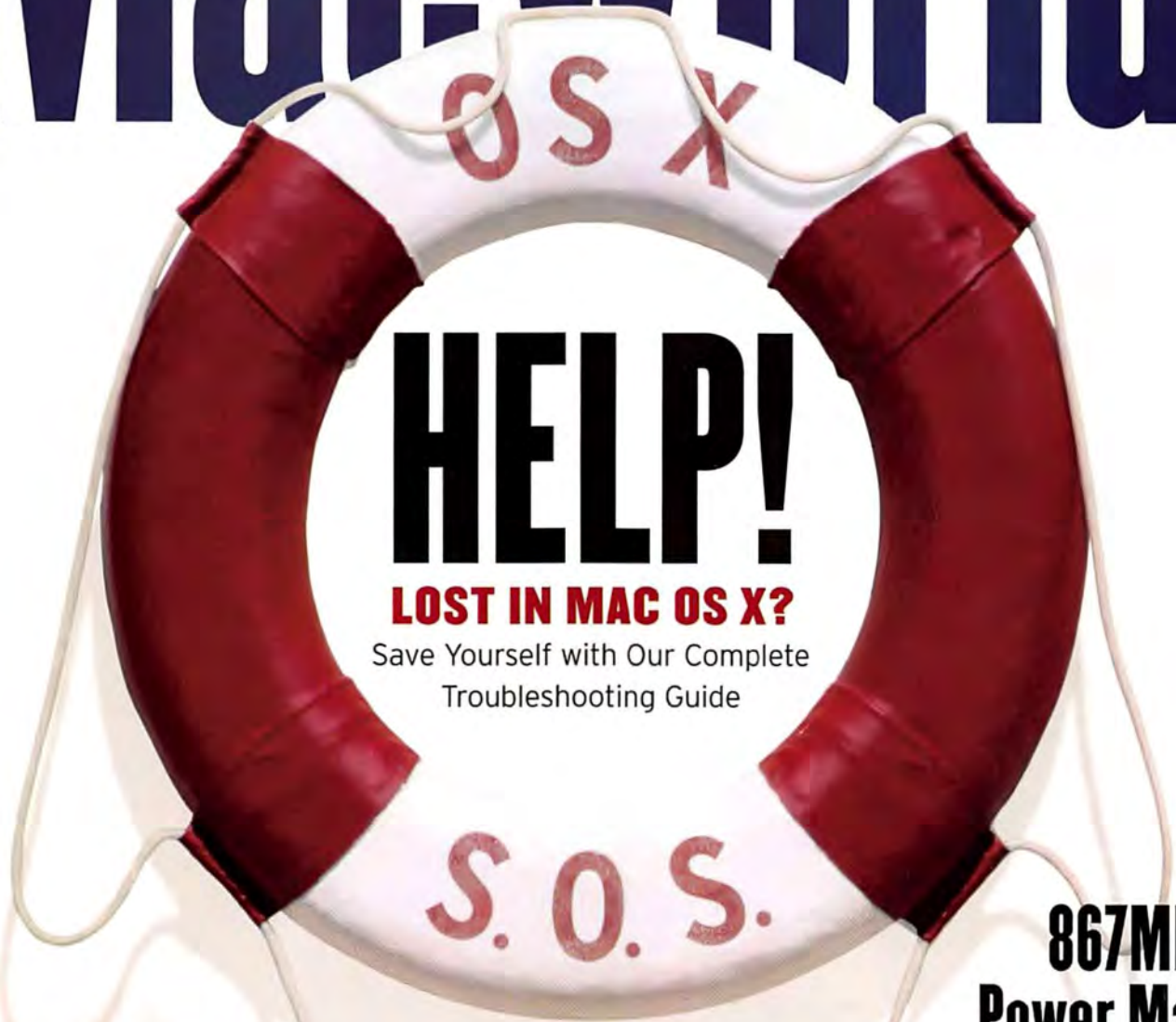
Macworld
10.2001
The Mac Product Experts

QUARKXPRESS 5.0 PREVIEW

Page-Layout Standard Makes a Play for the Web, page 56



HELP!

LOST IN MAC OS X?

Save Yourself with Our Complete Troubleshooting Guide

867MHz Power Mac

Macworld Lab Reviews Apple's Fastest G4 Yet

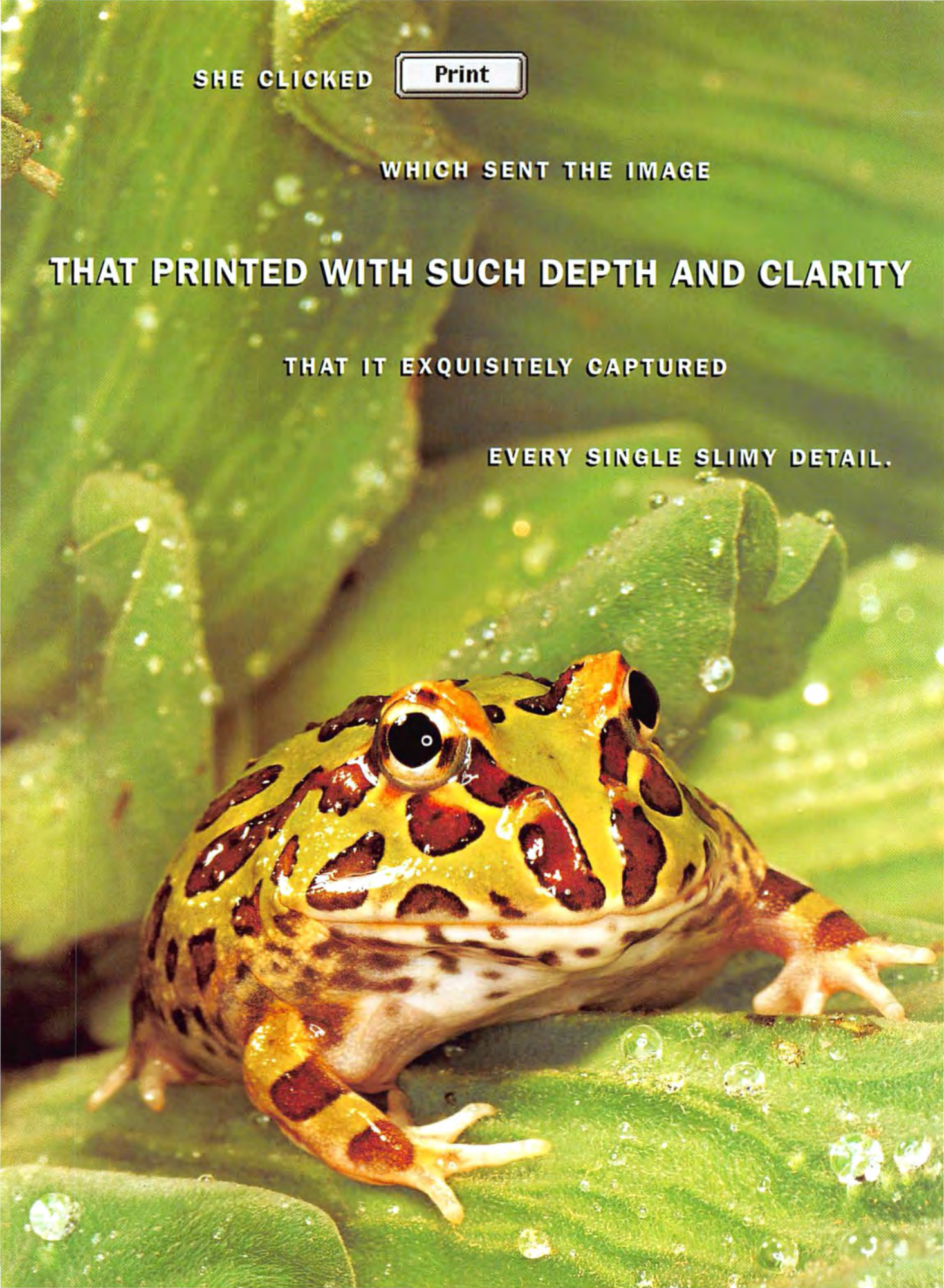
REVIEWED

Adobe Acrobat 5.0
PDF Creator Adds New Tricks

7 Film Scanners
High-Quality Scanners Fit Most Budgets

OmniWeb 4.0
Mac OS X Browser Challenges Microsoft Internet Explorer

www.macworld.com


SHE CLICKED
Print
WHICH SENT THE IMAGE
THAT PRINTED WITH SUCH DEPTH AND CLARITY
THAT IT EXQUISITELY CAPTURED
EVERY SINGLE SLIMY DETAIL.

Xerox Phaser® 790 Tabloid Color Laser
$6199*

XEROX PRINTERS MAKE IT HAPPEN.

Photographic-quality color so realistic, it's startling. Introducing the Xerox Phaser® 790 Tabloid Color Laser printer, the next generation in the award-winning Tektronix Phaser line. Built specifically for graphic designers, it has advanced color management tools and a broad range of colors for flawless continuous tones. Add auto duplexing, full color printing at 6 ppm, and paper handling up to 13 x 18, and you've got a printer as spectacular as its output.

Xerox now has a full line of color and black and white printers for whatever your work demands.
To see what a difference realistic color can make, call 1-877-362-6567 ext. 1788 or visit us at

www.xerox.com/officeprinting/frog1788

THE DIGITAL DOCUMENT COMPANY
XEROX

XEROX
NETWORK PRINTERS

Copyright © 2001 XEROX CORPORATION. All rights reserved. Xerox®, The Document Company® and Phaser® are trademarks of XEROX CORPORATION. Tektronix® is a trademark of Tektronix, Inc. licensed to XEROX CORPORATION.
*Estimated U.S. retail starting price. Reseller price may vary.

October 2001

Macworld

www.macworld.com

Incorporating MacUser

Opinion

13 Forums and Feedback
Readers respond.

43 The Game Room
PETER COHEN Summoner and Tony Hawk's Pro Skater 2 show how diverse Mac games can be.

120 Ihnatko
ANDY IHNATKO Andy visits a treasure trove of computing nostalgia.

Mac Beat

14 CD-burning crackdown, TechTV's QuickTime channel, Mac OS X–Office XP switcheroo, Kensington's FlyLight, hacking the CueCat scanner, and designer Steven Heller.

How-to

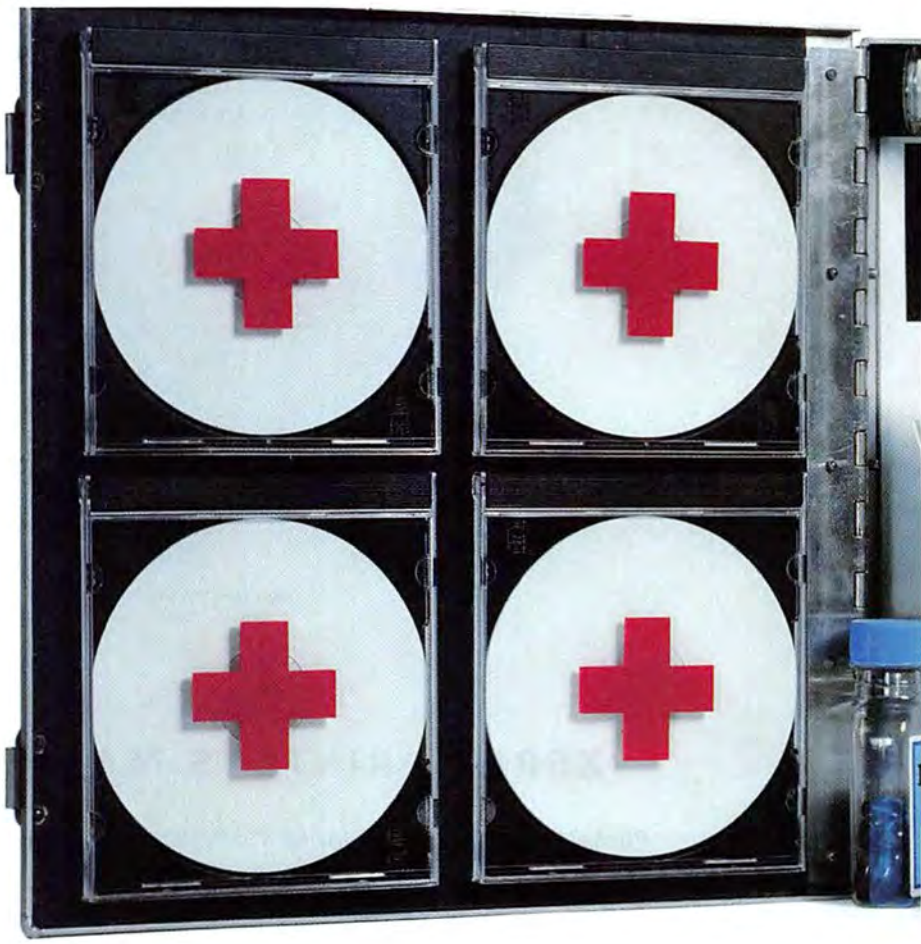
64 Upgrade an iMac
JENNIFER BERGER, CHRISTOPHER BREEN, AND JASON COX

72 Print Publishing Secrets
DAVID BLATNER Our QuarkXPress expert shares some of his favorite XTensions.

74 Web Publishing Secrets
LISA SCHMEISER Learn about adding a bulletin board to your Web site, to attract—and keep—an audience.

76 Mac OS X Secrets
DAVID L. HART Find out how to get root access in Mac OS X without endangering your shiny new system.

78 Mac 911
CHRISTOPHER BREEN Boot an iMac that has a broken CD-ROM drive, have Sherlock work the night shift, recover e-mail messages, and wake a sleeping PowerBook.



Mac OS X First Aid

TED LANDAU Mac OS X now comes loaded on every new Mac. In this guide, we explore solutions to the new operating system's most common—and most critical—problems, to make your switch as easy as possible.

46

Pro File: Steven Heller

ANDREW SHALAT *Macworld* talks with Steven Heller, graphic designer extraordinaire.

16

On the Cover:

Photograph © Frans Lemmens/Getty Images/The Image Bank
Photoshop Artists: Dan Doerner and Stephen Sugg

Quark's Leap of Faith

DAVID BLATNER With the impending release of QuarkXPress 5.0, Quark is poised to break new ground on the Web. *Macworld* looks at the newest version of the publishing standard.

56

Upgrade an iMac

JENNIFER BERGER, CHRISTOPHER BREEN, AND JASON COX With a little elbow grease, you can add more RAM and a bigger hard drive to your colorful compadre.

64

Macworld.com Find the most-recent product information, knowledgeable reviews, and real-life opinions on all things Mac—only at Macworld.com.

Reviews

24 Professional system
- ♦♦♦♦ Power Mac G4/867

26 Film scanners
- ♦♦♦ Canon CanoScan FS4000US
- ♦♦♦½ Microtek ArtixScan 4000t
- ♦♦♦ Minolta Dimage Scan Dual II AF-2820U
- ♦♦♦♦ Minolta Dimage Scan Elite F-2900
- ♦♦♦½ Nikon Coolscan IV ED
- ♦♦♦♦ Nikon Super Coolscan 4000ED
- ♦♦♦♦½ Polaroid SprintScan 4000

28 Web browser for Mac OS X
- ♦♦ OmniWeb 4.0.1

29 System-management utilities
- ♦♦♦ Chaos Master 1.2.1
- ♦♦♦½ Spring Cleaning 4.0

30 Calendar and contact software
- ♦♦♦♦ Now Up-to-Date and Contact 4.0

32 Multimedia-authoring tool
- ♦♦♦½ iShell 2.2.1

34 Database application
- ♦♦♦♦ FileMaker Pro 5.5

35 Sound card
- ♦♦♦½ Sound Blaster Live

36 Portable-document software
- ♦♦♦♦ Adobe Acrobat 5.0

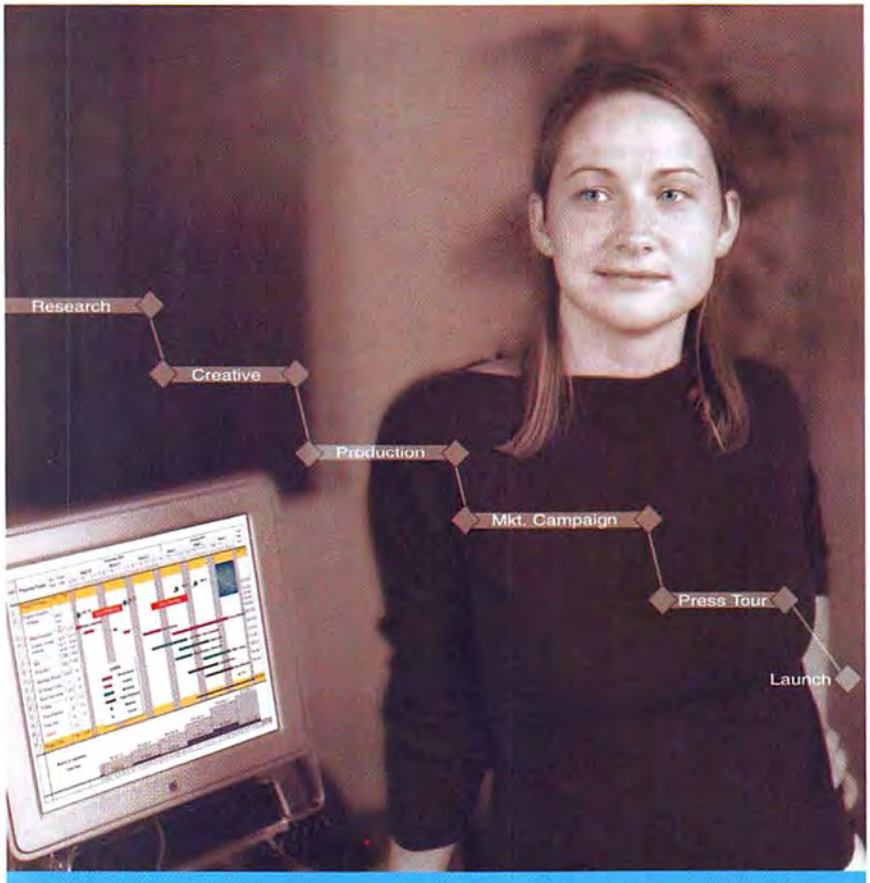
37 3-D-modeling software
- ♦♦½ Amapi 3D 6.1

39 Color-correction plug-in
- ♦♦♦♦ Test Strip 3.1

40 Network-inventory manager
- ♦♦♦ Asset Trustee 6.0

41 Flowcharting software
- ♦♦♦ OmniGraffle 1.0.1

42 More reviews online
Macworld.com Reviews



One incredibly successful project manager.

What does she know about managing a project that you don't? She knows with FastTrack Schedule 7, it's a snap to organize, track and manage all her project details. In minutes, project plans come to life in rich, colorful schedules that are sure to turn heads and get results.

Whether you have a day's worth of tasks or a yearlong project, FastTrack Schedule's three distinct views display your information the way you want—as a schedule, a calendar, or as a resource graph that tracks the people, equipment, and materials essential to project success.

And with our new compatible Palm OS version, you can sync schedules between your desktop and handheld. So even when you're on the run, your schedules are right at your fingertips. FastTrack Schedule also includes FastSteps™ intra-application scripting, full support for AppleScript, and is available in a compatible Windows version. For a free demo version or to order, call us today at **800.450.1982** or visit **www.aecsoft.com**.

Easily the best in Project Scheduling!

AEC SOFTWARE Details | FastTrack Schedule for Palm OS | FastTrack Schedule Version 7

MVP Winner PCComputing | 5-STAR PCComputing

© 2001 AEC Software, Inc. All rights reserved. Corporate names and trademarks listed herein are the property of their respective owners. Outside the United States, please call 703.450.1980 for information.

Circle 84 on card or go to www.macworld.com/getinfo

Macworld

VP OF CONTENT/EDITOR IN CHIEF Rick LePage
EDITOR Jason Snell
EXECUTIVE EDITOR Scholle Sawyer McFarland
EXECUTIVE EDITOR, MACWORLD.COM Lisa Schmeiser
SENIOR EDITOR, MAC BEAT AND NEWS Philip Michaels
SENIOR EDITOR, HOW-TO Terri Stone
SENIOR EDITOR, REVIEWS Linda Comer
ASSOCIATE EDITORS Jennifer Berger, Mathew Honan, Kelly Lunsford, Jonathan Seff
ASSISTANT EDITOR Adrienne Robillard
EDITORIAL ASSISTANT Bonnie Huie
EDITORIAL INTERN Jennifer Smodish

CONTRIBUTING EDITORS

David Blatner, Henry Bortman, Christopher Breen, Adam C. Engst, Bruce Fraser, Jim Heid, Andy Ihnatko, Ted Landau, Deke McClelland, 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 Jeffy K. Milstead
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 ASSOCIATES Amy Conger, Alissa Mach
PREPRESS CONSULTANT Stephen Sugg
CONTRIBUTING DESIGNER Jennifer Steele
DESIGN INTERN Terrence Robillard

MACWORLDPRICEFINDER.COM

ASSISTANT PRODUCER Cathy Begien

INTERNATIONAL EDITORS

Matthew JC. Powell, Australia; Bernard Le Du, France; Sebastian Hirsch, Germany; Enrico Lotti, Italy; Yoshio Moriya, Japan; Tomasz Bitner, Poland; Daniel de Blas, Spain; Nils Holmlöv, Sweden; Bahattin Apak, Turkey; Simon Jary, United Kingdom

www.waituntilyougetaloadofthis.com

Introducing Painter 7.™ Overflowing with creative tools, it will seamlessly take your work to places you have only dreamed of. Adobe® Photoshop® compatible, Painter 7 is one in a line of innovative procreate™ products designed for creative professionals. Take yourself to the website above for a peek at the possibilities.

procreate™

Copyright ©2001 Corel Corporation. All rights reserved. Painter 7, procreate and the procreate logo are trademarks or registered trademarks of Corel Corporation. All other trademarks or registered trademarks are the property of the respective companies.

Vehicle.

Passengers.

Titanium
Floppy Drive

Titanium
FireWire CD-R/W

Titanium FireWire
Thin Drive

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™

www.smartdisk.com

Circle 74 on card or go to www.macworld.com/getinfo

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
CHIEF INFORMATION OFFICER	Lynn Heiberger
NETWORK SERVICES MANAGER	Sean Greathouse
IT MANAGER	Jennifer Torres
IT SPECIALIST	Jose "Peps" Jara

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 Culley (831/475-0565)
ACCOUNT EXECUTIVE	Margaret Level Green (415/243-3582)
ACCOUNT EXECUTIVE	Michelle Davis (415/243-3577)
SALES ASSISTANT	Jim DeCleene (415/243-3662)
SALES ASSISTANT	Janecke Hausken (415/243-3583)
SHOWCASE ACCOUNT MANAGER	Niki Stranz (415/243-3664)
SHOWCASE ACCOUNT MANAGER	Carol Johnstone (415/243-3691)
SHOWCASE SALES ASSISTANT	Franck Zamora (415/243-3628)
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

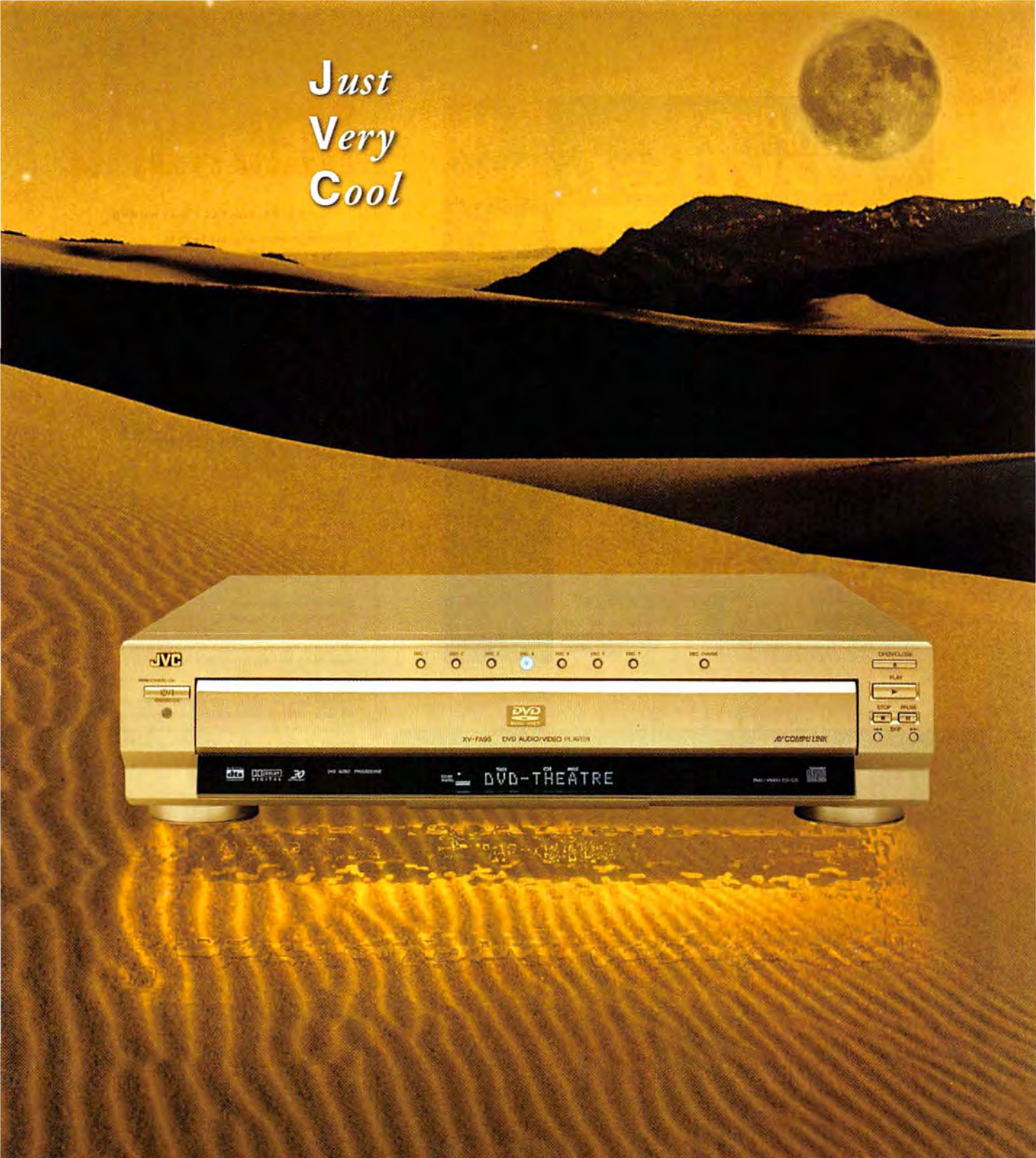
PRODUCTION DIRECTOR	Steve Spingola
PREPRESS MANAGER	Alan Anzalone
BOOKING AND BILLING MANAGER	Ricardo Sandoval
AD COORDINATOR	Megan Matteoni

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.


Just
Very
Cool

destination: **D***igital*

YOU HAVE ARRIVED. Far out. Beyond technology that spans space and time, there's still something more. The whole is greater than the sum of it's parts. As a DVD player, JVC's XV-FA95 is a portal to sights yet unseen. As a CD player or DVD audio player, a passport to sound scapes only imagined. And with new seven disc loading technology – this is an experience that could go on forever.

JVC

Excite your senses.

www.jvc.com

©2001 JVC Company of America. All Rights Reserved.

Circle 143 on card or go to www.macworld.com/getinfo

Make Your Own... DVD's!

DVD-R

World's first Firewire CD/DVD burner

Includes Toast 5.0 ® DVD and CD recording software for burning movies or interactive video to DVD and audio or data to CD

Distribute DVD movies

Bring Hollywood to your desktop with the DVD Revo. After you've created your own movies the DVD Revo DVD-RW is a perfect way to distribute them to virtually any DVD player.

Store 4.7GB of data or multimedia

The size of a CD-Rom and the storage capacity of 7 CD-R discs, DVD-RW is a great medium for data storage

Like 6 drives in 1

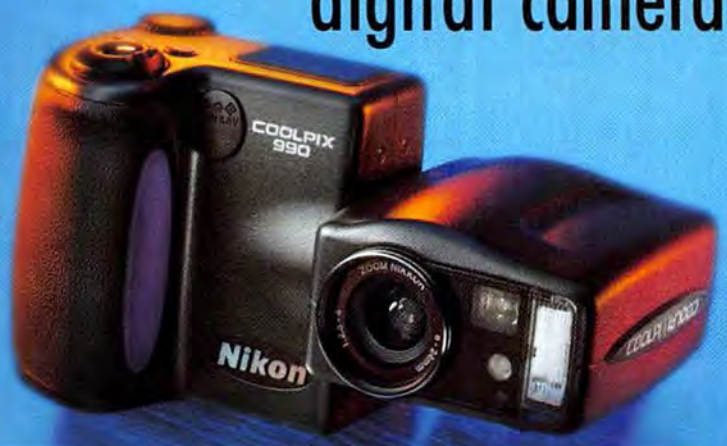
DVD-R, DVD-RW, DVD-Rom, CD-R, CD-RW, and CD-Rom all in one. To start with the DVD Revo writes DVD's at 2X which is equivalent of recording CDs at 16X (1X DVD write = 8X CD write). It takes just over 30 minutes to write a full 4.7GB DVD

all 4 DVD
www.all4dvd.com

MEDIASTORE
www.mediastore.com
1-800-555-5551

CD CYCLONE
www.cdcyclone.com
ph: 714-247-0099
fax: 714-247-0080

Shopping for a digital camera?



Don't miss the great deals in the **SHOWCASE** section, starting on page **102** of this issue!

Macworld. Get It Right.

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 St., 16th Fl., 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 St., 16th Fl., 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, 16th 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 lockups, 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

A A-LIST PCComputing

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

USB UNIVERSAL SERIAL BUS

Mac

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 b522y • Call 888-289-APCC x4065 • Fax 401-788-2797

©2001 American Power Conversion. All Trademarks are the property of their owners. APC1DØEF-USa • PowerFax: (800)347-FAXX • E-mail: apcinfo@apcc.com • 132 Fairgrounds Rd., West Kingston, RI 02892 USA

21 PAGES-PER-MINUTE OF AWESOME COLOR!

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 mangement expertise, product versatility, and an affordable price – it's 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

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*..... **$58.00**

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*..... **$69.00**

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*..... **$205.00**

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*..... **$96.00**

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*..... **$113.00**

CLEARLY™ Adobe IMAGING

**Lease Prices based on 36 month lease.*

Also available from the ColourLaser product line:

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..... **$137.00**

XANTÉ COLOUR SCREENWRITER

For Screenprinting Specialties

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

Lease price per month..... **$137.00**

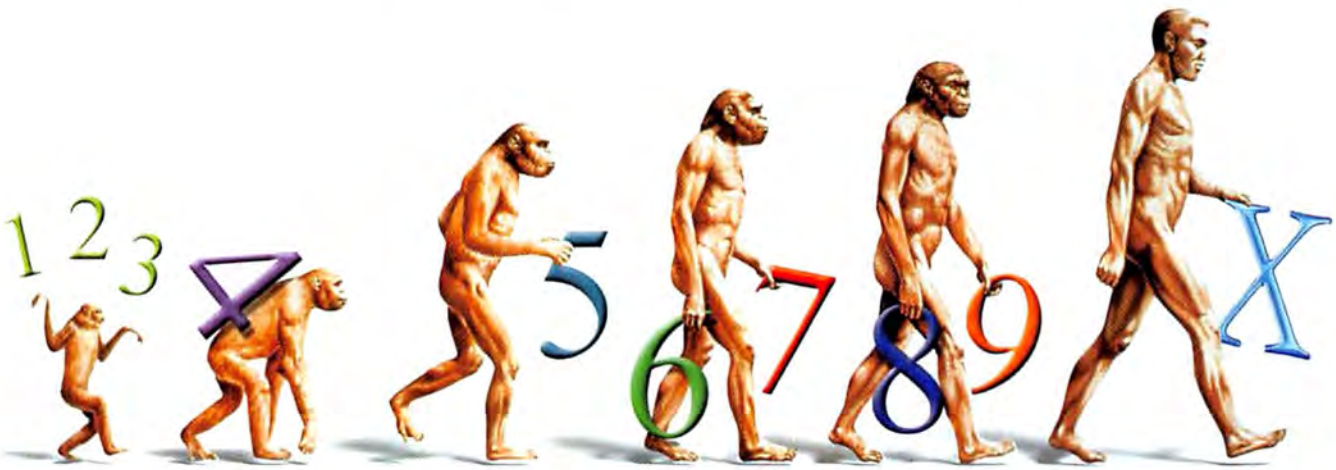
XANTÉ
Innovations in Printing Technology

1-800-926-8839 EXT. 2170

Enter online for your chance to win a
FREE ColourLaser 21!
WWW.XANTE.COM / MW21

©2001 XANTÉ CORPORATION. XANTÉ and XANTÉ Colour.aser are trademarks or registered trademarks of XANTE 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

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

DataViz®
Compatibility. Instantly.

www.dataviz.com/mwspecial

1.800.808.4825

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

Circle 142 on card or go to www.macworld.com/getinfo

Forums and Feedback

*Font*astic!

Everyone's talking fonts lately—not about a new font-management product or a *How-to* article on choosing fonts, but about the typeface we use in *Macworld*. With our July 2001 issue, Sabon became our primary editorial font, and our readers seem thankful. Speaking of things that are easy on the eyes, Apple's Newton continues to fascinate (if the response to Andy Ihnatko's column on the potential for an Apple handheld is an accurate gauge). Let's hope for Apple's sake that any Newton successors feature the right font. **m**

Sabon C'est Bon

ARMAN AFAGH Thank you so much for changing the font used in article text (July 2001). I found the previous font, used since September 2000's redesign, to be difficult to read and hard to distinguish from ad text. Bravo on the latest font change, which resolves those problems!

RON GOLDMAN After looking like one giant ad for the past few months, *Macworld* has finally returned to a readable editorial font. Now, how about fleshing out the pages with more articles, more tech facts, and more ratings comparisons?

About That iBook . . .

MATTHEW J. BECHERER I bought the iBook base model ("The New iBook: Big Thing, Small Package," *Buzz,* July 2001), and I think it's a wonderful and versatile machine. In short, I love it. It does everything my desktop can do—and faster. My only gripe concerns the keyboard. It's complete cheese. The delete key has fallen off twice; the return key has fallen of once. This is not the kind of behavior I expect from an otherwise excellent and well-produced product.

Newton's Law

ROBIN NEWBERRY I'll bet you think it's very funny to get a reader's pulse racing for no reason, as you did mine with Andy Ihnatko's latest column ("Newton's Ghost," July 2001). Not too long after I bought my Newton MessagePad 2100, Apple discontinued production. Then you go and run a photo-realistic picture of the Apple "iPad." The thought of such a device—an updated Newton working with today's G4s—caused my brain to swivel in its casing. I read the article while mopping the drool out of my lap, only to discover that Ihnatko was just whining because an Apple-made Newton replacement isn't yet available. That wasn't a nice trick to play on your loyal readers.

TONY GLASER Ihnatko's column was dead on the money. I've used my Newton MessagePad 2100 every day for the last few years, in all kinds of rough-and-tumble situations, and while I crave something smaller and in color, no other product can compare. The day a Pocket PC finally beats it will be the day I forsake Macs and buy a PC—unless someone finds an easy way to sync Pocket PCs and Macs.

We're not encouraging people to adopt Pocket PCs, but an easy way to sync them with Macs is in the works. Type **Pocket PC** *in Macworld.com's Search box for more details.—Ed.*

No Print for Writer

ANDY MENNICK I was sad to see your online-only, truncated review of Nisus Writer 6.0. In addition to Microsoft Word, there are several Mac word processors. Burying their reviews on the Web won't encourage users to look at the variety out there. The folks at Nisus (who incidentally may provide the best customer support in the business) deserve better, as do Mac users.

Post your comments on our forums (www.macworld.com) or send them by mail to Letters, *Macworld,* 301 Howard St., 16th 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.*

CORRECTION

An update to August 2001's *Web Publishing Secrets* has been posted at Macworld.com. To see a correctly filled-in Find And Replace dialog box and a correction to the code that appears in page 78's third paragraph, visit www.macworld.com/2001/08/howto/webpublishing.html.

Rip. Mix. Burn. Steal?

DOES USING YOUR MAC TO BURN YOUR OWN AUDIO CDS MAKE YOU A THIEF?

LORENZ/AVELAR

When Apple added built-in CD-RW drives to its desktop line in early 2001, Mac users joined the digital-audio revolution en masse. But just as they were beginning to burn their favorite tracks onto CD, the revolution's rules began to change.

You've no doubt heard of the online music-swapping service Napster and its legal troubles. Facing a court order, Napster has filtered out many copyrighted songs from its servers, and pretty much anything you'd want to listen to can't be downloaded anymore—unless you're a huge fan of rocking versions of public-domain songs (such as "Twinkle, Twinkle, Little Star").

As record companies clamped down on online music swapping, Roxio (866/280-7694, www.roxio.com)—which, along with Apple (800/692-7753, www.apple.com), makes the CD-burning software used by Macs—struck a deal with EMI Group. The makers of Toast will team up with the record label to develop a secure CD-recording platform. This news has some users worried that Roxio plans on restricting the ability to burn CDs from MP3 files.

Is your ability to create your own CDs going the way of file swapping on Napster? And more important, if you're already making your own CDs, are you doing anything wrong?

Rip Now, Pay Later?

The answer to the first question, at least, is an unequivocal no. Although Apple has declined to comment on the future direction of any of its products, including iTunes, Roxio says that it's not about to take away a user's ability to burn audio CDs from MP3 files.

"Nothing will be disabled in what Toast will do," Roxio spokeswoman Kathryn Kelly says. "We will just enable people to burn authorized content from EMI." The change will allow users to unlock encrypted music files in a subscription-based service and download music directly from EMI. Roxio is working with other major record labels on setting up similar services that will allow consumers to download and burn their music, Kelly adds.

"The record companies are concerned about everything," she says. "What we're trying to do is talk to them. They have to include CD burning [in future digital-music plans] because without it they will fail."

But Is It Legal?

As for whether or not it's against the law to make CD copies of music, things get a little fuzzy. Everyone—from the Recording Industry Association of America (RIAA) to the Electronic Frontier Foundation (EFF), a civil-liberties advocacy group—seems to agree on one point:

"It's perfectly legal for you to make copies of your own music for your own personal use," says Robin Gross, EFF's staff intellectual-property attorney. "It's called 'fair use.' It's your legal right to do so, even if the copyright holder doesn't want you to."

So if you want to take all your Radiohead albums, rip selected tracks from each of them, and burn a mix

CD for your own use, there's nothing wrong with doing so.

But when you make a mix CD for someone else, or create a CD from music downloaded from a source such as Napster, things get tricky.

If you were to pass your Radiohead mix CD along to a friend, fair use becomes debatable. If listening to a track on that mix CD inspires the friend to run right out and buy a copy of *Amnesiac*, then you might have a case for it being a fair use of the material, according to the EFF. Not so fast, the RIAA counters; that Radiohead CD is legal *only* if you also hand over to your friend all the legally purchased Radiohead CDs you used to burn it.

The RIAA's position is unambiguous: making a mixed CD of music you own and then giving that CD to someone who does not own that music violates copyright law.

So who's right?

"There is no bright line," Gross says. "We've never had to draw the [copyright law] legality down to that level of distinction before. That's really one of the problems right now. There isn't a clear guideline as to how we're supposed to analyze. That's why it's important to pay attention to what people think. One important thing to consider is that the law should spring from society, rather than be imposed from above."—MATHEW HONAN

Web-Channel Surfing

The producers at TechTV had a problem. The San Francisco-based cable network is one of dozens of companies that provide online streaming-media content for Apple's QuickTime Player. But TechTV's QuickTime channel was somewhat static. Whenever TechTV producers wanted to update content, they had to do so manually.

So TechTV put Ryan Francesconi on the case. Francesconi is an in-house developer for the network's Vignette StoryServer, a popular content-management database. StoryServer is where all the graphics and stories on TechTV's Web site are stored.

More Info: www.apple.com/quicktime/qtv

Check out TechTV—and dozens of other streaming QuickTime TV channels—on Apple's QuickTime page.

LINK

TIMOTHY ARCHIBALD

Ryan Francesconi enhanced TechTV's QuickTime channel.

Francesconi wanted TechTV's QuickTime channel to query StoryServer, grabbing the latest headlines from the database and displaying them for QuickTime-equipped viewers. So he wrote a template that served text from the database in a QuickTime-friendly format. Using Totally-Hip's LiveStage Pro authoring tool, he reprogrammed TechTV's QuickTime channel. Now, whenever a user clicks on the TechTV QuickTime-channel button, data from a TechTV URL loads into the QuickTime text track.

TechTV could have chosen an alternative such as Macromedia's Flash Generator, but Francesconi found nothing as inexpensive and easy to implement as QuickTime. "The QuickTime platform is now open enough to allow dynamic updating of content," he says.

And because of Francesconi's efforts, TechTV's QuickTime presence is more dynamic, too.—JEFFY K. MILSTEAD

COOL STUFF

You *Can* Judge a CD by Its Label

Thanks to iTunes, and a growing collection of bootleg songs from Napster, you're in dire need of burning a CD or two. Or maybe you're an iMovie junkie who wants to use Toast to make VideoCDs of your vacation in Bangor, Maine, for everyone in the family. Either way, you'll want the outside of your CDs to reflect the cool stuff they contain. WriteAway, from Digital Innovations (888/762-7858, www.digitalinnovations.com), offers a way to make labels as unique as your CD's contents. Download a template from the company's Web site, design your own label, print it, and you're set to go. WriteAway labels work with laser and ink-jet printers, and templates are available for several programs, including Microsoft Word and Adobe Illustrator and Acrobat. But the handiest feature just helps you to avoid goof-ups. The WriteAway kit ($13 buys 20 labels; $25 buys 50) comes with a device that holds your CD in place as you apply the label, so you won't position it off-kilter. And in case you mess up, the labels are completely removable. Even uncoordinated magazine editors can now have perfect CD labels.—MATHEW HONAN

WEIRD STUFF

The Guiding Light

You want to work on your PowerBook during your flight to New York, but the guy in the middle seat insists that the glare from your overhead light is affecting his enjoyment of *The Animal*. How can you go about your business without distracting others from the subtle intricacies of Rob Schneider's performance? Try the $20 FlyLight, from Kensington Technology Group (800/235-6708, www.kensington.com). One end of the 18-inch-long gooseneck cable plugs into any USB port, and the other end sports a white light-emitting diode, or LED. An LED is made up of a solid-state semiconductor inside an epoxy lens. As energy flows through the semiconductor, the LED emits photons visible as light. Unlike an incandescent bulb, which wastes up to 90 percent of its energy in heat, an LED converts almost all its energy into light. The resulting glow is equal to a penlight's (about 0.5 watts) but spread over a larger area. Worried the FlyLight may suck the battery power right out of your Mac? Relax—Kensington says it uses only 30 milliamps of power, or about 90 seconds of battery life per hour. That means the FlyLight will still be burning bright after the in-flight movie's closing credits fade away.—PHILIP MICHAELS

CLICK HERE

www.routergod.com

When Routers Go Hollywood

Did you know that many celebrities are also experts on network routers? **RouterGod** contains "interviews," with stars such as Alicia Silverstone and Elizabeth Hurley, on the handling of Cisco equipment. The faux interviews (which are a hoot even if you don't know a frame relay from a configuration register) are the work of Richard Haskins, a technical instructor who specializes in Cisco products. With Haskins receiving fan mail from some of RouterGod's guest stars, it seems that the idea of celebrity router experts isn't so far-fetched after all.—LISA BAGGERMAN

PRO FILE

Grand Design

Q&A with STEVEN HELLER

One could argue that Steven Heller wrote the book on graphic design—in fact, he's written more than 80 of them. And when Heller isn't writing about design, he's putting his theories into practice. The senior art director of the New York Times *and cochair and founder of the Master of Fine Arts program in design at New York's School of Visual Arts, Heller has a career that spans hot-metal typesetting, the advent of computers, and the Mac's increasingly crucial role in design work.*—ANDREW SHALAT

Q: ***What do you use to lay out the*** **New York Times Book Review?**

A: Well, now it's a Mac, of course. And we're on the QPS system. I was here when the first Mac was used, and that was brought in by Gary Cosimini, who works for Adobe now. He actually brought in a little laptop keyboard. From that he went to what became the Mac Classic, and then he helped inaugurate other Mac products in the *New York Times*.

Q: ***It seems that when you got into graphic design, digital technology had not yet taken hold. The medium was still the hand-cut one that made Milton Glaser and others of his generation famous.***

A: Well, the first thing I ever worked with was an IBM MTST [Magnetic Tape Selectric Typewriter] computer in 1968, or maybe late 1967. It was the first time I was introduced to what typesetting was. And when I came to the *New York Times* years later, I worked on hot type, Linotype, hot-type chases, on the stone. I was actually the last person to work on a hot-metal page at the *New York Times*. An art director or pasteup editor would stand over the printer who was putting type into the page. And you'd watch as they put the slugs of metal onto the page. I worked with rotogravure printing, but when I came up I learned you printed it out on the MTST; you cut it up and pasted it down with wax. You'd get Velox, you'd cut those down, you'd make silhouettes, and you'd make borders with ruling tape. And then later on, when we lost so much money that we had to give up our MTST, we kept the Selectric part of it. So I used to do justified type by hand, which was one big pain in the ass. You remember, you'd calculate it and you'd have a little dial on the right-hand side, and you'd put your pica width in there, per line. So when I finally learned QuarkXPress, I felt like I was learning a new language. I felt like I had finally learned French.

More Info: www.macworld.com/2001/10/macbeat/heller.html

Steven Heller talks about the graphic-design program at the School of Visual Arts in this extended interview.

LINK

AT A GLANCE

STEVEN HELLER
AGE: 50
RESIDENCE: New York, New York
MACS: 233MHz iMac, 400MHz iMac SE, 366MHz iBook SE
SOFTWARE: QuarkXPress
PERIPHERAL: Iomega Zip drive

iomega

EXTREMELY VERSATILE.
INFINITELY EXPANDABLE.

Peerless™: UP TO 20GB OF SPACE ON REMOVABLE DISKS

The new Peerless™ system is the affordable, flexible way to add extra space. It's fast, with transfer rates up to 15MB per second. It's reliable, featuring shock resistant, sealed disks. And it's fully modular and compatible with USB and FireWire™ interfaces. Is it any wonder it's called Peerless?

TO LEARN MORE ABOUT PEERLESS DRIVES AND DISKS VISIT WWW.IOMEGA.COM.

iomega

The company that practically invented removable digital storage has done it again—in a very big way.

Introducing Peerless™, the groundbreaking storage solution from Iomega®. This sleek magnetic drive is super-fast, with transfer rates up to 15 MB/sec (with FireWire®). Compact and portable, the disk slides into a base station only slightly larger than the disk itself. In fact, the whole system fits in the palm of your hand. And Peerless is the first, true high-capacity removable storage medium with cartridges available in 10 or 20 Gigabyte configurations. That's right. Gigabytes. Adding extra space has never been easier.

Peerless offers modular interchangeable connectivity, so you can switch between FireWire® and USB computer interfaces. And Peerless is tough. A built-in shock-absorption system protects against drops of up to 30 inches—just in case. Plus, it features an exclusive design that keeps the read/write heads secure from crashes and sealed away from dust and other contamination.

With Peerless, you can back up an entire computer on a single disk. It's powerful enough to store all your files, fast enough to run applications straight from the drive, and versatile enough to go anywhere you do. And with up to 20GB on each disk, it has the capacity you want, plus the flexibility to expand easily and affordably.

Basically, Peerless offers all the space you need in one incredible, compact drive. It's the next big thing in removable digital storage. Would you expect anything less from Iomega?

Peerless™ is compact (the entire drive fits in your hand), and tough, with built-in shock absorbers.

Peerless offers interchangeable 10GB or 20GB disks—there's always room to grow.

Read/write heads are integrated into each fully sealed Peerless disk, drastically reducing the risk of contamination.

With its high transfer rate, Peerless is fast enough to run programs directly from its drive.

The Peerless drive supports modular connectivity—you can switch between FireWire® and USB interfaces.

TO LEARN MORE ABOUT PEERLESS DRIVES AND DISKS VISIT WWW.IOMEGA.COM.

Circle 104 on card or go to www.macworld.com/getinfo

SOFTWARE SWITCHEROO

X Doesn't Mark the Spot

Jason Romney wanted to be an early adopter of Apple's much heralded new operating system, Mac OS X. So in early May, Romney went to the Utah State University bookstore in Logan, Utah, and bought himself a copy—or so he thought.

Opening the box, Romney saw Apple's now-familiar white CD with the big aqua X. He popped it into his drive and got ready to experience the power of Unix combined with the ease of Mac OS. There was just one problem—instead of identifying itself as an OS X installation, the icon on Romney's desktop claimed to represent an entirely different application.

Office 10.

Romney's OS X CD-ROM was, in fact, Microsoft Office XP for Windows. Romney had become the proud owner of a useless Office XP disc chock-full of *.exe* files but with nary an Aqua-colored operating system to be found.

When Romney called AppleCare, the company promised him another disc but was at a loss to tell him what to do with his copy of the OS X—actually XP—CD. Nor could Romney even use his unwanted Windows application: without a CD key to unlock the XP installer, his copy of Office wouldn't install even on a Pentium machine.

JASON ROMNEY BECAME THE PROUD OWNER OF A USELESS OFFICE XP DISC.

Romney tried selling it online, but eBay pulled the auction at Microsoft's request. And Microsoft still sent Romney an e-mail demanding that the CD be pulled from the auction site: "Because the software program contained on the disc is Microsoft's protected intellectual property, its redistribution is an infringement of Microsoft's rights." But the Redmond colossus did note that "there may be opportunities to exchange this component for software which would be of more use to you."

Romney has received a real OS X CD from Apple. As for how Office XP wound up on an OS X disc, neither Apple nor Microsoft can offer an explanation.

Both companies have their CDs pressed at the same Zomax facility, and Microsoft attributes the blunder to "a mistake" at the plant. At press time, Romney still had his mislabeled copy of XP, having received nothing useful from Microsoft in exchange.

Then again, there are Windows users who might say the same thing.—MATHEW HONAN

A CAT'S TALE

The technology was going to change how people surfed for information. Instead, Digital:Convergence's CueCat handheld scanner and its accompanying CRQ software (www.crq.com) are holding on for each of their nine lives.

CRQ—which began shipping in Mac form early this summer—gathers Web addresses via the CueCat. About the size of a mouse but shaped like a cat, the scanner reads "cues" in broadcast and print materials, and CRQ then directs consumers to related Web sites.

Say you're flipping through a magazine and you see an ad with a CueCat symbol. You take the scanner—connected to your Mac via a USB cable—and run it over the ad. Doing so would open a relevant Web site in a browser window on your Mac.

Digital:Convergence says the CueCat eliminates entering long addresses and hunting for Web pages. No word on how that works if you don't read magazines or watch TV while tethered to your computer.

Shortly after the June release of CRQ's Mac version, Digital:Convergence announced massive layoffs, which it said won't affect its products. At press time, the CueCat reader was available free (there is a shipping and handling charge) from the company's Web site.

But even if this CueCat concept goes the way of the saber-toothed tiger, it may find new uses, thanks to enterprising hackers who've rewired their CueCats to do everything from reading bar codes to looking up ISBN numbers on Amazon.com.—JENNIFER SMODISH

More Info:
http://freshmeat.net/search/?q=cuecat

LINK

Got a CueCat? Check out this site for scripts that will expand the handheld scanner's functionality.

DAVID PAPAS

product watch

Apple's Sequel to iDVD

When Apple introduced iDVD—the DVD-authoring software that's included with all SuperDrive-equipped Power Macs—creating DVDs became easier for Mac users. With the latest version of iDVD, due by the end of September, those creations can be a lot more attractive.

iDVD 2.0 will run only on Mac OS X 10.1—also set for release in September—and will be available on CD-ROM for $20 to current iDVD users. Apple hasn't said whether it will also support new external DVD-writing drives from companies such as EZQuest, CD Cyclone, and LaCie.

DVDs created with iDVD 2.0 can get a professional touch, thanks to the addition of motion to menu items. Users will be able to animate menu backgrounds, the images on iDVD buttons, or both—a look common in commercial DVDs. iDVD 2.0 also can play a soundtrack in the background of a DVD menu screen or a slide show.

The updated version offers more-flexible interface-building tools that allow you to freely position buttons, vary button size, and choose button border styles.

Users of iDVD 2.0 will be able to record more video on a DVD; the limit has been pushed to 90 minutes. Users can encode video at 5 or 8 megabits per second. At the lower data rate, the quality goes down somewhat, but the maximum amount of video fits on a disc.

Burning should go faster in iDVD 2.0 than in version 1.0. Once you drop a movie into iDVD 2.0, the program immediately starts encoding it in the background.—JASON SNELL

MAC STUFF

Breathing Easy

Chronic asthma sufferers have to keep track of everything from symptoms to medications. The way FireLogic (703/415-0180, www.healthengage.com) sees it, the Mac is the perfect tool for storing that data. So the company developed HealthEngage. Available for Mac OS 8.6 or later—including OS X—HealthEngage is a $60 database that charts asthma information. Users can enter their peak flow results—measurements of an asthmatic's ability to push air out of the lungs—and print out the data in a chart that's easy for doctors to read. FireLogic plans to release similar software for other chronic diseases later this year, making the Mac a hub not just for the digital lifestyle, but for a healthy one as well.—PHILIP MICHAELS

HARDWARE

PERSONAL STORAGE

- Two storage devices from Imation (888/466-3456, www.imation.com): The **FlashGo** ($80) is a USB flash-memory-card reader-writer that recognizes all existing flash-memory-card formats. The **RipGo** ($400) is a small-format CD burner and music player that supports MP3 and WMA. Both should ship in September.
- A high-capacity storage system from MicroNet Technology (310/320-7272, www.micronet.com): The **SANcube** ($3,698) can store 600GB of data and deliver 38MB-per-second data throughput.

PROJECTORS

- Two digital projectors from Lightware (800/211-9001, www.lightware.com): The **LS-8** ($1,795) is a 2.9-pound, 800-lumen projector featuring SVGA (800-by-600) resolution with XGA compatibility. The **LX-8** ($2,695) is also a 2.9-pound, 800-lumen projector. It features true XGA (1,024-by-768) resolution.

SCANNERS

- Five scanners from Epson (800/873-7766, www.epson.com): The **Perfection 2450 Photo** ($399) features 2,400-by-4,800-dots-per-inch resolution and USB and FireWire interfaces. It will ship in October. The **Perfection 1650** ($199) is a USB-only scanner with 1,600-by-3,200-dpi resolution. A **Perfection 1650 Photo** model ($249) includes a built-in 35mm filmstrip adapter. The **Perfection 1250** ($129) offers 1,200-by-2,400-dpi resolution. A **Perfection 1250 Photo** model ($149) is also available. The 1650 and 1250 scanners will ship in September.

UPGRADE CARDS

- CPU upgrades for iMacs and Wall Street PowerBooks from Sonnet Technologies (949/587-3500, www.sonnettech.com): The **Crescendo/WS G3** CPU card ($400) uses a 500MHz PowerPC G3 processor with 1MB of Level 2 backside cache. It's meant for PowerBook G3s with clock speeds of 233MHz to 300MHz. The **Harmonl** ($300) has a 500MHz PowerPC G3 processor with 256K of Level 2 backside cache. It also incorporates a FireWire port, which lets owners of original iMacs use DV cameras, CD-RW drives, and other FireWire peripherals. It's compatible with iMacs running at 233MHz to 333MHz.

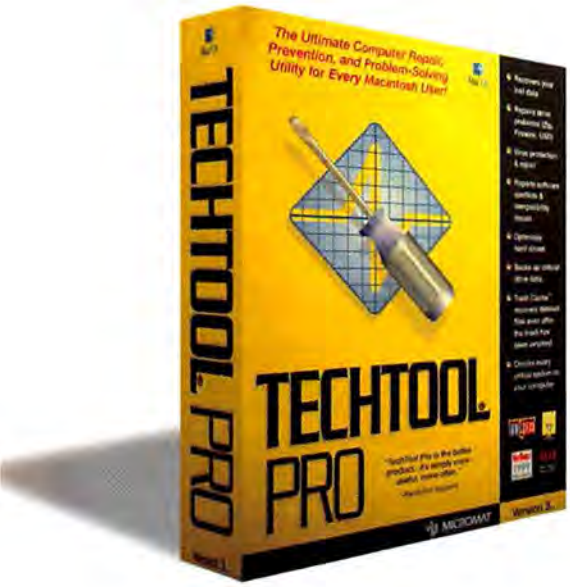
SOFTWARE

GRAPHICS SOFTWARE

- **Boris Graffiti 2.0** from Boris FX (888/772-6747, www.borisfx.com): The updated graphics and tiling application includes vector text, animated text on paths (which can be imported from Adobe Illustrator), extruded materials with reflection mapping, and Adobe After Effects plug-in support. It will ship by October ($495; upgrade, $199; professional edition, $995).

continues

In with the new...



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?

In with the newer...

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.

What's HOT

A QUICK LOOK AT THE WORLD OF TECH

1. **Steve Jobs boasts that new features in iDVD 2.0 let you produce DVDs that surpass Hollywood products in quality.** *You'd say the same thing if* Mission to Mars *had been your in-flight movie on the way to this year's Macworld Expo in New York.*

2. **Apple ditches Flower Power and Blue Dalmatian as iMac colors.** *The move comes as part of a company directive to pick designs that can be found on the visible end of the color spectrum.*

3. **Software maker Corel renames its Mac division "Procreate."** *The company settled on Procreate after its first ten choices couldn't be printed in family publications.*

- **Maya** from Alias/Wavefront (800/447-2542, www.aliaswavefront.com): The company is taking advance orders for the OS X-native version of its high-end 3-D animation software. Anyone who orders Maya before December 31, 2001, will receive 12 months of maintenance. Those who order the program before it ships will also receive a free productivity pack. Maya is set to ship by September 25 ($7,500).
- **Painter 7** from Corel (800/772-6735, www.procreate.com): Features new to the popular painting tool include a watercolor effect that drips and smudges paint across the canvas, and a Liquid Ink tool that mimics the gluey viscosity of ink or paint ($499; upgrade, $199).

NETWORKING SOFTWARE

- A free OS X-native version of **Dave** from Thursby Software Systems (817/478-5070, www.thursby.com): The PC-to-Mac file-sharing software will run only on OS X 10.0.4. Thursby decided to offer a free beta for early adopters of the new operating system. The company plans to continue developing a commercial version of Dave for OS X.
- A beta release of Virtual PC for OS X from Connectix (800/950-5880, www.connectix.com): Registered Virtual PC 4 users can download **Virtual PC Test Drive** for free. The beta, which will expire on January 31, 2002, lets OS X users run PC-based operating systems on their Macs.

PRODUCTIVITY SOFTWARE

- OS X-native fax software from Smith Micro (949/362-5800, www.smithmicro.com): Set to ship this fall, **FaxSTF X** allows faxes to be sent and received from any Mac application ($60).
- **FileMaker Server 5.5** from FileMaker (800/325-2747, www.filemaker.com): The updated database-hosting application automatically updates and deploys FileMaker Pro plug-ins to FileMaker Pro 5.5 clients across a TCP/IP network. The application runs natively in OS X ($999; upgrade, $499).—Compiled by PHILIP MICHAELS

MACWORLD CONFERENCE & EXPO: BEST OF SHOW

At each Macworld Expo trade show, *Macworld* and MacCentral.com pick the most exciting new products. Winners from this year's Macworld Expo in New York include:

- Apple's Mac OS X 10.1 and its 867MHz Power Mac G4
- Asanté's FriendlyNet wireless-ready cable/DSL router
- Canon's D2400UF scanner
- DiamondSoft's Font Reserve Server for OS X
- IBM's ViaVoice for OS X
- Micromat's Drive 10 disk-repair utility
- Microsoft's Office 10 for OS X
- SmartDisk's FireLite 5GB FireWire hard drive
- Toon Boom's Toon Boom Studio 1.0
- Xerox's Phaser 860 color printer

SOFTWARE UPDATES

powered by versiontracker.com

4D WebStar Server Suite V 5.0b1
Server suite for Mac OS X

Adobe InDesign Photoshop Import 1.5.2b
Import-filter update

Aladdin Stuffit Express 1.1
File-transfer-automation tool

Apple Web Sharing 1.0
Security improvements to Apache

Blaze 1.0
Shareware word processor

CE QuicKeys 1.0b1
Beta of OS X-native automation utility

Connectix DoubleTalk 1.1
Networking tool adds network browser support

Crescendo/Encore 1.4.6
Driver for G3 and G4 update cards

Digital Voodoo 5.0
Update for DI Desktop 64 SDI 10-bit video cards

EndNote 5.0
Bibliographical tool adds instant formatting in Microsoft Word

FlightCheck Classic 4.03
Preflight tool prepares DTP files for prepress

iGoom 1.7.3
iTunes visual-effect plug-in

Keyspan Digital Media Remote 2.0.3b1
Updates software for remote-control unit

LimeWire 1.6b
Gnutella peer-to-peer file-sharing OS X client

Logitech MouseWare 4.0
USB driver for USB Wheel mouse

Metrowerks CodeWarrior Pro 6.3
Maintenance release for development software

MSN Messenger 2.0
Free instant-messaging application

Opera 5.0b2
Updates next-generation browser

The Sims X 1.1.4
Fixes bugs for Mac OS 9.1 and later

Snapz Pro X 1.0
Screen-capture tool

StockView 4.0
Image-library-management suite

Virex 7.0b3
Beta of virus-protection software for Mac OS X

VR Worx 2.1
Authoring tools for QuickTime VR

Wacom Tablet 4.7
Driver for most Wacom tablets

XLR8 Mach Speed Control 2.5.0
Cache control for XLR8 CPU cards

For these and other current updates, visit:
www.macworld.com/subject/updates
LINK

Run OS X on your older Mac!

Sonnet Technologies Extends Mac® OS X Support to PCI Machines

Sonnet's latest breakthrough OS X compatibility solution is available now! The new OS X support software for our popular Crescendo™/PCI processor upgrades, available for purchase as a download from our website, enables "officially" unsupported PCI machines, such as a Power Macintosh 7300/7500/7600, 8500/8600 or 9500/9600, to install and run OS X. Backed with our three-year limited warranty and included technical support, this innovative solution provides a simple path to attaining OS X performance without the expense of a new system.

Great News for Newer Technology Customers

There's no need to feel left out if you're a Newer Technology customer—Sonnet's commitment to extending Mac OS X support also includes solutions for MAXpowr/ZIF and MAXpowr/PCI G3/G4 processor upgrades! Available as a download for a nominal fee from our website, this software will extend the usefulness of Newer Tech upgrades.

If you own one of these Macs and Sonnet makes a product to go into it, then we have an OS X solution for you!

- Power Mac G3 & G4 Series
- Power Macintosh 7300, 7500, 7600 Series
- Power Macintosh 8500, 8600 Series
- Power Macintosh 9500, 9600 Series
- G3 All-in-one
- G3 Blue & White
- G3 Desktop
- G3 Minitower
- G3 Server
- PowerTower Pro
- PowerWave
- UMAX J700, S900

Don't wait any longer! Enjoy the benefits of OS X now.
Order your installation solution today.

SONNET
SIMPLY FAST

Go to www.sonnettech.com/news/macosx_update.html for purchase options and a complete statement on Sonnet's Mac OS X compatibility solutions.

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

Power Mac G4

867MHz "Quicksilver" Power Mac Nicely Balances Punch and Price

BY CHRISTOPHER BREEN

BEVERLEY HARPER

POWER MAC G4/867

Rating: ♦♦♦♦

Pros: Good price; SuperDrive allows DVD authoring; fast 3-D performance.

Cons: SuperDrive lacks manual eject; no audio-input port; paltry RAM.

Company's estimated price: $2,499

OS compatibility: Mac OS 9, Mac OS X

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

When Steve Jobs failed to unveil a redesigned iMac at July's Macworld Conference & Expo, many people felt that Apple's summer offerings were little more than a rehash of its current product line. Although it's certainly true that the most recent Expo brought no revolutionary new designs from Apple, the company deserves credit for placing more power in the hands of its customers for a substantially reduced price.

The faster iMacs Jobs did introduce reinforced Apple's bigger-bang-for-fewer-bucks Expo message, but no new Mac model serves as a better example of that theme in action than the 867MHz Power Mac G4.

True Value

This Power Mac—the fastest single-processor computer that Apple has ever offered—falls in the middle of the current Power Mac G4 trio in terms of price. At $2,499, it costs $1,000 less than the dual-processor 800MHz Power Mac G4 (which should be available by the time you read this) and $800 more than the newly reconfigured 733MHz Power Mac G4.

Except for the absence of a second processor, the 867MHz G4's features closely match the dual-processor model's. Both offer a 133MHz system bus, a 2MB Level 3 cache (one for each processor on the dual system), four 33MHz PCI slots, a 4× AGP slot, three DIMM slots (supporting up to 1.5GB of RAM), and a SuperDrive—the DVD-R and CD-RW drive that lets you create DVDs for playback on most home DVD players. The 867MHz Power Mac includes a 60GB 7,200-rpm Ultra ATA/66 hard drive (compared with the 80GB drive in the dual-processor 800MHz machine). All three new G4 models ship with Mac OS 9.2, and all include Mac OS X 10.0.4.

The 867MHz Power Mac contains only 128MB of RAM—half the 256MB found in the dual-processor model. Given how memory-hungry Mac OS X (and its Classic mode) can

be, Apple shouldn't have skimped. (In fact, we boosted the 867MHz G4's RAM to 256MB for our tests, in order to run Adobe Photoshop.)

Nod to Titanium Design

While the new look of this Mac reflects some design elements of the Titanium PowerBook G4, it's not strikingly different from that of previous Power Mac G4s. Other than the matte-gray plastic front panel, few exterior changes are in evidence. The Programmer's button is smaller, but the audio-input port is still conspicuously absent. Because there's no power pass-through port, users who don't have an Apple flat-panel display—which gets power from the Apple Display Connector—must plug their monitors into an external socket.

Though the speaker itself hasn't changed, Apple has removed the protective plastic speaker grille. Some may argue this makes the Mac more attractive, but it leaves the speaker more vulnerable to damage.

More significantly, the 867MHz G4's SuperDrive offers no way to eject a disc manually. Rather, you must rely on the keyboard's eject key, use the Eject application or control-strip module (found in the Eject Extras folder inside the Apple Extras folder), or hold down the mouse button at start-up. Since we can envision situations where manually ejecting a disc may be the only way to remove it from a crashed Mac, we hope Apple will offer a workaround.

Predictably Powerful

With 256MB of RAM, the Power Mac G4/867 performed just about as we expected. In our Speedmark tests, it bested the former top-of-the-line Mac, the 733MHz G4 in its original configuration, by about 17 percent overall (see "Up to Expectations"). (The 867MHz model's Speedmark score was nearly identical when we tested it *without* the extra RAM.) In our Photoshop tests, the 867MHz G4 shaved up to 20 percent off the 733MHz G4's times. It pulled further ahead in the Cinema 4D results, completing the rendering task 1 minute and 40 seconds faster than the 733MHz system did.

But when we put the 867MHz Power Mac up against the discontinued dual-processor 533MHz Power Mac, we were reminded that two processors *are* better than one in some cases. Although the 533MHz DP system couldn't keep up with the other two Power Macs in our Speedmark test, it beat the 867MHz G4 in every Photoshop test but RGB to CMYK (a task not optimized for multiprocessors); knocked a full 2 minutes off the 867MHz G4's Cinema 4D score; and finished encoding our MP3 file in iTunes 8 seconds ahead of the 867MHz G4. Seeing this kind of performance from Apple's old dual-processor Power Mac made us even more anxious to get our hands on the dual-processor 800MHz model.

The 867MHz G4's most dramatic results were in our Quake III test. The older Power Mac G4/733, with its Nvidia GeForce2 MX graphics card running under Mac OS 9.1, cranked out 78 frames per second (fps) at a resolution of 640 by 480. The 867MHz Power Mac, using the same video card under Mac OS 9.2, blasted out 107 fps. Can a G4 processor running just 134MHz faster really make such a startling difference in 3-D performance?

Well, no. Those extra megahertz do make a difference, but Quake III also benefits from the new Nvidia and OpenGL drivers included with Mac OS 9.2. These drivers—versions 2.2 and 1.2.2, respectively—also goosed Quake III's frame rate on our older Power Mac G4/733 when we installed OS 9.2. On that Mac, we saw frame rates rise from 78 fps to 83 fps—more than 6 percent. Speedmark scores with OS 9.2 on the older 733MHz Mac also improved, by almost 4 percent.

Macworld's Buying Advice

Considering that on July 17, 2001, you would have paid $1,000 more for a less powerful SuperDrive-bearing Macintosh than the 867MHz Power Mac G4 announced the next day, the new midrange G4 is a very attractive deal. We would welcome more RAM, a protected speaker, an audio-input port, and a manual eject mechanism on the optical drive. But given this Power Mac's outstanding price and performance, these are minor considerations for what is an otherwise solid product. **m**

Up to Expectations

Macworld LAB TEST

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

	SPEEDMARK 2.1	ADOBE PHOTOSHOP 6.0.1				CINEMA 4D XL 7.1	ITUNES 1.1	QUAKE III
	Overall Score	Gaussian Blur	Unsharp Mask	RGB to CMYK	Lighting Effects	Render	MP3 Encode	Normal
Apple Power Mac G4/867 (256MB)	**215**	5	6	**12**	5	8:53	1:20	**107**
Apple Power Mac G4/733	*183*	*5*	*6*	*15*	*6*	*10:33*	*1:19*	*78*
Apple Power Mac G4/533 DP	*176*	**3**	**5**	*25*	**4**	**6:52**	**1:12**	*73*
	Better ▶	◀ Better	◀ Better	◀ Better	◀ Better	◀ Better	◀ Better	Better ▶

Speedmark 2.1 scores are relative to those of an iMac 350MHz (1999), which is assigned a score of 100. Photoshop scores are in seconds. iTunes and Cinema 4D scores are in minutes:seconds. Quake scores are in frames per second. We tested all systems with 256MB of RAM (the G4/867 shipped with 128MB), a default system disk cache, and virtual memory enabled (except for Photoshop tests). We set displays to 1,024-by-768-pixel resolution and 24-bit color. The reference systems had Mac OS 9.1 installed; the G4/867 ran OS 9.2. For Photoshop tasks, we used a 50MB file, with the memory partition set to 150MB and History set to Minimum. We set Cinema 4D XL's memory partition to 188MB and rendered a 640-by-480-pixel model with oversampling set to 4 by 4. 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 1.29f's Time Demo 1 at 640-by-480-pixel resolution, with graphics set to Normal. For information on Speedmark, visit www.macworld.com/speedmark.—**Macworld Lab testing by Ulyssis Bravo and Jason Cox**

Film Scanners

Latest Models Yield Great Scans and Are More Affordable

BY BRUCE FRASER

Flatbed scanners do a great job on prints and other paper-based art and a decent job on medium- or large-format film. But if you want to scan 35mm or APS film (and wind up with a print that's bigger than a postage stamp), you need a film scanner. The good news is that film scanners have never been more affordable.

Macworld Lab rounded up seven 35mm film scanners, all priced below $2,000, and put them through their paces. Although we were impressed by the scanners' quality, we found significant differences in cost, resolution, dynamic range, speed, and the usability of their accompanying software.

The scanners fall into two classes: the Canon CanoScan FS4000US, the Microtek ArtixScan 4000t, the Nikon Super Coolscan 4000ED, and the Polaroid SprintScan 4000 all offer 4,000-pixels-per-inch (ppi) resolution; the others—the 2,438-ppi Minolta Dimage Scan Dual II AF-282OU, the 2,820-ppi Minolta Dimage Scan Elite F-2900, and the 2,900-ppi Nikon Coolscan IV ED—capture fewer pixels. All the high-resolution scanners have SCSI interfaces except the Super Coolscan, which is FireWire-only; the CanoScan has both SCSI and USB. Alone among the lower-resolution scanners, the Dimage Scan Elite has a SCSI interface; the Dimage Scan Dual and the Coolscan are USB-only.

Just two of the scanners we tested were compatible with Mac OS X. The Dimage Scan Dual did fine in OS X's Classic mode, as did the CanoScan (when we selected its USB port).

The Polaroid SprintScan 4000

The Sharper Image

We found that the 4,000-ppi scanners captured more detail than the lower-resolution models rather than simply creating a larger file, but we also found that they were merciless regarding flaws in the original images—chromatic aberrations in lenses and softness due to camera shake are much more obvious at high resolutions. The Super Coolscan produced sharper scans than the ArtixScan and SprintScan, and the CanoScan was the least sharp (though the differences were slight).

We found surprisingly little difference in the amount of detail revealed by the 2,438-ppi Dimage Scan Dual and the 2,900-ppi Coolscan. The Dimage Scan Elite produced scans that were slightly sharper than those from the other lower-resolution scanners, but we had to look very hard to find the differences here, too.

Seeing Shadows

Vendor claims about *dynamic range*—the range of tones a scanner can capture, from light to dark—can be hard to judge, because there's no universally accepted method of measurement. Most specifications give a maximum density (dMax), but they don't quantify the amount of noise present.

We found that the Super Coolscan, for which Nikon claims a dMax of 4.2, did a somewhat poorer job of pulling detail out of shadow areas than the more conservatively rated scanners when used in single-pass mode. The only way we could get the Super Coolscan to live up to its dMax claim was to enable the 16× multiscanning option (which averages 16 separate scans and hence takes 16 times longer than a single pass) and to turn off both autoexposure and color management.

The ArtixScan pulled the most detail from the shadows, but it also introduced a lot of noise. The SprintScan produced the best detail with the least noise, and both Minolta scanners yielded decent shadow detail despite their more conservative ratings. The Coolscan and the CanoScan both lost detail in the darkest areas, rendering them as almost solid black.

Negative Findings

We were a little surprised that the Minolta scanners did by far the best job with color negative film. The Nikon scanners blew out the highlights to solid white, as did the CanoScan. The SprintScan and ArtixScan preserved both highlights and shadows but got grainier results than the Minoltas.

We still haven't seen a scanner that can produce good results from color negatives automatically. If you're prepared to do some fine-tuning, you can get decent results from color negatives using any of the scanners except the CanoScan. However, you'll find that you have a lot less work to do with the Minolta scanners than with the others.

Speed Bumps

Comparing scanner speeds is tricky, both because the scanners don't all capture the same number of pixels and because speed depends on the scanning options you choose. Of the high-resolution scanners, the CanoScan was considerably slower than the others when connected via SCSI and even slower when connected through USB. The SprintScan was consistently the fastest when we enabled color management in all the scanners, but the Super Coolscan took the lead when we disabled color management.

Of the lower-resolution scanners, the Nikon Coolscan was the fastest on 24-bit scans, while the Dimage Scan Elite was the fastest on high-bit scans. The Dimage Scan Dual lagged behind both, despite capturing fewer pixels.

Controlling Behavior

All the scanners we tested have decent drivers, but Nikon and Polaroid get the award for most-improved software. NikonScan 3.0, which drives both Nikon scanners, is so much better than its predecessor that it's barely recognizable. Polaroid still bundles the idiosyncratic PolaColor Insight, but now it also includes the very capable Silverfast plug-in from Lasersoft. Microtek has also improved its plug-in driver to fully support ColorSync, and it offers a complete set of tools for tweaking scans. The software from Minolta and Canon is more rudimentary.

Both Nikon scanners include Digital ICE3, a system for detecting and removing surface defects. The software does an amazing job of eliminating dust and scratches, though it lengthens scanning times considerably and softens the image somewhat. If you always scan pristine film in a clean room, ICE3 has little to offer you. If you deal with a lot of old, damaged originals, it's a lifesaver.

Macworld's Buying Advice

It's difficult to pick a clear winner from this very capable bunch, but we declare the Polaroid SprintScan 4000 the all-around champ—it's fast, produces excellent results from positives and decent results from negatives, comes with excellent software, and is reasonably priced. Our runner-up is the Nikon Super Coolscan 4000ED; it produces excellent scans, even with damaged originals—but only when you use the multipass scanning feature, which slows scanning to a crawl. Finally, if you scan negatives rather than positives, the Minolta Dimage Scan Elite F-2900 does a great job without making you jump through hoops. The price of the ArtixScan—the most expensive of the bunch—will have dropped to $1,000 by the time you read this, making it a much more attractive option. **m**

Film Scanners Compared

★ = Editors' Choice

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	CONTACT	RESOLUTION (IN PIXELS PER INCH)	INTERFACE	PROS	CONS
Canon	CanoScan FS4000US	♦♦♦	$999	800/652-2666, www.usa.canon.com	4,000	USB, SCSI	Least expensive in its class.	Rudimentary software; slow.
Microtek	ArtixScan 4000t	♦♦♦½	$1,795	888/722-6255, www.microtekusa.com	4,000	SCSI	Includes calibration target and profiling software.	Expensive; grainy results from color negatives.
Minolta	Dimage Scan Dual II AF-2820U	♦♦♦	$399	888/264-6658, www.minoltausa.com	2,438	USB	Inexpensive; good results with color negatives.	Lowest resolution; limited dynamic range; rudimentary software.
	Dimage Scan Elite F-2900	♦♦♦♦	$769	888/264-6658, www.minoltausa.com	2,820	SCSI	Excellent results with color negatives.	Rudimentary software.
Nikon	Coolscan IV ED	♦♦♦½	$899	800/645-6689, www.nikonusa.com	2,900	USB	Very good software; automatic dust and scratch removal.	Needs multipass scanning to obtain best results, hence slow.
	Super Coolscan 4000ED	♦♦♦♦	$1,699	800/645-6689, www.nikonusa.com	4,000	FireWire	Very good software; automatic dust and scratch removal; good dynamic range.	Needs multipass scanning to obtain best results, hence slow.
Polaroid	SprintScan 4000 ★	♦♦♦♦½	$1,295	800/816-2611, www.polaroidwork.com	4,000	SCSI	Excellent software; speedy; excellent results from positives.	Grainy scans from color negatives.

OmniWeb 4.0

Cocoa Browser Missing Important Features

BY TOM NEGRINO

The prerelease Carbonized version of Microsoft Internet Explorer may be Mac OS X's default browser, but it's soon going to have some serious competition. Opera Software has released a beta Carbonized version of Opera 5, and The Omni Group has shipped the shareware OmniWeb 4.0.1, developed in Cocoa. OmniWeb demonstrates the significant built-in advantages offered by Cocoa apps, but this browser still needs a lot of polishing before it'll be able to outshine Internet Explorer.

Gloriously Readable Pages

The first thing you notice about OmniWeb is how great it makes Web pages look. Thanks in part to Mac OS X's Quartz underpinnings, OmniWeb excels at displaying text; Internet Explorer can't hold a candle to it.

OmniWeb's user interface is also very good. For example, ⌘-clicking on a hyperlink opens a new window behind the current one, so you don't have to stop reading the first page to rearrange windows. When you hit a bookmarked page whose address has changed, the browser asks if you want to automatically update the bookmark. Customizable shortcuts let you type an abbreviation into the Address field; for example, you could type in **mw**, and OmniWeb would expand that to http://www.macworld.com. You can even opt to block advertising.

In addition to browsing, you can use OmniWeb to create and modify HTML pages. Its HTML Source Editor lets you enter text, offers automatic syntax coloring, and flags possible code errors. If you have upload privileges, you can save an edited page to your server via FTP from within OmniWeb.

Like Having One Foot in a Bucket

OmniWeb has only a nodding acquaintance with important Web standards such as HTML 4.01, Cascading Style Sheets (CSS1 and CSS2), and Document Object Model (DOM1), despite claims to the contrary on The Omni Group's site. There's a fair amount of support for CSS1, but it's buggy and incomplete; you often see incorrect rendering, such as lines of text overlapping or the wrong colors in page elements. Though most sites display well, a significant minority have problems.

OmniWeb's DOM is roughly equivalent to Netscape 4's, which puts it many years behind the times. Very incomplete JavaScript support means that only the simplest scripts, such as image rollovers, will work; other common site features, such as form validation, will fail. Java applets generally don't work at all.

Because of OmniWeb's JavaScript problems and some issues with its implementation of SSL (Secure Sockets Layer), which encrypts transactions with e-commerce sites, you won't be able to access some sites. And OmniWeb supports Web animations created with Macromedia's Flash 4 but not those created with the newer Flash 5.

Using Internet Explorer and Opera is a pleasure because they draw pages quickly and display cached pictures almost instantly when you click on the Back button. With OmniWeb, a fast cable-modem connection often feels like a 56K dial-up link. Pages load slowly, and going back to pages you have already viewed takes nearly as long. If you increase text size, OmniWeb fetches and renders the entire page all over again. The browser also crashed repeatedly during testing.

Read the Fine Print OmniWeb's terrific text rendering helps eliminate online eyestrain.

Macworld's Buying Advice

OmniWeb has enormous promise, but that promise has yet to be realized in too many important areas. Download OmniWeb for free to become familiar with how it works; save your money until the program's performance issues have been resolved. **m**

OMNIWEB 4.0.1

Rating: ▮▮

Pros: Beautiful text rendering; very good user interface.

Cons: Poor standards support; slow; inadequate e-commerce support; buggy.

Company's estimated price: $30

OS compatibility: Mac OS X

Company: The Omni Group, *800/315-6664*, **www.omnigroup.com**

System-Management Utilities

Chaos Master, Spring Cleaning Offer Halfhearted Help

BY CHRISTOPHER BREEN

While rummaging through your System Folder, you have undoubtedly discovered that your hard drive is crammed with what appear to be unnecessary files. Wouldn't it be wonderful if there were a utility that could help you cull those dispensable documents and applications? Two utilities—Casady & Greene's Chaos Master 1.2.1 and Aladdin Systems' Spring Cleaning 4.0—provide a measure of help, though they lack the means to make intelligent choices about which files should go and which should stay.

Something in Common

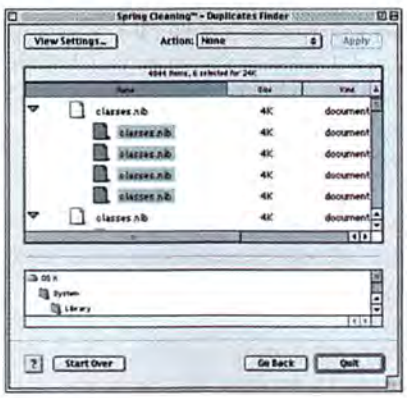
Both Chaos Master and Spring Cleaning scour your Mac's hard drive for duplicate files, unattached aliases, empty folders, orphaned preferences, and Internet cache files. In addition, each allows you to uninstall applications and their associated files, and to slim extraneous code from "fat" applications—those that include both PowerPC and 680X0 code.

The two programs aren't identical, however. Aside from being the only one that runs natively in Mac OS X, Spring Cleaning has two features Chaos Master doesn't: a MailCleaner module that lets you remove attachments from Eudora, Outlook Express, and Entourage e-mail archives; and iClean, a useful utility (also sold separately) that lets you selectively remove Web cookies and delete Internet history files. But only Chaos Master can check the version number of your applications and control panels and provide links to online updates.

Spring Ahead

Spring Cleaning is the more thorough of the two programs. In our tests, Chaos Master was unable to find a duplicate copy of SimpleText that Spring Cleaning had no trouble locating. Spring Cleaning also unearthed a greater variety of Internet cache files. And it offers far more options for dealing with files once you've found them—you can launch them, trash them, or move or duplicate them to a folder or a StuffIt archive, and you can undo some of these actions with Spring Cleaning's Restore command. With Chaos Master, you can only launch, trash, or move files, and the program lacks a Restore command.

But Spring Cleaning can be *too* thorough. When looking for duplicates, for instance, it lists not only real duplicates but also files that simply have the same name. While the program clearly indicates that these files aren't exact duplicates and that you should be careful about discarding them, unwary users could easily jettison important files. This thoroughness might be less problematic if Spring Cleaning offered more-comprehensive filtering. Alas, its filters are too broad. For example, the MailCleaner module lets you filter attachments only by date and name. The ability to exclude attachments by size and origin would also be helpful. Chaos Master's filters are no better, offering just a couple of options.



Guessing Game Care to take a stab at which of these Mac OS X files are disposable?

CHAOS MASTER 1.2

Rating: ♦♦♦

Pros: Finds duplicate and extraneous files; helps locate online updates.

Cons: Can't distinguish between necessary and unnecessary files; poor filtering; limited options for removing files.

Company's estimated price: $40

OS compatibility: Mac OS 9

Company: Casady & Greene, *800/359-4920*, **www.casadyg.com**

SPRING CLEANING 4.0

Rating: ♦♦♦½

Pros: Finds duplicate and extraneous files; helpful iClean utility; multiple options for dealing with files.

Cons: Can't distinguish between necessary and unnecessary files; poor filtering.

Company's estimated price: $50

OS compatibility: Mac OS 9, Mac OS X

Company: Aladdin Systems, *800/732-8881*, **www.aladdinsys.com**

Macworld's Buying Advice

Spring Cleaning is more useful than Chaos Master, thanks to its ability to search more carefully and extensively, particularly among Internet cache files. Used carelessly, however, either utility is more hindrance than help. **m**

Now Up-to-Date and Contact 4.0

PIM Gets a Modern Look but Too Few New Features

BY TOM NEGRINO

Other Macintosh PIMs have fallen in battle, but Now Up-to-Date and Contact has survived after being rescued from near oblivion by Power On Software. The first major update since 1995 makes several compatibility changes and brings the package in line with current Mac technology. But although the package is still the best in its category, Power On Software skimped on new features, making version 4.0 a disappointment.

Somewhat Up-to-Date

Both programs have received a facelift, adopting a more Aqua look in their tool bars and windows. You can customize their colors and background patterns, but you can't customize tool bars to suit your work style. And although the programs offer good integration with Palm handhelds, they still don't support Palm's Memo application.

The calendar views in Now Up-to-Date include new mini-calendars that show one or more upcoming months; click on a date in a mini-calendar, and it appears in the main calendar. But the long-overdue mini-calendars still need improvement. It would be useful if they highlighted dates with activities and allowed users to view preceding, as well as upcoming, months. Other missing features include event templates and, in the Year view, indicators of which days contain events. And you still can't conveniently group events and contacts into projects.

Keeping in Contact

Now Contact 4.0 offers extra fields for Internet addresses and other custom information, as well as shared keywords. Data-filtering improvements include the new AlphaBar, a row of letter buttons above the contact list; clicking on a letter filters the list down to contacts beginning with that letter. You can also narrow the contact list by typing a few letters into the new QuickFilter field. The QuickContact extension, accessible from the menu bar, now displays more information.

Grab-N-Go, a fine new feature, lets you use contextual menus to create calendar entries from selected text. For example, if you select a person's name in an e-mail message, open the contextual menu, and choose an event, Up-to-Date will create and open that event. Grab-N-Go doesn't work in all applications, but it supports Microsoft Office and Internet Explorer, and most e-mail programs.

The Contact and Calendar servers have been revised to use TCP/IP as their sole networking protocol, dropping AppleTalk support. The 4.0 servers communicate faster with the clients and fix problems in the old servers. But because older clients can't connect to 4.0 servers, and 4.0 clients can't use the older servers, you have to upgrade all your users at once.

This version runs in Mac OS X's Classic mode, but the Carbonized version, 4.1, should be available by the time you read this.

Not the Hardest-Working Calendar in Show Business
Now Up-to-Date's new mini-calendar is helpful, but it needs to do more—for example, indicate which days have events.

Macworld's Buying Advice

Now Up-to-Date and Contact 4.0 is an improvement, but its $50 single-user upgrade price is steep when you consider that it doesn't provide much more functionality than version 3.9. If you're still using 3.6.5 or earlier, version 4.0 is clearly worth its upgrade cost. If you paid to upgrade to 3.8 or 3.9, you might want to wait for the Carbonized version and then upgrade your OS and PIM at the same time. **m**

NOW UP-TO-DATE AND CONTACT 4.0

Rating: ♦♦♦♦

Pros: Modernized interface; useful Grab-N-Go feature; improved server performance.

Cons: Still doesn't support Palm Memo; steep upgrade price.

Company's estimated price: $120; upgrade, $50

OS compatibility: Mac OS 9

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

PowerShot G1 and Pro90 IS. Digital Gets Serious.

Creative control for serious photographers thanks to 12 EOS picture taking modes plus easy adaptability to Canon lens converters and EOS EX-series Speedlites. This isn't just digital photography, this is photography.

PowerShot S110 and S300. Digital Elegance.

Stylish, compact and elegant. The newly expanded PowerShot Digital ELPH Series introduces two cameras with amazing new features like Direct Print Mode. Beautiful, aren't they?

PowerShot A10 and A20. Digital Made Easy.

PowerShot's new A Series was designed with easy-to-use controls so you can concentrate on having fun. Welcome to the digital revolution.

©2001 Canon U.S.A., Inc. Canon is a registered trademark and "are you digital yet?", PowerShot, ELPH and Canon Know How are trademarks of Canon Inc. Neckstraps and printer sold separately.

Card Photo Printer CP-10. Digital Made Tangible.

Now you can print out wallet-sized pictures with the S110, S300, A10 and A20 just as quickly as you take them.

Canon KNOW HOW™

Circle 23 on card or go to www.macworld.com/getinfo

iShell 2.2

Cross-Platform Authoring for Multimedia Designers and Programmers

BY BRENNAN YOUNG

Although Macromedia Director is still the program of choice for authoring stand-alone interactive multimedia titles, Tribeworks' iShell 2.2.1 is a viable alternative for those frustrated with Director's difficult learning curve and inconsistent user interface. iShell's drag-and-drop approach lets even nonprogrammers start producing sophisticated content quickly, and the software itself is free—you purchase a membership if you want to distribute commercial projects. However, the more powerful features are so well hidden in the free version that those who give it a try may find Director a more obvious choice for advanced projects.

Outlines, Not Timelines

iShell's interface is unusual: its interlocking, L-shaped panels, called *outlines,* collapse or expand when you double-click on them and tile neatly inside one another. iShell is built closely around QuickTime and its supported file types (fewer than Director, but enough for most projects).

An iShell project consists of a list of URLs pointing to local or remote media and to one or more *K files,* which resemble Flash symbols in that they can be edited independently and nested within each other. Opening a K file brings up a layout window—similar to Director's Stage—as well as an outline listing its attributes and contents. You drag media files, or other K files, from the Finder or the project palette onto an object's outline, where they become attributes of that object. To rearrange the hierarchy, you drag nested attributes to another part of the outline.

Although individual objects can have time-based actions, iShell has no timelines, as such. You drop events onto an object's outline so it can respond to mouse actions or messages from other objects. To configure the response, you drop commands onto each event. The command set is tiny compared with Director's, but iShell handles many complex tasks automatically or with a single command.

Distribution Options

Your delivery options are limited considerably by the absence of an installed base of browser plug-ins; you have to distribute finished projects with the iShell player. Users of the free version can distribute only noncommercial titles, which feature a Tribeworks-branded splash screen, whereas Silver or Gold members aren't restricted in what they can distribute (they pay an annual fee). The Gold membership lets you extend iShell using C or its scripting language, Key. Unfortunately, the free version conceals these features, so advanced Lingo programmers are bound to come away feeling that iShell is no match for Director.

Unlike with Director, you can distribute Windows-based projects from the Mac-based authoring tool and vice versa. Tribeworks says that a Mac OS X–native version of iShell is in development. Performance in OS X's Classic mode is adequate, if a little slow.

Inside and Out iShell's nested outlines, which replace the timelines of other authoring tools, help reduce complexity.

Macworld's Buying Advice

iShell is ideal for anyone who wants to create cross-platform CD-ROMs and stand-alone multimedia titles, particularly those containing QuickTime content. Although its feature set remains slim compared with Director's, iShell's easier learning curve and free authoring tool make it more accessible. Seasoned Lingo programmers, however, will find little in the free version to prompt them to jump ship. **m**

iSHELL 2.2

Rating: ♦♦♦½

Pros: Powerful; easy to learn; excellent QuickTime integration; free authoring tool.

Cons: Not available for OS X; limited support for non-QuickTime content.

Company's estimated price: Software and base membership, free; Silver membership, $975; Gold membership, $2,750

OS compatibility: Mac OS 9

Company: Tribeworks, *800/807-4458,* **www.tribeworks.com**

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.

MORE THAN 73,000 UPGRADES — PC Makers' CHOICE — OVER 13,000 SYSTEMS

$21.59 **128MB PC100 SDRAM**
for today's most popular systems

Price reflects an automatic 10% discount for ordering online. Price was taken on 7/24/01 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™

FileMaker Pro 5.5

Classic Database Software Makes the Move to Mac OS X

BY JASON SNELL

When it comes to Mac database applications, FileMaker's flexibility and ease of use make it the standard. The latest version, FileMaker Pro 5.5, doesn't diminish that status, but its array of new features is overshadowed by the fact that the Mac's top database program now runs natively in Mac OS X.

Database X

In many ways, FileMaker should serve as a model for developers thinking of bringing their applications to Mac OS X. Granted, there are no particularly flashy enhancements, but neither are there glaring omissions that cripple its usefulness. FileMaker Pro 5.5 runs as well in OS X as it does in OS 9 (the CD contains installers for both). Though some of FileMaker's interface elements feel slower in OS X, they're balanced by behind-the-scenes features that feel slightly more responsive.

In our tests, FileMaker Pro 5.5's Instant Web Publishing feature, which translates a database and its layouts into HTML pages on-the-fly, clearly took advantage of the improved multitasking features in Mac OS X. And running in OS X, FileMaker was quite responsive to queries from a Web browser running on the same Mac; in OS 9, each local Web-to-FileMaker query was fairly slow.

Although the Instant Web Publishing feature can create remarkable advanced-HTML facsimiles of database layouts, creating a *usable* Web version of a database is not exactly instant: you'll likely need to tweak or redo your layouts. Fortunately, you can now attach scripts to buttons on Instant Web Publishing pages, so Web interfaces are much more FileMaker-like than they were with earlier versions.

FileMaker Pro 5.5's built-in Web server also boasts technical improvements. It's multithreaded, so it can send images and other files simultaneously rather than one at a time. But FileMaker itself still isn't multithreaded, meaning that Web users must wait their turn to query the database. In addition, the company continues the restrictive Web Companion license it introduced with FileMaker Pro 5.0 (*Reviews*, February 2000)—it can serve files to only ten unique IP addresses in a 24-hour period.

Better Security

This update's other notable new feature is one that developers have desired for some time: record-level security. You can now lock users out of individual records based on the value of a calculation field within that record.

While each of the smaller new features in version 5.5—including better interaction with SQL databases, more-flexible tools for generating SQL commands, and the ability to import data based on Excel named ranges—will have its adherents, they won't appeal to everyone. If you regularly interact with SQL databases or import Excel data, these features alone will likely make the upgrade worthwhile.

Access Privileges FileMaker Pro 5.5's Passwords dialog box lets you restrict access on a record-by-record basis.

Macworld's Buying Advice

FileMaker Pro 5.5 offers the same great combination of simplicity and flexible power as previous versions, and for FileMaker addicts, this update will make the transition to Mac OS X a smooth one. Users who want to free their data from Microsoft Excel or who need improved Web Companion scripting, record-level security, or SQL features will probably find this upgrade worthwhile. But for many users, their current version—be it 5.0 or even 4.1—may be sufficient. **m**

FILEMAKER PRO 5.5

Rating: ♦♦♦♦

Pros: Friendly relational database; quick authoring environment; solid Mac OS X compatibility; record-level security.

Cons: Some new features have limited appeal; restrictive Web-publishing features; no multithreaded database access.

Company's estimated price: $249; upgrade, $149

OS compatibility: Mac OS X, Mac OS 9

Company: FileMaker, *800/325-2747*, **www.filemaker.com**

Sound Blaster Live

Versatile Sound Card Hindered by Limited Compatibility

COINCIDENT WITH the disappearance of the audio-input port from recent Power Mac G4s, Creative Technology has released the Sound Blaster Live, an inexpensive sound card that offers audio input and output and MIDI synthesis—but limited support for the latest G4s.

Audio Accessories

This PCI card sports two analog outputs, for both two- and four-channel speaker systems; a digital output, for digital audio tape (DAT) drives or digital speakers; a line input; a microphone input; a MIDI connector; and a EMU10K1 synthesizer chip, for playing sampled wave-table sounds from a MIDI sequencer or via MIDI input.

The software bundle includes Mixman Technologies' Mixman Studio; Casady & Greene's SoundJam MP; Steinberg's Cubasis AV; and Prosoniq's convoluted audio-editing application, SonicWorx Essential.

The Sound and Our Fury

The card worked well on a beige Power Mac G3, channeling alert sounds and audio-CD content through speakers attached to the card's audio-output port. I was able to record directly to a DAT deck via the Sound Blaster's digital-output port. And the card's synthesizer chip functioned properly when I plugged a MIDI controller into the Sound Blaster's MIDI port. The 2MB, 4MB, and 8MB General MIDI sound banks are serviceable but not terribly convincing. Although the installation CD includes a fair number of sounds, a richer MIDI sound set would be welcome.

The card performed less well on a more recent Power Mac G4/733. At first it didn't appear as an input source in the Sound control panel's Input window. After I restarted the Mac several times, the card finally surfaced as an input source, but the signal from a CD player connected to the Line Input port was distorted. Creative is working on a driver update to fix the problem.

As for Mac OS X compatibility, Creative's plans are on hold until Apple provides the system resources necessary for third-party cards to work under the new operating system.

Rating: ♦♦♦½

Pros: Versatile; inexpensive; decent software bundle.

Cons: Incompatible with latest Power Macs; weak audio editor.

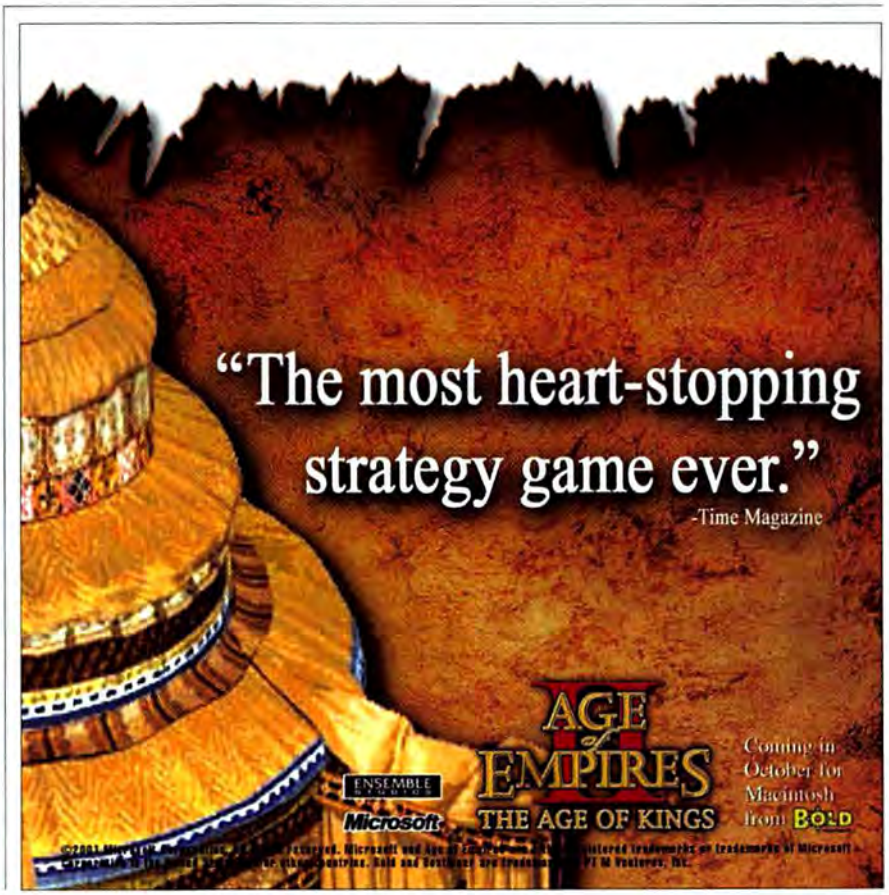
Company's estimated price: $150

OS compatibility: Mac OS 9

Company: Creative Technology, *800/998-5227*, **www.creative.com**

Macworld's Buying Advice

The Sound Blaster Live is a potentially capable, low-cost option for those seeking to add audio input to their Power Macs. It'd be more dazzling if it came with a better audio editor and worked with the latest models. Such compatibility may be a reality by the time you read this.—CHRISTOPHER BREEN



Adobe Acrobat 5.0

PDF Creator Adds Impressive Feats to Its Act

BY VIC LENNARD

There was a time when Adobe's Acrobat technology was used for little more than creating PDF files with Acrobat Distiller and viewing them through the free Acrobat Reader. But over time Acrobat has evolved into a far more versatile product, and Acrobat 5.0 makes PDF creation more convenient than ever before.

Transformations

One of the most significant additions in Acrobat 5.0 is the ability to repurpose PDF files. You can reuse a PDF's text and tables in a company report, for instance, or edit a PDF to fit on a handheld device. The latest version supports cross-platform tagged PDF documents, which you can save as RTF files. You can even save nontagged PDFs in a number of formats and export a file's graphics as individual items. Unfortunately, you can export vector images only in raster format.

If you pass PDFs through a proofing cycle, you'll appreciate another important addition: a browser plug-in that includes many standard Acrobat tools and allows several users to share and mark up a server-based PDF file online. You can upload and save comments to a server using the industry-standard WebDAV protocol. And the browser plug-in lets you use database-driven interactive forms to which digital signatures can be added; there's even support for XML form data.

Updates and Improvements

Batch processing is no longer limited to a small number of presets—you can use almost any function and set up custom sequences of functions. And in conjunction with the new PDF Consultant tool, which strips out unnecessary elements and reduces file size, batch processing lets you check and repair multiple PDFs.

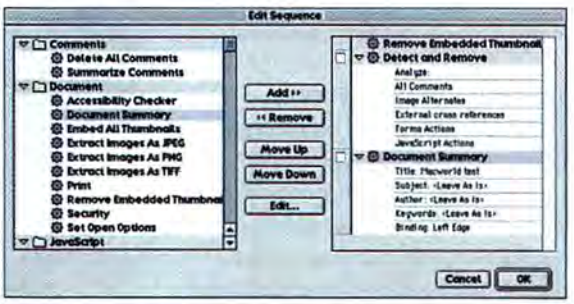
With version 5.0, Adobe has also added a number of useful print-based features to Acrobat. Proof Setup, for example, lets you define the color space and set Paper White or Ink Black options. Such on-screen soft proofing works well with a calibrated monitor, and you can extend the proofing to printouts.

In fact, Acrobat's entire color-management system is flexible and yields reliable results. For the first time in Acrobat, you can view and print an image's transparency effects. And Acrobat's Overprint Preview gives an on-screen warning of overprint and knockout problems in a file. That's a handy feature, but it's of limited use to QuarkXPress users because it trashes custom knockout preferences when you save a document as a composite PostScript file or a PDF.

Deviations

Acrobat 5.0 is not without flaws. It doesn't run natively in Mac OS X, and it stumbles in OS X's Classic mode; problems include difficulties with scanning and searching, as well as incompatibility with third-party drivers.

An important feature missing from the Mac version is the Convert To Adobe PDF function. In the Windows version, this macro preserves the structure of a Microsoft Word 2001 file, including links to indexes and tables of contents. The Mac version's Create Adobe PDF feature, in contrast, requires you to re-create links manually.



Fix It with Functions Acrobat 5.0's improved batch processing lets you impose a sequence of functions on a folderful of PDFs.

Macworld's Buying Advice

With version 5.0, Adobe has taken Acrobat to a new level. Its Web integration, content repurposing, and print and soft-proofing features make this a tempting upgrade for anyone with a previous version, and a must-buy for anyone new to PDF creation. **m**

ADOBE ACROBAT 5.0

Rating: ♦♦♦♦

Pros: Easy repurposing of documents; integration with Web browsers; good color-management features; improved batch processing.

Cons: Not OS X native; not fully integrated with Microsoft Word.

Company's estimated price: $249; upgrade, $99

OS compatibility: Mac OS 9

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

Amapi 3D 6.1

3-D Modeler-Renderer Stumbles in Object Management and Animation

FOR MAC USERS, finding a 3-D modeler-renderer that's both inexpensive and capable of building complex organic surfaces can be a challenge. Amapi 3D 6.1, with its limited object-management, rendering, and animation features, doesn't quite rise to the challenge.

Smooth Operator

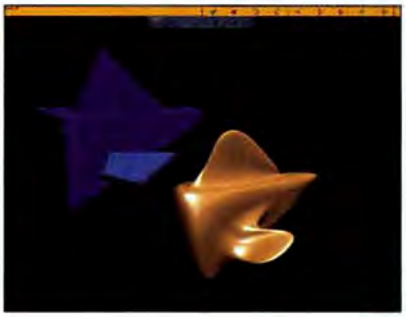
One of Amapi's most unusual and useful capabilities is that it lets you easily create complex smooth surfaces from simple shapes cobbled out of primitive objects. Version 6.1 improves on that feature by offering better control over smoothing tension. Although Amapi's modeling tools are fast, they lack functionality such as precise control over curve and tangent continuity.

Amapi 3D 6.1 lets you toggle between two modes: a quirky "workshop" interface that hides the modeling tools until you tap the screen's edge with the cursor, and a new Mac-like interface with floating palettes. But you can't use the workshop interface when you have the Dock enabled in OS X's Classic mode, and Amapi's performance in Classic is generally slow. Eovia says that an upcoming Carbonized version will fix these problems.

Missing Management

Amapi's strength lies in modeling; as an environment for texture mapping, lighting, animation, and assembling large collections of objects, it's not impressive. For example, most 3-D tools offer layers and hierarchical outlines for managing objects, but in Amapi you simply group objects. As a result, scenes with many objects quickly turn into an unintelligible tangle of wireframes.

Because Amapi's rudimentary animation tools are based on keyframes, they're poorly suited to character animation and complex situations. The renderer lacks special effects, such as glows and particles. And although Eovia touts Amapi's new support for TGS's 3Space Web format—which lets you add compact, animated 3-D objects to a site—the browser plug-in required to view those objects is not yet available for the Mac.



Slick Surfaces Amapi's smoothing tool turns polygonal shapes into fluid surfaces.

Macworld's Buying Advice

Amapi 3D 6.1 is useful for creating still images or elements for inclusion in other graphics, but its limitations mean that few creative professionals are likely to rely on it as a mainstay of their work.—SEAN WAGSTAFF

Rating: 2½

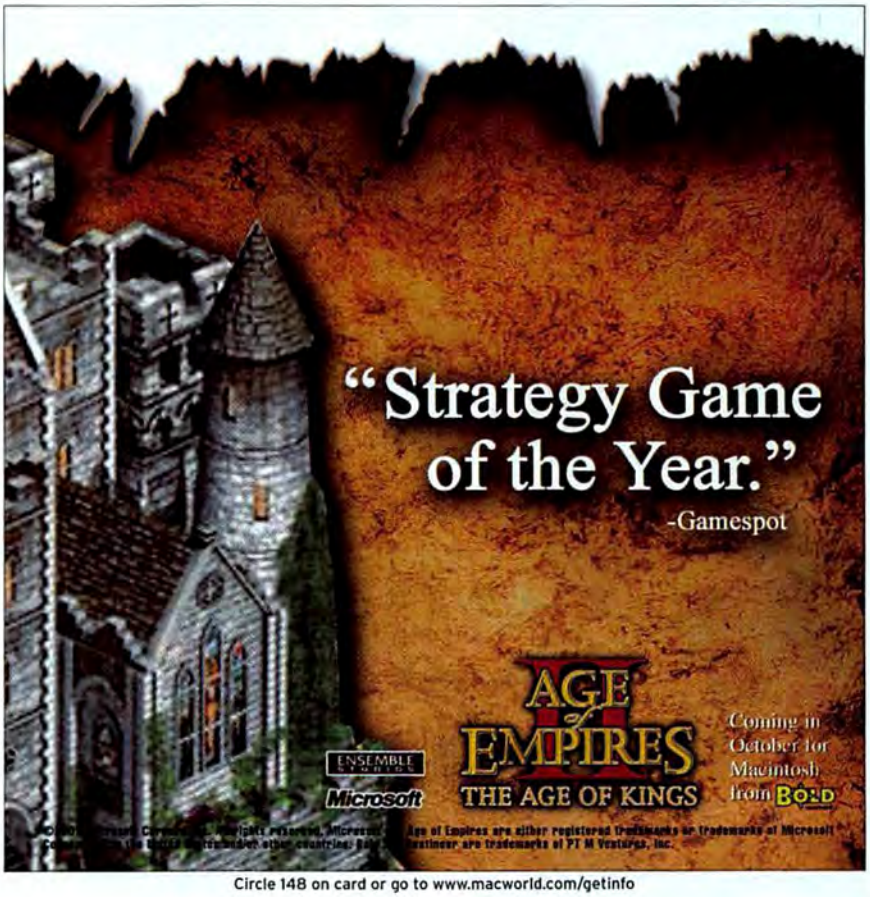
Pros: Capable organic-modeling tools; enhanced smoothing tools.

Cons: Inadequate object management; limited rendering features and effects; outdated keyframe animation.

Company's estimated price: $399

OS compatibility: Mac OS 9

Company: Eovia, *888/394-2307*, **www.eovia.com**

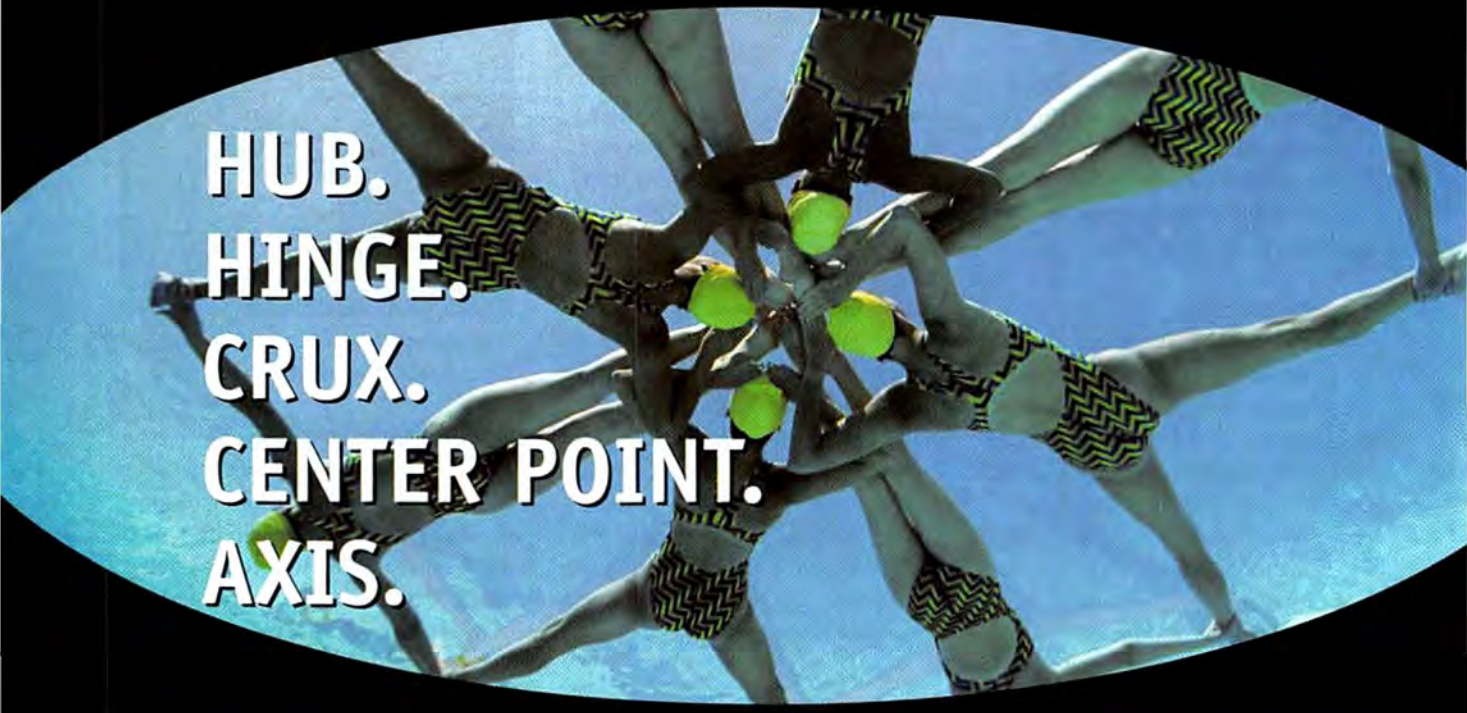


Circle 148 on card or go to www.macworld.com/getinfo

Key3 Media Group PRESENTS

SEYBOLD

SEMINARS / PUBLICATIONS



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—Seybold San Francisco September 24–28, 2001 and Seybold Seminars Boston April 22–26, 2002—and more about Seybold Publications. www.seyboldseminars.com

SEYBOLDSF DesignBuildCommunicate 2001

SEYBOLD SEMINARS BOSTON DesignBuildCommunicate 2002

SEYBOLD PUBLICATIONS

SEYBOLD REPORTS.COM

POWERED BY Digital Island.

The Official Internet Provider of Key3Media

Copyright © 2001 Key3Media Events, Inc., 303 Vintage Park Drive, Foster City, CA 94404-1135. All Rights Reserved. Key3Media, Seybold Seminars, Seybold Seminars Boston, Seybold San Francissco, 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: MABA

Key3 Media Group

Test Strip 3.1

Photoshop Plug-in Eases Color Correction

MANY FACTORS can affect color accuracy in a digital image. Adobe Photoshop's Variations feature offers a visual way to correct color, but it's limited, and more-complete tools such as Curves and Levels can be intimidating. Vivid Details' Test Strip 3.1, a Photoshop plug-in, takes a friendlier approach to color correction. It can't solve all your color woes on its own—for the most-accurate results, you must also calibrate your equipment—but it goes a long way.

Familiar Features

Test Strip divides an image into predefined sections that preview the results of adding or subtracting colors, contrast, density, and saturation. The new Gels feature lets you create independent, resizable strips. It's easy to create a Gel, assign 6 percent cyan to it (for example), and then drag it over the image to preview the effect.

Even color-science novices can improve images with the new Metamorphosis tool. It works like an eye exam: you see two side-by-side slices of your image and click on the slice that most appeals to you. Choose the best of several more pairs, and Test Strip alters the original image's dynamic range, brightness, color, and saturation. Metamorphosis combines that series of changes into just a few corrections, helping avoid the data loss that comes with overprocessing. It doesn't work well with all images—particularly dark photos—but it's a good starting point.

Text labels would make Test Strip even easier to use—the functions of many components aren't clear. Deciphering the program's mysterious icons required many trips to the manual.

Although version 3.1 is designed to run in Mac OS 7.6, 8, or 9, you can also run it in OS X's Classic mode. I tested it in OS X 10.0.4 on a G4/450, and windows didn't always fully redraw. And unless the Dock was hidden, it obscured key Test Strip buttons. Vivid Details says it will release a native OS X version when Adobe ships a Carbonized Photoshop.

Image Pepper-Upper Test Strip's Gels feature lets you preview changes to your image in 1 percent increments.

Macworld's Buying Advice

Prepress operators and other professional image editors should still do their color correction in Photoshop. But for the rest of us, Test Strip 3.1 is well worth buying.—TERRI STONE

Rating: ★★★★

Pros: Provides easier color correction than Photoshop; new Metamorphosis feature is a great time-saver.

Cons: Interface can be unintuitive; Metamorphosis fails with some images.

Company's estimated price: $200; upgrade, $50

OS compatibility: Mac OS 9

Company: Vivid Details, *800/948-4843*, **www.vividdetails.com**

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

Asset Trustee 6.0

Network Inventory Manager Keeps Your Assets Covered

TRACKING A NETWORK'S equipment and software assets is a tedious and error-prone process. Asset Trustee, from FileWave, makes it easier to view and manage your network inventory, and version 6.0 adds integrated Web serving, a revamped user interface, and a Java-based SNMP scanner that alerts you to new devices on your network.

Rating: ♦♦♦

Pros: Cross-platform support; numerous report options; integrated Web server.

Cons: Weak SNMP-scanning feature.

Company's estimated price: 20 users, $840; 100 users, $3,700

OS compatibility: Mac OS 9

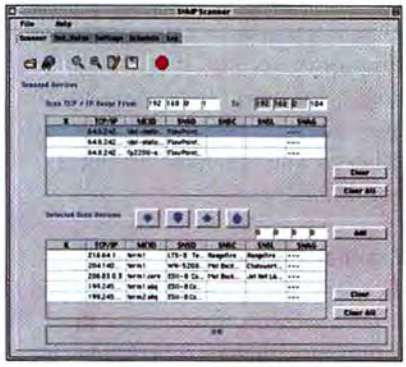
Company: FileWave, *888/345-3928*, **www.filewave.com**

However, the program does not run natively in Mac OS X.

Asset Trustee is a suite of four components—Collector, Inventory Manager, Scanner, and SNMP Scanner. You install Scanner on every computer (both Mac and Windows) you want to inventory; it runs in the background during idle time, taking stock of hardware and software and monitoring disk space and other variables. Scanner forwards this data to Collector. You can then add information such as purchase price and date to the collected inventory data, and use Inventory Manager to generate reports. A built-in Web server puts reports online for you. SNMP Scanner lets you add devices to the inventory, but it's hard to use, poorly documented, and not well integrated with other components.

Macworld's Buying Advice

Asset Trustee does a great job of tracking network assets and helps you catch new devices when they're installed. Despite weak SNMP support, it's a good choice for monitoring the status of network assets.—MEL BECKMAN



Scan Your WAN Asset Trustee's SNMP Scanner monitors ranges of IP addresses.

DiskWarrior® has than

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

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

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

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

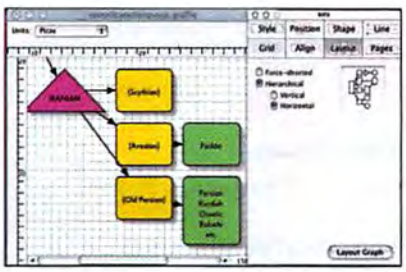
Repairs disk problems such as disks that won't mount, files you
Now with DiskShield™ to prevent damage to your disks before it

OmniGraffle 1.0

Flowcharting Application Looks Tasty but Doesn't Quite Satisfy

FLOWCHARTING PROGRAMS are some people's bread and butter. But for most, they're side-dish apps used only occasionally to redraw an org chart or create a technical illustration. For such users, the simple, OS X–native OmniGraffle 1.0.1 may be an alternative to costlier illustration programs.

OmniGraffle gives you all the tools you need to create, modify, and export basic hierarchical charts and nonlinear diagrams. Although OmniGraffle's tool set is fundamentally complete, some features are better than others: the Selection panel offers comprehensive fine-tuning options, for example, while the Line palette is poorly organized. The interface is attractive but often unintuitive, and the Help menu is inadequate (it barely touches on the Auto Layout feature, a somewhat dangerous tool that, when applied incorrectly or to the wrong type of chart, can make a mess of your hard work). Preconnected chart items and templates are also noticeably absent.



Order Up Used correctly, OmniGraffle's Auto Layout tool can help you bring order to chaos.

Rating: ♦♦♦

Pros: Good basic tool set; decent price.

Cons: Lacks pro-level features; incomplete help; often unintuitive interface.

Company's estimated price: $110

OS compatibility: Mac OS X

Company: The Omni Group, *800/315-6664*, **www.omnigroup.com**

Macworld's Buying Advice

Though heartier flowcharting applications, such as the $125 ConceptDraw (♦♦♦♦; www.macworld.com/2001/03/16/reviews/concept.html), cost only a little more, OmniGraffle 1.0.1 is a usable and useful (and Mac OS X–native) program. But those who regularly create highly complex charts will run up against its significant limitations. (The company says it will fix some problems in an update, which should be available by the time you read this.)—CHARLES PURDY

won more top awards
any disk utility ever.

mac today EDITORS' CHOICE '98
Mac Today 1998 Editors' Choice Awards
Outstanding Disk Rescue Product. "DiskWarrior belongs in the arsenal of every Mac owner!"

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

Macworld 2000 Finalist
"DiskWarrior comes to the rescue..."

2000 Home Choice Awards MacHome Journal
MacHome 8th Annual Home Choice Awards
Best Utility. "Got lots of votes for repairing and preventing damage to hard disks so well. DiskWarrior 2.0 is a quick solution to faster, more stable hard drives."

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

WWW.ALSOFT.COM
ALSOFT
1-800-257-6381

© 2000 Alsoft, Inc. Alsoft, DiskWarrior, DiskShield are trademarks of Alsoft, Inc.

Circle 141 on card or go to www.macworld.com/getinfo

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®.

THURSBY Software

The File Share Folks™

www.thursby.com/world

© 2001, Thursby Software Systems, Inc.

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

Get everything you're looking for!

get info

Macworld's Reader Service

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

www.macworld.com/getinfo

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

Or if you prefer, use the handy mail-in hard card in this issue. Just circle your product choices as you read Macworld on the train, on the plane or wherever you are. Then drop the card in the mail and it's on the way!

Macworld

The Mac Product Experts

ONLINE REVIEWS

Macworld.com

For these reviews:

www.macworld.com/2001/10/reviews/online.html

LINK

Educational software

- ★★★½ Excel @ High School
- ★★★½ Excel @ Mathematics
- ★★★½ Excel @ Middle School
- ★★★★½ Grammar for the Real World
- ★★★★ Higher Score for the SAT/ACT, Deluxe Edition 2002
- ★★★ Math Mysteries: Advanced Fractions
- ★★★ Math Mysteries: Fractions
- ★★★½ Science Court: Gravity

Digital storage

- ★★★½ PowerFile C200S Solo

Professional digital cameras

- ★★★★ Kodak DCS 760
- ★★★★ Nikon D1X

FireWire CD-RW drive

- ★★½ TDK veloCD161040F

Organizational software

- ★★★½ Inspiration 6.0

Two-megapixel cameras

- ★★★½ Canon PowerShot A20
- ★★★★ Canon PowerShot S110 Digital Elph
- ★★★ Kodak DC5000
- ★★★★ Kodak DX3500
- ★★★★ Olympus C-2100 Ultra Zoom
- ★★ Olympus C-700 Ultra Zoom
- ★★★½ Olympus Camedia D-510 Zoom
- ★★ Samsung Digimax 210 SE
- ★★½ Toshiba PDR-M61

Reviews You Can Trust

RATINGS

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

PETER COHEN

The Game Room

If there's a center of Mac game development in the United States, it's probably the state of Texas. Yep, the whole darn state. Aspyr Media, GraphSim Entertainment, Id Software, Pangea Software, and United Developers (the parent company of MacPlay) all call the Lone Star State home. The two games I review this month—a tag team from Texas—show how diverse the Mac game market is.

Rode Hard, Put Away Wet

The idea of stepping onto a skateboard after all these years sets off mental Klaxons blaring that I'd permanently damage some part of my body. Fortunately, the fine folks at Austin-based Aspyr Media enable people like me to experience some of the thrills and spills of pro skateboarding vicariously, through the Mac conversion of Tony Hawk's Pro Skater 2, the popular extreme-sports game originally published for the PC by Activision. There's nothing like it for the Mac—it's a 3-D action game that puts you in control of a skateboarder who must navigate treacherous ramps, rails, and other obstacles.

Skate or Die You can perform radical maneuvers—without risking your neck—in Tony Hawk's challenging Pro Skater 2.

You can use a keyboard or a game pad to skate through a variety of environments ranging from a school yard to a shopping mall to an aircraft hangar. Grind rails and get major air time as you hop over obstacles. As you improve your skills, you can string together combination moves to grab huge points. I've seen experts use combos to rack up hundreds of thousands of points in just a few seconds. If you perform specific feats of daring, you'll be rewarded with a certain amount of money. You can also find cash lying around if you know where to look. The more money you earn, the more parks you can visit, the more equipment you can buy, and the more tricks you can learn.

The game features a soundtrack of punk-pop and ska tunes from recognizable bands, which loops from track to track as you play. I got tired of it and shut it off, opting instead for my own soundtrack. Unfortunately, the game requires that the game's CD-ROM remain in the drive when you're playing, so I had to play music on my stereo.

Thanks to the game's multiplayer mode and its support for GameRanger—a free Mac-only multiplayer service—I've discovered that I'm every bit as clumsy and uncoordinated on a virtual skateboard as I would be on a real one. I've had my hindquarters handed to me in each of the various multiplayer modes, including trick attack, graffiti, and horse.

The game is also chock-full of customization features. Although it boasts a preexisting cast of some of pro skating's top stars, you can customize your own skater's height, build, basic physical features, and capabilities. And Pro Skater 2 comes with a built-in skate-park editor that enables you to come up with park designs as wild or mild as you desire.

And yes, this game supports Mac OS X (a Carbonized version is on the CD). However, some features, such as game-controller support, were missing in that version as *Macworld* went to press.

It's rare enough that a sports game comes to the Mac, but what makes Tony Hawk's Pro Skater 2 unique is that it's not your average sports game—it's an *extreme-sports* game. It's a challenging one at that, with immeasurable replay value thanks to its multiplayer gaming, customizable skaters, and skate-park editor.

continues

En Garde Summoner's Joseph takes on a dastardly villain.

Nicest, Friendliest Bunch of D&D Folks

If you're a fan of the style of role-playing game (RPG) that has become popular on video-game consoles in the past few years, you're in for a treat with Summoner. The game, brought to the Mac by Dallas-based publisher GraphSim Entertainment, is unique and deep; it takes hours, perhaps even weeks, to get through. What makes Summoner special is that it doesn't attempt to duplicate the pen-and-paper RPG experience of Dungeons and Dragons. Instead, it melds a solid rules-based system with action evocative of 3-D console games.

Summoner is a fantasy game set in a medieval land. You play the role of Joseph, a young man endowed with mystical powers that enable him to summon creatures, demons, and other nightmarish monsters. While eluding an evil emperor's henchmen, Joseph must find five hidden rings that will help him control and master his abilities. You also control other folks with special abilities and attributes whom Joseph befriends along the way.

Summoner is beautiful to watch—like Tony Hawk, it's a 3-D game that uses OpenGL and makes fairly high demands on system resources. Its roots as a console game are occasionally revealed in the form of some blocky texture maps, scenery that suddenly pops up out of the fog, and other graphical curiosities, but these problems aren't serious enough to detract from the game.

Summoner isn't an action game—at least not in the conventional sense. You're responsible for controlling characters individually or as a group, manipulating inventory, solving quests, engaging in combat with opponents, and interacting with nonplayer characters.

I hope I'm not being dumber than a box of hammers, but I found combat awkward and difficult to master. Although your party is composed of several characters, you can control only one at a time, which can make melee combat with several other opponents overly complicated. Access to inventory, spells, attributes, and some elements of combat isn't intuitive enough. And the game sometimes changes camera angles at inopportune moments, interfering with combat or other activities that require split-second timing.

If Summoner were just a single-player game, you'd put it away once you won, but you can also play online. Impressively, the game allows Mac and PC users to play together—something of a rarity in Mac game conversions. Summoner makes use of THQ's free multiplayer service, aptly called thqmultiplay.net.

Summoner won't be a good fit for everyone—it has too much action for some RPG fans and requires too much individual character manipulation for some action fans. It ran solidly on my test machine, a Power Mac G3/450 with 256MB of RAM. Unfortunately, the shipping version I reviewed didn't support Mac OS X. GraphSim has promised an update.

Happier 'n a Rooster in a Henhouse

Those from the Lone Star State have long been known for their independence. Let's hope this spirit will keep leading to more games like Tony Hawk's Pro Skater 2 and Summoner, which far surpass run-of-the-mill first-person shooters and 3-D action games. **m**

PETER COHEN, a senior editor at MacCentral.com, got his Texan lingo from the Texas Talk site (www.rice.edu/armadillo/Texas/talk.html).

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

TONY HAWK'S PRO SKATER 2

Rating: ★★★★½

Pros: Multiplayer support and customizable skate parks and skaters give the game longevity; Mac OS X support included.

Cons: Soundtrack gets irritating fairly quickly; no game-controller support under Mac OS X.

System requirements: PowerPC G3/233MHz or faster, 32MB of RAM, Mac OS 8.6 or later (including Mac OS X), 4× CD-ROM, hardware-based 3-D acceleration using an ATI Rage Pro or faster graphics processor

Company's estimated price: $45

OS compatibility: Mac OS 9, Mac OS X

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

SUMMONER

Rating: ★★★★

Pros: Macs and PCs can play together; unique blend of 3-D action and role-playing puzzles.

Cons: Control system occasionally too complex; graphical "popping" and texturing problems; no Mac OS X support.

System requirements: PowerPC G3/300MHz or faster, 64MB of RAM, Mac OS 8.6 or later, 8× CD-ROM, hardware-based 3-D acceleration using an ATI Rage Pro or faster graphics processor

Company's estimated price: $45

OS compatibility: Mac OS 9

Company: GraphSim Entertainment, *972/386-7575*, **www.graphsim.com**

Macworld and Mac OS X
We're closer than you think.

By the end of 2001, Macworld will test and rate all products based solely on how they perform on Mac OS X. To signify this change, we will take the definitive icon of product quality in the Macintosh market — the Mouse Rating — and give it a fresh coat of paint. Blue paint.

When you see a Blue Mouse in Macworld magazine, Macworld.com, or on product packaging, you will know that we have tested that product's ability to work on the Mac's new operating system, and whether it made the grade. If a product does not work on Mac OS X, either in native mode or the Classic environment, it won't get a rating.

It's that simple.

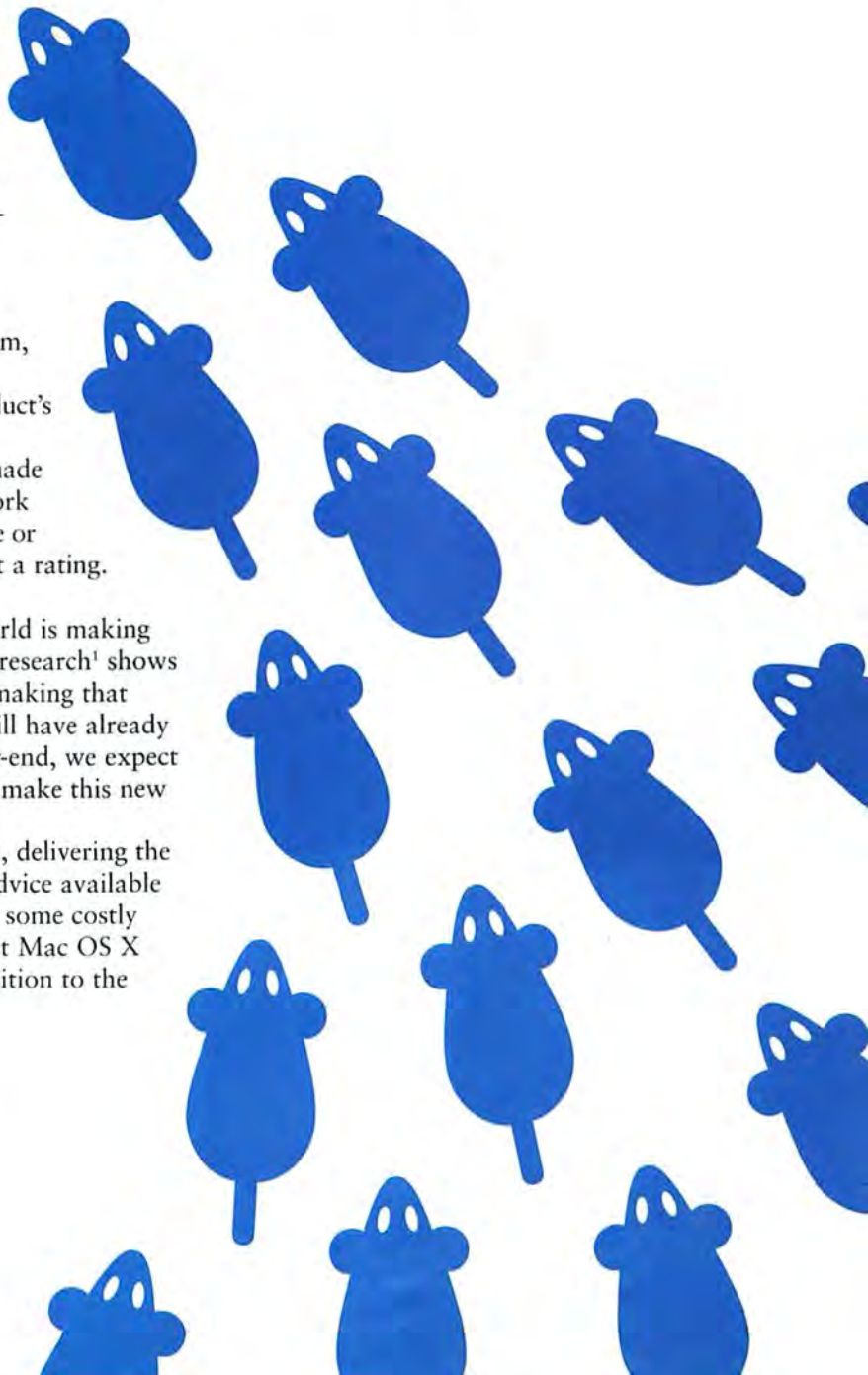
If you're wondering why Macworld is making such a bold move, it's because our research[1] shows that you, our readers, are already making that bold move: by July, 68% of you will have already purchased Mac OS X. And by year-end, we expect almost all of you to be working to make this new OS your OS.

Macworld will be there with you, delivering the most objective, lab-based buying advice available anywhere. Together, we'll save you some costly mistakes, point you toward the best Mac OS X products and help make your transition to the new OS a positive one.

The Blue Mice are coming.

And that's a very good thing.

Macworld



[1] Karlin Associates – Macworld OS X Study, 4/01

MAC OS X

Illustrations by Marilyn Janovitz

What You Need to Fix Your Mac's Problems

by Ted Landau

Welcome to square one. When you're troubleshooting in Mac OS X, most of what you learned about OS 9 is irrelevant. There's no more rebuilding the desktop, no more isolating extension conflicts—OS X is much more than an upgrade to Mac OS; it's an entirely new operating system. When trouble strikes (and it will), your reliable set of OS 9 remedies will be of little help.

Now that Apple is including OS X on every system it sells, and with a major update of OS X on its way, you need to know how to keep your new operating system in excellent condition—and that's where this article comes in. It provides a first-aid kit for nursing OS X back to health when problems arise. For everything from system crashes to files that won't go into the Trash, here's what you need to keep your Mac OS X system in good health.

THAW A FROZEN MAC

Applications can freeze in Mac OS X, just as they do in OS 9—most commonly resulting in an endlessly spinning beach-ball cursor. However, unlike in OS 9, freezes in OS X don't usually bring your Mac to a screeching halt. If you click on a window belonging to an application other than the frozen one, the Mac responds normally. Still, you'll probably want to thaw out the frosty application, especially if you need to use it again. Here are the steps to take:

1. Use Force Quit If you've used ⌘-option-escape to force quit an application in Mac OS 9, you'll be pleased that this keyboard command works in OS X. Alternatively, you can select Force Quit from the Apple menu. Either method brings up the Force Quit Applications window (see "Force Quit"). From here, you get to select which application (including the Finder) you want to quit.

2. Use Process Viewer In Mac OS X, some programs (the Dock, for example) run behind the scenes. Since you didn't launch them, they aren't listed in the Force Quit Applications window. Still, you may someday need to quit one. A Dock icon may stop working, for example, or the "puff of smoke" that appears when you drag an icon off the Dock may not disappear

FIRST+AID

How Privileged Are You?

Your log-in status determines your ability to access the contents of each and every file on your Mac OS X system's hard drive. To check your status with regard to a particular file or folder, select its Show Info window (⌘-I) and select Privileges from the pop-up menu. You'll then see the privileges assigned to each of three categories: the owner of the folder, the group whose members can access the folder's contents, and everybody else. If you are the owner, you can modify the privileges assigned to the various categories. For example, if a folder is Read Only for everybody and you want others to be able to modify the contents, you can change that category's privileges setting to Read & Write.

On the surface this seems to be the equivalent of the Sharing settings accessed from the Get Info windows of Mac OS 9. However, there are critical differences—to start with, in Mac OS X privileges are always enforced. Similarly, for users who aren't on a network, these settings become relevant in OS 9 only if you enable Multiple Users. In OS X, you always log in as a specific user. And privileges can be set separately for each file in OS X, down to the last text document. In Mac OS 9, settings are limited mainly to folders. Finally, in OS X, even the owner can't reassign a file to another owner or group—at least not from the Show Info window.

All this makes dealing with privileges unavoidable in OS X. It also can be a frequent source of irritation, as you're confronted with "insufficient privileges" errors that you never saw in OS 9. Here are some guidelines to help you through this tangled web:

Who Owns What? Each user is the owner of the files in his or her User directory, and the system is the owner of just about everything else. Your access to files owned by the system depends on your group assignment. As an administrator, for instance, you're a member of the Admin group, which has Read & Write access to what's in the Applications folder—even though Admin does not own those files. Items assigned to the group "wheel" (including nearly everything in the System Folder) can also be accessed by administrators—but only via root access.

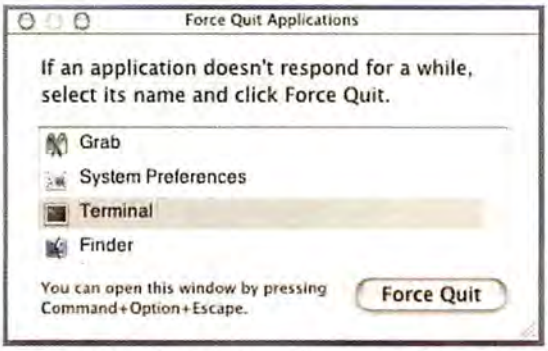
You can get a complete list of all groups and see their members by opening NetInfo Manager and clicking on the Groups item from the Directory Browser. Click on the name of a group, and the Users list at the bottom of the window will show the names of its members. You can even create new groups with this utility.

Copycats When you copy an item to a new location, the privileges of the copy will change to match those of the destination location. So if you copy a program from the Applications folder to your Home directory, the owner of the file will change from the system to you.

Folders Trump Files Folder privileges have priority over the privileges of files within the folder. Suppose that as an administrator, you place an application in the Applications folder and enable Read & Write access—which imparts the ability to drag it to the Trash —for all users. Because the program resides in the Applications folder—which limits deletion power to administrative members only—a non-administrator's attempt to delete the file will be denied.

Ignore Privileges (Sort Of) There is an option called Ignore Privileges On This Volume in the Show Info window of volumes. Enabling it theoretically turns off the enforcement of privileges for that volume. The rationale is that when you mount an external volume, the privileges settings used in the volume's prior location will be irrelevant. Enforcing the privileges would likely prevent you from accessing the contents of the volume, defeating the purpose of mounting it. But either by design or due to a bug, the option doesn't work as expected.

Make Unix Your Friend Show Info's privileges are actually a subset of the full Unix-based permissions settings that OS X uses. If you want to easily take advantage of the available settings, try a $10 shareware utility called Get Info (www.gideonsoftworks.com/getinfo.html). It allows an administrator to change the owner and group of any file and to modify the read, write, and execute permissions.



Force Quit To get out of a freeze, the Force Quit Applications window lets you choose an application to force quit.

Dock Quit To quit processes not listed in the Force Quit Applications window, use Process Viewer.

as it should. If this happens to you, quitting and then relaunching the Dock may be the cure. This is where Process Viewer (found in OS X's Utilities folder) comes to the rescue. Launch it, and select the Dock process from the list that appears (see "Dock Quit"). Then select Quit Process from the Processes menu. The Dock will vanish and then reappear in about ten seconds.

3. Log Out or Restart If neither Force Quit nor Quit Process works, select Log Out from the Apple menu to log out, and then log back in. This almost always fixes a freeze. (And because the freeze probably affected only one application, you can save your work in any other open applications before doing this.)

With those rare freezes so severe that you can't get the Log Out command to work, you may need to restart your Mac. However, before you do, let it sit idle for a minute or two. This gives it a chance to write cached data from RAM to the hard disk (something it may still be able to do, despite the freeze), possibly preventing data corruption. After you've done that, use whatever method works with your particular model (pressing ⌘-control with the power button on laptops or with the reset button on desktop Macs).

PREVENT PANIC ATTACKS

Most Mac users have come across the dreaded system bomb from time to time, but the types of crashes that cause it do not occur in Mac OS X. Don't start celebrating quite yet, though—OS X has its own version of the system crash. It's called a *kernel panic*—and it's just as debilitating as any OS 9 crash. A kernel panic happens when the underlying Unix core that Mac OS X depends on fails. You'll know it's happened to you if strings of text containing error messages appear over the current display on your screen—right before everything stops working.

Kernel panics are rare but can be triggered by familiar demons: corrupted software, a software bug, or incompatible hardware. For example, as of OS X 10.0.4, a kernel panic may occur if you eject a CD while the iTunes application is opening; if you start up with a blank CD in a SCSI-connected CD-RW drive; or if third-party RAM isn't within your Mac's specifications, even if that RAM works fine in OS 9. Here is how to recover from a kernel panic:

1. Restart If a kernel panic occurs, just restart your Mac—you should be fine.

2. Reinstall or Check for Updates Typically, the only thing you can do to prevent the panic's return is to avoid whatever caused it. In the long term, you need to get a bug-fix upgrade to the offending software. An update may already exist; to find out, run OS X's Software Update and check sites such as VersionTracker.com. Otherwise, on the off chance that the kernel panic was caused by corrupted software rather than a bug, try to reinstall the suspected culprit.

GET YOUR OS OUT OF THE STARTING GATE

When your Mac won't even start up, you know you're in trouble. In Mac OS X, that problem can take any of several forms. You may wind up with a blank "blue screen of death" or a ripped-in-half System Folder icon, or—most unsettling for a Mac user—you may get dumped into a command-line mode displaying several lines of error messages. Try the following tricks:

1. Reboot in OS 9 On most OS X–supported Macs, you can hold down the option key while restarting to bring up a window where you can select which OS you want to use. Select the OS 9 start-up icon. In OS 9, open the Startup Disk control panel. Make sure you're using version 9.2.1 or later of Startup Disk (run Apple's Software Update control panel to see

continues

TIP *You can apply Force Quit to any open application from the Dock. Just click and hold the mouse on the application's Dock icon. When the pop-up menu with a Quit option appears, hold down the option key and Quit will change to Force Quit.*

whether you have the latest version), as earlier versions may cause problems when you try to switch to OS X. Then select an OS X system and restart. With luck, OS X will now start up.

First Aid Disk First Aid, Apple's well-known OS 9 repair utility, survives as part of Disk Utility in OS X.

2. Disconnect Hardware Certain SCSI cards and USB hubs are among several hardware peripherals linked to start-up crashes. The workaround? Remove the card or device from your Mac. Then check with the hardware manufacturer (or a Mac Web site, such as my own MacFixIt [www.macfixit.com]) for information about a possible permanent solution (such as an OS or firmware update that allows the card or device to work). In some cases, you can still use the hardware if you reconnect it after start-up.

3. Run a Disk-Repair Utility You may be able to fix your start-up problem by repairing corrupted data. Disk First Aid, part of the Disk Utility application that comes with OS X, is designed to do just that (see "First Aid"). Unfortunately, the current version of Disk First Aid won't make repairs to the start-up volume. The solution is to restart from the OS X installation CD, select Open Disk Utility from the Installer menu, and use Disk First Aid to attempt to repair your drive.

As of this writing, there's only one third-party repair utility that can run from Mac OS X: Micromat's $70 Drive 10 (800/829-6227, www.micromat.com). However, the latest versions of Alsoft's $70 DiskWarrior (800/257-6381, www.alsoft.com), Micromat's $98 TechTool Pro, and Symantec's $100 Norton Utilities (800/441-7234, www.symantec.com) can all make repairs to OS X volumes when run from OS 9. They may be able to fix problems that Disk First Aid misses.

4. Run fsck If you don't have a Mac OS X installation CD or another repair utility handy, all is not lost. Restart, and hold down ⌘-S. This dumps you into single-user mode. You'll see a distressingly long block of white and yellow text against a black background. Don't despair; this is just a variant of OS X's Unix command-line interface.

When the scrolling has stopped and you can actually enter text, type **/sbin/fsck -y** and press return. This will initiate a Unix repair function called fsck (for *file system check*). In OS X, Apple has added Disk First Aid code to this function. If fsck makes any repairs, you'll get a message that says "File system was modified." Run fsck again until the message no longer appears. (The first run may uncover additional errors that will require a further run to fix.) Once all repairs are made, type **reboot** and press return.

TIP ***Don't run an older version of a disk-repair utility unless the documentation specifically says it can be used with Mac OS X; pre-OS X versions may actually corrupt your data. The latest versions ought to work just fine.***

If you get the start-up error that dumps you immediately into the command-line interface, you can run fsck directly from there, without needing to restart.

5. Reinstall OS X Corrupted files in the OS X Library folders can cause a start-up crash. Though you can spend time trying to track down and remove the offending file(s), it's often easier to start up from the OS X installation CD and reinstall OS X (being careful not to select the option that erases the disk). Doing this will leave almost all your custom changes intact. But if you've updated the OS to a version that's newer than the one on the CD, you'll have to reinstall those updates, too. If an initial reinstall doesn't work, try restarting from OS 9 and deleting the entire OS X System Folder. Then restart from the OS X installation CD and reinstall the operating system.

MODIFY THIS

OS X will sometimes refuse to let you move a file to the trash—typically informing you that you don't have "sufficient privileges." You may get the same sort of error message when you try to copy, move, or open a file. Unlike OS 9, OS X requires you to log in with an identity every time you start up. Depending on the privileges associated with your log-in, you may run into problems (see "How Privileged Are You?" for more information). Here's how to get OS X to cooperate:

1. Unlock the File A common reason for the inability to delete a file in OS X is that the file is locked. The easiest way to fix this—if it works—is to deselect the Locked option in the file's Show Info window (similar to OS 9's Get Info windows). You may run into trouble if the file was locked under OS 9. In that case, try DropNuke (www.divnull.com/products.html). This freeware utility should unlock and delete any file or directory of files dragged onto it. Otherwise, go back to OS 9 to unlock and delete the file.

Occasionally, OS X may allow you to place a file in the Trash but

continues

It's a Wrap: Mac OS X Packages

Almost every application you see in Mac OS X is actually a package—a special type of folder made up of the application file and many accessory files, such as plug-ins. This is a convenient way of tying related files together, but when you double-click on an application package icon, the application launches, whereas double-clicking on a folder in OS 9 opens a window showing the folder's contents.

What if you want to go inside a package—to install new Microsoft Internet Explorer plug-ins, for example? To take the wraps off a Mac OS X package, just click on the package icon while holding down the control key, and select Show Package Contents from the pop-up menu. With AppleWorks 6, you'll find two application files inside: the Carbonized version of AppleWorks (inside the Contents/MacOS folder) and the Classic version (inside the Contents/MacOSClassic folder). You'll also find many of AppleWorks' accessory files in there—among them, copies of the AppleWorks Essentials, Clippings, and Starting Points folders.

Extract Files from Packages The other common use for packages is in the creation of Installer documents. For example, the OS X 10.0.4 update is a file called 10.0.4Update.pkg, which contains every file that the Installer installs. You can extract an individual file from an update package and use it to replace a copy that you may have accidentally deleted or that appears to be corrupted. This can save you the trouble of having to reinstall the entire update. Here's the way it works:

Click on the file and select Show Package Contents. Open the Contents folder therein, then open the Resources folder inside that. Now find a file that ends in *.pax.gz*. For example, with the 10.0.4 update, you'll want 10.0.4Update.pax.gz (see "Package Deal"). Drag the file to the desktop to make a copy of it.

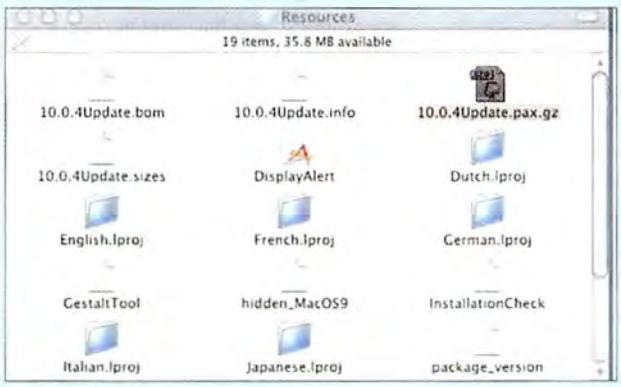
Once you've done so, decompress the file with a utility such as the free OpenUp (www.stepwise.com/Software/OpenUp/). You now have a copy of everything that the OS X update installs. If a file you want to replace is in your System Folder, you can log in as the root user to replace it.

Save Software Update Packages All of this assumes that you downloaded the stand-alone version of the update. If instead you installed it via Software Update, the package is automatically deleted when you restart. You can avoid this and save the package:

Using the free utility TinkerTool (www.bresink.de/osx/TinkerTool.html), select the Show Hidden And System Files option. After the Software Update is finished downloading, installing, and optimizing the new software, a dialog box appears. Ignore it for the moment. Select Go To Folder from the Finder's Go menu. Enter **/private/temp**. The resulting window will typically contain a folder with a three-digit number as its name (such as 501). Open this folder.

Inside will be the update.pkg file. Hold down the option key and drag the icon to the desktop to make a copy of the file. Go back to the Software Update dialog box and click on Restart. When you log back in, the Installer file will be on your desktop.

Check Your Receipt Inside the Receipts folder in the Library folder are package files with the same names as the Installer packages. But these packages are missing the critical *.pax.gz* files that contain the files to be updated. As the folder name suggests, these files serve as "receipts." They're used by the OS to track which updates have already been installed. If you must reinstall an update, and you get a message saying that the update is already installed, move the receipt package for the update to the desktop. The update should proceed. After the update is done, you can trash the removed receipt file.



Package Deal Inside OS Update packages, such as 10.0.4Update.pkg, will be a file whose name ends in *.pax.gz*. It contains all the new and updated files installed by the Update.

then refuse to delete it. If that happens, try placing the file in a folder and dragging the folder to the Trash before selecting Empty Trash. You can also try to reboot in OS 9 and delete it. Be careful to remove the file from the Trash before switching to OS 9, or you may have trouble locating it.

2. Run Disk First Aid If the file isn't locked, start up from the Mac OS X installation CD and run Disk First Aid as described earlier. There may be a problem preventing you from deleting the file; hopefully, the utility will fix it.

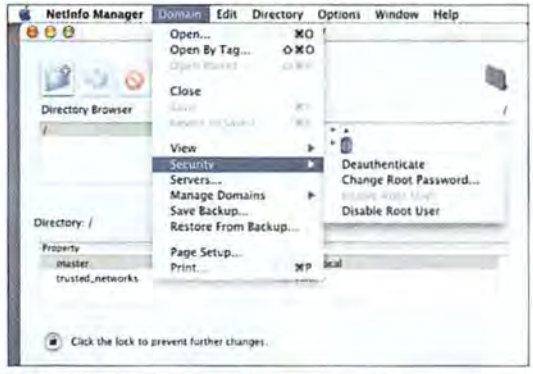
3. Be an Administrator Still no luck? Open Users System Preference. For the name of the currently logged-in user, look in the Name column. Then check the Kind column (see "Three of a Kind"). If the **Admin** designation does not appear next to your name, you're not an administrator. There are some things an administrator can do that other users can't. For example, regular users can't add files to or remove them from the Applications folder.

If you're an administrator and another user isn't (for example, if your daughter has her own log-in on the home computer), you can opt to give that user administrator status as well. To do this, highlight the user name and click on Edit User. Select the Allow User To Administer This Machine option, and then click on OK.

TIP ***The Reset Password command is useful if you ever forget your Administrator password. Just boot from your Mac OS X CD, and then find the command in the Installer menu. After that, select your account name and create a new password for yourself.***

4. Get Root Access (If Needed) Mac OS X occasionally blocks you from modifying certain files even if you're an administrator. Prime examples are the files in the System Folder. If you try, for example, to move a file from the System Folder, you'll get a message such as "The operation cannot be completed because you do not have sufficient privileges for *item or folder name*" or "The item *item name* could not be moved because *system* cannot be modified." The rationale behind this is to protect these essential files from accidental harm—not a bad idea, because you usually have no need to mess with these files. However, if you are an administrator and you want to modify the contents of the System Folder, you can do so by giving yourself root access. There are several ways to accomplish this bit of OS X magic.

Three of a Kind To make a user an administrator, select his name, click on Edit User, and choose the appropriate option.



Root of the Matter To enable root access (or disable it, if it's already been enabled), use NetInfo Manager.

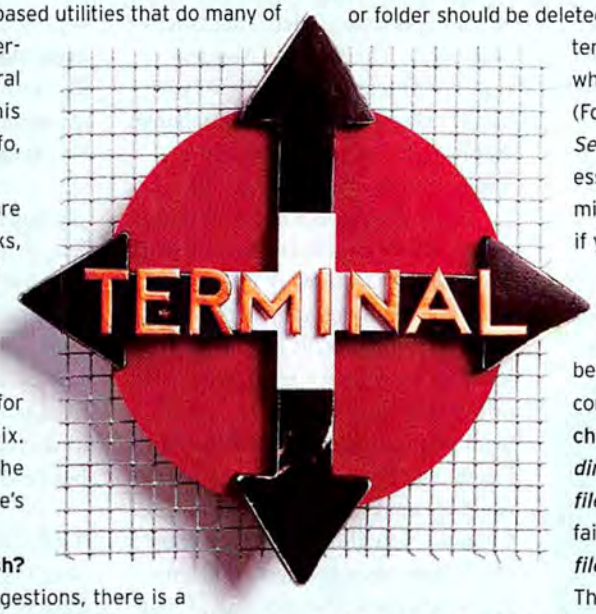
One method is to log in as the root user. Before you can do that, you have to set up a root account. Select OS X's NetInfo Manager (see "Root of the Matter") via its Enable Root User command (after first clicking on the lock icon to allow changes to be made, choose Domain: Security). You can also start up from the Mac OS X installation CD and select the Reset Password command from the Installer menu. From there, select System Administrator (Root) from the pop-up menu that appears and establish a password. Once you've set up the account, restart as usual and enter the word **root** as your user name, along with the password you selected. You will then have access to nearly everything on the drive. Be aware that logging in as root can be dangerous: the root can bring down a system by mistakenly deleting or modifying the wrong files.

Another method involves the $15 shareware application Pseudo (http://personalpages.tds.net/~brian_hill/pseudo.html), which essentially grants you root access in a limited way, circumventing the need to log in as root. It lets you launch an application that you couldn't otherwise launch (or open documents that you couldn't otherwise open) unless you had root access or went to the command line. To use it, simply drag onto the Pseudo icon any application you want to work with. The program will open, prompting you for your admin password along the way. After entering the password, you'll have root access to the application and to any files you open from within it. This means that you can use TextEdit to open documents (such as preferences files) in the System Folder or even in OS X's invisible Unix directories; you would otherwise be prohibited from opening them.

Unix: Controlling the Strings

There's much more than meets the eye in Mac OS X—that is, there's a lot going on that you won't even notice most of the time. Located at the root level of the drive, and normally invisible, is the true power behind Aqua's throne: the dozens of files and directories that constitute OS X's version of Unix. To truly master OS X, you'll need to grapple with Unix. And the primary way to do this is via the Terminal application.

However, for those who would just as soon avoid Unix's command-line interface, shareware authors have come to the rescue. They've designed Aqua-based utilities that do many of the things you otherwise need Terminal to do. These include several of the utilities mentioned in this article, such as Pseudo, Get Info, TinkerTool, and xFiles.



But if you already know, or are willing to learn, how Unix works, Terminal offers the advantage of allowing you to do tasks that can't (at least not yet) be done any other way. This is neither the time nor the place for a full introduction to using Unix. But to give you an idea of the power you can wield with it, here's an example.

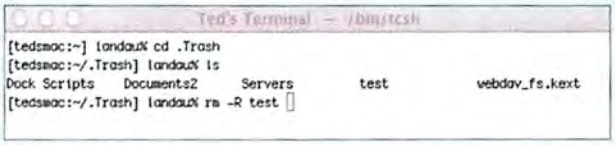
Still Can't Empty the Trash?

If, after following my other suggestions, there is a file or folder in the Trash that you still can't delete, try launching Terminal.

By default, Terminal should be in your Home directory. Since I'm assuming that you want to delete a file from your own Trash (every user has his or her own separate Trash in OS X), you're already almost in the right place.

Type **cd .Trash** to move into the Trash directory.

Type **ls**. This should list everything currently in the Trash. This step is optional but confirms that you've made it to the desired location (see "Take Out the Trash").



Take Out the Trash When the Finder's Empty Trash command doesn't cut it, you can locate and delete trashed items from Terminal.

Type **sudo rm -R** ***name of file or directory you want to delete.*** You will be asked for your password. Give it, and the file or folder should be deleted. Note: **sudo** is a command that temporarily gives you root access, which may or may not be needed. (For more on sudo, see *Mac OS X Secrets*, elsewhere in this issue.) It's essentially what the Pseudo utility mimics. The **-R** option is needed only if you're trying to delete a folder that isn't empty.

In some cases, you may need to type the following lines before using the **rm** command (these commands unlock any locked files): **chflags -R noschg** ***file name or directory name*** or **chflags -R nouchg** ***file name or directory name.*** If this fails, try **sudo chmod 777** ***name of file or directory you want to delete.*** This changes the permissions of the file so that everybody has read and write access to it. Now try again to delete it—either via **rm** or by selecting Empty Trash from the Finder.

When entering the name of the file, type the first letter, and press the tab key. If no other files in the Trash have a name that begins with that letter, Terminal completes the name for you. If you want to delete everything in the Trash, type **rm -R**. But be very careful: if you're somewhere other than in the Trash directory, this could irrevocably delete files you never intended to erase, because **rm** deletes even items not in the Trash.

MAKE DOCUMENTS AND APPLICATIONS GET ALONG

How often do you get an e-mail attachment—a picture from your parents' trip to the Grand Canyon, say—and find that double-clicking on it sends your Mac into a confused search for an application that can display it? When you double-click on a document icon in Mac OS X, the file should automatically open in an appropriate application—typically the one that created it. But OS X may sometimes open the wrong application or even claim that no application is available to open the document.

Here's how to avoid that problem:

1. Check for Updated Applications

The version of Microsoft Internet Explorer that came with the initial release of Mac OS X has a problem decompressing files: it tries to launch a version of Expander from OS X's

continues

Classic mode rather than one available in OS X. Update to the latest version of Explorer to fix this.

2. Check for Fix-It Utilities In some cases, *.dmg* (disk image) files downloaded from the Web show up in Mac OS X as text files. Double-click on them, and you launch TextEdit rather than Disk Copy. You can work around this by dragging the image file's icon to the Disk Copy icon or by mounting the image from within Disk Copy. If you find these extra steps annoying, you can use a freeware utility called DMG Fixer (http://homepage.mac.com/mnkd/dmgfixer10.sit). Just drag the problem file's icon to the DMG Fixer icon, and the utility will permanently fix the file. Afterward, you'll be able to open the file correctly by double-clicking on it.

3. Place the Application in the Dock If you've got two versions of the same application on your drive (for example, one for OS 9 and another for OS X), and documents for that application open by default to the wrong one, drag the preferred application's icon to the Dock. Typically, OS X will open that version of the program by default when you double-click on documents created with it.

TIP *Do you need help finding out where a particular file is supposed to go? No problem. Just double-click on the Installer.pkg file, continue until you get to the Select A Destination screen, and select Show Files.*

4. Make the Application Open the File From the Application pane of the problematic file's Show Info window (see "Quick Change"), select Open This Document With A Specific Application. To change the listed application, click on the application's icon, and from the pop-up menu that appears, select Add Application. In the resulting window, select the desired application. If the application you want is dimmed, change the Show pop-up menu from Recommended Applications to All Applications. Remember, however, that this will fix the problem only for that particular file.

5. Get More Document Control To get all files of the same type to open with an assigned application, select Show Info: Open This Document With The Generic Application For Documents Of This Type, and if necessary, click on the Change Application button to select the application you desire.

If the Change Application button is dimmed or otherwise doesn't work, try the xFiles shareware utility ($20; http://personalpages.tds.net/~brian_hill/). It won't always fix the problem, but it's worth a try. Launch the utility, and drag the file that you want to modify to the xFiles window. Delete whatever code is listed in the text box next to **Creator**. Click on Change. Now double-click on the file. It may already open in the correct application. For example, I had a document that launched PictureViewer in OS X's Classic environment when I double-clicked on it. After I eliminated the Creator code, it opened in OS X's Preview. If that doesn't fix it, return to the Show Info window; the Change Application button should now be enabled. Select the desired application.

6. Change the File-Name Extension Unlike Mac OS 9, Mac OS X uses file-name extensions (suffixes that are appended after a period to a file's name, such as *.doc* for Word documents) to identify the document type. For example, files with a *.txt* extension will open in TextEdit by default, while graphics with a *.tif* extension will open in Preview. Assuming you know what extension you want, simply append it to change a document's icon as well as the application that opens it. For example, change a text document's extension from *.txt* to *.cwk* and it will open in AppleWorks instead of in TextEdit. You may still need to eliminate the Creator code, as described in the previous tip, before this will work.

Quick Change To choose the application that will open when you double-click on a document, use the Applications pane of the file's Show Info window.

THE LAST WORD

Mac OS X, like any new OS, will have to contend with a few aches and pains as it matures. Fortunately, this operating system has a lot of people working to keep it healthy. From tips on how to best use the features built in to OS X, to freeware and shareware utilities that provide the features Apple omitted, troubleshooters have already given us a well-stocked medicine cabinet filled with remedies. **m**

Contributing Editor TED LANDAU is the editor of MacFixIt, where you can find new information about troubleshooting Mac OS X every weekday (www.macfixit.com/osx).

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

Get the latest on Mac OS X and the 10.1 update.

LINK

digital color

32 million colors on demand.

PRINT

COPY

1-800-63 RICOH

ricoh-usa.com

STORE

FAX

When it comes to dependable color output, depend on *DEPENDABLE DIGITAL™* color printing. The Aficio Color® 6000 series delivers unsurpassed Ricoh color with sizes up to 13 x 19 and stock up to 140 lb. index.

© 2001 Ricoh Corporation

We're in your corner.

RICOH®
Image Communication

QUARK'S LEAP OF FAITH

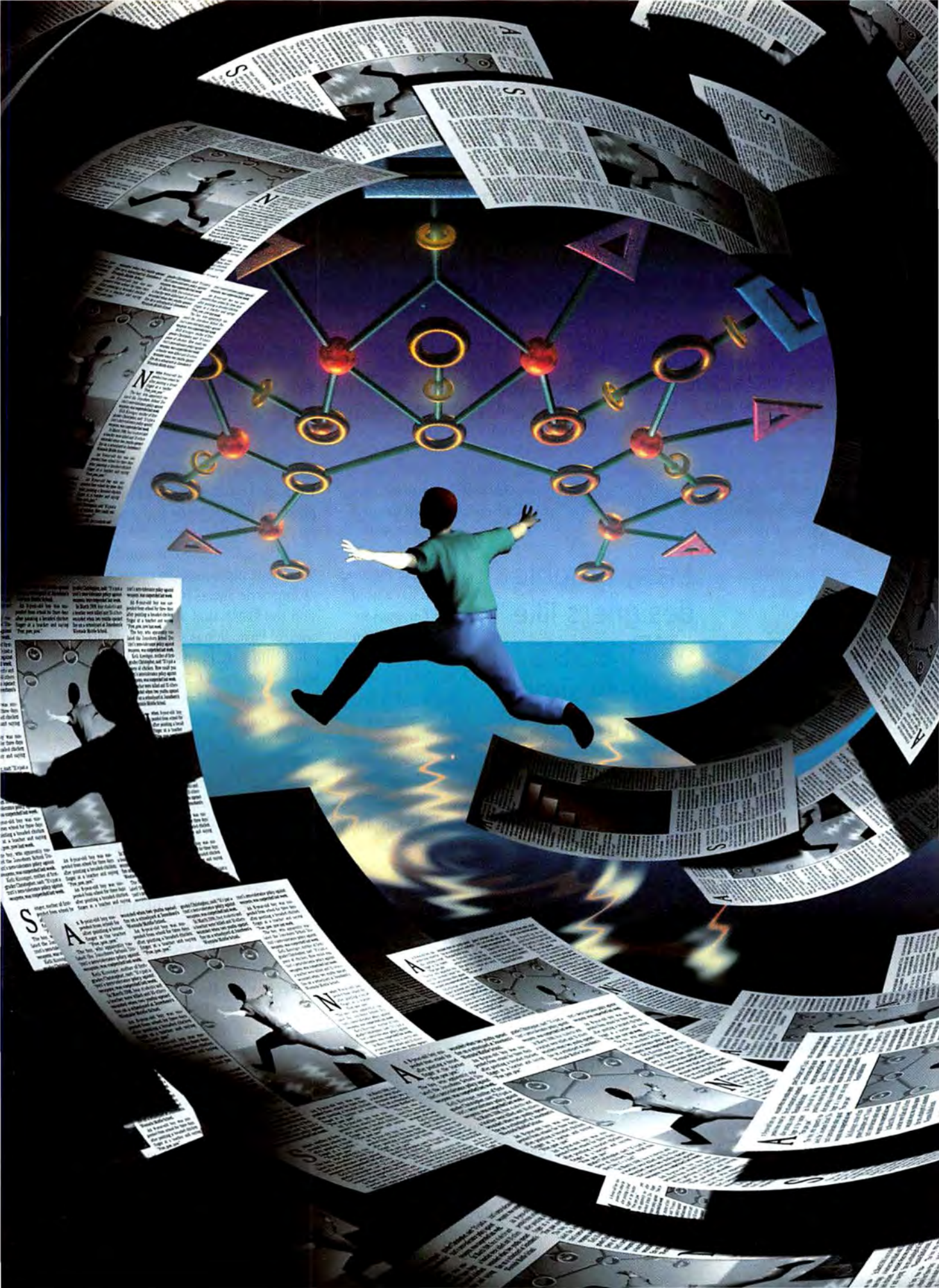
MACWORLD'S EXCLUSIVE LOOK inside QuarkXPress 5.0's Bid for the Web

by DAVID BLATNER

Quark is known far and wide for marching to the beat of a different drummer. Whereas many other software companies aim for a 12- or 18-month release cycle, Quark (800/676-4575, www.quark.com) took seven years to upgrade the desktop publishing standard QuarkXPress ($869) from version 3.0 to 4.0. And with version 5.0, Quark has stayed true to form: it first spoke publicly about the upgrade in 1999, but it still hasn't announced a firm shipping date—even though the new version is expected on store shelves before the end of the year.

Quark has something to prove with this upgrade. Many customers are anxiously waiting to compare the next generations of XPress and its page-layout competitor, the $699 Adobe InDesign (888/724-4508, www.adobe.com). The forthcoming version of InDesign (it doesn't have a firm arrival date, either) will add innovative capabilities such as object transparency to its already impressive feature set. Quark needs to produce an upgrade that will satisfy wavering customers and show them that it has an eye on the future.

JIM LUDTKE



XPress 5.0 represents an attempt to do both. This new version adds features—such as a table editor—that longtime print designers will welcome. But it also demonstrates Quark's belief that the future of publishing is inextricably linked to the Web.

I examined a prerelease version of XPress 5.0. At press time, it was still a work in progress and couldn't be tested for reliability or speed; however, I can give you a sneak peek at the most important changes to come.

From Print to the Web

Publishers have long wanted an easy way to publish content in print and on the Web simultaneously. A couple of Quark XTensions came to the rescue. But BeyondPress, from Extensis (800/796-9798, www.extensis.com), has not been updated in years, and HexMac's HexWeb XTension has been discontinued. And Quark was reluctant, until recently, to build HTML tools into XPress.

> Many graphic designers like XPress's relatively simple layout tools.

The Old Ways So how have print designers gotten their pages onto the Web if they don't use XTensions? Some of them create mock-ups in XPress or Adobe Photoshop and then pass the files (or the printouts) to Web-production people—a process fraught with problems because print designs don't always work on the Web. Other designers have taken the time to learn how to use dedicated Web-authoring tools.

But many designers like the relatively simple layout tools in XPress and feel that Web-authoring programs (and the rules of HTML they're based on) are mysterious and convoluted. Quark is betting that if you're not comfortable with traditional Web-authoring tools, you'll appreciate QuarkXPress 5.0's approach, which lets you use all of XPress's familiar page-layout tools to create an HTML Web page.

The New Web Tools

Web documents and print documents are two separate things in XPress 5.0. Importantly, you can't convert a Web document into a print document (or vice versa). If you need to repurpose a print document, you must create a new Web document and drag text and picture boxes to it from the print file. (See "Make a Web Page in XPress.")

When you open a new Web document, XPress 5.0 displays the Web Tools palette, which offers new tools for defining image maps and placing form elements (such as buttons, text fields, and pop-up menus) on your pages. (See "The New Tools.")

Making Pictures If you have used TIFF images in your document, XPress 5.0 can easily convert them to JPEG or GIF format for you. However, you don't get nearly the control over the process that Photoshop provides. For instance, though you can specify a Web Safe palette for a GIF image, there's no way to optimize a graphic to reduce its file size. XPress 5.0 can convert an EPS image, but the resulting GIF will be based on the low-resolution preview embedded in your document; many people will find the quality of such images unacceptable.

XPress 5.0 does let you create basic rollovers (which cause a different image to be displayed in the Web browser when a viewer's cursor moves over them). However, the rollover image can't be a TIFF or EPS—you must use a JPEG or GIF.

Setting Type XPress 5.0 can circumvent some typographic limitations of HTML by converting blocks of type into pictures—helpful when a headline or logo must look a certain way. This means you can harness all the power of XPress's type tools to set type on a path or kern display text to perfection, and then create a GIF to preserve the results. You don't get that level of control over your type in either Photoshop or Macromedia Fireworks.

However, when you're working with text you *don't* want to convert into an image, your options in XPress 5.0 are more limited. With text on the Web, you're at the mercy of your viewers: the only fonts they see in their Web browsers are the ones loaded on their computers. You can set the text in your Web page to be 14-point Franklin Gothic, but if people don't have it loaded, chances are they'll see Helvetica or Arial instead.

XPress 5.0 uses your standard document style sheets to create Cascading Style Sheets (CSS)—an extension to HTML that allows you to control basic things such as font size, color, and page positioning. The font-styling aspects of CSS work in version 4.0 browsers and later, though not always consistently. You can either embed the style information within your Web page, or link multiple Web pages to an external CSS file.

The problem is, the application doesn't let you edit the CSS. And unlike most dedicated Web-authoring programs, it doesn't let you choose a desired font *set* (for example: Garamond, Times New Roman, Times, serif) instead of a specific font. When you designate a font set, a browser will display the first font that the viewer has installed from that set.

Linking Up One of XPress 5.0's more elegant new Web features is the Hyperlinks palette, which you use to assign links to text and objects on your pages. It keeps track of the links you've used so you can reapply them quickly later. The palette also makes building HTML anchors—links to a specific place on a page—a breeze.

Laying It Out When you export your HTML page, XPress 5.0 tries

to re-create your page geometry (the way objects are placed on the page) by using HTML tables; doing this ensures that most Web browsers will display the page correctly.

In some cases—such as when text is placed over a graphic—XPress may also use CSS *absolute positioning*, which tells the Web browser exactly where to place each object on screen. However, these pages may not display correctly in pre–version 5.0 Web browsers. And unfortunately, you can't choose to *not* use CSS absolute positioning (to prevent such problems).

Limitations Let's be clear: though XPress 5.0 lets you create Web pages, it has nowhere near the power of Macromedia Dreamweaver or Adobe GoLive. XPress 5.0 won't let you manage a site with multiple Web pages or check for broken links. It has no tools with which to create a complicated site architecture. It won't let you write custom JavaScript into your HTML. In XPress, you can't directly access the HTML code to fix mistakes. And it's important to note that there is no way to open an HTML page in XPress 5.0 to edit it.

Quark has also left out a lot of the functionality found in third-party XTensions—such as the ability to export headlines and stories without their page geometry. While future versions of XPress will surely be sturdier, this one will appeal primarily to people who either create basic Web pages or want to design first-draft layouts in XPress—and who can then leave the HTML tweaking to Web geeks. And we'll have to wait for the final XPress 5.0 to see whether the program produces clean HTML (code without a lot of extraneous information)—a major consideration.

XML for All

Perhaps one of the most powerful yet subtle new features in XPress 5.0 is its ability to import and export XML files using Quark's avenue.quark software, which will be bundled with the upgrade. (Currently, Quark sells this XTension for $199.) XML lets you separate content from form so you can import the same content into multiple templates and have it look different in each—perhaps one template for print, another for the Web, and a third for a PDF document. (See "Inside XML," October 2000.)

While the XML tools will likely be of most interest to large publishers who have database-driven publishing systems (a magazine with all its content stored in databases, for example), XML will enable even small shops to create e-books quickly. Since this XTension will be included with every copy of XPress 5.0, curious designers and production people will have an opportunity to experiment with XML.

The New Table Tools

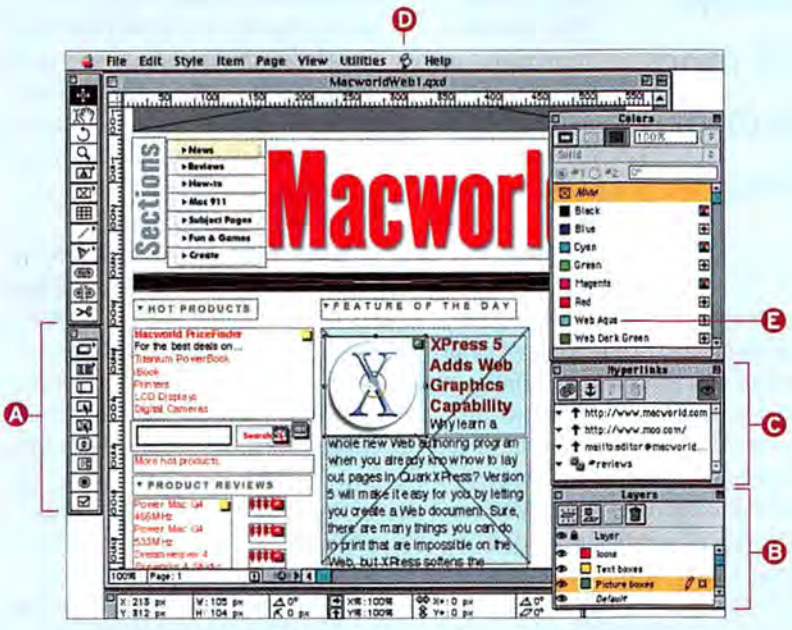
Web tools are version 5.0's most radical additions, but you'll also find some new features *long* awaited by print designers. Building tables in QuarkXPress has always been difficult. Historically, it has involved painstakingly setting tab stops in a text box or with the help of an XTension, but now version 5.0 boasts true table-making tools.

There are two new ways to create a table: drawing a rectangle with the Table tool, or selecting text (typically comma- or tab-delimited text) and choosing Convert Text To Table from the context-sensitive menu. Either approach will get you a basic table that you can format many ways. For instance, you can resize rows, columns, or your entire table.

XPress 5.0 also lets you merge table cells, useful when headings span more than one row or column. You can place either text or a graphic into a table cell, and even rotate the cell's contents. In short, you can do to a table cell anything you can do to a text or picture box. (See "Making Tables.")

Rough Edges What's missing? To begin with, XPress 5.0 cannot import Microsoft Word tables as XPress tables. For the many designers who

continues



The New Tools Print and Web documents are built with many of the same XPress tools. New features include the Web Tools palette A, the Layers palette B, the Hyperlinks palette C, and the AppleScript Scripting menu D. The Colors palette now shows whether colors are spot or process inks, and includes special HTML colors E for Web documents.

receive content in this form, that'll be a big pain. Also, you still have to do some formatting manually—such as the common practice of placing a colored tint behind every other row.

These missed little details add up to more time spent futzing. (Some of these features may be more polished by the time the final product is released.)

The New Layers Palette

While PageMaker and InDesign have had Layers palettes for years, XPress users have had to purchase one of several XTensions to get layers. That's why the more complex your documents are, the more you'll like XPress 5.0's Layers palette, which lets you group objects together into named layers that can be hidden, locked, suppressed (when the items are visible but won't print out), and moved in front of or behind other layers.

Say you need to create unique documents for each of ten salespeople. The documents are the same except for some personalized information in one section. You could make one file and put the custom information on a different layer for each person; only the document layers that are visible will print.

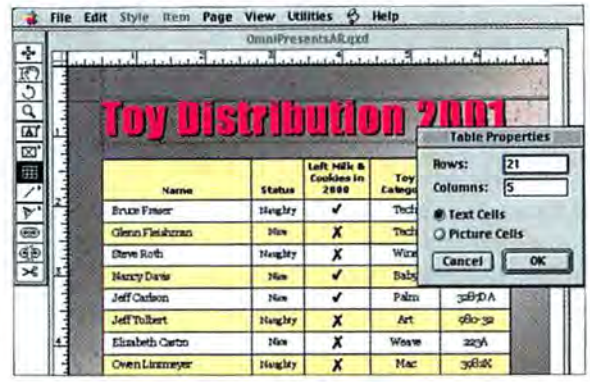
Each layer is assigned its own color, and each object on that layer is tagged with that color, which is very helpful when you're working with a lot of layers. Locking a layer is essentially the same as activating the Lock feature for each object on that layer. Unfortunately, Quark hasn't beefed up XPress's Lock feature, so locked objects can still be altered in several ways, including with the arrow keys.

Interface Improvements

Although the Web features, the Table tool, and the Layers palette are the flashiest elements in this upgrade, about two dozen smaller changes have been introduced to the feature set and interface. Many improve on existing features, but some are completely new. The more subtle enhancements may not result in great time savings, but they will certainly be welcomed by users.

Contextual Menus One of my favorite new features is the context-sensitive menu. Control-click anywhere on your document, and a pop-up menu appears with options relevant to wherever you've clicked. For example, control-click on a text box, and XPress gives you options that apply to text boxes (Get Text, Save Text, and so on). Control-click on the rulers for a quick way to change your measurement units from inches to picas. In fact, the context-sensitive menus now provide the *only* way to perform some functions, such as Fit Box To Picture.

Convenient Color Anyone who has accidentally chosen a spot color instead of a process color (and had to pay for reprinting the film separations) will be relieved that the Colors palette now clearly identifies the two kinds of color. Even better, you can save time by creating new colors within dialog boxes (just choose Other instead of an already-built color). For instance, if you're inside the Modify dialog box and don't see the color you want, select Other to create it on-the-fly rather than leaving that dialog box and opening Colors from the Edit menu.



Making Tables Click and drag to build a table with QuarkXPress 5.0's Table tool. Each cell of a table is editable as though it were a separate text or picture box. You can also format individual border lines between cells, and frames around tables.

You will also find some new features long awaited by print designers.

After hearing from the masses that the Find/Change dialog box was lacking, Quark's programmers added color options; you can now search for (and change) colored text in XPress.

Opaque Boxes In version 4.0, Quark changed the behavior of text boxes: when you type inside a transparent text box, the box's background remains transparent instead of becoming opaque. Some folks love this because it retains the page's look-and-feel while they edit; others prefer opaque boxes, saying they ease editing in a box that overlays a picture or blend. In version 5.0, the Document Preferences dialog box lets you choose between the two methods.

Text Insets In previous versions of XPress, the Text Inset option was applied to all four sides of a text box; if you set it to two picas, XPress would push the text away from all sides of the text box by that amount. Now you can set the Text Inset value for each side individually, which is very helpful if you need to change where text sits in a box vertically but not horizontally (or vice versa).

Character Lists The current Lists feature can create a table of contents by collecting a list of all the paragraphs tagged with particular paragraph style sheets (such as Heading1 and Heading2). QuarkXPress 5.0 goes further, letting you also gather text tagged with

character style sheets. You can tag all the company names mentioned in your magazine with a character style, for example, and then use the Lists feature to quickly build an index of them.

Better Books To help people create long documents, QuarkXPress 4.0 made it possible to bundle separate documents into a book, which acts much like one long document. You can use the Synchronize button in the Book palette to force the grouped documents to use all the same style-sheet definitions, colors, hyphenation and justification settings, and so on. XPress 5.0 lets you control which settings get synchronized—so you can synchronize the style sheets but not the colors, for example.

Better Collection For the past eight years or so, QuarkXPress's Collect For Output feature has helped designers to gather documents and linked graphics in preparation for sending them to a service bureau. But because of legal concerns, it has *not* collected fonts and ICC color profiles. Apparently, Quark's lawyers are finally assuaged, and XPress 5.0 gathers these, too. Hooray!

Improved Indexing Not many people use the Index palette, but those of us who do should be pleased to note that it now sports an Add All button. This means that instead of having to add each instance of a word or phrase separately, you can add them all with one click. And when you hold down the option key, the Add button changes to Add Reversed—very useful when you want to index *Jay Nelson* as *Nelson, Jay*.

Printing Progress

The cost of ink-jet printers has fallen dramatically in recent years—so dramatically that almost everyone has bought one. Designers find ink-jets particularly handy for printing out rough copies of their designs. (See "Macworld's Ultimate Buyers' Guide: Printers," August 2001.) The problem is, QuarkXPress has always assumed that users are printing to a PostScript printer, which most ink-jets are not. The results of this conflict—if the document prints at all—are poor color and poor graphics quality.

Quark has finally responded: XPress 5.0 has better support for non-PostScript printers. For instance, it lets you print thumbnails of your document, reduce or enlarge your page image at print time, and—most important—send composite RGB data to the printer instead of the data for the washed-out CMYK colors that so many people had complained about.

PostScript lovers will be delighted to learn that the Preview tab of the Print dialog box is also greatly improved; you can now get a quick overview of what your printed page will look like. Best of all, the preview indicates whether the Page Flip or Negative options have been selected. This should please service bureaus that have been burned by accidentally printing files with incorrect settings.

Better PDF Support

The ability to output PDF files directly from XPress documents—without the help of Acrobat Distiller—has been on many wish lists for years. But last year Quark quietly announced it wouldn't deliver this feature; indeed, XPress 5.0 still requires the $249 Adobe Acrobat

continues

QuarkXPress 5.0 Features at a Glance

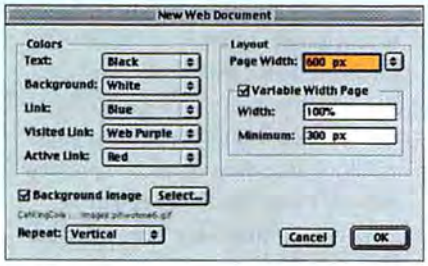
- **Web Tools** Use the new Web tools to create image maps, forms, hyperlinks, and rollovers.
- **Layers** XPress finally has a Layers palette (similar to the ones in Adobe Illustrator and InDesign), which lets you assign objects to named layers. You can choose to make layers visible or invisible.
- **Easy Tables** Build basic tables quickly with the new Table tool. You can make cells that straddle columns or rows, and even mix pictures and text together. XPress won't import Microsoft Word tables, though.
- **XML Support** Quark will ship the avenue.quark XTension—now sold for $199—with XPress 5.0. It lets you import and export XML files.
- **Font and Profile Collection** The Collect For Output feature can gather a document's fonts and ICC profiles for your service bureau.
- **Color Improvements** The Colors palette distinguishes between spot and process colors, and Quark's color-management system lets you specify rendering intents. You can also create Web Safe colors.
- **Flexible Text and Picture Boxes** You can adjust the inset of text separately for all four sides of a box, and the size of a picture box to fit a picture.
- **Indexing Evolution** Indexing hasn't changed much, but a few small improvements make working with long documents much easier.
- **Printing Flexibility** The Print dialog box has an enhanced Preview tab, and XPress now prints to non-PostScript printers (such as color ink-jets) better than ever.
- **Context-Sensitive Menus** Control-click to reveal menus specific to where you're clicking. QuarkXPress has finally entered the 1990s!

Make a Web Page in XPress

Why learn a whole new Web-authoring program when you already know how to lay out pages in QuarkXPress? Quark is betting that you'd rather try your hand with version 5.0's Web tools, which are designed to ease the transition from print to the Internet. Here's how to make a simple Web page in QuarkXPress 5.0.

1 Create a Blank Web Document

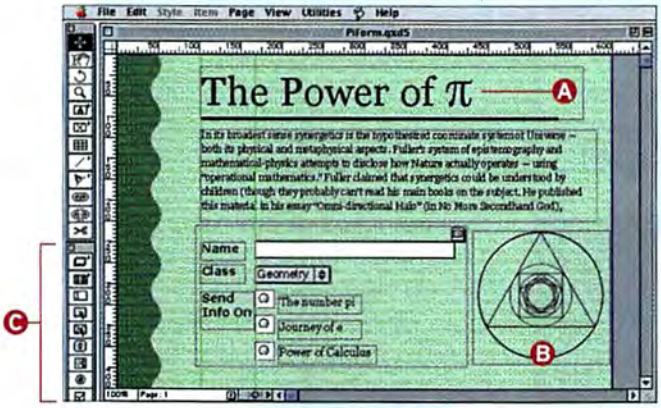
You can't convert a print document into a Web document, but you can create a new Web document and then copy and paste (or drag) objects to it.



Select File: New: Web Document (or press ⌘-option-shift-N) to bring up the New Web Document dialog box. Here you can determine the document's pixel dimensions, text and background colors, and more. To change these settings later, select Page: Page Properties. In the Page Properties dialog box, you can also assign a page title (which will appear at the top of the window in the viewer's Web browser) and meta tags, such as keywords.

2 Lay Out Your Page

Once you have a Web document open, you can use almost every feature in XPress to design your Web page, including the Space/Align feature, the Layers palette, and even text on a Bézier path. If HTML doesn't support something you've produced, XPress can convert it to a graphic.

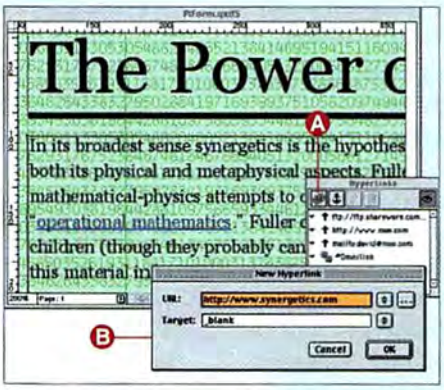


Place text boxes, picture boxes, and lines around your page, and use guides to align objects. If you want to preserve the look of special text, such as a headline A, you can turn it into a GIF. Select the text box, choose Item: Modify, and activate the Convert To Graphic On Export option. If you import TIFF images B, XPress 5.0 can convert them to GIF or JPEG automatically when you export the HTML file. However, XPress doesn't offer much control over the conversion. Your choices for GIF images are: whether to use interlacing; whether to use dithering; and which kind of palette to use—Web Safe, Adaptive, Mac OS, or Windows.

XPress 5.0 does offer 12 new tools in the Web Tools palette C (three are hidden from view here). The three image-mapping tools let you define areas of your graphics that are *hot* (containing hyperlinks). The nine other Web tools help you build forms with checkboxes, text-entry fields, and pop-up menus. To make these elements interactive, XPress provides a place for you to enter the URL of the CGI script (on your Web server).

3 Assign Hyperlinks

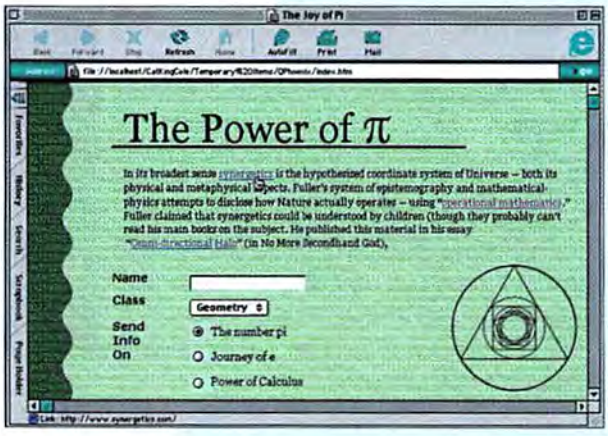
To create hyperlinks in your page, use the Hyperlinks palette. XPress lets you assign a link from an image or text selection in your document to any other page in your site or on the Web. You can also assign links within a page (anchors) from this palette.



First, select some text or a picture box from your document, and click on the Link button A in the Hyperlinks palette. Then type the link into the New Hyperlink dialog box B. Or if you prefer, you can select a prefix (such as *http://* or *mailto:*) from the pop-up menu. The new hyperlink will be saved along with your file.

4 Export the Finished HTML

QuarkXPress 5.0 can build pages, but to view the results properly you need a Web browser such as Microsoft Internet Explorer or Netscape Navigator.



To preview your file in a Web browser before your final export, click on the Preview button (it looks like a globe) in the lower left corner of the document window. This exports a temporary HTML file and launches your Web browser. When you're happy with your Web page, export a final HTML document by selecting File: Export: HTML.

package (888/724-4508, www.adobe.com) to create PDF files.

However, if you need to include interactive elements (such as bookmarks) with your PDFs, you'll be glad to know that XPress 5.0 can automatically generate links from your document's table of contents, index, and any text tagged with a hyperlink.

But in the end, the new PDF export feature isn't as rich as Techno Design's $299 PDF DesignPro XTension (www.techno-design.com). For example, XPress still can't translate multiple documents into a single PDF.

The Last Word

Remember that this overview is based on beta software, and that Quark—like most companies—has been known to change interface elements or even add or remove features at the last minute. But this much is certain: Quark is deeply committed to the Web and has embraced HTML and XML.

On the other hand, QuarkXPress 5.0 will not be a native Mac OS X application. Quark promises that the next version (5.X) will be Carbonized, but officials aren't ready to say when it will be released. (They *have* let it slip that 5.X will accommodate some key customer requests, including multiple undos.) Adobe recently announced that InDesign's next version *will* be OS X native.

Print Lives Looking down the list of XPress's new features, many print designers may feel frustrated that Quark has invested so many resources in Web tools. Many of us have waited a long time for a built-in story editor, high-quality screen previews of EPS and TIFF images, multiple undos, transparency, footnotes, and more. (And many of these features are already available in InDesign.) As it stands now, XPress 5.0 is plainly an evolution, not a revolution, for print publishers who don't need to repurpose content for the Web.

Look to the Future The publishing world is at a crossroads. Will designers upgrade to XPress 5.0 or choose the next version of InDesign? Will XPress 5.0's Web tools satisfy, or is Quark already too late to enter the Internet market? These questions will be answered in the months to come, after Quark and Adobe release the final versions of their new products. But one thing's for sure: this will be a fascinating time for publishing. **m**

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

Check out our QuarkXPress subject page for a complete archive of QuarkXPress tips, reviews, and news articles.

LINK

Contributing Editor DAVID BLATNER is the author of *The QuarkXPress 4 Book* (Peachpit Press, 1998) and the upcoming *Real World QuarkXPress 5* (Peachpit Press), and he is a coauthor of *Real World Photoshop 6* (Peachpit Press, 2001). You can find him at www.moo.com.

Upgrade an iMac

BY JENNIFER BERGER, CHRISTOPHER BREEN, AND JASON COX

You may have been an early adopter, the first in your sewing circle to own a tray-loading Bondi blue iMac or fruit-flavored wonder—or perhaps you held off until the arrival of the slot-loading fruit flavors or earth-toned ruby and sage models. But your computer now seems a little rickety. Your applications are begging for more RAM, and your hard drive is just about full to the brim.

But buying a new machine isn't your only option. An iMac may look hermetically sealed—and its insides truly are harder to access than a Power Mac's—but with some time, some patience, and a reasonable amount of money, you can turn your iMac into a more capable computer.

Though you can't easily replace an iMac's G3 processor, there are at least two other ways to improve your iMac: increasing the amount of RAM, and replacing the hard drive with a roomier one. If you have a Rev. A iMac, you can also supplement your computer's video RAM. We'll show you how to accomplish all three tasks. The first set of steps (1 through 6) applies to the tray-loading Bondi blue and fruit-flavored iMacs; the second set is for slot-loading fruit-flavored models and for every iMac since. If you're up for an even greater challenge, consider Sonnet Technologies' Harmoni, a $300 card that combines a processor upgrade with a FireWire port (800/786-6260, www.sonnettechnology.com). Check with the company to determine compatibility.

You may void your warranty when you perform these tasks, and with any hardware upgrade, some risk is involved. There isn't much danger that you'll actually damage your machine while performing this how-to's steps, but more than one person on *Macworld*'s staff has had trouble upgrading an iMac. The warnings and tips provided here come from hard-won experience. **m**

Contributing Editor CHRISTOPHER BREEN wrote the directions for tray-loading iMacs. Associate Editor JENNIFER BERGER and Associate Technical Analyst JASON COX wrote the directions for slot-loading iMacs.

What You'll Need

Here's a rundown of the supplies necessary to upgrade an iMac.

1. A 5,400-rpm ATA or Ultra ATA hard drive (faster drives may be too hot for iMacs).

2. Your Mac OS installation CD, for help in backing up the old hard drive and reinstalling the OS when you're finished upgrading.

3. New RAM. The first slot-loading iMacs accommodate up to 512MB of RAM; iMacs released in the summer of 2000 and later take a maximum of 1GB. Check out www.ramseeker.com for a list of RAM vendors and prices.

4. A way to back up your old hard drive's contents: an external CD-RW drive, a Zip drive, a hard drive, or a network backup solution. (See "Save Your Data," September 2001.)

5. Old-fashioned hardware: a magnetic Phillips screwdriver, to reduce the risk of your dropping screws into your iMac; a flathead screwdriver; and needle-nose pliers, helpful for grabbing and holding the tiny screws you'll find in your iMac.

6. A small box, to hold the removed screws so they don't roll away and to keep them easy to find.

7. A grounding strap, to keep your iMac safe from static electricity (they cost less than $1 at electronics and computer stores).

8. A soft surface, such as a pillow, blanket, or towel, to prevent scratches on the monitor or case.

9. One hour of your time (or less).

PHOTOGRAPHS BY STEPHEN SUGG

1

TRAY-LOADING iMACS

Prepare the iMac and Crack the Case
Before you can expose the inside of your tray-loading iMac to the outside world, you must prepare it for the operation.

2

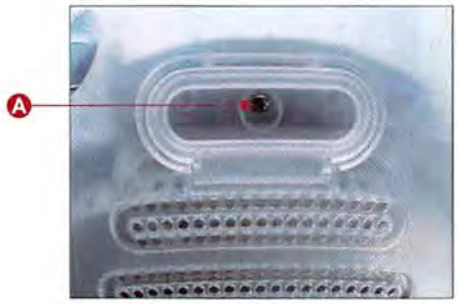
Venture inside the iMac During this stage, you'll protect your iMac from a shocking experience, dislodge a few cables, remove more screws, and extract the iMac's core from the case.

Even if you intend only to upgrade your iMac's RAM, something could go wrong, causing your data to go the way of the dodo. Back up your data to a network, the Internet (iDisk accounts are free at www.apple.com), or external media such as Zip disks or CD-RWs.

Unplug any cables attached to your iMac, including USB, modem, Ethernet, audio, and power cables.

To access the innards of your early iMac, you must place it monitor-side down. Protect the monitor from scratches by placing the iMac on a soft surface, such as a pillow, blanket, or plush towel. If you use a pillow, make sure it's flat enough to prevent the iMac from rocking while you're working on it.

Turn your iMac so you can see its bottom (the white side). There you'll see a handle with a Phillips screw in the middle Ⓐ. Remove this screw, and put it where you won't lose it.



Retract the handle, and give it a gentle tug to remove the white plastic cover. Because the cover is secured in some places with plastic tabs, you'll hear an unsnapping sound. Don't worry—this sound is a normal part of the operation. Put the cover aside.

If you have a grounding strap, attach it to your wrist and the iMac's metal case to release static buildup. If you don't have one, touch the iMac's metal case to discharge static.

You'll see four cables attached to a rectangular metal box—two large clumps of multicolored wires and two gray cables Ⓐ.

Remove the round gray cable to the right, and use a Phillips screwdriver to loosen the two screws that keep the larger gray cable clamped to the case.

Remove the large multicolored cable by pressing down on the tab inside the metal cutout and pulling firmly on the connector. Then pull straight up on the smaller multicolored cable connector to disconnect it. Remove the small screw that holds the smaller multicolored cable in place.

Remove the two screws beneath the clear plastic handle near the top of the case (just beneath the serial-number sticker) Ⓑ.

The motherboard/drive assembly is ready to be extracted. Move the cables out of the way, and pull straight up on the plastic handle.

continues

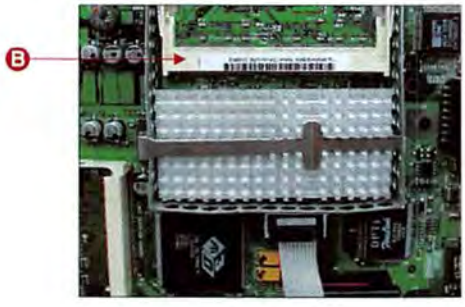
3

Upgrade the RAM These iMacs ship with a scant 32MB of RAM. You can add as much as 256MB of RAM (144-pin, PC100 SO-DIMM) to the RAM slot. As we went to press, RAM was inexpensive, priced at around $70 for a 256MB module.

Position the motherboard/drive assembly so that the CD-ROM drive is closest to you Ⓐ.

Near the top of the motherboard is a shiny metal cover. To access the iMac's spare RAM slot, remove this cover by prying the side of the cover open with a flathead screwdriver. *The cover's edges are sharp! To avoid injury, don't touch the edges with your hands.*

Beneath the cover, you'll spy a white plastic bracket Ⓑ. This is where the RAM goes.



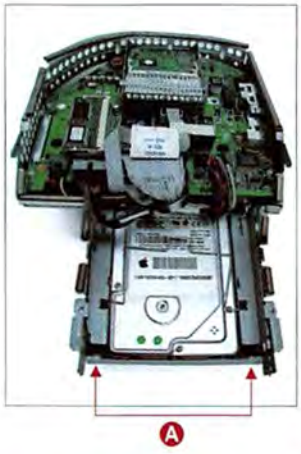
When you're handling RAM, don't touch the gold-plated contacts. Keep the new RAM in its static-proof bag until you're ready to install it.

Remove the RAM module from its bag, line up the notches in the RAM module with those in the RAM slot, and press the RAM into the slot at a 45-degree angle until it's securely seated. Now press down on the top of the RAM module until it snaps into place.

If you have a Rev. A iMac, you'll see a similar empty RAM socket on the left side of the motherboard. This is the video RAM (VRAM) socket. While you're inside your iMac, it's not a bad idea to max out your iMac's VRAM by adding a 4MB SGRAM SO-DIMM (around $20).

4

Upgrade the Hard Drive The Bondi blue iMacs originally carried 4GB hard drives, and the five original fruit-flavored iMacs had 6GB drives. If your iMac is running low on storage space, this step is for you. Compatible ATA hard drives that hold as much as 60GB are now available for less than $300.



You must remove the CD-ROM drive to expose the hard drive beneath. The CD-ROM drive is held in place on the front of the drive mounting by a couple of hooks Ⓐ that slip through slots in the drive cage. To remove the CD-ROM drive, push in the face of the drive to slip these hooks out of the slots, then lift the drive up and over the top of the cage. Once the CD-ROM drive is clear, disconnect its ribbon cable. Put the drive aside.

With the hard drive exposed, remove the metal clip over the drive and the two Phillips screws on the top of the cage—on the left and right sides of the drive Ⓑ. These screws secure the hard drive's bracket to the cage.

Pull the bracket from the cage, and disconnect the drive's data and power cables. Unscrew the bracket screws, remove the old drive, and set it aside.

With the new drive, reverse this process by attaching the bracket and cables, slipping the bracket back into the cage, screwing the bracket to the cage, reinstalling the clip over the drive, and replacing the CD-ROM drive.

5

Put It Back Together Putting Humpty-iMac back together again is largely a matter of following the preceding steps in reverse order. However, you should be aware of some places where the process isn't as simple as it may seem.

Before reinserting your iMac's motherboard, make sure that all connectors and chips are firmly seated.

Grasp the motherboard/drive assembly by the plastic handle, and slide it back into place. To do so, push the four cables aside, making sure they're clear of the assembly. You'll see metal pins on the side of the drive cage. These pins must slide behind the iMac case's plastic rails A. Be sure the front of the CD-ROM drive is flush with the front of the iMac.

Replace the two screws beneath the plastic handle. They'll go in more easily if you tilt the iMac away from you.

Reattach the large multicolored cable first, then the smaller multicolored cable, then the screw that holds the smaller multicolored cable in place, then the large gray cable, and finally the smaller gray cable.

Replace the cover by slipping the plastic lip at the bottom of the cover under the rim of the iMac's case. Snap the rest of the cover into place, and replace the single screw under the handle.

Replace the cables, and turn on your iMac.

6

Install and Restore Your Software If you've upgraded the iMac's hard drive, the new drive likely contains not a shred of system software—meaning that your iMac can't boot from it. An iMac that doesn't boot is no more than an attractive curio. Here's how to make it more useful.

After switching on your iMac, you'll see a flashing folder icon with a question mark. This indicates that your iMac can't find a functioning System Folder. Insert an appropriate system-software installation disc into the CD-ROM drive—the Software Install disc that came with your iMac or a more recent installation disc, such as the Mac OS 9.1 system-software disc. The iMac should boot from this disc.

Open the Utilities folder on the disc, and launch Drive Setup. Select the iMac's hard drive in the Drive Setup window, and click on the Initialize button.

To format the drive as a single volume, click on the Initialize button A in the resulting window. To create partitions, click on Custom Setup and select the number of partitions you'd like from the Partitioning Scheme pop-up menu.

Run the Mac OS Install application on the CD-ROM to install a new system on the hard drive.

Go to About This Macintosh (in the Apple menu) to make sure the computer is registering your new RAM.

Finally, you can copy your backed-up data to the new hard drive and restart from your new hard drive.

continues

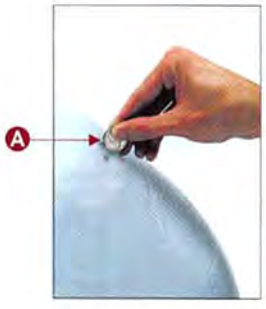
1

SLOT-LOADING iMACS

Prepare Your Computer Before you break into your slot-loading iMac's case to replace the hard drive, you'll need to back up your data, disconnect all cables from your iMac, position the computer properly, and undo the iMac's back doors and latches.

Back up the contents of your hard drive to an external hard drive, a network, the Internet, or some form of removable media. Shut down your iMac, and disconnect all cables from it, including peripherals and its power cord.

Turn your iMac upside down on a soft surface such as a towel, so that the monitor is facing away from you and the part of the case with the handle is on the soft surface.



Use a quarter or a flathead screwdriver to open the latch on the door for RAM and AirPort access Ⓐ.

To discharge electricity that could harm your iMac, put a grounding strap around your wrist and attach it to the iMac's metal case. If you don't have a grounding strap, touch the iMac's metal case to discharge static.

Inside the case, you'll see RAM and an AirPort card (if you have one). Remove both the RAM and the AirPort card with needle-nose pliers or your fingers.

Locate the VGA port cover Ⓑ, and carefully pry it off with the flathead screwdriver.

2

Open the Case Now that you've backed up your data and laid the groundwork, you're ready for the bulk of the job: taking apart and putting together the iMac's case.

Unscrew the four retaining screws: two under the VGA port and two under the height-adjustment stand. Put the screws in a safe place.

Your next challenge is removing the iMac's bottom panel. Look closely near the bottom of the monitor for the white plastic clips.

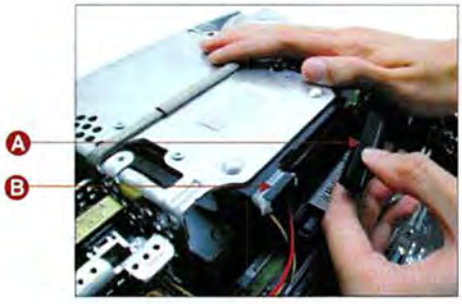
Gently lift the bottom part of the case, from the back side of the iMac toward the monitor Ⓐ, and remove it. You may break the clips; even if you don't, it may sound as though they're breaking. (Your iMac will function with broken clips.)

Use a magnetic Phillips screwdriver to remove the four tiny screws around the outside of the metal grid that acts as a heat shield and the two on top of the heat shield Ⓑ. Take care not to drop a screw into your iMac. Leaving the screw inside could result in its tripping a wire or otherwise causing damage. Wiggle the heat shield gently while lifting it upward. It should come completely off.

3

Remove the Original Hard Drive Taking out your old hard drive is easy. Just disconnect the drive's cables, and free the drive from its housing by undoing some screws.

Locate the rectangular metal box that sits closest to the iMac's monitor and round speakers. Disconnect the data ribbon Ⓐ and power connection Ⓑ by tugging and wiggling them. It may take more than a gentle touch to persuade the power connector out of the socket. Just make sure you pull the connector itself and not the cable.



Loosen the four small screws on the top of the metal housing that hold your hard drive in place Ⓒ and put them somewhere safe. Reach into the metal box and remove the hard drive. Set it aside.

4

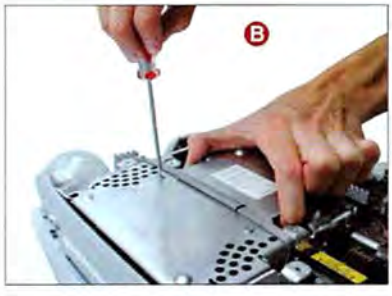
Install the New Hard Drive Now that you've removed the old hard drive, you're ready to install a larger-capacity hard drive. It's time to check the jumper configuration, line up the drive, and fasten the screws.

Examine your new hard drive to make sure that the jumpers Ⓐ are set for Master or Single. If they're not set correctly, follow the directions that came with the new hard drive to reset them.

Now put the new hard drive, with the ports facing out (so you can reconnect the data ribbon and power connection), into the metal housing, and align the screw holes in the metal housing with those on the hard drive. You may want to use the flathead screwdriver to help you prop the hard drive against the metal housing.

Replace the four small screws on top of the metal housing. Tighten the screws completely only when all four screws are aligned in the hard drive properly Ⓑ.

Replace the data ribbon and the power connection. Both may seem a little resistant, but be sure to push them in until they're snug.



continues

5 Replace the Outer Case and Install the RAM

It's time to close up your iMac's case, restoring it to its original state. The RAM slot is accessible from the outside of the iMac, so you'll upgrade the RAM last.

Fit the heat shield back onto your iMac on the side closest to the VGA connector Ⓐ, and bring it down toward the hard drive.

Another tricky spot involves replacing the six small screws that fasten the metal heat shield to the bottom part of the iMac's case. Use your needle-nose pliers to help hold the tiny screws in place around the outside of the heat shield. The screw closest to the front left of the monitor is the most difficult, so do that one last.

Replace the white plastic case, starting at the iMac's monitor—where the plastic clips are—and going toward the VGA connector. Then you can replace the four screws you removed in step 2.

Now that your iMac is completely reencased, open the RAM door with the flathead screwdriver or a quarter. Use your hands to line up the RAM in the two slots, and then push it into place with your fingers Ⓑ. Replace the AirPort card, if you have one, in the same way.

6 Start Up the iMac and Restore Your Data

All that's left to do is initialize your new hard drive, reinstall Mac OS, and restore the data you backed up in step 1. Unfortunately, if you made a mistake in a previous step, this is when you'll find out.

Reconnect all the cables to your iMac, and turn on the computer. When you see a flashing folder icon with a question mark, insert the Mac OS CD.

Go to the Utilities folder on the disc, and launch Drive Setup. Select the iMac's hard drive in the Drive Setup window, and click on Initialize.

To format the drive as a single volume, click on the Initialize button Ⓐ in the resulting window. You can create partitions by clicking on Custom Setup and selecting the appropriate number of partitions from the Partitioning Scheme pop-up menu. If you plan to install OS X someday, this is a good time to set one partition aside for it. Select Mac OS Extended in the Volume Info portion of this window.

Run the Mac OS Install application on the CD-ROM to install a new system on the hard drive.

Go to About This Macintosh (in the Apple menu) to make sure the computer is registering your new RAM.

Finally, you can copy your backed-up data to your new hard drive and restart your iMac.

NEW! A Web site where ANYONE can BUY or SELL used, liquidated, or refurbished Macs and Mac-related products:

Macworld CLASSIFIEDS

buyers –
Need a Mac product at a really low price?

sellers –
Have a Mac product you need to sell fast?

buy smarter!

- Loads of products to choose from.
- Prices FAR BELOW retail.
- Easy access to product reviews on Macworld.com.
- Insure your transaction through Escrow.com. No hassle.
- You get the product you want, at an unbeatable price.

sell smarter!

- List your used, liquidated, or refurbished products on a Macworld Web site.
- Reach thousands of Macworld readers every day.
- Macworld set-up takes care of the whole transaction. No hassle.
- We sell your product — we send you the check.

It's so easy! And it's for everyone!

Macworld CLASSIFIEDS

buy smarter. sell smarter.

www.macworldclassifieds.com

DAVID BLATNER

Print Publishing Secrets

People tend to think of QuarkXPress as a finished application, but in fact it's more akin to a computer operating system: what really makes it great is the software you can add to it. There are hundreds of QuarkXPress plug-ins, called XTensions. Not all of them are relevant to everyone, but I can guarantee you'll find at least a few so useful that they pay for themselves in no time at all.

JAMES STEINBERG

The All-in-Ones

Most QuarkXPress users can benefit from a bundle of utility XTensions. In this category are XPert Tools volumes 1 and 2, from A Lowly Apprentice Production (ALAP); each is $100 (888/818-5790, www.alap.com). Xdream, from Vision's Edge ($99; 800/983-6337, www.visionsedge.com), is another contender. Each bundle has different features—for example, XPert Tools volume 2 offers a palette that enhances XPress's text-linking feature, and Xdream can list the definitions of a document's style sheets. These XTensions (and the others I mention) should work with QuarkXPress 5.0; check with the developers to be sure.

Text Handling

Who says that the folks at Quark know best? Some third-party developers have found great ways to improve upon QuarkXPress's typographic features.

FingerType Designers who love typography go gaga for ALAP's $50 FingerType, with which you can perform kerning, baseline shifts, and other typographic functions simply by clicking on a letter or word and moving it around—instead of hassling with numbers and keyboard shortcuts.

Redefine Style Sheet The wonderfully simple, $50 Redefine Style Sheet, from Xpedient (781/647-1050, www.xpedient.com), lets you redefine a style sheet by altering text on a page instead of using cumbersome dialog boxes.

HX PowerSelect One of the most requested features I hear about is the ability to select unconnected text (a word here, a sentence there) and then apply text formatting to all of it at once. The solution: HanMac Software's $79 HX PowerSelect (www.hanmac.com).

Interface Improvements

Many XTensions enhance the XPress interface. They can help make your mundane tasks both easier and faster.

FullMeasure XT While QuarkXPress's Measurements palette is serviceable, Badia Software's $59 FullMeasure XT (866/223-4298, www.badiasoftware.com) makes the palette much better, extending it to include dozens of other controls. Every XPress user can benefit from this tool. Badia also makes FullColor XT, which replaces the Colors palette and is well worth its $59 price.

XPert Align Some of the best XTensions come from ALAP. This great little company makes the world's best replacement for XPress's lame Space/Align dialog box: XPert Align ($30).

ex Grids & Guides Quark has developed a free XTension called Guide Manager, which can help you add and remove guides. But it's so cumbersome and confusing that I refuse to use it. Several commercial XTensions are better, including CoDesCo's $69 ex Grids & Guides ([49] 40 71 30 01 30, www.codesco.com) and Gluon's $59 ProGuides (888/458-6698, www.gluon.com). These let you alter guide colors, create grids, and specify exact guide positions.

ProScale Scaling a group of objects is possible but a real hassle without an XTension. Gluon's $95 ProScale takes the tears away.

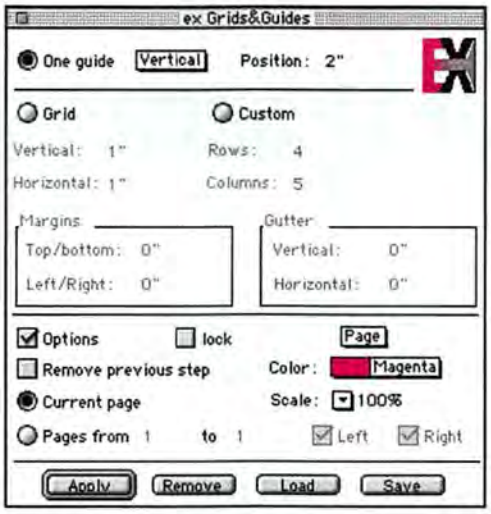
The Ins and Outs

QuarkXPress doesn't live in a vacuum; you often need to import content from other sources or export content for use elsewhere. These XTensions can help.

XPressImage Do you need a TIFF or JPEG of your XPress page to put on the Web or send to a client? Gluon's $169 XPressImage (*Reviews*, May 1999) turns pages to graphics effortlessly, at any resolution.

PDF Filter Quark's free PDF Filter is the best way to get PDF files out of QuarkXPress.

Xdata Anyone who regularly publishes information from a database or spreadsheet should have Em Software's $300 Xdata (877/984-1010, www.emsoftware.com). There are more-expensive XTensions that offer greater database connectivity, but Xdata is brilliantly simple and powerful enough for most database-publishing tasks.



Painlessly Position Guides and Grids An XTension such as ex Grids & Guides allows you to place guides and change their color. You can double-click and drag a guide to reposition it precisely.

GetImages Handy if you import lots of images, the $128 GetImages XTension, from ThePowerXChange (877/940-0600, www.thepowerxchange.com), creates picture boxes and captions for a whole folder of images.

ImagePort ALAP's $100 ImagePort is a favorite of mine because it does the seemingly impossible: it not only lets you import Adobe Photoshop documents into QuarkXPress, but also actually adds Layers, Channels, and Paths palettes to the XPress interface. (They're not exactly the same as Photoshop's, but they're close.) ImagePort is perhaps best used when you have images with spot colors (*Reviews*, June 2000).

Making Book

QuarkXPress has long been the primary tool used in laying out books, but that doesn't mean it can't use a little help from some friendly XTensions.

Autopage Many book publishers depend on KyTek's powerful Autopage ($7,500, network version; $945, single-machine version; 603/529-2512, www.kytek.com) to automate laying out pages, footnotes, figure references, and so on. It ain't cheap, but if you produce a lot of books, it's worth the money.

fXT Maybe you lay out a lot of footnotes but can't afford the Autopage XTension. KyTek pulled the footnote feature into a stand-alone XTension, a $300 plug-in called fXT. Its interface isn't as convenient as Autopage's, but using fXT is faster than setting footnotes by hand.

Imposer QuarkXPress has no built-in method for making a booklet (in which the first page and the last page print side-by-side, the second page and the penultimate page go together, and so on). Commercial printers probably need a high-end (and high-cost) page-imposition solution. But ALAP's $200 Imposer is enough for most small shops.

A Bit of This and a Bit of That

Some XTensions defy categorization. Nevertheless, they fill designers' needs nicely.

ItemMaster Style sheets group a bunch of typographic choices into a single name so you can apply all the formatting with one click. ALAP's $100 ItemMaster XTension takes the style-sheet metaphor even further, letting you make *item* style sheets that you can apply to lines and boxes. For example, you can make a style that describes the color, the border, and even the size of your sidebars.

XState Markzware's $99 XState (800/300-3532, www.markzware.com) can track groups of documents, including how much time you've worked on each document (for cost accounting). It even remembers where you were in a document when you last worked on it.

Add One On Today

QuarkXPress without XTensions is like a car without a stereo system: you can get where you want to go, but the going won't be as much fun. XTensions not only make you more efficient, but also allow you to accomplish things you simply couldn't do otherwise.

Many people complain that all these features should have been built into QuarkXPress to begin with. However, third-party developers often have the ability to create these XTensions faster and cheaper than Quark can. You can wait five or ten years to get the tool you want, or you can pay a little extra and get what you need today. **m**

Contributing Editor DAVID BLATNER wrote *The QuarkXPress 4 Book* (Peachpit Press, 1998) and coauthored *Judaism for Dummies* (HungryMinds, 2001). Find him at www.moo.com.

Where to Find XTensions

While some XTension developers sell their own programs, many others depend on one or more distributors. For more tips on locating freeware and shareware XTensions, see www.macworld.com/1999/04/create/print.html.

COMPANY	CONTACT	COMMENTS
ThePowerXChange	877/940-0600, www.thepowerxchange.com	Demos of almost all XTensions it sells.
Quark	800/676-4575, www.quark.com	Free XTensions.
The XPresso Bar	www.xpressobar.com	Demos, freeware, and shareware XTensions.

LISA SCHMEISER

Web Publishing Secrets

Few Web sites come with a built-in collection of visitors. One way to attract people to your site and keep them coming back is to create your own online watering hole—a bulletin board. The technical barrier for visitors is low, and a lot of the Web's best community spaces center on bulletin boards. Here's how to host your own. For starters, think about whether you *should* host one.

Strategize, Strategize

Before you succumb to the lure of opening your site to lively community dialogue, ask yourself whether a bulletin board will add to your site or overwhelm it.

What Kind of Web Site Is It? If you're running a Web site with frequent or time-sensitive updates, it's helpful to offer a forum where your readers can comment and query. For example, a Web site about XML implementation has content that changes often and focuses on resources; the topic lends itself to extended discussion. However, if you don't update your site frequently—or don't have content appropriate for ongoing discussions—you may have difficulty nurturing a forum.

What Tone Do You Want to Set? Some online communities are famous for raucous personalities, others for supportive or cerebral discussions. Before you put up a space where people can post comments, think about what kinds of discussions you want and how they will complement the rest of your site. For example, in Mighty Big TV's forums (www.mightybigtv.com; motto: "Television without Pity"), the moderators keep the discussions whip-smart and focused, with well-placed quips. This conversational style matches the site's editorial voice.

What's Your Role as Moderator? A bulletin board is like a cocktail party, and the moderator plays the role of the gracious host. It's his or her job to circulate, making sure that everyone's engaged in an interesting conversation and nobody's trapped next to the crab dip listening to an insulting boor or a tiresome bore.

Some parties run themselves, especially if all the attendees know one other or have a common interest. Other parties need a few nudges, especially at the beginning when everyone's standing around staring at strangers. The worst cases require an arbitrator—or even a bouncer.

Hosting a good bulletin board requires a clear sense of the tone you'd like to promote. Have plans in place for setting up and encouraging community standards—such as good spelling and grammar, and the exclusion of profanity.

Before you install your bulletin board, make sure you'll have time to keep track of it. To do it right, you'll need to check in on conversational threads regularly, including at night and on weekends. You'll also need a little help from your friends—find someone you can trust to keep the forums running smoothly when you're on vacation. For details on what to expect in your new role as moderator, ask forum hosts whose boards you admire how they've handled worst-case scenarios and how much time they spend moderating.

One forum duty that took me by surprise was dealing with frequent new posters who would barge in on a board I was moderating, ignore the plentiful open discussions, and post a deluge of questions other people had already answered. I developed a deep reserve of patience and tried to teach other posting members by example. I politely thanked users for their enthusiasm, redirected them to the forum thread that would answer their questions, and then closed the redundant thread.

JOHN HERSEY

Another forum duty every moderator has to face is restoring order when your visitors argue viciously. In flame wars, bulletin-board moderators often get strafed when they try to intervene. Do you want to take the high road by engaging the poster off list, or invoke your rank as the host and drop-kick him or her into the great beyond?

Anticipating difficult situations and being prepared to spend time resolving them—sometimes at inconvenient moments—is part of a moderator's role.

Choosing the Right Software

Once you've settled on a strategy for nurturing your online community, it's time to begin implementing the bulletin board. Your first step is to select a software package that will support the goals you just articulated.

This is where form marries function; you want a bulletin-board format that's appropriate for your content. For example, if you run a news Web site and want to encourage instant input from users as they read and respond to articles, then you need bulletin-board software that appends a threaded discussion to each article. On the other hand, if your goal is to use your Web site as a hub for online discussions, pick software that lets you sort forum threads on pages separate from your other Web-site content, such as Infopop's Ultimate Bulletin Board and Antone Roundy's Threads. This type of program fosters a well-designed community space.

There's something for every budget (see "Mac-Friendly Bulletin-Board Software"). You may have to sacrifice features such as customizability or customer support if you go with the lower-priced or free packages.

Before you commit to any package, ask yourself how much time you're willing to spend troubleshooting or programming your tool. You may be tempted to pick up a free forum script and install it on your site, but if you're not fond of debugging and troubleshooting, you're better off investing in software that doesn't require you to be both forum moderator *and* system operator.

Integrate Discussion into Your Site

Once you've set up your bulletin-board software and everything's in place, you need to make sure that your Web-site visitors are aware of your forum—and that forum visitors are aware of the rest of your site's content.

You may need to modify the site's design or content to take advantage of your new bulletin board. This often entails adding a teaser to your site's pages—an element such as a provocative, prominently placed quotation that entices people to click on it and visit the forum.

It's hard to lure Web surfers to a bulletin board if they don't know it exists. Include links to the board in site-navigation tools, and add hyperlinks in other appropriate places—such as the top, middle, or bottom of articles, the index pages, or a "What's New" section. You can also use a juicy quote or question from the forum to show that its topics fit in with the rest of the site. This will help visitors make the shift from reading your site to participating in its forums.

The Host with the Most

Once you've arranged the furniture and determined the topic of conversation in your virtual salon, you're ready to throw open its doors to the public. You'll learn what the people who use your site *really* think about its content, and you'll be party to some amusing and informative conversations. **m**

LISA SCHMEISER is the executive editor of Macworld.com. She spends an extraordinary amount of time playing with Ultimate Bulletin Board.

Mac-Friendly Bulletin-Board Software

PRODUCT	COMPANY	COMPANY'S ESTIMATED PRICE	PROS	CONS	VERDICT
DiscussionApp 3.0	Server.com (http://server.com/communityapps/discussionapp/index.html)	Free if you display Server.com ads	Threaded interface lets you display several conversations simultaneously.	Offers limited options for customizing and administering the forum.	Good choice if you want to be able to modify your forum's interface without venturing into server or software administration.
Lusenet	Phil Greenspun (www.greenspun.com/bboard/index.tcl)	Free	Greenspun site hosts the bulletin board, so you don't have to perform complex setup and administrative tasks.	You cede some control to the people running the tool.	Viable option for people who simply want to fill out a form and host a no-frills, threaded discussion area.
Threads	Antone Roundy (www.mouken.com/threads/)	$12	You can host and administer this software on your Mac, giving you control over the board. Customizable software offers e-mail notification and other user perks. Easy for visitors to use.	Requires you to do the installation and troubleshooting.	A good combination interface for those who want to have the option of viewing either threaded discussions or full comments.
Ultimate Bulletin Board	Infopop (www.infopop.com)	Starts at $99; depends on level of customer support	Elegant and customizable interface; setting up varied topics and individual threads is easy.	You must have the time and expertise it takes to configure and administer a Web server on your Mac. Expensive.	The most hands-on and professional of the applications here; an excellent tool for those who run vital bulletin boards.

DAVID L. HART

Mac OS X Secrets

As far as the classic Mac OS is concerned, a user is a user is a user. But the Unix core of Mac OS X introduces different user levels. At the top of the heap in every Unix system is a single, all-powerful *superuser*—also named *root* (after the topmost directory of the Unix file system). If you have *root access*, you have ultimate power: you can alter or delete any file or folder in that system.

Why Root Access?

First, let's back up for a minute. A user who is designated as an administrator can adjust system preferences (such as the network address), update the OS, and roam almost unhindered throughout that system.

But sometimes *almost* doesn't cut it. For Unix omnipotence, you want to act as root. For example, you may want to adjust some settings that Apple put out of the reach of administrators—such as some system-configuration files or the built-in Apache Web server (see *Mac OS X Secrets*, August 2001). Or perhaps you want to install some Unix software before Aqua-friendly installers become available. Or maybe you just can't stand not having absolute control over your operating system.

Whatever your reasons, root access is only a few short commands away.

Words of Caution

Apple doesn't tell you how to enable your root account in OS X—for good reason. As root, you can delete your entire file system in fewer than ten keystrokes. And logging in to your root account opens up your system to the security vulnerability inherent in any Unix system. If someone cracks your root password, for example, your machine can be taken over remotely. But if your root account is not enabled in the first place—as in the default Mac OS X installation—there's a much smaller chance of that happening.

Some Mac users may think they need to enable their Mac OS X machine's root account to do anything serious, but that's just not true. We will show you an alternative that allows you to act as root while keeping your root account disabled, thus protecting against typical network-based attacks.

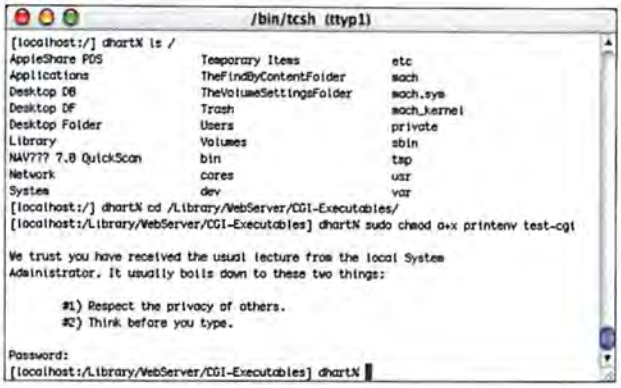
But root access—even if you don't enable the root account—is risky. To see where you can do the most damage when you gain root access, enter this command in Terminal: **ls /**. You'll see the folders in the root directory of the file system, including the same folders that you see via the Finder: Applications, Library, System, and Users. But you can also see directories that the Finder does not show, such as *bin*, *etc*, and *usr*. As the superuser, you could recklessly delete files in these hidden directories, unwittingly circumventing the file-access permissions that would otherwise keep you from harming them. Damaging these files can wreak havoc with your system, potentially even keeping it from booting up. And in Unix, there is no undo command.

Using the Sudo Command

The Unix directive you need to execute commands as root is *sudo* (pronounced *soo*-doo), which stands for "superuser do." (Type **man sudo** in the command line to read more information about sudo than you'll ever need.) To use sudo, you must be logged in as an administrator of the system.

To execute a single command as the superuser, insert **sudo** and a space in the command line, before the Unix command that you want to issue. For example, you can

JOHN RITTER



The Root of the Matter By typing **ls /** at the command-line prompt, you can see a list of the folders at your machine's root level (you can't seem them via the Finder) and change permissions using sudo.

use this command to make user jsmith the owner of the file test.html:

sudo chown jsmith test.html

When you invoke sudo, you'll be asked for a password. Enter the password for your administrator account. Even though you're already logged in as that user, you need to enter your password again (for security reasons). Once you've done so, you have a short time (five minutes by default) during which you can issue other commands using sudo without having to reenter a password.

When issuing a series of commands as root, you might get tired of repeatedly entering **sudo**. Or perhaps you want to run a shell script—a file that, when executed by root, issues a series of Unix commands. You can get root access for as long as you like by invoking **sudo -s**. To end a superuser session before the power goes to your head, type **exit**.

Example: Run CGI Sample Scripts

Now you'll want to try out your superuser status. Let's say you want to run the two CGI scripts, printenv and test-cgi, that Apple includes with OS X for use with Apache. However, as installed, they don't work because the file permissions are set incorrectly. To briefly explain, Apache is configured to run CGI scripts that are stored in the folder /Library/WebServer/CGI-Executables, as long as the script files are marked as executable (the demo script files aren't). To reset these permissions, issue the following consecutive commands in Terminal:

cd /Library/WebServer/CGI-Executables

sudo chmod a+x printenv test-cgi

Assuming that you've turned Web sharing on via the Sharing panel of System Preferences, you can now run the two sample CGI scripts by entering these URLs in your Web browser:

http://localhost/cgi-bin/printenv

http://localhost/cgi-bin/test-cgi

Example: Edit Message of the Day

You may also need to assume the mantle of superuser to edit files in the usr, bin, etc, and other hidden directories, but you alter them at your own risk. When you're ready to try it out, one file you can edit with some degree of abandon is the message of the day file in /etc/motd, which is accessible via the command line. The message of the day appears when a remote user logs in to your system from a terminal interface. By default, the Mac OS X message of the day is "Welcome to Darwin!"

To make that message a little more exciting, you can edit /etc/motd with a Unix editor such as pico or vi. The command **vi /etc/motd** or **pico /etc/motd** will let you open the file only as read-only. However, if you "sudo" the editing command, you'll be able to save a more informative message, such as "Welcome to Dave's Mac OS X. The system will be down tomorrow for maintenance."

To edit the message of the day or other Unix preferences files via TextEdit instead of pico or vi, drag the TextEdit icon on top of the icon for the shareware application Pseudo ($15; personalpages.tds.net/~brian_hill/pseudo.html). You can find more information about Pseudo in "Mac OS X First Aid," elsewhere in this issue.

Example: Install Unix Software

Finally, here's a more complex situation: installing Unix software for which a complete, user-friendly Aqua installer has not yet been created. Perhaps you want to install the free MySQL database to go along with your Apache Web server. There isn't a Mac OS X–compiled version available for download from the MySQL Web site, but a Web search turns up (among other choices) Marc Liyanage's Web page (www.entropy.ch/software/macosx), where you can download MySQL compiled for Mac OS X.

Without root access, it is impossible to install this piece of software. An Aqua installer handles most of the dirty work, but the instructions do call for a handful of commands to be run with sudo. (The commands are listed on Liyanage's Web page.)

The Bottom Line

There is rarely a need, or a good reason, for OS X users—even those who have above-average skills—to enable the root account. In fact, there are excellent reasons *not* to enable it—especially since the sudo command allows you to wield the power of root access throughout your system. As our examples demonstrate, sudo gives you the ability to configure (or confound) Mac OS X at its most fundamental level. **m**

DAVID L. HART is a science and technology writer and the author of *Mac OS X Web Server Handbook* (Prentice Hall PTR, 2001) and *The Cross-Platform Mac Handbook* (Prentice Hall PTR, 2000).

More Info: www.macworld.com

For more information about sudo and other forms of root access in Mac OS X, visit Macworld.com and type **OSXSecrets** in the Search box.

LINK

CHRISTOPHER BREEN

Mac 911

Step right up, ladies and gentlemen. You say your iMac's hard drive has given up the ghost? Never fear, I have a solution. And sir, you find Sherlock sluggish? A fix is at hand. And yes, young fella, I can retrieve your e-mail. How's that, ma'am? Sure, I can wake that sleepy PowerBook. And don't you fret, miss, of course I can end Britney Spears's infernal caterwauling. After all, I'm here to help.

Broken and Entering

Q. I have an iMac DV with a broken CD-ROM drive. But that's not the problem—I've added an external USB CD-RW drive. The difficulty is that my Mac won't boot from the hard drive, and with no internal CD-ROM, I can't boot from the iMac's Restore CD. What can I do?

HAROLD LANDRETH
Juneau, Alaska

A. Harold, you present the kind of locked-room conundrum worthy of Agatha Christie. With the normal means of entry barred, how do you access your recalcitrant drive?

The secret to unraveling this mystery can be found on the right side of your iMac—it's the FireWire port. You'll also need a second Mac to get the job done.

For some time it's been possible to mount a PowerBook's internal drive from another Mac via SCSI using a protocol called Target Disk Mode (TDM, formerly termed SCSI Disk Mode). TDM is now supported via FireWire as well, which allows you to mount the hard drive of a "target" computer (your iMac) on another FireWire-capable "host" Mac. The target Mac must have shipped with a FireWire port (TDM doesn't support add-on FireWire cards for the target computer—just for the host Mac).

To make this FireWire brand of TDM work, the Macs involved must meet a few additional requirements. The host Mac must be running Mac OS 8.6 or later and FireWire 2.3.3 or later, and your target iMac must have Firmware 2.4 or later. Here's how to set it up:

Remove any FireWire devices from both computers before you start. With the target computer off (the host Mac can be turned on), string a six-pin–to–six-pin FireWire cable (available from any good Mac mail-order house for around $10) between the target and the host Macs. Switch on the target iMac, then press and hold the T key until you see a FireWire icon on the target Mac's screen. The icon for the target Mac's internal hard drive should appear on the host Mac's desktop. Once you're there, Harold, you can repair the drive with a troubleshooting utility or insert the iMac's Software Install CD in the host Mac's CD-ROM drive and install a whole new system on the iMac's drive.

To exit TDM, drag the target Mac's hard-disk icon to the Trash and press the target Mac's power button.

Interminable Indexing

Q. I recently purchased an iMac and shortly thereafter indexed the drive with Sherlock. Since then I've installed two games, yet when I ask Sherlock to update the index, it tells me the process will take 12 hours! What can I do to speed things up?

TRAVIS ROLLMAN
Enfield, New Hampshire

A. I'd begin by not panicking. Clever as Sherlock may be, it's not terribly good at deducing how long it takes to index a drive when it first begins the process. If you were to sit with stopwatch in hand while Sherlock chugs

FELIX SOCKWELL

through your drive, you'd find that its initial estimate is shockingly inaccurate.

That's not to suggest, however, that indexing a drive is a brisk procedure. It isn't, and because of this, it's best to begin the operation when you'll be away from your Mac for a while—overnight, for example.

You can automate the process by creating a schedule. To do so, select Index from Sherlock's Find menu and click on the Schedule button in the resulting dialog box. Select a convenient day and time for indexing to begin, and leave your Mac on during the appointed hour.

Bear in mind that you needn't index your entire drive. You can index a single file or folder by control-clicking on that item in the Finder and choosing Index Selection from the resulting contextual menu. You can also select Preferences from Sherlock's Edit menu and elect to index items by label—only those documents with an orange label, for example. In the same Preferences window, click on the Languages button and switch off all languages except English to further speed Sherlock's indexing.

Language Barrier To speed up indexing in Sherlock, simply switch off the languages you don't plan to use, such as Afrikaans, Estonian, and Portuguese.

Corrupt Correspondence

Q. Outlook Express doesn't run on my Mac any longer, but I need the e-mail it contains. Is there any way to retrieve my messages?

MARTY HARPER
Grass Valley, California

A. A good start would be trying to get Outlook Express up and running again by reinstalling it. However, if it's reluctant to do the job even after the reinstall and you need your e-mail *right now*, try this: Trot on over to www.eudora.com and download the latest version of Qualcomm's Eudora. When you first launch the program, it offers you the opportunity to import mail from other e-mail clients. Choose Outlook Express from the pop-up menu in the Import Mail dialog box, then click on OK.

If Eudora's already installed, you can import your e-mail by selecting the Import E-mail command from Eudora's File menu.

You can configure Eudora in three ways: Sponsored mode, where you get the full version of the program for free but have to look at some fairly unobtrusive advertisements; Paid mode, a full version without ads; and Light mode, a free limited version without ads but offering fewer features. Eudora is also available in a Mac OS X–native form.

Tip of the Month

You can add a **Sherlock** button to your **Internet Explorer 5** tool bar (View: Customize Toolbars), but under Mac OS 9.1 it's inactive. To make it active you must replace the Sherlock 2 alias in the Apple Menu Items folder with the actual Sherlock 2 application (found inside the Applications folder at the root level of your hard drive). Internet Explorer Help incorrectly states that the Sherlock application gets placed in the Apple Menu Items folder by default.

STEVE GIER
Grand Rapids, Michigan

Comatose PowerBook

Q. Recently, whenever I put my PowerBook to sleep, it refuses to wake up. What can I do?

ZOE SARANTIS
Melbourne, Australia

A. We've seen this question a few times on the Macworld Troubleshooting forum, and for good reason. PowerBooks can be devilishly difficult to awaken at times. I wish I could provide a single fix, but unfortunately there appears to be no universal solution. Therefore, allow me to enumerate some of the usual suspects.

Start by examining your extensions, control panels, and applications. For example, MenuFonts, a component of Extensis's Suitcase, can create a conflict that disables a PowerBook G4's keyboard when you awaken that PowerBook. Some users have found that switching on the Control Strip causes sleep problems in PowerBooks. And still others claim that a PowerBook wakes more readily if you use the Special menu's Sleep command rather than just closing the notebook's lid. TCP/IP can also be a source of trouble for some PowerBooks. Apple claims that if TCP/IP is set to Active and can't establish an Internet connection, a PowerBook may pause for as long as five minutes when it tries to wake from sleep. If you're thus afflicted, Apple suggests that you set TCP/IP to Inactive and select the Load Only When Needed option.

Mac OS X has its wake-from-sleep issues as well. There have been reports, for example, that having a Classic application at the forefront while putting your PowerBook to sleep can make the device more difficult to rouse.

continues

The key to treating a soporific PowerBook lies mostly in your powers of observation. If you've recently changed something about your PowerBook—say you installed new hardware or software—and your portable pal refuses to leave its state of slumber, try undoing your recent actions and see if the problem disappears.

Noisy Lab

Q. I teach a variety of computer skills in an iMac-based lab. Although I've muted the sound on the iMacs, my students download RealPlayer and play music during class. What can I do to keep the sound muted, short of removing the iMacs' speakers?

CARRIE NICHOLS
Santa Fe, New Mexico

A. Having been a teacher earlier in my life, I understand how difficult it can be to restrain the youthful enthusiasm of your students—particularly when that energy drives them to blast the latest adenoidal Britney Spears single from one end of campus to the other. Though I believe the shortest route to a solution is to threaten the little punks with expulsion should more than the default alert sound emerge from the lab's iMacs, in these litigious times I understand that may not be an option. You ask in particular about shutting off sound on these iMacs, but the overarching question really is, How can I keep prying little hands and minds from screwing around with system settings in a multicomputer environment? There are a couple of answers—one built in and another available through a third party. Let's begin with the built-in solution.

With Mac OS 9, Apple introduced Multiple Users—a combination control panel and extension that allows a Mac's administrator (the owner) to create individual user accounts on that computer and limit what people using them can do. For example, you can configure the lab's iMacs so your students can only use AppleWorks.

One of Multiple Users' niftier features is its ability to bar access to control panels. This is how we'll mute your iMacs. First, create a new user account in the Multiple Users control panel and give that user Normal privileges—freedom to do anything he or she wants on the iMac. Log out of the owner account and log in as the user you just created. Open the Sound control panel and click on the Mute button—this silences the iMac. But there are still two other ways to make it speak. Let's silence them as well.

Open the Keyboard control panel, click on the Function Keys button in the resulting window, and deselect the Use F1 Through F15 As Hot Function Keys option. You've now disabled the Volume Up, Volume Down, and Mute buttons on your iMacs' keyboards. Open the Control Strip control panel and select the Hide Control Strip option. This prevents your students from using the Control Strip to jack up the iMacs' volume.

When you've run through this rigmarole, log out of that user account (by selecting Logout from the Finder's Special menu), and then log back in as the owner. Next, open the Multiple Users control panel and assign Limited privileges to the user account you created. Finally, click on the Show Setup Details triangle, select the Privileges tab, and make sure that the user doesn't have access to the Control Panels folder.

What have you accomplished? Anyone using the account you just configured shouldn't hear a peep out of that computer and, unless he or she circumvents Multiple Users, can't restore sound to the iMac. As you can probably see, this kind of chicanery can serve any number of prohibitive purposes. You can keep your kids from dimming the iMacs' screens, changing the screen resolution, playing QuickTime movies . . . heck, with some careful planning you can make your labful of iMacs just no fun at all.

If that's too much bother and your school has a reasonably meaty budget, install a more robust security program intended for classroom use. With an application such as Power On Software's On Guard ($50; 800/344-9160, www.poweronsoftware.com), you can determine what your students can and can't do with the lab's iMacs—and you can configure the whole mess from a single administrator's computer. On Guard isn't secure enough for government work, but for a supervised computer lab, it should do the job nicely. **m**

Unsolicited Advice

As fancy-pantsy as I find Mac OS X, there's one Classic Mac OS feature I desperately miss: the ability to turn off the Trash warning—you know, the message that indicates the number of items in the Trash and asks if you're really, really, *really* sure you want to empty it. OK, so maybe I like to live dangerously, but this warning annoys me.

Although I can't turn off this warning for good, I'm not completely without options. I can skirt it—as I did in other versions of the Mac OS—by holding down the option key while selecting the Empty Trash command from the Finder menu.

Contributing Editor and occasional carnival huckster CHRISTOPHER BREEN proudly oversees Macworld.com's Mac 911 forum. He invites you to join the fun.

Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also send tips by e-mail to mac911@macworld.com. We pay $50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*.

Shareware and freeware mentioned in *Mac 911* are available 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.
AEC Software	aecsoft.com	4
Alsoft	800-257-6381	40-41
American Power Conversion	888-289-APCC	9
APS Technologies	800-950-2015	94-95
Canon USA	canondv.com	31
CD Cyclone	cdcyclone.com	8
CDW Computer Centers, Inc.	800-509-4239	92-93
Corel Corporation	800-722-6735	5
Crucial Technology	crucial.com	33
Dataviz	800-270-0030 ext.133	12
Destineer	destineerstudios.com	35,37,39
IDG World Expo	macworldexpo.com	82-83
Iomega	iomega.com	17-18
J&R Computer World	800-221-8180	97
JVC	jvc.com	7
Kensington	kensington.com	BC
MacMall/Creative Computers	800-222-2808	84-91
MegaHaus	800-786-1184	96
MicroMat	800-829-6227	21
Ricoh	800-63RICOH	55
Roxio	roxio.com/toast5	CV3
SCGI	asiva.com	63
Seybold	seyboldseminars.com	38
SmartDisk	vsttech.com	6
Sonnet Technologies	800-786-6260	23
Thursby Software Systems	thursby.com	42
Xante Corporation	xante.com/mw21	10-11
Xerox Network Printers	xerox.com	CV2-1

PAGE NO.	ADVERTISER	GET-INFO
HARDWARE		
COMPUTER SYSTEMS		
6	SmartDisk	74
63	SCGI	–
84-91	MacMall/Creative Computers	132
HARD DISK STORAGE		
8	CD Cyclone	127
33	Crucial Technology	–
96	MegaHaus	108
17-18	Iomega	104
94-95	APS Technologies	56
MISCELLANEOUS		
BC	Kensington	1
8	CD Cyclone	127
9	American Power Conversion	73
33	Crucial Technology	–
MONITORS/ GRAPHICS BOARDS		
23	Sonnet Technologies	133
PRINTERS		
55	Ricoh	4
CV2-1	Xerox Network Printers	101
10-11	Xante Corporation	113
SCANNERS & DIGITAL CAMERAS		
7	JVC	143
31	Canon USA	23
MAIL ORDER		
96	MegaHaus	108
97	J&R Computer World	57
84-91	MacMall/Creative Computers	132
92-93	CDW Computer Centers, Inc.	2
94-95	APS Technologies	56
SERVICES		
TRADESHOWS/CONFERENCES		
38	Seybold	–
82-83	IDG World Expo	–
SOFTWARE		
BUSINESS/PRODUCTIVITY		
4	AEC Software	84
12	Dataviz	142
42	Thursby Software Systems	124
ENTERTAINMENT		
35,37,39	Destineer	148
GRAPHICS/DTP		
5	Corel Corporation	79
MULTIMEDIA		
CV3	Roxio	140
UTILITIES		
21	MicroMat	37
40-41	Alsoft	140

October 2001, Volume 18, Number 10 Macworld (ISSN 0741-8647) is published monthly by Mac Publishing, L.L.C. Editorial and business offices: 301 Howard St., 16th Fl., San Francisco, CA 94105, 415/243-0505. Subscription orders and inquiries should be directed to 303/665-8930. Subscription rates are $34.97 for 12 issues, $59.97 for 24 issues, and $79.97 for 36 issues. Foreign orders must be prepaid in U.S. funds with additional postage. Add $20 per year for postage for Canada, Mexico, and all surface mail to foreign countries. Add $70 postage for air mail to foreign countries. Periodicals postage paid at San Francisco, California, and at additional mailing offices. Postmaster: Send address changes to Macworld, P.O. Box 54529, Boulder, CO 80328. Printed in the U.S.A.

www.macworldexpo.com

Owned and Managed by

IDG WORLD EXPO

© 2001 IDG World Expo
All rights reserved

Macworld
Conference & Expo™

January 8-11, 2002

Moscone Convention Center
San Francisco, California

www.macworldexpo.com

Exhibits Only Registration opens
August 25, 2001

Register online at www.macworldexpo.com with
Priority Code: A-MWO to receive a Free Exhibits Only Pass*

*Offer ends 10/15/01. Valid on new registrations ONLY. This offer cannot be redeemed for cash or used in conjunction with any other offer. All registration fees are non-refundable and credentials are non-transferable.

Circle 112 on card or go to www.macworld.com/getinfo

MacMall

FREE 128MB Extra RAM & Lexmark Z23 Printer!*

*With CPU purchase. MacMall Free RAM offer requires $30 professional installation fee. Offer expires 10/15/01. Lexmark Printer free after $79 mfr. mail-in rebate. Price before rebate is $79. Expires 10/14/01.

PowerBooks and NEW Power Macs!

Up to 512MB total RAM, stylish designs & the power of DVD!

Apple delivers two powerful systems with a PPC™ G4 processor, DVD capabilities and easy expandability in either a portable or desktop version. And MacMall delivers everyday low prices on Apple systems, compelling offers such as free memory upgrades and a personal Account Executive standing by to serve you—making us the ideal place to purchase a new Mac!

At MacMall, you'll get up to $400 in savings on popular peripherals plus up to 256MB of free extra RAM to use with your Mac running Mac OS X!

Titanium PowerBook G4—revolutionary design!

The PowerBook™ G4 is only 1" thin and weighs just 5.3lbs. And it offers powerful features such as a slot loading DVD-ROM drive and a stunning 15.2" display capable of 1152 x 768 pixel resolution in millions of colors!

- 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

#956071	PowerBook G4 Additional AC Adapter	$69
#956072	PowerBook G4 Additional Battery	$129
#953968	Apple Pro Keyboard	$59
#953969	Apple Pro Mouse	$59

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
- Standard headphone jack
- Multiple audio output capabilities
- Two FireWire ports
- Two USB ports
- AirPort™ Card slot
- 10/100/1000BT Ethernet
- iMovie 2, QuickTime, iTunes, iDVD (requires SuperDrive), FAXstf and more!

SAVE up to $400!

Save $100 on each of these peripherals!

#81950	Rio 600 32MB MP3 Player Price before rebate is $149.99.	$49.99*
#957913	Handspring Visor Edge Blue Price before rebate is $399.	$299*
#957911	Handspring Visor Edge Silver Price before rebate is $399.	$299*
#953364	HP PhotoSmart 315 Digital Camera Price before rebate is $299.99.	$199.99*
#959033	Canon ZR20 DV Camcorder Price before rebate is $629.95.	$529.95*
#959031	Canon ZR25MC DV Camcorder Price before rebate is $699.95.	$599.95*

Receive a $100 mfr. mail-in rebate on purchase of Rio 600 MP3 Player, Handspring Visor Edge, HP PhotoSmart 315 Digital Camera, Canon ZR20 DV or ZR25MC DV Camcorder with Mac CPU purchase. See macmall.com for rebate coupon and further details. Offer expires 10/14/01.

We'll beat any price on any Mac computer or Competitive Promotion • Fre

Titanium PowerBook G4s starting at

$2,594!

SUPER DEALS!

iBook Final Cut Pro System

This professional package includes:

- iBook 500MHz with internal DVD/CD-RW Drive
- LaCie 48GB Portable Pocket Drive
- Final Cut Pro 2
- Artec Boris Graffiti
- Sonic SmartSound SonicFire Pro

all this for only **$4,494!** #961705

QuarkXPress 4.1

It's the powerhouse page layout program with over 75 new features! Work faster and smarter with an expanded and refined feature set!

only **$788.89!** #55401

Airport Wireless Networking!

Airport Base Station only **$299!** #57373

Multiple users can surf the Web simultaneously!

Airport Card only **$99!** #57369

Procreate Painter 7 with FREE 16X CD-R 50-Pack

procreate

Truly advanced, realistic painting plus photo editing!

only **$378.89!** #961642

Mac Upgrade Kit

Turn your old Power Mac into a Power Mac G3 complete with USB and FireWire! Includes: PowerLogix G3 Upgrade Card, FireWire PCI Card and USB PCI Card

only **$199.99!** #959055

Power Macintosh G4s starting at

$1,694!

Authorized Reseller

Power Mac G4s Order	MHz	RAM	FREE RAM	TOTAL RAM	Hard Drive	56K Modem	Drive	Gigabit Ethernet	Video	Price!	or as low as
#961585	733	128MB	256MB*	384MB	40GB	Yes	CD-RW	Yes	NVIDIA GeForce2 MX	$1,694*	$48/mo**
#961586	867	128MB	256MB*	384MB	60GB	Yes	CD-RW	Yes	NVIDIA GeForce2 MX	$2,494*	$70/mo**
#961587	800 (2)	256MB	256MB*	512MB	80GB	Yes	DVD-R/CD-RW	Yes	NVIDIA GeForce2 MX Twin	$3,494*	$98/mo**

PowerBook Series Order	MHz	RAM	FREE RAM	TOTAL RAM	Hard Drive	DVD Drive	56K Modem	USB Ports	FireWire Ports	iMovie 2	iTunes	Price!	or as low as
#961330	400	128MB	256MB*	384MB	10GB	Yes	56K	Two	One	Yes	Yes	$2,594*	$73/mo**
#961332	500	256MB	256MB*	512MB	20GB	Yes	56K	Two	One	Yes	Yes	$3,494*	$98/mo**

*Professional installation fee of $30 required for free RAM. Hurry! MacMall RAM promotion ends 10/15/01. Lexmark printer free after redemption of $79 mfr. mail-in rebate. Offer expires 10/14/01.

**Own this Titanium PowerBook G4 400MHz for as low as $73/month with the New MacMall EZ Payment Plan! Call for details.

For your best price call 1-800-217-9492 macmall.com

Priority Code: ZMWD1A3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!

Call for details.

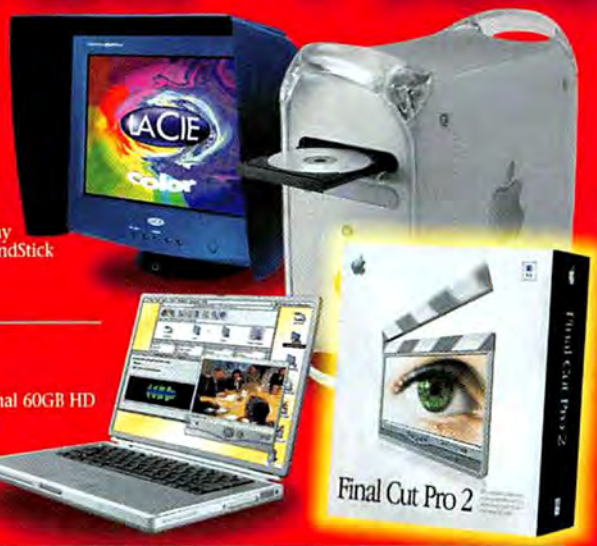
MacMall

FREE
128MB Extra RAM & Lexmark Z23 Printer!*

*With CPU purchase. MacMall Free RAM offer requires $30 professional installation fee. Offer expires 10/15/01. Lexmark Printer free after $79 mfr. mail-in rebate. Price before rebate is $79. Expires 10/14/01.

Professional Vide

Pro G4 Systems with Final Cut Pro 2!



Power Mac G4 733MHz System
- 512MB RAM ■ DVD-R/CD-RW Drive
- 60GB HD ■ Additional 60GB HD
- Boris Graffiti ■ Sonic Fire Pro ■ 14" Sony NTSC
- LaCie 19" electron 19blueII display
- 3 Piece Harmon/Kardon SoundStick

only **$5,494!** #961708

Power Mac G4 800MHz Dual Processor System
- 512MB RAM ■ DVD-R/CD-RW Drive
- 60GB HD ■ Additional 60GB HD
- Boris Graffiti ■ Sonic Fire Pro
- LaCie 19" electron 19blueII ■ 14" Sony NTSC ■ 3 Piece Harmon/Kardon SoundStick

only **$6,694!** #961709

Power Mac G4 867MHz System
- 384MB RAM ■ DVD-R/CD-RW Drive
- 60GB HD ■ Additional 60GB HD
- Boris Graffiti ■ Sonic Fire Pro ■ 14" Sony NTSC
- LaCie 19" electron 19blueII display
- 3 Piece Harmon/Kardon SoundStick

only **$5,694!** #961712

Power Mac G4 800MHz Dual Processor System
- 512MB RAM ■ 60GB HD ■ Additional 60GB HD
- DVD-R/CD-RW Drive ■ Boris Graffiti
- Sonic Fire Pro ■ 14" Sony NTSC
- LaCie 19" electron 19blueII
- 3 Piece Harmon/Kardon SoundStick

only **$6,394!** #961711

With speeds of up to 500MHz and a slot loading DVD drive, the PowerBook G4 is the ideal notebook for every mobile professional!

Work and play with Mac OS X—it's the most advanced OS technology on the planet!

Titanium PowerBook G4 500MHz System
- 512MB RAM ■ 20GB HD ■ Targus Carry Case
- External 48GB FireWire HD ■ DVD Drive
- Boris Graffiti ■ Sonic Fire Pro

only **$5,794!** #961706

Titanium PowerBook G4 500MHz System
- 512MB RAM ■ 20GB HD ■ Targus Carry Case
- Ext. 48GB FireWire HD ■ DVD ■ Boris Graffiti
- Sonic Fire Pro ■ Sony GV-D900 Walkman Deck

only **$7,494!** #961707

Great Savings on Top-Selling Products!

Shuttle Pro Multimedia Jog/Shuttle Controller
- *13 programmable buttons*
- *Application specific settings*

only **$99.99** #960688

Coolpix 995 Nikon
- *3.34 Megapixel*
- *4X optical & 4X digital zooms*
- *16MB CompactFlash*

only **$899.99** #959506

SuperDrive + DVD-RW Fast FireWire
- *Write to 4.7GB media*
- *2x1x4 speeds*

only **$989.99** #960138

LiveStage Pro 3.0
The QuickTime 5 interactive authoring environment!
- *Flash scripting capabilities*
- *XML import/export/process*

only **$899.95** #959571

Boris FX Pro 6.0
The industry standard for integrated effects in nonlinear editing!
- *Displacement mapping*
- *Natural and lighting filters*

only **$995** #961793

19" electron 19blueII Color Display w/Hood
- *1600 x 1200 @ 85Hz*
- *3 year warranty* LACIE

only **$589.99** #59441

We'll beat any price on any Mac computer or Competitive Promotion • Free

Powerful G4 733MHz System Featuring DVD Studio Pro!

- 512MB RAM • 60GB Hard Drive • Additional 60GB Hard Drive
- DVD-R/CD-RW • Boris Graffiti • Sonic Fire Pro
- LaCie 19" electron 19bluell Display • 14" NTSC
- 3-Piece Harmon/Kardin SoundStick

only $6,394! #961713

18" Flat Panel only $799!

XENON

- Full 18.1" viewable screen
- 1280 x 1024 maximum resolution
- High 250:1 contrast ratio
- 1 yr warranty on panel/back light
- 3 yr warranty on parts

only $799! #960451

Best Price Ever!

o Editing Systems!

Pro G4 Systems with Adobe® Premiere® 6.0!

Power Mac G4 733MHz System

- 512MB RAM • 60GB HD • Additional 60GB HD
- DVD-R/CD-RW Drive • 14" Sony NTSC
- LaCie 19" electron 19bluell display
- 3 Piece Harmon/Kardon SoundStick

only $4,494! #961714

Power Mac G4 867MHz System

- 384MB RAM • 60GB HD • Additional 60GB HD • DVD-R/CD-RW Drive
- LaCie 19" electron 19bluell display
- 3 Piece Harmon/Kardon SoundStick • 14" Sony NTSC

only $4,894! #961719

Power Mac G4 800MHz Dual Processor System

- 512MB RAM • 60GB HD • Additional 60GB HD
- DVD-R/CD-RW Drive • 14" Sony NTSC
- LaCie 19" electron 19bluell display
- 3 Piece Harmon/Kardon SoundStick

only $5,594! #961716

Power Mac G4 800MHz Dual Processor System

- 512MB RAM • 60GB HD
- Additional 60GB HD
- DVD-R/CD-RW Drive • 14" Sony NTSC
- LaCie 19" electron 19bluell display
- 3 Piece Harmon/Kardon SoundStick

only $5,294! #961718

Titanium PowerBook G4 500MHz System

- 512MB RAM • 20GB HD • Targus Carry Case
- External 48GB FireWire HD • DVD Drive

only $4,894! #961722

Titanium PowerBook G4 500MHz System

- 512MB RAM • 20GB HD • Targus Carry Case
- External 48GB FireWire HD • DVD Drive
- Sony GV-D900 Walkman Deck

only $6,494! #961721

complete pro systems starting at

$4,494!

MacMall Is Your Solution for Professional Hardware and Software!

SmartSound Sonic Fire Pro

Create instant soundtracks!

only $326.99 #961138

Final Cut 2.0

Award-winning video editing, compositing and special effects!

- *Unlimited layers*

upgrade only $249 #958184

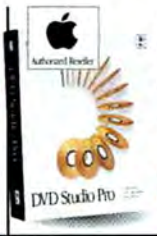
#958182 Final Cut 2.0 Full $995

matrox

only $999 #958658

Matrox RTMac

Realtime editing and effects for G4s with Apple Final Cut Pro. Work with three layers of video and graphics in real time!



DVD Studio Pro

Quickly and easily author professional DVD-Video discs!

- *Motion & still menus*
- *Up to 99 tracks*

only $995 #956213

Adobe Premiere 6.0

- *Robust DV support*
- *Special FX*

Adobe

upgrade $138.99 #955005

#955002 Adobe Premiere 6.0 Full $548.99

Canon GL1 Mini DV Camcorder

- *20X optical and 100X digital zoom*

only $2,149.95 #51450

Shoot like a pro with 3 CCDs!

Adobe Digital Video Collection

4 programs:

- *Photoshop*
- *After Effects*
- *Premiere*
- *Illustrator*

only $1,999 #958992

Adobe

AG-DV2000 DV Proline Editing Deck

Panasonic

- *DV-format VTR*
- *FireWire terminal*
- *Full editing capabilities*

only $2,199.95 #951051

For your best price call 1-800-217-9492 macmall.com

Priority Code: ZMWD1A3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!

Call for details.

MacMall

FREE
128MB Extra RAM & Lexmark Z23 Printer!*

*With CPU purchase. MacMall Free RAM offer requires $30 professional installation fee. Offer expires 10/15/01. Lexmark Printer free after $79 mfr. mail-in rebate. Price before rebate is $79. Expires 10/14/01.

Apple's Durable iBooks and NEW iMacs!

Work & play at top G3 speeds—up to 700MHz!

New Apple iMacs—the flexible center of your digital world!

New iMac™ models come fully loaded with the most advanced features with speeds up to 700MHz,* an engaging new interface, a CD-RW drive and tons of software. With your new iMac you can easily perform processor-intensive tasks as well as any digital projects like burning CDs or making desktop movies!

- Up to 700MHz G3 PowerPC processor
- 256K on-chip level 2 cache
- Up to 256MB SDRAM; exp. to 1GB
- Up to 40GB HD ■ CD-RW 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
- 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
- 30 days free EarthLink Internet service

#57369	Apple AirPort Card	$99
#57373	Apple AirPort Base Station	$299
#959646	Additional iBook Rchrgble. Battery	$129
#959645	Additional iBook AC Adapter	$69
#959647	iBook AV Cable	$19

iBooks 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 , a DVD-ROM, a CD-RW or a Combo drive which combines the capabilities of CD-RW & DVD playback.

- 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

†Most applications are preinstalled, though some may require downloads. Product contains electronic documentation. Backup software is provided on CD-ROM.

Your MacMall Account Executive is waiting for your call! We are open 24 hours a day, 7 days a week. So call today at 1-800-217-9492!

SAVE *up to* **$400!**

Save $100 on each of these peripherals!

#81950	Rio 600 32MB MP3 Player Price before rebate is $149.99.	$49.99*
#957913	Handspring Visor Edge Blue Price before rebate is $399.	$299*
#957911	Handspring Visor Edge Silver Price before rebate is $399.	$299*
#953364	HP PhotoSmart 315 Digital Camera Price before rebate is $299.99.	$199.99*
#959033	Canon ZR20 DV Camcorder Price before rebate is $629.95.	$529.95*
#959031	Canon ZR25MC DV Camcorder Price before rebate is $699.95.	$599.95*

Receive a $100 mfr. mail-in rebate on purchase of Rio 600 MP3 Player, Handspring Visor Edge, HP PhotoSmart 315 Digital Camera, Canon ZR20 DV or ZR25MC DV Camcorder with Mac CPU purchase. See macmall.com for rebate coupon and further details. Offer expires 10/14/01.

We'll beat any price on any Mac computer or Competitive Promotion • Free

Authorized Reseller

iBooks starting at

$1,294!

SUPER DEALS!

iBook Super Bundle!

Top Loading Nylon Notepac, APC Notebook Sure Arrest, USB cable and Notebook Cable Lock

all this for only

$89.99! #959246

With iBook or PowerBook purchase.

Small Office Solution

all this for only

$549! #960474

Quicken 2002 Deluxe

Now compatible with Mac OS X!

as low as

$39.95! #778436

Reflects $20 mfr. mail-in rebate. Price before rebate is $59.95.

Diamond Rio 800 128MB MP3 Player

Includes carrying case, clip, and rechargeable batteries. For PCs and Macs with USB conection.

only $243.79! #980667

HP DeskJet 842C Color Printer

only $89.99! #57374

Price reflects $30 mail-in rebate. Price before rebate is $119.89. Offer expires 9/22/01.

iMacs starting at

$999!

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
#961598	500MHz G3	Snow	128MB	128MB*	256MB	20GB	Yes	CD-RW	2	2	Yes	Yes	$999*	$26/mo**
#961602	500MHz G3	Indigo	128MB	128MB*	256MB	20GB	Yes	CD-RW	2	2	Yes	Yes	$999*	$26/mo**
#961606	600MHz G3	Snow	256MB	256MB*	384MB	40GB	Yes	CD-RW	2	2	Yes	Yes	$1,294*	$34/mo**
#961605	600MHz G3	Graphite	256MB	256MB*	384MB	40GB	Yes	CD-RW	2	2	Yes	Yes	$1,294*	$34/mo**
#961609	700MHz G3	Snow	256MB	256MB*	512MB	60GB	Yes	CD-RW	2	2	Yes	Yes	$1,494*	$42/mo**
#961608	700MHz G3	Graphite	256MB	256MB*	512MB	60GB	Yes	CD-RW	2	2	Yes	Yes	$1,494*	$42/mo**

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
#961295	500MHz G3	64MB	128MB*	192MB	10GB	Yes	CD-ROM	2	1	Yes	Yes	$1,294*	$37/mo**
#961296	500MHz G3	128MB	128MB*	256MB	10GB	Yes	DVD-ROM	2	1	Yes	Yes	$1,494*	$42/mo**
#961297	500MHz G3	128MB	128MB*	256MB	10GB	Yes	CD-RW	2	1	Yes	Yes	$1,594*	$45/mo**
#961298	500MHz G3	128MB	128MB*	256MB	10GB	Yes	DVD/CD-RW	2	1	Yes	Yes	$1,794*	$50/mo**

*Professional installation fee of $30 required for free RAM. Hurry! MacMall RAM promotion ends 10/15/01. Lexmark printer free after redemption of $79 mfr. mail-in rebate. Offer expires 10/14/01.

**Own this iBook 500MHz for as low as $37/month with the New MacMall EZ Payment Plan! Call for details.

For your best price call 1-800-217-9492 macmall.com Priority Code: ZMWD1A3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!

Call for details.

MacMall

FREE 128MB Extra RAM & Lexmark Z23 Printer!*

*With CPU purchase. MacMall Free RAM offer requires $30 professional installation fee. Offer expires 10/15/01. Lexmark Printer free after $79 mfr. mail-in rebate. Price before rebate is $79. Expires 10/14/01.

Huge Savings at M

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

Dazzle Hollywood 1394 DV

- Convert analog video to DV and vice versa
- Monitor video from a TV
- Convert your video without a computer

only **$259** #944700

4 Port USB Hub

Provides you with instant expandability that's as simple as plugging in a USB connector!

only **$33.99** #54763

CD Cyclone 24x10x40 FireWire CD-RW Drive

With a convenient carrying handle!

only **$349.99** #960670

Que! 16x10x40 FireWire CD-RW Drive

With a 2MB RAM buffer and 1 year warranty.

only **$259.99** #956549

Crescendo/WS G3 Upgrade Card

Turns your PowerBook G3 into one of the fastest Mac portables with a 500MHz G3 processor and a 1MB L2 backside cache!

only **$399.95** #961652

Coolpix 995 Digital Camera

- 4X Nikkor zoom lens
- 2048 x 1536 res.
- 3.34 Megapixel

only **$899.99** #959506

Olympus D-490 Digital Camera

- 2.11 Megapixel
- 1280 x 960 res.
- 3X optical zoom
- QuickTime™ movie mode
- 8MB SmartMedia

only **$449.99** #951256

Peerless 20GB FireWire Bundle

Includes Base Station, cable and power supply, one 20GB disk plus additional software.

only **$399** #793841

Software includes: Altiris PC Transplant Pro, MusicMatch™ Jukebox, MGI PhotoSuite and Videowave & Iomega QuickSync

ScanMaker 4700 Scanner

- 1200 x 2400dpi
- 42-bit color
- USB interface
- 8.5" x 11.7" scan area

only **$149.99** #74853

SprintScan 4000 Color Scanner

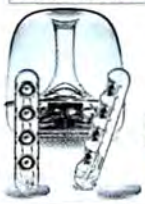
Take 35mm scanning to a whole new level of speed and quality!

- 4000dpi
- One minute scan time

only **$949.99** #953299

Soundsticks 3-Piece USB Speakers

This 40-Watt self-powered system has a 6" woofer!



only **$189.99** #952775

Fantom 75GB FireWire External Hard Drive

- 7200RPM
- 8.5ms average seek time

only **$449** #950199

Astra 6450 FireWire Scanner

- 600 x 1200dpi
- 42-bit color
- 8.5" x 11.7" scan area

only **$179.99** #950402

LaCie 24x10x40 External FireWire/USB CD-RW

only **$299.99** #960135

After $30 mfr. mail-in rebate. Price before rebate is $329.99. Expires 10/15/01.

LaCie 16x10x40 External SCSI CD-RW Drive

only **$289** #959602

After $30 mfr. mail-in rebate. Price before rebate is $319. Expires 10/15/01.

Apple 15" Flat Panel Display

- Active-matrix LCD
- 1024 x 768 max. res.

$200 Price Drop!

only **$599** #950991

For Power Mac G4 models only.

Apple 22" Cinema Display

- 1600 x 1024 max. res.

only **$2,499** #951070

For Power Mac G4 models only.

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.

We'll beat any price on any Mac computer or Competitive Promotion • Fre

acMall!

SAVE up to $400!

Save $100 on each of these peripherals!

#81950	Rio 600 32MB MP3 Player Price before rebate is $149.99.	$49.99*	#953364	HP PhotoSmart 315 Digital Camera Price before rebate is $299.99.	$199.99*
#957913	Handspring Visor Edge Blue Price before rebate is $399.	$299*	#959033	Canon ZR20 DV Camcorder Price before rebate is $629.95.	$529.95*
#957911	Handspring Visor Edge Silver Price before rebate is $399.	$299*	#959031	Canon ZR25MC DV Camcorder Price before rebate is $699.95.	$599.95*

Receive a $100 mfr. mail-in rebate on purchase of Rio 600 MP3 Player, Handspring Visor Edge, HP PhotoSmart 315 Digital Camera, Canon ZR20 DV or ZR25MC DV Camcorder with Mac CPU purchase. See macmall.com for rebate coupon and further details. Offer expires 10/14/01.

Incredible Deals on Top-Selling Software!

AppleWorks 6.2

Enjoy six applications in one: word processing, spreadsheets, page layout, painting, database and multimedia presentations!

New! VERSION!

only $77.99 #795409

Painter 7

Captures the real painting experience!

- *Liquid Ink layer mimics viscosity*
- *Realistic watercolor technology—paints drip and blend together!*

New! VERSION!

upgrade $188.89 #961563

Final Cut Pro 2.0

Professional editing, compositing & effects!

- *Real-time editing architecture*
- *Supports virtually all video formats*

upgrade only $249 #958184

#958182 Final Cut Pro 2.0 (Full) $995

Quark XPress 4.1

The leading layout and design software for publishers worldwide!

- *Layout, design and graphics management • Text processing*
- *Printing and production*

only $788.89 #55401

TechTool Pro 3.0

No other program tests as many aspects of your system!

- *Detects virus problems and software conflicts*
- *New drive repair routines*

only $88.99 #30489

Dreamweaver 4 Fireworks 4 Studio

Create, edit and animate bitmap and vector Web graphics and add advanced interactivity & pop-ups.

upgrade $184.89 #953745

#953738 Dreamweaver 4 Fireworks 4 Studio (Full) $366.99

Adobe Acrobat 5.0

The best way to share documents!

- *Create documents anyone can open*

New! VERSION!

upgrade only $87.99 #957596

#957605 Adobe Acrobat 5.0 (Full) $218.99

Adobe PageMaker 7.0 Upgrade

Produce professional quality business publications for print and electronic distribution!

New! VERSION!

only $79 #960472

#960471 Adobe PageMaker 7.0 (Full) $499.99

Adobe Web Collection

Includes Adobe® GoLive, Adobe Photoshop, Adobe Illustrator and Adobe LiveMotion in one box at one low price!

only $699 #954796

With CPU purchase.

Adobe Digital Video Collection

Includes Adobe® Premiere, Adobe After Effects, Adobe Photoshop & Adobe Illustrator all for one great low price!

only $1,199 #958841

Norton SystemWorks

Includes Norton Utilities and Norton AntiVirus for Macintosh, Aladdin Spring Cleaning and Dantz Retrospect Express Backup!

as low as $69.99 #852776

After $50 mfr. mail-in upgrade rebate. Price before rebate is $119.99.

Toast 5 Titanium

Make your own music, data and video CDs!

Turn digital photos into video slide shows and burn them or iMovies onto playable Video CDs!

only $82.98 #975774

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.

For your best price call 1-800-217-9492 macmall.com

Priority Code: ZMWD1A3

RAM with every Mac • MacMall EZ Payment Plan • Fastest overnight delivery!

Call for details.

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 Pro 2060U

22" totally flat CRT

With its superior screen display and dynamic cabinet design, Mitsubishi Diamond Pro 2060u brings you to the forefront of flat screen technology packed into this 22" CRT with 20" viewable image size.

$929.99 CDW 266444

Adobe After Effects V5.0 Production Bundle

Adobe® After Effects® V5.0 Production Bundle software provides comprehensive 2D and 3D compositing plus 16-bit color support, vector paint capabilities, advanced motion and keying tools, network rendering and much more.

Upgrade **$289.46** CDW 276519

Full version **$1379.59** CDW 276508

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

NEC/MITSUBISHI ELECTRONICS DISPLAY
SEE MORE.

Adobe everywhere you look™

Authorized Reseller

CDW®

Computing Solutions Built for Business®

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 MW7889A/B 10/01

Apple iBook™

◗ 500MHz PowerPC G3 processor ◗ Memory: 64MB std., 576MB max. ◗ 10GB hard drive ◗ 12.1" active-matrix display ◗ 24X Max CD-ROM drive ◗ 56Kbps modem and 10/100 Ethernet ◗ Mac® OS 9.1

$1299.00 CDW 294701

Apple iBook™

◗ 500MHz PowerPC™ G3 processor ◗ Memory: 128MB std., 576MB max. ◗ 10GB hard drive ◗ 12.1" active-matrix display ◗ 56Kbps modem and 10/100 Ethernet ◗ Mac® OS 9.1

With 8X Max DVD-ROM drive **$1499.00** CDW 294705

With 8X4X24 CD-RW drive **$1599.00** CDW 294706

Apple PowerBook®

◗ 400MHz PowerPC G4 processor ◗ Memory: 128MB std., 1GB max. ◗ 10GB hard drive ◗ 6X Max DVD-ROM drive ◗ Mac OS 9.1 ◗ 15.2" active-matrix widescreen display ◗ Includes: Apple iMovie 2 Software

$2595.00 CDW 267777

Apple PowerBook

◗ 500MHz PowerPC™ G4 processor ◗ Memory: 256MB std., 1GB max. ◗ 20GB hard drive ◗ 6X Max DVD-ROM drive ◗ Mac OS 9.1 ◗ 15.2" active-matrix widescreen display ◗ Includes: Apple iMovie 2 Software

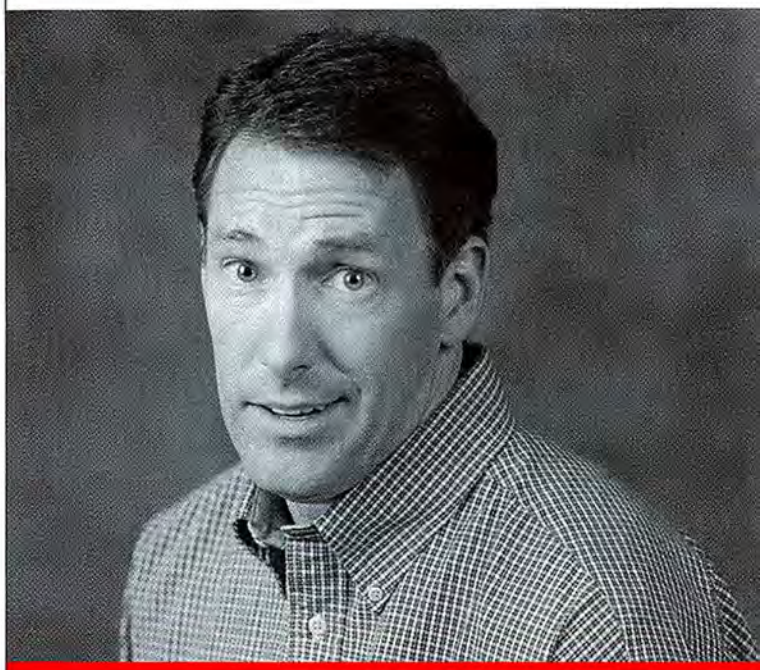
$3495.00 CDW 267778

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 PowePC logo™ are trademarks of International Business Machines Corporation, used under license therefrom.

"Did you back up all my files?"

Translation: I think I just deleted all my files.



At CDW, we understand what it can be like in IT.

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®

Designed to deliver.

APS Tech remains dedicated to providing extraordinary cross-platform storage, digital video and color-management peripherals for personal, business and multimedia environments. In this tradition, APS Tech is proud to unveil its newest — and fastest — edition: the APS CD-RW 24x10x40 FireWire Plus. Use this speedy rewritable drive to master your own music CDs, or store and archive your important data. Cross-platform and easy to set up, the APS 24x10x40 drives can rewrite to CD-RW media more than 1,000 times, making it an economical, efficient solution for data playback, backup or storage.

FireWire USB

$299.95
• reduced price

APS CD-RW 24x10x40 FireWire *plus*

- FireWire and USB interfaces
- Hot-swappable
- Blazing 24X record speed
- Burn full CD in just three minutes
- Mac and PC compatible

APS CD-RW FireWire *plus* Drives

Model	Price
APS CD-RW 8x4x32 FireWire Plus	$199.95*
APS CD-RW 16x10x40 FireWire Plus	249.95*
APS CD-RW 24x10x40 FireWire Plus	299.95*

** price after $30 mail-in rebate.*

APS CD-RW SCSI Drives

Model	Price
APS CD-RW 16x10x40 SCSI	$269.95*
APS CD-RW 24x10x40 SCSI	299.95*

** price after $30 mail-in rebate.*

FireWire **$989.95**

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

$169.95
price after $30 mail-in rebate

APS CD-RW 4x4x32 USB

- Cross-platform, easy to use
- Reliable performance, little expense
- Convenient USB interface – no setup hassles
- Hot-swappable to share among workstations
- Perfect for iMacs, G3s, G4s, other USB computers

FireWire **$799.95**
with Retrospect software for Mac and PC

APS HyperDAT® III FireWire

- Reliable DDS-3 technology
- 12GB native backup
- Ideal for entry-level networks
- Fast FireWire interface for high-end workstations
- Ships with Retrospect for Mac and PC

APS HyperDAT Tape Backup

Model	Price
APS HyperDAT® III (DDS-3) SCSI	$749.95
APS HyperDAT® III (DDS-3) FireWire	799.95
APS HyperDAT® IV (DDS-4) LVD	1,049.95

Ships with Retrospect software for Mac and PC

FireWire **$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+ SCSI	$1,449.95
APS AIT+ FireWire	1,499.95
APS AIT II LVD	3,299.95

Ships with Retrospect software for Mac and PC

Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

Visit our website for a complete listing of products:
www.apstech.com

one step further.

FireWire USB

$299.95

• reduced price

APS 60GB FireWire *plus* Hard Drive

- FireWire and USB interfaces
- Hot-swappable
- No device IDs, terminators
- Ideal for DV storage
- Share among Macs and PCs

APS FireWire *plus* Hard Drives

Model	Price
APS 20GB 7200 RPM FireWire Plus Hard Drive	$229.95
APS 40GB 7200 RPM FireWire Plus Hard Drive	269.95
APS 60GB 7200 RPM FireWire Plus Hard Drive	299.95
APS 80GB 7200 RPM FireWire Plus Hard Drive	399.95

APS Ultra160 LVD SCSI Drives

Model	RPM	*Internal	External
APS ST 18GB Ultra160 LVD	7200†	$279.95	$349.95
APS ST 36GB Ultra160 LVD	10,000	499.95	619.95
APS ST 36GB Ultra160 LVD	15,000	—	879.95
APS ST 73GB Ultra160 LVD	10,000	819.95	939.95
APS ST 180GB Ultra160 LVD	7200	—	1,899.95

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	$279.95	$349.95

Drives listed above carry a five-year warranty.

** Internal configuration does not include a mounting bracket. Intended as a replacement internal SCSI drive.*

FireWire USB

$299.95

• reduced price

LaCie 20GB PocketDrive™

- Powerful, pocket-sized hard drive
- U&I technology — FireWire and USB ports
- Mac and PC compatible

LaCie PocketDrives

Model	Price
LaCie 10GB PocketDrive	$249.95*
LaCie 20GB PocketDrive	299.95*
LaCie 30GB PocketDrive	449.95*
LaCie 48GB PocketDrive	849.95

** price after $30 mail-in rebate.*

LaCie PocketCD-RW

Model	Price
LaCie 8x4x24 PocketCD-RW	$369.95*

** price after $30 mail-in rebate.*

USB

$179.95

APS 20GB USB Hard Drive

- 7200 rpm hard drive
- Hot-swappable
- Convenient USB interface
- Affordable storage

APS USB Hard Drives

Model	RPM	APS Pro2
APS 20GB USB Hard Drive	7200	$179.95
APS 40GB USB Hard Drive	7200	219.95

LaCie electron22blueIII

$999.95

LaCie electronblueIII monitors

- High dot pitch minimizes eye strain
- Large viewable area
- Maximum resolution for large layouts
- Advanced flat-screen technology eliminates distortion
- Color-enhancing blue hood reduces glare

LaCie monitors

Model	Price
LaCie electron19blueIII	$499.95
LaCie electron22blueIII	999.95

Mac OS, FireWire and the FireWire logo are registered trademarks of Apple Computer, Inc. APS Tech is a registered trademarks. 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 mechanism manufacturer's warranty which will be serviced 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: MW1001

Call 800 - 950 - 2015

VISA MasterCard American Express Discover

Corporate Sales (800) 395 - 5871 • International (503) 844 - 4600
6am - 9pm, Monday - Friday, 9am - 4pm Saturday, Pacific Time, Closed Sunday

APS TECH
Advanced tools for digital visionaries™

Circle 56 on card or go to www.macworld.com/getinfo

Since 1987
MEGAHAUS
Everything High Tech
All Under One Roof

BEST BUY AWARD WINNER!

We've been satisfying customers for nearly 15 years!

Best Buy

#1 Drive store on the Web! Check out more at: www.megahaus.com/mac

Monitors

ViewSonic
LCD Flat-Panel Monitor *ONLY*
$469 REDUCED!
15" Viewable (VE150)

USB & 1394 Technology

USB 4x4x6 CD-Rewritable for PC or Mac (CDW54EUSB)	$169
USB 250MB Zip Drive w/Software (ZIP250USB)	$160
USB External Hard Drives w/Case (5400):	
10GB or 20GB (USB10/20GB)	$175/$185
30GB or 40GB (USB30/40GB)	$195/$215
60GB or 81.9GB (USB60/80GB)	$270/$335
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 (CRX1600L/A2)	$230
1394 3.5 Hard Drives w/Case (7200 RPM):	
10GB/20GB (FW10GB72 / FW20GB72)	$ 205/$ 225
30GB/40GB (FW30GB72 / FW40GB72)	$ 249/$ 269
60GB/76GB (FW60GB72 / FW76GB72)	$ 355/$ 389

Hard Drive

Maxtor
18.4 GB/10,000 RPM
8 MB Buffer
SCSI Ultra 160 **$218** Int. (KW018L2) Ext. **$348** (KW018L2X)
Upgrade Your Mac With A New Controller Card!
Adaptec Power Domain SCSI (APD29160MAC) **$269**

Hard Drive

Seagate
18.4 GB / 7,200 RPM
2 MB Buffer
Ideal For Older Model Macs
SCSI Ultra **$185** Int. (ST318417N) Ext. **$245** (ST318417NX)

RAID Solution

Cremax
8-Drive External RAID Solution
• 800 GB / 5400 RPM
Rack Mount **$7355** (STARACK800)
$7149 (STARTOW800)

CD-Rewritable Drive

YAMAHA
16x10x40 ***SCSI CD-RW***
w/Mac & PC Mastering Software and 1 Disk
Int. (CRW2100SZ) **$259**
Ext. (CRW2100SXZ) **$289**

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 160/m SCSI Will work on older SCSI, Ultra Wide, Ultra 2 controllers

9.2GB	7200	4MB	XC309100LW	$155
18.4GB	7200	4MB	XC318400LW	$179
36.7GB	7200	4MB	XC3367001W	$335

IDE ULTRA ATA/100

10.2GB	7200	2MB	QMP10200AS	$78
20.5GB	7200	2MB	QMP20500AS	$92
30.0GB	7200	2MB	QMP30000AS	$110
40.0GB	7200	2MB	QMP40000AS	$130
60.0GB	7200	2MB	QMP60000AS	$182

Maxtor

ULTRA 160/m SCSI Will work on older SCSI, Ultra Wide, Ultra 2 controllers

18.4GB	10,000	8MB	KW018L2	$218
36.7GB	10,000	8MB	KW036L4	$425
73.4GB	10,000	8MB	KW073L8	$795

IDE ULTRA ATA/100

10.0GB	5400	2MB	2R010H1	$70
10.0GB	7200	2MB	M5T010H1	$75
15.0GB	5400	2MB	2R015H1	$77
20.0GB	5400	2MB	4K020H1	$82
20.0GB	7200	2MB	M5T020H2	$89
30.0GB	7200	2MB	M5T030H3	$108
40.0GB	5400	2MB	K4040H2	$105
40.0GB	7200	2MB	M5T040H4	$127
60.0GB	5400	2MB	4K060H3	$159
60.5GB	7200	2MB	M5T060H6	$187
80.0GB	5400	2MB	K4080H4	$225
100.0GB	5400	2MB	4W10086	$269

IBM

ULTRA 160 SCSI

9.1GB	10,000	4MB	07N3220	$155
18.3GB	10,000	4MB	07N3210	$185
36.7GB	10,000	4MB	07N3200	$369

IDE Ultra ATA/100

20.0GB	7200	2MB	07N6652	$93
40.0GB	7200	2MB	07N6654	$118
60.0GB	7200	2MB	07N6655	$179
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	$105
40.0GB	5400	2MB	WD400AB	$108
40.0GB	7200	2MB	WD400BB	$125
60.0GB	5400	2MB	WD600AB	$153
60.0GB	7200	2MB	WD600BB	$185
80.0GB	5400	2MB	WD800AB	$205
80.0GB	7200	2MB	WD800BB	$220

Visit our website at www.megahaus.com/wd

FUJITSU

IDE Ultra ATA/100

20.4GB	5400	512K	MPG3204AT	$83
40.9GB	5400	512K	MPG3409AT	$105

HARD DRIVES

Seagate *(Call for deals on our externals)*

ULTRA SCSI

				Int.
18.4GB	7200	2MB	ST318417N	$185

ULTRA WIDE SCSI

18.4GB	7200	2MB	ST318417W	$178

ULTRA 160 SCSI

9.2GB	10,000	4MB	ST39205LW	$175
18.4GB	7200	2MB	ST318437LW	$178
18.4GB	10,000	4MB	ST318405LW	$209
18.4GB	15,000	4MB	ST318452LW	$329
36.7GB	7200	2MB	ST336737LW	$329
36.7GB	10,000	4MB	ST336705LW	$405
73.4GB	10,000	4MB	ST373405LW	$775
181.6GB	7200	4MB	ST1181677LW	$1425
181.6GB	7200	16MB	ST1181677LWV	$1475

IDE ULTRA ATA/100

20.4GB	7200	2MB	ST320414A	$89
30.6GB	7200	2MB	ST330620A	$109
40.8GB	7200	2MB	ST340824A	$129
60.0GB	5400	512K	ST360020A	$155
80.0GB	5400	512K	ST380020A	$219

Visit our website at www.megahaus.com/seagate

2.5" IDE LAPTOP

10.0GB	9.5mm	Toshiba	MK1017GAP	$87
15.0GB	9.5mm	Toshiba	MK1517GAP	$105
20.0GB	9.5mm	Toshiba	MK2016MAP	$128
30.0GB	9.5mm	Toshiba	MK3017GAP	$218
5.0GB	9.5mm	IBM	07N4391	$85
10.0GB	9.5mm	IBM	07N4390	$92
20.0GB	9.5mm	IBM	07N4388	$120
30.0GB	12.5mm	IBM	07N6714	$225
48.0GB	12.5mm	IBM	07N6718	$429
10.0GB	9.5mm	Hitachi	DK23BA10	$98
20.0GB	9.5mm	Hitachi	DK23BA20	$130

Power Back-Up Solution Problems? Call Us!

FIREWIRE DRIVES

3.5 Hard Drives w/Case (5400 RPM)

20.0GB	FW20GB54	$199
30.0GB	FW30GB54	$219
40.0GB	FW40GB54	$239
60.0GB	FW60GB54	$299
81.9GB	FW80GB54	$349

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	$269
Adaptec PowerDomain PCI Card	APD39160MAC	$385

Let us custom-build your next RAID array using high-quality CRU cases! Call for pricing and availability!

CD ROM

				Int.	Parallel Port
• IDE •					
Teac	CD540E	40X	85ms	$43	$98
Mitsumi	CRMCFX48X	48X	65ms	$39	$95
Creative	SBCD52	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 •					
Teac	CD532S	32X	85ms	$72	$132
NEC	CDR3010	40X	85ms	$67	$127
Toshiba	XM6401B	40X	85ms	$69	$129
Plextor	PX40TS	40X	85ms	$87	$147

• CD CHANGER •

Pioneer 24 X6 Disc Ext. SCSI (DRM624X) $407

TAPE BACKUP

• 4mm DAT •

4-8GB	30MB/min	Seagate STT28000N	$219
4-8GB	60MB/min	HP C1599AI	$519
4-8GB	66MB/min	Seagate DDS-2 STD28000N	$495
4-8GB	90MB/min	Sony SDT7000AI	$419
12-24GB	144MB/min	Sony DDS-3 SDT9000AI	$565
12-24GB	120MB/min	HP DDS-3 C1554AI	$695
20-40GB	288MB/min	Sony DDS-4 SDT11000AI wow! $819	
48-96GB	66MB/min	Seagate DDS-2 STL4960001N	$1609
72-144GB	120MB/min	HP 6 tape load DDS-3 C5648A $1649	

• TANDBERG DATA SLR •

12-24GB	8.6GB / hr.	SLR24 [6214]	$689
20-40GB	21.6GB / hr.	SLR7 [6620]	$695
30-60GB	28.8GB / hr.	SLR60 [6560]	$1059

• QUANTUM DLT •

40-80GB	6MB/sec	BH1AA-YF	$1339
40-80GB	12MB/sec	DLT8000	$2945

• SEAGATE ULTRIUM LTO •

100-200GB	1.92GB/min	STU42001LW-S (Bare Int.)	$5015
100-200GB	1.92GB/min	STU42001LW-K (Kit Int.)	$5131
100-200GB	1.92GB/min	STU62001LW-S (Bare Ext.)	$5306
100-200GB	1.92GB/min	STU62001LW-K (Kit Ext.)	$5425

• USB •

4-8GB	120MB/min	Seagate STT681U-R	$299
10-20GB	120MB/min	Seagate STT6201U-R	$339

ZIP, JAZ & 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)	$319
1GB Jaz disk 2-4/5-9/10+	$80/77/75
2GB Jaz disk 2-4/5-9/10+	$85/80/77

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 (SMAX5 2) 1-4/5-9/10+	$83/80/77

Maxoptix Optical

2.6GB SCSI Ext. 4MB buffer (T5-2600XM)	$1159
5.2GB SCSI Ext. 8MB buffer (T6-5200XM)	$1439

CD MEDIA

CD RECORDABLE MEDIA

16X Max Speed [CDR74B-S/20/50/100]	5/20/50/100 Pack $5/$18/$42/$78

80 MINUTE MEDIA

16X Max Speed [CDR80-S/20/50/100]	5/20/50/100 Pack $4/$13/$32/$59

CD-REWRITABLE MEDIA

4X Max Speed Budget [CDR74WB-S/20/50/100]	5/20/50/100 Pack $6/$24/$56/$104
4X Max Speed [CDR74W-S/20/50/100]	5/20/50/100 Pack $12/$45/$107/$199

CD-R PRINTABLE SURFACE MEDIA

16X Max Speed Budget [CDR74PB-S/20/50/100]	5/20/50/100 Pack $4/$15/$35/$66
16X Max Speed [CDR74P-S/20/50/100]	5/20/50/100 Pack $7/$26/$62/$115

CD RECORDABLE PLATINUM MEDIA

12X Max Speed [CDR74PA-S/20/50/100]	5/20/50/100 Pack $6/$24/$57/$106

CD-RW's

Sony 12x8x32 FireWire Rewritable •
Packet write, 4MB buffer, Spressa iLink
Ext. [CRX1600L/A2] $230

Sony 10x4x32 Rewritable •
Packet write, 4MB buffer, tray loading
Int. [CRX145S] / Ext. [CRX145SX] $259 / $319

CD Cyclone 12x10x32 FireWire Rewritable •
150ms Rand. Access Time, 2MB buffer, tray load
w/Mastering Software, cable, media [7025] $275

Plextor 12x10x32 Rewritable •
Packet write, 4MB buffer, tray loading
Int. [PXW1210TSB] / Ext. [PXW1210TSBX] $229/$289
w/Toast [PXW1210TSM] / [PXW1210TSXM] $299/$359

PRINTERS

Epson Stylus Photo 785EPX Ink Jet	C408011	$249
Epson Stylus Color 980 Ink Jet	C380001	$249
Epson Stylus Photo 1280 Ink Jet	C393011	$499

SCANNERS

HP ScanJet 4300Cxi Flatbed Color	C7733A	$129
Epson Perfection 1240U USB	B124011	$139
Epson Perfection 1640SU USB/SCSI	B126021	$185

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

Since 1987
MEGAHAUS
Everything High Tech
All Under One Roof

1-800-786-1184
Sales lines open: M-F 7-8, Sat 9-1, CST
www.megahaus.com
Secure Ordering • *Para Llamadas En Español:* (800) 786 - 1174

2201 Pine Drive, Dickinson, Texas 77539
(281) 534-3919 Fax: (281) 534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defective items may not be returned. No refunds on software or special orders. Items not listed in ad. | All refunds subject to 15% restocking fee. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at ad price. All warranties listed are manufacturer's warranty only. For complete terms and policies, please visit our website. ©2001 MegaHaus, Inc.

J&R COMPUTER WORLD

LACIE

aCie PocketDrive™ D-RW 8424
cternal 8x4x24 USB/FireWire®
obile CD-RW Drive
lax.:8x-write/4x-rewrite/24x-read •2MB buffer
oftware, blank CD-R & CD-RW •USB/FireWire®
nnectors •For Windows®/Mac®
379.99 (LAC 300383)

00103 External FireWire® CD-RW Drive
lax: 8x-write/4x-rewrite/32x-read •Includes
AST™ software (LAC 300103) **$199.99**

00152 External 75GB FireWire® Hard Drive
.5ms average seek time •7200rpm •2MB buffer
C/Mac® compatible (LAC 300152) **$499.99**

MP3 Players — ALL For MAC /PC!

iövolt™ igital Audio D Player
lays audio CDs + P3/WMA files
corded to CD-Rs (20+ play) •120-sec. elec- nic shock protection •Up to - hr. battery life with 2 AAs (included)
169.99 (DIA 90260193)

ike psa (play 60 Portable Sport Audio Player
kip-free audio •32MB built-in memory for up to 60 n. of listening •Upgradeable with MMC cards upports MP3/WMA digital formats •USB
A 90260094) **$119.99**

o 600 Digital Audio Player
2MB memory, upgrade to 372MB •Supports P3/WMA formats •Skip-free •USB port •Headphones
A 90260027) **$149.99**

o 800 Digital Audio Player
apture/mix/play digital music from Internet or CDs 4MB memory for 2-hr. music/32-hr. talk •Supports P3/WMA •USB •Remote & headphones
A 90260092) **$249.99**

Macintosh® Software

licrosoft® Word + ntourage 2001 pecial Edition
pecial word processing, e-mail personal info software •File aring, organize art, keep track contacts & more •Mac® CD
139.99 (MSM WORD2K1SE-C)

ageMaker® (7.0)
Adobe® (ADM PAGEMAKE7-C) **$499.99**
pleWorks® 6.2
Apple® (APP WORKS62-C) **$79.99**
acLinkPlus® Deluxe 13.0
DataViz (DAM MACLINK13-C) **$89.99**
0 Mail-in Upgrade Rebate Available!
cyclopaedia Britannica® 2002-
panded DVD Version
Encyclopaedia Britannica® (EYM EB2K2X-D) **$64.99**
icken® 2002 Deluxe
Intuit (IUM GD2K2-C) **$59.99**
0 Version Upgrade Rebate Available!

Mac® Entertainment

teinberg ubasis ST 2.0 Mac
ro audio & MIDI recording ftware •Compose, arrange & cord music on your Mac or the eb •Up to 48 audio (Wave/ P3) & 64 MIDI ch. •Mac® CD
69.99 (SBG CUBASIS2-C)

ldur's Gate 2 - Shadow of Amn
Mac® Play (MPY BALDUR62-C) **$42.99**
apico
Gathering of Developers (GAP TROPICO-C) **$36.99**
eakout
MacSoft (GTA BREAKOUT-C) **$16.99**
nerican McGee's ALICE™
Aspyr™ Media (AYA ALICE-C) **$46.99**
ues Guitar Instruction
Emedia (EMB BLUESLEGE-C) **$24.99**

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.

Your Life. To Go. For Less.

When You Buy ANY Mac®.

Buy Any Macintosh® & Receive A FREE LEXMARK™ COLOR PRINTER!***
And Save Even More When You Also Buy These Great Products:
Canon ZR20 or ZR25 MC Camcorder, Hewlett-Packard 315 Digital Camera, Handspring™ Visor Edge™ Handheld & Riö 600/32MB MP3 Player! *Offer Good Thru October 14th, 2001!*

***Tax & other charges not included. Store purchase required & is subject to sales tax. Offer based on $80.00 mail-in rebate & $80.00 Manufacturer's Suggested Retail Price for the Lexmark™ Z23 Color Jetprinter. Offer also good toward $80.00 mail-in rebate for $140.00 MSRP on the Lexmark Z53 Color Jetprinter & $50.00 mail-in rebate for $50.00 MSRP on the Lexmark Z22 Color Jetprinter.

NEW APPLE® iMAC™ COMPUTERS IN STOCK AT J&R!

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)

NEW APPLE® POWER MAC™ MINITOWER COMPUTERS IN STOCK AT J&R!

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 64174ESEMCS)

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 64174ESEMCS)

Apple® Power Mac™ G4/Dual 867 256/80GB/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 6432ZESEMCS)

©2001 Apple Computer, Inc. All rights reserved. Apple, Apple logo, Macintosh, Power Macintosh & iMac are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective owners. All Apple products designed to be accessible to individuals with disabilities. Prices & promotions may not be combined with any other prices & promotions. Offers good while supplies last. PowerPC & the PowerPC logo are trademarks of International Business Machines Corporation used under license therefrom.

Order from www.jandr.com AOL Keyword: J&R

J&R CORPORATE SALES BUSINESS LEASING:
No Money Down, No Payments for 30 Days!
*Call J&R Corporate Sales for details at 1-800-221-3191 or 1-212-238-9080
J&R CORPORATE SALES

Digital Cameras — ALL For MAC /PC!

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 •Windows®/Mac®
$1499.99 (MIN DIMAGE7)

Fuji FinePix 1300 Digital Camera
•1.3 megapixel •Up to 1280 x 960 •2x digital zoom •1.6" color LCD •8MB SmartMedia™ •USB •PC/Mac®
(FUJ FINEPIX1300) **$149.99**

Canon PowerShot S110 Digital ELPH Camera
•2.11 megapixel •Up to 1620 x 1220 res. •2x-optical/5x-digital zoom •1.5" TFT color LCD •8MB CompactFlash™ •Flash •USB •Windows®/Mac®
(CAN S110) **$499.99**

Olympus C-3040 ZOOM Digital Camera
•3.34 megapixel •Super Bright 1.8-2.6 3x zoom lens •1-2.5x digital zoom •1.8" TFT color LCD •16MB SmartMedia™ •5-mode flash •USB •Windows®/Mac® •Remote (OLM C3040ZOOM) **$699.99**

CANON Digital Camcorders

Canon GL1 Digital Camcorder
•3CCD image sensors •20x Flurite optical/100x-digital zoom •Optical stabilizer •2.5" LCD •Color viewfinder
CALL FOR PRICE! (CAN GL1)

ZR30MC Digital Camcorder •2.5" color LCD screen •10x-optical/200x-digital zoom •Image stabilizer •Digital photo mode •IEEE 1394 •8MB card
(CAN ZR30MC) ..... **CALL!**

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
CALL FOR PRICE! (SON DCRVX2000)

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!**

UMAX® Scanner

UMAX PowerLook 1100
FireWire Scanner for Creative Professionals •Transparency Adapter •42-bit using Bit enhancement technology •1200 x 2400 dpi, 9600 x 9600 dpi interpolated •4MB input/output buffer
$899.99 (UMX PW1100DUOWT)

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 (MOX RTMAC)

All Major Credit Cards Accepted
Overnight Delivery Available!
Order Code: MWM1001
(Prices Good Until 10/15/2001)

To Order Toll Free and Receive our NEW Exciting Free Catalogue
800-221-8180
Hours, Days, ywhere The USA
PARK ROW • NEW YORK • NY • 10038 FAX: 1-800-232-4432

t responsible for typographical or pictorial errors. Merchandise is brand-new, factory-fresh & 100% guaranteed! ♦Except where noted! Some quantities may be limited.

Macworld

Reprints

Enhance your promotional efforts
with professional quality reprints.

Use reprints as :

Presentation Materials / Trade Show Handouts

Direct Mail Pieces / Sales Tools

Order Today !
Reprint Management Services
717 - 399 - 1900, ext 163 / www.reprintbuyer.com

Welcome to the Apple OS X Showcase

In conjunction with the Apple Developer Connection, **Macworld magazine** built this special Mac OS X Showcase to keep you, our valued reader, apprised of the hottest products built to take advantage of Apple's new operating system. You can rest assured that this new section will grow with each passing month, spotlighting the coolest new products for Mac OS X. Be sure to check the Mac OS X Showcase monthly for a wide variety of new and innovative solutions that will make your Macintosh and Mac OS X experience as enjoyable and productive as possible.

STONESTUDIO™

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™
TRACK, INVOICE AND BILL YOUR TIME

PStill™
MAKE PDF AND VIEW EPS FILES

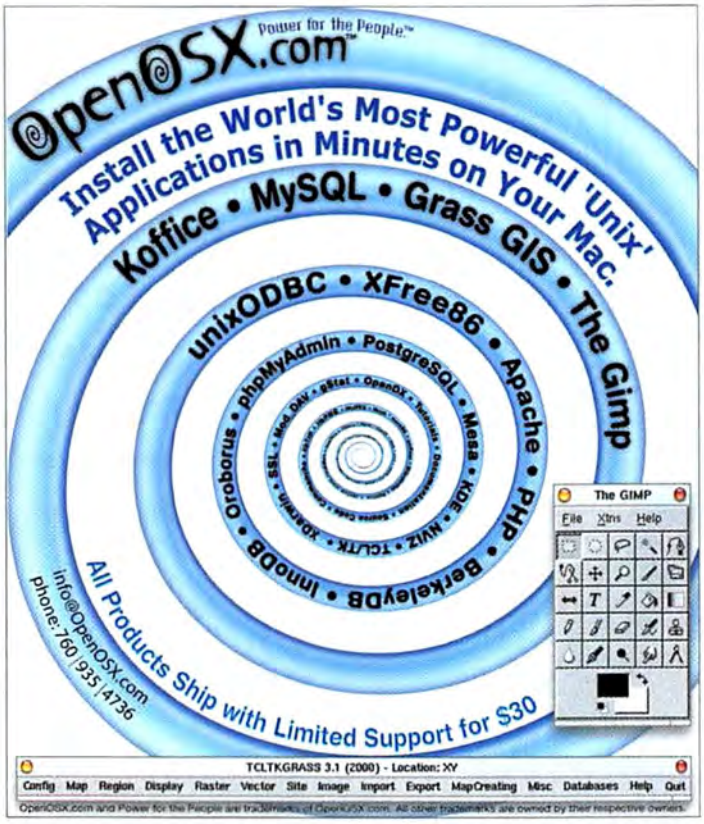
REQUIREMENTS
MAC OS X
AVAILABILITY
VISIT WWW.STONE.COM TO DOWNLOAD OR ORDER CD ROM

copyright ©1990-2001, Stone Design Corp. Albuquerque, NM. All rights reserved.

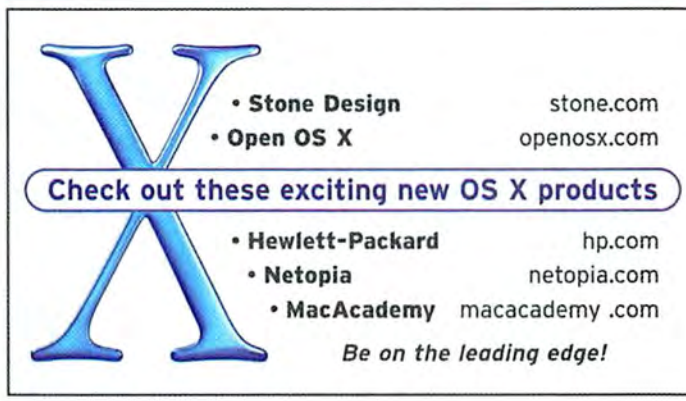
STONEWARE FOR MAC OS X
AMAZING TOOLS FOR AMAZING PEOPLE
WWW.STONE.COM

Built for Mac OS X

stone design


OpenOSX.com™
Power for the People.™
Install the World's Most Powerful 'Unix' Applications in Minutes on Your Mac.
Koffice • MySQL • Grass GIS • The Gimp
unixODBC • XFree86 • Apache • PHP • BerkeleyDB • InnoDB • Oroborus • phpMyAdmin • PostgreSQL • Mesa • KDE • NVIZ • TCLTK • XDaWin • SSL • Mod_DAV • gStat • OpenDX • Tutorials • Documentation • Source Code • Compilers • Scripts • Libraries
All Products Ship with Limited Support for $30
info@OpenOSX.com
phone: 760|935|4736
The GIMP
File Xtns Help
TCLTKGRASS 3.1 (2000) - Location: XY
Config Map Region Display Raster Vector Site Image Import Export MapCreating Misc Databases Help Quit
OpenOSX.com and Power for the People are trademarks of OpenOSX.com. All other trademarks are owned by their respective owners.

hp
invent
hp deskjet printer drivers now available
Visit
www.hp.com/go/mac-connect
for hp Mac OS X information


• Stone Design stone.com
• Open OS X openosx.com
Check out these exciting new OS X products
• Hewlett-Packard hp.com
• Netopia netopia.com
• MacAcademy macacademy .com
Be on the leading edge!

QuicKeys® X Is Here!
Helping you work X Times SMARTER, FASTER, BETTER!
CE SOFTWARE
FREE Trial Version!
www.cesoft.com
© Copyright 2001 CE Software, Inc. CE Software and the CE Software logo are trademarks and QuicKeys is a registered trademark of CE Software. All other brand or product names are the property of their respective holders.

A NEW SYSTEM HAS ARRIVED

Don't Get Caught With Your Mac Down!

No Mac is complete without Timbuktu Pro, the premier remote control and file transfer software for Mac OS for over ten years. No network is complete without the smart systems management of netOctopus.

Both tools are newly rewritten for OS X, bringing the power and simplicity of Netopia software to the world's most advanced operating system. For deployment, training and support of all your Macs (and PC's!) Timbuktu and netOctopus are indispensable!

Are you ready to migrate? We're ready to take you there.

macosxready.com

Timbuktu Pro netOctopus

2 FREE* TRAINING CD-ROMs!

Purchase any four training CD-ROMs at a price of $59 each and receive 2 CD-ROMs of your choice FREE.

**Plus shipping and handling. May not be combined with any other offer.*

Priority Code SP-2416 Offer Expires 12/31/01

CALL 800.527.1914

FAX 386.677.6717

macacademy.com

15 Years of Excellence in Training

PHOTOSHOP	MAC OS	POWERPOINT
ILLUSTRATOR	DREAMWEAVER	FINAL CUT PRO
QUARKXPRESS	ACROBAT	APPLEWORKS
PREMIERE	FILEMAKER PRO	GOLIVE
DIRECTOR	WORD	AFTER EFFECTS
WEB DEVELOPMENT	PREPRESS TO PRINT	EXCEL & MORE

MacAcademy®

Macworld Showcase Featured Advertisers

Developer Showcase		Griffin Technology	griffintechnology.com	Silicon Valley CD	svcd.net	Mac of all Trades	macofalltrades.com
ADS Technologies	adstech.com	IntelliTech	maclabel.com	Drive Savers	drivesavers.com	Data Tech Remarketing	datatech-rmkt.com
Formac	formac.com	Biomorph	biomorphdesk.com	Total Recall	totalrecall.com	PowerMax	powermax.com
CompuCable	compucable.com	Itsco	itsco.net	Copy Craft	copycraft.com	Shreve Systems	shrevesystems.com
Granite Digital	scsipro.com	Worth Data	barcodehq.com	Creative Juices	bigposters.com	MCE Systems	powerbook1.com
Ratoc	ratocsystems.com	Keyspan	keyspan.com	Show and Tell	show-tell.net	PowerOn Computers	poweron.com
Mace Group	macally.com	iProof Systems	iproofsystems.com	Postcard Press	postcardpress.com	MegaMacs	megamacs.com
Lind Electronics	lindelectronics.com	On A Dime	onadime.com	Presentation Services	imagers.com	Journey Educational Mktg.	journeyed.com
Marathon Computer	marathoncomputer.com	**Services Showcase**		**Direct Showcase**		Memory Masters	18004memory.com
Photo Control	photo-control.com	Action Front Data Recovery	datarec.com	POS Direct	posdirect.com	Mac Solutions	macsolutions.com
Mac Show	macshowlive.com	Mac Academy	macacademy.com	The Camera Zone	thecamerazone.com	AcademicSuperstore	academicsuperstore.com
Eskape Labs	eskapelabs.com	Microcom	mcrecovery.com	MacPro	mac-pro.com	Creation Engine	madaboutmac.com
Gefen	gefen.com	Modern Postcard	modernpostcard.com	Mac Power	macpowerinc.com	Data Memory Systems	datamem.com
Dr. Bott	drbott.com	Lazarus	lazarus.com	MacResQ	macresq.com	Mac Solutions	macsolutions.com

For more information contact Niki Stranz or Carol Johnstone at (800) 597-1594.

PYRO PlatinumDV with Adobe® Premiere® 6.0
FULL VERSION with Manuals

Package includes

Available everywhere including: Mac Zones, Mac Mall, CompUSA, B&H Photo, Video Guys, DV Direct, Data Vision, CWOL.com, J&R Music World, Micro Center, and more!

$69

USB Instant Video
- Capture video on your computer from any analog video source
- Edit your video with titles, transitions, and music then share your video over the Internet or archive it onto a CD with MovieWorks LE

$99

PYRO 1394 WebCam
- The web cam that takes advantage of your Mac's FireWire port to deliver the clearest images on the Net

$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

Mac

FireWire®

ADS TECHNOLOGIES

Cerritos, CA - 800-888-5244
www.adstech.com

An Asanté router is not just a good buy, it's the *best* buy – and *best* value.

FR3004C with back-up modem
FR3004LC with back-up modem and parallel printer port

PC WORLD BEST BUY
"Best Buy."
FriendlyNET FR3004LC
January 2001

Macworld
"Best Value."
FriendlyNET Cable/DSL Router
October 2000

Asanté's new FriendlyNET® routers are ideal for sharing high-speed Internet connections in your home or office. Just connect multiple Macs and PCs to share your cable modem or DSL Internet service. Advanced firewall security with integrated 4-port 10/100 switch gives you the power and flexibility to start or expand your network.

Feature Comparison	Asanté FR3004 Series	Linksys BEFSR41	Netgear RT311
Web-Based Configuration	Yes	Yes	Command line required for many features
Ideal for Mac/PC Networks	Yes	No	No
Advanced Security:			
Log intrusion attempts	Yes	No	No
Ports open on-demand	Yes	No, always open	No, always open
Group security	Yes	No	No
Physical security	Yes	No	No
Backup Modem Port	Yes	No	No
Print Server	Yes'	Add $170 for 1 port (PPSX1)	Add $245 for 3 ports (PS113)
Performance	Best	Slower"	Slowest"

ASANTÉ
www.asante.com

Special promotional pricing – save $20!
Call 800-566-6680 or visit our website at asante.com/promo/mac

© 2001 Asanté Technologies, Inc. Asanté and FriendlyNET are registered trademarks of Asanté Technologies. The Asanté logo is a trademark of Asanté Technologies. All rights reserved. 'Asanté FriendlyNET router model FR3004LC. "Practically Networked benchmarked the Asanté FriendlyNET FR3004 series to be significantly faster than the Linksys (up to 25% faster) and Netgear (up to 42% faster) routers.

ex·tend·it
DVI to ADC Conversion Box

Converts DVI to ADC

- Connects an ADC flat panel display to any Mac or PC computer with a DVI output.
- Connects two ADC monitors with a second DVI card.
- Extends ADC monitor up to 25 feet
- Plug and play - installs in minutes
- No loss of quality

GEFEN Inc.

Supports the Apple family of Flat Panel Displays:

22-inch Apple Cinema Display, 15-inch Studio Display, and the newly introduced 17-inch Studio Display

800-545-6900 fax: 818-884-3108 web: www.gefen.com email: gsinfo@gefen.com

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

FireWire RAID

SCSI Vue™ SCSI RAID Enclosures

Ultra 160 SCSI Towers 7 & 9 Bay

Temperature ALARM!

From: $999

SCSI Vue™ 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

SCSI Vue™ 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

From: $99 **Active Digital SCSI Repeater**

PS Included

- Models for all SCSI types
- Fixes SCSI Cable Problems
- Doubles Cable Length (up to 18')

NOW! Ultra-3 LVD 160MB/s!

SCSI Vue™ 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

Teflon® is a registered trademark of DuPont

Benefits:
- Less Errors, Ultimate Performance
- Silver Wire Improves Signal Quality

From: $39

Features:
- Perfect 90 or 132 Ohm Impedance
- Custom in 1 Day
- Triple Pronged Connector - Gold contacts Silver Wire

Drive Replacement Cables for External Drive Cases.

68 Pin Replacement Cable for External Drive Cases.

Speed Breakthru...40 MB/s!!!

8 Bay Tower

4 Bay Tower

2 Bay Tower

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.

$3995 Kit

240 Gigabyte 4 Hot-Swap Bays

4 - Bay Tower holds 240 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

$1995 Kit

120 Gigabyte 2 Hot-Swap Bays

2 - Bay Tower holds 120 Gigabytes of Hot-Swappable Drives. Bays incorporate exclusive Blue Neon Light.

$995 Kit

Our Hot-Swappable RAID Systems offer quick and easy bay interchangability 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

4-4 Pin - Connects 2 Cables
6-6 Pin - Connects 2 Cables
4-6 Pin - Converts 6p Cable
6-4 Pin - Converts 4p Cable

$19.95

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.

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.

$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

$99

1394

FireVue™ FireWire 1394 to PCI Host

$99

Gives 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.

FireVue™ Gold FireWire 1394 Cables

From: $29

Diagnostic LED monitors power on the Firewire cable. Gold Connectors, Ferrite Beads, and perfect cable characteristics. Lengths up to 32', both 4 and 6 pins.

Our 32' 6 pin to 6 pin Cable is a Granite exclusive. These cables go longer because they are made better! 2 x Specification.

RAID Cables

FireVue™ FireWire 6" Patch Cables

LED shows that power is being supplied

$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. 6", 12" 18", 30"

$13.95

FireVue™ FireWire Hot-Swap Bay

$159

The Hot-Swap FireWire Bays fit all standard 5 1/4" openings. Can be used in any standard enclosure or computer opening. Comes with Neon glow bar indicator, Ultra fast 40 MB/s second generation speed, and two cooling fans.

SCSI Vue™ Active Terminator

From: $39

Seven models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits:
- Improves SCSI Bus Performance
- Less Errors; More Reliable Data Transfer
- Diagnoses Problems
- Analyzes Signal Quality

Features:
- Active Regulation
- Fast 50 & Fast Wide 68
- Status Indicators
- Gold Contacts

Hot Swap Powered Terminator

$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.

50C

SCSI Cable Tester - LED Readout

Special Package of all 3: $99

This Digital SCSI Cable Tester can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use an

Three models to choose: • 50 IDC • 50 Cen • 68 MD

Gold Diagnostic Adapters

- Both 50 pin and 68 pin (all combinations)

From: $39

Gender Changer

- 68 Pin Drive to 50 Pin IDC (runs wide drive as narrow)

Drive Bus Changer runs 68 pin on 50 pin bus

- 80 Pin SCA Drive to 68 Pin (converts SCA to 68 SE or LVD)

Ultra-160

For Adaptec Ultra Wide Cards
- Adapters with partial termination built in for 68 to 50 converters (converts Host Adapter)

68 Pin to 50 Pin Centronics or 50 Pin MicroD Adapters

FireVue™ FireWire Hot-Swaps

$199 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

$159

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.

- 50 Watt Power Supply
- 40MB/s Fast RireWire
- 1 Year Warranty
- Supplies power to bus

Cases come with additional face panels.

FireVue™ FireWire Bridge Boards

$99

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 the fastest choice on the market to date. Case mount also available.

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

$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.

Online Catalog at... www.scsipro.com

Granite "The Solution Company"

Granite Products Are The Best Because They're Engineered Right.

Granite D•I•G•I•T•A•L

3101 Whipple Rd. Union City, CA. 94587 Ph: 510-471-6442 Fax 510-471-6267

Circle 186 on card or go to www.macworld.com/getinfo

macally™

macally
optical trackball

Optical Mini Mouse

MICROMOUSE

Motion Sensing Midair Joystick

macally
AirStick

Force Feedback Game Controller

macally
iShockII

Macally is proud to bring you the latest USB and FireWire peripherals for Mac users. Our full line of products are specifically designed to improve your productivity. Please visit our website to see what Macally has to offer. We work hard to provide you with the best peripherals for your Mac.

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

RATOC Systems,International

MacOS X Now!

FireWire | Mac

FireWire to Ultra SCSI Converter
FR1SX

- Changes your favorite Ultra SCSI device into MacOS X FireWire storage.
- Quick and Easy installation.
- Compact, Just fit to SCSI-II connector.
- Allows true Plug & Play and Hot-swapping.
- Allows booting up from SCSI device.

Other compatible device with MacOS X.

FireWire HD Removable Case
FR-MDK1

- Hi-Speed, over 30MB/sec sustained Read.
- Compatible with ATA100 UDMA HD.
- Best for DV Editing.

FireWire Desktop HD
FR-HD75

- Hi-Speed, over 30MB/sec sustained Read.
- Faster than the internal UDMA HD.
- Includes IBM 7200rpm, 75GB ATA100 HD.

FireWire Desktop CD-RW
FR-CW1610

- iTunes compatible.
- High Speed, 16x Write, 10x Re-Write, 40x Read.
- Works as a repeater even if in a power-off state.

RATOC Systems,International

See **www.ratocsystems.com** to learn more information
phone **408-955-9400**

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

RACKMOUNT YOUR G4

(or your G3)

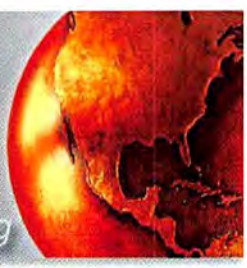
mwd@marathoncomputer.com
www.marathoncomputer.com
800 · 832 · 6326

Circle 164 on card or go to www.macworld.com/getinfo

LIND

"Your Essential Source"

Power Accessories for Mobile Computing



When in the Air or On the Road Keep Your PowerBook Powered & Your Battery Charged!

With Lind Auto/Air Power Adapters

Rugged Lind adapters feature:
Low input voltage & output short circuit protection
Internal temperature limit - Automatic fault reset
Nylon carrying case - 3 year warranty
Durable aluminum housing

Adapters in stock now for G4s, G3s & iBooks!
Only $99.95

Order online at:
www.lindelectronics.com
or Call 24hr/7days a week to order:
#800-897-8994

Got TV?

Eskape Labs
A Hauppauge Company

MyTV2GO and MyTV...
TV for your Mac

From $99

NEW!

From $149

You've got to see it to believe it!
www.eskapelabs.com

MacWAREHOUSE · MICRO CENTER · @DEPOT · JBR · ClubMac · Outpost.com · COMPUSA

CREATE, PRINT & READ BAR CODES with new Bar Code Fonts from ITSCO!

* All popular bar codes * Individual or deluxe packages
* User-friendly * Both TrueType & PostScript
* Designed in the Bear Rock tradition!

CALL 1-800-228-9487
or visit us at www.itsco.net

ITSCO AUTO ID PRODUCTS Where people make the difference

Ask about our full line of USB-compatible bar code scanners, printers, and accessories!

USB

Circle 221 on card or go to www.macworld.com/getinfo

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

USB

Call For Free Catalog & Bar Code Primer

Worthington Data Solutions is now... WORTH data

Phone: 831-458-9938 • Fax: 831-458-9964

SELLING DIRECT?
SELL MORE
WITH AN AD IN THE
Macworld
SHOWCASE

CALL NOW
1•800•597•1594

Want to Print Bar Code Labels?

LABEL PRINTERS
maclabel.com
USB
Ethernet
Appletalk
HP PCL5, LJIII

IntelliTech INTERNATIONAL
PH: 800-694-3034
iii@intellibar.com

The Macworld Developer Showcase

Place your ad here. Call today to reach our active buyers.
1•800•597•1594

When one display just isn't enough...

DVIator for ADC

With DVIator and a DVI video card you can add additional ADC displays to a new G4, or upgrade an older Mac with Apple's new flat-panels.

Dr. Bott

www.drbott.com • 503.582.9944 • 877.611.2688

RESELLERS! Dr. Bott has a great reseller program. Mention this ad when you contact us and we'll send some extra special goodies when you sign up as a Dr. Bott reseller.

Circle 173 on card or go to www.macworld.com/getinfo

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 and self-powered modes, & 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

KEYSPAN

Circle 170 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.

FUTURE RELEASES...COMING SOON! FUTURE RELEASES...COMING SOON!

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.

GRIFFIN TECHNOLOGY 615.399.7000

info@griffintechnology.com 1619 Elm Hill Pike, Nashville, Tennessee 37210 www.griffintechnology.com

your new Mac is the fastest, smartest, most powerful thing on the market...

so what can your desk do?

- multi-level height adjustability
- sit-to-stand operation
- 1-3 monitors
- built-in wire management
- certified ergonomics

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-Lawson ©2001Ground Support Equipment (US) Ltd.

Circle 161 on card or go to www.macworld.com/getinfo

Ever wonder if your proof will match what comes off the press?

With PowerRIP 2000™ and your Epson or HP ink jet printer you no longer have to wonder.

- Save time and money, make your own pre-press proofs
- Recognizes named spot colors, such as PANTONE, and selects the best CMYK match for printer, ink and paper
- Recompose separations to check your color traps
- Accepts custom ICC profiles
- Add PowerRIP PDF option and make Proofs or PDFs with one application
- Built-in network print server makes printer available to all on the network

PowerRIP 2000 makes your proof = your press

iProof SYSTEMS

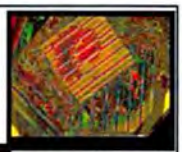
Tel: 321-254-4401 Fax: 321-254-6899
www.iproofsystems.com

art born, music visualized -live- as if from the datastream of your imagination

Realtime Creativity

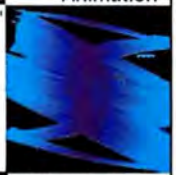
Onadime Composer

Download the **Free** OnadimePlayer and sample Compositions



not cell by cell animation
Live Interactive Animation

1. "SEE THE MUSIC" Onadime CD-ROM
2. PlayerPlus for added features
3. Composer for realizing dreams



Select from hundreds of Onadime Compositions on the web

Your own voice
Your own music
live video or canned
Quiktime & MPEG
Full MIDI in & out

Create your own music visualizations and interactive art with the new Onadime COMPOSER

ONADIME

Onadime
POB 99151, Seattle WA 98199 USA

Music Visuals & Creative Software for the Real-Time Digital Arts
www.onadime.com

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

EMERGENCY DATA RECOVERY

ISO 9001
World's 1st ISO certified data recovery company

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 sytems, (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

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

FULL COLOR PRINTING
FROM YOUR ELECTRONIC FILES

brochures
postcards
rackcards
flyers
posters
self-mailers
business cards

high quality guaranteed
low prices • fast turnaround

CALL TOLL FREE
1.877.890.2300
www.horizenmedia.com
email: mw@horizenmedia.com

WEB HOSTING

web hosting from $99/year with your domain, pop email & ftp account access. No bandwidth fee!

Call 1.877.890.2300 or email us hosting@horizenmedia.com

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 MacWorld, Mac Addict, MacWeek, Popular Mechanics; also by CNN, BBC, Forbes, and many others.
7. Federal and State Contracts.

DRIVESAVERS DATA RECOVERY
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

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 Clementina 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
www.mcrecovery.com

When you absolutely, positively have to get your data back...

- 24hr. Emergency Data Recovery
- Worldwide Services

MICROCOM
20802 Plummer St. Chatsworth, CA 91311 • 818 718-1200
800 469-2549

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.

- 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

1,000 18" x 24" POSTERS
Printed FULL-COLOR on one side (4/0) from your digital files on 100# Fortune Gloss Text with FREE aqueous coating.
Get 5,000 for only $1,699

$999 SUGGESTED RETAIL $2,069

Adobe Authorized Graphic Arts Available

QUARK Authorized Service Bureau

Copy Craft PRINTERS, INC.
4413 82nd Street • Lubbock, TX 79424 • FAX: 806.798.8190

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

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!*

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 Guarantee Our Quality!

We Use...Advanced technologies for the best results!

HEIDELBERG Digital Offset Quality · indigo Ultrastream · XEROX DocuColor 2060 · Kodak PHOTO CD · DisplayMaker · Fuji

IMAGERS® Since 1947

Monday to Friday 8:00am to 8:00pm East Coast Time

Go online
info, quotes, & job submittal
www.imagers.com

800.232.5411 or 404.351.5800
1575 Northside Dr. Ste.490 Atlanta 30318

Circle 155 on card or go to www.macworld.com/getinfo

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

DISCOVER · MasterCard · VISA

ORDER BLANK CD-R DISCS AND SUPPLIES IN OUR ONLINE STORE!

SILICON VALLEY CD since 1992

990 Richard Avenue #103, Santa Clara, CA 95050 Tel: 408-486-0800 Fax: 408-486-0809

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!

Modern Postcard

800-959-8365
modernpostcard.com

© 1999 Modern Postcard. All rights reserved.

207 on card or www.macworld.com/getinfo

BIG POSTERS & HUGE DISCOUNTS
FROM YOUR COMPUTER FILES

24" x 36"	36" x 48"	48" x 72"
Full color print on 7 mil high or low gloss paper	Full color print on 7 mil high or low gloss paper	Full color print on 7 mil high or low gloss paper
$25	$50	$125
NO MINIMUMS VOLUME DISCOUNTS	NO MINIMUMS VOLUME DISCOUNTS	NO MINIMUMS VOLUME DISCOUNTS

FOR MORE INFO & PRICING VISIT OUR WEBSITE
www.BIGPOSTERS.com
CREATIVE JUICES PRINTING & GRAPHICS INC.
(in New York) Tel: 516-520-4533 Fax: 516-520-4534 • 14 Wolcott Rd., Levittown, NY 11756
1-888-880-HUGE

177 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@aviltd.com • posters@aviltd.com

219 on card or www.macworld.com/getinfo

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.

174 on card or www.macworld.com/getinfo

POINT OF SALE • INVENTORY CONTROL

New Mac Drivers for InkJet Receipt Printer

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
- Wireless Credit Authorization

Free Catalog & Demo CD or download demos off of the website.

(800) 622-7670
www.posdirect.com
sales@posdirect.com • (618) 985-3014 fax

P.O.S. DIRECT

Circle 165 on card or go to www.macworld.com/getinfo

ACADEMIC DISCOUNTS on CREATIVE DIGITAL TOOLS

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: 650.934.3234
We offer software from over 100 companies including Adobe, Alien Skin, Corel, Hash, Macromedia, Microsoft, Newtek & Symantec!
Prices subject to change. Please call for latest prices.

ACADEMIC DISCOUNTS

Great Savings for... Students, Teachers and Schools!

Nemetschek's Vectorworks 9
The latest CAD software at an unbelievable student price! **$82**

MACWORLD Special
Amorphium Pro $139
This new version from Electric Image now creates 3D graphics in the .SWF format, made popular by Macromedia's Flash!

Macromedia Web Design Studio
Dreamweaver 4, Fireworks 4, Flash 5, and Freehand 10. **$239**

Cinema 4D XL v7 NEW **$679**
Turn almost any computer into a 3D animation studio with this new release!

All Adobe Titles	Call!	Dreamweaver 4	$98	All Microsoft Titles	Call!
Body Paint	$385	EI Universe 3.0	$449	Norton Utilities	$59
Boris FX 6	$309	EyeCandy 4000	$69	Painter 7	$199
Bryce 5 NEW	$79	Filemaker Pro 5.5	$148	Poser 4	$119
Cleaner 5	$289	Flash 5	$98	Sibelius	$229
Coda Finale 2001	$199	Flash + Freehand	$139	TechTool Pro 3.0.3	$79
Director 8.5	$329	All Iomega Titles	Call!	Wacom Graphires	$79
Dreamweaver 4 + Fireworks 4 Studio	$139	Lightwave 6.5	$889	webSavant	$119
		Mathematica 4.1	$136		

(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 & PO'S TO 512-450-0263

ACADEMIC SUPERSTORE
www.AcademicSuperstore.com

Circle 180 on card or go to www.macworld.com/getinfo

AOL KEYWORD camerazone

THE CAMERA ZONE

visit us online at www.thecamerazone.com

24 HOUR FAX: 718-491-4418
Local: 718-491-4408

140 58th Street Suite 4E
Brooklyn NY 11220

Company Hours
Sunday 10am - 6:00pm
Monday-Thursday 9am-8pm
Friday 9am-5:00pm
Saturday Closed

WE ACCEPT ALL SCHOOL, and GOVERNMENT BIDS & POs!!

CALL TOLL FREE 1-888-596-4716

ORDER ON LINE AT www.camerazone.com

Digital Cameras

OLYMPUS

C-3040

* 2048x 1536 Max Resolution
* 3.34 Million Pixel CCD
* 16 Mb Smart Media
* One Touch White Balance
* Multi Spot Metering

C-700

* 1600 x 1200 Max Resolution
* 8MB Smart Media
* 10x optical/2.7x digital zoom
* Auto exposure bracketing
* Burst / Movie modes
* 2.1 mega pixel CCD

C-2100Z

* 10x Image Stabilized Optical
* 2.7x Digital Zoom
* 3 Frame Per Second Burst Mode
* 5 Program Modes
* Spot & Multi Spot Metering
* SLR-Like /2.1 mega pixel

E-10

* 4.1 Mega Pixel
* Holds SmartMedia & Compact Flash card 2
* 35-140mm Lens
* Fully Multi-coated glass optics

C-3000	Call	C-2040	Call
C-2500L	Call	D-100	Call
E100RS	Call	D-150	Call
C-211	Call		

Nikon

Coolpix 995

*2048 X 1536 Mamimum *resolution / swivel lens
*4X Optical / 4x digital zoom
*16MB Compact Flash 1 & 2
*1.8" LCD Monitor
*Burst / Movie modes
* 3.34 Megapixel

Coolpix 775

*2.1 Megapixel CCD
*1600 x 1200 True Resolution
* Incredible print quality
* 8 MB Compact Flash

New D1H/D1X Pro Digital SLR	Call
Coolpix880	Call
Coolpix990	Call

Kodak

DC-5000

* 2.1 Megapixel CCD
* 1760 x 1168 resolution
* 2X optical / 3X digital Zoom
* 1.8" TFT color LCD to give you excellent detail for your pictures
* Rugged Body Design oversized controls for easy handling

DX-3500

*1800 x 1200 Maximum Resolution.
*2.6 Mega Pixel
*3 x Digital Zoom
*8MB Compact flash.
*1.8"LCD Monitor

DC-5000	In Stock	DC-240	In Stock
DC-3400	In Stock	DC-280	In Stock
DC-215	In Stock	DC-290	In Stock

SONY

MVC-CD300

*2048 x 1536 Max Resolution
*3x Optical / 6x Digital zoom
*2.5" LCD Monitor
*3" CD-RW disk storage
*4 Program modes Movie & Voice modes

DSC-P1

* 3.3 Megapixel
* 2x Optical/3X Digital Zoom Lens
* 1.5" LCD Screen
* Underwater Housing
* Exclusive new GIF animation feature

DSC-S75

* 3x Optical Zoom
* 3.34 Million Pixel CCD
* 8MB Memory Stick
* HQ Movie Mode
* 2" Color Lcd
* Spot Metering
* Variable ISO

Mavica FD-75	Call	Mavica FD-97	Call
Mavica FD-87	Call	Mavica CD-1000	Call
Mavica FD-92	Call	Mavica CD-200	Call

Canon

Powershot S-110 Zoom Digital Elph

* 1600x1200 Resolution
* 1.8" TFT LCD Display
* 2X/4X Digital Zoom
* Built-in flash
* Built-in high- speed USB interface

Powershot G-1

* 2048 x 1536 Resolution
* 3.34 Megapixel
* 2X/4X digital zoom
* Built-in flash
* Built-in high- speed USB interface

EOS D-30

* 3.11 Million Pixel Resolution SLR
* 3 Frames Per Second
* Histogram Displayed w/Each Shot
* 13 Custom Function
* Easy Controls
* High Quality Still Images

Powershot S300	Call
Powershot A10	Call
Powershot A20	Call

FUJIFILM

FINE PIX 4900

* 2.4 Megapixel Super CCD
* 6x Aspherical Zoom Lens
* 1/4 to 1/2000 sec Shutter Speed
* TTL 64 Zone Metering

FINE PIX 6800

*3.3-6.0 Million Megapixel
*5 Frames Per Second
*USB Hot Synch
*Video Conferencing
*2832 x 2128 Max Resolution

FINE PIX 40i

* Ultra compact metal body
* 2.4 million pixel * USB Port
* Plays MP3 Audio
* Available in Metallic Silver or Blue

Finepix 2300	Call	Finepix 4800	Call
Finepix 2400	Call		

DIGITAL VIDEO

SONY

DCR VX-2000

* 3 1/3" 380K Pixel CCD's
* 12 or 16 Bit PCM Stereo w/Audio Dub Capability
* Carl Zeiss Vario Sonar lens
* 10x optical/ 120x digital zoom
* Steadyshot Image Stabilizer
*2.5" Color LCD 208K Pixels

DCR PC-110

* Digital Video Recording
* Mega-Pixel CCD
* Carl ZeissTM Vario-Sonner Lens
* 10x Optical/120x Precision Digital zoom
* 2.5" Precision SwivelScreen
* Precision Color View finder (180,000 Pixels)

DCR PC-5

* Palm-sized Handycam Camcorder
* 2.5" SwivelScreen * LCD Display
* Super SteadyShot Picture Stabilization
* AccuPower* Battery System
* Stereo Sound with Audio Dub Capability
* 10x optical/ 120x digital zoom
* Carl Zeiss* Optics

DCR TRV-30/17

*Dcr Trv 30: * 1.5 Mega Pixel Imager * 1360x1020 Digital Still Images * Intelligent Pop Up Flash
*Dcr Trv 17: * 10X Optical/120X Digital Zoom w/steadyshot stabilization * Analog Recording Capability * USB Connection * Laserlink Wireless Connection

DCR TRV-830/730/530

* 25x optical And 450x digital zoom lense. Hyper precision CCD with 460,000 produces sharp pictures at full zoom
*Photo mode captures a still image with seven seconds of audio narration

*Dcr Trv 530; Has a large 3.5 swivel LCD color display
*Dcr Trv 730: Has a 4" LCD display.

Up to 14 hours recording time with optional NP-F960 battery.
*Dcr Trv 830; Same as 730. Includes eye sub printer.

Canon

XL-1

* 3-CCD DV Camcorder with Interchangeable Lens Mount System
* 16X Optical Zoom w/ SuperRange Image Stabilizer
* Normal Movie mode
* Hi-resolution stop action movie & Digital Still Modes

GL-1

• Professional Quality L-Series Fluorite Lens For Remarkable Images
20x Zoom Lens with 10bit Digital Zoom Provides Supreme Clarity • 3 CCD Image Sensors with Pixel Shift Achieve Outstanding Detail • Optical Image Stabilization Corrects Camera Shake Instantly • 3 Shooting Modes Accommodate any Recording Need

Elura 2MC

* 10x Optical/40x Digital Zoom Lens
* Optical Image Stabilization
* 2.5" Color LCD View Screen
* Color View finder* PCM Stereo
* Utilizes Multimedia Cards for Digital Still Pictures

New!

ZR-30
* 10x Optical Zoom * 20x Digital Zoom * 2.5" LCD Screen *Automatic and *Manual Modes * Holds Still Images on Multimedia Cards & SD Memory Cards * Advanced Accessory Shoe to add additional light w/out cables

Optura Pi	Call	ZR-20MC	Call
ZR-25MC	Call		

JVC

GRDVL-2000

10x Optical / 300 Digital Zoom
3.5" LCD Color Monitor
Image Stabalizer
680000 Pixel CCD

GRDV-M815

*Multimedia Interface * 10x Optical Hyper Zoom * 2.5" High Resolution LCD monitor * 25x Digital Zoom * High resolution color view finder * Digital recording for superior picture & sound

GR-DVL-M300/500/505/805

PRINTERS

EPSON

Stylus Photo 2000P

*Professional, Archival quality fine art photo printer w/1440x720 PI resolution, print sizes up to 13 "x19" and panorama to 13"x44" Print life rated at 200 years. Includes roll paper holder.

$100 Rebate Available Call for Information

Stylus Photo 1280

* 2880x720 DPI premiere 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 Qbeo Photo Genetics & Epson Film Factory

Stylus Photo 890 ..... Call

OLYMPUS

P-330N

P-400

Canon BJC80	Call	Canon CD300	Call

SCANNERS

Nikon

Coolscan 4000ED
New!

* 4000 DPI 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 Fractals software

Coolscan IV ED	Call	Coolscan 8000ED	Call

MINOLTA

Dimage Scan Elite

* Scans both 35mm sleeves and mounted, positive and negative films in color and black & white
* Optional Aps adapter is available
* 2,820 dpi optical resolution
* 3.6 wide dynamic range
* 12-bit Ad Conversion producing 36-bit color
* Digital ICE correction Enhanceme* Adobe Photoshop LE included * Available for Mac and Windows

New Scan Dual II	Call	New Scan Multi II	Call

Canon

Canoscan FS 4000
New!

*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

Canoscan 2710	Call		

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 mint condition. Not responsible for typographical errors. Above prices supercede all others and remain in effect until next month's issue.* Indicates price after rebate.

Circle 210 on card or go to www.macworld.com/getinfo

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

Firewire Full Height Drives

20/30 GB available!

Call for best prices!

USB Floppy Drives

FREE box of 25 1.44 floppy discs included!

iMac DV's ON SALE!

Different Colors available!

Factory Refurbished / 90Day Warranty

AS LOW AS $749

MacintoshLC580 Internet Ready!

- 33-MHz MC68LC040
- 8MB of RAM
- 800MB Hard Drive
- 28.8 Motorola Modem

Last Chance Blowout!

$199 with internal 4XCD

ONLY $149

MacAlly Extended Keyboard

NEW!

CALL!

1.44 SuperDrives

STARTING AT

NEW **$19!**

PART # 661-0474

NO EXCHANGE REQUIRED!

NEW!

7200 Logic Boards

ONLY $29

NEW

NEW!

Genuine Apple ADB Mouse II

Generic ADB Mouse ONLY $29

Monitor Blowout!

ONLY $79!

Apple 13" Trinitron RGB
Factory Refurbished

PowerComputing 17" Monitor

ONLY $149!

Factory Refurbished

Don't Miss Out!

AS LOW AS $49!

NEW!

Voxon 14" and 15" Monitors

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, Line 6, Boss, and Mark of the Unicorn!

AKAI DPS 12 v2

AS LOW AS $699

Now Includes a FREE 2GB 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 refurbished	$199 refurbished	$399 refurbished	$399 refurbished	$399 refurbished	$99 refurbished	$149 refurbished

PowerMac CPU SALE!

PRINTERS

HP Deskjet 890 CM, NEW	$249
Apple StyleWriter 1200,	$129
Apple Stylewriter 1500, factory refurbished	$149
Apple StyleWriter 2400, no cartridge, refurbished	$99
LaserWriter IInt, refurbished Toner not included	$149
LaserWriter IIf 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

IMAGING PRODUCTS

Apple QuickTake 150 refurbished	$149
Apple QuickTake 100 refurbished	$99

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 logic board,No Processor, refurb	$49
Quadra 950 logic board, refurbished	$179
7100/66 logic board, refurbished	$99
6200/75 logic board, 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

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	$999
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
IIsi Nubus adapter with math co-processor	$49

VIDEO CARDS

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

1•800•227•3971

*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.

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

GO TO OUR WEB SITE @ WWW.
OR CALL 800.304.4639

MAC OF ALL TRADES®COM

500 Bishop Street, Suite E3
Atlanta, GA 30318
404.355-5144 FAX 404.355.5461
email: sales@macofalltrades.com

BUYER'S AND SELLER'S RESOURCE FOR USED MACS SINCE 1994

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 $37.99
4 Black Inks ..... NEW $24.99

PowerBook G3/266 64/4gb/20x/56k/14.1" $899.99

Apple 8xCD for PB 1400 $99.99

AppleShare IP v6.3 10-Pack NEW $199.99

SupraExpress 56k Flex v.90 Serial Modem NEW $69.99

32mb DIMM Low-Profile for iMac 233-333, iBook, PB G3 Series $4.99/ea

All-In-One PowerMac Blowout!

All systems include a 15" display, CD-ROM drive, keyboard & mouse.

5500/225av	$299.99
5400/200	$199.99
5260/120	$149.99
5200/75	$99.99

All items are refurbished unless noted as new. Pricing & availability subject to change. 15% restocking fee on functional returns. No returns after 30 days.

888-447-3728 More than 4000 Macintosh products & secure online ordering @ www.macresq.com

Circle 191 on card or go to www.macworld.com/getinfo

Save on Reconditioned Macs

POWERMACS
4400/200 32/2G/CD $189
7200/90 16/500/CD $129
7200/120 16/1G/CD $149
7300/180 32/2G/CD $149
7300/200 32/2G/CD $279
7500/100 16/1G/CD $199
7600/132 16/1G/CD $219
8500/120 32/1G/CD $229
8500/180 32/2G/CD $279
8600/200 64/4G/CD $349
9500/132 32/2G/CD $269
9600/350 64/4G/CD $699

G3 POWERMACS
DT/233 32/4G/CD $499
DT/300 32/4G/CD $579
MT/266 32/6G/CD/AV $629
MT/300 64/4G/CD/Zip $689
MT/333 128/9G/CD/Zip $849
B&W/350 128/6G/CD $749
B&W/400 128/9G/CD $899

POWERBOOKS
5300c 16/750 ..... $299
1400c/133 16/1G/CD $499
3400c/200 16/2G/CD $599
G3/266 64/4G/CD $999
G3/292 64/6G/CD $1049
G3/300 64/6G/CD $1149
G3/333 64/8G/CD $1299

All CPUs include mouse 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

MacBuyersClub.com
a division of DataTech Remarketing
beginning September 1, 2001

SELLING DIRECT? SELL MORE
WITH AN AD IN THE
Macworld
SHOWCASE
CALL NOW 1•800•597•1594

www.MEGAMACS.com
PowerBook3400c/200 32/2/CD/Zip/FL$699
Adobe Premier 5.1 / OmniPage 7 $119/29
Office 2001 / Freehand 8 $299/49
Norton Internet Security/Utils 4 $49/9
OS 7.6/8.1/8.5/9/X $39/49/59/59/99
RayDreamStudio 5.5 or Web Savant $59
RamDoubler 9 / Conflict Catcher 8 $24/45
Intego NetBarrier2 or TimbuktuPro$29
MacLink+Dlx11/BusPlanToolkit7$24/39
Epson 670/ 700 / 850NE $69/109/149
LaserWriter Pro630/ PB Batteries $229/29
56K Modems/PB Batteries from $24
PowerMac G4/400 128/10/CD $899
Get FREE software with orders placed on our website
918-664-MACS(6227) WE BUY MACS!
fax: 918-663-6340 Price rounded down,credit cards ok

www.MAC-PRO.com Systems & Software
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

Mac POWER
Sales & Service, Inc.
BUY • SELL • TRADE
UPGRADE • REPAIR
New • Used • Refurbished
• Powrbooks • Monitors
• PowrMacs • Printers
• Performas • Peripherals
• Quadras • Ram
• MacII-LC • Parts
www.macpowerinc.com
888-275-POWER
Fax: 408-448-6132
San Jose, California, 95123

192 on card or www.macworld.com/getinfo

MCE TECHNOLOGIES

SUPERIOR Products for Your POWERBOOK

www.mcetech.com

NEW! FireBay FireWire Docking Unit

- 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
- Stackable • Hot Swappable • Very Lightweight
- Compatible with most expansion bay drives used with the PowerBook G3 99 & 2000 (Lombard & Pismo)

$169

MobileStor PowerBook Internal Hard Drives

- The BEST Internal Hard Drive Upgrade Kits for your PowerBook!
- Package includes hard drives from the same manufacturers that shipped in the PowerBook from the factory, bundled with everything you need for a successful installation*
- For use in PB G4, PB 2000, iBook, PB G3 Series, G3, 3400, 2400 & 1400*

10GB $179 20GB $249 30GB $349 48GB $599

NEW! Xcaret Pro Expansion Bay DVD/CDRW Combo Drives

- Read DVDs and Burn CDs with a single Expansion Bay drive!
- Bootable • Hot Swappable • Fast Backup or File Transfer
- Toast Recording Software • MCE Xbay Protective Carrying Case
- Available for PowerBook G3 98 and PowerBook G3 99 & 2000
- iTunes Compatible • Perfect with the MCE FireBay!
- Also available, Even Faster Xcaret Pro CDRW Drives for the PowerBook G3 98 and PowerBook G3 99 & 2000

$449

$379

NEW! Transport Pro Portable FireWire & USB Combo Drives

- Ultra-Fast, Sleek, and Bus-Powered Portable FireWire Drives great for Digital Video work
- Convenient USB connectivity • Use the Transport Do-It-Yourself FireWire or PC Card Kit to convert your PowerBook's old Internal Drive into a Portable Drive!

FireWire

48GB $699 30GB $499 20GB $399 10GB $299 Do It Yourself FireWire Kit $149 Do It Yourself PC Card Kit $99

Xcaret Pro Expansion Bay Hard Drives

GREAT for Video Editing!

- Ultra Fast! • Hot Swappable • Bootable • Compact
- MCE Xbay Protective Carrying Case • Perfect with MCE FireBay
- Available for PowerBook G3 98 or PowerBook G3 99 & 2000

48GB 240 min.† $699 30GB 150 min.† $499 20GB 100 min.† $399 10GB 50 min.† $299

Do It Yourself Kit $149 Turn your old internal PowerBook drive into an expansion bay drive!*

†approximate FireWire DV Video Capture time in minutes

USB FlexLight

- Conveniently lights up your keyboard and surrounding paperwork
- Comes with both a Clear and a Red Diffuser Cap

$24.99

MCE TECHNOLOGIES

Distributed by: INGRAM MICRO

For more info:
www.mcetech.com
800.500.0622
949.458.0880

* See website for detail

---

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 PB G4 TITANIUM!

Micro-AC Adapter only $85

Save space and weight in your carrying case!!

Auto/Air Adapter Charge your PowerBook in the car or airplane $80

BUNDLE DEAL! Micro-AC Adapter & Auto/Air Adapter $150

MADSONLINE

G3 to G4 Generation Gap AC Adapter Converter $20

Carrying Cases
Slimline Case...$99
Productivity Case...$139

G4 Saver Neoprene Carry Case for PB G4 $59

Titanium PowerBook G4

$2599

- 400MHz G4
- 128MB SDRAM memory
- 10GB Ultra ATA drive
- DVD-ROM • 10/100 Ethernet
- 56K internal modem
- 2 USB ports • FireWire port

+ FREE 128MB RAM*

iBook

Authorized Reseller

- 500MHz G3
- 128MB SDRAM memory
- 20GB Ultra ATA drive
- 10/100 Ethernet • DVD/CD-RW
- 56K internal modem
- 2 USB ports • FireWire port

+ FREE 128MB RAM*

$1799

Call for Custom Configurations & Bundle Deals!

* While supplies last. $30 installation fee added to price of computer.

VST TECHNOLOGIES incorporated

Expansion Bay Zip Drives
100MB starting at $199
250MB $279

Charger, Battery & AC Adapter Bundle $285

RATOC Systems

CBFW2 CardBus-to-FireWire Adapter $129
CB31PB CardBus-to-Ultra SCSI Adapter $129
FireREX1U FireWire-to-UltraSCSI Converter $119

macally

$35 iOpti Jr. Compact USB Optical Mouse

$79 CardBus-to-USB Adapter

$69 USB Floppy Drive

$29 iMouse Jr. Mini USB Mouse

iVoice USB Microphone $39

iHub Jr. 3 Port USB Hub $39

PRO AUDIO FOR POWERBOOKS

VXpocket
Professional ANALOG AND DIGITAL audio interface for your PowerBook!
$599

CapSure/Kritter SV BUNDLE DEAL! $229

CapSure PC Card Composite or S-Video Input $99
CapSure USB Comp/S-Video Input Built-in Microphone $119
Kritter USB Camera $99
Kritter USB Camera $129
Kritter SV Camera $139

TARGUS

Top Loading Notepac $49

Backpack Carrying Case $59

$15 Retractable Phone Cord

4-Port Mini USB Hub $49

World Travel Connection Kit $79

Defcon-1 Security Alarm

MCE Xbay Expansion Bay Device Carrying Case
Convenient protection for expansion bay devices!
$19

Klear Screen iKlear PowerBook Screen Cleaner 12-pack $9.99

PowerBook & iBook Memory Upgrades!!
See our web site for latest pricing!!

G3 Processor Upgrades for your PowerBook 1400 & G3 Wall Street

JONNET! SIMPLY FAST PowerLogix

Apple Computer
PowerBook 2400 Battery $249
PowerBook G3 99/2000 Battery $139

30 Hughes Suite 203 • Irvine, CA • 92618
Visa / MC / AmEx / Discover / P.O.

1-800-5000-MAC (6 2 2) • 949-458-0800 • fax 949-458-1803

Circle 184 on card or go to www.macworld.com/getinfo

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.

Apple 22" Cinema Display **$2388**

Indigo iMac™ 400 64 RAM, 10 Gb HD, CD, 56k **$749**

iMac™ 450 64/20/DVD Sage, Ruby or Indigo! **$899**

PowerBook® G3/500 128 RAM, 12 Gb HD, DVD, 56k **$1999**

G4/466 128 RAM, 30 Gb HD CD-RW, 56k **$1299**

Graphite iMac 600 128 RAM, 40 Gb HD, CD-RW **$1149**

iBook™ 500 64 RAM, 10 Gb, CD, 56k **$1199**

Dalmatian iMac™ 600 128 RAM/40 Gb/CD-RW **$1149**

Factory Refurbished Specials

Check out over 300 models at www.powermax.com!
We load 'em with RAM & guarantee 'em! Great price/performance!

Model	Starting At
6100 series	$27
7100 series	$49
7200 series	$113
8100 series	$152
7500 series	$101
7600 series	$229
8500 series	$269
9500 series	$319
7300 series	$299
8600 series	$399
9600 series	$549
PowerBook® 1400's	$599
PowerBook® 3400's	$649
PowerBook® G3's	$799
iBook™ SE 366 64/6/CD	$999
iMacs™	$549
Blue & White G3 Towers	$849
G4 Graphite Towers	$1099

"Used Macs have incredible staying power. These machines pack an incredible punch for the money!"

G3 desktops starting at only $477!

Add a postscript LaserWriter for only $199!

G3 PowerBook Sale!	
G3/233 32/2000/CD/12.1	$807
G3/233 32/2000/CD/13.3 FD	$895
G3/233 32/2000/CD/14.1	$919
G3/233 64/2000/CD/14.1	$979
G3/292 96/2000/CD/14.1	$1,026
G3/250 48/5000/CD/12.1 FD	$1,062
G3/266 64/4000/CD/14.1	$1,127
G3/233 64/6000/CD/13.3	$1,142
G3/250 64/4000/DVD/13.3 FD	$1,199
G3/266 64/4000/CD/14.1 FD	$1,219
G3/250 32/4000/CD/13.3 REF	$1,229
G3/333 64/4000/CD/14.1	$1,249
G3/300 64/8000/CD/14.1	$1,298
G3/400 64/6000/DVD/14.1	$1,435
G3/400 64/6000/DVD/14.1 FW	$1,536
G3/400 64/6000/DVD/14.1 FW	$1,536
G3/500 128/12000/DVD/14.1	$1,899

"Check out our 'PowerMax-imum' Bundles!"

G4/500 w/ 512 mb RAM, 27 Gb drive, DVD-RAM drive, Zip Drive and a 17" Apple Graphite Studio display, all w/one year warranty. **$1999**

Perfect Starter Mac! Indigo 400 iMac™ w/ 192 mb RAM, 10 Gb drive, 24x CD and Microsoft Office 2001 w/Word, Excel, PowerPoint & More! **$1149**

CD-RW FireWire & USB 24x10x10x $299* 16x10x40x $269* *After rebate

Save over $800!

Ref. Photon 18Blue II Display $1199

20 Gb FireWire & USB Pocket Drive $379

LACIE

7200 RPM FireWire Drive 40 Gb $289 60 Gb $339

Electron 19Blue II Display $589

JVC JY-VS200U Pro DV Cam ~~$2295~~ $1888

JVC New!

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 Pro Scope – Capture stills and QuickTime movies at up to 200X! only $199!

POWERMAX.COM

Factory Refurbished units include 1 year warranty

- Daily specials & blowouts
- New, used & refurb lists
- Downloadable software
- Bargain Basement Deals
- Digital video packages
- Updates & spec sheets

Plus: Important national Macintosh news updated daily!

Why PowerMax?
- Hundreds of Mac models to choose from
- Knowledgeable, non-pushy salespeople
- Great tech support
- No voice mail (during office hours)
- We consult on all Mac hardware & software
- no rebate games or hidden charges

TradeUp with PowerMax! We'll take your Mac OS computer in trade toward the purchase of new product. Call one of our expert Mac consultants for full details!

POWERMAX™

Knowledge is Power

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.

Authorized Reseller · Apple Specialist

- Personal Financing
- Fast P.O. Approvals
- Business Leasing
- Weekly specials on our web site
- Order on line or call one of our experts!

G4s & Cubes | DV iMacs™ | iBooks™ | PowerBooks® | Blue & White G3's | Beige G3's | Software

The Mug Store: members only special deals!

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.

Apple Specialist

www.applemugstore.com

Authorized Reseller

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.

Circle 208 on card or go to www.macworld.com/getinfo

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

INTERNET BUNDLE

PPC G3/66 603e / 100 Mhz
24MB RAM
1.2GB Hard Drive
8x CDROM Drive
1.44 Floppy Drive
1 PCI Slot
Keyboard • Mouse

COMPLETE PACKAGE

plus 56K Modem, EtherNet & Monitor!

$149.99 w/ 14" Mtr

$179.99 w/ 16" Mtr

Educational Pricing Available

Mac OS 8.5 CD

FREE WEB UPGRADE TO 8.6

$79.99 OEM/FULL INSTALL

Mac OS 7.6 CD OEM/FULL INSTALL $39.99
Mac OS 8.0 CD FULL INSTALL $49.99
Mac OS 9.0 CD FULL INSTALL $99.99

HARD DRIVE DEALS

Includes Hard Drive Utilities FREE

2GB 3.5" x 1.6" SCSI 50 pin or 68 w/50 pin adapt $39.99
4GB 3.5" x 1.6" SCSI 50 pin $69.99
9GB 3.5" x 1.6" SCSI 68 Wide w/50 pin adapt $99.99
18GB 3.5" x 1.6" SCSI 50 pin $179.99

CDROM DEALS

8x 1200i SCSI $49.99
32x 4800i ATAPI $99.99

External SCSI CDROM Cases (N) . 39.99
12x Apple SCSI CDROM 79.99
24x Apple SCSI CDROM 129.99
iMAC CDROM-Slot loading 99.99
iMAC CDROM-Tray loading 99.99
6x Apple DVD ROM ATAPI 149.99
CDROM Installation Kits.....IN STOCK

MONITOR DEALS

$299 AppleVision 20" 850
$239 Apple 20" MultiScan
$129 Apple 17" MultiScan
$89 Apple 15" MultiScan

MODEM DEALS

External 56k V.90 Modem new $59.99

56k v.90 modem SupraExpress refurb $39.99
PCMCIA 28.8/33.6bps modem $29.99
PCMCIA 56k v.90 modem X-jack $59.99

WE SELL.... ETHERNET for DSL/CABLE MODEMS

MONTHLY SPECIALS

AppleDesign Apple Original Extended Keyboard ADB • 16 Key $19.99

Canon BJC2100 USB Factory Refurbished Factory 1 year warranty USB and Parallel $49.99

Apple 14" Trinitron Apple Original Great Picture Trinitron Tube $39.99

Adaptech 2940U2W PCI SCSI Card 2940U2W / 2940U2B 50 pin/ 68 pin Wide $69.95

1 GB SCSI HD Apple spare 50 pin SCSI 3.5"x1.6" $19.99

1 GB IDE HD Mac Compatible IDE 3.5"x1" Performa Replacement $39.99

Apple Floppy Drive New Manual Floppy 661-0121 or 661-1390 (for 8500 to G4) $49.99

Iomega SCSI ZIP External SCSI 100 MB Removable Disks Sold Separately $69.99

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 EDUCATIONALQuotes

Mon-Fri 7-6,PST Sat 10-5PST

All Prices include 3% cash discount. All items are Used or Refurbished unless otherwise indicated. ALL SALES FINAL.
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
Iomega Stuff
Modems
Monitors
Networking
PowerBook Memory
Printer Memory
SDRAM
SIMMs
Storage Drives
Surge Suppressors

DMS has all you need to network your business

Memory
√ PC66 SDRAM
√ PC100 CL2/CL3
√ PC133 SDRAM
√ ECC & EDO

Networking
• Client/Server Systems
• Ethernet Cards & Conns.
• Hubs
• CAT5 Cabling

DMS DATA MEMORY SYSTEMS
DATA MEMORY SYSTEMS
24 Keewaydin Dr.
Salem, NH 03079
Fax: 603-898-6585

Since 1986, DMS has provided customers with the best memory prices, guarantee and service anywhere!

Nothing has changed...
Secure Online Shopping
www.datamem.com

Circle 213 on card or go to www.macworld.com/getinfo

LOWEST WEB PRICES!

MEMORY mb	16	32	64	128	256	512
G3/G4/iMac™ 350-600	–	$12	$14	$20	$35	$70
PowerBook G4	–	–	–	$20	$35	$185
PowerBook G3	–	$13	$14	$21	$48	$89
iBook™/iMac™ 233-333	–	$13	$14	$21	$48	–
168 pin DIMMs	$19	$24	$35	$55	–	–
72 pin SIMMs	$12	$17	$49	–	–	–

IDE Hard Drives

Size rpm: 5400	7200
20gb $89	$99
30gb $117	$128
40gb $136	$157
60gb –	$244
70gb –	$294
External USB	ADD $79
External Firewire	ADD $99

UW Hard Drives

Size rpm: 7200	10,000	15,000
18gb $196	$244	$365
36gb –	444	–
72gb –	864	–

PowerBook Drives

20gb	4200rpm	$159
30gb	4200rpm	$279
External Firewire Mini -		ADD $99

All prices are subject to change without notice. Prices listed are available from our website only, not in-store.Current Web prices listed at print deadline. Not responsible for typographic errors. Limited to stock on hand.

NEW & USED CPUs!*

N - G4-800DP	256/80gb/SD/NV17	$3,499
N - G4-733	128/40gb/CDRW/NV11	1,699
N - iBook 500	12.1 TFT/Firewire 128/10gb/DVD-CDRW combo/E/56k	web
N - iBook 500	64/10gb/CD/56k	call
U - 6500/275	32/6gb/CD	325
U - 7200/120	16/1gb/CD	125
U - 6100/60	8/230mb	60

FREE 256mb on New Macs
*with $29 installation Fee

SPECIALS!!

Mac®OS 9	plus 9.1 updater	$69
Mac®OS 8.1	CD only WOW!	29
Mac®OS 8.6	w/Free 8.5 CD	69
Epson 900	refurbished - Serial	155
Epson 850	refurb.- Serial/Ethernet	150
Global Village	56k serial modem	59

Authorized Reseller Apple Specialist 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 728

MAC Solutions

Call 800-873-3RAM or Order Online at
www.macsolutions.com

DIRECT showcase

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

SELLING DIRECT? SELL MORE
WITH AN AD IN THE
Macworld
SHOWCASE
CALL NOW 1•800•597•1594

1 one memory .com
LIFETIME WARRANTY
BEST QUALITY
SECURE
FAST • EASY
PC100 128mb $19 256mb $34
PowerBook G4 128mb $30 256mb $58
sales@onememory.com
www.onememory.com

Classifieds

POWERBOOK GUY - THE PREMIER SOURCE FOR POWERBOOKS, ACCESORIES, & 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

For more information, contact Niki Stranz at 415-243-3664 or Carol Johnstone at 415-243-3691

continued from page 120

But why are there so many Macs here, month after month? I've often thought about that. You do see Wintel boxes, but chiefly in the form of the contents of an entire office that got upgraded. Macs are everywhere, in threes, fours, and singles. And they usually move pretty fast, too. Color Classics get snapped up at hefty prices. SE/30s fetch only ten bucks or so, but they often find buyers—they make great Unix boxes. You'll see people lugging around Mac Portables and fiddling with Newtons, and there's usually a table of PowerBooks.

The Quadras and transitional Power Macs are permanent installations, practically Stonehenge-like. I often come home with a peppy pizza-box Quadra: for less than $60, you can buy what is essentially a complete '040-based alternative to the iMac, just perfect as an e-mail–and–Web box for a kid or favored aunt. They're useful, but they don't generally sell.

People don't form the attachment to a IIsi or Centris that they do to a Color Classic. Yes, a Mac Plus may be nearly useless, but it offers two features that boxy Spindler- and Amelio-era Macs (and Windows machines) don't: character and personality.

You don't see any Jobs-era Macs at all—even original Bondi iMacs are still being used by their first owners. But when an iMac or a Power Mac G3 tower gets jettisoned, it'll find a buyer, just like the Pluses and Color Classics. Character and personality are the Mac's greatest strengths, something that was forgotten until iSteve came back to Apple and began shrieking it to his new underlings. The company's success comes from designing gear that resonates with the user. For good or bad, people buy Macs because they *feel* right. Like a spouse, a city to live in, or clam chowder, a Mac sells itself with that initial feeling of *yes, this one, definitely*—whether it's brand-new at $2,499 or used at $10, five for $20.

As I'm musing on this, a pal spots me and trots over to bring me news: *Lisa is in the building*. I trot around until I spot it, and all of a sudden, there it is. It doesn't have a Twiggy drive (which remains a Holy Grail for me), but it's a Lisa nonetheless, sitting patiently beneath a table. It's also positively filthy, but it has retained its original dignity, and I soon fork over ten bucks for it.

I heave it into the car (along with a quack medical device from 1911 and a 2.7GB mainframe hard drive the size and weight of a cello filled with mercury). It's stupid anthropomorphism; I acknowledge that. But I will take this Lisa apart and scrub off the grime and peel away the stickers and patch that one hole drilled into the side.

And although I will store this Lisa away with the rest of the group, I take some very small pride in having saved another distinguished member of the Mac family from the scrap heap. **m**

ANDY IHNATKO (www.andyi.com) has enough old Macs to make a wicked-big fort.

ANDY IHNATKO

Island of Discarded Macs

Be They Quadra, Lisa, or Newton, All Old Macs Have a Home Here

IT'S THE THIRD SUNDAY OF the month in Cambridge, Massachusetts. And just as axe-wielding undead psychopaths are drawn to remote forest cabins where teenagers are drinking and making out, geeks of every size, gender, race, creed, and operating system can't help but heed the siren call emanating from the corner of Albany and Main Streets—for there, in the shadow of one of the Massachusetts Institute of Technology's cyclotrons, lies the MIT Flea Market.

The MIT Flea is where old technology goes to die. It's also where old technology goes to be reborn. And occasionally it's where technology that the CIA has steadfastly denied to Congress that it owns is disposed of without paperwork. I mean, it's sort of a mixed bag; the earlier you arrive, the greater the sense of exhilaration and fear at what you'll discover. Suffice it to say that one of the things drawing me back month after month is the dead certainty that one of these days I'll come across a footpad from an *Apollo* lunar lander on a card table marked "$40 OBO."

Here's a whole box of pagers, two for a dollar; I buy a couple just to get the little motors that make them vibrate. I examine but don't buy a Resusci-Annie CPR dummy—the guy wants $250 for it. His son gleefully shows me that her pupils are dilated and of unequal size. This kid is headed for the cover of *Time* magazine—one way or another.

What's in that bin there? It seems to be the discards of some research lab that has upgraded its facilities. Some automated pill dispensers will make perfect network-controlled goldfish feeders—that is, they will after the hoppers are cleaned of barbiturates.

If the Flea has a motto, it's *Sic transit gloria mundi*. The hypermegasupersexy gear that once graced the covers of *Macworld*, *Byte*, and *PC World* is now gracing a Chiquita banana box underneath a folding table. I could give a toss for homeless puppies or lost kitties, but there's something about a Hewlett-Packard 75C priced at $10 that tugs at my heartstrings. Apricots, Sparcstations, Osbornes, GridPads, and computers that loaded their software from eight-track tapes—it's the Island of Misfit Toys in a parking lot.

My father gave away my old Apple II+ when I went away to college, but I was recently able to put together an even better system for about $30. I bought the black Bell & Howell Apple and all flavors of IIe and IIc, and after a morning in which my movements were clearly blessed by God, I assembled the IIGS of my dreams. It was just like new, and I managed to populate every slot for pennies—and to top it off, it was a Woz Special Edition.

There's no shortage of Macs. They're stacked everywhere, and people who brought some to sell keep chasing me down. I am indeed the person who wrote and published a set of plans for converting classic Macs into MacQuariums, and I would like to believe that these folks hunt me down because I encourage people to build and sell them to benefit charities. But I know the true motivator: CRTs are hazardous waste that can't be thrown away with regular trash, so these folks must find some rube who'll take them. I already have plenty, thank you, although I'm always pleased when I come across a Fat Mac or original Mac 128K that I can restore and conserve.

continues on 119

© 2000 STEVE NIEDORF PHOTOGRAPHY / THE IMAGE BANK

Need more space? Try a digital solution. Back up your data, burn all your video, MP3s and multimedia presentation files onto CD. Anyone can do it with Toast™ 5, by Roxio. The world's best selling CD burning software for the Mac. Check out roxio.com/toast5. Use a PC? Look for Easy CD Creator® 5.

burn everything

roxio™
THE DIGITAL MEDIA COMPANY

© 2001 Roxio, Inc. All rights reserved. Roxio, the Roxio logotype, pure burn and the pure burn mark are trademarks of Roxio, Inc. Toast and Easy CD Creator are registered trademarks of Roxio, Inc. All other trademarks used are owned by their respective owners. Our software is designed to assist you in reproducing material in which you own the copyright or have the legal right to copy from the copyright owner.

Meet the new Mac OS.

Thinking of upgrading your operating system? Start with the new Turbo Mouse® Pro trackball. It's a USB-ready operating system in its own right—with all the professional features you need to guide you through Mac® OS X in comfort and style. Its six DirectLaunch™ buttons launch apps and transport you to your favorite web sites instantly. Four programmable buttons reduce repetitive tasks to a single productive click. An integrated scroll wheel races effortlessly through even the largest documents. All while you're pampered by the silky-smooth precision of steel bearings and an extra large ball. Check out the Turbo Mouse Pro—the perfect touch for any Mac. Visit your nearest Kensington dealer or www.turbomousepro.com.

KENSINGTON
Smart design at work.

Circle 1 on card or go to www.macworld.com/getinfo