



MICROSOFT OFFICE 2004: FIRST LOOK

AN EXCLUSIVE SNEAK PEEK AT NEW FEATURES
IN WORD, EXCEL, AND ENTOURAGE, p. 58

Macworld

www.macworld.com | March 2004

The Mac Product Experts



HOT NEW STUFF

✕ IPOD MINI

4GB of Music in a Truly
Tiny, Very Shiny Player

✕ GARAGEBAND

Revolutionary Application
Makes Beautiful Music

✕ iLIFE '04

Major Updates to iDVD,
iPhoto, and iMovie

✕ TOP PRODUCTS

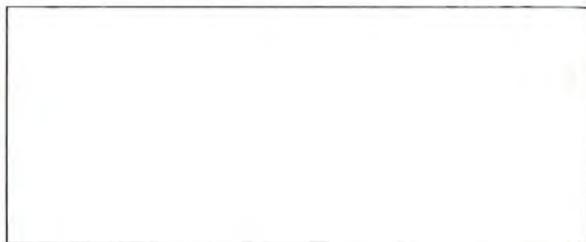
The Best of the Best from
Macworld Expo San Francisco



NEW iBOOKS REVIEWED



DIGITAL HUB RECORD ANYTHING TO YOUR MAC, p. 72





**Fade Out: The \$50,000 editing system.
Fade In: Final Cut Pro 4.**

Introducing Final Cut Pro® 4, the new choice of professional editors everywhere, from prime-time networks like NBC to Miramax Films in Hollywood. With over 300 new features—including RT Extreme for real-time compositing and effects, powerful new interface customization tools, multi-channel audio mixing and

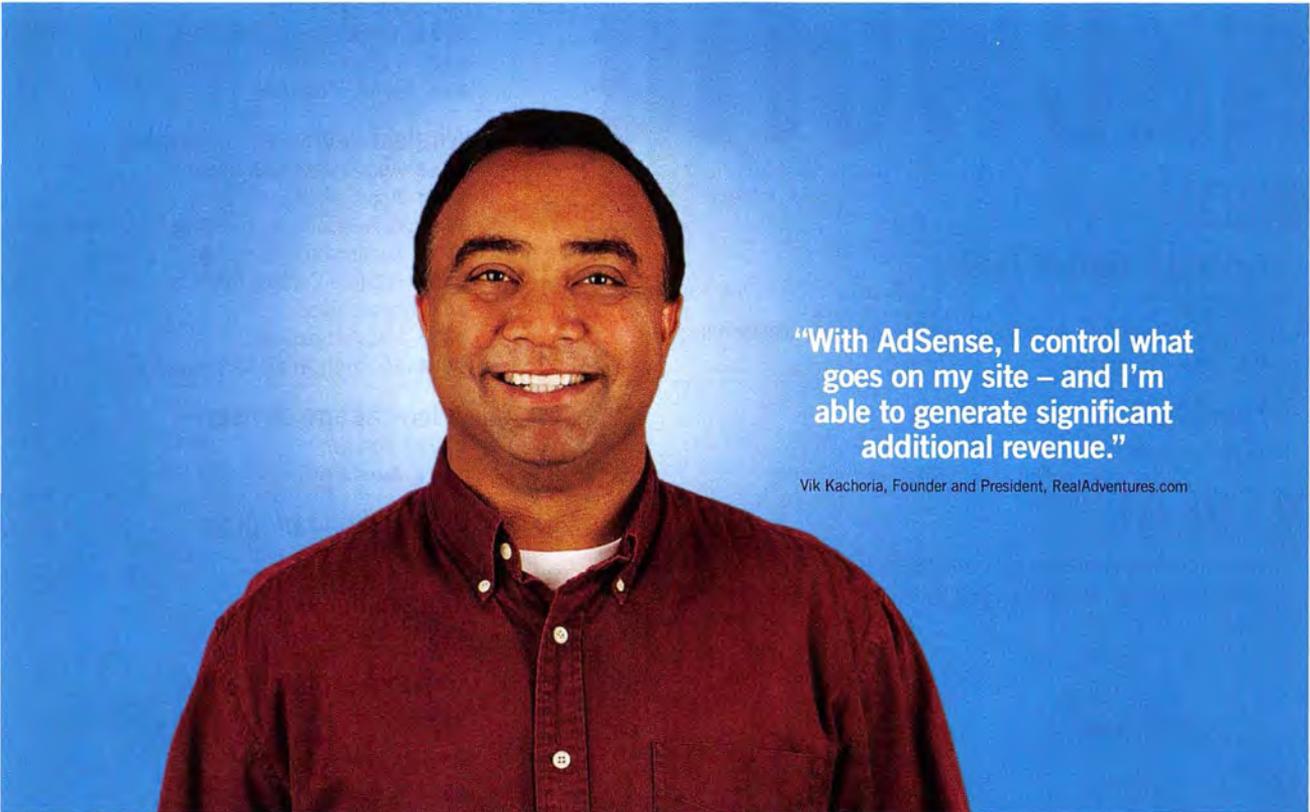
Cold Mountain In Theaters Now.



full scalability from DV to SD, HD and film – Final Cut Pro 4 now offers unmatched capabilities. And with four complimentary applications included – Soundtrack for music, LiveType for animated titling, Cinema Tools for film and Compressor for encoding – it still offers unmatched value at \$999.*



“I was concerned that serving ads on my site might mean losing traffic to competitors. And I didn’t think the ad revenue would amount to much.”



Talk about control: Google AdSense™ lets you block up to 200 competitive URLs. What's more, AdSense enables you to serve ads that are relevant to the content on your site. How's that for a useful service to your visitors?

The more relevant the ads are to the content on your site, the more likely it is that visitors will click on them – generating additional income for you in the process. And it takes very little effort to get started serving ads.

AdSense combines Google search technology with Google's 150,000-strong base of advertisers. And since Google does all the work of signing up advertisers and placing the ads, you can focus on building a great site that pays its way.

Learn about the AdSense advantages at www.google.com/getadsense



Macworld

REVIEWS

OPINION

7 From the Editor's Desk

JASON SNELL

Not just anyone can play a guitar, but everybody can create music—thanks to GarageBand.

14 Feedback

Readers respond.

MAC BEAT

18 News from Macworld Expo, Macs on the set of the sitcom *Scrubs*, a profile of DigitalFilm Tree, and an interview with Mac icon creator Susan Kare.



49 MAC GEMS



The Virtual CD

Subscribers now have free access to the contents of the CD-ROM that appears in newsstand copies of *Macworld*. (Broadband Internet recommended.) To view the contents of the CD, go to:

<http://cd.macworld.com/>
2004/03/673023h/.

On the Cover
Photography by Peter Belanger; digital retouching by Farnsworth Design

26 Portable systems

- ★★★★ 12-inch iBook G4/800MHz
- ★★★★½ 14-inch iBook G4/933MHz
- ★★★★ 14-inch iBook G4/1GHz

28 Wireless keyboards and mice

- ★★★★ Apple Wireless Keyboard
- ★★★★ Apple Wireless Mouse
- ★★★★½ Belkin Bluetooth Wireless Optical Mouse
- ★★★★ Kensington Wireless Optical Desktop
- ★★★★ Logitech Cordless MX Duo
- ★★★★ Macally rfkey
- ★★★★½ Macally rfmouse
- ★★★★ Microsoft Wireless Optical Desktop

30 Video-capture devices

- ★★★★½ AJA IO
- ★★★★ Avid Mojo

30 Video-editing program

- ★★★★½ Avid Xpress Pro

32 Asset manager

- ★★★★½ iView MediaPro 2.0

35 Spreadsheet application

- ★★★★ Mariner Calc 5.2

35 Word processor

- ★★★★½ Mariner Write 3.5

36 3-D software

- ★★★★ Carrara Studio 3

37 OCR software

- ★★★★½ Readiris Pro 9

38 Project-management software

- ★★★★ Stuidometry 1.1

39 CAD software

- ★★★★½ VectorWorks 10.5

39 Label printer

- ★★★★ Dymo LabelWriter 330 Turbo

39 Surveillance software

- ★★★★ HomeGuardian 2

39 Wireless CardBus card

- ★★★★ Sonnet Aria extreme Wireless CardBus Card

40 Keyboard virtual instruments

- ★★★★ B4
- ★★★★ Lounge Lizard EP-2

43 The Game Room

PETER COHEN

Curry the gods' favor in *Age of Mythology*, torment the living in *Ghost Master*, gamble with gorillas in *Burning Monkey Casino*, and more.

49 Mac Gems

DAN FRAKES

Check out this month's collection of small wonders.



COVER STORY

52 Center of Attention

Apple made a splash at January's Macworld Expo. The company unveiled the iPod mini, announced the iLife '04 suite, and showed off a new application. We take a first look at the tiny iPods; examine iMovie 4, iPhoto 4, and iDVD 4; and delve into Apple's new GarageBand app.

FEATURE

58 Office 2004: First Look

KELLY LUNSFORD, PHILIP MICHAELS, AND JASON SNELL

You won't be able to buy the new Microsoft Office suite for months, but we can take you on a tour of it now. From a suite-wide project organizer to a talking version of Word, we've got the inside scoop.



SECRETS

66 HANDS ON Ahead of the Curve

BEN WILLMORE

Learn to use Adobe Photoshop's Curves command to alter and enhance photos.

70 WORKING MAC Word Productivity

DAVID BLATNER

Harness regular expressions to supercharge your efficiency in Microsoft Word.

72 DIGITAL HUB Record Streaming Audio

JIM HEID

Record any sound that your Mac can play and save it to your hard drive.

74 CREATE Creative Suite Layers

SANDEE COHEN

Create layered PDF files in Adobe Illustrator CS and InDesign CS.

76 MOBILE MAC Hop on a Hotspot

FRITH GOWAN

Keep connected when you're on the move, with our guide to wireless access points.

78 GEEK FACTOR Develop Safari's Power

DORI SMITH

Install bookmarklets in Safari to validate Web sites, check the URL of a linked image, and control the way Safari handles windows.

80 HELP DESK Mac OS X Hints

ROB GRIFFITHS

Improve your DVD Player experience, work with Activity Monitor, and master the new Open and Save dialog boxes.

82 Mac 911

CHRISTOPHER BREEN

Teach Panther to create a bootable disc, install missing language resources, replace Copy Agent, and force-quit games.

BACK PAGE

116 Hot Stuff

Check out our editors' favorite developments of the month.

Nena craves the flavor of **Bordeaux**

The image features a woman in the background looking at the camera. In the foreground, a computer window titled 'Suitcase' is open. The window has a toolbar with icons for 'Activate', 'Deactivate', and 'Keywords'. Below the toolbar is a search bar with the text 'Bordeaux' and a 'point size: 48' dropdown. To the left is a list of fonts under 'Digital Fonts', including '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'. At the bottom of the list, it says '7673 item(s)'. On the right side of the window, a preview area shows the word 'Bordeaux' in four different fonts: 'SarahScript', 'Zapfino', and 'Edwardian Script'. The word is also shown in a very light, faded font at the bottom of the preview area.

Suitcase X1 | www.extensis.com/X1

ExtensisTM

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

Choose 68 at www.macworld.com/getinfo



Musically Inclined

MY RELATIONSHIP WITH MUSIC IS, LIKE MOST PEOPLE'S, somewhat complicated. I vigorously resisted years of piano lessons and became an adult with only rudimentary piano skills and the ability to read

sheet music. As for my abortive yearlong attempt to learn the trumpet back in the sixth grade, let's just say that it's the low point of my academic record.

But none of these hardships stopped me from becoming a voracious consumer of popular music. I think a lot of us ended up this way—not really able to express ourselves musically, but sampling and consuming as much music as possible.

With the iPod and the iTunes Music Store, Apple satisfied our immense appetites for music. I will never willingly give up my iPod, iTunes, or my Slim Devices SliMP3, because they have allowed me to enjoy more and more-varied music than I could have imagined as a cranky 13-year-old kid listening to the radio while waiting for a piano lesson to begin.

But serving consumers of music was the easy part. The real trick is to create a product that turns many of those consumers into *creators*—to do for music what iMovie and iDVD did for video.

I didn't believe it could be done until a couple of months ago, when I began using Soundtrack (★★★★; December 2003), a \$199 Apple program that's also included with Final Cut Pro 4. Soundtrack is a serious tool for creating royalty-free soundtracks for your video projects, yes—but it's also an amazing audio toy. I spent many hours mixing different drum, guitar, and keyboard loops, and created melodies so catchy that they stuck in my head long after I'd shut off my Mac. Even though I wasn't playing a note, I was expressing myself through music. It was a revelation.

With Apple's release of iLife '04, which includes the groundbreaking GarageBand program, Apple is bringing that revelation to the masses (see our cover story about iLife and the new iPod mini, page 52). Sure, a lot of what's created with GarageBand will be ugly, dissonant, or amateurish. But you could say the same thing about iMovie and iDVD. With GarageBand, Apple has reduced the size of the barrier that prevents people from expressing themselves musically. GarageBand won't make anyone into a guitar virtuoso overnight, but it might help a person with brilliant songwriting talent communicate that talent, even though he or she never learned to play an instrument. And kids who *are* learning an instrument just got a complete backup band for \$49, which should reduce the crushing boredom of practice a little bit.

New and Notable

Every January, the Macworld Expo trade show in San Francisco brings a flood of interesting new products, large and small. (For the show's highlights, see our *Mac Beat* coverage [page 18] and *Hot Stuff* [page 116].) This year was no different, but Apple did come in for more criticism than it has in recent years, and most of that disapproval had to do with the prices the company is charging for its products.

I can understand the frustration of people who must now pay \$49 to upgrade iPhoto and iMovie. But I don't blame Apple for charging for the upgrade—developing that software isn't cheap. It's appropriate that owners of new Macs will get iLife '04 for free, though I'd hoped that Apple would give a price break to .Mac customers, Panther purchasers, or both. Still, I'd argue that each of the components available only through iLife '04—iMovie 4, iDVD 4, iPhoto 4, and GarageBand—is probably worth \$49. Together, they're a steal.

The other debated Apple pricing decision involved the iPod mini. I was disappointed in the iPod mini's price, mostly because I'd like to see Apple create a *really* low-cost iPod. But I suspect that its \$249 price tag won't be around for long—it just makes sense for Apple to cut the price after it produces more of them.

Price aside, the iPod mini is remarkably cool, with a scroll-wheel interface that beats the original iPod's and a shockingly small size. Apple will sell a bunch of the new iPods—and once the price comes down, it will sell even more. □

ABOUT THIS MACWORLD



Testing GarageBand was one of the more entertaining things we've done at our office lately. To get under the new application's hood, Senior Associate Editor Jonathan Seff brought in his trusty Fender Eric Clapton Stratocaster and composed several brief tunes—serenading the rest of our staff all the while.

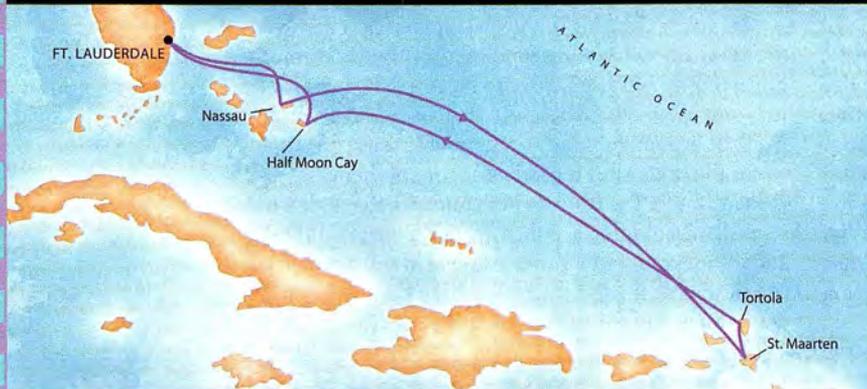
I'm interested in knowing what you think of Apple's moves. Are they music to your ears, or do they have you singing the blues? If you can tear yourself away from GarageBand's 1,000 loops, write me at jason_snell@macworld.com, or visit our online forums at www.macworld.com.

NOVEMBER 7-14, 2004

MacMania III



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



Cabin rates, per person:

- Standard Inside: \$799
- Better Inside: \$849
- Standard Outside: \$949
- Better Outside: \$999
- Outside w/Balcony: \$1099
- Taxes are \$176 per person
- The conference fee is \$795

CO-PRODUCED BY:

Macworld
THE MAC PRODUCT EXPERTS



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 Seff
 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 Editor, MacCentral.com Peter Cohen

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 (415/978-3380)

Production Director Steve Spingola
 Prepress Manager Mark Frischman
 Booking and Billing Manager Ricardo Sandoval
 Assistant Production Manager 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

March 2004, Volume 21, Issue 3

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.



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

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.

COLOR
FLATBED MFC
From \$179

LASER FLATBED MFC
From \$299



LASER MFC
From \$249

COLOR MFC
From \$129

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.

Announcing...
The MacCentral Weekly
 A **FREE** e-Newsletter



All the Mac news you need and more:

- A concise summary of the most important news
- Expert analysis of big industry trends
- Hot product announcements
- Links to key Mac stories on the Web

But wait, there's more!

Every month, one lucky MacCentral newsletter subscriber will be randomly selected to WIN a 10 GB iPod!

Get connected. Stay informed. Enhance the way you work and play.

Subscribe today! www.macworld.com/newsletter

For contest rules, see <http://www.macworld.com/info/newsletterpromorules/>

Macworld

HOW TO CONTACT MACWORLD

Subscription Information and Services

Phone	800/288-6848 from the United States and Canada 515/243-3273 from all other locations
U.S. Mail	Macworld Subscriptions Department P.O. Box 37781, Boone, IA 50037-0781 (Include a mailing label with correspondence.)
World Wide Web	http://service.macworld.com (for service) or http://subscribe.macworld.com (to order)
E-mail	subhelp@macworld.com (Send your full name and the address at which you subscribe; do not send attachments.)
Fax	515/432-6994

SUBSCRIPTIONS

The one-year (12-issue) subscription rate is \$34.97; the two-year rate, \$59.97; and the three-year rate, \$79.97. Foreign orders must be pre-paid in U.S. funds; add \$10 per year for postage to Canada or \$25 per year for air freight to all other countries. Checks must be made payable in U.S. currency to Macworld. Please allow 3 to 6 weeks to receive your first issue or for changes to be made to an existing subscription.

BACK ISSUES OF MACWORLD

Starting with the March 2003 Macworld, back issues can be downloaded in digital format, from www.zinio.com (\$6.99; Mac OS X 10.1 or later required). Print-format back issues (subject to availability) cost \$8 per issue for U.S. delivery, \$12 for international delivery; prepayment in U.S. currency to Macworld is required. Send a check or money order to Macworld Back Issues, P.O. Box 37781, Boone, IA 50037-0781; or phone 800/288-6848 (U.S. and Canada) or 515/243-3273 (all other locations).

REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from Macworld. Write to Macworld, Reprints and Permissions, 501 Second Street, 5th Floor, San Francisco, CA 94107; include a phone number. To order reprints of your company's editorial coverage, call Reprint Management Services at 717/399-1900; fax 717/399-8900; or e-mail sales@rmsreprints.com.

MAILING LISTS

We periodically make lists of our customers available to mailers of goods and services that may interest you. If you do not wish to receive such mailings, please write to us at Macworld, P.O. Box 37781, Boone, IA 50037-0781, or e-mail us at subhelp@macworld.com. Please include a copy of your mailing label or your full name and address.

MACWORLD EDITORIAL

The editors of Macworld welcome your tips, compliments, or complaints. Some stories and reviews from past issues can be located at www.macworld.com. We are unfortunately unable to look up stories from past issues; recommend products; or diagnose your Mac problems by phone, e-mail, or fax. You can contact Apple toll-free, at 800/538-9696, or visit the company's Web site, at www.apple.com.

Our offices are located at 501 Second Street, 5th Floor, San Francisco, CA 94107; phone, 415/243-0505; fax, 415/243-3545. Macworld staff can be reached by e-mail at firstname_lastname@macworld.com.

LETTERS TO THE EDITOR

Send comments about any aspect of Macworld to letters@macworld.com. Due to the high volume of mail we receive, we can't respond to each letter. We reserve the right to edit all submissions. Letters published in Macworld or Macworld.com become the property of Mac Publishing.

MAC 911

Send your questions or tips on using Mac computers, peripherals, or software to Macworld, Mac 911, 501 Second Street, 5th Floor, San Francisco, CA 94107; fax 415/243-3545; or e-mail mac911@macworld.com. Include your name, address, and phone number. To share tips and discuss Mac problems with other Mac users, visit the Macworld.com forums.

MACWORLD CONFERENCE & EXPO

As the flagship sponsor of Macworld Conference & Expo, Macworld encourages all subscribers to attend this exciting biannual industry event. For information, please visit www.macworldexpo.com.



THANK YOU FOR NAMING US **NUMBER ONE.**

End users have spoken. And industry analysts agree. Nearly every independent industry organization awards Konica Minolta products with their highest ratings. In-depth user surveys honor Konica Minolta products for their reliability, quality and value. The toughest testers in the industry pick our products as among the best. Experience Konica Minolta's award-winning line of high-end document production systems, color imaging systems and multifunctional document systems. And the industry-leading support and service behind the products. See why end users and analysts rate us so highly, and see what we do to make your business better. Visit www.konicaminolta.us



KONICA MINOLTA

©2004 Konica Minolta Business Solutions U.S.A., Inc.

The essentials of imaging





ALLU

The Xerox Phaser® 7750 network printer gives
And at 35 color ppm, it's sure to make your

The color is truly stunning, the speed simply breathtaking. That sums up the new Xerox Phaser 7750 tabloid color laser printer. It not only prints 35 ppm in black and white, it prints

just as fast in color. And it can deliver up to an incredible 1200 dpi. Its single-pass laser technology prints up to 11x17 full bleed. Color is Pantone-approved, too, for more accurate

Visit: xerox.com/office/1965 Or call: 1-877-362-6567 ext.1965

© 2004 XEROX CORPORATION. All rights reserved. XEROX® The Document Company® Phaser® There's a new way to look at it™ and PhaserMatch™ are trademarks of XEROX CORPORATION. Adobe PostScript 3 is either a registered trademark or trademark of Adobe Systems Incorporated in the United States and/or other countries.



you color so vivid, you're naturally drawn to it.
heart flutter. **There's a new way to look at it.**

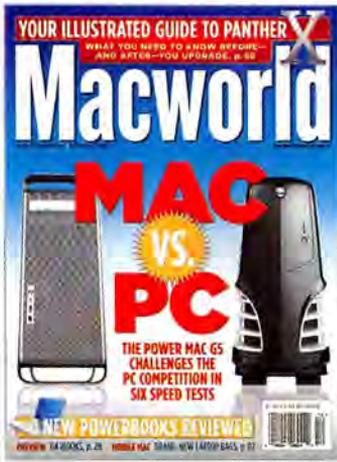
roofing. What's more, PhaserMatch™ 3.0 color management software ensures the colors you want are the colors you get. To experience the astounding richness



of Xerox color and our full line of printers, contact us today. The new Xerox Phaser 7750 laser printer. It'll lure you in with its truly stunning detail.



THE DOCUMENT COMPANY
XEROX®



FEEDBACK

Rooting for the Underdog

Our December 2003 cover story focused on one of the hottest debates in computer history: Macs versus PCs. We expected to receive many angry letters about our testing—instead, we received a flood of appreciation for our *Mac Beat* item on upgrading the G4 Cube. Mac users are, it seems, predisposed to love quirky outsiders and misunderstood misfits. *Macworld*, too, embraces its outside-the-norm readers—we were delighted by the positive response to our *Geek Factor* article about X11. The Mac may be small on market share, but it's big in our hearts. □

Thanks, Cubed

FRANK DOBBELAERE

As a Cube owner, I was pleasantly surprised to find a Cube article among all the buzz about G5s and other new hardware ("Building the Perfect Cube," *Mac Beat*, December 2003). But not mentioning the world's best Cube information source, CubeOwner.com, seems odd to me. Even if the writer didn't get any inspiration and information from the site, it should have been included. CubeOwner.com is home to an excellent Cube FAQ and a thriving support forum.

CubeOwner.com is a fabulous site; I used it extensively while researching my story. Unfortunately, a reference to it was removed during editing (due to space constraints). You can find more information about it in this issue's Geek Factor, page 78.—David Sawyer McFarland

STEVE LUXENBERG

Thank you, thank you, thank you! I've been bugged, annoyed, and frustrated that I couldn't burn CDs and DVDs on my G4 Cube. I've called Apple and just about everyone else complaining that someone should make a SuperDrive-like drive that's compatible with G4 Cubes.

As soon as I read your article, I logged on to www.macsales.com and ordered the Mercury Ti-SuperDrive.

I love my Cube, and as tempting as it was for me to go out and buy a new iBook, I just couldn't justify spending that kind of money for something that I wanted but didn't need.

You've come to my rescue. A million thank-yous to you.

JOHN WEIS

I appreciated your article on upgrading the G4 Cube, which included the replacement

of the CD drive with the Multi Drive, from MCE Technologies. But thanks to the usual lack of communication between Apple and third-party suppliers, that burner doesn't work with OS X 10.3. And I've found that my external CD recorder, a QPS 8x4x32 CD-RW drive, which worked great with OS X 10.2, is dead in Panther. This is the last time I will buy a new software or hardware release from Apple. Let someone else work out the bugs first.

MCE offers a driver that adds Panther compatibility to its Cube DVD Multi Drive. Contact support@mceotech.com to request the driver. The driver is also included with currently shipping drives.—Ed.

Problems with Panther

TODD JOHNSON

Overall, I enjoyed your story about Panther ("Panther by the Numbers," December 2003). But the "Network in the Finder" item has some major bugs.

You say in your article to "just choose Network from the Go menu to see a list of servers in the familiar Finder interface." But I've found several bugs while using Panther in a day-to-day work environment at multiple office locations on multiple test machines.

For example, you must enter your password, even if you've stored it in the Keychain, and there is no Options button to allow you to store the password or to allow you to choose whether you have a secure or a standard connection to the server, as there was in Jaguar's Network Browser.

If you leave a Finder window displaying the network open, let your Mac go to sleep, and then wake it up, expect the Finder to freeze at least half the time. This necessitates a hard reboot; force-quitting the Finder won't work.

Browsing the available servers is painfully slow—much slower than in Jaguar's Network Browser—and file listings in the remote folders take longer to come up. Plus, servers mounted this way *do not* show up on the desktop. These are just a few of the problems.

In some ways, the Finder has matured greatly since the initial release of OS X, but as far as browsing network services goes, Panther is less mature than version 10.0. I wouldn't deploy Panther in a stable network environment until Apple fixed it. Jaguar wasn't ready until version 10.2.3. I expect the same from Panther.

CHARLES FREAN

I'm enjoying several of Panther's new features and interface improvements, but I have two main complaints about the OS. The first is that Column view is (still) restricted to alphabetical order. I much prefer to display certain folders in reverse chronological order, as is possible in List view, but I like the flexibility of Column view for general navigation. I organize my work in different folders. Reverse chronological order lets me quickly see which files I've been working on recently. It's time-consuming to have to switch to List view and back.

The second complaint is that when I copy files, I cannot choose an Overwrite Only If Changed option, because Panther doesn't offer one. I frequently want to copy a folder from drive A to drive B, where the folder already exists on drive B and I'm trying only to update the folder to include new files and newer versions of existing files. The Finder detects only existing file names; it can't tell whether an existing file has the same name but an earlier modification date. What I want to do is overwrite files with the same name only if they have an earlier modification

date. If the Finder's copy operation had this capability, I could back up a large folder much faster because I wouldn't have to overwrite identical files, only those that have changed.

CHRIS WATSON

After receiving the December issue of *Macworld*, I was eager to try out the new Panther tips. I tried one of Ted Landau's suggestions: I used Panther's Font Book to disable some duplicate fonts. Unfortunately, once I did so, Apple apps such as Mail, Address Book, Safari, and Disk Utility all failed to launch (though non-Apple apps continued to work, adding to the confusion). After much gnashing of teeth and running a variety of utilities, I realized that the changes in Font Book might be an issue. I went back into Font Book and manually reactivated all the duplicate fonts. Apple's apps were immediately restored to full functionality. I'm not sure whether this is a serious bug—Apple's programs may just be very sensitive New Age apps. But this was an unpleasant (and inconvenient) surprise after following *Macworld's* usually spot-on advice.

I have seen a few similar reports. The problem isn't with Font Book or with the advice per se. It has to do with the duplicate you choose to deactivate. If you deactivate a duplicate font that's in the System: Library folder, you may experience the sorts of problems described here. The solution is to choose the other font. Often people just let Font Book decide which font to deactivate, and the program sometimes makes the wrong choice.—Ted Landau

Stand by Your Mac

ELLE FAGAN

Thanks so much for your article on Power Mac G5s versus PCs ("The Race Is On," December 2003). I liked and agreed with your approach: comparing apples and oranges.

I love technology and did my own site design and HTML. I'm not a digital expert, but I was able to learn to use the Mac, and sticking up for it has been easy, since its technology has saved me from problems with viruses, crashes, and a list of other stressful incidents. So even my old trusty G3 is "fastest" because of its compatibility with my needs.

When a person talks about "fastest" in terms of computers, their general features as they apply to the individual user's needs are what's important. If a computer handles well a function I use daily, and I achieve my computer-related goals in record time, then whatever computer and software organization and tasking methods I've used create the reality of "fastest" for me.

I love my G3 Mac, but I'm shopping for a G4 because the G3 can't run the new software I need. In terms of time saved for my arts business and its needs, online and off, the Mac wins with me.

RYAN WYLER

Nice article on the G5s versus PCs. I'm a recent switcher. Since I've switched, I've purchased three Macs and convinced about five friends to buy Macs, too.

Your article does a good job of explaining that even though there are a few desktops in the world that are currently faster than the dual-processor G5, at least Macs are back in the running.

I was a little disappointed with just one of the tests: MP3 encoding. Musicmatch continues

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

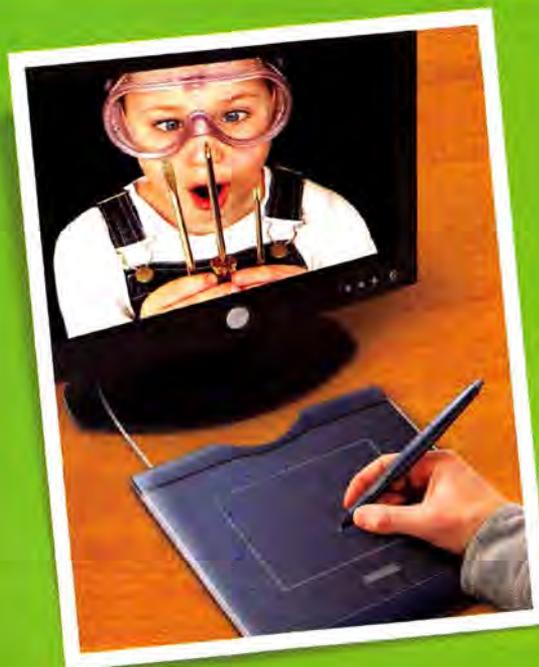
FREE TUTORIAL CD!

Visit our website today for your free copy of the new tutorial CD featuring digital imaging pros Scott Kelby and Dave Cross.



visit call

www.tabletphotofun.com 800-922-2589



HAVE FUN WITH YOUR DIGITAL PHOTOS!

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. ©2004 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.

Jukebox doesn't encode MP3s at anywhere near the same quality as QuickTime does, because it encodes much faster. It would be nice to see a follow-up with the MP3 test using iTunes, or even a program such as Lame, (www.mp3-tech.org/encoders.html) on each system.

I bet it's hard to keep everyone happy with articles like the ones you publish, but you've done a great job.

MARK COMER

So the PC has a little edge, and four out of six tests proved it. What I really notice is that the PCs you used in the tests were not the little \$499 Dells you see in commercials. By the time you equip a PC to do what a Mac does, you spend comparable amounts of cash.

I also feel that the extra speed of the PC is offset by the clumsy operating system. I'm spoiled by my Mac! If I want something done, I get it done on my Mac. When I plug something in, it plays (I don't have to identify hardware, load drivers, restart, start again, reload drivers, and then find out that things that used to work last week now do not). The PC speed advantage just takes you from crash to crash at lightning speed, and the operating system is as elegant as dancing with cinder blocks strapped to your shoes.

I don't care that my Mac is a bit slower. It works as near to flawlessly as anything I could imagine. My work gets done, the hardware is of wonderful quality (the case even closes tightly), it's dependable, and it's a visual treat.

There's still one thing that I don't understand, though: why is it that my 300MHz Yosemite G3 boots up and is ready to go faster than my 1.2GHz home-built Athlon?

PowerBooks Hinge on Design

RICHARD BRUCE

I was dismayed to hear about the excessive hardware flaws of the new 15-inch PowerBook G4s (*Reviews*, December 2003), but I'm not surprised. A 12-inch iBook I bought had to be replaced twice at the time of purchase, and then it had a faulty keyboard. Later I bought a 14-inch iBook, and the display had large dark areas from being pressed by something in the frame. The replacement had the same problem, though not as bad, and

the plastic frame around the display stuck out around the microphone on both sides, the latch didn't work, and there was a brown thing embedded in the plastic, which somebody at manufacturing thought they could scratch out.

This, in addition to things such as uneven seams and CD doors hanging down, prompts me to give a message to Jonathan Ive, Apple's vice president of industrial design: No one will mind if you take a hint from Big Blue's portable hardware, and here's a clue—micrometer.

Think Different, Dang It

ANTHONY W. MAGEE

I've been reading your publication for four years now and have heard some of the worst criticism about Apple come from its longtime users. I just want to say something a smart man named Sam Walton said a while back: "Don't get so stuck in your ways that you can't change." Way to go, Apple, for making your users think about what they're doing, for expanding their minds. And I love OS X 10.3, even though I don't yet own a Mac that can handle it. *Exposé* caught my eye immediately and stands out as an exercise of thought.

X11 Lessons

AMITAI SCHLAIR

In December 2003's *Geek Factor* ("X11 Marks the Spot"), Jim Akin recommends the FinkCommander GUI for OS X users looking to dabble with OS X applications. Those who seek or cultivate a more profound appreciation for OS X's BSD heritage may find it more fulfilling to install Unix software in a Terminal window.

Many of the standard Unix utilities found in OS X originated in NetBSD, a free version of Unix with a long history of excellent security and code quality. NetBSD also has a framework, called pkgsrc, to help compile additional programs from source code—and it works on several operating systems, including OS X. To learn more, visit www.pkgsrc.org.

MARC K. MYERS

After reading the article about X11, I was eager to give it a try. I used the link provided in the article and found that Apple is not offering X11 for any version

of the OS prior to 10.3. I'm planning on waiting until 10.3.2 to obtain Panther because I'd rather let the people on the bleeding edge deal with all of a new OS's inevitable problems. That leaves me wondering where I can get a copy of Apple's X11 package that will run in OS X 10.2.8.

Unfortunately, Apple pulled the Jaguar-compatible X11 beta from its Web site when it released Panther. Version 1.0 of X11 is Panther-only and included on Panther installation discs. If you would like to run X11 on Jaguar, you can install a non-Apple variant of X11 called XFree86 via FinkCommander, or download it directly from www.XDarwin.org. It isn't quite as user-friendly as Apple X11, but it launches from OS X's Applications folder and runs loads of great, free X11 software. Additional information is available at <http://fink.sourceforge.net/doc/x11/>.—Jim Akin

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 "The Two-Mac E-mail Shuffle" (*Mobile Mac*, February 2004), we said that copying the contents of OS X's Address Book to a secondary Mac required copying the file `Users/username/Library/Preferences/com.apple.AddressBook.plist`. In fact, the file to copy is `Users/username/Library/Application Support/AddressBook/AddressBook.data`.

In "Shop Smart" (January 2004), we mentioned Michael Thole's Searchling 1.1, which is no longer available. Also, we gave an incorrect URL for Thomas Reed's Coffee Break Pro X. The correct URL is www.bitjuggler.com.

In the text of February 2002's *Mac OS X Hints* "Unix Tip of the Month," we printed the ` (apostrophe) character where we should have printed the ` (grave accent) character in two commands. The article's screenshot shows the proper syntax.



[seethelightography]



D100
Digital SLR

The soft sunlight, the soulful color, the sudden epiphany, it all matters. So does everything inside the Nikon D100® Digital SLR Camera. Take this shot captured on the outskirts of Oaxaca, Mexico. Total Image Quality is the driving force behind the D100 and its 6.1 effective megapixels. As your eye for great pictures grows, the D100 SLR System expands with you. And at a price of under \$1700, you've entered (or simply moved

up to) the unparalleled world of Nikon's Total Imaging System. It's the system that includes over 60 compatible AF Nikkor® lenses, an expansive Speedlight System and the choice of Nikon Capture™ software. See the power. See the potential. See the story. Go behind the shot and learn more at nikonslr.com. Because seeing the light matters.

APPLE WASN'T THE ONLY COMPANY THAT MADE NEWS AT MACWORLD EXPO

Beyond the Digital Hub

Apple usually dominates the product news at Macworld Expo, and this January's San Francisco conference was no exception (see "Center of Attention," page 52, for more on Apple's new products). But there was more to this year's Expo than smaller iPods and the updated iLife suite. Around 250 exhibitors were at the show, displaying the latest in Mac hardware and software. Here are some of the product highlights from January's Macworld Expo.

Director's New Take

Director didn't make the final cut of programs that shipped as part of Macromedia's Studio MX 2004 (www.macromedia.com) last year. But with Director MX 2004 shipping by the time you read this, the app is now ready for its close-up. And designers who've wanted increased efficiency and flexibility should welcome this version of the app, widely used for creating professional-level multimedia content for CDs, DVDs, kiosks, and the Web.



One important addition to Director is support for embedding, controlling, and playing back DVD video within Director projects. This capability opens the possibilities of triggering events during playback, adding custom interfaces, and providing Web-synchronized viewing of additional content. In addition to allowing such DVD integration, Director MX 2004's DVD features mean that DVD creators can now easily add materials that work on any platform—Mac or Windows.

Director has long relied on a proprietary scripting language, known as Lingo, for creating interactivity. The MX 2004 update adds support for JavaScript—a boon for programmers and Web developers who don't want

to learn another scripting language. You can also use both languages within a single project.

Director MX 2004 is compatible with the latest version of Flash, so you can import Flash MX 2004 files into Director. This allows for rapid deployment of existing Flash content across multiple fixed-media types, the use of additional media types (QuickTime, RealMedia, BMP, and GIF, for example) in projects, and interactive real-time 3-D.

Other time-saving enhancements in Director MX 2004 include new Publish Settings preferences, such as the option to save a project's projector settings and the option to create Director applications for Mac and for Windows in one step. You can now assign custom names to sprites—graphic elements that can perform defined actions based on user input—and move sprites and channels without modifying code. Finally, Director includes prebuilt components such as calendar and interface elements, to cut development time.

Sometimes, getting a product right is more important than getting it out quickly. With any luck, we'll find that the improvements in the \$1,199 Director MX 2004 (\$399 for upgraders) were worth the wait.—JONATHAN SEFF

WHAT'S HOT Special Macworld Expo Edition

- 1 Music tool GarageBand becomes the latest iLife app. The program comes with more than 50 software instruments, 1,000 audio loops, 200 effects, and dozens of virtual groupies.
- 2 Hewlett-Packard plans to sell Apple-made iPods as HP-branded digital music players. In a similar move, Microsoft plans to sell OS X in a box labeled Windows 2006.
- 3 Apple releases the iPod mini, a smaller version of the iPod; it has room for 4GB of songs. Next up for Apple is the iPod LP, a vinyl disc capable of storing as many as six songs on each side.
- 4 Steve Jobs calls Apple's new iLife '04 suite "like Microsoft Office for the rest of your life." Not to be outdone, Microsoft plans to tout Office 2004 as "like iLife for the part of your life involving spreadsheets and PowerPoint."

PageMaker Makes Way for InDesign

For the last few years, Adobe (www.adobe.com) has kept PageMaker, its venerable page-layout application, in the game for OS 9 users while devoting most of its development attention to the OS X-only InDesign. But Adobe believes that InDesign is its franchise player, and the company has finally sent PageMaker to the showers.

To quell the qualms of PageMaker-loyal Mac users, Adobe has unveiled a PageMaker-friendly version of InDesign—InDesign CS PageMaker Edition—which registered PageMaker owners can buy for \$349.

(InDesign CS normally sells for \$699.) Existing InDesign CS users can buy a \$49 PageMaker Plug-in Pack that includes the templates and training material for people who prefer PageMaker's content and commands.

The InDesign CS and PageMaker Plug-in bundle lets you convert documents and templates created in PageMaker 6.0 or later. The bundle also includes the PageMaker toolbar, which places common commands such as New Document, Open Document, Save, and Print in

one place. To make InDesign more familiar, you can even use PageMaker keyboard shortcuts.

The bundle includes several features previously available only in PageMaker. That program's page-imposition abilities are now accessible through the InBooklet Special Edition

plug-in. You can also automatically style text with bullets and numbered lists, a popular feature among PageMaker users. Data Merge is a more recent addition to PageMaker, but it's also part of the bundle (see "Data Driven"). The bundle's new Position tool acts like PageMaker 7's Crop tool.

Adobe rounds out the bundle with more than 80 professionally designed templates, as well as training videos

and online help that answers questions for people migrating from PageMaker.

Adobe will continue its PageMaker technical support and customer service for people who don't want to switch from PageMaker. But the company's message is clear: from this point forward, InDesign is the layout star on Adobe's team.—TERRI STONE



Data Driven The new Data Merge palette helps you merge text and images from separate files into templates for projects such as catalogs, business cards, and form letters. This is a preview of a layout with merged data.

Panther Gets Some Backup

Updated operating systems need updated software. And some of those updates are trickier than others, as Dantz Development (www.dantz.com) learned when it came time to add Panther compatibility to its Retrospect backup software. OS X 10.3 introduced a number of new features—specifically FileVault encryption and Fast User Switching—that Dantz needed to support.

Panther-compatible Retrospect 6.0 tackles those challenges. The newly updated Retrospect can back up the user folders of FileVault users only when they're logged in. Version 6.0 is also savvy enough to refuse to launch when it's already open in another active user account. Most importantly, Retrospect now provides OS X 10.3 users—and those about to upgrade to the new OS—a way to back up and restore files.

Other additions to Retrospect 6.0 include support for Fibre Channel tape libraries and the ability to identify tape bar codes. Those capabilities are of particular interest to organizations in need of serious, large-scale backups, as is another new Retrospect feature—the ability to back up from and write to data sets larger than one 1TB. Smaller-scale users will appreciate several additions to Retrospect's file selectors. There's

now a selector that specifically backs up only your user folder and general preferences instead of your entire drive, reducing the size of your backup. Other new selectors include ones that weed out large movie and audio files, as well as a wide range of Web-browser cache files. Retrospect can also now save a backup set on multiple external hard drives, rather than being limited to a single drive.

If you've still got some OS 9 machines on your network, Retrospect 6 has you covered. The product ships with a copy of Retrospect 5.1 for OS 9; version 5.1 works with the same license codes that activate copies of Retrospect 6.—MACWORLD STAFF

PRICING OPTIONS

As with past releases, Retrospect 6.0 comes in three different versions.

- > The Desktop version (\$129; upgrade, \$60) can back up the computer it's on and two other computers on a local subnet.
- > The Workgroup edition (\$499; upgrade, \$199) backs up 20 computers and adds tape-drive support and the ability to run on Mac OS X Server.
- > The Server edition (\$799; upgrade, \$349) runs on and backs up OS X servers and as many as 100 clients.

HARDWARE
BEAT



Coolscan V ED, Super Coolscan 5000 ED, and Super Coolscan 9000 ED, from Nikon (www.nikonusa.com): High-speed desktop film scanners feature 4,000-dpi resolution (V ED, \$600; 5000 ED, \$1,100; 9000 ED, \$2,000).

Harman Kardon Soundsticks II, from Harman Multimedia (www.harman-multimedia.com): Speakers come outfitted with computer-optimized audio technology and analog connectivity (\$200).

HL-2700CN, from Brother (www.brother.com): Small-business printer with built-in 10/100BaseT Ethernet print server prints 31 black-and-white and eight color pages per minute (\$899).

HL-5100 series, from Brother (www.brother.com): Four printers feature print speeds as fast as 21 pages per minute (HL-5140, \$229; HL-5150D, \$299; HL-5150DLT, \$349; HL-5170DN, \$449).

JBL Creature II, from Harman Multimedia (www.harman-multimedia.com): Glowing speakers incorporate the latest Odyssey transducer technology (\$100).

Perfection 4870 Photo and Perfection 4870 Pro, from Epson (www.epson.com): Film scanners offer 4,800-by-9,600-dpi resolution (4870 Photo, \$449; 4870 Pro, \$599).—COMPILED BY PHILIP MICHAELS

XSERVE GETS FASTER CHIP; XSERVE RAID BOOSTS CAPACITY

Serving Up the G5

The PowerPC 970 processor added to Apple's Power Mac desktops last year amid much fanfare has made its way into another piece of Apple hardware. The Xserve, Apple's server product line, now runs on either one or two 2GHz G5 chips.

In addition to the 64-bit processor, the Xserve G5 features a new system controller with as much as 8GB of PC3200 error-correcting code memory; up to 750GB of storage; and two PCI-X slots that support 133MHz PCI-X cards with more than 1 Gbps of throughput. Apple is also offering a cluster-optimized

dual-2GHz server; all models should be available in February (see "Apple's Server Side" for more information about them).

Apple also updated its other server hardware, the Xserve RAID. The 3U rack storage system can now store 3.5TB, an increase of nearly 30 percent over its old capacity. The latest version of the Xserve RAID supports Small Form-Factor Plugable connections, for greater deployment flexibility. The Xserve RAID is also certified on Windows 2003 Server, Windows XP Professional, and multiple versions of Linux.—PHILIP MICHAELS



APPLE'S SERVER SIDE Apple reconfigured its Xserve and Xserve RAID lineups.

Xserve G5 Configurations		
PROCESSOR	OS X SERVER 10.3 EDITION	PRICE
2GHz PowerPC G5	Unlimited-client edition	\$2,999
Dual-2GHz PowerPC G5	10-client edition	\$2,999
Dual-2GHz PowerPC G5	Unlimited-client edition	\$3,999

Xserve RAID Configurations		
DRIVE MODULES	AVAILABLE STORAGE (RAID 0)	PRICE
Four 250GB Drives	1TB	\$5,999
Seven 250GB Drives	1.75TB	\$7,499
Fourteen 250GB Drives	3.5TB	\$10,999



PRODUCTIVITY BEAT

Dave 5.0, from Thursby Software (www.thursby.com): Networking software adds support for Windows Server 2003's enhanced default network security (\$119; upgrade, \$70).

DeltaGraph 5.5, from Red Rock Software (www.redrocksw.com): Data-analysis and charting software adds OS X 10.3 compatibility, PDF import and export, and the ability to drag and drop charts and objects to other applications (\$299; upgrade, free).

MYOB AccountEdge 2004 Network Edition, from MYOB (www.moyb.com/us): Small-business accounting and management software has been optimized for multiple users working simultaneously over a Mac network (\$599; upgrade, \$249).

PDFpen, from SmileOnMyMac (www.smileonmymac.com): PDF utility allows you to split, combine, reorder, and augment PDFs (\$30).—COMPILED BY PHILIP MICHAELS

MULTIMEDIA BEAT

AlchemyTV DVR, from Miglia Technology (www.miglia.com): PCI card that lets users watch and record TV shows on their Macs is now G5-compatible (\$159).

Combustion 3, from Discreet (www.discreet.com): Visual-effects and 3-D-compositing software adds JavaScript-based Expressions for complex animations, and Editing Operator for simple editing (\$995; upgrade, \$199).

Indie HD Toolkit, from Heuris (www.heuris.com): Suite for moving video shot with the JVC JY-HD10U HDV camera into Final Cut Pro includes import and player utilities and MPEG-2 encoding software (\$499).

Studio Artist 3.0, from Synthetik Software (www.synthetik.com): Graphic synthesizer for re-rendering source images or video as a painted image adds Vectorizer raster, Modular Synthesized Graphics plug-in architecture, and improved image processing (\$379; upgrade, \$179).—COMPILED BY PHILIP MICHAELS

The latest Mac bells, and the latest Mac whistles.



Apple® PowerMac® G5

- > 1.6GHz PowerPC™ G5 processor
- > Memory: 256MB RAM
- > 80GB serial ATA hard drive
- > DVD-R/CD-RW Superdrive



Authorized
Reseller

\$1795.00
CDW 508211



Apple® 20" Cinema Display

- > Liquid crystal display provides unparalleled image quality and richly saturated color
- > 1680-by-1050-pixel resolution for display of application palettes
- > Widescreen format for simultaneous display of two full pages of text and graphics, or full-screen DVD and QuickTime movies
- > Designed to work with the PowerMac® G4 or PowerMac® G5 digital graphics interface for distortion-free images
- > Wide (170°) horizontal and vertical viewing angle for maximum visibility and color performance



Authorized
Reseller

\$1294.95
CDW 460830



Macromedia Studio MX 2004

- > Includes the newest versions of industry-leading, standards-based tools, providing professional features for every aspect of web development
- > Integration across the Studio MX 2004 applications enables more efficient development of rich web sites and applications
- > Reduces design and development complexity
- > Consistent user interface elements help you work more efficiently when using multiple Studio MX applications



\$899.00
CDW 518905



macwarehouse.com • 800.ALL.MACS



DIGITALFILM TREE PUTS EDITING APP TO WORK

Final Cut's Pros

Hollywood is just beginning to offer Final Cut Pro, and other Apple hardware and software products, a leading role in postproduction work on projects large and small. But DigitalFilm Tree, a postproduction and services firm based in West Hollywood, California, has given Final Cut Pro top billing for years.



"One of our original goals was to use consumer technology for professional use," says CEO Ramy Katrib (pictured left), who founded DigitalFilm Tree in 1998. "Back then, Final Cut Pro was not used for films or TV. So for us, it started as making discoveries—figuring out how to edit 35mm feature films with a 450MHz [Power Mac] G3, using Final Cut Pro and FilmLogic."

In its early days, the company provided its offline and online editing services to small independent films and student projects. But as major filmmakers began using Final Cut Pro (and DigitalFilm Tree) in higher-profile productions—most notably Steven Soderbergh, with *Full Frontal*, and Roger Avary, with *The Rules of Attraction*—DigitalFilm Tree's belief that Final Cut Pro was capable of handling professional work began to spread.

Two years ago, DigitalFilm Tree was hired to conform the broadcast video masters—the last editing stage, which yields a master tape—of the NBC comedy series *Scrubs*. It helped *Scrubs* move to an all-Final Cut Pro workflow in 2003 (see "Choice Edits").

DigitalFilm Tree capped off last year with work on *Cold Mountain*, a contender in the upcoming Academy Awards. "No project in history that shot a million feet of film was ever cut on Final Cut Pro,"

Katrib says. "Plus [the film's editors] wanted four systems running simultaneously."

The folks at DigitalFilm Tree will be holding their breath come Oscar night. It may prove their point—that Final Cut Pro is a worthy industry player.—ADELIA CELLINI



ON SITCOM SET, MACS RUN THE SHOW

Choice Edits

For the first two seasons of the TV series *Scrubs*, the show's editors used Mac hardware but

turned to Avid for editing software.

Before the start of the third season last fall, the editors decided to give Apple's Final Cut Pro a try. "We became beta testers for Apple to see if [the program] was capable of doing what we needed it to do,"

says Tim Serda, assistant editor for *Scrubs*. "It worked for us, and we felt comfortable

making the switch for this season."

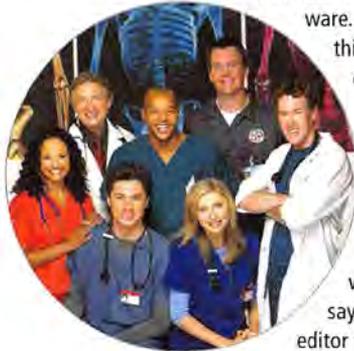
For Serda, the biggest test after the Final Cut Pro switch came when the executive producer worked with the editor to lock an episode—the

process of finalizing which shots wind up in the final show. "The editor gets into a mode of clicking and editing quickly, and the application can't crash or slow down on us," Serda says.

"Final Cut Pro passed the test—from that point on, we were locked into using Final Cut Pro."

Besides Final Cut Pro 4 on Power Mac G4s, the editing team uses three Xserve RAIDs, an 802.11b wireless network, and 17-inch PowerBooks for each editor.

While Serda thinks that Apple is on the right track with its latest releases, he says the company could add at least one feature to gain a stronger hold on Hollywood—support for multicamera viewing. Unlike *Scrubs*, which is shot with a single camera, many programs use multiple cameras. "[Final Cut Pro] is getting there," says Serda. "If the multicamera feature comes in, Final Cut Pro will be seriously considered by all of the networks." —JIM DALRYMPLE

STORAGE
BEAT

ComboDock, from WiebeTech (www.wiebetech.com): Docking device, featuring dual daisy-chainable FireWire 800 ports and a USB 2.0 port, lets users dock IDE drives to a FireWire 800–USB 2.0 bridge (\$150; with AC adapter and FireWire cable, \$170).

Data Backup 2.0, from Prosoft Engineering (www.prosofteng.com): Updated backup utility features new interface and streamlined functionality (\$49; upgrade, free).

QuickStream DV, from MCE Technologies (www.mce-tech.com): Hard-disk–based digital-video–capture device mounts on a DV camera and lets users record DV directly to disk (\$599 to \$999, depending on capacity).

Vanguard Ultra Elite Fibre System, from FirewireDirect.com (www.firewiredirect.com): Enterprise-level 2GB Fibre Channel RAID product supports hard drives with capacities as high as 250GB and can provide as much as 3TB of storage (\$5,695 to \$9,695, depending on configuration).—COMPILED BY PHILIP MICHAELS

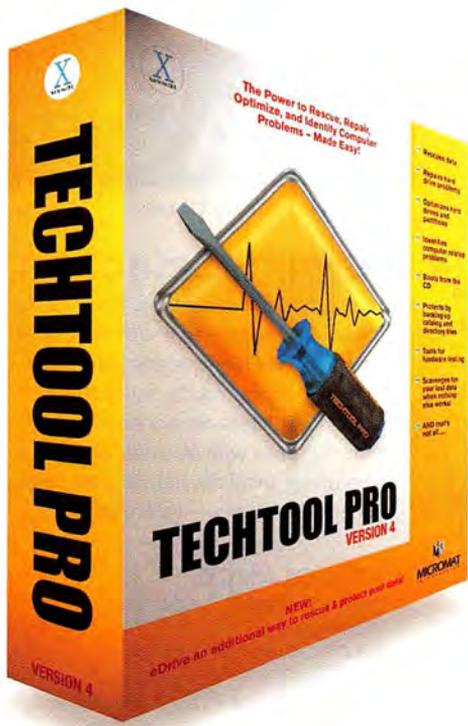
GAME
BEAT

Aki Mahjong Solitaire, from Ambrosia Software (www.ambrosiasw.com): Puzzle program runs on OS X 10.1 and later (\$20).

Eylau and Friedland, from By Design (www.macwargames.com): Two Napoleonic-era war games add OS X compatibility (\$25 each).

Tom Clancy's Rainbow Six 3: Raven Shield, from Aspyr Media (www.aspyr.com): Tactical action and strategy game features 15 new single-player missions and six dedicated multiplayer maps (\$50).

Tomb Raider: The Angel of Darkness, from Aspyr Media (www.aspyr.com): Latest Lara Croft adventure requires OS X 10.2.6 or later and 256MB of RAM (\$40).—COMPILED BY PHILIP MICHAELS



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

TECHTOOL[®] PRO

VERSION 4

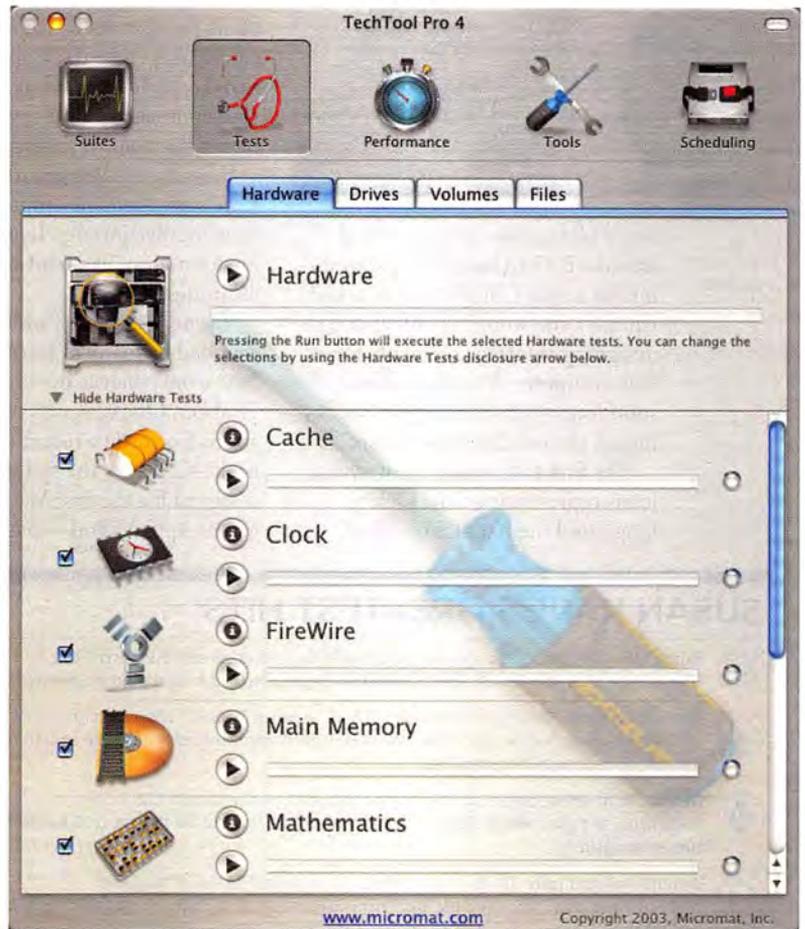
TechTool Pro includes **S.M.A.R.T.** testing, hardware tests, scheduling and alerts, performance tools, and more... even scavenges for files **when all else fails!**

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!

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



CATCHING UP WITH MAC ICON CREATOR SUSAN KARE

Behind the Smile

Maybe it's not that surprising that the Mac has spent the past 20 years developing a passionate following even among people without much interest in computers. After all, the icons and fonts that first attracted many of these technophobes to the Mac were designed by a person who also wasn't particularly interested in computers.

In 1983, Susan Kare had both an M.A. and a Ph.D. in fine arts from New York University. Out of the blue, she got a call from



Andy Hertzfeld—a high-school friend who had become a programmer at Apple Computer. He asked whether she would be interested in designing interface elements for a new computer. Intrigued, Kare soon found herself at Apple, working on the original Macintosh.

Her first task was to create visual icons representing File, Delete, Copy, and the handful of other

objects and commands in the OS. Kare began by working on graph paper, using one square to represent one pixel. Soon, Hertzfeld developed an icon editor that ran on an early version of the Mac, allowing Kare to toggle pixels on and off and view icons at actual size.

For Kare, the most challenging part was to create compelling metaphors for abstract concepts such as commands. Take the Copy command, which she tried to represent with an image of a cat gazing at its own reflection—a “copycat.”

“Visual puns don't work at all,” Kare says, “because users shouldn't have to solve puzzles. Icons should function more like road signs than illustrations.”

Twenty years later, we're still surrounded by many of Kare's original Mac icons, such as the Lasso and the Grabber. One of Kare's other creations has made a recent comeback—Chicago, the system font she designed for the first Mac, now graces Apple's iPod.—DAVID WEISS

PRO FILE Q&A



Q&A with Craig Barnes

Natural Selection

You Software founder Craig Barnes is following the same approach he took at Now Software and Extensis: offer a mix of homegrown products and software from independent developers. Barnes recently spoke with *Macworld* about how giving small developers a big stage benefits Mac users.—ANDREW SHALAT

AT A GLANCE

CRAIG BARNES Founder and CEO, You Software

MAC: 1GHz PowerBook G4 with SuperDrive

SOFTWARE: Apple Mail, Apple iPhoto

Q: Is the Mac market today different from how it was when you founded Now Software and Extensis?

A: Similar to the System 6-to-System 7 transition, we've cleared the decks and started over. A lot of junk has been purged, and renewed energy is everywhere. Sure, we had a downturn, but the optimism is unlike anything I have seen in a long time.

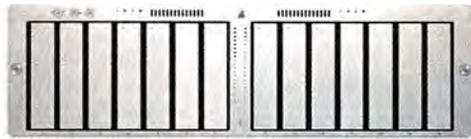
Q: You Software includes products originally developed by lone programmers. It's obvious how a one-person operation benefits from your distribution and marketing savvy, but what's the advantage for Mac users?

A: The main way it benefits the end user, frankly, is the ability for them to find out about the product in the first place. Hardcore techno types may dig for interesting or useful new products and technologies, but most people let the hard-core early innovators guide them. More important than marketing savvy or distribution is that experienced, dedicated commercial software organizations have the discipline, dedication, and wherewithal to deliver predictably high-quality products at reasonable prices—and will be there in the long run. There are many wonderful small software businesses out there, and many seem to plod along just fine. Our mission at You Software is to augment our own development efforts by leveraging and scaling the work of these types of businesses and getting broad productivity solutions to millions of users.

SUSAN KARE'S GREATEST HITS

- 
Happy Mac: The smiling Mac appeared at startup to let users know everything was A-OK. *"This was one of my favorites, because it summarized the problem I had to solve: making a friendlier computer."*
- 
Application Icons: The original apps took this form, as do the “generic” application icons in OS 9. *"I felt as though applications were active, so I made them diamond-shaped and dynamic so users could immediately distinguish them from files."*
- 
Watch: The timepiece popped up whenever a command took time to carry out. *"I was happy to make a watch, because Macs were more 'modern.' Not like the Lisa, or Xerox computers, which used an hourglass."*
- 
Irregular Polygon Icon: The tool first appeared in the original version of MacPaint. *"This was a hard one; I probably drew 50 different polygons, trying to make one that didn't look like anything."*
- 
The Command Symbol: The key bearing this image modifies the keyboard by adding more functions. *"We [used] the cloverleaf image based on a symbol for 'interesting feature' in Swedish campground signage."*
- 
Dogcow: Originally a hieroglyphic character in the Cairo font, the Dogcow was later used to show page orientation in the Page Setup dialog box. *"I meant this to be a dog, but many people thought it was a cow. Perhaps with a more squared-off nose it would have looked more like a dog."*
- 
Bomb: When this icon appeared on screen, Mac users knew there was a problem. *"Apple told me to come up with whatever I wanted to for this image, and that probably no one would ever see it."*

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 p515y • Call 888-289-APCC x4248 • 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.

iBook G4s

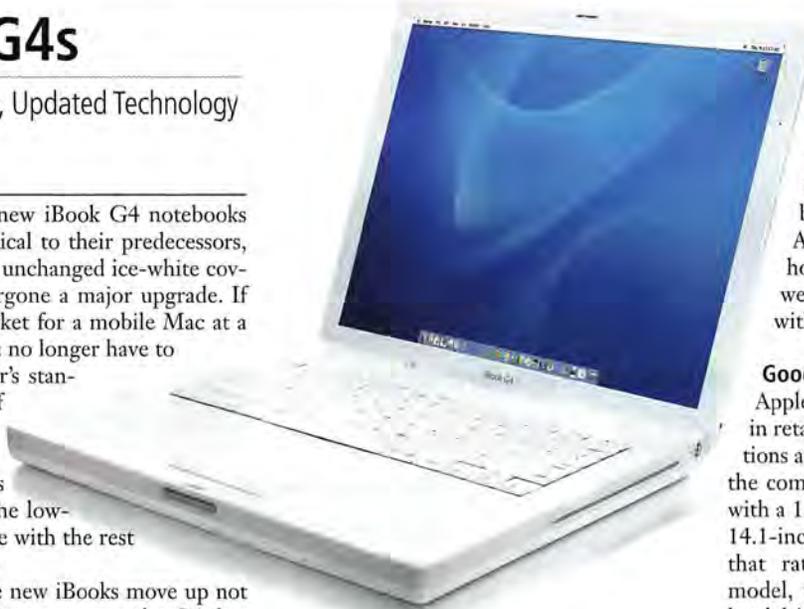
Familiar Design, Updated Technology

BY HENRY NORR

At a glance, the new iBook G4 notebooks look almost identical to their predecessors, but beneath their unchanged ice-white covers, they've undergone a major upgrade. If you're in the market for a mobile Mac at a bargain price, you no longer have to settle for last year's standards. In terms of core processing and connectivity technologies, this overhaul brings the low-end laptops in line with the rest of the Mac family.

Specifically, the new iBooks move up not only from the G3 processor to the G4, but also to a next-generation memory system. On the wireless front, they are the first iBooks to support AirPort Extreme (802.11g) networking (a \$99 option), as well as Bluetooth connections to compatible phones, wireless keyboards and mice, and other devices. (Plan ahead if you want Bluetooth: it's available only in built-to-order configurations, for \$50.)

While the single FireWire port is still the old FireWire 400 flavor (1394a), the two USB ports now support version 2.0 of that standard, enabling much faster data exchange with USB 2.0 external drives, cameras, card readers, and scanners. And the built-in optical drives are now slot loading; the easily damaged trays of previous iBooks are gone. And of course, the new models come with Mac OS X 10.3 (Panther).



another dimension that has scarcely changed: the entry-level version, with a 12-inch display, still weighs 4.9 pounds, while the two models with 14-inch screens weigh 5.9 pounds. And the new iBooks continue to deliver excellent battery life. We couldn't match Apple's promise of as much as six hours per charge, but in moderate use, we got more than four and a half hours with the default Energy Saver settings.

Good, Better, Best?

Apple is offering three iBook G4 models in retail outlets and as standard configurations at the online Apple Store. In the past, the company generally offered two models with a 12.1-inch screen and only one with a 14.1-inch display. This time it has reversed that ratio: only the entry-level, \$1,099 model, with an 800MHz G4 and a 30GB hard drive, has a 12.1-inch screen. The other two versions, a \$1,299 model with a 933MHz processor and a 40GB drive, and a \$1,499 version with a 1GHz G4 and a 60GB drive, have the larger screen—and the extra space and weight it requires.

Before you choose, remember that the larger-screen models don't actually display any more data than their smaller-screen siblings: all three models are limited to a resolution of 1,024 by 768 pixels. The difference is in the size of the pixels. When you squeeze that many into a 12.1-inch display, they have to be pretty small, and as a result, some people—especially those with vision problems—may find small type and other fine details hard to decipher.

If you're in that category, the 14.1-inch models may well be worth the extra cost and

Same Look, Same Weight

The last major makeover of the iBook line, back in May 2001, included a dramatic redesign: the flamboyant colors and bulky curves of the original clamshell iBook gave way to cool white and rectangular lines—the same styling later adopted for the iPod. This time, Apple's industrial designers opted to stick with that distinctive look. The new models feature the same compact design, sturdy feel, and white polycarbonate plastic case as their predecessors. Aside from the new optical-media slot, the only noticeable change is that the keys are no longer translucent (see "New Look").

The 2001 overhaul also resulted in iBooks that were almost two pounds lighter than the clamshell models. Unfortunately, that's

Macworld LAB TEST	Speedmark 3.3	Cinema 4D XL 8.5	iMovie 3.0.3	iTunes 4.2	Adobe Photoshop CS	Unreal Tournament
	OVERALL SCORE	RENDER	RENDER	MP3 ENCODE	SUITE	AVERAGE FRAME RATE
12-inch iBook G4/800MHz	78	9:21	1:40	4:56	3:35	12.9
14-inch iBook G4/933MHz	88	8:17	1:27	4:19	3:05	13.7
14-inch iBook G4/1GHz	91	7:54	1:26	4:05	2:59	14.1
12-inch PowerBook/1GHz	102	4:51	1:21	3:45	2:54	15.7
12-inch iBook G3/900MHz	75	8:00	2:07	6:28	3:56	13.4
	>Better	<Better	<Better	<Better	<Better	>Better

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

Speedmark 3.3 scores are relative to those of a 1GHz eMac (G4), which is assigned a score of 100. Photoshop, Cinema 4D XL, iMovie, and iTunes scores are in minutes:seconds. Speedmark 3.3 requires at least 512MB of RAM. Because all iBooks ship with 128MB of internal RAM, we tested the iBooks with 640MB of RAM. The PowerBook had 512MB of RAM. All systems were running Mac OS X 10.3.2. We tested MP3 encoding with an audio-CD track that was 45 minutes long, converting it from the hard drive using iTunes' Better Quality setting. We used Unreal Tournament's Antalus Botmatch average frames-per-second score; we tested at a resolution of 1,024 by 768 pixels. The Photoshop Suite test is a set of 14 scripted tasks using a 50MB file. Photoshop's memory was set to 75 percent and History was set to Minimum. For more information on Speedmark 3.3, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY KRISTINA DE NIKE AND JAMES GALBRAITH

26 Portable systems
 12-inch iBook G4/800MHz,
 14-inch iBook G4/933MHz,
 14-inch iBook G4/1GHz
**28 Wireless keyboards
 and mice**
 Apple Wireless Keyboard,
 Apple Wireless Mouse, Belkin
 Bluetooth Wireless Optical
 Mouse, Kensington Wireless
 Optical Desktop, Logitech

Cordless MX Duo, Macally rKey,
 Macally rMouse, Microsoft Wire-
 less Optical Desktop
30 Video-editing program
 Avid Xpress Pro
30 Video-capture devices
 AJA IO, Avid Mojo
32 Asset manager
 iView MediaPro 2.0
35 Spreadsheet application
 Mariner Calc 5.2

35 Word processor
 Mariner Write 3.5
36 3-D software
 Carrara Studio 3
37 OCR software
 Readiris Pro 9
**38 Project-management
 software**
 Studiometry 1.1
39 Label printer
 Dymo LabelWriter 330 Turbo

39 Surveillance software
 HomeGuardian 2
39 CAD software
 VectorWorks 10.5
39 Wireless CardBus card
 Sonnet Aria extreme Wireless
 CardBus Card
**40 Keyboard virtual
 instruments**
 B4, Lounge Lizard EP-2

43 The Game Room
 Active Lancer, Age of Mythology,
 Burning Monkey Casino, Ghost
 Master, Imaginext Battle Castle,
 Kelly Slater's Pro Surfer
49 Mac Gems
 imp, Macaroni, MisFox, Nice-
 cast, Peripheral Vision

iBook G4s Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	PROS	CONS
Apple Computer	12-inch iBook G4/800MHz	★★★★	\$1,099	408/996-1010, www.apple.com	Low price; compact design and relatively light weight; excellent battery life; slot-loading Combo optical drive; up-to-date wireless options; USB 2.0 ports.	Unimpressive performance; no unoccupied RAM-expansion slot.
Apple Computer	14-inch iBook G4/933MHz	★★★★	\$1,299	408/996-1010, www.apple.com	Better performance than 12-inch model; larger, more readable screen; excellent battery life; slot-loading Combo optical drive; up-to-date wireless options; USB 2.0 ports.	A little on the heavy side; no unoccupied RAM expansion slot.
Apple Computer	14-inch iBook G4/1GHz	★★★★	\$1,499	408/996-1010, www.apple.com	Pretty good performance; larger, more readable screen; excellent battery life; roomy hard drive; slot-loading Combo optical drive; up-to-date wireless options; USB 2.0 ports.	A little on the heavy side; no unoccupied RAM-expansion slot; extra performance and hard drive capacity don't justify the price.

weight. If you can easily read small type—and you don't mind a slightly slower processor and smaller hard drive—you might want to opt for the 12.1-inch screen. You'll save money and come away with a notebook that's noticeably easier to haul around.

There's another change in the iBook line: a CD-RW/DVD-ROM (Combo) drive is now standard in all three models, even the lowest-priced configuration, which in the G3 generation came with a CD-ROM drive. (If you order through Apple's Web store, you can downgrade the 14-inch models to CD-ROM and save \$100; this option isn't currently available for the 12-inch model.)

All three configurations also come with 256MB of memory. In one sense, that's a welcome, if belated, step forward. Given today's low RAM prices and the demands of OS X, there was no good excuse for continuing to offer just 128MB as standard equipment in most configurations.

The problem is that the new models have only half their memory soldered to the logic board; the other 128MB come in the form of a DIMM occupying the single RAM-expansion slot. If you want to add memory—as many users surely will—to get the most out of OS X, you have to throw away the 128MB DIMM to make way for a larger one. (If you order from Apple's Web store, you can avoid the issue

by upgrading up front to 384MB of total memory, for \$50, or 640MB, for \$150.) Officially, 640MB is the maximum amount of RAM the new iBooks support, but some suppliers are already offering 1GB modules, boosting total memory to 1,152MB. If you buy third-party RAM, make sure it

has been tested and certified for the iBook G4. We discovered that generic RAM, even if it appears to be compatible, can cause a variety of problems. Installing third-party RAM and/or exceeding the stated maximum iBook memory don't automatically affect your warranty, but Apple says that if your computer is damaged by or operates poorly with unsupported brands or RAM levels, your warranty will not cover the cost of repairs.

Architectural Enhancements

Compared to the G3, the chip that powered all previous iBooks, the G4 processor not only runs at higher clock speeds but also adds AltiVec (also known as Velocity Engine), a special feature that speeds up some routines commonly used by graphics, multimedia, and cryptographic applications.

In addition, the iBook G4's new logic board uses a faster flavor of RAM (266MHz double data rate synchronous DRAM, also known as DDR266 or PC2100) and connects it to the processor via a faster bus (133MHz, up from 100MHz in the previous iBook generation).

The net effect is a welcome performance boost over the old G3 iBooks—even though the version of the G4 chip Apple uses in the new models has only 256KB of on-chip Level 2 cache, half the amount built into the version of the G3 used in the previous iBooks.

This speed increase ranges from modest in some operations to dramatic in others, particularly with software that takes advantage of AltiVec. In our Speedmark

benchmark tests, the 1GHz iBook G4 outscored the fastest previous iBook, which featured a 900MHz G3, by about 21 percent overall. But if you look at the individual tests that score is based on, the improvement is much more substantial in some cases: rendering an iMovie and encoding a song in AAC format are 30 percent to almost 40 percent faster on the 1GHz G4.

The iBooks are still the slowest Macs on the shelf—even the fastest model lags behind the eMac and the base iMac and PowerBook configurations, although all of those systems also have 1GHz G4s. At least the gap has narrowed, and while the speed of the new models won't knock anyone's socks off, they don't feel as if they're constantly laboring under OS X's demands, as older and low-end G3 iBooks did.

Macworld's Buying Advice

Unless you have problems with its small screen, the standout in the new iBook G4 line is the \$1,099 model. By today's standards, it's a bit of a laggard in performance, but in other respects—price, weight, and features—it's an impressive value. In fact, aside from the speed penalty and a few features most users will never miss (such as a DVI-out port, an audio line-in jack, and support for extended-desktop mode with external monitors), it's a remarkably close match for the entry-level 12-inch PowerBook, which costs almost half again as much at \$1,599.

Between the two 14-inch iBooks, our choice is the \$1,299 model with a 933MHz processor. The slightly better performance and larger hard drive (60GB versus 40GB) of its 1GHz sibling hardly justify the \$200 price difference—especially because, if you have your iBook built to order, you can upgrade the 933MHz model's hard drive to 60GB for just \$50 more. □



New Look The keyboard is no longer translucent; now it blends in with the iBook's white motif.

Wireless Input Devices

Cord-Free Mice and Keyboards Promise to Set You Free

BY MATHEW HONAN

Input devices are not glamorous. But few pieces of equipment see more use—or have more potential to affect your computing experience—than the lowly keyboard and mouse. And who says input devices have to be mundane? A wireless mouse and keyboard not only provide the basic functionality that allows you to work with your computer, but also make your work much more pleasant.

For this review, we surveyed some of the major wireless mice and keyboards on the market: the Apple Wireless Mouse, Apple Wireless Keyboard, Belkin Bluetooth Wireless Optical Mouse, Kensington Wireless Optical Desktop (includes a mouse and a keyboard), Logitech Cordless MX Duo (includes a mouse and a keyboard), Macally rfkey, Macally rfmouse, and Microsoft Wireless Optical Desktop (includes a mouse and a keyboard). We tested all products on OS X 10.2 and OS X 10.3 systems.

Wireless products fall into two categories: Bluetooth and 27MHz radio frequency (RF). Both have advantages and disadvantages. RF devices are less expensive, more widely available, and far more compatible with older Macs than their Bluetooth counterparts.

Bluetooth devices have a much longer range, can transmit encrypted signals, and aren't prone to interference from other devices operating on the same frequency. Furthermore, RF products rely on wired base stations that plug into your Mac's USB port, while Bluetooth products can use either your Mac's built-in Bluetooth receiver or a comparatively small USB adapter that connects directly to the port without any wires. We prefer Bluetooth technology for wireless input devices.

Mice

Except for the Apple mouse, all these mice come with multiple buttons and scroll wheels. Many people prefer a one-button mouse, so we didn't knock Apple for its lone button. In addition, we didn't evaluate these products on an ergonomic basis, as that's best done case by case. We also didn't evaluate each mouse's comfort level, as hands come in many shapes and sizes. Three of the mice—those from Apple, Microsoft, and Logitech—have an ambidextrous design. The rest are configured for right-handed users. Indeed, lots of mice are curved to fit only right palms.

All the mice we tested used wireless technology and were optical. We found that the

Logitech mouse did the best tracking job on a variety of surfaces; however, all performed very well. The Apple mouse has a nice on/off switch on the bottom; it slides back and forth to cover the optical sensor when it's in the off position. Thanks to the switch, this is the only mouse that didn't zap our pupils when we turned it upside down to change the batteries.

Only the Belkin and the Apple mice lack programmable buttons. The rest can be programmed via software. We liked the software that came with the Kensington and Microsoft mice the best, but we gave a slight nod to Kensington. Both let you create application-specific settings and offer customization options.

The Apple and Belkin mice use Bluetooth; the others rely on RF. All the RF mice had problems with interference when used in a room with other RF mice; that has negative implications for lab settings and some offices. The Macally and Kensington mice were the likeliest to receive and cause interference, while Microsoft's mouse was the least likely to do either. Neither Bluetooth mouse had problems with interference.

The Bluetooth products also had the longest range. Both Bluetooth mice worked at distances of more than 30 feet, while the best RF mouse, the Logitech, stopped receiving signals at a distance of just more than 13 feet. The other RF mice all had effective ranges of less than 10 feet. The Macally mouse had the shortest range, about 5 feet, followed closely by the Microsoft mouse, at 6, and the Ken-

Wireless Mice and Keyboards Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
Wireless Mice							
Apple Computer	Wireless Mouse	★★★★	\$69	X	800/692-7753, www.apple.com	Bluetooth; tension adjustment; on/off switch; long range.	Not programmable; no battery recharge.
Belkin	Bluetooth Wireless Optical Mouse	★★★	\$89	X	800/223-5546, www.belkin.com	Bluetooth; price includes Bluetooth adapter; long range.	Not programmable; no battery recharge; no battery indicator; one button doesn't function; unable to pair.
Macally	rfmouse	★★★★	\$49	9X	626/338-8787, www.macally.com	Programmable buttons; easy-to-use software; batteries recharge via USB.	Prone to interference; requires separate base for keyboard and mouse.
Wireless Keyboards							
Apple Computer	Wireless Keyboard	★★★★	\$69	X	800/692-7753, www.apple.com	Bluetooth; small footprint; on/off switch; long range.	Not programmable; no battery recharge.
Macally	rfkey	★★★★	\$69	9X	626/338-8787, www.macally.com	Programmable buttons; application-specific settings; easy-to-use software; Mac layout.	Prone to interference with mouse; requires separate base for keyboard and mouse; no battery recharge.
Wireless Keyboard-Mouse Sets							
Kensington Technology	Wireless Optical Desktop	★★★★ (mouse: ★★★★★; keyboard: ★★★★★)	\$135	X	650/572-2700, www.kensington.com	Mouse: highly programmable features; application-specific settings; batteries recharge via USB. Keyboard: some programmable features; nice media-key setup; batteries recharge via USB; good effective range; Mac layout.	Mouse: very prone to interference. Keyboard: no major cons.
Logitech	Cordless MX Duo	★★★★ (mouse: ★★★★★; keyboard: ★★★★★)	\$100 ^A	X	800/231-7717, www.logitech.com	Mouse: battery charger in base; not very prone to interference; long range. Keyboard: programmable effective keys; nice media-key setup.	Mouse: excessive cord clutter. Keyboard: Windows-oriented, no battery recharge.
Microsoft	Wireless Optical Desktop	★★★★ (mouse: ★★★★★; keyboard: ★★★★★)	\$85 ^B	X	425/635-7040, www.microsoft.com	Mouse: programmable buttons; application-specific settings; innovative scroll wheel; least interference. Keyboard: programmable buttons; application-specific settings.	Mouse: no battery recharge. Keyboard: no battery recharge; Windows layout.

^A The Logitech MX 700 Wireless Cordless Optical Mouse is available separately for \$70. ^B The Microsoft Wireless Optical Mouse is available separately for \$45.

sington mouse, at 8. All the mice performed well when barrier objects, such as a stack of books, were placed between the mice and their receivers.

Battery life is another concern that each mouse addresses differently. Our favorite setups were Kensington's and Macally's; both mice use a base station to charge a spare set of batteries. Logitech has a similar solution: the base doubles as a docking and charging station for the mouse. However, while the former two draw power from the USB port, Logitech—which does have a very rapid charge—relies on an additional power cord for its base. Although the cord can be connected and disconnected, this seems like a step most users wouldn't want to take every time they need to charge the mouse. Many people use a wireless mouse to reduce cord clutter, and this defeats that purpose. Although the Apple and Microsoft mice don't automatically recharge, they do have battery-life indicators, while the Belkin mouse relies on a flashing light in the scroll wheel.

Each mouse has unique characteristics. Our favorite feature, as well as the most functionally innovative one, is the scroll wheel on the Microsoft mouse, which can scroll both vertically and horizontally. We also particularly liked the Apple mouse's tension switch, which lets you adjust how hard you have to press in order for the click to register.

The only mouse we don't recommend is the Belkin Bluetooth Wireless Optical Mouse. One of its buttons, the one closest to the user's thumb, doesn't work on Mac systems. Belkin says an upcoming firmware upgrade will rectify this. Although the mouse worked perfectly well, we were unable to get it to establish a secure connection with the computer (called *pairing*). And the setup guide on Belkin's Web site instructs users to ignore a message, from OS X's Bluetooth setup assistant, saying that the "device does not have necessary services." (Belkin says its firmware update will remedy this, too.)

And the Belkin mouse ships without OS X instructions, though they are on the Web site and will be included in future shipments (according to the company). On a positive note, the Belkin mouse does come with its own USB Bluetooth adapter that supports the full Bluetooth profile set, so it can support devices including phones, other mice, keyboards, or any other Bluetooth devices, not just the Belkin mouse. (Other Bluetooth adapters support only the device with which they ship.) This is a tremendous value, as most USB Bluetooth adapters cost nearly as much as this mouse.

Keyboards

We judged keyboards on transmission abilities, layout, and functionality. The only Bluetooth product we tested was the Apple Wireless Keyboard.

RF keyboards don't have the same problems with interference as RF mice do. But we still prefer Bluetooth technology for keyboards. Its encryption abilities prevent other people from capturing keystrokes and, thus, passwords, credit card data, and similar information. Only the Macally had issues with interference, and that seemed to come only from, oddly enough, the Macally mouse (the

board that you configure for the Mac by using the software to switch the position of the alt (option) keys. We highly preferred the setup of the Macally, Apple, and Kensington keyboards, which have the familiar ⌘ keys on either side of the spacebar. Although the Logitech keyboard also had the ⌘ keys in a familiar place, we felt that having two alt keys right next to each other (one for Mac users and one for PC users) was confusing. We also liked the Apple keyboard's compact footprint. While the other keyboards extend several inches beyond the keys, the Apple ends almost where the keys stop. This is particularly nice for small workspaces.

All the keyboards except the Apple had extra media keys along the top that performed functions such as launching iTunes, e-mail apps, and Web browsers. We really liked these programmable keys; however, only the Microsoft keyboard and the Macally keyboard allowed application-specific programming. The Microsoft keyboard was the most highly customizable. For example, the same key that launches iBlog while Safari is running can add a Bcc field to a new message in Mail. Several keys on the Logitech—such as the ones labeled Messenger and Webcam—didn't function at the default setting, but this was easily remedied with the accompanying software. Some of the keyboards—the Logitech, Macally, and Kensington—also had handy scroll wheels built in.

Power consumption is largely the same for the keyboards as for the mice; the two exceptions were the Logitech and Macally keyboards, which don't recharge via the base station, as the mice do. The Kensington keyboard is the only product with a base station—the same one the mouse uses—

designed to swap batteries.

Macworld's Buying Advice

We liked the Microsoft mouse best, thanks to its software, ability to overcome interference, horizontal scrolling, and keyboard integration (applicable for the mouse-keyboard combos that sell together and work with the same base station). The Apple Wireless Mouse, thanks to its Bluetooth functionality, came in a close second and is the best choice for a multiple-user setting. Individual users should consider the Kensington, which was a solid performer in all categories other than interference, and has excellent programmable software.

With no significant drawbacks, the Kensington keyboard is the best in this roundup. Apple came in next, due to its sleek design and Bluetooth compatibility, though we wish it had room for a few programmable keys. □



Wireless Wonders We tested the Apple Wireless Keyboard (top), Belkin Bluetooth Wireless Optical Mouse (center left), Apple Wireless Mouse (center), Macally rfmouse (center right), and the Macally rfkey (bottom).

Macally is also the only product we tested that relies on separate base stations for keyboard and mouse). When we used the two together, the mouse sometimes behaved erratically.

Wireless keyboards are an obvious choice for giving presentations. So we were interested in seeing what kind of range these keyboards had. The Apple keyboard had the longest maximum effective range, at about 30 feet, although we were able to get signals from as far away as 50 feet. The Microsoft keyboard had the shortest range, at a little under 9 feet, while the Kensington had the longest range of the RF keyboards, at 14 feet. Both the Macally and the Logitech maxed out at around 11 feet. All the keyboards performed well when barriers were placed between them and their receivers.

We didn't like the layout of the Microsoft keyboard. It's essentially a Windows key-

Avid Xpress Pro

Support for 24P Film Projects Improves Solid Editing System

BY ANTON LINECKER

Perennial rivals Avid Xpress Pro and Final Cut Pro took decidedly different upgrade paths this year. With version 4, Apple reinvented Final Cut Pro as a massive five-program bundle containing extra titling and music-scoring tools. Meanwhile, Avid Xpress Pro's core has become a more refined, more powerful version of the Xpress DV platform. Avid distilled features from its professional products, added hardware acceleration with the optional Mojo unit, and lowered the price.

At press time, Xpress Pro worked on Panther only with dual-G5 systems; a bug prevented it from working in single-processor Macs. (The company says that the bug will be remedied by the time you read this.) It does work in OS X 10.2, and it will undoubtedly appeal to the Avid faithful. To counter Final Cut Pro's massive upgrade, Xpress Pro now includes a free application bundle, once part of the Avid Xpress DV Power Pack, that includes Boris Graffiti 2, Boris FX 6, and Avid FilmScribe. New to the Avid bundle is a full version of Sorenson Squeeze 3 Compression Suite (ⓂⓂⓂⓂ; August 2003). As with Xpress DV, Avid includes both Mac and PC versions of Xpress Pro in the box (but provides only one dongle, which limits the number of users to one at a time).

Avid Xpress Pro addresses many of the criticisms directed at Xpress DV 3.5 (ⓂⓂⓂⓂ; November 2002): it has offline video resolutions, analog-capture hardware, and JKL trim support. Xpress Pro also includes many welcome improvements, such as film-project support, 24-frame video editing, solid color-correction tools, multicamera editing, and extensive real-time effects. These additions make it a far more powerful editing system for a pro user. For editors who require only DV editing, Avid still sells Xpress DV, now priced at \$695.

The Pro Feeling

For editors who work with Avid's more professional offerings, using Xpress Pro is somewhat like having a security blanket—it's comforting. The interface and workflow are practically identical all the way through the Avid line of products, apart from Avid DS, the family oddball. For editors accustomed to Final Cut Pro, Avid takes some getting used to, but it quickly grows on you. It's also quite stable, which often means more to an editor than flashy add-ons.

Professional editors who use the Avid Meridian or Adrenaline system will rejoice at Avid Xpress Pro's support for 24P film projects, which lets editors import and edit previously captured 24P video footage and

export negative cut lists. The only thing Xpress Pro can't do is capture 24P footage. Even so, the ability to drop an existing Avid film project onto a FireWire drive and take an Xpress Pro-equipped PowerBook on the road will definitely appeal to many editors, as traditional Avid systems can weigh more than 200 pounds. With Xpress Pro and its film-project support, you can conceivably edit a feature film on a 5-pound PowerBook while sipping a mai tai on a beach in Maui.

Offline Capabilities

Projects created in Xpress Pro are upward compatible, which makes online editing of projects on an Avid Symphony or DS system quite simple. Xpress Pro now offers a smattering of offline-quality video resolutions that, like Final Cut Pro's Offline RT and other offline codecs, allow editors to store large amounts of video efficiently. Editors can capture to 15:1 (29.97 fps) and 28:1 (23.98 fps) resolutions, and they can also import projects with media captured on an Avid Meridian or Adrenaline system to 14:1 and 35:1 resolution ratios. This is a welcome addition, although real-time playback of these offline video formats to tape requires either the Avid Mojo accelerator, also known as the Avid Mojo DNA (see our review, on this page), or a transcode to DV (available only for the 15:1 format). (Transcoding is the process of converting one video format to another.)

With the Mojo, Avid Xpress Pro can capture and edit uncompressed 1:1 video footage. It can also play a timeline with mixed

AVID MOJO

Users of Avid Xpress Pro can now add hardware acceleration to the program via the Avid Mojo DNA (Digital Nonlinear Accelerator) unit, which connects via FireWire. The Mojo DNA serves as an analog- and digital-video-capture device and as a hardware accelerator, allowing real-time output of effects and mixed-resolution video in Avid Xpress Pro.

The unit measures 6.75 inches by 11.25 inches and weighs 15 pounds. On its back it has S-Video, video reference (RCA), and composite (RCA) video and analog audio (RCA) connections, along with a six-pin FireWire connector that connects to your computer, a four-pin FireWire connector that connects to a DV deck, and a power port. Avid sells an optional component video cable that uses the S-Video and composite video ports as connectors. This is an important add-on if you're using a Beta SP deck. You'll need to buy two component adapter cables, one for inbound video and one for outbound. The lack of audio connections was disappointing.

Along with the AJA IO (see our review, page 31), the Mojo DNA unit is one of the first products capable of sending uncompressed video across FireWire. This feature allows Avid Xpress Pro to capture 1:1 uncompressed video footage. However, uncompressed video is only as good as the inputs, so using the optional component cables is important. These are suitable for Beta SP-quality video. The device doesn't have any SDI connections, so uncompressed digital video is not an option.

The Mojo DNA's key role is as a hardware video accelerator. It takes the burden off the host computer for rendering effects and coping with mixed-resolution



video formats on a timeline, thereby saving considerable rendering time. It also provides support for 24P formats, reinserting 3:2 on-the-fly so you can view the video on a monitor.

The Mojo DNA monopolizes the FireWire bus while it's attached (the AJA IO has similar requirements). Plugging a FireWire drive into the same bus will cause the Mojo unit to malfunction. This is an important point, particularly for PowerBook users. If you have a 12-inch 1GHz PowerBook (with the Mojo), you will be able to capture only to your internal drive, which limits the system's usefulness. The 15- and 17-inch PowerBooks have PCMCIA-card expansion slots (the FireWire 800 port is on the same bus as FireWire 400, however).

So you can buy an extra FireWire card and use FireWire drives with those PowerBook models.

Macworld's Buying Advice

The Avid Mojo DNA is a necessary addition to Avid Xpress Pro, especially if you intend to use offline formats, 24P footage, or uncompressed video.

RATING: ⓂⓂⓂⓂ

PROS: Real-time video acceleration for Avid Xpress Pro; analog video capture; uncompressed (analog) video support.

CONS: Has only consumer video and audio inputs; no SDI video inputs or pro audio ports.

PRICE: \$1,695

OS COMPATIBILITY: Mac OS X

COMPANY: Avid, 800/949-2843, www.avid.com



Color Correction Avid Xpress Pro's Color Corrector lets you inspect your video in a three-monitor view, so you can see your corrections against previous and next cuts. You also can split each frame to match colors exactly.

resolutions. This is useful, for example, when you're laying uncompressed titles over DV. (DV titles are notorious for their poor quality.) Rendering titles in an uncompressed format preserves as much information as possible, which is especially desirable when the material is intended for DVDs. The one drawback of uncompressed video is that it

requires a RAID for playback, and is therefore problematic for PowerBook users.

Avid has improved its already strong color-correction tool by adding a one-step AutoCorrect feature. This lets you adjust contrast and color balance in one click.

The company claims that Xpress Pro fully supports the 24P Panasonic DVX100, but the

truth is a bit more slippery. You can remove the Advanced 3:2 on-the-fly during capture and edit the resulting footage without any problems. But if you buy only the Xpress Pro software, you'll need the Avid Mojo to reinsert the 3:2 and output 24P video to tape. A possible workaround involves rendering the video with 3:2 insertion through After Effects. This is somewhat disappointing, particularly since Xpress Pro's rival Final Cut Pro 4 can output 24-fps digital video to tape with 3:2 properly inserted (smooth looking)—no additional hardware required.

For better or worse, the Avid Mojo is a necessary add-on to the Xpress Pro package—it's essential to making Xpress Pro more than a DV-only experience, and it doubles Xpress Pro's price.

Macworld's Buying Advice

Avid Xpress Pro, with its generous third-party software bundle, has a lot to offer pro video editors. Support for 24P film projects alone will prompt many Avid stalwarts to snap it up. The less-expensive Avid Xpress DV will better serve casual DV editors. □

RATING: ★★★★★

PROS: Support for 24P film projects and 23.98-fps editing, offline resolutions, and uncompressed capture and editing via the Avid Mojo.

CONS: Feels incomplete without Avid Mojo; no Panther support for single-processor Macs at press time (should be resolved by the time you read this).

PRICE: \$1,695

OS COMPATIBILITY: Mac OS X

COMPANY: Avid, 800/949-2843, www.avid.com

AJA IO

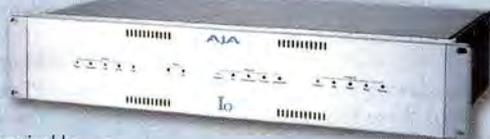
The AJA IO was the first unit to capture and transmit uncompressed video across FireWire. Designed specifically for Final Cut Pro 4, the IO packs almost every type of video and audio I/O imaginable.

The IO is a rack-mountable unit that connects to your Mac via a six-pin-to-six-pin FireWire connector. On the back of the unit are connectors for SDI, component video, S-Video, composite video, video reference (with loop-through), four-channel AES/EBU audio, eight-channel ADAT audio, two-channel SPDIF optical audio, four-channel analog audio, and even RS-422 machine control.

The IO installation CD includes a set of easy setups for 10-bit uncompressed video, 8-bit uncompressed video, 8-bit to DV50 (down conversion), and 8-bit to DV (down conversion). The IO manual mentions support for PhotoJPEG, but the CD doesn't include any easy setups. Full-size PhotoJPEG is available with AJA's Kona SD capture board. It gives great video quality at surprisingly low data rates. With the 1.1 drivers, PhotoJPEG at 720 by 486 is available for capture and editing but requires manual setup. The only drawback to using PhotoJPEG with the IO is that you're currently limited to watching your video on either an external monitor or your computer monitor. Sending video out to an external monitor sometimes blanks out the picture in Final Cut Pro's Viewer and Canvas windows altogether, but that's a minor inconvenience you can easily work around.

AJA IO's uncompressed 8-bit and 10-bit capture quality is superb. Using these high data formats requires a SCSI or Fibre Channel RAID (I used Apple's Xserve with no problems). These formats are ideal for online editing and professional video projects.

There's a minor problem with the AJA IO and its down-converted captures (DV, DV50, and PhotoJPEG). The capture-in points are never frame accurate (they fluctuate



between one and two frames late). AJA and Apple plan to rectify this in the next driver release.

When used with an Apple dual-G5 and Final Cut Pro 4.1, the IO is a technical marvel. With the 2.52TB Xserve RAID for storage, I was able to playback five streams of 10-bit uncompressed video with

no dropped frames (more with the 8-bit codec).

The AJA IO requires the entire FireWire channel, preventing you from attaching other FireWire devices to the computer, so it's not well suited to PowerBook users. Even with the top-of-the-line dual-G5, you'll need an extra FireWire PCI, SCSI, or Fibre Channel card to save files to external drives.

The IO has a few shortcomings—we hope future driver updates will add 3:2 removal on video capture and 3:2 insertion during 23.98 playback.

Macworld's Buying Advice

The AJA IO is an economical uncompressed and offline capture device that works hand-in-hand with Final Cut Pro 4. With its wealth of I/O options, the IO ensures that you can attach practically any video deck imaginable.

RATING: ★★★★★

PROS: Excellent uncompressed video capture; real-time transcode to DV, DV50, and PhotoJPEG; includes every I/O connection you could ever need.

CONS: Minor bug in transcode capture accuracy; no 3:2 insertion or removal.

PRICE: \$2,290

OS COMPATIBILITY: Mac OS X

COMPANY: AJA, 800/251-4224, www.aja.com

iView MediaPro 2.0

Asset Manager Is a Professional Designer's New Best Friend

BY ANDREW SHALAT

iView MediaPro has long been an excellent application for organizing your digital images, sounds, and movies. For a reasonable price, it lets you create Web galleries in a snap and catalog disk contents with ease. But the media-cataloging software category has recently become more competitive, with rival products such as Apple's iPhoto and Extensis's Portfolio springing up, so asset managers now have

iView MediaPro a necessity for graphics and photography professionals.

iView MediaPro 2 lets you set image size, resolution, bit depth, and color space. For instance, you can take a set of 300-dpi CMYK TIFF files that you prepared for a print brochure, and instantly convert them to 72-dpi RGB JPEGs for a Web project. But iView MediaPro handles much more than image-file conversions. Since

Version control lets workgroups keep abreast of new or altered files; iView MediaPro backs up copies in a designated Version Control Backup folder. And after you enhance an image, the Batch command lets you perform the same function on any number of images in that catalog, and then safely puts the enhanced images into a new folder. While this is a powerful and time-saving feature, we wish you could choose multiple filters simultaneously and apply them in a batch process, along the lines of Photoshop actions.

PDF creation is one of those things we're starting to take for granted in the OS X era. This program creates high-resolution PDFs for offset printing and for Internet distribution. For some unknown reason, the PDF maker is hidden in the Window menu, rather than appearing next to the conversion menus in the Make menu. Nonetheless, this tool is a powerful innovation. It acts as a rudimentary page-layout application, letting you choose image areas, resize and crop them, overlay images, and convert a page into a PDF. While it's not QuarkXPress or Adobe InDesign, it is a quick and easy way to make customized one-page marketing sheets and contact sheets.

Creating HTML galleries has always been easy with iView MediaPro, and it still is. The difference now is that you can add your own custom HTML templates through a greatly enhanced theme-based Make HTML Gallery menu. You can then store your themes in the new Plug-ins folder.

After you've cataloged your files, iView MediaPro lets you back up your media assets directly to CD, so you don't have to use a separate CD-burning application, such as Roxio's Toast.



Book of Changes iView MediaPro lets you convert image and multimedia files to new formats with ease.

to do more. With version 2.0.1, iView MediaPro has evolved into a complex and powerful digital-asset manager with increased capabilities and, not surprisingly, a higher price (a \$30 version, iView Media, is also available).

Designers and publishers will be happy that this incarnation of iView MediaPro surpasses version 1 in speed, and it has some interesting and versatile new features, such as improved slide-show creation, simple but useful image-enhancement tools, high-resolution PDF creation, and customizable HTML themes.

Conversion Capabilities

Anyone who has ever had to convert a group of images from one file format to another can now breathe a sigh of relief. iView MediaPro can change file formats for individual files, multiple selections, or whole catalogs at one time, so you don't have to open another imaging application. This instant file conversion would be enough to satisfy most users, but the breadth of tools within the conversion dialog box makes

it can catalog movies, sounds, and images, each of these formats has its own conversion options.

MediaPro can convert movies from QuickTime to DV streams (a handy tool for iMovie enthusiasts), MPEG-4, and several other formats. It can also convert sound files from MP3 to AIFF, WAV, or System 7 Sound, and it lets you save your settings.

Vast Array of Tools

iView MediaPro now lets you import files directly into the program, à la iPhoto. It also mirrors iPhoto's ability to erase files on your camera's media from within the application. And like iPhoto, iView MediaPro includes image-enhancement tools. However, the program's array of tools is larger than iPhoto's. For example, you'll find Sharpen Edges, Adjust Saturation, Convert To Duotone, and Invert Photo Negative commands. All these filters are adequate adjustment tools in their own right, but iView MediaPro's batch and version-control features increase their professional value.

Macworld's Buying Advice

Photographers, designers, and graphics professionals will find a good friend in iView MediaPro 2.0.1, which does an admirable job and has a justifiable \$160 price. Rather than making you turn to dedicated image-editing, file-conversion, or HTML tools, iView MediaPro lets you get as much of your work done within the program as possible and saves you time in the process. You'll be surprised to see how many mundane aspects of media management this powerful little application can handle efficiently and with excellent results. □

RATING: ★★★★★

PROS: Comprehensive file-conversion utility; swift cataloging; small file size; customizable HTML templates; built-in CD-backup capability.

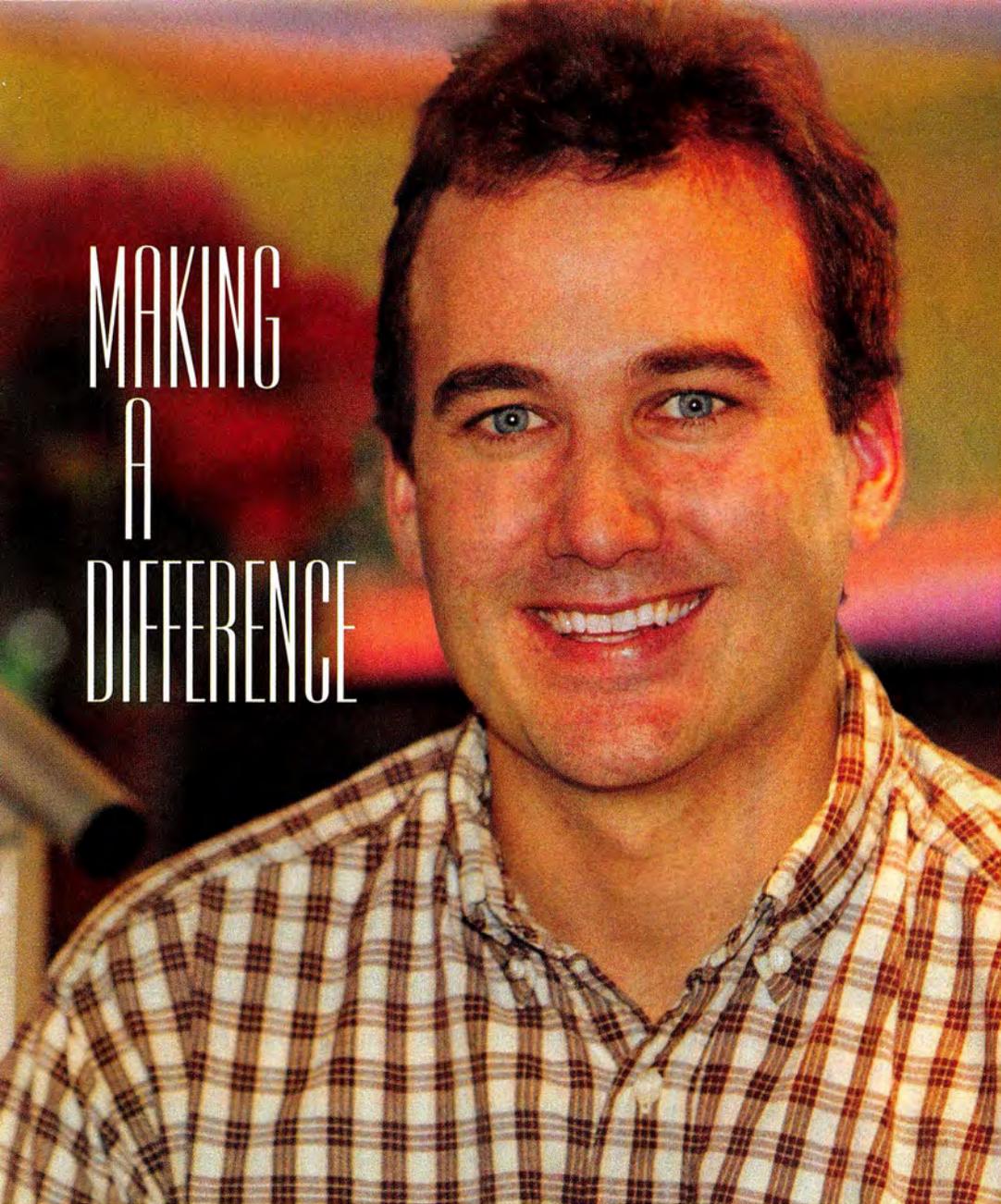
CONS: Image-enhancement batch commands don't handle complex series of actions.

PRICE: \$160; upgrade, \$72

OS COMPATIBILITY: Mac OS X

COMPANY: iView Multimedia, www.iview-multimedia.com

MAKING A DIFFERENCE



Adobe

Axis

Canon

Epson

Griffin

Kensington

Macally

Media

Microsoft

Orange Micro

SONY

XtremeMac

What's the difference? When you shop at Small Dog Electronics, plenty. It's the people at Small Dog who make a difference. People like Troy Kingsbury. Troy is one of several Apple-Certified Technicians here at Small Dog who always goes that extra mile to make Small Dog customers happy customers.

Small Dog Electronics invites you to see how different we are, from our outstanding employees and customer service to our Charitable Giving program and our socially responsible business practices. What's the difference? Visit us on the web at smalldog.com or at our showroom in Waitsfield, Vermont and find out.



Small Dog Electronics

www.smalldog.com

1-800-511-MACS

 Apple Specialist

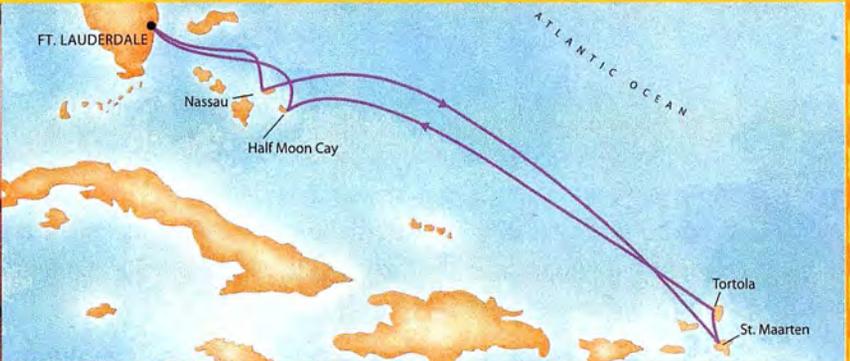


NOVEMBER 7-14, 2004

MacMania III

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

Cabin rates (per person): Standard Inside: \$799, Better Inside: \$849, Standard Outside: \$949
Better Outside: \$999, Outside w/Balcony: \$1099. Taxes are \$176 per person. The conference fee is \$795.



CO-PRODUCED BY:

Macworld
THE MAC PRODUCT EXPERTS

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

Mariner Write 3.5 and Mariner Calc 5.2

Strong Applications Undermined by Inconsistent Compatibility with Microsoft Office

BY JEFFERY BATTERSBY

The word processor Mariner Write 3.5 and the spreadsheet program Mariner Calc 5.2 are designed to fill a niche somewhere between their counterparts in AppleWorks and the full-featured standards, Microsoft Word and Excel. Mariner Write is a great program that

several formats, including PDF, TXT, and Word and Mariner versions of RTE.

Write neatly handled nearly every Word document we threw at it, at least in terms of formatted text. The program easily interpreted a variety of Word's paragraph styles and footnotes with no problem whatsoever—

a capability that the similarly priced and focused Nisus Writer Express (¶¶¶; January 2004) doesn't have. Write did have one peculiarity: its Style menu didn't recognize paragraph styles in imported documents. As a result, the menu always displayed No Style as the paragraph style. By contrast, AppleWorks can both interpret and recognize styles.

Write's performance when dealing with graphics embedded in documents left much to be desired. Write couldn't display images placed in-line with text in files saved in Word. And if the image had text wrapped around it, Write displayed a file I/O error message and then required a force-quit. Similarly, images saved in Write documents were missing when we opened those documents in Word. AppleWorks handles these issues, too, without a hitch.

Mariner Calc 5.2

For people who need spreadsheet capabilities but not true integration with Microsoft Excel,

MARINER WRITE 3.5

RATING: ¶¶¶

PROS: Excellent word processing abilities; easily translates most Word documents; customizable toolbars.

CONS: Paragraph-style translation has minor quirks; poor handling of embedded graphics in Word documents.

PRICE: \$80; download, \$70; upgrade, \$25; as part of MarinerPak, \$140; download, \$130

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Mariner Software, 612/529-3770,

www.marinersoftware.com

Mariner Calc is an excellent alternative. With more than 140 built-in formulas, tabbed worksheets that can contain 32,000 by 32,000 cells, customizable toolbars, multiple undos, and graphing capabilities, Calc makes perfect sense for many basic spreadsheets.

Calc uses the same formula conventions as Excel; if you type =SUM(E3:E40)*0.1 in a cell, for example, Calc will display 10 percent of the sum of cells E3 through E40. But because Calc doesn't ship with the templates or assistants you'll find in Excel and AppleWorks, you'll need to have a pretty firm grip on Calc's formulas if you want to manipulate data in a complex manner.

Graphing in Calc works well, but it's a bit counterintuitive. In most spreadsheet programs, you select the range of rows and columns that you want in your graph and then create the graph. In Calc, you can select only one column of data, from which Calc then attempts to determine the legend information. This worked perfectly in spreadsheets that had graph information in neighboring cells. But if the information is a few cells away, Calc uses its own naming conventions, which you must edit after the fact. Also, if you attempt to select two columns of data, Calc gets confused and creates a blank graph.

Calc was particularly weak when opening Excel files. The program maintained many basic text formats, such as bold and italic type, but it dropped number formats completely; we had to reinsert currency and decimal formatting after opening the Excel document. Also, if your spreadsheet includes any formulas Calc doesn't support, that information is lost completely. AppleWorks again had no problems converting any of the documents we tested.

Macworld's Buying Advice

As stand-alone programs that provide the features most users actually need, without the powerful (and expensive) features in Microsoft Word and Excel, both Mariner Write 3.5 and Mariner Calc 5.2 perform perfectly. They can ably handle most day-to-day word processing and spreadsheet tasks. But when viewed from the perspective of interoperability with Word and Excel, Write and Calc are overshadowed by the more feature-rich and considerably less expensive AppleWorks. □

MARINER CALC 5.2

RATING: ¶¶¶

PROS: Same formula conventions as Excel; multiple undos; tabbed worksheets; customizable toolbars.

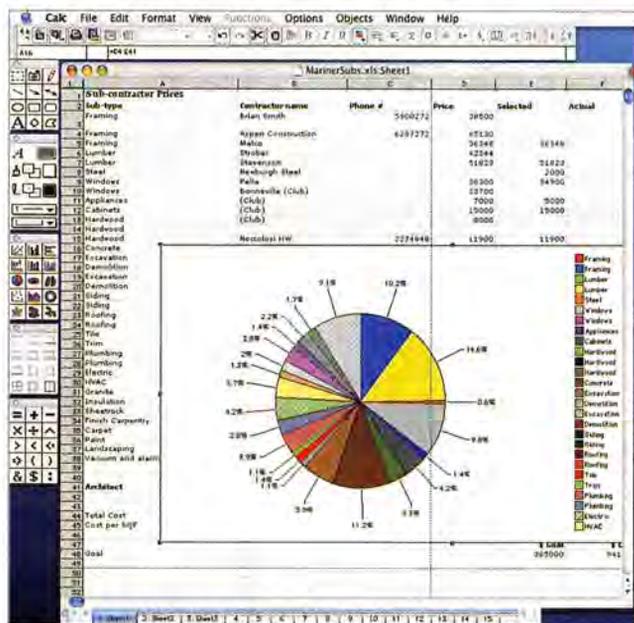
CONS: No templates for complex calculations; limited capability for opening Excel documents; handles only basic Excel cell formats.

PRICE: \$80; download, \$70; upgrade, \$25; as part of MarinerPak, \$140; download, \$130

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Mariner Software, 612/529-3770,

www.marinersoftware.com



Halfway to Office Both Mariner Calc and Mariner Write provide great features for people who don't need full compatibility with Microsoft Office.

easily handles most Word documents and meets a wide variety of everyday text-editing needs. Mariner Calc works equally well as a stand-alone application. But both programs don't quite succeed when it comes to Office compatibility. (Mariner Write and Mariner Calc are available individually, or collectively in the MarinerPak bundle.)

Mariner Write 3.5

According to Mariner Software, Mariner Write contains—in a streamlined program—the 75 to 80 percent of Microsoft Word features that are most important to the average user. As such, Write is a fine application. It has almost everything that most people need to create a variety of word-processing documents—from simple tools such as text formatting, an in-line spelling checker, and an 80,000-word dictionary and thesaurus, to advanced features such as paragraph styles, user-definable toolbars, footnotes, and integration with OS X's Services menu and AppleScript. Write can also save documents in

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

Carrara Studio 3

Moderately Priced 3-D Software Has High-End Features

BY BEN LONG

Although Eovia's Carrara Studio 3 boasts an impressive list of new features, such as HDRI (High Dynamic Range Imaging) support and new controls for subdivision surfaces modeling, it's the program's \$399 price tag that will sway many people. But don't let its modest price fool you—Carrara has a large array of high-end tools, wrapped in a package that new and experienced users will find comfortable. Originally developed by MetaCreations, Carrara has an interface similar in form and function to that of packages such as Bryce and Kai's Power Tools, both from Corel, and Curious Labs' Poser. If you're familiar with any of these programs, you'll recognize many of Carrara's modeling and navigation tools.



Tree Maker Carrara Studio 3 lets you edit or model potted plants or entire forests.

Interface Issues

Carrara's workspace is divided into separate "rooms," or modes, that provide environments for modeling, scene building, texturing, and animation. This setup is great for beginners, but the program's modal approach may frustrate some experienced users. For instance, the dialog boxes and other interface elements force you into a particular mode, rather than letting you move freely from one function to another. Because arranging and modeling are in two separate rooms, you can't arrange models as you are modeling, which is a drag if you want to see how changes in one model fit in with other models in your scene. Also, the program's three projection planes create a somewhat cluttered workspace.

New Modeling Tools

Carrara offers a number of new modeling tools such as subdivision surfaces (sub-D) modeling, spline modeling, and powerful Booleans. A new creasing feature lets you

create hard edges in your sub-D models. Eovia has optimized all modeling tools for better performance, and the Spline modeler now includes a Bevel option.

The biggest addition to the modeling room is the completely new Tree Maker, which allows you to edit and customize 26 basic tree shapes to create everything from simple potted plants to entire forests.

Carrara 3 includes both a UV Editor, for creating precise texture maps, and a much faster Vertex Modeler.

Better Rendering

Carrara's ray tracer has always produced beautiful results, but version 3 packs some much-needed modern rendering features.

HDRI is a different approach to calculating realistic-looking lighting. It uses a special HDR image, which wraps around the outside of your scene. The color information in the HDR file defines not just lighting intensity but also subtle color shifts and shadow hues. HDRI renderings are

more realistic than normal lighting techniques and don't require complicated light setups.

The new Non-Photorealistic Renderer lets you create everything from toon styles to natural-media renderings that look like paint, chalk, watercolors, or pencil. You'll need to experiment to get the hang of the controls, but the Non-Photorealistic Renderer is quite speedy.

Other rendering improvements include soft shadows in the program's ray tracer, an improved Global Illumination rendering engine, and alpha-channel rendering.

Macworld's Buying Advice

At \$399, Carrara Studio 3 is an exceptional value—the program's new features make it even swifter and more sophisticated. However, though it costs less than some competing packages, its interface is more limited and constrained. □

RATING: ★★★★★

PROS: New HDRI rendering; unique Non-Photorealistic Renderer allows customizable natural-media renderings; good tools for sub-D modeling.

CONS: Awkward division of modeling tasks into modal rooms; cluttered, cumbersome modeling environment.

PRICE: \$399; upgrade, \$169

OS COMPATIBILITY: Mac OS X

COMPANY: Eovia, 858/457-5359, www.eovia.com

Readiris Pro 9

OCR Application Offers Improved Accuracy, Has Some Quirks

BY CHRISTOPHER BREEN

Accurate optical character recognition (OCR) is difficult to achieve. An OCR program must not only decipher text printed in different fonts, sizes, and alphabets, and convert it to editable text, but also distinguish between text, graphics, and tables. Thanks to a new OCR engine, IRIS's Readiris Pro 9 largely meets these challenges.



In the Zone Readiris Pro 9 deftly discerns text, graphic, and table zones in uncomplicated documents.

New and Improved

Since we last reviewed Readiris (☑; October 2002), the program has adopted some features of ScanSoft's OmniPage Pro X (☑☑☑; June 2002; currently incompatible with OS X 10.2 and later). It can now import PDF files, even read-only ones. It also features a one-button recognition mode that scans a document; maps out text, graphics, and table zones; and saves the file in the output format you choose (text, RTF, HTML, or PDF). Like previous versions, Readiris Pro 9 recognizes 100 languages and the alphabets that support them, including Cyrillic and Greek characters and four Asian add-ons. It offers rotate, deskew, contrast-adjustment, and despeckle tools for cleaning imperfect scans and digital photos.

Readiris Pro 9 accurately recognizes text from a clean scan. In our tests of a scanned *Reviews* page from *Macworld*, a scanned product brochure, and two Apple specification sheets in PDF format, the program rarely misidentified common characters. It did have trouble with symbols such as Ω, ©, ±, and fractions. We performed the same tests with an earlier version (Readiris Pro 7), and the program is now much better at recognizing graphic artifacts and text.

Though recognition is accurate, the spelling checker is too vigilant: it flagged more than 100 characters in a one-page document. Although the spelling checker flags many correct characters and requires that you push either the Learn or the Ignore button for each character it flags, you may want to endure its frustrating persistence—if you do, checking similar documents will be easier. As you check a document, you instruct the program to learn character patterns. It may ask whether the letters // are really the numerals 11, for example; if so, you can train it to better recognize those letters in the future. You then save the learned characters to a dictionary file that you can apply to similar documents. We compiled a dictionary based on one of our two Apple PDF spec sheets, and then used it with the other one. Without that dictionary, Readiris flagged 98 characters; with the dictionary, it flagged only 36. One inconvenience is that you must manually load a dictionary file every time you open a new document.

Zoned Out

Readiris is less accurate when identifying *zones*, the parts of a document to convert. It misidentified the color table in our *Reviews* page as a mix of graphic and text zones. It also tagged the image of a flat-panel iMac on the specification sheet as text. You can delete incorrect zones, but you must either delete all the zones in the document or delete one zone at a time—you can't select an area of the document and delete just the zones in that area.

The program converts some documents better than others. Readiris created a fine RTF file in Word from our *Reviews* page, except for the table. And it correctly recognized the accented characters in a French novel. But we got overlapping text columns when we saved the Apple specification sheets as an HTML file and then opened the file in Safari and Internet Explorer. We had to scale down the font sizes to make the page readable.

Macworld's Buying Advice

Readiris's new OCR engine is an admirable improvement. Now that IRIS has dispensed with the tough stuff, we look forward to better autozoning and a spelling checker that has greater faith in the program's judgment. ☐

RATING: ☑☑☑

PROS: Accurate OCR; PDF import; support for multiple languages.

CONS: Overactive spelling checker; zone detection not always accurate; inflexible zone deletion; inconsistent output.

PRICE: \$130

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: IRIS, 561/921-0847, www.irisusa.com

NEW VERSION!!

MacMinute Showtime Award
Macworld San Francisco '04

Rendezvous with Fontezvous!

FontAgent Pro, the face nouvelle of font management and repair is très fantastique! For creating designs that are an eye-ful 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
www.insidersoftware.com • 866.216.1399

Studiometry 1.1

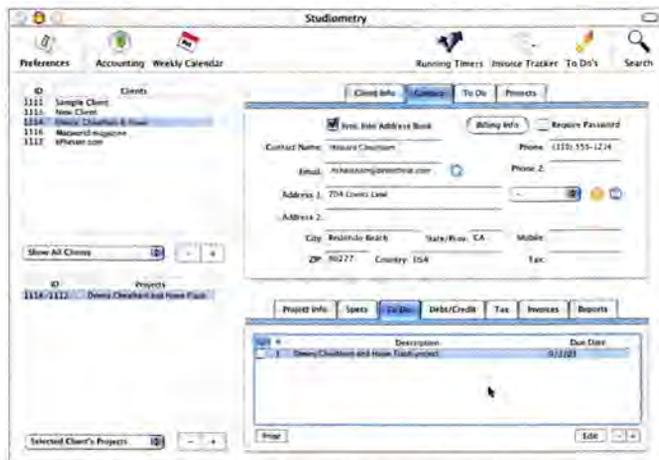
Project Manager for Freelance Designers Simplifies Some Tasks

BY ANDREW SHALAT

One of the most frustrating and tedious aspects of working as a freelance designer is keeping track of project incidentals. Billable hours, invoices, design notes, project files, and the like often end up scattered to all corners of your hard drives and workstations. If you want to rely on something other than your memory, handwritten notes, Stickies, or the Mac's hierarchical folder system, you need an application that organizes your projects in an efficient and easy-to-access manner. The project-management application Studiometry 1.1.4, from Oranged.net Software, attempts to corral your work in one central location, and it *almost* succeeds. If you

client list from scratch, or you can import client data from Apple's Address Book or any vCard-based contact-management list. Studiometry lets you drag and drop vCards right into its Contacts section. Unfortunately, not all designers use the vCard format. I wish Studiometry could also import tab-delimited data, since that would accommodate users who keep their contacts in database applications (FileMaker Pro, for example).

A Studiometry client file contains the same basic information as an Address Book file. Regrettably, Studiometry doesn't allow multiple contacts under one client. Also, you can't import Address Book groups as



Familiar Interface Oranged.net Software's Studiometry adopts an Aqua-fied interface, which makes its functions easy to identify.

don't mind using Studiometry for all your file-management and organization chores *except* invoicing, then this application can be an asset. But Studiometry falls flat when it comes to accounting: its billing feature is more work than it should be.

Organize Projects Visually

Studiometry's familiar and intuitive layout takes interface cues from Apple applications such as iTunes, iPhoto, and Address Book: it displays one large window broken into functional panes. You can easily move from the window to Studiometry's main sections: Client Info, Contact, To Do, and Projects. Studiometry's design resembles that of Apple's Address Book, which is sometimes an asset and sometimes a limitation. Address Book, while a convenient tool, is not a professional-level contact-management system, and its limitations become clear when you import information from Address Book into Studiometry.

Studiometry's project management begins with the client file. You can start a

them—otherwise, there'd be no one to pay you. Therefore, you can't open any working files without first establishing a contact. This extra step may limit how you manage your information. All further organizational actions and relationships stem from the way you set up this window; it's how you access your invoices, reports, and other information pertaining to the project.

You can add folders, graphics, or documents to a project by dragging and dropping them into that project's window. You can also track the relationships of linked files in a project.

Creating a to-do item, a report, and other information is easy to do. You can attach a to-do not only to a client file but also to a specific project—or to nothing at all. The program's To Do feature does a good enough job to replace your handwritten notes.

Studiometry's Running Timers feature is an efficient way to track your billable time. Clicking on the large Running Timers icon that sits atop the main window lets you attach a work session to a given project. If

nothing else, this is a handy utility for figuring out how much time you spend working on a project.

A Few Limiting Features

For all its ease, Studiometry has some time-consuming and nonsensical drawbacks. Its bill-tracking and invoicing system is confusing and difficult. In spite of the program's comfortable Aqua interface, Studiometry's Debt/Credit feature lacks the convenience and efficiency the rest of the program provides. The feature's name is confusing enough. I really didn't feel confident enough in this complex, byzantine system to submit my billing and financial information to it.

Studiometry's project-identification system is also limiting. It assigns numbers to projects according to individual clients, rather than letting you create a code for an entire company. Multiple clients can have the same invoice numbers, differing only in their client code prefix. Unless you're in love with complex and cryptically redundant codes, Studiometry is not the billing solution you want. I was very disappointed that Studiometry offered the invoice templates only in HTML code. These days, thanks to WYSIWYG editors and Web-design suites, many users forgo code-oriented layout for visual layout schemes. The same principle should govern Studiometry's invoicing features. Most designers are visually oriented, but Studiometry's templates are not.

Once you've created a client file, you can assign working files to a project. Studiometry assumes that projects will have clients attached to

Studiometry's documentation can be confusing, but for the most part, it takes you quickly into this application's universe.

Macworld's Buying Advice

Oranged.net Software has put many project- and contact-management pieces in place to build a powerful and useful application. Unfortunately, not all the pieces make perfect sense. While Studiometry 1.1.4's project and client files, To Do section, and timer feature work well together, limitations in the program's Client Info interface, and a complicated invoicing and billing system, bring this management vehicle to a screeching halt. The company needs to improve the program's limited features. I'm looking forward to the next version of Studiometry. ☐

RATING: 

PROS: Interface makes it easy to get started; project files are easily and quickly accessible; work timer is an asset to any small design shop.

CONS: Confusing invoicing and numbering system; limited ability to import client data; complicated HTML-based invoice layouts.

PRICE: \$55

OS COMPATIBILITY: Mac OS X

COMPANY: Oranged.net Software, 507/319-4353, www.oranged.net

Dymo Label-Writer 330 Turbo

Label Printer Shines with Excellent Mac Support

BY JENNIFER BERGER

You may be wondering whether or why you might need a dedicated label printer. Can't an ordinary printer do the job? Sure it can, if you want to print out partial sheets of labels and spend money replacing your ink cartridges.

If you don't find this prospect appealing, take a look at the Dymo LabelWriter 330 Turbo, which never runs out of ink, thanks to its thermal technology. It prints a variety of black-and-white labels: file-folder labels; address and shipping labels, which come with the unit; price tags; and CD and DVD labels, which cover only the center part of a disc.

Setting up this USB printer is easy. Just plug it in, put the label roll on its spool, and feed the labels through the printer's front slot.

The LabelWriter 330 Turbo prints very fast, taking about five seconds to produce a label. The output is clear, though a few times the print was too heavy or too light.

The included Dymo Label Software is easy to use and surprisingly full featured. It also comes with a utility for exporting OS X

Address Book entries. However,

the software failed to detect text after I applied a background color. But you can also print with the software you probably use already.

Dymo's OS X support is excellent: it even works with Panther and Rendezvous.

Unfortunately, there's no Mac support for Internet Postage or the Address Fixer utility, which Dymo advertises as features of the printer. A Mac version of Internet Postage is reportedly in beta.

Macworld's Buying Advice

This printer works only for labels, but it's a winner if you need to print them quickly and on demand in OS X. If speed isn't your highest priority, the Dymo LabelWriter 330 costs \$30 less and prints half as fast.

RATING: ★★★★★

PROS: Very fast; good Mac support; large variety of labels; easy to use.

CONS: Prints only black ink; software doesn't always recognize text over a colored background.

PRICE: \$210

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Dymo, 800/426-7827, www.dymo.com

HomeGuardian 2

Web-Cam Software Works Well but Only in Small Areas

BY JEFFERY BATTERSBY

HomeGuardian 2 simply and effectively uses your Web cam and your Mac's built-in microphone to monitor activity in your home or office. When motion or sound levels exceed a user-defined threshold, HomeGuardian e-mails photos, videos, and audio snippets of the activity to you remotely. The program works exactly as advertised, but it has practical limitations that restrict its monitoring capabilities to a very small area.



Gotcha! HomeGuardian monitors a room for movement or sound and then e-mails you snippets, such as the one pictured here.

We used an iSight and a Power Mac G4 Cube, but the program is compatible with a variety of Macs and off-the-shelf Web cams. Adjusting the program's sensitivity levels was a snap—you can easily trip the most-sensitive setting with a balloon gently swaying in a room, while the most-tolerant setting withstood the thunder of three children at play.

Once you set the specifications, HomeGuardian goes about its monitoring business without further input. Even if you don't have a camera, you can use the program to monitor sound. If you use two different cameras, you can capture video in different locations. But if you use two of the exact same cameras (such as two iSights), only one can capture video.

Macworld's Buying Advice

We recommend HomeGuardian 2 if all you need to do is monitor a single room. For that, it works perfectly.

RATING: ★★★

PROS: Easy setup; excellent movement sensitivity; inexpensive video monitoring.

CONS: Camera can be only 15 feet from computer; two cameras of the same kind won't work together properly.

PRICE: \$25

OS COMPATIBILITY: Mac OS X

COMPANY: SubRosaSoft, www.subrosasoft.com

Sonnet Aria extreme Wireless CardBus Card

★★★★; Sonnet Technologies, 949/587-3500, www.sonnettech.com; \$80



Apple's decision to not provide an AirPort Extreme option for CardBus PowerBooks, including G4 Titanium and G3 models, left owners of those laptops with no immediate hope of reaching AirPort Extreme's 54 Mbps. Some of those people already felt shortchanged by the Titanium PowerBook's short range. Sonnet's Aria extreme Wireless CardBus Card solves both problems, and it brings wireless to G3 PowerBooks that have no AirPort slots. The Aria extreme relies on AirPort 3.1 software (OS X 10.2.6 or later is required), making installation and configuration a simple matter. The Aria extreme offers a good range and full 54-Mbps speed. When installed in a Titanium PowerBook, the Aria extreme achieved a significantly stronger signal at 50 and 65 feet than an AirPort card. Owners of pre-AirPort G3 PowerBooks will benefit because the card gives their systems the same transmission speed as the PowerBooks with AirPort software. The card's price and features are comparable to similar products.—SHELLY BRISBIN

VectorWorks 10.5

9 X

★★★★; Nemetschek, 888/646-4223, www.nemetschek.net; \$895; upgrade from version 10, free



When we last reviewed VectorWorks (★★★★; February 2003), we felt that the program was an excellent value with well-integrated 2-D and 3-D capabilities and good documentation. However, we wished for more templates and symbols, and for QuickTime VR support. Well, the QuickTime VR support is still not here, but VectorWorks 10.5 has many more templates, symbols, and textures. It's also compatible with Panther (in a version 10.5.1 update).

But version 10.5's emphasis is on 3-D design. It has even more ways to manipulate a 3-D object: as a whole, by individual surfaces or edges, or by individual points.

VectorWorks' already extensive import and export functions for DXF and DWG files (used to interact with the popular, but Mac-incompatible AutoCAD software) have also been improved, giving more accurate text transfers. In addition, raster images are now included in DWG exports (as JPEGs) and can also be imported from DWG files created by AutoCAD 14 or later.

This upgrade isn't earth-shatteringly great, but it does add some very useful capabilities. If you're using an older version of VectorWorks or MiniCAD, what are you waiting for?—GREG MILLER

Keyboard Virtual Instruments

Lounge Lizard EP-2 and B4 Offer Great Sound but Have a Few Visual Quirks

BY DAVID LEISHMAN

In the second half of 2003, the four major digital music sequencers for the Mac reached relatively satisfactory levels of stability and usefulness in Mac OS X. Soon thereafter, plug-in makers began to ship plug-ins and virtual instruments (VIs) for OS X's three

supported plug-in formats: Apple's Audio Units (AU), VST, and Digidesign's RTAS.

Applied Acoustic Systems' Lounge Lizard EP-2, an electric-piano emulator, and Native Instruments' B4, an organ emulator, are the first free-standing VIs in their respective instrument categories. They share a

couple of strengths and weaknesses: both sound and look great, are easy to set up, and have controls that are mostly the same as those in previous versions. But they also suffer from graphic quirks when you use them within some sequencers, and neither application's manual has been updated for OS X.

Lounge Lizard EP-2
Lounge Lizard EP-2's centerpiece is a realistic Rhodes electric-

piano sound, combined with a fine variety of Wurlitzer electric-piano tones and a host of preset sounds that range from the exotic (Galapagos Bass) to the fruity (Banana Piano). EP-2 has a load of time-shift parameters—such as wah, phaser, tremolo, and delay—that you can tweak to create your own sounds. But the real fun lies in programming the piano's "physical" characteristics—including the stiffness of its mallets' coverings, for softer or brighter tones—and the vibrancy and decay of its fork, a central element of e-piano tones. And you can save your newly created sounds as presets, which appear in EP-2's browser. You'll need a weekend to familiarize yourself with the variables here, but it will be time well spent.

B4

B4 is a beautiful audio re-creation of a Hammond B3 organ, a standard instrument for jazz and rock musicians. Its clean B3 and mesmerizing Leslie-speaker sounds are so good, you might believe you're playing a real organ. B4 offers two screen choices for controlling parameters: an instrument view (see "Organ-ic Experience") or a palette of tone-knobs, for voicings, and drawbars, for pedals and registers. The OS X version includes the Tonewheel Set Vintage Collection, previously available separately, which adds the sounds of a variety of B3s with aged



Lizard Layout Lounge Lizard EP-2's main window displays controls for the instrument's "physical" components, as well as its on-board effects.

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.



Organ-ic Experience The B4's drawbars and bass pedals will be instantly familiar to musicians who've played a Hammond B3 organ. The menu bar provides easy access to the other settings and controls.

tonewheels, emulations of Vox and Farfisa organs, and the sounds of an Indian harmonium. You'll find plenty of tones to love. (If you have an earlier version of B4 and want to work with AUs, you'll need to download the B4 1.13 update from Native Instruments' Web site.)

What You See and What You Don't

Both apps work great on their own, but they exhibit visual oddities when used within every OS X sequencer except Steinberg's Cubase SX 2. In Apple's Logic, both emula-

tors' screens remain in the foreground while Logic's appears to be inactive—although you can use Logic's controls, you can't scroll the windows. In MOTU's Digital Performer (DP), any window can be brought to the front *except* the Audio Units window, so you'll need to access Audio Units via the Windows menu or the Audio Units window's title bar. And entering notes with your mouse when you're

using B4 produces visible "ghost" keys and drawbars. In Digidesign's Pro Tools, both VIs stay in front, denying you access to Pro Tools until you close the VIs' windows. Finally, when used as a plug-in, B4 supports neither keyboard shortcuts in OS X nor Digidesign's RTAS format. (We tested in OS X 10.2.6, using Cubase SX 2.0.1.10, Logic 6.3.3, DP 4.1, and Pro Tools 6.1.2.)

Macworld's Buying Advice

Both B4 and Lounge Lizard EP-2 offer superb emulations of their real ancestors.

The visual glitches that occur when you use them in sequencers are mildly frustrating, but these obstacles don't significantly affect the pleasure of playing these very cool virtual instruments. □

B4

RATING: ★★★★★

PROS: Produces luscious, evocative organ tones; has B3-like controls; can be used as a stand-alone instrument or a plug-in; organ voicings in the Tonewheel Set make a great addition.

CONS: Exhibits minor visual glitches in some sequencers; manual not updated for OS X.

PRICE: \$235

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Native Instruments, 866/556-6487, www.native-instruments.com

LOUNGE LIZARD EP-2

RATING: ★★★★★

PROS: Produces great Rhodes electric-piano sound; excellent presets and parameter controls; can be used as a stand-alone instrument or a plug-in.

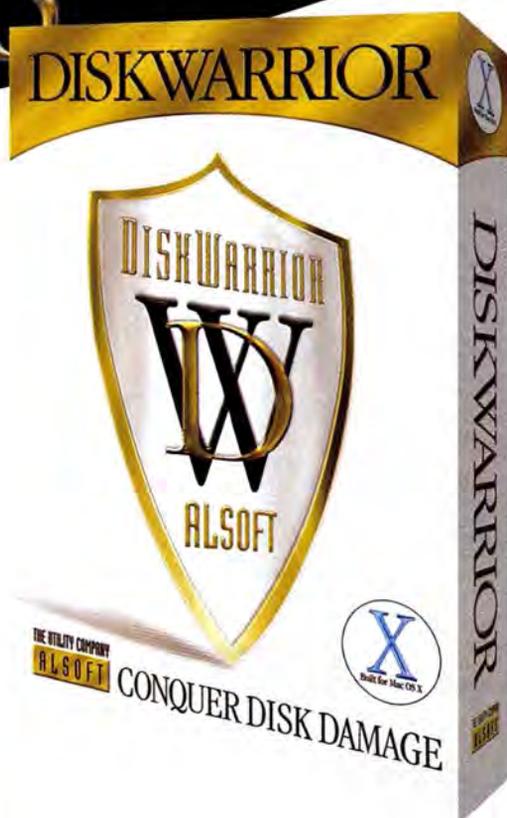
CONS: Minor visual glitches in some sequencers; manual not updated for OS X.

PRICE: \$249; download, \$199

OS COMPATIBILITY: Mac OS X

COMPANY: Applied Acoustic Systems, 888/441-8277, www.applied-acoustics.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

The Sims™

Makin' Magic

EXPANSION PACK*

Beware.
Your Sims
Have Magic.

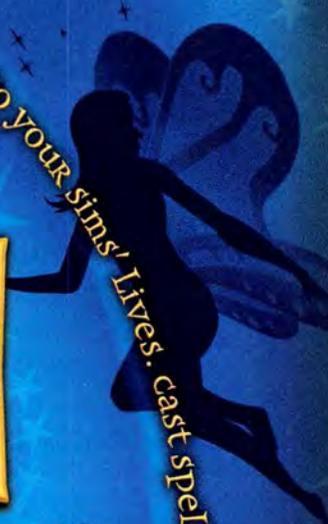
add a little magic to your Sims' lives.



Perform magic, quest for ingredients, and unlock spell recipes.



Craft charms, animate minions, and add magical decor.



Spells can go haywire if you're not careful. either way, the neighborhood will never be the same. But watch out, spells can even turn a neighbor into a frog.

*These Expansion Packs are also available:

- The Sims™ Livin' Large
- The Sims™ House Party
- The Sims™ Hot Date
- The Sims™ Vacation
- The Sims™ Unleashed
- The Sims™ Superstar

www.aspyr.com



ASPYR™

Authorized Electronic Arts™ Distributor



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

© 2004 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 GAMES™ 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.

- > Age of Mythology
- > Ghost Master
- > Kelly Slater's Pro Surfer
- > Burning Monkey Casino
- > Active Lancer
- > Imaginext Battle Castle

Gods and Generals

MACSOFT HAS A KNACK FOR DELIVERING SOME OF THE best strategy games on the Mac. Age of Mythology, its newest addition to the genre, is no exception. Developed by the same people who brought us

the Age of Empires series, Age of Mythology shares many of the traits of those earlier games. But thanks to great graphics, challenging play, and an interesting new twist, this game is anything but derivative.

Age of Mythology focuses on three ancient civilizations renowned for their mythology: the Greeks, the Egyptians, and the Norse. Each culture has unique attributes, such as the

way its people gather and use resources, how they build structures, and, of course, what they believe. Gods and monsters play a central role.

The notion of unique civilizations isn't new to this type of game. However, unlike the Age of Empires games—which featured a dizzying array of ancient civilizations but didn't do much to distinguish them—Age of Mythology creates tangible differences.

You'll raise your civilization through various aspects of economic and technological development. Gods are key to this endeavor: different gods demand different forms of worship, and they respond with blessings to help you along. If you sufficiently curry your patron god's favor, you'll earn upgrades in weapons and armor, as well as the ability to acquire mythological beings. These creatures and heroes can help when it comes time to wage war against your neighbors.

The graphics in Age of Mythology are fantastic. Although it features the same isometric view as the Age of Empires titles, Age of Mythology includes a



Good Gods Mythological monsters, gods, and heroes help you expand your empire in Age of Mythology.

new 3-D game engine that lets you zoom in on the action, with beautiful results. Also worthy of note is the included map editor, which lets you design your own game maps.

In addition to offering an extensive single-player campaign, Age of Mythology supports multiplayer gaming over LANs and through the game-matching service GameRanger. Alas, you won't be able to take on PC gamers. A

proprietary technology called DirectPlay hampers the Windows version of this game.

The Bottom Line Age of Mythology's impeccable credentials and flawless Mac conversion make this an instant classic for strategy-game fans.

Who You Gonna Call?

Feral Interactive's Ghost Master is a strategy game with an unusual twist: you're the bad guy. Oh, and you're *dead*.

Welcome to the town of Gravenille, which is currently under siege by the living. As a civil servant in the afterlife, you are charged with scaring them. Together with your spectral squad, you'll haunt more than a dozen different locales, including residences, the local police station, and a hospital.

Strategy games inevitably require resource gathering, and the coin of Ghost Master's realm is Plasm—the substance that's created when people are scared. The more you frighten the residents of Gravenille, the more Plasm they generate. You can click on humans to figure out what scares them and maximize your fright potential. Larger spooks tend to generate bigger scares, but they also require more Plasm. You'll also discover that most ghosts are fettered to specific types of objects—some need to work near beds, for example, while others are tied to electrical devices.

continues

AGE OF MYTHOLOGY

RATING: ★★★★★

PROS: Adds a neat twist to a proven genre; map editor extends play.

CONS: No cross-platform multiplayer support.

PRICE: \$50

OS COMPATIBILITY: Mac OS X

COMPANY: MacSoft, www.macsoftgames.com

GHOST MASTER

RATING: ★★★

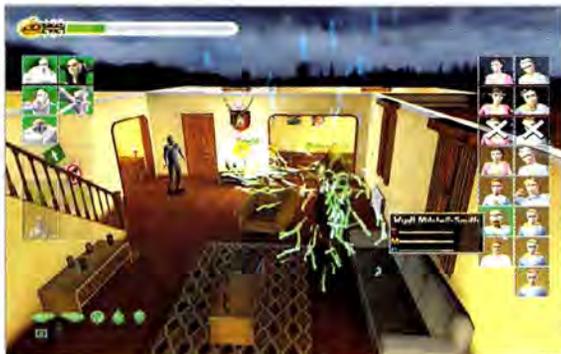
PROS: Unique design; great music and effects.

CONS: Some levels are too difficult.

PRICE: \$50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Feral Interactive, www.feralinteractive.com



Good Will Haunting Scare the heck out of people in Ghost Master.

Although Ghost Master is primarily about scaring folks, some twists and turns keep things interesting. Missions have primary objectives—to scare people or to make them discover certain things—as well as secondary objectives, such as freeing ghosts from traps. Unfortunately, some of the goals are remarkably hard to achieve.

If you've spent any time playing The Sims, Ghost Master will seem familiar. In fact, Gravenville residents even communicate in Sims-like babble and dialogue bubbles. However, Ghost Master's game play is a lot richer and more complex. And thanks to its good tutorial, Ghost Master takes only a short time to learn.

Ghost Master has a wicked sense of humor—its level names spoof popular Hollywood movies, which in turn inspire some of the characters and situations. It also features a great soundtrack.

Ghost Master offers only single-player modes, but I don't consider that a detriment—not every game needs to have multiplayer features shoehorned into it.

The Bottom Line Ghost Master marries a unique concept with great execution. It's marred only by a few flaws in level design that make some parts of the game more frustrating than they should be. Overall, though, it's a great game—especially for fans of horror movies.

Hang OS X

If you're looking for an extreme sports challenge but are burned out on Tony Hawk's Pro Skater series, Aspyr Media has

an alternative that will let you use some of the same skills in a very different setting: the waves.

Pro surfer Kelly Slater is a Mac user in his own right. He was featured in early Switcher ads showing off video footage he'd edited with his Mac. But until recently, if you wanted to play his game, you had to buy a video-game console. Now Aspyr has brought the surfboarding action to the Mac.

The trappings of Kelly Slater's Pro Surfer will seem familiar to anyone who's played Tony Hawk. The trick engine is similar; it has a career mode, in which you unlock new areas by achieving goals; and you can pick an identity from a variety of real-world pro surfers. In fact, the actual mechanics of

surfing are not unlike those of riding a half-pipe in Tony Hawk. While riding waves, you try to string together as many tricks as possible to earn ever-higher combination scores. A trick meter gauges the success of your sequences. Once you've maxed out the meter, you'll be able to pull off mad tricks that wouldn't otherwise be possible.

The game's graphics are fantastic. In fact, they're better than what I've seen in the console versions—water effects are

KELLY SLATER'S PRO SURFER

RATING: ★★★

PROS: Beautiful graphics; easy-to-grasp fundamentals.

CONS: May seem repetitive to Tony Hawk players; requires a game controller for optimal performance.

PRICE: \$30

OS COMPATIBILITY: Mac OS X

COMPANY: Aspyr Media, www.aspyr.com



Gnarly As a champion surfer in Kelly Slater's Pro Surfer, you score points by combining tricks.

detailed and lifelike, with beautiful particle and translucency effects that really bring the game to life. However, as with many games that have console pedigrees, you'll find it more satisfying to play on a game pad than on the keyboard, which I found cramped, lousily configured, and uncomfortable to use. The soundtrack is also good, evoking the mood of hanging out at the beach and trying to catch that perfect wave.

Kelly Slater's Pro Surfer doesn't offer Internet-based competition, which is probably just as well, as I've had little success with Tony Hawk's online modes. Aspyr advises Panther users to download a Pro Surfer patch (available from the company's Web site), which fixes problems specific to that operating system.

The Bottom Line Fans of Tony Hawk's game franchise won't find a ton of surprises here. Still, Kelly Slater's Pro Surfer is well executed and fun to play.

My Money's on the Monkey

Freeverse Software is one of my favorite independent Mac game developers, partly because it has an irreverent streak that imbues every game with a healthy sense of humor. Nowhere is this more evident than in its Burning Monkey series.

In the newest addition, Burning Monkey Casino, Las Vegas gets the smoldering-simian treatment. The collection includes five games: Slots, Three Card Monty, Poker, Scratch 'N' Win, and Black Jack. Each game is customizable—even Three Card Monty (the classic card-shuffling game made famous by street hustlers). A stand-up comic (doing the worst impression of Henny Youngman I've ever heard) pops up every few minutes to interject one-liners. Thankfully, you can shut him off if he becomes unbearable.

The entire Burning Monkey Casino collection is brimming with Freeverse's trademark humor and high production values. It comes with a great soundtrack that evokes Vegas lounge acts. In fact, it even offers a separate lounge-act feature in which a gorilla serenades you. Each game features animated backgrounds and special effects that will make you feel as though you've been transported to a casino in Vegas or Atlantic City, circa 1959.

continues

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 Med-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, Minneapolis, MN. Dainoier is a trademark, and MacSoft is a registered trademark of Dainoier, 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.



Blood and Gore
Intense Violence
Mild Language



Choose 30 at www.macworld.com/getinfo

BURNING MONKEY CASINO

RATING: ★★★

PROS: Great production quality; game variations keep play challenging.

CONS: Slim choice of games.

PRICE: \$20

OS COMPATIBILITY: Mac OS X

COMPANY: Freeverse Software, www.freeverse.com



Banana Chips Burning Monkey Casino offers many variations on classic casino games, as well as some jocular apes.

And if you find you've bet the farm and can't cover your debts, the Borrow Money button is only a click away. (I wish it were that easy in real life!)

The Bottom Line Burning Monkey Casino offers cute, lighthearted fun for players looking for some quick and dirty Vegas-style action.

Shmup-tastic

Shoot-'em-ups—or *shmups*—are some of the most popular arcade games of all time: Xevious and Super R-Type, for example. But while this genre once dominated the game market, shmups have largely been cast aside in recent years, in favor of showy 3-D games that look pretty but often don't measure up in game play.

Active Lancer, a new game by Freeverse Software, is a throwback to the golden days of shmups but offers enough new embellishments to keep the action challenging and fun for gamers young and old. It features elaborate 3-D cinematic sequences worthy of a big-budget game, as well as a lavishly illustrated and lushly rendered environment. It's also got a body-rocking soundtrack and game play up the wazoo.

In Active Lancer, you pilot an elaborate, formfitting flight

suit complete with no less than five different kinds of weapons, ranging from particle beams to guided missiles. Your mission is to fly over the surface of an alien landscape and annihilate a marauding interstellar species—while defending yourself against an onslaught of opponents that populate the land, air, and sea.

Each level in the game ends with a *boss*—a large alien craft that's much stronger, better armed, and substantially tougher to beat than its smaller counterparts.

As you fight, you collect power-ups, which you can use to charge up your weapons. Sharpshooting will also give you the chance to recharge. The more bad guys you blast, the higher your Rage meter gets. When it maxes out, you can activate a Berserker mode that temporarily causes you to speed up, while also powering up your weapons and recharging your shields.

To share the challenge of making it all the way to the end, you can use Active Lancer's two-player mode, which lets two gamers play simultaneously from the same computer. You can also team up with players over a LAN or through Freeverse's own GameSmith

ACTIVE LANCER

RATING: ★★★

PROS: Beautiful graphics and great music; tried-and-true shmup game play.

CONS: Making it through the game can be extremely difficult; networked game play works well only over a LAN.

PRICE: \$20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Freeverse Software, www.freeverse.com



One If by Land In Active Lancer, your goal is to blast the bejeezus out of everything that moves.

IMAGINEXT BATTLE CASTLE

RATING: ★★★

PROS: Lots of stuff to keep young players busy; fun and varied activities.

CONS: Similar to Pirate Raider; no girl characters.

PRICE: \$20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Vivendi Universal Games, www.vugames.com

service. However, Freeverse notes that game play through GameSmith can suffer from latency issues.

The Bottom Line Like many shmups, Active Lancer is tough to beat but very rewarding if you make it all the way to the end. The game's excellent production quality is proof that there's a lot of life left in this venerable genre.

Knight for a Day

Vivendi Universal Games has launched a new game franchise for kids. It's based on Fisher-Price's Imaginext toy series—action play sets for kids aged five and up. Vivendi's first game, Imaginext Pirate Raider, which I reviewed last December, let kids take to the high seas as marauding pirate captains. For its second release, Imaginext Battle Castle, the company turns its attention to knights, castles, and dragons.

Like its predecessor, Imaginext Battle Castle is packed with action, although there's absolutely no bloodshed or overt violence. On their journey, players get to build castles, challenge knights to duels, participate in castle sieges (and the defense of castles), go on rescue missions, and more. The missions grow progressively harder. The successful completion of each mission rewards players with new items they can use for their ultimate confrontation, with a mighty dragon.

All of the challenges in this game are age appropriate—just what you'd expect from a major publisher of kids' software. However, if your little ones have already played Pirate Raider, Battle Castle may seem repetitive. Also, there's no option for turning your knight into a girl. That's historically accurate but a bit backward-thinking these days—even given the toy series' boycentric approach.

The Bottom Line Imaginext Battle Castle is a great tie-in for kids who already play with Fisher-Price's Medieval World toys. It's also a fun romp for kids who want to pretend to be a knight for a day. □

MacCentral.com Senior Editor PETER COHEN enjoys haunting houses, especially the refrigerators.

COMMAND + CONQUER™

GENERALS

BE THE ULTIMATE MODERN
WARFARE GENERAL



CHINA:

No longer just a red-communist step-child, China's modern army is well financed, with a strong nationalistic bent. Parading technology like Dragon Tanks and nuclear missiles, China's military goes beyond simple troop numbers.

UNITED STATES:

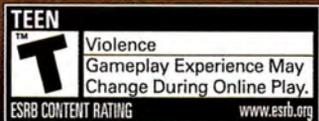
America's military leader must use the world's most advanced military to root out an elusive foe. Eradicating the cell-based GLA will take courage, conviction, and the will to see a prolonged campaign through to the end.



GLOBAL LIBERATION ARMY:

Facing superior firepower, the GLA embraces bio-terrorism, sabotage, and suicide bombings to further its political agenda. But leading a chaotic group of "freedom" fighters against two global superpowers will take some doing.

www.aspyr.com



ASPYR™

Authorized Electronic Arts™ Distributor



©2004 Electronic Arts Inc. Electronic Arts, Command & Conquer, 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. EA GAMES™ is an Electronic Arts™ and. The Aspyr logo is a trade mark 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 are the property of their respective owners. Made in the U.S.A.

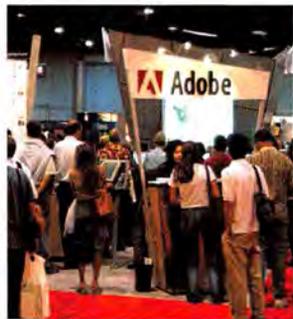
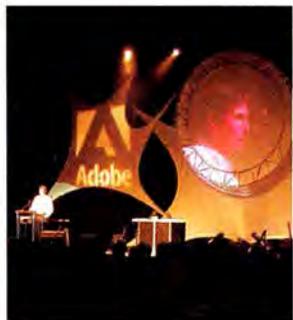
Choose 91 at www.macworld.com/getinfo

PhotoshopWorld

Built for Speed

Get up to speed fast at the world's largest
Adobe® Photoshop® Conference & Expo

MARCH 1-3, 2004
 THE MOSCONE CENTER
 SAN FRANCISCO, CA



PhotoshopWorld Tech Expo

Monday, March 1, 1-6 pm; Tuesday, March 2, 10 am-5 pm



The PhotoshopWorld Tech Expo is where you get face-to-face with the industry's leading companies to check out the latest Photoshop plug-ins, digital cameras, scanners, printers, imaging software, hardware, storage devices, and new Photoshop-related peripherals. This year we're planning for our biggest expo yet, so come and see demos of the hottest new releases from your favorite vendors.

Conference Highlights

- Adobe Keynote
- Comprehensive Workbooks
- Brand New Sessions
- PhotoshopWorld Party
- Adobe ACE Boot Camp
- Photoshop Wars
- CEU Credits
- Midnight Madness
- Guru Awards
- Peer to Peer Groups
- Photoshop Help Desk
- Networking Opportunities
- Art of Digital Photography
- PhotoshopWorld Pro Pass
- Nikon Photo Safari
- Live Photo Shoots

It's Show Time!

You're invited to spend three exciting days at the world's largest Adobe Photoshop educational event as the PhotoshopWorld Conference & Expo comes to San Francisco for the first time ever. This year's theme is "Photoshop CS: Built for Speed" and we've built an entire conference around this theme of Photoshop efficiency, productivity, and profitability. Choose from more than 60 sessions on Photoshop creativity, digital photography, motion graphics, print/prepress, productivity, and the business side of Photoshop to create a customized learning experience that's right for you. Whether you're a photographer, graphic designer, ad agency, print shop, Web designer, motion graphics designer, art director, or educator, this event will accelerate your Photoshop learning experience.

Registration Options

NAPP member	(before January 30, 2004)	\$399
	(after January 30, 2004)	\$499
Non-NAPP member	(before January 30, 2004)	\$499
	(after January 30, 2004)	\$599

*Includes a full-year membership to NAPP
 Canada add \$30 (US funds) • International add \$50 (US funds)*

Our line-up of **Photoshop Instructors** includes:



SCOTT KELBY BEN WILLMORE JACK DAVIS FELIX NELSON DEBEMCLELLAND BERT MONROY JULIEANNE KOST RUSSELL BROWN DAVE CROSS EDDIE TAPP VINCENT VERSACE KEVIN AMES LYNN GOLDSMITH



MARCH 1-3, 2004
 THE MOSCONE CENTER
 SAN FRANCISCO, CA

for more information www.photoshopworld.com or call **800 738-8513** or **813 433-5006**

- > Macaroni
- > MisFox
- > Peripheral Vision
- > Nicecast
- > imp

Personal Assistants

PERFORMED REGULARLY, CERTAIN MAC OS X MAINTENANCE tasks—Disk Utility's Repair Disk Permissions function and three Unix cleanup scripts scheduled to run daily, weekly, and monthly, respectively—

can help your Mac run more smoothly. Unfortunately, if you shut down your Mac (or put it to sleep) at night, the three Unix scripts never get a chance to run. I explained how to set up your Mac to execute these tasks at convenient times in "Easy Mac Maintenance" (*Hands On*, December 2003). However, that procedure required that you learn about Unix's cron utility and edit some Unix configuration files.

An alternative is Atomic Bird's \$9 **Macaroni 2.0** (★★★★; www.atomicbird.com), which ensures that OS X runs all three Unix maintenance tasks. Whenever you start up or wake your Mac, Macaroni checks to see whether any of the scripts are overdue to run; if so, it runs them. Likewise, Macaroni makes sure that the Repair Disk Permissions task is performed once a week.

By default, Macaroni runs a task only if your computer has been idle for five minutes or more—if you're busy working, Macaroni prevents the tasks from taking up precious system resources. Similarly, if you have an iBook or a PowerBook, Macaroni waits until the machine is plugged in to an outlet, to avoid wasting battery power. (You can disable both of these features.)

You can see the status of any task in the main Macaroni window, and you can run a task immediately by clicking on the Run Job Now button. The progress of the most recent task appears at the bottom of the window.

You can also use Macaroni to edit the schedules for these tasks and, if you're ambitious, to schedule your own automated tasks. But if all you care about is making sure that your Mac performs the four tasks described here, install Macaroni and forget about it.

Even More Internet

I've recommended Monkeyfood Software's excellent More Internet (★★★★; November 2003) for accessing the hidden settings of protocol helpers—applications that handle particular protocols and a few types of downloaded files—in OS X.

However, there are a number of settings to which even More Internet doesn't give you access. Specifically, neither it nor OS X provides an interface for editing *file mappings*—settings that determine which application will handle each type of file you're likely to download from the Internet. For this purpose, Alexander Clauss's free **MisFox 1.2**

(★★★★; www.clauss-net.de/misfox/misfox.html) comes to the rescue.

MisFox provides a list of almost every type of file you'll encounter on the Web, and it lets you decide which application should open each file type. The set-



tings for a particular mapping include the MIME type (also known as the content type) and the file extension, and, if necessary, the creator code and file type. Most important, the Postprocessing setting lets you choose what to do with downloaded files.

MisFox also lets you create new file mappings and delete settings. And via its Protocol Helpers tab, MisFox provides access to the same helper-application settings as More Internet, though I prefer More Internet for this purpose because of its drag-and-drop interface.

If you've ever downloaded a file from the Internet and found that it didn't open in the correct application, MisFox can probably help you set things right.

Peripheral Visuals

Although OS X's System Profiler application is helpful if you want to see what is connected to your Mac at a given moment, sometimes you want to know when devices have connected or disconnected

Elbow Grease

Macaroni ensures that maintenance tasks are performed regularly, helping you keep your Mac in shape.

continues

successfully. Granted Software's \$7 **Peripheral Vision 1.6** (★★★★; www.grantedsw.com/p-vision/) monitors FireWire, USB, Bluetooth, and network connections, and notifies you when a new device is connected and when a connected device is no longer available. You can set up different notifications—visual or audio—for each type of device, as well as for connections and disconnections. (When you log in, the utility will also quickly show you *all* connected devices so you can verify that everything is connected properly.)

In addition to monitoring peripherals, Peripheral Vision can launch an application or run an AppleScript or Unix script when it detects a particular peripheral. Finally, if you don't like the name of a device (Jargy USB, in my case), you can change how it appears when it's detected (to Left-side USB hub, for example).

I've found that Peripheral Vision is a great tool for troubleshooting and for everyday use. For instance, one of my Macs had been having problems with USB devices. I installed Peripheral Vision, and it showed me, via its on-screen display, that particular USB devices were intermittently losing their connection to my Mac. Surprisingly, some of those devices seemingly had been working just fine. By showing me which devices were having connection problems, Peripheral Vision helped me find the source of the trouble: a faulty USB hub.

Peripheral Vision is also useful for avoiding problems with FireWire



Not Hard to Handle Using MisFox, you can choose which application handles a particular type of file downloaded from the Internet.

drives—after you unmount a drive, if you wait until Peripheral Vision tells you it is no longer available, you know it's safe to disconnect. Peripheral Vision has become one of the first things I install when I get a new Mac.

Simple Broadcasting

Apple iTunes 4.0 allowed you to share your music over the Internet so you could, for example, listen to music stored on your home

Mac from your work computer. But Apple removed this feature in an iTunes update—now you can share music only with other Macs on the same local network. However, if you'd like to listen to your home iTunes music—or to any other audio emanating from your Mac—from elsewhere, Rogue Amoeba's \$30 **Nicecast** (★★★★; www.rogueamoeba.com/nicecast/) lets you do just that.

Nicecast is a server that lets you set up your Mac to stream audio, which you can access from anywhere on your local network or over the Internet. What sets Nicecast apart from other streaming-audio servers is its simplicity. You select the source (an application, such as iTunes, or an input device, such as a microphone) and click on the Start Broadcast button, and then you're broadcasting to the world (assuming that you're connected to the Internet, of course). Click on the Share button to see the address of your broadcast; you (or other users) can type that address into iTunes' Open Stream dialog box to listen. If your computer is behind a firewall or router, the Nicecast manual includes helpful information on getting the app to work with these restrictions.

But just because Nicecast is simple doesn't mean it's not powerful. You can adjust the quality level of your broadcast by choosing a compression level—higher compression means lower quality, but it also means you can use a slower connection to broadcast. You can also apply professional-quality effects to your broadcast (Nicecast supports a number of popular audio plug-in formats, such as VST plug-ins), and even add voice-overs to create your very own Internet radio station.

Nicecast is the best streaming-audio solution I've seen for OS X. □



Sound Advice With Nicecast, you can have your very own Internet radio station up and running in no time.

having problems with USB devices. I installed Peripheral Vision, and it showed me, via its on-screen display, that particular USB devices were intermittently losing their connection to my Mac. Surprisingly, some of those devices seemingly had been working just fine. By showing me which devices were having connection problems, Peripheral Vision helped me find the source of the trouble: a faulty USB hub.

Peripheral Vision is also useful for avoiding problems with FireWire



The Quickie

A number of iPod power adapters for use in your car are available, but SiK's \$30 **imp** (★★★★; www.sik.com) is unique. In addition to offering the ability to power both older and newer iPod models from any car's accessory (cigarette lighter) jack, the imp adapter provides newer dock-connector iPods with a genuine line-level output jack, normally available only from the dock base. What's more, you can disconnect the actual power adapter from the imp's dock-connector cable; doing so gives you the only true line-out cable available for the iPod. This allows me to use my iPod with my portable headphone amplifier, which prefers a line-level output.

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

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 QuietComfort® 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."



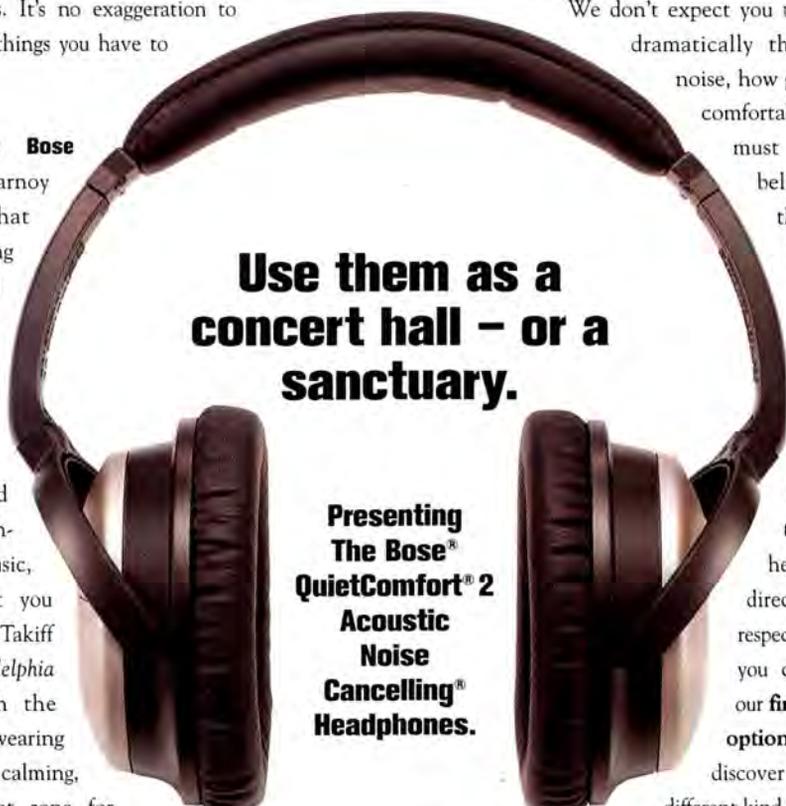
"The QuietComfort 2 lives up to its name, enveloping you in blissful sound in the utmost comfort. It's easy to forget they're on your head." That's what columnist Rich Warren says. And as Ivan Berger reports in The New York Times, the "QuietComfort 2

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 1-800-474-2673, ext. Q2593 today.

These headphones are available direct from Bose – the most respected name in sound. When you call, be sure to ask about our financing options. And discover a very different kind of head-

phone – Bose QuietComfort® 2 Acoustic Noise Cancelling headphones.

For FREE shipping order by April 15, 2004.

1-800-474-2673, ext. Q2593

For information on all our products: www.bose.com/q2593

Name _____
Address _____
City _____ State _____ Zip _____
Day Phone _____ Eve. Phone _____
E-mail (Optional) _____

Mail to: Bose Corporation, Dept. DMG-Q2593, The Mountain, Framingham, MA 01701-9168



©2004 Bose Corporation. Patent rights issued and/or pending. Financing and free shipping offer not to be combined with any other offer or applied to previous purchases, and subject to change without notice. Risk free refers to 30-day trial 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.



CENTER OF ATTENTION

iPOD MINI, iLIFE '04 EXPAND APPLE'S DIGITAL HUB

WITH A MIX OF POWERFUL hardware and innovative applications, the Mac has firmly established itself at the center of our digital lives. Got a digital camera? iPhoto can import, organize,

edit, and share all your images. Been videotaping birthdays and vacations on your DV camcorder? Use iMovie to edit your footage into a home movie, and then burn your movie onto a disc with iDVD. Now, thanks to a spate of new



products, Apple's digital hub is extending its reach. A slimmed-down version of the iPod has the potential to enlarge the music player's appeal, while the iLife '04 suite includes updates to

three popular i-apps and introduces an entirely new program that puts music creation at your fingertips. Here's a closer look at Apple's latest hardware and software—these products promise to make your digital hub the place to be.

A LITTLE MUSIC

BY PHILIP MICHAELS

Pop singers should envy the way the iPod has rocketed to the top of the charts. The portable music player debuted with a splash more than two years ago, and the hits have kept on coming ever since. Apple says that from October 2003 through December 2003, it sold 730,000 iPods—enough to give it a 31 percent share of the MP3-player market.

But as the iPod's capacity has grown—the smallest model now has 15GB of storage—folks with modestly sized music libraries have had less reason to sing the device's praises. Users without thousands of songs to store have little need for all that space.

Faced with this big problem, Apple came up with a small solution—the iPod mini. Basically a slimmer version of the iPod in a more colorful package, the iPod mini rounds out Apple's digital-music-player offerings (see "iPod Playlist"). More importantly, anyone looking for a lower-capacity music player now has an option that not only features Apple's stylish design but also seamlessly integrates with the iTunes jukebox software.

Mini to the Max

While the regular iPod is about as big as a deck of cards, the iPod mini is the size of a business card. The smaller iPod is 3.6 by 2.0 inches, compared with the 4.1-by-2.4-inch dimensions of its larger sibling.

To shrink the music player into such a small package, Apple's designers made some changes to the face of the iPod. Buttons found above the scroll wheel on the original iPod have moved onto the iPod mini's wheel itself. You can scroll through your iPod mini's music library with the touch of a finger; click on the scroll wheel's menu, play/pause, fast-forward, and rewind buttons to access those functions.

The rest of the iPod package is unchanged. The iPod mini retains the Hold switch, remote port, and headphone jack on its top side. The FireWire-USB 2.0 connector on the bottom is also the same, so most accessories that work with the regular iPod will also work with the iPod mini. (Two notable exceptions are the Belkin Voice Recorder and Belkin Media Reader, which were introduced last fall. They aren't supported by the iPod mini's software.)

The Color of Music

Apple is also injecting some color into the iPod line—five colors to be exact. The iPod mini comes in silver, gold, green, pink, or blue, on an anodized aluminum case that resists stains and scratches.

The iPod mini's screen resists scratches, too. It's recessed in the case, so if you set the iPod facedown on your desk, the screen never touches the surface.

Priced at \$249, the iPod mini costs \$50 less than the least expensive iPod (see "Music Player for a Song?"). But Apple is gambling that the combination of form and features is enough for another number-one hit.

MUSIC PLAYER FOR A SONG?

Forget the iPod mini's compact size and its assortment of colors. The feature that's really got people talking about Apple's miniature music player is its \$249 price. And the chatter hasn't exactly been enthusiastic.

When Apple unveiled the iPod mini, it positioned the slimmed-down iPod as a rival for small, flash-based music players. Apple CEO Steve Jobs compares the 4GB iPod mini to SonicBlue's 256MB Rio Chiba and Rio Cali. While those \$199 devices cost less than the new iPod mini, they also hold far less music than the 1,000 songs Apple's smaller music player can store. "That's the best \$50 you'll ever spend," Jobs said at January's Macworld Expo.

But critics of the iPod mini's price argue that for another \$50, iPod users can get even *more* storage—15GB worth, now that Apple has upped the capacity of its \$299 iPod. While paying \$249 for 3.7GB more storage than you get from a \$199 flash-based player may be a good deal, some analysts and Mac users contend that paying \$299 for 11GB more sounds even better.

Of course, a comparable music player—the Rio Nitrus 4GB—also sells for \$249. And Stan Ng, Apple's senior product manager for the iPod line, believes that the iPod mini will appeal to different users. Some will appreciate its colorful look and portability, while others—who don't have anywhere near 15GB of music—will find the iPod mini's smaller capacity provides more than enough storage.

Besides, Ng adds, the iPod released by Apple in 2001 offered only 5GB of storage, and it cost \$399. "And people thought that wasn't going to sell well," he says.

POD PARTNERS

First the iPod went cross-platform. Now it's going cross-company. Apple has struck a deal with Hewlett-Packard, which will deliver digital-music players based on the iPod but sold under the HP brand name. (Details—such as the product name and price—weren't available at press time.) As part of the deal, HP will also include the Windows version of iTunes on its Pavilion, Media Center, and Compaq Presario desktops and laptops. As of December 2003, the iPod enjoyed the biggest share of MP3-player sales in the world, and Apple's dealings with HP make it clear that the company intends to keep things that way.

SMALL DEVICE, BIG ACCESSORIES

So what will \$249 buy you these days, besides 4GB worth of storage in an anodized aluminum case? The iPod mini ships with earbud headphones, an AC adapter, and cables for FireWire and USB 2.0. The music player also ships with its own belt clip. Optional accessories include the \$39 dock for charging and synchronizing the device, and Apple's new \$39 in-ear headphones. iPod mini users on the move should be interested in the optional \$29 neoprene armband, for holding the music player in place while you're working out at the gym.

iPOD PLAYLIST

With the addition of the iPod mini, Apple now offers four digital-music-player configurations.

MODEL	DISPLAY	SIZE	WEIGHT	PRICE
4GB iPod mini	1.67-inch gray-scale LCD	3.6 by 2.0 by 0.5 inches	3.6 ounces	\$249
15GB iPod	2-inch gray-scale LCD	4.1 by 2.4 by 0.6 inches	5.6 ounces	\$299
20GB iPod	2-inch gray-scale LCD	4.1 by 2.4 by 0.6 inches	5.6 ounces	\$399
40GB iPod	2-inch gray-scale LCD	4.1 by 2.4 by 0.7 inches	6.2 ounces	\$499



IN MY GARAGE

BY JONATHAN SEFF

iTunes has made listening to, burning, and buying music a part of the digital lifestyle of Mac users. But something has been missing from Apple's musical equation—music creation. We have the \$199 Soundtrack and the \$699 Logic Platinum, but the former relies on sound loops to create background music, while the latter is a professional-level—and compli-

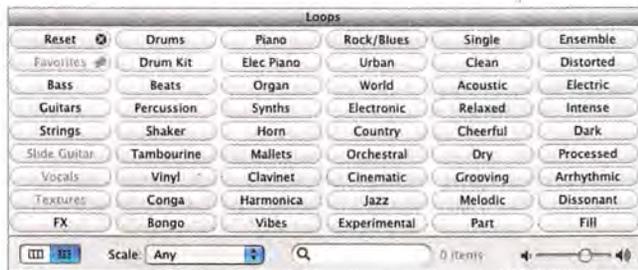
cated—audio and MIDI (Musical Instrument Digital Interface) music-creation application.

Somewhere between the extremes of Soundtrack and Logic lies GarageBand; the latest addition to Apple's family of iLife apps, it's included in the iLife '04 suite. With GarageBand, you can layer prerecorded loops, play software instruments via a MIDI keyboard, and record live instruments—all in one project.

LOOPS

Anyone who has seen Soundtrack (which comes as part of Final Cut Pro 4 or can be purchased separately) will be familiar with the concept of loops—short, prerecorded sounds designed to repeat for as long as needed.

Apple includes more than 1,000 loops in the Apple Loop format, the same format used in Soundtrack. In fact, many of GarageBand's loops come from Soundtrack—which ships with more than 4,000 loops on two DVD discs—while other loops have been created specifically for GarageBand. All are royalty-free, so you can use them to create music that belongs to you.



Loops are easily accessible via the Loop browser, and they're organized by instrument (mandolin, organ, acoustic guitar, and trombone, for example), mood (distorted, cheerful, grooving, and processed), and genre (orchestral, rock/blues, and cinematic). Clicking on a button brings up a list of loops, presenting you with the loop's name, tempo, key, and number of beats per loop. You can also type in the name of your desired loop via a search box similar to the one in iTunes, Safari, Mail, and other Apple apps.

Once you find the loop you want, you can drag and drop it into GarageBand's main window to create a new track. Want to lengthen or shorten the loop? Click and drag the loop in the timeline until it reaches the desired length. As you add other loops, GarageBand will adjust the tempo, key, and beats so everything matches. (Loops with green icons are MIDI generated, while those with blue icons are recordings of actual performances.)

If the included loops aren't enough, several third-party sound companies have started selling Apple Loop libraries that you can add to GarageBand (not to mention Apple's own \$99 GarageBand Jam Pack, which has 2,000 more loops). Acid Loops—a popular format in the PC world—won't work directly with GarageBand. However, you can use the Soundtrack Loop Utility—part of the Apple Loops SDK—to convert them (visit <http://developer.apple.com>).

SOFTWARE INSTRUMENTS

If the thought of making music appeals to you, you'll probably want to do more than just fiddle with someone else's loops. GarageBand obliges you by giving you access to virtual instruments—or Software Instruments, as Apple dubs them—for your own personal jam session.

With Software Instruments, you can "play" more than 50 different instruments that exist only as software code within the application. GarageBand includes an on-screen keyboard you can use to enter notes and chords, but to get the most out of GarageBand's Software Instruments, you'll need to add a MIDI or USB keyboard. Connected to your Mac, these keyboards let you play and record more-complex arrangements of piano, horn, drum, string, and choir sounds (to name just a few).

Instruments such as these can sell for hundreds of dollars apiece. Apple says that Software Instruments produce the same high-quality sounds as other virtual instrument products do—for example, a guitar sounds like a real guitar—but

have fewer parameters that users can control.

That doesn't mean you need to take sounds as they come. GarageBand has more than 200 effects presets for adjusting compression, equalization, echo, reverb, and more. By combining different effects, you can create custom sounds and save them.



LIVE RECORDING

After layering loops and generating sounds with Software Instruments, the third leg of GarageBand is live instrument recording.

Whether you play an instrument, such as an electric guitar or a bass, or sing vocals, you can record your live audio as tracks into GarageBand. The application has preset effects for effect combinations—for example, Bright Bass, Female Basic, and Crunchy Drums settings. When it comes to playing a guitar,

GarageBand includes several vintage amplifier sounds—with one of these chosen, playing a guitar through GarageBand will sound as if you were playing through a classic guitar amp.

Just as with loops and Software Instruments, you can record different live tracks in GarageBand, one at a time (rhythm and lead guitar parts, for instance). Your Mac's speed and your hard drive determine how many tracks you can play back at once.





GETTING CONNECTED

To connect an electric guitar (or a professional mike, for that matter), you'll need additional hardware. Apple sells the \$19 Monster Instrument Adaptor, which converts a guitar's 1/4-inch plug to a standard 1/8-inch minijack plug that you connect to your Mac's analog audio-in port (although you can pick up a similar adapter at your local electronics store for less than \$5). Apple says this is all you need to get guitar sound into a Mac, but for optimal sound levels and quality, you may want to consider a preamplifier such as M-Audio's \$180 MobilePre USB (shown here).



MIX DOWN

After you have all the tracks you want, you can tweak both volume and panning (left to right) settings by track, add and change effects, and more. In all, you can layer 64 instrument tracks, and even more for digital audio.

When you're happy with your results, select File: Export to iTunes. GarageBand will mix all your tracks down to a 2-track (stereo), 16-bit, 44.1kHz AIFF file—a full CD-quality song. Then GarageBand will send that file to iTunes, and you can compress it to MP3 or AAC format to put on your iPod or Web site, or keep it in full quality to burn to a CD.

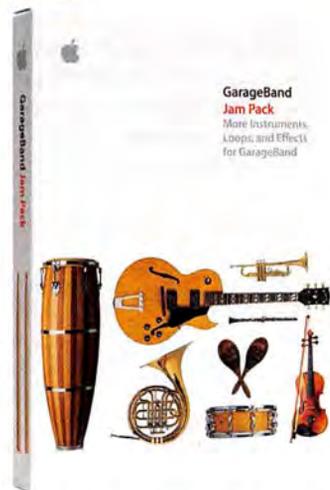
Band Together GarageBand adds music creation to the iLife suite's bag of tricks. The program lets you blend prerecorded loops, virtual instruments, and recordings of vocals and instruments, to produce songs that you can burn to a CD or compress to MP3 or AAC format.

I'M WITH THE BAND

GarageBand joins Apple's iLife suite—now dubbed iLife '04 and featuring updates of iDVD, iMovie, and iPhoto, as well as the latest version of iTunes. The suite ships on all new Macs and is also available as a \$49 boxed set. Unlike the other iLife programs, iTunes remains a free download (Mac and Windows versions).

All of GarageBand's loops and instruments should keep you busy for a while, but for when you want even more choices, several add-on options have emerged.

Apple has the \$99 GarageBand Jam Pack. This add-on contains more than 2,000 additional Apple Loops, another hundred or so Software Instruments, 100-plus more effects presets, and 15 more guitar-amp settings. Although you can use any MIDI keyboard with GarageBand, Apple sells M-Audio's \$99 Keystation 49e and Edirol's \$199 PCR-30, two USB keyboards, as accessories at the online Apple Store. And since the built-in sound output on your Mac probably won't be good enough for you when playing and recording music, consider purchasing a good pair of headphones or computer speakers.



iMOVIE'S LATEST EDITS

BY JASON SNELL

Director's Cut

iMovie 4's editing enhancements include the ability to trim clips in the timeline.

As far as sequels go, iMovie 3 was a disappointing follow-up to its predecessors. Last year's update to Apple's consumer video-editing program offered tons of interface and behind-the-scenes changes. But after discovering that iMovie 3 ran much slower, many people stuck with iMovie 2. Now with iMovie 4,



Apple has not only added more features but also addressed iMovie 3's biggest problem—speed. The updated app is part of the \$49 iLife '04 suite; it's no longer available as a free download.

Faster, Faster!

iMovie 4's interface is much more responsive than version 3's. Video starts playing almost immediately after you click on the play button—iMovie 3 just couldn't do this. But Apple's engineers have also pepped up the rendering of titles, effects, and transitions, so you won't have to wait as long to see if a cross-dissolve effect is really in the right place.

iMovie 4 also includes several new features designed to speed up your workflow. You can now select multiple, noncontiguous clips in the timeline. Say you decide that all the transitions in your project need to be one-second-long cross-dissolves. You can now select them all and change the cross-dissolve length in iMovie's Transitions panel; the program will re-render every transition with the new settings.

The new Bookmarks menu allows you to mark key spots in your project and then move between them with a keystroke. In a similar time-saving fashion, the View menu now lets you quickly move the Timeline or Clip Viewer to the current location of the playhead, saving you the trouble of scrolling through the viewer to figure out just what you're looking at.

iDVD 4: MATURE THEMES

iDVD's assortment of prebuilt themes—which provide attractive menu designs for DVD projects—is arguably the program's biggest asset. So while iDVD 4 introduces several new features, its most important addition is its 20 new themes. The program now features more than 40 high-quality templates for your DVD projects.

Beyond themes, though, are several other refinements that can make iDVD-built discs more closely resemble Hollywood productions. You can now create a movie that plays when someone inserts your disc, making it just like commercial DVDs that feature the FBI and Interpol warnings.

iDVD can also build video transitions *between* your menus, so you can move from one menu to another with the flip of a page or the twist of a cube, for example.

(Those dynamic, Keynote-style transitions are also available in iDVD's Slideshow feature, adding some variety to the simple cross-dissolve feature of iDVD 3's slide shows.)



iDVD's new Map button lets you view the structure of your disc as a flowchart, which is quite useful for large, complicated projects. Anyone facing hardware limitations will especially appreciate iDVD 4's Save As Archive command, which, for the first time, lets the program run on Macs without SuperDrives. You can build your DVD project on any iLife-compatible Mac, choose Save As Archive, and transfer the resulting archive file to a SuperDrive-equipped Mac for burning. You can also now fit more on one disc. Using the same MPEG-2 compression engine used in Apple's DVD Studio Pro, iDVD 4 can fit two hours of video on a disc. (If you don't have a lot of video, you can opt for higher-quality compression that can fit as much as one hour on a disc.)

Editing Made Easier

You can edit clips just as you've always done in iMovie. But the new Direct Trimming feature lets you shorten clips directly in the timeline.

When you first enter iMovie's Timeline view, you'll see a subtle change—untrimmed clips have slightly rounded edges, while trimmed clips are perfectly rectangular. When you click on the edge of a clip and drag it, you automatically trim the clip. iMovie's main window shows you just what video you're removing. You can also drag out blank space in the timeline to use for inserting other material, such as a Color Clip—a new feature in iMovie that lets you insert a blank clip of any solid color, for use with transitions or titling.

Productive Changes

iMovie 4 features numerous other improvements that can bolster editing productivity. Press the option key while you're clicking in the timeline, and you can drag the playhead back and forth while listening to your project's audio—a great way to make sure your soundtrack and video are synced properly.

This version also provides direct support for Apple's iSight video camera, so you can capture video from the iSight directly within iMovie. The new Share command provides expanded exporting options, including the ability to automatically compress and e-mail movies, publish them to the Web via .Mac's HomePage feature, or even send them to a Bluetooth-enabled portable device.

FLASH PHOTOGRAPHY

BY KELLY LUNSFORD

Two years and several thousand photographs after iPhoto's debut, Apple's image viewer is experiencing growing pains. These days, you may spend as much time waiting for iPhoto to catch up to commands as you do showing off photos.

So the fact that Apple has addressed these speed issues in iPhoto 4 should come as a relief to avid iPhoto users. (As with iMovie 4, this version of iPhoto comes only as part of the iLife '04 suite, not as a free download.) The update makes iPhoto more responsive when scrolling, dragging, and resizing, but it also offers a host of organizational tools that simplify the process of *finding* photos.

Find Photos Faster

Consider the dilemma of the iPhoto Library, a repository that displays every image ever imported into iPhoto. To find a recently taken photo in version 3, you had to scroll past every image that surrounded it—a tedious task, even with iPhoto's souped-up scrolling performance.

In iPhoto 4, however, Apple has made it much easier to find the photos you want. To quickly find a photo you took last year, you can click on a small disclosure triangle next to your Photo Library to see a new collection of photo albums organized by year. Each album contains only photos taken during those 12 months. Every time you import a new roll, iPhoto automatically adds the photos to the appropriate folder, keeping everything up-to-date.

If you want to see your most-recent photos, you can still click on the Last Roll menu item to view them or use the new Last 12 Months option to view everything taken in the past year. If these settings are too broad or too narrow, you can adjust them in iPhoto's preference pane.

Adapted from iTunes

Of course, sometimes you want to find photos featuring specific events, people, or other characteristics. iPhoto offers help in the form of Smart Albums, a feature similar to the Smart Playlists in iTunes.

Smart Albums automatically organizes photos into groups according to criteria you specify. Say you wanted to create an album containing all your family photographs. You could set up a Smart Album that automatically included any photo with the keyword *family*. You could further narrow down the collection by setting criteria such as dates, comments, file names, rolls, titles, assigned albums, or iPhoto 4's new rating system—another feature taken from iTunes—which lets you identify your favorite photos by applying as many as five stars. Once you've created a Smart Album, iPhoto will automatically add any future photos that match its criteria to it.

A third iTunes feature that made its way into iPhoto is Rendezvous integration. Now you can use



Apple's zero-configuration networking technology to share your entire photo library or selected albums across a network. You can password-protect shared albums to control who sees what. There's one key difference from iTunes' Rendezvous implementation, however: downloading photos from a shared album is simply a matter of dragging the photo to your own library.

The Song Is Not the Same

Other improvements to iPhoto 4 include new slideshow transitions and tighter integration with iTunes. Older versions of iPhoto let you select a single song to play over slide shows—meaning that the same song would play over and over again as you cycled through photos. Now you can select entire iTunes playlists for greater musical variety.

With the speed improvements in iPhoto 4, though, just make sure you pick an up-tempo song. □

Pick a Date By showing photos taken during a specified year, iPhoto 4 helps you sort through your library faster.

FINAL CUT EXPRESS 2

iMovie 4 may add welcome features such as improved trimming and enhanced titles, but it remains an entry-level editing program. Video editors looking for more power—without Final Cut Pro 4's \$999 price—should be pleased with Final Cut Express 2, the latest update to Apple's midlevel video editor.

Based on the Final Cut Pro 4 code, the new version of Final Cut Express (\$299; upgrade, \$99) has many of the same features as its more robust sibling. The biggest addition is RT Extreme, the same real-time architecture that's in Final Cut Pro. It provides more effects, transitions, and simultaneous layers in real time, without the need to render.

Real-time benefits even carry over to audio volume and filter adjustments. Additionally, the new version has other audio improvements such as automated audio keyframe recording and support for Apple's Audio Units plug-in format.

Another welcome pro-level feature is Final Cut Express 2's ability to capture footage across time-code breaks, helping users save time by capturing footage in one automated session. There's also tighter integration with other apps, in the form of scoring-marker export for Soundtrack, chapter-marker export for iDVD and DVD Studio Pro, and compression-marker export for Compressor.—JONATHAN SEFF

OFFICE 2004: FIRST LOOK

BY KELLY LUNSFORD, PHILIP MICHAELS, AND JASON SNELL



Although Microsoft's Office 2004 won't be on store shelves until the middle of this year, we got a sneak peek at its new features. And these additions—from a command center for related correspondence, calendars, and files, to an audio recorder that gives your typing fingers a rest—made quite an impression. Come take a look at the next version of one of the most important program suites for the Mac.

PROJECT CENTER

The biggest addition in Office 2004—an organizational tool called Project Center—resides in Entourage. But there's more to Project Center than e-mail. It reaches across Word, Excel, and PowerPoint, providing a single place from which to jump to documents, spreadsheets, presentations, and e-mail messages scattered across your hard drive. Project Center is at the heart of Microsoft's efforts to make organizing and managing information with Office easier.

Project Center extends existing features, combining Entourage's PIM capabilities—contact information, calendars, and to-do lists—with direct access to important files. And it links related items: you can see e-mails about a specific project alongside a calendar listing meetings, appointments, tasks, and due dates for that project. You can set up automatic rules that link projects to new e-mail messages as they hit your in-box. And you can share projects with other Entourage 2004 users.

Getting Started.....

The New Project Wizard's four screens walk you through setting up a project. In the first screen, you name the project, set due dates, and enter notes to yourself. You also assign a color and an icon to your project, making it easier to identify visually. In the second screen, you create Project Watch Folders and import items into the project folder. The third screen helps you set rules for automatically adding related e-mail messages to a project folder as they arrive in your in-box. The final screen is a summary pane with help information.

Just a Click Away.....

Even when you're working in Word, Excel, or PowerPoint, Project Center is within reach. A Project Toolbox appears in the other Office applications (you access it via the View menu or by clicking on an icon in the toolbar). It features nearly all the information you get from Project Center's Overview tab—a daily schedule, a task list, a notes window, and a list of new and recent e-mail. A button at the bottom of the toolbar lets you jump directly to Project Center.

Office 2004
Due Date: Monday, December 29, 2003

Project Watch Folders

Automatically create Project Watch Folders
 Manually set Project Watch Folders:

Finder: ~/Documents/Office Projects/Office 2004 [Change...](#)
Entourage: Office 2004 [Change...](#)

Import items

From Category: **Work**
From Project: **None**
(Import items other than files)

Description

Change the name or location of your Project Watch Folders in the Finder or in Entourage. You can also import items from a category or project.

Click the right arrow to continue... 2

Alpine Restaurant
Due Date: Tuesday, January 13, 2004
Due in 15 days

Schedule

Wed, Jan 7, 2004
12:00 PM Sample dinn...
3:00 PM Meet with win...
 Review web copy

Notes to self

Let it snow!

Tasks

- Schedule team lunch
- Review web copy
- Month end time sheets due
- Compile sales data
- Schedule photo review for brochure
- Edit copy for ads**

New & Recent Mail

- Remodel
- Printer suggestion
- Spicy Items
- Please send [More...](#)

Go to Project Center

The Big Picture

Project Center's Overview tab gives you the status of many aspects of a project. A seven-day calendar displays related appointments and meetings for any week. Two columns at the bottom of the screen offer quick, customizable access to everything from e-mail to past-due tasks.

Project Center Home The Project Center button is where the Custom Views button used to be. But Custom Views isn't gone altogether; it's part of the preview pane on the left side of the Entourage window.

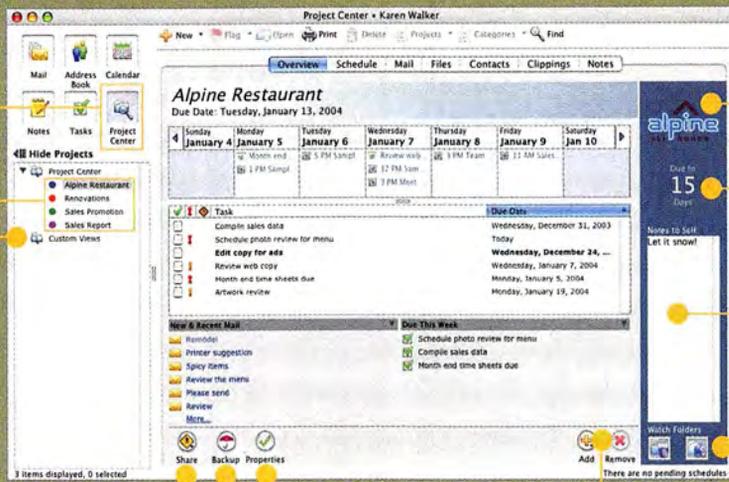
Picture ID Assigning a logo or an image to your project helps you identify the project quickly when it appears in places such as a Project Toolbox.

The Final Countdown Project Center keeps a running count of how many days remain until a project is due.

Make a Note of it Use this window to jot down reminders and memos.

Keep Watch Watch Folders, represented by icons in the lower right corner of Project Center, let you keep an eye on important e-mail and documents. The Entourage Watch Folder—its icon sports the Entourage logo—is a folder in Entourage's Mail view that's created with each project you start. Filing an e-mail message in your Entourage Watch Folder connects it to a specific project. The Project Watch Folder bears a Finder logo and links to a folder on your hard drive where you store all project-related files. (These files also appear in Project Center's Files view.) When you start a project, you can either automatically create a Watch Folder or select an existing one anywhere on your hard drive.

Color Coordinated Each project in Project Center gets its own color. Anything that belongs to that project sports a dot of that hue.



Custom Views You can control the kinds of information Project Center displays—for example, Recent Items, Due This Week, Past Due, Categories, New Mail, New & Recent Mail, Important Contacts, MSN Messenger Contacts, Recent Notes, and Recent Files.

Share Your Work Just click on the Share button to let other Entourage 2004 users look at e-mail messages, calendars, tasks, files, clippings, contacts, and notes via a network server. If you don't want to share a part of your project, just deselect that item. Only invited users can see your shared material.

Save Your Work The Backup button lets you back up and archive projects—a very useful feature once something is completed. You can archive finished projects to a separate database file and then remove them from Entourage.

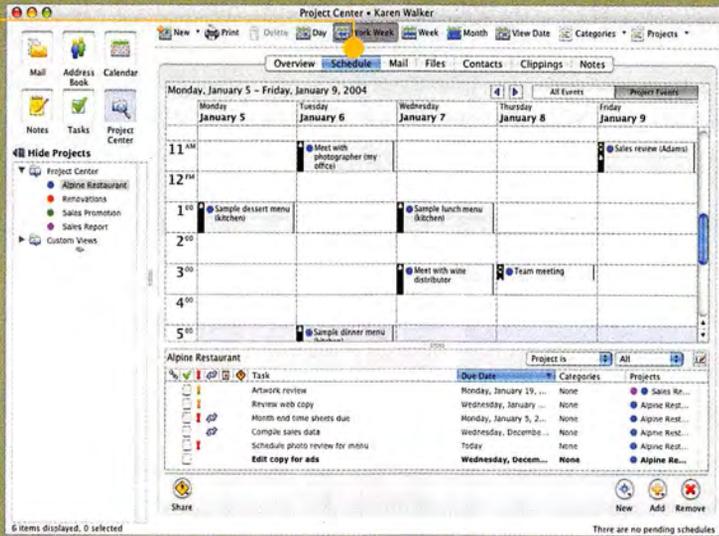
Easy Addition Click on the Add button to import files into a project—even non-Office files. Click on the Remove button to keep a file on your hard drive but take it out of a project.

Property Management Here's where you change a project's due date or icon.

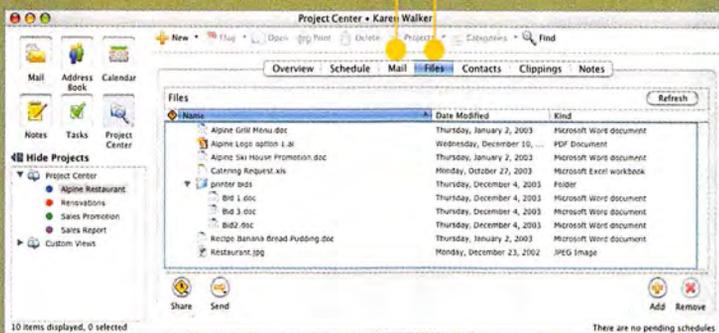
Other Views

In addition to Overview, Project Center sports six other tabs that let you see specific information about your projects. You can use these tabs to stay on top of those small details that can make a big difference in your work.

Schedule This tab gives you a more in-depth project calendar, with the option of daily, weekly, or monthly views. You can also display all calendar events or only those associated with a project. Schedule also has a task list, where you can cross out tasks as you complete them.

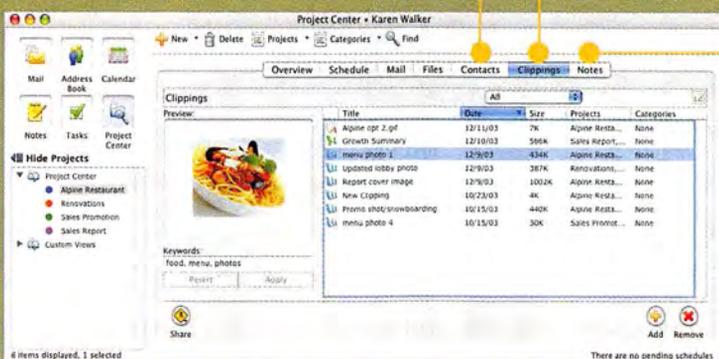


Files In this tab, you'll see lists of the assorted documents you've imported into a project, their modification dates, and their file types. The Files tab has its own Share, Add, and Remove buttons, along with a Send button that attaches a selected file to an e-mail message and sends it, so you don't have to create a new message and attach the document.



Mail Go to this tab to see all the e-mail correspondence associated with a project. As in your Entourage in-box, you can read e-mail messages, respond to them, and forward them.

Clippings The Clippings tab is where items from the Scrapbook—a new feature of Office—are contained. This tab gives you quick access to all the text and graphics clippings that you've saved.



Contacts This tab resembles Entourage's Address Book but lists only project-specific contacts. Integration with MSN Messenger lets you chat with contacts via Microsoft's instant-messaging client.

Notes This tab gives you access to project-related sticky notes created with Entourage's Notes feature.

NOTEBOOK LAYOUT VIEW

Most of us dread meetings—especially meetings in which we have to take notes. It's not that we're lazy. It's just that we almost always neglect to write down something important, and we need a cryptologist to decipher our own scrawls.

Word 2004 aims to alleviate "meeting-phobia" with its new Notebook Layout view. Essentially a beefed-up Outline view, Notebook Layout view turns your laptop into a note-taking machine by letting you embed an audio stream of a meeting or lecture in an open Word document. As you type, Word links your notes to what is being recorded at that time. Later, when you forget whether you're supposed to call Bill or bill Carl, you can click on the audio icon next to the Bill entry and jump directly to that part of the meeting.

Audio Notes

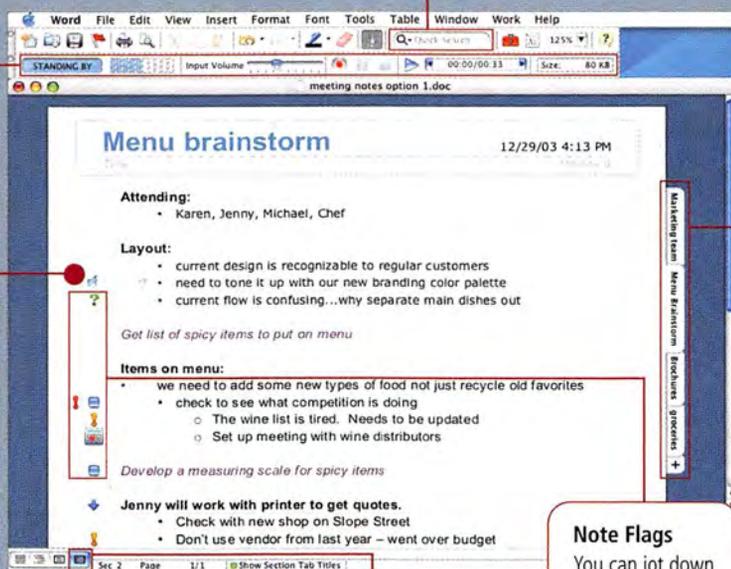
Toolbar The Audio Notes toolbar, accessible only in Word's Notebook Layout view, contains controls for embedding audio in your document. You can start, stop, and pause the recording, adjust the input volume, and play back audio.

From this toolbar, you can also monitor a file's size. According to Microsoft, a 60-minute recording in MPEG-4 format adds roughly 6MB to a Word document. (You can also save audio in AIFF or WAV.) You can export recorded audio as a separate file or delete it completely to get a slimmed-down version of the document.

Recording Markers

To jump to a specific place in recorded audio, click on the speaker icon next to the relevant note. Word plays back the audio from the point at which you entered the note.

Quick Search Type a word in the Quick Search box and press enter, and Word highlights all instances of that term in the outline.



Just One Click

Access the Notebook Layout view by clicking on the Notebook Layout view button at the bottom of the window or by selecting Notebook Layout from the View menu.

Note Flags

You can jot down reminders in page margins. While you type, use the Formatting palette's Note Flags to link text to tasks: mark important points, add follow-up questions, create a to-do, link tasks to your Entourage calendar, and so on.

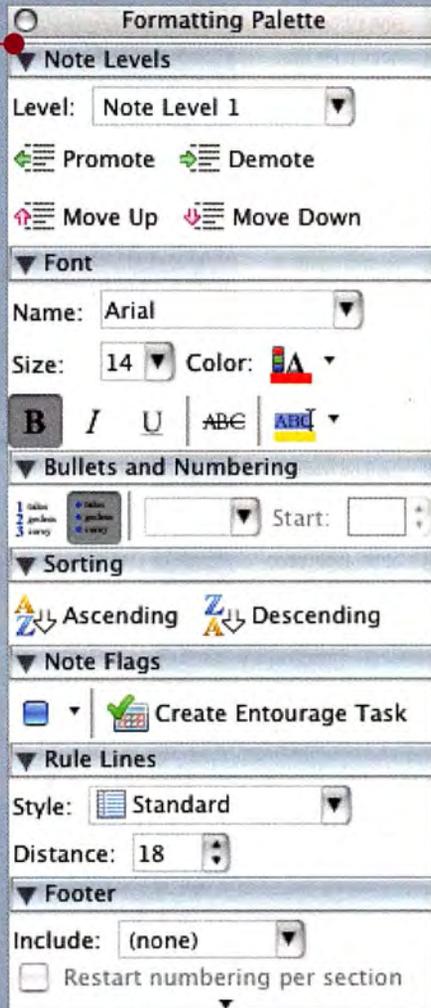
Section Tabs

The Section Tabs feature lets you divide notes into related topics. For instance, a student could keep a semester's worth of history lectures in one document and create a new tab at the beginning of each class. Then, when studying for a test, she could quickly jump to the relevant lecture. To create a new section tab, click on the plus sign (+).

Tabs appear only in the Notebook Layout view. When you switch back to the Normal view, tabbed sections appear sequentially, divided by section breaks.

Expanded Formatting

In the Notebook Layout view, you'll notice a few new headings under the traditional Formatting palette: Note Flags for marking follow-up text, settings for the document's notebook rules, and sorting options for outline items. You'll also find many of the organizational commands from the old Outlining toolbar.

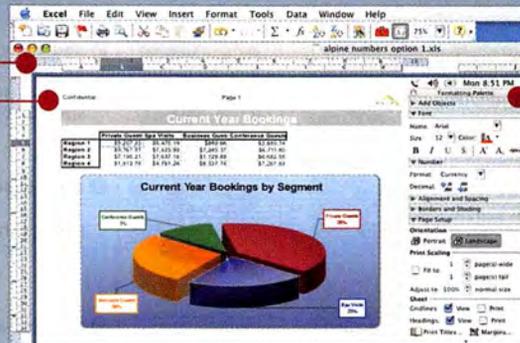


Note Levels To make the Notebook Layout view truly useful, you need to get used to the way outlines organize text hierarchically. The Formatting palette's Note Levels section offers easy access to important outlining functions: promoting and demoting outline topics, creating numbered or bulleted lists, and more. (You can also use the traditional keyboard commands for these tasks.) As you reorganize items, any associated audio moves with them.

Page Layout View in Excel

Excel's new Page Layout view, which debuts on the Mac, lets you view your Excel files in the same detail you're used to seeing in Word's Page Layout view.

Marginal Improvements You can quickly edit your document's margins and see how changes will alter your printout.



From Header to Footer You can preview and edit your document's headers and footers in the page layout.

A Better View In the Page Layout view, the Formatting palette includes settings previously available only in the Page Setup dialog box. Now you can quickly switch between portrait and landscape modes, scale your document to fit on a fixed number of pages or to print at a particular percentage, and turn grid lines and headings on and off.

KNOW YOUR RIGHTS

In the Windows version of Office 2003, Microsoft introduced Information Rights Management (IRM). The company touted IRM as a way to restrict printing, forwarding, and copying of e-mail messages and Office documents. Mac users couldn't create or access IRM-protected files, and that's still the case. And some people who run Office on Windows are out of the loop, too. To create the secure files, Windows users must have either the Professional or the Professional Enterprise version of the 2003 suite. To view IRM-protected files, Windows users must have Office 2003 or a Microsoft-supplied viewer.

Scrapbook

In OS 9, the Scrapbook utility functioned as a permanent clipboard—you could add almost any item to the Scrapbook and then, later, retrieve it for use elsewhere.

Office 2004 goes old-school with its new Scrapbook feature, available via the new Toolbox palette. You can store text and graphic tidbits in the Scrapbook by dragging them in from any Office application. Once you've put an item in the Scrapbook, it's always there when you need it—for example, if you've placed a photo in PowerPoint but now need to reuse it in Word.

In and Out

Move items into and out of the Scrapbook in a flash with these buttons, which let you add a selected item to the Scrapbook, paste a Scrapbook item into your document, and delete items from the Scrapbook.



Sort and Search

Office 2004's Scrapbook does the old Apple Scrapbook one better by allowing sorting and searching. You can assign keywords to items and assign items to categories and projects. Using the two pop-up menus, you can view a Scrapbook item by creation date, keyword, title, size, creation application, and project.

Stay Organized

The Organize section turns the Scrapbook into a miniature media database. Attaching keywords, categories, and projects to your Scrapbook items makes them easier to find later.

PRICE PROTECTION

Office 2004 will cost the same as the previous version of the suite, across all three editions introduced by Microsoft last fall (see "Three for All," *Mac Beat*, October 2003).

The Standard Edition of Office 2004—which includes all four Office applications—sells for \$399. The \$499 Professional Edition includes the same programs, as well as the latest version of Virtual PC with Windows XP Professional. The cost of the Student and Teacher Edition remains \$149, with users still able to install the suite on as many as three Macs.

If you buy Office v. X before June 30, 2004, Office 2004 will cost you little or nothing. Upgrading to the same edition is free; upgrading from the v. X Standard Edition to the 2004 Professional Edition costs \$90. If you have the academic edition of v. X, upgrading to the 2004 Standard Edition is \$90 and upgrading to the Professional Edition is \$129. Upgrade pricing for registered users of Office 98 remains unchanged: \$329 for the Professional Edition and \$239 for the Standard Edition.

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

Ahead of the Curve

MOST PHOTOS IN PROFESSIONAL BROCHURES AND MAGAZINES have been enhanced or corrected until they're as flawless and polished as Hollywood celebrities. And Adobe Photoshop (\$649; www.adobe.com) is usually the surgical instrument of choice. Photoshop has many ways to adjust images, but the Curves command is the most powerful and versatile when you need to darken or lighten a photo and highlight or obscure detail. With that power comes daunting complexity, so many people turn to cookie-cutter tips like "click in the middle and push up the curve" and "make an S curve." But generic techniques don't work on images with unique challenges. I'll show you how I've

used curves on real-world images, and explain how you can apply those methods to your images. Once you understand the Curves command, you'll be able to finesse even the most problematic photo. □

BEN WILLMORE is the author of *Adobe Photoshop CS Studio Techniques* (Adobe Press, 2004). You can find information about his seminars, books, and videos, along with hundreds of free Photoshop tips, at www.digitalmastery.com.

1 Get Your Bearings

Before you tackle tricky images, choose the adjustment mode that's best for you.

Photoshop represents an image's brightness levels in two ways: as light or as ink. These are called *adjustment modes*. Most photographers are more comfortable working with light, and most print-based designers are more comfortable working with ink. You can choose either mode regardless of whether you reproduce the final image on screen or in print.

Open a gray-scale photograph and choose Image: Adjustments: Curves (or type ⌘-M) to access the Curves dialog box.

The horizontal bar at the bottom of the dialog box contains all the shades of gray you can have in a normal, 8-bit gray-scale image. Because you opened an image in gray-scale mode, the white is on the left side of the horizontal bar. This indicates that you're in ink mode—Photoshop will adjust your image as if you were changing the amount of black ink needed to print the image on white paper. Click on the double-arrow icon in the middle of that

bar to switch the white to the right (A). Now you're in light mode. I'm going to use the light mode throughout this article, but you're welcome to use the ink mode—just move the curve in the opposite direction from what I say.

Above the horizontal bar is a grid

with a diagonal line known as a *curve*, even though it begins as a straight line (B).

Compare the curve to the shades of gray in the horizontal bar. The curve begins at the bottom of the graph area, above black, because a monitor doesn't need any light to display black. The curve rises above the lighter shades of gray because a monitor uses more light to display lighter shades.

2 Adjust Brightness Levels

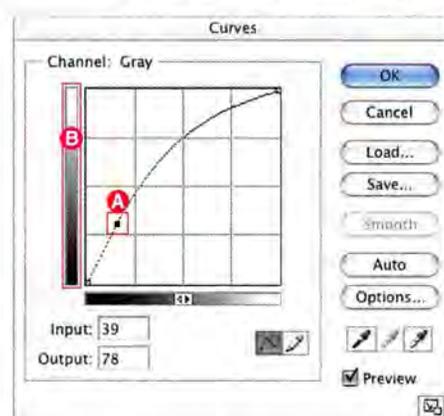
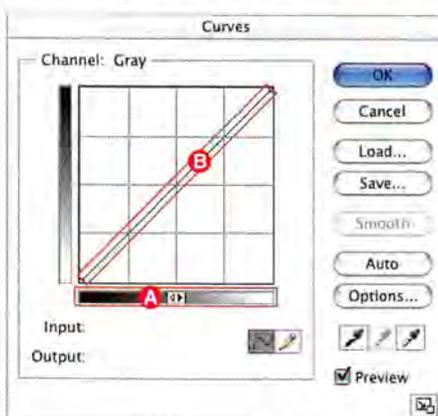
You can alter the curve to increase or decrease the amount of light used to display an image.

To adjust your image, click anywhere on the curve to add a dot, called a *control point* (A), and drag it up or down. When you move the curve up, you brighten the image by adding more light. Moving the curve down will darken the image by reducing the amount of light.

As you move the control point, keep an eye on the vertical bar on the left of the Curves dialog box (B). It shows

the shades of gray you'll get if you move the curve to a particular height.

You can use as many as 16 points when adjusting the curve. To remove a control point, ⌘-click on it or drag it off the grid area.



3 Target Your Efforts

To adjust your images with precision, let Photoshop add the control point for you.

To focus adjustments on a particular area of an image, you can find the brightness range of that area in the horizontal bar, and then adjust the part of the curve that appears directly above that part of the bar.

To target an exact location in an image, click on it. A circle will appear on the part of the curve that affects the brightness level of the location you're clicking on. Next, ⌘-click on the same location in your image to change the circle to a control point. Use the up- and down-arrow keys to move the point up or down.

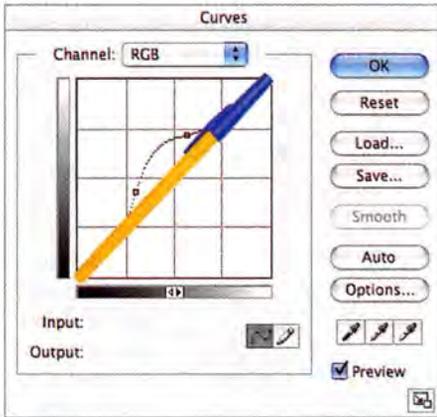
Note that you can't add control points this way when you're in CMYK mode.

For other ways to be precise in the Curves dialog box, see "Match Brightness."

4 Keep an Eye on the Big Picture

To estimate how a curve might affect an image, compare the curve you've created to the original diagonal line.

Any part of a curve that doesn't line up with the original diagonal line represents a change to your image. Hold a pen up to your screen to represent the original line, and look at where the curve deviates from it. Any part of the curve that is above the pen indicates an increase in brightness; any area below the pen indicates a decrease in brightness.



5 Fix an Overexposed Photo

You can combine and refine the basics to adjust an overexposed image.

In this image (see "Before"), the hands should be the central focus; the clothing is an accent that shouldn't distract from them. To accomplish that, I darkened the washed-out hands and made the clothing recede without losing all of its detail.

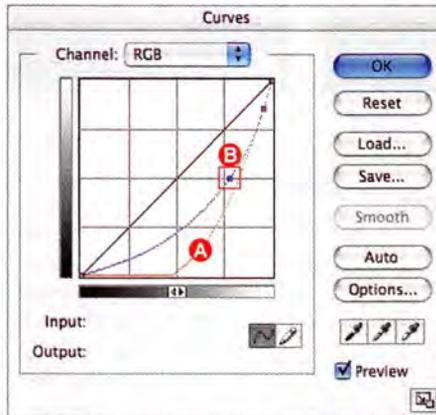
I ⌘-clicked on the brightest area of the hands to add a control point to the curve. To darken that area, I used the down-arrow key to move the curve (press the shift key and an arrow key to move in larger increments) until the hands looked right. The red line is the result.



But large areas of the clothing became solid black (see "Middle") because a big part of the curve bottomed out. I added a second control point by clicking within that part of the curve and moved it up to brighten the darkest areas.

You can see that the final curve, shown in blue, doesn't have any abrupt changes of direction. To get smooth transitions in your image, your curve should be smooth.

The final image is more balanced (see "After").



continues

6

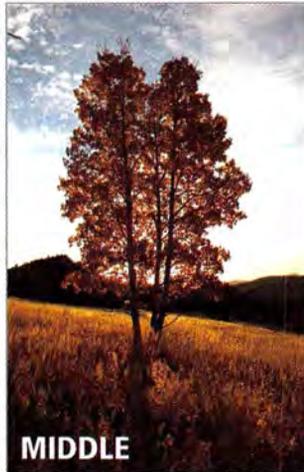
Fix an Underexposed Photo
 You can also use the Curves command to improve images that are too dark.

This photo of a tree has potential, but much of it is lost in darkness. To restore the image, I ⌘-clicked in the dark area

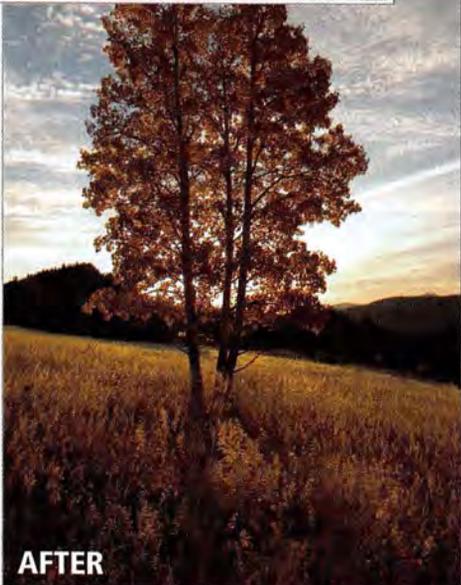
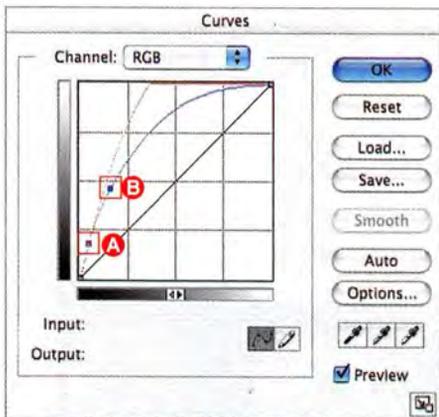


BEN WILLMORE

BEFORE



MIDDLE



AFTER

below the tree (see "Before"). That produced a control point near the left part of the curve. To brighten the image, I pressed shift+up arrow a few times until the area brightened; then

I let go of the shift key and used the arrow keys again to fine-tune the adjustment.

The field and tree looked good, but the sky was too bright (see "Middle"). To compensate, I ⌘-clicked within the sky to add a second control point and moved the curve down until the sky darkened.

It took only a few seconds to dramatically improve the image (see "After").

7

Exaggerate Detail by Increasing Contrast
 You can reveal detail hidden in an image by increasing a curve's angle, which adds contrast.

With a simple curve adjustment, you can transform flat-looking images into images that pop. Making a curve steeper exaggerates the differences between the brightest and darkest shades in an area of an image, thereby enhancing detail in that area.

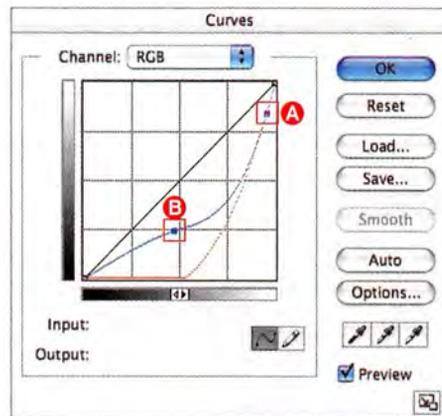
In this image, you can't see much detail in the stucco building (see "Before"). I clicked and dragged across the main stucco area to see which part of the curve I should move. To make that part of the curve steeper, I added a control point and moved it down.



BEFORE

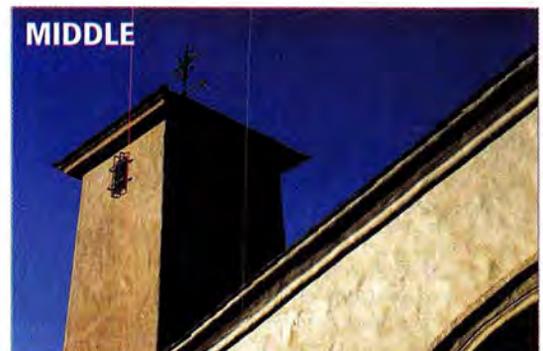
ANDY KATZ

So I ⌘-clicked on the black face of the tower to add a control point in the appropriate part of the curve, and I used the up-arrow key to move that point up.



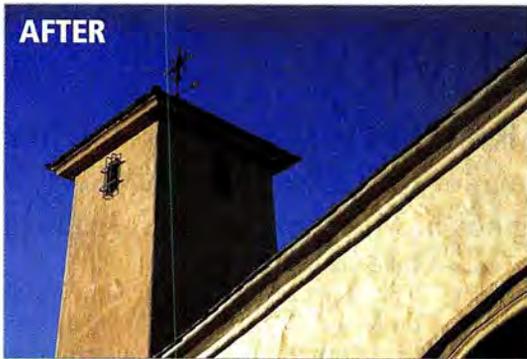
Because my curve ended up below the original diagonal line, Photoshop created the image with less light than before, and the entire image became darker (see "After").

For more about preserving your



MIDDLE

image when lowering curves below the original diagonal line, see "Stop Color Shifts."



8

Hide Detail by Lowering Contrast

To mask detail in part of an image, reduce the contrast in that area by flattening the curve.

When you flatten a curve, the different shades in your image become more similar, and detail can disappear. That isn't always a bad thing. In this image (see "Before"), I wanted the leaf to pop off the page. For that to happen, I had to lower the contrast of the grapes in the background.

I started by clicking and dragging across the grapes to see which area of the curve would affect them. I added control



MATCH BRIGHTNESS

You can use the numbers at the bottom of the Curves dialog box to make exact adjustments. Let's say a photo contains two objects that you want to match in brightness. With the Curves dialog box open, click on one of the objects, and the numbers at the bottom of the dialog box will calculate how much light is used in that area. ⌘-click on that area to add a control point for the object. ⌘-click on the second object to add a control point and see the light numbers for it. To match the two objects' brightness, just enter the brightness number from the first object into the Output field for the second object.

"Middle"). It also darkened the rest of the image too much. To remedy the situation, I clicked and dragged across the leaf,

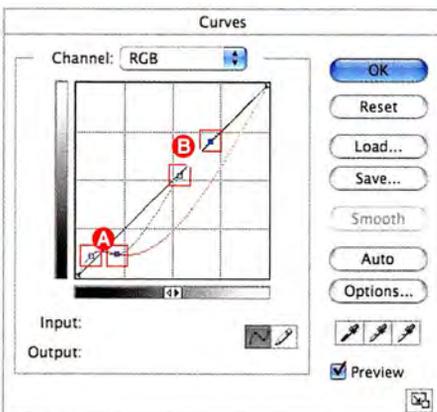


the curve started to bring those areas back to normal. In the final image, the leaf is impossible to ignore (see "After").

STOP COLOR SHIFTS

When you move a curve down to darken your image, the colors often become much more vivid. If the curve changes are significant, the colors may also shift in unexpected and unwelcome ways. You can prevent general color shifts (as well as saturation changes) immediately after changing a curve: choose Edit: Fade Curves, and set the Mode pop-up menu to Luminosity.

The Fade Curves command works only on changes you apply directly to an image, so it won't be available if you use an adjustment layer. In that case, change the blending-mode menu at the top of the Layers palette from Normal to Luminosity. If you'd rather use Luminosity from the beginning, hold down the option key when choosing Curves from the adjustment-layer pop-up menu at the bottom of the Layers palette. That will cause Photoshop to ask you for a layer name and blending mode before the Curves dialog box opens.



points at each end of the range that the circle traveled across. Then I flattened the curve across that area by moving one control point up and the other one down until they were at the same height A. That made it nearly impossible to see the grapes (see

Word Productivity

I LOVE GETTING MAXIMUM EFFICIENCY FROM MY MAC, so I love features that let me do a lot with a minimum of effort—features like the Find And Replace dialog box in Microsoft Word X. Many programs have a similar find-and-change tool, but Word's offers hidden features that can supercharge your productivity if you learn a few special codes. These codes let you search and replace text in ways you may never have thought possible.

Word's codes are based on *regular expressions*, which let you use wild cards to describe patterns in text, such as "any uppercase letter followed by any numeral."

Take the First Steps

The best place to start is with Word's *über*-wild card—the asterisk (*), which finds any amount of text. For instance, if you type *c*r* in the Find What field, Word finds *car*, *carburator*, and *can't make par*.

Let's say you remember that there's an epic quote about boats in your 300-page document, but you're not sure exactly what it said. Instead of finding every instance of the word *boat* and hunting through the results, you can narrow your search by typing *"*boat*"* in the Find field. Word will find only strings of text that start with a quotation mark, include the word *boat* somewhere, and end with a quotation mark. If your document uses smart quotes (typographic quotation marks), specify them here by using these keystrokes: option-[(open square bracket) and option-shift-[.

To test your regular expression, switch to the Find tab of the Find And Replace dialog box, turn on the Highlight All Items Found In option, and then click on Find All. You should see at least one match in the document window behind the dialog box.

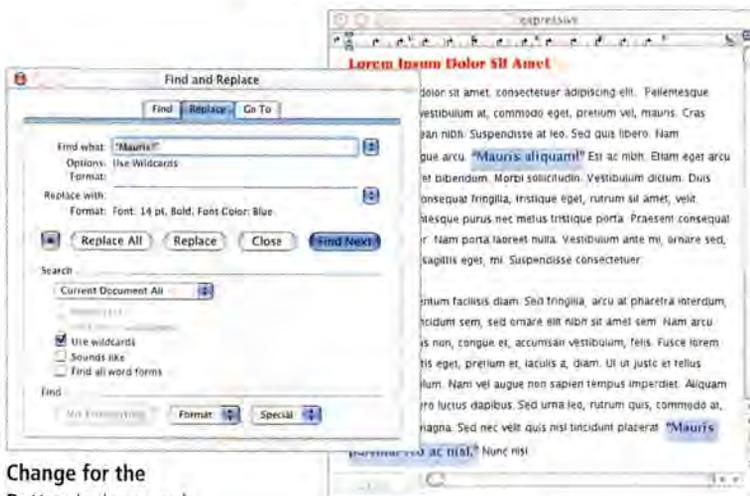
You can apply formatting to the text you find this way. For instance, perhaps you want to change the font. Switch to the Replace tab, make sure the Replace With field is empty, and choose formatting from the Format pop-up menu at the bottom of the dialog box.

Find a Word

Regular expressions may seem scary because they look like mysterious codes strung together. However, if you break regular expressions into pieces, they're really not that complicated.

You already know that you can use Word's regular Find command to find every word that includes the letter *q* (such as *aqua* or *quince*), but what if you want to search your file for every word that begins with *q* (*quince*, *Quark*, and so on)? The regular expression for "find every word that begins with the letter *q*" looks like this: `<[qQ][A-z]@>`.

Here's a translation: The open angle bracket (`<`) means "beginning of word," so Word knows that the next character we ask for must be the first letter in a word. Square brackets indicate a range of characters, so `[qQ]` means "find either a *q* (lowercase) or a *Q* (uppercase). Next, `[A-z]` means the second character of the word could be any uppercase or lowercase let-



Change for the Better In the example above, we used wild cards to search for every quotation that included the word *Mauris*. Then we used the Replace tab of the Find And Replace dialog box to reformat the typeface and the color of the quotations.

Regular expressions are lifesavers when you need to find a word that could be spelled two different ways, or to apply special formatting to anything that looks like a product code or a telephone number.

Word doesn't support as many regular expressions as Bare Bones Software's \$179 BBEdit and \$49 TextWrangler (781/687-0700, www.barebones.com), and computer languages such as Perl, do. But it has one important advantage: most of the text I work with is already in a Word document.

Here's how you can use a few of Word's wild-card codes to perform cool find-change actions. (For a helpful code guide, see "Find It Fast.") To make any of these work, choose Edit: Replace, click on the downward-pointing triangle in the Find And Replace dialog box, and select the Use Wildcards option.

More Info:

Hooked on regular expressions now? Learn how to use them in BBEdit. See "Transform HTML with Regular Expressions." www.macworld.com/2004/02/secrets/regex



FIND IT FAST

Here's a quick reference for Microsoft Word X's regular-expression codes. Note that some of these differ from the standard codes used in most other programs and languages (a fact that will really irk many geeks). Also, some codes supplied by Word's documentation don't work. With luck, later versions of Word will squash these bugs.

TO FIND	TYPE THIS WILD CARD	EXAMPLE
Any single character	?	d?g finds <i>dog, dig, and dug.</i>
Any string of characters	*	c*d finds <i>cod, cold, and can't have said.</i>
One of the specified characters or expressions	[]	vote[d s] finds <i>voted and votes.</i>
Any single character in this range (range must be in ascending order)	[-]	[A-Z] finds any single uppercase character, [0-9] finds any numeral.
Any single character except the characters inside the brackets	[!]	hi[!t] finds <i>him and his</i> but not <i>hit.</i>
Any single character except characters in the range inside the brackets	[! -]	[!4-6]/15/0? finds dates with 15 as the day, except those in April, May, or June, in any year between 2000 and 2009. (It will select only the last seven characters of dates with two-digit months.)
One or more occurrences of the previous character or expression	@	10@ finds <i>10, 100, 1000,</i> and so on (because of a bug, Word may select only the first two digits).
The beginning of a word	<	<w finds the first letter in any word that begins with a lowercase <i>w.</i>
The end of a word	>	nd> finds the <i>nd</i> in <i>mind and kind</i> but not in <i>window.</i>

ter in the alphabet. (If you typed [a-z], Word would find only lowercase letters; if you typed [0-9], it would find only numerals.) Because you don't know how long these words are, you have to use the @ symbol, which indicates that you want to "find one or more characters of the same type as the previous one." In this case, it means "find one or more uppercase or lowercase letters." Finally, the closing angle bracket tells the program that the last character is at the end of the word.

Once you've found the words that begin with *q*, you'll want to do something with them: for example, put them in quotation marks. In the Replace With field, type "^&". The ^& means "insert whatever text the program finds"—in this case, the words that begin with *q*.

If you need to specify both a first and a last letter for your word, try typing something like <[wW][!]@s> in the Find field. You'll locate all words that begin with the letter *w* and end with the letter *s*.

Again, this makes sense if you take it one step at a time. The angle brackets on each end mean that the expression encompasses a single word and that the first character can be either an uppercase or a lowercase *w*. The exclamation mark means "not," so [!] translates as "any character that is *not* a space" (there's a space after the exclamation mark). So [!]@ means "one or more characters in a row that are not spaces." The *s* at the end means that the last character of the word must be an *s*. This expression would find *waits*, *waters*, and even gibberish like *w3%bU;s*.

Rearrange Text

It's not hard to replace the single phrase *Speaker: Howard Phyques* with *Speaker: Phyques, Howard*, but it might get tiresome if you had several hundred names to reformat this way.

Instead, search for *Speaker: (<[A-z]@> (<[A-z]@>)*. The phrase (<[A-z]@>) means simply "any word consisting of one or more uppercase or lowercase letters." So your Find field tells Word to search for *Speaker:* followed by a space and two words.

Notice that in this example we've put each regular expression in parentheses. This lets you use a shorthand to refer to each portion separately in the Replace With field: the \1 stands in for the first name, \2 stands in for the last name. Or you can reverse the order and place a comma between the names by typing this into the Replace With field: *Speaker: \2, \1*.

Clean Up Quickly

Anyone who has received a long story as an e-mail message knows that cleaning up the weird line breaks, brackets, and more can be painful. For example, I keep many e-mails in which Web URLs are enclosed in

angle brackets. I remove the angle brackets and make the URLs italic because I think they look better that way in print. But I can't just search for everything between angle brackets—people also use <<- and <= as left-pointing arrows in their e-mail messages.

No problem. First, I search for \<([!-=]@)>. The backslash before each angle bracket tells Word that I'm actually searching for the angle bracket character—I'm not using the angle bracket as regular-expression code.

Next, I put the code (which represents a URL) inside parentheses so that Word sees it as a separate entity. That will allow me to do two things. First, I'll be able to more easily strip out the angle brackets that surround the URLs. Second, I'll be able to use the handy shorthand \1 to represent the code in the Replace With field. The code itself, [!-=]@, translates as "a string of one or more characters that are anything *except* a hyphen or an equal sign."

For the Love of Wild Text

The human brain is the best pattern-recognition device in the world, but when it comes to editing long documents, regular expressions have us beat. Build a few regular expressions, and you'll find yourself hooked—and much more productive in your work. □

Contributing Editor DAVID BLATNER is a coauthor of *Real World InDesign CS* and *Real World Photoshop CS* (Peachpit Press, 2004). You can find him at www.moo.com.

 *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.

Record Streaming Audio

THANKS TO THE INTERNET, YOUR RADIO CHOICES ARE NO longer limited to the local airwaves. Maybe you want to keep up with the news in your hometown—now 2,000 miles away. Or maybe you just can't

bear to miss a single minute of your favorite trash-talking, hackle-raising, morning radio host—despite the fact that you have to be in the office by 8 a.m. With a streaming-audio player such as Apple's iTunes or QuickTime Player, RealNetworks' RealOne, or Microsoft's Windows Media Player, radio programs can be delivered right to your desktop.

But like any radio broadcast, streaming audio is a fleeting affair: although players can connect you to live broadcasts from around the world, they don't store that audio on your hard drive. If you want to add your favorite Internet radio program to your iTunes library or listen to it on your iPod, you'll need additional software.

I tested five inexpensive utilities that record streaming audio, as well as any other sound your Mac can play. You can place some of the live sets from a concert DVD onto your iPod, for example, or you can record the soundtrack and explosions of a favorite video game if that's your idea of easy listening. Here's a look at these utilities, and at how to optimize your audio once you have the utility that's right for you.

By the way, the recordings you make are only for personal use. If you share recordings of Internet radio or DVD content, you could receive some legal correspondence.

For the Casual Recorder

If you only occasionally want to record audio, you probably don't want or need

complicated features. You certainly don't want to spend a lot of money on the endeavor. For you, there's Ambrosia Software's free WireTap (ⓂⓂⓂⓂ; *Mac Gems*, January 2004).

Recording with WireTap couldn't be simpler: you just start the audio source and click on the Record button. A second button lets you pause and resume the recording—great for cutting out commercials. When you're done, you can drag the resulting audio file into Apple's QuickTime Player or iTunes for playback.

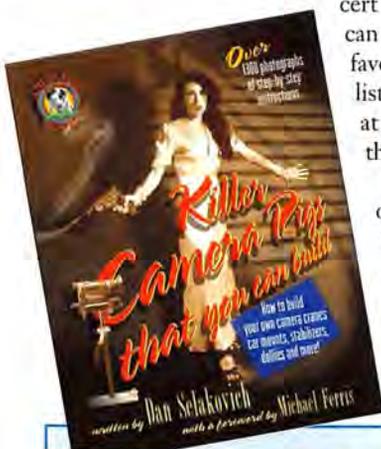
However, WireTap's simplicity does have a downside: it records *every* sound your Mac produces. If your e-mail program chimes during a talk-radio show, that chime will be in your final recording.

For Serious Sound

If you want to be more selective about your sound, you'll need a more sophisticated tool. Two of the best are Rogue Amoeba Software's Audio Hijack and Audio Hijack Pro (\$16 and \$30, respectively; www.rogueamoeba.com). These utilities restrict their recording to a specific program—letting you listen to iTunes while simultaneously recording a streaming program through your RealOne audio player. If you don't want to hear the audio as you're recording it, you can click on the Mute button without affecting the recorded sound. And thanks to the utilities' VCR-like timers, which let you start and stop recording at predefined times, you can make sure you never again miss your favorite talk-radio ranter (see "Recording with Hijack").

Both programs let you remove some of the mud-diness associated with Internet audio, as well as make additional bass and treble adjustments as you record. Audio Hijack Pro goes much further by providing a broad selection of audio-processing effects. The Reverb effect, for example, can make Howard Stern sound like he's in a cathedral—at least from an *acoustic* standpoint.

Another interesting option for Internet-radio fiends is Bitcartel Software's MusicSafari (\$20; www.bitcartel.com). Although it's not as flexible as the Audio Hijack family—it can't record from non-Internet sources such as DVD audio, for example—MusicSafari does allow you to record more than one streaming source at a time. (You'll need a fast connection for good results.) You can even use Apple's



MOVIE MAGIC

Sure, we'd like to shoot gorgeous panning shots like the Hollywood pros. But without expensive camera rigs, dollies, stabilizers, and other moviemaking niceties, we're often left pushing each other around in our office chairs.

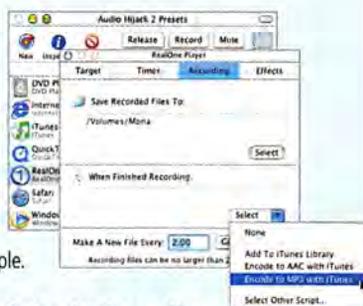
However, if you're handy with tools and can follow instructions, film teacher Dan Selakovich has another option: build your own rigs. In his book *Killer Camera Rigs That You Can Build*, Selakovich offers step-by-step instructions and tons of useful photos for building your own cranes, dollies, mounts, and more—all from materials you can find at your local hardware store. You can order the book from www.dvcamerarigs.com (\$35; on CD, \$27). The Web site also includes great examples of footage taken with different rigs, as well as book excerpts and additional resources.—KELLY LUNSFORD

RECORDING WITH HIJACK

Rogue Amoeba Software's Audio Hijack makes it easy to record streaming audio. Here's how to schedule a new Internet radio recording.

Step 1: Set Up Your Recording

Click on the New button to create a preset for the streaming player whose audio you want to record. You can click on the Timer tab to specify a start or stop time. You can set Audio Hijack to run an AppleScript after the recording is done—to have iTunes automatically encode the recording in AAC or MP3 format, for example.



Step 2: Begin Recording

Click on Audio Hijack's Record button. As soon as the audio begins to play, Audio Hijack will begin storing it on your hard drive according to your settings.

Step 3: Add the File to iTunes

Once you're finished recording, add the track to your iTunes library. (If you set Audio Hijack to run either of the encoding AppleScripts after recording, this will happen automatically.) Then locate the track in your iTunes library, choose Get Info from the File menu, and use the Info tab to enter the appropriate song information.

iCal to schedule upcoming MusicSafari recordings. However, in my tests of its debut release, MusicSafari proved to be a bit rough around the edges, with an unintuitive interface and flaky performance. Still, the program shows promise.

For the Radio Adventurer

Many Internet radio stations stream in MP3 format. You can tune in to thousands of such stations via the Radio button in iTunes, or via Web sites such as ShoutCast (www.shoutcast.com) and Live365.com.

Bitcartel's \$15 RadioLover specializes in recording these MP3 stations. Many stations send artist and song information along with their streams. Unlike other recorders, RadioLover uses this information to create separate song files, rather than one long file, as it records. It's a fabulous way to discover new music.

But it's also imperfect: it almost always cuts off the beginning or end of songs. (You can sometimes fix the problem by adjusting the program's recording preferences.) You should also keep in mind that all these songs will quickly eat up valuable hard-drive space—a typical 5-minute MP3 track will use around 4.5MB.

Optimize Your Recordings

Internet audio is often heavily compressed to allow streaming over slow modem connections. To avoid degrading the sound quality even more, you'll want to encode at a relatively high bit rate—96 Kbps for spoken-word programming, and 128 or 160 Kbps for music. If you're recording talk radio, set your software to record in mono rather than in stereo.

Whenever possible, save audio as AAC files rather than as MP3s. The AAC format tends to provide better sound quality than MP3—a 128 Kbps AAC file often sounds as good as a 160 Kbps MP3.

Some programs, such as Audio Hijack Pro and MusicSafari, let you determine these settings before you start recording. For the programs that don't, you'll need to use iTunes to encode the audio after you finish.

By encoding the audio as you record, you'll save time and use disk space more efficiently. On the downside, you won't be able to experiment with different encoding settings. To get the most flexibility and to fine-tune your radio broadcasts, first record audio in the uncompressed AIFF format. Then, using iTunes to encode the files, experiment with different bit rates and formats until you find the combination that sounds best to your ears.

Import into iTunes

Once you've recorded some radio favorites, it's time to bring the files into iTunes.

MP3 and AAC Files To add recorded MP3 or AAC files to your iTunes library, simply drag the sound files into the iTunes window. If you've set iTunes to copy files into its Music folder (you can find this option in iTunes' Advanced preference pane), you can delete the original audio files.

AIFF Files To add an AIFF recording to iTunes, you'll first need to encode it. Open your iTunes preferences, click on Importing, and then choose the desired bit rate and format from the pull-down menus. Click on OK. Next, hold down the option key and choose Convert To MP3 (or Convert To AAC) from the Advanced menu. Select the audio file you want to convert, and iTunes imports it, leaving the original untouched.

Trim Your Tunes

If you started recording a bit too early or if your recording ran a little long, you can change the start and stop times within iTunes by opening the Get Info dialog box (under the File menu) and clicking on the Options tab. When you adjust these settings, you won't actually cut off the beginning or end of the song—rather, you're simply telling iTunes to ignore the rest of the file. To *permanently* extract this space, you can open the file in Apple's \$30 QuickTime Player Pro, which includes useful editing tools.

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.

Creative Suite Layers

WHAT IF THEY MADE A FEATURE NO ONE COULD USE? When Adobe released Acrobat 6 Standard (\$299; www.adobe.com) last May, the program could display layers in PDF files for the first time. But there

were no Mac programs that could produce layered PDF files—only Microsoft's Visio and Autodesk's AutoCAD could, on the Windows side. Then came Adobe Illustrator CS (\$499) and InDesign CS (\$699).

I'll explain how to create layered PDF files in these programs, and how to put the new capability to work in projects such as a bilingual brochure and a multi-level map. Note that these techniques are for PDF files destined for on-screen environments—such as DVDs, kiosks, and e-books—not those that will be used in print projects.

Go Straight to the Source

You can't generate layers in Acrobat. Instead, you build them in a program that supports layers; then you

export them as part of the PDF-creation process. Not all programs that have layers can export layered PDFs; for example, Photoshop CS can't. Also, Acrobat Distiller and other PDF-creation programs don't create layered PDFs; you can't produce layered PDFs from, for instance, QuarkXPress or Macromedia FreeHand.

A Bilingual Brochure

Say you're using InDesign to construct two versions of a digitally distributed travel brochure: a French one and an English one. Without layered PDFs, you'd have to force some viewers to scroll past a page in one language to get to the other language. Now you can output a layered PDF that includes language buttons; your potential traveler simply clicks on the appropriate button to choose a language.

Create Layers and Buttons in InDesign On the second page of your InDesign document, use the Layers palette to place the English text in one layer and the French text in another. On the opening page, use the Button tool to create buttons labeled "English" and "French." Select each button in turn and choose Object: Interactive: Button Options. Click on the Behaviors tab and set the behavior to Go To Next Page. Click on Add and then on OK.

Export to a Layered PDF To export the layers correctly, go to File: Export and choose Adobe PDF from the Format menu. Click on the Save button and set the Acrobat options in the resulting window. Choose Acrobat 6 (PDF 1.5) from the Compatibility drop-down menu, and select the Create Acrobat Layers option and the Interactive Elements option.

When you open the PDF in Acrobat 6 or Adobe Reader (a free download at www.adobe.com/products/acrobat/readstep2.html), the layers will be listed in the Acrobat Layers pane. (Layered PDF files also have an adorable little layer-cake icon in the lower left corner of the document window.) If you open a layered PDF in previous versions of Acrobat, Reader, or Preview, all the layers display and you can't change their visibility.

Set Layer Visibility You can't apply layer-visibility actions to buttons in InDesign. Instead, you'll have to turn to Acrobat's button controls. Activate them by going to Tools: Advanced Editing: Show Advance Editing Toolbar and clicking on the Button tool.

Open your brochure PDF file, click on the Layers tab, and turn the English layer on and the French

TAKE OFF WITH OMNIPILOT

You know that everyone in your creative agency works hard, but you're never quite sure where their time goes. Or maybe team members aren't up-to-date on the progress of a joint project. Or perhaps you want to improve your billing efficiency. OmniPilot Software's agency-management program, OmniPilot Agency 4.1 (\$489; 954/315-0780, www.omnipilot.com), may be able to help.

It has tools for everyone in an agency. The interactive online conference keeps clients in the communication loop. And happy clients mean a high-flying agency.—TERRI STONE

The screenshot shows the OmniPilot Agency 4.1 software interface. The main window displays a project summary for '2GP-A-109 16 page 4/4 brochure'. The interface includes a sidebar with navigation options like 'Main Tim.', 'Records', 'Found', and 'Sorted'. The main content area is divided into several sections: 'Estimated Time', 'Estimated Expenses', 'Actual Time', and 'Actual Expenses'. Each section contains a table with columns for 'Personnel', 'Task', 'Hours', 'Expense', 'Description', and 'Amount'. A 'Summary' table at the bottom provides totals for 'Estimated', 'Actual', and 'Variance' for both time and expenses.

Estimated Time			Estimated Expenses		
Personnel	Task	Hours	Expense	Description	Amount
Carlos Machado	Client Services	5	Color Proofs		\$96
Helen	301-Copywriting	8	CD's		\$10
Johs Smith	302-Creative	10	Photography	Corbis	\$625
Mark Diggler	Production	15	Printing	5000 4/4 16 page -	\$7,500
Summary			Summary		
		Estimated	Actual	Variance	
		43	5.75	37.25	

Actual Time			Actual Expenses		
Personnel	Task	Hours	Expense	Vendor	Amount
johs.smith	302-Creative	2.75	Color Proofs		\$24
johs.smith	302-Creative	3	CD's		\$5
			Printing	ABC Company	\$7,500
				ABC Company	\$0
Summary			Summary		
		Estimated	Actual	Variance	
		\$8,231.00	\$7,529.00	\$702.00	

layer off. Then go to the first page of the brochure. Double-click on the English button to open Button Properties. Under the Actions tab, use the Select Action menu to add the Set Layer Visibility action to the button. Click on Close and repeat these steps for the French button, turning the English layer off and the French layer on. Now when someone clicks on one of the buttons, Acrobat will display the page with the appropriate language.

A Multilevel Map

Layered PDFs are also a blessing for projects with many complex details. Consider a city map distributed on the Web or on a CD. When you zoom out to see the entire city, the view reduces street names and other small details to meaningless clutter. It would be better to see only larger details, such as highways. But when you zoom in on the map, small details are crucial.

Create Layers in Illustrator Illustrator's Layers palette lets you place the thin lines indicating local streets on one layer, and the thicker lines for major highways on another (see "Map Magnifications"). Beware—only the top-level layers translate into PDF layers, so don't use sublayers.

Save as a PDF To create the PDF from Illustrator, choose File: Save As and select Adobe PDF from the Format menu. When you click on the Save button, you can set the Acrobat options. As in InDesign, choose the Acrobat 6 (PDF 1.5) compatibility option. Then choose the Create Acrobat Layers From Top-Level Layers option.

Zoom In with Bookmarks Buttons aren't convenient for displaying map layers, because as you zoom in to a new area, you lose sight of the buttons that control the zoom. Change the layer display using bookmarks, which are always visible in Acrobat's Bookmarks pane.

In Acrobat, use the Layers panel to make the zoomed-out map visible and the other layers invisible. Set the zoom level with the magnification control. Click on the Bookmarks pane and the Create New Bookmark icon. Select the new bookmark, name it, and choose Properties from the Options menu.

Under the Actions tab, go to the Select Action menu and add the Set Layer Visibility action to the bookmark. This creates a bookmark that sets the zoom level and changes the layer visibility. Repeat these steps for each detail level of your map.

Don't Stop Here

Layered PDFs have a place in many other projects. In a catalog, try putting a product's different colors and styles on separate layers. Or employ layers for a class workbook, with test questions on a student layer and answers on a teacher layer. There's no limit to how you can use layered PDFs. □



Map Magnifications

Layered PDF files are so new to Mac users that few of us know how to use them. In this project, I used Illustrator CS to layer maps of increasing complexity. One layer holds large details such as highways. Other layers hold smaller details that are helpful when you zoom in on the map. I assigned bookmarks to each layer in Acrobat 6.



SANDEE COHEN is the author of *InDesign CS for Macintosh and Windows: Visual QuickStart Guide* (Peachpit Press, 2003) and teaches classes on multimedia and interactive uses for PDF documents.



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.

Hop on a Hotspot

YOU'VE GOT WIRELESS NETWORKING IN YOUR HOME, AND you're enjoying surfing from the couch with your AirPort-enabled Mac, but you're starting to look a little wan and feel a little lonely. It's time to

search for coffee shops and other public places with Wi-Fi service (which is just wireless networking—the same as AirPort). Then you can cut the invisible cords that are keeping you at home, get some sunshine, and rejoin the real world. We'll help you connect wirelessly to the Web from wherever you roam.

A Wi-Fi Primer

Every week, there are more locations that let you connect wirelessly to the Internet. They're called *hotspots*, and with the right equipment, just about anyone can create one. In fact, these days it seems as though nearly everyone is offering hotspots. You can find them in hotels, cafés, bookstores, airports, libraries, and even throughout entire neighborhoods. Some places charge you for the privilege of connecting, but there are plenty of free hotspots out there, too.

Paying the Toll

In most major U.S. cities, it's easy to find places willing to take your money to let you connect (see "AirPort Away from Home," in "The Way to Wireless," March 2003). Visit Wireless ISP (WISP) sites such as T-Mobile HotSpot (www.t-mobile.com/hotspot) or Surf and Sip (www.surfandsip.com) to find places where you can access their services. Sites such as Wi-FiHotSpotList.com (www.wi-fihotspotlist.com), WiFinder (www.wifinder.com), JiWire ([.com\), and Wi-Fi Zone \(\[www.wi-fizone.org\]\(http://www.wi-fizone.org\)\) offer directories of hotspots. Their information can be incomplete, and you'll probably have to check multiple sites to find all the available hotspots.](http://www.jiwire</p>
</div>
<div data-bbox=)

Connecting to such networks is pretty easy (see "Making the Connection"). While some require that you download special software, others, such as T-Mobile, open a special Web page, called a *captive portal*, which is accessible only within the range of the hotspot. When you fire up your Web browser, this page prompts you to log in. (Starbucks T-Mobile hotspots require that you set up your browser to load a Web page when opening a new window.)

The Kindness of Strangers

Of course, paying \$8 per day to connect to a wireless network doesn't make sense when an equally nice café down the street offers free access. Many businesses, community and government organizations, and individuals see giving away Internet access as an effective way to bring people to an area or a store. And in many areas, officials and community leaders see the potential of Wi-Fi to give Internet access to people who might not otherwise have it.

How you join such networks varies. With some, you just choose from your list of available networks, and you're on. Others may require that you connect via a captive portal. *Finding* these free hotspots is another story. You may have read about *wardalking* (www.wardalking.org)—drawing chalk symbols on the sidewalk to indicate wireless access points—but this practice never really lived up to its hype. You're better off just opening your laptop wherever you are and checking for a connection (this is called *warwalking* or, when done from a car, *wardriving*). To do this, you can use MacStumbler (www.macstumbler.com), a free program that finds wireless access points you're near and tells you the signal strength, or the \$30 Kensington WiFi Finder (www.kensington.com), a keychain-size gadget that tells you when you're in range of a hotspot.

Many Web sites gather information about Wi-Fi networks in various communities. Some of the sites we've already mentioned include a smattering of listings. And sites such as NoCat.net (<http://nocat.net>), NodeDB.com (www.nodedb.com), and Wi-Fi Maps (www.wifimaps.com) concentrate on helping you find free community access points.

MAKING THE CONNECTION

Before you can access wireless hotspots, you'll need to do a couple of things. In OS X's Network preference pane, configure your computer to get an IP address via DHCP (select Using DHCP from the Configure pop-up menu under the TCP/IP tab).



Select your network from the menu represented by the AirPort status icon in your menu bar (if the icon isn't visible, open the Network preference pane, choose AirPort from the Show menu, click on the AirPort tab, and select Show AirPort Status In Menu Bar). Then try launching a Web browser and connecting to a Web site. If you wind up on a captive portal page, it will tell you how to connect. And if you connect directly to the site, you're using a free hotspot.

'BOOK BAG OF THE MONTH: BOOQ

Sleek but strong, chic but rugged, Booq bags really stood out from the laptop-bag crowd on Macworld Expo San Francisco's show floor. The Mamba.XS (\$70), for 12-inch iBooks and PowerBooks (shown, right), was especially eye-catching, thanks to its small size (12 by 10 by 1.5 inches) and cool styling. On further inspection, we discovered its configurable straps, which let you wear it as a backpack, a messenger bag, or a briefcase. A look inside revealed a good number of useful, flexible pockets; bright orange panels; and a well-padded section that keeps a PowerBook or iBook totally separate from other stuff. The Boa.XL (\$150) is very similar to the Mamba.XS, but it holds the larger laptops. The Mamba.XS has a back zipper that lets you zip the bag onto Booq's BooqPaq3 bag (\$120), part of a rugged system that allows you to connect Booq's bags to fit many situations.

Booq covers the size gamut: the company offers sleeves for 12-inch iBooks and PowerBooks through 17-inch PowerBooks (\$25 to \$50) and a messenger bag for the 17-inch PowerBook, as well as iPod, phone, and PDA cases (\$20 to \$40). You can find Booq laptop bags at www.booqbags.com and at selected retailers in Los Angeles and New York. —JENNIFER BERGER



Renegade Wireless

Not every hotspot is the creation of a big telecommunications company or a café owner hoping to get some steady clients. Sometimes, individuals create hotspots by accident. For example, if you set up a home wireless network via an access point such as Apple's AirPort Extreme Base Station and don't turn on any security features, you have essentially opened a new ISP for any of your neighbors within range of the access point. And many people intentionally create hotspots, to share their Internet access with a neighbor.

Be sure that you haven't disabled the other security features on your Mac, such as file sharing (in the Sharing preference pane). If anyone at home can access your hard drive without a password, so can anyone connected to your network. You should also follow these normal security procedures when connecting to others' Wi-Fi networks, and consider turning on the built-in firewall (also in the Sharing preference pane) in Jaguar or Panther.

As you help yourself to your neighbor's open wireless connection, you may ask yourself whether your actions are moral—or even legal. Should you expect a SWAT team to break down your door? The Electronic Frontier Foundation (EFF; www.eff.org), a technology-rights advocacy organization, says that while this isn't an area of settled law, you're probably OK.

"The way the Internet works, there's no permission mechanism," says EFF outreach coordinator Cory Doctorow. "The way I find out if I'm allowed to connect to your access point is by trying to connect to your access point."

Others take a dimmer view of the practice. Tim Pozar, an industry pioneer and founder of the Bay Area Wireless Users Group (www.bawug.org), believes that the practice hurts people who pay for the access, expect a certain amount of bandwidth, and inadvertently leave the connection open. It also hurts the ISPs, he argues, as they base their rates on average home use. "It blows some of the economics of residential broadband services," he says.

As far as sharing your Internet connection goes, check your ISP's fine print. Many expressly forbid it (the EFF is building a list of those that allow it, at www.eff.org/Infra/Wireless_cellular_radio/wireless_friendly_isp_list.html). But watch for warnings that opening a connection means opening yourself to litigation—if, for example, someone uses your network to illegally download the entire Air Supply catalog in MP3 format. Current law exempts ISPs from liability for such acts. So does your AirPort network make you an ISP? Again, it's not an area of settled law. "An ISP is someone who provides Internet service," says Doctorow. "If that isn't someone who provides an open connection, I don't know what is."

Internet Everywhere

The number of hotspots—free and paid—increases by the week. So if the lack of access in your neighborhood is making you live a hermit's life, don't lose hope—and don't throw away your street clothes just yet. The wireless revolution has just begun. □

POCKET PC WITHOUT SHAME

If you're the proud owner of a Pocket PC–based handheld, never fear: it can talk to your Mac, despite its Windows roots. Information Appliance Associates' PocketMac Pro (www.pocketmac.net) syncs your Pocket PC's contacts, calendar, and tasks with Entourage, iCal, or Address Book. It also lets you transfer many types of files. The latest version, the \$42 PocketMac Pro 3.0, has a slew of new capabilities, including syncing over Bluetooth, syncing of e-mail and Web bookmarks, new PocketMac Pro themes that make your Pocket PC more Mac-like, and installation of Pocket PC software using your Mac. It also supports OS X apps such as iSync, iTunes, and iPod.



Another version of the software, PocketMac Phone Edition 3.0 (\$29), works with Microsoft Windows Mobile–based Smartphones. These nifty devices add PDA functionality to cell phones. —JENNIFER BERGER

FRITH GOWAN is a freelance writer based in the San Francisco Bay Area.



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.

Develop Safari's Power

THE SIMPLEST AND MOST POWERFUL TOOLS YOU CAN ADD to your browser are things you may not even have heard about. Bookmarklets, also called favelets, are small bits of JavaScript you run in your browser just by clicking on a bookmark. You can use them to see what's behind successful Web sites, to control the way Safari handles windows, and more.

There's a common misconception that Apple's Safari Web browser doesn't support bookmarklets. This is not true. You just need to do a little one-time futzing around in JavaScript to get them up and running.

Installing Bookmarklets

Before you can use bookmarklets, you need to install them in Safari. There are two ways to do so: the easy and the not-so-easy. Both methods require that you have the Bookmarks bar showing, so press `⌘-B` to make it appear.

The easy way requires a Web page with a link containing a bookmarklet. Then you can simply click on the link and drag it onto your Bookmarks bar.

Since some bookmarklets need to be altered to work in Safari, you won't always be able to use the easy method. Plus, you might want to write your own. In that case, you'll need to crack open a text editor, such as Bare Bones Software's BBEdit or Apple's TextEdit. You'll write the bookmarklet's code (without line breaks), copy it, and paste it into Safari's address bar. Then you can click on the globe icon in the address bar and drag the icon to your Bookmarks bar.

Whichever method you use, Safari will ask you to enter a name for the new bookmarklet. Type one and click on OK, and that's all there is to it—as long as your bookmarklet code works perfectly. If not, you'll need to edit it. Control-click on the new bookmarklet to get a contextual menu, and then choose Edit Address. The Bookmarks pane will appear with your cursor positioned in the address field. Fix the code, and you're ready to go.

Now let's check out some bookmarklets I've written that work as is. For your copy-and-paste convenience, all of this code is available at www.macworld.com/2004/03/secrets/geekfactor/code.

Control Your Browser

If you've surfed to a site that has decided it knows more than you do about what size Web page you want, show it who's boss with this bookmarklet: `javascript:resizeTo(700,screen.availHeight);moveTo(0,0)`.

This bookmarklet will resize the browser window to be 700 pixels wide and as tall as your screen will allow (`resizeTo(700,screen.availHeight)`). It will also move the top left corner of your browser to the top left corner of the current window (`moveTo(0,0)`).

Do you want your browser to be on the right-hand side of your screen? No problem—just use the following bookmarklet: `javascript:resizeTo(700,screen.availHeight);moveTo(screen.availWidth-700,0)`.

We start by resizing the window to our desired height and width. We again end by placing the top left corner of the browser window just where we want it, but because we know the window is 700 pixels wide, we want it to be placed at the full screen's width minus 700 pixels (so the top right corner of the browser will be exactly in the top right corner of the screen).

I keep both of these on Safari's Bookmarks bar with the original names Left and Right, so I can position Web pages side-by-side with a single click. This is particularly helpful when I'm comparing two pages—and if you have this bookmarklet in multiple browsers, you can compare how the same page looks in all of them, as long as all the windows have identical dimensions.

Web-Developer Tools

If you're a Web developer, you already spend too much time working with your browser—so why

MORE FOOD FOR THOUGHT

> Bookmarklets (www.bookmarklets.com)

The site that started it all is a little out-of-date, but it's still a good place to begin.

> Favelets (www.favelets.com)

There's a strong preference here for Internet Explorer for the Mac (not surprisingly, as the site's owner used to work on the product team), but there are lots of great bookmarklets for Web developers.

> The Apple Web Site (www.apple.com/applescript/safari/bookmarks.html)

Apple calls them bookmarks instead of bookmarklets. Here it shows how to do cool stuff like making Safari use Sherlock and iTunes to look up information.

> JavaScript World (www.javascriptworld.com)

The companion site for the book *JavaScript for the World Wide Web: Visual QuickStart Guide*, fifth edition, has a chapter on bookmarklets, and all the code from the book is available free on this site.

GEEK FAVORITES

It's hip to be square at CubeOwner.com (<http://cubeowner.com>). Peruse the extensive FAQs and forums for answers to your every Cube question. Learn how to upgrade your Cube and how to find replacement parts. Check out the member photo gallery (an example is shown here). Or just socialize with fellow Cube lovers.—SCHOLLE SAWYER MCFARLAND



not make it work as hard as you do? These handy bookmarklets will make Safari do its share of the heavy lifting.

Validate Your Pages Want a fast way to find out whether a Web page conforms to the W3C's standards? Here's a simple bookmarklet that does just that. With one click, it opens a new window that contains the results of the W3C's validation check on your current Web page (see "One-Click Validation"). Here's what you'll type in Safari's address bar: `javascript:void(window.open('http://validator.w3.org/check?uri='+window.location.href))`.

This bookmarklet tells the browser to use JavaScript (`javascript:void`) to open a new browser window (`window.open`) and then tells that window to load the page at `http://validator.w3.org/check`, with the parameter `uri` set to the value of `window.location.href`. That last bit (`window.location.href`) is JavaScript's way of describing the current page's URL.

Check Images Quickly Have you ever wanted to see what the images on a Web page look like separate from the layout and content on the page? Or have you wondered what an image's URL is or what its dimensions are? A quick click on a bookmarklet can reveal all. To see the bookmarklet's code, go to the "Check Images Quickly" section of the online article.

If you know anything about JavaScript (or even if you know a bit of HTML), you can see that this script searches the current Web page for images and then builds a table containing each image, its height, its width, and its URL. When they've all been found, a new window is opened (as in the previous example), but instead of loading a specific URL, the page that you've just created is loaded on-the-fly.

One Quick Safari Fix

If you like what you've read about bookmarklets so far, you may have already rushed off to Google to see what others you can dig up. It won't be long before you discover that many of them don't work, as is, in Safari.

There are differences in the way various Web browsers understand JavaScript. For example, bookmarklets for Microsoft Internet Explorer and Netscape don't always work in Safari. One common problem is the JavaScript command `document.getSelection()`, which grabs the currently selected text. Safari understands the command `window.getSelection()` instead. Changing that code won't magically make *all* bookmarklets work with Safari, but it does fix many. It's a good place to start.

GetSelection in Action One example is a bookmarklet that lets you select a word on a Web page and

look it up at Dictionary.com. (If you haven't selected a word, a prompt will ask you for one.)

Just change `document.getSelection()` to `window.getSelection()`, and this bookmarklet works beautifully. For our edited version of this bookmarklet, go to the "GetSelection in Action" portion of the online article.

Blogging with Bookmarklets The same wayward code has also been a stumbling block for a large number of would-be Safari users: Webloggers. Most Weblog tools provide Blog This or equivalent bookmarklets for creating new blog posts. However, they provide them only for Netscape and Internet Explorer, leaving Safari users to choose between not blogging and using some other, lesser browser.

You no longer have to choose—just get your vendor's bookmarklet and modify it. For an example, go to the "Blogging with Bookmarklets" section of the online article. All I had to do was change the JavaScript statement `document.getSelection()` to `window.getSelection()`.

Beyond the Bookmarklet Basics

This article can give you only a quick overview of what bookmarklets are and how you can use them. But with a bit of experimentation, you'll find that the addition of a few bookmarklets will turn your browser into a Web developer's power tool. □



One-Click Validation Click on the Validate bookmarklet to open a new Web page that shows whether the current page is, in fact, valid XHTML.

DORI SMITH is a coauthor of *JavaScript for the World Wide Web: Visual QuickStart Guide*, fifth edition (Peachpit Press, 2003), and the recently released *Mac OS X Unwired* (O'Reilly, 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

DISCOVER PANTHER TIPS FOR IMPROVING YOUR DVD PLAYER experience, working with Activity Monitor, and mastering the new Open and Save dialog boxes. Plus, use Terminal to find out how much space folders use.

Use a Second Monitor for DVD Playback

If you have two monitors, Apple's bundled DVD Player is now smart enough to put the second one to good use. In OS X releases before 10.3, DVD Player would use only the primary display (the one with the menu bar) for DVD playback. In OS X 10.3's DVD Player, just drag your movie from the primary display to the secondary one, and you'll see a Switching Video To New Screen overlay appear in your movie window.

There, you can use DVD Player to play the video at full-screen size by selecting the Video: Enter Full Screen menu option. But if you then click on another application or on the Finder, DVD Player shrinks the movie down to Maximum Size. If you'd prefer that DVD Player leave the movie in full-screen mode, just open DVD Player's Preferences, click on Full Screen, and then select the Remain In Full Screen When DVD Player Is Inactive option. Now you can play a full-screen movie on your second monitor while you work on your primary monitor.



Word Wizard Can't quite recall a certain word? Just type the first few characters into any Cocoa application and press option-escape to see a list of possible completions.

Master Panther's Open and Save Dialog Boxes

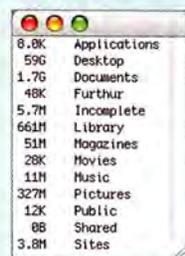
Mac users (and Windows switchers) will appreciate Panther's time-saving additions to the Open and Save dialog boxes. One of these new features is reminiscent of Windows—when you click on the name of an existing file in a Save dialog box, the file you are about to save will assume that name. You can then overwrite the existing file (OS X will provide a warning to make sure you want to do so), without having to retype the name.

Another change relates to navigating your hard drives from the Open and Save dialog boxes. In OS X 10.2 and earlier, you could use the Go To field to type in a path to another folder on your hard drive—OS X 10.3 lacks this field. You can still use the shortcut, though. To jump quickly to any folder anywhere on your system, press ⌘ -shift-G (it's the same sequence as for the Finder's Go: Go To Folder command) in the Open or Save dialog box. When the new window opens, type the path to the folder you want to reach, and then press enter. You can even press the tab key to autocomplete entries and avoid some typing (just as in Terminal).

You can now navigate the Open and Save dialog boxes' file listings by typing the first letter of any item in the list. For instance, to go to your Documents folder, make sure that you're looking at your Home directory and that the file list area of the

UNIX TIP OF THE MONTH

Have you ever wanted to know how much space a given set of folders (say, those in your Home folder) is taking up? You can use the Finder to get this information, but you'll have to switch to List view, make sure that Size and Calculate All Sizes are selected in the Finder's View Options dialog box, and then turn them off when you're done to avoid slowing down the Finder. If that seems like too much work, consider using Terminal. In OS X 10.3, launch Terminal (in Applications: Utilities) and type `du -s -h *`. Then press enter. You'll see something like the screen shown here (left).



The first column shows the size of the folder in bytes (B), kilobytes (K), megabytes (M), or gigabytes (G); the second column lists the folder names. While not as pretty as the GUI display, this method is quick and relatively easy to use. If you want to discover the size of another set of folders, just use the `cd` command followed by the directory name to switch directories.

This technique also works in OS X 10.2, although without the `-h` option—leaving you with only numbers that tell you the number of blocks in use on your disc (not broken down into B, K, M, and G).

If you'd really prefer not to use Terminal at all, download the free WhatSize (www.id-design.com/Software/WhatSize/) to view a summary of folder sizes from the Finder.

FIND THE MISSING KEY CAPS

If you've upgraded to OS X 10.3, you may have noticed that the venerable Key Caps application is no longer around. Key Caps presents an on-screen keyboard, extremely useful for finding and adding special characters such as ™, ©, and π to your documents (see "Character Viewer"). Don't panic—Apple hasn't removed Key Caps entirely, but it has relocated, temporarily disabled, and renamed this essential utility.

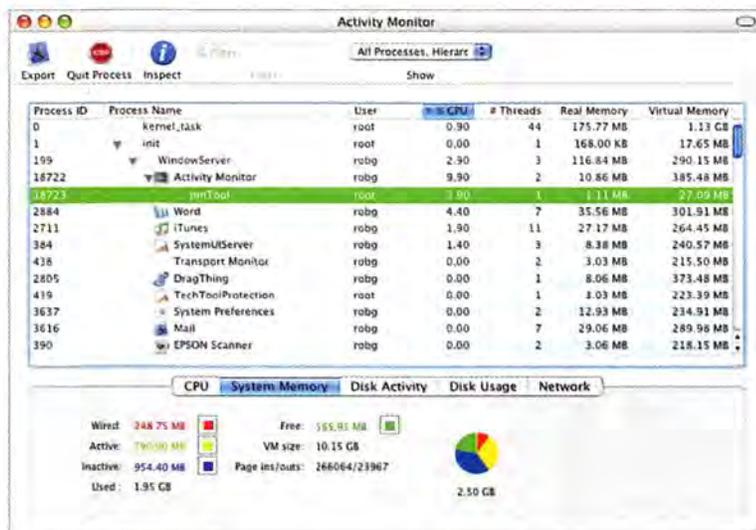
To enable the new Keyboard Viewer in OS X 10.3, open the International preference pane, click on the Input Menu tab, and then select the Keyboard Viewer option. You'll see a flag icon in your menu bar. When you need the functionality of Key Caps, click on the flag icon and choose Show Keyboard Viewer from the drop-down menu that appears. Now hold down a modifier key (option or ⌘, for example), and click on a key to add a particular character to your document.



Character Viewer The Keyboard Viewer program makes it easy to get any font's special characters into any application.

Monitor's Dock icon to make it display CPU usage, disk activity, network activity, or memory usage. And if you *really* like to keep an eye on exactly what your machine is up to, check out the free MenuMeters (www.ragingmenace.com/software/menumeters), which can display information about *all* of these items in your menu bar, in OS X 10.3 and earlier. □

Family Tree Set Activity Monitor to show all processes hierarchically, and the relationship between jobs becomes apparent.



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).

Open or Save dialog box is active, and then type `do` to highlight the Documents folder.

View Suggested Word Completions

When you're working in a Cocoa application, such as TextEdit, Safari, or Mail, you can use Panther's new autocompletion feature to find that certain word that's just itching to flow from your fingertips. Enter the first part of a word anywhere you can type—say, in the Google search box in Safari or anywhere in a TextEdit document—and then press the option and escape keys at the same time. You'll find a list of possible completions for the current word fragment (see "Word Wizard").

View System Performance with Activity Monitor

Activity Monitor is an Apple utility (found in Applications: Utilities) that can help you diagnose system problems, kill stalled programs, and examine CPU and memory usage in Panther. Activity Monitor is a more powerful replacement for Process Viewer, included in OS X 10.2 and earlier.

One neat feature in Activity Monitor is the ability to view all processes in a hierarchical tree (see "Family Tree"). Select All Processes, Hierarchically from Activity Monitor's pop-up menu, and you can see which tasks spawn subtasks, such as the pmTool program that Activity Monitor launches. Without this view, you'd see pmTool listed alone, and you might decide to quit it since you don't know what it is.

Another useful new feature is the Inspect button in the toolbar. Select an application in the list and click on the Inspect button, and you'll see a new window full of information that only a programmer could love—or so you might think. The Inspect window contains detailed data on memory usage, thread usage, page-ins, CPU time used, and much more. Why should you care about all this? If you have an application that seems to be out of control (for example, if Photoshop becomes unresponsive when you try to open a new file), switch over to Activity Monitor while the app is stuck, select the application in the list, and click on the Inspect button. In the new window, click on the Sample button to get a snippet of the code that the application is running. While 99 percent of this window's content probably looks like gibberish, these tidbits can help you diagnose the cause of the problem—Photoshop may be trying to find a file on a network server you've recently disconnected, for instance. You won't need this feature often, and you probably won't understand most of the stuff in there, but keep it in mind for when you need troubleshooting assistance.

If you enjoy this kind of low-level technical knowledge, you can even control-click on Activity



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

MAC OS X 10.3 (PANTHER) IS A MIGHTY FINE FELINE, BUT it isn't sleek enough to make this column obsolete. If you're confounded by Panther's ability to create a bootable disc, confused about installing missing language resources, seeking a replacement for Copy Agent, or distressed by ungainly games, read on.

Boot Camp

I'd like to create bootable copies of my OS X 10.3 installation discs for backup. How do I do this in Panther?

Terry Byers, Aptos, California

In earlier versions of OS X, you did this with Disk Copy, but in Panther, Disk Utility does the job. To copy your discs, follow these steps:

1. Launch Disk Utility (in the Applications: Utilities folder).
2. Insert the first Panther CD, and when its icon appears in the left side of the Disk Utility, select Mac OS X Install Disc 1.
3. Click on the New Image button at the top of the Disk Utility window and, in the resulting sheet, name the file (Panther 1, for example); then select DVD/CD Master from the Image Format pop-up menu. Don't change the None setting in the Encryption pop-up menu.
4. Click on Save and eat half a snack while Disk Utility creates an image of the disc.
5. Select the image and click on the Burn button.
6. Insert a blank CD-R and enjoy the other half of your snack while Disk Utility burns and verifies your disc.
7. Repeat for all the other Panther discs that you want to back up.

TIP OF THE MONTH

In the January 2004 *Mac 911* column ("Missing Link"), you suggested using iMovie to string together iTunes songs into a single track that could be played behind an iPhoto 2 slide show. Here's another way to create a single track from multiple songs:

In the Burning tab of iTunes' Preferences window, select Audio CD as the disc format and set the desired gap between songs. Now create a playlist with the tunes that you'd like to accompany the slide show. Burn the playlist to a CD.

From iTunes' Source list, select the CD you just burned and select all the songs on it. From the Advanced menu, choose Join CD Tracks and then click on the Import button. All the joined tracks—which must be consecutive tracks on the CD—will be imported as a single track that you can use as the audio background for your slide show.

David Martin, Columbia, Missouri

Relocalizer

I used Mike Bombich's free Delocalizer (<http://software.bombich.com>) to remove extraneous language files from my hard drive. It turns out that one of my Microsoft Word files includes a letterhead that contains foreign characters—characters that no longer appear. How can I restore language files?

Larry Grossberg, Hillsborough, North Carolina

Both Jaguar and Panther include language files you can install with a simple double-click. If you have the multidisc Jaguar installation set, you'll find these files in the Optional Installs folder on the first disc. If you received Jaguar on a single DVD, the Optional Installs folder is inside the Welcome To Mac OS X folder, which may be invisible. If you don't see it, download a copy of Marcel Bresink's free TinkerTool (www.bresink.com/en/index.html), launch it, select the Finder button, enable the Show Hidden And System Files option, and click on Relaunch Finder. The Welcome To Mac OS X folder will now be visible. (Because invisible files are invisible so you won't accidentally delete them, be sure to use TinkerTool to make your files invisible again when you're done.)

Restoring language files is much easier in Panther. Insert the second Panther CD, open the Packages folder, and double-click on the Languages.mpkg item. The Install Language Translations installer will open. After selecting a destination for the installed files, click on Continue to move to the Easy Install screen. Click on that screen's Customize button to view a list of all the language files you can install or upgrade. Deselect the languages you don't want to install, and click on Install. When you're asked for it, enter your administrator's password and click on OK.

Replacing Smart Replace

In the law office where I work, I use a set of 10,000 Word master documents, which is duplicated on each user's computer. I make changes to the master set of documents and then regularly update the other users' set of copies. Connectix's Copy Agent's Smart Replace feature allowed us to change only the documents that had been updated, but it doesn't run on OS X. Is there another tool that can do the same thing?

Scott Darling, Riverside, California

UNSOLICITED ADVICE

At the risk of injuring the feelings of Apple's Panther user-interface team, I have to admit that I find Panther's metallic Finder windows overbearing and unattractive. Because I do, I've scrounged the Web for tools that banish any trace of metal from my otherwise attractive OS.

One such tool is the free Whiteout, available from www.versiontracker.com. Whiteout replaces the system resource that brushes on the metal appearance in the Finder, iChat, iCal, and Safari (sorry, iTunes is still metallic) with a modified version of the resource that creates off-white, dimly pinstriped windows.

If you'd like your Mac to sport a wildly different appearance, check out Unsanity's \$20 ShapeShifter (www.unsanity.com/haxies/shapesifter), which allows you to apply themes to Panther's interface. Changing more than Finder windows, these themes alter the appearance of windows, menus, buttons, scroll bars, and sliders.

I can recommend three—Econ Technologies' \$20 ChronoSync (407/365-4209, www.econtechologies.com), Jason Weber's \$20 ExecutiveSync (www.executivesync.com), and Qdea's \$30 Synchronize X Plus (800/933-9558, www.qdea.com). Although classified as synchronization utilities, they work well for backing up files, and because they're designed to synchronize folders and volumes, they replace only changed files.

I wrote about the synchronization abilities of each program in my May 2003 column (www.macworld.com/2003/05/secrets/mac9110305), so I won't repeat myself here, other than to say that you might prefer ChronoSync or Synchronize X Plus because they offer scheduling features. You could put the schedule to good use by placing the master folder of your Word documents on the office's server, providing each user with a copy of one of these utilities, and configuring each user's utility to synchronize with that master folder as often as you deem necessary.

Blame Game

What is it about games that, when they crash, OS X locks up completely? If my other applications go belly up, I can force-quit that application and the OS keeps on truckin'.

Todd Harding, Duluth, Georgia

Games that perform slowly stink. To produce games that don't stink, programmers employ various forms of trickery to pull as many resources from the Mac and its video card as possible. Because a game demands so much from your computer, if something goes wrong, your Mac may not be able to back out from it gracefully.

Glenda Adams—Aspyr Media's director of PC and Mac development—confirmed that games often push settings higher than a video card can handle, thus not leaving enough for the OS to politely exit if the game crashes. All is not lost, however. Ms. Adams passed along this hint:

Sometimes the Force Quit command works even if you can't see the dialog box. Try pressing ⌘-option-escape and then press the return key twice. This may safely force-quit the game even if you can't see anything happen. In Panther, you can also try pressing ⌘-shift-option-escape. This force-quits the active application without asking for confirmation.

Time for Resets

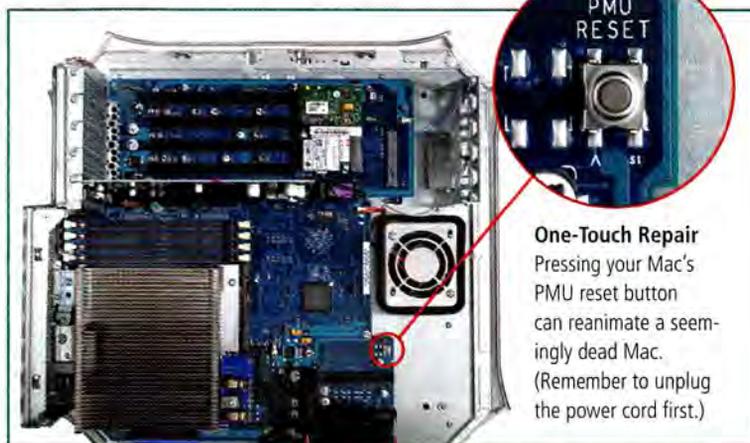
There was a power failure in my neighborhood while my Power Mac G4 was plugged in. I unplugged it until the power returned but when I plugged it back in, it wouldn't start—the button glowed when I pushed it, but I heard no activity from the computer. Is it dead?

Kerin Tyrrell, Macworld.com forums

Probably not. This has happened to my Power Mac G4 when the lights have gone out, and I've put things right by pressing the PMU reset button, which is located on the Mac's motherboard (see "One-Touch Repair")—its exact location varies depending on which Power Mac you own. Pushing this button resets the Power Management Unit and usually allows the Mac to start up.

The Apple-recommended method for performing this operation is to unplug the power cord and press the PMU reset button *only one time* (pressing it more than once could keep the PMU chip from responding and reduce the internal battery's life from five years to two days). Wait ten seconds, plug the Mac back in, and then press the power button.

After resetting the PMU, it's also a good idea to reset the Mac's nonvolatile RAM (NVRAM). To do so, shut down the Mac and restart while holding down ⌘-option-P-R. Continue to hold these keys until you hear the startup sound twice. Let go, and the Mac will continue to start up. After resetting the PMU and NVRAM, use System Preferences to verify your time zone, startup volume, and volume settings. □



One-Touch Repair

Pressing your Mac's PMU reset button can reanimate a seemingly dead Mac. (Remember to unplug the power cord first.)

Every Tuesday, Contributing Editor CHRISTOPHER BREEN appears as "Mac Daddy" on TechTV's *Call For Help* program. He is also the author of *Secrets of the iPod*, fourth edition (Peachpit Press, 2004).



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.

Happy XX Birthday, Mac!

Value Added Reseller

PowerMac G5

G5
The world's fastest 64-bit personal Computer
G5 1.8 GHz Special!
\$1999

- 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**



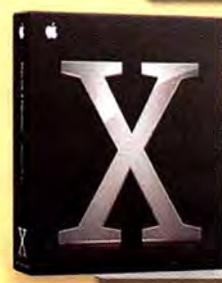
LCD Monitors

- 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 ComboDrive **\$1,989.95**
- 15.2" Widescreen Display 1.25GHz**
- 512MB DDR333 SDRAM
 - 80GB Ultra ATA
 - SuperDrive DV-RW/CD-RW
 - Backlit keyboard
 - AirPort Extreme built-in **\$2,549.95**
- 17" Widescreen Display 1.33GHz**
- 512MB DDR333 SDRAM
 - 80GB Ultra ATA
 - SuperDrive DV-RW/CD-RW
 - Backlit keyboard
 - AirPort Extreme built-in **\$2,949.95**



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**

Final Cut Pro 4 **\$899.95**

DVD Studio Pro 2 **\$479.95**

Soundtrack **\$294.95**

We Carry a Full Line of Apple Software!

<p>Keynote</p> <p>New generation of presentation software that has the ability to create stunning, professional-quality presentations to everyone.</p> <p>\$95.95</p>	<p>Final Cut Express 2</p> <p>Designed for video enthusiasts working with miniDV, Final Cut Express is a versatile, approachable, & affordable non-linear editing application for expressive video content creation.</p> <p>\$289.95</p>	<p>iLife '04</p> <p>Software for Digital Music, Photography, Movie-making, DVD Creation and Music</p> <p>\$48.95</p>	<p>AppleWorks 6</p> <p>Combines word processing, painting, page layout spreadsheet, database, and presentations</p> <p>\$78.95</p>	<p>.mac</p> <p>Revolutionize the way you use the internet and your mac</p> <p>\$98.95</p>
---	--	--	--	---

<p>Canon EOS Digital Rebel</p> <p>with 18-55mm EF Lens</p> <ul style="list-style-type: none"> • 6.3 MegaPixel • 1.6x Factor • CF Type I or II \$999⁹⁵ 	<p>Canon PowerShot G5</p> <ul style="list-style-type: none"> • 5 MegaPixel • CF Type I & II 	<p>Olympus C-5060</p> <ul style="list-style-type: none"> • 5.1 MegaPixel • xD & CF Type I & II 	<p>Nikon Coolpix 5700</p> <ul style="list-style-type: none"> • 5 MegaPixel • CF Type I & II & Microdrive 	<p>Canon PowerShot S400</p> <ul style="list-style-type: none"> • 4 MegaPixel • CF Type I 	<p>Sony Cybershot DSC-P10</p> <ul style="list-style-type: none"> • 5 MegaPixel • MS Media
<p>Wacom Intuos2 Tablets</p> <p>Graphic Tablets</p> <p>4x5" \$189.95 6x8" \$299.95</p>	<p>Epson Stylus Photo 2200</p> <ul style="list-style-type: none"> • 7 Color UltraChrome Inks • 2880x1140 dpi \$649⁹⁵ 	<p>Canon i9100</p> <ul style="list-style-type: none"> • 6 Color Printing • 4800x1200 dpi \$449⁹⁵ 	<p>Microtek ScanMaker 6800</p> <ul style="list-style-type: none"> • Flatbed • w/4x5 Slide Adapter • 2400x4800 dpi \$279⁹⁵ 	<p>ColorVision Spyder Pro</p> <p>with PrintFix Color Calibration \$399⁹⁵</p>	<p>Gretag Eye-One Display</p> <p>LCD & CRT Monitor Calibration \$249⁹⁵</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 Mini 4GB

(1000 songs)
Includes rechargeable battery, Earphones, belt, clip and AC Adapter

\$244.95

15GB iPod

(2,500 songs)
Includes rechargeable battery, AC Adapter

\$294.95

20GB iPod

(5,000 songs)

\$389.00

40GB iPod

(10,000 songs)

\$489.00

Includes Remote, Carrying Case with belt clip and Dock

- 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

iPod up to 40GB!



Belkin Voice Recorder

Belkin Media Reader

iSight

High Quality WebCam.
The eyes and ears of iChat. Delivers instant, clear live video and audio over the internet.

\$144.95

Airport Extreme

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



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



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 pxl SmartScale Mask Pro PhotoFrame Intelligence Pro



\$499.95

rik multimedia

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-TRV2/33/38 Mini-DV



DCR-TRV22 TRV33 TRV38
\$519.95 \$579.95 \$649.95

Canon Elura 50MC Mini-DV



Mini-DV Camcorder **\$519.95**

Canon Optura 10/20 Mini-DV



Optura 10 2.5" LCD **\$479.95**
Optura 20 3.5" LCD **\$579.95**

JVC GR-D30/70/90 Mini-DV



GR-D30 GR-D70 GR-D90
\$299.95 \$339.95 \$389.95

Canon ZR65MC/75MC Mini-DV



ZR65MC 2.5" LCD **\$379.95**
ZR75MC 3.5" LCD **\$439.95**

Sony DCR-DVD200/300 DVD



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



Analogue to Digital Video Converter **\$259.95**

Steinberg Nuendo 2.0



Music Production Software

JBL Computer Speakers



Duet Creature **\$54.95**
Invader **\$120.95**
\$174.95

Store & Mail Order Hours: Sunday 10-5 • Monday - Thursday 9-7 • Friday 9-1 • Saturday Closed

ADVERTISERS AND PRODUCT INDEX

Interact with the companies whose products and services are advertised in **Macworld**

ADVERTISER	INTERACT	PAGE NO.
Alsoft	800-257-6381	41-40
American Power Conversion	888-289-APCC	25
Apple Computer	-	C2-1
Aspyr Media	aspyr.com	42,47
B & H Photo	bandhp.com	84-85
Bose Corporation	bose.com/q2593	51
Broadway Photo	bwayphoto.com	92
Brother International Corp.	brother.com	9
CDW	800-509-4239	21
ClubMac	800-260-8549	87
Extensis	extensis.com/X1	6
Geek Cruise	geekcruises.com	34
Google	google.com/getadsense	2-3
Griffin Technology	griffintechology.com	98
Insider Software	insidersoftware.com	37
The Inside Mac Show	insidemacradio.com	22
J&R Computer World	800-221-8180	93
La Cie	lacie.com	C4
MacConnection	macconnection.com	90-91
MacMall	800-622-6255	88-89
MacSoft	macsoftgames.com	45
MicroMat	micromat.com	23
MYOB	myob.com/us	C3
Nikon Electronic Imaging	nikonslr.com	17
Otherworld Computing	macsales.com	94-97
PhotoshopWorld	photoshopworld.com	48
Small Dog Electronics	smalldog.com	33
Wacom	tabletphotofun.com	15
Xerox Office Group	xerox.com/office/1965	12-13

PAGE NO.	ADVERTISER	GET-INFO
H A R D W A R E		
MISCELLANEOUS		
25	American Power Conversion	73
51	Bose Corporation	-
COMPUTER SYSTEMS		
C2-1	Apple Computer	-
PRINTERS		
9	Brother International Corp.	119
12-13	Xerox	101
MISCELLANEOUS		
21	CDW	2
98	Griffin Technology	-
C4	La Cie	-
C3	MYOB	144
33	Small Dog Electronics	-
MONITORS/ GRAPHICS BOARDS		
15	Wacom	-
SCANNERS & DIGITAL CAMERAS		
17	Nikon Electronic Imaging	-
S O F T W A R E		
BUSINESS/PRODUCTIVITY		
6	Extensis	68
CLIP ART & FONTS		
37	Insider Software	-
ENTERTAINMENT		
42,47	Aspyr Media	91
45	MacSoft	30
UTILITIES		
41-40	Alsoft	141
23	MicroMat	37
M A I L O R D E R		
84-85	B & H Photo	-
92	Broadway Photo	-
87	ClubMac	98
93	J&R Computer World	57
90-91	MacConnection	-
88-89	MacMall	132
94-97	Otherworld Computing	-
S E R V I C E S		
TRADESHOWS/CONFERENCES		
34	Geek Cruise	-
22	The Inside Mac Show	41
48	PhotoshopWorld	-
INTERNET PRODUCTS/SERVICES		
2-3	Google	-

Just Announced at MacWorld San Francisco: iLife '04, Final Cut Express 2.0 & iPod mini



Introducing iLife '04 **Introducing Final Cut Express 2.0**

New! **New!**

Only **\$49** #351012

Upgrade Only **\$99** #346210

'04 includes iPhoto 4, iMovie 4, iDVD 4, iTunes 4.2.

Edit Like a Pro for Less. Final Cut Express 2.0 Full Version Only \$299 #346209

15GB iPod & iPod mini

New! **New!**

Small - 15GB model **\$294** #350999

FREE* Speakers *After \$9.99 Mail-in Rebate

3700 songs in your pocket!

The world's smallest 1,000 song player. Five new colors. For Mac or Windows.

Mini - 4GB model \$244

- #351002 (Silver)
- #351008 (Gold)
- #351010 (Pink)
- #351009 (Blue)
- #351011 (Green)

The iBook G4!

Up to **1GHz!**

63 iBooks Starting at \$799!

PowerBook G4

As Low as **\$1349** Up to **1.33GHz**

Plus These Great Offers!

FREE! Up to 512MB RAM **FREE!**

EPSON Stylus Color Printer FREE! Carrying Case or USB Floppy Drive

SAVE! Up to **\$300** on Final Cut Pro 4 & DVD Studio Pro 2

*Offers available with system purchase and after mail-in rebate(s). Not all offers available on all systems. See website for details.

The eMac G4

Up to **1GHz!**

Starting at **\$794**

17.1" Flat CRT Display

Special! 1.8GHz! PowerMac G5

Only **\$1749**

While Supplies Last!

Panther Mac OS X 10.3

Only **\$108.99**

#296382

iTrip for New iPod

FM Transmitter

Only **\$29.99**

#241722

Intuit Quicken 2004

Save \$30 when Purchased Together! Via Mail-in Rebate.

Only **\$69.95**

#246356

Intuit TurboTax Deluxe

Only **\$49.95**

#298286

Microsoft Office:mac Standard Edition

\$348.99

#208615

Get Microsoft Office 2004 Mac **FREE!** if you purchase a selected Office v.X product between 1/6/04-6/30/04.

Printers

HP Deskjet 5150 \$99.99 #265831

278103 Epson Stylus CX5400 \$50.00*

265645 Epson Stylus Color C84 \$109.95

131424 Epson Stylus Color Photo 1280 \$379.00

356835 HP Color LaserJet 3500 \$799.00

744192 HP Deskjet 6127 \$249.00

*After Mail-in Rebate and Purchase of an Apple CPU. Ends 2/29/04.

Canon PowerShot A60 \$179

#138628

Canon EOS Digital Rebel SLR \$899

Lens Not Included #271456

Apple Cinema Display 20" Displays

#960097 Apple 17" LCD Studio Display \$694.00

#970382 Apple 23" LCD Cinema HD Display \$1,994.00

#259776 Sony SDM-593 19" LCD \$649.00

#363235 Sony Multiscan G520 21" .24mm \$857.00

#967667 Cornea MP704 17" LCD \$399.00

#767511 LaCie Electronblue 19" IV 1600X1200 76Hz \$379.00

#319862 Sceptre X9G 19" LCD \$299.00

#663867 Gallery 2010 20" LCD \$1199.00

Microsoft Office:mac Standard Edition

\$348.99

#208615

Get Microsoft Office 2004 Mac **FREE!** if you purchase a selected Office v.X product between 1/6/04-6/30/04.

GVP 120GB External FireWire Hard Drive \$149

#505565

341667 GVP 200GB External FireWire HD 7200 \$229.00

105067 GVP 52X/24X/52X External FireWire CDRW \$109.00

23446 GVP 100pk 1x DVD-R Media \$109.95

138841 LaCie 200GB FireWire 7200rpm \$259.00

365972 Ezquest Cobra FireWire 7200 Ext HD 120GB \$169.00

291217 GVP XP 800 200GB FW800/USB 2.0 Hard Drive \$289.00

153744 Phantom Drives 120GB HD Ext FireWire 7200RPM \$169.95

Apple DVD Studio Pro 2.0 Upgrade and Full Version

Upgrade **\$194** Full Version **\$449**

Software-Graphics

#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 Family Pack \$188.99

#296385

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.

FREE SHIPPING!* Free UPS Ground Shipping Terms & Conditions

1-800-260-8549

NO SURCHARGE

*UPS ground shipping, after mail-in rebate, for orders \$99 or more (not including shipping costs) at one rate per person per shipping address every 90 days and not to exceed \$30 per shipping cost. Valid on credit card purchases only. See Website for more details. Expires 2/29/04.

24 Hours, 7 Days a Week

ClubMac®

Source Code: ZMWC403

Choose 98 at www.macworld.com/getinfo

WWW.CLUBMAC.COM

E-Mail: 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 TYPING 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: 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.

Free shipping on all orders over

All NEW iPod mini!

The world's smallest 1,000 song player!

All the best features of the iPod in a case weighing 3.6 ounces and smaller than any cell phone. Bring along enough music for a three-day weekend in a package so small you'll forget you're carrying it.

- 4GB ■ FireWire/USB 2.0
- 3.6 by 2 by .5 inches ■ 8 hours battery life
- Skip protection up to 25 minutes
- Includes Earbud headphones, belt clip, AC adapter, FireWire cable, USB 2.0 cable

Apple iPod™ Series

#350999 NEW! 15GB iPod	\$294
#279745 20GB iPod with Dock and Carry Case	\$394
#279747 40GB iPod with Dock and Carry Case	\$494

The iMac® G4—now offers up to a 20" widescreen display!

- Up to 1.25GHz PowerPC G4 processor
- 256MB of PC2700 (333MHz) DDR SDRAM



Save up to \$200!
On previous Apple iMac G4 models! Call today!

FREE Speakers!†† #569636



5 New Colors!



iPod mini only

\$244!

#351002 iPod mini-Silver	\$244
#351008 iPod mini-Gold	\$244
#351009 iPod mini-Blue	\$244
#351010 iPod mini-Pink	\$244
#351011 iPod mini-Green	\$244
#351014 iPod mini Dock	\$39
#351013 iPod mini Arm Band	\$29

††A 9.95 processing fee applies.

- 80GB Ultra ATA/100 hard drive (7200RPM)
- NVIDIA GeForce FX 5200 video card
- Built-in Apple Pro Speakers (7 watts each)

starting at **\$1,094!**
FREE up to 512MB Extra RAM!

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

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

\$250 Price Drop on 1.8GHz!



Display sold separately.

starting at **\$1,749!**
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	\$1,794
#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
--	---------

FREE upgrade to Microsoft Office 2004!† Plus... must have add-ons!

Microsoft® Office v. X Student and Teacher Edition

#248327
Microsoft
only **\$139.99!**
Call for details.

FREE upgrade to Office 2004!†

Adobe® Photoshop® CS

The professional standard for desktop digital imaging!
#283190
Adobe
upgrade **\$169!**
Call for details.

QuarkXPress 6.0/Macromedia FreeHand MX Bundle

#350007
QUARK
Special offer!
\$999!

TurboTax Deluxe 2003 for Mac

#298286
Intuit
only **\$49.95!**
†Save \$30 when purchased with Quicken 2004 (#246356). Call for details.

Final Cut Express 2

Create pro-quality video quickly and easily!
#346210
Apple
upg. only **\$99!**
Call for details.

Adobe® Illustrator® CS

The industry-standard vector graphics software!
#279956
Adobe
upgrade **\$169!**
Call for details.

Director MX 2004

Build rich content that delivers real results!
#349362
macromedia
upg. only **\$399!**
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
MACROMAT
as low as **\$88.99!**
Call for details.

Adobe® Creative Suite

Photoshop, InDesign, GoLive and Illustrator!
#285425
Adobe
upgrade from Photoshop **\$749!**
†Free limited time offer. 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 upgrade to Office 2004 upon release this spring.—With purchase of Microsoft Office v.X Student & Teacher Pro, or standard full version via mail-in coupon through Microsoft. Processing fees apply. All offers valid while supplies last.

99!†

Apple Authorized Reseller

Mac OS X v10.3!

New "Panther"—now shipping!

only **\$108⁹⁹!**

#296382



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 Apple Final Cut Pro and 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



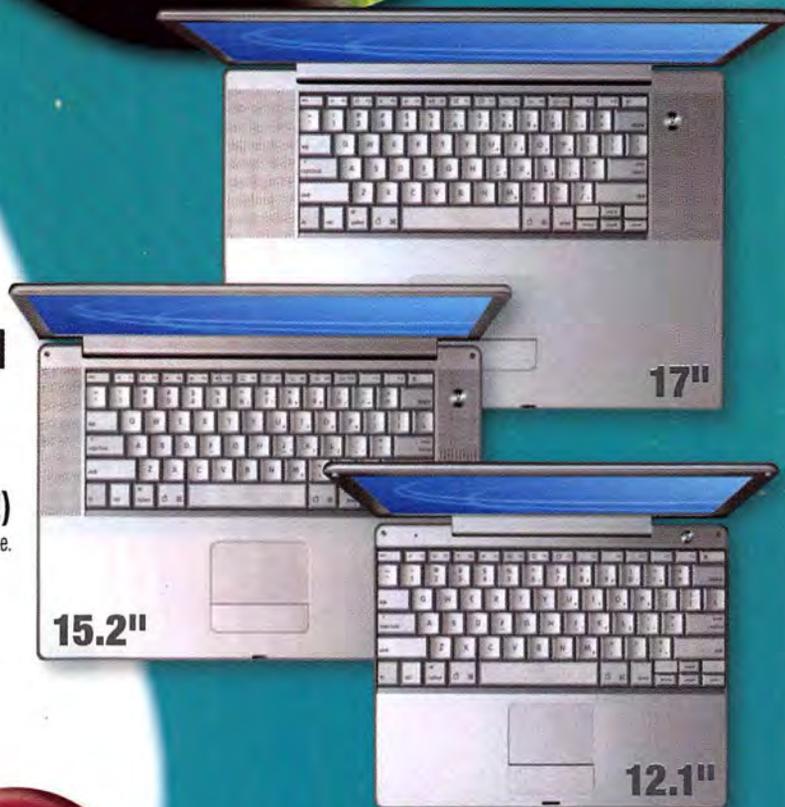
FREE Printer!™

With purchase of any Apple Computer. After mfr./MacMall mail-in rebates.



FREE Software!†

Free MYOB FirstEdge #638065 with purchase of any Apple computer. Additional processing fee applies to each title.



Save up to \$565!
On previous PowerBook G4 models! Call today!

NEW PowerBook G4 starting at \$1,594!*

Apple iBook G4!

The most affordable G4 notebook ever!
■ Up to 1GHz PPC G4 ■ 256MB RAM
■ Up to 60GB hard drive ■ 12.1" or 14" display
■ Slot-loading Combo Drive (DVD/CD-RW)

iBook G3 models as low as \$799!
Save up to \$300 on previous iBook G3 models! Call today!



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

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

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

Apple 14" 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

\$999

#441399



*After mail-in rebates. A \$99 value.

IMAGINE YOUR VERY OWN



NEW HP ScanJet 4670 Vertical Scanner

- See-thru
- 48-bit color

ONLY \$199.95
#461346



NEW Director MX 2004

- Build rich content and apps
- Author once, deploy anywhere

UPGRADE ONLY \$399
#4764331



Canon

NEW EOS Digital Rebel

- SLR camera body • 6.3MP CMOS
- 12 shooting modes

ONLY \$899 **WITH LENS \$999**
#460354 #460355

MacConnection®

A PC CONNECTION, INC. COMPANY

the right tools for the right brain™

www.macconnection.com

800.800.3333

PERSONAL RADIO STATION

NEW IPOD MINI IN 5 COLORS



Introducing the **NEW** iPod mini!

- Stores 1000 songs (4GB) • 5 cool colors
- Compact - just 3.6" H x 2" W x .5" D
- For Mac and Windows

\$249 EACH



SONY

Sony DCR-DVD 100 Handycam Camcorder
Record straight to DVD

- 10X Optical
- 210X Digital

ONLY **\$895**
#457720



Apple Authorized Reseller

20" Widescreen iMac
with **FREE*** 512MB Upgrade

- 1.25GHz PowerPC G4
- 256MB RAM • SuperDrive

ONLY **\$2194**
#4749457

*After \$100 rebate. \$29.95 installation fee applies.



Apple Authorized Reseller

NEW iLife '04

For the Creative Genius in You

- All-new GarageBand • New iTunes
- New iPhoto • New iMovie • New iDVD

ONLY **\$49**
#4787904



Apple Authorized Reseller

NEW 15GB iPod

- Only 5.6 ounces
- Stores up to 3,700 songs
- For Mac and Windows

ONLY **\$294**
#4787832

Broadway Photo

2922 Ave. L, Brooklyn, NY 11210

1-800-361-3436

Store Hours: Mon-Thurs: 9am-10pm • Fri: 9am-4pm • Sun: 10am-7pm • 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/Digital Zoom
- USB

\$289⁹⁹



Coolpix Z100 \$149.99
Coolpix Z100 \$219.99

NIKON Coolpix 5400

- 5.1 MegaPixels
- 4x Digital Zoom

\$509⁹⁹



NEW! Coolpix 3700 \$299.99

NIKON D1X

- 5.47 MegaPixels
- SLR Type Dig. Camera
- Uses Nikon AF-D/i /S Lenses

\$2849⁹⁹



NEW! D2H \$2499.99

OLYMPUS C-50

- 5.0 MegaPixels
- 3x Optical Zoom
- 4x Digital Zoom

\$324⁹⁹



NEW! Stylus 400 Digital \$299.99
NEW! Stylus 300 Digital \$299.99

PENTAX Optio 555

- 5.0 MegaPixel CCD
- 4x Dig./5x Opt. Zoom

\$409⁹⁹



IST-Digital \$1099.99
Optio S4 \$284.99

NIKON Coolpix 5700

- 5.24 MegaPixels CCD
- 4x Optical Zoom
- 2/3" CCD

\$639⁹⁹



NIKON D100

- 6.1 MegaPixels
- 1.8" LCD Screen
- USB

\$1149⁹⁹



NEW! D70 CALL

OLYMPUS E-ZO

- 5.24 MegaPixels
- 2/3" CCD Screen
- USB

\$969⁹⁹



OLYMPUS C-5000

- 5.4 MegaPixels CCD
- 4x Dig./3x Opt. Zoom

\$309⁹⁹



D-3000 \$119.99
NEW! D-560 \$189.99
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 DSC-F828

- 1.8" LCD Screen
- 4x Digital Zoom
- 7x Optical Zoom

\$829⁹⁹



DSC-F717

\$574.99

NEW! DSC-F77A

\$329.99

SONY DSC-V1

- 5.0 MegaPixels
- 4x Digital Zoom
- 4x Optical Zoom

\$429⁹⁹



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

\$1199.99

CANON PowerShot G5

- 5.0 MegaPixels
- 4x Optical Zoom
- 1.8" LCD Screen

\$464⁹⁹



CANON PowerShot S50

- 5.0 MegaPixels
- 3x Opt./4.1x Digital Zoom

\$349⁹⁹



NEW! S400

\$329.99

NEW! A300

\$359.99

NEW! SD100

\$279.99

NEW! SD110

\$249.99

FUJI FinePix S5000

- 3.1 MegaPixels
- 10x Optical Zoom

\$274⁹⁹



FUJI FinePix S2

- 3024x2016 Resolution
- USB

\$1299⁹⁹



NEW! Finepix S3

CALL

SONY DSC-P10

- 5.0 MegaPixels
- 3x optical Zoom

\$339⁹⁹



DSC-P8

\$264.99

DSC-P32

\$164.99

DSC-P52

\$209.99

DSC-P72

\$234.99

DSC-P92

\$299.99

CANON EOS 10S

- 11MegaPixels
- 2.0" LCD Screen

\$609⁹⁹



Special! 1D

\$6399.99

SD10

\$279.99

SD100

\$249.99

KODAK DX6490

- 13.89 MegaPixels
- IEEE 1394

\$379⁹⁹



NEW! DCS6440

\$309.99

NEW! DCS-Pro 14N

\$3549.99

DX6340

\$239.99

NEW! Finepix F700

- 6.2 MegaPixels
- 3x Optical Zoom
- 1.8" LCD

\$349⁹⁹



NEW! Finepix A210

\$154.99

NEW! Finepix A310

\$169.99

SIGMA SD-10

- 10.2 MegaPixels
- IEEE 1394
- USB

\$1079⁹⁹



SD9

\$799.99

MINOLTA Dimage A1

- 5.24 MegaPixels
- 7x Optical Zoom
- 1.8" LCD

\$619⁹⁹



NEW! Dimage 7H

\$599.99

NEW! Dimage Z1

\$279.99

NEW! Dimage XT

\$219.99

MINOLTA Dimage Z1

- 3.2 MegaPixels
- 10x Optical Zoom
- 4x Digital Zoom

\$269⁹⁹



NEW! Dimage X20

\$149.99

NEW! Dimage G500

\$269.99

NEW! Dimage G400

\$249.99

DIGITAL VIDEO

CANON GL-2

- IEEE 1394
- 20x Optical Zoom
- 100x Digital Zoom
- 2.5" LCD Screen

\$1809⁹⁹



CANON OPTURA 300MC

- 2.0 MegaPixels
- 2.5" LCD Screen
- IEEE 1394

\$849⁹⁹



Optura 10 \$429.99

Optura 20 \$599.99

NEW! Optura XI \$929.99

CANON XL-1S

- 3 CCD
- 7" Color LCD

\$2849⁹⁹



ZR-60 \$314.99

ZR-65 MC \$339.99

ZR-70 MC \$389.99

JVC GR-D90

- 16x Optical Zoom
- 700x Digital Zoom
- 3.5" Color LCD

\$329⁹⁹



JVC GR-DV800

- 1.33 MegaPixels
- 10x Opt. Zoom
- 2.5" Color LCD
- USB

\$424⁹⁹



SONY DCR-TRV950

- 12x Optical Zoom
- 150x Digital Zoom
- 3.5" LCD

\$1399⁹⁹



DCR-TRV250 \$324.99

DCR-TRV350 \$404.99

NEW! GR-DVP9

\$719.99

SR-VS30

\$699.99

HR-DV53

\$619.99

NEW! JY-HD100

\$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

\$2009⁹⁹



DCR-VX2000

\$1949.99

NEW! DHR-1000

\$2979.99

GVD1000

\$929.99

GVD800

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

\$3199⁹⁵

(NEN 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 ISD) **\$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**



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 SCDS000) **\$799.99**

Canon XL1S 3CCD Mini DV Digital Video Camcorder

•16x-optical/32x-digital zoom lens •Interchangeable lens system (XL mount) •Color viewfinder •72mm filter diameter •3 shooting modes •Programmed AE •PCM digital audio •Rechargeable battery... (CAN XL1S) **\$3549.99**



SONY

Apple iPod™

Get \$100 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®

15GB HD, holds 3,700+ songs in AAC format (APP M9145L/A) **\$294⁹⁹**

20GB HD, holds 5,000+ songs in AAC format (APP M9244L/A) **\$394⁹⁹**

40GB HD, holds 10,000+ songs in AAC format (APP M9245L/A) **\$494⁹⁹**

AppleCare™ Protection Plan For iPod™ (APP M9404LL/A) **\$59.99**

Apple iPod™ mini

Apple iPod™ mini

4GB Portable Digital Music Player

•Carry 1,000 songs everywhere you go •Smaller than a cell phone & only 3.6 oz. •Download songs for 99¢ each from iTunes® Music Store •Mac®/Windows •FireWire®/USB 2.0

\$249⁹⁹

(APP M9160LL/A) silver

(APP M9434LL/A) green

(APP M9435LL/A) pink

(APP M9436LL/A) blue

(APP M9437L/A) gold

FREE Monster Cable iSplitter (MC A1CYP) with your pre-order!

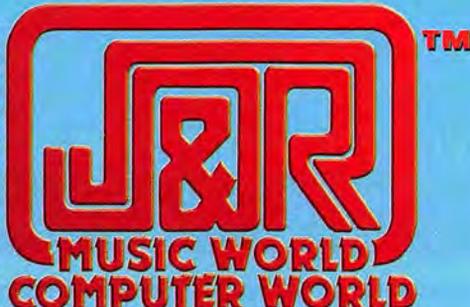
iPod Mini Arm Band... (APP M9445G/A) **\$29.99**

iPod Mini Dock... (APP M9467G/A) **\$39.99**

For Delivery in Early March, PRE-ORDER NOW!



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.

Apple® 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 M9145L/A) + (PNY D256MPC270P)

AppleCare™ 3-Year Extended Service Protection Plan For PowerMac® Computers (APP M8850LL/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 M8851L/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 M8853L/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®

Apple® iLife® '04

•Suite of 5 tightly integrated tools: GarageBand (make your own music), plus new versions of iTunes® (organize your music), iPhoto™ (sort & edit your photos), iMovie® (edit your own video) & iDVD™ (create & share quality DVDs) •Mac OS® v10.2.6+ or later CD

\$49⁹⁹

(APP M9364LL/A)



HP Laser Printer

EPSON Stylus® Photo 2200

Color Ink Jet Printer EPSON •7-color UltraChrome™ inks with individual ink cartridges •Up to 2880 x 1440 dpi-black & color •Max. print area: 13" x 44" •Roll paper holder & automatic cutter •Interchangeable photo & matte black inks •Parallel/IEEE 1394/USB •Windows/Mac

CALL

(EFS C1138701)



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® Hard Drives

•10ms average access time •FireWire® (IEEE 1394) interface
80GB Hard Drive... (LAC 300699U) **\$139.99**
160GB Hard Drive... (LAC 300702U) **\$189.99**
250GB Hard Drive... (LAC 300703U) **\$279.99**

External USB 2.0 Hard Drives

•11ms average seek time •USB 2.0 (1.1 compatible) •USB cable
40GB Hard Drive... (LAC 300697U) **\$99.99**
80GB Hard Drive... (LAC 300698U) **\$129.99**
160GB Hard Drive... (LAC 300700U) **\$179.99**

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 **\$239⁹⁹**

(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) **\$89.99**

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) **\$99.99**



Monitors/Projectors

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 •Analog connector •For PC/Mac •Gray

\$749⁹⁹ - \$100⁰⁰

Mr. Mail to Rebate Thru 3/27/04

\$649⁹⁹ (SON SDM-HS93/H)



InFocus® LP™ 530

Mobile Projector

•SXGA/VGA/SVGA/XGA/Mac/1080i-720p HDTV data compatible •Zoom lens & elevator foot •270 watt SHP lamp •400:1 contrast ratio •3-watt stereo audio system •Whisper quiet •Remote & carry case •1yr 2-year limited warranty

\$1949⁹⁹ (IFS LP530)



PNY Memory Cards

128MB CompactFlash™

\$44⁹⁹ (PNY PCF128RF)

128MB SmartMedia™

\$44⁹⁹ (PNY PSF3128RF)



128MB Secure Digital **\$54⁹⁹** (PNY PSD128RF)

256MB CompactFlash™ **\$59⁹⁹** (PNY PCF256RF)

Call To Order Toll Free & Receive Our Free Catalogue:

7 Days Anywhere In The USA **800-559-5504**

Park Row • New York, NY 10038 • Fax: 800-232-4432

All Major Credit Cards Accepted
Overnight Delivery Available!

Order Code: MWM 0304

(Prices Effective Thru 3/15/2004)

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



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



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!

512MB upgrade set \$89
(2 x 256MB matched modules)

1GB upgrade set \$175
(2 x 512MB matched modules)

2GB upgrade set \$569
(2 x 1GB matched modules)

SPECS: 6 layer low noise, 184pin PC3200 DDR 400MHz, CAS = 3.0

* G5/1.6GHz may also use PC2700 DDR333 DIMMs

PowerMac G4 * Mirrored Drive Door* 867MHz - 1.42GHz

256MB \$43.99 512MB \$85.99

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

60GB 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

SIIG, Inc.

Sonnet Sonnet Tempo Trio ATA/133 FW/USB Mac all-in-one PCI \$179.95

Sonnet Tempo Trio Mac all-in-one PCI \$179.95

Tri-o 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; PowerMac G3 FireWire (aka Pismo/00)

128MB \$36.99 256MB \$52.99

512MB \$117.95* 512MB LP \$125.99

* 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 \$49.99 512MB \$119.99

1GB PC2100 \$379.99; PC2700 \$499.99

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 \$94.95
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 \$269.99
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!

Serial drive and PCI card Serial drive and cable

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 \$54.99 512MB \$119.99

Hi-Performance PC133 CL2

256MB \$64.95 512MB \$129.99

SPECS: PC133 / PC100 SDRAM 168pin DIMMs

PowerMac G3 Beige, G3 Blue and White, G4 'Yikes'

128MB \$37.95

256MB \$49.95 **SPECIAL**

SPECS: PC66/PC100 CL2 168pin SDRAM

Make movies & music

Just add a SuperDrive!
From only **\$139.99!**

Sierra DVR-106

My Movies

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 \$249.99
9.5mm notebook, 7200RPM, 8MB Data 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!

30GB IBM/Hitachi Travelstor 5K80 \$119.99
9.5mm notebook, 5400RPM, 8MB Data Buffer, 3yr warranty

SPECIAL PURCHASE: Get this fast, quiet 30GB drive for the price you'd normally expect to pay for a 20GB model!

40GB Toshiba 4026GAX \$169.95
9.5mm notebook, 5400RPM, 16MB buffer, 3yr warranty

60GB Toshiba MK6022GAX \$199.95
9.5mm notebook, 5400RPM, LARGE 16MB buffer, 3yr warranty

80GB IBM / Hitachi 80GN \$219.99
9.5mm notebook, 4200RPM, LARGE 8MB buffer, 3yr warranty

80GB IBM / Hitachi 5K80 \$289.99
9.5mm notebook, 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

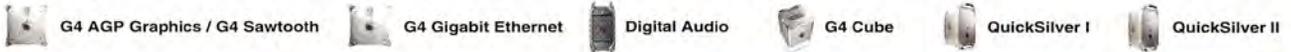
Excellent service / Competitive prices / Quality products / Expert tech staff



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 5 out of 5

MacAddict - 'Solid'

OWC Mercury G4 Extreme

<ul style="list-style-type: none"> G4/700-800MHz \$199.99 700MHz G4 guaranteed for up to 800MHz G4/800-900MHz \$269.99 800MHz G4 guaranteed for up to 900MHz G4/1-1.2GHz \$379.99 1GHz G4 guaranteed for up to 1.2GHz 	<ul style="list-style-type: none"> G4/1.25-1.467GHz \$439.99 1.25GHz G4 guaranteed for up to 1.467GHz G4/1.4-1.467GHz \$539.99 1.42GHz G4 guaranteed for up to 1.467GHz <p style="text-align: center; font-size: small;">Call for Dual G4 & Cube G4 processor upgrades!</p>
--	---

- 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!

All PowerMac G4 processor upgrades we offer are 100% compatible with Apple OS 9.2.x and Apple OS X versions including 10.3.x 'Panther'

Love your Cube even more after you boost it up to 1.4GHz

PowerLogix G4/1.4GHz with 2MB L3 \$599.99
Based on the latest Motorola 7457 processor, the fastest and coolest Cube upgrade available! 2yr PowerLogix warranty.

GigaDesigns G4/1.0GHz with 2MB L3 \$399.99
3yr GigaDesigns warranty

Faster video makes for a faster Mac!

- 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 2048x1535
- 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 2048x1535
- 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 2048x1535

Perfect for Apple OS X and Quartz Extreme

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!

OWC XpostFacto

The Power of OS X on Macs NOT Supported by Apple!

macsales.com/OSXCenter

Get OS X from only \$19.99!

You are not left behind - ZIF up to 1GHz!

For PowerMac G3 Beige, G3 Blue and White

<p>G3/900MHz \$229.99 G3/1GHz \$CALL</p>	<p>G4/700MHz \$347 G4/1GHz \$489 G4/500MHz \$199.99</p>	<p>G4/450-500MHz \$169.99</p>
--	--	--------------------------------------

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



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



G4 'Titanium'
65 watt hour \$139.99

www.macsales.com/music

We've got the products for making, playing, listening,
recording to audio/music with your Mac! Get help and
tips too with our free online forum.



Contour Shuttle A/V Controllers

Shuttle Pro v2 Jog/Shuttle + 15 programmable buttons \$119.99
Shuttle Express Jog/Shuttle + 5 programmable buttons \$47.99



Instant DVD USB \$199.99

Make your own DVDs from Television, Camcorder, VCR Tapes, any Composite/S-Video + Audio source with ease! Save TIME and Hard Drive space too since Instant DVD hardware encodes MPEG2 REAL-TIME so you don't have to do the DV to MPEG2 with your computer! Instant DVD is the EASIEST way to convert your video library to DVD!



ADS Pro AV Link FireWire Audio/Video In for Mac \$179.99

Import Audio/Video from any Composite or S-Video source with Audio on the fly via FireWire! So simple, so cool, it doesn't get easier to bring audio/video in!



Miglia Alchemy TV Tuner + PVR PCI card w/Remote \$139.99

Watch AND Record TV in a window on your Mac! Set recording schedules, play back recording television programs, and more! Tunes standard TV/Cable via Coax or Composite/S-Video + Audio inputs, use as your own digital Personal Video Recorder. Fun and Affordable!



Optical 3 Button +
Scroll Mouse \$17.99

GRIFFIN



iPod iTrip (1/2/3 gen) \$34.99
Transmits FM to listen to iPod on radio



Unreal UT2003



Macally iShock2 with
force feedback \$19.99

Keyboard / Monitor switches \$49.95
Use one keyboard / mouse / display to
control multiple Macs!

iSkin

iSkin keeps stuff out. Many
colors to choose from. For
iPods from \$18.99! For
PowerBooks and iBook \$19.99!



Clean your Apple LCD the right way!

Klear
Screen
Cleaner



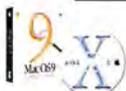
Apple Polish 2 Stage iKlear, 10 for \$7.50
Power Klean LCD 1500 cleanings kit \$23.99



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



visit macsales.com
800.275.4576

Top-Rated FireWire 400/800 & USB solutions by OWC



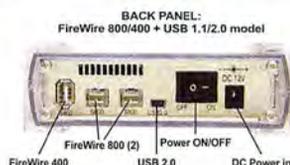
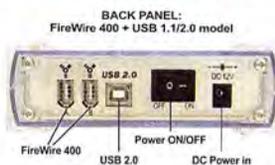
Sits great for vertical placement



Compact and stacks easy

OWC Mercury Elite Pro storage solutions

For all your high-speed storage needs!
www.macsales.com/firewire



Awards:



	Elite FW400 + USB 2.0/1.1	Elite FW800 + USB 2.0/1.1
60GB 7200RPM 2MB	\$145.99	\$NA
80GB 7200RPM 2MB	\$159.99	\$195.99
120GB 7200RPM 2MB	\$179.99	\$219.99
120GB 7200RPM 8MB	\$189.99	\$229.99
160GB 7200RPM 8MB	\$219.99	\$259.99
180GB 7200RPM 8MB	\$259.99	\$299.99
200GB 7200RPM 8MB	\$279.99	\$309.99
250GB 7200RPM 8MB	\$309.99	\$379.99
250GB 5400RPM 2MB	\$279.99	\$319.99
320GB 5400RPM 2MB	\$389.99	\$429.99

All Mercury Elite solutions include: Dantz Retrospect Express (Mac/PC) Intech Speedtools (Mac), all cables & 2 year OWC warranty

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	\$289.99

Neptune FW Solutions include Dantz Retrospect Express backup software (Mac & PC), Intech Speedtools (Mac), all cables & 2 year OWC Warranty

2.5" On-The-Go FireWire Solutions

MacAddict 'Droolworthy'

Drive may be powered by FireWire Bus or with included power adapter

All Mercury On-The-Go solutions include: Dantz Retrospect Express (Mac/PC) Intech Speedtools (Mac), all cables & 2 year OWC warranty

Photoshop User

	FireWire	FW + USB 2.0/1.1
40GB 4200rpm 2MB	\$219.97	\$225.99
40GB 5400rpm 8MB	\$249.97	\$259.99
60GB 4200rpm 8MB	\$249.97	\$259.99
60GB 7200rpm 8MB	\$339.97	\$349.99
80GB 4200rpm 8MB	\$299.97	\$309.97
80GB 5400rpm 8MB	\$349.97	\$359.99

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!

Macworld

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!**

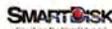
DragonBurn full featured authoring software, Dantz Retrospect Backup Software, 25 Pieces 80 Minute CD-R, All Cables, 1yr OWC Warranty included

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 versions 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 \$69.99

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 MiniStreet 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

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 dongles



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

Macworld Showcase Featured Advertisers

OSX Showcase

OmniPilot omnipilot.com
 Jiiva jiiva.com

Developer Showcase

CValley cvalley.com
 IL Cooper Electronics ilcooper.com
 Data Video Corp. datavideo-tek.com
 RadTech radtech.us/mw
 Macro Enter macroenter.com
 Globalmediapro globalmediapro.com/eshop
 Gefen gefen.com
 Orange Micro orangemicro.com
 AstroAge astro-age.com
 Granite Digital granitedigital.com

Dr. Bott drbott.com
 Mace Group macally.com
 Orange Micro orangemicro.com
 BooqBags booqbags.com
 Acme Made acmemade.com
 MarWare marware.com
 Matias Corporation halfkeyboard.com
 Axio axio-usa.com
 iskin xskn.com
 Acknowledge iskin4ipod.com
 WiebeTech wiebetech.com
 Marathon Computer marathoncomputer.com
 Applelinks thinkdifferentstore.com
 Engineered Audio engineeredaudio.com

Yazsoft yazsoft.com
 Rain Design igo4mac.com
 Photo Control photo-control.com

Services Showcase

AmericasPrinter.com americasprinter.com
 Creative Juices bigposters.com
 Pressnet Express pressnetexpress.com
 Presentation Services imagers.com
 Lazarus lazarus.com
 Drive Savers drivesavers.com
 Mark/Space markspace.com
 Copy Craft copycraft.com
 Wizard Graphics wizardgraphics.com
 Postcard Press postcardpress.com
 Sharpdots sharpdots.com
 Global Print Runner globalprinrunner.com

FatCow fatcow.com

Direct Showcase

inkfarm inkfarm.com
 Granite Digital granitedigital.com
 PowerMax powermax.com
 GoGamer.com gogamer.com
 Journey Educational journeyed.com
 SeafoodByNet seafoodbynet.com
 Academic Superstore academicsuperstore.com
 Mac Solutions macsolutions.com
 Your Mac Life yourmaclife.com
 MegaMacs megamacs.com
 PowerOn Computers poweron.com
 1-800-4-Memory 18004memory.com
 Mac of all Trades macofalltrades.com
 Mac Pro mac-pro.com
 MacResQ macresq.com

For more information, contact Niki Stranz or Carol Johnstone at (800) 597-1594.

OMNIPILOT
AGENCY
 SPECIAL EDITION
 for
QuickBooks®
 USERS
 NOW AVAILABLE

★ 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.

Got New Hardware?

PROTECT THE OLD - Permanently erase all data from your old Mac with SuperScrubber's military-strength disk sanitization

PROTECT THE NEW - As files are deleted, make sure they are securely deleted, automatically with AutoScrubber

Erase the Risk
SuperScrubber.com

MacASSTATED
 design
 MACFORMAT
 macHOME
 Jiiva

©2004 Jiiva, Inc. All rights reserved.

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. Try all 33 of Xstream Path's powerful tools today!
 beyond the bounds of Illustrator! Get your **FREE DEMO** at: www.cvalley.com

MCS3
Media Control Station

- Control Final Cut Pro, iMovie & most Audio/Video Software
- Professional Jog/Shuttle Control
- Compact for OS X, OS 9, Windows
- Software Included
- USB - Powered



Order Now
\$399.95

www.jcooper.com

SHOWCASE
YOUR PRODUCTS
TO OVER 2 MILLION READERS
*SOURCE: INTELLIQUEST CIMS v. 8.0

Macworld
1.800.597.1594

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

Innovative Solutions for Today's Digital Lifestyle

PodSleevez™ 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

6 Colors!

RADTECH
www.radtech.us/mw

macroenter

REC - CAD, Network &
Large Printing Solutions

Apple Value Added Reseller

CAD / Drawing Software

MacDraft	\$299
MacDraft PE	\$129
ConceptDraw	\$199
VectorWorks	\$895

Large Printers CALL

Encad, HP

MAC OS X Compatible

RIP Software

Shiraz Postscript L	\$495
Microspot X-RIP	\$399

Media / Supplies CALL

SEH Network

Ext. Print Servers	\$189
Int. Print Servers	\$245

HP • Epson • Kyocera
MAC OS X Compatible

PrintUlike

e-Storage • Photo Gallery
Online Printing

For \$ 2.99 month

www.printUlike.com

www.macroenter.com 1-800-622-7568

Globalmediapro
on-line store

PAL CAMERAS
PAL VTRs
MIXERS
LENSES
TRIPODS
BATTERIES

LOW PRICES
FAST DELIVERY
WARRANTY

globalmediapro.com/eshop
tel: +64 9 534 0804
sales@globalmediapro.com
New Zealand

Extends over 1500 feet away

extend it
**firewire
extender**
IEEE1394 Optical Repeater



the firewire extender
IEEE 1394 Optical Repeater

GEFEN INC.

www.gefen.com
800-545-6900 818-884-6294

**It's a bird!
It's a plane!**

**No, it's
iBOT™**
FireWire® WebCam



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:
Apple Store COMPUSA
shipitforyou.com Fry's Electronics

Orange Micro
www.orangemicro.com

WINNER LAPTOP Ultimate choice
X Mac OS
FireWire

MAKE YOUR MAC MOBILE



Gboard™ 5

The essential addition to your G5 or G4 tower



ASTROAGE

Gboard™ 4

www.astro-age.com
patents pending

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



80 MB/s Ultra Fast Performance Potential

from **\$279**

Gold FireWire 800 1394-B Cables



Ultra High Quality Guarantees Reliability

from **\$17.95**

USB 2.0 Case Kits



480 Megabyte/s F.W.T. 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

Fastest Drive **\$199**

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



Includes Installation Burn-in and Testing

\$129

Granite
D.O.G.I.T.O.A.L.
Providing Data Storage Integrity



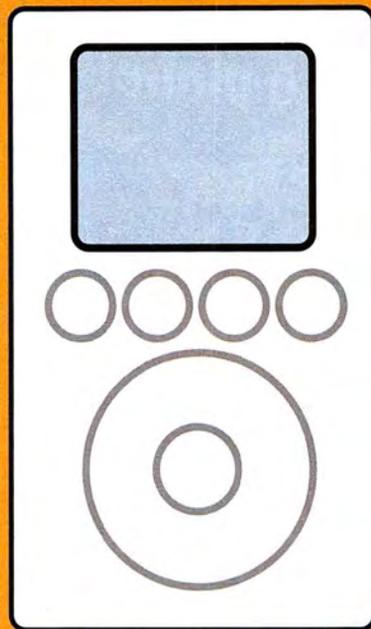
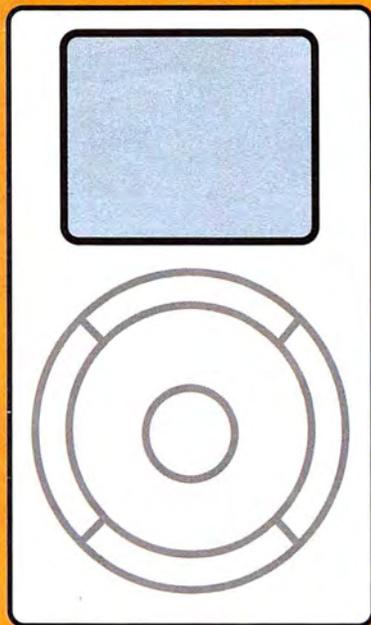
Whatever your storage needs, Granite has the solution. We offer a complete line of drive systems or all the components for do-it-yourselfers. Go online and see what we mean.

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

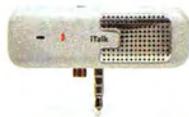
Choose 186 at www.macworld.com/getinfo

Get the Most Out of Your iPod!



Dr. Bott has the **NEWEST, COOLEST** IPOD stuff!

iTalk



GRIFFIN TECHNOLOGY

AutoKit



BEKIN

PocketDock



Starfon

FMXtra



DIGISETTE

iPod Connection Kit



Dr. Bott

iPod Armor



matias CORPORATION

SportSuit Convertible



SMARTWARE, Inc.

KSC17 StereoPhone



KROSS

iSkin EXO 2



iSkin BY SKINWARE

Reseller Opportunities Abound!
www.drbott.com 800.541.1167 503.582.9944

Dr. Bott LLC



World's Premiere Mac Accessories



Call us for dealers near you **1.800.644.1132** or visit us at: www.macally.com

Upgrade Your Mac with New FireWire 800 Technology

FireWire 800 & USB 2.0 Both Technologies in a single drive!



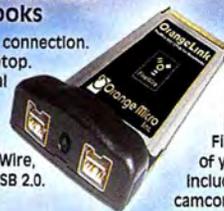
Orange Micro's FireWire 800/USB 2.0 Hard Drive Enclosure

The enclosure that will turn any IDE hard drive into a high performance portable device by using the fastest technologies of FireWire 800 and USB 2.0 in one drive enclosure.

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.

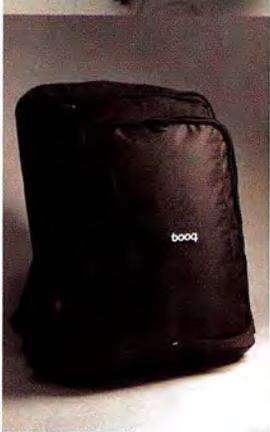


- 23 Years in Business
- Lifetime Guarantee
- Unlimited Telephone Support

Available at:
www.shipitforyou.com/orangemicro/
www.amazon.com

Orange Micro inc.
www.orangemicro.com

DEVELOPER showcase



Introducing Boa.XL.
The Fusion of Comfort
and Toughness for
Widescreen PowerBooks.

Boa.XL

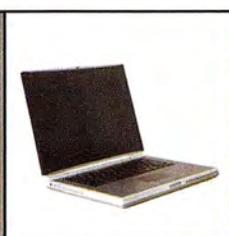
Designed with the most demanding PowerBook user in mind, constructed from some of the toughest ballistic nylons, the all-new Boa.XL widescreen backpack offers superb protection for your 15-inch or 17-inch PowerBook and iPod. It offers room for folders, books and all those accessories you'll need on your 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.

booq



Designed By Booq In California. ©2003 by Booq. All Rights Reserved. For more information, please visit www.booqbags.com or call (516) 438-9385.



Designed Protection **Acme Made**

order now at www.acmemade.com

CEO™

milano™ brief

MARWARE
innovative products for the Apple market.



A new sleek and stylish PowerBook case that provides abundant storage for the executive on the go.



www.marware.com

(954) 927-6031

would your laptop survive a ten foot drop onto concrete?



ours did.

laptop armor

www.laptoparmor.com/mw
phone: 905-265-8844 toll free: 1-888-663-4263



axio
AXIO BY HARODESIGN

Fuse! iPod Hardpack 760-557-0123 hardpack@AXIO-USA.COM
booth 1246_macworld_04

shareware developer?

reach over 1.7 million Mac buyers and still maintain your budget*

800-597-1594

Macworld

be visible

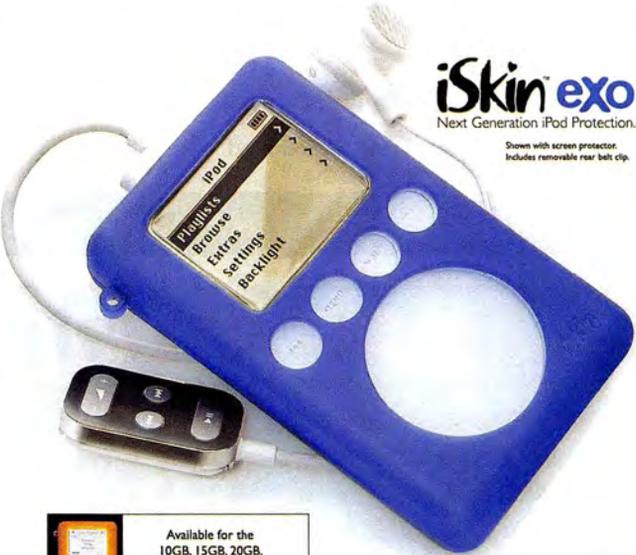
*Source: IntelliQuest CIMS v 9.0



Skn.com

eXo, eXo2, eXo3 are designed and manufactured by Lajo exclusively for Xskn

Safe & Sound
Durable, flexible protection for the Apple® iPod®.



iSkin exo
Next Generation iPod Protection.
Shown with screen protector.
Includes removable rear belt clip.

Available for the 10GB, 15GB, 20GB, 30GB and 40GB iPod in over 20 colors including glow-in-the-dark.

iSkin.com
iSkin Inc. All Rights Reserved 2003

COMBODOCK™

Complete FireWire
800/400/USB2
Bridge Solution
for 3.5" IDE
Hard Drives



Available at
Dr. Jotti MacMall

our best ideas store yours
Buy online at www.wiebetech.com Toll free 1-866-744-8722
ComboDock is a trademark of WiebeTech LLC.

MARATHON
COMPUTER

800-832-6326
615-367-6467
www.marathoncomputer.com
info@marathoncomputer.com

G5 DeskMount™

The ThinkDifferent Store

For all your Mac gear.



Action Jacket
\$29.99



MacClear for 3G iPod
\$10.00



iSkin eXo
\$28.99

www.ThinkDifferentStore.com

engineered audio

www.engineeredaudio.com

Aurius
USB Audio with FM transmitter



now \$50



\$40

RemoteRemote
Wireless remote control for your iPod

Available Now!

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





iGo
Your iMac's
other half.

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.raindesigninc.com rain design

Available at **Fry's ELECTRONICS** stores. Sales / reseller enquiries: Rain Design, San Francisco. Tel: 415 863 3826. Fax: 415 863 3829. sales@raindesigninc.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

BookEndz

DOCKING STATIONS

Convert your PowerBook or iBook to a desktop system in seconds without misplacing cables or damaging connectors.

15" - G4 PowerBook Docking Station

\$244⁹⁵ titanium
\$229⁹⁵ 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.

iBookEndz Docking Station

\$159⁹⁵ white
\$144⁹⁵ black

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.

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

714.521.1100 CA • 800.552.1303 toll free
714.521.5650 fax • jobs@AmericasPrinter.com
6940 Aragon Circle, Buena Park, CA. 90620

BIG POSTERS & HUGE DISCOUNTS FROM YOUR COMPUTER FILES

HIGHEST QUALITY PRINTS AT THE BEST VALUE. ANYWHERE • STATE OF THE ART EQUIPMENT • UP TO 600dpi

24" x 36" Full color print on 7 mil high or low gloss paper	36" x 48" Full color print on 7 mil high or low gloss paper	48" x 72" Full color print on 7 mil high or low gloss paper
\$25	\$50	\$125
<small>NO MINIMUMS VOLUME DISCOUNTS</small>	<small>NO MINIMUMS VOLUME DISCOUNTS</small>	<small>NO MINIMUMS VOLUME DISCOUNTS</small>

FOR MORE INFO & PRICING VISIT OUR WEBSITE
www.BIGPOSTERS.com
CREATIVE JUICES PRINTING & GRAPHICS INC.
(In New York) Tel: 516-622-4533 Fax: 516-622-4534 • 14 Woodside Rd., Lawrence, NY 11776

1-888-880-HUGE

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.

Try Our Services For Free!

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

IMAGERS
Since 1947

Digital Printing Center
www.imagers.com
800.232.5411 or 404.351.5800
1575 Northside Dr. Ste. 490 Atlanta 30318

Choose 155 at www.macworld.com/get info

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**

LAZARUS DATA RECOVERY
Working at the speed of business.
800-341-DATA

415-485-5556 • FAX 415-485-5553 • RESTRICTIONS MAY APPLY
379 Clementina Street • San Francisco, California 94103

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.

“We Can Save It!”

DRIVESAVERS DATA RECOVERY

Visit DriveSavers at **www.drivesavers.com**
©2003 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 INTL: 415-382-2000

Choose 211 at www.macworld.com/get info

The Mac Synchronization Experts!

- for Sony CLIE! \$29.95
- for Garmin iQue 3600! \$29.95
- for Pocket PC! \$39.95
- for Palm OS! \$29.95
- for Internet Sharing & AvantGo! \$19.95

MARKSPACE

MISSING SYNC
THE MAC SYNCHRONIZATION SUPER HERO
www.markspace.com

Choose 214 at www.macworld.com/get info

You've Never Seen Printing Like This Before!

300 Line Screen Waterless Printing.

What you're used to...times 2!

- Presses
- 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

1000 for \$99
2000 for \$169*
5000 for \$325*

FULL COLOR 4x6 POSTCARDS

1000 for \$149
2500 for \$294
5000 for \$357

Printed 4/0 on C1S 12pt. Super Premium Kromekote with Free Aqueous Coating.
*Each set of 1000 can be different artwork.



JIM ROSSON
REALTOR
(800) 794-6554
SUNLIT REALTY
11200 Canyon Avenue, Suite 1000, San Diego, CA 92121
www.jimrosson.com

SELDIN'S
Trinkets & Jewels



Exceptional Quality & Service

FULL COLOR LETTERHEADS

OR

FULL COLOR 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.



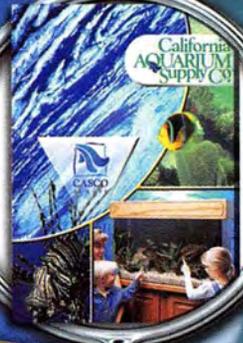
Fast Turnaround & Quotes

FULL COLOR PRESENTATION FOLDERS

500 for \$999
1000 for \$1160
2000 for \$1548

Printed 4/0 on C1S 12pt. Carolina Cover 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!

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

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

IT'S EASY
send your digital file
we'll print your job in
2-3 days!

NEW!

- ✓ 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		
500	95.00	N/A	1,000	60.00	90.00
1,000	145.00	195.00	2,000	80.00	108.00
2,000	165.00	222.00	5,000	140.00	189.00
5,000	289.00	390.00	10,000	250.00	337.00

1-800-957-5787
www.postcardpress.com

sharpdots.com

Your Online Resource For All Your Printing Needs

Easy & Affordable
Commercial
Printing At Your
Fingertips

**MARCH 2004 SPECIAL:
BOOKMARKS AT 10% OFF**

PLACE A BOOKMARK PRODUCT INTO YOUR SHOPPING CART AND ENTER **MAC03** DURING THE CHECKOUT PROCESS

SAMPLE OUR OTHER PRODUCTS:

- \$199 - 1K 8.5X11 4/0 FLYERS
- \$345 - 1K 11X17 4/0 POSTERS
- \$135 - 1K 4X6 4/1 POSTCARDS
- \$50 - 1K 4/0 BUSINESS CARDS

MORE PRODUCTS AND MAILING SERVICES AVAILABLE!
CALL US OR VISIT OUR WEBSITE TODAY!

1-877-742-7789
WWW.SHARPDOTS.COM

All Products Printed From Your Press Ready Digital Artwork - Prices Subject To Change Without Notice.

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

GLOBAL PRINT RUNNER

Call Us Toll Free
888-666-0744
www.GlobalPrintRunner.com



More Beef For Your Buck!

**More Space
More Transfer
Same Low Price!**

Only \$8.25 a month!

The FatCow
• 500MB disk space
• 25GB monthly trans.
• 100 email accounts
• New Free WebMail!

Featuring
• Shopping Cart
• CGI, PHP
• Toll-Free Support
• Website Statistics
• Money Back Guarantee

MiniMoo
• Domain Name Parking
• 1 email account
• Coming soon page
• Toll-Free Support

\$5 a year

FatCow: The Smart Choice in Small Business Hosting

*Based upon one year \$99.00 annual fee, due at sign-up.

www.fatcow.com/mac
Toll Free 1-866-506-9572

showcase showcase showcase showcase showcase showcase showcase showcase showcase showcase

shareware developer?

reach over 1.7 million Mac buyers and still maintain your budget*

800-597-1594

Macworld

be visible

*Source: IntelliQuest CIMS v 9.0

ink & toner

• **\$4.00 shipping!** • **\$2 off:** enter promo code "MWX"

• **All brands:** Alps, Lexmark, HP, GCC, Brother, more!

Epson Glossy Photo Paper		HP Inkjet Cartridges		Epson Inkjet Cartridges	
S041134 glossy, 20pk	6.46	51645A new	24.61	S020093 Orig. Epson	18.95
S041141 glossy, 20pk	9.12	refilled	17.41	Inkfarm brand	8.99
S041140 glossy, 20pk	9.08	C6578A new	52.91	S020187 Orig. Epson	21.64
S041145 glossy, 20pk	15.83	refilled	27.91	Inkfarm brand	10.75
S041156 glossy, 20pk	25.84	C6578D new	31.91	S020189 Orig. Epson	23.99
S041142 glossy, 20pk	26.55	C1823D new	29.99	Inkfarm brand	9.99
S041143 glossy, 20pk	34.03	refilled	22.99	S020108 Orig. Epson	24.75
Epson Prem. Glossy Paper		C1823T new	44.99	Inkfarm brand	10.45
S041286 8.5x11, 20pk	15.75	C6614 new	26.99	S020191 Orig. Epson	21.95
S041290 11x17, 20pk	39.83	C6615 new	25.91	Inkfarm brand	16.25
S041288 11.7x16.5	41.69	refilled	19.75	T003011 Orig. Epson	28.35
S041289 13x19, 20pk	52.53			Inkfarm brand	15.74
Epson Archival				T005011 Orig. Epson	34.29
S041341 8.5x11, matte	16.67			Inkfarm brand	18.74
S041339 13x19, matte	52.53			T007201 Orig. Epson	20.95
S041343 11.7x16.5	41.69			Inkfarm brand	16.75
S041331 8.5x11, semi	15.75			T009201 Orig. Epson	26.36
S041327 13x19, semi	52.53			Inkfarm brand	16.99
HP Photo Paper				T008201 Orig. Epson	17.51
C6039a 8.5x11, 15pk	9.26			Inkfarm brand	13.99
C6979a 8.5x11, 50pk	27.81			T017201 Orig. Epson	23.99
C6058A 11x17, 20pk	37.08			T018201 Orig. Epson	21.95
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				

Too much to list...call or visit site.



Too much to list...call or visit site.

1-800-INKFARM

inkfarm.com

the ink & toner supersite.™

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 Gold Cables, Adapters, SCSI Terminators, and Components offer the ultimate in quality and reliability



Standard Tray



SMART Tray



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

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\$599
- eMac® G4/700, 128 MB RAM, 40 Gb HD, CD-RW\$639
- eMac® G4/700, 128 MB RAM, 40 Gb HD, Combo\$669

- Refurb G5s Are Here!**
- Power Mac® G5/1.6-GHz, 256MB RAM, 80 Gb HD, SuperDrive, 56K modem\$1449
 - Power Mac® G5/1.6-GHz, 512MB RAM, 160 Gb HD, SuperDrive, 56K modem\$1699
 - Power Mac® G5/2.0-GHz Dual, 512MB RAM, 160 Gb HD, SuperDrive, 56K modem\$2399



- iMac® G4/700, 128 MB RAM, 40 Gb HD, CD-RW, 56K modem, 15" LCD\$849
- iMac® G4/700, 256 MB RAM, 40 Gb HD, Combo, 56K modem, 15" LCD\$899
- iMac® G4/1.25-GHz, 256 MB RAM, 80 Gb HD, Super 17" LCD\$1599
- PowerBook® G4/867, 256 RAM, 40 Gb, SuperDrive, 12" Scrn\$1349
- PowerBook® G4/1-GHz, 256 RAM, 60 Gb, Combo Drive, 56K modem, Airport Extreme, 15" Screen\$1749
- PowerBook® G4/1.25-GHz, 512 RAM, 80 Gb, SuperDrive, 56K modem, Airport Extreme, Bluetooth, 15" Screen\$2049

- Power Mac® G4/1.25-GHz, 256MB RAM, 80 Gb HD, Combo Drive, 56K\$1149
- Power Mac® G4/867-MHz Dual, 256MB RAM, 60 Gb HD, Combo Drive, 56K\$1388
- Power Mac® G4/1.0 GHz Dual, 256MB RAM, 80 Gb HD, SuperDrive, 56K\$1499
- Power Mac® G4/1.0 GHz Dual, 512MB RAM, 80 Gb HD, SuperDrive, 56K\$1599
- Power Mac® G4/1.25 GHz Dual, 512MB RAM, 120 Gb HD, SuperDrive, 56K\$1699

LOWEST PRICES EVER ON NEW MACS!

G4 iBook® Special

- New 14.1" Apple iBook® G4/1.0-GHz 256MB RAM 60 Gb Hard Drive/Combo\$1499
- Get 128MB extra RAM installed for just \$25!



Check-Out The Incredible Deals Below!

Get a new PowerBook for \$49/mo!

- Mag Innovation 15" CRT Display-used\$39
- ViewSonic GS-7771 17" CRT Display-used\$69
- Apple Blue & White 17" CRT Display-used\$88
- 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 Z3" 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

- iBook® G3/800-MHz 256/80/CD-ROM 12.1" Display\$729
- iBook® G3/800-MHz 256/40/CD-ROM 12.1" Display\$749
- iBook® G3/900-MHz 128/40/Combo, 12.1" Display\$949
- iBook® G3/900-MHz 384/40/Combo, 14.1" Display\$999
- iBook® G3/900-MHz 640/40/Combo, Airport, 12.1" Display\$1069
- iBook® G4/800-MHz 256/30/Combo, Airport, 12.1" Display\$1099

WHY SHOP AT POWERMAX?

- SERVING APPLE USERS FOR OVER 25 YEARS
- OVER 30,000 PRODUCTS AVAILABLE
- AUTHORIZED APPLE SPECIALIST
- WE'RE IN OREGON, THE LAND OF NO SALES TAX
- CONSULTATIVE SELLING AT MAIL ORDER PRICES
- THE COUNTRY'S BEST SELECTION OF NEW AND USED MACS

WE TAKE TRADE-INS!

Looking to trade-in your old Mac? We'll take your Mac OS computer in trade toward the purchase of new product. Call one of our expert Mac consultants for full details.

SUPER G5 Specials!

- POWER MAC G5/1.6-GHZ 256/80/SuperDrive/Modem\$1794
- POWER MAC G5/1.8-GHZ Dual 512/160/SuperDrive/Modem\$2499
- POWER MAC G5/2.0-GHZ Dual 512/160/SuperDrive/Modem\$2994
- Get a free 3 piece speaker set and MYOB software - PLUS up to \$100 off when purchased with an Apple display!
- POWER MAC G5/1.8-GHZ 512/160/SuperDrive/Modem\$2098
- Get 512 FREE RAM, PLUS get a free 3 piece speaker set and MYOB software! PLUS up to \$100 off when purchased with an Apple display!

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

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!



* Authorized dealers only, and we don't do those annoying retailer rebates!

USED COMPUTERS

Looking for the best used Apple computers at the lowest prices? Look no further than PowerMax. All our used merchandise is cleaned, tested and includes a 90-day warranty!

- Snow iBooksfrom \$599
- Lombard PowerBooksfrom \$499
- Pismo PowerBooksfrom \$645
- Titanium PowerBooksfrom \$877
- CRT iMacsfrom \$289
- G3 Beige Desktopsfrom \$149
- G3 Blue & White Towersfrom \$319
- G4 Graphite Towersfrom \$519

We're Your iPod Source!

Check-out our huge selection of iPod accessories on our web site!

- iPod AppleCare\$59
- Refurb 5GB iPod\$179
- Refurb 10GB iPod\$199
- New 10GB (old model)\$294
- New 20GB (new model)\$399
- New 40GB (new model)\$495

Your choice FREE with Final Cut Pro 4.0 purchase:

- USB Shuttle Pro!
- Post-Op FCP Keyboard!
- 25 DVD-R Media Disks!

- Factory Refurbished Specials
- Airport Extreme Card\$79
 - Airport Extreme Base Station with antenna\$199

GREAT DEALS!

- Fuji FinePix F601 3.1 MegaPixel Digital Camera 3x zoom lens\$439.99
- Xerox 8200N Color Laser Printer 16 ppm, solid ink color 1000 dpi resolution\$1874.89
- Klipsch Pro Media Ultra 5.1 Personal Audio System Quality sound!\$369.88
- Belkin Wireless Gateway Router for cable and DSL connections - 802.11b\$59.95
- Canon Optura 200MC Digital Video Camcorder\$788
- Refurb Iomega 750MB Zip Drive Fast and durable\$99

DIGITAL VIDEO DEALS

- Sony CyberShot U30 2.0\$199.77
 - HP PhotoSmart 735X1 3.2\$239.77
 - Minolta Dimage XT 3.0\$275.77
 - Nikon CoolPix SQ 3.1\$400.77
 - Sony CyberShot DSC-V1 5.0\$567.77
 - Nikon CoolPix 5700 5.0\$799.77
 - Canon EOS Digital Rebel 6.0\$988
- Mention this ad and receive a pack of 25 FREE CD-RW discs with any camera above!

Only \$995

Upgrade for only \$379!

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!

- ### STORAGE SOLUTIONS
- LACIE 120GB FireWire d2 HD\$169
 - Lacie D2 line; Larger & Faster Than Ever! Drives Now Available in FireWire 800!
 - 200GB 7200 RPM FireWire d2 Hard Drive\$229
 - d2 Hard Drive/USB 2.0\$269
 - 400GB 7200 RPM FireWire 800 d2 Hard Drive/USB 2.0\$449
 - DVD+-RW D2 FireWire with Mac Authoring Software\$249

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

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.applemugstore.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.

Choose 208 at www.macworld.com/get info

Local: (503) 624-1827 • Fax: (503) 624-1635
email: sales@powermax.com



Best Prices On

Memory

for all Apple CPUs

Lifetime Warranty RAM

65 1gb KIT \$129

65 2gb KIT \$249

512mb PC 100 PC 133 \$89

PowerBook® G4 DDR PC 2100/2700 512mb \$89

Internal Hard Drives

ATA	Capacity	Buffer	Price
133	120gb	8mb	\$109
	160gb	8mb	129
	200gb	8mb	179
Serial ATA	120gb	8mb	\$119
	160gb	8mb	139
	200gb	8mb	189
ATA	250gb	8mb	249
	120gb	2mb	\$149
	120gb	2mb	159
FireWire 400 w/ Oxford 911	200gb	2mb	219
	200gb	8mb	229
	250gb	8mb	289
	250gb	8mb	289

Hard Drive Fire Sale!

External FireWire 400 w/ Oxford 911

WWW.MAC SOLUTIONS.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 105
University & School P.O.'s Welcome. Note: Prices subject to change without notice.

800-873-3726

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

MEGA MACS WE BUY MACS! We stock many parts!

918-664-MACS fax 918-663-6340 (6227)

SystemWorks 3.0 \$45
w/Intego NetBarrier after \$50 mfr rebate \$85 alone

Final Cut Pro 4 Bundle \$829**
Final Cut Xpress 03** \$199

Office Standard - \$269
Retail \$299

Upgrade \$199

External USB Zip 100 \$29*
Zip 250 \$59*
Zip 750 \$69*
w/USB cable

Peerless 20 Gig base kit FW/USB w/cartridge* \$84

LACIE Ext LaCie 160gb FW HD Porsche \$179
Ext LaCie 4xDVD RW w/Toast Ti 6 \$244
Ext LaCie 52x32x52 FW Porsche \$95

Preowned System Specials

Blue & White iMac Upgrade \$399!
Blue & White 17" Studio Display w/G4 or G3 purchase \$49!
Blue & White 17" Studio Display \$99!
Beige DT G3/233/64mb/4gb/CD+ \$139!
Beige DT G4/500/128mb/4gb/CD/USB+ \$379!
Graphite G4/450/128mb/20gb/DVD/ZIP+ \$599!
Graphite G4/450/128mb/20gb/COMBO/ZIP+ \$659!
24x Verbatim CDRs pack in sleeve 2550/100 \$9/1729

Mac OS

8.1	\$34
8.5	\$69
9.1	\$49
9.2	\$69
X-1	\$39
X-2 upgrade	\$44
X-3 Panther	\$79
X-3	\$119
X-2+X-3 bundle	\$99

SONNET BLOWOUT SEE WEBSITE

USB rollup keyboard \$19

Archos External Drives

G3/233 All In One from \$109
Add Toast 5.0 lite for only \$9

CDRW 8x8x24 FW USB 2.0 \$44

40GB Ext. HD portable FW \$89

Get all for \$49 (save \$33!)

Appleworks 6- \$9
Kali's PhotoSoap SE- \$4
Quicken2002-\$19
World Book Encyclopedia- \$4
iLife 03 \$19
GAMES CD- \$14
Williams Sonoma Cooking- \$4
iMovie v2.01 OS 9.1- \$4
v2.03 OS X- \$4
Adobe Pagemill- \$9

Office Pro \$379
FREE Office 2004 upgrade available soon from Microsoft!

Fantom 120gb FW HD w/8 ports FW/USB PCI \$199

Digital Cameras

USB Kensington UniBrain FW Fire-i \$119
CD-ROM Drives

4x/24x Apple Int.SCSI \$99/99
32x Apple IDE \$19
24x iMac CD tray or slot \$39
6x Apple iMac DVD \$37
Apple 32x10x40x12 IDE \$89

HardDrives - SCSI

9GB LVD Bundle \$95
1GB/4GB from \$12/17
Adaptec 2940U2B Ultra SCSI PCI Card \$55

IDE

80GB IBM/Hitachi \$75
15GB Apple 2.5" \$79
120GB IBM/Hitachi \$105

Keyboards

Apple Pro Keyboard- \$44
Navigator \$25
Freedom \$12
iTouch \$19

Mice

Apple Pro Mouse- \$41
Kensington Orbit \$15
Optical 2button USB \$14

PCI Cards

USB 1.1 2port \$7
Asante 10/100 \$11
FW 3 port \$15
USB 2.0/FW 6 port \$34
USB 2.0/FW 8 port \$49

Other Software Bargains

Norton/Symantec Bargains
Utilities 4.0 Antivirus 6.0/7.0 \$7 7/11
Internet Security 1.0 or System Works 1.0 \$11

MacroMedia
Dreamweaver MX 2004** \$299
Studio MX 2004 Free Shipping! \$919
Fireworks MX** /Flash 4 \$239/69
Freehand 8/10/MX \$39/149/299

Other Software Bargains
Adobe After Effects 5.5 prod. bundle \$499
Business Plan Toolkit v.7 \$29
Encyclopedia Britannica Roy Ref 2003 \$5
Web Savant/Timbuku 2000 set- \$34/29
Office upgrades 98-2001/X- \$69/209/199
Appleworks 6/FixSTF(OS X)PCalc 2 \$39
Quicken Deluxe 98 \$4

JBL Invader Multimedia Speakers \$119

USB floppy drive
lomega PCI SCSI Card \$19
USB Hubs 4/7 port \$14/15
FireWire Cardbus- \$29
GV 28.8/Ethernet \$34
Zoom 56k modem \$39
Supra 56k modem \$39

Misc. Hardware

56k IrT Modem \$3 Mac OS \$19
USB Hubs 4/7 port \$14/15
GeForce 4Mx 32 \$63
nVidia 1x4600 128 \$239
Sonnet G4-500 \$3
www.1080P.com \$229

FREE Norton System Works 1.0 (DEM) available with any \$20 online purchase!

* After resale ** Refreshed/1 Pre-owned w/30 day warranty -DEM. ** upgrade with previous version
† \$299. † \$299 online orders only. prices rounded down and subject to change w/out responsible for errors - visit our website.

Office Pro \$379

FREE Office 2004 upgrade available soon from Microsoft!

Fantom 120gb FW HD w/8 ports FW/USB PCI \$199

Digital Cameras

USB Kensington UniBrain FW Fire-i \$119
CD-ROM Drives

4x/24x Apple Int.SCSI \$99/99
32x Apple IDE \$19
24x iMac CD tray or slot \$39
6x Apple iMac DVD \$37
Apple 32x10x40x12 IDE \$89

HardDrives - SCSI

9GB LVD Bundle \$95
1GB/4GB from \$12/17
Adaptec 2940U2B Ultra SCSI PCI Card \$55

IDE

80GB IBM/Hitachi \$75
15GB Apple 2.5" \$79
120GB IBM/Hitachi \$105

Check out our online clearance deals

POWERON

computer services 1-800-673-6227

IMAC DEALS

iMac 233 32/4GB/CD/ENET/56K	\$249.99
iMac 333 64/8GB/CD/ENET/56K	\$289.99
iMac 350 64/8GB/CD/ENET/56K	\$349.99
iMac 400 128/16GB/DVD/ENET/56K	\$399.99
iMac 500 128/20GB/CD-RW/ENET/56K	\$599.99

Pre G3 DEALS

PowerMac 5200 75 16/750/CD/15" Monitor	\$49.99
PowerMac 5300 100 24/750/CD/15"	\$79.99
PowerMac 5400 200 24/1.6GB/CD/15"	\$49.99

G3 & G4 DEALS

G3 266 64/8GB/CD/ENET/56K	\$99.99
All In One G3 323 32/4/CD/ENET	\$199.99
B&W 300 128/6/CD/ENET/56K	\$249.99
B&W 350 128/6/CD/ENET/56K	\$299.99
B&W 400 128/6/CD/ENET/56K	\$349.99

Portable DEALS

iBook 300 32/3.2GB/CD/ENET/56K	\$399.99
Powerbook 5300c 100 32/750/MB/ENET	\$199.99
Powerbook 5300c 117 32/1GB/ENET	\$199.99

Printer DEALS

HP Photosmart 1215v - Factory Refurb	\$79.99
Epson Stylus C42UX - New!	\$49.99
Epson Stylus Scan 2500	\$69.99

Drive DEALS

Apple 12x SCSI CD-ROM	\$19.99
Apple 2x IDE DVD	\$39.99
Philips 12x8x32 IDE CD-RW	\$39.99
Apple 16x10x40x10x Combo	\$149.99
iMac Slot Load 32x CD-ROM	\$99.99
Imaging 16x10x40x USB 2.0 External	\$79.99
20GB IDE Hard Drive	\$29.99
60GB IDE Hard Drive	\$69.99
80GB IDE Hard Drive	\$89.99
120GB IDE Hard Drive	\$129.99

Misc DEALS

3Com 56K	\$19.99
Firewire PCMCIA Card 2 Port	\$39.99
Mini Remote Controlled Boat	\$9.99
USB PCI Card	\$29.99
USB 2.0 PCI Card	\$39.99
4 Port Powered USB Hub	\$19.99
Apple Monitor to VGA Card Adapter	\$7.99
Generic Laptop Bag (Used)	\$19.99
3.6v & 4.5v PRAM Batteries	\$14.99
USB 2.0 & Firewire Enclosure	\$69.99

TiVo DEALS

Philips TiVo 20GB	\$119.99
Philips TiVo 80GB	\$189.99
Philips TiVo 20GB	\$219.99

HP Photosmart 215 \$69

HP Photosmart C200 \$99

HP Photosmart C500 \$129

HP Photosmart 315 \$79

PHONE SALES 8am-5pm PST M-F **WWW.POWERON.COM** WEB SALES 24 hours / 7 days
8801 Washington Blvd., STE. 101 • Roseville CA 95678

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

18004MEMORY.com

1-800-4-MEMORY
1-800-463-6679
http://www.18004memory.com

USED MACS

MAC OF ALL TRADES .COM

800.304.4639

BUY or SELL ONLINE

sales@macofalltrades.com

MAC-PRO SYSTEMS & SOFTWARE

www.mac-pro.com

Everything Macintosh... Everything!

Check our Website for More Great Deals

Any Ad is a Mac-Pro Ad!

800-525-3888

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 most items within 15 days for a full refund!

	PowerBook G4 \$999 ⁹⁹		iPods 10GB \$189 ⁹⁹ 15GB \$289 ⁹⁹ 20GB \$289 ⁹⁹ 30GB \$389 ⁹⁹
	PowerBook G3 \$399 ⁹⁹		Griffin FM Transmitter iTrip 1 \$29 ⁹⁹ iTrip 2 \$34 ⁹⁹
	PowerMac G4 \$499 ⁹⁹		Shure E2C Earphones \$89 ⁹⁹
	iMac G3 DV \$399 ⁹⁹		Sennheiser Wireless Headphones \$79 ⁹⁹
	PowerMac G3 B&W + 17" Display \$399 ⁹⁹		Digistor FW DVD Burner \$299 ⁹⁹

"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.!

InkResQ High-Quality Ink at Unbelievable Prices!

Check our site for your printer!

Epson 740 10-Pack Black	\$29 ⁹⁹
Epson 777 10-Pack Color	\$69 ⁹⁹
Epson C80 20-Pack B/C	\$129 ⁹⁹

Sad Mac?

PowerBook ResQ **PowerMac ResQ**

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

Hot Stuff

The Month's
Coolest
Developments

FROM THE EDITORS OF MACWORLD

Macworld
**BEST
OF SHOW**
2 SO★OF 4

AT JANUARY 2004'S MACWORLD EXPO, as at all Macworld Expos, we roamed the show floor to seek out the most exciting recently introduced Mac products. Many of the award winners were beta versions or prototypes, so they're not yet available to the public.



Bigger Disk, from LaCie Connects 1TB (terabyte) of storage to any computer via FireWire 800, FireWire 400, iLink/DV, Hi-Speed USB 2.0, or USB 1.1. That's nearly two years of continuous music and as much as one month of nonstop MPEG-2 video (www.lacie.com).

BumperCar, from Freeverse Web browser for kids with a colorful, playful interface that lets them surf the Web without being exposed to inappropriate content (www.freeverse.com).

Crypto-Server X, from CryptoCard Password-security system that stores all of a user's passwords on a "token" and generates a random master password (www.cryptocard.com).

EyeTV 200 and EyeHome, from Elgato Systems Captures MPEG-2s from analog sources such as VHS or from cable TV in real time. The EyeHome hooks up to your Ethernet network and brings your music, photos, and movies from the Mac to your TV (www.elgato.com).

G5Jam, from WiebeTech Ingenious design allows Power Mac G5 owners to increase their computers' internal storage, from two to four Serial ATA drives (www.wiebetech.com).

GarageBand, from Apple Now anyone can make music with the help of tons of prerecorded loops, dozens of MIDI-controlled software instruments, and the ability to record live instruments (www.apple.com). (For more on GarageBand, see this issue's cover story, page 52.)

Kid Pix Deluxe 3 for OS X, from Software Mackiev The beloved but recently neglected children's creativity software is back—and Software Mackiev has significantly updated it, with iLife integration and smoother graphics (www.mackiev.com).

lens&light optimizer, from camdynamics Software makes use of lens and other camera information to correct optical imperfections in photographs. (www.camdynamics.de).

Nicecast, from Rogue Amoeba Provides simple broadcast and streaming of any audio in OS X. You can use it to set up an Internet radio station, or simply stream your iTunes library over the Internet (www.rogueamoeba.com).

PIXimation, from Kaidan Creates QTVR object movies without requiring a special motorized turntable. Accepts video from FireWire-equipped digital video cameras and Web cams (www.kaidan.com).

Squeezebox, from Slim Devices Delivers wired or wireless streaming of most audio formats or MP3 Internet radio from your Mac to your home stereo (www.slimdevices.com).

SyncDek 5.0, from WorldSync Software that removes a long-standing obstacle for shared FileMaker databases—it allows offline users to use shared databases and synchronize changes with one another (www.syncdek.com).

Toast with Jam 6, from Roxio High-level audio tag team offers an improved interface, better cross-fading options, and tighter integration (www.roxio.com).

ToySight, from Freeverse Software that allows you to control game play via your body movements as detected by your FireWire Web cam (www.freeverse.com).

You Control, from You Software Devise menus you can place anywhere on your Mac, and call them up with hot keys. Eleven modules are included (www.yousoftware.com).



NoLimits

Not quite a real game, Mad Data's NoLimits is a physics-accurate roller-coaster simulator that lets you build your own fun amusement-park rides (www.nolimitscoaster.com).



2004 ART DIRECTORS INVITATIONAL MASTER CLASS

ADIM, as this conference is called, boasts amazingly imaginative presentations that will inspire even the most jaded designer, art director, or photographer. Each year there's a wacky theme for the conference—this time, it's James Bond.

ADIM 7: Design Another Day will be held March 22 through 26, 2004, in Santa Monica, California, and costs \$1,995. For more information, go to www.adimconference.com.





See Dick. See Dick run his business
with software that wasn't written
and designed for his Macintosh.
Poor Dick.

A moment of silence for Dick, please. A good guy with a good small business, but his accounting software was one of those PC transcription jobs, not pure MAC like MYOB AccountEdge and MYOB FirstEdge.

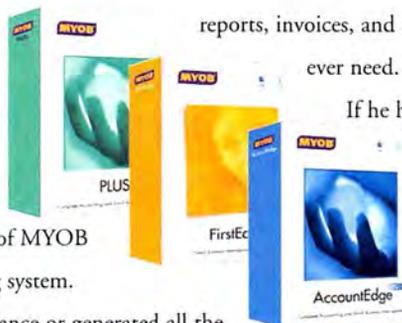
If only he'd known about the amazing capacity of MYOB software to bring out the best in his MAC operating system. He could have tracked and managed finances at a glance or generated all the

reports, invoices, and tax documents that he and his accountant would ever need. He could have spent more time with his clients.

If he had only known that MYOB develops the world's best selling MAC small business management software for lots of good reasons, this story might have had a happy ending. Sorry Dick.

**MYOB,
THE MAC ANSWER.**

©2003 MYOB US, Inc. (800)322-MYOB www.myob.com/us



MAKE YOUR OWN MOVIES



The Lacie logo is a trademark of Lacie, Ltd. ©2004 Lacie, Ltd. All rights reserved. All other products and brand names may be trademarks or registered trademarks of their respective owners.

ALUMINUM MEETS TITANIUM. THE LACIE DVD±RW DRIVE, CREATED FROM A STURDY, ALUMINUM ALLOY, COMES WITH TOAST® 6 TITANIUM RECORDING SOFTWARE FOR STORING MP3S, DIGITAL PHOTOS AND THE MOVIES YOU JUST CAN'T LIVE WITHOUT.

WWW.LACIE.COM

LACIE

Made for ideas.