

WATCH OUT, MICROSOFT

The Next Generation of Web Browsers Could Make Internet Explorer Obsolete

Macworld
Conference & Expo.
Don't Miss Out!
For Details, See Pages 83-88.

www.macworld.com

The Mac Product Experts

December 2002

Macworld

What's .Mac Worth?

PLUS

Hands-On
Tests of
Apple's iCal
and iSync

We Put Apple's New
Internet Services
Under the Microscope

Reviewed | Dual-1.25GHz Power Mac | Photoshop Elements 2.0 | Quicken Deluxe 2003

TAKE CONTROL

Make Your Mac Do Your Bidding—Our
AppleScript Pro Shows You How, page 74

If you get one of these,



*Import pictures from your digital camera in a snap, then use iPhoto® to organize them, print them, email them or enjoy them in a stunning slideshow right on your Mac.**



Import digital video from your camcorder, then use iMovie® to create a professional-looking home movie, complete with cross-dissolves, titles and a soundtrack.



Create the ultimate digital music library in iTunes®. Then burn your own custom CDs. Or get an iPod® and travel anywhere with up to 4,000 songs in your pocket.



With iMac's SuperDrive® and iDVD software, it's easy to burn custom DVDs that play your movies and photo slideshows on almost any DVD player.

*Select models only. Requires compatible third-party peripherals. TM and © 2002 Apple Computer, Inc. All rights reserved. All other trademarks are the property of their respective holders.



you'll need one of these.



Digital cameras will be one of the hottest gifts this year. And the new iMac[®] is designed to make the most of them. Just plug your camera into your iMac and your pictures will appear on the screen in seconds. Then you can easily save, organize and share them in some pretty amazing ways.

Looking for the best digital photos?
Follow the leader.



YOU'VE GOT TO SEE IT IN

EPSON

COLOR.™



Print your photos from memory cards* or any Direct-Connect-Compatible (DCC™) digital camera. Then save them directly to an external USB Zip drive – all without a computer.



View pictures, layouts and cropping options without a computer screen using the optional Color Preview Monitor (\$79).



Crop, resize and select from various BorderFree™ templates (4x6, 5x7, 8x10) using the control panel. Then, save your favorite settings and recall them with Epson's exclusive One Touch button feature.



Leave the printer unattended while it prints and trims your photos automatically, using an exclusive built-in cutter and attachable roll paper holder. (Cutter with Stylus Photo 925 only.)



Get brighter colors, sharper detail and the most lifelike skin tones from a superior 6-color Photo Ink system with true black, 4-picoliter droplets and up to 5760 x 720 optimized dpi.



Ensure the quality of your prints with Epson's PRINT Image Matching™ (P.I.M.) technology – which makes automatic color corrections and adjustments when used with any P.I.M.-enabled digital camera.

Why do so many digital camera owners look to Epson for all their printing needs? Because only Epson makes photo printers designed to work specifically with digital cameras. For images with more color and detail than ever before. Which means now the image quality that could only be found in a professional photo lab is yours to create – right at home. As you can see, when it comes to digital pictures, no other photo printer comes close to giving you the quality and convenience you get with this printer. For more info, call 1-800-GO-EPSON or visit epson.com.



\$179

\$299

Epson Stylus Photo 825 and 925

*Supports Compact Flash type I and II, Memory Stick, Smart Media, Secured Digital, MultiMedia and Microdrive (optional adapter needed for Compact Flash type II and Microdrive on SP 825; optional ZiU card reader needed for Secured Digital and MultiMedia on SP 925). Epson, Epson Stylus and PRINT Image Matching are trademarks/registered trademarks of Seiko Epson Corp. BorderFree is a trademark of Epson America, Inc. All other trademarks are properties of their respective companies. © 2002 Epson America, Inc.

OPINION

7 From the Editor's Desk

RICK LEPAGE

It's decision time: How do you feel about .Mac? And are you ready to welcome AppleScript into your life?

12 Feedback

Readers respond.

132 Ihnatko

ANDY IHNATKO

Will Jaguar's handwriting-recognition technology take wing or crash to earth?

MAC BEAT

16

Au revoir, OS 9; Gateway's Profile takes on Apple's iMac; menu items in Jaguar; the SLIMP3; updated CAD software from Nemetschek and Graphisoft; StuffIt Deluxe 7; and an interview with Adobe's Susan Prescott.

SECRETS

90

Dynamic Dreamweaver

DAVID SAWYER MCFARLAND

Dreamweaver's WYSIWYG interface makes it easy to build a front-end to a dynamic, database-driven Web site.

94

Mac 911

CHRISTOPHER BREEN

Make Jaguar purr with these tips on custom screen savers, desktop pictures, Mail attachments, mouse scroll wheels, the Finder's toolbar, Address Book imports, and QuickTime movie rotations.

December 2002

www.macworld.com

Macworld

Incorporating MacUser

COVER STORY

58 What's .Mac Worth?

ADAM C. ENGST

The iTools free ride is over. Should you shell out \$100 for its replacement, or can you still find free services that will suit your needs? Our in-depth look at what .Mac has to offer will help you decide.

FEATURES

64 Apple's Information Hub

CHRISTOPHER BREEN

Your life is complicated enough—you shouldn't have to worry about whether the information on your Mac, cell phone, and PDA is current. Apple tackles this problem with the new iSync technology and the iCal application. We examine what they do and how they do it.

68 Battle of the Browsers

JEFF CARLSON

Microsoft Internet Explorer may be the leading Web browser on the Mac, but it's not your only option. We compare the speed, fidelity, and standards support of seven browsers, so you can choose the one that's best for you.

74 Amazing AppleScript

SAL SOGHOIAN

There's nothing more frustrating—or draining—than performing repetitive tasks on your Mac every day. Luckily, OS X has something to help—AppleScript. We'll have you writing time-saving scripts in no time.



On the Cover
Image courtesy of
Apple Computer.



REVIEWS

- | | |
|--|---|
| <p>30 Desktop system
 ★★★★½ Apple Dual-1.25GHz Power Mac G4</p> <hr/> <p>31 Video-editing program
 ★★★★½ Adobe Premiere 6.5</p> <hr/> <p>32 Database-development program
 ★★★★ 4th Dimension 6.8.1</p> <hr/> <p>34 FireWire CD-RW drives
 ★★★★ EZQuest Boa CD-RW 48×12×48 FireWire External
 ★★★★ FireWireDirect Pro XL 44
 ★★★★ FireWireDirect Pro XL 48
 ★★★★ Formac CD-RW 40
 ★★★★½ GVP XV FireWire CDR-W 40×12×48×
 ★★★★ Ikebana 40×12×48 CD Burner
 ★★★★ Iomega CD-RW 40×12×48× FireWire Drive
 ★★★★½ LaCie 48×12×48 d2 CD-RW
 ★★★★½ OWC Mercury CD-RW Teac 40×12×48 External
 ★★★★½ Yamaha CRW-F1ZDX</p> <hr/> <p>37 Image-editing software
 ★★★★½ Adobe Photoshop Elements 2.0</p> <hr/> <p>38 Server environment
 ★★★★ Mac OS X Server 10.2</p> <hr/> <p>40 Compositing and animation program
 ★★★★½ Boris Red 2.5</p> <hr/> <p>41 Titling tool
 ★★★★½ Boris Graffiti 2.1</p> <hr/> <p>42 Project-management software
 ★★★★½ FastTrack Schedule 8</p> | <p>44 HomePlug network adapters
 ★★★★½ Asoka PlugLink Ethernet Bridge
 ★★★★ GigaFast HomePlug Ethernet Bridge
 ★★★★ Linksys Instant PowerLine EtherFast 10/100 Bridge
 ★★★★½ Netgear Powerline Ethernet Adapter
 ★★★★ Phonex Broadband NeverWire 14 QX-201</p> <hr/> <p>45 Personal-finance software
 ★★★★ Quicken 2003</p> <hr/> <p>46 Suite of graphics applications
 ★★★★½ CorelDraw Graphics Suite 11</p> <hr/> <p>49 Mathematics program
 ★★★★ Matlab 6.5</p> <hr/> <p>49 Engineering simulation program
 ★★★★ Simulink 5</p> <hr/> <p>50 Soundtrack-creation software
 ★★★★ SmartSound Movie Maestro</p> <hr/> <p>51 Wireless software for older Macs
 ★★★★½ IOXperts 802.11b Driver 1.0.1</p> <hr/> <p>51 Business-card scanner
 ★★★★ IRIS Business Card Reader II</p> <hr/> <p>53 The Game Room
 PETER COHEN
 The long-awaited Warcraft III: Reign of Chaos has arrived—and it was worth the wait.</p> |
|--|---|

Attack of the killer speakers.



It came from JBL. A new multimedia speaker system called Creature. Its subwoofer and two satellites will redefine your music, video and gaming experience. Attempts to resist its powerful sound are futile. Visit jblcreature.com.

H A Harman International Company. ©2002 Harman Multimedia. JBL and Creature are trademarks of Harman International Industries, Inc. Toll-free 877-266-6202.

JBL

What's .Mac Worth? The Decision Is Ultimately Up to You.

Value Proposition



RECENTLY, WE'VE DEVOTED CONSIDERABLE SPACE—IN this column, elsewhere in *Macworld*, and online—to discussing various Apple pricing policies, specifically the cost of Mac OS X 10.2 and the transformation of the free iTools service into the for-pay .Mac. These topics have joined the never-ending stream of debates out there on matters such as the affordability of Macs, the strengths and weaknesses of the Mac compared with those of other operating systems, and the quality of Apple's customer service.

These debates may never fade away. But despite all the sound and fury, it's Mac users like you and me who will ultimately determine the success or failure of both Jaguar and .Mac. Apple has tried to convince us that we should pay for its operating-system update and its collection of Internet services, and we'll vote with our wallets. In recent months, *Macworld* has extensively detailed OS X 10.2 for you; this month, we take on the suite of services that make up .Mac.

To help you decide whether .Mac is worth its price, we turned to Adam C. Engst, *Macworld* contributing editor and publisher of the excellent online newsletter TidBits. Adam details the various components of Apple's \$100-per-year service—mail, Web-page creation and storage, file and device synchronization, calendar sharing, and more. He also talks about alternatives that may not have the cachet or integration of Apple's offerings—but that also don't have the price.

Everyone wants a piece of your wallet—Apple, Dell, Microsoft, and plenty of other computer companies; the IRS; and yes, even *Macworld*. But our goal is also to help you understand what's good—and not so good—about the products and services out there in the market, so you can decide where to invest your hard-earned dough.

As for me, I did eventually decide to pay for .Mac. I've become addicted to the easy integration of iPhoto with .Mac, the extra e-mail account, and the ability to move files back and forth to my iDisk. I found value in .Mac—but Apple will have to give me more tools and features in the coming months if it wants more of my money.

Reviews Galore

Every issue of *Macworld* is packed with reviews, but this month seems especially full of our evaluations of hot new products that appeal to a wide range of Mac users. First, you'll want to check out Jonathan Seff's review of the dual-1.25GHz Power Mac G4. In last month's

Power Mac feature ("Apple's New Dual-G4 Macs"), we promised to review the top-of-the-line G4 system as soon as Apple made it available to Mac buyers. Now it's here, and Jon offers some telling observations on the biggest, baddest Mac Apple's ever produced.

We also have reviews of two Adobe products, Premiere 6.5 and Photoshop Elements 2.0. Adobe has suffered a bit in the Mac video-editing market, due to the prominence of Apple's Final Cut Pro (and the free iMovie), but our review shows that there are still valid reasons to consider Premiere. And version 2.0 of Photoshop Elements really does look like the ideal low-end program for anyone interested in digital imaging but not in spending big bucks on (or a lot of time learning) Photoshop.

AppleScript Primer

Also this month, we have an introduction to one of Apple's most powerful—and least understood—technologies: AppleScript.

If you've never really considered AppleScript, imagining that it would be too complex or not worth your time, here's a chance to discover some of the hidden power found in every Mac. The article, which covers the basics of scripting (with plenty of examples), was written by Sal Soghoian, Apple's own AppleScript guru and one of the technology's most tireless promoters.

Even if you don't decide to become a scripter, take a look at the resources available online, where you can find prewritten scripts for a wide variety of applications. (A great place to start is Doug's AppleScripts for iTunes and SoundJam [www.malcolmadams.com/itunes/index.shtml], which has lots of useful scripts for automating and managing your music library.)

AppleScript is one of the many great features that differentiates Mac OS from Windows, and nearly everyone can benefit from understanding its basics, whether they work in OS 9 or OS X. Sal's article is a great place to start. □

Everyone wants a piece of your wallet.

Do you want more reviews? More in-depth tutorials on AppleScript and other technologies? Let me know what you think about these topics or anything else related to the Mac. Drop me an e-mail (rick_lepage@macworld.com), or join the discussions on our online forums (www.macworld.com).

ANNOUNCING

Macworld

OS X BUYERS' GUIDE

ON NEWSSTANDS NOW



SPECIAL ISSUE (newsstand only) OS X BUYERS' GUIDE

- Expert Buying Advice
- Comprehensive Coverage
- Easy Reference Format
- Key Facts and Features
- Extensive Product Rating Directory

PLUS: 2 CD-ROMs

Over 1.2 GB of the latest OS X software tryouts, the hottest games, essential tips, eighteen months of Macworld reviews, interactive product listings, and hundreds of OS X shareware programs and utilities.

BONUS! MAC 911 BOOKLET OS X Troubleshooting Tips & Tricks

ORDER BY PHONE
1.800.288.6848

for \$7.95 plus \$4 shipping and handling*

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

Macworld

VP of Content/Editor in Chief Rick LePage
Editor Jason Snell
Managing Editor Jennifer Werner
Executive Editor, Macworld.com Lisa Schmeiser
Deputy Managing Editor Charles Purdy
Senior Features Editor Terri Stone
Senior News Editor Philip Michaels
Senior Reviews Editor Jennifer Berger
Test Manager, Macworld Lab James Galbraith
Associate Editors Kelly Lunsford, Jill Roter, Jonathan Seff
Copy Editor Sue Voelkel

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

Art Director Jennifer Steele
Design Associate Alissa Mach
Design Consultants Kevin Ashburn, Jean Zambelli
Prepress Consultant Stephen Sugg

News Director, MacCentral.com Jim Dalrymple
Senior Editors, MacCentral.com Peter Cohen, Dennis Sellers

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

President and CEO Colin Crawford
VP/Chief Operating Officer Stephen Daniels
Director of Finance Eos de Feminis
Accounting Coordinator Ronda Bittner
Senior VP, Human Resources Richard Willoughby
Human Resources Director Kate Coldwell
Human Resources Representative Julie McKie
IT Director Sean Greathouse

VP of Sales/Publisher Steve Plevin (415/243-3509)
Associate Publisher, East Cynthia Ramsey (973/243-1197)
National Accounts Manager Paul Bonarrigo (508/533-4020)
Account Executive Jo Zottarelli (631/277-4134)
Western Advertising Director Sara Cully (831/438-8408)
Sales Assistant 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)

Senior Marketing Manager Sharon L. Cordesse
Sales & Marketing Coordinator Kasey MacMullen

Production Director Steve Spingola
Prepress Manager Alan Anzalone
Booking and Billing Manager Ricardo Sandoval
Ad Coordinator Megan Matteoni

Senior Web Producer Christina Gonzales
Online Production Manager Ron Neal

December 2002, Volume 19, Issue 12
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 © 2002, Mac Publishing, L.L.C. All rights reserved. Macworld, the Macworld logo, Macworld Lab, the mouse-ratings logo, MacCentral.com, and PriceGrabber are registered trademarks of International Data Group, Inc., and used under license by Mac Publishing, L.L.C. Apple, the Apple logo, Mac, and Macintosh are registered trademarks of Apple Computer, Inc. Printed in the United States of America.

IDG
INTERNATIONAL DATA GROUP

The perfect combination of features.

Borderless Printing

Print borderless edge-to-edge photos quickly and easily.

Individual Ink Tanks

*Four individual ink tanks allow you to replace only the color that runs out. Can reduce ink waste and save money.**

Fast Beautiful Color

*Speeds of up to 22 ppm in black and 14 ppm in color. Print 4" x 6" borderless photos in less than 48 seconds.**†*



1,600 Total Nozzles

More nozzles equal fast photo print speeds.

Advanced MicroFine Droplet Technology™

Precision ink application system and consistent droplet size with up to 4800 x 1200 color dpi result in breathtaking detail.

Ultra-small Ink Droplets

*A combination of 5 picoliter droplets and ultra-small 2 picoliter droplets reduce visible graininess for beautiful photographs.***†*

The i850 Photo Printer.

There's a new printer from Canon that really has it all. Introducing the i850 Photo Printer. It prints beautiful, edge-to-edge, borderless 4" x 6" or 8-1/2" x 11" photos quickly and easily from your digital files. A brand new Canon printhead features 1,600 nozzles for exceptional speed. And, a combination of 5 picoliter and 2 picoliter droplets[†] reduces visible graininess for beautiful photographs. It comes with individual ink tanks that can reduce ink waste and save you money.* And with the included Easy-PhotoPrint^{††} software, it's never been easier to crop, rotate, resize and print your photos. The i850 Photo Printer. It's technology that makes sense. Visit www.usa.canon.com/consumer or call 1-800-OK-CANON.



Canon KNOW HOW™

*Will vary based on composition of images/documents printed. **4" x 6" photo print speed is based on default mode using Canon Photo Paper Pro For Borderless Printing 4" x 6". All other print speeds based on draft mode. Print speed will vary depending on system configuration, software, document complexity, print mode and page coverage. ***2 picoliter droplets not available with all paper types and may require higher settings of photo paper. †Specifications subject to change without notice. ††Easy-PhotoPrint is for Windows® operating systems only. Print image is simulated. ©2002 Canon U.S.A., Inc. Canon is a trademark of Canon Inc. Canon Know How is a trademark of Canon U.S.A., Inc. All other product and brand names are trademarks of their respective owners.

Unleash the power of VectorWorks 10

Get ready to shift your business into high gear with VectorWorks 10. The basics just got better: We've made dramatic improvements in fundamental drawing efficiency. Maneuver through deadline congestion: We've added features that help you work faster with fewer mouse clicks, and enhanced the compatibility with other CAD/CAM programs. Plus, we've designed remarkable new tools to help you create cleaner, more attractive plans. Power through presentations: New features help you visualize and present your ideas in 3D. Discover a better way to design. VectorWorks 10. Call us today and find out how to unleash the power for yourself.

A Product of Nemetschek North America
Vectorworks 10
ARCHITECT • LANDMARK • RENDERWORKS
CAD for the smart-sized company

888.646.4223 • www.vectorworks10.com

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 prepaid 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

Back issues (subject to availability) are \$8 per issue for U.S. delivery (\$12 outside the United States); 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; 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. Please include a copy of your mailing label.

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 received, 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.





*Karen (and the rest of our team)
would be happy to help you
configure your Anthro Workstation.*



Problem: Need furniture for 68 different spaces.

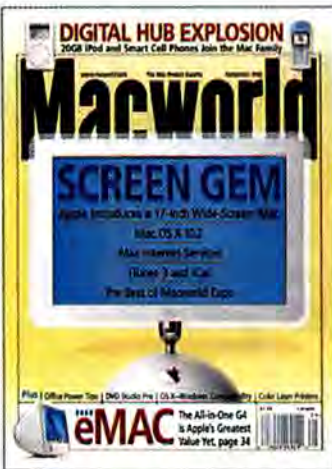
Solution: Anthro.



No matter what kind of business you're in, Anthro can outfit your workplace with just the furniture you need. Anthro is found just about anywhere there's technology. And you can build them any way you like. They're modular and flexible and expand or contract according to your needs. Call us or visit us on the Web. Our folks can help you fill whatever space or spaces you have.

Contact us at ANTHRO.COM or 1-800-325-3841.





FEEDBACK

Your Money or Your .Mac

Although the 17-inch flat-panel iMac graced our September 2002 cover, *Macworld* readers had something else on their minds: money—specifically, whether to give any to Apple in exchange for .Mac and the Jaguar update. So until the iMac's slot-loading optical drive starts spitting out \$100 bills, our readers are wondering whether .Mac's additional features will convince people to pay for services that iTools provided for free, and whether OS X 10.2's new features are worth \$129. Mac users aren't shying away from sharing their opinions—that's one thing you can take to the bank. □

Cashing Out

DAN SOLIDAY

I don't know Sturm from Drang ("Assessing .Mac," *From the Editor's Desk*, September 2002), but I know that we loyal Apple customers are just flotsam and jetsam. The smugly arrogant way Apple foisted .Mac upon us had to make even Bill Gates cringe. No consideration of tiered pricing plans or low-cost Web mail for the vast majority of users who need only that feature. No explanations after the deafening silence at Macworld Expo New York. No follow-up communication after thousands of iTools users expressed outrage in online forums. Typical silence. Typical Apple.

MIKE KIELOCH

Count me among the crowd that won't pay \$100 per year to keep iTools. Apple makes great computers, but it's not infallible. I saw a Mac.com e-mail address as a nice way to promote my love for (and continual purchase of) Macs, but no longer.

RON BENJAMIN

The services included with .Mac just don't justify its expense. There are plenty of free e-mail services out there that don't charge \$10 for each additional mailbox. I already have better versions of antivirus and backup software in Symantec's Norton AntiVirus and Dantz Retrospect, respectively. As for Internet storage, with the cost of gigabyte hard drives so low, what's the use of 100MB of online storage? What ISP doesn't already provide a home-page-creation tool? And iCal? Now there's something that makes us all wonder how we ever survived without it.

CHRISTOPHER ROMANO

I think the switch from iTools to .Mac is a big strategic blunder. Apple should

just call it "New Coke." For me, my account expired September 30 without any fanfare. And for Apple, it's losing a big selling point, as I was always impressed with the integration of iTools and iPhoto and would use it as a point of recommendation.

PHIL SHOCKLEY

Exactly how was anyone roped into using iTools? I certainly don't feel roped. Nor do I feel swindled, robbed, betrayed, or cheated. Apple offered it for free, and I used it. Now, it's no longer free, and unless I decide to pay, I won't. Do you complain to the grocery store's manager when there are no free samples? Instead of saying "Hey, Apple, you're scum for taking this away," how about "Hey, Apple, thanks for the use of iTools at no charge these past few years"?

For a Few Dollars More

DAN J. LOETERMAN

I was very excited about the release of OS X 10.2 ("Jaguar Unleashed: Mac OS X 10.2 Arrives," *Mac Beat*, September 2002), as I like to keep my computer fully upgraded. But I'm extremely frustrated about the price. I'm 14 and have been a Mac user all my life (short as it may be), and last year, I paid \$129 for OS X 10.1. I realize that one reason for the charge is the many new technologies and applications introduced in Jaguar. I think this will attract many OS 9 users, but OS X users who have already emptied their wallets and had a tough ride with previous versions should certainly be rewarded with some sort of upgrade program, as was the case with OS X 10.1.

JOSE J. JUAREZ

About a year ago, I converted from PC to Mac, and like many of your subscribers, I

am an early adopter, which is to say that I try to support Apple's innovative programs as soon as I am financially able. Back in early May, I purchased the full version of OS X 10.1.3, thinking that "OS XI" was still a few years away and that updates to OS X would be easily accessible through the Internet. Then along comes OS X 10.2. Naturally, I thought all I'd have to do would be to download an update from Apple's Web site as I normally do, but I was greatly mistaken. This blatant disregard for the consumer leads me to believe that Apple is nothing more than another computer company that "thinks" up "different" ways to increase its profit margin.

DAVID SELTZER

Unquestionably, I want Apple to succeed, and I know that means it has to grow, have a greater market share, and all that. But one of the important qualities that distinguishes Apple from other computer makers is the intimate relationship it has with its loyal following. I do understand that Apple needs to make money. It's a business, after all, and I applaud Steve Jobs's commitment to "innovating our way out of this." Still, holding onto the values that have made Apple so very special is equally important. I fear that if Apple becomes business-minded to the exclusion of its core values and the importance of promoting the creativity and wonderful computing experience of each individual, it will lose its way and join the other faceless, impersonal companies that cause many of us to recoil at the word *business*.

All about i-apps

MICHAEL A. JOHNSON

Jonathan Seff missed the coolest new iTunes 3 feature in "Keep Rockin'" (*Mac Beat*, September 2002): Join CD Tracks

under the Advanced menu. This lets you listen to music as the artists intended, without choppy track dividers between songs meant to resolve gradually.

LEE KLUSKY

It was nice having a Macworld Expo at which no major new hardware was announced. For once I don't feel as though my six-month-old Mac were already outdated. I enjoyed this Expo a lot because I saw increased interactivity and productivity for a couple hundred dollars rather than a couple thousand dollars. It's also nice to see the digital hub truly taking shape ("Apple Makes a Digital Hubbub," *Mac Beat*, September 2002). Tools for productivity, such as iSync and a centralized address book shared by all apps, make tons of sense. That's real time saved.

eMac's First Test

ARCHER GRAVELY

I disagree with Jason Snell's assertion, in his Apple eMac review (September 2002), that the G4 iMac "can't match the low price or

rugged construction that made the original iMac a hit with schools and Mac users on tight budgets." Funny, my checkbook shows that when I bought my Rev. B iMac, I paid \$1,299. At its introduction, the flat-screen G4 iMac was (gasp) \$1,299. The eMac is a clod of a machine, appearancewise. I suspect that the designer was—instead of Jonathan Ive—the man who gave us the hideous G3 all-in-one a few years back. This thing has the look of an unrealized prototype that Apple rushed to market in a panic when it saw that the educational sector wasn't jumping on the new-iMac bandwagon in the numbers it had hoped for. I do hope this machine makes inroads into the educational sector, but I wish Apple hadn't made it available to the general public. Apple seems to be wading into the old quagmire of releasing too many similar machines, diluting the market and confusing potential customers.

Let Heid Be Your Guide

FRED RAWLINSON

Thank you for Jim Heid's "Dig Deeper with DVD Studio Pro" (September 2002).

He says it all with this: "Using DVD Studio Pro can be bittersweet—its poor documentation makes it difficult to learn. . . ." I have been struggling with the user manual and a copy of *DVD Studio Pro Bible* for more than three weeks, trying to learn menu overlays. I created my first overlay in 15 minutes after reading Heid's commonsense, plain-language instructions.

ERIC NOEL

A **4.0** rating for DVD Studio Pro 1.5 is a bit harsh (*Reviews*, August 2002), but you have a point about documentation. One thing you mentioned was passing markers from Final Cut Pro to DVD Studio Pro. You seem to have found the magic recipe for keeping them: "But once we figured out the correct steps, we were able to export both types of markers without difficulty." Could you please tell me where I can find these steps?

After adding the chapter or compression markers to the sequence timeline, choose QuickTime from the File menu's Export submenu. From the Format pop-up menu, choose



HAVE FUN WITH YOUR DIGITAL PHOTOS

For just \$99, the Graphire2[®] gives you the control you need to quickly and easily edit your digital photos. Have fun with Graphire2 and join more than 2,000,000 satisfied Wacom[®] tablet users.

HOW TO FIX BLINKS

Use the control of your Wacom pen to seamlessly fix the blink by bringing in a pair of open eyes from another digital photo. Then have some fun turning that awkward sign in the background into something special.

FREE PHOTO FUN CD!!

Visit our website to see a short video of this fun fix in action. And while you're there, request your FREE Photo Fun CD.



visit

www.tabletphotofun.com

call

800-922-2589



SHE'LL LOVE HOW YOU CAPTURED THE MOMENT.

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. And no batteries to buy—ever.

FREE SOFTWARE

Adobe Photoshop Elements, procreate Painter Classic and penPalette LE by nik multimedia.

graphire2
BY WACOM



Intuos2[®] starts at \$199

Graphire2[®] only \$99

Cintiq[®] starts at \$1899

Where does yellow get its fire?

Find the answer inside your new Mitsubishi Diamond Pro®—the new standard in monitor performance.

To see all the nuances, look into a more advanced breed of monitor. The new Diamond Pro 930^{SB} and Diamond Pro 2070^{SB} with SuperBright™ Diamondtron® flat aperture grille technology. Their advanced technology takes you to a higher level of artistic expression.

Your colors come alive with SuperBright, the innovation that delivers up to twice the screen's normal brightness without sacrificing contrast. Resolutions as high as 2048 x 1536 give you an expansive workspace for multiple windows and palettes. Fatigue-free screen geometry and refresh rates up to 140 kHz help you work longer without burning out. And both monitors have our proprietary U-NX electron gun for an even sharper view.

For truest colors, the optional SpectraView™ color calibration system makes adjustments fast, easy and incredibly accurate. And with the super-wide color gamut, you're ready for precise color matching across a variety of standards and hardware.

We've also added numerous other pro features, including NaViSet™ for easy control via keyboard and mouse, and GlobalSync® (available on Diamond Pro 2070^{SB}), which eliminates distortion caused by the earth's magnetic field.

So start seeing what you've only imagined. Get complete details on the 19" Diamond Pro 930^{SB} (18" viewable), 22" Diamond Pro 2070^{SB} (20" viewable) and SpectraView color calibration system at necmitsubishi.com/diamondpro.



superior
brightness



ultra-high
resolution



fatigue-free
flat viewing



tighter focus
and clarity



accurate color
calibration

MPEG; then click on the Options button to specify data-rate settings.—Jim Heid

My Music, My Way

JOHN IRELAND

Putting copy protection on movies and music is simply against consumers' rights to use the products they pay for ("iPod, Therefore iSteal?" *Mac Beat*, September 2002). The problem these companies face in pursuing copy protection is that an underground technology will inevitably develop to counter it. If you can listen to it or see it, you can copy it. It's just a matter of time until some kid hacking away at the protection figures out how to get around it. Being so bold as to reach into my house and stop me from using a device I own to listen to music I own is simply wrong.

IVAN BEECKMANS

Why don't the Recording Industry Association of America, Disney, and Sony lower the price of compact discs so it's closer to what they cost to make, instead of experimenting with tremendously complicated copy-protection technology and pricey, lengthy court battles to prevent the "stealing" of music people have legitimately bought? If the public can buy blank CDs for less than a dollar each, we know that an unrecorded CD must cost a maximum of 50 cents to make. Add the cost of production, promotion, and distribution, plus the artist's cut, and you arrive at \$2 to \$3 a CD. Add on a 100 percent markup for retail, and you end up at \$6 to \$7 per CD. However, you can rarely buy a newly released CD for less than \$12 to \$15. These prohibitive pricing policies just drive people to share music instead of buying it themselves.

Microsoft Saves Apple

TOM CAVANAUGH

Andy Ihnatko doesn't get it ("Microsoft's Penance," *Ihnatko*, September 2002). But he's in good company: most Mac proponents don't get it. Early in 1995, Microsoft released Office 4.2.1 for the Mac, and the Mac platform continued to prosper. Late in 1995, Microsoft released Windows 95 and Office 95 for Windows, which contained newer features that weren't available on the Mac. Then Steve Jobs pulled the plug on all the Mac clones, and Microsoft released Office 97 for Windows. The general public saw the Mac as falling behind the Wintel offerings, and Mac sales took a nosedive. In August 1997, Microsoft bailed out Apple by agreeing to produce regular updates to Office for the Mac and to make its features comparable to the Windows version's. Let's face it: if Microsoft stopped selling Office for the Mac tomorrow, people would stop buying Macs tomorrow. Sure, Microsoft is a software and standards juggernaut, but if the company has anything to be penitent for, it's got nothing to do with the Mac.

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 received, 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*.



 **MITSUBISHI**
visual energy™



Macworld
BEST
OF SHOW
2ND YOC2

Visual Energy, SuperBright, SpectraView and Wideset are trademarks of NEC-Mitsubishi Electronics Display of America, Inc. Diamond is a registered trademark of Mitsubishi Electric. ©2002 NEC-Mitsubishi Electronics Display of America, Inc. All rights reserved. Simulated image in monitor.

Choose 20 at www.macworld.com/getinfo

WHEN RIVAL COMPUTERS FACE OFF, THE TRUTH ABOUT SPEED ISN'T ALWAYS CLEAR

Lies and Statistics

WHAT'S NEXT

At last year's San Francisco Macworld Expo, Apple unveiled the flat-panel iMac. What's in store for 2003? The trade show runs January 6–10.

>> On occasion, Apple uses its advertising to knock Windows and the PCs that run it—the company's “switchers” campaign being perhaps its most aggressive foray into attacking the opposition yet. But it's rare for a PC-maker to fire back at Apple, as Gateway has with its recent ad blitz attacking Apple's flat-panel iMac.

In the ad, Gateway's flat-panel Profile 4 computer leaps over the iMac, doing backflips as an announcer notes that an independent testing lab has proven that the iMac is much slower than the Gateway PC.

So what's the truth? As with anything you hear from a company with a product to sell—and that goes for both Apple and Gateway—it's best to take what's said with a grain of salt.

Put to the Test

Gateway paid the independent eTesting Labs to perform four tests on a 1.7GHz Celeron-based Profile, a 2.66GHz Pentium 4-based Profile, a 700MHz iMac G4, and an 800MHz iMac G4: a Quake III Arena 3-D test, a Web-browser JavaScript test, a boot-time test, and a file-open test with a 2.4MB PDF file. And indeed, eTesting Labs' tests showed a dramatic speed lead by the Gateway system.

But on numerous occasions, Apple has demonstrated Photoshops proving that the Mac is actually faster than Windows PCs powered by processors with much higher clock speeds.

Who's right? It depends, at least in part, on what's being tested. Certain Photoshop commands run faster on Macs than on PCs, and

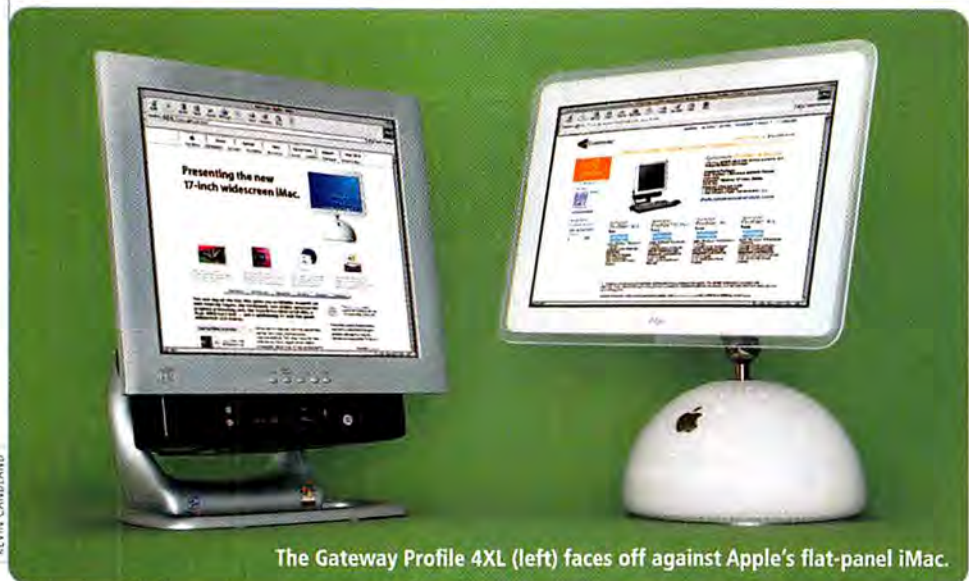
Apple knows it. By designing tests that emphasize those commands, the company can demonstrate (truthfully) that Macs are faster than PCs. Likewise, Gateway asked eTesting Labs to perform a peculiar set of tests, most likely because it knew that the Profile would excel at those tasks.

The reality is that Macs and PCs are so dramatically different in terms of hardware, operating system, and even application design, that it's possible to find tests to suit almost any purpose.

Macworld Lab Tests

With that in mind, we decided to at least check out Gateway's speed claims by using some of the tests from Speedmark, our system of testing speed in Mac models. Gateway provided us with the fastest Profile made, a \$2,149 built-to-order model powered by a 2.8GHz Pentium 4 chip. We compared it with a \$1,999 800MHz iMac G4.

The Profile won almost every test we performed, although most contests were fairly close (see “Flattened Competition?”). As you might expect, some of the Profile's best results came in tests similar to those eTesting Labs performed—the Profile was much faster starting up than an iMac, and it offered a higher Quake III frame rate. However, the iMac was fairly close in our Quake III tests, which use a more realistic 1,024-by-768-pixel resolution rather than eTesting Labs' default 640-by-480-pixel resolution. Likewise, our



The Gateway Profile 4XL (left) faces off against Apple's flat-panel iMac.

Flattened Competition?

	SYSTEM START-UP	DUPLICATE 100MB FILE	QUAKE III FRAME RATE	WEB- BROWSER SUITE	ADOBE PHOTOSHOP 7 SUITE
Gateway Profile 4XL	35	12	60.4	39	29
Apple iMac G4/800MHz	55	8	51.3	41	72
	<Better	<Better	>Better	<Better	<Better

BEST RESULTS IN BOLD.

Both test systems had 512MB of RAM and a 17-inch flat-panel display. The iMac had an 80GB hard drive, a DVD-R/CD-RW Combo drive, and Mac OS X 10.2.1 installed. The Profile had a 120GB hard drive, a 2.8GHz Pentium 4 chip, a CD-RW drive, and Microsoft XPHome installed. Quake scores are in frames per second; all other scores are in seconds. We set displays to their native resolutions and 24-bit color. The Web-Browser Suite uses Internet Explorer to load 3 Web pages served locally in a closed 100BaseT network. The Photoshop Suite test is a set of ten scripted tasks using a 50MB file. Photoshop's memory was set to 100 percent and History was set to Minimum. We tested Quake III v 1.3.1 at a resolution of 1,024 by 768 pixels with Graphics set to High Quality. —MACWORLD LAB TESTING BY JAMES GALBRAITH

browser tests—which measure page-load and -rendering time rather than JavaScript interpretation—showed the two systems very close, with only a slight Gateway advantage.

Most surprising was the iMac's poor showing in our suite of Photoshop tests. While it's unlikely that either consumer

computer would be used as a hard-core Photoshop workstation, the fact remains that the Profile was dramatically faster than the iMac in Photoshop performance.

What Does It Mean?

So if the Profile is really faster than the iMac, are you going to run out and buy

one? Let's be serious—if you're reading this magazine, the answer is probably no. But more important, what will the potential switchers think of Gateway's claims? While the pumped-up Profile is a faster computer than the iMac, in most cases it's comparable in terms of performance. High-end iMacs ship with a SuperDrive and cost less than the DVD-R/CD-RW Combo drive-equipped Profile. And while the Profile in Gateway's TV ads is as spry as an Olympic gymnast, the computer is, in reality, about as agile as an arthritic nose tackle, compared with the flexible iMac.

So should you believe Apple or Gateway? As you might expect, the truth lies somewhere in the middle. —JASON SNELL

IN 2003, NEW MACS WILL BOOT ONLY INTO OS X—WHAT IT MEANS FOR YOU

9 Questions: What's Ahead for Mac OS

Steve Jobs opened up Apple's May 2002 Developers' Conference with a mock funeral for Mac OS 9—making a not-too-subtle statement about the old OS's diminishing place in the platform's future. Apple plans to follow up that statement with a bold action: starting in 2003, all new Mac systems will boot only into OS X.

1. Why did Apple make this decision? Apple has long proclaimed that OS X represents the future of the Mac platform—and that future is now. After working through the initial hiccups of OS X with last year's 10.1 update and then adding new features via Jaguar, OS X is ready for the next logical step. And as Apple's Ken Bereskin puts it, the move “allows Apple and third-party developers to focus our energy on a single platform—it allows the entire community to focus on one resource, which is really important for developing great new products.”

2. Whom will this affect? Anyone purchasing new Apple desktops and laptops next year—those machines will be OS X only.

3. What about Classic? Apple isn't abandoning OS X's Classic layer. Many Mac users still rely on programs that don't yet run natively in OS X, and Apple has made it clear that Classic is here to stay, even on the new systems that will boot only into OS X.

4. What if I plan to upgrade to OS X next year? Will I still be able to boot into OS 9? If you've got an older system that currently boots into OS 9, you've got nothing to worry about.

5. Will Apple continue to offer tech support for OS 9 users? Just as Apple realizes the need for OS X to retain its Classic environment, it knows it can't completely cut its ties to OS 9 yet.

6. How are developers reacting to Apple's decision? With justifiable enthusiasm. The move to OS X-only systems means that developers can devote their full attention to producing native applications, instead of straddling the two operating systems. Microsoft, which criticized Apple's OS X promotional efforts this summer, called it great news. “It shows that Apple is focusing on OS X and the future,” says Tim McDonough, marketing manager for Microsoft's Mac Business Unit. Annette McCleave, executive vice-president of marketing at Corel, adds, “With a



complete move to OS X, our development and testing process will be streamlined.”

7. What about Quark? The maker of arguably the most important Mac app that has not yet come out in OS X-native form says it's comfortable with Apple's move. And while Quark hasn't made a specific announcement about XPress, development of an OS X-native version of the page-layout application is “well underway,” says Quark spokesman Glen Turpin.

8. How is the transition to OS X going, anyway? Very well, according to Apple's estimates. The company expects 5 million active OS X users by the end of 2002; there were already more than 3 million as of the end of September.

9. Has Apple set a specific date? Apple says that the move goes into effect with all new Mac models starting in January 2003. And if Apple plans to introduce any new hardware that month, Macworld Expo San Francisco would seem the ideal location. So you may want to circle January 7—the day of Jobs's keynote address—on your calendar. —PHILIP MICHAELS

INTERNET
BEAT

Software

Lasso Professional 6, from Blue World Communications (425/646-0288, www.blueworld.com): The Website-server product has been updated for OS X 10.2 and incorporates several Web industry standards including XML. It features enhanced data-manipulation abilities, such as faster data-source loading, enhanced searching, and improved data-importing and -exporting utilities. It also sports commerce-friendly features such as the ability to communicate with remote SSL servers and generate unique bar codes on-the-fly (\$1,299; download, \$1,199; Deluxe subscription, \$2,099; Deluxe download, \$1,999).

PictureTalk 4.0, from Pixion (925/467-5300, www.pixion.com): The latest version of the Web-conferencing software has group-friendly tools including Web Touring and Follow-Me browsing, a chat client, a polling feature, and voice-over-IP capabilities (prices start at \$60 per connection per month).

UsableNet Lift NN/g, from UsableNet (212/965-5388, www.usablenet.com): This new edition of the usability- and accessibility-testing software offers an integrated design feature that identifies common accessibility-related usability issues. It then presents and automates recommended fixes based on research conducted last year by Nielsen Norman Group and reported in "Beyond ALT Text: Making the Web Easy to Use for Users with Disabilities." The tool also includes World Wide Web Consortium (W3C) Web Content Accessibility Guidelines and guidelines recommended in Section 508 of the U.S. Rehabilitation Act of 1974 (\$549).—COMPILED BY LISA SCHMEISER

MULTIMEDIA
BEAT

Software

Toast 5.2 Titanium, from Roxio (866/280-7694, www.roxio.com): The popular CD-burning software adds full support for OS X 10.2 in this update. It's also the first OS X software to support CD-Text. The update improves Disc Copy speeds and VideoCD capabilities and offers support for recorders with speeds as high as 52x (\$100; upgrade, free for Toast 5 Titanium owners).

Updated **driver software** from Digital Voodoo (702/948-4976, www.digitalvoodoo.net): The drivers add OS X 10.2 support across Digital Voodoo's line of PCI Standard Definition 10-bit uncompressed QuickTime capture and playback cards, allowing users to take advantage of the speed and stability of Jaguar (driver software, free; SD card prices range from \$1,695 to \$5,995).—COMPILED BY JONATHAN SEFF

SEARCH ENGINE OFFERS DESIGNER-SPECIFIC RESULTS—FOR A PRICE

Tool Has Graphics on the Brain

How much would a search engine be worth if it produced results that were specific to your professional needs? About \$25 a year, say the creators of GraphicBrain.com, a search engine aimed at graphic-arts pros. GraphicBrain.com scours more than 3,500 Web sites containing nearly 3 million documents and information not available elsewhere, such as white papers and conference presentations. But is this search engine, designed by Belgium's Flemish Innovationcentre for Graphic Communication, worth its price—when Google can produce less industry-specific results for free?

In a comparison (see "In Search Of"), GraphicBrain.com scores points for letting you narrow searches, specify hit weights, and create an intelligent "agent" that searches unsupervised. Its hits include a summary of one to ten sentences, compared with Google's keyword-based results. But those summaries can be disjointed and may not mention any words in your query. Results usually aren't any more accurate than what you'd get from Google for free, and in some cases, they direct you to other fee-based sites—so your specialized results cost decidedly more than \$25.—TERRI STONE

In Search Of

QUERY	GraphicBrain.com		Google	
	SEARCH TIME (IN SECONDS)	RESULT ACCURACY	SEARCH TIME (IN SECONDS)	RESULT ACCURACY
Is there a PostScript Level 3 RIP that runs on Mac OS X?	8	No complete answers out of 50.	2	One out of 50 (5th entry).
What is a good tool for PDF/X on Mac OS X?	7	No complete answers out of 50.	2	One out of 44 (1st entry in Sponsored Links).
Will OpenType fonts print on PostScript Level 3 RIPs?	6	Two out of 50 (8th and 12th entries).	2	One out of 50 (13th entry).

We restricted GraphicBrain.com hits to 50. We limited Google results to the first 50 returns, even when more were given.

REVIVED PGP TO RUN NATIVELY IN MAC OS X

Encryption Made Plain

Practical public-key cryptography comes to OS X with the release of PGP Corporate Desktop 8.0. This package, from the newly formed PGP Corporation (866/747-5483, www.pgp.com), offers a level of security that many businesses require for transmitting confidential documents, and it includes an option to create encrypted virtual disks for secure local storage. Version 8.0, which should ship by the end of 2002 at a price still to be set, updates version 7.1 to support OS X 10.2 only.

The software had been languishing after owners Network Associates halted development in February 2002. PGP purchased the software rights this summer.

PGP Corporate Desktop contains public-key cryptography and AES (Advanced Encryption System) encryption. Public-key cryptography relies on an algorithm that lets anyone publish part of the key that encodes data. The public part can be posted on a Web site or put in a public directory, while the private key is kept secure. A message encrypted using a public key can only

be decrypted by the person or company that has access to the private key. Public-key cryptography avoids a common problem in sending encrypted messages in which the participants first have to agree on and exchange a secret before they can send secured data.

AES uses long encryption keys to encode data—the longer the key in an encryption algorithm, the less likely it is to be broken, regardless of technical innovation.

PGP Corporate Desktop bundles together several tools for managing and creating private keys, sharing or finding public keys, encrypting data to send to other people, and securing data on mountable virtual disks.

Version 8.0 is backward-compatible with disks created by the OS 9 version, which used a different, less widely adopted encryption algorithm. Still, PGP Corporate Desktop 8.0 can mount, read, and write PGP disks created in OS 9. Disks created in OS X are also interoperable with the Windows version of PGP.—GLENN FLEISHMAN

Jaguar's Interface Face-Off

Mac users have always taken substantial pride in their platform's interface. Even on those occasions when Mac OS didn't deliver specific features or functionality, an abundance of third-party add-ons guaranteed users the ability to customize to taste. But the way those tools did their work introduced instability into the system. Apple hoped to change that with Mac OS X.

The introduction of OS X's Aqua interface meant a rewrite for Apple's own Human Interface Guidelines, as well as restrictions to third-party developers' ability to customize the operating system's look-and-feel. The resulting conflict, which pits the ingenuity of third-party developers against Apple's engineers, is being played out in the open—specifically, in OS X's menu bar.

Apple jealously guards the privilege of producing software that creates system-wide menus; AirPort, the modem-status bar, and iChat are all examples of useful menus added by Apple. But some third-party developers feel that Apple shouldn't have a monopoly on the menu bar. Some developers figured out how to make menu-bar applets in OS X 10.1, but Apple took deliberate steps in Jaguar to disable them.

Apple says that its focus is to provide technologies that are designed for maximum reliability—a reasonable position, since some menu-bar applets introduced

instability in OS X 10.1. But at the same time, there is obvious demand from Mac users for third-party menu-bar applets, and not just Dock menu items, services, and System Preferences panes. The menu bar is the one area of a Mac's interface that's always in a predictable place. Also, the menu bar is an excellent place to access features with systemwide effects.

At present, Apple remains firm in its refusal to offer a supported system for creating menu-bar applets. Until that changes, developers will continue to figure out how to provide such capabilities, running the risk of causing potential instability.

While Apple has shown that it understands the value of openness when it comes to the open-source parts of OS X that encompass Darwin, it's holding on to Aqua with a much firmer grip than it ever did the classic UI. Until there's some sort of compromise on menu-bar items, no one—Apple, developers, or OS X's growing base of users—will benefit.—STEPHAN SOMOGYI



Menu Maneuvers

Developers such as Aladdin Systems are finding ways to get systemwide menus, such as this one for StuffIt Deluxe 7, into Jaguar.

STUFFIT DELUXE UPDATE INCLUDES NEW ARCHIVE FORMAT

Aladdin Goes for the Right Stuff

With StuffIt Deluxe 7, Aladdin Systems (800/732-8881, www.aladdinsys.com) has done more than just roll out a new version of its file-compression utility—it has introduced an entirely new archive format. Version 7 adds StuffIt X, a new format that promises smaller files and more security than the .sit format in previous editions.

Aladdin says StuffIt X (.sitx) archives are 50 percent smaller than .zip archives and 20 percent smaller than .sit archives. The .sitx format also includes stronger, 512-bit encryption for moving archives across the Internet securely.

StuffIt Deluxe will continue to provide full support for .sit archives by sporting backward compatibility with those created before version 7. StuffIt continues to run on OS 8.6 and later, including OS X.

Aladdin returned StuffIt's Magic Menu feature, which provides easy access to StuffIt functions from the Finder, to the OS X-native 6.5 release, but it wasn't compatible with OS X 10.2. Version 7 provides a Jaguar-compatible version of the feature.

StuffIt Deluxe 7 costs \$80; people who own all the previous versions can upgrade for \$30.—JENNIFER BERGER



PRODUCTIVITY BEAT

Software

Education

Encyclopedia Britannica 2003 Ultimate Reference Suite, from Encyclopedia Britannica (800/323-1229, www.britannica.com): The updated reference software includes the 75,000-article Encyclopedia Britannica, a 15,000-entry student encyclopedia, an encyclopedia for elementary-school students, two complete dictionaries and thesauruses, and a 1,300-map atlas. The suite runs on OS X 10.1 and higher (\$70).

Inspiration 7.0, from Inspiration Software (800/877-4292, www.inspiration.com): The updated visual-learning program adds OS X support; it continues to run in earlier versions of Mac OS. New tools include visually integrated notes and enhanced hyperlinking. Inspiration 7 also features interface enhancements, simplified template development and integration, rapid Web-site creation, and improved operation support (single-user version, \$69; multiple-user licenses start at \$310 for five computers; single-user upgrade, \$40).

E-mail

4D Mail, from 4D (800/785-3303, www.4d.com): The new scalable OS X mail server includes antispam features and antivirus support. The mail server—which has also been added to 4D WebStar 5.2, a free update for 4D WebStar V users—also features WebMail support (10-mailbox license, \$149; 100-mailbox license, \$249; unlimited license, \$1,499).

Finance

MYOB AccountEdge 3, from MYOB (800/322-6962, www.myob.com/us): The update to the accounting and business-management program for small businesses adds multiple-user functionality for OS X 10.1 and higher. (The software also runs in OS 8.6 and higher.) Version 3 lets users drag and drop contact information to and from AccountEdge and other vCard-compatible programs, including OS X's Address Book and Microsoft Entourage. New features also include expanded inventory management, a revamped report viewer, and category tracking that follows profits through multiple business lines (\$249; single-user upgrade, \$119).

Speech Recognition

ViaVoice Simply Dictation, from IBM (800/426-4968, www.ibm.com): A lighter version of IBM's ViaVoice, the new speech-recognition program lets users dictate, edit, and correct text in SpeakPad, a voice-enabled word processor. Users can also directly dictate into text fields of Mac applications. The program runs only in OS X (\$60).

Research

Reunion 8, from Leister Productions (717/697-1378, www.leisterpro.com): The update to the genealogy program adds native OS X support. It also features revamped chart-editing and enhanced register-report capabilities (\$99; upgrade, \$59).—COMPILED BY PHILIP MICHAELS

IMAGING
BEAT

Hardware

Displays

An LCD monitor from Formac Electronic (877/436-7622, www.formac.com): The **Gallery 2010** (\$1699) is a 20.1-inch LCD screen with a 1,600-by-1,200-pixel resolution. It comes with either an ADC or a DVI interface.

Three CRT monitors from NEC-Mitsubishi (888/632-6487, www.necmitsubishi.com): The **Mitsubishi Diamond Pro 930 SB** (\$799) is a 19-inch display with a resolution of 1,920 by 1,440 pixels. The **NEC MultiSync FP2141 SB** (\$1,299) and **Mitsubishi Diamond Pro DP2070 SB** (\$1,299) are both 22-inch displays with maximum resolutions of 2,048 by 1,536 pixels. All three displays feature the OS X-compatible SpectraView color-calibration technology.

Printers

A wide-format proofing printer from Canon (800/385-2155, www.usa.canon.com): The **ImagePrograf W2200** uses Canon's Microfine Droplet technology with a four-picoliter droplet size and six dye-based ink colors. It supports media as large as 13 by 19 inches, and it can print as many as four letter-size pages per minute in standard mode and six 11-by-17-inch pages per minute in high-speed mode (\$1,995).

A wide-format printer from Epson (800/873-7766, www.epson.com): The **Epson Stylus Pro 10600** (\$9,995) replaces the Stylus Pro 10000. It prints six-color images as large as 44 inches wide with a resolution of 1,440 by 720 dots per inch.

Three color LED printers by Oki Data (800/654-3282, www.okidata.com): The **C7100** (\$3,299), **C7300** (\$3,499), and **C7500** (\$5,399) all use Single Pass Color Digital technology. The C7100 prints 16 color pages per minute and has a maximum resolution of 1,200 by 600 dpi. The C7300 can print as many as 20 color pages per minute and offers a maximum resolution of 1,200 by 600 dpi. The C7500 also prints as many as 20 color pages per minute, but it offers a higher resolution: 1,200 by 1,200 dpi. All three models can print as many as 24 black-and-white pages per minute.

Software

Universe 5, from Electric Image (949/481-6660, www.electricimage.com): The updated 3-D-animation and -rendering tool adds multiprocessor support for both OS 9 and OS X (\$1,295; upgrade, \$349).

ZBrush 1.5, from Pixologic (888/748-5967, www.pixologic.com): The updated painting and modeling software now offers improved 3-D capabilities, including a 3-D-modeling tool called ZSphere, new sculpting and texturing features, and enhanced lighting and rendering options. Version 1.5—which runs in OS 8.1 and higher, including OS X's Classic environment—also offers a streamlined, customizable interface (\$399; upgrade, free).—COMPILED BY KELLY LUNSFORD AND PHILIP MICHAELS

NEMETSCHEK, GRAPHISOFT, ASHLAR-VELLUM PREPARE NEW VERSIONS OF CAD PROGRAMS

Some Model Updates

Designers who use CAD programs usually try to strike a balance between simplicity and sophistication. The makers of those applications face the same balancing act as they roll out new versions.

VectorWorks

VectorWorks 10, from Nemetschek (\$895; 888/646-4223, www.nemetschek.net), has a new 3-D-modeling engine that improves

and adds OpenGL graphic-card support for real-time 3-D navigation in a photo-rendering-quality environment within Virtual Building, a 3-D digital database that's the foundation of Graphisoft products. A new Project Navigator gives ArchiCAD users easy and instant access to documents, while the Layout Book tool automatically organizes project documentation into one file.



Building Spree Nemetschek's VectorWorks is one of several modeling programs that have recently been updated.

the performance and consistency of modeling operations. Version 10 is already shipping and includes a number of interface and Workspace Editor improvements, including a new Resource Browser that combines the functionality of the old Object Browser and Resource palette.

The 3D Power Pack modeling extensions introduced by Nemetschek last spring have been integrated into VectorWorks 10, to assist users with visualizing and presenting in 3-D.

VectorWorks 10 leads a parade of Nemetschek software updates, all of which run on Mac OS 8.6 and later, including OS X 10.1. Also available are new versions of VectorWorks Architect (\$1,295), Landmark (\$1,295), and the RenderWorks module (\$300). Upgrade pricing information is available from Nemetschek.

ArchiCAD

Graphisoft plans a November release for ArchiCAD 8 (\$3,950; upgrade pricing varies; 617/485-4203, www.graphisoft.com). The update boasts increased speed

Designer Elements

Previous releases of VectorWorks and ArchiCAD featured OS X compatibility, but Ashlar-Vellum is just now coming out with OS X-native releases of its Designer Elements products (800/877-2745, www.ashlar-vellum.com). Preview versions of Cobalt, Neon, Xenon, and Argon should be available by the time you read this. An OS

X-native preview of Graphite is due out late in 2002.

The previews are free for subscribers to Ashlar-Vellum's ASAP maintenance program. Full releases are expected in early 2003.—PHILIP MICHAELS

ATTENTION SHOPPERS

Do you have a favorite inexpensive (or free) application, utility, or piece of shareware that you just can't live without? If so, *Macworld* wants to hear from you. Earlier this year, we reviewed 60 great free and low-cost utilities ("Mac Software Bargains," July 2002). But we know that there are even more low-cost Mac programs out there—and we want your help in finding them. We've set up a thread on the Macworld.com forums where you can share your picks for the best low-cost software. Your favorites could appear in a future issue of *Macworld*.


More Info:

www.macworld.com/2002/12/picks.html
Tell us about your favorite shareware and low-cost applications at Macworld.com.

There's a better way to deal with your computer problems...



Even the best computer in the world can sometimes run into problems. That's why Micromat developed TechTool Pro[®] and Drive 10[™]. TechTool Pro contains everything you'll need to diagnose and repair almost any problem that ails your Macintosh. Drive 10 offers you the most comprehensive drive repair and defrag utility native to Mac OS X. With tools like these, you'll be able to keep your computer out of the can for a long, long time. Learn more at www.micromat.com.

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

©2002 Micromat, Inc. All rights reserved. TechTool is a registered trademark of Micromat, Inc.
Drive 10 is a trademark of Micromat, Inc. Macintosh is a trademark of Apple Computer, Inc.

MACS AT WORK

Why Using iMovie Is a Gas

After you've spent \$130,000 on a high-tech camera, how much would you need to pay for an editing system that guaranteed a quality finished product? For San Francisco-based Gas Imaging Systems, the answer turned out to be nothing. The company's Prescott Stone travels the world with his partner, sniffing out industrial gas leaks and using a flat-panel iMac running iMovie to edit captured footage of leaks in action. They use a camera equipped with a carbon dioxide laser that can be tuned to detect a wide variety of industrial gases.

Why use a free editing application to work with footage from a camera worth six figures? It's not iMovie's price, Stone says, but its ease of use that makes it ideal. "We taught ourselves how to use it and never even had to look at the manual," he says. "We're not film guys, so it doesn't have to be fancy, but it does everything we want."

Gas Imaging Systems uses iMovie to splice together the laser's black-and-white footage with traditional color movies, and then it adds text and graphics. After Stone and his partner edit the footage, they export it as a QuickTime movie and burn it to a CD (a sample clip is available at www.gasimaging.com).

The company has added an iBook to its Mac fleet because of the globe-trotting nature of its business. In one three-week period, Stone and his partner traveled from France to Texas and then on to Alaska. Thanks to the iBook, rough footage, much like the dailies used in major-motion-picture production, can be shown to clients before Stone returns to the home office to produce the finished product.—GREGG WRENN

MP3 PLAYER BRINGS iTUNES FEATURES TO STEREO SYSTEMS

Changing Your Tune

MP3s have revolutionized the way many Mac users listen to music, both on their Macs (via iTunes) and on the go (via the iPod). But once you've gotten accustomed to the variety and convenience a library full of MP3s can give you, you wish you could get the equivalent of iTunes for your component stereo system. That's essentially what the \$250 SLiMP3, from Slim Devices (408/255-0299, www.slimdevices.com), is—a small, stereo-component-style MP3 player. It's got a fluorescent, remote-controlled interface just like any other stereo component, making it more convenient than hooking up a Mac to your stereo. On the back of the device is an Ethernet port. Run a cable from the port to your local network and then start the

free SLiMP3 Server on your OS X Mac, and you're ready to go. The SLiMP3 configures itself (though you can also configure it manually with a static

IP address or just use a local DHCP server), finds your Mac, and accesses your iTunes music library. After that, you can use the included infrared remote to control the SLiMP3 as you'd control iTunes or the iPod—the MP3 files are transmitted via Ethernet from your Mac to the SLiMP3 and then out through your stereo amplifier. If you've got a Mac with loads of MP3s, a handy Ethernet network, and a desire to bring the iTunes listening experience to your stereo cabinet, the SLiMP3 just might be playing your song.—JASON SNELL



PRO FILE | Q&A WITH SUSAN PRESCOTT

FUTURE DESIGNS

Nature abhors a vacuum, and Mac users are just as put off when key applications are missing in action. So with a Mac OS X-native version of QuarkXPress still in development, publishing-software giant Adobe figures the time is right to convert Quark customers to its rival page-layout application, InDesign. *Macworld* recently spoke to Susan Prescott, Adobe's vice president of cross-media publishing, about her company's efforts to attract new users to InDesign.—ANDREW SHALAT



AT A GLANCE

SUSAN PRESCOTT

Vice President of Cross-Media Publishing, Adobe

SOFTWARE: Qualcomm Eudora, Apple iTunes and iPhoto

Obviously, you're making a concerted effort to reach Quark users. How do you convince them to switch to InDesign?

One of the things Adobe has done is early and deep support for OS X, making sure that we will have the most experience and the premier design experience on OS X. In the current environment, that remains an advantage. Quark will be releasing an OS X version, but by that point, we [will have] had over a year of experience on the OS, and we're confident that we're going to have a very high-quality, very robust experience on OS X. A second advantage for InDesign is the very tight integration with Adobe's other applications, which are very often on designers' desktops. That integration starts to mean great productivity and efficiency and ability to do more with your design. In terms of overall feature set, beyond the Adobe integration, we have some pretty great features. We're doing a lot to support users who are making the transition from Quark to InDesign.

How, specifically?

Things around keyboard shortcuts, for example, that we've incorporated. We've enhanced that and tried to make it an even easier experience, so from a usability perspective, it's more of what the Quark users expect as they sit down. We've had requests for other capabilities that developers are providing, and we're supporting those developers. But one of the most significant things that customers have asked for is not so much a feature in the product, but [something] actually outside the box. It's making sure that we're helping a lot of service providers to be ready and available to take the InDesign jobs. And most significantly, that training is available. That's the number-one request. At the end of July we announced free CompUSA training for anyone who had purchased a copy of InDesign anywhere. And that's one of the steps we've taken to make sure we've eliminated the barriers to people interested in moving from Quark.

More Info:

www.macworld.com/2002/12/macbeat/prescott.html
Susan Prescott talks about InDesign's XML support and Adobe's network-publishing strategy in *Macworld's* online interview.



Is your digital camera giving you the most realistic images?

With up to 10x optical zoom, the Olympus C-720 and C-730 Ultra Zoom cameras create picture quality so real, your images come to life. Faraway subjects are brought in close for detailed pictures, even in 8x10 prints. Combine this with 3 megapixels and an advanced Color Management System for accurate colors, plus a lens designed specifically for digital photography, and the result is crisper, more realistic images.



olympusamerica.com/ultrazoom

*The C-730,
with 3.2
megapixels
and 10x
optical zoom.*

The C-720 and C-730 feature a powerful optical zoom lens and ultra-compact body. And Auto Connect USB to easily download and share the most realistic digital images yet. **Nothing's impossible.**

PUBLISHING
BEAT

Software

Font Collections

Type Odyssey 2, from Bitstream (800/522-3668, www.bitstream.com): The collection of more than 1,450 fonts includes more than 450 typefaces that are new to version 2. All fonts are available in both PostScript and TrueType formats (\$1,495; upgrade, \$595).

PDF Utilities

Jaws PDF Creator 3, from Global Graphics (781/392-1600, www.jawspdf.com): The update to the PDF-file creator includes support for PDF 1.4 and ICC color profiles, as well as integration with Microsoft Word and PowerPoint. It runs on OS 8.5 and 9 (\$100; upgrade, \$30).

PDFCompress 1.0, from Metaobject (49 30 300 99 104, www.metaobject.com): The compression tool for PDF files produced by OS X's Quartz engine is compatible with OS X 10.2 (\$25).

Two PDF compressors, from Apago (770/619-1884, www.apago.com): **PDFshrink** (\$125) and **PDFshrink Lite** (\$35) are compression tools for OS X 10.1 and higher. PDFshrink gives users greater control over image resolution than the Lite version.

Text Preparation

Text Cleaner 2.1, from Studio 405 (301/270-8445, www.textcleaner.com): The updated text-preparation utility for typesetters adds compatibility with OS X's Classic and with QuarkXPress 5 (\$79; upgrades, free for 2.0 users and \$39 for others).

Preflighting

PrintReady, from Extensis (800/796-9798, www.extensis.com): Previously available as the Preflight Online Web application, the boxed program helps businesses with preflighting, collecting, and creating FTP files. It comes in a base version for designers working individually or in small groups, a Service Provider Edition, and an Enterprise Edition. All three versions require OS 8.6 to OS 9.2.2 (base, \$350; Service Provider Edition, \$2,000; PrintReady Enterprise Edition, \$10,000; upgrade pricing varies).

XTensions

Duplica 2.0, from Badia Software (416/463-5535, www.badiaxt.com): The XTension for QuarkXPress 5.0 and QuarkXPress Passport 5.0 lets you sample and duplicate attributes of boxes, characters, lines, pages, paragraphs, and pictures, without affecting the Clipboard contents. It runs in OS 8.5 and OS 9 (\$50; upgrade, \$30).

XpressImage 5, from Gluon (888/458-6698, www.gluon.com): These XTensions for XPress 4.1 and 5.0 automatically convert partial or entire documents to a variety of formats at any size or resolution. XpressImage (\$199; upgrade, \$119) boasts new format support and other improvements; XpressImage Pro (\$299; upgrade from XpressImage Pro 4, \$209; upgrade from XpressImage 4, \$249) emphasizes batch processing.—COMPILED BY TERRI STONE

WHY YOU CAN'T USE iDVD WITH A THIRD-PARTY DVD-R DRIVE

Apple's Burning Issue

When does using a copy of an application a company gives away for free with its computers constitute software piracy? When the application in question is iDVD.

Apple bundles the DVD-authoring program with SuperDrive-equipped Power Macs, iMacs, and eMacs. Still, that doesn't mean iDVD is entirely free. Apple wants to make sure that the only people using the application are the ones who paid for DVD-burning desktops. The program blocks users from using iDVD with external drives.

Other World Computing (800/275-4576, www.macsales.com) found out just how serious Apple is about who uses iDVD when it started selling its Mercury Pro FireWire DVD-R drives this summer. These DVD-R drives shipped with a software enabler that bypassed Apple's external-device block and allowed iDVD and DVD Player to recognize the units—at least until Apple objected.

OWC president Larry O'Connor says that his company stopped including the software enabler with the Mercury Pro drives after Apple raised the issue: "Apple's argument is that they don't sell iDVD as a stand-alone app, and they don't have any plans to sell it as a stand-alone product."

Apple declined an opportunity to comment, but it contends that the enabler encourages the piracy of iDVD. Since Apple uses iDVD as an incentive to push high-end Macs, the program's cost is more than covered by the extra amount

Apple charges for the units, explains Morningstar analyst Joe Beaulieu. "If consumers use iDVD with an external drive, in effect they are skirting around paying for it," Beaulieu adds.

Also at issue is who pays for the MPEG license for encoding and playing back MPEG-2 material. With consumer DVD players, license payment falls to the manufacturers. Not so with computer makers,



The OWC Mercury Pro FireWire DVD-R drive

which pay for the license only if there's a DVD unit in the computer that ships. A stand-alone iDVD release would actually trigger an extra license for Apple, says Larry Horn, vice president of licensing for MPEG LA, which handles royalties for MPEG patent holders.

For consumers, that leaves few DVD-authoring options. OWC's O'Connor hopes Apple will one day furnish a stand-alone version of iDVD that can be purchased. "For a lot of people, DVD Studio Pro does a lot more than they need it to do and is a lot more complicated than iDVD," he says.—ANTON LINECKER

HIGH-SPEED MEDIA DAMAGE SUPERDRIVES

The Case of Pioneer's Burnt-Out Burner

Use 4x DVD-R or 2x DVD-RW media in Pioneer Electronics DVD-burning drives—including Apple's SuperDrive—and you're endangering your drive. These discs will lock up and burn out the burner's optical assembly in as little as five minutes.

The solution is either to avoid the high-speed media—they won't speed up older burners anyway—or to update your burner's firmware.

Apple says all 17-inch iMacs, eMacs, and new dual-processor Power Mac

G4s already contain firmware that fixes the problem. Other drives, however, may need updating. For factory-installed SuperDrives, Apple plans to deliver a firmware update via Software Updater in OS 9 or OS X. If you have either an external FireWire drive or an internal burner that isn't factory installed, you'll need the update that Pioneer plans to deliver by the time you read this. Visit www.pioneer-electronics.com/hs/pioneer.html for information.—JIM HEID

Not using APC protection on your Mac?

You'll think differently during the next power outage...

...or surge, or spike, or other frequent power event that can end your computing experience in a flash.

If you're using your Mac without APC protection, now is the time to change your mind. Surges, such as those caused by lightning storms, can destroy your system (and your valuable data) in the blink of an eye.

In addition to surge protection, APC's battery backup solutions (such as our Back-UPS® LS) provide clean, continuous power that let you work through short-term outages or provide enough runtime to properly shut down during longer blackouts. Our uninterruptible power supplies (UPSs) let you function without frustrating interruptions, unlike cheap power strips that are incapable of preventing any of the problems that can cause keyboard lockups, system crashes, and lost Internet connections.



In addition to our reliable hardware, APC backs the Mac with new power management software for Mac OS X (v10.1).

Why remain among the unprotected? If you aren't using APC Legendary Reliability™ with your Mac system, that next power event might prove you're not as different as you think.



APC PowerChute® Personal Edition for Mac OS X (v10.1)



- Graceful operating system shutdown in the event of an extended power outage
- User notification when problem occurs
- Integrates with Mac OS X's "System Preferences" application
- Support for launching an external script before shutdown process initiates

APC Back-UPS® LS 500 Clear

- 7 power outlets (4 Battery + surge and 3 surge only)
- 2 line fax/modem protection
- Auto-shutdown software that saves your files and data, even when you're away from your computer
- Automatic Voltage Regulation (AVR)
- Audible and visible alarms alert you to power events as they occur
- Data Recovery warranty by Ontrack
- \$150,000 Equipment Protection guarantee
- 2 year comprehensive warranty



APC Back-UPS® LS 500 Clear

"Apple has always been committed to bringing the highest level of system reliability and productivity to the Mac community. With its impressive Back-UPS units and PowerChute® software, APC is providing more power management support directly to Mac OS X."

Ron Okamoto, Vice President
Worldwide Developer Relations, Apple

APC
Legendary Reliability™



Enter to win an APC Back-UPS LS 500 Clear for your Mac!

Enter to win APC's legendary power protection for your Mac, a \$149.99 value! All entrants will also receive an "Are You at Risk" Kit. (See URL below for complete promotion details)

Enter now: Visit <http://promo.apc.com> Key Code g392y • Call 888-289-APCC x4113 • Fax 401-788-2797

©2002 American Power Conversion Corporation. All Trademarks are the property of their owners. • E-mail: esupport@apcc.com • 132 Fairgrounds Rd., West Kingston, RI 02892 USA • APC3A2EF-US
Choose 73 at www.macworld.com/getinfo

WHAT'S
HOT

A Quick Look at
the World of Macs

1. Beginning in 2003, new Mac systems will boot only into OS X. Also starting next year, all iPods will play only prog-rock and salsa music.
2. Apple expects the number of active OS X users to reach 5 million by the end of 2002. Apple also expects 4 million complaints about the disappearance of the Happy Mac by year's end.
3. Apple briefly pulls the iPod out of France to bring the device in line with local regulations. You know what they call an iPod in France, don't you? Le Pirate Royale.
4. Macworld Expo will move from New York to Boston. Expo organizers chose Boston because of its new convention hall and the possibility for chance meetings with the gang from Cheers.

Mac OS X Updates

powered by
versiontracker
.com

- Apple Darwin OS 6.0.1**
Open-source binary release of OS X's core
- Apple iTunes X 3.0.1**
Improved Jaguar support for MP3 player and encoder
- Apple Macintosh Manager 2.2.1**
OS X Server client-admin tools
- BIAS Deck 3.5.1**
Multitrack digital-audio-workstation software
- CandyBar 1.0.1**
Customizes icons of OS X items
- Carbon Copy Cloner 1.4**
Copies OS X installations to other drives
- Data Rescue X 10.0.3**
Recovers data from crashed disks
- DVD Capture 1.0**
Screen capture from DVD player to file or clipboard
- EyeTV 1.0.3**
Adds repeating schedules and audio preferences to digital-video-recorder software
- Gimp-print 4.2.2**
Printer drivers using CUPS architecture for HP, Epson, Canon, and Lexmark
- Griffin PowerMate X 1.5**
Driver for audio- and media-controller device
- HP LaserJet update**
Driver for most LaserJet printers

iAddress X 2.0

Adds menu-bar icon for accessing Address Book in Jaguar

Intego Personal Backup X 10.0.1
Backup, syncing, and cloning tool

LimeWire X 2.6.3
No more central-host cache dependency for Gnutella peer-to-peer file-sharing client

MacAnalysis X 2.2.3
Network-security auditing tool

MacTracker X 1.7.2
Has detailed info on every Mac ever made

MacVCD X 4.1
Full-featured VCD player

MP3-To-Wave 2.5
Converts MP3 files into WAV files

Now Up-to-Date & Contact X 4.2.5
Update to PIM

Plasma 10.0.1
OpenGL screen-saver module

Print Center Repair 2.0.2
Print Center repair utility

Speed Download 1.9
Redesigned interface for download manager and accelerator

Starry Night 4.0
Astronomy software

Toon Boom Studio 1.2.1
Adds Jaguar compatibility to Web-animation program

vCal Explorer 1.1
Palm Desktop 4.0-to-iCal migration utility

Wacom tablet X 4.7.5a3
Beta driver for USB tablets

For these and other current updates, visit Macworld.com.

www.macworld.com/subject/updates has the latest from VersionTracker.com.

UTILITIES
BEAT

Software

Cross-Platform

Dave 4.0, from Thursby Software (817/478-5070, www.thursby.com): The file- and print-sharing program, which runs on OS 9 and OS X, has been updated to enhance SMB capabilities in OS X 10.2. The update provides NT domain login, supports Windows standard browsing, and stores files in Microsoft's standard NTFS format (\$149; upgrades are free for users who bought Dave 3.1 after July 1, 2002, \$50 for those who bought it before then, and \$90 for others).

General Utilities

Ten for X, from Aladdin Systems (831/761-6200, www.aladdinsys.com): The collection of utilities includes full, registered versions of popular OS X shareware programs such as Alarm Clock S.E., Executive Sync, LaunchBar, LimeWire Pro, Pseudo, and WindowShade X (\$50).

Interface Utilities

DeskShadePlus 10.1, from MacRabbit (www.macrabbit.com): The desktop-picture utility now runs in OS X 10.2. It can play movies as desktop patterns, hide icons on the desktop, and password-protect Macs (\$7).

DragThing 4.5.1, from TLA Systems (www.dragthing.com): The dock-replacement utility turns docks into sliding drawers that work like pop-up windows from OS 9. Besides improved support for and performance in OS X 10.2, version 4.5.1 adds translucency effects and contextual menus that can go more than five levels deep (\$25; upgrades, free for version 4 owners and \$10 for version 2 owners).

Management Utilities

ChronoSync 1.1.2, from Econ Technologies (407/365-4209, www.econtechnologies.com): The updated folder-synchronization utility now keeps track of what files were synchronized and when. It also adds a Scheduler background application that launches and closes ChronoSync on schedule (\$20; upgrade, free).

Data Rescue, from Prosoft Engineering (925/426-6100, www.prosofteng.com): This program lets OS X users recover hidden or missing files and folders from hard drives that no longer mount on the desktop (personal edition, \$90; corporate edition, \$200).

iSync, from Apple (800/538-9696, www.apple.com): The beta of the OS X utility allows users to synchronize their PDAs, iPods, and Bluetooth-enabled cell phones with iCal and Address Book in OS X 10.2 (free).

Announced

Cross-Platform Compatibility

The addition of Windows compatibility to **RealBasic**, by Real Software (512/328-7325, www.realbasic.com): Starting with RealBasic 5, slated for release in early 2003, the programming software will feature Mac and Windows compatibility. This will allow Windows users to develop apps for both platforms, a capability Mac users have had since 1999.—COMPILED BY JENNIFER BERGER AND PHILIP MICHAELS

PROTECTIVE HOOD SHIELDS CAMERAS FROM GLARE

A Bright Idea for Photographers



Unlike their film counterparts, digital cameras give you the instant gratification that comes from seeing an image immediately after you take a picture. Unfortunately, when the sun's cruel glare is especially blinding, getting a good look at that image on your camera's LCD screen is often difficult or impossible. If you've splurged on an SLR-style digital camera—Canon's EOS D60, say, or Nikon's D100—and you want to make sure the picture you've just taken is the one you

want to keep, there's always the SLR Pro Shooter Kit from Hoodman (800/818-3946, www.hoodmanusa.com). The company that made a name for itself manufacturing protective hoods for the replay monitors at National Football League games also offers a wide range of LCD hoods and protectors for most digital cameras and DV camcorders. The \$50 SLR Pro Shooter Kit combines an LCD protector, a magnifier, and a hood. The clear protective cap and mounting bracket permanently attach to the camera's LCD screen with an acrylic adhesive. A rubber bellows, with a 2× magnifying lens, slips over the cap to provide a larger and brighter image, collapsing into the camera when you're ready to shoot. In addition to the EOS D60 and the D100, the SLR Pro Shooter Kit is available for Canon's EOS D30 digital camera; Kodak's DCS 520, 620, and 760; and Fuji's FinePix S1 and S2.—RICK LEPAGE



THE BIRTHPLACE OF RAYMOND GRIFFIN

WHO FOUND THAT **imagePROGRAF**
PRODUCTS ALLOW HIS COMPANY
TO DELIVER PRECISION COLOR
AT MUCH FASTER SPEEDS

imagePROGRAF Solutions



1 - 8 0 0 - 0 K - C A N O N



imageANYWARE™ Your motto: you don't make history by sticking with the status quo. So, you explored the fascinating world of Canon color printers and struck gold: the new imagePROGRAF line of large-format and graphic arts color inkjet printers. What makes them superior? Precision color at record breaking speeds,* thanks to their new one-inch Extreme Precision Nozzle inkjet heads. You actually get 1,280 nozzles per head X 6 colors – that explains their unheard of speed and quality. All of which results in far more productive, cost-effective output. So, bravo. Thanks to Canon know-how, your company considers you an historical figure. Call or visit us at www.usa.canon.com

Canon is a registered trademark and Canon Know How is a trademark of Canon Inc. IMAGEANYWARE is a servicemark of Canon U.S.A., Inc. ©2002 Canon U.S.A., Inc. *Speed comparisons based on available products as of October 10, 2002.

Canon KNOW HOW™



New! Apple iMac® G4 with
17-inch display and up to
800MHz G4 processor

Apple iPod™
MP3 Player



Supporting the Mac aficionado since 1987.

We know Mac!

Rely on Mac Warehouse for:

- **Our Experience**
15 years, 34 million orders fulfilled
- **Our Knowledge**
You have a question, we have the answer
- **Our Service**
We're open for business whenever you call

Oh, and our 24/7 Tech Support is FREE
for the lifetime of your product.



Authorized Reseller

macware

authorized reseller

EPSON®



QUARK

SONY

Your #1 source for
everything Mac!

Powerful!

Equipped with a
PowerPC™ G4
processor with
Velocity Engine™

Stunning!

The 15.2-inch
diagonal widescreen
display delivers
awesome visuals

Multitalented!

Burn audio CDs, listen to
music, archive data —
watch a movie! The
PowerBook's Combo
Drive does it all.



Apple
PowerBook® G4



Canon ZR40 Digital
Video Camcorder



Iomega® HDD
Portable Hard Drive



Microsoft®
Office v. X



EPSON Stylus
1280 Photo Printer

house.com



MAC
WAREHOUSE
A MICROWAREHOUSE Company

1-800-434-3036

REVIEWS

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

DUAL-1.25GHZ POWER MAC G4

Top-of-the-Line System Offers Impressive Performance—at a Premium Price

BY JONATHAN SEFF

For those who need the fastest Mac around, high-end Power Mac G4s have always provided maximum performance—for a high price. Sitting atop the new dual-processor Power Mac lineup, the new dual-1.25GHz model—which contains the fastest G4 processors ever available in a Mac—is no exception (see “Apple’s New Dual-G4 Macs,” November 2002, for reviews of the dual-867MHz and dual-1GHz models).

By the Numbers

In addition to two of the fastest processors in the line—with a full 25 percent more megahertz than the previous high-end model—this new Power Mac has many improvements. Each processor has 2MB of dedicated L3 cache, which is vital for storing bits of code used repeatedly by the processors. The 1.25GHz G4’s 167MHz system bus is also the fastest in any Mac, shared only with the middle-of-the-line dual-1GHz Power Mac. Combine this with the 512MB of Double Data Rate (DDR) RAM that comes

standard with the machine, and you have a very fast system.

With the same amount of RAM, the dual-1.25GHz G4 beat the previous top-of-the-line, dual-1GHz, model by 21 points in our Speedmark testing. We

saw the biggest leaps, however, in the processor-intensive application tests, where the dual-1.25GHz Power Mac was faster than the old high-end Mac by between 22 and 27 percent.

The Perks and the Ports

Apple includes a 120GB ATA/100 hard drive in this high-end Power Mac G4. The machine also has a 4× AGP graphics slot with an ATI Radeon 9000 Pro video card, which supports two digital flat-panel displays (one ADC and one DVI). With powerful new video capabilities, this new G4 managed almost 131 frames per second in our Quake test—33 frames more per second than the old dual-1GHz model, and 12 more than the new dual-1GHz model, which has the same video card.

The high-end G4 also includes the DVD- and CD-burning SuperDrive. And the G4’s new case leaves an empty space for an additional optical drive. However, some drives may need to be altered so that the tray will fit through the opening in the front of the Mac.



This Power Mac ran smoothly in our tests, but its fan is considerably louder than the previous model’s—potentially problematic if you’re sensitive to noise or if you use the Mac to record music.

The new G4 also has all the amenities: two 400-Mbps FireWire ports; two 12-Mbps USB 1.1 ports; a Gigabit Ethernet port; a 56K V.92 modem; four 64-bit, 33MHz PCI slots; a well-placed headphone jack; higher-quality, 24-bit analog audio line-in; analog audio line-out; and a port for the optional \$59 Apple Pro Speakers.

Macworld’s Buying Advice

With the dual-1.25GHz Power Mac G4’s impressive overall performance, you really do get what you pay for. If you simply must have the world’s fastest Mac, do lots of video and graphics work, and can pony up the dough, this is the ultimate Mac. □

RATING: ★★★★★

PROS: Impressive application performance; includes fastest G4 processors available; 2MB of L3 cache per processor; fast 167MHz system bus.

CONS: Expensive; new case design can make adding hardware difficult.

PRICE: \$3,299

COMPANY: Apple Computer, 800/538-9696, www.apple.com

25 Percent More Megahertz

	Speedmark 3.2	Adobe Photoshop 7	iMovie 2.1.2	iTunes 3	Quake III v1.30b5	QuickTime 6	Cinema 4D XL 7.303	Adobe After Effects 5.5
	OVERALL SCORE	SUITE	RENDER	MP3 ENCODE	FRAME RATE	MPEG-2 ENCODE	RENDER	RENDER
Dual-1.25GHz Power Mac G4 (DDR)	184	0:31	0:32	0:26	130.9	8:14	2:45	6:07
Dual-1GHz Power Mac G4 (DDR)	161	0:38	0:39	0:33	118.6	9:56	3:45	7:17
Dual-1GHz Power Mac G4	163	0:40	0:39	0:34	97.8	10:48	3:46	8:06
	>Better	<Better	<Better	<Better	>Better	<Better	<Better	<Better

BEST RESULTS IN BOLD. REFERENCE SYSTEMS IN ITALICS.

Speedmark 3.2 scores are relative to those of a 700MHz eMac, which is assigned a score of 100. Photoshop, iMovie, and iTunes scores are in minutes:seconds. Quake scores are in frames per second. We tested each system with Mac OS X 10.2.1 installed and 512MB of RAM. We set displays to 1,024-by-768-pixel resolution and 24-bit color. The Photoshop Suite test is a set of ten scripted tasks using a 50MB file. Photoshop’s memory was set to 100 percent and History was set to Minimum. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes’ Better Quality setting. We tested Quake III at a resolution of 1,024 by 768 pixels with Graphics set to High Quality. Our single After Effects composition had multiple layers. We made transfer-mode changes and applied several dynamic geometric changes to each layer. We performed final renderings at maximum quality. We encoded a 2.4GB QuickTime movie using DVD Studio Pro’s MPEG-2 encoder. For more information on Speedmark 3.2, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY ULYSSES BRAVO AND JAMES GALBRAITH

30 Desktop system
Apple Dual-1.25GHz Power Mac G4

31 Video-editing program
Adobe Premiere 6.5

32 Database-development program
4th Dimension 6.8.1

34 FireWire CD-RW drives
EZQuest Boa CD-RW 48x12x48 FireWire External,
FireWireDirect Pro XL 44, FireWireDirect Pro XL 48,
Formac CD-RW 40, GVP XV FireWire CDR-W
40x12x48x, Ikbana 40x12x48 CD Burner,
Iomega CD-RW 40x12x48x FireWire Drive.

LaCie 48x12x48 d2 CD-RW, OWC Mercury CD-RW
Teac 40x12x48 External, Yamaha CRW-F1ZDX

37 Image-editing software
Adobe Photoshop Elements 2.0

38 Server environment
Mac OS X Server 10.2

40 Compositing and animation app
Boris Red 2.5

40 Titling tool
Boris Graffiti 2.1

42 Project-management software
FastTrack Schedule 8

44 HomePlug network adapters
Asoka PlugLink Ethernet Bridge, Gigaset HomePlug
Ethernet Bridge, Linksys Instant PowerLine EtherFast
10/100 Bridge, Netgear Powerline Ethernet Adapter,
Phonex Broadband NeverWire 14 QX-201

45 Personal-finance software
Quicken 2003

46 Suite of graphics applications
CorelDraw Graphics Suite 11

49 Mathematics program
Matlab 6.5

49 Engineering simulation program
Simulink 5

50 Soundtrack-creation software
SmartSound Movie Maestro

51 Wireless software for older Macs
IOXPerts 802.11b Driver 1.0

51 Business-card scanner
IRIS Business Card Reader II

53 The Game Room
Cave Dig 3, Rescue Heroes Tremor Trouble, Warcraft
III: Reign of Chaos

OUTSTANDING: ★★★★★ VERY GOOD: ★★★★ GOOD: ★★★ FLAWED: ★★ UNACCEPTABLE: ★

ADOBE PREMIERE 6.5

Venerable Video Editor Makes Its Mac OS X Debut, but Its Kinks Need to Be Ironed Out

BY JIM HEID

From its \$549 price to its video-editing capabilities, Adobe Premiere stakes out the middle ground between Apple's free iMovie and \$999 Final Cut Pro. Premiere has long been an ideal choice for moviemakers who have outgrown iMovie but can't afford Final Cut Pro, or who are daunted by Final Cut Pro's more difficult learning curve.

While Premiere 6's feature additions and modifications ran the gamut (★★★★, *Reviews*, May 2001), Premiere 6.5's are more modest. Still, the new version brings many significant improvements to the table, including support for OS X, an enhanced preview mode, a new titling feature, and new effects filters. But minor bugs and performance problems dampened our enthusiasm for the new version.

Strong Family Resemblance

Premiere 6.5's interface looks identical to its predecessor's. The Monitor window lets you view your clips and edited project, the Project window holds your project's video clips and other assets, and the Timeline window lets you sequence those assets and create transitions and effects. And like previous versions, Premiere 6.5 can work with other Adobe programs: you can move Premiere projects into After Effects, for example, and open Photoshop and Illustrator files in Premiere.

Premiere's interface is straightforward for beginners but provides keyboard shortcuts that veteran editors (and their wrists) will appreciate. However, we'd like to be able to give Premiere's

windows a muted gray appearance similar to the default display of other professional video-editing programs. Many video pros prefer a muted look because it's less visually fatiguing during long editing sessions.

As with all previous Premiere versions, a project can contain only one timeline sequence. Most important, this means that you can't divide a lengthy project into separate segments and then assemble them when you're done, as you can in Final Cut Pro. While Premiere supports projects as long as three hours, navigating such a lengthy timeline is cumbersome; therefore, Premiere remains best suited to projects no longer than about an hour.

Capture Concerns

Premiere 6.5 can capture video directly from a FireWire-equipped DV camcorder or through any of several analog capture cards, such as Matrox's RTMac or Aurora's Igniter RT. We used a Canon Elura DV camcorder and a dual-1GHz Power Mac G4 running Mac OS X 10.1.5 to test Premiere 6.5's capture features.

Unfortunately, the sailing was less than smooth. The video that Premiere 6.5's Capture window displayed was extremely jerky, making it difficult to log in-points and out-points with precision. (Adobe says that this problem will be fixed in a free update, which should be available on the company's Web site by the time you read this.)

Moreover, we found a bug: Premiere 6.5 didn't stash cap-



Designing Titles Adobe Title Designer, part of Premiere 6.5, is a multifaceted, though slow, tool for creating titles and other on-screen graphics.

tured movies where it was supposed to. Although the program's default setting is to store captures in the same folder as the Premiere application, our captures were stored at the top level of our Mac's internal hard drive. When we reset the capture location to a folder of our own choosing, Premiere 6.5 behaved properly. (Adobe has found that most Premiere users specify folders for captured movies instead of relying on the default setting. Adobe's tech support reports that this has not been a significant concern.) Also, Premiere 6.5 doesn't provide a feature for automatically dividing DV footage into separate clips based on scene changes, something even the low-end iMovie can do.

Effects Get Real

One of our favorite new features in Premiere 6.5 is the program's ability to preview effects, transitions, and filters without having to render them to the hard drive first, which is time-consuming. When Premiere 6.5's Real-Time Preview option

is active, you can simply press the return key to preview an effect.

Premiere 6.5 takes a clever approach to real-time previews. If your Mac is too slow to display an effect in real time, Premiere displays only some frames, giving you an approximation of the effect. This often yields an unsteady preview, but we think that's a fair price to pay for immediate gratification.

This approach also enables Premiere 6.5 to provide real-time previews on G3 Macs, something Final Cut Pro doesn't permit. In our testing (in OS X

RATING: ★★★★★

PROS: Straightforward interface; excellent title designer; supports Apple MPEG-2 encoder.

CONS: Occasionally sluggish performance; minor bug when storing captured movies; supports only one sequence timeline per project.

PRICE: \$549; upgrade, \$149

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

10.1.5) on a 500MHz PowerBook G3, previews of common transitions, such as cross dissolves, were jerky, and on a dual-1GHz Power Mac G4, dissolves and many other transitions previewed smoothly.

Titles Worth Waiting For

Also making its screen debut in Premiere 6.5 is Adobe Title Designer, a greatly enhanced titling feature you can use to create everything from static graphics to rolling credits. The Title Designer window provides a well-stocked tool palette for creating text, geometric shapes, and even Illustrator-like Bézier paths. Six text tools give you the ability to create text on a curved path, paragraph text (with or without tab stops), and vertically oriented text. Premiere 6.5 also includes 90 Adobe fonts to aid you in your titling endeavors.

We were especially impressed by the array of object-modification options Title Designer provides—you can stretch, squeeze, distort, slant, and kern text; you can fill any object (including text) with a solid color, a texture, or any of several types of gradients; you can add sheen to an object to create a chromelike appearance; and you can rotate objects and change their opacity. What's more, Title Designer updates its preview display in real time.

As for animation, you can create rolling titles and crawls (titles whose text marches from left to right, usually along the bottom of the screen). You can't, however, animate individual text elements—for example, you can't have a piece of text fly in from the left side of the screen.

Title Designer includes dozens of title templates organized into several categories. There are categories for specific types of videos, such as weddings and sports, and for specific types of graphics, such as lower thirds, which appear near the bottom of the frame. You can use the templates as they are, modify them, or create new ones from scratch.

Title Designer is powerful but slow. The first time we opened

the window after launching Premiere, it took more than ten seconds to completely appear. Subsequently, it opened much faster, but it still updated slowly when we dragged objects or made other changes. Adobe needs to improve the performance of this otherwise excellent new feature.

New Effects and MPEG-2

Premiere 6.5 also includes five new effects from Adobe's After Effects compositing and motion-graphics program. The new effects include Lightning, which creates beautiful bolts out of the blue; Channel Blur, which lets you blur a clip's red, green, and blue color channels independently; Blend, which blends two clips together in any of several ways; Ramp, which creates color gradients and blends them with an image; and Twirl, which creates whirlpool effects.

Finally, if you own Apple's DVD Studio Pro 1.5, you can use Premiere 6.5 to export your video into MPEG-2 format for subsequent DVD authoring. Premiere 6.5 even supports the chapter and compression marker features in Apple's MPEG encoder. By setting markers in Premiere's timeline, you can specify where new DVD chapters begin. Making our way to the MPEG-export dialog box required a few more mouse clicks than we would have liked, but once we got there, Premiere 6.5 worked well with Apple's MPEG-2 encoder.

Macworld's Buying Advice

With real-time preview capabilities, support for Apple's MPEG-2 encoder, and OS X compatibility, Premiere 6.5 satisfies some critical needs, particularly for people who produce DVDs or edit video in OS X; and Adobe Title Designer is appealing enough to turn Final Cut Pro users green with envy. While Premiere has its limitations—most notably that it supports only one timeline per project—it's quite capable of handling straightforward, shorter projects, and it's a good choice if you don't plan to edit video all day, every day. □

4TH DIMENSION 6.8

Development Environment and Relational-Database Engine Proves Powerful, Enables Cross-Platform Solutions

BY DENNIS R. COHEN

4th Dimension (commonly known as 4D) has been available on the Mac since 1987, evolving from a solid, powerful, and well-supported relational-database-management system (RDBMS) into a suite capable of handling nearly any requirement of database publishing or management.

You can almost say that 4D has a split personality. On one hand, it's an RDBMS, which you can use for basic tasks that require no programming or scripting; on the other, it's a development environment complete with a sophisticated editor and high-quality compiler, which allows you to generate full-featured applications for Mac OS 9, Mac OS X, or Windows. We found that the latest incarnation, 6.8.1, was quite capable, but it also had some annoying little quirks (such as the not yet OS X-native compiler).

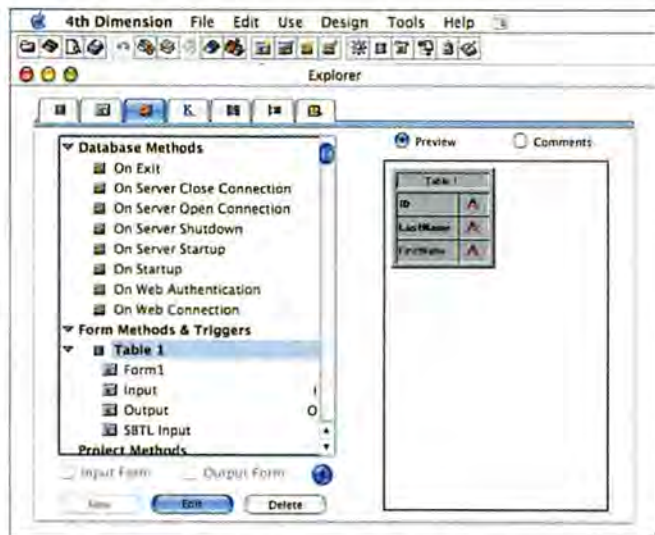
So Many Choices

4D comes in many flavors, including the \$349 Standard, \$799 Developer, \$999 Server Standard, and \$1,590 Server Developer editions, and various

options are available for each package. (4D offers complimentary licenses to academic and nonprofit organizations.) The Standard edition is very basic and doesn't include the compiler, which is in the \$590 Advanced Kit edition. The Developer edition is the Standard plus the Advanced Kit. Other items in the Advanced Kit are an integrated word processor for use within a database, a vector-graphics editor that can reference database objects, a backup and restore utility, a library of routines that access 4D databases from external programs, and clients for accessing ODBC and Oracle databases from 4D database applications—very handy tools in a corporate environment.

Using 4D

One of the most profound axioms of software development is "If it ain't broke, don't fix it." Following this lead, 4D developed a simple and straightforward database-creation process in the product's infancy and, aside from minor visual tweaks made to match changes in the Mac user interface, has left it almost unchanged.



Explore Away You use 4D's Explorer to navigate your database project.

When you launch 4D, you're given the choice of creating a new database or opening an existing one. When you click on Create A Blank Database, the program presents a standard Save dialog box where you name your database's schema, or Structure. You can start defining fields right away by double-clicking on the Table 1 item in the Structure window. To create relationships for relational databases, just click on the field in one table and drag it to its corresponding field in the other table. 4D draws an arrow from one to the other and presents the Relation Properties dialog box so you can define which actions are automatic.

Creating forms is just as easy. 4D will ask whether you want to create default input and output forms. Answer yes, and you get a basic input form and a columnar output form. All you have to do is supply your data.

If the basic forms don't satisfy your aesthetic sense (and they shouldn't), you can design your own with the help of 4D's Form Wizard. Its rich design toolbox, full of icons for the various objects you can place on your form, makes creating attractive and functional forms a piece of cake.

Industrial-strength databases are large, complex entities that contain multiple tables, forms, reports, methods, and so forth. 4D's Explorer (see "Explore Away") provides a handy control center from which you can quickly access any part of your database.

Since Last We Met

Since we last reviewed 4D (*Reviews*, June 2000), it's grown up quite a bit, implementing support for Windows XP and OS X, platform-specific style sheets in the Design environment, form inheritance, and cross-platform compatibility—without requiring a transport tool, as was necessary with previous versions.

The style sheets are some of our favorite features. When using 4D's Form Wizard to create a form, you can create templates for each platform (OS 9 and X and Windows 98, 2000,

and XP) and then select the template you want your subsequent forms to inherit.

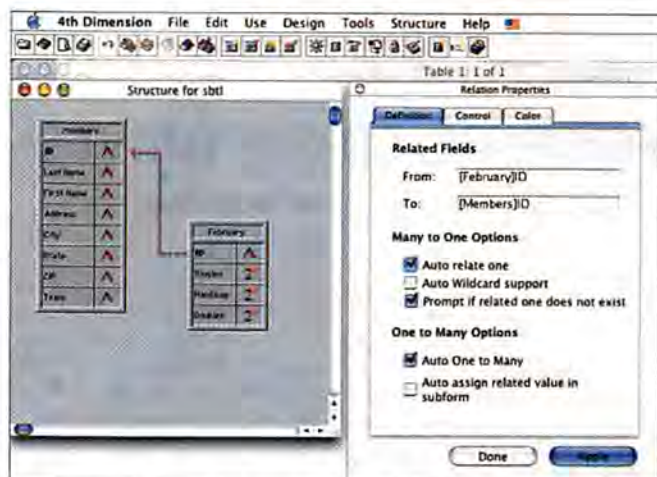
However, 4D's OS X-native promise is, at least so far, only partially fulfilled. The 4D environment is OS X native, as are the applications you develop in 4D, and that's good news. The bad news is that the compiler (a separate tool for generating database applications) is not yet OS X native, so you can use it only in Classic. Having to boot into OS 9 or start up Classic to run the compiler is very annoying, as well as aesthetically displeasing. To its credit, though, 4D has plans to integrate the compiler with the environment, making it native, in a version that should be announced by the time you read this.

Documentation and Support

4D is not at all difficult to use once you learn the basics, which are very straightforward and documented in a QuickStart and a JumpStart document on the product CD. The QuickStart document, which contains tutorials for new database users, is more current, covering 4D 6.8 (a paper copy is included in the box); JumpStart, for more-experienced users new to 4D, covers version 6.7. Having out-of-date introductory documentation seriously impedes the new user, whereas an experienced user can better deal with the upgrade addenda, which are available from the company's Web site.

4D's free online support is excellent, and at \$329 per year, it has a superb Partners program for professional database developers with more-complex needs. 4D also includes QuickTime instructional movies for many different actions.

This brings us to another of 4D's major support strengths—its offerings for developers and their user-group equivalent, 4D Community. 4D has a very active and extensive online support organization (both paid and volunteer) that provides free online training courses, streaming QuickTime tutorials, technical tips, extensive examples,



Relations Made Easy When you define fields as related, 4D draws an arrow in your database's Structure (left), to visually represent the relationship. The Relation Properties dialog box (right) then appears, so you can define other actions.

collections of tech notes, and other online references. Unfortunately, this is a hidden gold mine, as the provided PDF files don't mention the Web site as a resource.

On the Downside

We have a few more minor nits to pick. When 4D creates a new database, it defaults to the root directory of your boot disk in OS X, rather than your Home folder or (preferably) your Documents folder. In a multiuser environment, documents should be created in the logged-in user's hierarchy. While most developers aren't likely to be sharing their machines, some are, and it's better to follow standard practice.

As we mentioned earlier, creating a new database opens a full-screen window called Table 1, concealing your List Of Tables window. If you don't know that the List Of Tables window exists or if you don't resize the Table 1 window, you might never realize it's there. Also, the application lacks a Windows menu (but you can thank Apple for the 4D contextual menu in the Dock).

In addition, some OS-standard behaviors are unavailable; for example, dragging a background window while pressing the \mathbb{H} key doesn't leave the window in the background as it should.

Finally, the icons on toolbar buttons and dialog-box tabs don't clearly indicate their function. Fortunately, 4D makes use

of tool tips, which appear when the cursor hovers over an icon.

Macworld's Buying Advice

4D 6.8.1 is a fascinating amalgam of power, versatility, and ease of use, despite its irritating surface blemishes, such as scattered and out-of-date (but comprehensive) documentation.

If you want to create simple databases that will allow you to track your videotape collection, home inventory, or the like, 4D is massive overkill, and it won't be as easy to use as more-basic alternatives such as FileMaker Pro. However, if you're willing to do a little programming, if you want to create professional-quality database applications to help manage an organization or a project, and if you need to run them on multiple Windows and Mac platforms, 4D should be just the ticket. Version 6.8.1 suffered in an OS X environment, requiring frequent trips into the Classic mode for compilation, but that problem should be remedied by the time you read this. □

RATING: ★★★★★

PROS: Fast; powerful; excellent online support.

CONS: Introductory documentation not current; compiler not OS X native.

PRICE: Standard, \$349; Advanced Kit, \$590; Developer, \$799; Server Standard, \$999; Server Developer, \$1,590

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

FIREWIRE CD-RW DRIVES

A New Generation of Fast and Affordable Burners

BY JAMES GALBRAITH

Back when blank CDs cost a whopping \$5 each and 4× CD-R drives were the top of the line, it was hard to imagine the compact disc ever taking the place of the floppy disc. But now that blank CDs cost as little as a quarter and burning a CD takes about as long as reading one, the CD burner has become as popular a peripheral as the personal printer.

Macworld Lab recently put ten of the latest crop of FireWire CD-RW drives—all with CD-writing speeds of at least 40×—to the test. Three of the drives write to CD-R discs at 48×: the EZQuest Boa CD-RW 48×12×48 FireWire External, FirewireDirect Pro XL 48, and LaCie 48×12×48 d2 CD-RW. Two feature 44× write speeds: the FirewireDirect Pro XL 44 and Yamaha CRW-F1ZDX. And five of the drives we tested claim 40× write speeds: the Formac CD-RW 40, GVP XV FireWire CDR-W 40×/12×/48×, Ikebana

40×12×48 CD Burner, Iomega CD-RW 40×12×48× FireWire Drive, and Other World Computing OWC Mercury CD-RW Teac 40×12×48 External.

Popular Mechanisms

Look at any Mac dealer's catalog, and you'll find a dozen companies selling drives with similar specifications and prices. A closer look reveals that, though your brand choices may be many, the mechanisms inside the various cases are few. In fact, the ten drives we tested represent only five mechanisms. The manufacturer, specifications, quality, speed, and software compatibility of the mechanism—not so much the company selling the drive—will likely be the basis of your purchasing decision.

For example, four of the companies with CD-RW drives on the market—GVP, Ikebana, Iomega, and Other World Computing—house the same Teac CD-W540E mechanism in their

own enclosures, include various software, and set different prices. Likewise, the EZQuest and LaCie drives each feature a Lite-On mechanism, the FirewireDirect Pro XL 44 and Yamaha CRW-F1ZDX use the same Yamaha mechanism, the FirewireDirect ProXL 48 uses a Sony mechanism, and the Formac CD-RW 40 uses a Sanyo mechanism.

The three numbers separated by × symbols are the speed at which the drive claims to write to a CD-R disc, to write to a CD-RW disc, and to read data from a CD, as compared with the read speed of first-generation CD drives for the Mac (approximately 150K per second). The 40×12×48× Teac mechanisms, for example, claim to write a CD 40 times faster than first generation drives could read one—so, according to our calculator, they should burn a 650MB CD-R in about 2 minutes. In our tests, the 40× drives took closer to 4 minutes, which is still very fast.

Taking CD-RWs for a Test-Drive
A CD-RW drive's speed will probably be your main criterion when choosing one to buy. To test



The LaCie 48×12×48 d2 CD-RW

each drive's performance, we connected them to a dual-1GHz Power Mac G4 with 256MB of RAM and OS X 10.2 installed, and ran a series of real-world tests. Because half of the drives include Roxio's Toast 5 Lite, we used it to test each drive's write and rewrite speeds. (The drives that ship with other CD-burning applications were subjected to tests for compatibility with those applications.) To measure the CD-RW drives' read speeds, we dragged a CD's worth of files to the Mac's hard drive.

As expected, the 48× drives wrote CD-Rs proportionally faster than the 44× and 40× drives, with the three products that have the fastest-rated write speeds completing our burning tests at the front of the pack. When burning a 650MB folder of data to CD-R, the LaCie finished first with a time of 3 minutes and 16 seconds. The rest finished according to their mechanisms: the Teac mechanisms took about 4 minutes to burn a CD-R, and the Formac finished in last place, at 4 minutes and 58 seconds. (See "Let's Burn" for complete results.)

Burning the same data files to rewritable media also yielded results in accordance with the drives' speed ratings, with the remarkable 24× rewrite speed of the drives with Yamaha mechanisms clocking in at around 4 minutes and 30 seconds to burn a CD-RW, approximately 40 percent faster than the drives with 12× ratings.

If you're interested in using your CD-RW drive to burn music directly from iTunes, it's important to know that three of the drives—the Yamaha and the two FireWire Direct drives—are not compatible with iTunes 3 or Apple's Disc Burner feature, through OS X 10.2.1, although they work just fine with their included disc-burning applications. We expect that a future update to OS X will add support for these devices.

Let's Burn

	COPY 650MB TO HARD DRIVE (READ)	BURN 650MB FOLDER TO CD-R (WRITE)	BURN 650MB FOLDER TO CD-RW (REWRITE)
48×12×48× DRIVES			
EZQuest Boa CD-RW 48×12×48 FireWire External	2:59	3:28	7:25
FirewireDirect Pro XL 48	3:16	3:39	7:26
LaCie 48×12×48 d2 CD-RW	2:56	3:16	7:23
44×24×44× DRIVES			
FirewireDirect Pro XL 44	3:21	3:41	4:31
Yamaha CRW-F1ZDX	3:31	3:46	4:36
40×12×48× DRIVES			
GVP XV FireWire CDR-W 40×/12×/48×	2:46	4:00	7:32
Ikebana 40×12×48 CD Burner	2:49	4:03	7:31
Iomega CD-RW 40×12×48× FireWire Drive	2:56	4:01	7:26
OWC Mercury CD-RW Teac 40×12×48 External	2:47	4:04	7:34
40×10×48× DRIVE			
Formac CD-RW 40	3:05	4:58	8:46
8×4×24× DRIVE			
Internal SuperDrive Pioneer DVD-R/CD-RW	5:40	10:50	20:23
	<Better	<Better	<Better

BEST RESULTS IN BOLD. REFERENCE SYSTEM IN ITALICS.

All scores are in minutes:seconds. We tested each CD-RW drive on a dual-1GHz Power Mac G4 (DDR) with 256MB of RAM, OS X 10.2, iTunes 3, and Roxio's Toast 5 Lite installed. We recorded the time it took each drive to copy 650MB of data from an inserted CD to the Mac's internal hard drive. We then burned 650MB of data to both CD-R and CD-RW discs, and recorded times.—MACWORLD LAB TESTING BY JAMES GALBRAITH

FireWire CD-RW Drives Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	DRIVE MECHANISM	BUNDLED SOFTWARE	PROS	CONS
48x12x48x DRIVES								
EZQuest	Boa CD-RW 48x12x48 FireWire External	★★★★	\$199	888/898-8380, www.ezq.com	Lite-On LTR-48125W	Discribe 5.0	Second-fastest write speed.	Bulky case; large footprint.
FirewireDirect	Pro XL 48	★★★	\$199	512/302-0012, www.firewiredirect.com	Sony CRX210e1	Discribe 5.0	Very good performance.	Not compatible with iTunes.
LaCie	48x12x48 d2 CD-RW	★★★★	\$199	503/844-4500, www.lacie.com	Lite-On LTR-48125W	Toast 5 Lite, SilverKeeper 1.0	Fastest write speeds; attractive design; backup software included.	None significant.
44x24x48x DRIVES								
FirewireDirect	Pro XL 44	★★★	\$279	512/302-0012, www.firewiredirect.com	Yamaha CRW-F1E	Discribe 5.0	Very fast rewrite speeds.	Not compatible with iTunes; expensive.
Yamaha	CRW-F1ZDX	★★★★	\$279	800/492-6242, www.yamahamultimedia.com	Yamaha CRW-F1E	Toast 5 Lite, MusicMatch Jukebox, Photoshop LE 5.0, Retrospect Express 5.0	Generous software bundle; very fast rewrite speeds; attractive design.	Not compatible with iTunes; expensive.
40x12x48x DRIVES								
GVP	XV FireWire CDR-W 40x12x48x	★★★★	\$169	800/659-0101, www.gvpco.com	Teac CD-W540E	Toast 5 Lite	Good performance; inexpensive.	Drive door seems flimsy.
Ikebana	40x12x48 CD Burner	★★★	\$189	800/366-4433, www.ikebanadrives.com	Teac CD-W540E	B's Recorder Gold 1.7	Good performance overall; carrying case included.	No OS X software; relatively expensive.
Iomega	CD-RW 40x12x48x FireWire Drive	★★★	\$150	800/446-6342, www.iomega.com	Teac CD-W540E	HotBurn, MusicMatch Jukebox, and MGI PhotoSuite for OS 9.1	Inexpensive; good performance overall.	Ships with out-of-date software; no plans to update software.
Other World Computing	OWC Mercury CD-RW Teac 40x12x48 External	★★★★	\$180	800/275-4571, www.otherworldcomputing.com	Teac CD-W540E	Toast 5 Lite	Good performance overall.	Relatively expensive.
40x10x48x DRIVE								
Formac	CD-RW 40	★★★	\$199	510/528-9300, www.formac.com	Sanyo CRD-BP1700P	Toast 5 Lite	Attractive design.	Slow Toast burn times; expensive, considering its slow performance.

All of the CD-RW drives we tested are rated to read a CD at 44x or faster, and all of them transferred the contents of a CD to the Mac's hard drive in much less time than it took the internal SuperDrive, our reference drive, which was rated at a 24x read speed, to do so. The GVP drive edged out the competition by completing the task in 2 minutes and 46 seconds; the SuperDrive took 5 minutes and 40 seconds.

One drawback to these fast drive write speeds is the increased likelihood of buffer-underrun errors, which occur when the drive writes so fast that its data buffer briefly runs out of information to burn to the CD. This causes write errors that make the CD unusable. All of the drives we tested offer some sort of buffer-underrun protection. The drives with Yamaha mechanisms start the burning process by filling 8MB of cache memory to keep the burner fed with data even if the flow stops temporarily. The other drives use smaller caches (2MB), but to compensate, the drives can slow down or stop the burning process when the buffer runs dry and then restart burning once the data stream is

again flowing to the cache. Neither method burned higher-quality CDs, and we did not experience any buffer underruns. Therefore, both solutions are perfectly acceptable.

Bundle Up

Another factor to consider in choosing a CD-RW drive is the bundled software. Five of the drives we tested come with Toast 5 Lite, which lets you burn data to CD-R and CD-RW discs. However, if you want more-advanced capabilities, you'll need to upgrade to Toast 5 Titanium (★★★★; *Reviews*, June 2002).

In addition to Toast, LaCie includes its SilverKeeper 1.0 software (for OS 9 and OS X), which allows you to schedule backups to your CD-RW drive.

The EZQuest and FirewireDirect drives ship with Charis-mac's Discribe 5.0 software (★★★★; *Reviews*, May 2002). Discribe's interface is a little clunky, but it does much of what Toast does, and you get the full version instead of a pared-down version.

Other drives bundle lesser-known or proprietary software. The Ikebana drive ships with BHA's B's Recorder Gold 1.7,

which is compatible with OS 9 but not OS X. (Ikebana says an upcoming OS X version will be free via download from its Web site.) The Iomega drive includes Iomega's own Iomega HotBurn software for OS 9.1, but the company says that it's not planning to update the software for OS X or OS 9.2.2. Though OS X software is lacking in the Iomega and Ikebana drives, both work fine with iTunes and Apple's Disc Burner capability in OS X.

The Yamaha CRW-F1ZDX's bundle is comprehensive. Along with Adobe Photoshop LE 5.0 (for OS 9), MusicMatch Jukebox, and Dantz's Retrospect Express 5.0 backup software, there is a version of Toast 5 Lite that supports an odd feature called DiscT@2, which allows the CRW-F1ZDX's laser to draw text and graphics onto the unused portion of the data side of a CD. However, the FirewireDirect Pro XL 44, which uses the same Yamaha mechanism, does not ship with software to support this feature.

Silver: It's the New Beige

The hot look this season for CD-RW drives is silver. Eight of the

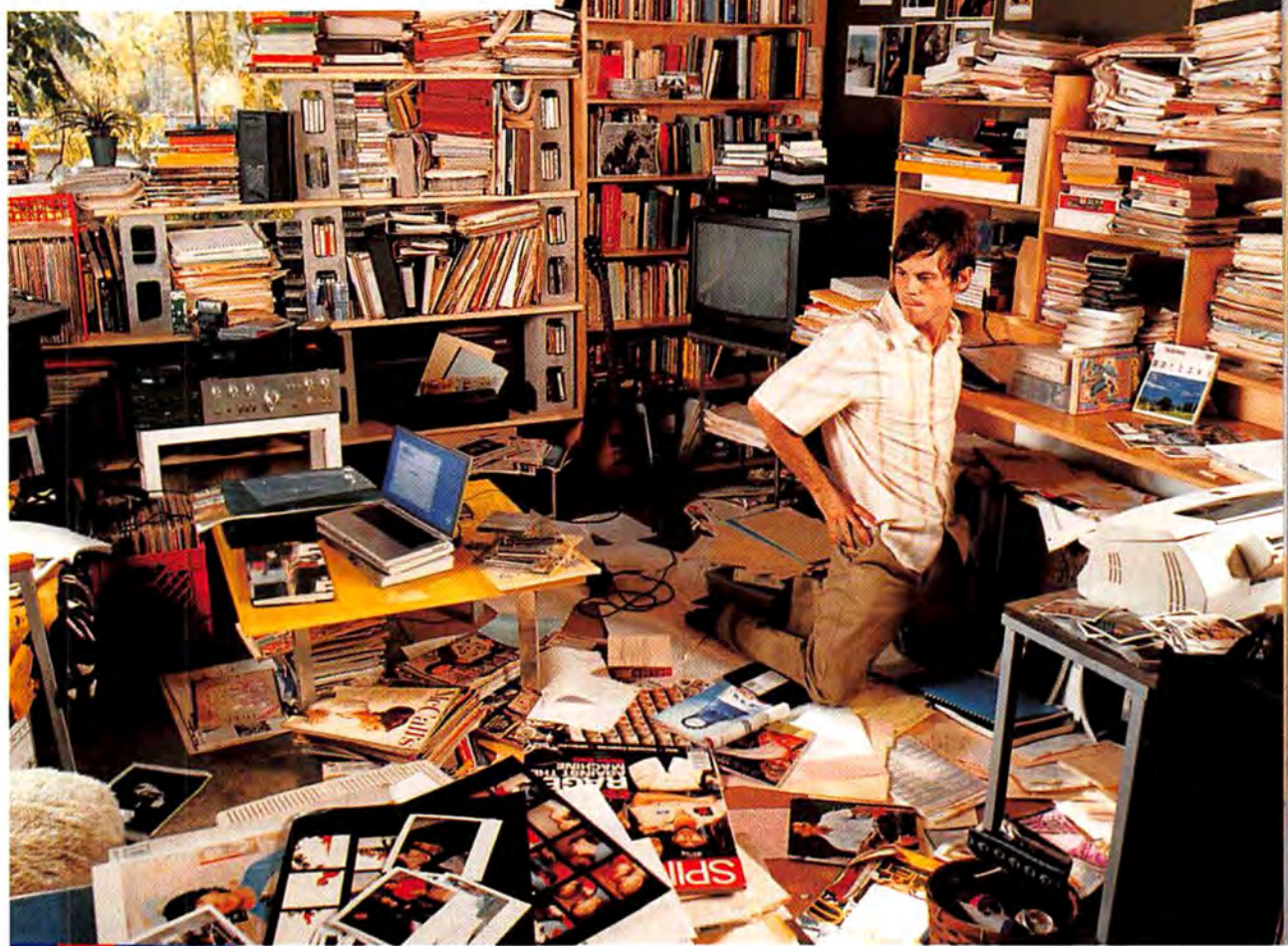
ten drives we reviewed sported metallic silver cases. But when you open the drive doors to see inside, most are still the standard beige. The best designs belong to LaCie and Yamaha. LaCie's new d2 design is thin, sleek, and stackable. The Yamaha drive has a finished design with thoughtful details.

Macworld's Buying Advice

All of these drives worked as advertised, combining speed and quality. There are no bums in the bunch, but some are faster than others, and three stand out. The LaCie 48x12x48 d2 CD-RW drive emerges as the winner for its good looks, great performance, and competitive price (\$199). Burners on budgets will be happy with the \$169 GVP XV FireWire CD-RW 40x12x48x drive, which features the Teac mechanism's solid performance and OS X-compatible software. And the Yamaha CRW-F1ZDX's innovative features—such as its 24x rewrite speed, generous software bundle, and attractive design—would make it our favorite, if only it also supported iTunes 3. □

room to burn

Audio freaks check out Toast with Jam™



Get organized, and take your files with you wherever you go. Burn all your data, video, photography, MP3s, vinyl, cassettes and whatever else you've got to CD with Toast® 5 Titanium, from Roxio. The best selling CD burning software in the world for the Mac®. You can even create your own personalized jewel cases for each disc. Hit roxio.com to find out how.

Built for Mac OS X.



© 2002 Roxio, Inc. All rights reserved. Roxio, the Roxio logo, Toast with Jam and the Burning CD logo are trademarks of Roxio, Inc., which may be registered in some jurisdictions. Toast is a registered trademark of Roxio, Inc. in the United States and may be registered in some other jurisdictions. Mac is a trademark of Apple Computer, Inc., registered in the U.S. and other countries. All other trademarks used are owned by their respective owners. Our software is designed to assist you in reproducing material in which you own the copyright or have the legal right to copy from the copyright owner.

Choose 140 at www.macworld.com/getinfo

ADOBE PHOTOSHOP ELEMENTS 2.0

User-Friendly Image Editor Marries Your Digital Camera to Your Mac

BY GALEN FOTT

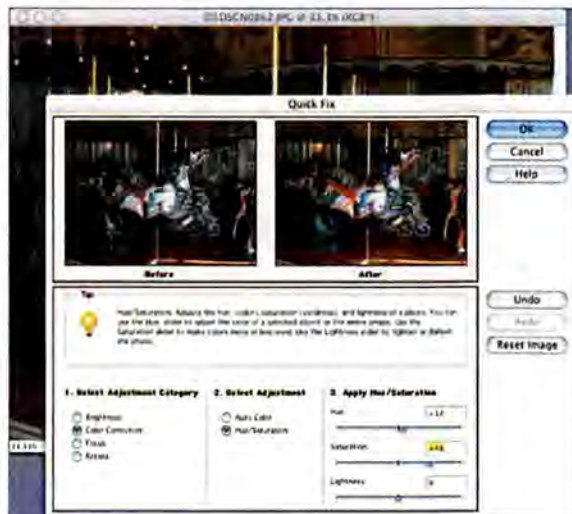
When Adobe Photoshop Elements debuted last year, many longtime Photoshop users—including this reviewer—were amazed at how much of Photoshop's power Adobe was offering at a fraction of its price (*Reviews*, August 2001). Because Elements was intended for digital-imaging newcomers, Adobe tacked on several help-related features meant to alleviate Photoshop's notoriously strenuous learning curve. Elements' successor, version 2.0, is even easier to use, and it introduces powerful new features. Elements 2.0 is also fully compatible with OS 9 and OS X, making it the ideal companion for anyone who owns a digital camera and is looking for an inexpensive and easy-to-use, while at the same time sophisticated, program for sprucing up photos.

Something Old

Like the first version, Elements 2.0 offers standard Photoshop features such as a History palette, adjustment layers, the Warp Text and Liquify commands, GIF animations (actually inherited from Photoshop's significant other, ImageReady), and a full complement of effects filters. But the centerpiece of Elements' new easy-to-use features is the Quick Fix command. Quick Fix lets you quickly adjust an image's brightness, color, focus, and rotation, all from within one window. Two large previews show the before and after states of your image, and a Tip section gives you pertinent advice as you go. Newcomers will immediately see an improvement in their images,

but for advanced users, Elements also has more-powerful ways, outside of Quick Fix, to accomplish many of these tasks.

Creating selections to isolate portions of an image is easier than ever in Elements 2.0. The new Selection Brush lets you simply paint a selection onto your image. In the Selection Brush's Mask mode, you paint a translucent red overlay; for the first time, it's possible for Elements users to actually see soft-edged selections and partially selected areas.



Color Fast From within Photoshop Elements' Quick Fix dialog box, you can make a number of improvements to your image.

Once you've made a selection, you can save it within the image file to use later. It's no longer necessary to painstakingly reselect complicated areas of an image if you need to adjust them later. And the new \mathcal{H} -H keyboard shortcut quickly hides potentially distracting selection outlines.

Something New

Selection Brush aside, there are plenty of useful new Elements-exclusive features. With just a couple of clicks, Attach To E-mail shrinks your image, turns it into a JPEG, fires up your e-mail program, and creates a blank e-mail with the JPEG

attached. And Frame From Video lets you import stills from precaptured QuickTime files or even raw iMovie footage. The PDF Slideshow command lets you easily turn a group of images into a slick presentation, though the promised flashy transitions are incompatible with Acrobat Reader 5.0.5. (Adobe says a fix for Acrobat Reader is coming soon.)

Something Borrowed

Elements 1.0 introduced the File Browser, an iPhoto-like palette that displays thumbnails of the image files in any given folder. Adobe transplanted this idea into Photoshop 7.0 and developed it into an indispensable tool for viewing and organizing images. Now almost all of Photoshop 7's File Browser capabilities are included in Elements 2.0. You can rotate thumbnails without actually rotating the corresponding images, reorganize images by dragging the thumbnails into different folders, view embedded

data from digital cameras, and even automatically rename a batch of files.

Several other Photoshop 7.0 features have trickled into Elements 2.0. For example, the Brush tool gives you a taste of Photoshop's new painting engine, with scores of brushes designed to simulate natural and unnatural media. The Picture Package command lets you combine multiple images for printing on a single page (though adding images is just as clumsy as it is in Photoshop). The new Auto Color command often produces respectable results with one click. And on a more mundane

but still welcome note, you can now rename a layer simply by double-clicking on its name in the Layers palette.

Get a Clue

Of course, if you're new to image editing, you're probably concerned with whether Elements has inherited Photoshop's difficult learning curve. But the good news is that Elements' strong Help system has been made even better. There's an ever-present Search field located on screen. Type in a word that's baffling you, and the Search Results palette appears, offering one-click access to related topics in the online Help. The How To palette gives step-by-step instructions for accomplishing many common tasks. Even the program's error messages offer hotlinks to technical words; clicking on one takes you straight to the built-in Glossary for a quick definition. And if you like to receive help the old-fashioned way, you can always turn to the 240-page printed manual.

Macworld's Buying Advice

For newcomers, Elements 2.0 makes it easy to correct images, providing excellent, time-tested tools. For Elements 1.0 users, it offers myriad new features and improvements in a perfect upgrade. And those who have Photoshop experience may just conclude that Elements 2.0 has all the digital-imaging power they need, at a much more affordable price. □

RATING: ★★★★★

PROS: Easy-to-use Quick Fix feature; greatly improved handling of selections; indispensable File Browser; deeply integrated Help system; many small improvements and new features; remarkable value.

CONS: PDF Slideshow transitions incompatible with Acrobat Reader 5.0.5; setting up Picture Package is awkward.

PRICE: \$99; upgrade pricing available

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

MAC OS X SERVER 10.2

Apple's Latest Server Environment Does Something for Every Mac Server Administrator

BY MARK H. ANBINDER

Over the last two years, Apple has offered Mac OS X Server in tandem with the desktop versions of the Mac OS X operating system. OS X Server 10.0 replaced both AppleShare IP and the Rhapsody-based OS X Server 1.X—an unattractive, if functional, product that made us appreciate the fantastic Aqua interface all the more.

Apple's latest server-software product is a complete operating system—built atop OS X 10.2, (Jaguar)—that offers easy access to the underlying Unix-based Internet services, as well as a host of cross-platform file-sharing and printer-sharing services. And although OS X Server 10.2 builds on the legacy of AppleShare IP 6, the similarities are only on the surface. In it, you'll find features that go far beyond AppleShare IP's capabilities and provide something for every kind of Mac server administrator.

Besides the major new features, there are minor yet significant enhancements, such as IMAP with SSH support and a Web-mail feature in the mail server; encrypted file sharing for OS X 10.2 clients; Kerberos support for FTP, mail, and AFP (Apple Filing Protocol, or AppleShare-style file sharing) servers; and per-user and per-printer restrictions for printing—along with page limits and detailed logging. You also get a special version of QuickTime Broadcaster with a command-line interface that the downloadable version lacks. An LDAP-based Open Directory service rounds out the user-management features.

Give Your Macs the Boot

This Mac server software has two features that are big changes for Mac users: NetBoot, which allows Macs to start up from a system OS that resides entirely

on a network server, and Network Install, which simplifies centralized updates and software distribution. These aren't new concepts, and they build nicely on past efforts such as Apple's Macintosh Manager and third-party tools such as the Purdue University Computing Center's RevRdist and Stairways Software's Assimilator.



Command Center The elegant Server Settings application, run on the server or remotely via an Internet connection, lets you start, stop, and configure Mac OS X Server 10.2's many workgroup and Internet services.

Essentially, NetBoot allows you to create a network of computers in which users can sit down at any Mac, even a brand-new one right out of the box, and be in their own familiar environment immediately. This requires a fair amount of configuration on the server, but we found that starting up a PowerBook G4 from an OS living on the server was seamless—and more than a little eerie. These features support only OS X 10.2 clients; Network Install lets you install software on both OS 9 and OS X computers, but installations of the OS must be version 10.2 or later.

Cross-Platform Goodness

One of OS X Server's strong suits is its ability to serve a wide variety of client platforms in their native protocols. When connecting to file servers, Mac users, of course, see a Mac-friendly file server. Windows

users see a server in their Network Neighborhood (as usual), and Unix and Linux users can access file services via NFS, FTP, or even WebDAV, without having to install additional client software. The same is true for printer sharing, and the mail and Web-server features support the expected Internet protocols, such as IMAP, SSL, and WebDAV.

File-server access, although it does support multiple platforms simultaneously, has one weak link. To support access for Windows clients via the SMB protocol, individual user accounts must be set to the more

server—remote-control software such as Netopia's Timbuktu Pro and Apple Remote Desktop notwithstanding. OS X Server 10.2's Server Admin, Workgroup Manager, and Server Monitor applications can be run from any OS X machine, anywhere. They can accommodate remote starting, stopping, and configuration of the various services; configuration of user accounts and folder or feature access; and monitoring of hardware status and network traffic (some monitoring features work only on Apple's Xserve).

A few features of the new server software, such as QuickTime Streaming Server, are administered separately via a Web interface. While this works well, we'd love to see a unified admin application rather than several tools doing different things, and Web-based administration of more features would be a nice touch.

Remote administration will require opening some ports in any firewall between your Mac and the server. When we had trouble opening the right ports, a call to Apple's tech support helped fill in some of the blanks, though the company's telephone-support system isn't yet adept at routing callers to the server-support team.

Selecting Your Hardware

If your users complain about the performance of your file server, it's important to remember that several factors can affect its speed. High-performance software like this needs high-performance hardware in order to shine, and a crowded

RATING: ★★★★★

PROS: Seamless cross-platform LAN-resource sharing; innovative Internet-service offerings; very good remote-administration tools.

CONS: No upgrade pricing; quirks in setting up SMB connectivity for Windows clients.

PRICE: Ten-user license, \$499; unlimited client license, \$999

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/538-9696, www.apple.com

Configure and Forget?

Changing server settings has traditionally required going to the

we protect your world™



Come see us at
Macworld Expo
San Francisco
Booth# 1029
January 7-10, 2003



available at:

www.intego.com



Macintosh, Mac and the Mac logo are registered trademarks of Apple Computer.
Intego, the Intego logo, ContentBarrier, DiskGuard, FileGuard, Internet Security Barrier, NetBarrier, VirusBarrier, Personal Backup, and we protect your world are registered trademarks of Intego.



To Each His Own In addition to access rights, you can use Workgroup Manager to control the appearance and operation of the end user's environment, no matter where that user signs on.

Ethernet network will slow down performance.

The ideal hardware for the new server software is Apple's Xserve rack-mountable server (see *Reviews*, November 2002), which includes the \$999 unlimited-client version of OS X Server 10.2 at no extra charge. (Or you can think of the package as \$3,000 worth of assembled server software with a free, slick machine to run it on.)

If an Xserve isn't in the cards, a Power Mac G4 you may have somewhere collecting dust will be a great machine for OS X Server 10.2. The software flies on a dual-processor Power Mac G4. On a dual-800MHz Power Mac G4 (Quicksilver) with 768MB of RAM, the server software performed well, and the user interface was smooth and a pleasure to use.

But you don't need a speedy machine to run OS X Server 10.2. We were pleasantly surprised that the server itself—most notably its file-sharing and QuickTime Streaming Server features—performed just fine on a 350MHz blue-and-white Power Mac G3 with 192MB of RAM. The Aqua interface bogs down a bit on slower G3 processors, but once the server is set up, most administrative tasks can be handled remotely. On older machines such as early iMacs, extra RAM should make a big difference. Apple says OS X Server 10.2, like Jaguar, requires 128MB of memory, but we'd suggest no less than 256MB, and preferably 512MB

or more if you'll be running multiple services.

Macworld's Buying Advice

Organizations that need to set up a new server will clearly get their money's worth from this package. You can get basic file-sharing and Internet services with any ol' Mac running the nonservice version of Jaguar, but if you want to save time when doing more than the most-basic setups, the server-software purchase will be worthwhile.

What's less clear is whether anyone who already owns OS X Server should bother upgrading. There's no upgrade pricing, so even if you want to upgrade from the OS X Server 10.1.5 software you purchased a few months ago, you'll pay the full price. We suspect that this price hurdle will cause a lot of people to stick with OS X Server 10.1; only you can decide whether it's worth paying the full price all over again.

But if you're currently using AppleShare IP 6.X or the short-lived OS X Server 1.X, you have an easier decision. You'll get much more from this software, including vastly better administration tools and detailed instructions and utilities to help you migrate to the new platform. Any way you look at it, the performance enhancements in the underlying OS X 10.2 software and the substantial new and improved features make Mac OS X Server 10.2 a very compelling product. □

BORIS RED 2.5

Compositing and Animation App Adds Rotoscoping and Painting to Your Video-Editing Program

Motion-graphics professionals who need to create flying logos, title sequences, and special effects should take a close look at Boris Red 2.5, the first OS X-native version of Boris FX's top-of-the-line motion-graphics package. With high-end compositing, animation, and rotoscoping tools, this version competes head-to-head with products such as Adobe After Effects, Discreet Logic's Combustion, and Pinnacle Systems' Comotion.

But Red outdoes its competition by offering all of its power in the form of a plug-in you can use from within a nonlinear editor (NLE) such as Apple's Final Cut Pro. This spares you the hassle of moving to a separate app to perform motion-graphics tasks. (Red also functions as a stand-alone app.) Though version 2.5's main new feature is OS X compatibility, this feature alone is worth the upgrade price if you've already moved your editing system to OS X.

Seeing Red

Red 2.5 requires OS 9.1 or OS X 10.1.5, and in addition to Final Cut Pro, it supports Avid's Xpress, Xpress DV, Media Composer, Symphony, and Media100, as well as Adobe

Premiere. How you access Red depends largely on your host application. In Final Cut Pro, for example, Red appears as a standard Video Generator, so you can add a Red effect to your project by simply dragging it from Final Cut Pro's Effects Browser into your timeline.

Most plug-ins integrate with a host application's standard interface, but this isn't the case with Red, whose four tiled windows and custom menus cover your screen. Via this interface, you reap the benefit of Red's complex controls and dedicated animation environment, as well as seamless integration between your motion-graphics program and your NLE.

As with all compositing programs, you define composites by stacking layers on top of one another—with Red, this happens in the Composition window. When you create a new layer, you specify the type of media that layer will contain. Red lets you import still images and movies, but it goes much further, allowing you to create layers that contain text, colored gradients, EPS artwork, 3-D shapes, and procedurally generated textures, so you don't have to create these things in a separate application.



In Control Red's all-encompassing interface facilitates the creation of effects and animations that titling and motion graphics pros need the most.

Via a simple pop-up menu, you can also specify the underlying shape of each layer—Red's shapes include 3-D planes, cubes, and spheres, as well as page turns, a standard motion graphics effect. For example, if you want an imported movie to appear on the face of a cube, you simply make that layer a cube.

Once you've set up a layer, you can use Red's standard Composition window to animate its properties. Red provides a tremendous amount of animation control. You can animate just about all of a layer's properties, from geometric information to color. The program even lets you animate a layer's transfer mode, something no other compositing program does. The Controls window's tabbed interface provides a well-organized display of all the currently selected layer's properties, making it easy to get to the parameters you want to change.

Our only complaint about Red's interface is that some properties are buried a little too deep. For example, you can't change a layer's name by clicking on it. Rather, you have to choose the Rename Track command from the Track menu. This sort of inefficiency makes Red feel a little less developed than Adobe After Effects.

Writing and Painting

Red's feature set is impressive on its own, but when you remember that you can access all of this application's power from inside your video-editing program, Red's advantage becomes more obvious.

In addition to a powerful titling engine (see "Boris Graffiti 2.1: The Features You Need to Create the Titles You Want"), the program includes a full vector-painting environment. You can use standard spline tools and Red's Vector Paint feature to create animated shapes or to perform masking and rotoscoping to isolate individual elements in your layers. If you have complex rotoscoping needs, you'll be better off

If your motion-graphics needs are limited to titles and animated 3-D text, Boris Graffiti 2.1 may have all the power you need. Geared toward video pros who either make do with the anemic titling tools in their NLEs or use a combination of programs to generate titles and 3-D work, Graffiti is basically Red's vector titling engine packaged separately.



Comprehensive Controls Graffiti's Text Window provides full typographic functionality, as well as controls for edge generation, drop shadows, color, and gradient fills.

Like Red, Graffiti can operate as a stand-alone program or as a plug-in for your NLE. It also shares Red's integration with all major NLEs, as well as Red's high-quality vector text rendering. Moreover, if you've used the Boris Calligraphy titling program included with Final Cut Pro, you'll feel right at home with Graffiti.

You perform the bulk of your titling work in Graffiti's Text Window. From there, you can enter your text and specify colors, edges, and drop shadows, as well as control all typographic functions, including kerning and leading.

Graffiti's typographic controls are comprehensive and easy to use. Performance gets a little sluggish as your titles get more complex, but in our tests, running OS X

with a rotoscoping package such as Commotion, but for simple touch-ups and masks, Red is a good solution.

Red's other effects run the gamut from standard filters, such as blurs and color correction, to particle effects, distortion, keying, and motion tracking. All of Red's effects provide more settings than those in most other packages. The Blur filters, for example, include special controls for accelerating rendering times—and all parameters can be animated, so you can change effects over time.

Taking Red for a Spin

Red's 3-D capabilities are unparalleled in any other compositing application. Red not only lets you move any layer in 3-D space, but also automatically extrude text or imported EPS files into fully beveled and textured 3-D shapes. For motion-graphics professionals,

10.2, the program never bogged down to the point of being unusable.

Graffiti provides Red's excellent Style Palette, which lets you save your text formatting as a style sheet that can be easily applied to other titles, helping you maintain consistency across projects. In addition, Graffiti packs Red's great Composition window, where you animate a layer's properties, and it provides all of Red's 3-D functionality, so you can easily extrude titles into 3-D objects and animate all titles—2-D or 3-D—in true 3-D space.

Graffiti offers multiple light sources, beveling, shadows, and texture-mapping controls that allow you to apply separate textures to the front, back, and sides of a 3-D text object. Other standout features include the ability to easily animate text along a path, automatic roll generation, and one-click creation of type-on-text effects.

While you'll have access to all of Red's powerful animation controls in Graffiti, you'll also run into the same interface issues—getting to frequently used parameters and controls can require a tedious series of clicks. Interface issues aside, Graffiti provides a full-featured, first-rate set of tools for creating 2-D and 3-D animated text. If you regularly find yourself using an image editor and compositing app to create titles, Graffiti will be a great time-saver.

RATING: ★★★★★

PROS: Powerful all-in-one solution for creating 2-D and 3-D animated titles; works from within your NLE.

CONS: Frequently used operations are buried a bit deep in the interface.

PRICE: \$595; upgrade from Boris Calligraphy, \$199

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Boris FX, 617/451-9900, www.borissfx.com

Red is unequivocally the fastest, easiest way to turn simple images into 3-D animations and flying logos.

Boris FX has done an impressive job of packing professional 3-D-rendering features into version 2.5. Multiple light sources, procedural textures, animated texture maps, shadow casting—they're all there and easy to use. Though pros will be pleased with Red's 3-D power, there are still some additions we'd like to see—the most important is the ability to make a light point at and track an object automatically.

Red offers speedy render times in OS X—comparable to the performance of other compositing programs—and its output quality is top-notch. We tested it in OS X 10.2 and experienced a good number of inexplicable crashes, but Boris claims it has better stability in 10.1.5. (A 10.2 patch should be available by the time you read this.)

Macworld's Buying Advice

For 90 percent of the effects that broadcast professionals create—effects that would traditionally be accomplished with digital-video-effects hardware—Boris Red 2.5 delivers the necessary power and puts it where it's most useful: in your video-editing program. If you regularly create titles or motion-graphics effects, Red's feature set and NLE integration make it indispensable. □

RATING: ★★★★★

PROS: Complete feature set; facilitates creation of most motion-graphics effects; integrates directly into your NLE.

CONS: Interface can be tedious to navigate.

PRICE: \$1,595; upgrade from any Boris product, \$999

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Boris FX, 617/451-9900, www.borissfx.com

FASTTRACK SCHEDULE 8

Project-Management Program Moves to OS X and Continues to Make Scheduling a Breeze

BY MIKE HECK

Over the years, a handful of intrepid companies, in particular AEC Software, have advanced the state of project management for the Mac. Unlike complex, traditional scheduling packages, such as Artemis International's Viewpoint, AEC's FastTrack Schedule lets you build sophisticated plans depicted with presentation-quality timelines, and it requires little project-management schooling. AEC's steadfastness has paid off—FastTrack currently has no serious competitors, given that Microsoft hasn't updated the Mac version of Project 4.0 in a dog's age.

FastTrack Schedule 7.0 (★★★★; *Reviews*, April 2001) offered features for building high-level project plans quickly and easily in OS 9. The latest release, FastTrack Schedule 8, takes project management a step further: tightly integrated with OS X (it still runs in OS 9 as well), version 8 capitalizes on OS X's performance capabilities. It also sports an Aquafied interface that's easier to use and navigate, and it offers precision and productivity enhancements, making it an appealing choice for beginning and professional project managers alike.

Fast Path to Planning

FastTrack Schedule 8's intuitive interface lets you get up and running right away. Much like a spreadsheet, it offers a row for each project task and columns for details, such as completion dates and costs. You list each task by name in the Activity column, and the program's built-in Outliner function allows you to display those tasks hierarchically. This way, you can quickly see which jobs depend on one another.

FastTrack Schedule shines as you get down to day-to-day work. A graphical timeline's horizontal bars represent how long tasks last. If your project

changes midstream, reordering the sequence of events is a painless process—just drag and drop the bars in the desired order within the timeline.

While there was nothing especially difficult about creating and modifying a schedule in past versions, FastTrack Schedule 8 further simplifies the process. First, the software's auto-outlining

simply launched the program's New File Assistant and selected the Construction template as an instant framework. You might also want to try moving things along with some of version 8's new Example files. Organized by industry (publishing and law, for example) these files offer a starter collection of tasks you can use when you're not sure which steps are essential for a successful project.

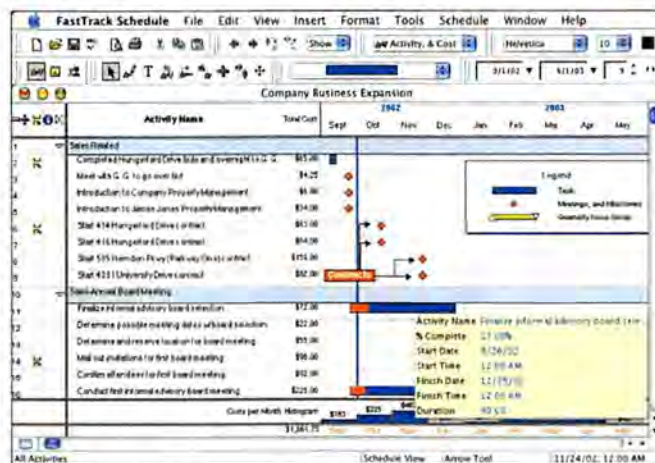
Kicking Projects Up a Notch

Full-time project managers have long relied on WBS (Work Breakdown Structure) codes as a

activities and printing reports. You can create more-advanced macros—to export information from a database and import it into FastTrack Schedule 8, say—via AppleScript. And for the large number of businesses using Microsoft Project 2000 for Windows, FastTrack's Project 2000 Exchange wizard makes short work of converting a Microsoft Project file into a FastTrack Schedule file.

Faithful FastTrack users will appreciate the latest update's speed in OS X. For example, when we recalculated a schedule's duration after inserting new tasks into FastTrack Schedule 8 running in OS X 10.1, and then did the same with FastTrack Schedule 7 running in OS 9, version 8 was about 30 percent faster, and overall response felt much snappier. The program also supports Palm Desktop 4.0 for Mac OS X; FastTrack Schedule 8 for Palm OS let us effortlessly synchronize files between the PDA version of FastTrack and the desktop application.

The only glaring omission is that multiple users can't collaborate on projects via the Web. Still, version 8 is sold in multi-user configurations, with the Mac and Windows versions able to share files.



View from the Top FastTrack Schedule 8 organizes a project's elements and offers fine graphing functions, giving you a clear view of even complex plans.

function now maintains activities at their current levels in the hierarchy, rather than forcing you to indent each new task manually as you enter it. Second, we appreciated the new Continual Summary Bar Display. Put plainly, this colored horizontal bar illustrates the duration of all project phases, so you can quickly see where major parts of a project fall along the bar and how they relate to other parts of the plan.

With 43 possible columns and many formatting options for graphs, casual project planners may have trouble figuring out where to begin. While it's up to you to determine your project's scope—including deadlines, task assignments, and so forth—FastTrack Schedule 8's templates help you put all these elements together without overwhelming you. For instance, to begin, we

means of controlling a project's phases, down to the minutest detail. WBS lets you identify project tasks with individualized numeric or alphanumeric labels, and we used version 8's new and easy-to-use dialog box to assign a custom WBS sequence to each task. When we then added tasks or moved existing ones within the hierarchy, WBS codes updated automatically, making it extremely easy to divide and reorganize large projects into manageable pieces.

Sweating the Small Stuff

Throughout FastTrack Schedule 8, we noticed many smaller improvements that, combined, made a big difference. For example, using FastSteps, the built-in point-and-click scripting capability, we automated repetitive tasks, such as filtering

Macworld's Buying Advice

FastTrack Schedule 8 is a hard-to-find fusion of simplicity and power. Its graphical timelines are perfect for beginning project managers. And its new features, which can automate more-complex scheduling tasks and enable data exchange with Microsoft Project, make it an ideal choice for project-management pros. □

RATING: ★★★★★

PROS: Intuitive navigation and pre-made templates for quick learning and improved productivity; versatile Work Breakdown Structure organizes complex projects.

CONS: No Web-collaboration ability.

PRICE: \$299

OS COMPATIBILITY: Mac OS 9, Mac OS X

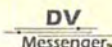
COMPANY: AEC Software, 800/346-9413, www.aecsoft.com



Canon Mini DV. When making movies is your life. Or when making a movie of your life.

Consider the professional movie director (who has a bunch of hot-shot producers breathing down his neck). Lucky for him, Canon's XL1S has revolutionized digital video with a fully customizable *Open Architecture* that accepts an enormous range of lenses

XL1S



GL2



and viewfinders. What's more, our GL2 has a *Fluorite lens with 20x Optical Zoom* that takes shots you wouldn't try up close

(no matter how passionate you are). Both feature 3 CCDs with *Pixel Shift*

and Canon's superb *Optical Image Stabilizer™* for utmost clarity. **Inside every moviemaker**

there's a photographer waiting to get out. Our Optura 200MC and Elura 40MC are not only the envy of other camcorders, they're exceptional digital cameras too. The Optura 200MC's *Digital Photo Mode* captures and stores *1.33 Megapixel photos*.

And both print them in full color directly from our Card Photo



Card Photo Printer CP-100

optura 200MC

Printers without connecting to your computer. **Just show me where to point.** If you insist on being your own director, better

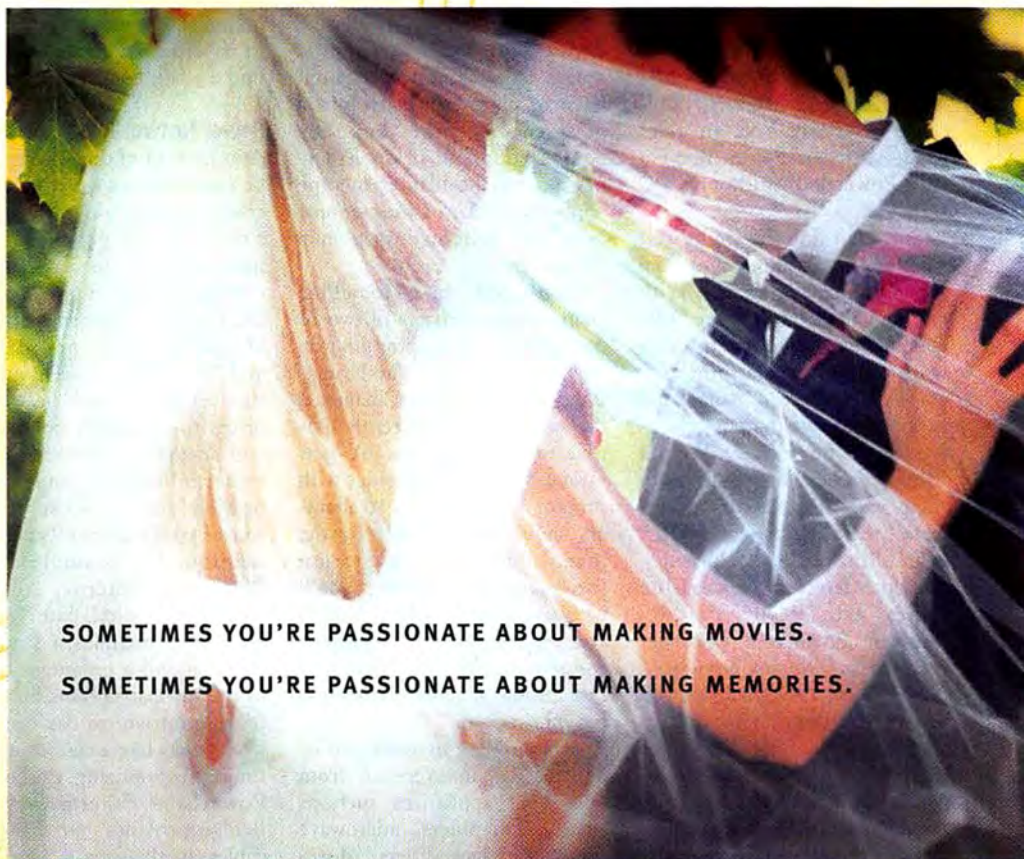
ZR50MC use the ZR50MC.



8 Program Auto

Exposure Modes

adjust to any shooting



SOMETIMES YOU'RE PASSIONATE ABOUT MAKING MOVIES.

SOMETIMES YOU'RE PASSIONATE ABOUT MAKING MEMORIES.

condition. Better yet, select the *Easy Mode* and the camera adjusts itself. **Everyone's passionate about Canon.** Movies. Memories. Tinseltown. Your town. Canon Mini DV camcorders make memorable movies and moving memories. www.canondv.com 1-800-OK-CANON

Card Photo Printer CP-10



ELURA 40MC

©2002 Canon U.S.A., Inc. Canon is a registered trademark and Canon Know How, Optical Image Stabilizer, DV Messenger, DV Messenger logo, Canon Connects, and the Canon Connects logo are trademarks of Canon Inc. Mac and the Mac logo are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. Microsoft, Windows, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the U.S. and/or other countries. The Designed for Windows XP logo refers to the digital camcorders and their drivers only. DV Messenger is only compatible with Windows XP. Viewscreen images are simulated.

Canon KNOW HOW™

Choose 23 at www.macworld.com/getinfo

HOMEPLUG NETWORK ADAPTERS

Power-Line Technology Broadens Home Networking Options, but Security Issues Arise for Mac-Only Networks

BY CHRISTOPHER BREEN

Anyone who's wriggled through spider-infested crawl spaces and drilled into beams and walls in order to run Ethernet cable through a home or office has undoubtedly thought, "There's got to be a better way." Recently, that better way has been an IEEE 802.11b wireless network, à la Apple's wireless AirPort technology. But AirPort isn't an option if the distance you want your network to cover exceeds AirPort's range or if you have an older Mac—such as a Power Mac G3 or a PowerBook without a PC Card slot.

But don't don the spider-suit yet, for there's another option: HomePlug networking. With two or more HomePlug 1.0-compliant adapters, you can network computers and printers—as well as share a broadband connection—via the power outlets in a home or office. We put five of these adapters through their paces—the Asoka PlugLink Ethernet Bridge, GigaFast HomePlug Ethernet Bridge, Linksys Instant PowerLine EtherFast 10/100 Bridge, Netgear Powerline Ethernet Adapter, and Phonex Broadband NeverWire 14 QX-201—and found that they all performed adequately. But only the NeverWire adapter makes it easy for Mac users to implement security measures in a HomePlug network, and it's this feature that

puts the NeverWire ahead of its competition.

Plugging Into HomePlug

Each adapter has a power and an Ethernet port, and each has status lights that indicate an active power connection. (The Linksys adapter provides an additional light that turns on once you've established a 100BaseT connection.) To connect a device to your network, you'll have to plug it directly into a powered wall socket, and then connect one end of an Ethernet cable to the adapter and one end to your Mac's Ethernet port or a free Ethernet port on a router or hub.

Nearly all of these HomePlug adapters work in sets of two or more, with a 16-adapter limit on any given network. The HomePlug Ethernet Bridge adapter is the exception: it's currently limited to two adapters. (A new HomePlug Ethernet Bridge with support for as many as 16 adapters should be available by the time you read this.) In a typical two-computer network, you'll have one adapter per machine. If you want to share a broadband connection, all you need is a HomePlug adapter connection for your router.

A HomePlug network can be affected by interference from household appliances such as stereos, computers, microwave ovens, and hair dryers. More-

severe interference—an intervening circuit-breaker box, for instance—can disrupt the link between HomePlug adapters. Thankfully, these devices are *rate-adaptive*: they can lower their data rates to compensate for power-line interference. However, because such interference is common in most homes and offices, you may have to try different power outlets to find the best connection.

Power Networking

Although all of the adapters can be used either in a computer-to-computer configuration or with a router or hub, certain adapters make it easier to set up these configurations. For example, the PlugLink Ethernet Bridge, HomePlug Ethernet Bridge, and NeverWire have switches that let you choose between a direct-to-computer connection and an uplink connection to a router or hub (the kind of connection you'd choose if you were sharing a broadband connection, for example). The Powerline Ethernet Adapter lacks such a switch, but Netgear graciously includes a straight-through and a crossover cable, as well as instructions on when it's appropriate to use each. In what looks like a case of unfortunate economizing, the Instant PowerLine Etherfast 10/100 Bridge provides no Ethernet cables at all.



The Phonex Broadband NeverWire 14 QX-201

The Need for Speed

Although HomePlug networks boast a maximum data-throughput rate of 14 Mbps, this is the theoretical limit. In practical use, you should see speeds about 30 to 50 percent faster than a typical 802.11b wireless network, which also operates well below its theoretical maximum of 11 Mbps. While this is sprightly enough for Web surfing, you'll really notice the slowness when you copy files across a network.

To test speeds, we attached the adapters to a 400MHz PowerBook G4 and a 700MHz flat-panel iMac G4. Both Macs were equipped with 10/100BaseT Ethernet ports. We copied a 50.2MB file between the two Macs over a wired Ethernet connection, over an AirPort connection (using an intervening graphite AirPort Base Station), and via each of the five HomePlug adapters. We weren't surprised that the wired Ethernet connection was far faster than either the AirPort or the HomePlug connection—it took just 6 seconds to copy the file.

Transferring the file over the AirPort connection took 3 min-

HomePlug Network Adapters Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	SECURITY	INCLUDED UPLINK CAPABILITIES	PROS	CONS
Asoka	PlugLink Ethernet Bridge	★★★	\$99	650/591-3236, www.asokausa.com	Windows-based application	switch	Uplink switch.	No Mac encryption software.
GigaFast	HomePlug Ethernet Bridge	★★★	\$99	626/964-2960, www.gigafast.com	Windows-based application	switch	Uplink switch.	Supports only two units; no Mac encryption software.
Linksys	Instant PowerLine EtherFast 10/100 Bridge	★★★	\$99	800/546-5797, www.linksys.com	Windows-based application	none	Additional status light indicates 100BaseT connection.	No Mac encryption software; no included cables.
Netgear	Powerline Ethernet Adapter	★★★	\$99	888/638-4327, www.netgear.com	Windows-based application	crossover cable	Uplink switch.	No Mac encryption software.
Phonex Broadband	NeverWire 14 QX-201	★★★★	\$129	800/257-0601, www.phonex.com	built-in hardware	switch	56-bit DES encryption via button on adapter.	More expensive than other adapters.

utes and 55 seconds. While not nearly as zippy as the direct Ethernet connection, the HomePlug adapters outperformed AirPort, with speeds ranging from as fast as 1 minute and 20 seconds to as slow as 2 minutes and 55 seconds.

These numbers reflect tests in a real-world environment, one in which electrical interference ebbs and flows. For example, when the adapters shared a plug with a power strip connected to a host of peripherals, including a computer, a scanner, a printer, and powered speakers, it took each adapter nearly a minute longer to copy our test file. Because of the many variables involved, we were unable to ascertain exact speeds for each of the HomePlug devices.

(In)security

Our speed tests shouldn't unduly influence your buying decision, but your ability to secure your HomePlug network certainly should. You can successfully link these adapters throughout apartment buildings and office spaces that share wiring; if you live or work in such an environment and would prefer that others not access your network or pilfer your bandwidth, you'll choose the NeverWire, hands down, for its security features.

Turning on encryption is a simple matter of pressing a Secure button on each NeverWire unit within the network. This initiates 56-bit DES encryption, which, although it's a less secure level than most current encryption schemes, is solid enough to deter all but the most determined hackers. However, the NeverWire's method is desirable only when you control the space in which the adapters reside.

To secure the other HomePlug adapters you must run the included Windows-compatible encryption application from a PC (all the adapters use the same Security Configuration Utility software). This software generates and stores a password in the unit's hardware, so you can configure the adapters with a PC and have the encryption still work with your Mac. If you don't have access to a PC and want a secure network, we don't recommend anything but the NeverWire.

Macworld's Buying Advice

At a cost of \$200 to \$250 for a two-computer network, these adapters aren't the most economical solutions around—1,000 feet of Category-5 (Ethernet) cable costs less than \$80—nor are they the speediest. But if you plan to operate a network in a single-family home or small office and don't require peak performance, you'll be content with any of these adapters. If you need a measure of security in your setup, Phonex Broadband's NeverWire 14 QX-201 is your only choice. □

QUICKEN 2003

Financial Powerhouse Rests on Its Laurels

BY TOM NEGRINO

After years of evolution, Intuit's Quicken provides all the finance-management features most people will ever need. With Quicken, you can track checking-account and credit-card transactions, pay bills, manage your investment portfolio, and even plan for taxes and retirement. You can also download your bank and investment statements directly into Quicken and pay bills with electronic checks.

This program already does so much that the pace of development has slowed, and Quicken 2003 sports only a small number of

more like a native Aqua application, with more-attractive icons and controls, though there's room for improvement. For example, although you can now assign Tax Links, which let you associate Quicken transaction categories with specific lines on a federal tax form, the scrollable window for selecting the tax lines is only six lines high and can't be resized; scrolling through the hundreds of choices is unnecessarily difficult.

Quicken 2003 brings several improvements in the area of complex investment transactions. Quicken can now handle short selling and margin interest, and (perhaps in a reaction to a turbulent market) it can now merge two securities to account for corporate acquisitions. Best of all, Quicken can now track and manage cash in investment-portfolio accounts, so if you have a money-market checking account linked to your investment portfolio, you no longer have to

manage the accounts in separate registers.

As in the past, Quicken for Mac's features lag behind those of its Windows stablemates, even though the programs have the same price. There's still no Home and Business version for the Mac, and the Mac version connects to far fewer companies for online-brokerage downloads (more than 70 for the Windows version versus only five for the Mac). However, online-banking support is much better than online-brokerage support: Quicken for Mac works with more than 1,200 financial institutions.

Macworld's Buying Advice

Quicken is fairly priced for new users and remains a very good product, but new versions have too few compelling new features to justify yearly upgrades. For most Quicken users, upgrading every other year is a better strategy—the improvements in this year's model won't be worth \$40 (price with rebate) if you have last year's. But if you're using Quicken 2001 or an earlier version, Quicken 2003 for Mac provides enough solid improvement to make an upgrade a good investment. □

RATING: ★★★★★

PROS: Convenient online-transaction scheduling; better handling of complex investment transactions; improved interface.

CONS: Interface still lacks polish; feature set lags well behind that of Quicken for Windows.

PRICE: \$60; upgrade, \$40

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Intuit, 800/952-2558, www.intuit.com



Information on Cue The new Scheduled Updates feature lets Quicken gather information from online banking and investment accounts automatically.

new features, such as interface improvements and some capabilities for advanced investors. With few exceptions, these enhancements add convenience rather than necessary functions, so the frugal Quicken user should evaluate Quicken 2003 carefully before paying to upgrade.

This Year's Model

One of the most useful new features in Quicken 2003 is scheduled automatic updating of information about investments and accounts you've set up for online access (including online banking). You can set Quicken to download data from such accounts at specified days and times (see "Information on Cue"). So if you're organized enough to work with your finances at the same time each week, Quicken can have all the information you need ready for you before you sit down at your Mac. Intuit has also consolidated several functions—such as One Step Update, PIN Vault, and your online-transaction history—into one convenient Online Account Updates window.

Support for Mac OS X is improved in Quicken 2003, and the program looks much

CORELDRAW GRAPHICS SUITE 11

Low-Priced Collection Proves to Be a Pleasant Surprise

BY ANDREW SHALAT

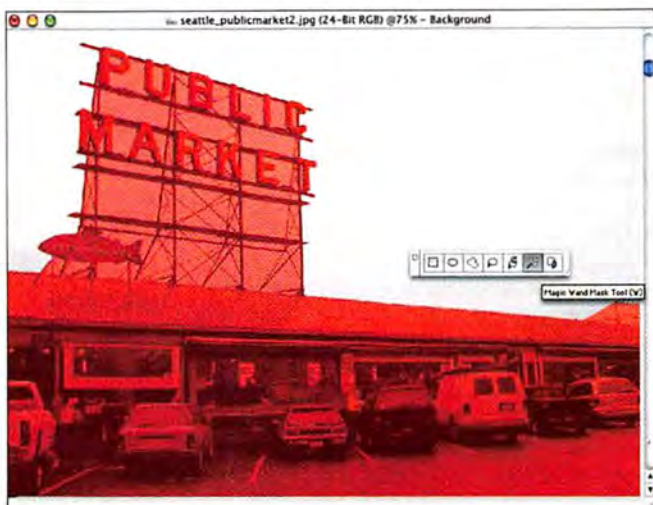
Geared toward corporate communications professionals, Corel Draw Graphics Suite 11 covers everything from digital illustration to image editing. But even graphics pros will discover many pleasant surprises—and improvements upon Graphics Suite 10—in this collection, once they put aside preconceived notions.

CorelDraw Graphics Suite 11 consists of a whole cast of graphics tools: Corel Photo-Paint 11, CorelDraw 11, and Corel RAVE 2 are the above-the-title stars; Corel Trace, DiamondSoft Font Reserve, and Scansoft OmniPage SE make up the supporting cast; and an enormous stock-art, clip-art, and font library fills out the list of extras.

Photo-Paint 11

Photo-Paint is a very clever image-editing application, and as is the case with many such applications, a comparison to Adobe Photoshop is inevitable. Corel Photo-Paint 11 imports and exports Photoshop documents with layers intact. But Photo-Paint takes a slightly different approach to image manipulation and editing. Although the results may be the same in many cases, the tools you use will be different.

Photo-Paint's new user interface is completely customizable, so you can make it suit your workflow. From its context-sensitive Property bar to its easily accessible fill colors, Photo-Paint 11's interface is much less



Where Are the Marching Ants? The Photo-Paint image editor makes selection and masking easy to do, seeing no distinction between the two.

cluttered than those of previous versions, and it emphasizes accessibility to tools and settings. The Customize Interface menu lets you choose Photo-Paint's default interface or a so-called Photoshop arrangement, in which toolbars and palettes are organized as they are in Photoshop.

You'll find what looks like a marquee tool, as well as a lasso.

But when you drag a selection across an image, you'll find that Photo-Paint sees any selection as masking. Make a selection, and everything else on your canvas is covered with a semi-opaque, Rubylith color, leaving editable areas clear. Fortunately, you can turn off the mask view and opt for the familiar *marching ants* marquee, or turn off evidence of selection altogether.

DiskWarrior® has than



1999 Macworld Editors' Choice Awards Winner, Utility Software. "DiskWarrior is an excellent ax to add to your disk-repair and -maintenance arsenal. DiskWarrior's ease of use, speed, and new method of fixing disk problems make it a powerful disk-maintenance product."



1999 MacUser Awards Best Utility/Enabling Software. "For providing a new, easier to use, safer, and often more successful alternative to more bloated recovery applications, the judges felt DiskWarrior deserved top billing..."



1999 Apple Design Awards Most Innovative Product, Runner-up Best New Product



5 Out Of 5 Stars "Every Mac on the planet can benefit from DiskWarrior!"

Repairs disk problems such as disks that won't mount, files you Now with DiskShield™ to prevent damage to your disks before it

Photo-Paint's new CutOut tool is the equivalent of Photoshop's underused Extract tool, and just like that tool, CutOut lets you extract an image from its background simply by drawing around the object, instead of applying a path point by point.

Photo-Paint also lets Web designers create image slices and optimize their graphics for the Web, as well as assign rollovers and output images to HTML. The Web Image Optimizer is a mirror of Photoshop's Save For Web option. You can optimize whole images or slices of them in Web-friendly formats, including GIF, JPEG, and PNG.

The Image Sprayer tool acts as an effects hose, similar to the Image Hose in Procreate's Painter, letting you apply patterns and objects across your canvas. Photo-Paint includes a variety of preset images, but you can create your own and add them to its Sprays list.

Just when we thought Photo-Paint had pulled all the tricks

from its sleeve, we found the Stitch tool, which lets you use a simple drag-and-drop process to create a panorama out of any number of images. But Photo-Paint does even more: it lets you create QuickTime VR movies, too. We could hardly believe how easy it was to make a 360-degree walk-around of an office and an interactive object movie.

CorelDraw 11

The next star of the Graphics Suite, CorelDraw, purports to be an illustration, page-layout, CAD, and Web-design program. Professionals used to more-focused tools might not trust a program that claims to do so much, but corporate users will welcome it as an efficient one-stop shop.

Topmost among CorelDraw's charms are the 3-Point drawing tools, Corel's clever new way to draw polygons, ellipses, and curves. For example, by clicking and dragging the 3-Point Rectangle tool, you can define a rectangle's baseline and its height.

Then, depending on the angle at which you drag, the rectangle's orientation will shift. The 3-Point Ellipse tool works much the same way, and the 3-Point Curve tool lets you create curved line segments with much more precision than Adobe Illustrator's Pen tool or Macromedia FreeHand's Arc tool.

Outside of these new features, CorelDraw has been playing catch-up by adding many features that are standard in FreeHand and Illustrator. The Polyline and Pen tools, for making curved and straight lines in one continuous motion, are akin to competitors' pen-tool functions. CorelDraw has enhanced the shaping tools with Simplify, Front Minus Back, and Back Minus Front commands, which are cousins to FreeHand's Combine commands.

Saving and exporting files from CorelDraw is especially flexible. It exports to PDF, as well as Photoshop or Photo-Paint formats, with layers intact. It also imports Illustrator files along

with their layers, as long as they have the PDF option embedded.

CorelDraw's new support for symbols allows you to create objects and reuse object instances without greatly increasing a document's file size. With the symbol library, you can make global changes and adjustments easily; if a particular symbol occurs 100 times in your document, you need only change the source symbol to change them all.

Don't hate CorelDraw because it's beautiful. The application

RATING: ★★★★★

PROS: Extensive collection of applications; very good value; thoughtful features.

CONS: Photo-Paint runs rather slowly; bundled Font Reserve not OS X 10.2 compatible.

PRICE: \$529; upgrade from previous versions, \$249; upgrade from Illustrator and FreeHand, \$389

OS COMPATIBILITY: Mac OS X

COMPANY: Corel, 800/772-6735, www.corel.com

won more top awards any disk utility ever.



Mac Today
1998 Editors'
Choice
Awards

Outstanding Disk Rescue Product.
"DiskWarrior belongs in the arsenal
of every Mac owner!"



disk problems with zero effort."

MacHome - Five Apples,
MACnificent Award
"DiskWarrior is a deceiv-
ingly simple yet incredibly
powerful disk repair utility,
which is able to fix your



"DiskWarrior comes
to the rescue..."



MacHome 8th Annual
Home Choice Awards
Best Utility. "Got lots of votes for
repairing and preventing damage
to hard disks so well. DiskWarrior 2.0
is a quick solution to faster, more stable hard drives."

can't trash, and folders that have disappeared.
occurs. Visit www.Alsoft.com for details.

Choose 141 at www.macworld.com/getinfo

WWW.ALSOFT.COM

ALSOFT

1-800-257-6381

© 2000 Alsoft, Inc.
Alsoft, DiskWarrior,
DiskShield are trade-
marks of Alsoft, Inc.

To learn more see us online at
www.geekcruises.com/home/mm2_home.html

MacMania II



June 1-8, 2003



CO-PRODUCED BY:

Macworld
THE MAC PRODUCT EXPERTS



REVIEWS

does so much so well that it would be wrong to overlook it as a powerful design program in its own right.

RAVE 2

RAVE, or Real Animated Vector Effects, is Corel's answer to Macromedia Flash. With it, you can create interactive Flash movies without having to use Flash itself. In addition to employing an interface similar to CorelDraw's and sharing some of that program's drawing tools, RAVE 2 lets you import Photo-Paint and CorelDraw objects for use in your Web animations.

RAVE takes the new symbols support in CorelDraw a step further, also letting you define *sprites*—animated symbols that move on their own timelines, even as they run along the basic animation timeline.

These days, the most important and compelling aspect of any interactive animation program is its behavior and action-scripting capabilities. Flash has made much hay over the depth of its Action-Script support, and Corel RAVE has stepped up its own Behavior commands. While they're not as extensive as those in Flash, they're just as effective.

RAVE 2 also sports enhanced tweening of text and shapes, and it lets you choose to export text to Flash *as text* or as outlines.

Also Starring...

The fourth Corel program, Corel Trace, stands out as a scene-stealer for its singular focus and ease of use. Corel Trace takes raster images created in Photo-Paint and Photoshop and accurately turns them into vector art, which

you can then use in CorelDraw or Adobe FreeHand or Illustrator.

Then there are the extras. Three of the CDs in this five-CD package include fonts, symbols, illustrations, thousands of clip-art files, stock photography, tiles, and a process-color chart. For new users, this bundle is a great starting point; and for seasoned users, it makes a great addition to an already extensive stock-photography and clip-art collection.

Completing the package are OmniPage SE, a pared-down version of the OmniPage Pro X OCR application (●●●●; *Reviews*, June 2002), and Font Reserve 3.01 (●●●●; *Reviews*, June 2002). (The latter is not compatible with OS X 10.2, and upgrading to the Jaguar-compatible version will cost you extra.) The breadth of Corel's bundle of applications makes it a great value.

Macworld's Buying Advice

Altogether, CorelDraw Graphics Suite 11 combines almost every aspect of digital design into a neat, affordable package of quite good programs and extras. Each application included here has something to offer even professional designers and artists, as either a replacement for or a complement to industry-standard image-creation and -editing programs.

Graphics Suite 10 users who upgrade to version 11 will not be disappointed, as there are enough new and interesting features to make it worth their while. Corporate communications professionals and Mac users who just want to design easily and inexpensively will find that Corel's suite is a sleeper hit. □



Act This Way Corel RAVE's Behavior scripts are not as extensive as Flash's, but for the most part, they make interactivity easy and effective.

MATLAB 6.5

The Engineer's Best Friend Returns to the Mac

BY CHARLES SEITER

The MathWorks' Matlab has long been the preferred math program for many engineering uses. After several years' absence, the latest version, Matlab 6.5, brings it back to the Mac. This is exceptionally good news for science and engineering labs with a code investment dating back to Matlab 5.2, the last Mac version.

Matlab's return is also a promising development for users and manufacturers of Unix software for CAD and engineering; if The MathWorks' simple X11-based port of a Unix package to the Mac meets acceptance, the result could be the development of hundreds of professional Mac programs in those two arenas.

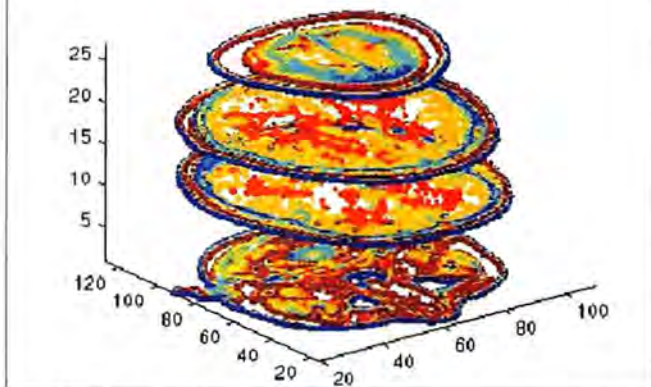
While You Were Out

Recent versions (6.0 and 6.1, for Windows and Linux only, and now 6.5, which adds Mac sup-

port) have included significant improvements to three main areas: speed, the programming environment, and graphical representation of applications.

All matrix operations and related linear-algebra functions, along with fast Fourier transforms (for analyzing wave inputs in electrical engineering), have been optimized and accelerated. The beefed-up programming facilities include an excellent Code Editor/Debugger and Code Profiler; the latter is useful for spotting critical slow spots in m-code, Matlab's programming language. Another plus, Matlab's new JIT (Just in Time) Accelerator uses some of the same profiling technology as Code Profiler to automatically speed up optimization of FOR and DO (looping commands in m-code), as well as other constructs you once had to optimize by hand. You can

```
phandles = contourslice(D,[],[],[1,12,19,27],8);  
view(3); axis tight  
set(phandles,'LineWidth',2)
```



Head Shot Matlab 6.5 offers a wealth of scientific graphics. This representation of multiple MRI scans displays the program's new 3-D graphics-slicing function.

easily port Matlab m-code on the Mac to C or FORTRAN, for use with Apple's GCC (GNU Compiler Collection) compiler or Absoft's FORTRAN compiler.

And scientific graphics are just spectacular in this version: Matlab supports all sorts of exotic lighting effects, transparency, slicing and sectioning in 3-D plots, and all the usual scientific-chart types (see "Head Shot").

While Matlab certainly boasts some stellar improvements, the toolboxes for generating Microsoft Excel add-ins and for data acquisition and run-time code are missing. But this won't be a severe problem in the university markets at which this version is aimed.

Head to Head?

Matlab and Wolfram Research's Mathematica (★★★★; *Reviews*, November 2002) both provide proprietary programming languages and hundreds of math functions. But despite this surface resemblance, they compete directly in relatively few areas.

If you write about general relativity, number theory, or differential geometry, you probably use Mathematica. If you design suspensions for General Motors, refine radar functionality for Hughes, or program chip sets for BlackBerry-capable handhelds, you're likely a longtime fan of Matlab and its companion, Simulink (see "Simulink 5: Simple Methods for Complex Models").

The head-to-head competition, evidenced by user-group interest and the number of books on the market, occurs in

financial applications (options pricing, derivatives, and time series), neural networks (mostly for financial decision-making), and computation-intensive statistics (working with very large data sets or with resampling statistics). Both programs have comparable add-ons for wavelet analysis, fuzzy logic, and image processing. Many ready-made solutions, provided mainly by third parties, are available for each program (and often downloadable for free from The MathWorks' or Wolfram's Web site). Your decision will likely depend on which of these solutions you need.

Macworld's Buying Advice

Mathematica users may just shrug, but most longtime Matlabbers will be ecstatic to see Matlab's Mac comeback. Matlab 6.5 provides a much improved programming environment and state-of-the-art execution speed on all matrix math functions. It's one of the first technical programs delivered to the Mac in "we're Unix software, get used to it" mode, and it's generally an impressive success. □

RATING: ★★★★★

PROS: Improved coding environment; enhanced speed; new JIT Accelerator eliminates the need to recompile your work; greater range of graphics.

CONS: Missing several toolboxes found in the Linux and PC versions.

PRICE: \$1,900

OS COMPATIBILITY: Mac OS X

COMPANY: The MathWorks, 508/647-7000, www.mathworks.com

Simulink 5: Simple Methods for Complex Models

The other major new release from The MathWorks is Matlab's counterpart, Simulink 5. This program, which uses a built-in Matlab computational base to generate simulations from block diagrams, is the best tool available for simulation of mechanical control systems and digital signal processing. It includes hundreds of predefined blocks for simulating mechanics, power electronics, and signal processing, and you can save Simulink models in Matlab m-code for further tweaking or for conversion to C or FORTRAN code. One important new feature is support for fixed-point numerics, which allows modelers to make sure no model output behavior is actually a quirk of floating-point computational conventions.

Be aware that the Mac version of Simulink 5 doesn't have The MathWorks' generators for embedded code for popular digital signal processor (DSP) and microcontroller chips, nor does it include most of

the block sets connected with data acquisition. These tools are compelling reasons to use Simulink, rather than other programs, in important engineering applications, and their absence is a major loss to Mac users—if you really need all that Simulink offers, you may as well install it on a plain Unix machine rather than on a Mac. But the Mac version really targets the university market rather than working engineers, and as a tool for teaching simulation methods, Simulink 5 is uniquely effective.

RATING: ★★★★★

PROS: Makes generating and changing models easy.

CONS: Lacks most professional Simulink toolboxes found in Linux and PC versions.

PRICE: \$2,800

OS COMPATIBILITY: Mac OS X

COMPANY: The MathWorks, 508/647-7000, www.mathworks.com

SMARTSOUND MOVIE MAESTRO

Soundtrack-Creation Software Makes Scoring Simple

BY DENNIS COHEN

A musical score can enhance any movie's impact, whether it's a video of your daughter's soccer game or your first documentary. With its foolproof interface and a host of compatible music, Sonic Desktop Software's SmartSound Movie Maestro can help you add the score that best suits your film.

Beautiful Scores Done with Ease

Using Movie Maestro to score a QuickTime-compatible movie or movie segment is about as hassle-free as it gets. After launching Movie Maestro, you simply feed it video by selecting your movie file from within the program. You then use Movie Maestro's timeline to choose the portion you want to score (the default is the entire movie), click on the Movie Maestro window's Add Music button, and follow a three-step wizard that lets you choose a category, style, and track. Movie Maestro will

make the soundtrack fit your selected video, within half a second of its length. Once you have the score in place, you can adjust its length, fade in and out, and more. Then you can export the music-enhanced movie to videotape, video CD, DVD, or back to a QuickTime Movie file.

Movie Maestro includes a collection of 26 tracks you can use in your movies. The only problem here is that Movie Maestro doesn't offer a facility for importing your own scores, so your choices are limited to what's included in the program and the six add-on libraries, each of which contains ten scores and costs \$30. Considering that the basic product costs \$50, these additional libraries are relatively expensive. Fortunately, the collections,

which offer New Age, easy-listening, orchestral, rock, and world styles, will likely satisfy most users. (All the music is royalty-free for noncommercial use.)

Even though Movie Maestro is a cross-platform product, it takes especially good care of Mac users by including options that let you save your score directly into an iMovie project and add your score to iPhoto slide shows, using iPhoto's Music pop-up menu.



At Your Fingertips Movie Maestro's interface is clean and intuitive, with all actions available in one window.

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

One to Grow On

If you outgrow Movie Maestro, you can upgrade to its older sibling, SmartSound Sonicfire Pro (\$349), which offers more-advanced capabilities. For example, it lets you create tracks of a specific length and includes complete support for manipulating audio imported from many additional formats, including DV. Libraries and palettes compatible with Movie Maestro will also work with Sonicfire Pro, so you won't have to re-create your music library from scratch.

Macworld's Buying Advice

SmartSound Movie Maestro does what it promises: it creates professional-sounding scores for your videos and requires little effort on your part. Its interface is clean and elementary, so anyone can use it. Movie Maestro's only downside is that it restricts you to SmartSound's soundtracks. □

RATING: ★★★★★

PROS: Intuitive interface; easy to use; good variety of included music.

CONS: Provides no way to import or create your own music libraries.

PRICE: \$50

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Sonic Desktop Software, 800/454-1900, www.sonicdesktop.com

IOXPerts 802.11b DRIVER 1.0.1

IOXPerts, support@ioxperts.com,
www.ioxperts.com; \$20

If you own a PowerBook G3, 2400, or 3400 that you want to hook up to a wireless network, until now you've been out of luck. These older PowerBooks are incompatible with Apple's AirPort card, and drivers for third-party cards are scarce. But IOXPerts' 802.11b Driver 1.0.1 opens the door. If you have any of the aforementioned PowerBooks, running either OS 8.6 or 9, as well as PC Card Manager 3.0, the Driver lets you use wireless PC cards that employ Prism-2 or Lucent chip sets, from companies such as D-Link, Linksys, NetGear, and Compaq.

The driver is easy to install and use, and it performs acceptably and stably. The interface consists of a control panel and a control-strip module, where you can choose a wireless network and enter its encryption key. However, there's no Keychain support or ability to save configuration settings for multiple networks.

IOXPerts' driver is especially ideal if you already have a third-party wireless card. (If you don't, another option is the Mac-compatible Orinoco PC Card [Silver or Gold], which costs slightly less.)—SHELLY BRISBIN

IRIS BUSINESS CARD READER II

IRIS, 561/395-7831, www.irislink.com; \$200



The IRIS Business Card Reader II is one of several products that promise to make the management of personal contacts easier—by allowing you to scan business cards and, through the still-developing miracle of optical character recognition (OCR) technology, upload contact information directly into a program such as Microsoft Entourage.

After you attach this miniature sheetfed scanner to your Mac via USB and install the included software, you're ready to begin digitizing your Rolodex. (When you start the program, you choose where to upload new scans.) And when the Business Card Reader works, it works just fine. We successfully uploaded the information from a handful of business cards into an Entourage address book, with little corrective retyping necessary afterward.

Unfortunately, many business cards are intended to please the eye, not OCR apps. Dark backgrounds, textures, colored type, and fancy fonts can stymie the software. Vertically oriented cards can also pose problems, as the reader is designed to accept standard-size cards. Because it failed to read so many of our cards, we have a hard time recommending this scanner as a time-saver.—CHARLES PURDY

STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY 39 U.S.C. 3685

1. Publication Title: *Macworld*
2. Publication Number: 0741-8647
3. Filing Date: September 27, 2002
4. Issue Frequency: Monthly
5. Number of Issues Published Annually: 12
6. Annual Subscription Price: \$34.97
7. Known Office of Publication: 501 Second Street, Fifth Floor, San Francisco, CA 94107 (Contact Person: Steve Spingola; 415/243-3558)
8. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher: Mac Publishing, L.L.C., 501 Second Street, Fifth Floor, San Francisco, CA 94107
9. The Full Names and Addresses of the Publisher, Editor, and Managing Editor: Publisher: Colin C. Crawford, 501 Second Street, Fifth Floor, San Francisco, CA 94107; Editor: Rick LePage, 501 Second Street, Fifth Floor, San Francisco, CA 94107; Managing Editor: Jennifer Werner, 501 Second Street, Fifth Floor, San Francisco, CA 94107
10. The Owners: International Data Group, Inc., Patrick McGovern, 5 Speen Street, Framingham, MA 01701

11. There are no known bondholders, mortgagees, or other security holders holding 1 percent or more of total amount of bonds, mortgages, or other securities.

12. Tax Status: Has not changed during preceding 12 months.

13. Publication Title: *Macworld*

14. Issue Date for Circulation Data Below: October 2002

15. EXTENT AND NATURE OF CIRCULATION: Average No. Copies Each Issue during Preceding 12 Months: A. Total Number of Copies (Net Press Run): 505,229; B. Paid and/or Requested Circulation: 1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541: 371,218; 2. Paid In-County Subscriptions Stated on Form 3541: 0; 3. Sales through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution: 49,280; 4. Other Classes Mailed through the USPS: 0; C. Total Paid and/or Requested Circulation: 420,498; D. Free Distribution by Mail (Samples, Complimentary, and Other Free): 1. Outside County as Stated on Form 3541: 1,126; 2. In-County as Stated on Form 3541: 0; 3. Other Classes Mailed through the USPS: 0; E. Free Distribution Outside the Mail (carriers or other means): 3,524; F. Total Free Distribution: 4,650; G. Total Distribution: 425,148; H. Copies Not Distributed: 80,351; I. Total: 505,229; J. Percent Paid and/or Requested Circulation (15C divided by 15G times 100): 98.97%.

15. EXTENT AND NATURE OF CIRCULATION: No. Copies Single Issue Published Nearest to Filing Date: A. Total Number of Copies (Net Press Run): 500,326; B. Paid and/or Requested Circulation: 1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541: 378,338; 2. Paid In-County Subscriptions Stated on Form 3541: 0; 3. Sales through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution: 47,149; 4. Other Classes Mailed through the USPS: 0; C. Total Paid and/or Requested Circulation: 425,487; D. Free Distribution by Mail (Samples, Complimentary, and Other Free): 1. Outside County as Stated on Form 3541: 949; 2. In-County as Stated on Form 3541: 0; 3. Other Classes Mailed through the USPS: 0; E. Free Distribution Outside the Mail (carriers or other means): 5,000; F. Total Free Distribution: 5,949; G. Total Distribution: 431,436; H. Copies Not Distributed: 68,890; I. Total: 500,326; J. Percent Paid and/or Requested Circulation (15C divided by 15G times 100): 98.62%.

16. This Statement of Ownership will be printed in the December 2002 issue of this publication.

17. I certify that the statements made by me above are correct and complete: Stephen A. Daniels, VP/Chief Operations Officer; September 27, 2002.

Finally...

two simple and affordable products that makes sense.

HEXA Media Drive The 6-IN-1 Digital Media Reader/Writer



The 6-in-1 HEXA Media Drive supports six popular media types and lets you easily transfer photos, music and data between your computer, PDA, digital camera, MP3 player and more.

2x

USB Floppy Disk Drive The High Speed Floppy Drive

The 2x USB Floppy Drive is the fastest of its kind. Double the speed of a normal disk drive.



For more information about these products and others, please visit our web site:

www.yedata.com

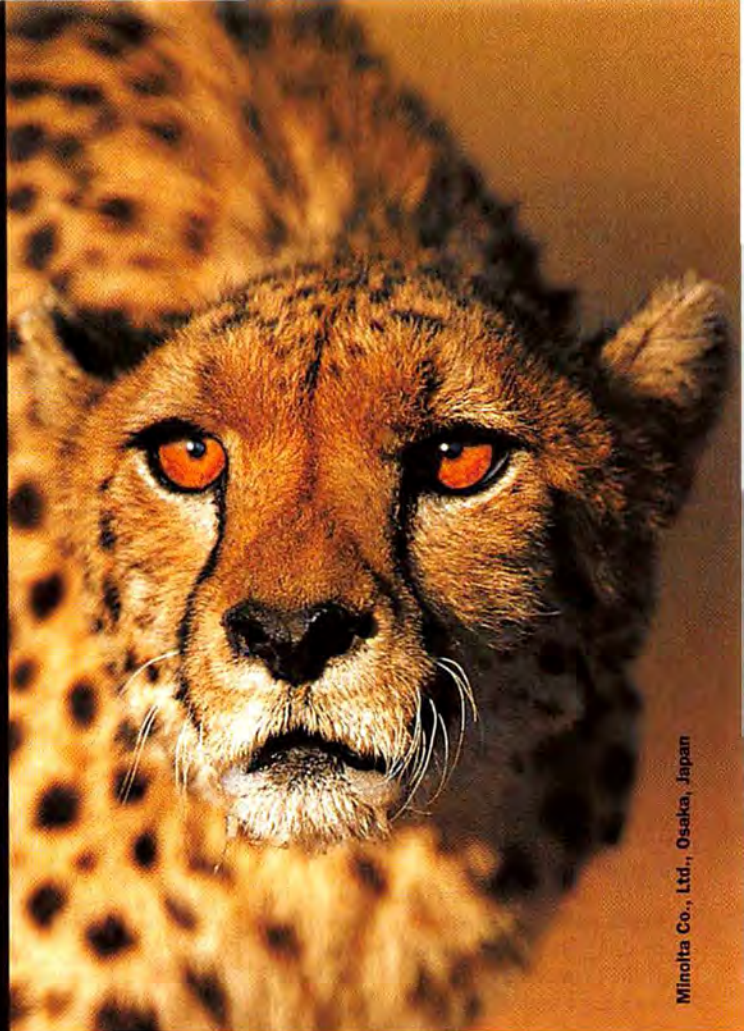
Y-E DATA®
Simple and affordable products that make sense.



Copyright © 2002 Y-E Data. All rights reserved. All other company and product names are trademarks of their respective trademark holders.

Choose 22 at www.macworld.com/getinfo

Keeping black & white on the run!



Minolta Co., Ltd., Osaka, Japan



16 ppm color

the speed you need to survive
magicolor® 3100 "Cheetah"

16 ppm full-color output. Precise, beautiful prints. All the result of an innovative print method called PRISMLASER Technology™. One printer ready to attack all your office needs. Watch out black and white! The fastest magicolor laser printer has just been unleashed—only **\$1,999***. For more information call **800-523-2696**.

- Built-in automatic duplexing
- Standard 10/100Base TX Ethernet®
- 1200 dpi
- 350 MHz RISC processor



© 2002 MINOLTA QMS, Inc. The MINOLTA QMS logo, magicolor, magicolor 3100 Cheetah and PRISMLASER Technology are trademarks or registered trademarks of MINOLTA QMS, Inc. All other trademarks or registered trademarks are the property of their respective owners. *Estimated street price. Dealer prices may vary. Images provided by kind courtesy of digitalvisiononline.com.

MINOLTA
QMS

The essentials of imaging

www.minolta-qms.com

Choose 105 at www.macworld.com/getinfo

Time to Go Down the Foxhole and into the Orc Burrow

Let Chaos Reign

BLIZZARD ENTERTAINMENT IS NEITHER THE LARGEST NOR the most prolific game developer on the planet, but it is one of the most influential. And that's easy to understand: the company's real-time strategy

games are fun to play, immersive, and incredibly well produced. Nowhere is Blizzard's commitment to detail—and to the Mac—more evident than in its most recent release, *Warcraft III: Reign of Chaos*.

Orc-Barrel Politics

Warcraft III is the latest installment in the game series that's largely responsible for popularizing the real-time strategy genre. It's the first full Blizzard game that has shipped simultaneously for both Mac OS and Windows (both versions are included on the same CD-ROM). And it sets itself apart from the gaming competition in myriad ways, most impressively by incorporating one of the most fantastically rich and detailed level editors you could ever hope to find, so you can create your own games from scratch.

The game returns you to the war-torn world of *Azeroth*, a land populated by humans and a menagerie of bizarre and terrible fantasy creatures. Humans have battled mainly with the bellicose and mighty Orcs over the decades (and in the two previous games in the *Warcraft* series), but these are not the only species now vying for control of the land. Night Elves have also come to the fore, along with a shambling army of horrifying undead creatures collectively called the Scourge.

To master previous installments of *Warcraft*, and its real-time strategy cousin *Blizzard's Starcraft*, players have come up with a fairly simple formula for success: harvest as many resources as possible in the shortest amount of time possible, amass troops, and hurl as many of them as possible at the enemy. *Starcraft* junkies are intimately familiar with "Zerg rushing," as it's called. There's an element of that in *Warcraft III*, but the game's designers have altered the formula to include what Blizzard calls "role-playing strategy."

Warcraft III's single-player scenario focuses much more on individual troop movements and small skir-



Attack! In *Warcraft III*, your mass of faceless troops can be led by an experienced, powerful hero.

mishes than on epic battles. You control *heroes*—advanced warriors with special spell-casting abilities who gain experience as they go along; heroes must complete specific missions to advance the story.

In an effort to foster a careful balance between the size of players' armies and the size and wealth of their domains, *Warcraft III* introduces the clever concept of "upkeep": the larger your forces get, the more expensive maintain-

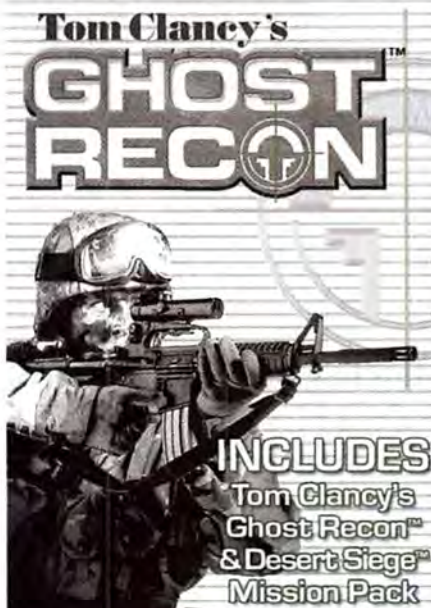
ing them becomes. A growing army requires ever increasing amounts of resources.

The game's refinements also include features that make resource acquisition and battles more complex than before. For example, you can barter with merchants to obtain resources that you can't generate yourself but that might help you in your quest. And in addition to your opponent, you'll have to battle roaming monsters who limit access to new sections of the map and to resources such as gold mines.

While previous *Warcraft* games used cartoonish sprite animations that were state-of-the-art for the time, *Warcraft III* has been thoroughly modernized with polygonal 3-D graphics and 3-D topologies for game maps. This makes the game's basic system requirements nothing to sneeze at: you'll need decent 3-D-graphics acceleration, and your Mac's processor can't be a slouch, either. There are arguably more-complex and visually richer games out there—but because of the depth of its detail (livestock snuffling and walking about, waves lapping on shore, reeds and trees swaying in the wind, and more), *Warcraft III* sets a high standard.

Of course, no *Warcraft* game is made complete simply by its single-player scenarios. When it comes to multiplayer battles over a network, *Warcraft III* >>

Warcraft III sets itself apart from the gaming competition.



**SWIFT. SILENT.
INVISIBLE.**



©2002 Red Storm Entertainment, Inc. Red Storm and Red Storm Entertainment are trademarks of Red Storm Entertainment, Inc. Red Storm Entertainment, Inc. is a Ubi Soft Entertainment company. Tom Clancy's Ghost Recon is a trademark of Ubisoft, Inc. under license to Ubi Soft Entertainment. Desert Siege is a trademark of Ubi Soft Entertainment, Inc. 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 are property of their respective owners. All rights reserved.



World View With Warcraft III's World Editor, you can create new game scenarios.

serves up action in spades. The game is playable on local networks and over the Internet via Battle.net, Blizzard's worldwide network of online servers. You can find opponents to play against anytime, day or night, on Battle.net, which is intelligent about matching you with gamers who are looking for the same kind of game as you are, and it lets you chat online with other players.

One piece of advice: Avoid using computer-controlled players when you're in multiplayer mode. The computer doesn't make mistakes and is relentlessly efficient, so it's hard to defeat. Several of us at *Macworld* have gone two-on-one, allied with experienced Warcraft players, and we've still had our butts handed to us by computer-controlled opponents.

Perhaps the most compelling aspect of the game is the OS X-only Warcraft III World Editor. The depth and breadth of this program is magnificent. It allows you to import your own audio and graphics, script complex interactions, sculpt terrain, and place objects, so you can create your own Warcraft III-based world to explore. It's possible to build entirely new games that have nothing to do with real-time strategy, per se—a friend of mine is creating a nonviolent world his young daughter can explore and play in, for example. (The regular Warcraft III game is violent but not gory, and it carries an ESRB rating of Teen.)

While playing the game, I have run into a few problems. Warcraft III has quit on me unexpectedly and frozen up once or twice in OS X. To Blizzard's credit, Warcraft III is continually updated (the

latest download can be installed automatically by connecting to Battle.net). This doesn't matter to me, however—the game is too fun to put down for long.

If you can still get a copy, I recommend picking up the Warcraft III Collector's Edition. It costs a bit more than the basic game, but it comes in a box that'll look fine on a shelf with the rest of your collectibles. The collector's box includes a DVD that sports all the cinematic sequences from the game, along with a CD of the game's soundtrack. Four art prints of each of the different species in the game are also included, as is a marvelous book with details of the artistic design behind the game. These extras are more than worth the \$20 difference in price, and it's all too rare that you can lay your hands on such a special edition in a Mac-compatible form.

The Bottom Line Warcraft III: Reign of Chaos is an absolute must-have. A natural evolution of the real-time strategy genre, Warcraft III adds some new technologies and embellishments to a proven formula, and the result is an exciting and challenging game.

WARCRAFT III: REIGN OF CHAOS

RATING:

PROS: Deep game play; great graphics; phenomenal game editor.

CONS: Occasional instability; steep system requirements.

PRICE: \$60; Collector's Edition, \$80

OS COMPATIBILITY: Mac OS 9 (except World Editor), Mac OS X

COMPANY: Blizzard Entertainment, 800/953-7669, www.blizzard.com

The Sims are on Vacation!

Take your Sims on the vacation of a lifetime. You choose whether they'll spend the weekend at a beach resort, rough it in the woods, or chill out in a winter wonderland. Whether they're embarking on a family adventure or hooking up on a romantic getaway, your Sims will always have plenty to do on Vacation Island.



EXTREME HOLIDAY



ROMANTIC GETAWAY

The Sims Vacation

EXPANSION PACK™



COMIC MISCHIEF
MILD VIOLENCE
SUGGESTIVE THEMES



*Requires
The Sims™
to play.

ASPYR™
Authorized Electronic
Arts™ Distributor
www.aspyr.com



©2002 Electronic Arts Inc., EA GAMES, the EA GAMES logo, The Sims, Maxis, the Maxis logo, and Electronic Arts are trademarks or registered trademarks of Electronic Arts Inc. in the U.S. and/or other countries. EA GAMES™ and Maxis™ are Electronic Arts™ brands. 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 are property of their respective owners. All rights reserved.

Choose 91 at www.macworld.com/getinfo

STAR WARS® JEDI KNIGHT® II: JEDI OUTCAST™



TO KNOW THE LIGHT,
YOU MUST SEE THE DARK.



Violence

ASPYR
www.aspyr.com



Outrun but Not Outfoxed
Foxchange Software's Cave Dig 3 has been around for a while, but it recently got an overhaul for OS X. If you've never played the game, this version's release is an excellent opportunity to give it a shot.

In Cave Dig 3, you assume the role of Simon, a genetically altered fox who finds himself in a world of caves. Each cave sports a single exit—a door—and to locate it, you'll have to navigate a dangerous subterranean labyrinth. Along the way, you can collect gems, dig, avoid being crushed by rock-falls and boulders, and figure out ways to foil the nasty critters that dwell in the caves' dark places.

A solid arcade puzzle game, Cave Dig 3's most obvious progenitors are games such as Sokoban and Dig Dug—classics that you'll remember well if your game days go back to the 1980s or if you had an original Nintendo Entertainment System



Big Dig Simon the fox jumps through a Dig Dug–inspired cavern in Cave Dig 3, a game that's fun for the whole family.

in your house. Foxchange has done an admirable job of capturing some of the elements that made those games so popular—colorful graphics and rich sound effects, enough of a plot to catch your interest, and simple game play that's challenging and fun. With very light slapstick violence and no blood and guts, Cave Dig 3 is suitable for the whole family, too.

A very useful feature in Cave Dig 3 is the Play Cave's Solution option, which plays back the correct way out of each cave and shows you what you must do to get through it.

Gaming on the Go

Owning a laptop that's a killer gaming rig is no longer just a dream. While gaming with a laptop still has (and will likely always have) some inherent shortcomings, there's no reason you can't turn your PowerBook or iBook into a great gaming system. PowerBooks, with better graphics systems and more-powerful processors, have the upper hand in the games department, but an iBook performs respectably, too, especially if you prefer casual games or can get away with playing older games that have less-demanding hardware requirements.

No matter which PowerBook or iBook model you choose for games, there are a few inexpensive embellishments that will greatly enhance your game experience. Mice and headphones are two of them.

A two-button mouse is a must-have for any gamer; you just can't get the same performance from a touchpad, no matter how well engineered. I'm quite fond of Swann Communications' Opti-Glo Mini (\$30; www.swann.com.au), a two-button USB mouse with a scroll wheel. It's not designed specifically for games, but it's tiny and portable, and it offers everything you need to play demanding games when you're on the road. Its translucent glowing parts look cool, too.

You should also invest in a decent set of headphones. I've seen a few sets of adequate flat-

panel speakers that are inexpensive and portable, but headphones are infinitely easier to work with. Headphones give you much better positional identification than speakers do—it's a lot easier to tell whether the bad guys are off to your left or your right.

If money is no object and you want the best gaming experience as you fly, get Bose's \$300 QuietComfort headset (pictured, above right; www.bose.com). It's pricey, big, and bulky, but its performance more than makes up for that. Powered by two AAA batteries, the QuietComfort reduces the sound of jet engines and other background noise by using an active noise-filtering technology. If you're looking for something that costs a lot less money and is a lot less bulky, consider Sony's over-the-ear MDR-Q33LP/S headphones (\$30; www.sony.com). These tiny headphones eschew the typical headband of normal stereo headsets in favor of clips that rest comfortably behind your ear. They provide a full, rich sound that's better than most of the earbud-style headphones I've tried, and they slip easily into a laptop's carrying case.



CAVE DIG 3

RATING: ★★★

PROS: Nintendo-style graphics and retro-style puzzle game play suitable for the whole family.

CONS: Spelling errors and bad punctuation are less than professional.

PRICE: \$15

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Foxchange Software,
www.foxchange.com

Unfortunately, Cave Dig 3 sports some spelling and punctuation mistakes that a thorough proofreading (and, hopefully, a minor update) should correct. Such errors mar an otherwise professionally presented game.

The Bottom Line A well-crafted retro-style game can be appealing. If figuring out puzzles while finding ways to foil bad guys sounds like fun, download Cave Dig 3 today.

No Kiddie Rides Remain

An earthquake has struck a theme park, and it's up to you and the Rescue Heroes to save the day. You'll also be controlling a giant robot called the Ultimate Robotic Vehicle, or U.R.V. for short. That's the premise of Rescue Heroes Tremor Trouble, a new game from Knowledge Adventure, aimed at four- to seven-year-old children.

The Rescue Heroes are popular Fisher Price kids' toys; they're nonviolent action heroes who rely on teamwork and a desire to help others, rather than on weapons or superpowers, to get the job done. Designed to be positive role models, the Rescue Heroes find themselves in precarious situations, as in this latest installment.

After you sign in and specify your difficulty level, you must respond to four crises happening in different parts of the theme park—rescuing people and animals along the way. Floods threaten the animals of African Savanna World, while broken gears and stalled gondolas cause problems for the folks in the High Sierras. You have to put out electrical fires and reassemble roller-coaster girders in Gold Rush Gulch, and rush to save a sunken submarine at Deep Sea Wilderness.

Each part of the park features two distinct activities, which more or less correspond to an action sequence and a skill-building sequence. Tremor Trouble is strictly a "soft learning" game—there are some skill-building exercises that empha-

size sequencing, pattern recognition, and so on, but there's nothing terribly taxing.

As you complete each activity, Rescue Heroes boss Warren Waters and other members of the team thank you for your help and tell you what a terrific job you did. And if you complete all the activities in one part of the park, you get one-quarter of a large diagram of the U.R.V., the giant robot assisting you in all your theme-park rescue adventures.

With multiple difficulty levels, Rescue Heroes Tremor Trouble offers some replay value, but the limited number of activities won't keep active players busy for too long. What's more, the game runs only in OS X's Classic mode and OS 9.



Not Amused You've got to rescue everyone from the trashed amusement park in Rescue Heroes Tremor Trouble.

While it runs well, I'd like to see Knowledge Adventure step up to the plate with a native OS X version already.

The Bottom Line If your preschooler or early learner loves all things Rescue Heroes, Rescue Heroes Tremor Trouble might be worth the trouble. Otherwise, look for games with more activities and more-robust challenges than this game has to offer. □

RESCUE HEROES TREMOR TROUBLE

RATING: ★★★

PROS: Esteem-building exercises and positive role models reinforce good behavior for little ones.

CONS: Limited replay value; no OS X support.

PRICE: \$20

OS COMPATIBILITY: Mac OS 9

COMPANY: Knowledge Adventure, 877/268-6197,
www.education.com

MacCentral.com Senior Editor PETER COHEN is avoiding his local theme park; he rode the Tilt-A-Whirl too soon after eating a chili cheese dog—and he developed some "tremor trouble" of his own.

STAR WARS GALACTIC BATTLEGROUND CLONE CAMPAIGNS

FEATURING
CONTENT FROM

STAR WARS
EPISODE II
ATTACK OF THE CLONES



Requires Star Wars®
Galactic Battlegrounds™

ASPYR™



Violence



© 2002 LucasArts Entertainment Company LLC. © 2002 Lucasfilm Ltd. & TM or ® as indicated. All rights reserved. Used under authorization. LucasArts and the LucasArts logo are registered trademarks of Lucasfilm Ltd. 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 properties of their respective owners.



WHAT'S THE .MAC WORTH

We Put
Apple's New
Internet
Services to
the Test

For Mac users, the free ride is officially over. The end came this past summer, when Apple decided to improve iTools, its landmark suite of free, integrated Web services. The new suite, named .Mac (www.mac.com), features expanded e-mail, Web-authoring, and online-storage services; new backup and virus-detection software; and a smattering of extra perks for Jaguar users. It also

features an upgraded price—\$100 per year—a move that has many Mac users crying foul.

On the surface, .Mac's base services sound fairly common. In fact, you can find each of these services elsewhere for less money. What Apple is really selling with .Mac is integration—not only between the different services but also with Mac OS in general. .Mac makes creating Web sites, sharing files over the Internet, and backing up data as easy as drag and drop. This is something no other service can offer. Sweetening the deal, .Mac lets Jaguar users share their calendars and synchronize data between Macs, via Apple's iCal and iSync tools (see "Apple's Information Hub," elsewhere in this issue).

But is it worth \$100 a year? To help you decide, we'll show you what each of .Mac's services has to offer, where their weaknesses lie, and how they compare with other services.

Mac.com E-mail

Although everyone who uses .Mac will likely already have an e-mail address from an employer, university, or Internet service provider (ISP), having another, totally independent address can be helpful if you want to change ISPs, maintain a consistent address after you leave school, or separate personal and work e-mail.

What It Offers Apple has made Mac.com's e-mail accounts flexible enough to fit into whatever workflow

you already have in place. You can forward Mac.com e-mail to another account or download it from Apple's servers via either POP or IMAP. If you don't want to download your mail at all, you can now read it via the Web—a boon while you're traveling. On the downside, we found that mail didn't always arrive at Mac.com accounts. This may be the result of filters Apple put in place to reduce spam; however, Apple did not comment on the subject when asked.

If you receive a lot of messages, you'll be happy to hear that Apple has increased the amount of mail you can keep online to 15MB (up from 5MB); even more space is available for a fee. (Mac.com limits the size of e-mail attachments to 3MB.) Each additional Mac.com e-mail address for a family member costs \$10 per year.

Mac.com Alternatives Of course, if all you need is a second e-mail address, there are plenty of alternatives to Mac.com. Some, such as Yahoo Mail (<http://mail.yahoo.com>) and Hotmail (www.hotmail.com), offer free Web mail accounts. Microsoft Entourage users can even access Hotmail accounts directly from their mail browser. Paying between \$20 and \$50 per year increases storage and (in the case of Yahoo Mail) adds e-mail forwarding and POP (but not IMAP) access.

A more comparable service, though, is FastMail (www.fastmail.fm), which provides free e-mail accounts with both IMAP and Web access—although you'll have

to put up with ads. By paying \$20 to \$40 per year, you can forgo the ads, increase storage and bandwidth, and add spam filtering and additional addresses.

TIP

SHARED SCREEN SAVERS



Jaguar users can take advantage of another new feature in iDisk: shared photo screen savers. These slide

shows, which appear whenever your computer is idle, are a great way to quickly and easily share photos with friends and family.

To publish photos for others to subscribe to, download the .Mac Slides Publisher utility from your iDisk's Software folder, and drop a set of photos on it. Other Jaguar users can then subscribe to your photo slide show by opening their System Preferences, going to the Screen Effects pane, and selecting the .Mac Screen Saver option. They then click on the Configure button and enter your .Mac member name. When their screen savers kick in, they'll see your photos rather than the usual canned images.

iDisk Remote Storage

Sharing files (either between your own machines at home and work, or with other people) remains a tricky proposition. Not every computer supports the same external media. At the same time, sending files via e-mail isn't practical with large files, and FTP sites are too difficult for most people to set up and use. That's where iDisk, .Mac's online file-sharing tool, comes in.

What It Offers Simply put, iDisk is 100MB of virtual disk space accessible from almost any Internet-connected Mac or Windows PC. Once you've signed in, your iDisk folder appears on your desktop, so transferring files is simply a matter of clicking and dragging. Pop your PowerPoint presentation onto your iDisk before you leave work, and you can finish it after dinner. Or copy your new album to your iDisk and listen to it at work. Jaguar users can upload their iCal and iSync data to .Mac and share it with other software and hardware. If 100MB isn't enough, you can buy as much as 1GB of space.

Sharing with Others You can also share files by dropping them into your iDisk's Public folder. This is particularly useful for files that are too large to send easily via e-mail, such as a draft of a long report. Restrict access to your files by setting up user names and passwords. Jaguar users can do this from the iDisk tab in the Internet Preference pane. OS X 10.1 users will need to use iDisk Utility.

(You'll find this in your iDisk's Software folder, which includes useful programs and updates from Apple and other developers).

Once others know your .Mac member name and Public folder password, they can connect to your Public folder from OS 9, OS X, Windows (98, 2000, and XP), and the Web. The instructions for each operating system differ significantly, so check the iDisk page on the .Mac Web site for details you can send to people you want to share files with. On that page, you'll also find instructions on how to make your Public folder available via the Web—something that isn't turned on by default.

iDisk Alternatives The way Apple has integrated iDisk with Mac OS, iPhoto, and other .Mac

services sets iDisk head and shoulders above its competition. If you want *only* to share files, though, you can get 30MB of free disk space from Yahoo Briefcase (<http://briefcase.yahoo.com/>), but you must upload and download via a Web browser. My Docs Online (www.mydocsonline.com) lets you access your account from OS X's Finder (via WebDAV) but charges fees starting at \$35 per year for 50MB of space. Take the time to test services before committing to a yearly fee. Some, such as iBackup (www.ibackup.com), require you to use a separate WebDAV program rather than the Finder.

HomePage Web Publishing

There's nothing revolutionary about HomePage, another member of the original iTools lineup—it basically makes and serves Web pages. Nevertheless, HomePage remains easier to use and more efficient than almost all comparable services.

What It Offers As a Web-publishing tool, HomePage is perfect for people who want to put up a simple Web site but have no desire to learn HTML or fuss with awkward uploads. Instead of creating HTML files, you can pick and choose from nine page templates (each of which offers a variety of attractive designs) and then simply fill in the blanks on HomePage's forms. HomePage creates all the HTML code for you, complete with any graphics. In fact, HomePage's integration with iPhoto, Apple's OS X photo-management software, makes creating Web-based photo albums particularly painless. Just select the pictures in iPhoto and click on the program's HomePage button to upload them.

Do It Yourself If HomePage's Web templates prove to be too limiting, you can create your own HTML files and copy them to your iDisk's Sites folder to make them available via the Web. This makes uploading much easier than with almost any other Web-hosting service, as there's no FTP or mucking about with uploading in a Web browser. Still, advanced users should keep in mind that HomePage isn't ideal for everyone. Those looking to build very complex or traffic-heavy Web sites will likely find themselves in conflict with Apple's bandwidth limits and license agreement (see "HomePage's House Rules").

HomePage Alternatives Of course, if you decide to forgo the .Mac fee, you can still accomplish much of what you can do in HomePage—just with a little more effort on your part. You can use iPhoto to export Web-based photo albums even without HomePage. In fact, for better results than you'll get with iPhoto's built-in Web-page export, try the free BetterHTMLExport (www.droolingcat.com/software/betterhtmlexport/).

You'll need space on a Web server to upload your HTML files and images—check with your ISP since most offer a limited amount of free Web space with Internet accounts. There are



plenty of free Web-hosting sites you can use, but you may be disappointed by what you find. Services such as Yahoo GeoCities (<http://geocities.yahoo.com>) offer prebuilt page templates, but they are nowhere near as elegant as those Apple provides for HomePage. Worse, their free accounts are marred by intrusive advertising and bandwidth limits.

You can pay an additional fee (typically starting at around \$60 per year and topping out at \$240 per year) to eliminate ads, increase disk space and bandwidth limits, and get extra e-mail addresses. However, if you're going to bother to pay for a personal Web-hosting service, you may as well pay for .Mac: HomePage's integration with iDisk and iPhoto, its elegant page templates, and its good interface definitely set it above the competition.

Backup

Whether it's through failed hardware or a natural disaster, you'll lose data at some point—and your only protection is a backup copy. With the addition of Backup to the .Mac suite, Apple has finally given users a built-in backup solution. Unfortunately, it succeeds only slightly at helping users protect important data.

What It Offers Backup is a simple OS X-only application that can back up files to your iDisk (where it shares the 100MB of space with everything else you upload), CD-R, or DVD-R.

Backup offers two ways of selecting important files to back up: manually and with Quick Picks, preconfigured sets of important files you might want to back up, such as Word files in your Home folder, your iTunes playlists, your Keychain, and so on (see "Backing Up to iDisk"). Although you can't create your own Quick Picks, you can add your own files or folders to be backed up merely by dragging them into the Backup window.

When you back up to iDisk, Backup copies only changed files. (Pay attention to how much free space is left on your iDisk, since Backup won't remove deleted files unless you turn on the Mirroring option in its Preferences pane). If you back up to CD-R or DVD-R, Backup copies *all selected files* every time, whether or not they've changed since the previous backup.

Severe Limitations If you're not currently backing up in some other way, Backup is better than nothing. That said, Backup is a lousy backup application. When executing a scheduled backup, it frequently failed to connect to our .Mac account. It can't back up to traditional backup media such as external hard disks (which are fast and cheap) or tape drives (which are

HOMEPAGE'S HOUSE RULES

Apple has worked hard to make sure that anyone can use its HomePage Web-publishing service. But that doesn't mean it's right for *everyone*. Here's what you need to know about Apple's limitations on the bandwidth and purpose of your HomePage sites.

Bandwidth It's not always good to be popular—especially on HomePage. Apple has bandwidth limiters in place, so if your site receives too many hits in a short period of time, Apple automatically blocks access to the site and then opens it back up after a few hours. This makes HomePage a bad candidate for bandwidth-intensive tasks such as hosting a popular Web page or off-loading graphics from another heavily visited site.

Apple's goal is to reduce overall bandwidth usage so there's enough for all .Mac members. Apple claims that 99 percent of .Mac members will never run into these limitations. However, the company's representatives wouldn't provide details, saying only that Apple constantly tunes the system for maximum availability, so there's no way to anticipate the exact usage patterns that will invoke the bandwidth limiters.

Membership Terms If your site is at all business related, you should also make sure you

won't run afoul of .Mac's membership terms (www.mac.com/1/membership_terms.html), which state that Apple intends .Mac only for personal use. Of course, the line between personal and business is often fuzzy.

While Apple assured us that it is "not in the business of shutting people down proactively," it does reserve the right to investigate if it receives complaints about your use of .Mac. When we offered a few examples—a photo-filled site for a nursery school, a brochure for a teenager's lawn-mowing service, a freelance illustrator's portfolio—Apple agreed that all were acceptable uses for .Mac.

One way of determining whether a potential use would conflict with .Mac's membership terms is deciding whether that use would be best served by a feature .Mac lacks. For instance, you can't get a custom domain name for your Web site, you can't run CGI programs with HomePage, and .Mac doesn't provide any access logs for you to analyze. If you'd miss any of those features, or if you'd mind having your site taken offline temporarily because it was using too much bandwidth, you should look elsewhere for Web and e-mail hosting.

capacious and good for archiving). Worse, it can't back up applications or system files, so if your hard disk flakes out, you'll spend hours or even days reinstalling everything from scratch.

The problems don't stop there. Although different users on the same Mac can back up to the same .Mac account, you can't back up more than one Mac to your iDisk at a time. So forget about protecting both your iMac and your iBook (unfortunate since it would be good to back up while you're on the road).

Although backing up to iDisk will work with any Internet connection, Backup is primarily useful if you have a high-speed connection, as it doesn't reduce upload time by performing compression. And since Backup doesn't encrypt your data, you should make sure your .Mac password can't be easily guessed.

Little Support As with any backup application, support is essential. Your .Mac membership includes technical support, but only through the .Mac discussion forums. Postings from Apple moderators do appear there from time to time, and the moderators have offered helpful suggestions to .Mac members who have had problems with Backup. But while that level of support is OK for much of .Mac, where problems are unlikely to be mission-critical, it's unacceptable for a backup application.

RESTRICTING ACCESS

If you want only a few people to be able to see certain parts of your Web site, you can separate those pages by creating a new folder inside your iDisk's Sites folder and password-protecting it.

TIP



Backup Alternatives If you're seriously looking to protect your data, the best choice is probably Dantz Development's \$49 Retrospect Express Backup (★★★★; *Reviews*, July 2002), which can back up to a variety of removable media, hard drives, and FTP servers over the Internet. FWB's \$40 Backup Toolkit (★★★★; *Reviews*, May 2002) is another possibility; it offers a streamlined interface for backing up, restoring, and synchronizing files to Finder-mountable media.

In the end, Backup can play a role in a broader backup strategy (see "Backup Strategies") and is better than not backing up at all, but people who are serious about protecting their data should look elsewhere. (For more information on protecting your files, see "Save Your Data," September 2001.)

TIP

BACKUP STRATEGIES

While no one seriously interested in protecting data should rely entirely on .Mac's Backup service, it can be a valuable addition

to a larger backup strategy. For example, if you already have a full-fledged backup application in place, an additional backup made to your iDisk provides an off-site copy of your most important data in the event of a fire or other catastrophe. Plus, Backup lets you make quick copies of current files, such as your thesis or your next novel, to your iDisk multiple times during the day, something that's often harder to do with other backup applications.

If you do decide to rely solely on Backup, consider combining backup methods for additional safety. For example, back up to your iDisk every night, while also making CD-R backups once a week. That way your iDisk will always have the latest versions of your files, but if one of these files gets corrupted, you can revert to an older version from the weekly CD-R backup.

only download the files manually but also use the Unix command line to install and run them. This unnecessary tedium is disappointing, especially considering that Apple is offering Virex as a benefit of an online service.

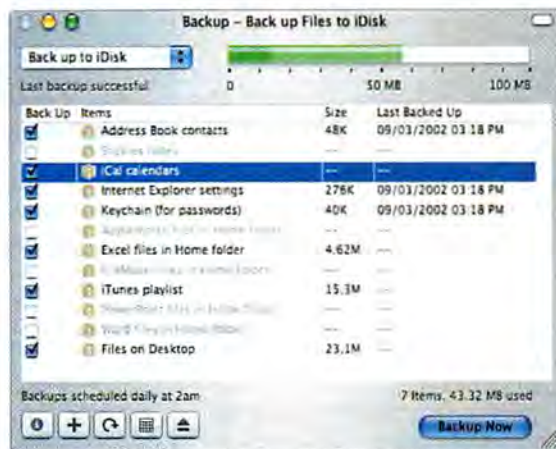
Virex

Even though viruses are nowhere near the problem on the Mac that they are in the Windows world, everyone should have an antivirus application to protect against new viruses or macro viruses hiding inside received Microsoft Office files. To this end, Apple has included McAfee's Virex (which would otherwise cost \$33 or more) as part of its .Mac services.

What It Offers Like all anti-virus applications, Virex finds and removes known viruses. Whereas Backup is restricted to OS X, Virex supports both operating systems: version 6.1 is for OS 9, and version 7.1 is for OS X.

Virex 6.1 (★★★★; *Reviews*, July 2000) offers excellent flexibility, letting users invoke scans via a Control Strip module, droplet, or contextual-menu command. The program's eUpdate feature automatically downloads new virus definitions as McAfee releases them.

The OS X-native Virex 7.1 is less versatile than its OS 9 counterpart, lacking some of Virex 6.1's alternative ways of starting a scan. A more notable failing, though, is Virex 7.1's handling of monthly virus-definition updates. Whereas Virex 6.1 finds and downloads them automatically, 7.1 requires that you download a disk image and run an installer manually; if you want the updates weekly, you'll have to not



Backing Up to iDisk Backup's QuickPicks help you back up pre-configured sets of files and save you the time and hassle of hunting them all down yourself. You can also add your own files or folders to the list by dragging them into the Backup window.

Virex Alternatives Other than manually downloaded virus-definition updates for version 7.1, there's nothing wrong with Virex. If you want to look elsewhere, you have two main choices: Symantec's \$70 Norton Anti-Virus 8.0 (★★★★; *Reviews*, November 2002) or Intego's \$60 VirusBarrier 10 (305/868-7920, www.intego.com). If you're looking to protect your files from every form of damage—from viruses to unexpected data loss—consider the \$130 Norton SystemWorks 2.0, an attractive bundle that includes Norton AntiVirus and Dantz's Retrospect Express Backup, as well as Norton Utilities, Alsoft's DiskWarrior Recovery Edition, and Aladdin's Spring Cleaning.

Macworld's Buying Advice

When deciding whether .Mac is worth \$100 per year, you must first figure out which of the services you'll actually use. Although you won't find anything that compares with .Mac for integration with Mac OS or other programs from Apple, it is possible to put together a comparable set of services separately. If you need only a small subset of what .Mac provides, you might even be able to do so less expensively. No matter what, keep in mind that .Mac does not provide Internet access, so you'll still have to pay a monthly fee to your ISP as well.

If you think you'd use only one of the .Mac services, \$100 might be too much to spend. However, if you want to use several of them—Mac.com e-mail, sharing files via iDisk, and publishing photos on HomePage, for instance—.Mac's elegant interface and tight integration with OS X make it a solid value. However, those who are serious about protecting their data should get a stronger backup application.

Ultimately, .Mac may prove to be just like the Macintosh—it's a little more expensive, but what you get is worth the extra money. □

Contributing Editor ADAM C. ENGST is the publisher of TidBits (www.tidbits.com) and author of *iPhoto 1.1 for Mac OS X: Visual QuickStart Guide* (Peachpit Press, 2002).

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

COLOR LASER
From \$1499

WORKGROUP
LASER PRINTING
From \$699

LASER PRINTING
From \$299

COLOR
FLATBED MFC
From \$299

LASER FLATBED MFC
From \$449

LASER MFC
From \$299

COLOR MFC
From \$169



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, to versatile all-in-one multi-function units which print, copy, scan and more, you'll find our products are every bit as evolved as our customers.

A VARIETY OF MODELS AVAILABLE AT: MacWarehouse, MacMall, MacConnection, MacZone, CDW, CompUSA, Office Depot, Staples, OfficeMax, Fry's, J&R Computer World

At your side.™
brother®

©2002 Brother International Corporation, Bridgewater, NJ. • Brother Industries, Ltd., Nagoya, Japan

For more information please call the Brother Fax-Back System at 800-521-2846 or visit our web site at www.brother.com • All trademarks and registered trademarks are the property of their respective owners.

Choose 119 at www.macworld.com/getinfo

BY CHRISTOPHER BREEN

APPLE'S INFORMATION HUB

With iCal and iSync,
You Can Take Your
Information Anywhere



Apple has quietly remade the digital hub into the information hub. The original hub placed the Macintosh at the center of a galaxy of multimedia gewgaws, but this new one lets a Mac running OS X 10.2 (Jaguar) organize, synchronize, and publish personal information—both locally and on the Web. Apple unleashed two of the key elements this September. The first, iCal 1.0, is a calendar application

that hints at a Mac OS more tightly integrated with Apple applications—it offers features that link with Apple's free Mail and Address Book applications, and with the \$100-per-year .Mac Internet service (800/538-9696, www.apple.com). The company also released a beta version of iSync, an application for synchronizing data between computers, portable digital devices, and the Web.

In our first look at these two applications, we examine their capabilities: what they do, how they do it (and in the case of iCal, how *well* it does what it does—for our review of iCal, see “iCal 1.0”), how you might find what they do useful, and how they integrate with other elements of the information hub.

Introducing iCal

After Apple included the Mail and Address Book applications in OS X, it was only a matter of time before the company took the next logical step and included an application for keeping track of appointments. That application is iCal.

iCal is free and easy to use. Like other calendar applications, such as Now Software's \$120 Now Up-to-Date (800/858-7506, www.nowsoftware.com), Microsoft's Entourage (part of the \$499 Office; 800/426-9400, www.microsoft.com/mac), and Palm's free Palm Desktop (800/881-7256, www.palm.com), iCal allows you to view events by day, week, or month. It also lets you add notes and contacts to events, schedule alarms to alert you to upcoming events, and create to-do items.

Unlike other calendar applications, iCal lets you create multiple calendars viewable within its single window (see “Multiple iCals”). One calendar, for example, might contain your business appointments; another, a schedule of your child's Little League games; and a third, the schedule for broadcasts of HBO's *Six Feet Under*. iCal lets you see as many or as few of these calendars as you like. You can easily distinguish one from the other by color—for example, by default the Work calendar is orange and Home is blue. Overlapping events are offset to make them distinguishable, and active but unselected calendars turn slightly transparent behind the selected calendar.

Information Integration

iCal is a player in the information hub because of its integration with Address Book, Mail, and .Mac. Click on the People button at the bottom of the iCal window, and the resulting window displays a list of all the entries in Address Book. To notify people of an upcoming event, click on the People tab in the Event Info window and drag the names of the contacts you want to notify to the window. Click on the Send Invitations button, and Mail sends each person on the list an e-mail alert about the

event. This feature doesn't require a .Mac account—Mail will send the invitations from its default e-mail account. There's no way to choose a different e-mail client.

Take It to the Web

You don't need a .Mac account to publish a calendar online, though it's the easiest way to go about it. (And you can make the online version of the calendar automatically update when you change the calendar within iCal.) However, if you publish calendars using the default .Mac publishing option, you can't password-protect them, so your calendar is viewable by anyone who happens upon it. (See “iCal Tips” for a workaround.)

iCal lets you avoid .Mac by using a WebDAV server to publish your calendar, but creating such a server on your Mac requires working in OS X's Terminal application. Alternatively, you can use a utility such as Findley Designs' free iCal FTP (www.versiontracker.com) to publish your calendar to an FTP server. The Web site My iCal (www.myical.com) promises free iCal hosting.

Using Mail to announce newly published calendars is easy. Once the calendar is published, a dialog box appears, offering you the opportunity to send an e-mail announcement about the page. Choosing this option creates a new message in Mail titled “View my calendar on the Web”; the message contains links for viewing and subscribing to the calendar. At press time, these links worked only with Microsoft Internet Explorer.

Subscription Service

Publishing your calendars on the Web is useful, but handier still is the ability to incorporate other calendars—the company work calendar or the schedule of a favorite sports team—into your own. Just select Subscribe from the Calendar menu and enter the URL for the calendar you'd like to add. Apple has compiled a library of calendars that includes, for example, holidays from around the world, sports teams' schedules, movie openings, select Apple Store events, and concert tour dates (www.apple.com/ical/library). And calendar libraries from unofficial sources already exist. To see one, visit www.icalshare.com. Subscribing eliminates one of the inconveniences of viewing published calendars on the Web—that you can't see multiple calendars on a single Web page.



Simple iSync

You can use iSync to link plenty of peripherals.

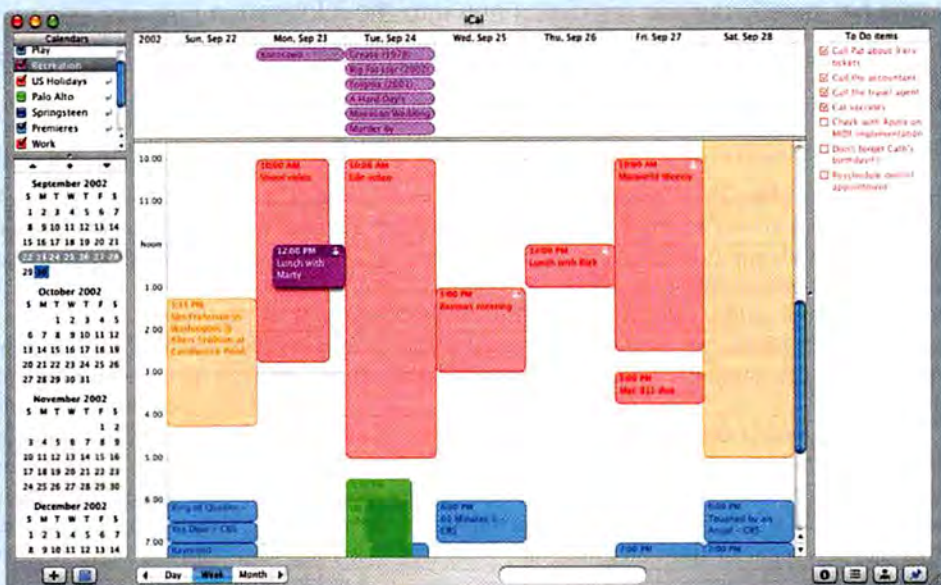
FREE BUT FLAWED: APP NEEDS SOME WORK

Like Mail 1.0 and Address Book 1.0 before it, iCal 1.0 shows potential but lacks many of the features and refinements found in its competitors. Although not exactly half-baked, iCal 1.0 is certainly underdone.

iCal's potential is reflected in its integration with Mail, Address Book, and the .Mac service. It's convenient to be able to publish a calendar on the Web and send out announcements about its publication to anyone listed in OS X's Address Book. And the ability to view multiple calendars in a single window is a welcome innovation. But much work remains to be done—starting with performance.

Slow Performance Compared with applications such as Microsoft's Entourage, Now Software's Now Up-to-Date, and Palm's Palm Desktop, iCal is slow. While you can swiftly move between daily, weekly, and monthly views in these com-

peting applications, there's a noticeable pause when switching views in iCal, even on a fast Power Mac G4. Importing a large number of Entourage events can take an hour or more—with no visible feedback other than a spinning beach-ball cur-



Multiple iCals iCal is unique in its ability to display overlapping calendars.

iSync I Can, iSync I Can

Many of us store redundant hunks of information on a multitude of devices. How many times have you entered your cousin Lenny's address and telephone number into your Mac *and* your Palm *and* your phone? Apple wants to coordinate that information via iSync.

The beta version of iSync consists of a simple interface with a .Mac icon and a Sync Now button (see "Simple iSync"). A click of this button synchronizes Address Book

and iCal data between the Mac and your .Mac account, an iPod, or a compatible cell phone. To synchronize data between a Palm device and iSync, you must first install the iSync_Palm.pkg file and then initiate a HotSync operation from the Palm, rather than from iSync.

Selecting Add Device from the File menu causes iSync to scan for compatible devices. When it finds one—an iPod or an in-range Bluetooth cell phone (such as the Sony Ericsson T68i) that you've paired



iCAL TIPS

Despite iCal's youth, enthusiasts are already coming up with ways to improve and enhance it. Here's a sampling of what's available.

A Small Measure of Security In an apparent response to the criticism that iCal calendars can't be password protected when published to a .Mac account, Apple has announced that you can publish private calendars to your iDisk. To do so, choose the calendar you want to publish, select Publish from the Calendar menu, click on the Publish On A Web Server option, and enter <http://idisk.com.com/username/Documents> in the URL field, replacing *username* with your .Mac account name. Enter your .Mac name and password in the appropriate fields, and click on Publish to publish your calendar to your iDisk Documents folder.

This calendar is now available only to those who have your iDisk user name and password—information you should entrust only to the trustworthiest.

Importing Now Up-to-Date Files iCal can't import files exported from Now Software's Now Up-to-Date. Fortunately, you can work around this limitation by using Palm's Palm Desktop (www.palm.com/macintosh) as a go-between.

Open the Now Up-to-Date calendar you want to export, and select Export from the File menu. In the resulting Export dialog box, make sure that Calendar Archive appears in the Export Template pop-up menu. Select the range of dates you want to export, and click on OK. Name the file in the Save: Now Up-to-Date dialog box, and click on Export.

Launch Palm Desktop, and select Import from the File menu. Navigate to the Now Up-to-Date file you just exported, and click on Import. In the Import dialog box, move the field headings in the left side of the window (Date, Start Time, and End Time, for example) so they match the data in the exported file. Click on OK.

Once the events are imported, select Export from Palm Desktop's File menu. In the Export: Palm Desktop dialog box, choose the vCal format from the Format pop-up menu and click on Export.

sor to show that either iCal or Entourage is engaged in productive activity.

Poor Relations Although Apple has integrated iCal with its own applications reasonably well, it could do more to establish better relations with other programs. iCal can import files in the iCalendar (.ics) and vCalendar (.vcs) formats (standards used in many calendar apps), as well as calendars created in Entourage. However, it can't directly import data from Now Up-to-Date. You can drag supported calendar files (such as those exported by Palm Desktop) into iCal—where they're integrated into the selected calendar—but you can't drag events or calendars out of iCal. The program limits you to exporting files in the .ics format only—a problem if another calendar program doesn't support this format.

The links generated in iCal announcements don't work in all browsers. When you send an e-mail invitation, the message asks the reader to click on a link in the message's body to view the event information. That link appears only when the recipient uses Mail. Other e-mail clients include the event as an attached .ics file, which is likely to confound the majority of computer users, who don't use Mail. Although there are ways to make other browsers and e-mail clients work correctly with iCal—using tools such as Monkey Food Software's free More Internet or Vince (www.monkeyfood.com)—it's up to you to tell recipients how to use these tools.

Insecure Information Security is another concern. You can't secure the information in a calendar published via the default .Mac setting. If someone knew your .Mac account name, it'd be

no trouble to find out that you and your loved ones planned to be on vacation for two weeks (leaving your home an enticing target for ne'er-do-wells)—because you'd unwarily published that information in your Home calendar.

And then there are the little things: you can't create a multiday event by dragging across multiple dates, you can't determine whether an event includes a note unless you open the Event Info window and click on the Note tab, and you can't select multiple events and delete them.

Macworld's Buying Advice

iCal is a promising—if wobbly—first step. If you demand little from a calendar application or find iCal's integration with other OS X applications and .Mac enticing, download iCal with our blessing. We, on the other hand, will stick with free competitors such as Palm Desktop until we see what iCal 2.0 holds in store.

RATING: ★★½

PROS: Integration with Jaguar's Mail and Address Book applications and Apple's .Mac Internet service; multiple-calendar view; free.

CONS: Slow; poor integration with non-Apple programs; lack of security; lack of features found in other free calendar applications.

PRICE: Free; \$100 per year to publish calendars via a .Mac account

OS COMPATIBILITY: Mac OS X

COMPANY: Apple Computer, 800/538-9696, www.apple.com

with your Mac, for example—that device appears in the Add Device window. (For more on Bluetooth and Macs, see “Bluetooth Breaks Through,” August 2002.) Once the device is found, you add it to iSync by dragging it to the iSync window.

Adding a Palm OS device requires that you first configure Palm Desktop 4.0's HotSync Manager to recognize iSync. To do so, launch HotSync Manager, select Conduit Settings from the HotSync menu, click on the

iSync Conduit entry in the resulting Conduit Settings window (this conduit is installed along with iSync), and click on the Conduit Settings button. In the pane that appears, enable the Synchronize Contacts and Synchronize Calendars options, choose the device you're using from the Device Type pop-up menu (Clie, M105, Palm III, Palm V, Treo, and Visor are your choices), and click on OK.

The .Mac Connection

The bond between iSync and .Mac goes beyond storing your contacts and events online. For iSync to synchronize the Address Book and iCal data between two Macs, those Macs must be registered with .Mac (meaning you must pay \$100 per year for a .Mac account). While some may see this as a compelling reason to purchase a .Mac account, others may be irked that Apple has hobbled the application in order to generate additional revenue.

The Last Word

At first blush, iCal and iSync seem to be little more than a convenient integration of Mac OS, a handful of applications, and a collection of digital devices. But it takes little imagination to see that iCal and iSync are Apple's vision of the future of computing: A future where information flows freely between local and global devices attached to an information hub. □

To bring the file into iCal, select Import from the iCal menu, choose the Import A vCal File option in the resulting Import dialog box, and click on the Import button. Alternatively, you can drag and drop the file on the iCal icon. Note that the imported data will be added to iCal's currently selected calendar.

Birthday Blues Regrettably, iCal's integration with its i-siblings goes only so far. It can't, for example, import birthdays from Address Book. Fortunately, there is a solution: Scotland Software's free iCal Birthday Shifter (www.scotlandsoftware.com) pulls birthdays from your Address Book data file and imports them into the iCal calendar of your choice.

Dated Music Those iTunes users who long for the kind of alarm-clock function found in Casady & Greene's dearly departed SoundJam will be keen to try Doug Adams's free iCal Calling iTunes (www.malcolmadams.com/itunes). This AppleScript creates iCal events that, when triggered, play the iTunes playlist of your choosing at a time you designate.

Mark your calendars: CHRISTOPHER BREEN's *Secrets of the iPod*, second edition (Peachpit Press), hits store shelves in January 2003.



Browser Options

Web Standards

iCab
Internet Explorer
Mozilla
Navigator
Netscape
OmniWeb
Opera

BATTLE OF THE BROWSERS

Which One Should You Take to the Web?

BY JEFF CARLSON



FOR MOST MAC OS X USERS, the gateway to the Web is Microsoft Internet Explorer (IE), which—not coincidentally—is the only non-Apple icon in the Dock. Netscape, once IE's only major competitor, is still around, but now other developers are bringing their browsers to OS X. By working hard to avoid the feature bloat and unpredictable display problems of earlier browsers, the makers of these alternative applications are redefining how we access the Web. If you want to speed up your browsing, or if you're just curious about what else is out there, we'll help you explore the possibilities.

Test Elements

We tested final releases of four browsers—IE 5.2.1, Netscape's Netscape 7, Mozilla.org's Mozilla 1.1, and The Omni Group's OmniWeb 4.1—as well as three mature beta versions: iCab's iCab 2.8.2, Opera's Opera 5.0 for OS X, and Mozilla.org's Navigator (also known as Chimera), which was at version 0.5 when we tested.

Site Picks To test the browsers' limits, we chose five Web sites with a mix of popular content, complex markup, plug-in media such as Flash, and more-advanced coding such as Cascading Style Sheets (CSS) and Extensible HTML (XHTML): CNN.com (www.cnn.com), ESPN (www.espn.com), Quicken (www.quicken.com), The Web Standards Project (www.webstandards.org), and the Explore section of the Adobe Studio site (http://studio.adobe.com/explore). As we tested, we asked several questions: Do pages load quickly? Does the browser render content correctly and support Web standards? And does it facilitate repeated use or get in the way when we spend hours accessing the Web? For a quick glance at our findings, see "OS X Web-Browser War."

Loading Speed

It's difficult to accurately judge a browser's speed. Of course, your Internet connection's bandwidth affects

how fast a Web page loads. Other considerations include the speed of the Web server and its connection, the amount of data on the page, how quickly a browser can interpret incoming data, and the speed of your Mac. We loaded each site in each browser on a 400MHz Titanium PowerBook G4 with 768MB of RAM and OS X 10.2 installed. (We also ran the browsers through Macworld Lab's Speedmark browser test to judge how each browser performed without the unpredictable overhead of the Internet.) For a look at all the numbers, see "Speed Tests: Real World and Macworld."

The results of real-world tests were surprising. Navigator, which clocked the best times for three of the five sites, averaged faster marks than IE on every page except Adobe's. Mozilla and Netscape were slow when launching, drawing new windows, and even bringing up the programs' preferences, but their final scores remained competitive, especially against IE. We attribute the snappier load times of Navigator, Mozilla, and Netscape to the Gecko rendering engine (see "Mozilla at Heart").

ESPN Goes to the Opera The Opera browser (above left) had a hard time with the ESPN site. Internet Explorer (above right) displayed it correctly.

MOZILLA AT HEART

In 1998, Netscape Communications released Netscape Communicator's browser source code to the public, under an open-source license. To coordinate its collaborators, Netscape created the nonprofit organization Mozilla.org, which soon focused its efforts on developing a new, standards-compliant core that would work easily across multiple computer platforms. The result was the Gecko rendering engine.

Developers can build around Gecko to provide interfaces and components specific to any given operating system. This is why Mozilla 1.1 and Netscape 7 are often confused with each other—they share the same underlying technology. But Netscape adds extra features such as an e-mail client, a chat interface, and licensed plug-ins (for example, Flash and RealPlayer). Navigator is also based on Gecko, but has its own OS X-specific interface and coding, without the extra baggage of Netscape's nonbrowser features.

OS X Web-Browser War

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	PROS	CONS
iCab	iCab 2.8.2	N/A*	\$29**	info@icab.de, www.icab.de	Built-in HTML validator; good speech support; can filter images.	Poor CSS support; frequent rendering problems.
Microsoft	Internet Explorer 5.2.1	★★★★	free	800/426-9400, www.microsoft.com	Most reliable renderer; good performance; great standards support.	Sporadic cache and redraw problems; doesn't take advantage of new technologies such as tabbed windows or ad blocking.
Mozilla.org	Mozilla 1.1	★★★★	free	www.mozilla.org	Gecko engine; good performance and rendering; tabbed windows; some ad-blocking capability.	Pauses when drawing new windows.
Mozilla.org	Navigator 0.5 (Chimera)	N/A*	free	www.mozilla.org	Fast; good rendering quality; blocks pop-up ads; tabbed windows.	Prone to crashes; minimal preferences; limited support for Flash.
Netscape	Netscape 7.0	★★★★	free	650/254-1900, www.netscape.com	Much improved performance over 6.X versions; Gecko engine; good rendering capability.	Pauses when drawing new windows; nonbrowser add-ons make it feel clunky and encumbered; no tabbed windows.
The Omni Group	OmniWeb 4.1	★★★★	free	800/315-6664, www.omnigroup.com	Good rendering speed; flexible privacy options; speech options.	CSS positioning unsupported.
Opera Software	Opera 5.0 for OS X	N/A*	free	[47] 24 16 40 00, www.opera.com	Document and User modes; fair rendering quality.	Mediocre CSS support; slow.

* N/A = not applicable. At press time, these browsers were beta releases and therefore were not rated. ** When iCab is released, it will cost \$29.

Opera bills itself as “the fastest browser on earth,” but it eked out a winning score for only one site, the Web Standards Project. However, Opera didn't fall too far behind the rest of the pack.

Rendering Fidelity

Speed is a nice perk, but a browser really shows its mettle when it can display pages correctly. Unfortunately, *correctly* is a subjective term when it comes to the Web, and we saw quite a bit of variation between browsers.

ESPN Results For example, the online edition of ESPN uses fairly complex HTML, JavaScript, and CSS to deliver sports news. Pages like this one make browsers work hard to parse and display multiple nested tables, graphics, Flash animations, and CSS definitions. To get an idea of this process, imagine someone throwing puzzle pieces that you must catch and fit together correctly in midair.

Most of the browsers in our tests displayed the ESPN page consistently, with the exception of iCab, which doesn't fully support the CSS positioning con-

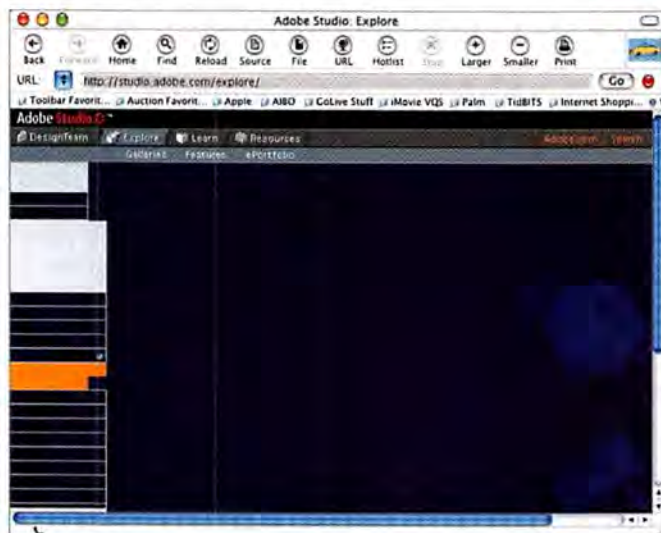
trols that the page relies on. Opera managed to get the basic layout correct, but it suffered from spacing problems at the top of the page and around the ESPN Keyword Search field (see “ESPN Goes to the Opera”).

Adobe Results We chose Adobe Studio's Explore page for its combination of advanced HTML, JavaScript, CSS positioning, and integration with common plug-ins such as Flash. As expected, the page's CSS underpinnings prevented iCab from correctly drawing it (see “Adobe Hails an iCab”), but the browser had no trouble loading the Flash animation. In contrast, Navigator assembled the page fine, but it didn't completely display the Flash until we ran our cursor over the animation. Opera rendered the page well but couldn't access the JavaScript- and CSS-based pop-up menus at the right side of the screen. The other browsers displayed the page without problems.

Standards Support

One negative consequence of the early competitive evolution of IE and Netscape was the incompatibility

Adobe Hails an iCab iCab (below left) choked on the CSS in the Adobe Studio site's Explore page. Mozilla (below right) displayed it correctly.



of some HTML formatting tags across all browsers. To create consistent-looking pages, Web designers had to explore elaborate workarounds. Now, browser developers are placing a higher priority on supporting the standards dictated by the World Wide Web Consortium (or W3C, www.w3.org).

The Web Standards Project Results To rate browser support of Web standards, we turned to The Web Standards Project, a group that encourages developers to stick to the W3C's recommendations. The site's home page is a minimalist petri dish for CSS text formatting and positioning (which the W3C now favors over using convoluted HTML to position elements or define text attributes).

Opera didn't pick up the font (defined in a linked style sheet as Trebuchet MS) of the navigation links or the sidebar to the right of the main text. OmniWeb displayed the fonts correctly but misunderstood the code that dictated the position of the elements, so navigation elements were pushed off the left edge of the screen and the horizontal divider image was crammed against the top of the window (see "Nonstandard Support in OmniWeb"). iCab didn't display the positioning correctly, either. Navigator, IE, Mozilla, and Netscape rendered the page correctly.

The Web Standards Project page uses XHTML, the W3C's recommended successor to HTML. Web design has traditionally focused on appearance, but HTML was conceived of as a *structural* language, meaning that an author marks up a page based on its content—for example, a paragraph here, a heading there—instead of using formatting tags to design the page. XHTML is a happy blend of structure and appearance. It provides better access to people with disabilities (who may be using text-reading devices, for example) and those running text-only browsers.

We were glad to see that none of the browsers sputtered on The Web Standards Project's page (the only one in our tests that uses XHTML), aside from the CSS-related issues mentioned earlier. In fact, Opera

includes a great feature that takes advantage of XHTML: a button on the Address Bar lets you toggle between Document mode, which displays all page and text formatting, and User mode, which simplifies the page to just its structure.

Day-to-Day Use

These programs are called "browsers" for a reason: accessing the Web involves opening and closing windows, entering URLs, clicking on links, and otherwise meandering from one online location to another. In some browsers, performing these actions is a breeze; in others, it's needlessly complicated.

Open URL Each program has a command—for example, **Open URL**—that lets you specify a new Web address. And in every browser but iCab and Opera, invoking this command highlights the Address field in the current window so you can type a new URL. (But you can do this in Mozilla and Netscape only by pressing **⌘-L**; no menu item exists for this basic shortcut.) If no window is open in IE, Navigator, or OmniWeb, the browser creates a new one with the field selected. Opera and iCab display an annoying floating dialog box.

Someone who doesn't know the **⌘-L** shortcut in Mozilla and Netscape (we discovered it by accident) can use Open Web Location (**⌘-shift-L**) to activate an Aquafed drop-down dialog box. But in addition to an address field, the box contains a pop-up menu that controls whether the new URL is loaded in the existing browser window or a new one. The problem here is that if no window is currently open and the pop-up



IN THE PAST, INCOMPATIBLE FORMATTING TAGS FORCED DESIGNERS TO USE ELABORATE WORKAROUNDS.

Speed Tests: Real World and Macworld

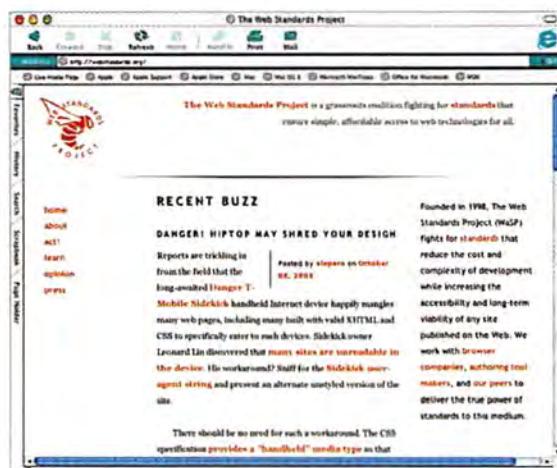
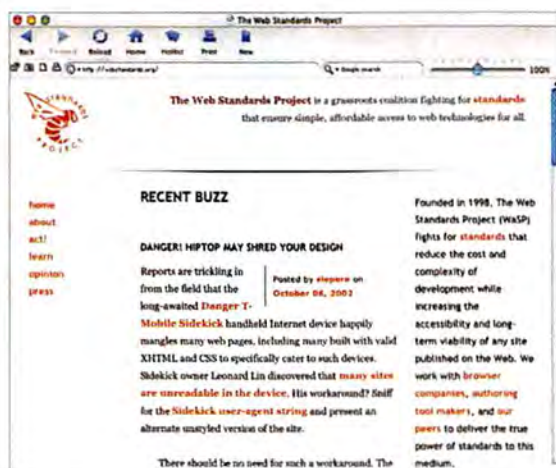
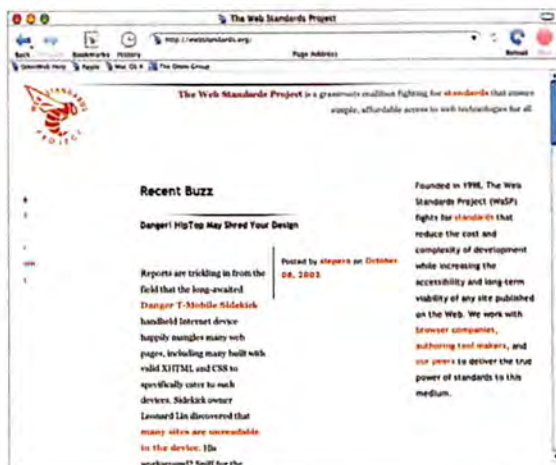
	Real-World Load Times					Macworld Lab Times		
	ADOBE STUDIO	CNN.COM	ESPN	QUICKEN	WEB STANDARDS PROJECT	LAUNCH	SPEEDMARK BROWSER TEST	
iCab 2.8.2	15.9	22.9	23.5	9.8	3.0	6	6	
Internet Explorer 5.2.1	15.5	15.4	23.3	7.9	5.0	5	41	
Mozilla 1.1	14.8	16	21.4	7.3	4.4	14	46	
Navigator 0.5 (Chimera)	17.9	12.9	19.3	6.7	4.6	9	49	
Netscape 7.0	16.6	16.5	22.1	7.9	4.8	14	46	
OmniWeb 4.1	13.9	19.4	21.7	6.9	3.7	20	56	
Opera 5.0 for OS X	21.7	18.8	20.3	11.2	2.4	5	N/A*	
	<Better	<Better	<Better	<Better	<Better	<Better	<Better	

BEST RESULTS IN BOLD. * N/A = not applicable. Opera timed out after 20 minutes.

Scores are in seconds. The Real-World Load Times test machine was a PowerBook G4/400 with 768MB of RAM, running Mac OS X 10.2, and connected via 128K DSL (ISDN over DSL). Real-World Load Times results are the average of three separate load attempts. Macworld Lab's test machine was an iMac G4/700 with 256MB of RAM, running Mac OS X 10.2. Launch times are recorded from the first time the browser is launched after a restart. The Speedmark browser test is composed of three Web pages (the first page loads QuickTime movies, the second page loads images, and the third page loads text with images) loaded from a Mac OS X 10.2 server in a closed, 100BaseT network. —REAL-WORLD TESTING BY JEFF CARLSON, MACWORLD LAB TESTING BY ULYSSES BRAVO AND JAMES GALBRAITH

Nonstandard

Support The CSS positioning underlying the Web Standards Project confounded OmniWeb (top left) and iCab (top right), Opera (bottom left) and Internet Explorer (bottom right) fared better.



menu is set to Current Navigator Window, your request will be ignored. Mozilla and Netscape also lost our favor because they had an especially irritating window behavior: when you create a new window, there is a few-second pause during which any part of an address you type is lost.

Cache and Redraw Although market dominance and our test results make IE the yardstick that all other browsers are measured against, it's not immune to

problems. IE often insists on holding onto cached page data. Even manually clearing the disk cache in IE's preferences doesn't always force the program to load a page's most recent version.

And then there's IE's occasional practice of not displaying most of a page's contents. You can force the browser to redraw (it doesn't require a reload) by pressing **⌘-B**, or by selecting Collapse Toolbars from the View menu; if the page is long enough,

MAKE THE BROWSER WORK FOR YOU

If you start your day by visiting a number of Web sites, save yourself some time and let your browser load everything while you're brewing coffee. You can easily create a simple AppleScript that runs after you turn on your computer or when you double-click on the script.

Launch the Script Editor application (located in the Applications:AppleScript folder) and type the following:

```
try
tell application "Internet Explorer"
  GetURL "http://maccentral.macworld.com/"
```

Activate
end tell
on error
end try

To use a browser other than Internet Explorer, enter its name within the quotation marks after **tell application**. To open more sites in separate windows, add new **GetURL** commands with the other pages' addresses.

When you're done, you can save the script as an application (an option available in the Save dialog box).

Some browsers use slightly different variables for performing this action. Netscape, Mozilla, iCab, and Opera can use **OpenURL** instead of **GetURL**; **OpenURL** provides more options for controlling window behavior. For example, iCab won't load multiple sites correctly unless you use **OpenURL** with a **toWindow** variable, as follows: **OpenURL "http://maccentral.macworld.com/" toWindow "0"** (or you can go to iCab's preferences, choose Operation:Windows/Launch, and select the GetURL Event Opens New Window option).

BLOCKING WEB ADS

Web advertising has become a necessary evil—it helps pay for the content we access online every day. But the latest generation of aggressive, in-your-face pop-up ads are downright obnoxious. Several utilities and browser features can keep your screen as uncluttered as possible.

Eliminating Pop-Ups Ricardo Batista's Pop-Up Zapper (www.batista.org/zap/) is a \$10 shareware utility that runs in the background and intercepts pop-up ads as a page is loaded. You'll still see the flash of a new window being created, but that's it: the window is eliminated before its contents can appear. Pop-Up Zapper was quite effective in our testing. But we'd like a log of zapped links (so we could make sure that legitimate windows weren't being nuked in the process) and the ability to specify exceptions. These abilities would've come in handy recently: I was connected to a wireless network in a local café, and Pop-Up Zapper killed a small window containing the only link for logging off the network.

To target pop-up windows at a deeper level, try Andrew Merenbach's free AdBlocker Toolkit (in the Mac OS X section of www.versiontracker.com), which has instructions for modifying your OS X hosts file. However, this involves mucking about in Terminal's command-line interface.

Some browsers can now detect and get rid of pop-up windows. The preview version of Navigator offered to turn on the feature when a pop-up window was detected, although no controls existed to enable or disable the feature manually.

Suppressing Ad Images Less intrusive but still annoying are ad images themselves, which have morphed from discreet banners into page-hogging behemoths. Fortunately, some browsers now let you choose to not display ads that either match typical banner dimensions or are loaded from a Web server other than that of the Web page you're viewing. In Mozilla's Preferences, click on Images

under the Privacy & Security category and select the Accept Images That Come From The Originating Server option. OmniWeb's Privacy preferences include options for denying advertisement-sized images and images coming from a different site, but OmniWeb also lets you enter regular expressions to match specific server names (such as images from www.doubleclick.net). In iCab, open Preferences, and click on the Images, iFrames option under Web Content; then select the Filter Images From Other Servers option. No other Web browser offers this capability.

These features may have unexpected consequences. In many cases, putting up a barricade against images from other servers can mean that you don't see legitimate images. In Mozilla, for example, Apple's home page comes up blank because that page is populated almost entirely by images fed through Akamai's content distribution servers.

hitting the page-up or page-down key can also trigger a redraw.

These may sound like minor quibbles, but they make a difference when you're visiting dozens or even hundreds of sites per day.

Unique Capabilities

Each browser has some unique capabilities meant to draw users in. Here are a few:

Window Tabs Mozilla and Navigator take advantage of a new window behavior: tabs. Instead of populating your screen with numerous windows that each contain the same toolbar, you can load multiple sites, each in its own tab, within the same window.


Speech Support iCab and OmniWeb include controls that let your Mac speak text on Web pages aloud. Simply select a range of text and choose Edit: Speech: Start Speaking (in OmniWeb), or choose Speak Selection from the contextual menu (in iCab). iCab also offers a Speak All command, though invoking it on some sites can result in your Mac reading all of a page's navigation links, too.

HTML Validator To the right of iCab's Address field is an intriguing smiley-face icon whose expression changes from happy to sad, depending on the page you're on. The state of the icon indicates a page's HTML validity. Click on the icon to bring up a list of validation results—handy for Web designers who are testing their pages.

Link List iCab can build a list of the links present in a page. Simply choose Link Manager from the Tools menu to see the links in a separate frame.

The Last Word

Microsoft's Internet Explorer effectively controls the Mac OS X browser market—its overall rendering quality and its support for Web standards made it the browser to beat in our tests. Netscape's fall from grace as IE's main competition has opened the field to newer browsers, such as Opera and The Omni Group's OmniWeb, that focus on speed and standards compliance. But what may turn out to be the biggest surprise is how Mozilla.org and the promising Gecko rendering engine have risen from the ashes of Netscape Communications to mount a credible challenge to IE's dominance. Although Mozilla is still too similar to its Netscape cousin in performance, Navigator's speed and rendering fidelity make it the OS X browser to watch. □



INTERNET EXPLORER
IS THE YARDSTICK ALL
OTHER BROWSERS
ARE MEASURED
AGAINST, BUT THAT
DOESN'T MEAN IT
HAS NO PROBLEMS.

JEFF CARLSON is a coauthor of *Real World Adobe GoLive 6* (Peachpit Press, 2002), and he can't recall any point during the last few years when a Web browser hasn't been running on his Mac.

AMAZING APPLESCRIPT!



Learn Apple's Simple Scripting Language, and Your Mac Will Be at Your Command

ALTHOUGH THE MAC IS PRIZED FOR ITS EASE OF USE, repetitive tasks such as changing large groups of file names and creating workflows that span several applications can be anything but easy. Sooner or later, you'll want to automate an action or series of actions to reduce your toil and increase your productivity—even if you're simply reducing the number of steps you must take to reply to an e-mail message. Software that does some of these things for you is available—usually designed for a specific purpose or application, and often for a price. But luckily, Mac OS already has the ultimate automation solution: AppleScript. It's easy, powerful, and free—and it's already on your computer.

At first sight, learning to script may seem daunting. But with a little guidance, you can be on your way to automating many of your computing tasks. In this introduction to AppleScript, we'll take a look at the fundamentals of understanding and writing AppleScripts, and then we'll walk through the creation of a sample Finder script. (This tutorial is written for Mac OS X 10.1 or higher and will not work with earlier systems.)

What Is AppleScript?

AppleScript is a language used to automate the actions of Mac OS and many of its applications. Whether a task is as simple as copying a file or as complex as building a catalog, AppleScript can intelligently perform the requisite actions for you, controlling applications and making decisions based on its observations or on information provided by its interaction with the person running the script.

Who Uses It Every day, businesses and individuals use AppleScript to create newspapers and books, manage networks, build DVDs, process images, generate Web pages, back up files and folders, make videos, and much more. In addition to loads of Apple applications such as iTunes, AppleWorks, Mail, and Terminal, many third-party applications—including QuarkXPress, Microsoft Entourage, Adobe Photoshop, FileMaker Pro, and Qualcomm Eudora—can take advantage of AppleScript.

How It Works You create AppleScripts with Apple's free Script Editor application, using the AppleScript lan-

guage. Each script contains a series of sequential instructions. To automate actions, you launch a script; your Mac communicates those instructions to your applications, which then perform the actions as instructed.

Scripts can be launched, or *run*, from within Script Editor, or they can be saved as either script files or script applications that are available from within other applications. You can access script files from an application's script menu or from Mac OS X's systemwide Script Menu utility. You launch script applications, or *applets*, just as you do other applications—by double-clicking on their icons in the Finder or by clicking on their Dock or Finder toolbar icons.

Nuts and Bolts

AppleScript is based on the concept of scriptable objects belonging to or being contained in other scriptable objects—it's sort of like having sets of nested Russian dolls inside your Mac. A file sits in a folder, which belongs to the hard disk; or a word is part of a paragraph, which belongs to a story. Understanding the relationship between scriptable objects is a key to learning how to write scripts.

All Together Now Consider the following statement: *On the Macintosh computer, everything is an object.* The computer, the desktop, the disks it displays, the folders on the disks, and the files in those folders—all of these items are objects. So are applications, their documents, and the data in those documents. Now consider this: *Everything belongs to, is related to, is contained in, or is part of something else.* The file is in the folder, which is in the



disk, which is on the desktop, which is on the computer. This relationship can apply to text as well: the letter is in the word, which is in the line, which is part of the paragraph, which is contained in the story.

This relationship between objects is referred to as hierarchical or, in military terms, the chain of command. AppleScript uses this hierarchical structure to identify particular scriptable objects, and it will be in the scripts you write. Just remember that in scripts, objects are described in terms of their position in the hierarchical structure.

Properties and Values Disks, files, folders, font suitcases, packages, and windows are all objects or elements belonging to the Finder application. They are the items the Finder uses in the organization and display of information. Each of these items has particular *properties* that define or describe it. Some of these properties are unique to each item, while others are shared by all items.

For example, while an Internet location file (or link) is the only Finder element that has a property describing a location on the Internet, it has some properties common to all Finder elements, such as its icon's size and position in a folder window or on the desktop. And like other Finder elements, such as a folder or document file, a link file has a name property whose value is displayed with its icon and can be edited by the computer user.

An important rule to remember is that every scriptable application contains elements or objects that have properties. These properties have values that can be read or manipulated.

This rule applies to the Finder application, as well as all scriptable applications. All elements of

the Finder have properties—for example, their name, size, and location. And all these properties have values, some of which can be edited and some of which can only be read.

Getting Familiar

In our overview of AppleScript, we'll examine the properties of a Finder window in detail and learn how to manipulate them with scripts.

The Script Editor To write a script, we'll use the Script Editor application installed in your system. You'll find this application in the AppleScript folder located in the Applications folder on your hard drive.

Script Editor displays a multipaned window, known as a script window, with two panes. The top pane con-

tains the description field, which is for optional comments or instructions regarding the use of the script. The bottom pane contains the script field, which is for the text of the script itself. (By default, the script window is rather small, so you may want to expand it.)

Our First Script We'll begin learning AppleScript by writing a series of simple script commands in the form of tell statements—single-line scripts beginning with the verb *tell*. This verb is used to direct script actions at a specific application or scriptable object. A tell statement has two parts: a reference to the object to be scripted and the action to be performed. Using this format—or syntax—we can write scripts instructing the Finder to perform whatever actions we desire. To see an example, type the following in the script window (making sure the word *Finder* is inside straight, not curly, quotation marks): `tell application "Finder" to close every window.`

Click on the Check Syntax button in the script window to confirm that the script was written correctly and to prepare it for use. Next, click on the Run button to play the script. The OS will read the script and send the appropriate commands to the Finder, which will then follow those instructions and close any open windows. Congratulations—you've written and run your first AppleScript!

Note that *Finder* is enclosed in quotation marks in the script—names and text data are always treated this way in scripts. This punctuation prevents Script Editor from seeing the text as commands or instructions when it checks and prepares the script. Delete the previous script from the script window, and enter, check, and run the following script: `tell application "Finder" to open the startup disk.`

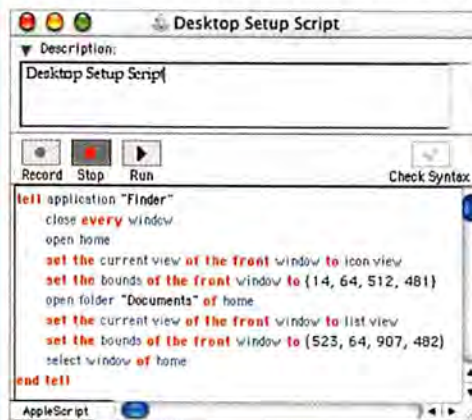
A new Finder window will appear on the desktop. Finder windows are different from other windows used by the Finder, in that they have a toolbar and display the contents of disks or folders. We'll use this newly opened window as we examine the properties of a Finder window.

The Name Property

The first Finder-window property we'll examine is its name property. A window's name is the text shown in its title bar. In the case of Finder windows, the text is the name of the folder or disk whose contents are displayed within the Finder window.

Name Game To retrieve the value of the window's name property, we'll use the *get* command. The verb *get* is used when we want to extract information or data from a scriptable element or object. Enter and run the following script: `tell application "Finder" to get the name of front window.`

To see the result of the request, look in the result window (choose Show Result from the Controls menu in Script Editor, or type `⌘-L`). You'll see that the title of the open Finder window also happens to be the name of your start-up disk.



Window of Opportunity

You create, check, and test your AppleScripts in the Script Editor.

AppleScript at a Glance

Finder Window Properties

Reference Properties

name: the text displayed in the title bar of the window: `tell application "Finder" to get the name of the front window`
index: a number indicating the position of the window in the stack of open windows: `tell application "Finder" to get the index of the front window`

Editable Properties

bounds: a list of coordinates defining the top left and bottom right corners of a window: `tell application "Finder" to set the bounds of Finder window 1 to {0, 22, 400, 300}`
collapsed: a true or false value indicating whether the window has been minimized to the Dock: `tell application "Finder" to set collapsed of every window to false`
current view: the method currently used to display content in the window—options are icon view, list view, column view: `tell application "Finder" to set the current view of Finder window 1 to icon view`
position: a list of coordinates indicating the horizontal and vertical offset of the window from the left and top sides of the screen: `tell application "Finder" to set the position of the front Finder window to {0, 22}`
target: a reference to the folder or directory whose contents are displayed in the window: `tell application "Finder" to set the target of the front Finder window to home`
zoomed: a true or false value that indicates whether the window has been expanded: `tell application "Finder" to set zoomed of the front Finder window to true`

Referring to a Finder Window

refer by window name: `Finder window "Documents"`
refer by index: `Finder window 1`
refer by descriptive index: the first Finder window; the second Finder window; the fifth Finder window; the 1st Finder window; the 23rd Finder window
refer by position relative to other windows: the front Finder window; the middle Finder window; the back Finder window; the last Finder window
refer by random selection: `some Finder window`

For Finder windows, the name property is a reference (or read-only) property—it can be used to refer to a window, but its value cannot be changed by a script. The value of a Finder window's name property will always be the name of the folder or disk whose contents it displays.

As the following script demonstrates, you can use the name property as a means to refer to a specific window. Delete the previous script from the script window, and then enter, check, and run the following script (replace `Macintosh HD` with the name of the open Finder window if it's different): `tell application "Finder" to close window "Macintosh HD"`. The Macintosh HD window should close. Note that this script is a fully qualified `tell` statement—it both refers to the object receiving the commands (in this case, the open window) and indicates the desired action to take (closing the window).

Verbs or Commands Used with Finder Windows

Accessing the Value of a Property of a Window

get: used to access the current values of a window property: `tell application "Finder" to get the target of the front Finder window`

Changing the Values of a Window Property

set: used to apply a new value to a window property: `tell application "Finder" to set the target of the front Finder window to home`

Controlling Windows

open: causes a window to become visible in the Finder: `tell application "Finder" to open the startup disk`
close: causes a window to close: `tell application "Finder" to close every Finder window`
select: causes a window to come to the front: `tell application "Finder" to select the last Finder window`

Tell Statement

contains a reference to the target object and the action to be performed: `tell application "Finder" to set the target of the last Finder window to home`

Tell Block

used instead of multiple `tell` statements; targets multiple actions at a scriptable object:

```
tell application "Finder"
    set the target of the front window to home
    set the current view of the front window to icon view
    set the position of the front window to {0, 22}
end tell
a nested tell block streamlines multiple targeted actions in a tell block:
tell application "Finder"
    tell the front window
        set its target to home
        set its current view to icon view
        set its position to {0, 22}
    end tell
end tell
```

The Index Property

If you're writing a script that will be used on multiple computers, using the name property is not always the best way to locate a specific window. Another, more generic way to refer to an open Finder window is through its index property.

Look Up My Number The value of this reference property is a number corresponding to the window's numeric position in the stacking order of open Finder windows. For example, the frontmost Finder window will always have an index value of 1, while the last Finder window will always have an index value equal to the total number of open Finder windows. To see how this property can be used, first reopen the previous window, using this script: `tell application "Finder" to open the startup disk.`

Now run the following script: `tell application "Finder" to get the index of Finder window "Macintosh HD"`. >>



The result of this script in the result window will be the number 1, since only one window is open at this point. Open a second window and run: `tell application "Finder" to open home.`

A second window displaying the contents of your Home directory will now appear on the desktop.

Note the use of `startup disk` and `home` in the previous scripts. `Startup disk` and `home` are special terms reserved by the Finder application to identify important locations. They're generic, and they'll work regardless of how drives and folders are named on the computer.

Now you can see whether the addition of the new window has affected the index value of the target window. Run the following: `tell application "Finder" to get the index of Finder window "Macintosh HD".` The result of this script is 2, since the target window is the second window in the stack of open windows on the desktop.

The index property can be used to identify any open window, and since the AppleScript language was designed to be like English and to be written in a conversational manner, there are several ways to reach the same result (for more on this, see "AppleScript at a Glance").

The Target Property

The value of the target property is a reference to the folder or disk whose contents are displayed in the Finder window. Unlike the values in our previous examples, this value can be both read and changed.

Where Am I? With your Home folder at the forefront, use this script to get the value of the target property: `tell application "Finder" to get the target of the front window.` This returns `folder username of folder Users of startup disk of application "Finder".`

As you can see, the result of this script is a reference to the folder whose contents are displayed in the Finder window, in this case your Home directory. This reference describes the target folder in terms of its position in its object hierarchy. The returned object reference clearly shows that the target folder is contained by the Users folder, which is on the startup disk, which is an element of the Finder application. You'll use this hierarchical reference structure often in the scripts you write.

Next, we'll change the targets of the open Finder windows. To change the value of a property, use the verb `set`. Run the following script: `tell application "Finder" to set the target of the front Finder window to the startup disk.` You'll notice that the frontmost Finder window now displays the contents of the startup disk. Now try this script: `tell application "Finder"`

`to set the target of the last Finder window to home.` The second Finder window now displays the contents of your Home directory.

To summarize, the target property of a Finder window has a value that is a reference to a specific folder or disk whose contents are displayed within the Finder window. This value can be changed by using the verb `set` in conjunction with an object reference to the new target folder. An object reference describes an object in terms of its position in its object hierarchy, or—in the case of a folder object—where it is on its parent disk.

Now, let's continue our overview of the properties of a Finder window.

The Current View Property

The next Finder-window property we'll examine is the current view property. The value of this property is the method used to display the contents of the Finder window. This property has three possible values—icon view, list view, and column view—and can be both read and edited.

Point of View To see your frontmost window's view status, run the following: `tell application "Finder" to get the current view of the front Finder window.` This returns one of the following terms: icon view, list view, or column view. In order to change the current view to list view, you can run this script: `tell application "Finder" to set the current view of the front Finder window to list view.` You can then easily change the view to another by substituting `column view` or `icon view` for `list view`.

The Position Property

The value of the position property determines where a Finder window is placed on the desktop. This value is displayed as a list of two numbers that describe the position of the top left corner of the Finder window in relation to the top and left sides of the desktop display. The value of the position property can be both read and edited, and you'll use this property in the scripts you write for organizing window placement.

Know Your Place Delete the previous script from the script window, and then enter, check, and run the following script: `tell application "Finder" to get the position of the front Finder window.` This returns a bracketed list of two numbers, such as {14, 64}, describing the window's position relative to the top left point of the desktop display. The first is the horizontal distance in pixels from the left side of the desktop display; the second, the vertical distance in pixels from the top of the desktop display.

Let's change the value of the position property of the front Finder window, to move the window to the top left of the screen. Delete the previous script from the script window, and then enter, check, and run the following script: `tell application "Finder" to set the position of the front Finder window to (72, 90).` The front Finder window has now been moved so that its top left corner is 72

More Info:

www.apple.com/applescript/

For more on AppleScript, including links to language guides, books, and Web sites with scripts and tutorials, check out Apple's page.

Good looking and smart?

(You bet!)

Gallery 2010

(Editors' Choice, Seybold 2002)

20.1" LCD with MVA Premium technology!

- UXGA resolution of 1,600 by 1,200. Virtual workspace corresponds to a 23" CRT!
- 600:1 contrast ratio
- 250 nits brightness
- 10-25 ms pixel response
- 3 year warranty
- ADC or DVI



Only
\$1,699

FGD 2010-1



Gallery 1740

Color-accurate LCD

- 17.4" TFT (1,280 by 1,024)
- 400:1 contrast ratio
- 220 nits brightness
- 10-25 ms pixel response
- 3 year warranty
- ADC or DVI

From
\$699

FWD 1740-1



Devideon superdrive

FireWire DVD-R/RW & CD-R/RW drive

- Formac DVD authoring software
- Burn up to 6 hours of video on one media
- 4-in-1 solution: Reads & Writes DVD-R/DVD-RW/CD-R/CD-RW
- Works with: OS9, OSX, G3, G4, PowerBook, iBook, iMac.

From
\$399

FWD 1494-1



Studio line

FireWire DV media converter

- Stereo TV Tuner: Schedule, record and watch TV
- Hardware CODEC: Record TV/video full screen, 30 fps, with digital audio quality
- I/O: RCA, S-Video, FireWire

From
\$289

FS 1041-0

Good looking and smart? Go to www.formac.com. Or call us at 1.877.4Formac



pixels from the left side of the desktop and 90 pixels from the top of the desktop.

The Bounds Property

If you find yourself always resizing windows, you'll probably write scripts with the bounds property. The value of this property describes the size and position of

the target window. A list of four numbers, a window's bounds are described by two points: the top left point and the bottom right point of the window. These two coordinates are used to outline the rectangular shape of the window. Like the position property, the value of the bounds property can be read and edited.

The Shape of Things First, let's get the bounds of the frontmost window: `tell application "Finder" to get the bounds of the front window`. The value of the bounds property is returned as a four-item list, such as {14, 64, 512, 481}, and describes the window's boundaries in relation to the screen.

By changing the value of the bounds property, a Finder window can be resized and positioned anywhere on the desktop. For example, the following script will place the front Finder window at the top left of the desktop (just below the menu bar) and resize the window to 400 pixels in width and 300 pixels in height. Again, the verb `set` is used in this script: `tell application "Finder" to set the bounds of the front window to {0, 44, 500, 344}`. The Finder window will now be resized to the top left of the desktop, just beneath the menu bar.

Make a Selection There is one more verb we'll learn for use with windows—`select`, to make a window become active or move in front of any other open windows: `tell application "Finder" to select the last Finder window`. The Finder window that was behind the

front Finder window will now be moved to the front of the open windows.

Desktop Setup Script

Using all the properties and verbs we've covered so far, you now have the tools to create a script you can use to quickly restore a cluttered desktop to a default window configuration.

Tell Block To set the desktop window display to the desired format, this script will perform a series of eight com-

mands. But instead of writing a group of individual `tell` statements, we'll shorten the time it takes to write our script by enclosing the commands in a `tell` block—used to target multiple actions at a scriptable object (in this

case, the Finder application) and to make scripts easier to read and write.

A `tell` block begins with the verb `tell` followed by a reference to a target object. The various actions to be performed are then listed, each on its own line. The `tell` block ends with the closing statement `end tell`. All actions inside the `tell` block target the object referenced in the opening statement. You'll always want to use a `tell` block in your scripts when you're addressing more than one action at a scriptable object.

The Script Delete any remaining script from the script window, and then enter, check, and run the following script:

```
tell application "Finder"
  close every window
  open home
  set the current view of the front window to icon view
  set the bounds of the front window to {14, 64,
512, 481}
  open folder "Documents" of home
  set the current view of the front window to list view
  set the bounds of the front window to {523, 64,
907, 482}
  select window of home
end tell
```

You should now see two Finder windows placed side-by-side on the desktop—one in icon view, the other in list view—with your Home directory as the active window.

Save the script as a script applet and install it in the Finder toolbar (see "Saving Scripts"). Choose Save from Script Editor's File menu. In the dialog box that appears, navigate to the Library folder in your Home directory. Click on the New Folder button and create a new folder named Toolbar Scripts in the Library folder.

Next, enter a name and save the script as a self-running application named Setup by choosing Application from the Format pop-up menu in the dialog box. Select only the Never Show Startup Screen option, and then click on the Save button. The new script applet will be saved in the newly created folder in your Library folder.

Switch to the desktop and open the Toolbar Scripts folder you just created. Drag the script applet icon to the Finder window toolbar, and release the mouse. The script will now be available from within any open Finder window. Anytime you want to return your desktop to your default setup, just click on the script icon in the toolbar (and with your newfound knowledge of AppleScript, you can customize this script to your liking).

The Last Word

Now that you've finished your initial foray into the world of AppleScript—having learned what it is, how it works, and how to script the Finder to control the display of Finder windows—you have the background you'll need to write more-advanced scripts. □

SAL SOGHIOIAN (<http://homepage.mac.com/applescript.guru>) is a noted AppleScript guru and serves as AppleScript product manager for Apple Computer.



Saving Scripts

Scripts are named and can be saved in several formats.

Recordable DVD from the leader in digital media.

Perfect for those who need their space.

When it comes to data-intensive storage, two things come to mind: Memorex and DVD. Why Memorex DVD? Over the past two years, more people have trusted and purchased Memorex optical media than any other brand in the world. And with a complete line of DVD formats, each offering 4.7 GB of space, we can help you transfer or store anything off your hard drive—even full-length videos. So if mammoth capacity, quick access rates and bulletproof reliability sound like the solution to your storage problems, we suggest you log onto www.memorex.com. Because Memorex DVD is—you guessed it—BIG.



Memorex
Is it live or is it Memorex?™

**You read Macworld for the best advice on Mac products...
now we'll show you where to find the best prices
on the coolest stuff—right at your fingertips!**

macworldproductfinder.com

**The Macworld Product Finder brings you
Macworld's trusted reviews on the best products,
PLUS a list of competitive prices from major online stores.**

**Finding the right product at the right price
is just a click away!**

**Don't spend hours searching on Mac product Web sites.
Find what you need NOW on**



Macworld
PRODUCT FINDER



Macworld

Conference & Expo™



Register online www.macworldexpo.com

FOR

W



January 6–10

Conferences January 6–10, 2003

Expo January 7–10, 2003

San Francisco The Moscone Center



Platinum Sponsor

COREL

Silver Sponsor

WINDY AVENUE

Flagship Sponsors

Macworld

Macworld.com

MacCentral

Macworld

Conference & Expo™

Conferences

January 6 – January 10, 2003

The world's best education and training programs designed exclusively to serve the needs of all Macintosh users. As we start our 19th year, Macworld Conference & Expo continues to build and expand its conference program to ensure you receive fresh and the most up-to-date training available. In-demand programs such as the Hands-on MacLabs, which debuted this past summer in New York City, have been expanded to complement the well-established Pro, Users, Power Tools and full-day Workshops to offer up to five days of intense education that is flexible to your needs. When packages are combined, Macworld Conference & Expo's conference program provides the most comprehensive and customized education to maximize your time and develop your Mac techniques. Learn how to make the most of the industry's most popular tools and applications, hear about innovative solutions, and broaden your general knowledge. You will leave with skills that can be immediately applied when you return to the office or to your home.



Expo

January 7 – January 10, 2003

For four days at Macworld Conference & Expo/San Francisco, immerse yourself in all that is Macintosh. In the same way the conference program is known for its top-quality education, the exhibit hall is known for its high energy level, exciting technology and new product launches. In addition to being one of the first to demo products before they hit the market, you can also take advantage of the many event resources available, comparison shop among hundreds of companies, and tap into the minds of your peers and industry leaders.



Dates & Times

Keynote*

Tuesday, January 7

9:00 am – 10:30 am

Macworld/Power Tools Conferences

Monday, January 6

9:00 am – 6:00 pm

Tuesday, January 7

11:00 am – 8:00 pm

Workshops

Tuesday, January 7

11:00 am – 6:00 pm

Macworld/Users Conference

Wednesday, January 8

11:00 am – 4:00 pm

Thursday, January 9

10:30 am – 5:45 pm

Macworld/Pro Conference

Wednesday, January 8

11:00 am – 4:45 pm

Thursday, January 9

10:30 am – 4:45 pm

Friday, January 10

9:00 am – 12:15 pm

Hands-on MacLabs

Friday, January 10

9:00 am – 1:00 pm

MacBrainiac Challenge

Thursday, January 9

12:30 am – 1:15 pm

MacBeginnings

Wednesday, January 8

11:00 am – 12:00 pm

3:00 pm – 4:00 pm

Thursday, January 9

11:00 am – 12:00 pm

3:00 pm – 4:00 pm

Friday, January 10

11:00 am – 12:00 pm

1:00 pm – 2:00 pm

Birds-of-a-Feather Meetings

Wednesday, January 8

6:00 pm – 7:30 pm

Thursday, January 9

6:00 pm – 7:30 pm

Exhibit Hall

Tuesday, January 7

10:30 am – 6:00 pm

Wednesday, January 8

10:00 am – 6:00 pm

Thursday, January 9

10:00 am – 6:00 pm

Friday, January 10

10:00 am – 4:00 pm

Registration Hours

Monday, January 6

8:00 am – 6:00 pm

Tuesday, January 7

7:00 am – 6:00 pm

Wednesday, January 8

8:00 am – 6:00 pm

Thursday, January 9

8:00 am – 6:00 pm

Friday, January 10

8:00 am – 3:00 pm

REGISTER ONLINE

with Priority Code A-MWD by December 9, 2002
for the Early Bird Discount!

* Open to Platinum and Super Pass, Pro, Power Tools, Users, Workshop and MacLab attendees ONLY. Seating is on a first-come, first-serve basis except for Platinum and Super Pass attendees who have access to VIP Keynote seating.

Special Interest Areas

Macworld Conference & Expo Special Interest Areas feature the coolest Mac developers, all boasting products that span a wide array of needs and interests.

The Special Interest Areas will showcase Mac developers displaying their products and services in the following markets:

- SciTech
- MacTech Central: Developer Tools & Technical Products
- Enterprise, Networking & Server Solutions
- Bluetooth & Wireless Technologies
- Digital Media
- QuickTime
- Business Solutions
- International
- Education, Edutainment & Assistive Technologies

Internet Café

The Internet Café is one of many resource areas Macworld Conference & Expo provides to help you make the most of your event experience.

Located in the Exhibit Hall and available to all registered attendees, the Internet Café offers a comfortable setting to check your email, access the Internet, grab a snack or cup of coffee, chat with your friends and colleagues, or just relax.

Apple Consultants Network — Free Technical Advice!

One of the most popular resource areas in the Internet Café is the Apple Consultants Network counter. Members of the Apple Consultants Network are independent consultants, trainers, and resellers specializing in Apple products and solutions who offer free technical support to Macworld Conference & Expo attendees! Take advantage of this opportunity to get help directly from an expert.

Sponsored by:



Macintosh Gaming Area

Join the top game publishers as they reveal the best new titles for Mac OS X.

Experience gaming hands-on in the Mac OS X Game Arcade, and watch publisher presentations showcasing the hottest new games in the Mac Gaming Theater. Both the Mac OS X Game Arcade and Theater are sponsored by Apple.

The Macintosh Gaming Area offers you the opportunity to discover why gaming on the Mac is the best it's ever been!

Final Cut Pro User Group Film Theater

Connect with members of San Francisco Cutters, Los Angeles Final Cut Pro User Group (LAFCPUG) and others within the FCP UG Network from across the country and abroad. The Boston Final Cut Pro User Group (BOSFCPUG) will host a program on filmmaking, short films and works created in Final Cut Pro. In the theater, watch compelling films contributed by the various FCP User Groups and meet with the filmmakers that created them through a Filmmaker Talk Series. Find out their secrets on working with digital video on the Macintosh and editing with Final Cut Pro.

Sponsored by:



MacBrainiac Challenge

Thursday, January 9

12:30 am – 1:15 pm



Host: David Pogue, best-selling Mac author

Open to all registered Macworld Conference & Expo attendees. Seating is limited and available on a first-come, first-serve basis.

Join us for the first-ever Macworld Conference & Expo Mac Brainiac Challenge for an entertaining presentation of OS X, Mac and other geek trivia! Lucky volunteers will be chosen from the audience to join the two teams, comprised of highly notable Mac personalities! Come watch best-selling Mac author David Pogue host this live quiz show as contestants match wits to vie for the dazzling Brainiac Award. Find out which team will be deemed the brainiest and bestowed with the shiny new Brainiac Award!

The Mad Dogcows

Team Captain:

Bob "Dr. Mac" LeVitus

Team Players:

- Adam C. Engst, Publisher, TidBITS
- Ted Landau, Founder of MacFixIt, Macworld Contributing Editor, & Author of "Mac OS X Disaster Relief"
- Audience Guest

X.F.L.

Team Captain:

Shawn King, Founder & Host, Your Mac Life

Team Players:

- Christopher Breen, Contributing Editor, Macworld
- Andy Ihnatko, Columnist, Chicago Sun-Times & Macworld
- Audience Guest

Macworld Conference & Expo Guided Tours

Due to continuous rave reviews, the Macworld Conference & Expo Guided Tours, will be available again, for both individuals and groups.

Whether you are a new attendee to Macworld Conference & Expo or a returning Mac user, Apple User Group volunteers will help you find the products, services, solutions and companies you want to see in the Exhibit Hall. These knowledgeable guides will assess your needs and escort you right to what's hot, help you find seats for floor demonstrations, and bring you to the experts who have the answers to your questions. We urge you to take advantage of this valuable free service.

Digital Art Contest & Gallery

The 2002 Digital Art contest was judged by some of the digital art community's most respected leaders who chose 32 winning digital masterpieces. Winning artwork will be displayed in a gallery on the exhibit hall at Macworld Conference & Expo/San Francisco 2003. The gallery will then travel across the country to art galleries and other venues.

Macworld Best of Show Awards



The Macworld Best of Show Awards represent an honor highly coveted within the Macintosh industry. Macworld's editors choose winners from products that are making a public debut at Macworld Conference & Expo, or have recently been introduced. Check out these exciting and innovative products on the expo floor by looking for the Best of Show logo hanging in selected exhibitor booths.

Macworld/Power Tools Conferences

Monday, January 6 – Tuesday, January 7, 2003



We're excited to introduce you to Macworld/Power Tools Conferences. By participating in one of these conferences, you will benefit from two days of intensive training on your favorite application or tool, interacting one-on-one with your peers, and tapping the minds of industry experts. Each session builds on the next; therefore you must select ONE discipline to focus on for the entire two days.

Spend 2 full days focusing on 1 of these nine disciplines:

Advanced OS X	Mac OS X 10.2	DVD Studio Pro
Dreamweaver	Final Cut Pro	Professional Photoshop
FileMaker Pro	Interactive Solutions	QuarkXPress

These Conferences will be held before the Macworld/Pro, Macworld/Users and Hands-on MacLabs conference programs. To achieve the most comprehensive educational experience, we recommend that you combine these programs and enjoy a full week of dynamic training on the Mac.

See complete descriptions at www.macworldexpo.com.

PA Macworld Conference on Advanced OS X Concepts and Administration

Understanding the core concepts behind OS X will enable administrators and managers to achieve greater flexibility when deploying Macs within their environment. Attendees will learn how to support OS X from a variety of levels: the User, the Support Staff, and the System Administrator.

PB Macworld Conference on Dreamweaver

Dreamweaver has allowed designers to cross the technical divide and build Web sites that not only look good, but work well. Macworld Conference & Expo is pleased to present a conference for intermediate Dreamweaver users. You'll explore advanced Web design concepts while learning to exploit Dreamweaver's sophisticated (and long) list of features.

PC Macworld Conference on DVD Studio Pro

DVD Studio Pro is one of the most exciting new software applications on the Macintosh, helping to drive the DVD Revolution. On the Macintosh, DVD Authoring takes on a simplicity and ease-of-use that is rapidly gaining favor and winning converts from other platforms. Come and learn the exciting new application DVD Studio Pro with a panel of respected DVD experts.

PD Macworld Conference on FileMaker Pro

FileMaker is a mature product line with a developer version, a server version, support of ODBC, JDBC, XML, Citrix and many other technologies, integration with the Web, connectivity to Palm and a developer community of nearly 5,000. Learn about the exciting world of FileMaker Pro with the world renowned FileMaker experts.

PE Macworld Conference on Final Cut Pro

Final Cut Pro is the video creation software that has finally delivered on the promise of the DV Revolution. With power, speed and features worthy of far more expensive software, Final Cut Pro offers a true high-end editing environment at a very down-to-earth price point. This conference will empower you to navigate Final Cut Pro's treacherous learning curve with ease and clarity.

PF Macworld Conference on Interactive Solutions — How to Produce, Create & Deliver Interactive Solutions

Attend this conference and learn how to get started in building interactive solutions. You will gain valuable knowledge on producing a project, the latest hardware and software requirements and how interactive applications are used. We'll also address developing digital solutions for delivery via the Web, CD and DVDs, and QuickTime, as well as recent technological breakthroughs.

PG Macworld Conference on Mac OS X 10.2 — Dr. Mac's "Tips, Tricks, Techniques and Advice on Becoming a Mac OS X 10.2 (Jaguar) Power User"

In this unique opportunity to spend some quality time with "one of the world's leading (self-proclaimed) authorities on Mac OS X." You'll see tips, hints, tutorials, shortcuts, troubleshooting advice, informative demos, timesaving software recommendations, where to do what on the Web and much, much more. Each of these sessions will help you use your Macintosh better and faster, and will kick-start you on your way to becoming a Power User.

PH Macworld Conference on Professional Photoshop

Photoshop is the "killer app" that changed the lives of thousands of graphics and creative professionals. Attend this conference to improve your skills, broaden your digital imaging bag of tricks, and open new horizons as you spend two intensive days with Photoshop masters.

PI Macworld Conference on QuarkXPress

This two-day conference focuses on the real-world issues involved in successfully using QuarkXPress in today's workflows, as well as preparing for the future. We'll explain the pros and cons of using InDesign vs. QuarkXPress, the How-To's of color management, tips for long documents, graphics and efficiency, and the free, cheap, and expensive XTensions that let you leverage your QuarkXPress knowledge in totally new ways.



See the complete descriptions, including who should attend:

www.macworldexpo.com

REGISTER ONLINE
with Priority Code A-MWD by December 9, 2002
for the Early Bird Discount!

Macworld/Pro Conference Overview



The Macworld/Pro Conference offers content-rich technical sessions designed for the professional Macintosh user or manager. Macworld/Pro offers the best opportunity to meet industry leaders, learn from your peers in the community of Macintosh professionals and improve your skills. Select the track that best meets your needs or mix and match sessions!

Track Descriptions

Color Management Track

Attend a day of conference sessions to help you get to the heart of making the color on screen and the color in print are the same!

Cross Platform Admin Track

Get insights on how to integrate Macs with Windows environments (or vice versa). Hear valuable lessons from the trenches to help you create seamless computing environments.

Developer Track

A day devoted to key topics of interest to Mac OS Developers.

Networking Concepts Track

Techniques and technologies associated with deploying Macintosh LANs, WANs, and Internet/Intranet access. Learn how to get the most out of your network or make it state of the art with the technologies and techniques.

OS X in Depth Track

Advanced sessions take you under the hood of Mac OS X — you'll learn about Mac OS X's Unix heritage and why this is important for advanced usage and management mastery.

Pro Video Track

This track mixes practical tools advice with brilliant industry perspectives to deliver a composite picture of creating and distributing successful digital video projects.

Professional Publishing Track

Get tips and techniques from industry experts on how to be more profitable, efficient, competitive and employable in the creative arena. These sessions will show you market opportunities and provide practical advice to improve your bottom line.

Security Track

With the migration to Mac OS X and Unix a host of new security challenges are at hand. Attend sessions in this track to hear from experts in the industry about how to address the new IT battleground.

Servers & Services Track

An in-depth look at Mac OS X Server and how to run a host of Internet services on Mac OS computers. We'll look at product selection, troubleshooting, configuration and management issues.

Macworld/Users Conference Overview



The Macworld/Users Conference continues to be one of the best educational values anywhere, offering more than 60 enlightening sessions on a variety of exciting topics all presented by industry experts. This program offers the best opportunity to get a taste of Mac OS X, making desktop movies, digital photography and get tips on using your favorite applications.

WEDNESDAY January 8

11:00am - 12:15pm	S01 Your First Mac OS X Course S02 Making the Transition to Mac OS X S04 From Music to Movies: Secrets of the Macintosh Digital Hub S06 Moving Toward Ten Thousand Users: Completing the Transition to Mac OS X in Higher Education	S07 Photoshop Digital Creation: Uncanny Realism S08 Filmmaker in 60 Minutes S09 Mac OS X for Musicians
1:15pm - 2:30pm	S11 Getting Started with iPod S12 How the Pros Troubleshoot Macintosh S13 Inside Jaguar: OS X Mail S14 Everything You Wanted to Know about iPod	S15 Journey Through QuickTime Player Pro 6 S16 Wireless Networking Essentials S17 Energizing Flash Projects S18 Making iMovies with David Pogue S19 The Beginner's Guide to Music on the Mac
2:45pm - 4:00pm	S21 Rhapsody in Bluetooth: How the Technology Can Work for You S23 Jaguar Unleashed: Address Book S25 From 0 to 360 Degrees in QuickTime VR S26 AFI's Screen Education Center: The Next Frontier for K-12 Literacy	S27 Introduction to Creative Thinking in Photoshop: A New Approach to Digital Art S28 Shooting Great DV S29 How to Set Up a Home Recording Studio

THURSDAY January 9

11:45am - 1:00pm	S32 Best of Mac Secrets S33 Inside Jaguar: iCal on Mac OS X S36 Mac OS X — PC Integration Issues S37 It's the FONTS!	S38 Getting the Most Out of iMovie: Tips and Tricks for Advanced Movie Making S39 Learning Music With Your Mac
1:30pm - 2:45pm	S41 Your First DVD S42 Mac OS X Disaster Relief: Prevention S43 Inside Jaguar: Inkwell on Mac OS X S44 Mac: Extend Your Digital Life S45 Power Tips: Entourage™ X for Mac OS X	S46 Putting Your Small Business on the Web S47 Dreamweaver MX Power User Tips and Tricks S48 Editing Techniques for iMovie S49 Guerrilla Marketing for Musicians
3:00pm - 4:15pm	S51 How to Talk to Tech Support (and Win!) S52 Mac OS X Disaster Relief: Cures S53 Inside Jaguar: Sherlock 3 on Mac OS X S54 The iPod Supersession	S55 Power Tips: Microsoft Office X for Mac OS X S57 Introduction to 3D Animation S59 Basic Audio Editing
4:30pm - 5:45pm	S61 Computing With Bifocals — Helping Your Parents & Grandparents Get Online S62 Dr. Mac's "The First Annual Mac OS X Shareware, Freeware, and Otherware Awards"	S63 Jaguar Unleashed: Rendezvous S66 Marketing with Mac OS X for Consultants S67 Designing with a New Eye S69 The Mobile Macintosh Audio Studio



Hands-on MacLabs*

Friday, January 10, 9:00 am – 1:00 pm



Brand new, the Hands-on MacLabs provide hands-on computer training on key applications and tools. Our trainers are experts in their fields and they are prepared to share their knowledge with you. So select a discipline and bring your laptop!

See exactly what will be covered, what you'll learn, and who should attend each of the different Hands-on MacLabs at www.macworldexpo.com. Class size is LIMITED to ensure that each student receives the instructor's full attention — so register early!

Acrobat in the Trenches: Combat Training for PDF Production

Level: Intermediate

This hands-on course offers a two-stage approach to improving your PDF skills. First, you will learn how to configure Adobe Acrobat to quickly create perfect PDF files for Web and print distribution. Then, we'll explore plug-ins (such as EnFocus PitStop) and other techniques for editing and correcting PDF problems to achieve successful output.

An Introduction to Network Traffic Analysis

Level: Beginner to Network administrator

This lab will provide a basic introduction to the analysis of networks. Attendees will use OS X based software tools to map network devices, view network utilization, capture and interpret network traffic from wired and wireless networks and learn how network analysis tools are used for performance troubleshooting and network security applications.

Final Cut Pro Hands-on — The Director's Cut

Level: Intermediate and aspiring filmmaker

This fast-paced hands-on class will show you what you need to know when cutting a project "the right way" is the difference between the success or failure of your video or motion picture project. You'll edit three projects, learn about compositing, titling, continuity, pace, and handling the requests of clients in the editing process. We'll also discuss sweetening and layback to tape or DVD.

Flash 5 ActionScript for Designers

Level: Beginner

The next step for designers and scripters alike, this lab presents an introduction to Flash 5's scripting language. Basic skills learned in this hands-on lab will even lay the groundwork for moving on to more advanced Flash programming techniques such as parsing external data, client-server communication, and more.

Get "Author-ized" with DVD Studio Pro

Level: Suitable for Beginners, yet helpful for Intermediate Authors as well

Here is your chance to hit the ground running by attending a special DVD Studio Pro training course. You'll receive invaluable basic DVD authoring insight while getting hands-on experience with Apple's powerful new authoring application, DVD Studio Pro. Knowledge of Mac operation and Adobe Photoshop 5.0 or 6.0 will be helpful.

Hands-on Mac OS X for Administrators

Level: Intermediate

This course is designed to give support professionals and administrators the information necessary to maintain and support Macintosh computers running Mac OS X. Attention will be paid to running applications within the Classic environment, basic UNIX troubleshooting, networking, file and folder permissions, the domain structure of Mac OS X, and must-have third party solutions.

Working Wireless Networks

Level: Beginner to Intermediate

This lab will teach you how to set up and use a wireless network, beginning with basic installation scenarios (wireless LAN, wireless WAN and remote wireless applications), moving on to more advanced skills like setting up firewalls, security, and roaming users.

** Please note: Each interactive lab requires a charged-up laptop with the appropriate software pre-loaded on the computer system supplied by the attendee. Please see www.macworldexpo.com for hardware, software and skill requirements. Hands-on MacLabs topics and speakers are subject to change.*



Workshops

Tuesday, January 7, 11:00 am – 6:00 pm

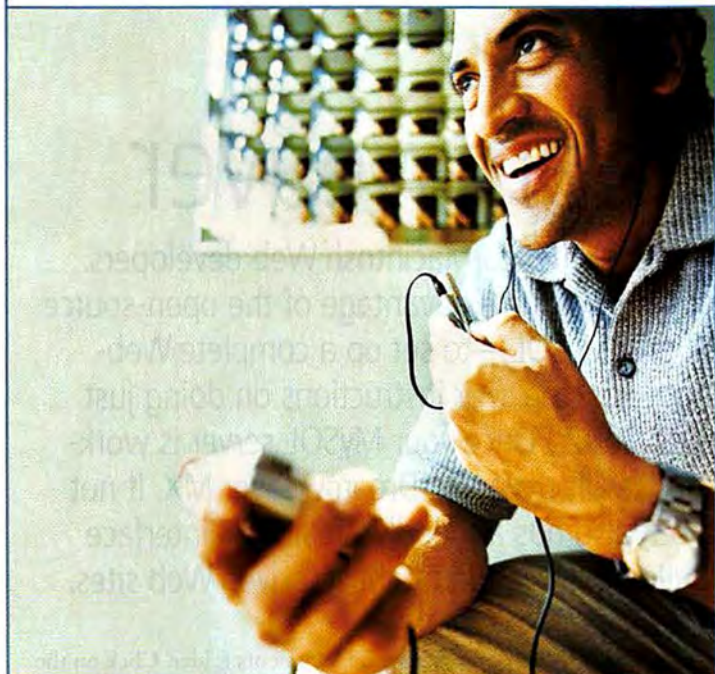


Our workshop agenda for San Francisco offers the best attended and best rated courses that we've presented in the past as well as several new workshops. Each workshop offers a full day of exciting learning opportunities.

- WA** A Practical Overview of Macintosh Networking Starting from the Beginning
- WR** Building and Maintaining Wireless Networks
- WC** Chris Breen's Massive Mac Brain Dump from punk to Power User in One Day
- WD** Mac OS X Advanced
- WF** Secrets of Desktop Publishing: From OS 9 to OS X
- WF** "Webmaster 2003"

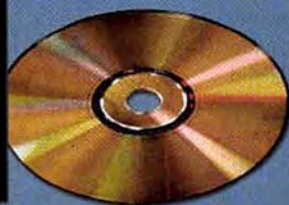
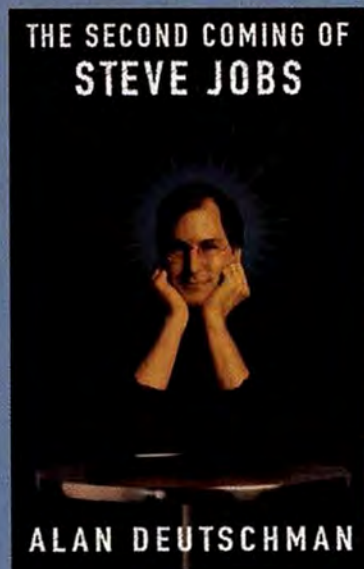
REGISTER ONLINE
with Priority Code A-MWD by December 9, 2002
for the Early Bird Discount!

SPECIAL OFFER FOR MACWORLD READERS



audible.com®

Download Steve Jobs' amazing true story - Free!
Listen on your iPod or burn to CD - only from Audible.



Audible lets you listen to the best audiobooks by Stephen King, Tom Clancy and more plus audio editions of popular periodicals including Macworld and The Wall Street Journal. Look for our special offer at:

www.audible.com/macworld

Dynamic Dreamweaver

Mac OS X has brought exciting possibilities to Macintosh Web developers. The operating system's Unix core lets you take advantage of the open-source Web triumvirate—Apache, PHP, and MySQL—to set up a complete Web-development environment on your desktop. (For instructions on doing just that, see "Serve It Up," November 2002.) Once your MySQL server is working, you can turn to the OS X-native Macromedia Dreamweaver MX. It not only supports PHP and MySQL, but also has a friendly WYSIWYG interface that provides a visual tool for building powerful database-driven Web sites.

As an introduction to Dreamweaver's database features, this article shows you how to build a basic set of Web pages for perusing a database's records. Some pages provide a summary listing of records; others, a

detailed view of individual database items. This combination is an almost universal requirement for database-driven Web sites. You can turn this basic set into the cornerstone of every e-commerce system: an online catalog and detailed product pages.

Setting Up the Site

When you begin work on a Web site in Dreamweaver, start by defining a new site (select New Site from the Site menu). This lets you take advantage of Dreamweaver's site-management tools and effectively preview database-driven pages.

Dreamweaver MX's new site-definition wizard makes the process simple. Click on the Basic tab in the Site Definition window. Type a name for your site in the first screen, and click on the Next button. Click on the Yes, I Want To Use A Server Technology button; select PHP/MySQL from the menu; and click on the Next button again.

Select the Edit And Test Locally option. In the same screen, you also tell Dreamweaver where it can find the pages for this site. In OS X, you can store Web pages in a couple of locations: in the Sites folder in your Home folder (a good choice if you are sharing your computer with others), or in the

Library: WebServer: Documents folder. Click on the generic folder icon, go to the desired folder, and select it. If a folder in the Documents or Sites folders contains your Web site, select this innermost folder instead. Click on the Next button to continue.

Now you need to tell Dreamweaver the URL of the Web site on the testing server. When the testing server is on your computer, the URL is `http://localhost/~myusername/` (your user name replaces `myusername`) if you stored the site in your Home folder's Sites folder, or simply `http://localhost/` if you put the site in Apache's Root folder in Library: Web Server: Documents). (If you further organized your files by putting your site in a subfolder inside either of these folders, tag that folder name to the end: `http://localhost/~myusername/mysiteroot/`, replacing `mysiteroot` with the name of the new folder.) Type the URL for the test site, and click on the Next button.

The setup process is nearly complete. If you already have a remote site—that is, a live Web site connected to the Internet—you could provide the login information required for transferring files to the real Web server. But if the remote Web server isn't set up, or if you're simply taking Dreamweaver's database tools for a test drive, you can select No in the Remote Server screen and click on Next. (You can always return to this window later and set up the remote site when you're ready to make your site live.) In the final screen, click on the Done button. You've finished defining your site, and you're ready to connect it to your MySQL database.

Making the Connection

Dynamic pages are often a combination of HTML and programming code. To make your site dynamic, create a new PHP page by selecting New from the File menu. Click on the Dynamic Page category, select



ILLUSTRATION BY ANDERS WENNGREN

the PHP page type, and click on the Create button. Save the file in your site folder. Although this is a PHP page and ends with *.php* (not *.html*), you can still use Dreamweaver's WYSIWYG tools to add graphics, links, and other elements as part of the page design.

To add database capabilities to the page, you must create a connection to a MySQL database. If you've set up PHP and MySQL correctly, connecting Dreamweaver to the database is a breeze. Open the Databases panel (⌘-shift-F10). Click on the + (plus sign) button, and select MySQL Connection. In the resulting window, type a name for the connection. (Beginning with *conn* is a good convention to follow. It makes recognizing a connection easy if you ever have to edit the PHP code directly.)

Type *localhost*—meaning the computer on which you're working—in the MySQL Server box. Next type the user name and password for the MySQL database. (You created these when you set up MySQL.) To select a database, click on the Select button. A list of all MySQL databases appears. Select the database you want to use on the site, and click on the OK button. Click on it again to close the MySQL Connection window and complete the setup. The new database connection will appear in the Databases panel.

Once you've created the connection, any page on the Web site can use it; you don't have to repeat the process unless you want to create another connection to a different database.

Building a Catalog Page

Displaying a catalog of products is one of the basic requirements of an e-commerce site. At its simplest, a catalog requires only two kinds of pages: a master page listing products, and detail pages with product specifics. When shoppers find an interesting product in the list, they can click on the product's name to jump to the detail page. Both types of pages retrieve information from the database.

Building a Record Set The first step in displaying database information on a Web page is to create a record set in Dreamweaver. A record set is a collection of information (or records) that a query—for example, "Give me a list of all our company's products"—retrieves from a database. You create different record sets and queries for the different kinds of information you have. For example, when building a catalog listing of products, you'll create a record set that contains all products.

To create a record set, click on the + (plus sign) button in Dreamweaver's Bindings panel or Server Behaviors panel and select Recordset (Query), or choose Insert: Application Objects: Recordset. The Recordset window offers basic and advanced methods of creating database queries using Structured Query Language (SQL).

In the Basic mode, you don't need to know any SQL. Just supply a few pieces of information, and Dreamweaver creates the proper code. Start by entering a name for the record set. Begin the name with *rs*—*rsProducts*, for example—so you can identify record sets as such when looking at the code. From the Connection menu, select the name of the database connection you created earlier.

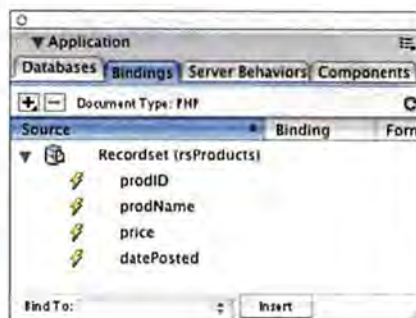
Databases such as MySQL group information into tables; one table usually contains data about one type of item. An e-commerce database would likely have tables for customers, products, and orders. When you create a record set, use the table menu to tell Dreamweaver which table to select information from. (In the Advanced record-set mode, you can select data from more than one table.)

Next, identify which information to retrieve from the table. Tables are organized into columns (or fields) that contain different pieces of information: product number, sale price, description, and so on. While a table may contain many columns for holding detailed information, you often need only a limited number of columns. A catalog listing, for instance, requires just a few pieces of information, such as the product number, name, and price. You'll reserve more-detailed information, such as inventory status, for the product detail page.

Make sure to include the table's primary key, a column (usually of numbers) that uniquely identifies each record in the table. The primary key is most likely a product ID or SKU number. You need this information to link to a detail page for each product.

To select a few columns' worth of information, go to the Recordset window, click on the Selected button, and ⌘-click on the fields you want.

You can also create a filter to find specific records. For example, you can filter records so that a page displays only products of a specific type, such as books or clothing. You'll use a filter to find a specific record on the product-detail page. To present records in a specific order, set up a sort for the record set. Choose a database column from the menu on the left and a sort order from the menu on the right. If you want to present products from least to most expensive, for example, select Price from the Column menu and Ascending from the Order menu.



Use Your Data Once you create them, database fields retrieved by a record set appear in the Bindings panel. To add this dynamic information to a page, just drag and drop.



Dreamweaver creates two folders—Connections and *_mmServerScripts*—at the root of your Web site. Don't delete these folders! They contain the scripts that allow your pages to access MySQL databases. Deleting them will make dynamic pages stop functioning.

Click on the OK button to close the window and add the record set to the page. Unlike database connections, record sets are inserted on a page-by-page basis; when you create another dynamic page, you need to create another record set.

Adding Information to the Page

Once you create a record set, Dreamweaver's Bindings panel (see "Use Your Data") makes adding dynamic content to a page a simple drag-and-drop affair: just drag the column name to the Web page and drop it where you want the information to appear.

Because a catalog page displays many items, you may want to insert a table into your page before adding content. Each product will appear in one row of the table. You don't have to know how many products are in the database to determine how many rows the table should have. Simply insert a table that has two rows and as many columns as database fields.

Add labels to the top row, identifying each row's information. In the second row, drag and drop each item from the Bindings panel into a cell. Inserted into Dreamweaver's document window, dynamic data looks something like `(rsProducts.prodName)`, which indicates a database column named `prodName` retrieved by the `rsProducts` record set.

At this point, the page can display only a single record. To display a list of database records, turn to Dreamweaver's Repeat Region object. Select the lowest table row containing the database information (select the entire `<tr>` tag) and choose Insert: Application Objects: Repeated Region. Dreamweaver adds programming code to make this row repeat for each record retrieved in the record set. In other words, for each product in the database, the page will display a single table row with that product's information.

Getting to the Details The catalog page is complete, but it doesn't yet provide a way to get detailed descriptions. You must link the catalog page to a page that has product details. This page knows which product to display by reading information passed along in the URL of the link (for example: `details.php?prodID=3`).

The detail page reads the information after the question mark (called a URL parameter) and retrieves product information. In this case, the record set locates the record whose product ID number is 3. The link from each product in the catalog page will send its ID number to the details page.

To add the appropriate link to the catalog page, create a details page with a name like `details.php`. This can be either an empty or a fully designed but still static Web page; you'll add the dynamic elements later. On the catalog page, select the dynamic element representing the product name.

In Property Inspector, click on the folder icon next to the link field or press `⌘-L` to open the Select File window. Locate and select the details file, but don't close the window. In that window, click on the Parameters button to open the Parameters window. Type a name such as `prodID` in the first column. In the value column, click on the lightning-bolt icon (this indicates dynamic data). The record set you created earlier will appear in a new window. Select the database column that contains the primary key for the products table—usually a product ID number—and click on OK. (You can ignore the format and code sections of this window.) Click on OK again to close the Parameters window, and click on Choose to apply the link. Now every product name on the catalog page will open the details page and pass the appropriate ID number.

The Details Page

Creating the details page is just as easy. Open the page and add a record set. The process is similar to the catalog-page process: name the record set, select a database connection and table, and choose the table columns you want to display. You'll probably pick more columns than you did in the catalog page, because the detail page contains more product information. But as this page displays only one record, you need to add a filter for selecting a single product.

The Recordset window's Filter options include three menus and a text field. From the first menu, select the name of the column containing the product number (the primary key). Select `=` (the equal sign) from the second menu, and choose URL Parameter from the third menu. Then type the name you gave the URL parameter when you created the link on the catalog page—`prodID`, for instance. These four steps limit the record set to those records whose product ID column matches the value passed in the URL.

Since this record set retrieves only one record, leave the Sort options alone and click on OK to create the record set. Complete the page by dragging items from the Bindings panel and placing them on the page. To finish, save both pages and preview the catalog page in a Web browser. Click on a product's name, and its detail page loads, complete with specific information.

Product information changes often, but your catalog's underlying database saves you from manual updates. For more, see "Easy Online Updates" (www.macworld.com/2002/12/secrets/dreamweaver.html).

It's a Snap

Combined with OS X's Web-server technologies, Dreamweaver MX streamlines the development of dynamic Web sites. In a few quick steps, you'll have a fully functioning Web catalog up and running. □



To see dynamic data displayed right inside Dreamweaver, choose View: Live Data (or click on the lightning-bolt icon in the document toolbar).

DAVID SAWYER MCFARLAND is the author of *Dreamweaver MX: The Missing Manual* (O'Reilly/Pogue Press, 2002) and the president of Sawyer McFarland Media (www.sawmac.com).

artisan
COLOR REFERENCE SYSTEM

SONY



COLOR ACCURACY



ARTISAN™ DISPLAY



ARTISAN™ SOFTWARE



ARTISAN™ SENSOR

THE DIFFERENCE IS WHITE & BLACK

Setting red, green and blue accurately sounds simple enough. Yet creative professionals know how easily the process can go wrong. That's why you need Sony's new Artisan™ Color Reference System.

With one-touch calibration, Sony carefully sets and maintains not just white, but also black — providing the constant contrast ratio and neutral gray balance required for faithful color reproduction. That means Artisan displays are color-consistent, day-to-day. And multiple Artisan displays can be accurately matched, across the hall or across the country, for color proofing you can count on.

Sony's Artisan Color Reference System is an integrated three-part solution. World-famous FD Trinitron® CRT technology, sophisticated software that adjusts internal electronics of the display itself and state-of-the-art colorimetric sensor, factory-tuned to Sony display phosphors. It's a combination that achieves remarkable color precision with applications like Adobe® Photoshop® - an advantage ahead of its class.

Sony Artisan Color Reference System. The difference is White and Black.



**Absolute Color Control. Absolutely Sony - For more information call
1-800-206-5363 or VISIT WWW.SONY.COM/ARTISAN**

©2002 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Features and specifications subject to change without notice. Sony, the Sony logo, Artisan, and Trinitron are trademarks of Sony. Adobe and Photoshop are trademarks of Adobe Systems Incorporated. Microsoft and Windows XP are trademarks of Microsoft Corporation. Mac OS is a trademark of Apple Computer, Inc. All other trademarks are property of their respective owners.

Making Jaguar Purr

Mac OS X 10.2, also called Jaguar, is one cool cat, but even it can use a little grooming. I provide just that sprucing up in this month's *Mac 911*, in which we examine ways to create custom screen savers, keep desktop pictures fresh, extract attachments from the Mail application, configure your mouse's scroll wheel, move the Trash to the Finder's toolbar, import addresses into Address Book, and juggle tools within the toolbar.

Self-Made Slide Shows

I love OS X's slide-show screen effects. How can I create a slide show of my own?

Charles Grace, El Cajon, California

The obvious way is to open the Screen Effects system preference, select the Pictures Folder entry, and click on the Configure button. When you do this, you're offered the opportunity to select a folder full of pictures as a source for your slide show. While

this method is obvious, it's not as cool as using a little-known tool included with OS X.

Go to Library: Image Capture: Scripts, and drag a folder full of pictures on top of the Build Slide Show app. Let go of the mouse button, and the pictures within that folder appear on your Mac's monitor as a screen saver. When you next open the Screen Effects system preference, you'll notice that a new Recent Photos entry appears in the list of

available effects. This selection will always be the last group of pictures you've dragged to Build Slide Show.

To save the slide shows you've created, go to your user's folder: Library: Screen Savers, and rename the Recent Photos.slideSaver file in the Screen Savers folder (keeping the .slideSaver extension). Once it's renamed, the slide show will appear as a selection in the Screen Effects system preference.

Change of Scene

In OS 9, I could create a randomly displayed series of desktop pictures by dragging a folder full of picture files to the

Desktop portion of the Appearance control panel. Does OS X offer this kind of convenience?

Foster Boyd, Palmer Junction, Oregon

OS X 10.2 does, and then some. Just open the Desktop system preference and drag a folder full of pictures into the portion of the window that displays lines of pictures. Then turn on the Change Picture option and select how often you'd like the desktop picture to change—your choices include every day, hour, 30 minutes, 15 minutes, 5 minutes, minute, and 5 seconds (bring on the Advil); when your Mac is waking from sleep; and when you're logging in.

Those running earlier versions of OS X can bring similar functionality to their Mac's desktop with the help of Brian Bergstrand's free Change-Desktop (www.classicalguitar.net/brian/software/changedesktop).

Inside mbox

I'm interested in viewing the contents of the Mail application's database outside the program—viewing messages in a single file or extracting attachments, for example. Is there a way to do this?

Sharon Fagan, Arlington, Kentucky

When you know how to dig down into the program's mbox database files, it's easy. Here's the trick:

Go to your user's folder: Library: Mail, and you'll spy at least one mailbox folder—named something like POP-janedoe@macworld.com, with your e-mail address in place of Jane's. Inside this folder, you'll spy one or more mbox files. To peek inside your in-box, just control-click on the INBOX.mbox folder and select Show Package Contents from the contextual menu. When you release your mouse, up pops the INBOX.mbox window, which contains an mbox file (along with a few other files).

To view the contents of this file (and thus all the messages in it), just double-click on it. In short order,



it will open in TextEdit, where you can browse it at your leisure. Any attachments included in your inbox will appear as long strings of nonsense text.

To decode an attachment manually, cut and paste the text (demarcated by entries that start with double hyphens, as in --B_3113207532_410736) into an application capable of saving a plain-text document. (Apple's TextEdit can do this if you select Preferences from the TextEdit menu and select the Plain Text option in the New Document Attributes section of the Preferences window.) Once you've saved the document, drop it onto the StuffIt Expander application found inside the Utilities folder. StuffIt Expander will then translate the gobbledygook into a real file.

Regrettably, that real file will likely give you no clue as to which program created it. But the header information in the mbox file will tell you. For example, if you were to see the entry *Content-type: application/x-msexcel; name="my_table.xls"* at the beginning of the file, you'd know you were dealing with an Excel file. A *Content-type: application/msword; name="This_Cool_Story.doc"* entry would indicate a Microsoft Word file.

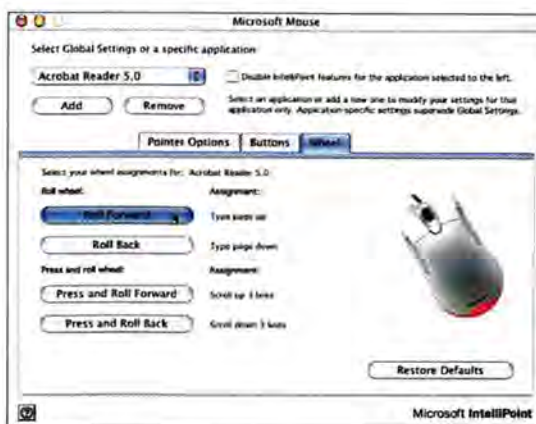
To extract all attachments from the file, drag it onto StuffIt Expander, which will place all the file's attachments into a single mbox folder. Inside this folder will be the attachments within the original mbox file, with generic "Untitled" names.

Wheel of Misfortune

The scroll wheel of my Microsoft IntelliMouse won't scroll vertically in Acrobat Reader 5.0 on my Power Mac G4 running OS X. The wheel functions as expected with Internet Explorer and Microsoft Word, however. Why is it picky about certain applications, and how can I get it to work in Acrobat?

"Macbiker," *Macworld.com forums*

Although OS X supports two-button scroll-wheel mice, some applications are more wheel savvy than others. Specifically, Cocoa applications (those programs written to run natively—and only—in OS X) do the right thing in regard to scroll wheels. Carbon applications (Classic programs altered to run natively in both OS 9 and OS X) and Classic apps may react positively to a scroll wheel, depending on whether the software that came with your mouse had been updated with Jaguar compatibility. Acrobat Reader is a Carbon application, and although it supports the mouse to the extent that contextual menus appear when you click on the right mouse button, the scroll wheel does nothing more than give your index finger a



light workout. But dry those tears; using the IntelliPoint software that comes with the IntelliMouse, you can create customized mouse settings for Acrobat Reader that simulate scrolling.

Open the Microsoft Mouse system preference, and click on the Wheel tab in the resulting window. To create a setup specifically for Acrobat Reader, click on the Add button and navigate to the Acrobat Reader application (most likely in your Applications folder) via the Choose A File dialog box that appears. Click on the Roll Forward button. In the resulting IntelliPoint Assignments dialog box, select Keystroke from the Select A Command pop-up menu. Now press the page-up key on your Mac's keyboard and click on OK. Repeat this procedure with the Roll Back button, assigning the page-down keystroke (see "Roll Your Own").

While you're mucking about with custom settings, you might care to click on the Buttons tab and assign the \mathbb{P} -plus sign (+) and \mathbb{P} -hyphen (-) key combinations to the Right Side and Left Side buttons, respectively. If you're like me, you continually increase and decrease the magnification of PDF files; having these commands literally at your fingertips is convenient.

Toolbar Trash

In earlier versions of OS X, I could put the Trash in the Finder's toolbar. In OS X 10.2, I can't. Is there a workaround for this?

Sonja Momberg, *Glaver, Oklahoma*



TIP OF THE MONTH

Note that items in the path name that contain spaces—such as iPhoto Library—appear like this: *iPhoto\ Library*. A full path name may look like this: */Volumes/OS\ X/Users/Gabriel/Pictures/iPhoto\ Library/2002*.

Dr. Gabriel Dorado, *Cordoba, Spain*

To copy an item's path name in OS X, open the Terminal application, type *cd* (change directory), and drag the file whose path name you want to the Terminal window. The full path will appear. Then simply copy the path and paste it wherever you'd like.

For those unfamiliar with the old method, here it is in a nutshell: Click on the Trash in the Dock to open the Trash window. Then drag the tiny Trash icon from the Trash window's title bar into the toolbar. As Sonja suggests, this trick won't work in OS X 10.2.

You can accomplish this in Jaguar by selecting Find from the File menu (\mathbb{P} -F), clicking on the Add Criteria drop-down menu, selecting Visibility, and selecting Off in the resulting pop-up menu. Type Trash in the File Name Contains field,

Roll Your Own Use software that comes with the IntelliMouse to simulate scrolling in Carbon applications.

UNSOLICITED ADVICE

When moving to OS X, many of us discovered that our Macs no longer recognized the printers with which they'd once been so chummy. While vendors eventually introduced OS X-compatible drivers for a number of printers, many printers looked to be orphaned for good. But thanks to the Common Unix Printing System (CUPS) technology in OS X 10.2, users with unsupported Hewlett-Packard, Epson, Canon, and Lexmark printers have a glimmer of hope.

Although there are a number of arcane ways to configure a printer via CUPS, the easiest I've found is the CUPS printer driver, *gimp-print* 4.2.1 (<http://www.alloxx.com/1030154694/index.html>). After ensuring that it supports your printer (this

information is available from the Web site), download and install *gimp-print*. Then plug your printer into your Mac's USB port, turn the printer on, and restart your Mac. Open Print Center, optionally click on the Add Printer button, select Advanced from the pop-up menu at the top of the resulting sheet, and select your printer model from the Printer Model pop-up menu below. Like magic, OS X 10.2 now supports your printer.

Note that many printer functions—the ability to clean your printer's ink nozzles or choose between black-and-white and color printing, for example—will not be available. If you want to check the level of ink in your printer or clean its nozzles, you must switch to OS 9.

and click on the Search button. You'll likely see numerous .Trash entries. Select the one that displays a small Trash icon in the bottom half of the Search Results window (it should stand alone, without showing any path to a folder higher up in the hierarchy).

If the toolbar doesn't appear in the Search Results window, click on the Clear button in the upper right corner. Drag the highlighted .Trash entry into the Toolbar. This .Trash folder will now appear in every Finder window, and items you drag to this folder will be placed in the Trash.

You can make this folder a bit friendlier by clicking on it from a Finder window's toolbar, pressing ⌘-I to bring up the Get Info window, and changing the name and icon. But after you've logged out or restarted, your changes will revert back to .Trash and a folder icon, respectively.

Change of Address

I have my contacts in an application other than Jaguar's Address Book. How can I move them to Address Book?

Fred Mead, Bridgewater, Connecticut

Apple offers an avenue via the included Import Addresses AppleScript found in Library: Scripts: Mail Scripts. This script presents a list of applications from which you can import your addresses, including Microsoft Entourage, Netscape, Palm Desktop, and Qualcomm Eudora. Some scripts require that you first import text to a tab-delimited text document.

If, like me, you've had a smidgen of trouble with this script, or if it doesn't support your application, you might try these other methods.

Palm Desktop 4.0 Launch Palm Desktop and choose Export from the File menu. In the resulting Export: Palm Desktop window, select vCard in the Format pop-up menu and click on Export. Open Address Book, select Import from the File menu, and select vCards from the submenu. Navigate to the Palm Desktop file you just exported and click on Open.

Microsoft Entourage for Mac OS X Create an empty folder on your desktop, and give it an intuitive name such as Entourage Contacts. Launch Entourage and click on the Address Book button. Select the addresses you want to export, and drag them into the folder you created. Launch Address Book. Drag the Entourage Contacts folder into the Group or Name field to add the addresses in the folder to Address Book.

Mozilla and Netscape 7 Open Mozilla's or Netscape's Address Book, select the addresses you want to export, and choose Export from the Tools menu. In the resulting Export Address Book dialog box, give the file a name ending with the .ldif extension (hank.ldif, for example), choose LDIF (*.ldi,*.ldif) from the Format pop-up menu, and click on Save. Launch Address Book, select Import from the File menu, and then choose LDIF from the submenu. Navigate to the .ldif file you just created, and click on Open.

Note: Without the .ldif extension, Address Book won't recognize the file.

Power On Software Now Contact 4.2 Now Contact is a bit trickier, in that it exports contacts only as text or Now Contact files—formats Address Book can't import. However, you can export your contacts as tab-delimited text files, import them into Mozilla or Netscape, and then use the previously outlined technique to move them into Address Book.

Qualcomm Eudora 5.1 Andreas Amann has created a wonderful free utility called Eudora vCard Export (<http://homepage.mac.com/aamann>), which places all the Eudora address-book entries into a single vCard that you can then drag into Address Book.

Tools Trick

Can I reorder the default tools in OS X 10.2's toolbar?

Ross Morrison, Chico, California

Forge ahead by employing the same method you use to move icons in OS X's menu bar. Hold down ⌘ and drag the icons wherever you like. □

Contributing Editor CHRISTOPHER BREEN is the proud papa of *Mac 911* and *Secrets of the iPod* (Peachpit Press, 2002).



Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also send tips by e-mail to mac911@macworld.com. We pay \$50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*. Shareware and freeware mentioned in *Mac 911* are available at www.versiontracker.com.



Manage your

SUBSCRIPTION

with a simple click!

Macworld



Using our Subscriber Services Web site is the fastest way to take care of any of your Macworld subscription inquiries.



Your online service options allow you to:

- Pay for your subscription
- Change your mailing address
- Sign up for continuous service
- Give a gift subscription
- Renew your subscription
- Inquire about missing/duplicate issues
- Contact us directly with your questions

Save time! Go to:

service.macworld.com

BROADWAY

PHOTO

2922 Avenue L, Brooklyn, N.Y. 11210

1-800-361-3436

Visit Our New Website at: www.bwayphoto.com

21 DAY SATISFACTION
NEXT DAY AIR AVAILABLE
WORLDWIDE SHIPPING

CUSTOMER SERVICE: 718-338-3028
LOCAL & INTERNATIONAL: 718-338-1800
24 HOUR FAX HOTLINE: 718-338-3029

STORE HOURS

MON-THURS 8:00AM - 12:00AM
FRIDAY 8:00AM - 4:00PM
SATURDAY 5:30PM - 10:00PM
SUNDAY 9:00AM - 9:00PM



DIGITAL CAMERAS

We specialize in Overnight Delivery.
Place Your Order by 5:00 PM EST and
Receive Your Order by the Next Business Day!
For an Additional \$29.95

DIGITAL VIDEO

Nikon Coolpix 4500
• 4.0 Megapixel CCD
• 1.5" LCD
• 4x Digital Zoom
• 4x Optical Zoom
\$499**
NEW! Coolpix 4300 \$379.99

Nikon Coolpix 5700
• 5.24 Megapixels CCD
• 2.7" CCD
• 4x Optical Zoom
\$819**
NEW! Coolpix 3500 \$499.99

Nikon D1X
• SLR Type Dig. Camera
• Uses Nikon AF-D1.5 Lenses
• 5.47 Megapixels
\$3399**
NEW! D2X \$4999.99

Canon GL-2
NEW!
• IEEE 1394
• 20x Optical Zoom
• 100x Digital Zoom
• 200x Digital Zoom
• 2.5" LCD Screen
\$1999**
NEW! GL-1 \$1609.99

Canon OPTURA 200MC
NEW!
• 2.5" LCD Screen
• IEEE 1394
• 10x Optical Zoom
• 200x Digital Zoom
Optura 100MC \$949.99

Canon XL-1S
NEW!
• 3 CCD
• 7" Color LCD
\$3099**
ZR-40 \$449.99
ZR-45MC \$519.99
ZR-50MC \$539.99
NEW! Elura 40MC \$619.99

Nikon D1H
• 3.74 Megapixel CCD
• 2000x1312 Resolution
• 2.0" LCD Screen
\$2899**
NEW! D2H \$3999.99

Nikon Coolpix 5000
• 2.7" CCD Screen
• 5.24 Megapixels
• USB
\$619**

Nikon D100
NEW!
• 1.8" LCD Screen
• 6.1 Megapixels
• USB
\$1609**

Canon GL-1
NEW!
• IEEE 1394
• 20x Optical Zoom
• 100x Digital Zoom
• 200x Digital Zoom
• 2.5" LCD Screen
\$1999**
NEW! GL-1 \$1609.99

Canon OPTURA 200MC
NEW!
• 2.5" LCD Screen
• IEEE 1394
• 10x Optical Zoom
• 200x Digital Zoom
Optura 100MC \$949.99

Canon XL-1S
NEW!
• 3 CCD
• 7" Color LCD
\$3099**
ZR-40 \$449.99
ZR-45MC \$519.99
ZR-50MC \$539.99
NEW! Elura 40MC \$619.99

Olympus C720
• 4x Optical Zoom
• 3x Digital Zoom
• 1/1.8" CCD
\$409**
NEW! C-730 \$499.99

Olympus C-5050
NEW!
• 1.34 Million Pixels
• 10x Digital Zoom
• 5x Optical Zoom
\$669**

Olympus C-4040
• 4.1 Megapixels CCD
• 7.5x Digital Zoom
• 3x Optical Zoom
\$509**
C-4000 \$359.99

JVC GY-DV300
NEW!
• 14x Optical Zoom
• 1/3" CCD
• 440,000 Megapixels
\$2429**
NEW! GY-DV5000 \$3799.99
GV-DV500 \$3799.99
SR-V520 \$949.99
NEW! SR-V530 \$949.99
NEW! GY-DVM96 \$729.99
NEW! GY-DVM76 \$679.99

JVC GR-DV3000
NEW!
• 3.5" Color LCD
• 1/32" CCD
• USB
• 10x Opt. Zoom
\$999**
GR-DVP7 \$929.99
GR-DVL120 \$389.99
GR-DVL130 \$449.99
GR-DVL230 \$479.99
GR-DVL720/725 \$549.99
GR-DVL820 \$609.99
NEW! GR-DVL920 \$649.99

Sony DCR-TRV950
NEW!
• 12x Optical Zoom
• 150x Digital Zoom
• 3.5" LCD
\$1699**
DCR-TRV840 \$629.99
DCR-TRV740 \$549.99
DCR-TRV340 \$519.99
DCR-TRV240 \$489.99
DCR-TRV140 \$419.99

Olympus E-20
NEW!
• 2.7" CCD Screen
• 5.24 Megapixels
• USB
\$1079**

Sony DSC-F717
NEW!
• 5.24 Megapixels
• 2.7" CCD
• 2x Digital Zoom
• 1x Optical Zoom
\$809**

Sony DSC-F707
• 2.7" CCD
• 2560x1920 Res.
• 5.24 Megapixels
\$619**

JVC GY-DV5000
NEW!
• 14x Optical Zoom
• 1/3" CCD
• 440,000 Megapixels
\$2429**
NEW! GY-DV5000 \$3799.99
GV-DV500 \$3799.99
SR-V520 \$949.99
NEW! SR-V530 \$949.99
NEW! GY-DVM96 \$729.99
NEW! GY-DVM76 \$679.99

JVC GR-DV3000
NEW!
• 3.5" Color LCD
• 1/32" CCD
• USB
• 10x Opt. Zoom
\$999**
GR-DVP7 \$929.99
GR-DVL120 \$389.99
GR-DVL130 \$449.99
GR-DVL230 \$479.99
GR-DVL720/725 \$549.99
GR-DVL820 \$609.99
NEW! GR-DVL920 \$649.99

Sony DCR-TRV950
NEW!
• 12x Optical Zoom
• 150x Digital Zoom
• 3.5" LCD
\$1699**
DCR-TRV840 \$629.99
DCR-TRV740 \$549.99
DCR-TRV340 \$519.99
DCR-TRV240 \$489.99
DCR-TRV140 \$419.99

Sony Mavica CD-400
NEW!
• 1/1.8" CCD
• 4.0 Megapixels
• 2.5" LCD Screen
• USB
\$609**
CD-300 \$749.99
CD-250 \$399.99

Sony DSC-S85
• 1/1000s Max Shutter
• 2272x1704 Res.
• 1/1.8" CCD
\$469**
DSC-P9 \$489.99

Canon EOS 1D
NEW!
• 10x Zoom with Image Stabilizer
• 1.8" LCD Screen
• IEEE 1394
\$3749**
NEW! EOS-1DS \$4999.99

Sony DCR-VX2000
NEW!
• 3-CCD Progressive Scan
• 12x Opt/48x Dig. Zoom
• 2.5" LCD Screen
\$2049**
GVD1000 \$1049.99
GVD800 \$699.99

Sony DSR-PD150
NEW!
• 2.5" Swivel Screen
• 12x Opt/48x Dig. Zoom
• 3-CCD Imaging
• Still Photo
\$2869**
NEW! DSR-PDX10 \$2199.99
DSR-250 \$1199.99
DSR-370 \$1199.99
DSR-370 \$1199.99

Sony IP-7 BT
NEW!
• BLUETOOTH
• 10x Optical Zoom
• 1/6" Advanced HAC CCD
\$1069**
NEW! DCR-IP55 \$499.99
NEW! DCR-IP220 \$1179.99
DCR-IP5 \$69.99
DCR-TRV18 \$89.99
DCR-TRV25 \$79.99
NEW! DCR-TRV50 \$109.99

Canon PowerShot G3
• 1.8" LCD Screen
• 4.0 Megapixels
• 4x Optical Zoom
\$679**
NEW! \$599.99

Canon EOS D60
NEW!
• 1072x2048 Resolutions
• 1.8" LCD Screen
• 6.52 Megapixels
• USB
\$1799**

Fuji FinePix S2
• 3024x2016 Resolution
• USB
• IEEE 1394
\$1899**

Sony DCR-PC120 BT
NEW!
• Mini DV Format
• Smallest DV Camera
• 2.5" LCD Screen
• BLUETOOTH
\$1249**
NEW! DCR-PC115 \$1219.99
NEW! DCR-PC101 \$909.99

Panasonic PV-DV952
NEW!
• USB
• 3.5" LCD Screen
• 120x Digital Zoom
• IEEE 1394
\$1249**
PV-DV852 \$899.99
PV-DV702 \$649.99
PV-DV402 \$589.99
PV-VX202 \$1279.99

Panasonic AG-DVC15
• 3-CCD Imaging
• Super VHS
• 12x Optical Zoom
• IEEE-1394
\$1769**
AG-DVC200 \$3999.99
PV-DC252 \$569.99
PV-DC352 \$799.99

Canon PowerShot G2
• 4.1 Megapixels
• 1/1.8" CCD
• 2272x1704 Resolution
\$529**

Fuji FinePix S602
NEW!
• 6x Optical Zoom
• 2" LCD Screen
• 6.0 Megapixels
• USB
\$549**
NEW! S-402 \$499.99

Fuji S-I Pro
• 2304x1536 Res.
• 2" LCD Screen
• Uses Nikon AF or AI-P Lenses
\$1449**
IBM MicroDrive I GIG \$1499.99

Sony DCR-PC120 BT
NEW!
• Mini DV Format
• Smallest DV Camera
• 2.5" LCD Screen
• BLUETOOTH
\$1249**
NEW! DCR-PC115 \$1219.99
NEW! DCR-PC101 \$909.99

Panasonic PV-DV952
NEW!
• USB
• 3.5" LCD Screen
• 120x Digital Zoom
• IEEE 1394
\$1249**
PV-DV852 \$899.99
PV-DV702 \$649.99
PV-DV402 \$589.99
PV-VX202 \$1279.99

Panasonic AG-DVC15
• 3-CCD Imaging
• Super VHS
• 12x Optical Zoom
• IEEE-1394
\$1769**
AG-DVC200 \$3999.99
PV-DC252 \$569.99
PV-DC352 \$799.99

Minolta Dimage 7HI
NEW!
• 1.8" LCD
• 2.7" CCD
• 5.24 Megapixels
• 7x Optical Zoom
\$869**

Minolta Dimage 7I
• Direct Manual Focus
• 5.24 Megapixels
• 7x Optical Zoom
\$689**

Sigma SD-9
NEW!
• 1.8" LCD
• Screen
• IEEE 1394
• USB
\$1649**

Sony DCR-PC120 BT
NEW!
• Mini DV Format
• Smallest DV Camera
• 2.5" LCD Screen
• BLUETOOTH
\$1249**
NEW! DCR-PC115 \$1219.99
NEW! DCR-PC101 \$909.99

Panasonic PV-DV952
NEW!
• USB
• 3.5" LCD Screen
• 120x Digital Zoom
• IEEE 1394
\$1249**
PV-DV852 \$899.99
PV-DV702 \$649.99
PV-DV402 \$589.99
PV-VX202 \$1279.99

Panasonic AG-DVC15
• 3-CCD Imaging
• Super VHS
• 12x Optical Zoom
• IEEE-1394
\$1769**
AG-DVC200 \$3999.99
PV-DC252 \$569.99
PV-DC352 \$799.99

DIGITAL CAMERA ACCESSORIES

Parallel Port Card Reader	89.99	AC Adapter	49.99	Super Hi-Res. Pro Filter Kit	209.99
USB Card Reader	89.99	Wide Angle Lens	49.99	Pro Filter Kit	89.99
Shockproof Case	59.99	Super Wide Angle Lens	149.99	2x Tele-Photo Lens	69.99
NIMH Rechargeable Batteries w/Charger	59.99	Super Wide Angle Titanium Lens w/Macro	229.99	2x Hi-Res. Telephoto Lens	149.99
				2x Hi-Res. Tit Telephoto Lens	229.99

DIGITAL VIDEO ACCESSORIES

Wide Angle Lens	69.99	Super Hi-Res. Pro Filter Kit	209.99	2x Tele-Photo Lens	69.99
Super Wide Angle Lens	149.99	Pro Filter Kit	89.99	2x Hi-Res. Telephoto Lens	149.99
Super Wide Angle Titanium Lens w/Macro	229.99	Multi-Coated Super High Resolution Pro Filter Kit	149.99	2x Hi-Res. Tit Telephoto Lens	229.99

SCANNERS

PRINTERS

Canon FS4000
• 5888 x 4000 pixels
• 4000 DPI Optical Resolution
• USB
\$699**

Nikon LS40
• 2870 Pixel Mono-Chrome Linear CCD
• 2900 DPI Optical Resolution
\$679**

Nikon Super Coolscan LS-4000
• 4000 dpi Optical Resolution
• Tri-linear CCD
• Multiple film format
\$1199**

Epson Stylus 2200P
NEW!
• USB-Serial Port
• PC or Mac
• 6 Color Small Archival Links
\$669**

Epson Stylus 1280
NEW!
• Smudge Free Inks
• PC or Mac
\$429**
Stylus 1000 \$1179.99

Olympus P400
NEW!
• Dye-Sublimation
• 314 dpi Res.
• LCD Panel for Previewing
\$469**

Policy: Visa, MasterCard, Discover, American Express, Diners Club, Money Orders, Certified Check, (Personal Checks up to \$14,000.00 with name and address imprinted on check). C.D.D. orders are also accepted. Orders by mail please print name address and phone number clearly. Shipping methods: In the Continental U.S.A. will be via FedEx, U.P.S. or Air Mail. Over size items via truck. Shipping and Handling are additional. 21 days for return or exchange (video & digital 7 days) with prior authorization only. (Call customer service for authorization number). Shipping and Handling are not refundable. All returns are subject to a minimum restocking fee of 5%. Prices may reflect mail-in rebate. All returned merchandise must be in new condition and must include all packaging and printed material in original, unaltered condition. Broadway Photo is not responsible for typographical errors. All items are covered by U.S.A. International or Broadway Photo and Video Warranty. All our merchandise is brand new and factory fresh. Quantities are limited. Thank you and enjoy your order.

ADVERTISERS AND PRODUCT INDEX

Interact with the companies whose products and services are advertised in **Macworld**

ADVERTISER	INTERACT	PAGE NO.
Alsoft	800-257-6381	46-47
Anthro	anthro.com	11
American Power Corp.	800-890-4272	25
Apple Computer	-	C2-1
Aspyr Media	aspyr.com	54,55,56,57
Audible.com	audible.com	89
Brother International Corp.	brother.com	63
Broadway Photo	800-361-3436	98
Canon USA	usa.canon.com	9,27,43
CDW	800-509-4239	104-105
Club Mac	800-217-9153	108-109
Corel Corporation	corel.com/resellers	C3
Epson America, Inc.	800-GO-EPSON	2-3
Formac	formac.com	79
Geek Cruise	geekcruises.com	48
Harman Multimedia	877-266-6202	6
IDG Expo	macworldexpo.com	83-88
Intego	intego.com	39
J&R Computer World	800-221-8180	111
Kensington	kensington.com	C4
MacMall	800-222-2808	100-103
MacWarehouse	800-355-5841	28-29
MacZones	maczone.com	106-107
MegaHaus	800-786-1184	110
Memorex	memorex.com	81
MicroMat	800-829-6227	21
NEC Mitsubishi	necmitsubishi.com	14-15
Nemetchek North America	nemetchek.net	10
Olympus America	olympusamerica.com	27
QMS/Minolta	minolta-qms.com	52
Roxio	roxio.com	36
Sony	sony.com/artisan	93
Wacom Technology Corp.	wacom.com	
Your Mac Life	wwbchat.com	50
Y.E. Data	yedata.com	51

PAGE NO.	ADVERTISER	GET-INFO
ACCESSORIES		
FURNITURE		
11	Anthro	-
HARDWARE		
COMPUTER SYSTEMS		
C2-1	Apple Computer	-
MISCELLANEOUS		
25	American Power Corp.	73
89	Audible.com	-
6	Harman Multimedia	-
C4	Kensington	1
13	Wacom Technology Corp.	-
50	Your Mac Life	-
MONITORS/ GRAPHICS BOARDS		
79	Formac	-
14-15	NEC Mitsubishi	20
93	Sony	-
PRINTERS		
63	Brother International Corp.	119
2-3	Epson America, Inc.	-
51	Y.E. Data	105
SCANNERS & DIGITAL CAMERAS		
9,27,43	Canon USA	23
27	Olympus America	7
52	QMS/Minolta	105
SOFTWARE		
BUSINESS/PRODUCTIVITY		
10	Nemetchek North America	126
ENTERTAINMENT		
54,55,56,57	Aspyr Media	91
GRAPHICS/DTP		
C3	Corel Corporation	79
MULTIMEDIA		
36	Roxio	140
UTILITIES		
46-47	Alsoft	141
81	Memorex	-
21	MicroMat	37
MAIL ORDER		
98	Broadway Photo	-
108-109	Club Mac	-
104-105	CDW	2
111	J&R Computer World	57
100-103	MacMall	132
28-29	MacWarehouse	19
106-107	MacZones	72
110	MegaHaus	108
SERVICES		
INTERNET PRODUCTS/SERVICES		
39	Intego	86
TRADESHOWS/CONFERENCES		
48	Geek Cruise	-
83-88	IDG Expo	-

New from Apple!



Authorized Reseller

NEW 17" widescreen iMac!

Up to 17" LCD flat screen with an adjustable base!

The new Apple iMac® is designed around a truly stunning 17" or 15" LCD flat screen display. Instead of your neck and back doing the adjusting, the new iMac allows you to effortlessly adjust its height or angle with just the touch of your finger.

Inside lives the fastest iMac ever, with up to a powerful 800MHz PPC G4 processor that blazes through Mac OS X applications. The revolutionary SuperDrive is also available to let you burn your own DVDs and customized CDs!

- Up to 800MHz PowerPC™ with Velocity Engine™
- Up to 256MB RAM
- Up to 80GB HD
- 2 FireWire® ports
- 5 USB ports
- 56K V.90 modem
- 10/100BT Ethernet

The drive you need:

The iMac G4 features a CD-RW drive, Combo drive (DVD-ROM plus CD-RW) or SuperDrive™ (DVD-R plus CD-RW).

iMac G4 starting at

\$1,199! #643250

#643250	700MHz G4/CD-RW/15"	\$200 Price Drop	\$1,199*
#643252	700MHz G4/Combo/15"	\$100 Price Drop	\$1,494*
#643254	800MHz G4/SuperDrive/15"	\$100 Price Drop	\$1,794*
#552067	800MHz G4/SuperDrive/17"		\$1,994*

New!

The NEW eMac!

Now available with Combo or SuperDrive!

The new eMac™, Apple's most affordable PowerPC G4 based system, comes complete with a 17" flat CRT display and a space-saving, all-in-one design that fits right in your home. Plus, the eMac includes award-winning digital lifestyle applications and Mac OS X, Apple's rock-solid operating system.

Features:

- Up to 800MHz PowerPC™ G4
- Up to 256MB SDRAM; exp. to 1GB
- 40 or 60GB Ultra ATA hard drive
- Combo Drive (DVD-ROM/CD-RW), or SuperDrive (DVD-R/CD-RW)
- NVIDIA GeForce2 MX with 32MB of DDR SDRAM
- VGA video mirroring
- Two FireWire® ports
- Built-in 10/100BT ➤ 56K

- Two USB ports on keyboard & three ports on computer
- Mac OS X v10.2 Jaguar and Mac OS 9.2 included



eMac G4 starting at

\$1,094! #590884

#590884	700MHz/40GB/Combo	\$1,094*
#590886	800MHz/60GB/SuperDrive	\$1,494*

FREE!
Extra
256MB
RAM!

Go Wireless!

Apple AirPort® Card

only **\$99** #962119

#965277 AirPort Base Station \$294



The Best Deals for your Mac on hardware, software and electronics!

Maya 4.5

New multi-processor support for rendering & IPR!

only **\$1,999** #968426



Stylus Photo 960

➤ 2880 x 1440dpi

only **\$349.99** #546709



QuarkXPress 5.0

The industry standard for desktop publishing!

only **\$799.94** #965797



Microsoft Office v.X for Mac OS X

only **\$188.99** #660562

With Apple computer purchase. **SAVE '200!**



Quicken 2003 upgrade

only **\$39.95** #540623
Price after \$20 mfr. mail-in upgrade rebate.



Premiere® 6.5

Real-time previews & MPEG-2 export!

upgrade only **\$144.99** #554358



Cobra 120GB Ext. FireWire HD

➤ 7200RPM

only **\$249** #965972



Photoshop Elements® 2.0

as low as **\$56.99** #548463

After \$30 mfr. upg/comp. upg. rebate.

Combustion 2 w/Cleaner 6

only **\$1,497** #671257



Coolpix 2000

➤ 2.0 Megapixel

➤ 3X optical zoom

only **\$249** #537920



Adobe® Design Collection

only **\$999** #447711



GL2 MiniDV Camcorder

➤ 3 CCDs

➤ Fluorite lens

only **\$376.67**



*Promotional offers cannot be combined. Please check individual promotion details for ending date and other restrictions or call your Account Executive for more information. Prices, specifications and promotional offers are subject to change without notice. Limited to stock on hand. While we do our best to check errors, mistakes may occur-call to verify pricing. **FREE RAM OFFER**-RAM is free after redemption of \$49.95 MacMail mail-in rebate on the following skus: #643252, #643254, #643248 and #643246. iMac 700MHz CD-RW model (#643250) requires redemption of \$200 MacMail mail-in rebate. ALL free RAM offers require a \$39.99 MacMail professional installation fee. Offer not available on #973554, #972233 or Xserve.

MacMall

MacMall EZ Payment Plan • Fastest overnight delivery!
We'll beat any price or competitive promotion on any Mac computer! Call for details.

1.25GHz! Introducing the new Power Mac G4 Dual Processor!

New Power Mac G4 models!

Now all with dual processors and up to 1.25GHz!

Newly designed from the inside out with an ultrafast Xserve-based architecture, the dual processor Power Mac® G4 delivers unprecedented performance.

- Dual 867MHz, 1GHz, or 1.25GHz PowerPC G4 processors
- Up to 120GB Ultra ATA hard drive (7200rpm)
- Up to 2MB DDR SDRAM L3 cache per processor with up to 4GBps
- 256K on-chip L2 cache

- Four DIMM slots supporting up to 2GB of DDR SDRAM
- Features SuperDrive (DVD-R/CD-RW) or Combo drive (DVD-ROM/CD-RW)

Power Mac G4 starting at

\$1,694!	#643246
#643246 867MHz DP G4	\$1,694*
#590880 1GHz DP G4	\$2,494*
#590882 1.25GHz DP G4	\$3,294*

1.25GHz in Stock!



Display & speakers sold separately.

Titanium PowerBook G4!

Speeds up to 800MHz!

The Titanium PowerBook® G4 lets you edit your digital movies, watch DVDs and burn

your own CDs anywhere with its slot-loading Combo drive.

- 15.2" screen display with 1280 x 854 resolution

PowerBook G4 starting at

\$2,494!	#643248
-----------------	---------

PowerBook G4 Series

#643248 667MHz G4/Combo/DVI	\$2,494*
#972233 800MHz G4/Combo/DVI	\$3,194*

FREE! Extra 512MB RAM!
(667MHz DVI model only)



Powerful Apple iBook G3!

Speeds up to 700MHz!

Turbocharged with up to a 700MHz G3 processor, the iBook® packs serious power into a slim, stunning design!

- Up to 700MHz PPC G3
- 512K on-chip Level 2 cache
- Up to 256MB PC100 SDRAM
- Up to 14.1" TFT XGA display
- DVD-ROM/CD-RW Combo Drive or 24X CD-ROM

iBook G3 starting at

\$1,194!	#642970
-----------------	---------

#642970 600MHz/CD-ROM/12.1"	\$1,194*
#642973 700MHz/Combo/12.1"	\$1,494*
#973448 700MHz/Combo/14.1"	\$1,794*

FREE! Extra 256MB RAM!
(12.1" models only)



The NEW Xserve from Apple!

1U rack-mount server!

The Xserve rack-mount server offers phenomenal processing power, jaw-dropping storage capacity and remote management tools!

- Features up to two 1GHz G4 processors
- 2MB DDR Level 3 cache
- Up to 480GB storage

- Dual Gigabit Ethernet
- Mac OS X Server software with an unlimited license—a \$994 value!

Xserve 1U starting at

\$2,994!

#973067

Xserve Series

#973067 Xserve with 1GHz 256MB RAM, 60GB HD	\$2,994
#973069 Xserve w/Dual 1GHz 512MB RAM, 60GB HD	\$3,994
#973089 AppleCare Premium Service for Xserve	\$949



New!

Custom configurations available! Call for details



The Apple Xserve holds nearly half a terabyte of data per unit & more than 20 terabyte per 42 unit stack!

Xserve Expansion Options

#973092 256MB Memory Module	\$164
#973103 512MB Memory Module	\$329
#973086 60GB Drive Module	\$349
#973095 120GB Drive Module	\$499

In Stock! 20GB Apple iPod!

The revolutionary iPod has been redesigned into a sleeker, more portable package that now holds up to 4,000 songs! The new 10GB and 20GB models also include a protective carrying case and remote control! And it's now available for Windows computers—call for details.

New iPod™ 20GB

with Carrying Case only **\$494!** #551634

#551632 Apple iPod 10GB with Protective Carrying Case	New! \$394
#551630 Apple iPod 5GB	New! \$294

Price Drop! Now save up to \$150 on Apple iPod!

#970381 Apple iPod 10GB	was \$499	now \$349
#964598 Apple iPod 5GB	was \$394	now \$294



NOW FOR PCs, TOO!

NEW! Mac OS X version 10.2!



Over 150 compelling new features!

Connect your Mac to any network—wired or wireless!

Mac OS X Version 10.2

Mac OS X Version 10.2, "Jaguar", combines the rock-solid reliability of UNIX with the ease of use of Macintosh! It's loaded with over 150 new features like AOL compatible instant messaging and a full-featured Internet search engine!

only **\$119⁹⁵** #551926



For your best price call 1-800-217-9492 macmall.com

Priority Code: ZMWD2C3

MacMall—your source fo

Professional digital video studio with revolutionary real-time architecture!

Avid Xpress® DV v3.5—provides over 100 real-time effects in one package!

Avid Xpress DV v3.5 provides professional video editing, 100+ real-time effects, expert color correction, advanced titling, powerful audio, compositing, graphics, and digital delivery tools in one easy to learn-yet hard to out-grow package.

Get the technology used by Hollywood professionals!

Built around the same Avid editing interface used by Hollywood professionals to edit the majority of prime time television

shows and feature films. Avid Xpress DV v3.5 software brings remarkable editing power to your desktop, laptop, edit suite or home office. Best of all, the projects you create on Avid Xpress DV v3.5 are fully compatible with Avid's higher-end editing.

Key benefits of Avid Xpress DV v3.5

- Versions for both Mac OS X and Windows XP software in same box so
- Compatible with other Avid editing systems and popular third-party applications
- Customizable workspaces

Avid®

New!
VERSION!

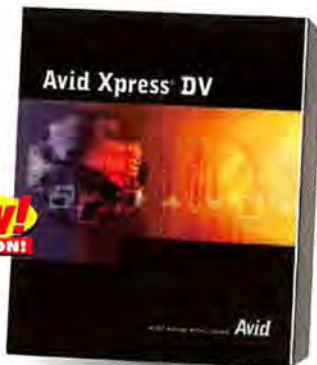
Avid Xpress DV v3.5
only

\$1,499

#538192

#538200 Avid Xpress DV 3.5 PowerPack

\$2,199



Avid Digital video editing systems and tools in one powerful bundle!

Dual Power Mac G4 867MHz Xpress DV Editing System

- Dual Power Mac G4 867MHz computer
- Avid Xpress DV editing software
- 768MB Total Memory after install
- 60GB system drive
- 120GB External FireWire hard drive
- DVD/CD-RW internal Combo drive



Authorized Reseller



- Apple 17" Studio Display
- 3 PC speaker system
- Post-Op EZ keyboard for Xpress DV
- AppleCare-3 year protection plan

all this for only

\$4,894 #671256

Dual Power Mac G4 1GHz Xpress DV Editing System

- Dual Power Mac G4 1GHz computer
- Avid Xpress DV editing software
- 768MB Total Memory after install
- 80GB system drive
- 120GB External FireWire hard drive
- DVD-R/CD-RW internal SuperDrive
- Post-Op EZ keyboard for Xpress DV
- Apple 17" Studio Display
- 3 PC speaker system
- AppleCare-3 year protection plan

all this for only

\$5,694 #555162

Dual Power Mac G4 1.25GHz Xpress DV Editing System

- Dual Power Mac G4 1.25GHz computer
- Avid Xpress DV editing software
- 1GB Total Memory after install
- 120GB system drive
- 120GB External FireWire hard drive
- DVD-R/CD-RW internal SuperDrive
- Post-Op EZ keyboard for Xpress DV
- Apple 17" Studio Display
- 3 PC speaker system
- AppleCare-3 year protection plan

all this for only

\$6,494 #671258

Professional digital video software and peripherals

DVD Revo DVD-R/CD-RW
Combo Drive
with Ice style case!

only **\$489⁹⁹** #960671



Adobe® Digital Video
Collection

only **\$1,349⁹⁹** #638049



Quattro USB Audio
Interface w/MIDI

only **\$229⁹⁵** #964156



PostOp EZ Keyboard
for Avid Xpress DV
Mac or Windows!

only **\$139⁹⁵** #967184



electron 22blueIII
22" Diamondtron Monitor
With detachable hood!

only **\$999** #962863



Apple Cinema HD
Display 23" LCD

only **\$3,494** #970382



Apple® Final Cut Pro™
w/FREE Contour
ShuttlePRO

only **\$995** #963225



FireWire
6-Port Hub
FireWire connectivity!

only **\$79⁹⁹** #975087



PowerShot EOS-D60
Digital Camera Kit

**CALL FOR
BEST PRICE!** #971086

Canon



Lacie 120GB FireWire
Hard Drive
7200RPM!

only **\$269** #538433



Formac
Studio DV

only **\$269** #566453



Shooting Awesome
Video

only **\$24⁹⁹** #539463



MacMall

MacMall EZ Payment Plan · Fastest overnight delivery!
We'll beat any price or competitive promotion on any Mac computer! Call for details.

More affordable DV solutions!

Canon XL1S

Professional features that will truly customize your shooting experience!

The Canon XL1S is not one, but many different cameras. Interchangeable lenses and viewfinders allow the XL1S to be tailored for optimal performance in any shooting condition. The XL1S raises the standard for others to follow.

- Digital video format and IEEE 1394
- Interchangeable lens system

- 3 CCD with Pixel Shift technology
- 3 shooting modes: Normal Movie, Digital Photo and Frame Movie
- Audio/video inputs and outputs

**Canon XL1S
Digital Camcorder**

**CALL FOR
BEST PRICE!** #961437

Canon



Video Monitors

PVM14N6U 14"
Color Video Monitor
Features 4:3 & 16:9 aspect ratios!

**CALL FOR
BEST PRICE!** #57985



TM-1650SU 16"
Color Video Monitor

JVC
only **\$699** #971985



PVM14N5U 14"
Color Video Monitor
High resolution of 500 TV lines!

**CALL FOR
BEST PRICE!** #960939



PVM20N5U 20"
Color Video Monitor
Flexible input video connectivity!

**CALL FOR
BEST PRICE!** #962493



Edit Decks

AG-DV2000 Proline
Editing VTR

**CALL FOR
BEST PRICE!** #951051



BR-DV600UA
DV Recorder/Player

**CALL FOR
BEST PRICE!** #961452



DSR-11 DVCAM
Compact DVR

**CALL FOR
BEST PRICE!** #961471



GV-D1000
Video Walkman

**CALL FOR
BEST PRICE!** #969227



DV Camcorders

GL2 Mini DV
Camcorder

**CALL FOR
BEST PRICE!** #537667



DSR-PD150
Digital Camcorder

**CALL FOR
BEST PRICE!** #961666



DSR-PDX10
Digital Camcorder

**CALL FOR
BEST PRICE!** #595060



DCR-VX2000
Digital Camcorder

**CALL FOR
BEST PRICE!** #80283



Visit Our Web Site!

- ✓ Featuring all the hot new hardware and software products from Apple!



And so much more!

- ✓ Fastest overnight delivery!
- ✓ Our 100% Apple Gold Certified, best trained sales staff!
- ✓ \$2 billion in inventory—a selection of over 125,000 products!
- ✓ Custom configuration—we'll build your CPU to your specifications!

MacMall EZ Payment Plan!

Payment terms up to 48 months!

Now you can have low fixed monthly payments on consumer purchases of \$750 or more with the new MacMall EZ Payment Plan. It's fast and easy to apply for, and there are no application fees or prepayment fees. Call your Account Manager today, or apply online! You can complete your purchase in just minutes and have your order tomorrow!

Financing available on approved credit arranged through MBNA America Bank, N.A. Payment does not include shipping charges and sales taxes if applicable. Estimated monthly payment is based on approximate 48-month term at an Annual Percentage Rate (APR) of 14.99%. Your APR may be higher. There are no transaction fees for MacMall purchases billed directly to your account. There is a transaction fee of 3% of the U.S. Dollar amount of each advance check you write (\$5 min/\$30 max), but there is no obligation to use advance checks.

For your best price call 1-800-217-9492 macmall.com

Priority Code: ZMWD2C3

Your tech
people are
asked to do
the impossible
every day.

Our job:
make it happen.



The Right Technology.
Right Away.™

©2002 CDW Computer Centers, Inc.



Authorized Reseller

Apple® Power Mac™ G4 Series

- ▶ 2 x 867MHz PowerPC™ G4 processors
- ▶ 256KB Level 2 cache
- ▶ Memory: 256MB DDR SDRAM
- ▶ 60GB hard drive
- ▶ DVD-R/CD-RW SuperDrive
- ▶ 56Kbps modem
- ▶ 10/100/1000 Ethernet
- ▶ Mac® OS 9.2/OS X 10.1



\$1695.00 CDW 417019

2 x 1.0GHz PowerPC™ G4 processors, 80GB hard drive,
DVD-R/CD-RW SuperDrive™

\$2495.00 CDW 417020



Authorized Reseller

Apple® eMac®

- ▶ 700MHz PowerPC™ G4 processor
- ▶ Memory: 128MB
- ▶ 40GB hard drive
- ▶ CD-RW/DVD combo drive
- ▶ 56Kbps modem
- ▶ 10/100 Ethernet
- ▶ 17" CRT display
- ▶ Mac OS 9.2/OS X 10.1

\$1095.00 CDW 417032

CDW carries the full line of Mac® and Mac compatible products. Call your
CDW account manager or visit us at www.cdw.com for more information.

All pricing subject to change. For all prices and products, CDW® reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes or typographical errors in advertisements. All products sold by CDW are third party products and are subject to the warranties and representations of the applicable manufacturers. Please refer to www.cdw.com for additional terms and conditions. Firewire® is a registered trademark of Apple® Computer Corp.

©2002 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 MW9796 A/B 12/02

Apple® iBook®



- ▶ 700MHz PowerPC G3 processor
- ▶ 56Kbps modem
- ▶ CD-RW/DVD-ROM combo drive
- ▶ Mac OS X 10.1

700MHz, 128MB memory std.,
20GB hard drive, 12.1" display **\$1495.00** CDW 391663

700MHz, 256MB memory std.,
30GB hard drive, 14.1" display **\$1795.00** CDW 391664



Apple® PowerBook® G4

- ▶ 800MHz PowerPC G4 processor
- ▶ 56Kbps modem
- ▶ Memory: 512MB
- ▶ 10/100/1000 Ethernet
- ▶ 40GB hard drive
- ▶ 15.2" active-matrix display
- ▶ CD-RW/DVD-ROM combo drive
- ▶ Mac OS X 10.1

\$3195.00 CDW 384745



Maxtor®

Maxtor Personal Storage 5000DV

- ▶ 120GB
- ▶ USB 2.0 and IEEE 1394 firewire interface
- ▶ 7200 rpm
- ▶ Exclusive Maxtor OneTouch™ feature copies all your internal hard drive's files with the simple push of a button
- ▶ Organize and store backup copies of your files on your PC or Mac

\$299.99 CDW 430345

SimpleTech

SimpleTech Bonzai USB Flash Mini-Drive

- ▶ 128MB
- ▶ Easy way to store, transfer and carry your legal files
- ▶ Gives you instant access to your files via any computer with a USB port
- ▶ Have complete control creating, copying and deleting files

\$96.99 CDW 404746

Apple® iPod™



5GB MP3 player

- ▶ Up to 1000-song capacity
- ▶ Weight: 6.5 oz.
- ▶ 10-hour battery
- ▶ Includes: iTunes 2 software

\$299.00 CDW 411132



Blazing performance sure to put a twinkle in your eyes

The Dual 1GHz Power Mac G4 churns out 15 gigaflops at peak performance by harnessing its sophisticated chip architecture, Velocity Engine™ and a Level 3 cache. That's up to 15 billion floating point operations per second! You'll run Adobe® Photoshop® up to 68% faster than a 2.2GHz Intel® Pentium® processor-powered PC. You'll encode digital video up to 302% faster than a 2 GHz Pentium PC.* Such Pentium-crushing speed might give you more time to enjoy the holiday season.

*Power Mac G4 system using Apple's iDVD 2 software vs. a PC using Sony's MovieShaker software

Apple 23" Cinema HD Display **\$3494.98** #147870



#139208 Studio 17" \$994.98 #124925 Cinema 22" \$2494.98



867MHz Dual

- 867MHz dual G4 processors
- L3 Cache – 1MB DDR SRAM per processor
- 256MB PC2100 DDR SDRAM
- 60GB Hard Drive
- Combo DVD-ROM/CD-RW
- Gigabit Ethernet
- NVIDIA GeForce4 MX with 32MB of DDR SDRAM

\$1694.98

#159217

1GHz Dual

- 1GHz dual G4 processors
- L3 Cache – 1MB DDR SRAM per processor
- 256MB PC2100 DDR SDRAM
- 80GB Hard Drive
- SuperDrive DVD-R/CD-RW
- Gigabit Ethernet
- ATI Radeon 9000 Pro with 64MB of DDR SDRAM

\$2494.98

#159218

1.25GHz Dual

- 1.25GHz dual G4 processors
- L3 Cache – 2MB DDR SRAM per processor
- 512MB PC2100 DDR SDRAM
- 120GB Hard Drive
- SuperDrive DVD-R/CD-RW
- Gigabit Ethernet
- ATI Radeon 9000 Pro with 64MB of DDR SDRAM

\$3294.98

#159219

FREE!
256MB-512MB Memory
with select CPU purchase.
Call for details.

#722601 AppleCare 3-Year Protection Plan (Coverage includes Apple Display when Power Mac and Display are purchased on same invoice.) \$249.99

Apple Instant Loan starting at only **\$38 per month**

Apple Xserve

1GHz **\$2994.98** #147878

1GHz Dual **\$3994.98** #147879

SPECIAL CONFIGURATIONS AVAILABLE – CALL!

Rack and servers sold separately.

Apple Instant Loan starting at only **\$49 per month**



Up to 512MB Memory **FREE!** Call for details.

Apple PowerBook G4

667MHz

- 667MHz G4 processor
- 15.2" Display
- 256MB Memory
- 30GB Hard Drive
- Combo CD-RW/DVD
- Gigabit Ethernet
- AirPort Card Ready
- ATI Mobility Radeon 7500

\$2494.98

#147876

800MHz

- 800MHz G4 processor
- 15.2" Display
- 512MB Memory
- 40GB Hard Drive
- Combo CD-RW/DVD
- Gigabit Ethernet
- AirPort Card Included
- ATI Mobility Radeon 7500

\$3194.98

#147877

#722604 AppleCare 3-Year Protection Plan – PowerBook G4 \$349.99

Mac Zone Exclusive!



Apple® Mac® OS X v10.2 with Ten for X bundle

*After \$20 Mac Zone mail-in rebate. Low Mac Zone price: \$154.97. While supplies last. When compared to product purchased separately.

\$134.97*

#159415

FREE 64MB CompactFlash for capturing holiday moments!



Nikon Coolpix 5700 SLR 5MP Digital Camera

\$1199.99

#159304

Take the "work" out of wireless networking



Apple AirPort® Base Station 2.0

\$294.99

#136155

#964263 AirPort Card. \$99.98

Easily add DVD authoring and long-term data storage to your Mac



LaCie DVD-RW SuperDrive

\$489.96

#154906

User-friendly digital video backup



EZQUEST 120GB External FireWire Cobra Hard Drive – 7200 rpm

\$248.96

#149142

Record your world to CD!



Toast with Jam

\$159.97

#141946

Capture it all with photos AND video



Sony DCR-TRV25 Digital Camcorder

\$899.99

#150702

CLICK or CALL!

CLICK on our website or CALL US for your BEST price on this product.

Don't forget your AppleCare

AppleCare Protection Plan

Starting at **\$149.99** Call for details.

NO SURCHARGE ON CREDIT CARDS

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Zones, Inc. are third party products and are subject to the warranties & representations of the applicable manufacturers. ©2002 Zones, Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Mac, Power Mac, PowerBook, iMac, iBook, AirPort, and FireWire are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. SuperDrive, iPod and eMac are trademarks of Apple Computer, Inc. AppleCare is a registered service mark of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation, used under license therefrom.

Gift Certificates Available!

"... not even a mouse."

Instead of a mouse, the iBook gives you a touch-sensitive trackpad for precise cursor movement. Pop open the iBook's lid and you'll have all the digital tools and toys you need to surf the Internet, create cool websites, share digital photos, build a music library, and edit your own movies. And if you get the iBook model with a Combo drive (DVD-ROM/CD-RW), you can burn your own music CDs.

128MB-256MB Memory
FREE! Call for details.



Apple Instant Loan starting at only **\$27 per month**



Authorized Reseller

NEW eMac G4

The most affordable G4 system ever!

The eMac comes complete with a 17-inch flat CRT display and a space-saving, all-in-one design that fits right in your home. Plus award-winning digital lifestyle applications and Mac OS X, Apple's rock-solid operating system.



Starting at
\$1094⁹⁸
Call for details

NOW
with Super
17" Drive!
Flat CRT

FREE
256MB RAM!

While
supplies
last!

iMac G4

Exceptional G4 power, grace and fun. Effortlessly adjust the new iMac's stunning 17" LCD flat screen height or angle with the touch of a finger.



Apple Instant Loan starting at only **\$29 per month**

NOW
In-Stock!

Apple iBook G3

600MHz

- 600MHz G3 processor
- 12.1" TFT Display
- 128MB Memory
- 20GB Hard Drive
- CD-ROM Drive
- 10/100 Ethernet
- AirPort Card Ready
- ATI Mobility Radeon

\$1194⁹⁸

#147880

700MHz

- 700MHz G3 processor
- 12.1" TFT Display
- 128MB Memory
- 20GB Hard Drive
- Combo CD-RW/DVD
- 10/100 Ethernet
- AirPort Card Ready
- ATI Mobility Radeon

\$1494⁹⁸

#147881

700MHz

- 700MHz G3 processor
- 14.1" TFT Display
- 256MB Memory
- 30GB Hard Drive
- Combo CD-RW/DVD
- 10/100 Ethernet
- AirPort Card Ready
- ATI Mobility Radeon

\$1794⁹⁸

#147882

700MHz

- 700MHz G4 processor
- 15" LCD
- 128MB Memory
- 40GB Hard Drive
- CD-RW Drive
- NVIDIA GeForce2 MX 32MB
- Apple Pro Speakers optional

\$1194⁹⁸

#147871

700MHz

- 700MHz G4 processor
- 15" LCD
- 256MB Memory
- 40GB Hard Drive
- Combo DVD-ROM/CD-RW
- NVIDIA GeForce2 MX 32MB
- Apple Pro Speakers

\$1494⁹⁸

#147872

800MHz

- 800MHz G4 processor
- 15" LCD
- 256MB Memory
- 60GB Hard Drive
- SuperDrive DVD-R/CD-RW
- NVIDIA GeForce2 MX 32MB
- Apple Pro Speakers

\$1794⁹⁸

#147873

800MHz

- 800MHz G4 processor
- 17" Widescreen LCD
- 256MB Memory
- 80GB Hard Drive
- SuperDrive DVD-R/CD-RW
- NVIDIA GeForce4 MX 32MB
- Apple Pro Speakers

\$1994⁹⁸

#159213

#722603 AppleCare 3-Year Protection Plan - iBook \$249.99

#722602 AppleCare 3-Year Protection Plan - iMac/eMac \$149.99

High-speed printing,
long-lasting results.



EPSON® Stylus C82 Printer
\$149⁹⁹
#1002669

Don't run out of "digital film" at a crucial moment



SanDisk 256MB CompactFlash™ Memory Card
\$89⁹⁶
#924826

\$20 Rebate!



Quicken 2003 for Mac
\$38⁹⁹*
#158947

*After \$20 mfr. mail-in upgrade. Low Mac Zone price: \$58.99. Offer good through 11/30/02.

NEW! Native support for Mac OS X's latest enhancements



Adobe® Photoshop® 7.0 Upgrade
\$134⁹⁶
#141955

Compact and fun



Sony DSC-S75 3.3MP Digital Camera
\$479⁹⁸
#837241

Fast CD burner that won't burn your budget



LaCie 48x12x48x FireWire CD-RW
\$179⁹⁹
#162917

Now available for Windows!



Apple iPod™ Starting At \$294⁹⁸

- #159202 iPod for Mac - 5GB \$294.98
- #159203 iPod for Mac - 10GB \$394.98
- #159204 iPod for Mac - 20GB \$494.98

Add an irock and listen to your iPod on any FM receiver!
300W Wireless Music Adapter
\$29⁹⁹
#952134



FREE Memory Offer: Up to \$12M5 free memory with select Apple computers and professional \$40 installation purchase. Allow up to one day for installation. Offer subject to change due to memory price volatility. Call for latest offers. Offer good while supplies last. Not valid with any other Mac Zone offers.

Microsoft Office X Offer: Save up to \$500 off MSRP with select new Apple CPU purchase after Mac Zone mail-in rebate. Both items must appear on same invoice. Regular low Mac Zone price: \$437.99. Call for details.

EPSON Printer Offer Details: FREE EPSON Stylus C42UX Printer with purchase of select Apple CPU and after \$30 Mac Zone mail-in rebate and \$50 in mfr. mail-in rebates. Low Mac Zone price: \$79.99. Ask for Item #162953. Offer good between 10/1/02 and 12/31/02.

Corporate bids welcome!
Fax to 1-425-430-3420
A NASDAQ COMPANY Ticker Symbol: ZONS

Source Code
MW122

Order by Phone
1.800.436.0606

Order Online Today
www.maczone.com



Authorized Reseller

FREE Epson Printer & RAM with

NEW! 17" iMac G4 800MHz \$1994



#552070

FREE!
512MB RAM on
all G4 15" iMacs
FREE!
256MB RAM on
all G4 17" iMacsPlus **FREE!** USB Floppy Drive with all iMacsDon't Forget!
Apple Care Protection Plan
3 Year Protection
For iMacs
Only\$149
#951378

*\$39.99 Installation Fee for FREE Memory. Free 512MB Memory after \$49.95 Mail-in Rebate. †Free Floppy Drive is After \$49.95 Mail-in Rebate-Price Before Rebate is \$49.95. All Offers Expire 11/30/02 or While Supplies Last.

#741480	700MHz	15" Screen	128mb	40GB HD	CDRW		\$1194
#741484	700MHz	15" Screen	256mb	40GB HD	DVD Combo	Pro Speakers	\$1494
#741493	800MHz	15" Screen	256mb	60GB HD	DVD-R	Pro Speakers	\$1694
#741497	800MHz	17" Screen	256mb	80GB HD	DVD-R	Pro Speakers	\$1994

iMac 600MHz 40GB All-In-One \$794

FREE!
128MB RAM
on all G3 iMacs
Plus **FREE!** USB Floppy Drive with all iMacs

*\$39.99 Installation Fee Applies. †Free Floppy Drive is After \$49.95 Mail-in Rebate-Price Before Rebate is \$49.95. All Offers Expire 11/30/02 or While Supplies Last.

#741476	Snow	600MHz	128MB	40GB	24xCD	ATI Rage 128	\$794
---------	------	--------	-------	------	-------	--------------	-------

eMac 800MHz \$1094

Up to 60GB Hard Drive
with SuperDrive**FREE!**
256MB
RAM
with All eMacs!Plus **FREE!** USB Floppy Drive with all eMacs

*\$39.99 Installation Fee for FREE Memory. †Free Floppy Drive is After \$49.95 Mail-in Rebate-Price Before Rebate is \$49.95. All Offers Expire 11/30/02 or While Supplies Last.

#741320	700MHz	128MB	40GB	DVD/CD-RW	NVIDIA GeForce2MX	\$1094
#741325	800MHz	256MB	60GB	SuperDrive	NVIDIA GeForce2MX	\$1494

iBook 700MHz

14.1" iBook \$1794

14.1" iBook as low as \$1194

**FREE!**
Carrying
Case
with
14.1"
iBooks!**FREE!**
256MB
RAM
with All 12.1 iBooks!

*\$39.99 Installation Fee for FREE Memory. Free Memory After \$49.95 Mail-in Rebate. Offer Expires 11/30/02 or While Supplies Last.

#664381	600MHz	12.1"	128MB of RAM	20GB HD	CD-ROM	\$1194
#664383	700MHz	12.1"	128MB of RAM	20GB HD	DVD Combo	\$1494
#664386	700MHz	14.1"	256MB of RAM	30GB HD	DVD Combo	\$1794

SONNET Encore/St G4 800MHz

\$499.95

CPU Accelerators

#74264	Sonnet Encore G4 500/250MHz w/ 1Mb Cache	\$299.95
#59435	Sonnet Crescendo G4 450/200MHz 1Mb Cache	\$299.95
#961651	Sonnet Harmoni G3 500/Firewire Card For iMac A-D	\$299.95
#539715	Sonnet Encore/St G4 800MHz	\$499.95
#540876	Sonnet Encore/St G4 1GHz	\$699.95

Accessories

#810315	Top Loading Notepad	\$48.94
#47509	Keypas USB To Twin Serial Adapter	\$69.99
#354862	Apple Extra Battery Powerbook G4 Titanium	\$129.00
#975672	Belkin Regulator Pro Gold USB 650 UPS	\$149.99
#961874	Photo Control Docking Station/G4 Titanium	\$199.99
#30726	APC Back UPS Pro 650 Beige	\$239.99

Audio/Video Peripherals

#972281	Apple Apple Pro Speakers (White Insides)	\$59.00
#951562	Sonnet Tango Adapter Card 2 Firewire/2 USB Port	\$89.99
#369724	ATI Radeon 7000 Mac PCI 32MB NTSC	\$118.99
#967178	ATI Radeon 8500 Mac AGP 64MB NTSC	\$179.99
#953115	Escape Lab MyVideo USB Video Capture	\$149.00
#952775	Harman Kardon Soundstick 3 Piece USB Speakers	\$178.99
#944700	Dazzle Multimedia Hollywood: 1394 DV (Mac)	\$264.94
#961764	Formac Studio-Analog/DV Converter with TV Tuner	\$389.00
#566453	Formac Studio-Analog/DV Converter	\$269.00

Communications

#863922	Global Village Teleport 56K V.92 Ext Serial Modem	\$78.99
#28300	US Robotics 56K V.90 Ext Mac Modem	\$81.99
#862912	Zoom V.90 56K Ext USB Voice Modem	\$94.99

Nikon Coolpix 2500

ELECTRONIC IMAGING

\$279*

Digital Camera

#537920	Nikon Coolpix 2000 2.0MP 3X/2.5X USB	\$229.00*
#969346	Nikon Coolpix 2500 2.0MP 3X/4X 16Mb CF USB	\$279.00*
#974515	Nikon Coolpix 4500 4.0MP 4X/4X USB	\$649.00†
#974509	Nikon Coolpix 5700 5.0MP 8X/4X 16Mb CF	\$1,199.00
#211448	Fuji Photo Finepix 2600 2.1MP 3X Zoom	\$239.00
#962374	Canon Powershot G2 4MP 3X 32Mb CF USB	\$609.00

*After \$20 Instant Rebate †After \$50 Mail-in Rebate

Input

#953969	Apple Apple Pro USB Optical Mouse	\$59.00
#953968	Apple Apple Pro USB Keyboard	\$59.00
#960688	Contour Shuttle Pro Multimedia Jog/Shuttle Cont	\$89.00
#961944	Wacom Steel Graphire 2 4X5 USB Tablet W/Pen	\$99.00
#962688	Wacom Intuos2 6X8 W/Pen & 2D Mouse-USB	\$349.99
#962689	Wacom Intuos2 9X12 W/Pen & 4D Mouse-USB	\$469.99

CORNEA

\$489

MP704 17" LCD Displays

#960097	Apple 17" LCD Studio Display	\$994.00
#951070	Apple 22" LCD Cinema Display	\$2,494.00
#970382	Apple 23" LCD Cinema HD Display	\$3,494.00
#363234	Sony E540 21" .24mm 1900X1440	\$559.00
#947137	Sony Multiscan G520 21" .24mm	\$744.00
#554331	NEC DP2070SB-BK 22" .24mm 2048X1536	\$759.00
#545920	Mitsubishi FP2141SB-BK 22" .24mm 2048X1536	\$729.00
#962149	LaCie Electronblue 19" III 1600X1200 76Hz	\$399.00
#962863	LaCie 22inch Electron Blue III W/Hood	\$999.00
#541244	Formac Gallery 2010 20" LCD	\$1679.00

Canon \$2699

GL-2 Mini DV Camcorder

Digital Camcorders

#968280	Canon ZR40 Mini DV Camcorder	\$499.95
#968282	Canon ZR45MC Mini DV Camcorder	\$574.50
#968284	Canon ZR50MC Mini DV Camcorder	\$684.95
#537667	Canon GL2 Mini DV Camcorder	\$2,699.00
#968521	Sony DCR-PC 120BT Mini DV Camcorder	\$1,599.00
#961666	Sony DSR-PD 150 Digital Camcorder	\$3,499.00

Inkjet Printers

#550180	Epson Stylus Color C42UX	\$79.00
#595729	Epson Stylus Color C62	\$79.00*
#659528	Epson Stylus Color C82	\$149.00
#956514	Epson Stylus Color Photo 1280	\$499.00
#37245	Epson Stylus Color 3000 13"X19"	\$995.00
#74261	HP Deskjet 1220C PS Color	\$479.00

*After \$20 Mail-in Rebate

Projectors

#794651	In Focus LP280 1000 Lumen SVGA 5.7lbs	\$1,499.00
#956645	In Focus LP130 1100 Lumen XGA 3lbs	\$2,999.00
#873442	Proxima X350 1100 Lumen XGA 3.5lbs	\$3,199.00
#367270	Epson PowerLite 51C 1200 Lumen SVGA 6.8lbs	\$1,629.00
#453620	Epson PowerLite 730C 2000 Lumen XGA 4.3lbs	\$3,199.00

Networking

#874476	Belkin 4 Port Firewire Hub	\$59.99
#957576	Belkin Firewire 6-Port Hub	\$79.99
#35839	Asante Asantetalk 10BT To LocalTalk Connection	\$84.99
#962119	Apple Airport Card	\$99.00
#965277	Apple Airport Base Station	\$294.00
#778846	Netgear Wireless Cable/DSL Router	\$124.99
#771469	Macsense Xrouter Aero Wireless Cable/DSL Router	\$219.99

www.clubmac.com

ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS. WARRANTIES: All items manufactured by ClubMac should be returned to ClubMac for warranty repair. Refer to manufacturer's warranty for Non-ClubMac products. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. RETURNS: ClubMac extends all other manufacturer's return policies to its customers. Call for a Return Authorization (RA) number! Any product that is returned WITHOUT an RA# will be refused. NOTE: Non-ClubMac products may be returned for replacement only. Apple Branded Products are not returnable. If you experience problems with your Apple purchase contact Apple 1-800-550-7078.

Mac Purchases!



New Power Mac G4 Faster!

Now Up to Dual Processor

Starting at

\$1694

FREE!*
512MB RAM
with All Power Macs!

1.25GHz!



Apple Care Protection Plan
3 Year
Protection
For Power Macs
Only **\$249**
#951377

*\$39.99 Installation Fee Free Memory. Free 512MB with 867MHz Model is After \$49.95 Mail-in Rebate. Offer Ends 11/30/02.

#664358	867MHzDP	256MB of RAM	60GB HD	DVD/CD-RW	\$1694
#664395	1GHzMHzDP	256MB of RAM	80GB HD	CD-RW/DVD-R	\$2494
#664397	1.25GHzDP	512MB of RAM	120GB HD	CD-RW/DVD-R	\$3294

New PowerBook G4

Now Up To

800MHz

Starting at

\$2494

FREE!*

512MB Ram, iomega Zip Drive or Airport Card

Apple Care Protection Plan
3 Year Protection
For PowerBooks
Only **\$299**
#951380



Free* Airport card or 512MB Memory with PB 667MHz Model listed on this page. Free Zip 100MB VL with PB 800MHz Model listed on this page. *\$39.99 Installation Fee Applies for Airport Card or Memory. Free memory is After \$49.95 Mail-in Rebate.

#664364	667MHz	14.1"	256MB of RAM	30GB HD	DVD/CD-RW	\$2494
#664377	800MHz	14.1"	512MB of RAM	40GB HD	DVD/CD-RW Airport Card	\$3194

Plus FREE Battery!

MINOLTA QMS \$294.99

Minolta PagePro 1250E 17ppm Laser Printer

Laser Printers

#972923	Minolta PagePro 1250E 17ppm 16MB	\$294.99
#781206	Brother HI-1470N 15ppm	\$498.99
#958348	HP LaserJet 1200SE 15ppm USB	\$378.99
#957974	HP LaserJet 2200DN 19ppm USB	\$1,058.00
#948807	HP LaserJet 4100N Network Printer 25ppm	\$1,465.00

Scanners

#540952	Epson Perfection 1660P Photo 1600X3200	\$179.00
#329807	Epson Perfection 2450 Photo Scanner	\$399.99
#552287	Smartdisk Smartscan 2700 Film Scanner	\$219.99
#332059	Microtek Scanmaker 4800 2400X1200	\$89.99
#952795	Microtek Scanmaker 8700 Pro 42Bit	\$749.00
#956698	Nikon Super Coolscan 4000 ED Film Scanner	\$1,549.00

Jedi Knight II

\$46.99

#534793

Software-Games

#358851	Aspyr Spiderman	\$28.99
#968435	Aspyr Sims Hot Date Expansion Pack	\$29.99
#965778	Aspyr Harry Potter And The Sorcerer's Stone	\$29.99
#82299	Aspyr The Sims	\$44.99
#452449	Aspyr Medal Of Honor: Allied Assault	\$48.99
#367691	Aspyr Return To Castle Wolfenstein	\$48.99
#430979	Aspyr Star Wars: Galactic Battlegrounds	\$49.99
#967070	Infogrames Civilization 3	\$39.99
#971491	Havas Warcraft III: Reign Of Chaos	\$54.95

Mac OS X v10.2

\$98.95*

*After \$21 Mail-In Rebate

Software-Business

#972337	Apple Appleworks 6.2.4	\$77.99
#551926	Apple Mac OS X V10.2	\$98.95*
#362191	Connectix Virtual PC 5 with Win XP Home	\$199.99
#537929	Filemaker Pro 6.0 Mac Upgrade	\$139.99†
#501512	Filemaker Pro 6.0 Mac	\$275.99
#640022	MYOB AccountEdge 3.0 NEW!	\$235.00
#208616	Microsoft Office V. X For Mac Upgrade	\$268.94
#208615	Microsoft Office Mac V.X Full Version	\$444.99

†FileMaker Pro 6 Upgrade requires qualifying previous versions

Adobe Photoshop 7.0 Upgrade

\$134.94

Software-Graphics

#968964	Adobe Photoshop 7.0 Upgrade	\$134.94
#963236	Adobe Illustrator 10 Upgrade	\$139.94
#968095	Adobe Photoshop 7.0 Full Version	\$588.99
#447711	Adobe Design Collection 6.0	\$999.00
#963234	Adobe Illustrator 10	\$389.94
#965797	QuarkXpress 5.0	\$799.94
#971076	Apple DVD Studio Pro 1.5	\$968.99
#965830	Apple Final Cut Pro 3	\$995.00



NO SURCHARGE

Check Out The Fall Promotions!

FREE!*

Epson Stylus Photo C42UX Printer



*Free printer is after Mail-in Rebates from Epson and ClubMac when purchased with any Apple CPU. Price before rebates is \$79. Offer Valid from 10/01/02 - 10/31/02 or While Supplies Last.

Save Up to \$400
On Select Apple Displays

Buy an Apple PM 867DP Save \$200
Buy an Apple PM 1 GHz DP Save \$300
Buy an Apple PM 1.25 GHz DP Save \$400
Buy an Apple PB 667MHz Save \$300
Buy an Apple PB 800MHz Save \$400



Price Before Savings
23" - \$3494
22" - \$2494
17" - \$994

CPU and Display must be purchased at the same time and on the same invoice. Offer ends 12/31/02. Call your sales representative for more details.

Office Party

Buy any Mac and Microsoft Office v.X and save \$300 on the spot.

Full Version
Only **\$188.99***



Product Ships In Promotional Packaging
660562

*When purchased with any qualifying Apple CPU. Offer ends 1/05/03.

.Mac \$94
#551928

Software-Utilities

#56470	Alsoft DiskWarrior 2.1	\$63.99
#795108	Dataviz MacLink Plus Deluxe 13.0	\$88.89
#372248	Symantec Norton Antivirus 8.0	\$64.99
#374767	Symantec Norton Utilities 7.0	\$94.99
#374768	Symantec Norton Systemworks 2.0	\$119.99
#975774	Roxio Toast 5 Titanium	\$79.99

GVP \$449

200GB External FireWire Hard Drive Storage

#505570	GVP 80GB External FireWire HD 7200	\$169.00
#505565	GVP 120GB External FireWire HD 7200	\$229.00
#641667	GVP 200GB External FireWire HD 7200	\$449.00
#505564	GVP 40X/12X/48X External FireWire CDRW	\$169.00
#797415	Seagate Barracuda ATA IV 80GB HD ATA/100 7200	\$99.99
#945652	iomega Zip 250MB USB Powered Drive	\$149.95
#492261	iomega Zip 750MB USB Powered Drive	\$179.99
#962073	Ezquest Cobra+ 80GB FireWire Ext HD 7200rpm	\$199.00

SOURCE CODE: ZMWC233

ClubMac®

E-Mail:cmsales@clubmac.com
Local & International Sales(949) 768-8130
24-Hour Fax(949) 768-9354

1-800-260-8549

24 hours
7 days a week

www.macworld.com

December 2002 | MACWORLD | 109

Since 1987

MEGAHAUS
Everything High Tech
all Under One Roof

Award Winning Service
We've been satisfying customers for nearly 15 years!
www.megahaus.com/mac



HARD DRIVES

Seagate.			
ULTRA SCSI			INT.
18.4GB 7200	2MB	ST318418N	\$165
36.7GB 7200	2MB	ST336918N	\$239
ULTRA 160 SCSI			
18.4GB 7200	2MB	ST318438LW	\$155
18.4GB 10,000	4MB	ST318406LW	\$179
18.4GB 15,000	8MB	ST318452LW	\$249
36.7GB 7200	2MB	ST336938LW	\$225
36.7GB 10,000	4MB	ST336706LW	\$259
36.7GB 15,000	8MB	ST336752LW	\$395
73.4GB 10,000	4MB	ST373405LW	\$559
146.8GB 7200	16MB	ST314617LW	\$1179
ULTRA 320 SCSI			
36.7GB 10,000	8MB	ST336607LW	\$309
73.4GB 10,000	8MB	ST373307LW	\$579
146.8GB 10,000	8MB	ST3146807LW	\$1089
IDE ULTRA ATA/100			
20.0GB 5400	2MB	ST320014A	\$65
40.0GB 5400	2MB	ST340010A	\$78
40.0GB 7200	2MB	ST340016A	\$83
60.0GB 7200	2MB	ST360021A	\$98
80.0GB 7200	2MB	ST380021A	\$115
120.0GB 7200	2MB	ST3120023A	\$175

Visit our website at www.megahaus.com/seagate

Maxtor			
ULTRA 160 SCSI			
18.4GB 10,000	8MB	KW018L2	\$139
36.7GB 10,000	8MB	KW036L4	\$245
73.4GB 10,000	8MB	KW073L8	\$539
IDE ULTRA ATA/133 FLUID BEARING			
20.0GB 7200	2MB	6E020L0	\$75
30.0GB 7200	2MB	6E030L0	\$79
40.0GB 7200	2MB	6E040L0	\$87
60.0GB 7200	2MB	6V060L0	\$109
80.0GB 7200	2MB	6V080L0	\$125
120.0GB 7200	2MB	6V120L0	\$185
160.0GB 5400	2MB	4A160L0	\$265

Visit our website at www.megahaus.com/max

IBM			
ULTRA 160 SCSI			
18.3GB 10,000	4MB	07N6350	\$175
36.7GB 10,000	4MB	07N6340	\$259
73.4GB 10,000	4MB	07N6300	\$569
146.8GB 10,000	4MB	07N6800	\$239
33.7GB 15,000	4MB	07N6801	\$379
IDE ULTRA ATA/100			
40.0GB 7200	2MB	07N9208	\$87
60.0GB 7200	2MB	07N9209	\$105
80.0GB 7200	2MB	07N9210	\$119
120.0GB 7200	2MB	07N9219	\$179
ULTRA 320 SCSI			
36.7GB 10,000	8MB	08K0342	\$285
73.4GB 10,000	8MB	08K0332	\$559
146.8GB 10,000	8MB	08K0322	\$1059

Visit our website at www.megahaus.com/ibm

Western Digital			
IDE ULTRA ATA/100			
20.0GB 5400	2MB	WD200EB	\$69
20.0GB 7200	2MB	WD200BB	\$75
40.0GB 5400	2MB	WD400EB	\$78
40.0GB 7200	2MB	WD400BB	\$85
60.0GB 5400	2MB	WD600AB	\$97
60.0GB 7200	2MB	WD600BB	\$105
80.0GB 7200	2MB	WD800BB	\$115
80.0GB 7200	8MB	WD800JB	\$125
100.0GB 7200	8MB	WD1000BB	\$145
120.0GB 7200	2MB	WD1200BB	\$175
120.0GB 7200	8MB	WD1200JB	\$195
180.0GB 7200	8MB	WD1800JB	\$375
200.0GB 7200	2MB	WD2000BB	\$409
200.0GB 7200	8MB	WD2000JB	\$449

Visit our website at www.megahaus.com/wd

FUJITSU			
ULTRA 160 SCSI			
18.4GB 10,000	8MB	MAN3184MP	\$149
36.7GB 10,000	8MB	MAN3367MP	\$249
73.5GB 10,000	8MB	MAN3735MP	\$549
ULTRA 320 SCSI			
36.7GB 10,000	8MB	MAP3367NP	\$279
73.5GB 10,000	8MB	MAP3735NP	\$559
147.0GB 10,000	8MB	MAP3147NP	\$1059

Visit our website at www.megahaus.com/fuj

2.5 IDE LAPTOP

20.0GB 9.5mm	Toshiba	MK2018GAS	\$102
30.0GB 9.5mm	Toshiba	MK3017GAS	\$135
40.0GB 9.5mm	Toshiba	MK4018GAS	\$169
60.0GB 9.5mm	Toshiba	MK6021GAS	\$345
20.0GB 9.5mm	IBM	07N8325	\$105
30.0GB 9.5mm	IBM	07N8326	\$139
40.0GB 9.5mm	IBM	07N8327	\$169
60.0GB 12.5mm	IBM	07N8328	\$405
20.0GB 9.5mm	Hitachi	DK23DA-20F	\$99
30.0GB 9.5mm	Hitachi	DK23DA-30F	\$139
40.0GB 9.5mm	Hitachi	DK23DA-40F	\$169
10.0GB 9.5mm	Fujitsu	MHR2010AT	\$85
20.0GB 9.5mm	Fujitsu	MHR2020AT	\$95
30.0GB 9.5mm	Fujitsu	MHR2030AT	\$135
40.0GB 9.5mm	Fujitsu	MHR2040AT	\$165

USB DRIVES

3.5 HARD DRIVES W/CASE (5400RPM)			
20.0GB	USB-20GB		\$169
40.0GB	USB-40GB		\$185
60.0GB	USB-60GB		\$199
80.0GB	USB-80GB		\$229
120.0GB	USB120GB		\$329
160.0GB	USB160GB		\$395

FIREWIRE DRIVES

3.5 HARD DRIVES W/CASE (5400 RPM)			
20.0GB	CFW-20GB54		\$185
40.0GB	CFW-40GB54		\$199
60.0GB	CFW-60GB54		\$229
80.0GB	CFW-80GB54		\$249
120.0GB	CFW120GB54		\$299
160.0GB	CFW160GB54		\$439
3.5 HARD DRIVES W/CASE (7200 RPM)			
20.0GB	CFW-20GB72		\$195
40.0GB	CFW-40GB72		\$209
60.0GB	CFW-60GB72		\$239
80.0GB	CFW-80GB72		\$259
120.0GB	CFW120GB72		\$309

CONTROLLERS

FIREWIRE			
WD 1394 PCI Card	WDAD004RNV		\$52
WD 1394 CardBus	WDAD003RNV		\$82
ATA 66/100/133			
Sonnet ATA/100 PCI	TAT-100		\$89
A Card ATA/100 PCI	AEC-6280M		\$105
A Card RAID/66 PCI	AEC-6860M		\$139
Sonnet ATA/133 PCI	TAT-133		\$99
A Card ATA/133 PCI	AEC-6880M		\$169
Sonnet RAID/133 PCI	TAT-133R		\$195
SCSI ULTRA/WIDE/ULTRA 160			
A Card Ultra SCSI	AEC-6712TUM		\$47
A Card Wide SCSI	AEC-6712UWM		\$92
A Card U160 SCSI	AEC-67160M		\$155
Adaptec U160 SCSI	APD29160MAC		\$315
Adaptec Dual U160 SCSI	APD39160MAC		\$405

CD-RW'S

FIREWIRE REWRITABLE			
Yamaha 44x24x44, External FireWire & USB 2.0 Kit			
CRW-F1ZDX			\$272
CDCyclone 40x12x48 w/Software, Cable & Media			
7070			\$195
TDK 24x10x40 VeloCD Drive Kit			
FE-241040BX			\$239
SCSI REWRITABLE			
Plexor 12x10x32 Packet Write, 4MB Buffer, Tray Loading			
Int. PXW1210TSB			\$219
Ext. PXW1210TSBX			\$279
With Toast Mastering Software			
Int. PXW1210TSM			\$289
Ext. PXW1210TSM			\$349
Yamaha 44x24x44 Exclusive Disc@2 Laser Labeling Sys.			
Int. CRW-F1ZS			\$239
Ext. CRW-F1ZSX			\$319

U160 HARD DRIVE

Seagate.			
18.4GB/15,000 RPM			
8MB BUFFER			
SCSI ULTRA 160			
ST318452LW			
			\$249

SCSI CD-RW DRIVE

YAMAHA			
44X24X44			
EXCLUSIVE LASER LABELING SYS.			
Int. CRW-F1ZS			\$239
Ext. CRW-F1ZSX			\$319

18" MONITOR

HITACHI			
18" VIEWABLE			
LCD FLAT-PANEL			
CML181SXW			
			\$1039

RAID SOLUTIONS

MEGA-RAID			
2.5TB EXTERNAL			
RAID SOLUTION			
5400 RPM			
RAID-ATA25M			
			\$12,499

ZIP 750 DRIVE

ZIP 750MB EXTERNAL WITH SOFTWARE			
IDE 32328			\$149
USB 2.0 32324			\$172

TAPE DRIVE

SONY			
SONY AIT EXTERNAL DEVICE			
35-90 GB			
USB 2.0 & FIREWIRE			
SDX-420COMBO			
			\$869

NETWORK AREA STORAGE

MEGA-NAS			
480GB NAS SOLUTION 10/100			
NASAS-2040/480G			
			\$3595

2.5 IDE HARD DRIVE

FUJITSU			
20.0GB/2MB BUFFER			
IDE LAPTOP DRIVE			
MHR2020AT			
			\$95

USB 2.0 CD-RW

PLEXTOR			
40X12X40			
4MB BUFFER			
PXW4012TUSW			
			\$187
mac software not included			

19" MONITOR

HITACHI			
18" VIEWABLE			
FLAT SCREEN CRT			
CM715U-S11			
			\$285

DIGITAL STORAGE

owerFile			
FIREWIRE			
200 CAPACITY			
DVD JUKEBOX			
11215			
			\$1049

FIREWIRE DRIVE

PORTABLE 30GB FIREWIRE DRIVE			
32380			
			\$249

TAPE DRIVE

TAPESTOR DDS-4			
20-40GB WITH SOFTWARE			
STD2401LW-R			
			\$899

USB 2.0 CD-RW

ARTEC			
ARTEC RETAIL KIT			
32X12X48			
27904			
			\$169

1202 Mac World **ALL US FOR HARD TO FIND PARTS!**

1.800.786.1184
www.megahaus.com
Sales lines open:
M-F 7-8, Sat 9-1, CST
Secure Ordering
Para Llamadas En Español
(800) 786 - 1174

Choose 108 at www.macworld.com/gecode

Prices & specifications subject to change without notice. Shipping charges are non-refundable. Returns must be in new condition and in original packaging. Defective items may not be refundable. No money back guarantee on special order items not listed in ad. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at full price. All warranties listed are manufacturer's warranty only. For complete terms and policies, please visit our website. ©2002 Megahaus, Inc.

MAKE APPLE® THE CENTER OF YOUR DIGITAL WORLD!

www.JandR.com **NOW**
Faster & Easier
America Online Keyword: J&R

MP3

Apple® iPod™
5GB Portable
MP3 Player For Mac®
•Ultra-slim, doubles as a FireWire® disk
for files & applications •Holds up to
1,000 songs •2" LCD with white backlight
•Browse your music with easy-to-use scroll wheel
•Over 20 EQ presets •Store up to 1,000 contacts
•Seamless integration with your Mac®
•Rechargeable lithium polymer battery provides
up to 10 hours of continuous playtime
•Only 6.5 oz. •Includes earphones,
AC adapter, FireWire® cable & iTunes® 3

\$299⁹⁹ (APP MB513LL/B)

Apple® iPod™ 10GB Portable MP3 Player For Mac®
(APP MB737LL/A) **\$399.99**

Apple® iPod™ 20GB Portable MP3 Player For Mac®
(APP MB738LL/A) **\$499.99**

Hard Drive

**LaCie External
FireWire® Hard Drive**

•7200 rpm rotational speed
•2MB buffer •Ideal for
professionals and home users,
and for various applications
such as databases,
desktop publishing,
digital content creation and
digital audio/video
•FireWire® interface
•For PC/Mac



60GB Hard Drive
\$199⁹⁹ (LAC 300509)

80GB Hard Drive
\$219⁹⁹ (LAC 300510)

120GB Hard Drive
\$269⁹⁹ (LAC 300511)

HOME OFFICE

**Palm™ Tungsten T
Color Handheld**

•Most compact & powerful Palm handheld
•Palm OS 5 •16MB RAM •Ultra-sharp color
•Bluetooth Technology •Voice recorder •USB cradle

\$499⁹⁹
(PALM P808505)



**Hewlett-Packard
LaserJet 3200m
Laser Printer/Fax/Copier/Scanner**

•Print: up to 9 ppm/1200 x 1200 dpi •Post-
Script emulation •Fax: max. 300 pg. memory &
275# speed dialing •Zoom copier •Color scan-
ner •USB/parallel •For Windows/Mac

\$699⁹⁹
(HP C7055A)



APPLE®

Apple® eMac™ G4/700
128/40GB/Combo Drive All-In-One Computer

•700MHz PowerPC™ G4 processor •128MB SDRAM
•40GB Ultra ATA drive •DVD/CD-RW Combo
•56K modem •NVIDIA GeForce2 MX graphics
with 32MB DDR RAM •10/100 BaseT Ethernet
•2-FireWire®/5-USB ports •17" flat CRT display
•Built-in speakers •Mac® OS X & OS 9
•Movie™ 2, iTunes™ 2, iPhoto™ & more

\$1099⁹⁹
(APP MB891LL/A)

3-Year AppleCare® Protection Plan for
eMac® Computers
(APP MB7812LL/B) **\$149.99**



APPLE®

Apple® iBook™ G3/700
128/20GB/Combo Notebook Computer

•700MHz PowerPC™ G3 processor •12.1" TFT XGA
•128MB SDRAM •20GB HD •DVD-ROM/CD-RW combo
•ATI Mobility Radeon graphics with 16MB VRAM
•56K modem •10/100 Ethernet
•1-FireWire®/2-USB ports •VGA/S/Composite-video out
•4.9 lbs. •Mac® OS 9 & Mac® OS X (v10.1)
•iTunes™, iPhoto™ & iMovie™ 2

\$1499⁹⁹ (APP MB602LL/A)

3-Year AppleCare® Protection Plan
for iBook® G3 Computers
(APP MB094LL/A) **\$249.99**



APPLE®

Apple® G4 iMac™ 800
256/80GB/SuperDrive™
All-In-One Computer

•800MHz PowerPC™ G4 processor •256MB SDRAM
•80GB hard drive •SuperDrive™ (DVD-R/CD-RW)
•NVIDIA GeForce4 MX graphics w/32MB VRAM
•56K modem •10/100 Ethernet
•17" widescreen flat-panel display
•2-FireWire®/5-USB ports •Mac® OS 9.2/OS X (v10.1)
•iTunes™, iMovie™ 2 & more

\$1999⁹⁹ (APP MB812LL/A)

3-Year AppleCare® Protection Plan for iMac® G4 Computers
(APP MB7812LL/B) **\$149.99**



APPLE®

Apple® PowerBook™ G4/800
512/40GB/Combo/GigE/AirPort®

•15.2" TFT •800MHz PowerPC™ G4
•512MB RAM •40GB HD •AirPort® card
•DVD-ROM/CD-RW combo •V.90 modem
•ATI Mobility Radeon 7500 graphics
with 32MB DDR VRAM
•10/100/1000 Ethernet
•1-FireWire®/2-USB ports
•DVD/Video out •5.4 lbs.
•Mac® OS 9.2/OS X (v10.1)

\$3199⁹⁹
(APP MB392LL/A)

3-Year AppleCare® Protection Plan for PowerBook® G4 Computers
(APP MB109LL/A) **\$299.99**



MONITORS

AG Neovo X-174
17.4" TFT LCD Digital/
Analog Monitor

•SXGA up to 1280 x 1024 •0.27mm pixel pitch
•400:1 contrast ratio •160° H/V viewing
•DVI-D/Video inputs •Black

\$949⁹⁹ - \$500⁰⁰
J&R Instant Rebate thru 12/31/02

\$799⁹⁹ Mail-In Rebate thru 12/31/02
(NDO X-174)



Formac Gallery 1740 17.4" Flat-Panel LCD Digital Display (ADC)

•Up to 1280 x 1024 res. •0.27 dot pitch •160° viewing angle •400:1 contrast ratio
•10-25ms pixel response time •Apple® Display Connector (ADC)

(FMC FGD1740-1) **\$799.99**

Formac Gallery 2010 20.1" TFT LCD Flat-Panel Digital Display (ADC/DVI)

•1600 x 1200 max. res. •170° H/V viewing angle
•Interface: ADC for Apple® Power Mac® G4/
DVI for Mac/PCs •500:1 contrast ratio
(FMC FGD2010-1) **\$1649.99**

DIGITAL CAMERAS

Nikon D100
Digital SLR Camera

•6.1 megapixel •Lens interchange-
able •3-mode color setting •5-area
autofocus •3D Digital Matrix Image
Control •High-speed image processing
•1.8" LCD monitor •Accepts CompactFlash®
& IBM Microdrive™ •Switchable NTSC/PAL
video output •Compact & lightweight
•USB •Software •For Windows/Mac

\$1999⁰⁰ (NKH D100)



Canon EOS D60 Kit Digital SLR Camera Body

•6.3 MP •1.8" TFT LCD •Accepts CF cards & all Canon EF lenses •Autofocus •USB
•Remote, battery, power: adapter/cable & DC coupler •For Windows/Mac

(CAN EOSD60/KIT) **\$2199.99**

Fuji FinePix S2 Pro Digital Camera

•SLR-type •6.1MP CCD •Accepts Nikon F mount lenses •Dual slots
for SmartMedia™/IBM Microdrive™ •FireWire®/USB
•Batteries, cables & software
(FUJ FINEPIXS2) **\$2399.99**

DIGITAL CAMCORDER

Panasonic® PV-DV851
Digital Palcamcorder

•Mini DV •Mega pixel CCD •Opt./100x dig. zoom
•2.5" color LCD monitor •Color viewfinder
•Digital image stabilization •8MB
SD memory card •5-mode program
AE •PhotoShot™ built-in digital still
camera •PHOTOVU LINK •LINK (IEEE
1394) PC interface •USB •Software

\$629⁹⁹ (PAN PVDV851)



Sony DCR-TRV18 MiniDV Camcorder

•1/4" advanced HAD™ 680K CCD •Carl Zeiss™ 10x opt./120x dig. zoom
•2.5" SwivelScreen™ •Super SteadyShot™ •8MB Memory Stick™ •MPEG Movie EX
•InfoLithium battery & wireless remote •LINK®/USB

(SON DCRTRV18) **\$699.99** **FREE Ground Shipping**

Sony DCR-TRV40 Digital® Handycam™

•Digital8® recording •Hi8™ & 8mm playback •1/4" 1070K CCD
•15x optical/420x digital zoom •3.5" color SwivelScreen™
•Digital Still Camera w/8MB Memory Stick™ •Remote

(SON DCRTRV40) **\$699.99**
FREE Ground Shipping

**7 Days
A Week
Anywhere
In The USA**

TO ORDER TOLL FREE & RECEIVE OUR FREE CATALOGUE:

800-221-8180

Park Row • New York, NY 10038 • Fax: 800-232-4432

*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

All Major Credit Cards Accepted

Overnight Delivery Available!

Order Code: MWM1202

(Prices Good Until 12/15/2002)

Macworld Showcase Featured Advertisers

OSX Showcase

Stone Design stone.com

El Gato Software elgato.com

Developer Showcase

ADS Technologies adstech.com

Griffin Technology griffintechology.com

Time Image timeimage.com

Data Video Corp. datavideo-tek.com

Gefen gefen.com

Orange Micro orangemicro.com

CoolShield.com coolshield.com

Hoodman Corporation hoodmanusa.com

The PowerSource thepowersource.com

Data Video Corp. datavideo-tek.com

Tomatochip.com tomatochip.com

Lind Electronics lindelectronics.com

Granite Digital scsipro.com

Marathon Computer marathoncomputer.com

Geethree.com geethree.com

Biomorph Interactive biomorphdesk.com

Eskape Labs eskapelabs.com

World Data barcodehq.com

Dr Bott drbott.com

Photo Control photo-control.com

MarWare marware.com

QuickVoice quick-voice.com

PPX2 ppx2.com

Compucable compucable.com

Everything iPod everythingipod.com

Services Showcase

Copy Craft copycraft.com

Fat Cow Hosting fatcow.com

Full Sail Real World Education fullsail.com

Mac Solution Experts macsolutionexperts.com

Total Recall totalrecall.com

AmericasPrinter.com americasprinter.com

Lazarus lazarus.com

Drive Savers drivesavers.com

Sharpdots sharpdots.com

Creative Juices bigposters.com

Presentation Services imagers.com

Postcard Press postcardpress.com

Direct Showcase

Journey Educational journeyed.com

MegaMacs megamacs.com

Academic Superstore academicsuperstore.com

Ramjet ramjet.com

Mac Solutions macsolutions.com

Data Memory Systems datamem.com

PowerOn Computers poweron.com

1-800-4-Memory 18004memory.com

PowerMax powermax.com

Otherworld Computing macsales.com

Shreve Systems shrevesystems.com

Applelinks.com thinkdifferentstore.com

Mac of all Trades maccalltrades.com

MacPro mac-pro.com

POS Direct posdirect.com

For more information, contact Niki Stranz or Carol Johnstone at (800) 597-1594.

FREE UPGRADES FOR LIFE!

TIRED OF BEING SHAKEN DOWN FOR EXPENSIVE, BUGGY, FORCED UPGRADES FROM THE BIG VENDORS? JOIN THE PEOPLE WHO BELIEVE THAT YOU SHOULD BUY SOMETHING ONCE – AND HAVE IT FOREVER! SUPPORT AN OPEN AND FREE SOFTWARE DEVELOPMENT COMMUNITY NOT RUN BY MARKETING TYPES OR BEAN COUNTERS.



The applications in Stone Studio — starring Create® — have all the most used features of these applications: Illustrator, Quark Xpress, DreamWeaver, Freehand, Corel Draw, PageMaker, Timeslips, Acrobat Writer, Stuffit Deluxe, ImageReady, iPhoto and more. Visit www.stone.com/Stone_Studio_Successes to see how people just like you get their best ideas out into the world.



STONE STUDIO™

7 APPS 1 LOW PRICE 0 PAID UPGRADES

STONE STUDIO DOWNLOAD NOW FROM WWW.STONE.COM



\$299

Any Place, Any Time . . .

Any Time

With EyeTV you can watch shows when it is convenient for you. It's like making the networks rearrange their schedules just for you!



Any Place

You can record dozens of hours of programs on a typical Mac hard drive. PowerBook and iBook users can watch their favorite shows on a plane, at the beach, anywhere.

Your Shows

Use EyeTV's program guide to find your favorite TV shows. Search by title, actor, or genre. Watch it now or automatically record it for later.



Your Way

EyeTV gives you the power to pause the show, even live television, and resume watching whenever you're ready. Use Instant Replay to jump back and see that scene again or use Jump to skip over commercials.

Macworld
BEST
OF SHOW
2002

EYE TV
DIGITAL VIDEO RECORDER

www.elgato.com



Make TV fit into your busy life, not the other way around

SHOWCASE
YOUR PRODUCTS TO OVER
2 MILLION READERS

*SOURCE: INTELLIGEST DIMS v. 8.0

Macworld
800.597.1594

**GROW
YOUR
BUSINESS**
1.800.597.1594
Macworld

"Data Memory Systems has been advertising in Macworld since 1996 and over that period, we have realized the largest return on investment of all other print media advertising that we've done . . . Macworld is where our advertising will stay."

DAVE WEIDLICH, MARKETING MANAGER,
DATA MEMORY SYSTEMS



We Proudly Present Our New White Peripherals For Mac!



rfMOUSE
Wireless Mouse

With functionality and form in mind, Macally brings to you our newly designed ultra slim extended keyboard, radio frequency wireless mouse and many other new peripherals. Our products will greatly improve your productivity and compliment your Mac.

iceKEY
USB Slim Keyboard



Works with OS X

Call us for dealers near you 1.800.644.1132
www.macally.com

Help For The DVD-Challenged



USB Instant DVD For Mac- \$499_{MSRP}

* CD-RW drive required for creating CD-RW disks. FireWire DVD recordable drive or SuperDrive required to create DVD disks.
Don't Steal Movies

**Capture & create your video then
burn DVDs or VCDs to play on your DVD
player!**

- USB Instant DVD For Mac gives you all the tools you need for capturing video in DVD/ MPEG-2 format from ANY Analog video source (Camcorder, VCR, DVDPlayer, etc.)
- Capture Audio/Video in REAL TIME at full DVD 720 x 480 resolution
- Edit videos and send back to VCR or burn to DVD or Video CD*
- **Includes:** Pixela Video Capture & DVD- Authoring Software
- Mac OS 10.1 or 10.2 Only

Connect



PYRO 1394DV for Notebooks
• Add 2 FireWire ports (one 6-pin & one 4-pin) to your Mac notebook - \$79

Create



PYRO 1394 WebCam
• High-quality, FireWire video conferencing
• Includes Mac software for Mac & PC users - \$79

Store



PYRO 1394 Drive Kit
• Convert your IDE hard drive or CD/DVD drive into an external FireWire drive (also available in USB 2.0) - \$99



ADS products are available everywhere including: Mac Zones, Mac Mall, CompUSA, B&H Photo, Video Guys, DV Direct, Data Vision, CWOL.com, J&R Music World, Micro Center, MacWarehouse, ComputerWorld Canada, Macsales.com& more!



Cerritos, CA - 800-888-5244
www.adstech.com

What can PowerMate do for you?



Take It For A Scroll

PowerMate is the fastest way to scroll through long text documents, spreadsheets, web pages. With a flick of the wrist, you get to the bottom of the story in record time.

Make Movies With A Twist

Edit your video masterpiece with your very own Jog/Shuttle wheel. Use PowerMate to scroll through and trim unwanted footage with the push of a button.



Power Control

PowerMate is an assignable controller. That means you can program it to do anything you want in any application. Program the wheel to scroll your email, set the button to switch to your browser. Customize it to your needs and get wild.

Pump Up The Volume



PowerMate is the coolest volume knob your desk has ever seen. Crank up your MP3s and CDs. Then with a push of its button, mute your music to answer the phone and handle the complaints.



PowerMate

USB Multimedia Controller & Input Device

ONLY
\$45.00

PowerMate is the coolest volume knob your Mac has ever seen and so much more. Use it to edit iMovies, scroll through long documents and web pages. Best of all, PowerMate is an assignable controller. Program it to do anything you want in any application. PowerMate - take it for a spin.



JUST
\$35.00

iMic

USB Audio Interface

- Adds stereo audio input to your Mac
- Plug-and-Play, no software required
- Portable, no installation or power needed
- Supports MP3, QuickTime and AIFF files



JUST
\$39.00

USB Audio Hub

4-Port USB Hub for Audio

- Optimized for USB-based audio recording
- Works both powered and unpowered
- External power supply included
- Functions as standard USB 4-port hub



ONLY
\$19.99

PowerPodAuto

Ultimate iPod Car Charger

- Works with any cigarette lighter or 12V accessory port in your car, truck or boat
- Charges while playing your music
- Uses any FireWire cable for custom fit

Now you have two **easy** ways to purchase your Griffin Technology product directly.
Order by phone at 615-399-7000 or **order online** at www.griffintechnology.com/store.

GRIFFIN TECHNOLOGY

ORDER NOW 615-399-7000

www.griffintechnology.com



Amazing!

10 Volume Film Library

ONLY \$195.00

ALL ROYALTY-FREE • ON MINI DV

View Demo and Order at

www.timeimage.com

HUNDREDS OF SHOTS

Time Lapse, World Locations, NASA, War, 3-D Animations, and More!

Perfect for Final Cut Pro, Premiere & AfterEffects

(We Accept Checks and MOs)



datavideo
DAC-100 DV CONVERTER



**CONVERT
BOTH WAYS!**

THE SIMPLEST SOLUTION FOR
DIGITAL/ANALOG CONVERSION

- Edit DV and export VHS, S-VHS, HI-8
- Import VHS, S-VHS, HI-8
- Works with NTSC or PAL
- 12 bit / 16 bit Audio Sampling

Find a dealer at 888-809-3282
www.datavideo-tek.com

PUMP UP THE VOLUME

"I have to give Macworld Showcase part of the credit for our four-fold growth last year . . . There is no substitute for an ad in Macworld"

ERIC PRENTICE, CEO
DR. BOTT LLC



Macworld

1.800.597.1594

ADC • DVI • CAT-5 • USB

Extenders • Converters • Switchers • Distribution • Adapters

ex·tend·it **ADC Switcher**
ADC, DVI, USB and Audio Switcher

Ideal for switching Monitor, Keyboard/Mouse and Audio
between two computers connected to an ADC Flat Panel Display



DVI to ADC
Conversion Box

Extends and Connects an
Apple Flat Panel Display to any Mac or PC Computer

Macworld
EXCLUSIVELY

800-545-6900 www.gefen.com

"One Small Step for iBOT One Giant Leap for Web Cams"



iBOT

World's first FireWire® Web Cam!

Warp speed provided by FireWire® Technology

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 USB web cams.

The iBOT works on MacOS 9 and OS X.

AVAILABLE AT:
MicroCenter
Fry's Electronics
1394 FireStation.com
& others

Orange Micro
Inc.
www.orangemicro.com



Choose 61 at www.macworld.com/getinfo

**CoolShield**

Improves screen visibility
when working outdoors

Maintains privacy and confidentiality
when working in public places

Illuminates the keyboard
when working in darkened places

Collapsible, portable and easy to mount
no velcro, no special attachments

Only
\$39.99

www.CoolShield.com • (212) 663 - 5093

See Your Laptop's Screen Outside!



\$39.95

800.818.3946

www.HoodmanUSA.com



Order directly from:
www.ThePowerSource.com

- Designed for iBooks and PowerBooks
- Exceeds Apple's requirements
- One Year Warranty

AC & Auto Power Adapters

Introductory price
\$39.95
Half the cost of others!



FIND A DEALER AT 888.809.3282
www.datavideo-tek.com

**POWER -
now PORTABLE**

**THE DVBANK
FIREWIRE DV RECORDER**

datavideo

Capture DV content directly to a high performance disk drive-based system while shooting, or anytime afterwards. Seamless loop playback is perfect for presentation playback. Available in 60 or 100 Gigabyte configurations, with 4.5 or 7.5 hours of DV storage time. Optional RS422, RS232 control.

TomatoChip.com

Your source for
**Mac Peripherals,
USB & FireWire Solutions,
and Networking Products**



USB Programmable Mouse

Starting at **\$6.99**

Shown: USB Programmable Mouse



**FireWire and USB Hard Drive
Conversion Kits**

Starting at **\$87.99**

Shown: 2.5" HDD Conversion Kit



FireWire and USB Cables

Starting at **\$0.99**

Shown: USB Extension Cable



USB and FireWire Hubs

Starting at **\$7.50**

Shown: 2-port USB Hub

... and more!

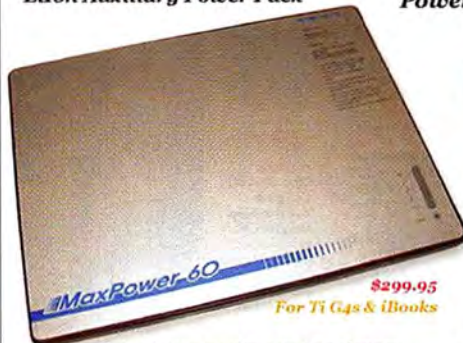
tomatochip.com

LIND

**Power Accessories for
Mobile Computing**

***Introducing the
MaxPower 60
LiIon Auxiliary Power Pack**

**Auto/Air Power Adapters
for
PowerBook G4s & iBooks**



\$299.95
For Ti G4s & iBooks

Extend your runtime up to 3x longer
Only 2.5 lbs - 11.25 x 8.5 x .5"
Includes AC adapter and cables



\$79.95

Lind adapters feature:
Fault protection circuitry
with Automatic reset
Durable ABS housing
Nylon carrying case

Order online at:
www.lindelectronics.com
or call #800-897-8994 to order

Lind Electronics, Inc. 6414 Cambridge Street, Minneapolis, MN 55426 #652-927-0303

S.M.A.R.T. FireWire - 1394 Hot-Swap - ULTRA 320 SCSI

S.M.A.R.T. FireWire Case Kits **\$199**



S.M.A.R.T. (Self Monitoring Analysis and Reporting Technology) adds reliability. Now you can monitor performance, predict possible data loss, and know everything you ever wanted about your drive. It's like having a technician built into every case. Small lightweight, compact size (6x8x1 1/4) make this the best there is.

FireVue™ FireWire Case Kits

\$139 Simply add your IDE drive to our case and you have an instant FireWire Drive. Two models, 3.5" and 5.25". Supports Hard Drives, CD-Roms, tape, and a variety of other devices.



Now with ATA-6!

FireVue™ FireWire Bridge Boards

If you have an existing case or if you want to have an internal drive connected to the FireWire bus then this is the solution for you. It plugs into any IDE Hard Drive and converts it to FireWire. With its super fast 40MB/s operation it is the fastest choice on the market to date.



FireVue™ FireWire to Cardbus

The perfect solution for any PDA/Laptop or Portable computer. This card is both Mac and PC compatible. Gives you two 1394 6-pin FireWire connectors. Supports up to 400MB/s speed. Optional Power Supply.

FireVue™ FireWire to PCI Host

\$69 Gives you four 1394 6-pin FireWire connectors. IEEE Standard compliant with auxiliary power connector on card. Supports up to 400MB/s speed. Works with Mac OS 8.6 or newer, just plug it in. Also supports Windows 98SE, ME, 2000, and XP.

SCSIVue™ Gold Diagnostic Cables

\$39 No Loss of Important Data • Faster Performance • Test Cable Integrity • Features: • Diagnostic Indicators • Large Ferrite Filters • Triple Shielding (Unique Design) • Double Gold 20u" Plated Connectors • Extra Heavy 26 Gauge Wire • 100 Styles in Stock

LVD-TPO Teflon™ Internal Cables

\$39 Benefits: • Less Errors, Ultimate Performance • Silver Wire Improves Signal Quality • Features: • Perfect 90 or 132 Ohm Impedance • Custom in 1 Day • Triple Pronged Connector - Gold contacts Silver Wire



Online Catalog at... www.granitedigital.com

FIREWIRE PRODUCTS

Our FireWire Hot-Swap Systems will transfer data at speeds up to 100MB/s!!! RAID or JBOD

FireVue™ FireWire RAID / JBOD systems offer up to 960 gigabytes of storage. Now you can have all the storage you want at affordable prices. We are now able to get a true 40MB/s data transfer rate; using 3 channels our data transfer rate hits 100MB/s!



960 Gigabyte 8 Hot-Swap Bays

\$3999 8 - Bay Tower holds 960 Gigabytes of Hot-Swappable Drives. Trays incorporate exclusive Blue Neon Light.



480 Gigabyte 4 Hot-Swap Bays

\$1999 4 - Bay Tower holds 480 Gigabytes of Hot-Swappable Drives. Trays incorporate exclusive Blue Neon Light.



240 Gigabyte 2 Hot-Swap Bays

\$999 2 - Bay Tower holds 240 Gigabytes of Hot-Swappable Drives. Trays incorporate exclusive Blue Neon Light.



Our Hot-Swappable RAID / JBOD Systems offer quick and easy tray interchangeability and complete fault tolerance. Each Hot-Swap Tray includes 2 fans and our exclusive Blue Neon Light. Systems can be custom configured to your specific needs. Our RAID Systems use standard IDE ATA100 / 133 Drives offering low cost and high reliability.



FireVue™ FireWire Aluminum RAID

Our Hot-Swappable Aluminum RAID / JBOD (just a bunch of drives) Systems offer quick and easy tray interchangeability.



Case Kits from **\$549**

These cool running lightweight Aluminum Towers are easy to move around from computer to computer. The Frosty Trays are completely compatible with the Red Colored Trays. Each Hot-Swap Tray includes 2 fans and our exclusive Blue Neon Light. Systems can be custom configured to your specific needs. Our RAID Systems use standard IDE ATA100 / 133 Drives offering low cost and high reliability.

FireVue™ Gold FireWire Cables

Diagnostic LED monitors power on the FireWire cable. Gold Connectors, Ferrite Beads, and perfect cable characteristics. Lengths up to 32', both 4 and 6 pins.

Our 32' 6 pin to 6 pin Cable is a Granite exclusive. These cables go longer because they are made better! 2 x Specification.

FireVue™ FireWire 6" Patch Cables

LED shows that power is being supplied. 6" Patch Cable connects External Cases or Internal Drives in RAID Cases. Large Ferrite Bead protect cable from static and noise interference.

FireVue™ FireWire Snap-In Cables

These Snap-In FireWire Cables allow you to easily install a FireWire drive into any existing case or computer.

FireVue™ FireWire Adapters

4-4 Pin - Connects 2 Cables
6-6 Pin - Connects 2 Cables
4-6 Pin - Converts 6 Pin Cable
6-4 Pin - Converts 4 Pin Cable

S.M.A.R.T. FireWire Hot-Swaps



S.M.A.R.T. Technology for reliability and Hot-Swap for affordable, easy removability. This is the ultimate storage system on the market. It is the idea solution for large backups, DV, AV, and other large storage needs. Your data is safe in our SMART Hot-Swap System.

FireVue™ FireWire Hot-Swaps



Hot-Swap Case Kit

\$229 Additional TRAYS **\$29.95**

FireVue™ FireWire

Hot-Swap Case Kits offer versatility and low cost transportable data storage. You simply buy the kit and as many extra bays to hold all the storage you need. Perfect for video production jobs, just dedicate a drive and bay for every job. With the low cost of IDE storage this system is one of the most cost effective "on-line" storage systems available.

Hot-Swap w/ 60 Gig IBM

\$379

Hot-Swap w/ 120 Gig IBM

\$509

Above systems include, everything needed to plug and play on any Mac or Windows 98SE, ME, 2000, XP platform.

FireVue™ FireWire Hot-Swap Bay

\$159 The Hot-Swap FireWire Bays fit all standard 5 1/4" openings. Can be used in any standard enclosure computer opening. Comes with Neon glow bar indicator, Ultra fast 40 MB/s second generation speed, and two cooling fans.

FireVue™ FireWire 6 Port HUB

These FireWire 1394 HUB / Repeater allow you to connect up to 6 devices. They can also be wired together to offer unlimited capabilities. Power Supply guarantees proper operation of many devices at the same time and rejuvenates the lines.

Gold VHD Ultra320 SCSI Cable

\$109 Features: • New .8mm Ultra 320 SCSI Connector • Triple Shielding (Unique Design) • Double Gold 20u" Plated Connectors • Diagnostic Indicators • Large Ferrite Filters

SCSIVue™ Active Terminator

\$39 Seven models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits: • Improves SCSI Bus Performance • Less Errors; More Reliable Data Transfer • Diagnoses Problems • Analyzes Signal Quality

Features: • Active Regulation • Fast 50 & Fast Wide 68 • Status Indicators • Gold Contacts

FREE Technical Support!!!

Available to everyone, customer or not.

ULTRA 320 SCSI PRODUCTS

SCSIVue™ Ultra 320 SCSI Cases



From: **\$99**

OPTIONS: • Ultra 320 LVD Cable Kit • Dual Hot-Swap Redundant PS • Hot-Swap SCSI Bays w/ Bracket • 2-3 Fan Bay Coolers w/ Brk • Temp Alarm System

• Ultra SCSI Custom Teflon Cable Available • Custom Enclosures in 1 Day for RAID & Arrays

Download Our Color Catalog at... www.granitedigital.com

SCSIVue™ SCSI RAID Enclosures



From: **\$999**

Our 8 Bay Rack Mount Enclosure includes a 250 watt power supply. These cases are commercial quality. Optional rails are also available.

SCSIVue™ RackMount RAID

Our 8 Bay Rack Mount Enclosure includes a 250 watt power supply. These cases are commercial quality. Optional rails are also available.

From: **\$399**

Granite Products Are The Best Because They're Engineered Right.

Granite


Granite "The Solution Company"

3101 Whipple Rd. Union City, CA. 94587

Ph: 510-471-6442 Fax 510-471-6267

Jump back, Jack, we can put your Mac inside of any standard 19-inch equipment rack. That's not all that Marathon can do; we can put your monitor inside there too. Your CRT, your LCD, we can rack it up as easy as ABC.

RACK YOUR WORLD



G-Rack for G4

MARATHON COMPUTER

With iRack for iMac and a 40-Unit high rack, put forty CPUs in one six-foot-high stack. Get off of the desk, get up off the shelf. You got your Mac, we got your rack, install it yourself. We're Marathon. That's all. We're gone.

www.marathoncomputer.com
email: info@marathoncomputer.com
800-832-6326 • 615-367-6467

Choose 164 at www.macworld.com/getinfo

Fog Mattes 4 Volumes!

Slick

Transitions & Effects

Plug-ins for iMovie

Ideally suited for documentaries, independent films, or any video project.



buy CD or download at: www.geethree.com

Choose 162 at www.macworld.com/getinfo



*stylish
smart
ergonomic*

biomorph[®] interactive desk

biomorph.com free catalog 888 302-DESK

Biomorph is a reg. trademark of S. Barlow-Lewison ©2002 Ground Support Equipment (USA) Ltd

Choose 161 at www.macworld.com/getinfo

Got OS X TV?

MyTV2GO and MyTV...
TV for your Mac

Eska Labs
A Hauppauge Company

From \$79



From \$134



Now with OS X support included

download new OS X software at www.eskape.com/tech.html

You've got to see it to believe it!

www.eskape.com



ClubMac

MICRO CENTER
THE COMPUTER DEPARTMENT STORE

1-800-DEPOT

MacMail

Bar Code Headquarters

Broad selection of Mac bar code products

- Portable Bar Code Readers
- Integrated USB Readers
- Keyboard Readers
- Wand, CCD or Laser Scanners
- Magstripe Scanners
- Wireless Scanners
- Wireless Interactive RF Terminals
- Postscript Bar Code Fonts
- Polyester Label Stock
- Made in the USA



Call us toll-free at 800-345-4220

or visit us online at www.barcodehq.com

- Technically superior products
- Shop online at www.barcodehq.com
- Free Catalog & Bar Code Primer
- 30 day money-back guarantee

- 18 years of dedicated customer service
- Toll-free technical support
- Same-day shipping
- Free 2-day air in US

Ph. (831) 458-9938 • Fax (831) 458-9964 • Email wds@barcodehq.com

WORTH
data

YOUR WISH LIST JUST GOT LONGER!



Pause live television, skip commercials and record your favorite shows all on your Mac!

EYE TV
DIGITAL VIDEO RECORDER

The ProScope



scalar

USB, handheld, digital microscope.

Cool Mac Keyboard



Crywolf
COMPUTERS

Ultra-flexible and durable, waterproof USB keyboard.

PowerMate



GRIFFIN
TECHNOLOGY

Cool and unique USB audio controller.

iPod Sportsuit Convertible



MAFWARE, Inc.

Protect your iPod with this sleek case.

iPod Connection Kit



Dr. Bott

Connect an iPod to your computer or car, home, or portable sound systems.

T3 Hubs



Dr. Bott

Thumb-sized, self-powered, 3-port USB hubs.

Dr. Bott

Attention Resellers: Dr. Bott has hundreds of useful, high-quality products for Macs!

877.611.2688 (toll free)

503.582.9944

www.drbott.com

Docking Stations for G4 PowerBooks and 2001 iBooks

\$244⁹⁹ titanium
\$229⁹⁹ black

\$159⁹⁹ white
\$144⁹⁹ black



Convert your PowerBook or iBook to a desktop system in seconds.

- 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.



BookEndz

A Division of Photo Control Corporation
4800 Quebec Ave. N, Minneapolis, MN 55428
Phone: (763) 537-3601 • Fax: (763) 537-2852
www.photo-control.com

www.bookendzocks.com

BookEndz Lindahl

Norman Camerz

SportSuit™
Convertible.
The best sports case available for the iPod.
Many colors and wearing options.



Visit our web site at:
www.marware.com
for more information on our Apple products.

SportFolio™ neoprene cases for iBook and G4 laptops. Maximum protection, minimum bulk, abundant storage.



954-927-6031

QUICKVOICE

Personal Recorder,
Voice Reminder,
Voice Email, and
Voice Stickers



For Ideas • Memos • "To Do's" • Meetings • Multimedia Audio • Lectures • Reminders • Journals

Featuring:
10 Recording Channels • 99 Messages Per Channel • One-Click Recording • Unlimited Recording Time • One-Click Voice Email

Download
Only \$19.95

Highly Rated! (4.8 of 5)

See Tucows, MacGeneration, Version Tracker, CNet

www.quick-voice.com

Capture your thoughts with the click of the mouse!

PubPro X2

Publication Management Software

"I bought PPX2 to help run our 3 magazines and in the first month I caught 2 human errors and saved the company \$3000 in lost revenues"

- Typical PPX2 Customer

www.ppx2.com

meM®

20/30/40 GB of Video, Music, Photos, and Data... To Go!

X-MeM

XPAND YOUR STORAGE INSTANTLY.
XPEDITE FILE TRANSFERS.

- Cartridge & Reader design maximizes portability
- FireWire and USB compatible (adapters included)
- Built-in 3-port FireWire repeater allows daisy-chaining
- MacOS9.1/X, Win98SE/ME/2000/XP compatible



CompuCable
Manufacturing Group

Available at

INGRAM
MICRO

CDW

WAREHOUSE

1-800-344-6921

X-MeM.compuccable.com

Register To Win A FREE iPod™

*No purchase necessary

The Aqua Jam Jacket



A translucent
silicone
iPod case

Fits ALL
iPod models!



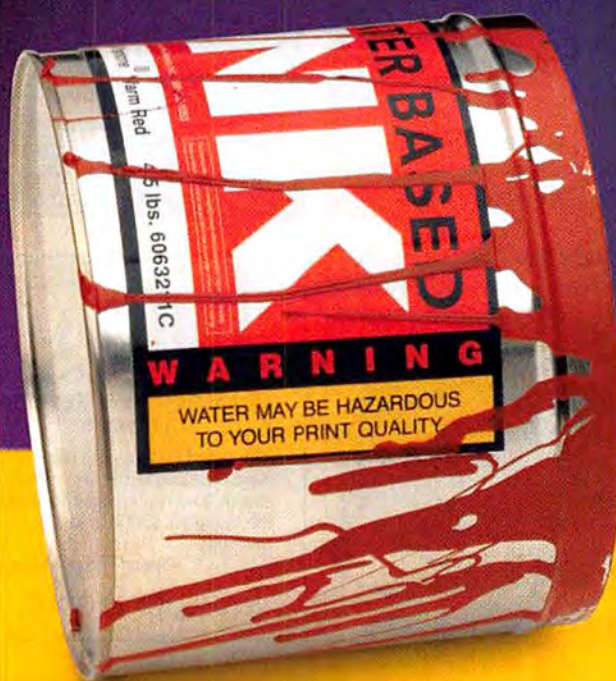
Over 100 different iPod Accessories!

Only at...

everythingipod.com

The Number One Source for iPod Accessories

300 LINE SCREEN WATERLESS PRINTING



It's true, printing with water is way too hazardous if you want accurate and precise color. 300 Line Screen Waterless printing delivers superior color saturation. Don't compromise your print design or quality one dot. As a leader in waterless printing, Copy Craft Printers is ready to help you set a new standard of quality and excellence in your print projects. Call or email us at request@copycraft.com right away. You'll find us easy to do business with and besides we guarantee it!



Your Wholesale Source for 300 Line Screen Waterless Printing

4413 82nd Street, Lubbock, Texas 79424

1-800-794-5594

www.copycraft.com



**big hosting plan.
simple price.**

- 100MB disk space
- 100 email accounts
- 5GB monthly transfer
- Shopping Cart
- Frontpage Extensions
- CGI, PHP, MySQL
- Control Panel
- Lots more!

WWW.FATCOW.COM/MAC

Toll Free: 1-866-506-9572

www.fullsail.com
800.226.7625

FULL SAIL
Real World Education



school of:
digital media
audio
film
computer animation
game design & development
show production & touring

Full Sail's
Adobe Lab
is one of over
60 studios,
production suites,
and computer labs
located on campus.

3300 University Blvd. • Winter Park, FL 32789

Job placement assistance.
Accredited college, ACCSCT.
Financial Aid available to those who qualify.

© 2002 Full Sail, Inc. All rights reserved. The terms "Full Sail Real World Education" and the Full Sail logo are either registered service marks or service marks of Full Sail, Inc.

**Macintosh
Service & Support**Nationwide, On-Site Office & Home
Provided by Local Mac Solution Experts

- ◆ Troubleshooting
- ◆ Networking
- ◆ Upgrades
- ◆ Graphics
- ◆ Training
- ◆ Database
- ◆ Digital Video

Mac
Solution
Experts1-877-865-6813
www.MacSolutionExperts.com**DATA RECOVERY**

Damaged drive? Lost files? Call us!

**FASTEST TURN-A-ROUND
IN-LAB OR REMOTE RECOVERY
GUARANTEED RESULTS****TOTAL RECALL**
THE DATA RECOVERY COMPANY800-743-0594
www.totalrecall.comThree Regional Service Centers!
COLORADO • FLORIDA • NEVADA**Data Recovery in hours.**

- Over 16 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.

- We've recovered more than 1 million gigabytes of Mac Data alone.

- You only pay when there's a recovery.

- Express One-Day Service is available.

- www.lazarus.com

415-485-5555 • FAX 415-485-5553 • RESTRICTIONS MAY APPLY
379 Clementine Street • San Francisco, California 94103**LAZARUS**
DATA RECOVERY

Working at the speed of business.

800-341-DATA

Choose 217 at www.macworld.com/getinfo

DATA RECOVERY: 800-440-1904**7 great reasons to choose DriveSavers:**

- Fastest, most successful data recovery service.
- Recommended by all hard drive companies.
- Advanced, proprietary techniques.
- 24-hour and weekend services available.
- Instantly retrieve recovered data with DATAEXPRESS™.
- Featured on CNN, BBC, MacWorld, MacAddict, and many others.
- Government Contracts.

**"We Can Save It!"**Visit DriveSavers at www.drivesavers.com

©2002 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 INTL: 415-382-2000

Choose 211 at www.macworld.com/getinfo

**AmericasPrinter.com**

The easiest way to print today.

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 most jobs anywhere in the USA within 2-3 days from your order and data file.

From Film to Finishing, One Price completes the Job!**15pt Super Heavy C/2/S cardstock**

w/ Gloss UV on color side(s) - 175 line Kodak film included.

		1000	2500	5000	10000
Business Card dimension size 3.5" x 2"	4/1	\$50	\$70	\$130	\$220
	4/4	\$90	\$110	\$190	\$320

1/4pg Postcard dimension size 4.25" x 5.5" or 2.75" x 8.5"	4/1	\$130	\$130	\$190	\$340
	4/4	\$170	\$170	\$260	\$470

1/2pg Postcard dimension size 5.5" x 8.5" or 4.25" x 11"	4/1	\$190	\$190	\$340	\$650
	4/4	\$260	\$260	\$470	\$850

100lb Cover Cardstock C/2/S Gloss

Grade 1 Sheet - 175 line Kodak film included.

		2500	5000	10000	15000
1/4pg Postcard dimension size 4.25" x 5.5" or 2.75" x 8.5"	4/1	\$120	\$160	\$310	\$440
	4/4	\$130	\$190	\$350	\$490

1/2pg Postcard dimension size 5.5" x 8.5" or 4.25" x 11"	4/1	\$160	\$310	\$595	\$850
	4/4	\$190	\$350	\$640	\$910

100lb Gloss Book (text) C/2/S

Grade 1 Gloss Sheet - 175 line Kodak film included.

		1000	2500	5000	10000
One sheet dimension 8.5" x 11" - This can be folded as a tri-fold, half fold, etc. Folding additional	4/0	\$199	\$280	\$445	\$690
	4/4	\$295	\$395	\$550	\$895

Brochure / Poster dimension 11" x 17" - This can be folded as a 4 page brochure, tri-fold, etc. Folding Additional	4/0	\$345	\$445	\$690	\$1095
	4/4	\$430	\$550	\$895	\$1395

8 Page Catalog 8.5 x 11 w/ folding & saddle stitching	4/4	\$985	\$1295	\$1760	\$2695
	4/4	\$1895	\$2495	\$3295	\$4970

714.521.1100 CA • 800.552.1303 toll free

714.521.5650 fax • jobs@AmericasPrinter.com

6940 Aragon Circle, Buena Park, CA. 90620

An Evening With Angels

With Angel Stories & Prayers
Katherine M. Miller

\$50 - 1,000 Business Cards
For Leave-Behinds, Mini Head Shots, etc.

sharpdots.com

Your Online Resource For All Your Printing Needs

1-800-800-NOVA

fax:918-663-6340 Prices rounded down & may change

Student Software Guide
Save Up to 75% OFF!

www.journeyed.com
1-800-874-0901
JourneyEd

Adobe
Microsoft
Discreet
Avid
Macromedia
Alias/Wavefront
Softimage
Autodesk
Extensis
Alien Skin
Digimation
Symantec
Corel
ADAM
Wacom
Many More

174 at www.macworld.com/getinfo

- Free print sample from your file
- Color lasers as low as 30¢ each
- Film scans as low as 90¢ each
- Digital photo prints up to 12" x 18"
- Slides/4x5 - neg, pos, black & white
- Offset CMYK color printing



www.imagers.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

NEW! **IT'S EASY**
send your digital file
we'll print your job in
2-3 days!

- ✓ New 2002 Heidelberg Speedmaster Press!
- ✓ Superthick cardstock!
- ✓ New mailing services!

4x6 Postcards			Business Cards		
Qty	4/1	4/4	Qty	4/0	4/4
500	95	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

POSTCARD PRESS

1-800-957-5787
www.postcardpress.com

ACADEMIC DISCOUNTS

Save Up To 80%
On Name Brand Software

FULL VERSION ACADEMIC PRICES FOR STUDENTS & TEACHERS

Adobe®	Microsoft®
Acrobat 5.....Save 77%	Office X.....Save 60%
Photoshop 7.....Save 52%	NewTek®
Illustrator 10.....Save 77%	LightWave 3D 7.5.....\$395
Web Collection.....Save 66%	Procreate®
Design Collection.....Save 60%	Painter 7.....\$199
Macromedia®	KnockOut 2.....\$145
Flash MX.....\$94	KPT Effects.....\$79
Dreamweaver MX.....\$94	Wacom®
Studio MX.....\$189	Graphire2.....\$84
Director 8.5.....\$324	

ALL MAJOR MANUFACTURERS...
ALL AT HUGE DISCOUNTS!

FREE UPS Use Discount Code:
GROUND SHIPPING **MW112**
When You Order.

1-800-218-7455

VISIT US TODAY:

AcademicSuperstore.com



RAMJET

Save Money
on Top
Quality RAM

Memory
Same Day Shipping

Educators:

PO's Accepted
from Schools &
Government
Institutions.

"When I called, I talked to a
LIVING PERSON right from the
start who was knowledgeable!
How rare these days."

Secure Online Ordering at:

www.ramjet.com

Educational
Discounts
Available.

1-800-831-4569

Ramjet Quality Means:

1. Faster System Performance
2. Fewer Crashes & Lock-Ups
3. No Hassle Advanced Replacement Policy



Spend More Time Creating. Less Time Re-Creating

Choose 180 at www.macworld.com/getinfo

Hard Drive Fire Sale!

Size	RPM	Type	Internal/External	Price
60gb	7200	FireWire® Oxf 911	E	\$169
80gb	7200	FireWire® Oxf 911	E	\$189
120gb	7200	FireWire® Oxf 911	E	\$249
20gb	4200	IBM 9.5mm/Laptop	I	\$105
30gb	4200	IBM 9.5mm/Laptop	I	\$139
40gb	4200	IBM 9.5mm/Laptop	I	\$159
60gb	5400	IBM 12.5mm/Laptop	I	\$359
External 3.5 FireWire case w/ Oxf 911				69

Software & Specials!

ThinkFree Office	\$ 37
AirPort® BaseStation-Gray	149
Mac® OS 9.0 w/Free 9.1 CD	89
Mac® OS 8.6 w/Free 8.5 CD	79
Mac® OS 8.1 CD only	39
Microsoft Word/Entourage 2001	WOW! 99
Kensington Flylight USB	16
DVD-R Blank Media 10-pack	YIKES! 15
Macally PCI Card Dual USB 2.0	24
Griffin PowerMate	40
Griffin iMate USB/ADB Adapter	35
Griffin iMic USB Audio Adapter	30
Dr. Bott ADC/VGA Extractor	27
G4Port Internal Serial Port	39
LaCie FireWire DVD-R/RW+CD-RW	429
LaCie USB pocket Floppy Drive	49
LaCie CD-RW 48x12x48 USB/FireWire	189
LaCie Pocket CD-RW 24x10x24 USB/FW	257
LaCie Electron 19 Blue Natural Flat	FREE shipping! 389
LaCie Electron 22 Blue Natural Flat	939
Contour Designs Shuttle Pro	89
Color Keycaps for Final Cut Pro	69
Pioneer DVR-104 DVD-RW Internal	265

Memory

for all Apple CPUs

Plus, Insanely Great Deals!

Lifetime Warranty on all RAM

Computer Model or Socket Type	RAM Type/Description	Prices listed by module M3 size:	1gb Kit
		32 64 128 256 512	
G4 Dual 1GHz/1.25GHz	DDR PC 2700	- - - \$59 \$119	\$235
Xserve/G4 Dual 867	DDR PC 2100	- - - \$59 \$109	\$215
G4 iMac®	PC-133 168 pin CL3	- - \$11 \$22	\$45 \$89
G4 AGP 466-Dual 1GHz	PC-133 168 pin CL3	- - \$11 \$22	\$45 \$89
PowerBook® G4	PC-100 144 pin CL2	- - \$19 \$29	\$85 \$165
G3/G4/iMac® 350-600	PC-133 168 pin CL3	- - \$11 \$22	\$45 \$89
PowerBook® G3	PC-100 144 pin CL2	- - \$19 \$29	\$49 \$95
iBook®/iMac® 233-333	PC-100 144 pin CL2	- - \$19 \$36	\$85 -
168 pin DIMMs		\$13 \$17	\$27 -
72 pin SIMMs		\$9 \$19	- -

DDR RAM
In Stock!

Apple Authorized Reseller Apple Specialist Apple Authorized Service Provider

Secure Online Ordering at www.macsolutions.com

800-873-3726

MacSolutions, Inc. 11933 Wilshire Boulevard, West Los Angeles, CA 90025 Fax: (310) 966-4433
University & School P.O.'s Welcome Note: Prices subject to change without notice. Ad code 930

*Check website for details on new computer purchases. Not responsible for typographic errors. Limited to stock on hand. Not valid in combination with any other promotions.

Macs, Macs, Macs and More!

Power Mac® G4
All Dual configs
in stock

PLUS... Free 256mb RAM & Free Shipping!

Western Digital
D540X
IDE/ATA
Internal 120 GB
Only \$124

iMac G4/700
128+40GB CD-RW

only \$1,150 PLUS... Free 256mb RAM w/129 install fee

Only \$99
Microsoft
Word/Entourage 2001

Blank DVD-R Media
10-pack
only \$15

iMac G3/500 \$749
Special Purchase!!
128/20GB CD-ROM

PLUS... Free Gig of RAM & Free Shipping!

Office Party! Microsoft
Office v.X

Only \$199 with purchase of any New Mac!

TRADE UP YOUR OLD G4 NOW!
CALL FOR A QUOTE 1-800-80-WEBUY

www.macsolutions.com



MEMORY

DATA MEMORY SYSTEMS - CALL 800-662-7466
Lifetime Memory Guarantee - 30 Day Money Back

AC Adapters
Batteries
Cables
Camera Memory
DIMMs
MacCPU Upgrades
Iomega Stuff
Modems
Monitors
Networking
PowerBook Memory
Printer Memory
SDRAM
SIMMs
Storage Drives
Surge
Suppressors

Memory

- ✓ PC66 SDRAM
- ✓ PC100 CL2/CL3
- ✓ PC133 SDRAM
- ✓ ECC & EDO

Networking

- Client/Server Systems
- Ethernet Cards & Conns.
- Hubs
- CAT5 Cabling

DMS has all you need
to network your business

Since 1986, DMS has provided
customers with the best mem-
ory prices, guarantee and
service anywhere!

Nothing has changed...
Secure Online Shopping
www.datamem.com

DMS
DATA MEMORY
SYSTEMS
24 Keewaydin Dr.
Salem, NH 03079
Fax: 603-898-6585

Choose 213 at www.macworld.com/getinfo

**WHY IS THE COMPETITION
SHAKING?**

BECAUSE

1-800-4-MEMORY

IS HERE

WE CAN BEAT

**ANY QUOTED PRICE ON ANY
MEMORY FOR ANY COMPUTER
(NOTEBOOK, DESKTOP,
PRINTERS) ANYWHERE ...
PERIOD!**

- LIFETIME WARRANTY
- FREE TECH SUPPORT
- NO CREDIT CARD SURCHARGE
- MOST ORDERS SHIPPED SAME DAY

**CALL AROUND
THEN CALL US**

CHECK OUR WEB SITE FOR SPECIALS
WWW.18004MEMORY.COM

PowerON

8a-5p PST M-F
916-677-6227 tel
916-677-6228 fax

• computer services •

iMac 233Mhz
233Mhz Bondi Blue iMac
Multiple Configurations
only \$319.99

***INTERNET READY**

Beige G3
266Mhz Desktop
64/4GB/CD/ENET
only \$349.99

***INTERNET READY**

Serial InkJet
HP680c
Includes:
Serial Cable,
Black and
Colored Ink
only \$139.99

WE BUY G3s
Entire e Labor
Single Laptops
email your list to:
purchasing@power-on.com

9GB SCSI
50pin SCSI
7200 RPM
1.6"x3.5" HH
only \$69.99

iMacs IN STOCK
333Mhz to 400Mhz
All Colors Available
only \$419.99

***INTERNET READY**

G3 B&W IN STOCK
300Mhz, 350Mhz & 400Mhz
Blue & White Mini-Tower
from \$449.99

***INTERNET READY**

7600/200Mhz
40MB/1GB/CD/AV
*Free Modem
\$139.99

5200/75Mhz
16MB/500MB/CD
*Free Modem
\$79.99

5500/225Mhz
32MB/2GB/CD/ENET
*Free Modem
\$149.99

Epson 1200u Scanner
USB Color
\$49.99

MacOS 8.5 OEM CD
FREE web upgrade to 8.6
\$79.99

3COM PCMCIA 56K
V.90 Modem, X-Jack
*PowerBook Modem
\$59.99

Digital Camera
USB 800x600 max
Built-In Flash
only \$34.99

***Buy 5+ only \$27.99**

Apple 17" Monitor
17MS, 1705, 1710, 720
"No Logo" Refurbished
only \$79.99

***Buy 5+ only \$69.99**

**CDROM & DVD
CLEARANCE**

Apple eeprom 300i 2x CDROMSCSI	\$19.99
Apple eeprom 600i 4x CDROMSCSI	\$29.99
Apple eeprom 1200i 8x CDROMSCSI	\$39.99
Apple eeprom 1800i 12x CDROMSCSI	\$49.99
Apple eeprom 3600i 24x CDROMSCSI	\$69.99
Apple eeprom 3600i 24x CDROMATAPI	\$69.99
Apple eeprom 4800i 32x CDROMATAPI	\$89.99
Apple eeprom 1x (20x) DVDROMATAPI	\$69.99
Apple eeprom 5x, 6x & 8x DVDATAPI	\$89.99
iMac 24x CDROM Trayloading	\$79.99
iMac 24x CDROM Slotloading	\$89.99
iMac 4x or 6x DVD Slotloading	\$99.99
iMac Internal CDROM Slotloading	\$179.99

**HARD DRIVE
CLEARANCE**

Apple eeprom 1GB TH 50 pinSCSI	\$19.99
Apple eeprom 1GB TH PerformaIDE	\$19.99
Apple eeprom 2GB TH 50 pinSCSI	\$39.99
Apple eeprom 2GB TH DriveIDE	\$39.99
Apple eeprom 4GB TH 50 pinSCSI	\$59.99
Mac Ready 9GB HH 50 pinSCSI	\$69.99
Mac Ready 18GB HH 68 pinSCSI	\$119.99
Mac Ready 36GB HH 68 pinSCSI	\$179.99
Apple eeprom 40GB TH G3/G4EIDE	\$89.99
Apple eeprom 60GB TH G3/G4EIDE	\$119.99
Adaptec 2930U2B 50pin PCISCSI	\$39.99
Adaptec 3950U2B Dual ChannelSCSI	\$69.99
Atto UL2D Dual Channel PCISCSI	\$69.99

Build your own SCSI External
Case & Cables
Buy a SCSI drive + **\$49.99**

Build your own USB External
PCI USB Card, Case & Cables
Buy an EIDE drive + **\$89.99**

Make a FIREWIRE External
PCI Firewire Card, Case & Cables
Buy an EIDE drive + **\$99.99**

All brands and product names are registered to their respective holders and are respectfully acknowledged.
All prices include a 3% cash discount. 20% restocking fee. Returned/Refused items.
ALL PRODUCTS are USED and/or REFURBISHED unless otherwise noted. 90 day PowerON WARRANTY.

8801 Washington Blvd., ste. 101, Roseville, CA 95678
www.poweron.com
CALL or ORDER ONLINE 800-673-6227

Choose 198 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!

FREE RIO™ 600 MP3 PLAYER!

That's right! Buy a new PowerMac G4 Tower and get one of these nifty Rio™ 600 MP3 players. This super-compact unit comes with headphones, USB cable, and more!



Ask About Our Free RAM Offer!

iMac G3/500, 64MB RAM, 20 Gb, CD-RW, 56K Modem	\$599
iMac G3/600, 256MB RAM, 40 Gb, CD-RW, 56K Modem	\$799
iMac G4/700, 128 RAM, 40 Gb, CD-RW, 56K Modem, 15" Scm	\$1188
iMac G4/800, 256 RAM, 80 Gb, SuperDrive, 17" Screen	\$1899
PowerBook G4/667, 256MB RAM, 30 Gb, Combo	\$2249
PowerBook G4/667, 512 RAM, 30 Gb, Combo	\$2399
PowerBook G4/800, 512 RAM, 40 Gb, Combo	\$3099
iBook G3/600, 128MB RAM, 20 Gb HD, CD-ROM	\$1069
iBook G3/600, 128MB RAM, 15 Gb HD, DVD	\$1088
iBook G3/700, 256MB RAM, 30 Gb HD, Combo	\$1669

DISPLAYS & PRINTERS

We stock a huge selection of displays from Apple, Sony, Lacie, NEC and more. New, used



Epson C80 Color Inkjet Printer	\$339
Lexmark Z25 Color Inkjet Printer	\$99
Lexmark Optra S 2455N LaserPrinter	\$1049
Xerox Phaser 8200N Color LaserPrinter	\$1829

USED COMPUTERS

7100/66 MHz 40MB RAM, 500Mb HD	\$25
7100/75 MHz 88MB RAM, 500Mb HD, CD	\$50
604/150 MHz 32MB RAM, 2Gb HD, CD	\$75
PowerBook 5300GS 40MB RAM, 500Mb HD	\$166
7300/180 MHz 48MB RAM, 2Gb HD, CD	\$261
Beige G3/266 MHz 192MB RAM, 4Gb HD	\$367
9500/225 MHz 256MB RAM, 1Gb HD, CD	\$419
Beige G3/300 MHz 256MB RAM, 4Gb HD	\$529
G4/450 MHz 256MB RAM, 27Gb HD, DVD	\$959

A MAC FOR JUST \$25?

It's true! PowerMax has an extensive line-up of quality, pre-tested used Macs -- all with a 60-day warranty.



VALUE PRICED PACKAGE DEAL!

This used system is a great deal for the value-conscious Mac user!

Includes a 17" Studio Display and a G4/Dual 500 MHz/256MB RAM, 20 GB HD and DVD-ROM

Only \$1599

SOFTWARE



Get This Full Mac OS X Suite For \$399!

Get A Free Shuttle Pro with Final Cut Pro 3.0 Purchase!

Quark 5.0 For Mac	\$899
Adobe Indesign 2.0 For Mac	\$688
Adobe PhotoShop 7.0 For Mac	\$599
Adobe Illustrator 10.0 For Mac	\$399
Microsoft Office 10.0 for OSX	Only \$379!

*DEM CD bundle

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, Corvallis, 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/getinfo

The New G4s Are Here!

PowerMac G4/Dual 867 MHz, 256MB RAM, 60 Gb HD, Combo Drive	Call
PowerMac G4/Dual 1 GHz, 256MB RAM, 80 Gb HD, SuperDrive, RV250	Call
PowerMac G4/Dual 1.25 GHz, 512MB RAM, 120 Gb HD, SuperDrive, RV250	Call

We Have Last Years Models At Great Prices!

Get TONS Of Free Stuff With Every New G4 Purchase!



We've Got The 17" iMacs In Stock!
Call for the latest pricing!

Choose From Our Huge Selection of PowerBooks!
All styles! All Configs!

New iBooks! Perfect For The Student!
Our Sales Staff Will Help You Choose!

Need A Custom Mac?
Looking for more storage, more RAM or an upgraded video card? We can customize your next G4 to your specifications!

WE BUILD TO ORDER!

ProScope
DIGITAL USB MICROSCOPE

This amazing, hand-held micro-scope captures images on your computer screen at 10X, 50X, 100X, even 200X magnification! A great tool for industrial, law enforcement and educational purposes!

Only \$199! (Mac or PC)

STORAGE SOLUTIONS

Refurbished 5GB iPod..... NOW \$248!
Stores up to 1,000 songs! Compact and elegant design! 10-hour battery included!

Check out www.powermax.com for tons of iPod accessories!

We Carry a Huge Selection Of Hard Drives, CD-Burners and Removable Media from All Major Manufacturers!

TradeUp G4x2
With PowerMax!

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.

Local: (503) 624-1827 • Fax: (503) 624-1635
email: sales@powermax.com



Apple logo



visit **macsales.com**

School / University / Government / Corporate Purchase Orders gladly accepted. (Subject to credit approval)

Open Mon - Fri 8:30am - 8:00pm & Sat 10am - 4pm CST



Other World Computing

Serving the Mac Universe since 1988

800.275.4576



OS X ON LEGACY MACS!
FREE Installer
Software from OWC



finelist
macworld
eddy's

eshop.macsales.com/osxcenter

Have the Power of X on your Pre-Beige G3 PowerMac!

Excellent Service

Competitive Prices

Quality Products

Expert Tech Staff

Other World Computing has the Memory, HD, or Accelerator for your Mac! Not sure what you need? Call our Mac Experts for free assistance, or use our Online Guide at <http://eshop.macsales.com/myowc>

Legacy Mac memory

Memory for your Legacy Mac and Mac clone!



168PIN Mac 5V DIMMs 60ns/70ns

Add up to 1GB or MORE memory to your PowerMac 7375/76/85/86/95/9600; SuperMac J700/S900; PowerComputing PowerCenter/PowerTower/PowerWave and other compatible models!

	FPM	EDO
64MB	\$21.95	21.99
128MB	\$25.99	26.75

168PIN 3.3v Mac DIMMs EDO 60ns

Upgrade your PowerMac 4406, 7220/200; StarMac 3000/4000; other compatible clones

32MB	\$17.95
64MB	\$24.95

72PIN FPM SIMMs for 60ns/70ns

For Older Macs, Nubus PowerMacs, and others:

32MB 72 Pin 8x32 SIMMs 2K 60/70ns	\$9.97
64MB 72 Pin 8x32 SIMMs 2K 60/70ns	\$15.99
16MB 30 Pin 16x8 SIMMs 60/70/80ns	\$11.99

3.5" SCSI drives



500MB Major Manufacturer \$9.95
1" Low Profile, 90 day OWC warranty

9.1GB IBM UltraStar 36LZX 10,000rpm 4.9ms, 4096k Buffer, 1" LP, new w/1yr OWC warranty	\$57.99
18.4GB IBM UltraStar 73LZX 10,000rpm 4.9ms, 4096k Buffer, 1" LP, new w/1yr OWC warranty	\$89.99
18.4GB Seagate Barracuda 36ES 7200rpm 8.5ms, 2048k Buffer, 1" LP, new w/3yr Seagate warranty	\$179.95
36.7GB IBM UltraStar 73LZX 10,000rpm 4.9ms, 4096k Buffer, 1" LP, new w/1yr OWC warranty	\$149.95

ATA/IDE PCI cards

Use ATA / IDE (3.5") hard drives in ANY PowerMac with a PCI slot!!



SIIG, Inc.

ONLY \$79.97!

Ultra133 ATA/133 Mac PCI Controller

Above three cards compatible with ALL Apple PowerMac models and compatible Mac clones with an available PCI Slot. Will allow use of up to 4 IDE/ATA Hard Drives.

ACARD AHard PCI Ultra ATA/66 Mac PCI Controller	\$59.95
Sonnet Trio ATA/133 + FW + USB Mac PCI	\$179.95

Memory for Apple G3/G4 PowerMacs, PowerBooks, iBooks, iMacs & Cubes!

PC133 CL2 & CL3 SDRAM DIMMs



For All PowerMac G4 Models 350-Dual 1GHz that use SDRAM DIMMs (except G4 'Yikes' PCI); iMac G3/350-700MHz; all G4 Cube Models; eMac G4/700-800MHz.

256MB	\$29.99
512MB	\$49.99

256MB PC133 CL2 2-2-2 HiPerformance	\$39.95
512MB PC133 CL2 2-2-2 HiPerformance	\$59.95

184pin DDR for New Aug' 02 Macs



PC2100 DDR 266MHz CAS 2.5	
For All Xserve models, G4 Dual 867MHz only	
256MB	\$54.95
512MB	\$117.95

PC2700 DDR 333MHz CAS 2.5	
For All Xserve Models, all 'new' G4 Dual 867MHz-1.25GHz models	
256MB	\$77.99
512MB	\$159.99

PC2700 is backwards compatible with PC2100 and may also be used in models that require only PC2100

PC100 CL2 SDRAM DIMMs

For all PowerMac G3 Models, PowerMac G4/350-500MHz (except G4/466 which requires PC133); All G4 Cube Models; iMac G3/350-700MHz.



128MB	\$19.95
256MB	\$29.95
512MB	\$49.95*

* For PowerMac G4 AGP / Sawtooth models, G4 Cube, iMac 350-700MHz ONLY. Also compatible with Intel / AMD based 'Winter' machines.

3.5" ATA/IDE drives



Call or visit
www.macsales.com for new drive up to 320GBs!

20GB Maxtor DiamondMax 541DX 5400rpm, <12ms, 2048k cache, ATA/100, 3yr Maxtor warranty	\$63.99
40GB IBM Deskstar 120GXP 7200rpm 5400RPM, <12ms seek, 2048k cache, ATA/100, 3yr Maxtor warranty	\$86.95
80GB Seagate Barracuda IV 7200rpm 8.9ms seek, 2048k cache, ATA/100, 3yr Seagate warranty	\$119.99
120GB IBM Deskstar 120GXP 7200rpm 8.5ms seek, 2048k cache, ATA/100, 3yr IBM warranty	\$179.99
180GB Western Digital 7200rpm JUMBO 8.5ms seek, 2048k cache, 3yr Western Digital Warranty	\$339.95
200GB Western Digital 7200rpm JUMBO 8.5ms seek, 2048k cache, 3yr Western Digital Warranty	\$399.95

Note: Above ATA Drives are fully compatible with all versions of vanilla ATA/IDE, ATA/33, ATA/66, ATA/100, ATA/133, EIDE, UDMA, Etc. Drives may be used with any Mac that has built in IDE/ATA or an added ATA/IDE controller (such as by SIIG, Acard, VST, or Sonnet).

Use ATA Drives in ANY PCI PowerMac! Don't have IDE/ATA built in or want a faster ATA/133 interface? OWC has the answers!

PC133 CL3 SO-DIMMs

For all Apple iBook models; iMac G4/700-800MHz; PowerBook G3 FireWire (yr 2000, aka Pismo). All PowerBook G4 Models.



256MB	\$31.99
512MB	\$59.99
512MB	\$99.95

Above memory operates PC100 CL2 in models utilizing PC100 memory.

PC100 CL2 SO-DIMMs



Apple iMac 233/266/333MHz models (all Rev A-D), PowerBook G3 Wallstreet (1998), PowerBook G3 Lombard (1999).

256MB	\$49.95
128MB	\$25.95
256MB Low Profile	\$59.99*

* Now you can have up to 512MB in your iMac or above PowerBook model

System Works

- Norton Utilities v6.x
- Norton AntiVirus v7.x
- Dantz Retrospect 4.3
- Quicken Deluxe 2000

Supports Apple OS 8 - 9.2.2; OS X



only \$9.99!

2.5" ATA/IDE notebook drives



Put up to 60GBs inside your PowerBook or iBook!

20.0GB Fujitsu MHR20AT 4200RPM, 2048k Buffer, 9.5mm, Slim, 3yr warranty	\$97.99
20.0GB IBM Travelstar 40GNX 5400rpm 5400RPM, large 8MB Buffer, 9.5mm, Super-Slim, 3yr IBM warranty	\$119.99
40.0GB IBM TravelStar 40GN 4200RPM, 2048k Buffer, 9.5mm, Slim, 3yr warranty	\$149.99
40.0GB IBM Travelstar 40GNX 5400rpm 9.5mm 5400RPM, large 8MB Buffer, 9.5mm, Super-Slim, 3yr IBM warranty	\$179.99
60.0GB Toshiba MK6021GAS 4200RPM, 2048k Buffer, 9.5mm, Super-Slim, 3yr Toshiba warranty	\$269.95
60.0GB IBM Travelstar 60GH 5400rpm 5400RPM, 2048k Buffer, 12.5mm, 3yr warranty	\$299.95

Put your existing notebook drive into a FireWire or USB Case!



- OWC Mercury Express 2.5" USB 1.1 Kit \$29.95
- OWC Mercury Express 2.5" FireWire Kit \$54.95

visit macsales.com

School / University / Government / Corporate Purchase Orders gladly accepted. (Subject to credit approval)

Open Mon - Fri 8:30am - 8:00pm & Sat 10am - 4pm CST



Other World Computing

Serving the Mac Universe since 1988

800.275.4576

Excellent service

Competitive prices

Quality Products

Expert Tech Staff

Mercury FireWire and FireWire / USB 2.0/1.1 Storage Solutions

Top-Rated OWC Mercury Elite FireWire Solutions are ideal for today's high speed Storage, Audio/Video, and Backup needs! High Performance and Superior Reliability come in this Elegant solution by means of the best components coupled with the Oxford911 bridge solution with data rates exceeding 40 MEGABYTES PER SECOND!

Plug and Play compatible with Apple OS 8.6-9.2.2, OS X; Windows 98SE, 2000, XP; Any OS with FireWire or USB* support.

Key Features: Cool Blue Activity Indicator, Near Silent Drive Operation, Large 2MB Data Buffer, Fully Audio/Video Capable, 2 FireWire Ports, 2 USB Ports*, All Connecting Cables Included, Intech Speedtools Performance Utilities Included, Data Rates in EXCESS OF 40 MEGABYTES PER SECOND! *FireWire = USB models only

OWC Mercury Elite

	FireWire	FireWire/USB 2.0/1.1
40GB 7200RPM	\$159.99	\$179.95
60GB 7200RPM	\$179.99	\$199.95
80GB 7200RPM	\$199.99	\$229.95
120GB 7200RPM	\$279.99	\$299.95
180GB 7200RPM	\$449.99	N/A
200GB 7200RPM	\$499.99	N/A
240GB-320GB NEW, CALL!		



OWC Mercury CD-R+RW / DVD-R+RW Solutions

Burn your own DVDs and CDs for Movies, Presentations, Backup, Music CDs, and More! OWC Mercury FireWire and USB solutions make it easy!

OWC Mercury 40x12x48x CD-R+RW External Solutions
FireWire \$179.97; FireWire + USB 2.0/1.1 Combo \$199.97

Features Teac Burnproof Technology and large 8MB Data Buffer. All Cables, Roxio Toast 5.1.x, 25 pieces CD-R Media, 1 Piece CD-RW Media included. Fully compatible with Apple iTunes and many others.

OWC Mercury Pioneer DVR-104 DVD-R+RW + CD-R/RW Solution
FireWire \$399.95; FireWire and USB 2.0/1.1 Combo \$419.95

Features the latest Pioneer Mechanism equivalent to what Apple features in SuperDrive equipped models. Fully compatible with iTunes, Apple DVD Studio Pro, Toast, and many others. All Cables, CharisMac Discrite 5.x, 5 Pieces of DVD-R 2X Media, 25 Pieces of CD-R Media included.



James Coates of the Chicago Tribune
"Mac users likely will just break into smiles when they plug this high speed hard drive into the FireWire ports on their machines."

MyMac.com review
5 out of 5



intech

All OWC Mercury FireWire Hard Drives include Intech's SpeedTools Utility for Mac.

Mercury On-The-Go FireWire Drives

The OWC Mercury On-The-Go is the lightest and most compact high performance FireWire solution available! With the same Oxford911 bridge as our Elite Series, these gems sustain data rates in excess of 35 MEGABYTES PER SECOND!



Plug and Play compatible with Apple OS 8.6 - 9.2.2, OS X; WindowsSE, 2000, XP; Any OS with FireWire Support.

Key Features: Shock Absorbent design isolates drive mechanism from casing, Cool Blue Activity Indicator, Near Silent Drive Operation, Large 2MB Data Buffer, FireWire Cable and Power Adapter included, may be bus powered or powered using included Power Adapter. Intech Speedtools Performance Utilities Included.

PCI FireWire/USB cards

Add FireWire and/or USB to your Mac from ONLY \$19.99!

There are thousands of USB and FireWire products you can use with just the addition of a simple PCI card!



MacAllly

3-port PCI FireWire Card \$19.99!

Plug and Play for Apple OS 8.6 - 9.2.x & OS X!

MacAllly PCI 2 FW & 2 USB 2.0 / 1.1 \$79.95

OrangeMicro 4 FW & 5 USB v1.1/2 \$119.95

Century 2 FW Cardbus for PowerBooks \$29.95

Sonnet PCI Trio FireWire & USB 2 & ATA/133 Combo \$179.95

20GB 4200rpm	\$175.97	20GB 5400rpm	\$199.97
40GB 4200rpm	\$239.97	40GB 5400rpm	\$279.97
60GB 4200rpm	\$359.97	60GB 5400rpm	\$399.97

FireWire Cable and AC Power Adapter included. Drive may be powered by FireWire Bus or with included power adapter.

www.MacSales.com for our full line of FireWire Solution including Lacie and EzQuest products.

Make your PowerMac MORE POWERFUL with a faster G3 or G4 upgrade TODAY!

OWC



PowerLogix



ATI

XLR8

SONNET

This is a fraction of the Mac Upgrades offered by OWC. Visit <http://www.FasterMac.com> to see all the upgrades available for your specific Mac Models!

GO UP TO 1GHz!!

PowerLogix PowerForce

G3/400MHz with 1024k cache \$119

G4/450MHz with 1024k cache \$229

For 7375/76/85/95/9600s & compatible clones



PowerLogix PowerForce Series 100

Series 100 1GHz(1000MHz) 2MB cache \$689.95

Series 100 800MHz upgrade 2MB cache \$447.99

Dual 1GHz and 800MHz - CALL!

For PowerMac G4 AGP and Cube Models. Get 2x, 3x, or more than 4x the performance from your current Mac!



Sonnet Crescendo PCI

Crescendo G4/800MHz 2MB \$399.95

For 7375/76/85/95/96 & compatible clones

NewerTech NuPower Pismo

G4/500MHz 1MB upgrade \$299.95

Upgrade ANY PowerMac G3 FireWire (aka Pismo / yr2000) to G4/500 with 1MB Cache!



OWC Mercury G3 & G4 ZIF Upgrades

G3/533MHz with 1024k 2:1 Cache \$179.93

G4/450MHz with 1024k 2:1 Cache \$179.94

G4/550MHz with 1024k 2:1 Cache \$259.99

Upgrade any PowerMac G3 Beige, G3 Blue & White, G4 'Yikes' PCI Mac Model or XLR8 ZIF carrier! Includes 2yr OWC Warranty.



NewerTech NuPower

G4/533MHz 1MB ZIF upgrade \$259.95

For all PowerMac G3 Models; PowerMac G4 'Yikes' PCI



Prices, specifications, and availability are subject to change without notice. Some reserves within 30 days may be subject to a 15% restocking fee. No return will be accepted without Return Merchandise Authorization number.

Some images the Courtesy of Apple

Other World Computing

International: (815) 338-8685
Fax: (815) 338-4332

Other World Computing
1004 Courtlands Dr., Woodstock, IL 60098



SHREVE SYSTEMS

For all of this and more-check out our website! <http://www.shrevesystems.com>



LASERWRITER IINT



\$100 without toner

Low Price

LOGIC BOARDS!

On Clearance now!

iMac (233-333Mhz)- **\$199**
G3 Logic Boards - **\$199**
G4 Logic Boards - **\$249**

*processor not included



7200/75 Logic Board

ONLY \$10.00!

NEW!



Voxon Monitors
AS LOW AS \$29!

Factory Refurbished

Apple Video... \$10 Apple iMac G4... \$10
Vector 300 with VGA Card... \$10
Focal 21 Pro 575... \$5 Apple Ethernet A/D Adapter... \$10
Power Monitor... \$5 Kensington Access Keyboard... \$10
Pro 16 Cards... \$2 Apple Wireless Cards... \$5
Apple Ethernet Nubus Card... \$10 Apple 16 Nubus Adapter... \$2
Apple Cinema 300 Nubus Adapter... \$2 Apple 16.25 Ext drive \$5
Apple 300 CD... \$10 Apple 3001 CD... \$10

1.44 SuperDrives

ITEM#661-0474

STARTING AT \$2

Firewire 3.5" Drives

20/30 GB available!
Call for best prices!

20 GB
ONLY \$89

30 GB
ONLY \$119

MacAllly Extended Keyboard



NEW!

\$5

TI MICRO LASER PRO E



ONLY \$249.00!

POWERBOOK 5300cs

FREE CARRY BAG!

- Supports ext. video
- 8MB RAM
- 750 Hard Drive
- 100-MHz 603se
- Dual-scan color
- Refurbished

ONLY \$149

MACINTOSH LC580 INTERNET READY!

- 33-MHz MC68LC040
- 8MB of RAM
- 800MB Hard Drive
- 28.8 Motorola Modem

ONLY \$79 with CD

CLEAR OUT PRICES!!!

6100/60 Mhz CPU\$49
7200/75 Mhz CPU\$69
PB 3400 Internal CD-ROM\$69
7250 WGS CPU.....\$149
7600 CPU.....\$199
3.5 Internal 18 GB H.D.....\$229
3.5 Internal 9 GB H.D.....\$149
Apple 21" Monitor.....\$599
Apple Color Laser\$499

IMAGING PRODUCTS

Apple QuickTake 150.....\$49
Apple QuickTake 100.....\$29

Apple 1.44 internal floppy 661-0121.....\$15
Diamond Javelin Card.....\$19
US Power Peripheri USB Mouse.....\$5
Apple 610 Nubus Adapter.....\$2
Apple Centriss 660 Nubusadapter.....\$2
Global Village teleport gold int. modem.....\$1
Apple LC CPU.....\$19
LC Power Supply.....\$50
8100 or 840 power supply.....\$19
Epson Personal Document Scanner.....\$5
PDA Leather case.....\$2
7300/180 Mhz CPU\$149

1/2 height 160 meg int. SCSI HD.CALL
Apple 13" RGB monitor(no cable).\$29
Rastorops 15" FDP Monitor.....\$19
Apple 1 meg VRAM simms.....\$5
Apple LC 580 CPU.....\$79
Kensington USB Videocam.....\$15
Apple Image II.....\$49
Apple portable Battery Charger.....\$2
Apple geoport telecom adapter.....\$10
Powerbook G3 battery.....CALL
GlobalVillage 19200bps for pb 500..\$10
7200/120 Mhz CPU\$129

Quadra 6600 NuBus Adapter...\$2
Quadra 610 Nubus Adapter.....\$2
Ilii Nubus adapter.....\$29
Diamond Javelin 3200.....\$19
*PowerMac HPV Card (1MB).....\$49
*PowerMac A/V Card (2MB).....\$49
*Radius Precision Color 8/1600..\$29
Apple Stylewriter Ethernet adapt.\$10
Ext. CD 2X.....\$29
3.5 Ext. SCSI Case.....\$39
7200, 7500, 7600 power supply.\$49
6400 or 6500 power supply.....\$49
Q900 or 950 power supply.....\$29

PRINTERS

HPDeskjet890CM,NEW.....\$249
Apple StyleWriter 1200, refurbished.....\$179
Apple StyleWriter 1500, factory refurbished.....\$229
Apple StyleWriter 2400, color incl., refurbished..\$229
LaserWriter IInt, refurbished.....\$99
LaserWriter IIf w/5MB RAM, refurbished.....\$399
LaserWriter IIf w/5MB RAM, refurbished.....\$449
Texas Instruments Micro Laser Pro E NEW.....\$299
Laser toner cartridges sold separately

MACINTOSH LOGIC BOARDS

G3 logic board, No Processor, No ROM.....\$199
7200/90 logic board, refurbished.....\$79
LC logic board, refurbished.....\$5
LC II logic board, refurbished.....\$10
Mac LCIII logic board, refurbished, exchnng..\$29
Performa 630, No Processor, refurbished.....\$19
Quadra 950 logic board, refurbished.....\$49
7100/66 logic board, refurbished\$49
6200/75 logic board, refurbished\$29

MONITORS

Apple 14" A/V refurbished.....\$49
Apple 14" Multiscan, refurbished.....\$39
Apple 15" A/V, factory refurbished.....\$79
Apple MultiScan 17", refurbished.....\$99
Voxon 14" MultiscanNEW.....\$29
Voxon15"MultiscanNEW.....\$39
Power Computing 15" rebish.....\$59
Power Computing 17" refurbished.....\$79

APPLE PC COMPATIBILITY CARDS

Pentium100MHz,refurb.....\$39
Pentium166-MHz, 12"PCI card \$69
586 100-MHz,7"PCIcard,refurb.\$99
486/66 Mhz for 6100 ser,NEW.....\$29
LIMITED QUANTITY ITEMS
VST USB Ext floppy.....\$49
Curtis MVP mouse.....\$29
Powercurve 120 mhz cpu.....\$29
Apple Laser Select.....\$149

Items Under \$10

Daystar cache adapter Ic III Gravis mousestick II
Fellow Mous Pen Rasterops 24 MX card
Apple Mac SE bus PC price card Mac II CPU

*Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. Not responsible for typographical errors. All trademarks MUST BE in working condition. Refurbished systems may include like-new components and may also include cosmetic blemishes which do not functionally impair performance of the hardware.

www.shrevesystems.com

Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. Not responsible for typographical errors.

1•800•227•3971

The Applelinks Store

For all your Mac gear.



Groove Jacket

EyeTV

ShuttlePRO

www.ThinkDifferentStore.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

Specials

iMac 333/160/6/CD \$399

MacOS 9.2.1 CD \$49

Kensington Orbit \$19

G3 B/W 400MHz

128/6/DVD \$49



Visit our Web Site
for More Deals!

Sign up for our Mailing List!

Any Ad is a Mac-Pro Ad!

800-525-3888

Choose 192 at www.macworld.com/getinfo

POINT OF SALE • INVENTORY CONTROL



CCD USB barcode
scanners starting
at only \$135.00

Software & Hardware for:

- Retail/Wholesale
- Mail Order/Distribution
- Rentals/Service/Repair
- Payroll/Check Printing
- Fully Integrated Accounting
- FileMaker™ & 4D™ Tools
- Multi-Site /Cross Platform
- Receipt Printers
- Barcode Readers/Printers
- Cash Drawers
- Mag Stripe /ID Cards
- Ribbons/Paper/Labels

ShopKeeper POS Software for Mac OS X



Free Catalog & Demo CD
or download demos
off of the website.

(800) 622-7670

www.posdirect.com

sales@posdirect.com • (618) 457-5351 vox • (618) 457-1632 fax

Choose 165 at www.macworld.com/getinfo

Classifieds

Macintosh web hosting & QuickTime streaming - Host your site on secure Mac servers - Publish your FileMaker database on the web - Access like an iDisk! - Stream QT Movies - Plans start @ \$100/year w/50MB of space.
www.macserve.net

Reach 400,000 circulation for as little as \$250.00 a month. Place a Classified ad in the Macworld Showcase!

For more information, contact Niki Stranz
or Carol Johnstone at 800-597-1594

continued from page 132 >

Hundreds of thousands of handheld computers are in daily use, and there are excellent handwriting-to-text systems for most of them—but instead, people are perfectly content to use Graffiti (still the gold standard for people who never need to use the letter *l*) or any of a number of on-screen and snap-on keyboards.

At this point, I think the Jennifer Connelly aspect of my little fantasy will become reality before the Apple tablet does.

Tablets the Apple Way

If Apple does ever close its eyes, commend its soul to God, and jump into the tablet market, I hope it *doesn't* take its cues from Microsoft's Tablet PC. To *really* kick butt, an Apple tablet shouldn't be an evolution of the PowerBook—it should be an extension of the iPod. Think “iPad.” It's just one letter off, for heaven's sake.

Imagine a slim, convenient package that runs for ten hours on a battery and is always on. Picture a screen that's big and dense enough to show big gulps of near-print-quality text, and a design that allows enough room for capacious and economical notebook-size hard drives.

And the iPad's killer feature isn't Ink, either. It's Rendezvous, hands down. Think of AirPort and Bluetooth and what they imply when you have Apple's Rendezvous networking technology running on a device that's always moving and looking for resources.

Rendezvous would turn the iPad into a revolutionary, category-busting product: You're in a lecture hall taking notes. Your iPad automatically finds

the Mac that's streaming the presentation and tosses the professor's slides onto *your* display, too. Then a pal of yours enters the lecture late and iChats you from 100 seats away to ask what he's missed. Or you unpocket your iPad on an airplane, intending only to read the PDFs iSync wirelessly loaded onto the thing before you left the office. It turns out that while it was inside your satchel, your iPad found a WiFi router near the Gate B22 lounge, and it presents you with new e-mail and piles of updated blogs and news sites.

Or you visit the Apple campus, and as soon as you've parked your Plymouth Reliant, your presence is announced, photos and contact info for the people you'll be speaking with appear in your address book, and a campus map, along with digital passkeys, drops into your in-box—all because you had the foresight to type *Steve Wozniak* in your iPad's Personal Identification field. This proves once again that advanced technology's true power lies in how it's applied. □

If Apple makes a tablet, it should be an extension of the iPod. Think “iPad.”

Contributing Editor ANDY IHNATKO (www.andyi.com) still hasn't gotten over the outfit Ms. Connelly wore in *Career Opportunities*.

Apple Brings Ink to Mac Users—but Will It Survive?

SCRIPT HAPPENS

SO I ACTIVATED INK, PICKED UP THE STYLUS FROM MY Wacom tablet, tapped inside a TextEdit window, and wrote “What hath God wrought?” My OS X 10.2–equipped Mac then transmogrified it into text.

“Good,” I thought.

And then I went back to playing Medal of Honor.

Admittedly, the letdown wasn’t as bad as the feeling I experienced on my first day of junior high, when I arrived eagerly anticipating my new learning and social environment—and left with the knowledge that if in the future I arrived at school with several spare sets of underwear in my book bag, I wouldn’t have to climb the flagpole quite so often during the course of the day.

Still, this absolutely, positively *is not* how I imagined my first experience with Mac handwriting recognition. When Apple released the Newton MessagePad, it strongly hinted that the arrival of technology that could turn handwriting into text was not entirely unrelated to the sudden appearance of all those crop circles a few years before. That Newton feature breathes anew in Jaguar, but Apple’s been so low-key about Ink that even during my hour-long briefing with Apple officials, we wouldn’t have discussed it if I hadn’t specifically asked about it.

Follow the Script

If Apple (apparently) cares so little about Ink, then why’d the company even bother to include it in Jaguar? I have some guesses:

One: Have you ever bought a cordless power saw on impulse and then found yourself cutting up your living-room sofa? Same deal here: Apple had this Newton technology and wanted to use it—no big mystery.

Two: A Mac is a creative tool, creative types use tablets, and creative types with tablets get annoyed when they have to keep putting down the stylus to key in a headline or whatnot. So all in all, being able to enter snippets of text via a tablet is a Good Feature.

Three: Ink will take some of the steam out of Microsoft’s rollout of the Tablet PC, released just a month after Jaguar. At the very least, it’ll give Apple a ready answer if press and analysts ask the question “So why isn’t *Apple* doing anything with handwriting recognition?”

In fact, Apple can credibly state that with Jaguar, it has created a pen-based OS that’s just as capable as Windows XP Tablet PC Edition, only without making a big PR fuss (or, um, publishing a set of hardware specs for third-party tablet computers).

Four: It’ll keep the Russkies on their toes.

Five: It’s an inexpensive, safe trial balloon. Apple released its speech-recognition technology with a similar lack of fireworks and T-shirts. It had no big strategy for this technology—the company just sort of tossed it out there to see what would happen. Mac users worldwide turned on Speakable Items, said, “Computer, what time is it?” and heard the correct answer. “Cool,” they thought. And then they all went back to playing Medal of Honor.

Instead of taking a bold leap and perhaps landing with a Charlie Brown–like thud, Apple is simply putting Ink out there to see what happens. If it takes off, the company’s engineers may get more ambitious and aggressive. If it doesn’t, Ink might meet the same humble fate as speech recognition. *Maybe*. Do remember that Speech makes Macs accessible to folks with vision and dexterity impairments. It’s the right thing to do, and it also helps Mac OS satisfy certain federal, educational, and corporate purchasing guidelines. Speech is bulletproof. Ink ain’t.

I think it comes down to my first and fifth guesses, myself. As implemented, Ink has all the earmarks of an idea that came up at around 3:37 on the Friday afternoon before a long weekend.

Written on the Wind

You may have imagined Mac OS handwriting recognition much as I did: I pictured myself sitting in the shade of a leafy tree in a public park, a stylus in hand, a shiny Apple tablet computer in my lap, and a pouty Jennifer Connelly stirring a pitcher of gimlets a few feet away.

And it’s not just us. Historically speaking—whether it’s John Sculley in *Fortune* or Michael Spindler in *BusinessWeek*—the item that Apple’s non-Steve CEOs have wanted to hold while being photographed for magazine covers has always been a tablet bearing an Apple logo. Somehow, tablets represent the awesome and ineffable future of computing.

By contrast, the inability of *anybody* to make a successful tablet-based computer has almost become a running joke. And incidentally, it’s possible that user resistance to handwriting-based computers is genetic.

This *isn’t* how I imagined Macintosh handwriting recognition would be.



» continues on page 131



© 2002 Corel Corporation. All rights reserved.

You'll want to design everything.

Nothing will be safe. Not a memo. Not a note. Not the tags on every piece of luggage you own. With CorelDRAW® Graphics Suite II, we can't blame you for wanting to design every single thing that pops into your mind.

Reshape objects freely with pressure-sensitive Roughen and Smudge brushes. Mask complex shapes in one step with an ingenious new CutOut tool. Minimize and reuse design elements with new Symbols support.

All while you see exactly what you're doing in real time with the help of Live Effects. Even if what you're doing is getting a little carried away.

Corel PHOTO-PAINT®, Corel R.A.V.E.®, and the winner of over 350 industry awards, CorelDRAW®. Take a closer look at www.corel.com/graphicsuiteII or go to www.corel.com/resellers to find out where you can get it. Available for Windows® XP and Mac® OS X.



graphic design
photo editing
web graphics
animation

enjoy what you do.™

COREL™

COMPUSA

MacMall

**MAC
WAREHOUSE**

MacConnection

Choose 79 at www.macworld.com/getinfo



Wish.

FlyLight™ Platinum:
It sees you when you're
sleeping — especially on
those endless red-eyes.



SaddleBag:
Gee, looks like Santa's got
a brand new bag.



Slim MicroSaver®
The safest buy
you'll make this
Holiday Season.

PocketMouse Pro: With its
ingenious retractable cord—it's
as good as giving gets.



Wish List.

Clearly, you've been extremely good when you get a Kensington® product this Holiday Season. Whether you unwrap the innovative PocketMouse Pro, the casually hip—yet incredibly functional—Saddlebag, or the "How did I get by without this?" Flylight: you'll extend the awesome performance of your Mac® laptop. But remember, 'tis as good to give as it is to receive. Visit us for more Mac gift giving ideas at www.gifts.kensington.com or call us at 800-235-6708. Oh and one last thing, Aunt Edna did knit you a sweater. Bummer.

KENSINGTON