

INSIDE MICROSOFT OFFICE V.X

Mac OS X's First Killer App Has Finally Arrived, page 66

Macworld

12.2001

The Mac Product Experts

OS X 10.1

GOOD TO GO

PLUS

Apple's Faster PowerBooks and iBooks

Lab Tested: Two New iMacs

DVD Burners, DV Camcorders Reviewed

Move Your Web Site to XHTML

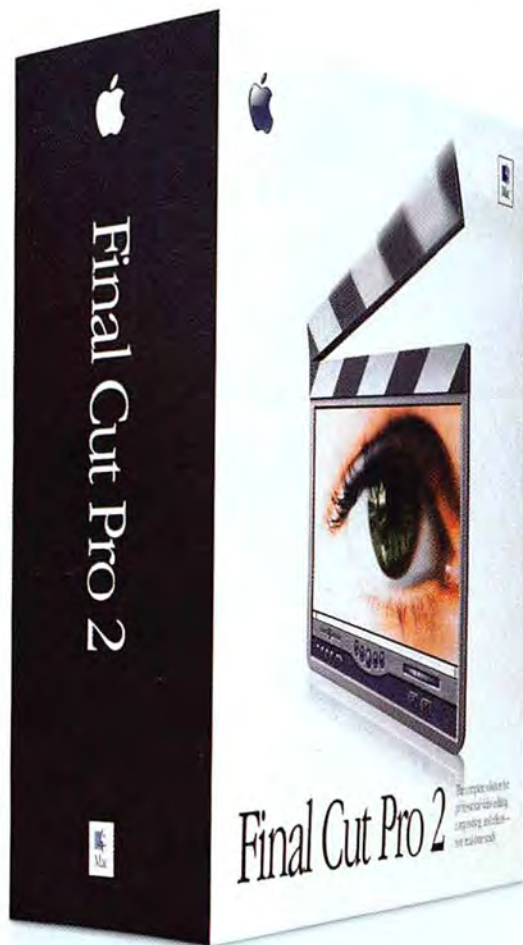
Pros on Final Cut Pro | #2 in a series





Barrett Sanders, Editor
for Evergreen Films.

"Thanks to Final Cut Pro, I now have two complete high-end editing systems, without spending a lot of money. The program offers me a level of polish and professionalism I've never experienced before." Barrett first saw the capabilities of Final Cut Pro two years ago, and his comment at the time sums it all up nicely: "This is going to completely change production as we know it." Learn more at apple.com/finalcutpro.



Microsoft®



**It's jam-packed with Mac tools.
The robot arm, though, that's just for show.**



Excel X



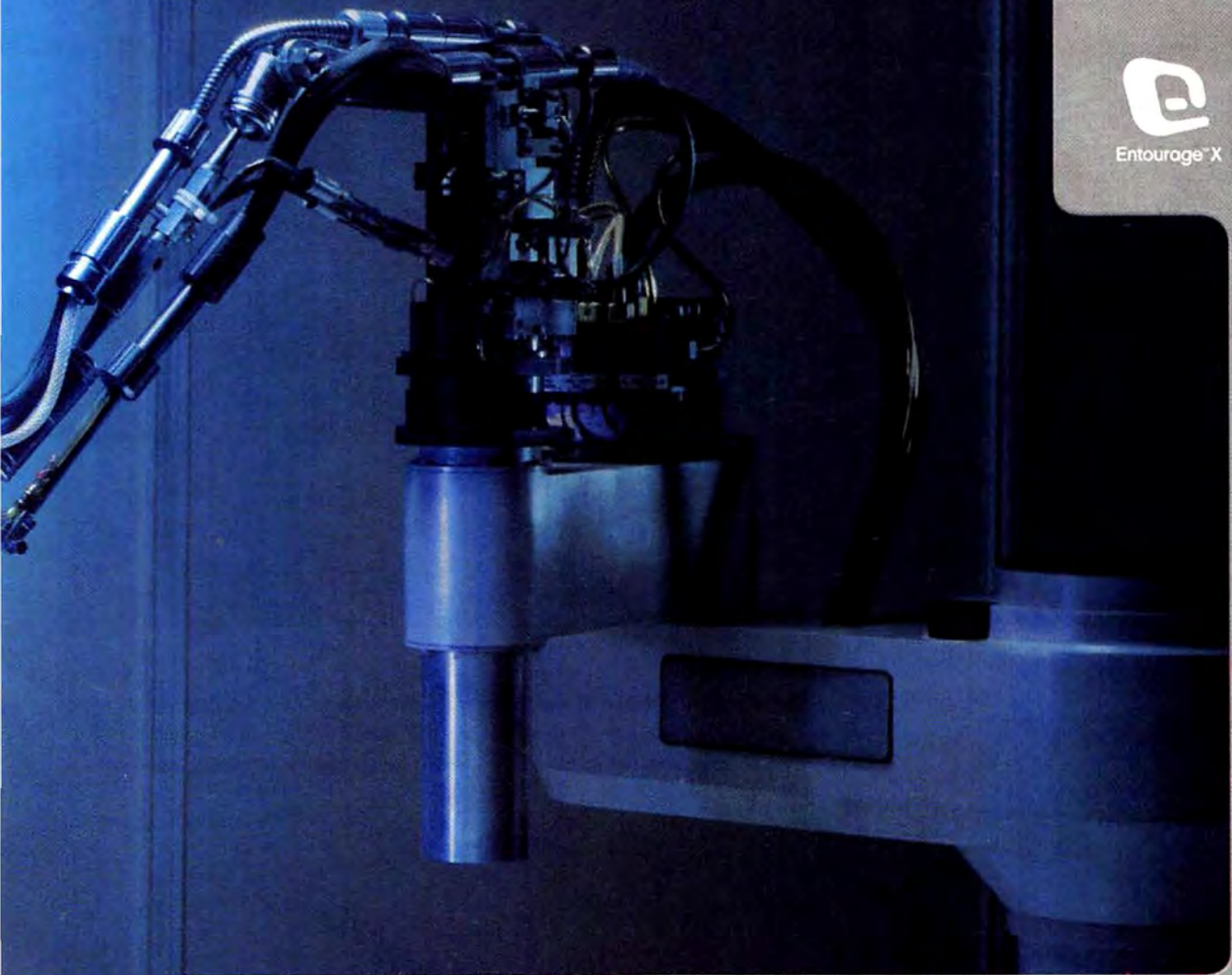
PowerPoint X



Word X



Entourage X



Introducing Microsoft® Word X, just part of the completely redesigned Office v. X for Mac. With the new Office, good looks are not deceiving. Go ahead. Ogle over the luscious Aqua Interface. But that's just icing. Inside it's filled with Mac-only features. Tools to simplify everything. Formatting Palettes. Project Manager. And in Word, Multi-selection to make formatting a snap, and Web Page Authoring to easily put your work on the Internet. It's not just form. It's function. microsoft.com/mac

Microsoft®
Office:mac
v. X

Opinion

17 Forums and Feedback

Readers respond.

53 The Game Room

PETER COHEN Journey through the cosmos in Star Trek Deep Space Nine: The Fallen, or into the disturbing Wonderland of American McGee's Alice.

140 Ilnatko

ANDY IHNATKO Darwin should be made welcome at the Mac OS X party.

Mac Beat

20 Apple's new PowerBooks and iBooks, Mac OS X 10.1 and multiprocessing, *Macworld's* 2001 Holiday Gift Guide, and Terra Soft Solutions' Briq.

How-to

78 Turn Cassettes or LPs into CDs

JONATHAN SEFF

84 Print Publishing Secrets

DAVID BLATNER Learn the techniques for using Adobe Photoshop's spot-color tools.

86 Web Publishing Secrets

JEFFREY ZELDMAN Prepare your site for the move to XML with this guide to XHTML, a transitional markup language.

88 Mac OS X Secrets

DAVID MORGENSTERN Take advantage of Mac OS X's Unix services, without using the Terminal program.

90 Mac 911

CHRISTOPHER BREEN Install multiple operating systems, ditch expendable extensions, and format disks correctly.

December 2001

Macworld

www.macworld.com

Incorporating MacUser



OS X Comes of Age

JASON SNELL The first release of Mac OS X was a radical change, but it was seen as a step backward by many Mac users. With the new version, 10.1, Apple fixes many of the original's problems—both improving existing features and adding new ones. Has OS X finally grown up?

56

Data to Burn

JIM HEID Read our review of six DVD-R/RW drives that bring DVD-burning power to us all.

38



Reviews

30 Illustration software

★★★★ Painter 7

33 Consumer systems

★★★★ Apple iMac 600

★★★★½ Apple iMac 700 Special Edition

36 DV Camcorders

★★★★½ Canon ZR25 MC

★★★★ Panasonic PV-DV101

★★★★ Sony DCR-TRV17

38 DVD-R/RW Drives

★★★★ APS Tech DVD-R/RW+CD-RW FireWire Pro2

★★★★½ CD Cyclone DVD Rev0

★★★★½ ClubMac FireWire DVD-R/RW

★★★★ EZQuest Boa FireWire DVD-R/RW

★★★★ LaCie DVD/CD Rewritable Drive

★★★★ QPS Que Fire DVDBurner Pro

40 Wide-format color printer

★★★★½ Epson Stylus Pro 5500

41 Software-updating utilities

★★★★½ TechTracker Pro 1.2 for OS X

★★★★½ UpdateAgent X 10.0.4

44 Financial software

★★½ Moneydance 3.2

★★★★ Quicken 2002 Deluxe

45 Backup utility

★★★★½ Rewind 1.2

46 Spreadsheet application

★★½ Mesa 3

47 Preflighting software

★★★★ FlightCheck Classic 4.2

48 Encyclopedia

★★★★ World Book Mac OS X Edition

49 Video codec

★★★★½ Sorenson Video 3 Professional Edition

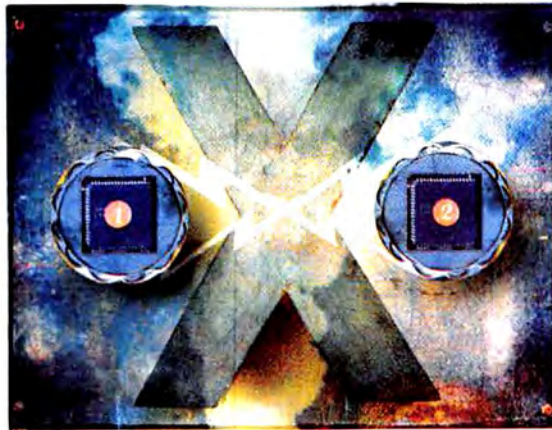
50 More reviews online

Macworld.com Reviews

Double Dose

MATHEW HONAN With Mac OS X 10.1 and a slew of rewritten applications, have we entered the era of Mac multiprocessing?

20



Turn Your Cassettes or LPs into CDs

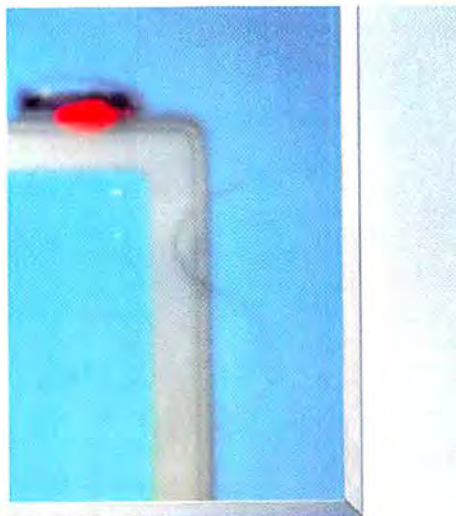
JONATHAN SEFF Transform your dusty old records into a CD collection you can listen to anywhere.

78

Office Remodeling

TOM NEGRINO When it comes to adoption of OS X, available native software is high on many requirement lists. With Office v.X, Microsoft brings the first killer app to OS X. Here's a look inside.

66



Macworld.com

Visit our site for online-only reviews and extras, a thriving forum where you can speak your mind about all things Mac, and the latest product information.







what will you make of it?™

Inspiration is everywhere. How will you bring it to life?
Corel GRAPHICS SUITE 10. Intuitive and powerful graphics software specifically designed for Mac® OS X.

✦ CorelDRAW® 10 ✦ Corel PHOTO-PAINT® 10 ✦ Corel R.A.V.E.™



Great Gifts for CD/DVD Storage



Firewire CD & DVD Burners



Unique Disc Storage



CD-R & DVD-R Media



DV Firewire Hard Drives

Visit our store: **MEDIASTORE.COM**

or call toll free: **800.555.5551**

NEVER UNDERSOLD
Since 1995

127 on card or www.macworld.com/getinfo

Macworld

VP OF CONTENT/EDITOR IN CHIEF Rick LePage

EDITOR Jason Snell

EXECUTIVE EDITOR, MACWORLD.COM Lisa Schmeiser

SENIOR EDITOR, HOW-TO Terri Stone

SENIOR EDITOR, NEWS Philip Michaels

SENIOR EDITOR, REVIEWS Linda Comer

ASSOCIATE EDITORS Jennifer Berger,

Mathew Honan,

Kelly Lunsford,

Jonathan Seff

CONTRIBUTING EDITORS

David Blatner, Henry Bortman, Christopher Breen, Adam C. Engst, Bruce Fraser, Jim Heid, Andy Innatko, Ted Landau, Deke McClelland, Scholte Sawyer McFarland, Tom Negrino, Nancy Peterson, David Pogue, Stephan Somogyi, Franklin N. Tessler

LAB

DIRECTOR OF PRODUCT EVALUATION Kristina De Nike

TEST MANAGER James Galbraith

SENIOR LAB ANALYST Jeffery K. Minstead

ASSOCIATE TECHNICAL ANALYSTS Ulyssis Bravo,

Jason Cox

COPY EDIT

MANAGING EDITOR Jennifer Werner

ASSISTANT MANAGING EDITOR Charles Purdy

COPY EDITORS Diane Ollis,

Sue Voelkel

ART AND DESIGN

DESIGN DIRECTOR Sharon Anderson

ART DIRECTOR Marlene Sezni

DESIGN ASSOCIATE Aissa Mach

PREPRESS CONSULTANT Stephen Sugg

CONTRIBUTING DESIGNER Jennifer Steele

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 Blas, Spain; Ni's Holmlöv, Sweden; Engin Gedik, Turkey; Simon Jary, United Kingdom

MacMania Early Bird Discount 'til Dec. 1st

AN ALASKA ADVENTURE

*7 Night Cruise
Departs May 27, 2002
Internationally-renowned
authors & speakers*

CHILL OUT WHILE YOU EXPLORE ALL THINGS MAC


Macworld
THE MAC PRODUCT EXPERTS

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

OUR CUSTOMERS FORM LONG-TERM,
MEANINGFUL RELATIONSHIPS WITH OUR FURNITURE.
FORTUNATELY, EVERY PIECE COMES WITH A LIFETIME WARRANTY.



AnthroBench Catalog, pg. 6

 You will form an attachment to your AnthroBench. This is a given. So we build them strong and sturdy—
for all the changes you'll go through and for all the heavy loads you'll put on them. And our Lifetime
ANTHRO Warranty assures that you and your Bench will be together far into the future. Visit our Web site
TECHNOLOGY FURNITURE® or call us. We'll get a catalog to you right away. ANTHRO.COM or 1-800-325-3841.



New! Support for inkjet printing in OS X.

My files are important.

Very important.

I only share my files
with those I trust.

I trust DAVE®.



Mac to PC, PC to Mac. Cross-platform file and print sharing is too vital to your business to risk. Trust Thursby, the company with 15 years experience. Trust DAVE, the solution with a proven track record. Share files and printers across a network with no barriers. DAVE installs on your Mac with no additional software required for the PC. It's fast, secure and easy to use. Download a free evaluation today!

Trust **DAVE**®.



and print
The File Share Folks™



www.thursby.com/world

Mac is a trademark of Apple Computer, Inc. registered in the U.S. and other countries. The "Built for Mac OS X" graphic is a trademark of Apple Computer, Inc., used under license. DAVE is a registered trademark of Thursby Software Systems. © 2001, Thursby Software Systems, Inc.

Macworld

PRESIDENT AND CEO Colin Crawford
VP/CHIEF OPERATING OFFICER Stephen Daniels
DIRECTOR OF FINANCE Eos de Feminis
ACCOUNTING COORDINATOR Ronda Bittner
VP OF HUMAN RESOURCES Sue Murphy
HUMAN RESOURCE MANAGER Su-Tsen Wu
NETWORK SERVICES MANAGER Sean Greathouse
IT MANAGER Jennifer Torres

DISPLAY ADVERTISING SALES

VP OF SALES/PUBLISHER Steve Plevin (415/243-3509)
ASSOCIATE PUBLISHER, EAST Cynthia Ramsey (973/243-1197)
SALES & MARKETING COORDINATOR Kasey MacMullen (415/243-3642)
NATIONAL ACCOUNTS MANAGER Paul Bonarrigo (508/533-4020)
ACCOUNT EXECUTIVE Jo Zottarelli (516/277-4134)
WESTERN ADVERTISING DIRECTOR Sara Culey (831/475-0565)
ACCOUNT EXECUTIVE Margaret Level Green (415/243-3582)
SALES ASSOCIATE Janecke Hausken (415/243-3583)
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)

MARKETING

DIRECTOR OF MARKETING Hilary Weber
MARKETING COMMUNICATIONS MANAGER Sharon L. Cordesse
MARKETING SERVICES MANAGER Joanna Bock Colombo
MARKETING INTERN Guillaume Guersing

PRODUCTION

PRODUCTION DIRECTOR Steve Spingola
PREPRESS MANAGER Alan Anzalone
BOOKING AND BILLING MANAGER Ricardo Sandoval
AD COORDINATOR Megan Matteoni

ONLINE

SENIOR TECHNOLOGY DIRECTOR Paul Forrester
SENIOR WEB PRODUCER Christina Gonzales
ONLINE PRODUCTION MANAGER Ron Neal

Macworld is a publication of Mac Publishing, L.L.C. Macworld is an independent journal not affiliated with Apple Computer, Inc. Macworld, MacUser, MacWeek, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, The Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers' Tools, Streetwise Shopper, and Conspicuous Consumer are registered trademarks of Mac Publishing, L.L.C. Apple, the Apple logo, Mac, and Macintosh are registered trademarks, and MacLetter and PowerBook are trademarks, of Apple Computer, Inc. Printed in the United States of America. Copyright © 2001 Mac Publishing, L.L.C. All rights reserved.

Circle 124 on card or go to www.macworld.com/getinfo

Now, when you've got
mail, the whole freakin'
neighborhood will know.



iTunes, iMovie, email. No matter what you do with your Mac, it's going to sound infinitely better with our 40-watt USB-enabled SoundSticks speaker system. Get yours at www.harman-multimedia.com. **harman/kardon**

H A Harman International Company. ©2001 Harman Multimedia. Mac is a registered trademark and iTunes and iMovie are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. Toll-free 877-266-6202.

CALLING ALL MACWORLD SUBSCRIBERS

Speak Out!

Tell Macworld How You Use Your Mac!

If you're a Macworld subscriber, we want to hear from you. For Macworld to be the best magazine it can be, we need to know how our readers use their Macs. By completing our confidential survey, you'll help us to make Macworld better fit your needs—and you'll have the opportunity to enter a drawing for one of two great prizes.

Grand Prize . . . iBook 500 MHz/128 MB/10 GB/DVD. The all-new iBook has been redesigned from the ground up to become the most competitive price-performance laptop on the planet.

First Prize . . . Canon PowerShot S110 Digital Elph with Executive Kit. The new, sleek Canon PowerShot S110 Digital Elph is perfect for those on the go! Plus you'll get a 16MB high-speed flash card, a deluxe carrying case, and a cleaning kit.

To participate or find out more about the survey, please visit: www.rsch.com/macsurvey/

The fine print NO PURCHASE NECESSARY TO ENTER OR WIN. Void where prohibited by law. Drawing is open only to current Macworld subscribers who complete the survey. To enter you'll need to provide a subscriber number or other information so your subscription can be validated. We must hear from you by 12/13/01 to be included in the drawing. Winner will be notified by e-mail approximately one week after survey close, on or about 12/21/01. For Official Rules, see page 50 in this issue or online at www.rsch.com/macsurvey/rules.htm

All information provided will be kept completely confidential and used only in combination with other respondents. Personal information will not be sold, shared, or used in any way outside the scope of this research. See www.rsch.com/macsurvey/privacy.htm for a full privacy statement.

Macworld

HOW TO CONTACT MACWORLD

Subscription Information and Services

Phone 800/288-6848 or
850/682-7624, from the United States
and Canada
303/604-7445, from all other locations

U.S. Mail Macworld Subscription Services
P.O. Box 54529, Boulder, CO 80322-4529
(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 850/683-4094, from the United States
and Canada
303/604-0518, from all other locations

Subscriptions

The one-year (12-issue) subscription rate is \$34.97 in the United States and \$54.97 for all other countries. The rate for a one-year (12-issue) subscription with the monthly CD-ROM is \$54.97 in the United States and \$74.97 for 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 check or money order to Back Issues, Macworld, P.O. Box 53131, Boulder, CO 80322-3131.

Reprints and Permissions

You must have permission before reproducing any material from Macworld. Write to Macworld, Reprints and Permissions, 301 Howard Street, 15th Floor, San Francisco, CA 94105; 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 54529, Boulder, CO 80322-4529. Please include a copy of your mailing label.

Macworld on Microfilm

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 734/761-4700.

Macworld Editorial

The editors of Macworld welcome your tips, compliments, or complaints. Stories and product 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 Macintosh problems by phone, e-mail, or fax. Contact Apple toll-free at 800/538-9696, ext. 500, for information on user groups in your area.

Our offices are located at 301 Howard Street, 15th Floor, San Francisco, CA 94105; phone, 415/243-0505; fax, 415/442-0766. Macworld staff can be reached by e-mail at firstname_lastname@macworld.com.

LETTERS TO THE EDITOR Direct comments and suggestions regarding any aspect of the magazine to letters@macworld.com. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all submissions. All 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, 301 Howard Street, 15th Floor, San Francisco, CA 94105; fax 415/442-0766; or e-mail mac911@macworld.com. Please include your name, address, and telephone 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 about registration, exhibitor lists, conference schedules, dates, and much more, please visit www.macworldexpo.com.

 BPA

APC introduces the best protection available for your Mac.

8 million computer users can't be wrong about APC power protection

Don't let a lightning storm destroy your Mac system in the blink of an eye. Your hard drive, modem and RAM are all at risk, not to mention peripherals like your zip drive, scanner, monitor and printer. Rely on an APC Back-UPS Pro® to save your investments from high voltage surges.

APC power protection also provides clean, continuous power that lets you function without frustrating interruptions, unlike cheap power strips that don't prevent any of the power problems that can cause keyboard lock-ups, systems crashes, and lost Internet connections.

And if your system is ever damaged by a surge, even lightning, APC's Lifetime Equipment Protection Policy will pay up to \$25,000 to replace your equipment.

** (see policy for details)*

Discover why 8,000,000 customers trust in APC's Legendary Reliability and protect your Mac system with an APC power protection unit today.



APC Back-UPS Pro®
500 USB BP500CLR

An APC Back-UPS Pro 500 USB provides:

- Emergency battery power for continuous uptime to help save your data through brief power outages
- Auto-shutdown software that saves your files and data, even when you're away from your computer
- Audible and visible alarms alert you to power events as they occur
- \$25,000 Equipment Protection guarantee
- 2 year comprehensive warranty
- iMac colored configurable speaker guards to match your computing environment



APC Back-UPS Pro® 500:
"APC's latest plugs into a USB port, making it completely painless to protect your PC from power snafus and electrical spikes."
- PC Computing 4/99



APC
Legendary Reliability™



Enter to win a clear APC Back-UPS Pro® 500 for your Mac!

Enter to win APC's legendary power protection for your Mac, a \$179.99 value! All entrants will also receive an "Are You at Risk" Kit. (See APC's Web site for complete promotion details)
Enter now: Visit <http://promo.apc.com> Key Code c445y • Call 888-289-APCC x4072 • Fax 401-788-2797

©2001 American Power Conversion. All Trademarks are the property of their owners. APC1D0EF-USa • PowerFax: (800)347-FAXX • E-mail: apcinfo@apcc.com • 132 Fairgrounds Rd., West Kingston, RI 02892 USA

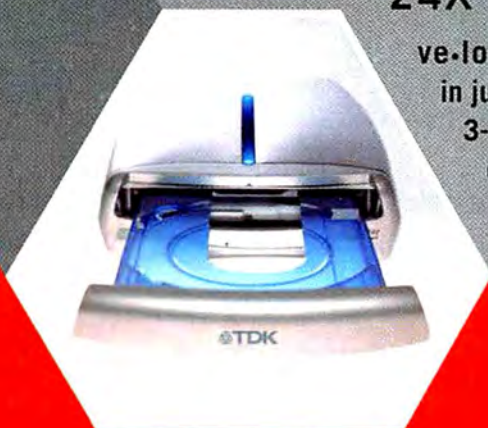


velocd™





24X FireWire veloCD



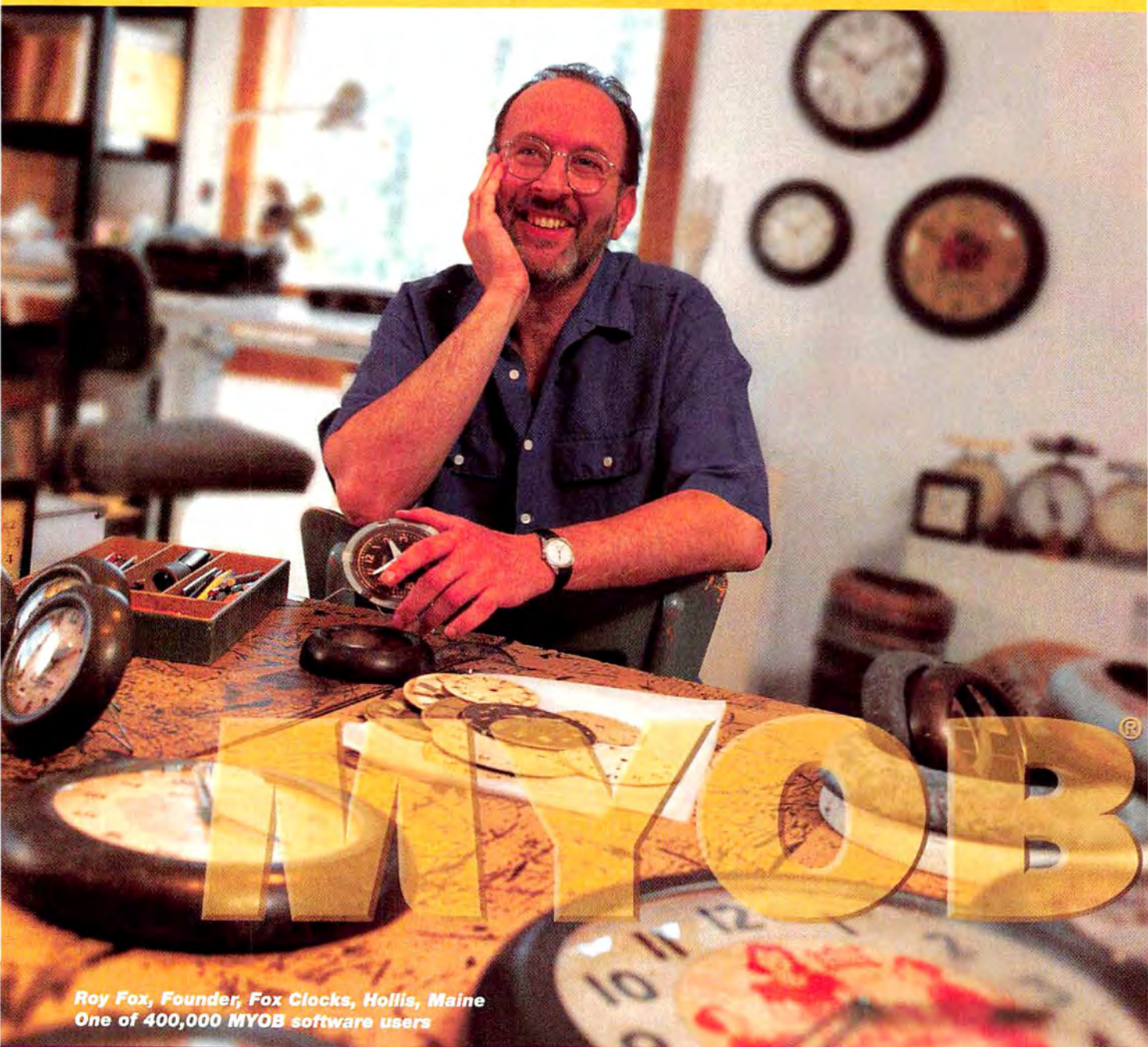
ve·loc-i·ty *n.* 1. A new TDK burner that records an entire CD in just 4 minutes. veloCD rips audio at 40X speed, moving a 3-minute song to your hard drive in less than 5 seconds! 2. An external burner that connects to any Mac or PC computer with a FireWire jack. 3. A unique burner that's visually enhanced by the hypnotic pulsing of its electric blue Light Pipe activity indicator. 4. A burner that can be yours when you discover the sweetspot of digital audio, www.buytdk.com.



DESIGNED FOR THE WAY YOU WORK

I'd rather create clocks than invoices.

If I wanted to keep books all day, I'd have been an accountant.



Roy Fox, Founder, Fox Clocks, Hollis, Maine
One of 400,000 MYOB software users

MYOB

**Small Business.
Smart Solutions.SM**

AccountEdge on the Mac.
Software includes QuickBooks[®] conversion utility. MYOB also offers conversion service.

800.322.MYOB
myob.com/us

®QuickBooks is a trademark of Intuit, Inc.

MYOB software is the simplest, most powerful, most complete solution for managing my company on the Mac, from the day to day to the bottom line.

Antique frames. Quartz movements. That's my business.

MYOB software works for me.

Circle 171 on card or go to www.macworld.com/getinfo

Forums and Feedback



The Pleasure Is Ours

Nothing pleases us more than making our readers happy. Likewise, nothing displeases us more than upsetting them—and many of you were a little miffed by the September issue's "Save Your Data" feature, which recommended Dantz Retrospect but didn't mention that program's incompatibility with Apple's internal CD-RW drives. Other readers were just as peeved about Apple's product announcements at Macworld Expo New York. But fortunately, everyone still seems happy with Andy Ihnatko—and we couldn't be more pleased. **m**

Other Mac backup options are essentially unchanged since our previous comprehensive backup article ("Be Safe, Not Sorry," February 1999). We definitely should have mentioned Retrospect's incompatibility with Apple's internal CD-RW drives. It is Macworld's policy to refer to appropriate software reviews; that's why we referred to the five-mouse rating we gave Retrospect long before the release of Macs with internal CD-RW drives. When Dantz ships the next version of Retrospect, expect a new review that takes into account any incompatibilities that may exist at that time. In September, Dantz announced Retrospect support for Apple's internal CD-RW drives.—Ed.

Back Up a Minute

HENRY F. DOMKE Much of "Save Your Data" (September 2001) was helpful and clear, such as the part called "The Best Backup Device," but I beg to differ on a few points. The only backup software you mention is Dantz's Retrospect. I've tried to use Retrospect for years, and it has never made sense to me. Connectix's Copy Agent allows disk mirroring—a technique you didn't mention, though I predict it will become the norm in the near future. Or what about online backup services such as BackJack? Although it's not cheap, it's simple, safe, and reliable. Thanks for the fine article. If only I had read it before my 60GB drive containing 12 years of work failed.

JAMES MILLIGAN I could not believe my eyes when I saw that you'd given Retrospect your highest rating, because Retrospect doesn't support the standard CD-RW drive Apple puts in its G4s. Retrospect is obviously

flawed. What other software product do you know of that won't work on a standard Power Mac G4 but still gets a top rating, which says, in essence, "This is a must-have piece of software"? I'm hoping we can put some pressure on Dantz to get this white elephant fixed and some pressure on *Macworld* to revise its rating. The bottom line for me is that Retrospect has been a great program and a good supporter of the Mac platform; unfortunately, Dantz has dropped the ball and is taking too long to pick it back up. When Dantz releases a fix or an upgrade, I'll probably buy it. But I would've thought a Mac magazine of your reputation would inform readers of this problem, especially when you devote several pages to backup solutions and prominently feature Retrospect as one of the best.

The article focused on Retrospect because it is by far the dominant backup program on the Mac. All

iMac: 2; Expo: Nothing

MATTHEW RAMPY The new Power Mac G4s look really cool ("Mac Beat Special Report: New Apple Products," September 2001), and I'm glad to see that Mac OS X is getting an upgrade, but I was still a little disappointed. I had hoped to see some new iMacs.

Another Way to Flash

PER-ANDERS EDWARDS There's a small problem with the preloader-creation tutorial that Russell Chun gives in "Ease the Wait with Flash 5" (*How-to*, September 2000), as there is in many such tutorials I've seen on the Web. Although this tutorial is easy to understand and demonstrates the way most people first create a preloader in Flash with ActionScript, the results are neither stable nor accurate. Also, if you have more than one scene in your movie, the frames-loaded method can be troublesome: for some reason, Flash can end up either dumping you into the movie before it's finished loading—*continues*

this happens especially when there are bitmap images in the body of the movie—or deciding that your movie never loaded and leaving you on the loading page with a full “fuel gauge” but nowhere to go. For a far more elegant and solid way of doing the same task, and to produce a preloader that truly lets users know how much of the movie has loaded and how far it has to go, Macromedia Flash 5 users should use the `getBytesLoaded` and `getBytesTotal` properties.

For an explanation of how to perform this technique, see the Magazine Feedback forum on Macworld.com.—Ed.

Stranger in a Strange Land

☑ **ANDREW STONE (FOUNDER AND CEO OF STONE DESIGN)** Thank you for your review of Stone Studio (September 2001). We’d like to correct one possible misunderstanding: text is completely editable in Create simply by double-clicking on it (a Cocoa standard) using either the text tool or the selection tool. This includes text that has multiple fills and strokes, text that has been placed along a path, and text that has been placed within or around other objects. We’d also like to note that Create is not intended to be a Macromedia FreeHand or Adobe Illustrator clone. In one low-priced package, it includes major illustration, page-layout, and Web-publishing features. Create is not wedded to older interfaces and technologies; since it was built from the ground up using Cocoa, it’s structured to take advantage of all the features built into Aqua and Mac OS X, including future features when they’re added to the system. *Macworld* constantly advises against upgrading to Mac OS X and insists there is “no software.” If you face backward as you approach the future, always comparing it to the old tools of a prior generation, it may look strange. But if you turn around and embrace the future, you’ll find all the magic it has to offer.

☑ **JIM DEMAS** Deke McClelland writes that “[Stone Studio’s] creators have little idea what today’s artists

expect from a graphics program. Traditional editing and navigation shortcuts go unobserved, the type tool lets you create text but not edit it, and there is no such thing as a context-sensitive pop-up menu.” In Create, text is fully editable. Just double-click on it and then use either the text tool or the selection tool. This text editing can be done with text that has strokes, text that has multiple fills, text that has been placed in or around objects, and text on a path. Double-clicking on text is a standard Cocoa convention. Apparently, Mr. McClelland is not as up-to-speed on Cocoa or OS X as he ought to be.

Selecting a type tool and clicking or dragging inside text is a standard observed by a host of publishing applications—but not by Create. I am not aware of any OS X convention that calls for an end to using a type tool to edit type.—Deke McClelland

A Not-So-Perfect 10?

☑ **KENT LUFKIN** FreeHand (*Reviews*, September 2001) is one of two or three applications I depend on to make a living. Although FreeHand 10 includes exciting new features such as master pages, it no longer supports dynamic font-menu updates under Mac OS 9 or earlier—a glaring problem if you regularly switch fonts on and off. When FreeHand 10 is launched on Macs running OS 8.6 or 9, fonts activated or deactivated with a utility such as Adobe Type Manager, Font Reserve, or Suitcase will not appear in any FreeHand font menus until you quit and restart that application. A Macromedia tech-support person confirmed that font menus do update dynamically when FreeHand 10 is run under Mac OS X, but that an apparent conflict with CarbonLib prevents this longtime feature from working properly on non-OS X machines. I applaud Macromedia for being among the first on the block to launch a mainstream graphics application that runs natively under OS X. But while OS X intrigues me, I’m not inclined to risk potential disruption of my business by convert-

ing to it until I’m positive it’s ready for prime time.


Andy Ihnatko, Master Craftsman

☑ **ALAN ULLMAN** Andy Ihnatko made some great points (“Making Great Software,” *Ihnatko*, September 2001), but when he used BBEdition’s ability to search and replace FileMaker data via an AppleScript as an example of BBEdition’s strength, he missed a great opportunity: to provide the script! I’ve long wanted a simple way to search and replace in FileMaker databases.

☑ **MARY JO DISLER** How I agree in principle with Mr. Ihnatko’s column. Why can’t companies just maintain some of the simple, direct apps of yesteryear? After yet another frustrating session trying to master style sheets in AppleWorks 6, I long for the simplicity and efficiency—not to mention the small RAM footprint—of good old MacWrite Pro. Unlike Andy, I do need some basic formatting capabilities for day-to-day work, and MacWrite Pro easily manages all I need. For example, AppleWorks 6 takes three mouse clicks to change a style, versus MacWrite Pro’s one. This is progress? My plea to software companies: Please maintain the best of the basics as single applications, and let customers choose either those or the bells-and-whistles versions. Think of the benefit for new computer users as well as for us longtimers who just want to get some work done.

☑ Post your comments on our forums at www.macworld.com or send them by mail to ☑ Letters, *Macworld*, 301 Howard St., 15th Fl., San Francisco, CA 94105; via fax to 415/442-0766; or electronically 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*.

CORRECTIONS

The Canon S110 digital camera received a  rating in our online-only review (*Reviews*, October 2001).

The price of Adobe Illustrator 10 upgrade is \$149 (“Here Come the Killer Apps,” *Mac Beat*, November 2001).



Sharp, colorful pictures. Minute detail. Subtle degrees of shadow. True, natural color. These are the things that drive us to create the very best digital cameras. Our latest is the CAMEDIA C-4040 Zoom. An f1.8 zoom lens.

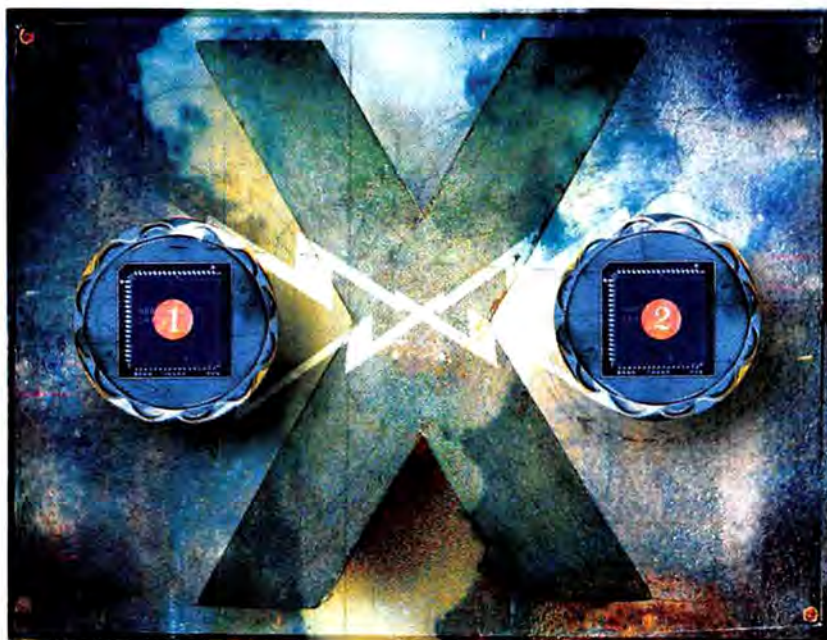


CAMEDIA. C-4040 ZOOM

4.1 megapixels. Noise reduction. Auto-Connect USB ease. Creative control. It will help you see things in new ways. Transform the ordinary into art. And capture the most realistic digital images yet. Nothing's impossible.

<http://c-4040.olympus.com>

What's New, What's in the Pipeline, What's Hot



Double Your Pleasure

OS X ADDS MULTIPROCESSING POWER—NOW ALL YOU NEED ARE THE APPLICATIONS

EVERY TIME A DUAL-PROCESSOR Mac arrives on the scene—whether it's the 1996 Power Macintosh 9500/180 MP or the Power Mac G4/500 DP that appeared four years later (“Double Vision,” November 2000)—Mac users hail the advent of multiprocessing. But all dual-processor Macs have faced the same hurdle: users won't enjoy significant performance gains unless they're using applications specifically written to take advantage of multiprocessing.

With Mac OS X, though, all of that should change.

For the first time, there is a universal benefit for all Mac users who

purchase a dual-processor machine: large parts of OS X have been designed to take advantage of multiple processors. Unlike previous versions of Mac OS, the new operating system divides various tasks between processors, whether applications are MP savvy or not.

Working Together

In OS 9, MP applications split their tasks between two processors. But most applications run on only one processor, and the OS has no way to divert tasks to the second CPU. When one chip reaches the limits of its processing power, applications

that are MP optimized are not able to send some of their work to the other chip.

Work gets divided differently in OS X. The operating system can send different programs to different processors, splitting the work more efficiently. This doesn't translate to system performance that's twice as fast as it would be with only one chip, but it does mean that one processor will reach its limit more slowly as other, non-MP-savvy programs are launched.

Some applications are OS X native *and* MP savvy. Quake III is perhaps the best example of this (see “Twin Engine”). Rather than having to work on just one processor while other programs run on the other, Quake III can split its tasks up, sending the work of game play to both processors at once. Therefore, the operating system does not have to “assign” Quake to one processor or the other.

Doubled Up

A number of major Mac applications have been written to take advantage of multiprocessing and run natively in OS X. And more are on the way.

OS X APPLICATIONS	OS X NATIVE?	MP SAVVY?
Activision Quake III	●	●
Adobe After Effects 5.0	○	●
Adobe Photoshop 6.0	○	●
Adobe Premiere 6.0	○	●
Alias Wavefront Maya	●	●
Apple AppleWorks 6.2	●	●
Apple Final Cut Pro 2.0	○	●
Apple iDVD 2.0	●	●
Apple iTunes 1.1	●	●
Maxon Cinema 4D XL 7.1	●	●
Media 100 Cleaner 5	○	●
NewTek LightWave 3D 7.0	●	●
Sorenson Video 3.0	○	●

● = yes; ○ = no.

MP Ready?

All this talk of multiprocessing has raised a frequent question among visitors to Macworld.com's forums: Now that Mac OS X has arrived, should I run out and buy the dual-processor 800MHz G4? The answer is largely the same as it was a year ago—an unequivocal maybe, leaning toward yes.

Although numerous processor-intensive programs have been optimized for multiprocessing (see "Doubled Up"), most of these applications have yet to be Carbonized, let alone written in OS X's Cocoa programming application.

Users running a multiprocessor-enabled application in OS X's Classic mode will see some benefit, though not the performance boost you could expect from an MP-savvy OS working in tandem with an MP-savvy program. An MP-enabled application running in Classic on a dual-processor machine should be faster than the same program running on a single-processor Mac. But its performance will lag behind that of a dual-processor machine running OS 9.

While the dual-processor Mac makes much more sense for someone who uses an MP-savvy, processor-

Twin Engine						Macworld LAB TEST	
		QUAKE III V. 1.29F*		ADOBE PHOTOSHOP 6.0.1		iTUNES 1.1.2	
				Gaussian Blur	RGB to CMYK **	Unsharp Mask	
Mac OS 9							
Apple Power Mac G4/800 DP	95	3	14	5	37		
Apple Power Mac G4/867	107	5	12	6	47		
	Better ▶	◀ Better	◀ Better	◀ Better	◀ Better		
Mac OS X							
		QUAKE III V. 1.29F*		ADOBE PHOTOSHOP 6.0.1 ***		iTUNES 1.1.2	
				Gaussian Blur	RGB to CMYK **	Unsharp Mask	
Apple Power Mac G4/800 DP	108	4	15	4	36		
Apple Power Mac G4/867	70	6	15	8	46		
	Better ▶	◀ Better	◀ Better	◀ Better	◀ Better		

* Running in OS 9, Quake III is not multiprocessing savvy. ** Non-MP-enabled filter. *** Running in Classic mode.

Photoshop and iTunes scores are in seconds. Quake III scores are in frames per second. We tested all systems with 256MB of RAM, a default system disk cache, and virtual memory enabled (except for Photoshop tests) under OS 9. We set displays to 1,024-by-768-pixel resolution and 24-bit color. For Photoshop tasks, we used a 50MB file, with the memory partition set to 150MB and History set to Minimum. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using iTunes' Better Quality setting of 160 Kbps.—Macworld Lab testing by Ulysses Bravo

intensive app that runs exclusively as an OS X–native program, that's not a universal experience. The dual-processor Mac isn't much more attractive now than it always has been to a user running a non-MP application in Classic. It's only slightly more appealing than it used to be for those who work mainly in MP-savvy apps that have not yet been Carbonized.

As more programs become Carbonized, the dual-processor Mac will

become an increasingly attractive option. Users who are making their Mac purchases with long-term use in mind and who place a premium on performance would be foolish not to consider a multiprocessor machine, because eventually every significant Mac application will switch to OS X.

Even without these programs, though, dual-processor machines boast certain advantages. An MP system sports two cache buses and double the cache size of a single-processor Mac. It also offers a performance boost by efficiently running multiple applications at the same time.

Mac users have heard about the wonders of multiprocessing for years. The arrival of OS X 10.1 may finally mark the beginning of multiprocessing's glory days, especially for high-end Mac users. But with more OS X–native and MP-enabled applications slated for the future—and multiprocessor machines with CPUs that top 800MHz sure to follow—it may take some time before a majority of Mac users are seeing double.—MATHEW HONAN

COOL STUFF

Yellow Briq Road

For years, Mac users have been able to run powerful Unix software on their Macs by installing Linux and Mac OS side by side. While the Unix-based Mac OS X may make that issue moot, the power of Linux on the Mac hasn't gone away—it just comes in a smaller package. The Briq, from Terra Soft Solutions (970/278-9243, www.terrasoftsolutions.com), is a tiny PowerPC computer that runs the company's Yellow Dog Linux or Black Lab Linux. Starting at \$1,454, the Briq weighs less than 2 pounds, is as small as a CD-ROM drive, and is powered by a 400MHz or 500MHz G3 or G4 chip. Terra Soft also offers four- and eight-Briq "nodes" to be used for rendering—or anything else that requires a load of raw processor power. Imagine unleashing eight G4 chips on that 3-D file you need to render, and you've got the idea. The Briq comes with serial and Ethernet ports (so you can put it on the network) and a 100MHz system bus. Terra Soft also offers a \$150 PCI slot add-on that even gives you a place to stash a video card.—JASON SNELL

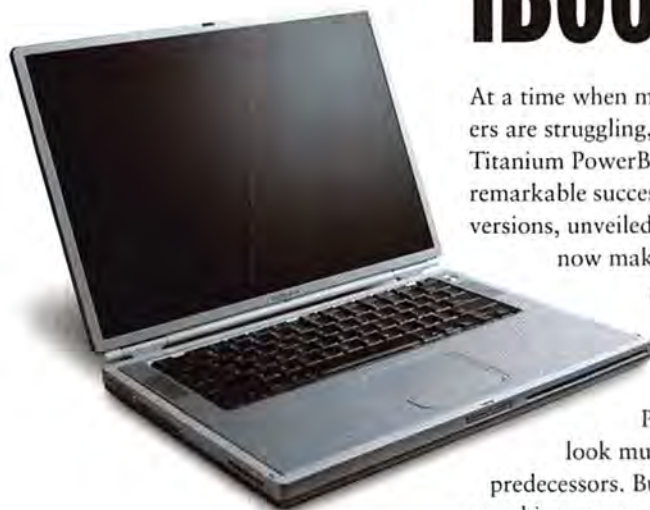


More Info: www.macworld.com/2001/12/macbeat/mp.html

Macworld's online archives offer an extensive look at the history of multiprocessing and the Mac.

LINK

PowerBooks, iBooks Get Boost



It may not look different on the outside, but the new PowerBook sports a faster processor, more storage space, and a new graphics card.

At a time when most computer makers are struggling, Apple's iBook and Titanium PowerBook G4 have been remarkable successes. And updated versions, unveiled in mid-October, now make these laptops even more compelling.

PowerBook

Viewed from the outside, the new PowerBook G4s look much the same as their predecessors. But inside are serious speed improvements, particularly on the new high-end model. Powered by a 667MHz G4 processor and a 133MHz system bus, it's one of the fastest Macs—desktop or laptop—Apple has ever built.

The other new PowerBook, powered by a 550MHz processor, uses the same 100MHz system bus built into previous PowerBook G4 models. Both variations offer 256K of Level 2 cache, a drop from the 1MB of cache in the original PowerBook G4.

However, that cache now runs at the speed of the processor, not at half the speed, as with previous models.

Hard-drive capacity has also been boosted in these two models, to 20GB in the 550MHz PowerBook and 30GB in its 667MHz counterpart. Space-hungry users can choose a 48GB drive instead, via Apple's Web site, and the company will also offer a slot-loading CD-RW drive as a built-to-order option.

The video subsystem of the PowerBooks has also been markedly improved. Gone is the ATI Rage Mobility 128 graphics processor that's been around since the days of the PowerBook G3. Instead, these new PowerBooks come with ATI's Mobility Radeon AGP 4X graphics system, allowing for improved DVD playback and faster graphics on some 3-D games and applications.

Both new PowerBook configurations offer built-in Gigabit Ethernet (10/100/1000BaseT), an improvement

POWERBOOK PHOTO COURTESY OF APPLE; CD-RW DRIVE PHOTO, PETER BELANGER; PDA PHOTO, KIRK AMYX

Macworld's 2001 Holiday Gift Guide

WHAT DO YOU GET THE MAC USER WHO HAS EVERYTHING? THESE IDEAS ARE A START.

This holiday season, skip the iMac-shaped alarm clocks and talking Steve Jobs dolls. Treat your favorite Mac users to gifts that make their computers even *more* powerful. We searched *Macworld's* reviews to find gifts that deliver high performance at an affordable price.—PHILIP MICHAELS AND KRISTINA DE NIKE

More info: www.macworld.com/2001/12/macbeat/giftguide.html

Looking for more gift ideas? Go online to find links to *Macworld* reviews of cameras, PDAs, and everything in between.

LINK



TWO-MEGAPIXEL CAMERA

What to look for: Once you've settled on megapixels, look for a comfortable-to-hold camera with a good optical zoom.

What you'll spend: \$400 to \$800

What we'd buy: PowerShot S110 Digital Elph (●●●●½); \$599; Canon (800/652-2666, www.usa.canon.com)

Why: It delivers sharp images and good contrast at a reasonable price. And it's small enough to fit in a stocking.

Read our review: November 2001

EDUCATION SOFTWARE

What to look for: It's all about the recipient; pick software that matches the interests and the age level of the person you're buying for.

What you'll spend: \$10 to \$100

What we'd buy: Break It, Fix It, Ride It Mountain Bike Repair (●●●●½); \$30; Break It, Fix It, Ride It (866/237-2453, www.bfr-it.com)

Why: When the snow clears off those rugged mountaintops, you'll want to take to the hills—and this interactive CD-ROM makes it easy to get your bike in shape.

Read our review: Macworld.com



Apple's New Laptops

MODEL	PRICE	RAM	DISK	SYSTEM BUS	OPTICAL DRIVE	VIDEO CARD	ETHERNET	AIRPORT CARD
PowerBook G4/667	\$2,999	256MB	30GB	133MHz	DVD-ROM	ATI Mobility Radeon	10/100/1000BaseT	included
PowerBook G4/550	\$2,199	128MB	20GB	100MHz	DVD-ROM	ATI Mobility Radeon	10/100/1000BaseT	optional
iBook/600	\$1,699	128MB	20GB	100MHz	Combo	ATI Rage Mobility 128	10/100BaseT	optional
iBook/600	\$1,499	128MB	15GB	100MHz	DVD-ROM	ATI Rage Mobility 128	10/100BaseT	optional
iBook/500	\$1,299	128MB	15GB	66MHz	CD-ROM	ATI Rage Mobility 128	10/100BaseT	optional

over the 10/100BaseT Ethernet support in the original Titanium PowerBook G4. The 667MHz model even comes with a built-in AirPort card.

These models are less expensive than the previous versions, too. At \$2,199, the 550MHz PowerBook G4 sells for \$400 less than the 400MHz configuration introduced in January. The 667MHz model sells for \$2,999, compared with \$3,499 for the 500MHz PowerBook G4 unveiled earlier this year.

iBook Like the PowerBook, the consumer-friendly iBook doesn't look much different—but there have been speed boosts inside. While Apple still offers an iBook configuration with a 500MHz G3 processor, the company has added two new models with 600MHz CPUs to the mix. In addition, the 600MHz iBooks include a 100MHz system bus, as opposed to the 66MHz bus in other models.

Memory and storage space have both been bumped up in this update.

All iBook models now come with the Mac OS X minimum of 128MB of RAM and are expandable to up to 640MB. The base hard drive configuration has risen from 10GB to 15GB.

And as with the PowerBook G4, these new iBooks are slightly less expensive than their predecessors, with prices ranging from \$1,299 to \$1,699.—PHILIP MICHAELS

MAC STUFF

The Writing on the Wall

Unless your life's ambition is to destroy thousands of dollars' worth of perfectly good hardware, it's not a wise move to take a pen and scribble on a plasma display. However, with the Smart Board for Plasma Displays, from Smart Technologies (888/427-6278, www.smarttech.com), drawing on a 40-inch plasma display is no longer the act of a madman—it's an effective communication tool. Similar to devices that attach to whiteboards and capture anything you write, the Smart Board is an overlay that fastens to the front of a plasma display. As you press on the overlay with one of the Smart Board's "pens"—which actually contain no ink at all—you register a contact point with the Smart Board software running on your Mac, making electronic ink marks as you move the pen. Every mark you make can be saved, printed, or e-mailed. With prices ranging from \$3,299 to \$4,999, the Smart Board overlay isn't cheap. But it's less expensive than taking a Magic Marker to your plasma display the next time your muse pays a visit.—PHILIP MICHAELS



MOUSE

What to look for: Size matters. So does the number of buttons—and where they're located on the mouse.

What you'll spend: \$10 to \$150

What we'd buy: PocketMouse Mobile Optical Mouse (●●●●); \$30; Kensington (800/235-6708, www.kensington.com)

Why: It's tiny and portable with a Rudolph-like optical light to guide it.

Read our review: Macworld.com

CD-RW DRIVE

What to look for: Speed and ports are key, and make sure the drive comes with Sanyo's Burn-Proof technology to avoid buffer underruns.

What you'll spend: \$200 to \$400

What we'd buy: 16x10x40x U&I Drive (●●●●); \$300; LaCie (503/844-4500, www.lacie.com)

Why: It features USB and FireWire ports, as well as the all-important BURN-Proof technology.

Read our review: August 2001



PDA

What to look for: Check expandability—can you connect with add-on devices, as well as memory and application cards? Also, you'll need to decide between color displays and the typically less expensive gray-scale models.

What you'll spend: \$100 to \$450

What we'd buy: Palm m505 (●●●●); \$449; Palm (800/881-7256, www.palm.com)

Why: The m505 is light and thin, with a color screen that'll make your season bright.

Read our review: September 2001

In with the new...

In with the newer...



TechTool Pro 3 is the super utility for your Macintosh. Besides repairing and recovering data, TechTool Pro can help you circumvent problems in the first place. Our new virus detect and repair feature, as well as our software conflict check feature, lets you keep your computer in tip-top shape. When booted from the included emergency CD, you can even check, repair and optimize your OS X computer.

Every day, more and more Macintosh professionals are choosing TechTool over other system utilities. In fact, even Apple Computer includes TechTool Deluxe with every copy of their AppleCare™ Protection Plan. Simply put, TechTool Pro 3 is the most complete and powerful troubleshooting utility available for your computer. Why would you settle for anything less?

For Apple's next-generation operating system, you'll need a next-generation disk utility. That's why Micromat has introduced Drive 10, the first and final disk utility for Mac OS X. Problems with your drive? Drive 10 can repair almost any drive problem with one simple click of your mouse. All within OS X's native environment.

While Drive 10 is a new product, it is derived from TechTool Pro, Micromat's world-class diagnostic and repair utility. Using TechTool's time-tested routines as well as some new routines developed exclusively for OS X, Drive 10 offers many tools for checking and repairing any drive on your system. Don't entrust your OS X drive to ancient utilities. Protect your data and drive safely with Drive 10.



Micromat Inc.

800-829-6227

707-566-3831

info@micromat.com

www.micromat.com

©2001 Micromat, Inc. All rights reserved. TechTool is a registered trademark of Micromat, Inc. Drive 10 is a trademark of Micromat, Inc. Macintosh and AppleCare are trademarks of Apple Computer, Inc.

Circle 37 on card or go to www.macworld.com/getinfo

Accounting for Change

For MYOB (800/322-6962, www.myob.com/us), the ability to manage a small company from a Mac is serious business. To that end, it released MYOB AccountEdge in late 2000 to fill the void left by Intuit's decision to stop updating the Mac version of its QuickBooks business-management product.

Now comes MYOB's next salvo in the fight to win former QuickBooks users and new small-business customers—an updated version of AccountEdge for the Mac priced at \$249. Existing users can upgrade for \$99 before November 30, or for \$119 afterward. AccountEdge 2.0, which could be available by the time you read this, streamlines some administrative tasks while expanding the flexibility of other features.

Getting Started A new Company File Assistant reduces the setup process from eight steps to five. An Easy Setup Assistant walks users through setting up payroll, purchases, sales, an accounts list, and customization features, letting them skip sections that don't apply to their business. "We more or less tore down what we had before and created a new way of navigating through the setup," says Tom Nash, director of product management.

New View Interface changes include the addition of more drop-down menus. AccountEdge's Report Center now offers brief descriptions and sample views

of each of its 150 reports. Most important, users can now choose to enter transactions and view accounts in a Quicken-like Bank Register.

Old Features, New Tricks MYOB has made



AccountEdge 2.0's Bank Register feature gives users an overview of their accounts and lets them enter transactions right from the register.

existing features more flexible, extending the capability of tools within AccountEdge. Users can insert lines, headers, and subtotals to customize the look of invoices. Packing slips printed in AccountEdge can now include orders. And credit-limit warnings, formerly available only on invoices, can be set on quotes and orders.

Take It to the Bank AccountEdge users who download bank and credit card transactions online can now import that data. AccountEdge matches it with existing transactions in the register; users can then review, fix, and enter any unmatched transactions. Version 2.0 supports most online-banking data formats including QIF, OFX, and Microsoft Money OFC.—PHILIP MICHAELS



HARDWARE

COMPUTERS

● An entry-level iMac, from Apple Computer (800/692-7753, www.apple.com): The indigo-only iMac sports a 500MHz G3 processor, 64MB of RAM, and a 20GB hard drive. The CD-RW drive available in other models is replaced with a CD-ROM drive (\$799).

DIGITAL CAMERAS

● Two digital cameras from Olympus (800/622-6372, www.olympusamerica.com): The **Camedia E-20N** (\$1,999) is a 5-megapixel camera that also lets users set a progressive scan mode of 2.5 megapixels. The **Brio D-230** (\$299) is a 2-megapixel camera.

DISPLAYS

● A lower-priced pen display from Wacom (800/922-9348, www.wacom.com): The **Cintiq 15X** (\$1,900) costs \$2,000 less than its predecessor, the PL500. The Cintiq 15X combines a full 24-bit color LCD display with a cordless, battery-free pressure-sensitive pen. The 15-inch active matrix color TFT display with 1,024-by-768-pixel resolution is equivalent to that of a 17-inch CRT monitor.

INPUT DEVICES

● New mice from Microsoft (800/426-9400, www.microsoft.com): The **Wireless IntelliMouse Explorer** (\$75) is Microsoft's first wireless optical mouse. Microsoft also released a wired version of the **IntelliMouse Explorer** (\$55) with

enhanced grip support, finger grooves, and a new shape, as well as a new version of the **IntelliMouse Optical** (\$45). All three mice come with enhanced versions of Microsoft's **IntelliPoint** driver software.

● An OS X-compatible wireless trackball from Kensington Technology Group (800/280-8318, www.kensington.com): The **Turbo Mouse Pro Wireless** trackball (\$120) has six Direct Launch buttons, four programmable mouse buttons, and a scroll wheel.

PDAs

● Two new handheld devices from Handspring (888/565-9393, www.handspring.com): The **Visor Neo** (\$199) adds a 33MHz Dragonball VZ processor to Handspring's entry-level PDA. The Neo's casing is available in your choice of three colors. The **Visor Pro** (\$299) doubles the installed memory to 16MB of RAM and comes with a rechargeable lithium ion battery.

● A new handheld from Palm (800/881-7256, www.palm.com): The **Palm m125** (\$249) features dual-expansion architecture so users can add software, extra memory, or modules. The PDA has 8MB of RAM and a 33MHz processor, and it comes with a USB cradle and bundled software.



ANNOUNCED

● The purchase of **Cleaner 5** by Autodesk (800/869-continues



What's HOT

A QUICK LOOK AT THE WORLD OF TECH

1. Steve Jobs compares progress in the transition to Mac OS X to a clock's hour hand. *So when the clock strikes midnight, do all Macs running Mac OS 9 change into pumpkins?*
2. Instead of charging a shipping fee for the OS X 10.1 update, Apple makes a free version available at some stores. *But if you still feel like mailing \$19.95 off to someone, the Mac Beat staff will send you a lovely thank-you note in return.*
3. Windows XP was set to ship on October 25. *Guess they celebrated Halloween a week early in Redmond this year.*

3504, www.discreet.com): Autodesk bought the compression tool along with the rest of Media 100's software product line for \$16 million. The products will become part of Autodesk's Discreet line, which includes the animation and 3-D-compositing application Combustion.

- A fix to the **Britannica 2002 Standard Edition Encyclopedia** CD-ROM, from Britannica (800/323-1229, www.britannica.com): The CD-ROM ran only under Mac OS X, despite labeling that said it would run on OS 8.6 and higher. A replacement CD that runs on the classic Mac OS should be available by the time you read this. Customers will be able to choose between the free replacement CD or a full refund.



SOFTWARE

DEVELOPMENT SOFTWARE

- **Script Debugger 3.0**, from Late Night Software (888/999-3210, www

.latenightsw.com): The AppleScript authoring software adds Mac OS X support and features scripting and usability improvements (\$189; upgrade, \$79).

GRAPHICS SOFTWARE

- **Canvas 8**, from Deneba (305/596-5644, www.deneba.com): The update to the illustration and page-layout software runs on both OS 9 and OS X 10.1. New features include advanced automation capabilities and a file-sharing component called DenebaShare (\$400; upgrade, \$200)

- **KPT Effects** from the Procreate division of Corel (800/772-6735, www.procreate.com): KPT Effects (\$199) is a collection of nine Adobe Photoshop-compatible plug-ins that add effects to digital images. The software runs on OS 8.6 and higher, and natively in OS X. Corel also released **Corel Graphics Suite 10 for Macintosh** (\$569; upgrade for CorelDraw users, \$249), a suite of vector-illustration, image-editing, painting, and animation applications that includes CorelDraw 10 and Photo-Paint 10. The graphics suite runs in both the classic Mac OS and OS X.

PRODUCTIVITY SOFTWARE

- **FileMaker Developer 5.5**, from FileMaker (800/325-2747, www.filemaker.com): The database software aimed at developers and workgroup-database administrators adds features from FileMaker Pro 5.5, such as OS X compatibility, along with database-design, report, and script-debugger tools, and updated ODBC drivers (\$499; upgrade, \$399).

- **Grammarian X**, from Casady & Greene (800/359-4920, www.casadyg.com): The application-independent grammar checker is now OS X native, supporting Cocoa and Carbon applications (\$50; upgrade, \$20).

UTILITY SOFTWARE

- **Stuffit Deluxe 6.5**, from Aladdin Systems (800/732-8881, www.aladdinsys.com): The updated compression utility includes Stuffit Express Personal Edition, which lets users create customized drop-box applications to automate file-compression and transfer tasks. Version 6.5 also offers Magic Menu support for OS X (\$80; upgrade, \$20).—Compiled by PHILIP MICHAELS

MAC OS X UPDATES

powered by 
versiontracker.com

Adobe SVG Viewer X 3.0b2

Browser plug-in to view SVG files

Aqfa ScanWise X 2.1

Beta software for the SnapScan line

Apple Macintosh Manager 2.0.3

OS X Server client-admin tools

ConceptDraw Professional 1.7

Expanded graphic formats from standard version of diagramming application

Corona 1.5.1

Accounting and payroll application

Dantz Retrospect client 1.0.425

Beta of OS X client for backup software

Divx for X 1.1.2

QuickTime divx/3ivx component

FoldersSynchronizer 2.2b9

Beta tool to synch and back up files and folders

IView Media Pro 1.2

Adds import options, fixes bugs in asset-management application

Keyspan USB adapters 1.0b8

OS X driver for USB serial adapters

Lexmark X83 1.44

Drivers for the X83 multifunction printer

MacDoppler Pro X 1.7.0

Amateur radio application

Maxum Rumpus 2.0

High-performance FTP server software

PopChart Xpress X 3.5.2

Builds Web-ready charts from spreadsheets

Snax 1.0

Cocoa-based file browser

Speech Text 1.0

Advanced text editor

Stone Studio 9-2001

Web- and print-apps suite optimized for OS X 10.1

Super Get Info 1.0.2

Adds Empty Trash command to replacement for Show Info command

Test Pilot 4.0.3

Creates tests and surveys for delivery and collection over the Internet

TimeSlice 2.2

Adds Edit Fee feature to billing application

Unsupported UtilityX 2.0b1

Helps install Mac OS X on some unsupported Macs (the Power Mac 7300 to 9600 series, and equivalent clones)

VueScan 7.1.16

Alternate film scanner driver for Nikon, Minolta, Hewlett-Packard, and others

XML Editor 1.11

XML building tool

For these and other current updates, visit:

www.macworld.com/subject/updates

TEMPO™ ATA100

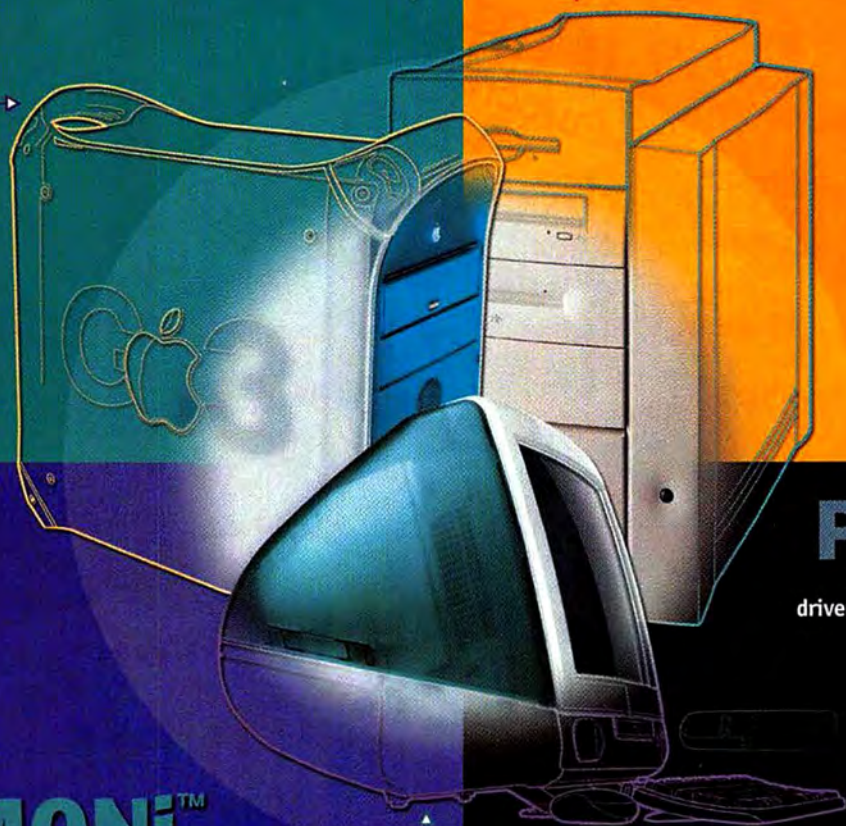
The best-selling connection between high-speed, high-capacity, low-priced ATA drives and your PCI Power Mac

Connect

TANGO™ FireWire/USB

The reliable way to add FireWire® and USB connectivity to your PCI Macintosh

Adapt



PICCOLO™

Portable, flexible, secure—these driverless, car key-sized USB "drives" are simply amazing!

HARMONI™

Join the desktop video revolution—upgrade your original iMac™ with this 500 MHz G3 processor/FireWire adapter combo

Expand



Do it all...

For more information visit www.sonnettech.com

SONNET™

SIMPLY FAST™

Circle 133 on card or go to www.macworld.com/getinfo

Outstanding Color, Unlimited Possibilities.



*This special toner is for use with the XANTÉ ColourLaser and the Colour ScreenWriter. Transfers printed on plain paper using the dye-sub toner can be used in conjunction with a heat press and sublimatable items. Perfect for creating personalized specialty items.

XANTÉ COLOURLASER

Photo Quality Color Output

- Resolutions up to 1200 dpi, 175 lpi
- Output up to 13" x 19"
- XANTÉ's color management software
- Fast RISC processing

Lease price per month.....**\$137⁰⁰**

XANTÉ COLOUR SCREENWRITER

For Screenprinting Specialties

- Film positives
- Heat transfers
- Output up to 13" x 19"
- Color proofing, labels, & more!

Lease price per month.....**\$137⁰⁰**

MORE GREAT PRINTING SOLUTIONS FROM XANTÉ:

OFFICE AND NETWORK PRINTING

Accel-a-Writer 3N

- Serves as a workgroup laser printer
- Resolution up to 1200 dpi
- Output up to 13" x 18.5"

Lease price per month** **\$58⁰⁰**

COMPUTER-TO-FILM FOR SCREEN PRINTERS

ScreenWriter 3

- Desktop film positives for screen printing applications
- Resolutions up to 1200 dpi
- Output up to 13" x 35.5"

Lease price per month** **\$69⁰⁰**

COMPUTER-TO-PLATE TECHNOLOGY

PlateMaker 3

- Computer-to-plate
- Computer-to-film
- Resolutions up to 2400 dpi
- Output up to 13" x 35.5"

Lease price per month** **\$205⁰⁰**

2400 DPI GRAPHICS PRINTING

Accel-a-Writer® 3G

- Monochrome graphics up to 2400 dpi
- Output up to 13" x 35.5"
- Fast RISC processing

Lease price per month** **\$96⁰⁰**

COMPUTER-TO-FILM TECHNOLOGY

FilmMaker 4

- Computer-to-film
- Resolutions up to 2400 dpi
- Output up to 13" x 35.5"

Lease price per month** **\$113⁰⁰**



**Lease Prices based on 36 month lease.

Also available from the XANTÉ ColourLaser product line:



Introducing the XANTÉ ColourLaser 21, XANTÉ's latest and most dynamic digital color printing solution. Along with the precision color performance and consistency you've come to expect from XANTÉ, you get the ultra high-speed printing you've craved. The XANTÉ ColourLaser 21 is the ultimate digital color workhorse – combining XANTÉ's color management expertise, product versatility, and an affordable price – its quality is unsurpassed.

- High volume, high performance
- Oversized printing up to 12" x 35.5"
- Duplexing capabilities
- XANTÉ's color management
- Low cost-per-page
- And much more!

Lease price per month** **\$257**



1-800-926-8839 EXT. 2171

Enter online for your chance to win a
FREE ColourLaser 21!
WWW.XANTE.COM / MW9

©2001 XANTÉ CORPORATION. XANTÉ and XANTÉ ColourLaser are trademarks or registered trademarks of XANTÉ CORPORATION. Adobe, PostScript, PostScript 3 and the PostScript logo are trademarks of Adobe Systems Incorporated. PANTONE® and other Pantone, Inc. trademarks are the property of Pantone, Inc. Other brands and product names are trademarks or registered trademarks of their respective holders. XANTÉ CORPORATION, Post Office Box 16526, Mobile, AL 36616-0526, USA. Phone: 251-473-6502, Fax: 251-473-6503. www.xante.com

product reviews

Hands-on Evaluation and Authoritative Buying Advice

Painter 7

Carbonized Graphics Application Adds Realistic Watercolor Tools

BY BEN LONG



ADOBE PHOTOSHOP MAY BE THE current image-editing program of choice, but when it comes to painting, nothing compares to Procreate's Painter, which has long been renowned for natural-media tools that convincingly simulate the look and feel of real-world painting and drawing tools. Painter 7 adds realistic new watercolor brushes to its predecessor's already impressive toolbox, and it's the first fully Mac OS X-compatible version of the program. But while the ability to run a major graphics application in Mac OS X is exciting, the program's lack-

luster performance in the new operating system will likely drive you to reboot in OS 9.

More of the Same

With version 6 (★★★★; *Reviews*, January 2000), then-owner MetaCreations gave Painter a streamlined new interface—a marked improvement on its predecessors' huge, screen-gobbling palettes. Procreate (a division of Corel) has Aquafied version 7's interface for OS X users, but overall the program's look has changed little.

If you've never used Painter before, getting started can be daunting; learn-

PAINTER 7

Rating: ★★★★★

Pros: Great new watercolor and Liquid Ink features; simple color management; numerous additions and improvements.

Cons: Disappointing Mac OS X performance; complex interface.

Company's estimated price: \$399; upgrade, \$199

OS compatibility: Mac OS 9, Mac OS X

Company: Procreate, 800/772-6735, www.procreate.com

ing your way around the palette-driven program, with its hundreds of tools, may take some time. For example, Painter includes 17 brushes, each with variants that change how the brush performs. In addition, each brush has a slew of parameters that allow you to create custom variants.

Fresh Watercolors

Painter has had watercolor brushes since its first release, but version 7 sports a completely rewritten watercolor engine that produces incredibly realistic results. In previous versions, watercolor brushes painted onto a single "wet" layer of a document. This layer stayed wet—meaning that watercolor strokes could interact with each other—until you chose the Dry command. With version 7, you can create as many wet layers as you like. You can even use the new watercolor

tools to manipulate imagery created with “dry” tools, by moving the contents of dry layers onto wet layers.

Real-world watercolors consist of granular paint pigments suspended in water. As you move your brush across paper, these particles diffuse into water spread by the brush, as well as into water already on the page, mixing and bleeding into other colors. Painter 7's new watercolor engine simulates this process and includes several new parameters that let you control how “water” spreads, dries, and evaporates.

To use the watercolor tools, you simply grab a watercolor brush and start painting; Painter automatically creates a new wet layer for your strokes. By controlling the Wetness and Pickup parameters, you can change how a stroke expands across your virtual paper, as well as how your current color mixes with and leaches into existing wet colors. Other parameters let you control the speed at which paint spreads on the page.

In addition to yielding startlingly realistic results, Painter 7's watercolor tools are fun to use. Select a *really* wet brush, and you can watch the virtual water and pigment drip and spread across your page in real time. Because Painter actually simulates the physics of water and pigment, the program includes special Wind parameters that you can use to alter the gravity of your canvas. These controls let you tilt your canvas and blow on your strokes to spread the colors.

All this sounds processor intensive, and it is. Procreate recommends a G3 or higher, and you'll want the fastest clock speed you can afford—and at least 128MB of RAM—if you plan to do a lot of high-resolution watercolor work.

Liquid Inks and Other Effects

Painter 7's other major addition is the Liquid Ink feature, which lets you paint with a thick, gooey ink. Like watercolors, Liquid Inks go on their own layers. As strokes pass near each other or intersect, color blobs and spreads, as real ink does. And Liquid



Stroke of Genius Painter 7's watercolor engine has been redesigned to yield amazingly realistic results.

Ink goes on in layers, like a thick oil paint, so you can create realistic built-up strokes. This feature is similar to Painter's Impasto tools, but there's no limit to how many layers you can have or how high the ink can build.

The Liquid Ink and watercolor tools are the biggest new features in Painter 7, but this version offers other additions (such as nonprinting perspective grids) and many improvements. For example, while Painter has always allowed tools to interact with an underlying paper texture, version 7's tools are sensitive to the direction of the paper's grain: a stroke in one direction (with the grain) might lay down more ink than a stroke in the other direction (against the grain).

The Text tool is also greatly improved. A single palette lets you control everything from fonts to drop shadows to text on a curve. Painter's main weakness in terms of text is its continued inability to apply colors to individual characters.

The program can now open and save RGB or CMYK Photoshop files with full layer support; it also offers JPEG and GIF preview options for selecting compression parameters. Perhaps the best enhancement is that you can now use Painter's scripting feature to execute a stroke repeatedly in a selection, giving you a quick and easy way to add cross-hatching, textures, and patterns.

Fast, Accurate, and Under Control Painter 7's updated color-management facility offers full support for ICC profiles. The single Color Management

dialog box makes it easy to select scanner, monitor, and printer profiles and to specify a document color space; a separate dialog box lets you control the handling of documents saved in other color spaces. When you're printing or moving documents from Painter into an image editor, version 7's new color-management tools should make it much easier to maintain consistent color.

Although we were very pleased with Painter's performance on a 400MHz G4 PowerBook running Mac OS 9.2.1, we were eager to see if the program would run even faster in OS X 10.1. Alas, using Painter 7 is a very different experience in the new OS: brush strokes are slow to render, tools respond sluggishly, and the program is generally less tactile than in OS 9.

For example, Painter's Sharpen filter took almost twice as long to work in OS X as in OS 9, as did the Apply Surface Texture and Rotate commands. Script performance was particularly bad in OS X, ranging from three to six times slower than in OS 9. Oddly, when we launched Painter 7 in OS X's Classic mode, performance approached normal OS 9 speeds. Procreate is aware of the problem and is working on optimizing the program to bring it up-to-speed in OS X.

Although Painter 7 is usable—and very stable—in OS X, the performance hit OS X causes is too great. For now, you're better off booting directly into OS 9 or running Painter in Classic mode.

Macworld's Buying Advice

With its new watercolor tools and dozens of other enhancements, Painter 7 doesn't disappoint in the painting department. And if you already rely on Painter, the new tools and improvements make this upgrade worthwhile. But for Mac users longing to make the transition to OS X, version 7's performance in the new operating system is a big deterrent. **m**



**Upgrading
your memory
doesn't
have to be
complicated.**

You need Crucial RAM.

Select your system make and model at Crucial.com, and you'll find memory guaranteed to be compatible with your system or your money back. It's that easy! Best of all, you'll get the same top-quality memory the world's leading computer makers install in their systems. Visit Crucial.com and get great memory upgrades at low, factory-direct prices.

\$18⁸⁹

**128MB PC100 SDRAM
for today's most popular systems**



Price reflects an automatic 10% discount for ordering online. Price was taken on 9/24/01 from Crucial's Web site; however, prices can (and do) change daily. Prices may vary according to specific system requirements.

©2001 Micron Semiconductor Products, Inc. All rights reserved. Crucial Technology and the Crucial logo are trademarks of Micron Technology, Inc., and Micron is a registered trademark of Micron Technology, Inc. All other brands and names used herein are the property of their respective owners. Crucial Technology is a division of Micron Semiconductor Products, Inc. Phone: 208-363-5500; Fax: 208-363-5501; E-mail: crucial_sales@micron.com. Crucial Technology is not responsible for omissions or errors in typography or photography.

Order online:

www.crucial.com

or call toll-free 1-888-363-3082

crucial
TECHNOLOGY
A Division of Micron

The Memory Experts™

iMac and iMac Special Edition

Capable New 600MHz and 700MHz Models Are More of the Same

BY CHRISTOPHER BREEN

Apple's latest iMacs could inspire some differing opinions. Some may celebrate the idea that with the new 600MHz iMac, Apple provides almost the same machine it released earlier in 2001 (*Reviews*, June 2001), but with more RAM, a bundled copy of Mac OS X, and a more traditional color scheme—all for \$200 less than

the previous 600MHz model. These same people will likely cheer for the new top-of-the-line iMac, the \$1,499 Special Edition (SE), which runs at 700MHz and, like the 600MHz model, includes 256MB of RAM.

Others, however, may wonder if Apple isn't coasting just a bit with this release. They might suggest that the iMac—now three years old and counting—is ready for changes somewhat more substantial than a faster G3 processor, a greater RAM allotment, and a roomier hard drive. They might also question whether a 100MHz-faster processor and a

20GB-larger hard drive really make this Special Edition “special.”

We believe that the truth of the matter lies somewhere between these divergent viewpoints.

Few Changes

If you've used an iMac built during the past year, you'll find no surprises in the new models. Each of these iMacs includes two USB ports, two FireWire ports, a VGA port for mirroring video on an external monitor (at the same three resolutions available to the iMac), a 10/100BaseT Ethernet port, a slot-loading 8×4×24

iMAC 600

Rating: ★★★★★

Pros: Good price; solid performance in OS 9 and OS X 10.1; good RAM allotment.

Cons: Inflexible Software Restore CD.

Company's estimated price: \$1,299

OS compatibility: Mac OS 9, Mac OS X

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

iMAC 700 SPECIAL EDITION

Rating: ★★★★★½

Pros: Solid performance in OS 9 and OS X 10.1; high-capacity hard drive.

Cons: Inflexible Software Restore CD; not terribly “special” for its price.

Company's estimated price: \$1,499

OS compatibility: Mac OS 9, Mac OS X

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

CD-RW drive, a 56K modem, an internal microphone, an audio-input and -output port, two internal speakers, an Apple Pro Keyboard, and an Apple Pro Mouse. Both iMacs include a welcome 256MB of RAM and an ATI Rage 128 Ultra graphics board with 16MB of VRAM, and either model is available in snow (white) or graphite (dark gray).

The reasonably beefy software bundle has changed little since the last iMac iteration. Apple's iTunes (and a rich collection of more than 11 hours of spoken-word and music MP3 files), iMovie 2, and AppleWorks 6 are preinstalled, as are FaxSTF 6, Quicken 2001 Deluxe, and three games from Pangea—Nanosaur, Bugdom, and the *Flintstones*-era driving game Cro-Mag Rally. On our 600MHz model, the bundled copy of Mac OS X as













continues



COURTESY OF APPLE

You Don't Bring Me Flower Power



Reference system in <i>italics</i> . Best results in bold . Shorter is better. Longer is better.	SPEEDMARK 2.1		QUAKE III V1.29F	iTunes 1.1	iMovie 2.1
			Normal	MP3 Encode	Render
Apple iMac 600MHz (OS 9.1)	 133	 39	 2:10	 2:05	
Apple iMac Special Edition 700MHz (OS 9.2)	 141	 44	 2:01	 1:46	
Apple iMac Special Edition (Flower Power) 600MHz (OS 9.1)	 132	 36	 2:16	 2:10	

Better ▶
Better ▶
◀ Better
◀ Better

Speedmark 2.1 scores are relative to those of an iMac 350MHz (1999), which is assigned a score of 100. Quake scores are in frames per second. iTunes and iMovie scores are in minutes:seconds. We tested each system with its preinstalled OS, the standard shipping RAM configuration of 256MB, a default system disk cache, and virtual memory enabled. We set displays to 1,024-by-768-pixel resolution and 24-bit color. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using a default setting of 160 Kbps in iTunes 1.1. We tested Quake at a resolution of 640 by 480 pixels, with graphics set to Normal.—Macworld Lab testing by Ulyssis Bravo and James Galbraith

included on the Software Restore CD; the 700MHz iMac offers it on a separate disc. According to Apple, the system software that ships on all the new iMacs will be included on one Software Restore CD. We'd prefer that this weren't the case, as it prevents users from choosing where and how to install OS X.

The limitations of this Software Restore CD scheme become apparent when you attempt to restore a single application from the CD. In short, it can't be done. Regrettably, except for the Pangea games—which can be restored from a separate Applications disc—you can't reinstall copies of the bundled applications individually. Rather, you must restore *all* the hard drive's contents—erasing the hard drive (or partition if you've partitioned the drive) in the process.

Although the Software Restore CDs allow Apple to more easily protect its software from unauthorized distribution, they're far too limiting and cumbersome for users. In the future, Apple might address this shortcoming by including an installer that would allow users to reinstall only selected applications—*without* jeopardizing the contents of their hard drives. In the meantime, those who purchase one of these iMacs might be wise to put the CD-RW drive to good use and burn backup copies of each application and its support files.

Fair Gains

For the most part, the two iMacs performed as we expected. The new 600MHz model slightly outpaced the

600MHz Flower Power iMac SE, due to updated drivers in the version of OS 9.1 bundled with the new system. The new, 700MHz iMac SE produced the best scores—though none of its scores are really earth-shattering. In our Speedmark tests, for example, the 700MHz model bested the new 600MHz iMac by only six percent. The new iMac SE also squeezed out an extra five frames per second in our Quake III test. And in our iTunes MP3-encoding test, the iMac SE crossed the finish line nine seconds earlier than the 600MHz iMac. But considering this iMac's 100MHz-faster processor, we'd hoped to see greater gains.

We had also hoped Apple would include faster CD-RW drives in these iMacs. Although the included drives are adequate, their 8x write speed is rather slow—modern CD-RW drives often boast write speeds of 24x. We pray that the next iMac release will include faster media drives.

Mac OS X

Although Macworld Lab doesn't currently support an official suite of OS X tests, we were eager to get a feel for how these new iMacs performed with Apple's next-generation operating system. Although both were a bit sluggish with OS X 10.0.4, they fared far better with OS X 10.1. (Systems built before OS X 10.1's release ship with earlier versions of OS X installed, yet these machines come with an OS X 10.1 installation CD.) On the new 600MHz iMac, AppleWorks launched in a single bounce, and Microsoft Internet

Explorer 5.1 appeared after a mere two bounces. Even the Microsoft Word X Test Drive application, a version not yet completely optimized, was reasonably snappy. It launched in just three bounces and felt responsive—a great relief to us. Given OS X's ability to utilize the AltiVec functions of the G4 processor, we had wondered if a G3 processor could do OS X justice. With OS X 10.1 and these iMacs, our fears have been laid to rest.

Macworld's Buying Advice

These iMacs are perfectly capable computers that perform well enough for all but the most demanding users. Both iMacs turned in respectable scores in our Speedmark, Quake III, and iTunes tests, and they seemed to handle Mac OS X 10.1 with aplomb. The software bundle covers the basics and offers some compelling multimedia applications. The 256MB of included RAM is welcome, the CD-RW drive—though no speed demon—is useful, and while Apple has offered more-attractive iMac color schemes in the past, we can't say that we're sorry to see the last of Flower Power and Blue Dalmatian.

While the 700MHz iMac Special Edition is the fastest iMac ever produced, we expected more from it than slightly better performance and a higher-capacity hard drive. For that additional \$200, you might expect a G4 processor or an Nvidia graphics board. We hope that the next iteration of the iMac Special Edition (and all iMacs, for that matter) will be truly worthy of the word *special*. **m**

GL1

Professional performance in a compact Mini DV.

- 20x Optical Zoom Lens plus 100x Digital Zoom with Optical Image Stabilizer™
- L-series Fluorite Lens used by professional photographers
- 3CCD with pixel shift gives you the highest resolution and the sharpest color available
- Shoot in Movie mode, take pictures in Photo Mode or record 30 frames per second for a cinematic look and internet compatibility
- Record directly from analog camcorders



XL1S

The ultimate Mini DV camcorder.

- 27 new features provide extensive control over picture and sound adjustments
- Exclusive XL Mount gives zoom lens options: Extra Wide Angle 3x, 16x Manual Servo, 16x with Optical Image Stabilizer™, and 3D Imaging Video Lens
- 3CCD with pixel shift gives you the highest resolution and sharpest color available
- Accepts EOS EF Super Telephoto camera lenses with optional EF adapter
- Full manual control

NEW



Moviemaking is
all about having
the right
connections.

NEW



Optura 100 MC

The digital camcorder that's a digital camera.

- 1.33 megapixel CCD for hi-resolution still images
- 10x Optical Zoom Lens plus 200x Digital Zoom with Optical Image Stabilizer™
- Store still images on an MMC or SD Memory Card
- Transmit power to an attachable microphone or video light
- Built-in flash with 4 modes

NEW

ELURA 20 MC

The Elura 10 and Elura 20 MC: Pocket-sized powerhouses.

- 10x Optical Zoom Lens plus 40x Digital Zoom with Image Stabilization
- MultiMediaCard or SD Memory Card for still images (Elura 20 MC only)



- Extended recording time; up to 4 hours on a single cassette
- Progressive Scan CCD with RGB Primary Color Filter
- 3 shooting modes: Movie, Photo and Digital Motor Drive
- Only 0.86 pounds

ZR30 MC

The ZR20, ZR25 MC and ZR30 MC are perfect companions for making digital home movies.

- Canon 10x Optical Zoom Lens plus 200x Digital Zoom with Image Stabilization
- Store still images with an MMC or SD Memory Card (ZR25 MC and ZR30 MC only)
- Transmit power to an attachable microphone or video light (ZR30 MC only)
- Record directly from analog camcorders



Each of our Mini DV camcorders has an IEEE 1394 (FireWire™) digital terminal for easy computer connectivity, superior picture clarity you can only get from Canon lenses, and an optional Floppy Disk Adapter for capturing stills. Because what you record is just the beginning. 1-800-OK-CANON www.canondv.com

Mini DV

© 2001 Canon U.S.A., Inc. Canon, Canon Know How, Digital Motor Drive, Optical Image Stabilizer, Canon Connects, and the Canon Connects logo are trademarks of Canon, Inc. FireWire is a registered trademark of Apple Computer, Inc., registered in the U.S. and other countries. SD is a trademark of 3C-LCC. MultiMediaCard is a trademark of Infineon Technologies AG. Microsoft, Windows, and the Windows logo are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Canon KNOW HOW™

DV Camcorders

Latest Canon, Panasonic, and Sony Models Offer More for Less

BY JEFF PITTELKAU

Those who don't own a digital-video camcorder are missing out on one of the best reasons to own a Mac. All of Apple's Mac models, even the least-expensive iMac, have built-in FireWire ports and iMovie software, making the creation of professional-looking videos for business, home, and school projects very easy.

Until now, digital-camcorder prices were prohibitively high, and the lower-priced models had only the most-basic features. But as with all technology advancements, camcorders' best features have migrated down to the latest entry-level models. We compared three of those models—the Canon ZR25 MC, the Panasonic PV-DV101, and the Sony DCR-TRV17—that can be had for less than \$1,200.

Why DV?

All the camcorders we tested use MiniDV tapes, tiny cassettes that store 60 minutes of high-quality digi-

tal video in standard-play mode or 90 minutes in long-play mode. Once you record your video, you can upload it to your Mac via a FireWire cable (sold separately) and edit it using either Apple's iMovie or a higher-end program such as Apple's Final Cut Pro or Adobe Premiere.

The DV format—used by DV, MiniDV, and Digital 8 cassettes—stores video at more than twice the resolution of standard VHS or 8mm tapes, and it stores 25 percent more information than S-VHS or Hi8 tapes. Color fidelity and noise immunity are also markedly better on DV

tapes than on analog tapes, resulting in breathtaking video quality. And because the recorded video is digital, you can upload it to your Mac or copy it to another DV tape without any loss of quality.

How They Feel

The Panasonic PV-DV101 was the most affordable model we looked at but also the lightest on features. Although it's a bit bulky, resembling a standard 8mm camcorder, its size allows for a 20× optical zoom lens. Two notable features also make it easier to use: the intuitive zoom control and the simple tape-loading mechanism. The zoom control on the PV-DV101 consists of two buttons operated with one finger each. The other two camcorders have a smaller, up-and-down lever that's operated with a single finger.

The PV-DV101's simple tape-loading slot pops open and allows cassettes to be loaded from the top. In contrast, the more-compact camcorders load tapes into a mechanical contraption—with cautionary stickers advising you to press here but not there—that's accessed via clamshell covers on the underside of each camcorder.

How They Work

Although its simplicity allows for a price hundreds of dollars lower than Canon's ZR25 MC and Sony's DCR-TRV17, the PV-DV101 lacks many desirable features. Like the ZR25 MC, it has a 2.5-inch color LCD screen, but its viewfinder is a black-and-white monitor inside a fixed-length tube that extends well past the camcorder housing—presumably to accommodate the optional higher-capacity batteries. In contrast, both



The Sony DCR-TRV17

DV Camcorders Compared

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	CONTACT	LCD SCREEN*	MAXIMUM BATTERY LIFE**	OPTICAL/DIGITAL ZOOM	REMOTE CONTROL	PROS	CONS
Canon	ZR25 MC	★★★★½	\$800	800/652-2666, www.usa.canon.com	2.5	8:30	10x/200x	yes	Compact; records from analog sources.	Fimsy port covers.
Panasonic	PV-DV101	★★★	\$600	800/211-7262, www.panasonic.com	2.5	9:00	20x/300x	optional	Inexpensive; convenient top-loading tape mechanism.	Black-and-white viewfinder; can't charge battery in camcorder.
Sony	DCR-TRV17	★★★★	\$1,100	800/222-7669, www.sonystyle.com	3.5	11:30	10x/120x	yes	Infrared Night Shot mode; tapeless conversion of analog video to DV.	VCR controls hard to reach.

* In inches. **In minutes:seconds.

the DCR-TRV17 and the ZR25 MC have color viewfinders in an assembly that extends or collapses, depending on the size of your batteries. You can also charge batteries in the DCR-TRV17 and the ZR25 MC, a convenience not offered by the PV-DV101 and many other Panasonic camcorders, which rely on a separate charger module.

And the ZR25 MC offers much more. It can capture still images using progressive scans rather than interlaced scans, which can lead to jagged photographs of moving objects. In addition to tape, you can store still images on MMC (MultimediaCard) or SD (secure digital) cards, although that feature is of little use to Mac users; you need to copy the stills to tape before you can upload them to your Mac. Another annoyance is the absence of a lock on the ZR25 MC's switch for selecting card or tape mode; if it's accidentally bumped into card mode, the camcorder won't record motion video. The DCR-TRV17, which can also record still images to memory cards, has a pop-out lock on its selector switch to prevent this from happening.

The ZR25 MC can shoot in wide-screen mode, with a 16:9 aspect ratio. When shot in this mode, images in the viewfinder will appear somewhat squashed, though they're recorded correctly on tape. The DCR-TRV17 can also shoot video in wide-screen mode, and it letterboxes video in the viewfinder and on its LCD screen, so you see everything in the proper aspect ratio as you're filming. And

like the other contenders, the ZR25 MC has a microphone on its front rather than on its top; the result is better sound than that of other compact camcorders. The ZR25 MC's only flaw is that the port covers are flimsy and could break off after extended use.

The Sony DCR-TRV17 falls in the middle in terms of size but not features. It not only feels sturdier and more solid than the PV-DV101 and the ZR25 MC, but also has a 3.5-inch color LCD screen that's markedly clearer than the others' 2.5-inch screens. The DCR-TRV17 can capture still images to Sony's proprietary Memory Stick cards, which mount as a virtual disk on your Mac's desktop. And if you're using Mac OS X, the Image Capture application will load these images automatically. The DCR-TRV17 also includes a USB port and cable for connecting the camcorder to your Mac.

Another handy feature is the DCR-TRV17's Night Shot mode: an infrared transmitter lets you film in total darkness from as far away as ten feet. Images recorded this way are black-and-white with an eerie green tint, but they're surprisingly clear. And the DCR-TRV17 provides a fairly accurate real-time estimate of remaining battery life, based on current usage conditions. Our only beef with the DCR-TRV17 is that you have to swing out its LCD display to access the playback controls.

If you're upgrading from an analog camcorder or have analog footage that you want to convert to or import as digital video, you need a camcorder

with analog-video inputs. Both the ZR25 MC and the DCR-TRV17 offer such inputs, allowing you to record analog video to MiniDV tape. However, the DCR-TRV17 can also convert analog video directly to a DV stream that can be imported to your Mac—no tape required.

How They Performed

In our tests, all three camcorders produced high-quality video, though the DCR-TRV17 had an edge on detail and color when recording in less than perfect lighting conditions. And all three worked flawlessly with iMovie on our iBook: they were directly controllable from iMovie, which had no trouble recognizing each camcorder's start-and-stop recording sessions as separate clips.

All three models also offer digital-image stabilization, which eliminates some of the jerkiness in videos filmed without a tripod. The PV-DV101 goes a step further: its dual-image stabilization can also steady movies while you're playing them back.

Macworld's Buying Advice

All three contenders performed well, but we favor the tiny Canon ZR25 MC over the bulky Panasonic PV-DV101—for \$200 more, you get a color viewfinder, a built-in battery charger, and wide-screen-recording capability. For another \$300, you can get all this and more in the Sony DCR-TRV17, which has enough bells and whistles to quell your camcorder envy for many years to come. **m**

DVD Burners

Six External SuperDrive Stand-ins Connect via FireWire

BY JIM HEID

Forget about CD burners. Today's optical drive of choice is a DVD burner, which lets you create video discs that play in most consumer DVD players. With Mac OS X 10.1, you can also use your DVD burner to back up files through the Finder. And of course, you can burn CDs using CD-R or CD-RW media.

The DVD-burning trend began when Apple added the SuperDrive to its top-of-the-line Power Mac G4. Designed and built by Pioneer, the SuperDrive is included in the top two G4 system models.

But you don't have to buy a new desktop Mac to get a DVD burner. Several storage vendors now sell external drives that contain the same Pioneer mechanism and connect to a Mac or Windows computer via FireWire. Although they're not called SuperDrives, they are super drives.

Macworld Lab tested six external DVD burners: the DVD-R/RW+

CD-RW FireWire Pro2, from APS Tech; the DVD Revo, from CD Cyclone; the ClubMac FireWire DVD-R/RW, from ClubMac; the Boa FireWire DVD-R/RW, from EZQuest; the LaCie DVD/CD Rewritable Drive, from LaCie; and the Que Fire DVDBurner Pro, from QPS. While our stopwatch says the drives are virtually identical, they differ in other ways, including price, case design, and bundled software (see "DVD Burners Compared"). The \$699 QPS Que Fire DVDBurner Pro provides the best mix of value and design, while CD CyClone's \$1,049 DVD

Revo is overpriced and unable to play commercial DVD video discs.

Fast Burn

We expected all six drives to perform similarly, and they did: in our tests, each drive turned in results that were within a few seconds of its competitors' (see "Benchmarked Burners").

The one exception was an original SuperDrive that we tested for comparison purposes. In DVD-burning tests, it was twice as slow as the newer units. The slowdown was due to the brand of media we used for testing. Early SuperDrives support double-speed DVD burning with only three brands of media: Apple, Pioneer, and Verbatim. With other brands—we used Mitsui—early SuperDrives downshift to single-speed DVD burning.

Pioneer has since addressed this issue, and mechanisms containing firmware version 1.44 or later support double-speed burning on a wide assortment of media brands. Alas, Apple has no plans to release a firmware update for its pioneering SuperDrive customers.

The Case for Good Design

Each DVD burner has a unique design, and some designs are better than others. The QPS Que Fire DVDBurner Pro takes the size prize—its case is only slightly larger than the drive mechanism itself, and because the drive uses an external power supply, the case lacks a noisy fan. The Que Fire drive also includes a padded carrier.

The DVD Revo drive also uses an external power supply, but the remaining four use internal supplies that contain fans. The quietest of these four fans is the one in EZQuest's Boa, which has a sturdy, silvery case. The



The QPS Que Fire DVDBurner Pro

Benchmarked Burners



Reference systems in italics.
Best results in bold.
 Shorter is better.

	DVD STUDIO PRO 1.1	TOAST 5.0.2		QUAKE III	ITUNES 1.1
	DVD Movie	Burn Data on DVD	Burn Data on CD-R	Full Install	MP3 Encode
APS Tech DVD-R/RW+CD-RW FireWire Pro2	8:06	7:07	10:50	5:30	1:20
CD Cyclone DVD Revo	8:09	7:07	10:49	5:31	1:20
ClubMac FireWire DVD-R/RW	8:06	7:08	10:50	5:30	1:21
EZQuest Boa FireWire DVD-R/RW	8:06	7:05	10:49	5:29	1:20
LaCie DVD/CD Rewritable Drive	8:06	7:08	10:50	5:30	1:21
QPS Que Fire DVDBurner Pro	8:06	7:08	10:49	5:30	1:21
<i>Power Mac G4/733 (Sawtooth)</i>	15:59	14:05	10:59	5:28	1:20
<i>Power Mac G4/733 (Sawtooth) with newer SuperDrive</i>	8:09	7:05	10:49	5:28	1:20

Better
 Better
 Better
 Better
 Better

Scores are in minutes:seconds. We tested with 256MB of RAM, Mac OS 9.2.1 installed, a default system-disk cache, and virtual memory enabled. DVD Studio Pro made a 979MB DVD movie that is 24 minutes long. Toast burned a 690MB folder using CD-R and DVD-R media. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using iTunes' Better Quality setting of 160 Kbps.—Macworld Lab testing by Ulyssis Bravo

FireWire Pro2 earns the ugly-duckling award for its basic beige case.

The ClubMac FireWire, Boa FireWire, and DVD Revo also include rear-panel audio-output jacks. While not necessary—sound also plays through the Mac's audio circuitry—audio jacks give you more flexibility when connecting to external speakers.

You Can Burn but Not Author

All of the drives we tested work with Apple's DVD Studio Pro and iTunes. We also burned DVDs with each drive using the Finder in Mac OS X 10.1.

All of the drives except the ClubMac model include bundled software for burning; however, the LaCie and the APS drives include only Windows software. The best bundle accompa-

nies the DVD Revo, which includes Windows software and Roxio's Toast 5 Titanium. The Que Fire DVDBurner Pro includes Windows software and Toast 5 Lite.

To create DVDs that will play in a set-top player, you need authoring software for creating menus and encoding video into MPEG format. The Windows software that accompanies some drives includes simple authoring tools, but none of the drives include Mac authoring software. Unless Apple releases a stand-alone version of iDVD that supports third-party burners, you will have to use the \$999 DVD Studio Pro for authoring.

The Pioneer mechanism in these drives is capable of playing back commercial DVDs. But CD CyClone's

DVD Revo can't play DVDs that are encoded for specific geographic regions, as most commercial DVDs are. CD CyClone is planning a software update to address this problem.

Macworld's Buying Advice

The only drive we can't recommend is CD CyClone's DVD Revo—it's expensive and unable to play back commercial DVDs.

Of the remaining five, the QPS Que Fire DVDBurner Pro provides the best mix of value and performance. Its \$699 price tag is the lowest of the bunch, its padded carrier is a nice plus, and its software bundle is good—although serious users will also want to spring for the full version of Toast 5 Titanium. **m**

DVD Burners Compared

★ = Editors' Choice

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
APS Tech	DVD-R/RW+CD-RW FireWire Pro2		\$890	Mac OS 9, Mac OS X	800/395-5871, www.apstech.com	Includes Windows burning and authoring software.	No Mac software included; noisy fan; beige case.
CD CyClone	DVD Revo		\$1,049	Mac OS 9, Mac OS X	714/247-0099, www.cdyclone.com	Includes Toast 5 Titanium and Windows software*; no fan.	Expensive; unable to play commercial DVDs.
ClubMac	ClubMac FireWire DVD-R/RW		\$699; \$749 with Toast 5 Titanium	Mac OS 9, Mac OS X	800/217-9153, www.clubmac.com	Least-expensive drive tested.	Includes no software; bulky case; noisy fan.
EZQuest	Boa FireWire DVD-R/RW		\$799 with Toast Lite; \$859 with Toast 5 Titanium	Mac OS 9, Mac OS X	714/694-0031, www.ezq.com	Rugged case design; includes Windows software and Toast 5 Titanium*.	Somewhat noisy fan; poor documentation.
LaCie	LaCie DVD/CD Rewritable Drive		\$889	Mac OS 9, Mac OS X	503/844-4502, www.lacie.com	Includes Windows burning and authoring software.	No Mac software included; noisy fan.
QPS	Que Fire DVDBurner Pro ★		\$749	Mac OS 9, Mac OS X	800/559-4777, www.qps-inc.com	Includes Toast 5 Lite and Windows software*; most compact case; no fan; nice padded carrier included.	No Mac DVD-authoring software included.

* Bundled software does not run on Mac OS X.

Epson Stylus Pro 5500

Wide-Format Ink-Jet Offers High-Quality Archival Prints, Great Comps

BY RICK LEPAGE

Small workgroups of graphic artists seeking a large-format color proofer and comping device found it in Epson's Stylus Pro 5000, a breakthrough printer when it was released a few years ago. With the 5000's successor, the Stylus Pro 5500, Epson has included the photographic and fine-art market in its scope.

The 5500 offers great print quality, excellent performance, and long-lasting prints while retaining the characteristics that made the 5000 an exceptional graphic-arts printer.

Archival Inks and Speed

The Epson Stylus Pro 5500's primary enhancement is the use of pigment-based archival inks—similar to the ones found in Epson's Stylus Photo 2000P—that Epson claims will last more than 200 years when used on specific Epson papers. The device uses six inks and has a maximum print resolution of 2,880 by 720 dpi. Depending on print size and ink coverage, its four high-capacity ink cartridges can produce from 150 to 1,000 prints each. The 5500 can handle page sizes as small as 4 by 6 inches and as large as 13 by 19 inches.

Overall, the Stylus Pro 5500 is close to twice as fast as Epson's consumer ink-jet printers. A 5-by-7-inch

photo that took 4 minutes and 22 seconds to print at 1,440 dpi on a Stylus Photo 1280 took 2 minutes and 20 seconds on the 5500. An 11-by-17-inch image took almost 20 minutes to print on the 1280, but it took only 8 minutes and 30 seconds on the 5500.

The 5500's print quality is superb; images printed on Epson's new resin-coated photo semigloss paper are crisp and vibrant, rivaling traditional photographs. Matte-finish and watercolor paper is also available, and the 5500 prints satisfactorily on plain paper. We also printed from a variety of graphics applications, including QuarkXPress and Adobe Illustrator, Photoshop, and InDesign. The 5500 isn't a PostScript printer, but its high resolution and consistent color allow it to create comps that come very close to a final proof. (Epson will offer a \$995 software-based PostScript RIP for the 5500 by the end of this year.

Metamerism Be Gone

Epson claims that the 5500's smaller ink droplets (the smallest ink dot is 3 picoliters) prevent the color-shift problems that afflicted the 2000P when printing neutral-toned or black-and-white images. This phenomenon—known as metamerism—causes

a print to look different depending on lighting conditions. Our tests corroborated Epson's claims: images that exhibited a severe color shift when printed on a 2000P showed significantly less metamerism when printed on a 5500. It isn't entirely gone—metamerism is a characteristic of pigment inks—but the 5500's output is much more balanced than Epson's earlier pigment ink-jets.

The only problem we encountered with the Stylus Pro 5500 was a relatively minor one—an occasional paper



jam when we used the manual-feed slot on the printer's back. Another annoyance is that if you're using Mac OS X, you'll have to wait until the end of the year for a print driver with only limited features. And a full-featured driver won't be ready until Carbonized versions of Photoshop, Illustrator, and QuarkXPress are released.

Macworld's Buying Advice

For heavy-duty prepress comping, the Stylus Pro 5500 is unbeatable. Its archival inks, excellent print quality, and great performance make it a fine choice for artists and photographers, as well as graphic artists. **m**

EPSON STYLUS PRO 5500

Rating: ★★★★★½

Pros: Excellent print quality, color consistency, and performance.

Cons: Occasional manual-feed problems; no Mac OS X drivers.

Company's estimated price: \$3,495

OS compatibility: Mac OS 9

Company: Epson, 800/873-7766, <http://prographics.epson.com>

Software-Updating Utilities

UpdateAgent X, TechTracker Pro Keep Your Software Collection Current

BY FRANKLIN N. TESSLER

The Internet makes it easy for vendors to release software patches and revisions, but keeping track of changes can be a full-time job. Two new Carbonized applications, Insider Software's UpdateAgent X 10.0.4 and TechTracker's TechTracker Pro 1.2 for OS X, relieve the drudgery of searching for updates.

Cost of Entry

UpdateAgent X checks the applications and other software on your hard drive against an online database. A one-time update costs \$10; \$50 buys you unlimited access for a year. There's also a \$90, two-CD set containing 1.3GB of recent updates.

TechTracker Pro scans as many as three Macs for out-of-date software. The program is free, but to use it you must register with VersionTracker Pro, which costs \$50 a year. In addition to offering free services, VersionTracker Pro lets you access a custom Web page that tracks revisions to any subset of your software, distinct from the updates TechTracker Pro supplies.

Customized Updates

UpdateAgent X lets you scan all your drives or a single volume. You can also program the software to run unattended and either shut down your computer or put it to sleep when the scan is done. In contrast, TechTracker Pro examines all your disks at once and lacks a scheduling feature.

Although TechTracker Pro was slightly faster, both applications ran smoothly and took only a few minutes to inspect a 30GB hard drive containing more than 80,000 files. And both utilities found most of the same updates, although UpdateAgent X didn't inform me of a major upgrade to Adobe Premiere.

UpdateAgent X's results list distinguishes between *free updates*, consisting of bug fixes and enhancements, and *upgrades*, which you generally purchase from the vendor. You select the updates you want, and UpdateAgent X downloads their installers to your computer from Insider's servers.

TechTracker Pro's file view surpasses UpdateAgent X's in several respects. For example, a pop-up menu lets you specify the software you want to monitor, and you see two version numbers for every item—one for the software you have, and one for the update. Buttons next to the menu let you filter out applications, control panels, and extensions from the list, although I found it hard to tell when



Latest Versions TechTracker Pro makes it easy to see how far behind the times you are.

TECHTRACKER PRO 1.2 FOR OS X

Rating: 4.5

Pros: Finds more software updates than UpdateAgent X; e-mail and Web-based notification of updates.

Cons: No scheduling feature.

Company's estimated price: \$50 per year

OS compatibility: Mac OS X

Company: TechTracker, 503/227-2571, www.techtracker.com

UPDATEAGENT X 10.0

Rating: 4.5

Pros: Customized scheduling; distinguishes between free and fee-based updates; inexpensive.

Cons: Overlooks some updates.

Company's estimated price: \$10 to \$90

OS compatibility: Mac OS 9, Mac OS X

Company: Insider Software, 800/700-6340, www.insidersoftware.com

the buttons were selected. Unlike UpdateAgent X, TechTracker Pro retrieves updates from each vendor's server; that could potentially be less reliable, although I didn't encounter any significant glitches.

Macworld's Buying Advice

Even though it's less exhaustive, UpdateAgent X is a competent, inexpensive utility ideal for most home or SOHO users; the \$10, one-time-only version is especially economical. If you want to find as many updates as possible, TechTracker Pro may be the better choice. With either program, you'll save hours of valuable time. **m**

(Note: Macworld has a marketing relationship with TechTracker and publishes a list of VersionTracker updates in each issue.)

room to burn



VINYL



DIGITAL VIDEO



DATA BACKUP



ORIGINAL MUSIC

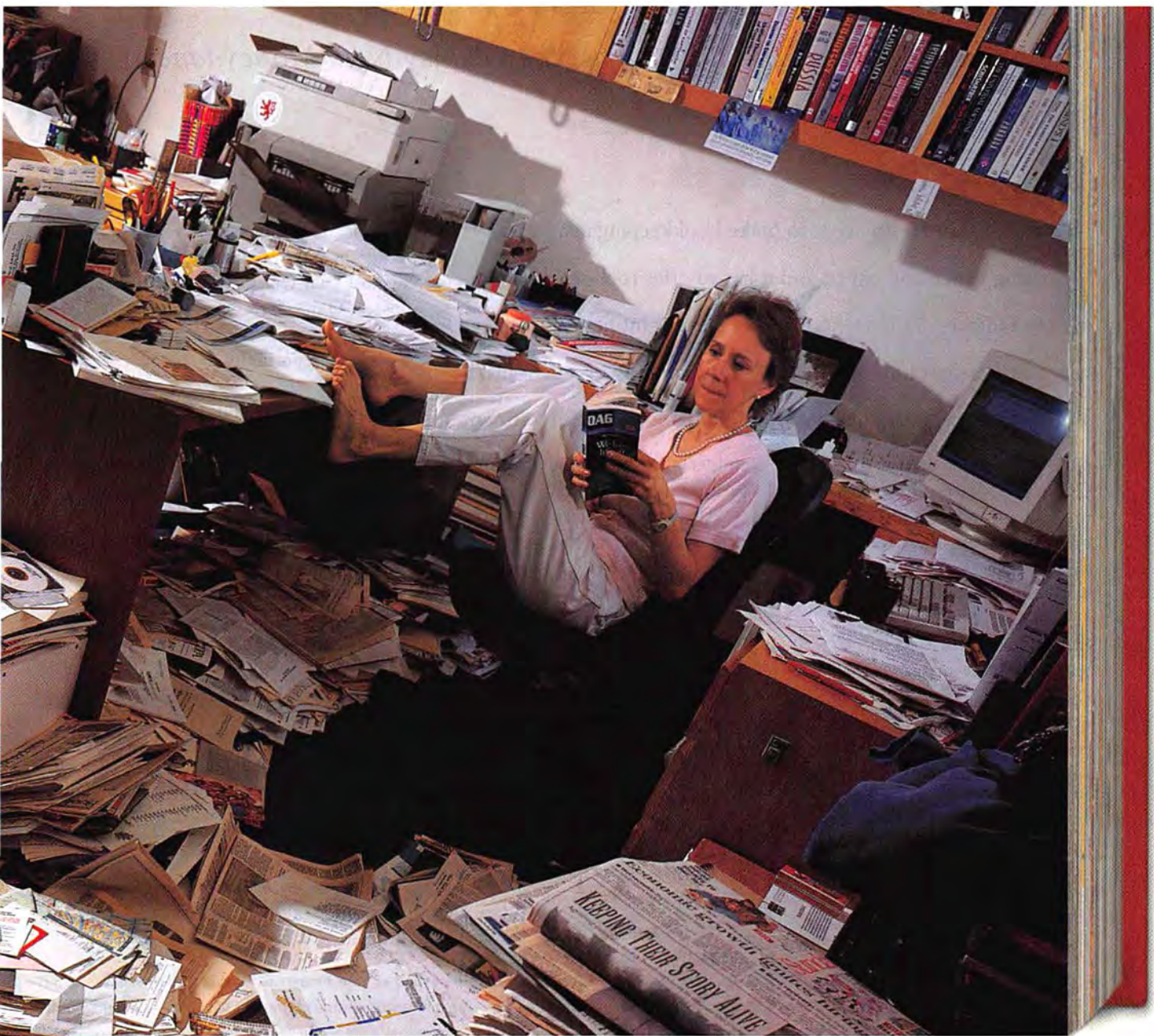


DIGITAL PHOTO



MP3





Need more space? Try a digital solution. Back up your data, even burn all your video, MP3s and multimedia presentation files onto CD. You can even create your own personalized jewel cases for each disc. Anyone can do it with Toast® 5, by Roxio. The best selling CD burning software in the world for the Mac. Use a PC? Look for Roxio's Easy CD Creator® 5.



United States and may be registered in some other jurisdictions. 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

Circle 140 on card or go to www.macworld.com/getinfo

Personal Finance Software

The Nimble Quicken 2002 Steps Past the Clumsy New Moneydance

BY TOM NEGRINO

A financial program needs to make bookkeeping tasks easier than using pencil and paper, and it has to offer rock-solid reliability.

In Quicken 2002 Deluxe, market leader Intuit adds some great new features that improve the program's already excellent utility and ease of use, particularly for online banking and investment

purposes. Compared with the mature Quicken, Appgen's Moneydance 3.2 is a callow youth that just can't keep up; with its many user-interface deficiencies and crippling bugs, it isn't worth your money.

Still Quick on Its Feet

Surely the most important change in Quicken 2002 Deluxe is that it runs natively in Mac OS X, although it still runs in OS 9.0.4 or later. As a Carbon application, it sports the Aqua look-

and-feel throughout and gives snappy performance in OS X 10.1.

This version still isn't as feature-rich as its Windows kin, but the gap is closing. Mac-based businesses would appreciate a Home and Business version like the one Intuit offers for Windows; with its project-tracking, invoicing, and accounts-receivable features, it has just enough accounting oomph for small businesses. Such a version for the Mac would bridge the gap between Quicken, a personal-finance manager, and MYOB AccountEdge (*Reviews*, March 2001), a full-featured accounting package.

One Step Update, a feature long enjoyed by Windows users but new to the Mac, lets you perform all your online transactions with one click. You can download banking data and credit card transactions, send bill payments, and get stock quotes in a single session rather than connecting to each financial institution separately. PIN Vault, another new feature, stores all the passwords or PIN numbers for your different online accounts. Like the Mac OS's Keychain, this feature lets you access everything with one master password.

Another terrific new feature for online banking users is automatic checkbook reconciliation. After

downloading your transactions, the program checks the online balance against your Quicken register. If they match, Quicken reconciles the account; if there's a problem, you're given the opportunity to reconcile them manually.

Quicken 2002 adds transaction downloading from brokerages—a great convenience, especially if you do a lot of trading. You can download information on purchases, sales, and dividend payments for stock and mutual funds. You can't initiate a new transaction, such as a stock purchase, within Quicken; you'll have to do that at your broker's Web site.



Investing at Your Fingertips Quicken's new ability to download investment transactions frees you from onerous data entry and helps eliminate errors.

At the moment, Quicken supports only two online brokers—TD Waterhouse and Fidelity Investments. If you have accounts with E-Trade, Charles Schwab, Datek, or other brokers, you will have to wait; Intuit is working with these firms to enable the service. You can update the list of participating companies using the Financial Institutions window. Another investment aid is the new Capital Gains Estimator: enter your tax rate, and it shows you the tax consequences of selling one

MONEYDANCE 3.2

Rating: ★ 1/2

Pros: Works identically on different platforms; Aqua look-and-feel.

Cons: Limited feature set; useless OIF import; inferior data entry; online banking not available for Mac OS 9 users.

Company's estimated price: \$40

OS compatibility: Mac OS 9, Mac OS X

Company: Appgen, 800/231-0062, www.moneydance.com

QUICKEN 2002 DELUXE

Rating: ★★★★★

Pros: Carbonized; easier online updating; automatic account reconciliation.

Cons: Doesn't yet support most online brokerage accounts.

Company's estimated price: \$60

OS compatibility: Mac OS 9, Mac OS X

Company: Intuit, 800/952-2558, www.quicken.com

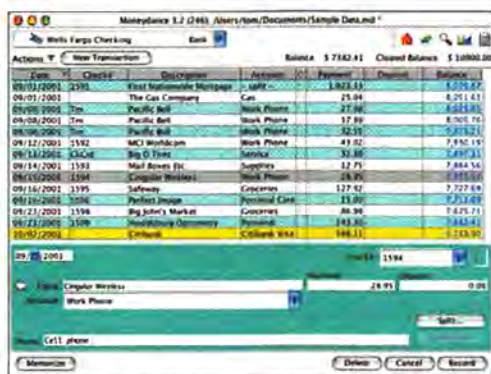
or more lots of securities. If you are new to Quicken, two new assistants can walk you through the process of creating investment accounts and bank accounts, respectively.

Moneydance Stumbles

Moneydance is written in Java, which means it works in many operating systems—Mac OS 8, 9, and X; Linux; and most flavors of Windows. Some features, though, depend on the robustness of a platform's Java implementation. The most important example is that you can't use online banking on the Mac unless you're running OS X.

If you've been thinking of switching to Moneydance from Quicken or another financial program, think again. You can't import Quicken data into Moneydance, and although the hype on the program's box boasts of its ability to import files in Quicken Interchange Format (QIF), doing so yields unintentionally hilarious results. After importing my Quicken data from a QIF file, Moneydance thought I owned stocks worth \$4.8 billion; if that were true, I assure you that someone else would have written this review. Out of 28 accounts exported from Quicken 2002, only 3 imported with the correct transactions and balances, and the program created dozens of blank accounts. Moneydance also failed to identify investment accounts correctly; it placed the imported data into bank accounts, which prevented me from using the portfolio-tracking features (once an account is created, you can't convert it from bank to investment).

Until Appgen fixes these importing bugs, Moneydance is usable only if you plan to do all your data entry from scratch. Even then, you're much more limited in Moneydance than in Quicken. Entering data is less convenient, because creating new transactions takes both the keyboard and the mouse. You enter split transactions in a second window that requires many clicks and keystrokes, and another



Too Many Steps Moneydance makes data entry harder than it should be; you must click on the Record button, and memorization requires several mouse clicks.

window's poor design makes it difficult to add your own expense and income categories.

Other little annoyances mar the program. For example, there's no way to mark expenses as tax related so you can track your deductions at tax time. And investment handling is nowhere near as convenient as it is in Quicken; you must update all your information, including stock prices, manually rather than downloading it from the Internet.

Besides the interface hurdles, Moneydance has a number of bugs. For example, it showed the correct transaction price in the register for a bond purchase but got it wrong in the portfolio overview window. And more than once, I lost data while switching between windows to edit transactions.

Macworld's Buying Advice

Moneydance 3.2 is less expensive than Quicken 2002 Deluxe, but the latter's \$20 rebate for owners of previous versions (including those that shipped with iMacs) means that for many users the two are effectively the same price. But even at the higher price, Quicken provides much more value than Moneydance. In virtually every financial area, Quicken's tools are more complete and easier to use than their Moneydance equivalents. Moneydance is improving rapidly—two updates arrived before this review was completed—but it has a long way to go before it can challenge Quicken as the Mac's personal-finance leader. **m**

Rewind 1.2

Better but Not Perfect

OUR FIRST LOOK AT POWER ON Software's Rewind—a utility designed to restore your Mac's hard drive to a previous saved state—left us unimpressed by the program's performance. Rewind 1.2 corrects most of version 1.1's problems (🔴🔴🔴½; *Reviews*, April 2001): it doesn't constantly access the hard drive when updating its database, and it more quickly releases free hard-drive space.

However, some reliability problems remain. For example, after upgrading a PowerBook G4 from Mac OS 9.1 to Mac OS 9.2.1, I pressed the R key in an attempt to boot from Rewind's Emergency Disk—a virtual startup drive set aside on the Mac's hard drive—but I was unsuccessful. I worked around the problem by deleting the Emergency Disk and replacing it with a new one created in OS 9.2.1. Then, after I rewound back to OS 9.1, booted from the Emergency Disk, and attempted to rewind back to OS 9.2.1, the PowerBook refused to boot up.

Macworld's Buying Advice

Although Rewind is getting better, there's still room for improvement. It can get you out of some sticky situations—but you shouldn't use it in lieu of a comprehensive backup strategy.—CHRISTOPHER BREEN

Rating: 🔴🔴🔴½

Pros: Can bring some files back from the dead.

Cons: Sometimes unreliable.

Company's estimated price: \$100; download, \$90


OS compatibility: Mac OS 9, not Mac OS X's Classic mode

Company: Power On Software, 800/344-9160, www.poweron.com

Mesa 3

Cocoa Spreadsheet Has a Few Smart Features—and Some Gaping Holes

P & L SOFTWARE'S MESA 3, a full-blown spreadsheet program written in Cocoa, lets you build a budget document, map out complex statistical data, and produce presentation-quality reports. But how does Mesa measure up to Microsoft Excel when it comes to slicing and dicing your numeric data? Not very well, unfortunately.

Rating:  4 1/2

Pros: Formula-building shortcuts; tools for building custom reports.

Cons: Lacks basic functionality; non-standard keyboard shortcuts; limited charting options.

Company's estimated price: \$99

OS compatibility: Mac OS X

Company: P & L Software,
mesa@plsys.com, www.plsys.com

Mesa is packed with outstanding timesaving tools, including several that outshine Excel's. The Formula Inheritance feature lets you copy formulas from cell to cell, maintaining a link between the original formula and all the copies. If you make a change to the original formula, all the referenced cells update automatically, making it easier to execute global changes to calculations throughout your document. And Report Builder lets you create customized layouts for printed reports using a WYSIWYG view.

But Mesa's advanced features cannot make up for its deficiencies. There is no zoom tool, charting options are limited (you can't make pie charts, for example), and contextual pop-up menus are rare. And Mesa is often less intuitive than Excel.



Cell Control You can format Mesa spreadsheets using the Cell Format Inspector.

Macworld's Buying Advice

Mesa is a powerful spreadsheet program, and it runs natively in OS X, but the holes in its feature set and lack of polish make it pale in comparison to Excel.—JOSEPH SCHORR

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."



judges felt DiskWarrior deserved top billing..."

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



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!"

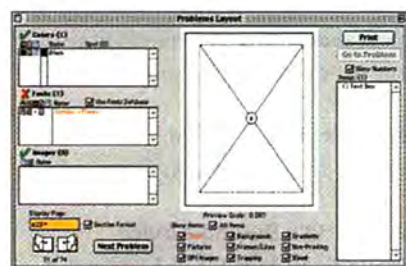
**Repairs disk problems such as disks that won't mount, files you
Now with DiskShield™ to prevent damage to your disks before it**

FlightCheck Classic 4.2

Preflighting Tool Identifies Problems Before You Submit Your Job

HAVING YOUR SERVICE BUREAU run your job through a preflighting program can prevent errors from showing up in print, but each problem that crops up causes delays and may result in extra charges.

Markzware's FlightCheck Classic 4.2 can help you eliminate problems before you submit your job, saving you



Next Problem, Please FlightCheck Classic 4.2's Problems Layout window lets you step through and resolve each slipup.

time and money. Its Ground Controls palette lets you set up the rules by which the program will flag conditions as errors. FlightCheck scans your publication and then produces a detailed usage report, a window showing the problems it's flagged, and a window that lets you step through and fix problems. When you're done, the program can collect all your job's elements and save them for transmission.

FlightCheck checks for everything from obvious oversights, such as missing fonts, to obscure problems, such as an out-of-range ink limit. And it supports all major page-layout and image-editing programs.

Macworld's Buying Advice

FlightCheck Classic catches more potential problems and is more config-

Rating: ★★★★★

Pros: Fast; comprehensive; catches potential problems that other preflighting tools ignore.

Cons: Somewhat daunting user interface; Quark-centric terminology.

Company's estimated price: \$399; download, \$379

OS compatibility: Mac OS 9

Company: Markzware, 800/300-3532, www.markzware.com

urable than its main competitor, Extensis's Preflight Pro, and it's much more comprehensive than the preflighting utilities in the applications whose output it checks. If you need to deliver publications that will sail through your service bureau's production chain, this is an indispensable tool.—BRUCE FRASER

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!"



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



"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."

WWW.ALSOFT.COM

ALSOFT

1-800-257-6381

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

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

Circle 166 on card or go to www.macworld.com/getinfo

World Book Mac OS X Edition

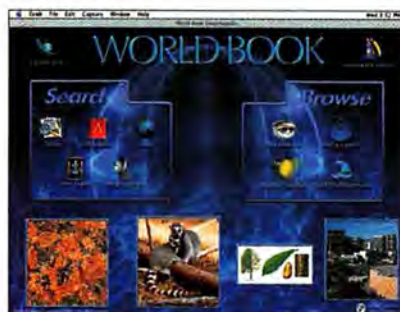
Aquafied Encyclopedia Is an Able Research Assistant

THE *WORLD BOOK Encyclopedia*, 1960 edition, was the encyclopedia of my youth; its volumes filled half the available shelf space in the family room. Times have changed, and World Book is now available on space-saving CD-ROM (but not on DVD). The latest version, World Book Mac OS X Edition, fills two CDs with the com-

plete text of the current print edition, as well as media content I never dreamed of as a kid. You can even update the program over the Web.

This edition incorporates Aqua elements seamlessly and takes advantage of OS X's multimedia capabilities, offering images, audio, video, animations, and 360-degree panoramas. World Book is available in a \$49 edition for older versions of the OS.

Geared primarily toward middle-school students, the CDs include an atlas, a dictionary, and a basic word processor; homework wizards help kids create timelines, make charts, and write reports. Unfortunately, you can't drag and drop from the chart and timeline tools into the word processor. And although you can use the search tool or click on icons to see



World Book's World The opening screen puts World Book's tools at your fingertips.

Web-based information, links are missing from the articles themselves.

Macworld's Buying Advice

World Book Mac OS X Edition is a solid research reference for young students and a worthy successor to the hardbound version.—HENRY BORTMAN

Rating: ★★★★★

Pros: Seamless Aqua interface; homework wizards; excellent multimedia content; online updating.

Cons: No Web links from within articles; no DVD version.

Company's estimated price: \$60

OS compatibility: Mac OS X

Company: World Book, 800/967-5325, www.worldbook.com



Original



Asiva®



Asiva®

SOME MASKS ARE A WORK OF ART, OTHERS ARE A WASTE OF TIME.

HASSLE-FREE COLOR EDITING. ASIVA PHOTO.

An intricate mask for color-editing may be a work of art, but it's not one your client appreciates or wants to pay for. Asiva® Photo lets you achieve the precise color changes and natural transitions you want, without the tedium of mask-making.

- Change anything anytime
- Sharpen or soften edges
- Enhance or reduce color saturation
- Retouch photo detail
- Change colors of objects or backgrounds
- Clean up distracting backgrounds
- Create special effects

Asiva® Photo lets you turn operations on and off independently for complete control, then see your changes right away — no waiting for images to render.

See for yourself at
www.asiva.com

US Patent Granted.

ASIVA
photo

Sorenson Video 3 Professional

QuickTime Codec Delivers Excellent Video Quality

QUICKTIME 5.0.2 INCLUDES a free copy of Sorenson Video 3—the latest version of the most widely used codec for compressing and decompressing Web-based QuickTime video—but multimedia professionals should consider paying \$499 for the Professional Edition. Its advanced compression settings yield even better image quality, and it has a few features the



free version lacks (for example, the ability to add color watermarks to a movie as you compress it).

Unfortunately, neither version takes advantage of multiple processors—a useful feature when you're encoding live events. (A free update that adds support for multiple processors should be available by the time you read this.) One of the Professional Edition's best capabilities—variable-bit-rate (VBR) encoding, which improves image quality—will be inaccessible until Discreet's Cleaner 5.1 ships. And the program runs only in Mac OS 9—not in OS X's Classic mode.

Macworld's Buying Advice

Sorenson Video 3 Professional Edition is a superb, if pricey, codec for low-bit-rate applications. QuickTime pros who create high-quality Web video will want it, especially once Cleaner 5.1 is available.—JIM HEID

Rating: ★★½

Pros: Dramatically improved image quality; advanced compression options.

Cons: No multiprocessor support; VBR encoding requires Cleaner 5.1.

Company's estimated price: \$499

OS compatibility: Mac OS 9, not Mac OS X's Classic mode

Company: Sorenson Media, 888/767-3676, www.sorenson.com

Vehicle.



Passengers.

Just 2½" x ½" x 4"!

FireFly™

Tiny, portable 5 GB FireWire™ drive for your digital data



FireWire™ Portable CD-R/W

Speedy (8x8x24), reliable CD burning



FireWire™ Thin Drives

Fast, portable hard drive in 10, 20 and 30 GB capacities

Get to your destinations faster and easier with SmartDisk products designed to meet the demands of your portable lifestyle.

Keep your engine running with power accessories for your PowerBook or iBook available at www.smartdisk.com.

SMARTDISK™
Simplifying The Digital Lifestyle™

Circle 166 on card or go to www.macworld.com/getinfo

Official Drawing Rules (see ad, page 12)

NO PURCHASE NECESSARY TO ENTER OR WIN. IF YOU DO NOT WISH TO BE BOUND BY THESE RULES, PLEASE DO NOT ENTER THE DRAWING.

HOW TO ENTER: Drawing is open only to current Macworld subscribers. This is an Internet only drawing. To enter, complete the survey at www.rsch.com/macsurvey and fill out the entry form at the end of the survey. The form must contain your name, mailing address, e-mail address, and daytime phone number. If your name and/or address differ from Macworld's subscription records, a valid subscriber number must also be supplied. The information you provide in the survey is for research purposes and will be held strictly confidential. This information will never be sold or given away. No salesperson will ever contact you as a result of any information you provide us. Entry period begins at 12:01 a.m. (Pacific Time), on 9/25/01 and ends at 11:59 p.m. (Pacific Time) on 12/13/01. Participation constitutes entrant's full and unconditional agreement and acceptance of these Official Rules which shall be final in all respects. Only one entry is allowed per person. For the purposes of this promotion, an "entrant" shall consist of a person, family or household with a valid email address. Should multiple entries be received, all such entries will be disqualified. Late entries, ineligible entries, illegible entries and/or incomplete entries will not be accepted. All entries subject to verification.

ELIGIBILITY: All pertinent survey questions must be answered to enter. Drawing is open to legal residents of the 50 United States or the District of Columbia who are 18 years of age or older upon entry. Persons in any of the following categories are NOT eligible to participate in this drawing: (i) persons who from or after January 1, 2000 were or are employees or agents of Mac Publishing, L.L.C. or its independent contractors; (ii) individuals engaged in the development, production or distribution of materials for this drawing; (iii) persons who are immediate family of any person in any of the preceding categories regardless of where they live; or (iv) persons who reside in the same household, whether related or not, as any person in any of the preceding categories.

WINNER SELECTION: On or about 12/14/01, one Grand Prize winner and one First Prize winner will be randomly selected under the supervision of Sponsor from all eligible entries received. Grand Prize winner will be awarded an Apple iBook 500MHz 128MB/10GB/DVD (approximate retail value \$1500). First Prize winner will be awarded a Canon Powershot S110 with Executive Kit (approximate retail value \$450). Any additional expenses incurred in connection with prize will be the sole responsibility of the prize winner. Sponsor's decisions are final in all matters regarding this drawing. No negotiations will be entered into. The odds of winning depend on the number of eligible entries received. Winners will be notified by e-mail and/or telephone on or about 12/21/01. For winners' list, send a self-addressed, postage paid envelope after 12/28/01 to Macworld Online Drawing, 301 Howard St., 15th Floor, San Francisco, CA 94105.

CONDITIONS OF PARTICIPATION: It is your responsibility to read, understand and ensure that you have complied with all of the conditions contained in these Official Rules. All entries become the property of Sponsor and will not be returned. Sponsor is not responsible for incorrect or inaccurate entry information whether caused by entrants or by error of the equipment or programming associated with or utilized by Sponsor or by any technical or human error which may occur in the processing of the entries in the drawing. Entrant agrees to release and hold Sponsor, its officers, directors, affiliates, employees, contractors, subsidiaries, agents and partners harmless from and against all liability, arising from or in any way related to this drawing. Entrant shall indemnify Sponsor, its officers, directors, affiliates, contractors, subsidiaries, agents, employees and partners from and against all claims or suits or any damages or costs arising from or relating to entrant's violation or inaccuracy of any warranties or representations made relating to this drawing. Sponsor is not responsible for any fraud or misconduct on the part of entrants. Should an entrant engage in fraud or misconduct of any nature, including but not limited to a violation of the Official Rules, such participant shall be subject to immediate disqualification. Sponsor reserves the right in its sole discretion to cancel or suspend this drawing should virus, bugs or other causes beyond its control corrupt the administration, security or proper play of the drawing. Winners must respond within 72 hours from the time winner is notified. If a winner fails to respond within the time limit, winner shall have forfeited the prize and it shall be within Sponsor's sole discretion to select an alternate winner. Prize is non-transferable. No cash redemption or substitution will be allowed, except at Sponsor's sole discretion. If the prize is unavailable, Sponsor reserves the right to substitute a prize of equal or greater value. Winner may be required, in the sole discretion of Sponsor, to sign and return an affidavit of eligibility and a liability release within ten (10) days of prize notification or the prize may be forfeited and awarded to an alternate winner. Winners are responsible for all applicable Federal, State and local taxes. If these rules differ from any promotional or other materials published in connection with the drawing, these rules shall control.

LAW: This drawing is void where prohibited or restricted by law. All federal, state and local laws, rules and regulations apply. Drawing is governed by, construed, and enforced in accordance with the laws of the State of California, United States of America, without regard to any choice of law principles. As a condition of entering this promotion, entrants agree that (a) any and all disputes, claims and causes of action arising out of or connected with this promotion, or the prize awarded, shall be resolved individually, without resort to any form of class action, and exclusively by arbitration under the rules of the American Arbitration Association; (b) any and all claims, judgments and awards shall be limited to actual out-of-pocket costs incurred, including cost associated with entering this promotion but in no event attorney's fees; and (c) entrants hereby waive all rights to claim punitive, incidental and consequential damages or other damages, other than actual out-of-pocket expenses, and any and all rights to have damages multiplied or increased.

ENTIRE AGREEMENT: These Official Rules set forth the entire agreement between the parties relating to the subject matter hereof, and supersede all prior agreements and understandings relating thereto, whether oral or written.

DRAWING SPONSOR: Mac Publishing, L.L.C., 301 Howard St., 15th Floor, San Francisco, CA 94105.

ONLINE REVIEWS

Macworld.com

For these reviews:

www.macworld.com/2001/12/reviews/online.html

LINK

17-inch flat-panel displays

- ☆☆1/2 Acer FP751
- ☆☆☆☆ AG Neovo X-174
- ☆☆☆☆1/2 Apple 17-inch Studio Display
- ☆☆1/2 Envision Peripherals EN-7100e
- ☆☆☆☆ iiyama Pro Lite 44A
- ☆☆☆☆1/2 NEC-Mitsubishi 1700M
- ☆☆☆☆ Philips 170B
- ☆☆☆☆ Planar 17.4-inch Multi-Media Monitor
- ☆☆☆☆ Proview PL765 LCD 17-inch
- ☆☆☆☆ Samsung SyncMaster 170MP
- ☆☆☆☆1/2 Samsung SyncMaster 170T
- ☆☆☆☆1/2 ViewSonic VE170 ViewPanel
- ☆☆☆☆ ViewSonic VG175 ViewPanel

Web-log analyzers

- ☆☆1/2 Analog 5.03
- ☆☆☆☆ Sawmill 6.2.5
- ☆☆☆☆ Summary 2.0.1

Math software

- ☆☆☆☆ Mathematica Explorer

USB flash storage

- ☆☆☆☆1/2 DiskOnKey
- ☆☆☆☆ Trek ThumbDrive

Optical mouse

- ☆☆☆☆ Kensington PocketMouse

Reviews You Can Trust

- OUTSTANDING: ☆☆☆☆
- VERY GOOD: ☆☆☆
- GOOD: ☆☆☆
- FLAWED: ☆☆☆
- UNACCEPTABLE: ☆

RATINGS

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 20, 2001
4. Issue Frequency: Monthly
5. Number of Issues Published Annually: 12
6. Annual Subscription Price: \$34.97
7. Known Office of Publication: 301 Howard Street, 15th Floor, San Francisco, CA 94105
8. Complete Mailing Address of the Headquarters of General Business Offices of the Publisher: Mac Publishing, L.L.C., 301 Howard Street, 15th Floor, San Francisco, CA 94105
9. The Full Names and Addresses of the Publisher, Editor, and Managing Editor: Publisher: Colin C. Crawford, 301 Howard Street, 15th Floor, San Francisco, CA 94105; Editor: Rick LePage, 301 Howard Street, 15th Floor, San Francisco, CA 94105; Managing Editor: Jennifer Werner, 301 Howard Street, 15th Floor, San Francisco, CA 94105
10. The Owners: Mac Publishing, L.L.C., 301 Howard Street, San Francisco, CA 94105; Ziff-Davis Publishing, 28 East 28th Street, New York, NY 10016; Macworld Communications, Inc., 301 Howard Street, 15th Floor, San Francisco, CA 94105.

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 2001

15. EXTENT AND NATURE OF CIRCULATION: Average No. Copies Each Issue during Preceding 12 Months: A. Total Number of Copies (Net Press Run): 548,501; B. Paid and/or Requested Circulation: 1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541: 382,718; 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: 49,693; 4. Other Classes Mailed through the USPS: 0; C. Total Paid and/or Requested Circulation: 432,411; D. Free Distribution by Mail (Samples, Complimentary, and Other Free): 1. Outside County as Stated on Form 3541: 9,500; 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): 0; F. Total Free Distribution: 9,500; G. Total Distribution: 441,911; H. Copies Not Distributed: 106,590; I. Total: 548,501; J. Percent Paid and/or Requested Circulation (15C divided by 15G times 100): 97.85%.

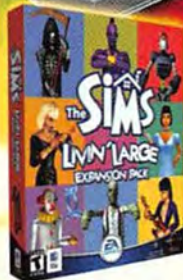
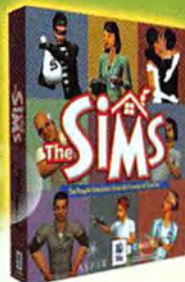
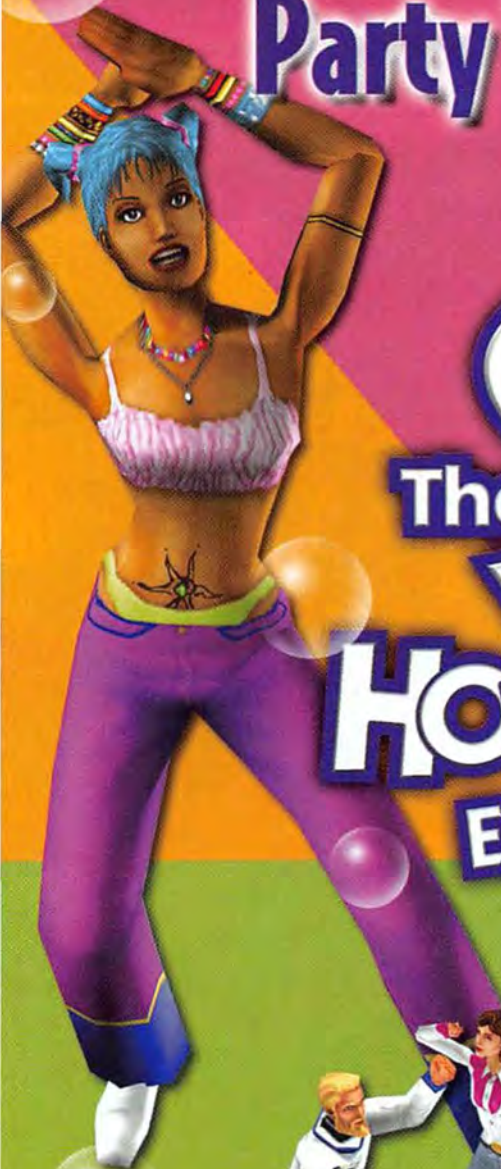
15. EXTENT AND NATURE OF CIRCULATION: No. Copies Single Issue Published Nearest to Filing Date: A. Total Number of Copies (Net Press Run): 527,811; B. Paid and/or Requested Circulation: 1. Paid/Requested Outside-County Mail Subscriptions Stated on Form 3541: 380,500; 2. Paid In-County Subscriptions Stated on Form 3541: 0; 3. Sales through Dealers and Carriers, Street Vendors, Counter Sales, and Other Non-USPS Paid Distribution: 50,100; 4. Other Classes Mailed through the USPS: 0; C. Total Paid and/or Requested Circulation: 430,600; D. Free Distribution by Mail (Samples, Complimentary, and Other Free): 1. Outside County as Stated on Form 3541: 8,724; 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): 0; F. Total Free Distribution: 8,724; G. Total Distribution: 439,324; H. Copies Not Distributed: 88,487; I. Total: 527,811; J. Percent Paid and/or Requested Circulation (15C divided by 15G times 100): 98.01%.

16. This Statement of Ownership will be printed in the December 2001 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 20, 2001.

Party With Your Sims!

The Sims™ HOUSE PARTY EXPANSION PACK*



*Requires The Sims to play.

Livin' Large Expansion Pack* also available.



ASPYR™

Authorized Electronic Arts™ Distributor
www.aspyr.com

MAXIS

© 2001 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. Macintosh and the MacOS logo are trademarks of Apple Computer, Inc. All other trademarks are property of their respective owners. All rights reserved.

Circle 91 on card or go to www.macworld.com/getinfo

The highly-anticipated prequel to the award-winning myth series

MYTH III

THE WOLF AGE

"If you are a fan of the first two MYTH games, do not hesitate to look forward to MYTH III. The game looks great!" —INSIDE MAC GAMES



Take command of more than 40 unit types, each with their own personalities and special abilities



Incredibly detailed 3D models and landscapes. Wage war in towering forests, dank dungeons, scorched deserts and murky swamps



Conquer 25 single-player maps as you live an epic tale of heroism and battle



Blood & Gore
Violence



mumbo
jumbo

INFOGRAMES
MacSoft®

©2001 Take-Two Interactive Software, Inc. All rights reserved. Myth III and Myth III logo are trademarks of Take-Two Interactive Software, Inc. Mumbojumbo and the Mumbojumbo logo are trademarks of Mumbojumbo, Inc. All other trademarks and registered trademarks are the property of their respective owners. Manufactured and marketed by Infogrames, Inc., New York, New York.

Circle 30 on card or go to www.macworld.com/getinfo

The Game Room

Third-person action games, such as those in the Tomb Raider series, are related to but subtly different from games in the first-person-shooter genre. They not only present action from diverse perspectives—vantage points outside your on-screen persona—but also call on different skills. These games often require a better sense of spatial awareness and feature more puzzles, platforms, and mazes.

This month I'm taking a look at two third-person action games that have recently been released for the Mac—Star Trek *Deep Space Nine: The Fallen* and American McGee's *Alice*.

Go Ask Alice

American McGee's *Alice* is an unusual and disturbing journey through Wonderland. Game publisher Aspyr Media and conversion studio Westlake Interactive collaborated to bring it to the Mac. It's built on top of the same engine that powers Id Software's *Quake III Arena*, so it has similarly rich graphics and animation.

Alice has many of the trappings you'd expect from a third-person action game. Mostly, what you must do is get from point A to point B without plummeting to your death or being feasted upon by voracious monsters. On your way to each goal, you have to figure out how to make your way across precarious ledges, through rushing water, and around other pitfalls. Some elements involve careful timing. Others involve recovering an item that another character needs in order to help you. Sometimes you have to solve basic puzzles. Truth be told, none of Alice's elements are particularly new or innovative, but they're done extraordinarily well.

In this game, Alice is older than she was in Lewis Carroll's book. A fire has claimed her family, sending poor Alice to a sanitarium. There, she takes an inward journey back to Wonderland, only to find that it's a dark shadow of the place she remembers from her childhood. Alice must



Curiouser and Curiouser On her journey through Wonderland, Alice meets foes old and new, including the Mad Hatter.

find her way home from this dark, eerie place, confronting the wicked Queen of Hearts along the way.

Many elements of *Alice's Adventures in Wonderland* are here. Alice can summon the Cheshire Cat to get advice, for example, and he's as enigmatic as ever, though his rictal grin and wrung neck make him look more like a reanimated cadaver than the lovable pink-and-purple creature popularized by Disney half a century ago. The Caterpillar is back

again, as is the White Rabbit and other characters from the original story, but they're more sinister.

Although it's downright creepy, the game—from the levels to the textures to the characters—is exquisitely designed, with fine detail and stunning architectural elements. Bold use of texture and color make this game a feast for the eyes. It's one of the best-looking games to be released for the Mac this year.

The voice acting is well done—characters are believable, and the accents and affectations are never cloying or hokey. The music helps set the mood, although it does occasionally wear out its welcome. The sometimes haunting soundtrack was composed by Chris Vrenna, whose previous credits include a stint with Nine Inch Nails.

Today Is a Good Day to Die

By far, my favorite Star Trek show has been *Deep Space Nine*. So I had high expectations of Simon & Schuster *continues*

Interactive's release of *Star Trek Deep Space Nine: The Fallen*, a game that finally came to the Mac after a delay of almost a year. Was it worth the wait? In some respects, yes; in others, no.

The *Fallen* fits into the framework of Simon & Schuster's *Star Trek Deep Space Nine* series of novels. If you're a fan of the books, you'll be pleased to find a game that maintains their storyline. Developed by Collective Studios, *Star Trek Deep Space Nine: The Fallen* alternately puts you in the roles of characters Sisko, Kira, and Worf. You must recover the Red Orb, an ancient artifact containing the essence of the Pah Wraiths, a race of alien creatures that once threatened to destroy the people of planet Bajor. Two opposing forces have discovered that recovering the Orb can lead either to peace or to the development of a superweapon.

The *Fallen* is powered by the Unreal Tournament engine, and it looks and plays great—most of the time. Collective Studios has added some advanced features to the engine that help provide fluid character animation and realistic special effects. All the requisite elements of the third-person action game are here. You'll spend much of your time exploring different areas, recovering items you need to continue the game, and achieving goals such as collecting keycards. A lot of this game play is similar to other third-person action games, but it does drive the story forward.

The game's interface is very *Trek*-like, and certain elements take *The Fallen* beyond a basic action game. You wield a tricorder to find items and life forms, and you match your phaser to the frequency of alien shields. You can call upon Bashir, Dax, Odo, and others to help you.

One of *The Fallen*'s most unusual aspects is that it's a story told in three parts. You're required to play each of the three characters in the story, although the order in which you play them is largely up to you. This sounds better in theory than it is in practice, because it can lead to inconsistent storytelling. It's worth playing the game out as all three characters, though I had to stop between characters and play something else to avoid burnout.

Call me uncoordinated, but I repeatedly found myself getting cut to ribbons by various menaces as I fumbled with the sometimes complex combination of keyboard and mouse movements needed to execute commands or use some items. The game's difficulty level seems to be tweaked well above what's customary for games of this ilk.

The *Fallen* has a well-crafted story filled with interstitial sequences that make the game move forward like an episode of the television show—it's engrossing and a lot of

fun. And you get a chance to explore the *Defiant*, visit Bajor, check out different parts of the *Deep Space Nine* station, and travel to a Dominion prison base.

The game's soundtrack production and voice acting are top-notch, too. In fact, the game's producers lined up most of the actors from the television series, although sound-alike actors supplied the voices of O'Brien and Sisko.



By the Prophets *Star Trek Deep Space Nine: The Fallen* combines familiar elements of *Star Trek* storytelling with engrossing—and challenging—3-D gaming action.

Those replacement actors did admirable jobs, but I must admit that I missed hearing Avery Brooks's distinctive and commanding voice in the role of Sisko.

Alas, *The Fallen* had problems on my G4/500 equipped with Mac OS 9.1 and 512MB of RAM. Audio would occasionally click or pop, and I had to restart my Mac at times when the game froze. I also had a few problems getting the game to start at all.

Macworld's Buying Advice

Both of this month's selections

offer new looks at familiar stories. American McGee's *Alice* is definitely not for those seeking Disney's sweet version of Lewis Carroll's heroine, but it's a mind-bending treat for anyone who wants hard-core gaming. *Star Trek Deep Space Nine: The Fallen* is beautiful look at, but it's hampered by audio glitches and can be unreliable. **m**

MacCentral Senior Editor PETER COHEN is reserving judgement on the new series *Enterprise*—at least for a season or two.

Got a comment? Visit www.macworld.com/columns/gameroom/.

AMERICAN MCGEE'S ALICE

Rating: ★★★★★

Pros: Beautifully rendered scenes and character animations; an intriguing take on *Alice's Adventures in Wonderland*; Carbonized for Mac OS X.

Cons: Some levels take a long time to load.

Company's estimated price: \$50

OS compatibility: Mac OS 9, Mac OS X

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

STAR TREK DEEP SPACE NINE: THE FALLEN

Rating: ★★★★★½

Pros: Essentially three games in one; true to the *Star Trek* world.

Cons: Lacks reliability and stability; no Mac OS X compatibility.

Company's estimated price: \$30

OS compatibility: Mac OS 9

Company: Simon & Schuster Interactive, 888/793-9972, www.ssinteractive.com

Rome Has Fallen. The World is Up For Grabs.

Lead one of the most powerful civilizations of the Middle Ages to greatness. Raise your armies. Forge alliances. Grow a thriving market economy. Build wonders to stand the test of time. There are many paths to power, but only one civilization will reign supreme.



Command powerful armies in real time.

Joan of Arc, William Wallace, Genghis Khan and more. Who will fight under your flag?



Build your civilization into a flourishing empire.

GOLD EDITION

INCLUDES
AGE OF EMPIRES II:
THE CONQUERORS

AGE of EMPIRES III THE AGE OF KINGS

©2001 Microsoft Corporation. All rights reserved. Microsoft and Age of Empires are either trademarks or registered trademarks of Microsoft Corporation in the United States and/or other countries. Bold and Destineer are trademarks of PT M Ventures, Inc.

"Strategy Game of the Year"

-USA Today

"May be the best real-time strategy game ever"

-Computer Games Online

"The most heart-stopping strategy game ever"

-Time Magazine



Microsoft

**ENSEMBLE
STUDIOS**

Mac Version From



ORDER: Direct: www.boldgames.com, or call Toll Free 866-512-9111, or visit your local retailer



OS

10.1

®

WITH VERSION 10.1, APPLE'S
NEW OS IS BETTER AND FASTER.
IS NOW THE TIME TO SWITCH?

BY JASON SNELL

OS X

COMES OF AGE

The Mac community has been buzzing about Mac OS X for years. But even Apple admits that OS X's previous incarnations—from last year's beta to this spring's first "final" release—were only for people who wanted to experiment with and explore the operating system's new features. For these early adopters, OS X was a glimpse into the future—the rest of us just sat back and waited for the future to arrive.

Apple's new version of the OS, Mac OS X 10.1, is what we've been waiting for. With improved reliability, dramatic speed boosts, many interface improvements, and a clutch of native

software, this release is the first version of OS X that's truly ready for general use.

Although Mac OS X is still not a feature-for-feature match for Mac OS 9, it's no longer a step backward (see "Are You Ready for OS X?" June 2001). This version combines much of OS 9's functionality with a collection of improvements that make upgrading to OS X a serious possibility for even dyed-in-the-wool devotees of the classic Mac OS.

SPEED BOOST

Most Mac OS users asked Apple to improve OS X's performance before adding whizzy new interface additions or networking utilities—the fact is, the first version of OS X was slow.

Fast and Furious Apple says version 10.1 is "all about performance," and our tests bear that claim out. The Finder is now quick to respond to clicks, double-clicks, and drags—in many cases, OS X's responses are now faster than OS 9's. Menus drop from the menu bar much faster than they did in version 10.0, and a moderate-size folder can now be copied in the blink of an eye.

Application launches are also much faster in this version. When a couple of programs are running, a new program launches in a single "bounce" of its icon in the Dock. The more programs you have running, the longer launching a new one takes, but starting apps is no longer the trial it was in the initial release of OS X.

Lab Testing Macworld Lab compared Mac OS X 10.1 with Mac OS X 10.0.4 and OS 9.2.1, and found that the new version of OS X was clearly faster than its predecessor (see “A New 10”). OS X 10.1 also tended to be as fast as or faster than OS 9 on G4 systems, but it was slower on G3 Macs.

Generally, drawing on-screen graphics has gotten a big boost in version 10.1, especially in the 3-D realm. According to Apple, the speed of graphics drawn via OpenGL has increased by 20 percent in this release. In addition, OS X 10.1 offers native support of the GeForce3 acceleration card. In our graphics-intensive Quake III tests, version 10.1 was clearly faster than version 10.0.4, but it was slower than OS 9 on all systems except the dual-processor 800MHz Power Mac G4. Oddly, OS X 10.1 actually performed worse than version 10.0.4 on our PDF scrolling test—and both lagged very far behind OS 9.

FABULOUS FEATURES

What's New

- Menu-bar items
- Data-CD and -DVD burning
- DVD playback (some systems)
- Hidden file extensions
- Connecting to SMB file server
- Connecting to AFP servers over AppleTalk
- Two-line file names
- AppleScript networking

What's Improved

- Finder speed
- Application-launch speed
- Graphics speed
- Classic-environment speed
- Dock preferences
- System preferences
- WebDAV file-server support
- Digital-camera support

According to Apple, every dimension of the operating system has been modified to improve performance—the virtual memory system, the file system, the graphics subsystems—and there



RENDERING IN IMOVIE WAS NEARLY TWICE AS FAST IN VERSION 10.1 AS IN VERSION 10.0.4.

have been innumerable small speed improvements as well. Our tests verify Apple's claims. The most impressive improvement was in iMovie rendering, which was almost twice as fast in version 10.1 as in version 10.0.4.

And the speed boosts aren't limited to OS X-native applications. Our tests show that applications tend to run almost twice as fast in OS X 10.1's Classic environment as they do in OS 9. Most actions in our Photoshop 6.0 tests took only a few seconds longer in OS X 10.1 than in OS 9—but they were faster under OS X 10.1 than under OS X 10.0.4.

The result of Apple's tweaks to OS X is an operating system that feels eminently usable, a big change from the hair-pulling experience that was version 10.0.

INTERFACE MODIFICATIONS

Giving Mac OS X a speed boost may have been Apple's primary focus, but Mac OS X 10.1 also features a host of interface changes. Some new additions boost productivity, while others

are tweaks to poorly thought-out features from OS X's first release (see “Mac OS X Face-lift”).

Dock Tweaks The biggest change to the Mac interface in OS X was the addition of the Dock, a strip of icons showing running applications and minimized windows while also functioning as a launcher for commonly used items. You can now move the Dock from its standard position at the bottom of the screen to either the left or the right, and other changes have been made.

Apple now offers two options for minimizing and maximizing windows when you move windows into or out of the Dock. In addition to the much-ballyhooed “genie” effect, there's a subtler and much faster scaling effect, which shrinks a window (without any processor-intensive warping effect) that's on its way to the Dock.

Take Out the Trash Another tweak to the Dock alters an interface quirk that's been with the Mac since it was introduced: namely, the mixed metaphor that is the Trash. Logically, when you put a document into something called “the Trash,” you expect it to be thrown away. But does it make sense, especially for novice users, that you drag a disk to the Trash to eject it?

In OS X 10.1, the icon transforms itself based on context: the familiar garbage-can icon remains when you drag a document to the Trash; an eject-button icon appears when you drag a removable disk to the Trash; and a “burn” icon shows up when you drag to the Trash a CD-R that's destined to be burned with OS X's new data CD-burning features.

Quick Access In OS X's original release, controls for many common system preferences were hidden deep in the System Preferences application. In version 10.1, Apple has brought them to the forefront by adding a series of icon menus to the right-hand corner of the Mac OS menu bar.

This new method lets you view a portable Mac's battery status, set your system volume, monitor AirPort signal strength, choose AirPort servers, and modify display and networking settings—and it's as easy as using Mac OS 9's Control Strip.

Even the clock in the top right corner is now a drop-down menu—if you click on it, you can see the weekday, date, and time, and have quick access to clock settings and the Date & Time preference panel. You can rearrange menu-bar items by ⌘-clicking and dragging them into position. You can also remove an item by ⌘-clicking and dragging it off the menu bar; then you simply watch it disappear in a puff of smoke—much easier than turning it off via its preference panel.

Docking Control Although Apple prefers that third-party software developers not add items to the menu bar, some have done so—Aladdin, for example, with StuffIt Deluxe 2.6.5. These, however, cannot be moved or removed. Alternatively, developers can create items whose icons sit in the Dock and provide a

set of commands when control-clicked on. For example, a future, OS X-savvy version of Palm Desktop might have an icon in the Dock that revealed the current day's appointments and to-dos, as well as shortcuts to launching the full Palm Desktop application or making a quick appointment.

Apple itself is taking advantage of this technology. iTunes—now part of OS X—offers a contextual menu, which indicates the title and artist of the currently playing track and gives you pause and track controls, in the Dock.

Preference Order In the first release of Mac OS X, Apple replaced control panels with the System Preferences application, a multipaned window with 21 preference items to click on. For users still trying to adapt to life without control panels, the sea of icons in System Preferences was especially confusing.

With 10.1, Apple has tried to clean up the System Preferences application, dividing preference icons into four categories: Personal, Hardware, Internet & Network, and System.



A few preferences behind those icons have changed, too. For example, the Desktop preference panel's Desktop Pictures option now lets you view a folder's picture files as thumbnails, making it easier to select a picture to place on your desktop. If you want to enable or disable any of OS X 10.1's new menu-bar icons, you do that via the relevant preference-panel settings, such as the new Show Displays In Menu Bar option in the Displays preference panel.

Improved Access There's one new preference panel in Mac OS X 10.1: Universal Access. Like the Easy Access tool found in the classic Mac OS, Universal Access serves people who have difficulty using mice or keyboards. From the Keyboard tab, you can activate an option that

A New 10

Macworld
LAB TEST

We tested three Macs—an iMac G3/500, a Power Mac G4/867, and a dual-processor Power Mac G4/800—to see how Mac OS X 10.1's performance compared with Mac OS X 10.0.4's. To see how OS X's scores stacked up against those of the classic Mac OS, we also ran our tests in OS 9.2.1 on all three systems. Version 10.1's most dramatic speed gains were in iMovie rendering, opening multiple folders, our Quake frame-rate test, and our Cinema 4D XL Multitask test. PDF scrolling with Adobe Acrobat 5, however, was still faster in OS 9.2.1 than in OS X 10.1, which didn't perform even as well as OS X 10.0.4 in this test.

Best results in bold. Shorter is better. Longer is better.	STARTUP	OPEN MULTIPLE FOLDERS	IMOVIE 2.0 RENDER	PDF SCROLL	ITUNES 1.1 MP3 ENCODE	CINEMA 4D XL 7.1		CLASSIC STARTUP	PHOTOSHOP 6.0.1*			QUAKE III
						Render	Multi-task		Unsharp Mask	Gaussian Blur	RGB to CMYK	
Apple iMac G3/500 (OS 9.2.1)	57	23	137	88	155	16:32	20:00	N/A**	15	16	30	36
Apple iMac G3/500 (OS X 10.0.4)	92	33	210	183	137	16:04	64:07	43	19	45	39	31
Apple iMac G3/500 (OS X 10.1)	62	27	130	184	137	16:03	58:31	38	17	16	34	33
Apple Power Mac G4/800 DP (OS 9.2.1)	59	18	70	47	37	5:11	5:29	N/A**	5	3	14	95
Apple Power Mac G4/800 DP (OS X 10.0.4)	70	18	116	98	37	5:10	6:48	24	4	16	23	97
Apple Power Mac G4/800 DP (OS X 10.1)	52	15	59	103	36	5:07	6:29	21	4	4	15	108
Apple Power Mac G4/867 (OS 9.2.1)	56	19	70	43	47	8:42	9:43	N/A**	6	5	12	107
Apple Power Mac G4/867 (OS X 10.0.4)	66	16	114	92	48	8:40	14:35	22	10	15	18	59
Apple Power Mac G4/867 (OS X 10.1)	47	14	59	96	46	8:36	13:32	20	7	6	15	70

* Photoshop testing under Mac OS X was done in Classic mode. ** N/A=not applicable.

Cinema 4D scores are in minutes:seconds. Quake III scores are in frames per second. All other scores are in seconds. We tested all systems with 256MB of RAM, with Mac OS 9.2.1, Mac OS X 10.0.4, and Mac OS X 10.1 installed on separate partitions. We set displays to 1,024-by-768-pixel resolution and 24-bit color. For Photoshop tasks, we used a 50MB file. Cinema 4D XL rendered a model at a resolution of 640 by 480 pixels with oversampling set to 4 by 4. We rendered the same model in Cinema 4D XL while playing a QuickTime movie in the background for the Multitask test. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using iTunes' Better Quality setting of 160 Kbps. We ran Quake III v1.29f's Time Demo at 640-by-480-pixel resolution, with graphics set to Normal. We used Adobe Acrobat 5 for the PDF scroll test. Classic mode used the base extensions for Mac OS 9.2.1.—Macworld Lab testing by Ulyssis Bravo

MAC OS X FACE-LIFT

Mac OS X's brand-new Aqua interface was a giant leap for Apple, but not everyone felt the same way about that leap's direction. Some parts of the interface were buried away in unfamiliar places, some were not completely finished, and others were missing altogether. With version 10.1, Apple has done more to make the interface friendly and usable; those who still hanker for the days of Mac OS 9 should be pleased.



Line Up The improved Systems Preferences pane gives you easier and more-logical access to the preferences that control every aspect of your interaction with the OS. Preferences are grouped into four shelf-like categories rather than shown all together, and common preferences are duplicated at the top.

Drop and Give Me Options With the new Apple menu-bar icons, you can see the date and time, control your AirPort connections and view signal strength, change your monitor resolution, adjust your system volume, and more.



Movie Magic Apple's DVD Player 3.0 lets you watch movies in OS X. Its controller is like a set-top DVD player's, and it has full-screen and launch-on-insertion options.

Pop Goes the Dock In OS X 10.1, Apple added more flexibility in the Dock. You can move the Dock to the left or right side of the screen—a common user request—and you can now control actions via Dock-based contextual menus that open with a control-click. In iTunes, for example, you can see what track is playing, pause it, or go to another track in your playlist. Third parties can build this functionality into their Dock icons.



allows you to enter a sequence of modifier keys as a key combination. For example, if you can press only one key at a time, you can press the command and P keys in succession, instead of simultaneously, to get the Print dialog box.

From the Mouse tab, you can enable a feature that lets you use the numbers on your keypad to control the cursor. Or you can eliminate the need for a mouse altogether by opening the Keyboard preferences panel and turning on Full Keyboard Access

(control-F1). This feature lets you control the menu bar, the Dock, windows, tool bars, and palettes entirely through the keyboard.

Logging In Unlike Mac OS 9, which offers the Multiple Users feature as an option for shared Macs, Mac OS X requires everybody to log in as a user. (Apple has just managed to hide this fact by having the system create a user when you install OS X and then log you in when you boot up. You can change that setting via the Login preference panel.)

While single-user Macs never have to see any Login options, users of shared Macs aren't so lucky. In OS X 10.0, users had to enter a user name and password to log in to the system. With this version, however, Apple has made OS X's Login panel just as flexible as OS 9's—by default, the Login window now displays a list of available users for you to choose from. You can even set up icons for individual users, à la Multiple Users—just visit the Identity pane of the Users preference panel.

On-Screen Controls In the original version of Mac OS X, some hardware controls—namely, the brightness and volume controls on Mac laptops' function keys—didn't work correctly, and when they did work, you got no feedback that they were working. Now the brightness and volume controls work just as they did in OS 9, though they provide feedback as only Aqua could—when you adjust brightness or volume, a semitransparent icon appears, gives you feedback about your settings, and then gently fades away.

Other Choices Version 10.1 also gives back a few interface choices once offered only to users of the classic Mac OS. Through the General preferences panel, you can choose whether your windows' scroll bars have single- or double-headed arrows at the top and bottom. From the same panel, you can define how many documents and applications appear in the Recent Items submenu of the Apple menu (a feature from OS 9's Apple Menu Options control panel), and choose the

point size at which the system should begin automatically antialiasing text.

OS X GETS CONNECTED

With Mac OS X, Apple has attempted to make an operating system that's a good cross-platform partner for Windows PCs, in areas from file names to networking.

File Names First off, Apple has radically changed the way the Mac handles file names. Now Mac OS is much more savvy about dealing with Windows-style file-name extensions (.doc, for example)—it can even hide those extensions from you in the Finder (see “True Names and Other Dangers”).

In addition to those changes, Mac OS can now handle long file names like those found on Windows files since the advent of Windows 95. In OS X 10.0, files could have names as long as 255 characters, but the Finder couldn't display them. In version 10.1, the Finder can display file names on two lines when in Icon mode, making it much easier to recognize files with extremely long names.

Network Friendly Mac OS X 10.1 not only handles PC files in a friendlier manner but also has a much nicer demeanor when dealing with Windows file servers. Included as part of OS X 10.1 is a Server Message Block (SMB) client, mean-



ing that Macs can now connect to PC servers without the assistance of an add-on such as Thursby Software's Dave.

A Little DAV'll Do Ya WebDAV is an increasingly popular file-sharing method, especially among Web designers. WebDAV uses Web-server technology to create file-sharing connections *continues*

TRUE NAMES AND OTHER DANGERS

Perhaps the most noticeable change to the traditional Mac way of doing things is how the new OS handles file names. With OS X 10.1, Apple has begun to encourage file compatibility between Macs and Windows PCs by adopting (if not quite embracing) the three-letter file-name extensions that have been attached to PC files since the dawn of DOS.

Brave New.world Mac OS X 10.1 tries to shield users from the ugly file-name extensions of the Windows world, while at the same time encouraging Mac users to create files in the same way that Windows users do.

Confusing? It sure is—and it could potentially pose interface dilemmas that Mac users have never seen before.

By default, Mac OS X 10.1's Finder hides file extensions from users. Although you might look in a folder and see a Microsoft Word document called “Letter,” the file name may actually be “Letter.doc.” Apple has made it possible for developers to append hidden extensions to file names, so if you choose to save a document as “report,” it may say “report” in the Finder, but the real name on the hard drive is “report.rtf.”

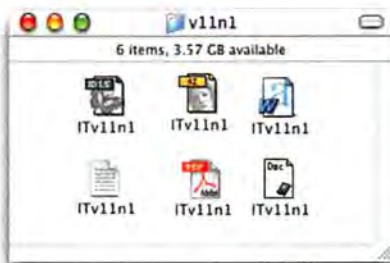
Version 10.1 also introduces a strange quirk to the Finder: if you've got more than one file with the same name, and each has a different extension, you may end up with a folder full of files that *appear* to have the same name (see “Will the Real File Please Stand Up?”).

Apple's rationale is that Mac users have no interest in seeing three-letter file extensions—and Microsoft obviously feels the same way about Windows users, as it has hidden those extensions from its users since the days of Windows 95—but they're still necessary for complete compatibility with Windows PCs, which, unlike Macs, rely on those extensions to determine a file's type and figure out which application should be used to open a file.

Many Mac users will undoubtedly find it unsettling that, for the first time, what you see in the Finder may not be what's actually on your hard drive. Fortunately, Apple has provided an Always Show File Extensions option in Finder Preferences; it can make sure that what you see is what you get. You can also show or hide extensions on individual files by choosing Show Info (⌘-I) from the File menu and selecting Hide Extension from the Name & Extension panel.

What Type Am I? Mac OS X is now much more savvy about using file-name extensions than the classic Mac OS ever was. OS X's Finder can determine a file's type based on its name, and treat it just as it would a native Mac document. For example, if you receive an Excel file called “spreadsheet.xls” from a PC user, it will show up in the Finder as an Excel file, icon and all.

For file extensions that could potentially be owned by more than one application—text files, for example—OS X users can use the Finder to choose a program to take precedence. Choose Show Info for a document of that type, select Open With Application, and then pick the application that should own it. Pressing the Change All button will make sure that every file with that extension (whether or not it has Mac type and creator information) will be opened by the application you chose.



Will the Real File Please Stand Up?

In OS X, hidden file-name extensions mean that you can have multiple files with seemingly identical names.



with less overhead than traditional networking protocols. WebDAV has been implemented in products such as Adobe GoLive and Macromedia Dreamweaver. OS X offered some support for it, but Apple has improved OS X's WebDAV support—so much that its entire iTools file-sharing service has been connected to the new protocol. When you connect to iTools in OS X 10.1, you're using WebDAV.

Since WebDAV is based on Web technology, it works like a Web server: connections are made only when data needs to be transferred. That's in contrast to old-style networking protocols, which required a constantly open connection and an ongoing dialog between the server and the client. The result should be more reliable network connections (no more "server has disconnected" warnings after a period of disuse), as well as compatibility with a whole new collection of servers, especially Web servers commonly accessed by Web designers.

AppleTalk Returns In terms of compatibility with existing Mac networks, new in this version of OS X is support for an old standard: AppleTalk connections to Apple Filing Protocol servers. If you've got an existing Apple file server running on an AppleTalk network, OS X is finally as compatible as OS 9 has always been. In addition, OS X's printing support has been improved, bringing it up to parity with the features of the classic Mac OS's LaserWriter 8 driver, and adding support for more than 30 printers.

Better Scripting Finally, AppleScript support is greatly improved in Mac OS X 10.1, especially when it comes to creating scripts that take advantage of networking. Scripts can now control applications on remote Macs via a network (an OS 9 feature that OS X lacked until now) and can

take advantage of the Simple Object Access Protocol (SOAP) to access data stored on remote XML-based database servers. You can even drag AppleScripts to the Finder's tool bars to add custom features to the Finder.

A BETTER DIGITAL HUB

Earlier this year, Steve Jobs first described his vision of the Mac as a "digital hub," the nerve center of a collection of digital devices, from cameras to handheld computers to con-

sumer audio and video devices. Not surprisingly, Mac OS X 10.1 offers several new and improved features that tie in with the Apple CEO's strategy.

DVD Arrives One of the glaring omissions in the first release of Mac OS X was support for DVD-movie playback. But this new version of OS X includes DVD Player 3.0, an application that makes the DVD-viewing experience as good as, if not better than, the one in OS 9.

continues

The Face of Things to Come

COMPANY	PRODUCT	MAC OS X VERSION	CONTACT
GRAPHICS AND PUBLISHING			
Adobe	Acrobat*	No date announced	888/724-4508, www.adobe.com
	InDesign	Beginning of 2002	
	Illustrator	End of 2001	
	Photoshop	No date announced	
Quark	QuarkXPress	No date announced	800/676-4575, www.quark.com
DIGITAL VIDEO AND AUDIO			
Adobe	After Effects	No date announced	888/724-4508, www.adobe.com
	Premiere	No date announced	
Apple	Final Cut Pro	No date announced	800/692-7753, www.apple.com
BIAS	Peak	November 2001	800/775-2427, www.bias-inc.com
Digidesign	ProTools	No date announced	650/842-6698, www.digidesign.com
Media100	Cleaner	No date announced	800/773-1770, www.media100.com
PRODUCTIVITY			
Microsoft	Office	November 2001	800/426-9400, www.microsoft.com
Palm	Palm Desktop	End of 2001	800/881-7256, www.palm.com
INTERNET			
Microsoft	Outlook Express	No date announced	800/426-9400, www.microsoft.com
Netscape	Netscape	No date announced**	650/254-1900, www.netscape.com
Qualcomm	Eudora	No date announced**	800/238-3672, www.eudora.com
GENERAL UTILITIES			
CE Software	QuickKeys	Fall 2001	800/523-7638, www.cesoft.com
Dantz	Retrospect Backup	Fall 2001**	925/253-3000, www.dantz.com
Power On Software	Rewind	2002	800/344-9160, www.poweronsoftware.com
DIAGNOSTICS AND REPAIR UTILITIES			
Micromat	TechTool Pro	No date announced	800/829-6227, www.micromat.com
Symantec	Norton Utilities	No date announced***	800/441-7234, www.symantec.com
WEB DESIGN			
Adobe	GoLive	No date announced	888/724-4508, www.adobe.com
	ImageReady	No date announced	
Macromedia	Director/ Shockwave Studio	No date announced	800/457-1774, www.macromedia.com
	Dreamweaver	No date announced	
	Fireworks	No date announced	
	Flash	No date announced	

* Acrobat Reader is part of the OS X 10.1 installation.

** Betas are currently available.

*** The latest version will work with OS X if run from a bootable disk or an OS 9 partition on the hard drive.

RED FACTION™

THE
REVOLUTION
IS COMING

Join
now



A new generation of
First Person Shooters
that will revolutionize
Mac gaming.

For the first time ever,
destroy and alter the
environment in real-time!
GEO-MOD™ technology
gives you the power to
blast obstructions, creating
strategic elements as the
action unfolds.

Unleash 15 weapons of mass
destruction, hijack 5 fully armed
land, sea and air vehicles and
wage war through the diverse
levels, trying to stay alive long
enough to bring down Ultor and
solve the mystery of the Plague.
Red Faction is a revolution. Join now!



graphsim
entertainment
www.graphsim.com



THQ

BLOOD AND GORE
VIOLENCE



Red Faction - Game and Software © 2001 THQ Inc. Developed by Vollition, Inc. Red Faction, Vollition, Geo-Mod, THQ and their respective logos are trademarks and/or registered trademarks of THQ Inc. All rights reserved. Mac and the Mac logo are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. All other trademarks, tradenames and copyrights are the property of their respective owners.

Circle 92 on card or go to www.macworld.com/getinfo



The new DVD Player app has an improved remote-control palette and lets you decide how you want the player to behave when you insert a disc (you can set it to jump into full-screen mode or to begin playing upon insertion of a disc). DVD Player won't work, though, on PCI-based blue-and-white G3s and the first G4s.

Playing DVDs really shows off the power and multithreaded nature of Mac OS X. When we played a movie on a dual-processor 800MHz Power Mac G4, we could freely drag the movie window around the screen without any apparent dropping of frames. On a 500MHz iBook, that didn't work, but we were able to use other applications while the movie played in a background window, without any hiccups or hesitation in either DVD Player or the other applications we were using.

Video Burning Mac OS X 10.1 doesn't include software for encoding and burning DVD-Video discs, but Apple's new iDVD 2.0—which should be available by the time you read this—requires version 10.1 to run. This means that any users of SuperDrive-equipped Power Macs will be able to use iDVD 2.0 and OS X 10.1 to create and burn DVD movies in a flash.

Data Burning Although Apple updated OS X earlier this year to allow users to burn audio CDs via iTunes, burning data CDs was still out of the question.

Version 10.1 changes that equation by adding built-in support for burning data discs—either CD-Rs or, on SuperDrive models, 4.7GB DVD-Rs. When you insert a disc, a

dialog box appears, asking you to choose the format for the disc. Then an icon appears on your desktop, representing the new disc. You can copy files to the disc and even make modifications to files on the disc—OS X actually creates a temporary directory elsewhere that contains all the contents of your disc, and it lets you make as many changes as you want until you're ready to burn. Choose Burn from the Finder tool bar or drag the disc to the Trash (which automatically transforms into a "burn" icon),



TODAY, APPLTALK NETWORKING IS AS COMPATIBLE IN MAC OS X AS IT IS IN MAC OS 9.

and the data in the temporary directory burns to the disc. *Voilà*—you've burned a disc from the Finder.

Camera Friendly Getting images from your digital camera is another important part of the digital-hub idea, and Mac OS X's support for digital cameras is better than ever.

In this version, OS X's Image Capture application also supports the Picture Transfer Protocol, an emerging standard for communicating between camera and computer. Plug in a camera, and pictures will automatically be transferred to your Pictures folder, or anywhere else you select. If you'd prefer to use some other utility to transfer your files, you can still shut off the automatic transfer.

THE LAST WORD

In the end, Mac OS X will not succeed on its own. As well as Classic mode runs non-native software—and in 10.1, Classic was quite functional, if a bit shocking in contrast to the OS X-native stuff—Mac users are going to want to run OS X-native apps on OS X. For OS X to succeed, the core software must be present. (For a list of upcoming applications, see "The Face of Things to Come.")

The good news is that the release of version 10.1 appears to be a watershed event for OS X software development. The system is so improved that several developers are creating software that requires version 10.1 to run—the biggest example being Microsoft Office X (see "Remodeling Office," elsewhere in this issue).

There are a few hold-outs worth noting, including Adobe Photoshop and Apple's own Final Cut Pro; undoubtedly, certain segments of the Mac community will be forced to remain on OS 9 for a while. But most software *is* now making the move to OS X. And to top it off, version 10.1 includes two major applications itself, namely the final version of Microsoft Internet Explorer 5.1 and Adobe Acrobat Reader 5.0.

Apple's new operating system has left the world of theory and guesswork behind—its numerous performance and usability improvements make it a mature and reliable platform. We've been waiting for years, but Mac OS X is now truly the operating system of tomorrow. **m**

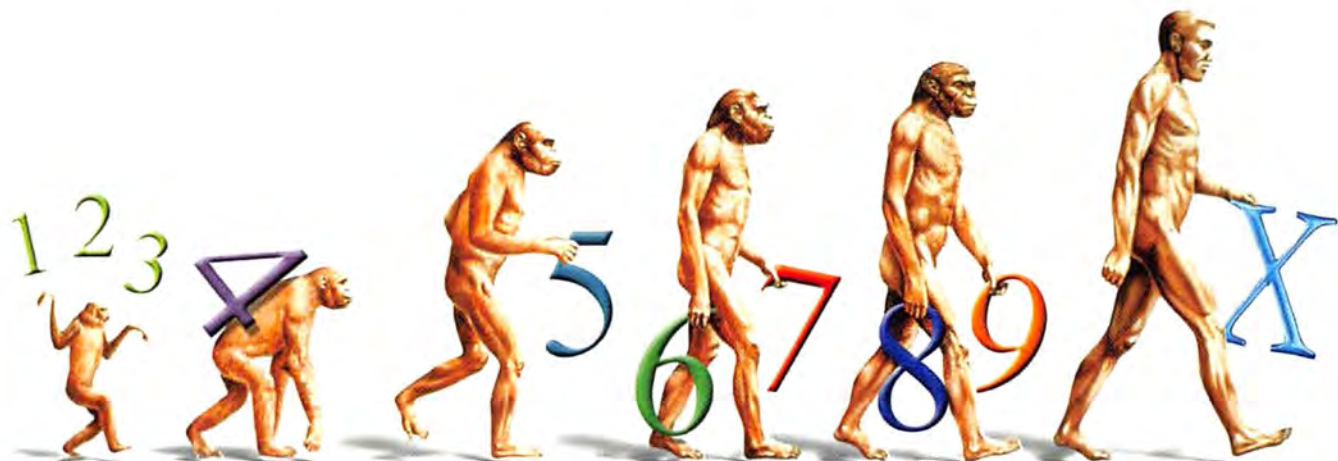
Editor JASON SNELL has been covering the development of Mac OS X since 1998. He wrote this story in Microsoft Word X running on Mac OS X 10.1.

More Info: www.macworld.com/subject/macosex/

For up-to-date information on Apple's new operating system, visit Macworld.com's Mac OS X subject page.

LINK

One Evolution Deserves Another



Introducing MacLinkPlus[®] Deluxe 13

The #1 Survival Kit for Mac Users in a Windows World

MacLinkPlus Deluxe 13 is the DataViz solution for OS X compatibility. With over 10 million copies sold, it continues to be the #1 selling file translation utility. MacLinkPlus Deluxe opens files that come as e-mail attachments, on disks, or files created in programs you just don't have. Whether you have an AppleWorks 6 file or an Excel 2002 file, MacLinkPlus Deluxe will be able to open it in the application of your choice. You don't have to worry about file types, document formats or Binhex encoding. What could be easier?

For the past 17 years, DataViz has continually improved compatibility between different platforms. Now, MacLinkPlus Deluxe 13 takes full advantage of the new features in OS X.

Don't get caught with a file you can't open! To buy or upgrade your current copy of MacLinkPlus Deluxe, visit our website or our fine software retailers.



FRY'S MICRO CENTER COMPUSA

©2001 DataViz, Inc. All rights reserved. All products names and icons are trademarks or registered trademarks of their respective holders. 0601-269

DataViz[®]
Compatibility. Instantly.

www.dataviz.com/mwspecial

1.800.808.4825

MICROSOFT OFFICE v.X BRINGS THE
MAC'S MOST WIDELY USED APPLICATIONS TO MAC OS X
PHOTOGRAPHS BY TREVOR PEARSON

Office Remodeling

by TOM NEGRINO

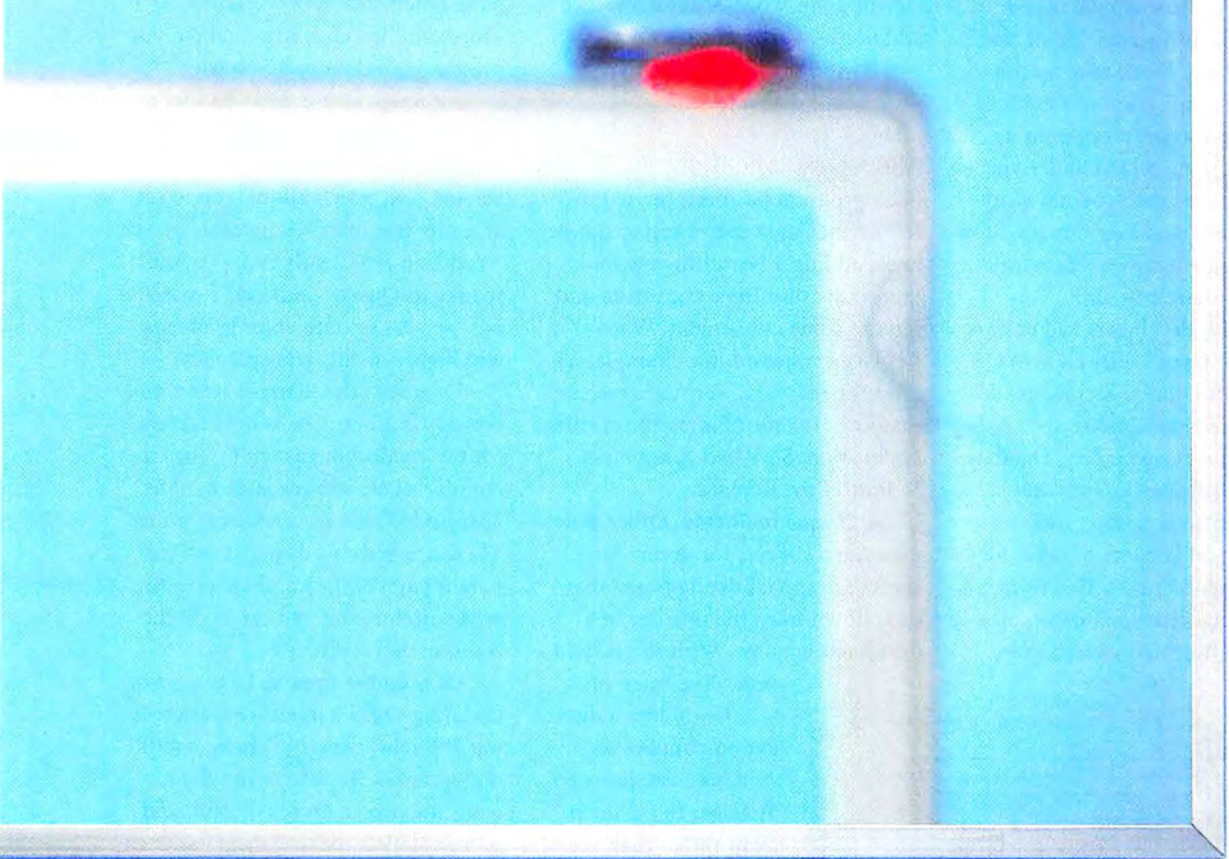
EXCEPT FOR A FEW RISK-TAKERS OUT THERE, most of us don't welcome major change. We need convincing evidence that leaving our comfortable ruts will benefit us. This is especially true when a change involves something we use every day, something our livelihoods depend on—for example, our operating systems and software programs.

With the release of Office v.X, Microsoft may have given Mac users a reason to leave the rut of Mac OS 9. Thousands of us rely on Word, Excel, Entourage, and PowerPoint, and those applications now run natively under Mac OS X. In fact, the new versions of these pro-

grams don't run any other way, unlike some programs that work with both OS 9 and OS X. In a very real sense, the arrival of Office v.X legitimizes OS X.

Two Beta Xs In preparing this first look, we used a beta copy of Office v.X running under a prerelease version of Mac OS X 10.1. Since both products were weeks from completion, there was no way to make a solid performance judgment. With that caveat, we can report that the responsive feel of the Office applications was impressive; the programs launched quickly, and most operations were on a par with the same actions in Office 2001 under Mac OS 9.1.

MICROSOFT



Office Remodeling

Different but Familiar

With every upgrade, the first question most people ask is “What’s new?” For Office v.X, there are two seemingly contradictory answers: “Everything” and “Not that much.” Yet both answers are correct.

Mountains of Code For applications to run natively under Mac OS X, developers must rewrite large portions of them, especially if they’re going to take full advantage of the Aqua interface. It can take months to port one application using Apple’s Carbon application programming interfaces (APIs); all the underlying code that makes the program work needs revising, and every dialog box, tool bar, and window needs tweaking to look right in Aqua.

Microsoft developers had to port 25 million lines of Office code to OS X. Microsoft Office v.X consists of the four main applications; six ancillary programs (Clip Gallery, Database Daemon, Equations Editor, Graph, Office Notifications, and Organization Chart); and dozens of other files, such as shared libraries. Rewriting all that code required a mammoth programming effort that’s lasted more

than a year (see “The People behind the Program”). Much of that work went into Carbonization rather than into new features. So although just about all of Office has changed under the hood, what you’ll most notice is the new Aqua paint job.

That’s not to say that Office does not have any new features. Entourage X leads the pack with a significant face-lift, and Word X has a few nice additions. Microsoft gave Excel X and PowerPoint X comparatively short shrift in this revision.

Allover Aquafication

Each program has been revised to follow the Aqua user-interface guidelines, adding a beautiful new look that may cause some confusion and require some adjustment. Word’s Replace command, for example, has always been ⌘-H , but Aqua reserves that keystroke for hiding the current application. So Word X now uses ⌘-shift-H for Replace.

A Change to Sheets Office now uses Aqua’s *sheets* for saving files; sheets are special dialog boxes that slide down from the title bar of a document window. With sheets, you

never lose track of which window a dialog box applies to. And because sheets are attached to the document rather than the application, you’re freed from an annoying Mac OS 9 trait: being stuck in an application by a dialog box that must be dismissed before you can continue. If you’re in PowerPoint when your Entourage Calendar demands your attention, for example, you can take care of it right away.

Quartz Transparency Taking advantage of yet more new Mac OS X technology, Office v.X now uses the Quartz graphics layer for its drawing tools, allowing for anti-aliased and transparent graphic objects. Transparency might not sound like much of an improvement, but it can make a big difference in your documents. For instance, transparent elements in PowerPoint, Word, and Excel charts can help you present your data more clearly.

Although Office 2001 had a Semitransparent option for graphics, it provided much less control than version v.X, which allows you to set an exact transparency percentage (see “You Can See Clearly Now”). And thanks to Quartz’s superior rendering, you get smooth color gradients and higher-quality transparency.

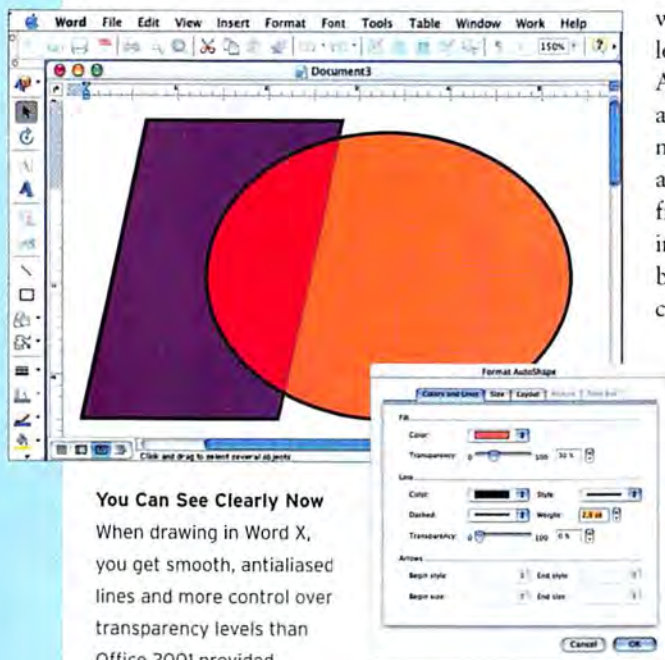
Even though Quartz-driven transparency is a Mac OS X-only feature for Office, documents with transparent objects are still readable in older Mac and Windows versions of Office. These applications display the transparent parts of the graphics as dithered patterns, and you can’t edit the transparency level.

Easy on the Eyes A large part of updating Office’s interface was creating 700 new icons and changing 800 dialog boxes. Tool bars and their icons are bigger, more colorful, and more detailed, making them easier to understand—and nicer to look at.

Scroll and Click Thanks to the built-in support in Mac OS X 10.1, Office v.X applications are able to use some features in third-party mice and keyboards. Mice with scroll wheels and two buttons work; clicking the right button is the same as control-clicking, giving you easy access to contextual menus.

Entourage X

From an interface standpoint, Entourage 2001, Office 2001’s big addition, wasn’t much more than a buffed-up Outlook Express 5. Personal informa-



You Can See Clearly Now

When drawing in Word X, you get smooth, anti-aliased lines and more control over transparency levels than Office 2001 provided.

tion manager (PIM) features—the enhanced address book, calendar, tasks, and notes—were clearly shoe-horned into Outlook Express's interface. But Entourage X's interface has had an extensive overhaul.

Easier to Switch Besides the Aqua look, you'll find big buttons that switch between Address Book, Calendar, Mail, Notes, and Tasks, plus the vastly improved Custom Views. For the keyboard-oriented, each task area has a keyboard shortcut for quick switching.

At-a-Glance Improvements In the Calendar, events spanning multiple days now show as banners rather than as a string of repeated events (see "Calendar Evolution"). Color-coded days indicate workdays and weekends, and you can display a task list next to the calendar. New buttons in the tool bar toggle between Day, Week, and Month views.

Address Additions When you address a new e-mail message, a list of recently used addresses pops up, as do the usual address-lookup choices that appear as you type. The recently used addresses appear regardless of whether they're in your Address Book, and names are prioritized, with the ones used most often at the top of the list. If you accumulate too many names, you can clear the list or even turn it off altogether.

E-mail Movies You can now copy formatted text, pictures, and even QuickTime movies from other applications and paste them into an e-mail message without losing the formatting. As one example, a realtor could drag a Word brochure for a property, including JPEG-formatted photos, into the body of an e-mail message for a prospective buyer, rather than enclosing the brochure as an attachment. Because many people—especially America Online and Windows users—have difficulty dealing with attachments, this addition could smooth the communication process.

Passwords New support for the Mac OS X Keychain means that you can let the system manage the passwords for all your mail accounts, without having to store them in Entourage (thus leaving your e-mail vulnerable to whoever wanders by your desk).

Custom Views If you are organizing your life in Entourage, you need tools that help you quickly sift through its wealth of information. All the task areas now have dedicated Custom Views that let you show selected data—for example, Mail Received Today or Events Due In The Next Week. You can create and save your own Custom Views, slicing and dicing data in any number of ways. For example, if you assign a common category to all of the items associated with a particular project, a Custom View can show you everything about that project, including appointments, e-mail, contacts, notes, tasks, and all the files you've created to support the project.

New Way to Notify Because Mac OS X does not allow extensions, the new Office Notifications application takes over the job of popping up and alerting users when Entourage reminders come due (see "Tell Me about It"). Mike Connolly, Microsoft's group program manager, notes that Entourage X's database is always running in the background, even when no Office applications are running. "And unlike Office 2001," Connolly says, "there's no performance hit on the active application, even when the database is doing an intensive oper-

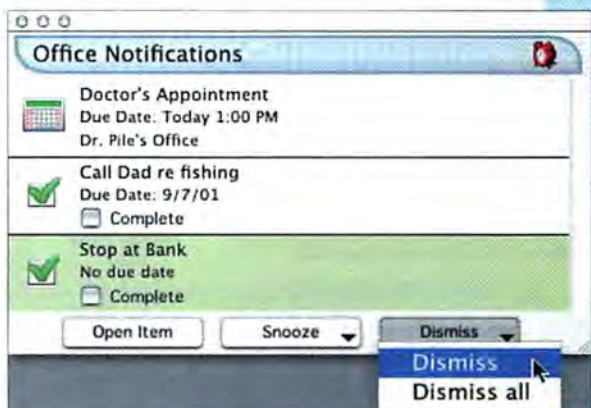
ation, such as searching through mail messages."

Besides Entourage events, Office Notifications alerts you when a buddy is available for instant messaging (if you're online and have the new MSN Messenger 2.1 for Mac OS X installed). MSN Messenger works with Office Notifications to display .Net Alerts, a new service that lets live information from the MSN Web site, such as stock-price changes, pop up on your desktop.

Room for Improvement The PIM features in Entourage X still need *continues*



Calendar Evolution No part of Entourage X has changed more than the Calendar window. The central calendar has been redesigned, and the Tasks pane and thumbnail months have been rearranged for better visibility.



Tell Me about It The new Office Notifications application opens alerts from Entourage in one well-behaved window—no more modal dialog boxes in the Mac OS X era.

Office Remodeling

improvements before they'll be able to go head-to-head with Power On Software's Now Up-to-Date and Contact. Entourage is still a single-user app, so you can't share your Calendar with coworkers. You can assign priorities to tasks but not to events. And when you complete tasks, they disappear from the Tasks pane next to the Calendar, rather than being shown crossed out. Most annoyingly, because Palm hasn't completed native Mac OS X conduits, you can't synchronize Entourage to your Palm handheld. Microsoft promises to

make a free downloadable update available when Palm gets up-to-speed.

Word X

The most useful new feature in Word is noncontiguous text selection, which allows you to select one or more separate blocks of text in one operation: Select the first block of text, hold down the ⌘ key, and then select the next block (see "Choice Words"). Word applies your next operation to all of the selected text. Say you're formatting a report with headings at the start of each section. You can scroll

through the document, selecting each heading as you go, and then apply a style with one click.

Noncontiguous text selection also allows you to choose parts of your document for tasks. For example, you can check the spelling of the body of a report without slogging laboriously through that table of names and addresses in the middle.

Clear the Decks One long-overdue new feature is the ability to clear all formatting of a selection and reset it to the default style for that paragraph.

Excel X

Although there are not a lot of new features in Excel, the program feels surprisingly fresh, again thanks to Quartz and Aqua. Text and numbers in cells seem easier to read and crisper, and improved shading in the row and column bars makes it more obvious which cell is selected. When you edit a cell, it appears to lift a bit above the rest of the worksheet, with a drop

shadow that makes the cell you are working on very easy to pick out on screen (see "Excel Gets Obvious").

Custom Shortcuts For hard-core users, the most useful addition to Excel X will be customizable keyboard shortcuts. As in Word, you can add, reassign, or remove keyboard shortcuts. If you've been using Excel for several versions, this will be especially welcome, since Office 2001 remapped many long-standing shortcuts, such as ⌘-B for blanking out a cell's contents. The ability to customize the keyboard in Excel allows longtime users to restore those familiar shortcuts.

Transparent Charts When you generate charts in Excel, you can now set the transparency of individual bars, columns, or other chart components. For example, in 3-D charts, you can make the frontmost elements translucent, so you can still see information in the rest of the chart. And because of Quartz antialiasing, jagged chart lines are a thing of the past.

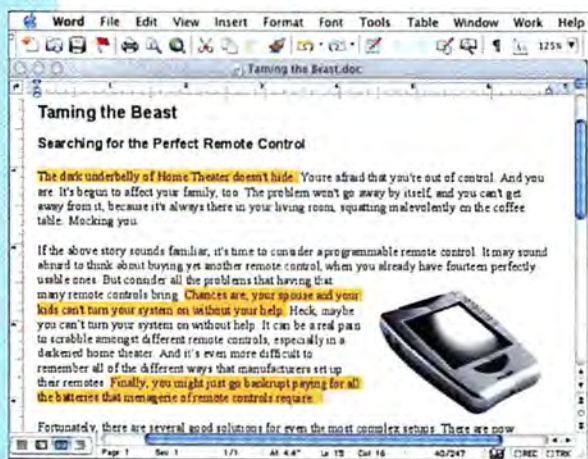
Data Recovery Excel's new AutoRecover feature automatically saves a snapshot of your worksheets at timed intervals you set. If Excel crashes when you haven't saved for a while, AutoRecover brings back all or part of your unsaved work when you reopen your document. You should then save it right away, and fast!

PowerPoint X

Like the rest of Office, PowerPoint lets you set the transparency of drawn objects or pictures, and it uses Quartz's text manipulation and layout abilities to antialias text on your slides, making for clearer and more-attractive presentations.

The Whole Package New to PowerPoint are PowerPoint Packages. A Package gathers your presentation and any linked files into one folder, which you can then burn to a CD or e-mail to a colleague.

continues



Choice Words Word's noncontiguous text selection is in action here; this feature allows you to select many discrete sections of a document and apply formatting to all of them at once.

A screenshot of the Microsoft Excel X application window showing a table of MLB standings. The title bar reads "2001 MLB Standings.xls". The table has columns for team names, wins, losses, and winning percentages. The rows are grouped by league: Eastern and Central. The table is as follows:

	A	B	C	D
1				
2	2001 American League Standings			
3				
4	EAST	Won	Lost	Pct
5	NY Yankees	86	57	0.601
6	Boston	72	69	0.511
7	Toronto	70	73	0.49
8	Baltimore	55	87	0.387
9	Tampa Bay	50	93	0.35
10				
11	CENTRAL	Won	Lost	Pct
12	Cleveland	82	62	0.569
13	Minnesota	76	68	0.528
14	Chicago Sox	74	70	0.514
15	Kansas City	57	86	0.399

Excel Gets Obvious Excel uses Aqua graphics to better indicate which cell is active, with improved shading in row and column bars. When a cell is being edited, it seems to lift above the worksheet.

© 2001 Canon U.S.A., Inc. Canon, Canon Know How and Canon Connects are registered trademarks of Canon Inc. FireWire is a registered trademark of Apple Computers, Inc. registered in the U.S. and other countries.



THE DIGITAL CAMCORDER
THAT'S A DIGITAL CAMERA.

Mini DV, 10x Optical Zoom,
and Optical Image Stabilizer
for superior video.

Digital dualism

THE DIGITAL CAMERA
THAT'S A DIGITAL CAMCORDER.

1.33 megapixel resolution
and Progressive Photo for ultra
crisp digital stills.



optura 100  Mini DV

- IEEE1394 (FireWire) • 2.5" LCD color viewscreen
- PCM Digital Sound • Built-in auto flash
- MultiMedia Card and SD Memory Card

1-800-OK-CANON www.canondv.com

Canon KNOW HOW™



PRESENTS

SEYBOLD

SEMINARS PUBLICATIONS

**HUB.
HINGE.
CRUX.
CENTER POINT.
AXIS.**

Where It All Comes Together—Seybold Seminars

Delivering content today involves considerations unheard of just a few short years ago. Digital communication technologies—the Web, Internet-enabled cell phones, PDAs, broadband, streamed media—were less than a twinkle in some visionary's eye. Now communicators have to leverage a combination of media, if not the full range, in order to achieve results. They have to plan and proceed with precision. And, as never before, they have to collaborate and rely on teamwork to create and deliver cross-media communications.

New options mean new learning curves, requirements and expectations. That's where Seybold Seminars comes in—our conferences, expositions and publications deliver essential information and education, product exhibitions and demonstrations, and access to innovative experts. Seybold Seminars is where emerging and established media tools and practices converge. Where professionals involved in strategic planning, authoring, production, management and distribution of content come to evolve their knowledge and plans.

Visit us online to learn more about our events and publications.

www.seyboldseminars.com • www.seyboldreports.com

Seybold Seminars New York February 19–22, 2002

Seybold San Francisco September 9–13, 2002

SEYBOLDNY
DesignBuildCommunicate 2002

SEYBOLDSF
DesignBuildCommunicate 2002

SEYBOLD
PUBLICATIONS

SEYBOLD
REPORTS.COM

Digital Island
Cable & Wireless company

The Official Web Services Provider for Key3Media

Copyright © 2001 Key3Media Events, Inc., 303 Vintage Park Drive, Foster City, CA 94404-1135. All Rights Reserved. Key3Media, Seybold Seminars, Seybold Seminars New York, Seybold San Francisco, DesignBuildCommunicate, Seybold Publications and associated design marks and logos are trademarks owned or used under license by Key3Media Events, Inc. and may be registered in the United States and other countries.

Priority Code: MWHU



Supercharge Your Office

MICROSOFT OFFICE IS PACKED with tools designed to help save you time and effort—from automatic text insertion to a dizzying array of preferences. But if you want to put Office into high gear, you can create macros—small programs that automate repetitive tasks. Windows users have long enjoyed the robust programming tools of Visual Basic for Windows, but Mac users who wanted to take advantage of this power had to rely on the limited capabilities of Office's scaled-down Visual Basic Editor—until now. Thanks to the release of Real Software's \$350 RealBasic 3.5 (512/263-1233, www.realsoftware.com), Mac users now have a full-featured tool for editing Office's Visual Basic code—and putting Office into overdrive.

The Basics of RealBasic

RealBasic is a Mac OS programming environment that works a lot like Visual Basic for Windows. It allows users to create customized applications that run natively and can control almost any aspect of a computer. But *unlike* Visual Basic for Windows, RealBasic lets you create applications for both Mac and Windows operating systems—which means that you can share them with your cross-platform coworkers.

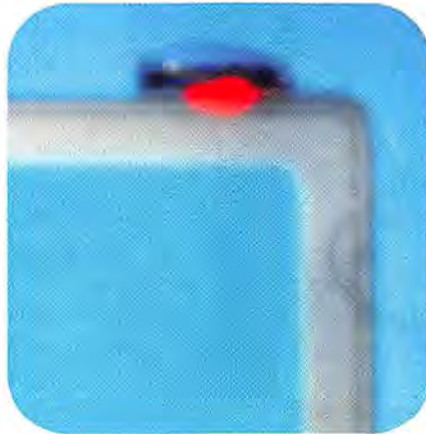
RealBasic 3.5—which runs on Mac OS X—adds a complete set of tools for controlling nearly every aspect of Microsoft Office. (Microsoft includes a free trial version of RealBasic 3.5 in the Value Pack folder on the Office v.X installation CD.)

Keeping It Simple

RealBasic strives to simplify the programming process. To begin building your applications, you first create a user interface. To make the job easier, RealBasic includes a

Window Editor that lets you drag and drop interface elements. Once your user interface is complete, you add code to give it functionality. This is where RealBasic's advantage over Office's Visual Basic Editor truly shines, thanks to its powerful code tools, superior debugging capabilities, and better user interface.

You can test the interface and code as you work. Once you have them set to your liking, building a Mac- or Windows-compatible application is only a menu click away. You can then use and share this application just as you would any other.



Putting RealBasic to Work

Business users will be the first to stand up and take note of the possibilities offered by RealBasic Office Automation. For example, with three or four macros, you could cross-reference your customer database on the West Coast with your billing database on the East Coast, create a form letter for each delinquent account, save the letters as Word documents, and e-mail them to your customers. Or say you

need to batch-process hundreds of images from your company catalog, overlaying a company logo and a product description—the macro could do it.

With RealBasic, these scenarios are not only possible but also relatively easy to put into action. A moderately experienced RealBasic user could produce most of these tools in mere hours.

With RealBasic 3.5, Mac users can finally exploit the time-saving features Windows users have enjoyed for years. The ease with which a business user can create cross-platform applications that automate Office workflow makes RealBasic a must-have addition.—ERICK TEJKOWSKI

Comprehensive QuickTime

PowerPoint 2001 introduced the ability to turn presentations into QuickTime movies, but the movies were more limited than the original presentation, lacking interactive features such as hyperlinks and slide transitions. PowerPoint X's movies now look and act more like the presentation running inside PowerPoint, so presentations that you save as QuickTime movies and put on the

Web or distribute on CD will display all of your presenting genius. You'll also find support for the TV-style transition effects built into QuickTime, such as cross-fades and circle wipes, in addition to PowerPoint's slide transitions set.

What Does It Need, and What Will It Cost?

A full installation of Office v.X will require about 200MB of disk space.

Thanks to Mac OS X's intelligent memory management, there's no need to muck about with application memory settings, as was sometimes the case with Office 2001; as long as you have at least 128MB of RAM, Office v.X should run fine. You'll also need to run Mac OS X 10.1—Office v.X requires it.

Cost of Admission Office v.X will sell for \$499 when it's available in *continues*

Getting Out of the Office

THE ARRIVAL OF MICROSOFT OFFICE v.X brings new levels of productivity and practicality to Mac OS X. But if you're looking for a way to process words or crunch numbers without kowtowing to the Microsoft behemoth, take heart: a handful of Office alternatives are available to the OS X user. Granted, none offers *all* the features of Office v.X. But honestly, when was the last time you threw together a PivotTable in Excel? And if all you need is a basic word processor, why shell out \$499 for an entire suite of programs—some of which you may never even open? Here's a quick roundup of some lesser-known (and dramatically lower-priced) alternatives to Word, Excel, and PowerPoint in the world of Mac OS X.

Getting the Word Out

If you're looking for a Word substitute, the best of the Office alternatives by far is Apple's \$79 AppleWorks 6.2 (800/692-7753, www.apple.com). AppleWorks is more than a word processor; like Microsoft Office, AppleWorks brings spreadsheet, database, presentation, and word-processing capabilities—along with some basic drawing and painting tools—to Mac OS X in one integrated program.

AppleWorks 6.2 offers everything you'd expect from a legitimate word processor: a good outliner, style sheets, support for embedded images and text-wrapping, easy-to-use tables, a spelling checker, and a thesaurus. Perhaps most significantly, AppleWorks 6.2 comes with all the DataViz translators needed to exchange documents seamlessly between current and earlier versions of Microsoft Word (compatibility stretches back as far as Word 6 on the Mac and Word 97 for

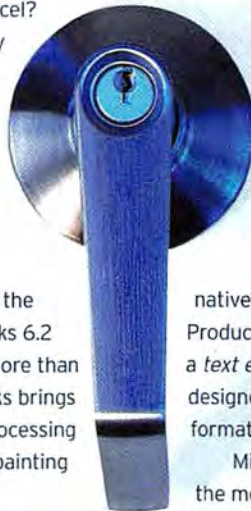
Windows). Apple had removed these translators in version 6.0, turning the exchange of documents between AppleWorks and Word into a big headache. But with DataViz back in place, sharing documents with Microsoft Office users is so smooth that your colleagues probably won't even notice that you're not using Word.

Admittedly, AppleWorks 6.2 lacks some of Word's more sophisticated automation features, such as AutoCorrect and AutoText, both of which can save you a lot of keystrokes. You also can't record macros, customize menus and keyboard shortcuts, or do powerful mail merges in the program. But as a general word processor, AppleWorks 6.2 feels complete.

Looking for an even cheaper word-processing alternative? For \$16, you can use FinalWord 2.1, from PineHill Products (716/349-2410, www.pinehillproducts.com). Billed as a *text editor* (as opposed to a *word processor*), FinalWord is designed primarily for editing plain text—not creating richly formatted documents.

Minimalist to the extreme, FinalWord offers little beyond the most rudimentary functions. Margin, tab, and paragraph-alignment controls are nonexistent. The Check Spelling command merely launches Rick Zaccone's Excalibur, a free third-party spelling checker you have to download separately. (And if you don't have Excalibur installed when you choose the Check Spelling command, FinalWord crashes.)

Despite its limitations, FinalWord offers some unexpected extras. For example, it has a built-in (albeit very basic) e-mail client. You can also use it to encrypt documents and create



Four Office v.X Alternatives Weigh In

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	CONTACT	TYPE OF PRODUCT	PROS	CONS
Apple	AppleWorks 6.2	★★★★½	\$79	800/692-7753, www.apple.com	Integrated word-processor, spreadsheet, database, presentation, and drawing and painting modules	Reasonably strong modules offer the tools most users really need; includes translators for compatibility with MS Office apps; inexpensive.	Lacking some of Word's best automation and shortcut features; limited charting capabilities in Spreadsheet module.
PineHill Products	FinalWord 2.1	★★	\$16	716/349-2410, www.pinehillproducts.com	Text editor	Very inexpensive; built-in e-mail client; document encryption.	No tables, style sheets, or paragraph formatting; buggy; doesn't work in OS 9.
P & L Software	Mesa 3.0.1	★★★★½	\$99	info@plsys.co.uk , www.plsys.com	Spreadsheet	Sophisticated formula handling; generates good printed reports.	Missing basics such as a magnification tool and the ability to create pie charts; awkward, nonstandard interface elements; doesn't work in OS 9.
CodeBlazer Technologies	UPresent 2.6.2	★★★★½	\$120	612/336-9567, www.codeblazer.com	Presentation	Good handling of movies, audio, 3-D, and videodisc technology; presentations can contain custom navigation menus.	Difficult to create slides containing text and graphics; limited transitions; unintuitive interface.

automatic backups. But none of this makes up for FinalWord's bugs. Many preferences and standard keyboard shortcuts are either missing or inoperable. Worse, FinalWord can't gracefully exchange data with other word processors such as Microsoft Word. You can open and save documents only as text files. In fact, if you need only basic word processing tools, you may be better off with TextEdit, which is free with Mac OS X.

Doing the Math

Number crunchers looking for Excel's capabilities in a smaller, less expensive package can choose from two Mac OS X alternatives: the AppleWorks 6.2 Spreadsheet module and the \$99 Mesa 3.0.1 by P & L Software (www.plsys.com).

The AppleWorks spreadsheet isn't as powerful as Excel or Mesa. For example, you can't create multiple worksheets, and the chart-formatting options are limited (you have limited control over attributes such as the thickness and style of gridlines, bars, and lines). Still, AppleWorks is easy to use and offers more than 100 different formula-building functions—more than you'll probably ever use—and they are well documented in the AppleWorks Help system.

When it comes to raw number processing, Mesa 3.0.1 is a viable challenger to Excel. It's a powerful and sophisticated spreadsheet program that supports the full range of mathematical, financial, and database functions you would expect. But Mesa also lacks some basic features (like a Zoom tool) and has some quirky, nonstandard interface elements (see *Reviews* in this issue). With Mesa, you can get your number crunching done, but the process is often less intuitive and involves more keystrokes than Excel.

Show and Tell

For building presentations in OS X, you've got two alternatives to PowerPoint. Again, you can really get your \$79 worth out of AppleWorks and use its built-in Presentation module, or you can try the \$120 UPresent 2.6.2 from CodeBlazer Technologies (612/336-9567, www.codeblazer.com).

The AppleWorks Presentation module is basic but functional—a very stripped-down version of what you get in PowerPoint. You create slides on which you can place text and graphics, and you then organize them in a slide show with a variety of transitions. What you don't get are a lot of animated text, bullet points that automatically appear one by one, or the ability to save your finished production as a QuickTime movie. You'll also need the full AppleWorks application to show your presentations.

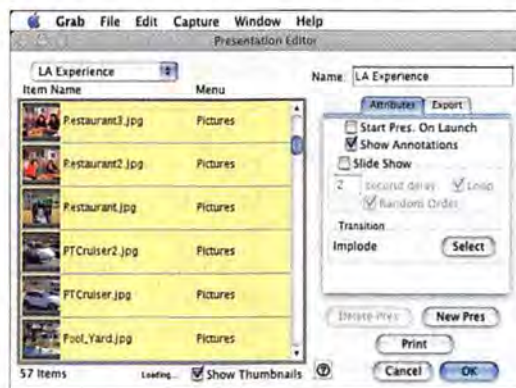
UPresent, on the other hand, is a totally different type of presentation program—it puts the emphasis on graphics rather than text. It's designed to help you present collections of photos, animations, and movies in a slide-show format, but it lacks the text-outlining features you'd find in PowerPoint—features that most business users rely on.

Setting up a UPresent presentation is labor-intensive. You don't type on a blank slide but instead set up custom menus for each type of media that you want to include. You then use these menus to quickly display a particular image

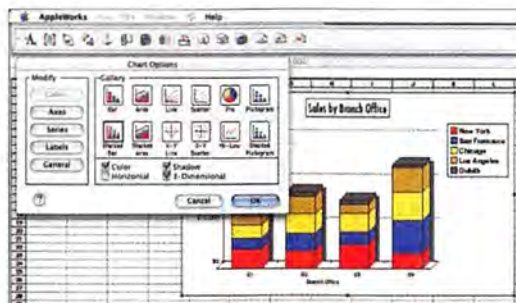
or movie on screen. Unfortunately, you can display only one image per slide—a serious limitation. This is as confusing as it sounds. Don't expect to get anything done without reading the manual. UPresent can be useful for creating simple portfolio-style slide shows of images, but trying to create more-sophisticated presentations with it is frustrating. The program offers very few transition effects, and most of them look amateurish. Most important, combining text and graphics on a UPresent slide is absurdly difficult.

The Outlook

If this sampling of alternatives to Microsoft Office seems just a bit anemic, remember that Mac OS X is still in its infancy; limited options are to be expected at this point. As software developers see more people becoming full-time Mac OS X users, better alternatives to Office are sure to come.—JOSEPH SCHORR



Show Time UPresent's Presentation Editor lets you set the presentation order for a collection of images and pick one basic transition—just one—for the whole show.



AppleWorks Stacks Up The AppleWorks spreadsheet module doesn't give you all the charting options found in Excel, but you still get plenty of choices.

The People behind the Program

MAC FANS AT MICROSOFT? It may seem like a contradiction, but according to Kevin Browne, general manager and a founding member of Microsoft's Macintosh Business Unit (MacBU), that's exactly what he and his teammates are.

The MacBU is the group of product developers, programmers, and strategists responsible for bringing powerhouse programs like Microsoft Office v.X to the Mac. But despite what many people may assume, Browne emphasizes that MacBU members are not Windows users forced to grudgingly write code for the Mac. In fact, their programmers don't write any Windows code. Although technologies at Microsoft are shared between the Windows and Mac product groups, the MacBU is an independent entity, free to add or cut features based on what it thinks Mac users need and want.

The MacBU was formed in 1997 after the failed release of Office 4 and its update, Office 4.2. Before this time, the Windows and Mac teams at Microsoft worked together on new product releases—completing roughly 80 percent of the code before beginning the process of preparing it for a specific platform. The result was a Mac program that seemed built for Windows users.

"Office 4.2 was a bad product for our customers—it almost killed Microsoft on the Mac," said Browne. "We're still recovering in many ways: recovering our reputation with customers, recovering the trust level customers have with us."

After evaluating the failure of Office 4, Microsoft decided to spin off the Mac group into its own business. The unit now writes code from the ground up specifically for the Mac.

But Browne thinks Microsoft has demonstrated its renewed commitment to Apple and Mac users over the years. Since the formation of the MacBU, the group has

released Office 98, Office 2001, Internet Explorer 5, and Outlook Express 5. The release of Microsoft Office 2001 for Mac brought with it many improvements for Mac users, including many Mac-first features and greater compatibility with Office's Windows counterpart. And Microsoft was one of the first companies to pledge support for OS X.

"The original mission of the MacBU was to bring a version of Office to the Mac," said Browne. "Now, I look at the MacBU as having a mission to look at everything that Microsoft is building. We need to make sure we understand what the Mac customers want—what services they want—and then be able to provide those to them."

To this end, two of the full-time employees at the MacBU spend their days collecting research data on what Mac customers want. This information is relayed to the rest of the team, who then decide if—and how—it can be implemented in a future version.

The MacBU has become more outspoken over the past year, as the group has gained confidence in its products. At Macworld Expo New York, during his keynote address, Browne asked Mac users to try the MacBU's products and to let his team know about things they didn't like—and to pass positive comments about Microsoft's programs on to others.

"With Office 2001, Internet Explorer 5, and Outlook Express 5, my contention is that our Mac apps are among the best Mac apps there are," said Browne. "If there's something missing in our products, I want to know about it. But what I have a hard time with is when people use opinions that were formed or facts that were in evidence five years ago to talk about what we are doing with our products today."—JIM DALRYMPLE

November 2001. For a limited time, an upgrade price of \$149 is available to Office 2001 owners (either the whole package or any of the stand-alone programs) through Microsoft's Web site. (If you don't already own any version of Office, buying the Word + Entourage Special Edition bundle and then upgrading is the cheapest way to buy Office v.X.) After this offer ends, upgrades from Office 2001—as well as from Office 98 and previous versions—will cost \$299.

Considering the relative paucity of new features in these upgrades, they may seem rather expensive. You'll need to balance their cost

against the benefits of running native Mac OS X applications.

Mac OS 9 Support The Office 2001 package will remain available for users of Mac OS 9 and earlier, but it has been placed into "maintenance mode." Updates, if any, will be bug fixes and changes needed to maintain compatibility with possible future classic Mac OS releases. But any significant Office development will occur on OS X.

The Last Word

The initial release of Mac OS X was embraced by early adopters and the curious, but for most of us, it didn't

improve on the way we were working in Mac OS 9—quite the opposite, in fact. But the one-two productivity punch of Mac OS X 10.1 and Office v.X can't be ignored, nor can Microsoft's commitment to OS X. If you use Office and you've been sitting on the fence, wondering whether you should move to Mac OS X, Office v.X is a good reason to make the leap and hit the ground running. **m**

Contributing Editor TOM NEGRINO has Office on the brain; he's the author of the forthcoming *Microsoft Office v.X for Macs for Dummies* (Hungry Minds, 2002) and *Microsoft Office v.X Inside Out* (Microsoft Press, 2002).

Complete Data Storage Solutions and SAN Systems for Macintosh®

Mac OS
X

"Time Proven Technology, Field Proven Quality"



- Shared Storage for Video and Publishing Workgroups, Increases Productivity
- Blazing Speed (100 MB/s and 200 MB/s)
- Preconfigured and Ready to go. No Service Tech Required!
- Supports RAID 5, 0+5, 1, 0+1, 0. Enterprise Class Reliability
- Capacities up to 3.6 Terabytes in a Single System
- Rackmount and Tower Designs, up to 20 Drives/sys.

Systems from **\$7,699**

Fibre Channel RAID Systems

"Macintosh Compatibility Built-in!"

ArrayMasStor FC



- Add Fast Reliable Data Storage to your Network Without Deploying Expensive Servers
- Built-in RAID 5 Storage Array for Data Protection and Speed, up to 6 Drives (600 GB)
- Drives are Hot Swappable, Allowing Hard Disk Servicing Without Down Time!
- Online Spare Drive Option Provides even more Continuous Uptime and Data Protection
- Built-in LCD Status Display and Control Panel for Easy Setup and Monitoring
- Built-in SCSI Port for Adding Tape Backup (or Even More SCSI Storage!)
- Supports Mac, Windows, Linux and UNIX Clients

Systems from **\$3,699**

Network Attached Storage (NAS)

"Excellent for Mixed Platform Networks"

NetArray MasStor



- The Ideal Solution for the "Mobile Professional" Capturing DV in the Field!
- Up to 140 minutes of DV Recording - Directly from your Camcorder's 1394 port!
- Plug and go ease of use. Battery Powered (Rechargeable Packs)
- Supports Up to 1024 scenes per Disk Pack and AV/C (Audio Video Control Protocol)
- Instant Random Access to any scene, no more Rewinding Tapes!
- Full Remote Control Capability for "Hands Free" Operation

Systems from **\$1,699**

Hard Disk Video Recorders (1394)

"A Revolution in Portable DV Recording"

DV MasStor



- LVD, HVD and Single Ended SCSI Storage Systems
- Maximum SCSI Transfer Rates (Up to 160 MB/s)
- Preconfigured and Ready to use
- Support for RAID 5, 1, and 0
- 4 and 6 Drive Systems with Capacities to 600 GB/sys.
- Enterprise Class Reliability, Rackmount and Tower Designs
- Options for "Legacy" Macintosh SCSI Systems



Systems from **\$1,599**

SCSI RAID Systems

"Huge Performance at Affordable Prices"

SCSI-3 Ultra Wide and Ultra160



- Affordable, High Performance FireWire Storage Systems. Ideal for iMacs and iBooks.
- Single Drive Capacities up to 100 GB (That's 7.5 hrs. of DV!)
- Mirror Models (Hardware RAID 1) for Maximum Data Protection, an ADTX Exclusive!
- Factory Preconfigured. Just Plug them in and they're Ready to use
- Second Generation IEEE 1394 Technology, up to **40MB/s!**
- Extra High Capacity "Multi-Drive" Models also Available

Systems from **\$ 259**

FireWire Hard Disk Systems

"Exceptional Value and Performance"

MasStor FW

ADTX
Advanced Technology and Systems Co., Ltd.

13715 Alton Parkway, Irvine, CA 92618
949-583-2993 Tel. 949-583-2999 FAX
sales@adtx.com www.adtx.com

Turn Cassettes or LPs into CDs

BY JONATHAN SEFF

If you're like most people, you've spent years building your music collection. From Elvis on vinyl to Kiss on eight-track to Men at Work on cassette, you bought tons of tunes before *digital* was an everyday word, and before you'd even heard of compact discs. But now CD is the de facto official format for recorded music, and many of those gems you bought years ago just aren't available on disc. And even though some are, you've already bought the music once, so why spend another \$18 on it?

Thanks to your Mac, you don't have to. If you have a CD burner, either built-in or external, you can use it and your Mac to capture audio from a tape or LP, eliminate unwanted noise in the recording, and transfer your music to CD so you can listen to it in your car, at the office, or anywhere else you like to play CDs.

Several programs are made for the task, such as the free Coaster (www.visualclick.de), \$30 Sound Sculptor II (<http://hometown.aol.com/sculptorii/index.html>), and \$35 Sound Studio (215/482-6664, www.feltp.com/products/soundstudio/). CD Spin Doctor and Audio-Scribe are included with popular CD-burning programs, such as Toast.

There are more-expensive ways to go. But if you don't have an audiophile's budget, if you have more than a couple of records or tapes to convert, and if you want the easiest, fastest method and the best-quality digital recording, here's what we suggest: use BIAS's Peak LE to transfer the analog recording to your Mac, Arboretum Systems' Ray Gun to remove unwanted noise, and Roxio's Toast 5.0 Lite or Toast 5.0 Titanium to burn the music to CD. **m**

Associate Editor JONATHAN SEFF has transferred countless tapes, LPs, and DATs to CD.

What You'll Need

- A Y-cable, which has two stereo RCA plugs on one end and a 1/8-inch stereo minijack plug on the other. Y-cables are available from most electronics stores for about \$5.
- Your turntable or cassette-deck stereo component. If you're using a turntable, you'll also need a stereo receiver or pre-amplifier (available at most electronics stores for about \$50).
- Records or cassette tapes.
- A soft cloth or device designed for removing dust and dirt from record surfaces. You might also consider replacing the phonograph needle.
- A tape-head cleaner or even a new, inexpensive tape player if yours is old and dusty. This will ensure that you get the best sound from your cassettes.
- An inexpensive USB audio-input device, or a PCI sound card if your Mac doesn't have an audio-in port (like many of the newer Mac models). See step 1 for suggestions.
- Plenty of hard-drive space, since CD audio takes about 10MB per minute. A typical album will eat up between 400MB and 700MB.
- BIAS's \$99 Peak LE (800/775-2427, www.bias-inc.com).
- Arboretum Systems' \$99 Ray Gun (800/700-7390, www.arboretum.com).
- A CD-R or CD-RW drive.
- Roxio's Toast 5.0 Lite (which is included with Peak LE, and a version probably came with your CD burner) or \$99 Toast 5.0 Titanium (408/635-7694, www.roxio.com).

More Info:

www.macworld.com/2001/07/reviews/cdburning.html
Read our comparative review of CD-burning software.

www.macworld.com/2001/02/reviews/peak.html
See what *Macworld* thought of Peak VST 2.5.

www.macworld.com/2001/10/reviews/soundblaster.html
Get the lowdown on the Sound Blaster Live PCI sound card.

1

Set Up Your Hardware Connect your turntable or cassette player to your Mac. You'll need a receiver or preamplifier if you're transferring records, and an add-on sound-input device if you have a newer Mac.

How you set up will depend on your Mac model and whether you're transferring from cassette tape or vinyl.

You'll transfer audio to your Mac via the computer's audio-input port. If your Mac doesn't have one, as is the case with many of the newer models, other low-price options include Griffin Technology's \$35 iMic or \$99 Power-Wave (615/399-7000, www.griffintech.com), both of which connect via USB. Alternatively, you can install a PCI sound card such as Creative's \$100 Sound Blaster Live (800/998-5227, www.creativelabs.com) or M-Audio's \$230 Audiophile 2496 (626/445-2842, www.m-audio.com).

If you're recording from a cassette deck, you can insert the end of the Y-cable with the two RCA plugs directly into the output port on the back of your component. Plug the mini-jack end into your Mac's audio-in port (most likely indicated by a microphone icon).



If you're recording from a turntable, however, you'll need an additional item. Because most turntables lack built-in amplification, you'll need to plug the turntable into a stereo receiver or preamplifier. Then run the Y-cable from an output port (such as Tape Out) on the receiver to the Mac's audio-in port.

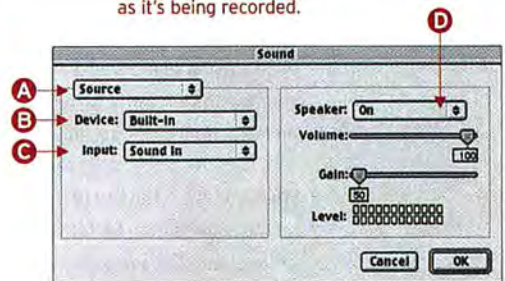


2

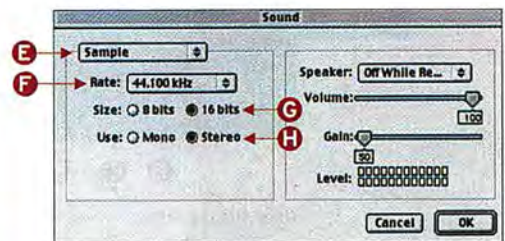
Install and Set Up Your Software Now install Peak LE and Ray Gun, and configure Peak LE to receive the audio signal. Also make sure your media is recorded in the proper format for burning to CD: 16-bit, 44.1kHz stereo AIFF.

Note: After you've installed the Peak LE software, be sure to download the latest update to prevent data corruption or loss (www.bias-inc.com/downloads/updates/).

In Peak LE, choose Record Settings from the Audio menu, and click on Device And Sample Format in the resulting window. From the pop-up menu on the upper left (A), select Source. Since you'll be recording through your Mac's audio input, choose Built-in from the Device pop-up menu (B) and Sound In from the Input pop-up menu (C). (If you're using a different device, such as the iMic, choose its name from the Device pop-up menu.) Select On from the Speaker pop-up menu (D) so you'll be able to hear your music as it's being recorded.



Go back to the first pop-up menu on the left and choose Sample (E). Make sure that Rate is set to 44.100kHz (F), Size is set to 16 bits (G), and Use is set to Stereo (H). Click on OK.



continues

3

Record Your Music Now that your system and software are set up, you can start digitizing your record or tape collection. It's easiest to record each album or tape onto your hard drive as one large file.

To capture the best-quality audio, clean your tapes and records, or replace your turntable's phonograph needle.

Open Peak LE's Record dialog box by clicking on the Record button **A** in the tool bar.



You'll now see how many minutes and seconds of music you can record **B** (based on the space available on your hard drive). Make sure the window indicates that it will be recorded at the audio-CD standard: 16-bit 44100Hz Stereo AIFF **C**.

Now click on the Record button **D** in the Record window, and begin to play your record or tape. The waveform being recorded will appear in the Audio Source Display area on your Mac, as will moving, colored input lights on the bottom of the screen.

When you reach the end of the first side, click on the Pause button **E**, turn over the record or tape, and click again on Pause.



When the recording is finished, click on the Stop button **F** and save the file.

Now you can delete unwanted silences by highlighting the blank space and pressing the delete key. However, don't delete silent spaces between songs yet.

4

Eliminate Unwanted Noise from Your Recording Using the Ray Gun plug-in, you can clean up audio recorded from your tapes and LPs, by removing many of the hissing and popping sounds associated with analog recordings.

Note: Before you install the full version of Ray Gun, remove the Ray Gun demo version that comes preinstalled with Peak LE (in the Peak Plug-Ins folder).

In your new file, highlight a section that has hisses or pops. From Peak LE's Plug-Ins menu, choose Premiere and select Ray Gun 1.2.0-pr.



With the Ray Gun interface, you can begin modifying the sound on your recording. Start with one of the presets found in the pop-up menu **A** and then move the sliders to get the desired results.

To audition the highlighted part of your recording with your Ray Gun changes, click on Play **B** with the various fixes turned on. Once the music sounds right to you, go back to the pop-up menu, click on Save, and enter a name for your new preset. Toggle the In/Out button **C** to hear the music with and without the changes you've made.

Now click on Cancel **D**, select the entire file you want to fix, and relaunch Ray Gun. From the pop-up menu, choose the preset you created and click on Apply **E**.

This is nondestructive editing. If you don't like what you've done, you can undo it.

5

Normalize Low Levels Often, the music you capture will be very quiet. Normalizing is a good way to fix that problem before burning to CD—and it's much safer than recording at high volume, which can lead to digital clipping, or distortion, that shows up as static and clicks.

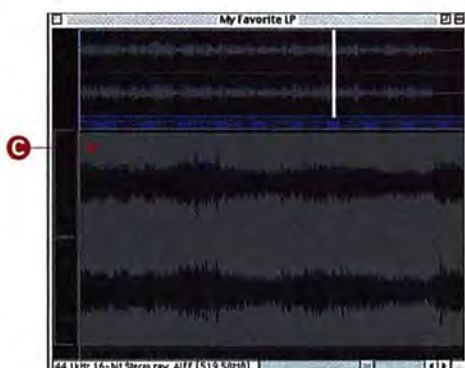
Normalizing is the process by which the software analyzes your entire recording's waveform, takes the highest point, amplifies it as high as it can go without clipping, and brings the rest of the music up proportionally.

In Peak LE, choose Normalize from the DSP pull-down menu. By default, the program will normalize 100 percent **A**—that is, bring the highest point to its maximum safe level. Although there is a slider **B** for choosing a lower degree of normalization, go with the default and click on OK.



After Peak LE has done all the calculations and processed the sound file, it will redraw the waveform **C**.

Play the recording. If it was quiet to start with, it will be noticeably louder.

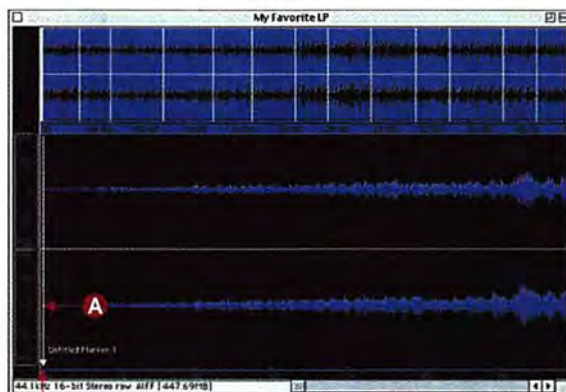


6

Insert Markers to Distinguish Tracks

Because you recorded your album to your computer as one big file, you'll need to segment it into tracks that your CD player will recognize.

Peak LE uses markers to denote points of importance in an audio file. In this case, markers will show track breaks on a CD.



With your recorded file open, click near the beginning of the file **A** and select Find New Marker from the Action menu (or press ⌘-M) to insert your first marker.

Then click on the white triangle **B** at the bottom of the marker and drag it as far to the left as you can to indicate where your CD should begin.

Look for flat spaces—that is, areas of silence between tracks—in the waveform of the whole album. Go through the file, find where each song begins, and insert a marker. This tells the program where you want your CD to start the next track.

Note: You can also insert markers while the music is playing, by using the ⌘-M key combination. When you do so, Peak LE will add a marker wherever the play indicator is at the time you press the keys.

continues

POWER UP YOUR SHOPPING

WITH THE **MACWORLD PRICEFINDER**



If you haven't tried the PriceFinder lately, you've gotta see it now! It's better than ever with new features to help you get the best deal on Mac products in the shortest time possible. Take a look. . .

● WE MAKE IT SIMPLE.

You'll find the top Mac products in each major category. Searching is easy!

● WE SAVE YOU TIME.

We do the math so you'll know **EXACTLY** what you'll pay for a product (including tax & shipping) from a variety of online stores.

● WE SAVE YOU TROUBLE.

Many of the products are linked to Macworld reviews and ratings that will help ensure your purchase fits your needs.

● WE GIVE YOU OPTIONS.

Now you can compare prices between new products on Macworld PriceFinder with prices for used, liquidated and refurbished products listed on Macworld Classifieds. Find the bargain to fit your budget!

Macworld

PRICEFINDER

More than ever, Macworld PriceFinder gives you the power to shop like an expert. Try it again and see!

www.MacworldPriceFinder.com From the Mac Product Experts.

7

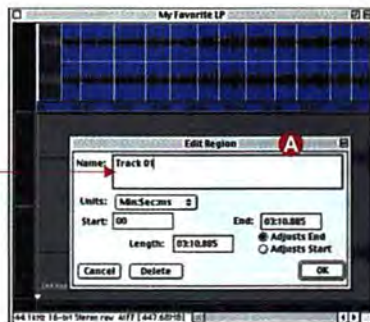
Prepare the Tracks Once you've marked where you want your songs to begin, you can choose one of two ways to prepare the files for the CD-burning process, according to your circumstances.

If you have lots of disk space to spare and you want to make MP3s from your recording before you burn the CD:

Press the tab key. Peak LE will highlight the waveform between the first two markers, which is your first track.

Go to the File menu, select New, and select Document From Selection. Peak LE will then copy the audio from the current highlighted area and paste it into a new document.

Save and name the file, and repeat this process for each song on your album. (To keep the tracks in order, start each name with O1, O2, and so on.)



If you want to use the fastest method and conserve hard-disk space, and if you don't want to make MP3s from your recording at this point:

Press the tab key and highlight a track area as described earlier. Instead of creating a new file, select New Region from the Action menu (or press shift-⌘-R) to create a region. The Edit Region window **A**, with an option for naming the region, will appear; call it Track O1 **B**, and each subsequent region will automatically be named Track O2, Track O3, and so on. Click on OK.

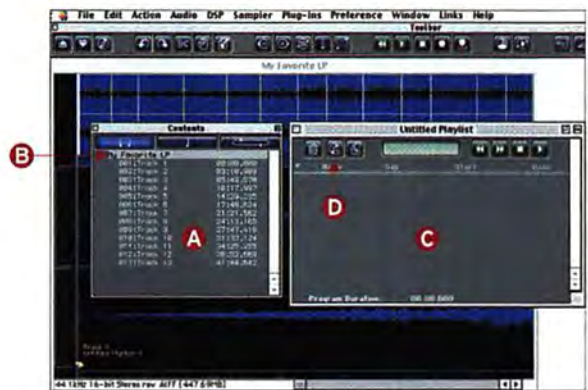
Once you've completed this process for all the tracks, save your file.

8

Burn Your CD Now for the moment of truth—when you put your precious music onto CD. Peak LE includes Toast 5.0 Lite, and you most likely got a copy with your CD burner when you purchased it.

If you exported track files individually, simply open Toast Lite or Toast 5.0 Titanium, select Audio, and drag and drop the files into Toast's Audio window. Here you can adjust the amount of blank space before each track except the first, since it must be preceded by a two-second pause. (Tapes and records have built-in space between songs, so set the gap for all the other tracks to 0 seconds.)

If you created regions in one file, select Contents from the Window menu. You'll see each of your regions listed by its name and by its start time on your disc **A**.



Now go to the File menu, choose New, and select Playlist Document (or press shift-⌘-P). Drag the name of the large file **B** containing all the separate tracks from the Contents window to your new playlist **C** and click on the Bounce button **D** (this "bounces" your files to Toast).

After a few minutes, Toast Lite will launch. All the regions from your playlist will appear as separate files, but their names will be different, since Peak LE sent Toast only temporary files. You can choose to burn a disc or cancel the operation; choose Cancel and click on the 2 Sec pop-up menu next to the tracks, changing it to 0 Sec. Then click on Burn.

Now you have a new CD of your old music!

Print Publishing Secrets

Almost every color image in print consists of four ink colors: cyan, magenta, yellow, and black (CMYK). But CMYK can't reproduce some parts of the spectrum, such as an electric blue or a metallic silver. These require spot colors. They also require finesse on your part, especially in Adobe Photoshop. Here we'll show you techniques for using Photoshop's spot-color tools correctly.

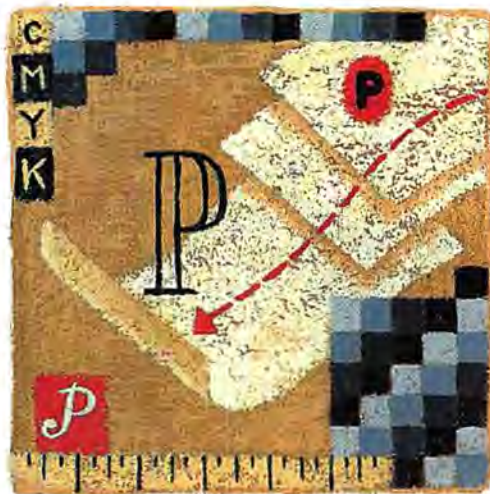
If you are coloring hard-edged vector artwork (such as Bézier shapes or type) with a spot color, it's best to apply color in your illustration program or page-layout application. However, Photoshop is called for when spot colors are part of a bitmapped image. For example, spot colors are key to duotones, which typically boost the tonal range of black-and-white photographs by adding a spot color, especially in the highlights and midtones. You can also make an image pop by adding a solid spot color to just one portion of an image—for instance, printing your company logo in color in the middle of a gray-scale photo.

Specifying Spots

Instead of using ambiguous descriptions—"dark brick red," for example—designers and printers rely on swatch books of numbered samples for spot-color names. Pantone (866/726-8663, www.pantone.com) makes the most-common swatch books in North America; spot colors are generally referred to by a Pantone Matching System (PMS) number.

The traditional way to add Pantone colors to Photoshop images is to convert a gray-scale image to Duotone mode (Image: Mode: Duotone). But this technique doesn't work when you want areas of solid spot color, because in a duotone image, every pixel is a blend of two or more inks.

When you want areas of solid color, you'd normally choose a color from Photoshop's Color Picker (the dialog box you get when you click on the foreground or background color swatch in the Tool palette) and then paint



or fill a selection. Photoshop lets you do this with Pantone colors too. The result, unfortunately, is a cruel joke: the color appears correct on screen, but when you try to print color separations, the spot color won't separate onto its own plate. It appears on one or more of the other color plates, resulting in a muddy mess (because when you choose a color this way, you're not picking a spot color—you're picking an RGB or CMYK *simulation* of a spot color).

The only way to add a non-duotone spot color to a gray-scale or CMYK image in Photoshop is to create a spot-color channel in the Channels palette. You can do this by ⌘-clicking on the New Channel button at the bottom of the Channels palette, or by selecting New Spot Channel from the palette's pop-up menu.

Color and Solidity

When you create a new spot-color channel, Photoshop lets you pick both the color and its solidity. But remember the most important rule when working with spot colors: Never trust how they appear on screen. Many spot colors can't display correctly on screen, and even mundane colors often don't appear properly because Photoshop displays only RGB and CMYK colors. Trust only printed swatch books (or request *draw downs* from your print shop).

Because you base your choice on a swatch book, you may think the new spot-color channel's color and solidity settings don't matter—after all, these affect only your

screen representation and prints made on desktop color printers.

But although you can't trust what you see on screen, you still want something that looks passably correct. There is no solidity table for spot colors, so you have to experiment. Metallic color inks are generally opaque, so you should use a solidity of 90 or 100 percent. To simulate a varnish, which also counts as a spot color, pick a light yellow color and set the solidity to 0 percent. For most other colors, a solidity of 50 or 60 percent works well.

Painting Spots

Once you have your spot-color channel, you can paint on and add type to it. Keep in mind that each spot color is its own channel, so there are limitations. First, always paint or fill using black, white, or gray. When you place black text on the PMS 286 channel, for instance, it appears on screen as blue. (The same thing happens with the normal color channels: if you paint black just on the magenta channel, it appears on screen as magenta.) Similarly, white pixels on the spot-color channel indicate no spot color, and gray pixels indicate a tint of the spot color.

Second, you can't put spot colors on layers—anything you put on a spot-color channel will appear in front of your other image data.

Finally, spot-color channels don't automatically knock out the image data behind them. Spot colors overprint the other colors in your image; this may create a mottled look. When you want the spot color to print without anything behind it, you must set the pixels on the other color channels to white: set the background color to white, ⌘-click on the spot-color channel, click on the composite-color channel (labeled CMYK, RGB, or Grayscale in the Channels palette), and press the delete key. Even better, after loading the channel as a selection, go to Select: Modify: Contract and choose to contract by one pixel. This creates a trap area, in case the spot color misregisters slightly on the printing press.

Saving Spots

When it comes time to save your Photoshop file and import it into a page-layout program, remember that only the native Photoshop (PSD) and DCS 2.0 file formats can handle spot-color channels, so don't even think about using TIFF or EPS. However, QuarkXPress 4.X, Adobe PageMaker 6.X and 7.X, and Adobe InDesign 1.X can't read spot colors in PSD files, so you should use the DCS 2.0 format if you work in one of those programs.

One notable workaround is the ImagePort XTension from A Lowly Apprentice Production (\$99; 888/818-5790, www.alap.com), which lets you import native Photoshop



Photoshop's Spot-Color Channels When you ⌘-click on the New Channel button, Photoshop lets you specify a spot color and its solidity value.

files with spot-color channels into QuarkXPress. It also lets you turn the channels on and off, and even change the spot color itself.

When you import the DCS 2.0 file into a page-layout application, it automatically adds the image's spot color to the document's list of colors, so you can apply it to type or other elements on your page. However, don't delete this color from the document: if you do, the program won't be able to separate the spot color properly.

Special Spot Effects

People use spot colors in many ways. The following techniques can help your designs hit the sweet spot every time.

Monocolor When you want to apply a single spot color to an entire image—say, a light pastel color over a graphic to ghost it back—make a gray-scale TIFF image in Photoshop and apply the spot color to it in your page-layout program. It's easy to change the spot color later if you need to.

Duotones If you want a duotone-like effect but also require areas of solid spot color—for example, to put a solid-color corporate logo behind a CEO's head shot—convert a gray-scale image to Duotone mode (applying desired colors and curves via the Duotone dialog box). Then convert the file to Multichannel mode. Photoshop automatically creates the spot-color channels, ready for you to paint on or add type to. Again, save the multichannel file in the DCS 2.0 format so it separates properly in your page-layout program.

Bump Plates If you're using a spot color to boost specific colors in your image (for example, making a red car appear more vibrant by adding a red spot color in that area of the image), you should take a look at CoCo (\$300; 877/940-0600, www.thepowerxchange.com). This Photoshop plug-in is the best way to build bump plates of this kind. Similarly, CreoScitex's Silvertone plug-in is designed to make bump plates for metallic colors, such as the chrome on a car bumper (\$250; 800/472-2727, www.creoscitex.com).

Expand Your Spectrum

Limiting yourself to printing only gray-scale or CMYK colors is like settling for a small box of crayons. Many printing presses today are set up to handle five- or six-color jobs, so it's easier than ever to get the rich colors you crave. **m**

Contributing Editor DAVID BLATNER is a coauthor of *Real World Photoshop 6* (Peachpit Press, 2000) and the author of *The Joy of Pi* (Walker Books, 1998). Find him at www.moo.com.

Web Publishing Secrets

Whether you hand-code your Web pages or let a WYSIWYG application generate tags, you probably author in HTML. But the World Wide Web Consortium now recommends XHTML, a hybrid that works much like HTML but is based on XML, a super markup language. And making the switch to XHTML is easy—you'll learn everything you need to know in this tutorial.

Many Benefits, Little Work

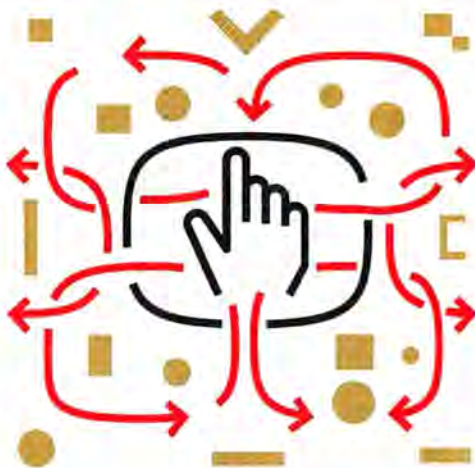
Moving your existing sites to XHTML—and using it to create new sites—can help you in several ways.

Painless Transition The Web is moving to the powerful markup language XML (see *Inside XML*, October 2000). Writing well-formed, valid XHTML pages is the easiest way to make the transition.

More-Logical Markup XHTML brings uniformity to your document structure, forcing you to dot your *i*'s and cross your *t*'s. The rules of XHTML help restore the structural integrity of documents that was lost during the Web's rapid expansion between 1994 and 2001. This is critical for large corporations (and for organizations such as libraries and universities) whose Web pages must work well with logically marked-up documents in legacy systems and databases.

One Size Fits All Unlike with old-style HTML pages, you can easily repurpose valid, well-formed XHTML documents for wireless devices, Braille readers, and other specialized Web environments. Moreover, XHTML's insistence on clean, rule-based markup helps you avoid the kind of errors that make Web pages fail even in traditional browsers.

XHTML Is Accessible Because they follow strict rules and avoid nonstandard markup, well-authored XHTML pages are more accessible than old-school HTML pages, helping you comply with U.S. laws (www.usdoj.gov/crt/508/508law.html) and Web-accessibility guidelines (www.w3.org/WAI/).



The Rules of XHTML

XHTML is nearly identical to the HTML you use every day—there are just a few additional rules.

Open with the Right Tags

XHTML documents must begin with tags that tell the browser how to interpret them (see “Start at the Top”).

Use Lowercase Tags XML, and therefore XHTML, is case sensitive. XHTML tags and attributes must be lowercased, or your document will not validate. (Validation ensures that your pages are error free. See *Web Publishing Secrets*, September 2001, for details.)

To “translate” an older document into XHTML, you would recast, for example, `<TITLE>My Totally Valid Web Site</TITLE>` as `<title>My Totally Valid Web Site</title>`.

All you've done is lowercase the title tag. Likewise, `P` becomes `p`, `BODY` becomes `body`, and so on.

The free World Wide Web Consortium (W3C) tool Tidy (www.w3c.org/People/Raggett/tidy/) can automatically convert hundreds or even thousands of Web pages from uppercase to lowercase tags, making it easy to update even very large sites. Professional Web-editing tools for the Mac have also been upgraded to generate XHTML-style tags. (More on that shortly.)

Quote Your Attribute Values In HTML, you don't have to put quotation marks around attribute values. In XHTML, however, there must be quotes around each and every attribute value—for example, `height="55"`, not `height=55`. Once again, Tidy can automatically do this work for you.

Close Everything In sloppy old HTML, you are able to open tags such as `p` and `li` without closing them. For example, the following is perfectly valid HTML:

```
<p>This is a paragraph. Where will it end?
<p>Who cares? Let's just start another.
```

This open-ended approach to things made sense when the Web was young. The fewer rules HTML had, the easier it was to learn. Similarly, early Web browsers forgave inconsistent, sloppy, and even invalid HTML (and many of them still do).

All that sloppy HTML has taken its toll on the Web's structural integrity and can wreak havoc with technologies such as Cascading Style Sheets. For instance, if you apply a style to a paragraph that you haven't closed, a browser may not close the style, either. XHTML forces you to use correct syntax by insisting that you close every open tag:

```
<p>This is a paragraph. Where will it end? Right here.</p>
<p>This is a new paragraph. You can tell because the
previous paragraph is now closed.</p>
```

The Incredible Self-Closing Tag Having to close tags such as `p` and `li` is logical enough, but what about "empty" tags such as `br` and `img`? In creating XHTML, the W3C decided that those elements should close themselves by including a forward slash at the very end of the tag: `` should now be ``.

Note also that a single blank space precedes this slash. Without that blank space, the closing slash can confuse older browsers. (The blank space enables older browsers to ignore the slash.)

Of course, to be valid and accessible, the `img` tag would also have to include an `alt` attribute, and a `title` attribute wouldn't hurt:

```

```

Tools and Shortcuts

Several applications let you produce Web pages in XHTML. Hand-coders may want to investigate Bare Bones' BBEdit (\$119; 781/687-0700, www.barebones.com), Optima System's PageSpinner (\$29.95; www.optima-system.com/pagespinner), and Mozquito Technologies' Mozquito Factory (\$249, boxed with printed documentation; \$149, download only; www.mozquito.com).

Dreamweaver fans can either hand-convert Dreamweaver-generated pages to XHTML or download XHTML extensions such as the Super HTML-XHTML DTD extension or the XHTML-compatible Meta Generator extension (www.macromedia.com/exchange/dreamweaver/).

Converting to XHTML is easy—and how often can you say that about new Web technologies? But don't let the smooth taste fool you: there's a lot of power behind this easy-to-work-with technology. Learning the simple rules of XHTML today is the best way to prepare yourself and your sites for the XML-driven Web of tomorrow. **m**

JEFFREY ZELDMAN (www.zeldman.com) is the author of *Taking Your Talent to the Web: A Guide for the Transitioning Designer* (New Riders, 2001) and the creative director of A List Apart (www.alistapart.com), a weekly online magazine for people who make Web sites.

Start at the Top

Every Web document should begin with a document type, or DOCTYPE, declaration (see *Web Publishing Secrets*, September 2001). But while an old-fashioned HTML page can squeak by without a DOCTYPE, an XHTML document requires a DOCTYPE declaration, such as:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Transitional//EN" "DTD/xhtml1-transitional.dtd">
```

I Need My Space

Because XHTML is really XML (and follows the rules of XML), an XML namespace declaration follows the DOCTYPE:

```
<html xmlns="http://www.w3.org/1999/xhtml"
xml:lang="en" lang="en">
```

If you're the super-responsible type, you can learn about XML namespaces at www.w3.org. If you're the busy, hard-working type, just cut and paste.

Cut the Prologue

Many XHTML 1.0 pages begin with an XML prologue, `?xml`, which precedes the DOCTYPE and namespace declarations. This little text widget does three things: it defines your page

as an XML document, it indicates the version of XML used, and it specifies the character encoding within your document—mighty useful when you're creating a site in a language other than English.

Unfortunately, many browsers (including Microsoft Internet Explorer 4 and 4.5 for the Mac, and Netscape Navigator 4) choke on the `?xml` prologue. So for backward compatibility, it's usually best to omit it.

Don't worry; the prologue is optional, and you can write perfectly valid XHTML 1.0 documents without it. If you're working on an international site and your page will include non-ASCII characters, you can probably get by with a simple meta tag, such as:

```
<meta http-equiv="Content-Type"
content="text/html;charset=UTF-8" />
```

The Worst Is behind You

If you've made it this far, congratulations. Understanding how these opening declarations work is the most confusing part of making the XHTML transition. The rest of the process will be cake.

Mac OS X Secrets

Tell the truth: you're a bit intimidated by Mac OS X. The Aqua interface isn't a problem, but OS X's Unix underpinnings can bring out the technophobe in anyone. Mercifully, Mac developers are rushing to the rescue with utilities that let you tap Unix services—for everything from scheduling tasks to running an industrial-strength Web site—without having to use the still-daunting command line.

Under the Hood

Beneath OS X's surface is an array of Unix programs (called "services") that handle jobs such as Web serving and security. Each has its own set of controls and method of configuration, usually involving a text file—unfamiliar territory to many Mac users. OS X's System Preferences provides access to some settings but not all of them, and many optional features are turned off in the default installation.

Mac vendors and developers are now offering new utilities that provide users either a Mac-like graphical interface on top of a traditional Unix service or an improvement on existing features in OS X.

Most of these utilities require that BSD Unix Subsystem be enabled. Although this package was a standard part of the Mac OS X 10.0 installation, Mac OS X 10.1 reduces it to an option. When installing the OS X 10.1 update, make sure the BSD Subsystem option is selected (in the Custom Install window).

Productivity Helpers

OS X's Unix side can make for some unwelcome chores that intrude on your workflow, but two utilities aim to improve your productivity.

As new OS X users soon discover, Unix is much more vigilant than the classic Mac OS about restricting access to shared files—and setting permissions using the standard Show Info command can become a time-consuming and tiresome task. Longtime Mac developer Bare Bones Software offers **Super Get Info** (\$20; 781/687-0700,



www.barebones.com), which improves on and simplifies the Show Info window.

Super Get Info provides a window that allows you to quickly view file information, permissions, and a preview of a file's contents. Even better, it can open multiple windows so you can compare settings among files and then apply group, owner, and permission settings to a file or even all items in a folder. And instead of a thumbnail, the preview image is big, providing a real look at the file.

Another new and useful utility is **CronniX 1.4.1**, by German developer Sven Schmidt (www.koch-schmidt.de/cronnix/). This free software applies an Aqua interface to cron (or crontab), the powerful task-scheduling scripting service. With OS 9, you have to buy a separate task-scheduling utility, but this function is built into OS X, so why not take advantage of it?

Let's say you want to schedule a weekly AppleScript that backs up certain files on your hard drive. You can drag and drop that AppleScript (or any script, such as a CGI script or PerlScript) into CronniX to easily build the schedule, instead of having to type the path names and directory structures in the Terminal window. Composing the command via Terminal wouldn't be terribly difficult, but it's just not the Macintosh way.

Firewall Utilities

In the classic Mac OS, Web sharing is relatively secure, but in OS X you must be more careful. If you decide to allow remote log-in via Telnet or to run a Web server



IPso Facto The Moose's Apprentice 10.1.4 provides an editor for many settings, such as IP filters. It notifies you of any modifications to the settings and lets you undo unwanted changes.

(see *Mac OS X Secrets*, November 2001), you'll need some additional security and adjustment of ports. Mac OS X comes with ipfw, a network-firewall package, and because ipfw has been extended by third-party developers, you no longer have to make a trip to the Terminal application to use it.

To that end, Brian Hill says he designed the \$25 **BrickHouse 1.1b5** Firewall utility (http://personalpages.tds.net/~brian_hill/brickhouse.html) with the Web-serving novice in mind. In addition to an easy interface, it comes with settings that help prevent denial-of-service and other resource-based attacks over the Internet. It also provides filters for common network configurations such as DHCP (dynamic host configuration protocol), frequently used with broadband access.

One of BrickHouse's competitors, Mike Vannorsdel's \$25 **Firewalk X 1.3.7** (www.pliris-soft.com) provides feedback on your firewall's status, sending notification via e-mail when a new event occurs. Using Firewalk X, you can create and save different sets of rules and switch between them on-the-fly.

A different security tack is offered by WunderMoösen's **The Moose's Apprentice 10.1.4** (www.wundermoosen.com). This \$15 utility generates a daemon that compares important system files to their last saved versions. If a file has been modified without your knowledge, The Moose's Apprentice will alert you and let you step backward through the file's history to undo the unwanted changes.

Web Administration Made Easier

Mac OS X comes with the industrial-strength Apache Web server, which provides great performance—yet its installation and administration can be arcane to many people who run Web sites (see *Mac OS X Secrets*, August 2001).

A company with much experience developing Unix and Apache for the Mac, Tenon Intersystems offers **iTools 6.1** (800/662-2410, www.tenon.com) for Mac OS X and Mac OS X Server. The \$399 package (\$299 for users of Tenon's MachTen and WebTen products or any commercial Mac OS-based Web server software) brings Aqua and HTML interfaces to Apache, so someone other than a Unix guru can administer the server.

Supporting remote administration, iTools provides a wide range of extras for Apache, including support for the Secure Socket Layer encryption protocol used in online commerce; WebMail, a service that lets remote users access their mail; a domain-name server; and a search engine. The package also comes with a set of third-party Apache modules.

Tracking the visitors to and usage of your site is very useful, but reading log files containing that information can be overwhelming. Flowerfire CQ now offers an OS X CGI version of its powerful **Sawmill 6.2.1** server-log-analysis tool (\$99 for one user, \$399 for an organization with fewer than 50 users; 650/219-4923, www.flowerfire.com); according to the company, it runs three times faster than the Carbonized Mac OS X version. While providing general statistics such as a list of the ten most popular files on your server, Sawmill allows you to analyze usage patterns on your site by tracking each visitor's progress, page by page. On top of all that, it can provide live statistics and lets you use custom filters to analyze viewing habits.

More Than Just a Pretty Face

Some utilities are only for serious work, but TinkerTool 1.5 (www.bresink.de/osx/) also appeals to Mac users' lighter sides. Marcel Bresink's freeware controls a grab bag of hidden preferences in the Finder. Some are minor, such as animation effects in the Dock; however, others provide more functionality. For example, TinkerTool can fine-tune font antialiasing to improve appearance on low-resolution analog displays, or it can show Terminal in a transparent window.

But keep in mind that TinkerTool's feature set may change often, depending on the settings that Apple engineers decide to implement (or hide) in each release of OS X. Some features in earlier versions have been rolled into the current Finder's Preferences panel. "In an extreme case, none of TinkerTool's features might survive, but I don't really expect that," says Bresink.

A Moving Target

The field is wide open for Mac OS X utilities such as these. Programs will come from commercial developers, as well as individuals who start out writing small applications to simplify their lives and then offer those apps for free to the Mac community. Of course, as Mac OS X evolves, we can expect some of these improvements to make their way into the standard OS. **m**

Now dusting off his Unix grep manuals, DAVID MORGENSTERN is a freelance editor and was once the editor of *MacWeek*.

More Info: www.macworld.com

For links to the software mentioned in this article, visit Macworld.com and type OSXSecrets in the Search box.

Mac 911

Filled as I am with the spirit of giving during this holiday season, I give you in this month's column the lowdown on how to install multiple operating systems under Virtual PC, what your surge protector can and can't do for you, how to determine which extensions are expendable, why worms are harmful not only to cats but also to computers, and the ins and outs of disk formatting.

Multi-OS VPC

Q. I would like to run Connectix's Virtual PC on my Mac. Though I have a copy of Windows 2000, do I need to buy the Windows 2000 version of Virtual PC? Or can I purchase the less expensive DOS version and install my own copy of Windows 2000?

PRZEMYSŁAW KROJCER
New York, New York

A. This is the kind of save-a-buck spirit I admire—particularly in this challenging economic climate. You can indeed save several dollars by purchasing the DOS-flavored version of Virtual PC (VPC) rather than the one smothered in rich—nay, *fatty*—Windows 2000 sauce. Virtual PC for DOS costs a mere \$100 while VPC for Windows 2000 is priced at \$250. The Windows 98 and ME versions cost \$200 each (800/950-5880, www.connectix.com).

Installing an additional OS isn't difficult. Simply launch Virtual PC, tell it you'd like to create a new machine, name that machine, and select the Guide Me option.

Next, create a new drive image and tell VPC what sort of OS you intend to install—in your case, Windows 2000. Start the virtual machine and insert your Windows 2000 CD, letting it mount automatically. Press any key to continue, choose the option to boot from the CD, and watch as Windows slowly does its stuff.

If the OS you're installing requires a floppy disk to boot, you'll have to hunt around for a Mac with a floppy drive and then use Apple's Disk Copy utility to create a disk image of that floppy. When it's time to boot the virtual



machine, drag your newly created floppy-disk image to VPC's floppy-disk icon.

A Shocking Affair

Q. In a recent column, you suggested disconnecting your Mac's modem from your surge protector to speed up the modem. Doesn't that make your modem more susceptible to damage from power surges and spikes?

ALEX GRANT
San Bernardino, California

A. Possibly. I weasel for this reason: should lightning travel from the heavens, through power lines, and into your home, anything but an industrial-grade surge protector would collapse under the strain—allowing devices attached to it to be thoroughly charred. This is why prudent souls unplug their computers (and any other electronic devices they cherish) when such celestial fireworks begin nearby. They also remove any phone cords leading into those computers (electricity can zip down phone lines too).

Even with the kind of less severe surges created by heavy-duty appliances or your local power company, some surge protectors may provide no protection at all. Cheapo surge protectors don't respond quickly enough to keep deadly surges and spikes at bay.

A quality surge protector—one that protects from most common surges but not from direct lightning strikes—costs between \$50 and \$80. But there are more-concrete ways to tell if yours is up to snuff. First of all, be sure it meets the UL 1449 Compliance Standard. This safety standard dic-

rates how much voltage is allowed to pass through the protector. In addition to this standard, look for a rating of 330V or less. Your surge protector should also have a response time of no more than five nanoseconds—one nanosecond is preferable. And a device with a failure light provides greater protection—surge protectors can burn out, leaving your gear vulnerable. Finally, get a surge protector that carries a couple of phone jacks or DSL/cable/satellite jacks. Errant electricity can travel down these connections as well, and if it does, it could fry both your modem and motherboard if you're not using a surge protector.

What's That?

Q. Each time I upgrade Mac OS or QuickTime, more extensions are added to my hard drive. Which ones can I delete?

ED SHERRILL

Jacksonville, Florida

A. This question seems to return to us with the same regularity as the monarch butterfly to California's Monterey peninsula. Unlike that airborne caterpillar, however, it will soon return no more. For better or worse, with Mac OS X, extensions and control panels are a thing of the past.

Until you make the leap to OS X, you can open the Extensions Manager control panel to see which of the OS 9 add-on doodads your Mac requires. Select Mac OS 9.1 Base (or whatever version of the OS you're running) from the Selected Set pop-up menu, and scan down the list of items. Apple has put a check mark by items it feels are essential for the proper operation of your Mac. But even this list contains far more active items than are necessary.

The trick is to learn what a particular add-on does so that you can make an informed decision about whether to

terminate it. There are loads of ways to gain this information. You could, for example, open Extensions Manager, click on an item, and then click on the Show Item Information triangle to reveal a window that provides you with a terse description of that item. I've also found it helpful to view items by package (select As Packages from Extensions Manager's View menu). This groups related items in a way that helps you understand what particular add-ons do, and it lets you enable or disable a slew of items with a single click.

There are also a few third-party tools that can help. Casady & Greene's terrific \$60 extension-managing utility, Conflict Catcher 8 (800/359-4920, www.casadyg.com), will, among other things, impart the purpose of most extensions and control panels you throw at it. Teng Chou Ming and Peter Hardman's \$20 Extension Overload (www.extensionoverload.com) is another good source of information, and like Extensions Manager and Conflict Catcher, it allows you to manage sets of extensions. Dan Frakes's hopefully-updated-to-include-Mac-OS-9.2-by-the-time-you-read-this \$20 InformInit (www.informinit.com) is another favorite. InformInit distinguishes itself by providing exhaustive information about the purpose of any extension or control panel that you're likely to encounter.

Worrisome Worms

Q. I've heard about the recent outbreaks of the Red Alert worm and wonder if my iMac running OS 9 is safe.

BEVERLY MITCHELL

Yellowknife, Northwest Territories, Canada

A. From direct attack, it is. But that doesn't mean you're out of the woods.

As you probably know, most computer viruses are designed for the enjoyment of Windows users. But cooties such as the Red Alert and Sircam worms can cause enough collateral damage to seriously muck up a Mac user's day. How so? Last summer, Code Red flooded enough ISP servers that many ISPs shut down their users' ability to run personal Web servers. Code Red also disabled a number of routers—routers used by both Mac and PC folk. Sircam wasn't nearly as devastating, but it did cause a load of annoying messages to appear in Mac users' mailboxes.

There's little you can do to protect yourself from such collateral damage. If a computer-toting sociopath decides to exploit one of the many security breaches in Microsoft's operating systems for the pure naughtiness of it, you'll just have to ride it out. In the case of a Sircam-like worm, you can create an e-mail filter that automatically trashes any files whose body contains a phrase associated with the virus (Sircam e-mail contained the phrase "I send you this file in order to have your advice," for example).

Mac-specific viruses are still quite uncommon—so much so, in fact, that I haven't contracted a virus on one

continues

Tip of the Month

I was tired of being bombarded with the VCF files (virtual business cards) people attach to their e-mail messages, so I created an e-mail rule in Outlook Express to automatically delete them. Here's how:

Select Rules from the Tools menu, click on the New button in the Mail Rules window, and name the rule (I called mine "Nuke VCFs!"). In the If section of the window, select Attachment from the pop-up menu, select Name Contains in the pop-up menu that then appears, and type .vcf in the Contains field.

In the Then portion of the window, select Remove Attachments from the pop-up menu, and then close the Mail Rules window. From now on, VCF files will be automatically stripped from incoming e-mail.

DAVID BATTINO

Cupertino, California

of my Macs in years. I still use virus-protection software to be safe, but so far it's hardly paid for itself.

That will likely change with OS X, however. The core of OS X—Unix—has been around for a long time, and there are plenty of folks out there who know how to exploit its weaknesses. When I begin doing real work in OS X, I'll be on the lookout for an OS X-compatible virus-protection utility.

Formatting for Matt

Q. I recently purchased a new, higher-capacity hard drive and moved all my old data to this drive. I now want to erase my old hard drive and am confused about the terms *initializing* and *formatting*. What's the difference, and how do you perform these procedures?

MATTHEW TILLSON
Buffalo, New York

A. When you want to erase a drive quickly—without actually wiping most of your data from the drive or checking the drive for defects—you'd choose to initialize the drive (also known as performing a high-level format). Initialization doesn't remove the data from your drive; rather, it expunges its directories—the information the drive uses to locate files. (That's one reason initializing takes just a few seconds.) Consequently, you can still recover old data from a drive after initialization.

To sweep the data off your drive entirely, you'd choose a low-level format. This wipes out not only the drive's directories but also its data. During a low-level format, the formatting software seeks out bad blocks on the drive—physical areas of the drive that the software determines are unreliable—and maps them out so your Mac can't write to them. A low-level format takes much longer than a high-level format (as long as an hour for a multigigabyte drive).

Note that while you can do a low-level format on a SCSI drive with Drive Setup 1.1.7 and later, you can't do it with an ATA drive. To more thoroughly wipe an ATA drive, you'd instead choose the Zero All Data option. This overwrites the drive with a sequence of zeros—making it far more difficult to recover data from the drive. (Note that such formatting is not up to Department of Defense standards, so if you want to *really* scramble data, use a sterner tool such as Wipe Info, part of Symantec's Norton Utilities.)

Performing each of these operations is simple. Just launch Drive Setup (found in the Utilities folder of your Applications folder in OS 9.1), select your drive, and click on the Initialize button. To perform a high-level format, click on Initialize again.

If you prefer a low-level format, select Initialization Options from the Functions menu. In the resulting window, select the Low-Level Format option (you can also choose Zero All Data in the same window). Select the options you want and click on the Initialize button to wipe your drive. **m**

Unsolicited Advice

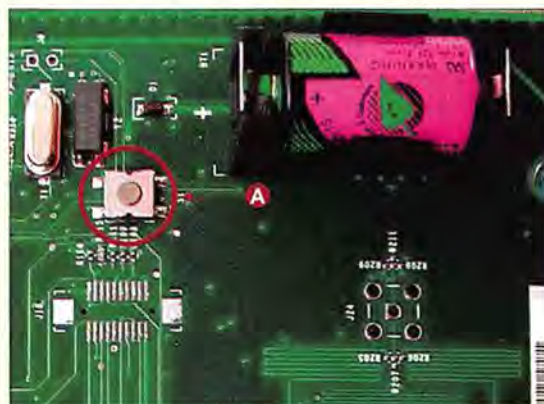
Have a seemingly dead Mac? So did I—until I gave an oft overlooked button, found in many late-model Macs, a push. Here's my story:

While testing a Power Mac G4/733, I shut down the computer, swapped in a couple of 128MB RAM modules, and pressed the power button; then . . . nothing happened. The Mac deigned to play an error tone, and that, my friends, was that.

Knowing the RAM worked perfectly well in another Mac, I zapped the PRAM by holding down the ⌘-option-P-R keys at start-up in an attempt to bring the Mac to life. This catchall correction can generally fix such wayward behavior. In this case, though, there was no change.

I then shut down the computer, opened the case, and eyeballed the RAM to be sure it was properly seated. That's when I spied the tiny CUDA button near the battery (see "Woulda, Shoulda, CUDA")—a button that, when pushed, resets the Mac more thoroughly than a PRAM zap. I gave the CUDA button a two-second push and closed the case, and the Mac booted up with nary a complaint.

Lesson learned? When zapping the PRAM won't do the trick, give your Mac's CUDA button a try.



Woulda, Shoulda, CUDA Pressing the Mac's CUDA button **A** lets you perform a reset that's even more thorough than zapping the PRAM.

Contributing Editor CHRISTOPHER BREEN oversees Macworld.com's Mac 911 forum and produces Macworld Daily Tips.

Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also send tips and questions by e-mail to mac911@macworld.com. *Macworld* pays \$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 from ZDNet's Macdownload.com (www.macdownload.com).

ADVERTISERS AND PRODUCT INDEX

Interact with the companies whose products and services are advertised in **Macworld**

ADVERTISER	INTERACT	PAGE NO.
ADTX	adtx.com/english	77
Alsoft	800-257-6381	46-47
American Power Conversion	888-289-APCC	13
Anthro	anthro.com	9
Apple Computer		C2-1
APS Technologies	800-950-2015	112-113
Aspyr Media	aspyr.com	51
CDW Computer Centers, Inc.	800-509-4239	114-115
Canon USA		35,71
ClubMac	800-260-8549	116-117
CD Cyclone	cdyclone.com	8
Corel Corporation	800-722-6735	6-7
Crucial Technology	crucial.com	32
Dataviz	800-270-0030 ext. 133	65
Destineer	boldgames.com	55
Graphic Simulations	graphsims.com	63
Harman-Multimedia.com	877-266-6202	11
IDG World Expo	macworldexpo.com	94-99
J&R Computer World	800-221-8180	119
Kensington	kensington.com	BC
La Cie	lacie.com	C3
Mac Zones	maczone.com	108-111
MacMall/Creative Computers	800-222-2808	100-107
MacSoft	gtstore.com	52
MegaHaus	800-786-1184	118
MicroMat	800-829-6227	24
Microsoft	microsoft.com/mac	2-3
MYOB	800-322-MYOB	16
Olympus America	c-4040.olympus.com	19
Roxio	roxio.com/toast5	42-43
SCGI	asiva.com	48
Seybold Seminars		72
SmartDisk	vsstech.com	49
Sonnet Technologies	800-786-6260	27
TDK	tdk.com	14-15
Thursby Software Systems	thursby.com	10
Xante Corporation	xante.com	28-29

PAGE NO.	ADVERTISER	GET-INFO
ACCESSORIES		
FURNITURE		
9	Anthro	—
HARDWARE		
COMPUTER SYSTEMS		
C2-1	Apple Computer	—
116-117	ClubMac	98
108-111	3Mac Zones	72
100-107	MacMall/Creative Computers	132
49	SmartDisk	74
HARD DISK STORAGE		
77	ADTX	82
112-113	APS Technologies	56
8	CD Cyclone	127
32	Crucial Technology	—
118	MegaHaus	108
MISCELLANEOUS		
13	American Power Conversion	73
8	CD Cyclone	127
32	Crucial Technology	—
11	Harman-Multimedia.com	—
BC	Kensington	1
C3	La Cie	—
14-15	TDK	—
MONITORS/ GRAPHICS BOARDS		
C3	La Cie	—
27	Sonnet Technologies	133
PRINTERS		
28-29	Xante Corporation	113
SCANNERS & DIGITAL CAMERAS		
35,71	Canon USA	23
19	Olympus America	7
MAIL ORDER		
112-113	APS Technologies	56
114-115	CDW Computer Centers, Inc.	2
116-117	ClubMac	98
119	J&R Computer World	57
108-111	Mac Zones	72
100-107	MacMall/Creative Computers	132
118	MegaHaus	108
SERVICES		
TRADESHOWS/CONFERENCES		
94-99	IDG World Expo	—
72	Seybold Seminars	—
SOFTWARE		
BUSINESS/PRODUCTIVITY		
65	Dataviz	142
2-3	Microsoft	—
16	MYOB	171
10	Thursby Software Systems	124
ENTERTAINMENT		
51	Aspyr Media	91
55	Destineer	148
63	Graphic Simulations	92
52	MacSoft	30
GRAPHICS/DTP		
6-7	Corel Corporation	79
48	SCGI	—
MULTIMEDIA		
42-43	Roxio	140
UTILITIES		
46-47	Alsoft	140
24	MicroMat	37

Macworld

Conference & Expo™



Macworld Conference & Expo

The Moscone Center
San Francisco, California

Conferences **January 7-11, 2002**

Expo **January 8-11, 2002**

Register Online

by January 6 for special savings

www.macworldexpo.com

Owned and Managed by





Keynote*

Tuesday, January 8, 2002

Feature Presentation*

Wednesday, January 9, 2002

BRAND NEW!

Macworld/Power Tools

January 7 – January 8, 2002

Workshops

Tuesday, January 8, 2002

Macworld/Pro Conference Program

January 9 – January 11, 2002

Macworld/Users Conference Program

January 9 – January 11, 2002

MacBeginnings

January 9 – January 11, 2002

Exposition Hall

Tuesday, January 8

10:30 am – 6:00 pm

Wednesday, January 9

10:00 am – 6:00 pm

Thursday, January 10

10:00 am – 6:00 pm

Friday, January 11

10:00 am – 4:00 pm

* Keynote and Feature Presentation are open to Platinum Pass, Super Pass, Pro Conference, Users Conference, Power Tools Conference and Workshop attendees ONLY. Seating is on a first-come, first-serve basis.

Owned and Managed by



© 2001 IDG World Expo. All rights reserved.
All other trademarks contained herein are
the property of the respective owners.

Flagship Sponsors

Macworld

Macworld.com

 **MacCentral**

Macworld

Conference & Expo.

The must-attend staple of the Mac community in 2002!

Macworld Conference & Expo is more than a conference and more than an exposition. For anyone that uses a Mac in their careers or personal lives, or is interested in Mac hardware, software and peripherals, Macworld Conference & Expo is the best place to enhance your knowledge.

As an attendee at Macworld Conference & Expo, you will join tens-of-thousands of users...

- to learn from the extensive conference programs
- network with peers
- hear about the leading solutions
- test-drive the newest products and services
- demo the latest applications
- gain recognition
- purchase technologies designed to improve your business and your life

The evolution continues.

The spring 2001 release of Mac OS X put unprecedented power and interface elegance into the hands of Mac users. As we prepare for Macworld Conference & Expo/San Francisco, the imminent release of Mac OS X version 10.1 evolves the story of the most significant change in the Macintosh user's computing experience since the introduction of the PowerPC. We're pleased to present you with a comprehensive conference agenda that looks under the hood of the new OS. With over 30 conference sessions specifically covering Mac OS X topics — and just about every session discussing how Mac OS X affects their application — we've got Mac OS X covered for you with content that is available exclusively at Macworld Conference & Expo.

Join us and expand your Macintosh horizons!

Visit www.macworldexpo.com for complete schedules and program updates!



**Register online with your Priority Code
by January 6, 2002 to take advantage
of discounted rates!** Priority Code A-MWD6

Keynote Address*

Tuesday, January 8

8:45 am – 10:15 am

Start off your week by hearing groundbreaking and news-making presentations first-hand from Apple executives, industry leaders and alliances. The Macworld Conference & Expo Keynote has a long-standing tradition of delivering high-powered executives that set the pace for the future of the Mac OS platform. The Keynote sets a tone of excitement and enlightenment that will stay with you throughout your week at Macworld Conference & Expo as you uncover what's new, what's next and what's hot for the Macintosh community.

Feature Presentation*

Wednesday, January 9

9:30 am – 10:30 am

This ain't your parents' Mac: The Present and Future of the Mac Platform

Rick LePage, Editor-in-Chief, Macworld

Come hear what industry pundits think about the direction of the Mac platform. Apple offers an incredible range of products that incorporate innovative and functional design with incredible applications, superfast processors and, of course, Mac OS X. What does this all mean for the future of the Mac? In this panel discussion, learn why the Mac platform will continue to drive innovation and remain the platform of choice for creative professionals, web professionals, educators, consumers, techies and more.

* Keynote and Feature Presentation are open to Platinum Pass, Super Pass, Pro Conference, Users Conference, Power Tools Conference and Workshop attendees ONLY. Seating is on a first-come, first-serve basis.

Special Interest Boulevard

After its debut last winter, the Special Interest Boulevard returns to San Francisco featuring 100 of the coolest Mac developers, all boasting products that span a wide array of needs and interests.

As you walk along the Special Interest Boulevard at Macworld Conference & Expo/San Francisco 2002, you will find Mac developers who specialize in the following types of products and solutions:

- Digital Media
- Small Business
- Sci-Tech
- Education/Assistive Technology

BRAND NEW!

Macworld/Power Tools

The Macworld/Power Tools Conferences present attendees an opportunity to spend two full days immersed in training on the products that they rely on to do their jobs every day. Taught by industry experts, consultants, authors, product engineers and power users, these focused two-day conferences provide an immersion experience for attendees who want to take their skill sets to a new level.

Birds of a Feather Meetings

Open to ALL registered Macworld attendees

Birds of a Feather Meetings (BOFs) are casual, informal discussions where attendees can meet like-minded Mac users. They are great ways to network with other people, discuss resources for doing your job, and get answers to tough questions. To ensure topics are current and top of mind, a complete listing of the meeting topics will be available prior to the show at www.macworldexpo.com!

Digital Art Contest & Gallery

This will be the fourth year that the Macworld Conference & Expo Digital Art Gallery will be on the show floor at Macworld Conference & Expo. Artists are now able to use the new speeds of the Macintosh computer and innovative graphic software to produce artwork that is getting the attention of the art world and attendees at Macworld Conference & Expo.

The contest is judged by some of the digital art community's respected leaders who choose 30 digital masterpieces. Winning artwork is first displayed in a gallery setting on the show floor at Macworld Conference & Expo/San Francisco 2002 and then travels across the country to galleries and other venues.

Sponsored by 

Apple Solution Experts – Free Technical Advice!

One of the most popular resource areas in the Internet Café is the Apple Solution Experts counter. Apple Solution Experts are independent consultants, trainers, and resellers specializing in Apple products and solutions who will be offering free technical support to Macworld Conference & Expo attendees. Take advantage of this opportunity to get help directly from an expert.

Sponsored by Apple Solution Experts 

Macworld Conference & Expo Guided Tours

With continuous rave reviews we are excited to bring back the Macworld Conference & Expo Guided Tours. Both individual and group tours will be available!

Whether you are a new attendee to Macworld Conference & Expo, or a returning Mac user, Apple User Group volunteers can help you find the products, services, solutions and companies you want to see on the Exhibit floor. These knowledgeable guides will assess your needs and escort you right to what's hot, will help you find seats for floor demonstrations, and bring you to the people who have answers to your questions. We urge you to take advantage of this invaluable free service.

Macintosh Gaming Area

The Macintosh is the hottest gaming platform around! Discover the latest Mac gaming products from the top Mac publishers within the Macworld Conference & Expo Macintosh Gaming Area. This area also offers the Mac Gaming Theater where you'll see the latest, greatest games for the Mac. You can partake in exciting hands-on demonstrations of the games in action. If you enjoy playing Mac games, you're not going to want to miss the Mac Gaming Theater, sponsored by Apple.





BRAND NEW! Macworld/Power Tools Conferences

January 7-8, 2002

The Macworld/Power Tools Conferences were designed in response to your request for more in-depth training on specific applications. Combine Macworld/Power Tools with a Macworld/Pro or Macworld/Users conference and you will achieve the ultimate training experience! This is an opportunity for dynamic training on all levels at the most comprehensive Mac event!

PA The Macworld Conference on Professional Photoshop

Photoshop is the "killer app" that changed the lives of thousands of graphics and creative professionals. Macworld Conference & Expo is pleased to present an advanced conference on Photoshop presented by a faculty of experts that will unlock this amazing tools secrets, inspiring you to take your projects in new directions. 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.

Monday, January 7

9:30 am - 5:30 pm

Opening Remarks: The History of Photoshop
Digital Imaging Essentials
Layer Secrets
The Power of Vector Shapes & Styles
Real World Masking & Compositing
Professional Retouching Techniques

Tuesday, January 8

10:45 am - 6:45 pm

All About Type
Special Effects
Color Management — In Plain English Please
Taking It to the Web
Actions & Droplets: Photoshop for Lazy People

Workshops

Begin the week with one of our information packed full-day workshops that provide in-depth training on key products and technologies. You can find full workshop descriptions at www.macworldexpo.com.

Tuesday, January 8

12:00 pm - 7:00 pm

WA JavaScript Bootcamp
WB DV Revolution Workshop — Digital Video Production from Concept to Completion
WC Practical Introduction to Mac Networking
WD Getting Started in Interactive Development
WE PDF Secrets for Print or Web

PB The Macworld Conference on FileMaker Pro

FileMaker is the most popular database for the Macintosh because it is so easy to use. In the past seven years, the capabilities in FileMaker have been increased significantly. FileMaker has a robust scripting and calculation language, web enablement technologies and support for emerging technologies like JDBC, Java, XML and Citrix. These areas and more will be covered in the Professional FileMaker Conference at an intermediate to advanced level.

Monday, January 7

9:30 am - 4:45 pm

Opening Remarks: The Future of FileMaker
Relational Database Design
Intermediate Scripting and Calculations
Emerging Technologies
FileMaker and the Web

Tuesday, January 8

10:45 am - 6:45 pm

Advanced Scripting and Calculations
The Power of Plug-ins
So You Want to be a Developer
Security
FileMaker as a Business Tool

WF Dr. Mac's "Getting Comfortable with Mac OS X" Workshop
WG The Total Communications Solution: Integrating Voice, Data, and Applications
WH QuickTime Streaming Workshop
WI Mac Efficiency and Power User Tips
WJ Integrating Professional Publishing Tools
WK Getting Started with AppleScript
WL Mac OS X In-Depth

PC The Macworld Conference on Final Cut Pro

Final Cut Pro is the video creation software that has finally delivered on the promise of the DV evolution. 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.

Join **Josh Mellicker** and **Steve Martin** from DVcreators.net, the world's two top Final Cut Pro gurus, for a two-day seminar that will empower you to navigate Final Cut Pro's treacherous learning curve with ease and clarity.

Whether you'll be creating corporate training videos, feature films, educational videos, marketing CD-ROMs, documentaries or web video shorts, this seminar will reveal a vast landscape of possibilities with this powerful video creation tool.

Monday, January 7

9:30 am - 5:30 pm

Opening Remarks: The History of Final Cut Pro
Building the Ultimate Desktop Movie Studio
Editing Essentials
Basic Title Techniques — Art and Function
Transitions, Filters and Keyframing
Compositing and Motion Graphics
Audio Post Production

Tuesday, January 8

10:45 am - 6:45 pm

Editing Aesthetics and Storytelling
Tricks, Tips and Timesavers: PowerUser Session
Software Integration
Hollywood Special Effects
Final Mastering and Output

Macworld/Pro Conference Program

January 9-11, 2002

The Macworld/Pro Conference agenda presents topics of interest to the computing professional who relies on the Macintosh as his/her platform of choice. We have a new conference agenda that offers the most sophisticated training available on Mac networking, digital video (with an emphasis on QuickTime), professional publishing, Mac systems administrations for large organizations, and detailed technical presentations that take you inside Mac OS X.

Track Descriptions:

Macintosh Networking & Communications

This track presents techniques and technologies associated with deploying Macintosh LANs, WANs, and Internet/Intranet access. These technical presentations take you inside the protocols and services you encounter when deploying connected Macintoshes. Get the most of your network or make it state of the art — these tactical sessions will show you how.

Sessions Include:

Mac Networking Update

On the Trail of Network Problems

Macintosh Network Security in a Changing World

Advanced AirPort Networking

The Art of Self-Defense on the Web

Securing Your Internet Connection —
Updated for Mac OS X

Network Q & A — Ask the Experts

Digital Video and Filmmaking

The Mac is a mainstream tool in the digital filmmaking arenas. Apple technology provides best of class tools to produce and deliver the highest quality content. Attend sessions in this track to hear from industry experts and top practitioners on how to use these tools to create quality material and delivery experiences for your customers. This track mixes practical tools advice with brilliant industry perspectives to deliver a composite picture of creating and distributing successful digital video projects.

Sessions Include:

AFI Presents: Digital Filmmaking at the Crossroads

Digital Filmmaking Visualization and PreProduction

Digital Filmmaking Distribution: Web Streaming,
HD Digital Cinema and Beyond

QuickTime Streaming Secrets

DVD Now Means: Digital Visionary Device

QuickTime on the Web

Guerrilla Marketing for Independent Filmmakers

Authoring and Delivering Interactive Video

Professional Publishing

Hear from industry experts how to be more profitable, efficient, competitive and employable in the creative arena. You'll gain knowledge that will help you run a leaner, meaner and more productive creative group. These sessions will show you market opportunities and provide practical advice to improve your bottom line.

Sessions Include:

Mac OS X: Networked Workflows for Publishing

Mac OS X and PDF — The REAL Story

ColorSync Workflow Demonstration and Theory

Real World ColorSync

Introduction to AppleScript for Creative Workflows

Web Development in Mac OS X: The Ultimate Web
Publishing Platform

Mac OS X In-Depth

This track of advanced sessions takes you under the hood of Mac OS X — the new operating system for the Macintosh. You'll learn about Mac OS X's Unix heritage and why this is important for advanced usage and management mastery. Also covered are sessions on how popular add-on technologies like AppleScript and Java are affected by OS X. You'll hear about housekeeping issues in OS X such as backup and font management. Advanced topics on the advanced operating system — Mac OS X. Only available at Macworld/Pro.

Sessions Include:

NetInfo for System Administrators

Mac OS X Sysadmin Concepts

Taking Control of Mac OS X

Mac OS X Server: In-Depth

Backup, Archiving and File Transfers for Mac OS X

Using Unix Software with Mac OS X

Mac OS X Security Features and Fundamentals

It's a Darwin World: Mac OS X and Open Source

Mac Manager

The Mac continues to be a platform in transition. Organizations that depend on the Mac OS now are facing new software and hardware options that require a considerable amount of strategic planning to ensure successful deployment. This track features sessions that look at the needs of organizations using the Mac and present the methods, practices and technologies that are defining the role of the Macintosh manager.

Sessions Include:

Ask Questions First, Reinstall Later: Hardcore Theory-
Based Troubleshooting for Veteran MacTechs

Using Java on the Mac

Taking Over Your Company's Macs: Becoming "Mac
IS" for Companies without Mac Support

Building and Maintaining a Macintosh Datacenter

Travel & Venue



ETMI is once again the official travel company for the Macworld Conference & Expo/San Francisco 2002 taking place January 7-11, 2001 in San Francisco, CA.

Hotel Reservation Instructions

To Make Hotel Reservations for Macworld Conference & Expo/San Francisco 2002:

- Book on-line using www.macworldexpo.com and receive immediate hotel confirmations!

For Macintosh users, Internet Explorer 4.X or greater OR Netscape 4.1 or greater is required. For PC Users, Internet Explorer 4.01 with Service Pak 2 or greater is required.

- Call toll free at 1-866-254-1103 in the US or 1-312-396-2127 outside the US, Monday - Friday from 9:00 am - 7:00 pm EST.

For exciting updates of additional hotels and the lowest negotiated rates, please check the Travel page on the Macworld Conference & Expo Web site at www.macworldexpo.com.

Airline Reservation Instructions

Don't forget to book your airline tickets. ETMI makes it convenient by booking Hotel reduced rates and airline discounted fares with just one phone call.

- Contact ETMI by email at Air@event-travel.com. We can book your reservations for you on any airline as well as offer exclusive discounts for Macworld Conference & Expo/San Francisco 2002 registrants on American Airlines and US Airways.
- For your convenience, you may also call the airlines directly as noted below. Please make sure to mention the tour code to take advantage of these low fares.

American Airlines	US Airways
800-433-1790	877- 874-7687
Tour Code: A0112BA	Tour Code: 96192163



**Register Today
& Save!** Priority Code A-MWD6

Macworld/Users Conference Program



Macworld/Users Conference Program

January 9-11, 2002

The Macworld/Users Conference continues to be one of the best educational values anywhere offering over 70 conference sessions on a variety of exciting topics all presented by industry experts. Get your first taste of Mac OS X, learn all about making Desktop Movies, Digital Photography and get tips on using your favorite applications. We've also got special tracks of sessions for Creative Professionals, Educators, and Small Business owners. We've added new sessions on how your Mac can act as a Digital Hub to connect many of your favorite personal electronic devices.

Wednesday, January 8

- S01 Making the Transition to Mac OS X
- S02 Crashed Again! How the Pros Troubleshoot Macintosh
- S04 Your Mac as a Digital Hub
- S09 Selecting the Right Tools for Your Small Business
- S06 Getting Started with Home Movie Making
- S07 Photoshop Digital Creation: Uncanny Realism
- S08 FileMaker Pro Supersession
- S09 High-performance Computing for the Sciences on the Macintosh
- S11 Using the Classic Environment in Mac OS X
- S12 "Macintosh Bible" Roundtable
- S13 Wireless Networking Essentials
- S14 iTunes Rocks — I Want My MP3
- S15 Going Virtual: A Small Business Guide to Creating a Virtual Small Business
- S16 Making iMovies with David Pogue
- S17 Mac OS X for Musicians
- S18 Introduction to 3D Animation
- S19 Science Education
- S22 The Care and Feeding of Hard Disks
- S24 Mac OS X and the Digital Lifestyle
- S25 Making a Life While Making a Living as Independent Professionals, Consultants and Entrepreneurs
- S26 Editing Techniques for iMovie 2
- S27 It's the FONTS
- S28 Microsoft Office 10 Inside and Out
- S29 Macs in the Law Office

Thursday, January 10

- S31 One User, Two User... Red Mac, Blue Mac
- S33 Internet Security for the Rest of Us
- S35 Wireless Networking for Small Business
- S36 Shooting Great DV
- S37 Photoshop: Ho-hum to Wow! in 60 Seconds
- S38 From 0 to 360 Degrees in QuickTime VR
- S39 Return on Investment: Can Your Community Pay the Bills?
- S41 Troubleshooting Mac OS X
- S42 PalmPilot & Macintosh — A Match Synched in Heaven
- S43 Creating Wireless Computer Labs
- S45 Small Business Management Made Easy — With an All-Mac Business Management System
- S46 Cool QuickTime Tools
- S47 Digital Photography Studio Essentials for Professional Photographers
- S48 Gunfight at the Page Layout Corral
- S49 Why Should You Care About MPEG-4
- S53 Education Has Moved Online
- S54 How to Digitally Archive Your Family History
- S55 The Total Communications Solution: Integrating Voice, Data, and Applications
- S57 Recipes for Success with Adobe Photoshop Elements
- S58 Just Flash It

Friday, January 11

- S61 Troubleshooting Classic in Mac OS X
- S62 Best of Mac Secrets
- S63 Transitioning to Mac OS X in Higher Education
- S65 A Mac User's Survival Guide to Working with Windows Clients
- S66 Getting the Most Out of iMovie: Tips and Tricks for Advanced Movie Making
- S67 Messages/Narrow Pipe
- S68 Xtending QuarkXPress with Xtensions
- S71 Backing Up Under Mac OS X
- S75 Selecting the Right Macs for Your Small Business

Please note: Conference sessions and speakers are subject to change.

Conference Packages

BRAND NEW! Platinum Pass

2 Days of Macworld/Power Tools Conference Sessions, 3 Days of Macworld/Pro Conference Sessions, Lunch (Jan. 7-11), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)
Register for 4 Platinum Passes and get the 5th FREE!

Super Pass

Workshop (Jan. 8), 3 Days of Macworld/Pro Conference Sessions, 3 Days of Macworld/Users Conference Sessions, Lunch (Jan. 8-11), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)
Register for 4 Super Passes and get the 5th FREE!

Macworld/Pro Conference — 3 Days

3 Days of Macworld/Pro Conference Sessions, Lunch (Jan. 9-11), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)

BRAND NEW! Macworld/Pro Conference — Day Pass

1 or 2 Days of Macworld/Pro Conference Sessions (Wed/Thurs/Fri), Lunch on selected Conference Day(s), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)

BRAND NEW! Macworld/Power Tools Conference

2 Days of Macworld/Power Tools Conference Sessions, Lunch (Jan. 7-8), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)

Workshop

Workshop (Jan. 8), Lunch on Workshop Day (Jan. 8), Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)

Macworld/Users Conference — 3 Days

3 Days of Macworld/Users Conference Sessions, Keynote, Feature Presentation, MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11)

Exhibits Only Package

MacBeginnings, Birds of a Feather Meetings, and Exhibit Floor (Jan. 8-11) (*Does NOT include access to Keynote or Feature Presentations*)



Register Today & Save!

Priority Code A-MWD6

www.macworldexpo.com ■ For information, call toll free 1-800-645-EXPO

NEW Power Mac G4!

Up to 512MB FREE!



Authorized Reseller

733MHz, Dual 800MHz and 867MHz!

Apple delivers two powerful systems with a PPC™ G4 processor, DVD capabilities and easy expandability in either a portable or desktop version. And with MacMall's incredible prices and service you'll find purchasing one of these two exceptional systems easy and enjoyable!

The Power Mac G4 puts tremendous creative resources at your fingertips with the revolutionary SuperDrive (DVD-R/CD-RW) and award-winning digital video editing and DVD authoring software. You can choose from three models: the dual 800MHz or 867MHz model with a SuperDrive or the 733MHz model with a CD-RW.

Power Macintosh®— redefining computing speed!

- Up to 867MHz PPC G4 processor; or dual 800MHz PPC G4 processors
- Up to 256MB of PC133 SDRAM
- Up to 80GB HD & up to 7200RPM
- CD-RW drive or SuperDrive (DVD-R/CD-RW drive) ■ 56K modem
- Three 3.5" expansion bays with support for up to 232GB of storage
- NVIDIA GeForce2 MX graphics card with 32MB SDRAM or TwinView with 64MB SDRAM for dual display support (800MHz model)
- Standard headphone jack
- Multiple audio output capabilities
- Two FireWire ports ■ Two USB ports
- AirPort™ Card slot ■ 10/100/1000BT
- iMovie 2, QuickTime, iTunes, iDVD (requires SuperDrive), FAXstf and more!

Astonishing processing power!

Apple has once again managed to do the near impossible, improve upon perfection with the introduction of its new, faster PowerBook G4.

The PowerBook G4 is a full-featured system with everything you need to do your best work on the move such as a PowerPC G4 processor, up to 30GB of hard drive space and an AirPort card pre-installed on the 667MHz models.

Revolutionary design!

- 1 inch thin and only 5.3lbs.
- Durable titanium casing
- Slot loading DVD-ROM drive for playback of DVD-Video, DVD-ROM, DVD-RAM and CD-ROM

Supercomputer performance!

- Up to 500MHz PPC™ G4 processor with Velocity Engine™
- Up to 5 hours of run time
- 128MB or 256MB of PC100 SDRAM
- Easy expandability through FireWire®, USB and PC Card slot
- Built-in 2D/3D graphics acceleration with integrated ATI RAGE Mobility 128 video controller w/AGP 2X
- Built-in 10/100BASE-T Ethernet

PowerBook Accessories

#959645	PowerBook G4 Additional AC Adapter	\$69
#956072	PowerBook G4 Additional Battery	\$129
#953968	Apple Pro Keyboard	\$59
#953969	Apple Pro Mouse	\$59

“My new Power Mac G4 is so blazing fast, I've doubled my productivity and reduced my frustration in Photoshop!”

—Janine Ahuja, Art Director

Apple Power Mac G4 starting at

\$1,694!

MacMall

We'll beat any price or competitive promotion on any Mac computer • Free

up to
**256MB
FREE!**

with any Apple Titanium PowerBook G4 purchase.

PLUS... Your choice of a FREE Zip Drive, Targus Case or Palm m100!



Light. Speed. The New 667MHz Titanium PowerBook G4!

AirPort-ready:
The PowerBook G4 is ready for wireless networking with two built-in antennas. The 667MHz model has an Apple AirPort card pre-installed!

15.2-inch mega-widescreen format:
This 15.2-inch display with its 1152x768-pixel resolution is perfect for laying out your video or graphics projects simultaneously!

Full-size keys:
Built-in keyboard includes 12 function keys and 4 arrow keys.

Built-in Gigabit Ethernet:
Features built-in Gigabit Ethernet (10/100/1000 BASE-T) for quick access to a corporate network, DSL modem or cable modem.



5 hour Battery & Radeon Graphics:
Includes a 55-watt-hour lithium-ion battery that provides 5 hours of battery life and the ATI Mobility RADEON with unparalleled 2D, 3D and multimedia graphics performance!

PC Slot:
With the PC slot you can add SCSI adapters, compact flash memory, flash media readers and more.

Power, performance and speed:
Includes a PowerPC G4 processor, room for up to 1GB of RAM and up to 30GB of hard disk space—all beautifully designed into a titanium case. The entire PowerBook only measures 13.5 x 9.5 x 1 inches and weighs just 5.3 pounds!

the Mac
Professional's Choice

BookEndz Docking Station
Convert your PowerBook into a desktop in seconds!
Titanium only \$244⁹⁵! #961874
Black only \$229⁹⁵! #961887

Apple 22" Cinema Display
• 1600 x 1024 max. res.
• 22" (diagonal image)
• Active-matrix liquid crystal display
\$2,499! #951070

Adobe Web Collection 3.0
• Adobe GoLive 5.0
• Adobe Photoshop 6.0
• Adobe Illustrator 9.0
• Adobe LiveMotion
\$999! #954100

Nikon Coolpix 990 Digital Camera
• 3.34 Megapixel CCD
• 3X optical & 4X digital zooms
\$529! #960780 Mfr. redonditioned.

Wireless Networking Apple AirPort Base Station/Card
• 11Mb per second
• Up to 10 users
• 150' range
AirPort Base Station #57373 **\$299!**
AirPort Card #962119 **\$99!**

PowerBook Series			FREE RAM	TOTAL RAM	Hard Drive	DVD Drive	AirPort Card	56K Modem	USB/FireWire Ports	iMovie 2	iTunes	Price!	or as low as
Order	MHz	RAM											
#956566	400	128MB	256MB*	384MB	10GB	Yes	No	56K	Two/One	Yes	Yes	\$1,794*†	\$50/mo*
#963907	550	128MB	128MB*	256MB	20GB	Yes	No	56K	Two/One	Yes	Yes	\$2,194*	\$62/mo*
#963908	667	256MB	256MB*	512MB	30GB	Yes	Yes	56K	Two/One	Yes	Yes	\$2,994*	\$84/mo*

Power Mac G4 Series			FREE RAM	TOTAL RAM	Hard Drive	56K Modem	Drive	Gigabit Ethernet	Video	Price!	or as low as
Order	MHz	RAM									
#961579	733	128MB	256MB*	384MB	40GB	Yes	CD-RW	Yes	NVIDIA GeForce2 MX	\$1,694*	\$48/mo*
#961580	867	128MB	512MB*	640MB	60GB	Yes	CD-RW	Yes	NVIDIA GeForce2 MX	\$2,494*	\$70/mo*
#961582	800 (2)	256MB	512MB*	768MB	80GB	Yes	DVD-R/CD-RW	Yes	NVIDIA GeForce2 MX Twin	\$3,494*	\$98/mo*

*Own this Titanium PowerBook G4 400MHz for as low as \$50/month with the **New MacMall EZ Payment Plan!** Call for details.
†Professional installation fee of \$30 required for free MacMall RAM offer. Hurry, MacMall RAM promotion ends 12/03/01. †Limited Availability. Actual carrying case may differ from shown.

For your best price call 1-800-217-9492 macmall.com Priority Code: ZMWD1C3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!
Call for details.

Total Editing Solutions for Digital Video Professionals!

Turnkey systems featuring
today's hottest DV products!

Power Mac G4 733MHz Final Cut Pro Editing System

A digital video editing bundle containing all the tools you need to create stunning video masterworks!

- Power Mac G4 733MHz with a total of 640MB RAM, 40GB HD and CD-RW
- 60GB Videoraid 2/60 SCSI APD 39160 Storage Controller ■ Matrox RTMac
- Final Cut Pro 2.0
- SmartSound SonicFire Pro
- Boris Graffiti
- La Cie electron19Blue III 19" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Contour Shuttle Pro Multimedia Jog/Shuttle Controller
- Harman/Kardon SoundSticks Speakers

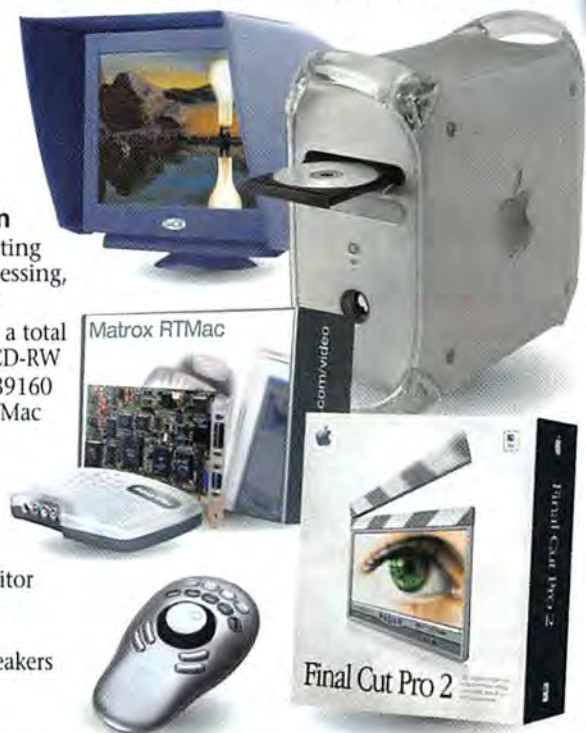
only **\$7,293!** #963178

Power Mac G4 800MHz DP Final Cut Pro Editing System

For even more digital video editing power, get the speed of dual processing, more memory and more storage!

- Power Mac G4 800MHz DP with a total of 768MB RAM, 80GB HD and CD-RW
- 60GB Videoraid 2/60 SCSI APD 39160 Storage Controller ■ Matrox RTMac
- Final Cut Pro 2.0
- SmartSound SonicFire Pro
- Boris Graffiti
- La Cie electron19Blue III 19" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Contour Shuttle Pro Multimedia Jog/Shuttle Controller
- Harman/Kardon SoundSticks Speakers

only **\$8,693!** #963269



Power Mac G4 733MHz Adobe Premiere Editing System

Never before has so much digital video firepower been concentrated in such a convenient place. Get everything you need to create and edit video, develop rich multimedia Web sites or serve up thousands of concurrent video streams in one package!

- Power Mac G4 733MHz with a total of 640MB RAM, 40GB HD and CD-RW

- 60GB Videoraid 2/60 SCSI APD 39160 Storage Controller
- Adobe Premiere 6.0
- La Cie electron19Blue III 19" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Sony DVMC-DA2 Digital Video to VHS Converter
- Harman/Kardon SoundSticks Speakers

only **\$5,293!** #963279

Power Mac G4 867MHz DVD Authoring Bundle

- Power Mac G4 867MHz with a total of 640MB RAM, 60GB HD and SuperDrive
- 60GB Videoraid 2/60 SCSI APD 39160 Storage Controller
- Matrox RTMac
- DVD Studio Pro ■ Final Cut Pro 2.0
- SmartSound SonicFire Pro

- Boris Graffiti
- La Cie electron19Blue III 19" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Contour Shuttle Pro Multimedia Jog/Shuttle Controller
- Harman/Kardon SoundSticks Speakers

only **\$9,692!** #963275



All the tools you need to author your own DVDs!

MacMall



Stock Up on DVD-Rs at MacMall!
Apple DVD-R
Media Kit 5-Pack only **\$49⁹⁵** #957745

We'll beat any price or competitive promotion on any Mac computer • Free

Pro Video to Go!

Includes 500MHz Titanium PowerBook G4 with 512MB SDRAM and 20GB Ultra ATA Drive PLUS Final Cut Pro 2, Boris Graffiti, SonicFire Studio, Sony GV-D900 VTR, La Cie 48GB PocketDrive and Contour ShuttlePro Multimedia Jog Controller

all this for only **\$7494!** #961707



Authorized Reseller



CineWave DV Editing Systems!

Power Mac G4 867MHz CineWave SD Analog System

- Power Mac G4 867MHz with a total of 640MB RAM, 60GB HD and CD-RW
- CineWave Base System
- CineWave Pro Analog Option
- MaxArray LVD 72GB Ultra SCSI Dual Bus ■ APD 39160 Storage Controller
- Ecrix Tape Back Up System
- Final Cut Pro 2.0 ■ Cleaner 5.0
- SmartSound SonicFire Pro
- La Cie electron22Blue II 22" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Contour Shuttle Pro Multimedia Jog/Shuttle Controller
- Harman/Kardon SoundSticks Speakers

all this for only **\$19,094!** #963179

#963180 Power Mac G4 800MHz Dual Processor
CineWave SD Analog System **\$20,094**

Includes the Power Mac G4 800MHz Dual Processor with a total of 768MB RAM, 80GB hard drive and CD-RW plus all of the other additional features listed above!

Power Mac G4 867MHz CineWave SD Digital System

- Power Mac G4 867MHz with a total of 640MB RAM, 60GB HD & CD-RW
- CineWave Base System
- CineWave Pro Analog Option
- MaxArray LVD 72GB Ultra SCSI Dual Bus ■ APD 39160 Storage Controller
- Ecrix Tape Back Up System
- Final Cut Pro 2.0 ■ Cleaner 5.0
- SmartSound SonicFire Pro
- La Cie electron22Blue II 22" Monitor with Hood
- Sony SSM14N5U 14" Color Monitor
- Contour Shuttle Pro Multimedia Jog/Shuttle Controller
- Harman/Kardon SoundSticks Speakers

all this for only **\$20,083!** #963181

#963182 Power Mac G4 800MHz Dual Processor
CineWave SD Digital System **\$21,083**

Includes the Power Mac G4 800MHz Dual Processor with a total of 768MB RAM, 80GB hard drive and CD-RW plus all of the other additional features listed above!



Adobe® Illustrator® 10

Adobe
upgrade
\$138^{99!}
#963236

Final Cut Pro 2 with Contour ShuttlePRO

only
\$995! #963225

Lowel Light T1-92 Total-Light Trans Kit

only
\$868^{95!} #962562

DSR-PD150 Digital Camcorder

SONY
only
\$3,499^{95!} #961666

the Mac Professional's Choice

Minolta DiIMAGE 7
Digital Camera
MINOLTA
only
\$1,289! #796336

Lightwave 3D 7.0

upgrade
\$479^{99!}
#210684

Macromedia FreeHand 10

upgrade
\$118^{89!} #958097

Sorenson Video 3 Pro

upgrade
\$212^{99!}
#962250

AG-DV1000 Mini DV ProLine VTR Panasonic

only
\$1,049^{95!} #961457

CineStream Streaming Software

only
\$428^{99!}
#948567

For your best price call 1-800-217-9492 macmall.com/pro Priority Code: ZMWD1C3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!
Call for details.

Apple iBook G3

plus an Extra 256MB FREE RAM!

Models featuring DVD/CD-RW Combo drives!

**Apple iBook notebooks—
designed to fit your digital life!**

The first thing you'll notice is that the iBook™ weighs just 4.9lbs. and is only 11.2 inches wide, 9.1 inches deep and a mere 1.35 inches thick!

Choose your new iBook with a CD-ROM, DVD-ROM, CD-RW or a Combo drive which combines the capabilities of CD-RW & DVD playback.

iBook features include:

- 500MHz PPC™ G3 processor
- 256K on-chip L2 cache

- 64MB or 128MB of PC100 SDRAM; one available slot for up to 640MB
- 24X CD-ROM, 6X DVD-ROM, 8x4x24 CD-RW or CD-RW/DVD-ROM Combo
- ATI RAGE Mobility 128 graphics controller with 8MB SDRAM
- 10GB hard drive ■ 56K modem
- 10/100BT ready for DSL/cable modem

Apple's new iMac—the flexible center of your digital world!

New iMac™ models come fully loaded with the most advanced features—speeds up to 700MHz, an engaging new interface, a CD-RW or 24X CD-ROM drive and tons of software. You can easily perform processor-intensive tasks as well as any digital projects like burning CDs or making desktop movies!

iMac features include:

- Up to 700MHz G3 PowerPC processor
- 256K L2 cache ■ Up to 40GB HD
- Up to 256MB SDRAM; exp. to 1GB
- CD-RW or 24X CD-ROM drive
- ATI RAGE 128 Ultra w/16MB SDRAM
- 15" display ■ 56K V.90 modem
- 10/100BT Ethernet ■ Airport™ ready
- 2 FireWire® and 2 USB ports
- Standard VGA output (15-pin mini D-Sub); support for video mirroring
- 30 days free EarthLink Internet service
- Software includes*: Mac OS X, AppleWorks 6, iTunes, QuickTime 4, iMovie™ 2, Palm Desktop, Bugdom, Nanosaur, Cro-Mag Rally, Quicken Deluxe 2001, FAXstf, Netscape Communicator, Microsoft Outlook Express, Microsoft Internet Explorer†

iBook Accessories

#57369	Apple AirPort Card	\$99
#57373	Apple AirPort Base Station	\$299
#959646	Additional iBook Recharge. Battery	\$129
#959645	Additional iBook AC Adapter	\$69
#959647	iBook AV Cable	\$19

“My compact and light iBook is so flexible and versatile that I can go anywhere, easily get online and always stay in touch with my work!”

—Raja Itani, Sr. Accounts Payable Supervisor

Apple iBook Notebooks starting at

\$1,294!

MacMall

We'll beat any price or competitive promotion on any Mac computer • Free

up to
256MB FREE!*

Plus, get an **EPSON Stylus Color 777i**

Printer FREE†

with any Mac computer purchase.



FREE HP 315xi Digital Camera or \$150 Cash Back* with purchase of a 600MHz or 700MHz iMac!

*Via mfr. mail-in rebate coupon.
Offer ends 12/31/01.



Apple iMac Computers



Authorized Reseller



Apple Mac OS X comes pre-installed on every iMac:

Mac OS X gives you more ways to personalize your system by making it easier to send and receive e-mail and to access applications, files, external devices, networks and the Internet.

FREE RAM with every iMac computer purchase: MacMall is offering up to 256MB of free RAM with an iMac purchase. A \$30 professional installation fee is required. Offer ends 12/03/01.

Virtual PC 4.0 with Windows 2000

- Faster than ever
- Easier network configuration
- Larger disk images

Connectix

\$224⁹⁹!

only #949828



Diamond Rio 800 128MB MP3 Player

Includes carrying case, clip and rechargeable batteries. For PCs and Macs with USB connection.

\$243⁷⁹!

only #980667

Quicken 2002 Deluxe Works with Mac OS X!

as low as

\$37⁹⁹!

Reflects \$20 mfr. mail-in upg. rebate. Price before rebate is \$57.99.



#778436

Intuit

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Quicken 2002 deluxe

Digital Imaging Kit

Includes: Kodak DC4800 Camera w/PM 200 Printer (recond.), Iomega Photoshow, BUSLink USB CD-RW, Wacom Tablet, Targus Pro Black Digital Camera Case.

\$949⁹⁹!

all this for only #962114

Z53 Color Inkjet Printer

- Up to 2400 x 1200 dpi
- 16ppm black; 8ppm color
- Dual cartridge design

LEXMARK

\$129!

only #992087



iBook Series

Order	MHz	RAM	FREE RAM	TOTAL RAM	Hard Drive	56K Modem	Drive	USB Ports	FireWire Port	iMovie 2	iTunes	Price!	or as low as
#959626	500MHz G3	64MB	256MB*	320MB	10GB	Yes	CD-ROM	2	1	Yes	Yes	\$1,294*	\$37/mo*
#959627	500MHz G3	128MB	256MB*	324MB	10GB	Yes	DVD-ROM	2	1	Yes	Yes	\$1,494*	\$42/mo*
#959633	500MHz G3	128MB	256MB*	324MB	10GB	Yes	DVD/CD-RW	2	1	Yes	Yes	\$1,794*	\$50/mo*

iMac Series

Order	MHz	Color	RAM	FREE RAM	TOTAL RAM	Hard Drive	56K Modem	Drive	USB Ports	FireWire Ports	iMovie 2	iTunes	Price!	or as low as
#963665	500MHz G3	Indigo	128MB	128MB*	256MB	20GB	Yes	CD-ROM	2	2	Yes	Yes	\$799*	\$23/mo*
#961592	500MHz G3	Snow	128MB	256MB*	384MB	20GB	Yes	CD-RW	2	2	Yes	Yes	\$999*	\$28/mo*
#961593	500MHz G3	Indigo	128MB	256MB*	384MB	20GB	Yes	CD-RW	2	2	Yes	Yes	\$999*	\$28/mo*
#961595	600MHz G3	Snow	256MB	256MB*	384MB	40GB	Yes	CD-RW	2	2	Yes	Yes	\$1,294*	\$37/mo*
#961594	600MHz G3	Graphite	256MB	256MB*	384MB	40GB	Yes	CD-RW	2	2	Yes	Yes	\$1,294*	\$37/mo*
#961597	700MHz G3	Snow	256MB	256MB*	512MB	60GB	Yes	CD-RW	2	2	Yes	Yes	\$1,494*	\$42/mo*
#961596	700MHz G3	Graphite	256MB	256MB*	512MB	60GB	Yes	CD-RW	2	2	Yes	Yes	\$1,494*	\$42/mo*

Own this iMac 500MHz for as low as \$23/month with the **New MacMall EZ Payment Plan! Call for details.

*Professional installation fee of \$30 required for free RAM offer. Hurry, MacMall RAM promotion ends 12/03/01.

†Free printer after \$50 mfr. mail-in rebate and \$19.99 MacMall mail-in rebate. Rebate applies with purchase of any Mac computer. Regular price of printer is \$69.99. While supplies last.

For your best price call 1-800-217-9492 macmall.com Priority Code: ZMWD1C3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!
Call for details.

The Best Prices on the Best Selection of Products!

MacMall is your #1 source for the greatest deals on hot Macintosh software & hardware solutions!

Visit Our Site!

✓ Featuring all the new products from Apple!



And So Much More!

- ✓ Fastest overnight delivery!
- ✓ 100% Apple Gold Certified, best trained sales staff!
- ✓ \$2 billion in inventory—over 125,000 products!
- ✓ Custom configuration—we will build your CPU to your specifications!

MacMall EZ Payment Plan!

NEW! 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.

MacMall

Incredible Deals on Top Selling Software!

AppleWorks 6.2

Built for Mac OS X!

Enjoy six applications in one: word processing, spreadsheets, page layout, painting, database and multimedia presentations!

- Save your work as HTML

only **\$65⁹⁹** #795409



Adobe Acrobat 5.0

The best way to share documents!

- Create documents anyone can open

upgrade **\$87⁹⁹** #957596

#957605 Adobe Acrobat 5.0 (Full) **\$218⁹⁹**



Painter 7

Captures the real painting experience!

- Liquid Ink layer mimics viscosity
- Realistic watercolor technology lets paints drip & blend together!

upgrade **\$188⁹⁹** #961563

#961562 Painter 7 Mac (Full) **\$378⁹⁹**



Adobe Photoshop 6.0

Combine vector drawing tools and new layer design features greatly enhances all of your creative options!

upgrade only

\$178⁹⁹ #951597

#951608 Adobe Photoshop 6.0 (Full) **\$598⁹⁹**



Quark XPress 4.1 with FREE Quark XPress 5.0 Beta CD

The leading layout and design software for publishers worldwide!

- Precision typography

only **\$788⁹⁹** #55401



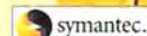
Norton Utilities 6.0

Optimize performance and solve your hard disk problems!

- Rescue damaged disks
- Prevent future disk problems
- Recover deleted files

only **\$41⁸⁹** #852775

After \$50 mfr. mail-in upgrade rebate. Price before rebate is \$91.89.



New Mac OS X v. 10.1!

The most advanced OS!

This groundbreaking operating system delivers the performance and stability needed for 21st Century computing. And Mac OS X v.10.1 unleashes the full potential of your Mac with dozens of new features!

- Designed to run on: iMac, iBook, Power Mac G3/G4, Power Mac G4 Cube and PowerBook introduced after 9/98 (call for more details on compatibility)

only **\$99⁸⁹*** #963214

*After \$20 MacMall mail-in rebate. Price before rebate is \$119.89. Expires 11/30/01.

Sys. req.: PPC G3 or G4, minimum of 128MB RAM, 1.5GB HD



Dreamweaver 4 Fireworks 4 Studio

Create, edit & animate bitmap and vector Web graphics and add advanced interactivity & pop-ups.

upgrade only

\$184⁸⁹ #953745

#953738 Dreamweaver 4 Fireworks 4 Studio (Full) **\$388⁹⁹**

Corel Graphics Suite 10

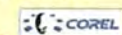
Includes CorelDRAW 10, Corel PHOTO-PAINT 10 and more!

upgrade

\$208⁸⁹ #952969

Upp. for CorelDRAW users only. Requires previous version of CorelDRAW to install.

#209646 Corel Graphics Suite 10 (Full) **\$518⁹⁹**



We'll beat any price or competitive promotion on any Mac computer • Free

Attention Consultants!

MacMall presents the universal laptop!

Titanium PowerBook G4 500MHz with Connectix Virtual PC 4 (Windows 2000)
Includes: 500MHz PPC G4 Processor, Virtual PC 4 W2000, 512MB SDRAM After Free RAM Offer,

Add More Connectix OS Packs!

#961422 Connectix-Windows 98 \$159⁹⁹
#961421 Connectix-Windows Me \$165⁹⁹

20GB Ultra ATA Drive, Slot Load DVD, 10/100BT, 56K, 15.2" Screen, 2 USB Ports, 1 FireWire Port and Mac OS X.

all this for only **\$3,177**

#961688



Walk into any company and be compatible with their operating system!



MacMall Has the Latest Hardware Products at Everyday Low Prices!

HP DeskJet 960Cse Printer

- Resolutions up to 2400 x 1200dpi
- 15ppm black; 12ppm color

only **\$199** #958474



Stylus® Color 777 Printer

- 2880 x 720dpi
- 8ppm black; 3ppm color

only **\$79** #952038



HP DeskJet 1220Cse Printer

- Up to 13" x 19"
- 11ppm black; 9.5ppm color
- 2400 x 1200dpi

only **\$399** #56424



Apple 15" Flat Panel Display

- Active-matrix LCD
- 1024 x 768 max. res.

only **\$599** #950991

For Power Mac G4 models only.



Piccolo 32MB USB Hard Drive

No cables, drivers, software or adapters—just plug it in!

only **\$99⁹⁵** #961656



CD Cyclone 24x10x40 FireWire CD-RW Drive

With a convenient carrying handle!

only **\$319⁹⁹** #960670



Matrox RTMac

Delivers realtime power & creative freedom to your Power Mac G4!

only **\$979** #958658



Crescendo/WS G3 Upgrade Card

Upgrade your PowerBook G3 with a 500MHz G3 processor and a 1MB L2 backside cache!

only **\$399⁹⁵** #961652



Rio 600 MP3 Player

- Backlit LCD display
- 32MB memory; expandable to 372MB
- Supports MP3 & WMA

only **\$138⁹⁹** #81950



LaCie 16x10x40 External SCSI CD-RW Drive

only **\$319** #959602



New! CM615 17" Display

- 1280 x 1040 @ 65Hz
- .24mm H and .14mm V dot pitch

only **\$169** #59116



Astra 3400 Scanner

- 600 x 1200dpi
- 42-bit color
- 8.5" x 11.7" scan area

only **\$69⁹⁹** #74633



Polaroid SprintScan 4000 Color Scanner

- One minute scan time
- 4000dpi resolution

only **\$736⁹⁹** #953299



3GB Translucent Blue Digital Wallet

- 3GB 2.5" hard drive
- Up to 2MB/s
- NiMH batteries

only **\$199⁹⁹** #959537



LaCie 24x10x40 Ext. FireWire/USB CD-RW Drive

only **\$329** #960135



USB Floppy Drive

Compatible with Mac and PC-formatted 1.44MB high-density diskettes!

only **\$85⁹⁹** #954838



New Microsoft Office v.X for Mac!

Takes full advantage of the Mac OS X design!

Office v. X is a fully native Mac OS X productivity suite that includes a new Aqua user interface, offers complete support for Mac OS X's modern architecture and provides many new feature enhancements!

upgrade **\$249⁹⁹*** #208616

*Price reflects \$20 MacMall rebate. Price before rebate \$269.99. Offer expires 11/30/01.

Sys. req.: PPC 120MHz or better, 128MB RAM, 160MB HD Apple Mac OS X v.10.1 or better

#208615 Microsoft Office v.X (Full) \$437⁹⁹



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.

*Professional installation fee of \$30 required for free RAM offer. Hurry, MacMall RAM promotion ends 12/03/01.

For your best price call 1-800-217-9492 macmall.com Priority Code: ZMWD1C3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery! Call for details.



Apple Studio 17 Display
17" Diagonal Flat-Panel #139208 **\$999⁹⁸**

Quicksilver G4 Starting At Only **\$1694⁹⁸**

New Quicksilver G4 – faster than ever

Apple® Power Mac™ G4

With the entry-level Quicksilver Power Mac G4 performing as fast as a Pentium® with twice the clock speed, the new Power Mac G4 line trounces the Pentium® 4 and proves the Megahertz Myth is just that.

	BLOWOUT 466MHz	733MHz	867MHz	IN-STOCK! Dual 800MHz
G4 Processor	466MHz	733MHz	867MHz	Dual 800MHz
Hard Drive	30GB	40GB	60GB	80GB
RAM	128MB	128MB	128MB	256MB
Optical Drive	CD-RW	CD-RW	SuperDrive CD-RW/DVD-R	SuperDrive CD-RW/DVD-R
Graphics Card	ATI RAGE Pro128/ 16MB	NVIDIA GeForce2 MX/32MB	NVIDIA GeForce2 MX/32MB	NVIDIA GeForce2 Dual Display/64MB
FireWire/USB	2 Ports each	2 Ports each	2 Ports each	2 Ports each
Ethernet	Gigabit	Gigabit	Gigabit	Gigabit
Cache	1MB L2	256K L2 –	256K L2 2MB L3	2X 256K L2 2MB L3
WAS	\$1694⁹⁸			
NOW	\$1294⁹⁸	\$1694⁹⁸	\$2494⁹⁸	\$3494⁹⁸
SAVE	\$400 #130736	#136135	#136136	#136137



AppleCare Protection Plan

Power Mac G4 #722601 **\$249⁹⁹**

Power-packed at a lower price

Apple® Titanium PowerBook™ G4

At 5.1 lbs. and 1" thin, the sleek-yet-robust PowerBook G4 can be moved in minutes. Up to 20GB of storage.

Up to **\$500**

JUST ANNOUNCED!

NEW PowerBook G4
UP TO **667MHz**
starting at **\$2194⁹⁸**

NEW iBook G3
UP TO **600MHz**
starting at **\$1294⁹⁸**

plus UP TO \$900 PRICE DROPS
on select PowerBooks and iBooks. While supplies last.

CALL Mac Zone today for Details!

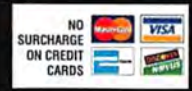
Starting At Only **\$2194⁹⁸**

Call for details.

*A \$30 professional installation fee applies to all FREE memory promotions. It may take up to one business day to process the installation. Offer good while supplies last. Restrictions may apply.

SAVE	\$2194⁹⁸ \$400 #130731	\$2994⁹⁸ \$500 #130730
-------------	---	---

AppleCare Protection Plan
Titanium PowerBook G4 #722604 **\$299⁹⁹**



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, including but not limited to Y2K compliance. Accordingly, Zones, Inc. makes no representation or warranty with respect to Y2K compliance of product sold. ©2001 Zones, Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh and PowerBook are registered trademarks of the Apple Computer, Inc.

FREE Speakers!



New iMacs with CD burners built in

Apple® iMac™

The iMac makes the ideal choice as the center of your digital world. Your niftiest toys, such as your digital camera, DV camcorder, PDA, MP3 player and more can all come together in the iMac. The greatly expanded hard drive capacity gives you plenty of room for all the movies and music you'll make. All new iMacs come with both Mac OS 9.1 and Mac OS X, so you get both time-tested and advanced operating system technology. And, in addition to the popular Indigo and Graphite colors, Snow makes its return amidst the flurry of cool iMac improvements. Order your ideal iMac today!



Starting At Only **\$794⁹⁸**

Processor	NEW! 500MHz	500MHz	600MHz	700MHz
Hard Drive	20GB	20GB	40GB	60GB
RAM	64MB	128MB	256MB	256MB
Optical Drive	CD-ROM	CD-RW	CD-RW	CD-RW
FireWire/USB	2 Ports each	2 Ports each	2 Ports each	2 Ports each
iMovie 2	Yes	Yes	Yes	Yes
ONLY	\$794⁹⁸ Indigo #136148	\$994⁹⁸ Indigo #136130 Snow #136129	\$1294⁹⁸ Graphite #136131 Snow #136132	\$1494⁹⁸ Graphite #136133 Snow #136134



AppleCare Protection Plan

iMac #722602 **\$149⁹⁹**

IN STOCK!

Beautiful, brainy digital companion

Apple® iBook™



Starting At Only **\$1294⁹⁸**

Taking size-slimming style cues from the Titanium PowerBook G4, the iBook's eye-catching total redesign goes beyond its good looks. At only 4.9 pounds and measuring just 1.3" thin, it's small enough, rugged enough and powerful enough to fit any mobile lifestyle. And now you also get a 500MHz G3 processor and your choice of optical drives – a CD-ROM drive, DVD-ROM or combo CD-RW/DVD-ROM drive.

*A \$30 professional installation fee applies to all FREE memory promotions. It may take up to one business day to process the installation. Offer good while supplies last. Restrictions may apply.

FREE!
Benwin Speakers

with all New Apple Computers
\$50 Value! Call for details.

G3 Processor	500MHz	500MHz	500MHz
Hard Drive	10GB	10GB	10GB
RAM	64MB	128MB	128MB
On-chip Cache	256K	256K	256K
Optical Drive	CD	DVD	CD-RW/DVD
FireWire/USB	1/2	1/2	1/2
AirPort Ready	Yes	Yes	Yes
Ethernet	10/100BT	10/100BT	10/100BT
Modem	56K	56K	56K
iMovie 2	Yes	Yes	Yes
iTunes	Yes	Yes	Yes
ONLY	\$1294⁹⁸ #130737	\$1494⁹⁸ #130738	\$1794⁹⁸ #139207



AppleCare Protection Plan
iBook #722603 **\$229⁹⁹**

Corporate bids welcome!
Fax to 1-425-430-3420

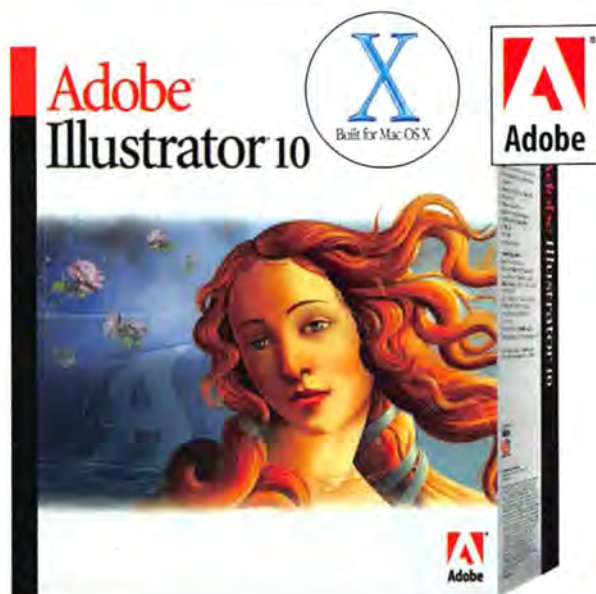
Source Code
MW121

Order by Phone
1.800.436.0606

Order Online Today
www.maczone.com

A NASDAQ® COMPANY Ticker Symbol: ZONS

www.macworld.com December 2001 109



NEW! Designed for Apple's Mac OS X!

The latest version of the industry-standard vector graphics software is Mac OS X-powered

- Adobe® Illustrator® 10.0 Upgrade
 - NEW! Symbols and symbolism tools
 - NEW! Live enveloping, warp effects and liquify tools
 - NEW! Dynamic data-driven graphics
 - NEW! Object-based slicing, including support for cascading style sheet layers
 - NEW! Line, arc and grid drawing tools

\$139⁹⁷

#145012

Pro Hardware



Ideal for digital video and other large files that eat up disk space

- LaCie 75GB FireWire Hard Drive

#119761 **\$439⁹⁹**



SPECIAL PURCHASE*

- Nokia 445 Pro 21" Flat Screen Monitor

#665421 **\$429⁹⁹** *While supplies last

Pro Software



Burn your own music, data and video CDs

- Roxio Toast 5 Titanium

#134010 **\$89⁹⁹**



Use PANTONE colors more effectively

- PANTONE ultimate survival kit

#116535 **\$249⁹⁹**



Get more control, comfort and productivity!

- Intuos2 6" x 8" Graphics Tablet with Grip Pen & 2D Mouse

#136324 **\$349⁹⁹**



Share high-speed internet access, files and resources

- Asanté Cable/DSL Router

#831393 **\$129⁹⁸**



Tool of choice for creative, efficient page design

- QuarkXPress™ 4.1

#613842 **\$789⁹⁸**



Preflighting for designers and document creators

- FlightCheck Collect 4.0

#141653 **\$129⁹⁹**



The perfect complement to Mac OS X

- Wireless Turbo Mouse Pro

#136306 **\$129⁹⁹**



Professional color output

- Xerox Phaser 750 Color Solid Ink Printer

#119663 **\$1999⁹⁹**



For dynamic Web design

- Macromedia® Flash 5 FreeHand™ 10 Studio Upgrade

#134030 **\$189⁹⁹**



Dazzle your Web audience

- Macromedia® Director® 8.5 Shockwave® Studio Upgrade from Director 8

#128352 **\$189⁹⁸**



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, including but not limited to Y2K compliance. Accordingly, Zones, Inc. makes no representation or warranty with respect to Y2K compliance of product sold. ©2001 Zones, Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh and PowerBook are registered trademarks of the Apple Computer, Inc.

and More!



512MB \$64⁹⁹

PC133
from All
Components
#119284

Mobile Accessory



BookEndz
from Photo-Control Corporation

Convert your PowerBook G4 to a desktop computer in seconds

- Pilot Technologies BookEndz Docking Station for Titanium PowerBook G4

#135783 **\$239⁹⁹**

Drives & Storage



**33%
FASTER** than
12X drives



Hot Price!
Super fast
FireWire CD burner

- ACOMdata 16x10x40x CD-RW

#128492 **\$189⁹⁹***

* After \$30 mfr. rebate. Low Mac Zone price: 219.99. Offer expires 10/31/01.

Video Software



Professional digital video editing tools

- Adobe Premiere 6.0

#134008 **\$398⁹⁸***

* with any camcorder purchase. Low Mac Zone price: \$548.98. Phone orders only. Offer expires 12/31/01.

Digital Video



**FREE MMC
Card Reader!**

**Crystal-clear
video and stills**

- Canon ZR25 Digital Camcorder

#134174 **\$749⁹⁹**
CALL**

* Via mfr. mail-in rebate. ** After \$50 Canon mail-in rebate. Low Mac Zone price: \$799.99. Offers good through 12/31/01.

Graphics Software



**\$100
Price
Drop!**

Intuitive, powerful set of 3D graphics creation tools – incredibly priced!

- Amorphium Pro

WAS ~~\$219⁹⁹~~
#139114 **\$119⁹⁹**

Business Software



**Integrates with
Office 2001***

**Easily organize and
access your data**

- FileMaker Pro 5.5 Upgrade

#135762 **\$149⁹⁹**

* Sold separately.

#135761 FileMaker Pro 5.5 Full Version\$249.99
#139437 FileMaker Pro 5.5 Server Upgrade\$498.99

Available NOW! Built for Mac OS X



FREE!
Update to 10.1

- Mac OS X version 10.1 Includes:
 - Faster overall performance
 - Aqua interface enhancements
 - Exceptional network compatibility
 - DVD playback and authoring
 - CD burning from the Finder
 - Improved graphics and printing

#130755 **\$119⁹⁸** * At Apple.com for Mac OS X owners. Call for details.



Now save more time and steps

- Intuit Quicken 2002 Deluxe

#139439 **\$39⁹⁵***

* After \$20 in-box mfr. mail-in upgrade rebate. Low Mac Zone price: \$59.95. Offer good through 10/31/02.



Tune up and troubleshoot your Mac

- Symantec Norton SystemWorks 1.0

#127129 **\$69⁹⁹***

* After \$50 mfr. mail-in upgrade rebate. Low Mac Zone price: \$119.99. Offer good through 10/31/02.



Amazing game play*

- Giants: Citizen Kabuto

#141928 **\$49⁹⁹**

* Runs in Classic mode.



Powerful 3D landscaping and animation

- Corel™ Bryce® 5 Upgrade

#139117 **\$144⁹⁹**



The ultimate NaturalMedia™ painting tool

- procreate Painter 7™ Upgrade

#857799 **\$189⁹⁹**



The smartest way to work with fonts

- Extensis Suitcase 10

#139135 **\$99⁹⁹**

Find more of everything you need at our website!

Corporate bids welcome!
Fax to 1-425-430-3420

Source Code
MW121

Order by Phone
1.800.436.0606

Order Online Today
www.maczone.com

A NASDAQ® COMPANY Ticker Symbol: ZONS

Time to burn?

The APS CD-RW 24x10x40 allows you to burn a full 700MB CD in a blistering three minutes, freeing up your valuable time for other urgent tasks. Use this speedy drive to master your own music CDs, or store and archive your important data on reliable, durable media. With impressive 24x write speed, you'll burn data, images or audio compilations virtually instantly. Equipped with FireWire Plus technology from APS Tech, this drive delivers USB and FireWire (IEEE 1394) connections for complete versatility. Look for this and other time-saving products in this ad and order yours today.



\$239.95

• reduced price



\$699.95

• reduced price

APS CD-RW 24x10x40 FireWire plus

- FireWire and USB interfaces
- Blazing 24X record speed
- Burn full CD in just three minutes
- Mac and PC compatible

APS DVD/CD Rewritable FireWire

- Affordable DVD-RW/CD-RW writer in one drive
- High-speed FireWire interface
- Records and reads DVD-R/RW and CD-R/RW discs
- Produce digital content on DVD and CD media
- Easy connectivity

APS CD-RW FireWire plus Drives

Model	Price
APS CD-RW 16x10x40 FireWire Plus	\$199.95
APS CD-RW 24x10x40 FireWire Plus	239.95

APS CD-RW SCSI Drives

Model	Price
APS CD-RW 16x10x40 SCSI	\$269.95
APS CD-RW 24x10x40 SCSI	299.95

APS CD-RW USB Drives

Model	Price
APS CD-RW 16x10x40 USB	\$169.95



Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.



\$749.95

with Retrospect software for Mac and PC

APS HyperDAT III SCSI

- Reliable DDS-3 technology
- 12GB native backup
- Ideal for entry-level networks
- Ships with Retrospect for Mac and PC

APS HyperDAT Tape Backup

Model	Price
APS HyperDAT III (DDS-3) FireWire	\$799.95
APS HyperDAT III (DDS-3) SCSI	749.95
APS HyperDAT IV (DDS-4) LVD SCSI	999.95

Ships with Retrospect software for Mac and PC



\$1,499.95

with Retrospect software for Mac and PC

APS AIT+ FireWire

- 35GB native backup
- Native SCSI adapted for FireWire
- Perfect for 3-D graphics workstations
- 4MB sustained data transfer rate
- Ships with Retrospect for Mac and PC

APS AIT Tape Backup

Model	Price
APS AIT+ FireWire	\$1,499.95
APS AIT+ LVD SCSI	1,399.95
APS AIT II LVD SCSI	3,099.95

Ships with Retrospect software for Mac and PC



\$629.95

APS DVD-RAM/R Drive

- Combo DVD-RAM/DVD-R in one drive
- Read compatible with DVD, CD formats
- Fast FireWire connectivity

Visit our website for a complete listing of products:
www.apstech.com

with the speed of thought.



\$369.95

• reduced price

APS 120GB FireWire plus Hard Drive

- FireWire and USB interfaces
- Hot-swappable
- Ideal for DV storage
- Share among Macs and PCs

APS FireWire plus Hard Drives

Model	Price
APS 20GB 7200 RPM FireWire Plus Hard Drive	\$199.95
APS 40GB 7200 RPM FireWire Plus Hard Drive	239.95
APS 60GB 7200 RPM FireWire Plus Hard Drive	269.95
APS 80GB 7200 RPM FireWire Plus Hard Drive	299.95
APS 120GB 5400 RPM FireWire Plus Hard Drive	369.95

APS Ultra160 LVD SCSI Drives

Model	RPM	*Internal	External
APS ST 18GB Ultra160 LVD	7200†	\$199.95	\$279.95
APS ST 18GB Ultra160 LVD	10,000	\$229.95	\$349.95
APS ST 18GB Ultra160 LVD	15,000	—	\$489.95
APS ST 36GB Ultra160 LVD	7200†	\$369.95	\$449.95
APS ST 36GB Ultra160 LVD	10,000	399.95	549.95
APS ST 36GB Ultra160 LVD	15,000	—	789.95
APS ST 73GB Ultra160 LVD	10,000	749.95	899.95
APS ST 180GB Ultra160 LVD	7200	—	1,789.95

Drives listed above carry a five-year warranty, except those marked.
† Marked drives carry a three-year warranty.

APS Ultra SCSI Drives

Model	RPM	*Internal	APS Pro2
APS ST 18GB Ultra SCSI	7200	\$199.95	\$249.95

Drives listed above carry a five-year warranty.

* Internal configuration does not include a mounting bracket. Intended as a replacement internal SCSI drive.



\$319.95

• reduced price

LaCie 30GB PocketDrive™

- Powerful, pocket-sized hard drive
- U&I technology — FireWire and USB ports
- Mac and PC compatible

LaCie PocketDrives

Model	Price
LaCie 10GB PocketDrive	\$219.95*
LaCie 20GB PocketDrive	249.95*
LaCie 30GB PocketDrive	319.95*
LaCie 48GB PocketDrive	669.95*

* price after \$30 mail-in rebate.

LaCie PocketCD-RW

Model	Price
LaCie 8x4x24 PocketCD-RW	\$299.95



\$199.95

APS 40GB USB Hard Drive

- 5400 rpm hard drive
- Hot-swappable
- Convenient USB interface
- Affordable storage

USB 2.0 Ready!

APS USB Hard Drives

Model	RPM	APS Pro2
APS 40GB USB Hard Drive	5400	\$199.95
APS 60GB USB Hard Drive	5400	229.95
APS 80GB USB Hard Drive	5400	269.95



LaCie electron22blue III

\$999.95

LaCie electronblue III monitors

- High dot pitch minimizes eye strain
- Maximum resolution for large layouts
- Advanced flat-screen technology eliminates distortion
- Color-enhancing blue hood reduces glare

LaCie monitors

Model	Dimension	Price
LaCie electron19blue III	19" Diagonal	\$399.95
LaCie electron22blue III	22" Diagonal	999.95

Mac OS, FireWire and the FireWire logo are registered trademarks of Apple Computer, Inc. APS Tech is a registered trademark. Other brand or product names are registered trademarks or trademarks of their respective holders.

- 30-day money-back satisfaction on all APS Tech brand drives and accessories. Your risk is the cost of shipping. Monitors and 3rd party products carry warranties from their respective manufacturers.
- APS Tech's warranty is a pass-through of the manufacturer's warranty which will be honored by APS Tech. APS Tech warrants APS Tech branded enclosures, brackets and power supplies, and will, at its discretion, replace or repair products found to be defective according to the specific terms of the warranty accompanying the product.
- Refused orders subject to 20% restocking fee.
- International customers must pay for all shipping charges.
- Prices and specifications are subject to change without notice.
- Not responsible for typographical errors.
- Your APS Tech Drive unit may contain one or more components that were in prior use, but which have been inspected and repaired or rebuilt as necessary. These components, if any are covered by the same warranty provisions, exclusions and limitations to the same extent, and on the same terms as otherwise "new" components.
- © 2001, APS Tech. All Rights Reserved.

Source Code: MW1201

Call **800 - 874 - 1429**

Corporate Sales (800) 395 - 5871 • International (503) 844 - 4600
Gam - 6pm, Monday - Friday, Pacific Time, Closed Saturday and Sunday



Advanced tools for digital visionaries™

The latest technology from CDW



Apple® Power Mac™ G4 733MHz minitower

- ▶ 733MHz PowerPC™ G4 processor
- ▶ Memory: 128MB std., 1.5GB max.
- ▶ 40GB Ultra ATA hard drive
- ▶ 12X10X32 CD-RW drive
- ▶ 56Kbps modem
- ▶ 10/100/1000BASE-T Ethernet
- ▶ Mac® OS 9/OS X

\$1695.00 CDW 311644

Apple Power Mac G4 867MHz minitower

- ▶ 867MHz PowerPC™ G4 processor
- ▶ Memory: 128MB std., 1.5GB max.
- ▶ 40GB Ultra ATA hard drive
- ▶ SuperDrive
- ▶ 56Kbps modem
- ▶ 10/100/1000BASE-T Ethernet
- ▶ Mac® OS 9/OS X

\$2495.00 CDW 311647

Apple Power Mac G4 Dual 800MHz minitower

- ▶ Dual 800MHz PowerPC™ G4 processor
- ▶ Memory: 256MB std., 1.5GB max.
- ▶ 80GB Ultra ATA hard drive
- ▶ SuperDrive
- ▶ 56Kbps modem
- ▶ 10/100/1000BASE-T Ethernet
- ▶ Mac® OS 9/OS X

\$3495.00 CDW 311648



NEC-Mitsubishi Diamond Plus 73 17" truly flat monitor

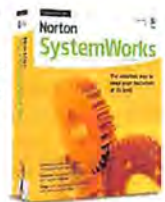
The Mitsubishi Diamond Plus 73 17" CRT with 16" viewable image size features a truly flat and completely distortion-free screen eliminating reflections and glare. The result is remarkably realistic, 1280 x 1024 at 60Hz images that are much easier on your eyes.

\$255.51 CDW 212691

Symantec Norton SystemWorks*

Norton™ SystemWorks™ V1.0 is a smart way to keep your Mac® at its best. This essential suite features Norton Utilities to optimize performance and solve problems, Norton AntiVirus™, plus the Aladdin Spring Cleaning™ uninstaller and Dantz Retrospect® Express Backup.

\$ 119.01 CDW 248037



*\$50 mail-in manufacturer upgrade rebate with purchase of Norton SystemWorks V1.0 (3/31/02)



Apple iMac™ Snow

- ▶ 500MHz PowerPC™ G3 processor
- ▶ Memory: 128MB std., 1GB max.
- ▶ 20GB hard drive
- ▶ 8X4X24 CD-RW drive
- ▶ 56Kbps modem
- ▶ 10/100BASE-T Ethernet port
- ▶ Mac® OS 9.1/OS X

\$995.00 CDW 310827

Apple iMac Graphite

- ▶ 600MHz PowerPC™ G4 processor
- ▶ Memory: 256MB std., 1.5GB max.
- ▶ 40GB hard drive
- ▶ 8X4X24 CD-RW drive
- ▶ 56Kbps modem
- ▶ 10/100BASE-T Ethernet connection
- ▶ Mac OS 9.1/OS X

\$1295.00 CDW 310832



Computing Solutions
Built for Business®

NEC/MITSUBISHI
NEC MITSUBISHI ELECTRONICS DISPLAY
SEE MORE.

SYMANTEC®



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.

©2001 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 MW8189A/B 12/01

"Just order the standard computers"

Translation: By standard I mean configured just like mine.

Apple iBook™

▶ 500MHz PowerPC G3 processor ▶ Memory: 128MB SDRAM
▶ 15GB hard drive ▶ 24X Max CD-ROM drive ▶ 56Kbps modem and
10/100 Ethernet ▶ 12.1" active-matrix display ▶ Mac OS X v 10.1

\$1299.00 CDW 337396



Apple iBook™

▶ 600MHz PowerPC G3 processor ▶ Memory: 128MB SDRAM
▶ 15GB hard drive ▶ 6X Max DVD-ROM drive ▶ 56Kbps modem and
10/100 Ethernet ▶ 12.1" active-matrix display ▶ Mac OS X v 10.1

15GB hard drive
and 6X Max DVD-ROM drive **\$1499.00** CDW 337398

20GB hard drive and combo
4x4x24 CD-R/6X DVD-ROM drive **\$1799.00** CDW 337401

Apple PowerBook®

▶ 550MHz PowerPC G4 processor ▶ Memory: 128MB SDRAM +
128MB FREE* ▶ 20GB hard drive ▶ 6X DVD-ROM drive ▶ 56Kbps modem
and 10/100 Ethernet ▶ 15.2" active-matrix display ▶ Mac OS X v 10.1

\$2199.00 CDW 337385

*FREE 128MB of extra memory included;
preinstalled (offer ends 12/31/01 or while supplies last)



Apple PowerBook

▶ 667MHz PowerPC G4 processor ▶ Memory: 256MB SDRAM +
256MB FREE* ▶ 30GB hard drive ▶ 6X DVD-ROM drive ▶ 56Kbps
modem and 10/100 Ethernet ▶ 15.2" active-matrix display
▶ Mac OS X v 10.1

With 30GB hard drive **\$2999.00** CDW 337392

With 48GB hard drive **\$3299.00** CDW 337829

*FREE 256MB of extra memory included;
preinstalled (offer ends 12/31/01 or while supplies last)



At CDW, we understand what
it can be like for your IT department.

That's why we sell all the brand name technology solutions you might need. Like software, PCs, storage, networking, telephony and more. Plus, all the services to support them. You name it and we've got it.

One-Stop Solution: From systems software to networking, no matter what you need, CDW will ship you what you need - usually the same day.



Personal Expertise: CDW assigns an account manager and a team of product experts to your business so we get to understand your IT needs.



Reliable Resource: CDW delivers complete computing solutions at competitive prices. Along with the backing and reliability of a Fortune® 500 company.



www.cdw.com



800-509-4239

CDW

Computing Solutions
Built for Business®



Authorized Reseller

Apple, the Apple logo, Mac, Mac OS, Power Macintosh and PowerBook are registered trademarks of Apple Computer, Inc. AirPort, iBook, iMac, iMovie and Power Mac are trademarks of Apple Computer, Inc. PowerPC™ and the PowerPC logo™ are trademarks of International Business Machines Corporation, used under license therefrom.

Circle 2 on card or go to www.macworld.com/getinfo



ClubMac®

Instant Re

New! iBook's

Now Up to

600Mhz

as low as \$1295

Plus Up to \$50 Instant Rebate!



New! Powerbook's

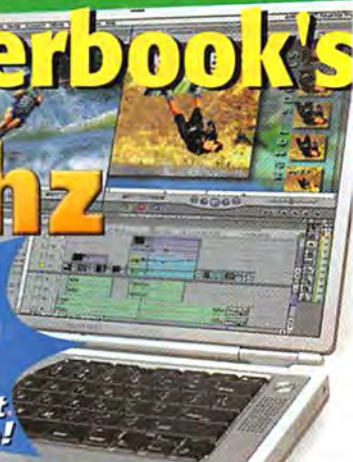
Now Up to

667Mhz

as low as

\$2195

Plus Up to \$100 Instant Rebate!



Rebate offer good on ANY computer advertised in this catalog. Computer price is based on the base model configurations. Additional add-ons of any kind do not count towards rebate computer value. Offer not valid with any other ClubMac offer. Computer must be sold at advertised price. Offer expires 11/30/01.

DOUBLE YOUR RAM!

For a limited Apple Doubles your memory for free! For a limited time, you'll get an extra 128MB or 256MB of memory at no extra charge when you buy an eligible PowerBook G4. Best of all, your extra RAM will be preinstalled. PowerBook G4 550Mhz ships w/ a 256MB and PowerBook G4 667Mhz ships w/ 2 256MB. Offer good from 10/16/01 to 12/31/01

Features:

- 1 Firewire Port
- OS 10.1 and 9.2
- 56K Modem
- 2 USB Ports
- Airport ready
- Built in 10/100Base-t

Part#	Mhz	Optical Drive	Base Ram	HD	Price!	Or as low as
A102 2088	500Mhz G3	24x CD-ROM	128MB	15GB	'1295	'32/MO
A102 2089	600Mhz G3	DVD	128MB	15GB	'1495	'37/MO
A102 2090	600Mhz G3	DVD/CD-RW	128MB	20GB	'1695	'41/MO

Features:

- Gigabit Ethernet
- 8MB SDRAM 2D/3D AGP 2x Video Graphics
- 1 Firewire Port
- 2 USB Ports
- OS 10.1 and 9.2
- 56K Modem
- Airport ready (included on 667Mhz)

Part#	Mhz	Optical Drive	Base Ram	HD	Price!	Or as low as
A102 2086	550Mhz G4	DVD-ROM	256MB	20GB	'2195	'60"/MO
A102 2087	667Mhz G4	DVD-ROM	512MB	30GB	'2995	'82"/MO

INSANE MEMORY PRICING!

512MB AS LOW AS \$57⁹⁵

PowerMac G4 Dual
800/867/733
PowerMac G4
466/533/667/733

Description	Price	ITEM #
128MB DIMM	'15 ⁹⁵	M905 2482
256MB DIMM	'27 ⁹⁵	M905 2483
512MB DIMM	'57 ⁹⁵	M905 2484

iMac 500/600/700
iMac 350/400/450/500/600

Description	Price	ITEM #
128MB	'14 ⁹⁵	M905 2365
256MB	'27 ⁹⁵	M905 2366
512MB	'57 ⁹⁵	M905 2367

iBooks (All Models)

Description	Price	ITEM #
128MB	'15 ⁹⁵	M905 2445
256MB	'32 ⁹⁵	M905 2446
*512MB	'325 ⁹⁵	M905 2490

PowerMac G4
Dual/400/450/500
G4 Cube/G3 Blue & White

Description	Price	ITEM #
128MB DIMM	'14 ⁹⁵	M905 2365
256MB DIMM	'27 ⁹⁵	M905 2366
*512MB DIMM	'57 ⁹⁵	M905 2367

iMac
233/266/300/333

Description	Price	ITEM #
2 DIMM slots 128MB	'15 ⁹⁵	M905 2343
Upper Slot 256MB	'34 ⁹⁵	M905 2358
Lower Slot 256MB	'84 ⁹⁵	M905 2486

PowerBook G4 Titanium

Description	Price	ITEM #
128MB DIMM	'15 ⁹⁵	M905 2445
256MB DIMM	'32 ⁹⁵	M905 2446
*512MB DIMM	'325 ⁹⁵	M905 2490

PowerMac G3 Series Beige

Description	Price	ITEM #
3 DIMM slots 64MB	'13 ⁹⁵	P900 1062
768MB MAX 128MB	'17 ⁹⁵	P900 1063
256MB	'34 ⁹⁵	P900 1331

98'/99' PowerBook G3 (Black Case)

Description	Price	ITEM #
128MB	'15 ⁹⁵	M905 2343
256MB	'34 ⁹⁵	M905 2358
Lower Slot 256MB	'84 ⁹⁵	M905 2486

PowerBook G3 400/500 (FireWire)

Description	Price	ITEM #
64MB or 128MB 128MB	'15 ⁹⁵	M905 2445
2 slots 256MB	'34 ⁹⁵	M905 2447
512MB	'69 ⁹⁵	M905 2448

MICROTEK
Better Images Through Innovation

ScanMaker 5700

- 42 bit
- 2400 dpi
- FireWire/USB

Only \$379
M150 1098

EPSON Stylus C80 New!

- 20 Page Per Min!
- 2880 dpi
- After \$30 Manufacturer's Mail-in Rebate.

\$149⁹⁵
E047 1113

Nikon ELECTRONIC IMAGING

CoolPix 885

- 3.21 mp
- 3x Zoom Nikor Lens
- Lightweight

\$599
N043 1033

Ai Radeon Mac Edition

PCI 32MB Video Card

*After \$20 Mfr's Mail-in Rebate expires 1/15/02

\$179
A143 1118

SONY

G520 21" Flat Trinitron Display

\$749
S106 1139

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 1-800-500-7078.

Rebates!

\$25 Rebate on ANY computer priced \$995 thru \$1694
\$50 Rebate on ANY computer priced \$1695 thru \$2494
\$75 Rebate on ANY computer priced \$2495 thru \$2994
\$100 Rebate on ANY computer priced \$2995 thru \$3500



iMac

as low as
\$795
 Plus
 Up to **\$25** Instant to Rebate!

FREE!*
 HP 318xi
 Digital Camera
 or
\$150 Cash Back!
 when you purchase an iMac 600MHz or 700MHz system

PowerMac G4



as low as
\$1695
 Plus
 Up to **\$100** Instant to Rebate!

Rebate offer good on ANY computer advertised in this catalog. Computer price is based on the base model configurations. Additional add-ons of any kind do not count towards rebate computer value. Offer not valid with any other ClubMac offer. Computer must be sold at advertised price. Offer expires 11/30/01.

Features:

- Built in 15.1 Monitor (13.8 Viewable)
- Slot Load CDR-W (8x4x24x) (24x CD Rom on \$795 iMac 500)
- 2 Firewire Ports
- OS 10.1 and 9.2
- Built in 56K Modem
- 2 USB Ports
- 10/100Base-t Ethernet

Part#	Mhz	Color	Base Ram	HD	Price!	Or as low as
A102 2046	500MHz G3	Indigo	64MB	20GB	\$795	\$20/MO
A102 2011	500MHz G3	Snow	128MB	20GB	\$995	\$25/MO
A102 2012	500MHz G3	Indigo	128MB	20GB	\$995	\$25/MO
A102 2013	600MHz G3	Snow	256MB	40GB	\$1295	\$32/MO
A102 2014	600MHz G3	Graphite	256MB	40GB	\$1295	\$32/MO
A102 2015	700MHz G3	Snow	256MB	60GB	\$1495	\$37/MO
A102 2016	700MHz G3	Graphite	256MB	60GB	\$1495	\$37/MO

Features:

- 2 Firewire Ports
- OS X and 9.2
- NVIDIA 64MB Twin View Card on Dual 800
- 2 USB Ports
- NVIDIA 32MB GeForce2 on 733 and 867
- 56k Modem
- 10/100/1000Base-t Ethernet

Part#	Mhz	Optical Drive	Base Ram	HD	Price!	Or as low as
A102 2008	733MHz G4	CD-RW	128MB	40GB	\$1695	\$46 ⁹⁹ /MO
A102 2009	867MHz G4	SuperDrive	256MB	60GB	\$2495	\$68 ⁹⁹ /MO
A102 2010	Dual 800MHz G4	SuperDrive	256MB	80GB	\$3495	\$90 ⁹⁹ /MO

New! OS X Software

Mac OS X 10.1
 World's Most Advanced Operating System!
\$119
 A109 1488

Stuffit Deluxe 6.5
 Send files faster, Access anything!
\$19.95*
 A290 1044
 *After \$60 MFR Mail-in Rebate for owners of previous versions
 Aladdin Systems

Office:mac
 The Best Version of Office for the World's Most Advanced Operating System!
\$268.95
 M089 2120

Quicken 2002 deluxe
 Just When You Thought it Couldn't GET EASIER!
\$39.95*
 I039 1098
 *After \$20 MFR Mail-in Rebate for owners of previous versions
 Intuit

Adobe Illustrator 10 Upgrade
 The Industry Standard in Vector Graphics!
\$138
 A030 1477

FileMaker Pro 5.5
 Manage Your Data from Desktop to Web!
\$149.95
 F219 1048

ClubMac STORAGE

FIREWIRE DVD-R/RW
 Make Your Own DVDs!
 Starting At **\$699*** New!
 *Without Toast
 C104 5580

2.5" FIREWIRE DRIVES
 New!
48GB ONLY \$499!
 C104 6003

FIREWIRE CDRW
24x/10x/40x BURN-Proof.
 *Burn-Proof is a licensed technology of Sanyo Electronic Ltd.
 Now Using Oxford 911 Chip!

SCSI CDRW DRIVE
16X/10X/40X
 INCLUDES
Price Drop \$189
 C104 4030
 OEM VERSION OF TOAST

FIREWIRE HARD DRIVES
 Starting At **\$249**
UP TO 100 GIGS!

INCLUDES
 ALSO AVAILABLE IN COLORS
 OEM VERSION OF TOAST

ClubMac
 19 Morgan, Irvine CA 92618
SOURCE CODE: 691101

Sales
 24 Hours a Day, 7 Days a Week (800) 260-8549
 Customer Service
 M-F 6am-6pm, Sat. 8-12 Noon PST (800) 551-6398
 Inquiries & International Sales
 24 Hours a Day, 7 Days a Week (949) 768-8130

24-Hour Fax (949) 768-9354
 Corporate/Educational Sales
 M-F 6am - 6pm PST (800) 258-2621
 Technical Support
 M-F 6am - 6pm PST (800) 854-6227

ORDER TODAY! 24 HOURS A DAY 7 DAYS A WEEK **1-800-260-8549**

#1 Drive store on the Web! Check out more at: www.megahaus.com/mac

Monitors

ViewSonic
LCD Flat-Panel Monitor ONLY
\$429 *REDUCED!*
 15" Viewable (VE150)



USB & 1394 Technology

USB 4x46 CD-Rewritable for PC or Mac (CDW5EUSB) \$165
 USB 250MB Zip Drive w/Software (ZIP250USB) \$139
 USB External Hard Drives w/Case (5400):
 20GB or 30GB (USB20/30GB) \$175/\$190
 40GB or 60GB (USB40/60GB) \$210/\$249
 80GB or 100GB (USB80/100GB) \$309/\$349


Hard Drive

Maxtor
 18.4 GB/10,000 RPM
 8 MB Buffer
SCSI Ultra 320 \$205 Ext. **\$335**
 Int. (KW018L2) (KW018L2X)
 Upgrade Your Mac With A New Controller Card!
Adaptec Power Domain SCSI (APD29160MAC) \$285



Hard Drive

Seagate
 18.4 GB / 7,200 RPM
 2 MB Buffer
 Ideal For Older Model Macs
SCSI Ultra \$179 Ext. **\$239**
 Int. (ST318417N) (ST318417NX)



RAID Solution

8-Drive External RAID Solution
 • 800 GB / 5400 RPM
 Rack Mount **\$7089**
 (STARRACKS00) (STARTOW800)



1394 PCI/MAC BOARD KIT (70HTL13941) \$59

1394 Hub (70HTL00030) \$85
 1394 Repeater (70HTL00020) \$45
 1394 15 Ft. Cable 6-to-4pin (70CAB13943) \$15
 1394 Sony 12x8x32 CD-RW (CRX1600LA2) \$219
 1394 3.5 Hard Drives w/Case (7200 RPM):
 20GB/30GB (FW20GB72 / FW30GB72) \$209 / \$229
 40GB/60GB (FW40GB72 / FW60GB72) \$259 / \$299
 80GB/100GB (FW80GB72 / FW100GB72) \$345 / \$435

CD-Rewritable Drive

YAMAHA
 20x10x40 **SCSI CD-RW**
 w/Mac & PC Mastering Software and 1 Disk
 Int. (CRW2200SZ) **\$275**
 Ext. (CRW2200SX2) **\$325**



250MB ZIP Drive

250MB ZIP Ext. Drive **iomega**
 Just **\$139** (ZIP250)
SCSI Mac or PC
 250MB disks **\$17** each (ZIP250C)



HARD DRIVES

Maxtor Formerly Quantum Drives
ULTRA 160mm SCSI Will work on older SCSI, Ultra Wide, Ultra 2 controllers.
 9.2GB 7200 4MB XC309100LW \$149
 18.4GB 7200 4MB XC318400LW \$175
 36.7GB 7200 4MB XC336700LW \$325
IDE ULTRA ATA/100
 20.0GB 7200 2MB QMP205000AS \$89
 30.0GB 7200 2MB QMP300000AS \$105
 40.0GB 7200 2MB QMP400000AS \$120
 60.0GB 7200 2MB QMP600000AS \$169

Maxtor
ULTRA 320mm SCSI Will work on older SCSI, Ultra Wide, Ultra 2 controllers.
 18.4GB 10,000 8MB KW018L2 \$205
 36.7GB 10,000 8MB KW033L8 \$405
 73.4GB 10,000 8MB KW073L8 \$775
IDE ULTRA ATA/100
 20.0GB 5400 2MB 4K020H1 \$80
 20.0GB 7200 2MB MST020H2 \$89
 30.0GB 7200 2MB MST030H3 \$105
 40.0GB 5400 2MB 4K040H2 \$95
 40.0GB 7200 2MB MST040H4 \$119
 60.0GB 5400 2MB 4K060H3 \$139
 60.0GB 7200 2MB MST060H6 \$169
 81.9GB 5400 2MB 4K080H4 \$205
 100.0GB 5400 2MB 4W100H6 \$249

IBM
ULTRA 160 SCSI
 9.1GB 10,000 4MB 07N6360 \$219
 18.3GB 10,000 4MB 07N6350 \$279
 36.7GB 10,000 4MB 07N6340 \$465
 73.4GB 10,000 4MB 07N6300 \$839
IDE Ultra ATA/100
 20.0GB 7200 2MB 07N6652 \$89
 40.0GB 7200 2MB 07N6654 \$115
 60.0GB 7200 2MB 07N6655 \$169
 75.0GB 7200 2MB 07N4777 \$255
 Visit our website at www.megahaus.com/ibm

WESTERN DIGITAL
IDE Ultra ATA/100
 20.0GB 5400 2MB WD200AB \$78
 20.0GB 7200 2MB WD200BB \$85
 30.0GB 5400 2MB WD300AB \$89
 30.0GB 7200 2MB WD300BB \$99
 40.0GB 5400 2MB WD400AB \$102
 40.0GB 7200 2MB WD400BB \$115
 60.0GB 5400 2MB WD600AB \$132
 60.0GB 7200 2MB WD600BB \$165
 80.0GB 7200 2MB WD800BB \$205
 100GB 7200 2MB WD1000BB \$265
 Visit our website at www.megahaus.com/wd

FUJITSU
Ultra 160 SCSI
 18.2GB 10,000 4MB MAJ3182MP \$205
 36.4GB 10,000 4MB MAJ3364MP \$399
 73.5GB 10,000 4MB MAN3735MP \$809

HARD DRIVES

Seagate (Call for deals on our externals)
ULTRA SCSI
 18.4GB 7200 2MB ST318417N \$179
ULTRA WIDE SCSI
 18.4GB 7200 2MB ST318417W \$170
ULTRA 160 SCSI
 9.2GB 10,000 4MB ST32905LW \$170
 18.4GB 7200 2MB ST318437LW \$170
 18.4GB 10,000 4MB ST318406LW \$225
 18.4GB 15,000 4MB ST318452LW \$329
 36.7GB 7200 2MB ST336737LW \$309
 36.7GB 10,000 4MB ST336706LW \$425
 36.7GB 15,000 4MB ST336752LW \$559
 73.4GB 10,000 4MB ST373405LW \$769
 181.6GB 7200 4MB ST1181677LW \$1419
 181.6GB 7200 16MB ST1181677LWV \$1459
IDE ULTRA ATA/100
 20.4GB 7200 2MB ST320011A \$89
 40.8GB 7200 2MB ST340016A \$112
 60.0GB 7200 2MB ST360021A \$159
 80.0GB 7200 2MB ST380021A \$215
 Visit our website at www.megahaus.com/seagate

2.5 IDE Laptop
 10.0GB 9.5mm Toshiba MK1017GAP \$87
 20.0GB 9.5mm Toshiba MK2016MAP \$120
 30.0GB 9.5mm Toshiba MK3017GAP \$185
 5.0GB 9.5mm IBM 07N4391 \$85
 10.0GB 9.5mm IBM 07N4390 \$92
 20.0GB 9.5mm IBM 07N6713 \$120
 30.0GB 9.5mm IBM 07N6714 \$189
 48.0GB 12.5mm IBM 07N6718 \$419
 10.0GB 9.5mm Hitachi DK23BA10 \$95
 20.0GB 9.5mm Hitachi DK23BA20 \$129

Power Back-Up Solution Problems? Call Us!

FIREWIRE DRIVES
3.5 Hard Drives w/Case (5400 RPM)
 20.0GB FW20GB54 \$195
 30.0GB FW30GB54 \$205
 40.0GB FW40GB54 \$235
 60.0GB FW60GB54 \$295
 80.0GB FW80GB54 \$335
 100.0GB FW100GB54 \$409

CONTROLLERS
 WD 1394 PCI Desktop Card (PC/Mac) WDAD002RNW \$49
 WD 1394 PC CardBus for Notebooks WDAD003RNW \$95
 Sonnet Tempo Ultra ATA/66 PCI Card TAT-066 \$98
 Sonnet Tempo RAID66 PCI Card TAT-066R \$189
 Adaptec PowerDomain SCSI Card APD29160MAC \$285
 Adaptec PowerDomain PCI Card APD39160MAC \$385

Let us custom-build your next RAID array using high-quality CRR cases! Call for pricing and availability!

CD ROM

	IDE	Parallel Port
Teac CD540E	40X 85ms \$43	\$98
Mitsumi CRMCFX48X	48X 65ms \$39	\$95
Creative SBDC52	52X 100ms \$37	\$95
Sony CDU5211	52X 85ms \$39	\$95
Acer CD656A	56X 85ms \$39	\$95
	WIDE SCSI	Int. Ext.
Plextor PX40TSUW	40X 85ms \$99	\$189
	SCSI	Int. Ext.
Teac CD532S	32X 85ms \$72	\$132
NEC CDR3010	40X 85ms \$67	\$127
Toshiba XM6401B	40X 85ms \$69	\$129
Plextor PX40TS	40X 85ms \$87	\$147
	DVD DRIVES	Int. Ext.
Tray Load 16 X IDE (DVD116)		\$65
Slot Load 10 X SCSI (DVD305)		\$99

TAPE BACKUP

	4mm DAT	Price
5-6GB 30MB/min	Seagate STT2800N	\$249
4-8GB 60MB/min	HP C1599A	\$509
4-8GB 60MB/min	Seagate DDS-2 STD2800RFT	\$639
4-8GB 90MB/min	Sony SDT7000A1	\$419
12-24GB 144MB/min	Sony DDS-3 SDT9000A1	\$565
12-24GB 120MB/min	HP DDS-3 C1554A1	\$695
20-40GB 288MB/min	Sony DDS-4 SDT11000A1	wow! \$819
48-96GB 66MB/min	Seagate DDS-2 STL496000N	\$1609
72-144GB 120MB/min	HP 6 tape load DDS-3 C6484	\$1649
	TANDBERG DATA SLR	Price
12-24GB 8.6GB/hr.	SLR24 [6214]	\$689
20-40GB 21.6GB/hr.	SLR7 [6620]	\$695
30-60GB 28.8GB/hr.	SLR50 [6560]	\$1059
	QUANTUM DLT	Price
40-80GB 6MB/sec	BH1AA-YF	\$1209
40-80GB 12MB/sec	DLT800	\$2629
	SEAGATE ULTRium LTO	Price
100-200GB 1.92GB/min	STU42001LW-S (Bare Int.)	\$4619
100-200GB 1.92GB/min	STU42001LW-K (Kit Int.)	\$4959
100-200GB 1.92GB/min	STU62001LW-S (Bare Ext.)	\$5095
100-200GB 1.92GB/min	STU62001LW-K (Kit Ext.)	\$5275
	USB	Price
4-8GB 120MB/min	Seagate STT68U-R	\$299
10-20GB 120MB/min	Seagate STT620U-R	\$339

ZIP, JAZZ & OPTICAL

iomega
 100MB Zip Ext. USB (ZIP100USB) **wow! \$79**
 250MB Zip Ext. SCSI for PC or Mac (ZIP250) \$139
 2GB Jaz Internal SCSI (JAZ2I) \$249
 2GB Jaz External SCSI (JAZ2X) \$309
 1GB Jaz disk 2-4/5-9/10+ \$80/7/7/5
 2GB Jaz disk 2-4/5-9/10+ \$85/8/0/7/7
Sony Magneto Optical
 5.2GB SCSI-2 Int. 4MB buffer (SMOF551) \$1379
 5.2GB SCSI-2 Ext. 4MB buffer (SMOF551X) \$1459
 5.2GB opt. media (SMAXS2) 1-4/5-9/10+ \$83/8/0/7/7
Maxoptical
 2.6GB SCSI Ext. 4MB buffer (TS-2600XM) \$1159
 5.2GB SCSI Ext. 8MB buffer (TE-S200XM) \$1439

CD MEDIA

CD RECORDABLE MEDIA	Price
16X Max Speed 5/20/50/100 Pack (CDR74B-5/20/50/100)	\$5/\$18/\$42/\$78
80 MINUTE MEDIA	
24X Max Speed 5/20/50/100 Pack (CDR80-5/20/50/100)	\$4/\$13/\$32/\$59
CD-REWRITABLE MEDIA	
4X Max Speed Budget 5/20/50/100 Pack (CDR74WB-5/20/50/100)	\$6/\$24/\$56/\$104
10X Max Speed 5/20/50/100 Pack (CDR74HS-5/20/50/100)	\$15/\$59/\$145/\$279
CD-R PRINTABLE SURFACE MEDIA	
16X Max Speed Budget 5/20/50/100 Pack (CDR74PB-5/20/50/100)	\$4/\$15/\$35/\$66
16X Max Speed 5/20/50/100 Pack (CDR74P-5/20/50/100)	\$7/\$26/\$62/\$115
CD RECORDABLE PLATINUM MEDIA	
12X Max Speed 5/20/50/100 Pack (CDR74PA-5/20/50/100)	\$6/\$24/\$57/\$104

CD-RW's

Sony 12x8x32 FireWire Rewritable
 Packet write, 4MB buffer, Spressa iLink Ext. [CRX1600LA/2] \$219
Sony 10x4x32 Rewritable
 Packet write, 4MB buffer, tray loading Int. [CRX1455J] / Ext. [CRX1455X] \$259 / \$319
CD Cyclone 12x10x32 FireWire Rewritable
 150ms Rand. Access Time, 2MB buffer, tray load w/Mastering Software, cable, media [7025] \$259
Plextor 12x10x32 Rewritable
 Packet write, 4MB buffer, tray loading Int. [PXW1210TSB] / Ext. [PXW1210TSBX] \$225/\$285
 w/Toast [PXW1210TSM] / [PXW1210TSMX] \$295/\$355

PRINTERS

Epson Stylus Photo 785EPX Ink Jet C408011 \$245
Epson Stylus Color 980 Ink Jet C380002 \$195
Epson Stylus Photo 1280 Ink Jet C393011 \$489

SCANNERS

HP ScanJet 4300Cxi Flatbed Color C7733A \$129
Epson Perfection 1250 USB B1B145011 \$129
Epson Perfection 16450 USB/SCSI B1B146021S190

SOFTWARE

RapidTrak Drive Formatting Software Mac Version **RAPIDPD** **wow! \$5**
ROXIO Toast 5 Titanium CD-Mastering Software New Version 1912300 \$85
Retrospect Mac Backup Software Retail Mac Version **RETROSPECT \$145**
 Call for additional software titles!!

We now carry VIDEO GAMES!
 Visit www.MegaHaus.com/games

LACIE
LaCie PocketDrive™
CD-RW 8424
 External 8x4x24 USB/FireWire®
 Mobile CD-RW Drive
 •Max. 8x-write/4x-rewrite/24x-read •2MB buffer
 •Software, blank CD-R & CD-RW •USB/FireWire®
 connectors •For Windows®/Mac®
\$379.99 (LAC 300383)



300103 External FireWire® CD-RW Drive
 •Max. 8x-write/4x-rewrite/32x-read •Includes
 TOAST™ software (LAC 300103) **\$199.99**

300152 External 75GB FireWire® Hard Drive
 •8.5ms average seek time •7200rpm •2MB buffer
 •PC/Mac® compatible (LAC 300152) **\$449.99**

MP3 Players **ALL For MAC/PC!**

Riövolt™
 Digital Audio
 CD Player
 •Plays audio CDs +
 MP3/WMA files
 recorded to CD-Rs (20+
 hr. play) •120-sec. elec-
 tronic shock protection •Up to
 15 hr. battery life with 2 AAs (included)
\$149.99 (DIA 90240193)

Riövolt™
 Nike pps [Play 60 Portable Sport Audio Player
 •Skip-free audio •32MB built-in memory for up to 60
 min. of listening •Upgradable with MMC cards
 •Supports MP3/WMA digital formats •USB
 (DIA 90260094) **\$99.99**

Rio 600 Digital Audio Player
 •32MB memory, upgrade to 372MB •Supports
 MP3/WMA formats •Skip-free •USB port •Headphones
 (DIA 90260077) **\$149.99**

Rio 800 Digital Audio Player
 •Capture/mix/play digital music from Internet or CDs
 •64MB memory for 2-hr. music/32-hr. talk •Supports
 MP3/WMA •USB •Remote & headphones
 (DIA 90260092) **\$199.99**

Macintosh® Software

Apple® Mac® OS X (v10.1)
 •Faster menu drawing, application
 launching & more •Bundled
 iTunes, DVD playback, audio/
 data CD burning •Improved net-
 work/printer support •Mac® CD
\$119.99 (APP OSX-CD)

Quicken® 2002 Deluxe
 by Intuit (IUM Q02R2-C) **\$59.99**

520 Version Upgrade Rebate Available!

AppleWorks® 6.2
 by Apple® (APP WORKS62-C) **\$79.99**

Word & Entourage® 2001 Special Ed.
 by Microsoft® (MSN WORD2K1SE-C) **\$139.99**

Graphics Suite (10.0)
 by Corel® (CRM DRAM10-C) **\$299.99**

Office (10.0) Upgrade
 by Microsoft® (MSN OFFICE10U-C) **\$299.99**

PageMaker® (7.0)
 by Adobe® (ADN PAGEMAK7-C) **\$499.99**

Mac® Entertainment

Propellerhead Reason
 •First software synth to
 surpass dedicated hardware
 •Complete with synths,
 samplers, drum machines,
 loop players, sequencer &
 more •Windows®/Mac® CD
\$279.99 (PPH REASON-C)

Backyard Basketball
 by Humongous (HUM BASKETBALL-C) **\$16.99**

Alien Vs. Predator - Gold Edition
 by Mac® Play (MFP ALIENVSPRE-C) **\$27.99**

Fly II
 by MacSoft (GFA FLYII-C) **\$36.99**

Play Music™ (1.0)
 by Notation® Technologies (NOT PLAYMUSIC-C) **\$39.99**

J&R COMPUTER WORLD

www.jandr.com
Toll Free: 800-221-8180
America Online Keyword: J&R

Apple® Macintosh® Computers
ALL INCLUDE APPLE® OS X FREE OF CHARGE!
DOUBLE YOUR MEMORY ON ANY APPLE® DESKTOP OR LAPTOP COMPUTER YOU PURCHASE AT J&R... FREE!
 Installation EXTRA! Cannot be combined with any other J&R offer.

NEW LOW PRICES ON APPLE® POWERBOOK® G4 NOTEBOOKS!

Apple® PowerBook® G4/400 128/10GB/DVD-ROM/10/100BASE-T
 •400MHz PowerPC® processor w/Velocity Engine •15.2" TFT display •128MB SDRAM
 •10GB HD •DVD-ROM •8MB VRAM •56K max. modem •10/100BASE-T •iMovie™ 2/iTunes™ 2/iTunes
 •Mac® OS9.1 •Titanium
15.2" TFT Color Display TITANIUM CASING! \$2199.99 (APP M7952LL/A) + (PNY 6416YESWMCS)

Apple® PowerBook® G4/500 256/20GB/DVD-ROM/10/100BASE-T
 •500MHz PowerPC® processor w/Velocity Engine •15.2" TFT display
 •256MB SDRAM •20GB HD •DVD-ROM •8MB VRAM •56K max. modem
 •10/100BASE-T •iMovie™ 2/iTunes™ 2/iTunes •Mac® OS9.1 •Titanium
\$2999.99 (APP M7710LL/A) + (PNY 6432VESWMCS)

APPLE® iMAC™ ALL-IN-ONE COMPUTERS

Apple® iMac™ G3/500 128/20GB/CD-RW All-In-One Computer
 •500MHz PowerPC® G3 processor •128MB SDRAM •20GB HD •CD-RW
 •16MB VRAM •10/100BASE-T •V.90 modem •15" display •Mac® OS 9 & OS X
\$999.99 EACH indigo (APP M8582LL/A) + (PNY 64174ESEMCS)
 SNOW (APP M8490LL/A) + (PNY 64174ESEMCS)

Apple® iMac™ G3/600 256/40GB/CD-RW All-In-One Computer
 •600MHz PowerPC® G3 processor •256MB SDRAM •40GB HD •CD-RW •16MB VRAM
 •10/100BASE-T •V.90 modem •15" display •Mac® OS 9 & OS X
\$1299.99 EACH graphite (APP M8492LL/A) + (PNY 6432ZESEMCS)
 SNOW (APP M8546LL/A) + (PNY 6432ZESEMCS)

Apple® iMac™ Special Ed. G3/700 256/60GB/CD-RW All-In-One Computer
 •700MHz PowerPC® G3 processor •256MB SDRAM •60GB HD •CD-RW •16MB VRAM
 •10/100BASE-T •V.90 modem •15" display •Mac® OS 9 & X
\$1499.99 EACH graphite (APP M8510LL/A) + (PNY 6432ZESEMCS)
 SNOW (APP M8554LL/A) + (PNY 6432ZESEMCS)

APPLE® POWER MAC™ MINITOWER COMPUTERS

Apple® Power Mac™ G4/733 128/40GB/CD-RW/GigE MiniTower
 •733MHz PowerPC® G4 processor w/Velocity Engine™ •128MB SDRAM •40GB HD
 •CD-RW •32MB VRAM •V.90 modem •10/100/1000BASE-T •Mac® OS9 & X
 •Monitor sold separately **\$1699.99** (APP M8359LL/A) + (PNY 6416YHSEMCS)

Apple® Power Mac™ G4/867 128/60GB/DVD-R/CD-RW/GigE MiniTower
 •867MHz PowerPC® G4 processor w/Velocity Engine™ •128MB SDRAM •60GB HD •Super Drive
 (DVD-R/CD-RW) •32MB VRAM •V.90 modem •10/100/1000BASE-T •Mac® OS9 & OS X
 •Monitor sold separately **\$2499.99** (APP M8360LL/A) + (PNY 6416YHSEMCS)

Apple® Power Mac™ G4/Dual 800 256/80GB/DVD-R/CD-RW/GigE MiniTower
 •Dual 800MHz PowerPC® G4 processor w/Velocity Engine™ •256MB SDRAM •80GB HD
 •Super Drive (DVD-R/CD-RW) •64MB VRAM •V.90 modem •10/100/1000BASE-T •Mac® OS9
 & OS X •Monitor sold separately **\$3499.99** (APP M8361LL/A) + (PNY 6464WHSEM8G)

Digital Cameras

Minolta Dimage 7
 SLR Digital Camera
 •5.24 megapixels
 •2560 x 1920
 max. •7x-optical/
 2x-digital zoom
 •12-bit A/D
 conversion •16MB
 CompactFlash™ •1.8"
 TTL LCD Viewfinder
 •For Windows®/Mac®
\$1099.99 (MIN DIMAGE7) MINOLTA

Fuji FinePix 4800 Zoom Digital Camera
 •4.3 MP file/2.4 MP CCD •Up to 1600 x 1200 res.
 •3x optical/3.75x digital zoom •2" LCD color monitor
 •USB •USB PC Sync Cradle •For Windows®/Macintosh®
 (FUJIFINEPIX4800) **\$399.99**

Canon PowerShot S300 Digital ELPH Camera
 •2.1 megapixels •3x-optical/7.5x-digital zoom
 •1600 x 1200 max. •Multi mode flash •Movie clips
 •USB •8MB CompactFlash™ •For Windows®/Macintosh®
 (CAN S300) **\$499.99**

Nikon COOLPIX® 995 Digital Camera
 •3.34 Megapixel •4x-optical/4x-digital zoom •Pop-up
 flash •Includes 8MB CompactFlash™, Li-Ion battery &
 charger •USB •For Windows®/Macintosh®
 (NKN COOLPIX995) **\$749.99**

CANON Digital Camcorders

Canon GL1
 Digital
 Camcorder
 •3CCD image
 sensors •20x
 Fluorite opti-
 cal/100x-digi-
 tal zoom
 •Optical stabilizer
 •2.5" LCD •Color viewfinder
CALL (CAN GL1)

ZR25MC Digital Video Camcorder •2.5" color LCD
 •10x-optical/200x-digital zoom •Image stabilizer
 •Progressive photo •Color viewfinder •Digital photo
 mode •MultiMedia/SD Memory card •IEEE 1394
 (CAN ZR25MC) **\$699.99**

SONY Digital Camcorders

Sony DCR-VX2000
 3-CCD Digital
 Camcorder
 •Memory Stick™
 •VGA 640 x 480
 still image res
 •12x optical/48x
 digital zoom •Super
 SteadyShot™ •iLINK™ •2.5"
 SwivelScreen™ •Color viewfinder
SONY.
CALL FOR PRICE! (SON DCRV2000)

DCR-PC110 Digital Handycam® Camcorder
 •1,070K pixel CCD •Carl Zeiss® Vario-Sonnar T lens
 •10x optical/120x digital zoom •2.5" SwivelScreen™
 •Color viewfinder •Digital photo mode •iLINK™
 (SON DCRPC110) **CALL!**

Hewlett-Packard Scanner

Hewlett-Packard ScanJet 7490c
 Professional Color Flatbed Scanner
 •True 48-bit •Up to 2400 x 2400 dpi •Legal size
 scanning •Transparency adapter •50-sheet document
 feeder •SCSI & USB •For Windows® & Macintosh®
\$899.99 (HP C7719A)

Matrox Video Editing

Matrox RTMac
 Realtime Native-DV Editor for
 Power Mac™ G4
 •Requires Final
 Cut Pro (2.0)
 •Realtime native-DV
 editing with
 realtime
 effects for the
 Power Mac™ G4
\$999.99 (MTRX RTMAC)

To Order Toll Free and Receive our NEW Exciting Free Catalogue
800-221-8180
 24 Hours, 7 Days, Anywhere in the USA
 PARK ROW • NEW YORK • NY • 10038 FAX: 1-800-232-4432
 Not responsible for typographical or pictorial errors. Merchandise is brand-new, factory-fresh & 100% guaranteed! *Except where noted! Some quantities may be limited.
 All Major Credit Cards Accepted
Overnight Delivery Available!
Order Code: MWM1201
 (Prices Good Until 12/15/2001)
 Circle 57 on card or go to www.macworld.com/getinfo



Visit
www.hp.com/go/mac-connect
for hp Mac OS X information

BackJack
Jack

Don't let your data disappear -

BackJack provides daily, fully automated, secure, off-site backup of your mission-critical Mac files.

online backup service for Macintosh

www.backjack.com
toll free - 888 421 0220

STONE STUDIO™



Create™
create entire websites, vector artwork, drawings



GIFfun™
make animated web graphics



PackUp&Go™
compress and uncompress files



SliceAndDice™
cut up pictures for online use



PhotoToWeb™
make photo albums and websites



TimeEqualsMoney™
billing & invoicing



PStill™
make PDF and view EPS files



FOR MAC OS X
DOWNLOAD OR
CD-ROM AVAILABLE



www.STONE.COM

QuicKeys®



Is Here!

Helping you work X Times SMARTER, FASTER, BETTER!



FREE Trial Version!
www.cesoft.com

Macworld Showcase Featured Advertisers

OS X		RAIDking Technologies	raidking.com	Mac Show	macshowlive.com	Data Tech Remarketing	datatech-rmkt.com
Hewlett Packard	hp.com	iProof Systems	iproofsystems.com	Postcard Press	postcardpress.com	MCE Systems	powerbook1.com
Stone Design	stone.com	On A Dime	onadime.com	Action Front Data Recovery	datarec.com	Academic Superstore	academicsuperstore.com
BackJack	backjack.com	Itsco	itsco.net	Mac Academy	macacademy.com	Mac Power	macpowerinc.com
CE Software	cesoftware.com	Photo Control	photo-control.com	Copy Craft	copycraft.com	Mac Solutions	macsolutions.com
Developer Showcase		Lind Electronics	lindelectronics.com	Modern Postcard	modernpostcard.com	MegaMacs	megamacs.com
ADS Technologies	adstech.com	Road Tools	roadtools.com	Show and Tell	show-tell.net	Journey Educational Mktg.	journeyed.com
Formac	formac.com	Gefen	gefen.com	Creative Juices	bigposters.com	MacPro	mac-pro.com
Granite Digital	scsipro.com	Escape Labs	escape-labs.com	Presentation Services	imagers.com	Mac of all Trades	macofalltrades.com
Mace Group	macally.com	Hoodman Corporation	hoodmanusa.com	Direct Showcase		Memory Masters	18004memory.com
Griffin Technology	griffintechology.com	Midiman	midiman.net	The Camera Zone	thecamerazone.com	Creation Engine	madaboutmac.com
Keyspan	keyspan.com	Services Showcase		PowerMax	powermax.com	Mac Solutions	macsolutions.com
Dr. Bott	drbott.com	Silicon Valley CD	svcd.net	Shreve Systems	shrevesystems.com	PowerOn Computers	poweron.com
Worth Data	barcodehq.com	Lazarus	lazarus.com	TD Curran	tdcurran.com	Data Memory Systems	datamem.com
Digital Horizons	digitalhorizonsonline.com	Total Recall	totalrecall.com	MacResQ	macresq.com	POS Direct	posdirect.com
Biomorph	biomorphdesk.com	Drive Savers	drivesavers.com				

For more information contact Niki Stranz or Carol Johnstone at (800) 597-1594.

THE Complete
line of **FireWire**[®]
Solutions for
capturing,
editing,
and storing
your **DIGITAL
VIDEO**

Available everywhere including: Safe Harbor, Mac Zones, Mac Mall, CompUSA, B&H Photo, Video Guys, DV Direct, Data Vision, CWOL.com, J&R Music World, Micro Center, and more!

\$299



PYRO PlatinumDV

- Capture video from your digital camcorder via FireWire with the PYRO Card
- Bundled with the Full Version of Adobe® Premiere® 6.0 for professional DV editing

\$399



PYRO DV RAID

- Speed up video render time
- Enclosure holds two IDE hard drives
- Includes Charismac RAID software for your Mac
- Supports both striping and mirroring/RAID 0 and RAID 1

\$99



PYRO 1394 Drive Kit

- Add extra storage space for your large video files by converting any IDE hard drive or CD-ROM drive into an external FireWire drive

\$89



PYRO 1394 WebCam

- The web cam that takes advantage of your Mac's FireWire port to deliver the clearest images on the Net
- Includes software for cross-platform video conferencing



Cerritos, CA - 800-888-5244

www.adstech.com

Connect, Create, and Store



Shop Formac!

Formac

www.formac.com

Visit our website for the easiest and most convenient way to buy the best products for your Mac. Or call us at 1-877-4Formac (that's 1-877-436-7622).



Vivid colors, brilliant images, fluid motions - truly digital!

gallery 1740 **ADC flat panel display!**

Superior display solutions for creative professionals

- See the big picture: 17.4" TFT display increases your workspace by ~5% in comparison to 17" displays!
- Full-motion digital video playback: industry-leading pixel response (10-25ms) predestines Formac gallery for professional video work. Play back videos without ghosting!
- Superior picture quality: MVA technology combined with true digital interface (ADC), unparalleled contrast ratio (400:1) and brightness (220cd/m²) produce sharp and brilliant images.
- Ultra-wide viewing angle: View crystal clear images with accurate colors from a viewing angle of up to 160 degrees - from sides, top or bottom.
- Ultra-high SXGA resolution: 1,280 by 1,024 pixels
- Apple Display Connector (ADC): one single cable carries digital graphics, power and USB signals. Built-in self-powered USB hub.
- Form + Function: Slim desktop footprint and unique hinge design to adjust viewing angle to individual needs.



Producers wanted!

studio DV/TV **Holiday Special!**

Convert analog video to high-quality DV

- Hardware CODEC: Capture video in native DV, full-screen at 30 frames per second with digital audio quality (48kHz @ 16 bit)
- Input and output for Composite Video (RCA), S-Video, Stereo Audio and two FireWire ports
- Built-in Stereo TV/FM Tuner (NTSC): Convert TV into DV!
- FireWire: hot-swappable and bus powered*

studio DV/TVR **Built-in 48GB hard disk!**

All the features of Formac studio DV/TV plus many more:

- Digital video recorder: create individual schedules and record your favorite movies - more than 4 hours in high-quality DV!
- Export to monitor: Enjoy your movies on a large monitor or TV!
- Bus powered*: Present and watch your movies and audio files anywhere you want, at any time!

Only
\$399

FS 1042-0

Only
\$999

FS 1142-48



Workspace in abundance!

pronitron 22/800

- 22" Diamondtron CRT monitor
- Maximum resolution of 2,048 by 1,536
- Brilliant and flicker-free images: 0.24 grille pitch and industry-leading horizontal frequency of max. 121kHz
- Built-in self-powered USB-hub

Only
\$699

PN 2280-1



Rip, Mix and Burn - with Style!

cdrw

- Ultra-fast FireWire CD-RW technology
- BURN-Proof technology eliminates buffer underrun errors
- 24X/10X/40X burns complete 650MB disc in just 3 minutes!
- Quiet: Hermetically sealed enclosure virtually eliminates noise of drive
- Includes Roxio Toast 5 LE



From
\$199

FDR 1016-1



*Please check our website for Macintosh computers that support bus-powered devices. © 2001, Formac Electronic, Inc. Formac, Shop Formac!, Formac cdrw, Formac gallery, ProNitron and Formac studio are registered trademarks of Formac Elektronik GmbH and its subsidiaries in the US and in other countries where Formac products are sold or distributed. Other brands and names are the property of their respective owners.

Also available at the Apple Store, ClubMac, MacMall, RCS, Datavision or at other Formac Certified Resellers (Please visit our website for a detailed list and locations). Call us for Education prices.

Custom **ULTRA 160 SCSI LVD** - **Ultra 100 IDE** - **Firewire 1394**

If you want Ultra SCSI Performance use our Quality Cables & Active Terminators. High Performance Solutions for Ultra100 IDE and Firewire Improves Performance.

SCSI Ultra 160 RAID

SCSIVue™ SCSI RAID Enclosures

Ultra 160 SCSI Towers
16 & 29 Bay



Temperature ALARM!

From: **\$999**

SCSIVue™ Ultra 160 SCSI Cases



From: **\$99**

OPTIONS:

- Ultra 160 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

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.



\$399

Bay Cooler Kit keeps those HOT Ultra SCSI Drives COLD as ICE!

Dual Fan & Bracket **\$29**

HOT SWAP Pull Out Bays Compatible with all 50 pin & 68 pin SCSI Buses up to Fast SCSI 2. From: **\$79**

\$99 Active Digital SCSI Repeater

- Models for all SCSI types
- Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

PS Included

SCSIVue™ Gold Diagnostic Cables

Benefits:

- 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

From: **\$39**

Gold VHD Ultra160 SCSI Cable

From: **\$109**

Features:

- New .8mm Ultra 160 LVD SCSI Connector
- Triple Shielding (Unique Design)
- Double Gold 20u" Plated Connectors
- Diagnostic Indicators
- Large Ferrite Filters

LVD-TPO Teflon™ Internal Cables

Benefits:

- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

Features:

- Perfect 90 ohm 132 Ohm Impedance
- Custom in 1 Day
- Triple Protection Connector - Gold contacts Silver Wire

From: **\$39**

68 Pin Replacement Cable for External Drive Cases.

Hot Swap Powered Terminator

From: **\$49**

Now you can safely remove any SCSI device from a SCSI chain by simply clicking a switch. Optional Power Supply provides termination power to portable setups or when termination power is not being supplied properly.

Speed Breakthru...40 MB/s!!!

FireVue™ FireWire RAID systems offer up to 480 gigabytes of storage. Using the second generation of FireWire. We are now able to get a true 40MB/s data transfer rate; 3 Times faster than the competition!

480 Gigabyte 8 Hot-Swap Bays

8 - Bay Tower holds 480 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

From: **\$3995** Kit

240 Gigabyte 4 Hot-Swap Bays

4 - Bay Tower holds 240 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

From: **\$1995** Kit

120 Gigabyte 2 Hot-Swap Bays

2 - Bay Tower holds 120 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

From: **\$995** Kit



Our Hot-Swappable RAID Systems offer quick and easy bay interchangeability and complete fault tolerance. Each Hot-Swap Bay 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 Drives offering low cost and high reliability. Each system uses IBM 60 Gigabyte 7200rpm drives with three year warranties.

FireVue™ FireWire 1394 Adapters

These FireWire 1394 Gender Changer and Cable Extenders allow you to use your current cables to extend or change your connector ends. Combined with the added versatility that these devices offer is the ability to also monitor 1394 power. Our exclusive LED circuit lets you know that power is being supplied to the 1394 bus.

From: **\$19.95**

- 4-4 Pin - Connects 2 Cables
- 5-6 Pin - Connects 2 Cables
- 4-6 Pin - Converts 6p Cable
- 6-4 Pin - Converts 4p Cable

FireVue™ FireWire 1394 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.

From: **\$99**

Power Source Included

FireVue™ FireWire 1394 to Cardbus

The perfect solution for any PCMCIA Laptop or Portable computer. This card is both Mac and PC compatible. Gives you two 1394 6-pin FireWire connectors. Supports up to 400Mb speed. Optional Power Supply.

From: **\$99**

FireVue™ FireWire 1394 to PCI Host

Give you four 1394 6-pin FireWire connectors. IEEE Standard compliant with auxiliary power connector on card. Supports up to 400Mb speed. Works with Mac OS 8.6 or newer, just plug it in. Also supports Windows 98SE, 2000, and 2000 Server.

From: **\$99**

SCSIVue™ Active Terminator

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

From: **\$39**

Gold Diagnostic Adapters

From: **\$39**

- Both 50 pin and 68 pin (all combinations)
- 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)
- 80 Pin SCA Drive to 68 Pin (converts SCA to 68 SE or LVD)

For Adaptec Ultra Wide Cards

- Adapters with partial termination built in for 68 to 50 converters (converts Host Adapter)
- 68 Pin to 30 Pin Centronics or 50 Pin MicroD Adapters

FireVue™ Gold FireWire 1394 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.

From: **\$29**

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

From: **\$19.95**

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.

From: **\$13.95**

6", 12", 18", 30"

FireVue™ FireWire Hot-Swap Bay

From: **\$159**

The Hot-Swap FireWire Bays fit all standard 5 1/4" openings. Can be used in any standard enclosure or computer opening. Comes with Neon glow bar indicator, Ultra fast 40 MB/s second generation speed, and two cooling fans.

SCSI Cable Tester - LED Readout

Special Package can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use on an

From: **\$89**

Three models to choose: 50 IDC • 50 Cen • 68 MD

Gold Diagnostic Adapters

From: **\$39**

- Both 50 pin and 68 pin (all combinations)
- 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)
- 80 Pin SCA Drive to 68 Pin (converts SCA to 68 SE or LVD)

For Adaptec Ultra Wide Cards

- Adapters with partial termination built in for 68 to 50 converters (converts Host Adapter)
- 68 Pin to 30 Pin Centronics or 50 Pin MicroD Adapters

FireVue™ FireWire Hot-Swaps

\$229 Hot-Swap Case Kit

Additional BAYS **\$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.

FireVue™ FireWire Case Kits

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.

From: **\$159**

- 50 Watt Power Supply
- 40MB/s Fast FireWire
- 1 Year Warranty
- Supplies power to bus

Cases come with additional face panels.

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's the fastest choice on the market to date. Case mount also available.

From: **\$99**

IDEVue™ Ultra 66/100 TPO Cables

Ultra 66/100 TPO Cables use 80 conductor cable and special 40 pin connectors. The best you can buy for internal or external use.

From: **\$29.95**

IDEVue™ Ultra 100 Teflon Cables

Ultra 66/100 Teflon Cables use 80 conductor cable and special 40 pin connectors. These are designed for RAID applications or where additional shielding and protection is required.

From: **\$29.95**

Up to 36" Long! (double the specification length)

IDEVue™ Ultra 66/100 Hot Swap Bay

From: **\$39.95**

The IDE Ultra66/100 Hot Swap Bay works with hard drives and removable drives. Includes cooling fan, key lock, and 96 pin high reliability interconnection. LED indicators for Power and HDD Activity.

For true Hot-Swap you must use a Host Adapter

FREE Technical Support!!!

Available to everyone, customer or not.

*'Twas the night before Christmas, and all through the house
Not a creature was stirring, not even a Macally Mouse...*



Call us for dealers near you 1.800.644.1132 or visit us at: www.macally.com

Circle 159 on card or go to www.macworld.com/getinfo

iMic

USB AUDIO INTERFACE



The iMic is the ideal audio interface for Macs without audio input capabilities. You can use it to connect virtually any audio device to your USB equipped Mac.* Designed for both the pro and the hobbyist, the iMic provides superior audio input/output quality for microphones, headsets, stereos, turntables, music equipment and more.

*Macintosh with built-in USB port(s) running Mac OS 9.0.4 or greater is recommended.

GRIFFIN
TECHNOLOGY

615.399.7000

info@griffintechnology.com

1619 Elm Hill Pike, Nashville, Tennessee 37210

www.griffintechnology.com



PowerMate

USB AUDIO CONTROL & INPUT DEVICE

This programmable USB device will provide volume adjustment capabilities for USB Audio and features a click button for endless control possibilities, including power-on.



vSync

VIDEO ADAPTER

The new vSync will allow G4s with the newest video cards to run older monitors.

FUTURE RELEASES... COMING SOON!



Our new USB hub is just 3/8" thin! Perfect for your PowerBook



This amazing hub offers full desktop functionality in an incredibly thin case. The hub has four 12 Mbps USB ports, supports both bus-powered & self-powered modes, uses up to 95% less power than other mini-hubs, and includes a built-in USB cable for connection to the PowerBook. Available in silver or black.



Upgrade your G3 or G4 to USB 2.0. See our website.

The top selling brand of USB serial adapters!

Keyspan is #1 in USB Adapters!
USB Twin Serial adapter, USB PDA adapter for PalmPilots, & USB Parallel adapter for Epson printers.

(510) 222-0131 www.keyspan.com



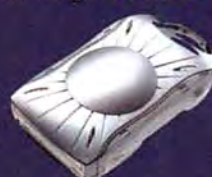
Circle 170 on card or go to www.macworld.com/getinfo

WEST HEDGE DESIGNS  **IceBook Tote**



Dr. Bott T3Hub

 **Revo Ice CD**



ROAD TOOLS
Podium Cool Pad

COOL MAC STUFF

Dr. Bott COOL

www.drbot.com
877.611.2688



Swann OptiGlo

 **Kritter Cam**



RESELLERS!

Dr. Bott has a great reseller program. Contact us for more information.
www.drbot.com • 503.452.8101 • 877.611.2688

Circle 173 on card or go to www.macworld.com/getinfo

Bar Coding
Peripherals
Mobile Computin

DEVELOPER showcase

Call Us Toll Free 800-345-4220

Broadest Selection of Bar Code Products in the Industry

- Technically superior products direct from the manufacturer
- Toll free technical and pre-sale support
- 24-hour turnaround on repairs
- Free UPS Blue shipping in U.S.
- 30-day money back guarantee
- Portable & non-portable Batch Readers
- Cordless interactive R/F Terminals
- Wand, Laser, CCD, Magstripe or Slot Badge
- PostScript bar code fonts

or visit our website at
www.BarCodeHQ.com
for a complete catalog and bar code primer



Worthington Data Solutions is now...



Phone: 831-458-9938 • Fax: 831-458-9964



CREATE, PRINT & READ BAR CODES

with new Bar Code Fonts from **ITSCO!**

- All popular bar codes
- User-friendly
- Designed in the Bear Rock tradition!
- Individual or deluxe packages
- Both TrueType & PostScript

CALL 1-800-228-9487
or visit us at www.itsco.net



Ask about our full line of USB-compatible bar code scanners, printers, and accessories!



For G4 PowerBooks! BookEndz DOCKING STATIONS



Only \$244.95

Convert your PowerBook to a desktop system in seconds!

Eliminates cable confusion and damage to connectors.

Supports all rear panel PowerBook ports.

Adds only 3" to rear of PowerBook while docked.

New ejection levers for easier docking & undocking.

www.bookendzdocks.com

BookEndz
Division of PHOTO CONTROL CORPORATION
800-787-8078 or 763-537-3601
E-Mail: beinfo@photo-control.com

LIND

Your Essential Station

Power Accessories for Mobile Computing

*New **Smaller - Lighter**

Powerbook Auto/Air Power Adapters

Only 6.5 oz
3-75" long



Rugged Lind adapters feature:
Durable ABS housing
Fault protection circuitry with Automatic reset
Nylon carrying case
3 year warranty

Adapters in stock for all G4s, G3s & iBooks!
Now only \$79.95

Order online at:
www.lindelectronics.com
or Call 24hr/7days a week to order:
#800-897-8994

Lind Electronics, Inc. 6414 Cambridge Street, Minneapolis, MN 55426 #952-927-6303



Take Your Laptop Anywhere

- Eliminates Glare!
- "Pops" into Shape!
- With Travel Bag!
- Guaranteed!!!

Item #:	Fits Screen Size:	Price:
Order E-2000	12" - 15"	\$39.95
Order E-2004	14" - 16"	\$39.95

By: **HOODMAN**

Get Yours Today!

800.818.3946

www.HoodmanUSA.com



Macworld has an advertising section dedicated to the needs of the smaller developer

The **Macworld** Developer Showcase

Place your ad here. Call today to reach our active buyers. **1-800-597-1594**

ex-tend-it

The DVI Repeater & the DVI to ADC Conversion Box

Extends and Connects
an Apple Flat Panel Display (ADC)
to any Mac or PC Computer.

The DVI Repeater works by doubling the distance of any DVI cable. It enables you to work far away from your computer in a quiet, non-intrusive environment or extend a projector for presentations.



Supports
the Apple family of
Flat Panel Displays:

- Converts DVI to ADC
- 6, 12, 15, 25, 35, 50 & 75 foot cables available
- No loss of quality



800-545-6900
www.gefen.com

relay

An Independent Digital Delivery Software.

Processing

FTP Delivery

E-mailing

Faxing

Filing



Totally automated and easy to use.
Ensures failsafe digital delivery.
Solutions starting at \$799

For more information contact Digital Horizons Software Development Inc.
Tel: (905) 821-2961 or visit our website at digitalhorizonsonline.com

leading edge designers.
pioneering research scientists.
prestigious architects.
they all work right here.

shouldn't you?



biomorph personal desk
• multi-level height adjustability
• sit-to-stand operation
• 1-2 monitors
• certified ergonomics
• starting at \$1,295

biomorph
interactive desk

biomorphdesk.com it's what you work on

call for free ergonomic furniture catalog 888 302-DESK

full range of desks, chairs and storage options. Biomorph is a reg. trademark of S.Barlow-Lewson ©2001 Ground Support Equipment (US) Ltd.

Circle 161 on card or go to www.macworld.com/getinfo

Don't Get Caught With Your Data Down!

Affordable RAID
Storage Solutions
by MacRAID™



Need more storage? Get a new RAID storage solution by MacRAID™! You'll enjoy blazingly fast speed, quick and easy set-up, and plenty of ultra-reliable storage space!

MacRAID™, by RAIDking™ Technologies, is the World's most affordable reliable RAID storage solution. Call us now toll-free to discover more!

www.MacRAID.com
1-866-MacRAID

RAIDking™ Technologies
6050 Corte Del Cedro
Carlsbad, CA 92009-1514
Outside the US: 760-929-9373



Cooler Running Powerbooks, \$30



PODIUM CoolPad™

Rock-solid adjustable-tilt pivot base

(CoolPads make great gifts)

Increasing the airspace under your Powerbook will allow better heat dissipation. The adjustable-tilt lets you find your own comfort zone. Pivots 360 degrees, guaranteed for life. Black or white (for iBooks), works with any laptop, \$29.95

to order... www.coolpad.com • 1-877-696-9600 (2477)

STAPLES
The Office Superstore

The smaller 'Traveler' CoolPad™ is available in Staples stores. \$19.95

Macworld
Dec. 1998

ROAD TOOLS • Made in USA • Patent Pending • www.roadtools.com

Got TV?

Eska
pe
Labs
A Hauppauge Company

MyTV2GO and MyTV... TV for your Mac

From \$99

From \$149



You've got to see it to believe it!

www.eskape.com

MacWAREHOUSE **MICRO CENTER** **DEPOT**
ClubMac **Outpost.com** **COMPUSA**

• music-visuals • video fx • mp3's • real-time digital art • live performance • visual programming •

See the Music.

www.onadime.com

Real-time Music & Digital Arts Software

Download your free Onadime Player or Onadime Composer demo today!

**ONADIME
COMPOSER**
The Live Digital Medium

- CD's
- movies
- mp3's
- pictures
- live music
- live video
- quicktime
- color shapes
- live MIDI
- real-time fx
- mouse
- QT... MIDI
- tablet
- fractals

www.onadime.com



Some wedding photos are definitely more "color critical" than others...

With PowerRIP 2000® – a PostScript Level 3 compatible RIP providing professional, fast and simple output from HP and Epson color ink jet printers – achieving accurate pre-press is a piece of wedding cake.



PowerRIP 2000 includes ICC profiles for printer manufacturers' inks and papers as well as iProof's PressProof paper stocks. Industry standard color profiles are provided; however users may add their own ICC color profiles. Provides Chooser level printing on the Mac. PowerRIP will spool jobs into a queue to better manage your production. Recompose separated DCS color files into a single color proof. Easily specify spot colors right at your RIP. Make PDFs with PowerRIP PDF feature. PowerRIP 2000 is available for all Hewlett Packard series 900 and 1220 ink jet printers, as well as all Epson Stylus Color and Stylus Photo ink jet printers



Tel: 321-254-4401 Fax: 321-254-6899
www.iproofsystems.com

Reality Audio

Award-winning audio technology for your Mac from the company music professionals trust: M-Audio.



Music professionals are uncompromising when it comes to the fidelity and performance of their soundcards. They don't just demand the best; they demand reality.

Now with the Audiophile 2496 you can have that same level of performance in all of your multimedia applications: from hi-fidelity MP3 and internet audio to 24-bit audio recording, vinyl transfers, and even DVDs. If you demand professional quality audio, it's time to get real. Discover what the Audiophile 2496 can do for you. For more information, and to get yours, click on www.m-audio.com/macworld/



Computer Music Magazine

says of the Audiophile:
"How does it sound?
Well, in a word, stunning."



Available at
apple.com
go to Store > Accessories > Music

800-969-6434 • WWW.M-AUDIO.COM • EMAIL: INFO@M-AUDIO.COM

CALL SILICON VALLEY CD

FOR CUSTOM SILKSCREENED BLANK CD-R DISCS, AND...



CD/DVD MANUFACTURING AND PACKAGING



CD-R DUPLICATION WITH CUSTOM PACKAGING



BusinessCardCD™ OPTICAL BUSINESS CARDS

Why use Silicon Valley CD? Listen to a satisfied customer:

Beautiful printing, on-time delivery in a rush situation, friendly and (most importantly) helpful people, a smooth transaction... all for a fair price. I've been a graphics professional for 30 years, but I'm a beginner in CD-ROM publication. So I was relieved to have your experts thoughtfully guide me through the process. I will definitely order from Silicon Valley CD again.

— Marlene Burrell, Partner, April Graphics
June 1, 2001

CALL TODAY!
800-255-4020
WWW.SVCD.NET

FAST Turnarounds
EASY Ordering



ORDER BLANK CD-R DISCS AND SUPPLIES IN OUR ONLINE STORE!




990 Richard Avenue #103, Santa Clara, CA 95050 Tel: 408-486-0800 Fax: 408-486-0809

Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-a-million megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clamencia Street • San Francisco, California 94103


LAZARUS
DATA RECOVERY
Working at the speed of business.
800-341-DATA

Circle 217 on card or go to www.macworld.com/getinfo

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:



1. Fastest, most successful data recovery service available.
2. Recommended and certified by all drive companies to open the drive and maintain the warranty.
3. Advanced, proprietary recovery techniques.
4. 24-hour, onsite, and weekend service available.
5. Retrieve recovered data instantly with DATAEXPRESS™ over secured Internet lines.
6. Featured in Mac-World, Mac Addict, MacWeek, Popular Mechanics; also by CNN, BBC, Forbes, and many others.
7. Federal and State Contracts.



Since 1985
INTL: 415-382-2000

"We Can Save It!"

Visit DriveSavers at: www.drivesavers.com

©2001 DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949 FAX: 415-883-0780

Circle 211 on card or go to www.macworld.com/getinfo

EMERGENCY DATA RECOVERY

ActionFront - Data Recovery Labs
"The Data Emergency Specialists"™

- Free Evaluations and Guaranteed Results.
- Specializing in Top Priority High-End recoveries from network servers, multi-drive systems, (RAID, optical jukeboxes).
- Mac, SQL, Jaz, Zip, DLT & DAT tapes.
- Over 10 years of successful recoveries.
- Authorized by hard drive manufacturers.

ACTION FRONT
DATA RECOVERY LABS

Toronto • Atlanta • Buffalo • Santa Clara • Tokyo
www.ActionFront.com

1-800-563-1167

ISO 9001
World's #1 certified
data recovery company

PROFESSIONAL DATA RECOVERY

HARD DRIVES • REMOVABLE DISKS • MOST OPERATING SYSTEMS

Lost Data?

No other company offers a more complete range of data recovery services at such affordable prices. From In-House recovery to Do-It-Yourself software solutions, we are industry leaders and innovators since 1989.

Online quotes at www.totalrecall.com

800.743.0594

(719) 495-8600

TOTAL RECALL

OFFICES: CALIFORNIA COLORADO NEW YORK UKRAINE

Circle 199 on card or go to www.macworld.com/getinfo

Mac-zimum Mac-Talk

Your Digital Life...
MacGaming...
TechTips...
Interviews...
MacBasics...
MacMediaPro...



Live WED 9-11PM ET @ macshowlive.com

SHOWCASE

**YOUR
SERVICES
HERE**

**- CALL TODAY -
1-800-597-1594**

1000 Full Color BizCards - \$60!



Preferred by over
8,000 professionals!

- Superthick Stock
- Glossy UV
- No film charge
- Friendly Service
- Free Samples

**1000 Color
Postcards
\$145**

black imprint on back

FREE!



Postcard Press

1-800-957-5787

www.postcardpress.com

For computer &
software training

MacAcademy

Visit us at
macacademy.com
1.800.527.1914

175 on card or www.macworld.com/getinfo

WHOLESALE WATERLESS COLOR PRINTING FROM YOUR COMPUTER FILES

1000 FULL COLOR BUSINESS CARDS FOR \$100 Sug. retail price \$179
1000 FULL COLOR POSTCARDS FOR \$149 Sug. retail price \$249

Printed waterless at 300 line screen from your computer files on Super Premium 12pt. Kromekote with our FREE scratch-resistant aqueous coating.



Try Our Fast 4/C Print Quotes!

- BUSINESS CARDS
- POSTCARDS
- CD INSERTS
- CD TRAY LINERS
- BROCHURES
- BOOKLETS
- NEWSLETTERS
- POSTERS & MORE



FEATURING 300 LINE SCREEN WATERLESS OFFSET PRINTING

Rates for Brochures, Booklets and Flat Sheets are also available.

4-COLOR WATERLESS SPECIAL **5,000 6 x 9 POSTCARDS**
 Printed FULL-COLOR on both sides (4/4) from your digital files on 80# Fortune Glass Cover with FREE aqueous coating.
 Get 10,000 for only \$999 **\$699** SUGGESTED RETAIL \$1,365



Authorized Service Bureau

Se Habla Español

Email your requests for printing quotes to request@copycraft.com

1.800.794.5594

CALL TODAY FOR A FREE COPY OF OUR NEW 32-PAGE FULL COLOR CATALOG

Visit www.copycraft.com for more Specials...in English or Spanish!

Circle 223 on card or go to www.macworld.com/getinfo

full color custom POSTCARDS

Use **Pro Designer™** at modernpostcard.com to easily FTP ready-to-print postcard files or send them in on a disk.

Prices start at just **\$95/500** cards. Plus, our in-house mailing services can save you time, money & hassles.

FREE SAMPLES
 Visit our website or call NOW for your postcard kit!



800-959-8365
modernpostcard.com

207 on card or www.macworld.com/getinfo

Digital Imaging

Slides & Negatives \$3.75
 4x5 Transparencies/Negs \$30
 Large Posters & Displays \$45
 Scanning: Hi & Lo Res
 Kodak Photo-CD Scans
 Short Run Color Printing
 Show & Tell 39 W 38th St., NY, NY 10018

www.show-tell.net
 212 840-2912 212-840-7953 (fax)
jobs@avilt.com • posters@avilt.com

2199 on card or www.macworld.com/getinfo

BIG POSTERS & HUGE DISCOUNTS FROM YOUR COMPUTER FILES

HIGHEST QUALITY PRINTS AT THE BEST VALUE. ABOVE • STERIL OF THE ART EQUIPMENT • UP TO 50% OFF

24" x 36" Full color print on 7 mil high or low glass paper \$25 <small>NO MINIMUMS VOLUME DISCOUNTS</small>	36" x 48" Full color print on 7 mil high or low glass paper \$50 <small>NO MINIMUMS VOLUME DISCOUNTS</small>	48" x 72" Full color print on 7 mil high or low glass paper \$125 <small>NO MINIMUMS VOLUME DISCOUNTS</small>
---	---	--

FOR MORE INFO & PRICING VISIT OUR WEBSITE
www.BIGPOSTERS.com
 CREATIVE JUICES PRINTING & GRAPHICS INC.
 (in New York) Tel: 516-520-5553 Fax: 516-520-4334 • 14 Woodside Pl., Levittown, NY 11756

1-888-880-HUGE

177 on card or www.macworld.com/getinfo

Get A Free Sample

Printed From Your File

Go to www.imagers.com/macw... Discover the excellent print quality of our newest and very improved Indigo Ultra digital color press!



We Guarantee Our Quality!

Digital Services!

Offset CMYK Color Printing
 Large Format Color Posters
 Hi-Res Film Scans To CD
 Color Laser Printing
 Digital Photographic Prints
 Slides/4x5-Neg, Pos, B&W

- INSTANT Online Quotes
- OVERNIGHT Services
- Submit Jobs Online
- Expert Tech Help
- A Price You'll Like!

We Use...Advanced technologies for the best results!



Go online

info, quotes, & job submittal
www.imagers.com

800.232.5411 or 404.351.5800
 1575 Northside Dr. Ste. 490 Atlanta 30318

Monday to Friday 8:00am to 8:00pm
 East Coast Time

Circle 155 on card or go to www.macworld.com/getinfo

DIGITAL CAMERAS

OLYMPUS	FUJIFILM	SONY	Canon
<p>E-10</p> <p>* Top Rated *</p> <ul style="list-style-type: none"> *2240x1680 Pixels *4.1 Megapixels *4x Optical zoom *Holds smart media & Compact Flash II storage *Hot shoe/PC Flash *Manual focus kns ring *Pro/ digital SLR <p>C-2100UZ</p> <ul style="list-style-type: none"> *1600x1200 Pixels *2.1 Megapixel CCD *10x Optical zoom *2.7x Digital zoom *Stabilized zoom *Lens, LCD/TTL viewfinder <p>C-700</p> <ul style="list-style-type: none"> *1600x1200 Pixels *2.1 Megapixel CCD *10x Optical zoom *2.7x Digital zoom *LCD TTL viewfinder *Voice recording <p>C-4040</p> <ul style="list-style-type: none"> *2272x1704 Pixels *4.1 Megapixel CCD *3x Optical zoom *2.5x Digital zoom *16Mb Smart Media storage *Full range manual aperture & shutter priority <p>C-2040</p> <ul style="list-style-type: none"> *1600 x 1200 Resolution *2.1 Mega Pixel *1.8" TFT LCD Monitor *3X Zoom (40-120mm) *Optical View finder *Program AE *USB Interface 	<p>FINE PIX 6800</p> <ul style="list-style-type: none"> *3.3 Million Mega Pixel *5 Frames Per Second *USB Hot Synch *Video Conferencing <p>FINE PIX 6900</p> <ul style="list-style-type: none"> *3.3-6.0 Million Pixels *35MM-210MM 6X Zoom *5 Frame Burst Mode *Manual Focus Ring *Playback LCD <p>FINE PIX S1 Pro</p> <ul style="list-style-type: none"> *6.1 Megapixel Digital SLR *Exclusive Super CCD Technology *5 Exposure Modes *Histogram Display *2" LCD Color Screen <p>finepix-4800</p> <ul style="list-style-type: none"> *2400 x 1800 Pixels *4.3 Megapixel *3x Optical zoom *3.75x Digital zoom *Voice recording *PC-Camera for internet *Video conferencing 	<p>Cybershot F707</p> <p>*New*</p> <ul style="list-style-type: none"> *4.92 Megapixels *5.24 million pixel sensor *38 mm - 190 mm lens <p>MUC-CD300</p> <ul style="list-style-type: none"> *2048x1536 Resolution *2.5" TFT LCD *3X Optical Zoom Lens *2X Digital Zoom *Voice Mode <p>MUC-FD97</p> <ul style="list-style-type: none"> *10X Optical Zoom Lens *2.1 Megapixel Resolution *39-390MM Zoom *Stores Pictues on Disc <p>MUC-FD87</p> <ul style="list-style-type: none"> *Perfect Entry Level Mavica *1.3 Megapixel *3X Zoom Lens *Info Lithium Battery *AC Power Supply *Memory Stick compatible <p>DSC-S85</p> <ul style="list-style-type: none"> *2272 x 1704 *4.1 Megapixel *34mm-102mm *3x Optical zoom *2x Digital zoom *16 Mb Memory Stick 	<p>EOS D30</p> <ul style="list-style-type: none"> *3.11 Million Pixel Resolution SLR *3 Frames Per Second *Histogram Displayed w/Each Shot *13 Custom Function *Easy Controls *High Quality Still Images <p>Pro 90IS</p> <ul style="list-style-type: none"> *Digital SLR *3.3 Million Pixel *37 MM-370MM *10X Zoom Lens *4X Digital Zoom <p>Powershot G2</p> <ul style="list-style-type: none"> *4 Million Pixel *34 MM-120MM *3X Zoom Lens *Great For Low Light Settings <p>Powershot S-300</p> <ul style="list-style-type: none"> *2.11 Million Pixels *3x Optical Zoom *Smallest Digital Camera *Direct Print with CP-10 Printer *Records Movie Clips & Audio
<p>Kodak</p> <p>DX-3600</p> <ul style="list-style-type: none"> *2.2 Megapixel *8MB Internal Memory *Optical Viewfinder *2X Zoom *Fixed Focusing *Auto Exposure 			<p>Nikon</p> <p>*New* D1X/H</p> <ul style="list-style-type: none"> *5.47 megapixel CCD *5.33 million pixel sensor *LSI high-speed image processing *Continuous shooting mode *3D Multi-Sensor balanced fill-flash <p>*New* COOLPIX 995</p> <ul style="list-style-type: none"> *3.34 Million Pixel *38 MM-152MM *4X Zoom Lens *256 element matrix Metering *50 Step manual focus

VIDEO CAMERAS

JVC	Panasonic	Canon	SONY
<p>GR-DU 2000U</p> <ul style="list-style-type: none"> *Progressive Scan CCD & UXGA *Digital still (1600 x 1200 pixels) *1.92 Megapixels *SD memory card/ multimedia card *3.5" LCD view screen *Shooting-oriented in line design 	<p>PU-DU851/901/951</p> <ul style="list-style-type: none"> Megapixel CCD, 10x Hi-Definition 100x Digital zoom, Digital stills on Multimedia cards, 2.5" LCD, Color viewfinder, Analog-In, Electronic Image Stabilizer PV-DV901: 3" LCD PV-DV951: 3.5" LCD, 3 CCD, 1.6 Million Pixels, Digital Effects (Adds effects to videos) 	<p>ZR20/25/30MC</p> <ul style="list-style-type: none"> 10x Optical, 200x Digital zoom, Image stabilization, 2.5" Color LCD, Long time recording, Still digital photo mode ZR-25MC: Digital Still images ZR-30MC: Digital Stills, Advanced accessory shoe 	<p>DCR-PC9</p> <ul style="list-style-type: none"> *Zeiss lens 10x Optical *120x Digital *1/4" CCD 680k Pixels *SteadyShot Stabilizer *2.5" Color LCD 184k Pixels *640x480 VGA Digital Still on Memory Stick

SCANNERS

EPSON	OLYMPUS	Canon	Nikon
<p>Stylus Photo 2000P</p> <ul style="list-style-type: none"> *2880x720 DPI Premiera Photo Printer, Quick Drying Inks for Stunning Prints to 13"x19", Border Free Printing, 6 color Inks and Panoramas up to 44", 4 Picoliter dot size, Includes Obeo Photo Genetics & Epson Film Factory 	<p>P-400</p> <ul style="list-style-type: none"> Uses USB or Parallel Port Compatible with Windows and MAC, LCD Information Panel Prints 8x10 Dye Sub Color Photos, Professional Solution without the Professional Budget 	<p>Canoscan FS-4000</p> <ul style="list-style-type: none"> *New affordable 4000 DPI film scanner. Uses Xenon lamp light source. USB and SCSI interfaces. Creates 42 bit scans for 35mm and APS film. Canon FARE automatic dust and scratch removal. Fast 48 second scan time and 3.4 dynamic range. Includes Adobe Photoshop LE 	<p>Coolscan 4000ED</p> <ul style="list-style-type: none"> *4000 CPI film scanner with fast 38 second scan time! 4.2 Dynamic range highest of any desktop scanner *Multi Scan Feature produces Drum Scanner Quality. *Firewire IEEE 1394 interface. *Color management system. *Digital ICE, ROC, and GEM image enhancement technology. *Uses RGB, CMYK and Lab Color spaces. *Includes full version of Altamira Genuine Fractal Software

We carry a full line of all camcorders, digital cameras, film scanners, printers and more. Visit us at www.camerazone.com

All merchandise is brand new & carries a full USA or International Warranty. Our 14-Day Satisfaction Guarantee allows for exchanges on products or returns for credit. All returns for credit are subject to a minimum 10% restocking fee. 20% restocking fee for special orders. Shipping & Handling charges are non-refundable. All returns must be returned in original condition. Not responsible for typographical errors.

Call the Mac Experts!

Your one-stop source for Apple® Macintosh® - New, refurbished and used: thousands of different items in stock every day! It's pretty simple: we know a lot about Mac® stuff, and we care about our customers.

iBook™ 366
64/6/CD/56K
\$999



iBook™ 500's on sale!

64 RAM, 10 Gb, CD, 56k ... \$1188
128 RAM, 10 Gb, DVD, 56k ... \$1388
128 RAM, 10 Gb, CD-R, 56k ... \$1649

Factory Refurbished Specials



PowerBooks®

G3/400 64/10/DVD

\$1599

G3/500 128/12/DVD

\$1899

G4/500 256/20/DVD

\$2688

iMac™ iBlowout!

350 64 RAM, 6 Gb HD, CD\$649
400 64 RAM, 10 Gb HD, CD\$699
450 64 RAM, 20 Gb HD, DVD\$729
500 64 RAM, 20 Gb HD, CD\$799
500 64 RAM, 20 Gb HD, CD-RW\$848
600 128 RAM, 40 Gb HD, CD-RW\$1088
Huge assortment of colors available!

G4's Galore!

400 64 RAM, 10 Gb HD, DD\$1149
450 Cube 64 RAM, 20 Gb HD, DVD\$1299
733 128 RAM, 40 Gb HD, CD-RW\$1549
733 256 RAM, 60 Gb HD, CD-RW\$1629
500 Dual 256 RAM, 40 Gb HD, DVD\$1849
533 Dual 128 RAM, 40 Gb HD, CD-RW ..\$1999
800 Dual 256 RAM, 80 Gb HD, DVD-R ..\$3199

Check out over 300 models at www.powermax.com!
We load 'em with RAM & guarantee 'em! Great price/performance!

Model (w/RAM & drive) ... Starting At
6100 series\$ 33
7100 series37
7200 series95
7500 series139
7600 series229
8500 series259
9500 series269
7300 series299
8600 series399
9600 series549
PowerBook® 5300's399
PowerBook® 1400's449
PowerBook® 3400's599
PowerBook® G3's699
iBooks™899
iMacs™549
Blue & White G3 Towers769
G4 Graphite Towers999



"Used Macs have incredible staying power. These machines pack an incredible punch for the money!"

G3 desktops starting at only \$469!

Add a postscript LaserWriter for only \$199!

PowerBook® Prices Lowered!
1400x G3/250 64/2/CD/56K\$ 699
G3/233 64/2/CD/56K/14.1"739
G3/233 32/2/CD/56K/12.1"769
G3/233 32/2/CD/56K/14.1"788
G3/233 32/2/CD/56K/14.1"799
1400x G3/333 64/20/CD829
G3/266 64/4/CD/56K/14.1"899
G3/250 48/5/CD/56K/12.1"988
G3/292 96/2/CD/14.1"999
G3/250 96/5/CD/56K/12.1"1049
G3/300 64/8/CD/56K/14.1"1099
G3/333 64/4/CD/56K/14.1"1099
G3/292 64/8/CD/56K/14.1"1099
G3/400 64/6/DVD/56K/14.1"1299
G3/400 64/6/DVD/14.1"1499
G3/500 128/12/DVD/56K/14.1"1699

"Check out our 'PowerMax-imum' Bundles!"

Pre-owned Blue & White "Yosemite" G3/350 w/ 192 mb RAM, 6 Gb drive, CD-ROM drive and an 17" Apple Studio display. **\$1049**

Pre-owned 6 slot Power Mac 9500/120 w/ 112 mb RAM, 1 Gb drive, CD-ROM drive and an Apple 1710 Trinitron display. **\$499**

Sale! AppleWorks 6.0 only \$49!

Save over \$800! Ref. Photon 18" Blue II LCD Display \$1188

20 Gb FireWire & USB Pocket Drive \$299

FREE! 256 Mb RAM AND Jam Studio Graphics Tablet free with selected CPU's! Call for details!

LACIE 7200 RPM FireWire Drive 40 Gb \$249 60 Gb \$329 75 Gb \$429

JVC JY-VS200U Pro DV Cam \$2295 \$1777

Canon Authorized Reseller Canon ZR-25 \$699 Canon Elura 2 \$999 Canon Optura Pi \$1099 Canon GL-1 \$2149

Hundreds sold at MacWorld Expo! The Scalar ProScope - Capture stills and QuickTime movies at up to 200X! only \$199!

POWERMAX.COM

- Daily specials & blowouts
- New, used & reburb lists
- Downloadable software
- Bargain Basement Deals
- Digital video packages
- Updates & spec sheets
- Plus: Important national Macintosh news updated daily!

POWER MAX

800-613-2072

Local: (503) 624-1827 • Fax (503) 624-1635

email: sales@powermax.com

Prices subject to change without notice. Prices reflect cash discount. Credit card orders strictly verified against fraudulent use. With use of credit card as payment customer acknowledges that some products are subject to final sale. Many prices are limited to stock on hand. All brand or product names are registered trademarks of their respective holders.

Knowledge is Power

- Personal Financing
- Fast P.O. Approvals
- Business Leasing
- Weekly specials on our web site
- Order on line or call one of our experts!

G4 Towers

DV iMacs™

iBooks™

PowerBooks®

Blue & White G3's

Beige G3's

Software

The Mug Store: members only special deals!

Huge Selection!

New Low Prices!

The Latest Stuff!

Free RAM!

Unique Deals!

New & Refurb!

MUG STORE

Macintosh User Group members enjoy access to a very special Apple-sponsored web site featuring super deals on the latest Apple products as well as factory refurbished and discontinued Macs, and much more! Not a member? Find out how you can get these great deals by calling PowerMax at 800-689-8191.



www.applemugstore.com



The MUG Store. A cooperative venture between Apple and PowerMax to bring MUG members exclusive deals on the latest Mac® products and special offers on discontinued and factory refurbished computers.

PowerMax is a division of Computer Stores NW, Corvallis, OR.

WE BUY MACS AND MAC STUFF
(318) 424-9791

SHREVE SYSTEMS

For all of this and more check out our website!
<http://www.shrevesystems.com>



WE STOCK MAC PARTS!

1-800-227-3971

1200 Marshall St
Shreveport, LA 71037



IMAGS ON SALE!!!

Just in time for the holidays!!!

Various Colors available!

AS LOW AS \$799

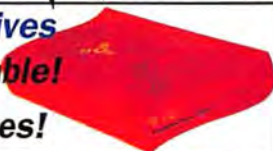
Hot Item!

CALL!



Firewire 3.5" Drives
20/30 GB available!

Call for best prices!



PART #
661-0474



1.44 SuperDrives
STARTING AT \$19!
NO EXCHANGE
REQUIRED!



USB Floppy Drives

FREE box of 25
1.44 Mb floppy
discs included!

Macintosh LC580
Internet Ready!

- 33-MHz MC68LC040
- 8MB of RAM
- 800MB Hard Drive
- 28.8 Motorola Modem

\$199 with internal 4XCD

ONLY \$149

NEW! 7200 Logic Boards
ONLY \$29

MacAlly Extended Keyboard



NEW! Genuine Apple
ADB Mouse II
\$49
Generic ADB
Mouse ONLY \$29

Monitor Blowout!



PowerComputing
17" Monitor

ONLY \$149!

Factory Refurbished



Voxon 14" and 15" Monitors

AS LOW AS \$49!

NEW!

Don't Miss Out!

See our line items below for other monitor blowout specials!

We also specialize in digital audio recording!

Call for the best prices on Alesis, Akai, Tascam, Digidesign, Roland, Korg, Mackie, Behringer, Boss, Mark of the Unicorn, and others!



AKAI DPS 12 v2
AS LOW AS \$649

Includes a **FREE 2GB IDE Hard Drive!**

Check out our website at www.shreveaudio.com



ClarisWorks 4
Internet Edition

ONLY \$39!
NEW!

System Bundles SALE!

7100/60	5200/75	4400	5300/100	7300/200	PowerCurve 120	7200/75
24/350/CD/13" Monitor	8/500/CD/15" Monitor	32/2GB/CD	16/1GB/CD	32/2GB/CD	0/0/0/	0/0/0
\$199	\$199	\$399	\$399	\$399	\$99	\$149
refurbished	refurbished	refurbished	refurbished	refurbished	refurbished	refurbished

PowerMac CPU SALE!

PRINTERS

HP Deskjet 890 CM, NEW	\$249
Apple StyleWriter 1200, refurbished	\$129
Apple StyleWriter 1500, factory refurbished	\$149
Apple StyleWriter 2400, no cartridge, refurbished	\$99
LaserWriter IInt, refurbished Toner not included	\$149
LaserWriter III w/5MB RAM, refurbished	\$399
LaserWriter IIg w/5MB RAM, refurbished	\$549
Texas Instruments Micro Laser Pro E NEW	\$449

Laser toner cartridges sold separately

MACINTOSH LOGIC BOARDS

G3 logic board, No Processor, No ROM	\$299
7200/90 logic board, refurbished	\$149
LC logic board, refurbished	\$49
LC II logic board, refurbished	\$89
Mac LCIII logic board, refurbished, exchange	\$99
Performa 630, No Processor, refurbished	\$49
Quadra 950 logic board, refurbished	\$179
7100/66 logic board, refurbished	\$99
6200/75 logic board, refurbished	\$99

MONITORS

Apple 14" A/V refurbished	\$129
Apple 14" Multiscan, refurbished	\$99
Apple 15" Multiscan, refurbished	\$119
Apple 15" AV, factory refurbished	\$199
Apple MultiScan 17", refurbished	\$179
Apple 20" Multiscan, refurbished	\$599
Radius IntelliColor/20e, factory refurbished	\$299
Voxon 14" Multiscan NEW	\$69
Voxon 15" Multiscan NEW	\$99
Power Computing 15" refurbished	\$119
Power Computing 17" refurbished	\$149

NUBUS ADAPTERS

Quadra 660AV NuBus Adapter	\$49
Quadra 610 Nubus Adapter	\$49
Isi Nubus adapter with math co-processor	\$49
E-Machines DoubleColor SX Nubus Card NEW	\$29
Diamond Javelin 3200	\$79
*PowerMac HPV Card (1MB)	\$79
*PowerMac A/V Card (2MB)	\$99
*Radius Precision Color 8/1600	\$79

VIDEO CARDS

IMAGING PRODUCTS

Apple QuickTake 150 refurbished	\$149
Apple QuickTake 100 refurbished	\$99

APPLE PC COMPATIBILITY CARDS

Pentium 100-MHz, refurbished	\$149
Pentium 166-MHz, 12" PCI card, refurbished	\$199
586 100-MHz, 7" PCI card, refurbished	\$99
486 66-MHz for 6100 series, NEW	\$29

*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 trade-ins **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.

1-800-227-3971

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.

www.shrevesystems.com



SUPERIOR Products for Your POWERBOOK

www.mcetech.com

FireBay FireWire Docking Station



- Turn your PowerBook Expansion Bay drives into External Bus-Powered FireWire drives you can use with any FireWire-equipped PowerBook, Power Mac, iBook or iMac
- Built-in Connecting/Stacking Module • Hot Swappable
- Compatible with most expansion bay drives used with the PowerBook G3 99 & 2000 (Lombard & Pismo) • MSRP \$169



MobileStor

- The BEST Internal Hard Drives for your PowerBook!



USB FlexLight

- Conveniently lights up your keyboard!



Find other great MCE products at www.mcetech.com
800.500.0622 • 949.458.0880

INGRAM MICRO

MacMall Outpost.com

TransPORT Pro Portable FireWire Hard Drives w/USB

- Portable Bus-Powered FireWire Hard Drives
- Convenient USB connectivity also built-in
- Ultra Fast -- Perfect for Digital Video or Digital Audio
- So Small it Fits in the Palm of your Hand
- Sleek Design complements your PowerBook, dual-USB iBook, iMac, or Power Mac G4
- Built-in heat dissipating air vents
- High-Speed 10GB, 20GB, 30GB, and 48GB capacities available



Xcarét Pro Expansion Bay Drives

- For PowerBook G3 1999 & 2000 or PowerBook G3 1998
- Are all hot swappable, compact and bootable
- Come with protective MCE Xbay Expansion Bay Device Carrying Case
- Go great with the MCE FireBay FireWire Docking Station (Xcarét Pro-99 or Xcarét Pro-2000 only)



Xcarét Pro Expansion Bay Hard Drives

- High-Speed 10GB, 20GB, 30GB and 48GB capacities - Great for Digital Video

Xcarét Pro Expansion Bay CDRW Drives

- Burn CD-R and CD-RW Discs quickly & easily
- Toast CD recording software included

Xcarét Pro Expansion Bay CDRW/DVD Drives

- Burn CD-R and CD-RW Discs AND play DVDs with one drive
- Toast CD recording software included



www.powerbook1.com

secure online ordering

CardBus Upgrade Service for PB 2400 & 3400/G3

opens up the possibilities for USB, FireWire, 10/100 Ethernet, expanded Video. See website for details!

WORLD'S SMALLEST POWERBOOK AC ADAPTERS!
FOR PB G3 MODELS, iBOOK, 3400, 2400, 1400 & 2300
AND NOW ONE FOR THE DUAL-USB iBOOK & PB G4 TITANIUM!



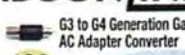
only \$85

About the size of a credit card.



\$80

BUNDLE DEAL!
G3 Micro-AC Adapter & Auto/Air Adapter \$150



\$20

Carrying Cases
Slimline Case...\$99
Productivity Case...\$139
G4 Saver Neoprene Carry Case for PB G4...\$59

iBook

- 500MHz G3
- 128MB SDRAM memory **+ FREE 128MB RAM**
- 20GB Ultra ATA drive \$1299 CD-ROM
- 10/100 Ethernet \$1499 DVD-ROM
- 56K internal modem \$1799 CD-RW/DVD-ROM
- FireWire port
- 2 USB ports

iBook

- 500MHz G3
- 128MB SDRAM memory **+ FREE 128MB RAM**
- 30GB Ultra ATA drive
- 10/100 Ethernet • DVD/CD-RW
- 56K internal modem \$1999
- 2 USB ports • FireWire port

Call for Custom Configurations & Bundle Deals!

*While supplies last. \$30 installation fee added to price of computer.



\$19.99

High-Speed Portable Storage 10GB 20GB 30GB 48GB

MobileStor Internal PowerBook Hard Drives \$149 \$229 \$299 \$499

Xcarét Pro Expansion Bay Hard Drives \$229 \$299 \$399 \$599

Transport Pro Portable FireWire/USB Hard Drives \$249 \$299 \$399 \$599



USB Floppy Drive \$69



\$35



\$79



\$30



\$25



\$19

PowerBook & iBook Memory Upgrades!!
See our web site for lowest pricing!!



\$169



6 pack \$10



\$149

30 Hughes Suite 203 • Irvine, CA • 92618
Visa / MC / AmEx / Discover / P.O.

1-800-500-MAC • 949-458-0800 • fax 949-458-1803

6 2 2

Circle 184 on card or go to www.macworld.com/getinfo

Mac POWER

Sales & Service, Inc.
BUY • SELL • TRADE
UPGRADE • REPAIR
New • Used • Refurbished

- Powerbooks
- Monitors
- PowerMacs
- Printers
- Performas
- Peripherals
- Quadras
- Ram
- MacII-LC
- Parts

www.macpowerinc.com

888-275-POWER

Fax: 408-227-7957
San Jose, California, 95123

MAC-PRO.com

Buy • Sell • Upgrade • Repair • New • Used

We have It All
In Stock!

- IMac, G3, G4
- PowerBooks



Everything Mac!

Any Ad is a Mac Pro Ad

800-525-3888

sales@mac-pro.com Fax 408-369-1205

T.D. CURRAN

YOUR TOTAL COMPUTER CENTER

InkJet Cartridges

HP® compatible

T017201 Black Stylus Color 777	NEW	only \$14.95
T018201 C/M/Y Stylus Color 777	NEW	only \$14.95
T007201 Black Stylus Photo 780/870/1270		only \$15.95
T008201 C/M/Y Stylus Photo 780/870		only \$14.95
S020189 Black Stylus Color 740		only \$6.95
S020191 C/M/Y Stylus Color 440/640/740		only \$10.95
T003011 Black Stylus Color 900		only \$7.95
T005011 3-Color Stylus Color 900		only \$11.95
T013201 Black Stylus Color 480/580		\$6.95
T014201 C/M/Y Stylus Color 480/580		\$9.95
T009201 C/M/Y Stylus Photo 1270		\$16.95

PLUS

HP compatible

51626A Black Deskjet 500, Designjet 230,250C	only \$19.95
51629A Black DJ680C, 690C, DW600,680C,695C	only \$20.95
51625A C/M/Y Deskjet 300 & 500 Series	\$19.95
51641A C/M/Y Deskjet 820/850/855/870	\$19.95
51645A Black Deskjet 800/1600 Series	\$17.95
51649A C/M/Y Deskjet 612C,660,680C, 690C	\$19.95
C1823D C/M/Y Deskjet 722,810,880,890,895	\$19.95
C6614A Black Deskjet 600 C-Series	\$19.95
C6615A Black DeskJet 700 C-Series	\$17.95

PLUS



Apple & Canon compatible

BC-02 Black StyleWriter II, 1200, 1500	\$15.95
BCI-21B Black BJC 4000 StyleWriter 2400/2500	\$6.95
BCI-21C Color BJC 4000 StyleWriter 2400/2500	\$6.95
BJI-201B Black Canon BJC 600 StyleWriter Pro	\$3.95

and MANY, MANY MORE!

Memory Upgrades

PC133	
128MB	only \$24
256MB	only \$39
SOD	
128MB	only \$20
256MB	only \$45



WOW!

IDE Hard Drives

3.2GB 5400RPM	\$49
4.3GB 5400RPM	\$65
30GB 7200RPM	\$109
60GB 7200RPM	\$165
80GB 7200RPM	\$215
100GB 7200RPM	\$295



iOptiNet USB Optical Mouse \$29.95

Great Deals On **macally**™

iOptiJr. USB Optical Mouse \$26.95



FireWire/USB 2 USB & 2 FireWire PCI \$74.95



USB Floppy Drive Perfect for iMac \$59.95



iVoice USB Microphone \$39.95



FireWire Cardbus Add Firewire to your laptop \$79.95



iHubJr. 3 Port USB Hub \$26.95



iShock USB Program! gamepad \$26.95



USB Cardbus Add USB to your laptop \$87.95



iHub 4 Port USB Hub \$34.95



Call us at 800-645-2533
or place your order online
at www.tdcurran.com
or sales@tdcurran.com



800 Marine Drive
Bellingham, WA 98225

Go To: **MAC OF ALL TRADES®.COM**

BEST PRICES!!!

- Buy
- Sell
- Trade

USED MACS

404.355.5144
FAX 404.355.5461
email: sales@macofalltrades.com

500 Bishop Street, Suite E3 Atlanta, GA 30318

ACADEMIC DISCOUNTS

Great Savings for...
Students, Teachers
and Schools!



Macromedia Web Design Studio
Dreamweaver 4, Fireworks 4,
Flash 5, and Freehand 10. **\$239**

Maxon Cinema 4D XL 7
Turn your computer into a 3D
animation studio with this new release! **\$295**

Adobe Web Collection
Photoshop 6, Illustrator 9,
GoLive 5, and Livemotion. **SAVE \$**

All Adobe Titles	Call!	Dreamweaver 4	\$98	Microsoft Office	Call!
Amorphium Pro	\$139	El Universe 3.0	\$449	Norton Utilities	\$59
Body Paint	\$295	EyeCandy 4000	\$69	Painter 7	NEW \$199
Boris FX 6	NEW \$299	Filemaker Pro 5.5	\$149	Poser 4	\$119
Bryce 5	\$79	Final Draft 5	\$126	Sibelius	\$229
Cleaner 5	\$289	Finale 2002	NEW \$199	TechTool Pro 3.0.3	\$79
Director 8.5	\$329	Flash 5	\$98	Vectorworks 9	\$82
Dreamweaver 4 +		Flash + Freehand	\$139	Wacom Graphire2	\$84
Fireworks 4 Studio	\$139	All Iomega Titles	Call!		

(PC titles available!)

Visit us online for more savings, specials,
bundles and 24hr. ordering!

CALL FOR YOUR FREE CATALOG

1-800-333-8571 FAX ID'S & POS'S TO 512-450-0263

www.AcademicSuperstore.com



Circle 180 on card or go to www.macworld.com/getinfo

MRQ

Mac-Res-Q®
sales@macresq.com
(925) 689-9488 • (925) 689-9487 fax

ProColor Ink Cartridges at Amateur Prices!



Our new Ink store offers great prices on ink for popular Apple, Canon & Epson printers!
3 Black & 3 Color Inks **NEW \$37⁹⁹**
4 Black Inks **NEW \$24⁹⁹**

All items are refurbished unless noted as new. Pricing & availability subject to change. 15% restocking fee on functional returns. No returns after 30 days.

PowerMac G4 Minitower
from \$1099⁹⁹

PowerMac G3 Blue/White
from \$749⁹⁹

PowerMac Beige DT
from \$99⁹⁹

Norton SystemWorks
NEW \$79⁹⁹

Mac OS 9.0.4 10-User Pak
NEW \$199⁹⁹

AppleShare IP v6.3 50-User
NEW \$199⁹⁹

Scanner Blowout!
Agfa 1212U USB
only \$49⁹⁹

Agfa 1236S SCSI
only \$59⁹⁹

Factory Refurbished incl. software & manuals

888-447-3728

More than 4000 Macintosh products & secure online ordering @ www.macresq.com

Save on Reconditioned Macs

POWERMACS	8100/80 16/500/CD.....	\$129
	6100/60 16/230/CD.....	\$59
	4400/200 32/2G/CD.....	\$179
	7100/80 16/500/CD.....	\$79
	7200/75 16/500/CD.....	\$89
	7200/90 16/500/CD.....	\$99
	7200/120 16/1G/CD.....	\$139
	7300/180 32/2G/CD.....	\$209
	7500/100 16/1G/CD.....	\$169
	7600/120 16/1G/CD.....	\$179
	7600/132 16/1G/CD.....	\$189
	9500/120 32/2G/CD.....	\$219
	9500/132 32/2G/CD.....	\$249

G3 POWERMACS	DT/233 32/4G/CD.....	\$449
	DT/300 32/4G/CD.....	\$529
	MT/266 32/6G/CD/Zip.....	\$599
	MT/300 64/4G/CD/Zip.....	\$629
	MT/333 128/9G/CD/Zip.....	\$749

POWERBOOKS

540c 12/320.....	\$159
5300c 16/750.....	\$209
1400c/133 16/1G/CD.....	\$399
3400c/200 16/2G/CD.....	\$529
63/233 32/2G/CD.....	\$749
63/300 64/4G/CD.....	\$949

All CPUs include mouse
Additional Products Available
6-Month Warranty

VISA/MC & AmEx accepted
TO ORDER CALL

1-800-281-3661
Or www.datatech-rmkt.com

DataTech
REMARKETING, INC.

Tel: 615-860-4422
Fax: 615-860-0390
471 Myatt Dr. Madison, TN 37115

Corporate names and trademarks are the property of their respective owners.



Save 20-50% On Your Next Mac
CLICK & JOIN



ACADEMIC DISCOUNTS on CREATIVE DIGITAL TOOLS

\$99	\$199	\$Call	\$89
Macromedia Flash 5	Animation: Master 2001	Microsoft Office 2001	Wacom Graphire2
\$86	\$299	\$149	\$99
Corel Bryce 5	Media 100 Cleaner 5	FileMaker Pro 5.5	Macromedia Dreamweaver 4

www.creationengine.com

Students, Teachers & Schools
Save 30-70% off Software!

Use promotional code "macworld" on your online order to receive a free mousepad!

Easy secure online ordering!
Orders processed within 24 hours!
Explore our web site for product info, academic prices, reviews, tutorials, art gallery, quote builder, site licensing, specials & more!

www.madaboutmac.com
Macintosh resources for teachers and students!



www.creationengine.com

CREATION ENGINE, LLC

348 East Middlefield Road, Mountain View, CA 94043 Phone: 800-431-8713 Fax: 509-934-3234
We offer software from over 100 companies including Adobe, Alien Skin, Corel, Harsi, Macromedia, Microsoft, Newtek & Symantec.

STUDENTS

Save up to 75% OFF popular software!

Thousand Of Titles Available!!



Adobe
Microsoft
Discreet
MetaCreations
Macromedia
Alias/Wavefront
Softimage
Autodesk
Extensis
Alien Skin
Digimation
Symantec
Corel
ADAM
Wacom
Many More!

FREE CATALOG!
Serving Students and Schools Since 1990

1-800-874-9001

www.JourneyEd.com

JourneyEd .com
Education Marketing

Offer for U.S. & Canadian degree-seeking students only
Proof of student status required with order.

MEGAMACS.COM

iMacs 400/500/600Mhz \$699/879/1069
OS 7.6.1/8.0/8.5/9/X \$39/49/59/95
Epson 670/700/850NE \$69/109/149
Adobe Premier 5.1 / OmniPage 7 \$99/29
PhotoShop 6/ FileMaker Pro 5 \$349/149
Norton Internet Security+SystemWorks \$49
Kensington VideoCam/LW Pro630 \$19/229
PowerBook G4/400 128/6/DVD/FW \$1299
Intego NetBarrier2 or Timbuktu Pro \$29
Conflict Catcher 8 or BusPlan Toolkit \$39
56K Modems & PB Batteries from \$24
Olympus C2500L 2.5 MegaPixel 3x \$899
3COM Palm IIIc / Rio 500 MP3 \$244/109
We have OVER 130 Software titles priced \$9 or less! WE BUY
918-664-MACS (6227) MACS!
fax: 918-663-6340 Price rounded down, credit cards ok

1one memory.com

LIFETIME WARRANTY **PC100**
BEST QUALITY 256mb '24
512mb '55
SECURE **PowerBook G4**
FAST • EASY 256mb '24
512mb '128

sales@onememory.com
www.onememory.com

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

Circle 213 on card or go to www.macworld.com/getinfo

LOWEST WEB PRICES!

MEMORY	mb	16	32	64	128	256	512	NEW CPUs!*
G3/G4/Mac	350-600	-	'12	'13	'16	'25	'56	G4-867 128/40gb/SuperDrive/56k \$2,399
PowerBook®	G4	-	-	-	'16	'25	'129	G4-800DP 128/40gb/DVD-R/56k 3,099
PowerBook®	G3	-	'9	'14	'17	'38	'69	G4-733 128/40gb/CDRW/W/11 web
iBook®/iMac	233-333	-	'9	'14	'17	'38	-	iBook® 500 128/10gb/DVD-CDRW/56k web
168 pin DIMMs		'9	'19	'27	'37	-	-	PwrBook G4-500 128/10gb/DVD/56k 2,679
72 pin SIMMs		'12	'15	'49	-	-	-	*Check our website for details on Specials and FREE stuff!

IDE Hard Drives		UW Hard Drives		SPECIALS!!	
Size	rpm	Size	rpm	Mac OS 9	plus 9.1 updatr
30gb	5400	18gb	7200	Mac OS 8.1	CD only
40gb	103	36gb	444	Mac OS 8.6	w/Free 8.5 CD
60gb	169	72gb	864	Epson 900	refurbished - Serial
75gb	219	PowerBook® Drives		Epson 777	USB
80gb	206	20gb	4200rpm	Global Village	56k serial modem
External USB	ADD \$79	30gb	4200rpm	lomega Zip	100mb USB Drive
External FireWire	ADD \$99	External FireWire Mini	ADD \$69	lomega Zip	100mb .10 pak

All prices are subject to change without notice. Prices listed are available from our website only, not in-store. Check for details on new computer purchases. Not responsible for typographic errors. Limited to stock on hand.

Apple Authorized Reseller Apple Specialist Apple Authorized Service Provider

MacSolutions, Inc. Fax: (310) 966-4433
11933 Wilshire Blvd, West Los Angeles, CA 90025
University & School P.O.'s Welcome. Ad code 928

Call 800-873-3RAM or Order Online at
www.macsolutions.com

800•673•MACS

916-677-6227 fax 916-677-6228 800-673-6227

WE SHIP ANYWHERE IN THE WORLD. CHECK OUT OUR WEEKLY WEB SPECIALS <http://www.poweron.com>

G3/233 Beige Bundle
includes Monitor & 56k Modem

\$449⁹⁹ refurb
64 MB RAM
4 GB HD • 24x CDROM
Serial • SCSI • 10/100 Ethernet

MORE G3 DEALS

- G3/233MHz Beige DT 64/4/CD/ZIP 399.99
- G3/266MHz Beige DT 64/4/CD/ZIP w/monitor .. 499.99
- G3/266MHz Beige MT 64/4/CD/ZIP w/monitor .. 549.99
- G3/300MHz Beige DT 64/4/CD/ZIP w/monitor .. 599.99
- G3/350MHz B&W MT 128/6/DVD/ZIP w/monitor 699.99
- G3/400MHz B&W MT 128/6/DVD/ZIP w/monitor 799.99

iMac 500 Mhz Bundle
includes CDRW, PRINTER & CAMERA

\$899⁹⁹ refurb
128 MB RAM
20 GB HD • Apple CDRW
USB • FireWire • Ethernet • 56k V.90
Canon BJC2100, JamCam 3.0 Digital Camera

MORE IMAC DEALS

- iMac G3/233MHz teal 64/4/CD/56K/Camera 449.99
- iMac DV G3/400MHz 64/4/CD/56K/Camera 699.99
- iMac DV G3/500MHz 64/20/CDRW/56K/Camera . . . 849.99
- iMac DV G3/600MHz 128/30/DVD/56K/Camera . . . 899.99
- iMac DV G3/600MHz 128/40/CDRW/56K/Camera 999.99

INTERNET BUNDLE
COMPLETE PACKAGE

PPC G300 600e / 190 Mhz
24MB RAM
1.2GB Hard Drive
8x CDROM Drive
1.44 Floppy Drive
1 PCI Slot
Keyboard • Mouse

plus 56K Modem, EtherNet & Monitor!

\$149⁹⁹ w/ 14" Mtr

\$179⁹⁹ w/ 16" Mtr

ETHERNET (for DSL and CABLE MODEMS)

CAMERA DEAL

JamCam 3.0 Digital Camera

- USB Mac & PC
- 800x600 Max.
- 640x480 Std.
- Expandable Memory
- 10 sec. self timer
- Automatic Strobe Flash
- Cables and User Guide
- Adobe PhotoDeluxe 2.0

\$39

MODEMS DEALS

56k v.90 modem Serial **\$39⁹⁹**

PCMCIA 56k v.90 modem X-Jack **\$39⁹⁹**

ORIGINAL MONITOR Warehouse Clearance
REFURBISHED 90 day warranty

- 14" Apple RGB ~~\$89~~ **\$25**
- 16" Apple RGB ~~\$89~~ **\$35**
- 15" Apple MultiScan ~~\$89~~ **\$55**
- 15" Apple MultiScan ~~\$89~~ **\$75**
- 17" Apple MultiScan ~~\$89~~ **\$95**
- 20" Apple MultiScan ~~\$89~~ **\$195**

ORIGINAL CDRW Warehouse Clearance

- 2x Apple CD 3001 ~~\$29~~ **\$10**
- 4x Apple CD 6001 ~~\$49~~ **\$20**
- 6x Apple CD 12001 ~~\$49~~ **\$40**
- 12x Apple CD 18001 ~~\$79~~ **\$60**
- 24x Apple CD 36001 ~~\$129~~ **\$120**

iMac CD & DVD-Trayloading/Slottloading from 129.99

32x Apple ATAPI CDRW G3/G4 99.99

8x Apple DVD ROM ATAPI-Internal 139.99

COMPATIBLE DRIVES Warehouse Clearance

- 1GB All SCSI 3.5" x 1.6" ~~\$99~~ **\$10**
- 2GB All SCSI 3.5" x 1.6" ~~\$89~~ **\$20**
- 4GB All SCSI 3.5" x 1.6" ~~\$89~~ **\$40**
- 9GB All SCSI 3.5" x 1.6" ~~\$129~~ **\$90**
- 18GB All SCSI 3.5" x 1.6" ~~\$199~~ **\$180**

ZIP DRIVE 100 MB SCSI-Internal 79.99

ZIP DRIVE 100 MB ATAPI-Internal 79.99

APPLE 1.44 FLOPPY DRIVE-Internal 59.99

Mac OS 8.5 CD
FREE WEB UPGRADE TO 8.6

\$79⁹⁹ DEMFULL INSTALL

Mac OS 7.6 CD **\$39⁹⁹** DEMFULL INSTALL

Mac OS 8.0 CD **\$49⁹⁹** FULL INSTALL

Mac OS 9.0 CD **\$99⁹⁹** FULL INSTALL

INK CARTRIDGES & TONER
1000's Available
See Our Web Catalog

ORIGINAL PARTS
Macs, PowerComputing,
UMAX, Motorola

All brand or product names are registered trademarks of their respective holders and are respectfully acknowledged.

www.poweron.com
sales@poweron.com Check Out Our Complete Inventory Online

Business Offices
8801 Washington Blvd.
STE. 101
Roseville, CA. 95678

PowerON
Computer Services

Gov't & School PO's Accepted
CALL for EDUCATIONAL Quotes

Mon-Fri 7-6^{PST}, Sat 10-5^{PST}

All Prices include 3% cash discount. All items are Used or Refurbished unless otherwise indicated. 20% RESTOCKING
90 day PowerON warranty. Mfr warranty may be available on certain items. Call for details

Circle 198 on card or go to www.macworld.com/getinfo

MEMORY

DATA MEMORY SYSTEMS - CALL 800-662-7466

Lifetime Memory Guarantee - 30 Day Money Back

AC Adapters
Batteries
Cables
Camera Memory
DIMMs
MacCPU Upgrades
Omega 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 memory 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

POINT OF SALE • INVENTORY CONTROL



Software & Hardware for:

- Retail/Wholesale
- Mail Order/Distribution
- Rentals/Service/Repair
- Light Manufacturing
- Payroll/Check Printing
- Credit Card Auth. SW
- Internet Commerce
- FileMaker™ & 4D™ Tools
- Fully Integrated Accounting
- Multi-Site/Cross Platform
- Receipt Printers
- Barcode Readers/Printers
- Cash Drawers
- Mag Stripe/ID Cards
- Ribbons/Paper/Labels
- Portable Data Collection

New InkJet Receipt Printer for Mac

Free Catalog & Demo CD or download demos off of the website. sales@posdirect.com • (618) 985-3014 fax

(800) 622-7670
www.posdirect.com



Circle 165 on card or go to www.macworld.com/getinfo

Classifieds

POWERBOOK GUY - THE PREMIER SOURCE FOR POWERBOOKS, ACCESSORIES, & PARTS! www.powerbookguy.com OR DIAL (415) 386-0200

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

GRAPHIC ARTISTS 21-in-1 Desktop Publishing & Design Ruler. Also, FREE A-Z Graphic Type-Art Library! www.GalaxyGauge.com

For more information, contact Niki Stranz or Carol Johnstone at 800-5971594

continued from page 140

the world of the future, it's all about being agile enough to accept and implement any new standards—particularly networking standards—that come along.

Take Microsoft's .Net strategy, a scheme for deploying Microsoft-proprietary software modules from servers, across networks, using open protocols. In the absolute worst-case scenario, it would create new standards for establishing identity and conducting secure commerce that relied on Microsoft-licensed software. Bang—Microsoft would have a stranglehold on the Internet.

But there's already an open-source movement to create a free implementation of .Net technologies for Linux . . . and since Linux is Darwin's cousin, an initiative for OS X is right behind that.

Power in Numbers Before OS X, the world consisted of Windows and a balkanized collection of other operating systems. Now, there's Windows, and then there's the open-source community. Would you believe that this community, working together, could totally screw up any chance that Microsoft might have to abuse its .Net leverage? By getting .Net into everyone's hands, it could transform one company's power play into a free standard that would benefit everyone and keep all operating systems and bits of beeping plastic on the same operational level.

RSVP to Darwin

I'm convinced that as OS X matures, Unix operations will become something akin to AppleScript: a powerful resource that doesn't confuse people unless they willingly dive into it, and one that most users never exploit until they see the frabjously slick ways someone else is using it. I've been recommending two books published by O'Reilly and Associates: *Unix Power Tools* and *Unix in a Nutshell*. Both feature O'Reilly's usual maximum content for minimum bucks. Of the two, *Power Tools* is the one you'll be referring to most often. *Nutshell* takes a classroom approach, but reading *Power Tools* is like idly watching an expert go about his business. You won't retain the entire picture right away, but it'll fix in your mind what you're capable of doing with the command line, and your eyes will thus be open to simpler ways of doing things that don't involve mousing.

So I want you to walk right over to Darwin and introduce yourself. Don't pretend he isn't there. OK, yes, maybe he *has* caused us an inconvenience or two by strewing three-letter file-name extensions like so many empty Miller Lite cans across our pristine, Teletubbies-style landscape. But he's got a heart of gold. And once you get to know him, you'll understand why he was invited in the first place. **m**

When not writing for *Macworld*, the *Chicago Sun-Times*, and other publications, columnist ANDY IHNATKO (www.andyi.com) has been thrown out of some of the most exclusive parties on society's A list.

HOW REFRESHING it is to be at a party and on the other side of the snide comment "Good God—who invited *him*?" We're at a big party celebrating the success of Mac OS X. And the *him* is Darwin, the cutely named Unix creature who lives underneath OS X's Aqua interface—and who's currently hogging a bowl of Goldfish crackers. Ever since Apple's new operating system arrived, everyone has been just a bit uneasy about the little guy invited to the Mac party by Steve Jobs.

It's not Darwin's fault. Much like a fish-out-of-water partygoer no one knows anything about (except for one woman who's pretty sure that he plays bass in a Duran Duran cover band), the very presence of this implementation of Unix has caused suspicion, fear, and loathing to spread throughout the OS X celebration.

Social conventions can be cruel. But looks can be deceiving. Even the most questionable invitee can end up being the center of attention, once he opens up and you get to know him. Darwin's like that. Here's what he brings to the party:

Developers When Apple announced its plan to build its future on an open-source (well, open-source-ish) operating system that would be based on Unix, the number of Mac OS developers instantly increased by one order of magnitude (the exact number quoted varies depending on the people you ask—and on how much glue they've been sniffing). This fact alone makes Darwin worth keeping around, even if he does keep pestering the DJ to play something by The Bangles.

Darwin made Mac OS instantly palatable to Unix developers; so far, more than 2,500 open-source apps have been

Life of the Party

*It May Seem Strange,
but Darwin Brings
Plenty to the
Mac OS X Table*



brought to Mac OS via Darwin. Granted, few Mac users are going to see the ability to run the Pine mail client in a Terminal window as a great leap forward, but all the greatest hits of open source are here, including a lot of apps that'll shore up the Mac's presence in academic and enterprise computing. Browse through the links on www.macgimp.org/—the home of MacGIMP, a next-to-free image editor that offers many of Photoshop's features at a very un-Photoshop-like price—to get an idea of the larger world that lies just beyond Aqua.

All this may or may not impress you, but the fact remains that the bathroom lines at Apple's annual World Wide Developers' Conference just got a lot longer. That's a bad situation for those developers, but it's a great one for all who use the products they create.

Unix developers aren't the only ones who'll welcome the arrival of Darwin on the desktop: old-school Mac developers are also getting in on the act. Just in the past few months, two longtime Mac apps, FileMaker's FileMaker Pro Server and 4D's WebStar, announced new OS X versions that are radically different from their previous Mac incarnations. Both programs are actually Darwin applications, lurking beneath the surface of Aqua and providing huge amounts of serving power. Then both companies wrote very pretty Aqua applications—in Cocoa for FileMaker, and Java for WebStar—for us to use when we're setting up server preferences.

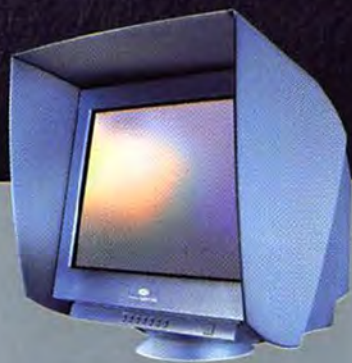
Standards Boy, this is a big deal. The Big Shimmering Evil Green Cloud that once threatened to kill operating systems' futures was lack of hardware. Later, it was lack of software. But here in

continues on page 139



AMAZINGLY ACCURATE COLOR.

The LaCie electronblue III monitor. Built on aperture grille technology with a naturally 100% flat screen, this monitor combines high resolution and outstanding color accuracy so what you see on the screen is what you'll see on the page.



LACIE Made for ideas.



Now with no wire, no clutter, no hassle. Cool.

Introducing the perfect complement to Mac® OS X—the Turbo Mouse® Pro *Wireless* from Kensington. Now there's nothing to tie you to your desk. No clutter to knock over your pencil cup. And no more hassle, because you get the latest thinking in Turbo Mouse Pro *Wireless*. Like six DirectLaunch™ buttons, four programmable buttons and scroll wheel, along with the smoothest tracking in the Mac market. Imagine designing, building and surfing from your hand, lap or pizza box. Finally, there's a real reason to go wireless. To clean-up your desk, visit your nearest Kensington reseller now or go to www.turbomouse.com.

KENSINGTON

©2005 Kensington Technology Group. All rights reserved. Mac OS X is a registered trademark of Apple Computer, Inc. All other marks are the property of their respective owners. Kensington Technology Group is a Division of 3M Company.

Circle 1 on card or go to www.macworld.com/getinfo