

PASSING THE TEST: NEW G3 MACS RATED, PAGE 32



A P R I L 1 9 9 9

Macworld

THE ESSENTIAL MACINTOSH® RESOURCE
www.macworld.com

ULTIMATE INTERNET

GUIDE



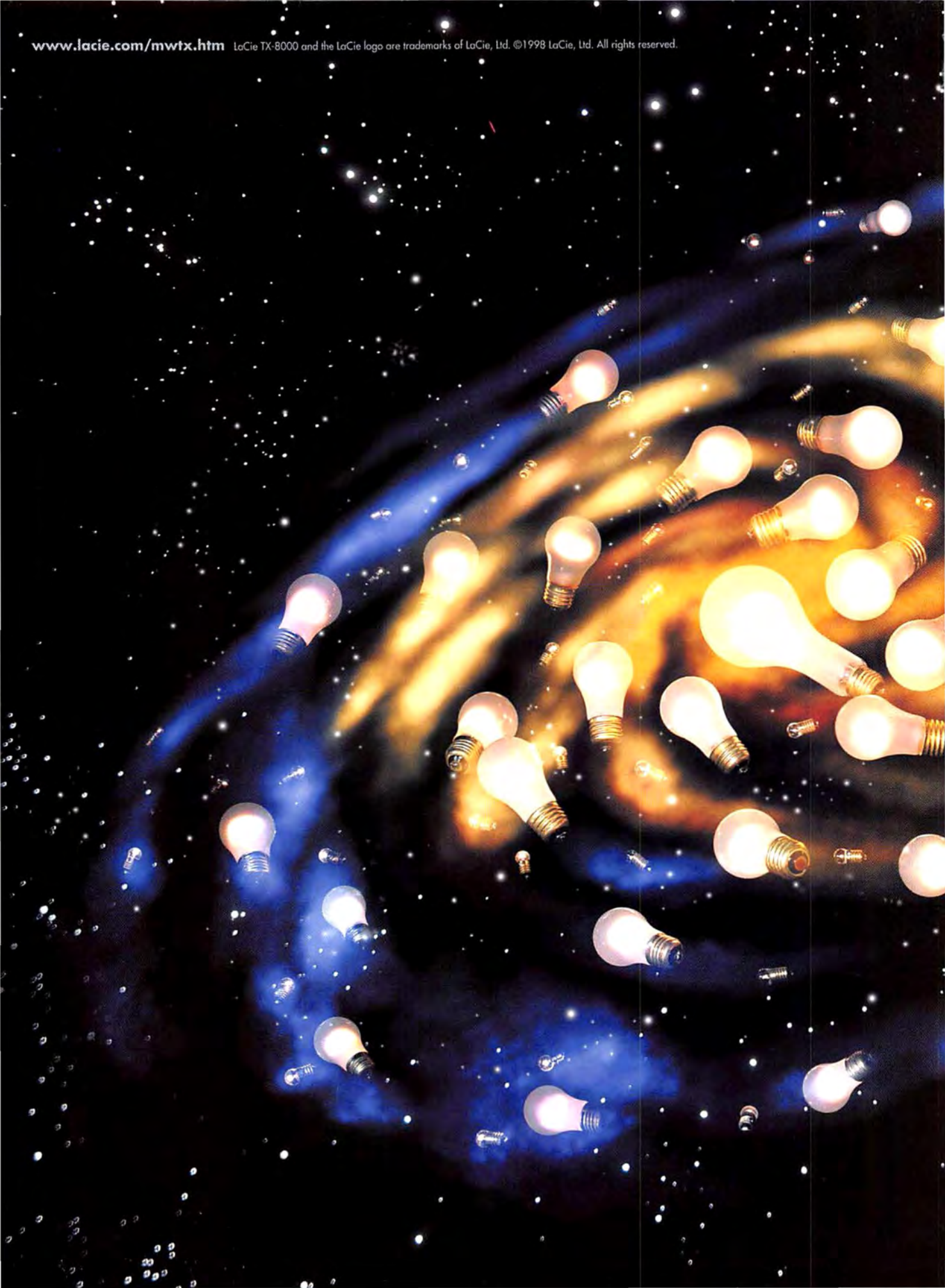
AN iMAC MUST-READ:

BEST MAC SITES!

BEST MAC BROWSER!

TOP SEARCH TIPS!

ESSENTIAL WEB UTILITIES!



ASTRONOMICAL.

The capacity of the LaCie TX-8000™ is simply colossal. It can store up to one quarter terabyte in eight RAID accelerated drives with either Ultra2



SCSI or Fibre Channel host controllers. And four scaleable towers combine to total one terabyte (1000 GB). So, go ahead, think as big as you please.

LACIE

Made for ideas.

Macworld

APRIL 1999

Incorporating MacUser

Features

Cover Story

66 The Macworld Web Traveler's Companion

BY SHELLY BRISBIN All plugged in with too many places to go? Streamline your online excursions with *Macworld's* guide to the best the Web has to offer. Plus: the best browser, search tips, and utilities every traveler should have.

LAB TEST

74 Put Your Files in the Fast Lane

BY BRUCE FRASER Fasten your seat belts! Which server operating system is the swiftest for the way you work? Macworld Lab put Mac OS, Windows NT, and Unix to the test to see which gives your files the fastest ride.

80 The Beauty of the Beast

BY STEPHAN SOMOGYI The power of Unix can be yours on the Mac today—but it's not for everyone. See how Linux and Mac OS X can bring speed and stability to a Mac near you.



Are you being served fast enough? page 74.



The definitive travel guide for discerning Web wayfarers, page 66.

ON THE COVER

Illustration by Paul Rogers

Create

Motion

93 Presenting with HTML

BY JIM HEID Use the language of the Web to make truly portable presentations.

Web

97 Dynamic HTML without Tears

BY TOM NEGRINO Create groovy DHTML effects—but avoid learning a new dialect.

Print

103 Extend QuarkXPress

BY DAVID BLATNER Learn why QuarkXPress is built for companionship, and which are its choicest XTensions.



All sped up with nothing to burn: media-less 8x CD-R drives, page 29.



**Presto, change-o—your URLs
are now under control,
page 87.**

News

- 27 NetBoot Your Mac**
Apple's new Mac OS X Server opens up the door to network computing.
- 28 QuickTime Sprites Finally Take Flight**
New animation programs take advantage of interactive features in QuickTime 3.
- 29 Packin' In the Pixels**
Epson unveils the high-resolution Expression 800 flatbed scanner.
- 29 Product Watch**
The latest products for your Mac, including a slide scanner from Polaroid and 3-D-modeling software from auto-des-sys.
- 30 Building for the Forbidden Interface**
Micro Conversions and Formac offer expansion cards for the iMac's off-limits mezzanine port.



Opinion



























- 17 Letters**
- 23 The Vision Thing**
BY ANDREW GORE What lurks in the dark shadows of e-commerce?
- 164 The Desktop Critic**
BY DAVID POGUE The unvarnished truth about cable modems.
- 10 How to Contact Macworld**



Secrets

- 87 URL Magic Tricks**
BY JOSEPH SCHORR Wrangle
and reorganize unruly URLs.
- 89 Quick Tips**
BY LON POOLE Tips, tricks,
and shortcuts.

Reviews

- 32  **Power Macintosh G3/300;**
 **Power Macintosh G3/350;**
 **Power Macintosh G3/350 DVD;**
 **Power Macintosh G3/400**
Professional systems
- 34  **Macromedia Director 7**
Multimedia authoring suite
- 36  **Dreamweaver 2**
Web-page design tool
- 41  **SurfJet Agent 1.0;**
 **Web Buddy 2.0;**
 **WebWhacker 3.0**
Offline Web tools
- 42  **Shadow Filter 1.12;**
 **Three-D Luxe Filter 3.0;**
 **VariFocus Filter 1.1**
Photoshop plug-ins
- 44  **Extensis Intellihance Pro 4.0**
Image-correction Photoshop plug-in
- 46  **DiskWarrior 1.0**
Disk-repair utility
- 46  **Hard Disk ToolKit 3.0.1**
Disk-drive utility
- 48  **Ipix Pro;**
 **PanoTouch 1.01;**
 **VR ObjectWorx 1.01;**
 **VR PanoWorx 1.01;**
 **VR SceneWorx 1.0**
QuickTime VR tools
- 51  **Stuff-It Deluxe 5.0.2**
File-compression utility
- 53  **Boris AE 2.0;**
 **CineMotion 1.0 for After Effects**
After Effects plug-ins
- 54  **Font Reserve 2.0**
Font-management software
- 55  **Consultant 2.5.3**
PIM for Palm organizers
- 56  **Iomega Zip 250**
Removable-media drive
- 58  **CommuniGate 3.01**
Integrated mail-server system
- 60  **Monsoon MM-1000 Speakers**
Multimedia speakers
- 62  **Myth II: Soulblighter**
Adventure strategy game

BUY YOUR MAC FROM APPLE BUY YOUR PRINTER DIRECT FROM GCC.

iMac Compatible



 **GCC**
TECHNOLOGIES

HERE'S WHY...

We're GCC Technologies, and our printers are sold direct against some of the most famous names in the computer industry. This creates a buying opportunity for those who understand a basic principle of free enterprise: Selling direct is better for the manufacturer and buying direct is better for the customer.

Therefore, we sell our printers direct, eliminating many prosperous middlemen, and lowering your costs.

We also provide direct technical support, eliminating other middlemen who can't solve your problems. And we are compassionate hand-holders. We offer unlimited free technical support, not just on business days, but on Saturdays too – throughout the one-year warranty period. If during that period you have a problem that our technical support people can't solve, our Platinum Exchange program guarantees you a replacement printer by the next business day.

We invite you to buy your next printer direct from GCC and join our growing family of satisfied customers. All GCC printers come with an unconditional thirty-day money-back guarantee.

For complete details, call the 800 number below. And, for the record, yes, our printers have wonderful technology too. It's just that you don't have to pay extra for it.



ELITE 12 Series

12 pages per minute
Maximum Print Area: 8.5" x 14"
Letter/A4, legal, envelope
250-sheet Universal Tray
PostScript® Level 2 compatible, PCL 5
35 PostScript fonts, 15 PCL fonts,
45 downloadable fonts
RAM expandable to 64 MB
1st year Platinum Exchange Warranty
EtherTalk®, LocalTalk®, TCP/IP
Ethernet (10 BaseT), Bi-directional Parallel
2nd Paper Feeder*
(Includes 500-sheet Universal Tray) Add \$ 299

ELITE 12/600 \$999

600 x 600 dpi resolution
8 MB RAM expandable to 64 MB
2nd year Platinum Exchange Add \$ 99
Business Lease \$50 Month/24 months**

ELITE 1212 \$1199

1200 x 1200 dpi resolution
16 MB RAM expandable to 64 MB
2nd year Platinum Exchange Add \$119
Business Lease \$59 Month/24 months**



ELITE XL 20 Series

20 pages per minute
Maximum Print Area: 12.6" x 35.1"
Letter/A4, tabloid/A3, legal, envelope, poster
500-sheet Universal Tray
PostScript® Level 2 compatible, PCL 5
35 PostScript fonts, 15 PCL fonts,
250 downloadable fonts
RAM expandable to 64 MB
1st year Platinum Exchange Warranty
EtherTalk®, LocalTalk®, NetWare™, TCP/IP
Ethernet (10 BaseT, AAUI), Bi-directional Parallel
2nd or 3rd Paper Feeder*
(Includes 500-sheet Universal Tray) Add \$ 299

ELITE XL 20/600 \$1799

600 x 600 dpi resolution
16 MB RAM expandable to 64 MB
2nd year Platinum Exchange Add \$179
Business Lease \$63 Month/36 months**

ELITE XL 20/800 \$1999

800 x 800 dpi resolution
24 MB RAM expandable to 64 MB
2nd year Platinum Exchange Add \$199
Business Lease \$69 Month/36 months**

ELITE XL 20/1200 \$2199

1200 x 1200 dpi resolution
64 MB RAM installed
2nd year Platinum Exchange Add \$219
Business Lease \$76 Month/36 months**



ELITE XL 8 Series

8 pages per minute
Maximum Print Area: 11" x 17"
Letter/A4, tabloid/A3, legal, envelope
250-sheet Universal Tray
PostScript® Level 2 compatible, PCL 5
35 PostScript fonts, 15 PCL fonts,
45 downloadable fonts
RAM expandable to 64 MB
1st year Platinum Exchange Warranty
EtherTalk®, LocalTalk®, TCP/IP
Ethernet (10 BaseT, 10 Base2), Parallel
2nd Paper Feeder*
(Includes 250-sheet Universal Tray) Add \$ 319
(Includes 500-sheet Letter/A4 Tray) Add \$ 419

ELITE XL 608 LC \$1399

600 x 600 dpi resolution
8 MB RAM expandable to 64 MB
2nd year Platinum Exchange Add \$139
Business Lease \$50 Month/36 months**

*The Elite 12/600, Elite 1212, and the Elite XL 608 LC support one additional paper feeder. The Elite XL 20/600, Elite XL 20/800, and the Elite XL 20/1200 support two additional trays. **Leasing provided by independent leasing companies to qualified customers. Lease payments based on 24-month and 36-month terms. Lease terms subject to change without notice or obligation.

GCC Technologies is a registered trademark of GCC Technologies, Inc. Elite 12/600, Elite 1212, Elite XL 608 LC, Elite XL 20/600, Elite XL 20/800 and the Elite XL 20/1200 are trademarks of GCC Technologies, Inc. All other trademarks or registered trademarks are trademarks of their respective companies.

To order call 1-800-422-7777, or visit our web site, www.gcctech.com

Keycode 904MWS

Choose 43 at www.macworld.com/getinfo

Conquer Disk Damage



Introducing DiskWarrior™, a revolutionary new way to restore damaged disks!

DiskWarrior is a revolutionary new utility that combats disk damage. It quickly rebuilds, recovers and optimizes your HFS and HFS Plus disk directories, eliminating all directory errors and recovering lost files. Other utilities attempt to repair disks by patching the damage. Patching can result in more damage and permanent loss of files.

100% Recovery Assurance

Only DiskWarrior builds a new optimized directory using data recovered from the damaged directory. You have 100% assurance that DiskWarrior will always restore your disks and recover your files when directory damage is your enemy.* You'll also have 100% confidence that you're getting the desired results. DiskWarrior's exclusive Preview ability lets you preview the restoration. You can examine your damaged disk in the Finder as it will appear after the directory is restored but before any changes are made to your disk.

Routine Maintenance

DiskWarrior is your first line of defense against unseen disk damage. Running DiskWarrior regularly prevents small unseen problems from becoming large ones by keeping your directories error free. You'll also keep your directories optimized to speed up overall disk performance.

©1998 Alsoft, Inc. PO Box 927, Spring, Texas 77383-0927 USA. 281-353-4090 or fax 281-353-9868. DiskWarrior is a trademark of Alsoft, Inc. *Visit our web site or call for requirements. DiskWarrior is not a magician. No utility can restore directories that have been written over.



THE UTILITY COMPANY

ALSOFT

www.alfsoft.com 800-257-6381

Choose 140 at www.macworld.com/getinfo

Macworld

EDITOR IN CHIEF
EXECUTIVE ASSISTANT

Andrew Gore
Cynthia A. McDonald

EDITORIAL

EDITOR	Michael Penwarden
SENIOR EDITOR/NEWS AND REVIEWS	Stephen Beale
SENIOR EDITOR/DEPARTMENTS	Nancy Peterson
SENIOR EDITOR/FEATURES	Jason Snell
SENIOR ASSOCIATE EDITORS	Allyson Bates, Linda Comer, Scholle Sawyer
ASSOCIATE EDITOR	Brooke C. Wheeler
ASSISTANT EDITOR	Michael Gowan

CONTRIBUTING EDITORS

David Biedny, Henry Bortman, Christopher Breen, Bruce Fraser, Ted Landau, Deke McClelland, Rik Myslewski, Tom Negrino, David Pogue, Lon Poole, Stephan Somogyi, Franklin N. Tessler

INTERNATIONAL EDITORS

Steven Noble, Australia; Bernard Le Du, France; Andreas Borchert, Germany; Enrico Lotti, Italy; Yoshio Moriya, Japan; Tomasz Bitner, Poland; Daniel de Blas, Spain; Lennart Håkansson, Sweden; Fred Jame, Taiwan; Bahattin Apak, Turkey; Simon Jary, United Kingdom

LAB

TECHNICAL DIRECTOR	Jeff Pittelkau
LAB DIRECTOR	Kristina De Nike
SENIOR LAB ANALYSTS	Jeffy K. Milstead, Kevin Mitchell
ASSOCIATE LAB ANALYST	Gil Loyola
INVENTORY COORDINATOR	Ulysis Bravo

COPY EDIT

MANAGING EDITOR	Claire H. Breen
ASSISTANT MANAGING EDITOR	Paul-Michael King
COPY CHIEF	Jon Zobetica
SENIOR COPY EDITOR	Elissa Rabellino

ART AND DESIGN

DESIGN DIRECTOR	Eleanor Leishman
ART DIRECTOR	Sylvia Chevrier
ASSOCIATE DESIGNERS	Martha Katt, Michael Rattary
DESIGN ASSOCIATES	Jackie Goodman, Jonathan Woolson

ONLINE

VICE PRESIDENT, SALES, & PUBLISHER	Matt Sweeney
DIRECTOR OF CONTENT	Matthew Rothenberg
SENIOR ONLINE EDITOR	Philip W. Dyer
CONTENT ENGINEER	Jeff Cheney
ASSISTANT CONTENT ENGINEER	Jessica Graves
DIRECTOR, BUSINESS DEVELOPMENT FOR ONLINE	Nicholas Harvey
ACCOUNT MANAGER	Diana Berry
ONLINE TRAFFIC MANAGER	Nicole Nestel



More connected.™



Kate Hunter
Dancer



Three choreographers I'd kill to work with; Paris # for Francois.



Ballet class 10:00 am; physical therapy at 4:00 pm; dinner w/Mark, 7:30 pm.



The Times review of my performance; notes on Balanchine bio.



Buy another half-dozen leg warmers; roses to Katya for premiere (hey, who's jealous).



Synchronize and back up my Palm V™ organizer with my Mac. With just one touch.

Simply Palm

www.palm.com

Palm Computing, Inc., developer of the world's leading handheld platform.

© 1999 3Com Corporation. 3Com, Palm Computing, and HotSync are registered trademarks and Simply Palm, Palm V, Palm, the Palm Computing platform logo, PalmPilot and More connected are trademarks of Palm Computing, Inc., or 3Com Corporation. PalmPilot MacSync requires Macintosh connectivity. sold separately for \$14.95 (U.S.). Palm Mail application and some links to desktop software not supported on Macintosh.

USB Floppy Disk Drive

from VST Technologies, Inc.

Works with all USB equipped
Macintosh computers

Powered by USB port

Reads/writes standard
1.44MB floppy disks

Transfers data easily from
floppy disks to/from your
hard drive

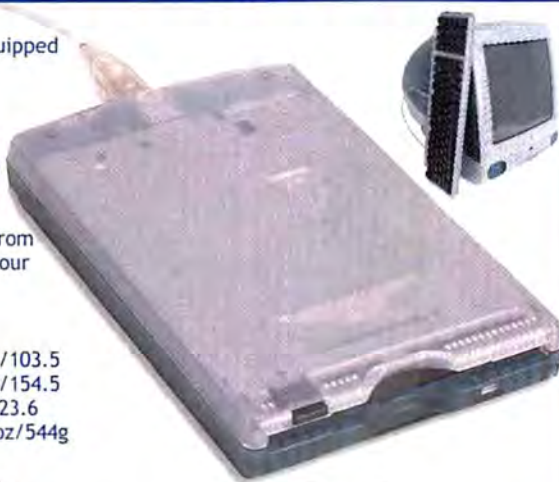
Dimensions (in/mm):

Width 4.075/103.5

Depth 6.083/154.5

Height .929/23.6

Weight: 1lb 2oz/544g



VST
TECHNOLOGIES
Incorporated

VST Products are available at

www.vsttech.com and through
major distributors, resellers and catalog mail houses.

This drive
Reads & writes
standard 1.44MB floppy disks



Choose 73 at www.macworld.com/getinfo

furniture for the way you do business.
as individual as you are.



1.800.688.2446 x622

www.agiodesigns.com/mw

free catalog

AGIO DESIGNS™

Choose 265 at www.macworld.com/getinfo

Macworld

PRESIDENT AND CEO	Colin Crawford
ASSISTANT TO THE CEO	Sharon Sanderson
CHIEF FINANCIAL OFFICER	Stephen Daniels
BUSINESS MANAGER	Eos de Feminis
ACCOUNTING COORDINATOR	Ronda Bittner
IT ASSISTANT	Christian Semmel
DIRECTOR OF HUMAN RESOURCES	Sue Murphy
HUMAN RESOURCE MANAGER	Marisa Chow

DISPLAY ADVERTISING SALES

VICE PRESIDENT, SALES, & PUBLISHER	Matt Sweeney
ASSOCIATE PUBLISHER	Steve Plevin (415/243-3509)
SALES COORDINATOR	Karla Kyrias (415/278-8542)
SALES ASSISTANT	Bryan Farnsworth (415/243-3577)
NATIONAL ACCOUNTS MANAGER	Jessica Ross (415/243-3583)
NATIONAL ACCOUNTS MANAGER	Sara Culley (970/327-4499)
ACCOUNT EXECUTIVE	Margaret Level Green (415/243-3582)
EASTERN ADVERTISING DIRECTOR	Cynthia Ramsey (973/243-1197)
NATIONAL ACCOUNTS MANAGER	Paul Bonarrigo (508/533-4020)
ACCOUNT EXECUTIVE	Jo Zottarelli (516/277-4134)
SHOPPER ACCOUNT MANAGER	Niki Stranz (415/243-3664)
SHOPPER ACCOUNT MANAGER	Carol Johnstone (415/243-3691)
SHOPPER ADMINISTRATIVE ASSISTANT	Alissa Mach (415/243-3628)

RESEARCH

SENIOR RESEARCH ANALYST	Phillip Hibbert
-------------------------	-----------------

MARKETING

MARKETING MANAGER	Francesca Koe
TRADE SHOW/EVENTS COORDINATOR	Nancy Galanty

MACWORLD GLOBAL PRODUCT SUPPORT CENTER

COORDINATOR	Sharon Sanderson (415/243-3640)
-------------	---------------------------------

PRODUCTION

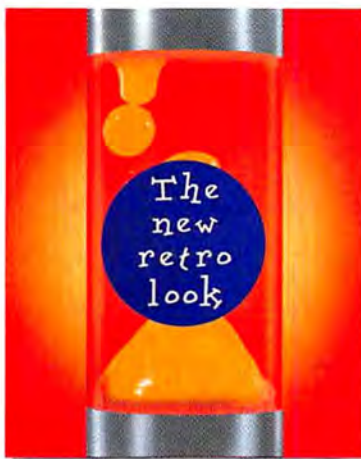
VICE PRESIDENT OF MANUFACTURING	Anne Foley
PRODUCTION DIRECTOR	Cynthia Neustadt
MANUFACTURING TECHNICAL DIRECTOR	Clayton Haberman
DIGITAL AD COORDINATOR	Mac Scott
AD SALES COORDINATOR	Rick Sandoval

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 MacInterr and PowerBook are trademarks, of Apple Computer, Inc. Printed in the United States of America. Copyright © 1999 Mac Publishing, L.L.C. All rights reserved.

Original: 9:30 am



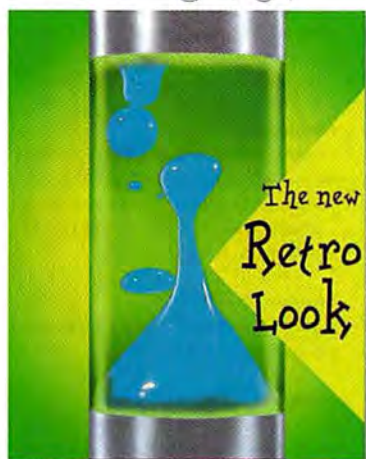
Revision #1: 2:00 pm



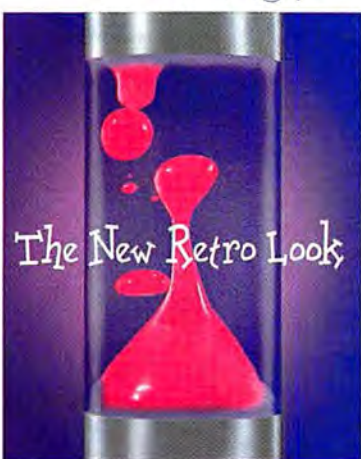
Revision #2: 3:30 pm



Revision #3: 4:15 pm



Revision #4: 4:45 pm



Final: 5:00 pm



Believable Color So Fast It Even Keeps Up With Your Most Unbelievable Clients.

Xerox Digital Color Printers always make you look great. Because no matter how many last-minute revisions, unreasonable deadlines or pressures you put on them, they still deliver Pantone®-accurate, high-speed output right on demand.

Start with the impressive 6ppm color of the affordable DocuColor 5750 (with up to 12" x 18" capability). Or try the DocuColor 5799, a proven workhorse at 9ppm, with near photographic image



quality. Or move all the way up to the award-winning color technology of the DocuColor 40, which offers astonishingly true color at 40ppm. Each one delivers high performance backed by the Xerox Total Satisfaction Guarantee. And 24-hour/7-day service is available.

So call 1-800-ASK-XEROX ext. 949 today to speak with a Xerox Color Specialist. Because Xerox always helps you get it done. And get it right the first time. Even if your clients don't.

Print
The
Document

THE DOCUMENT COMPANY

XEROX

XEROX®, The Document Company®, the digital X®, and the identifying Xerox product names and numbers herein are trademarks of XEROX CORPORATION. Pantone® is a registered trademark of Pantone, Inc. In conjunction with Xerox' efforts to reduce the company's impact on the environment, Xerox equipment includes new, reprocessed, and/or recovered parts and assemblies. Visit us at: www.xerox.com/color

Choose 100 at www.macworld.com/getinfo

Project Scheduling Made Easy!

DON'T TELL MY BOSS

I'm not a project management expert, but everyone thinks I am. Most of my time is spent completing tasks, so I need a scheduling tool that's easy, fast, and flexible.

FastTrack Schedule 6.01 fills the bill. It keeps me organized and in control displaying all my project details in rich, colorful timelines. FastTrack Schedule provides just the right amount of power because it's more sophisticated than day-planners, but *easier to use and half*

\$199* the price of traditional, high-end project managers.

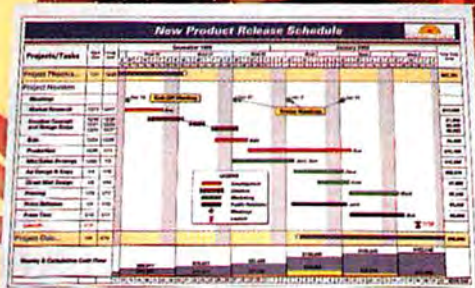
The presentation-quality schedules clearly illustrate project objectives and deadlines keeping team members and clients informed and up-to-date.

In a single schedule, I can outline multiple projects, make assignments, track cash flows, set-up dependencies—even add graphics. Whether I use it once a week or every day, FastTrack Schedule makes project scheduling easy.

For the free Demo CD, more info, or to place an order call **800-450-1982**.

NEW Version 6.01

- ExpressDate™ • FastSteps™
- Open/Export MS Project MPX files
- Full AppleScript Support
- Histograms • Hyperlinks
- and much more...



FastTrack Schedule

Version 6.01

Schedule Tomorrow's Success Today.™ **AEC SOFTWARE**

© 1999 AEC Software Inc. All rights reserved. Corporate names and trademarks listed herein are the property of their respective owners. *Estimated Street Price is \$199; prices may vary at individual retailers. Outside the United States, please call (720) 450-1982 for information.



Macworld

HOW TO CONTACT MACWORLD

Subscription Services

Phone 800/627-2247 or 303/665-8930, United States only
303/604-7445, outside the United States
U.S. Mail Macworld Subscription Services
P.O. Box 54529, Boulder, CO 80322-4529
World Wide Web www.zdnet.com/zdsubs/macworld/service

Subscription Rates

The one-year (12-issue) subscription rate is \$34.97 in the United States and \$54.97 in Canada and Mexico; for all other countries, send either \$54.97 for surface mail or \$104.97 for air mail. The two-year U.S. rate is \$59.97, and the three-year rate is \$79.97. Checks must be made payable in U.S. currency to Macworld. Please allow 6 to 8 weeks to receive your first issue.

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 Department, Ziff-Davis Inc., 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 Services at 800/217-7874 or 651/582-3800; fax 651/633-1862.

Newsstand CD-ROM

Subscribers interested in receiving CD-ROMs monthly should call 303/665-8930 for more information.

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 and 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, 313/761-4700.

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; 415/243-0505, fax 415/442-0766.

LETTERS TO THE EDITOR Direct all 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 Online become the property of Macworld.

QUICK TIPS Send your questions or tips on how to use Mac computers, peripherals, or software to Macworld, Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105, fax 415/442-0766, e-mail quicktips@macworld.com. Please include your name, address, and telephone number.



Be Fast, Be Smart, Be Productive...



Introducing the New MACH Speed G3™ Performance Package From XLR8.

Welcome to a new generation of Macintosh® performance – exclusively from XLR8. We've combined the talent and soul of DayStar Digital®, with the market leading performance of XLR8® to bring you this incredible performance package!

You get **G3 speed**, plus **dual USB ports**... a new **scrolling mouse**, and **exclusive software tools**! Now, you can have the world's fastest Mac with new tools and new capabilities! All for the same price you'd normally pay for an upgrade alone.

Be Fast - As benchmarked by Mac industry pros, nothing beats a 400 MHz upgrade card, not even the newest G3 PowerMac.

Be Smart - Our new software intelligence tools give you superior control and performance. These tools can even configure RAM and SCSI on most Macs!

Be Productive - USB and our revolutionary XLR8 *Point & Scroll*™ mouse will change the way you work by saving steps and space.

From the PowerMac 7300 to the newest translucent G3 Macs, the MACH Speed G3 series transforms your Mac from a Chevy into a Ferrari!

WITHOUT G3

3 hours - from art to final (hurry up and wait).

WITH MACH SPEED G3

1 hour - finished with time to spare!

Register to get your free *Performance* t-shirt...
call 888-XLR8TOR today!
or get all the details and register at www.xlr8.com/g3

Tools to perform and create... on your Mac!™



ClubMac
800-258-2622
Other World Computing
800-275-4576

MicroWAREHOUSE
800-397-8508
MACGURUS
800-775-DRAM

Mac Zone
888-211-5032
MacMall
800-552-8883

COMPUER
800-294-4727
BOTTOM LINE
800-347-0052

CYBERIAN Outpost
877-OUTPOST
INGRAM MICRO

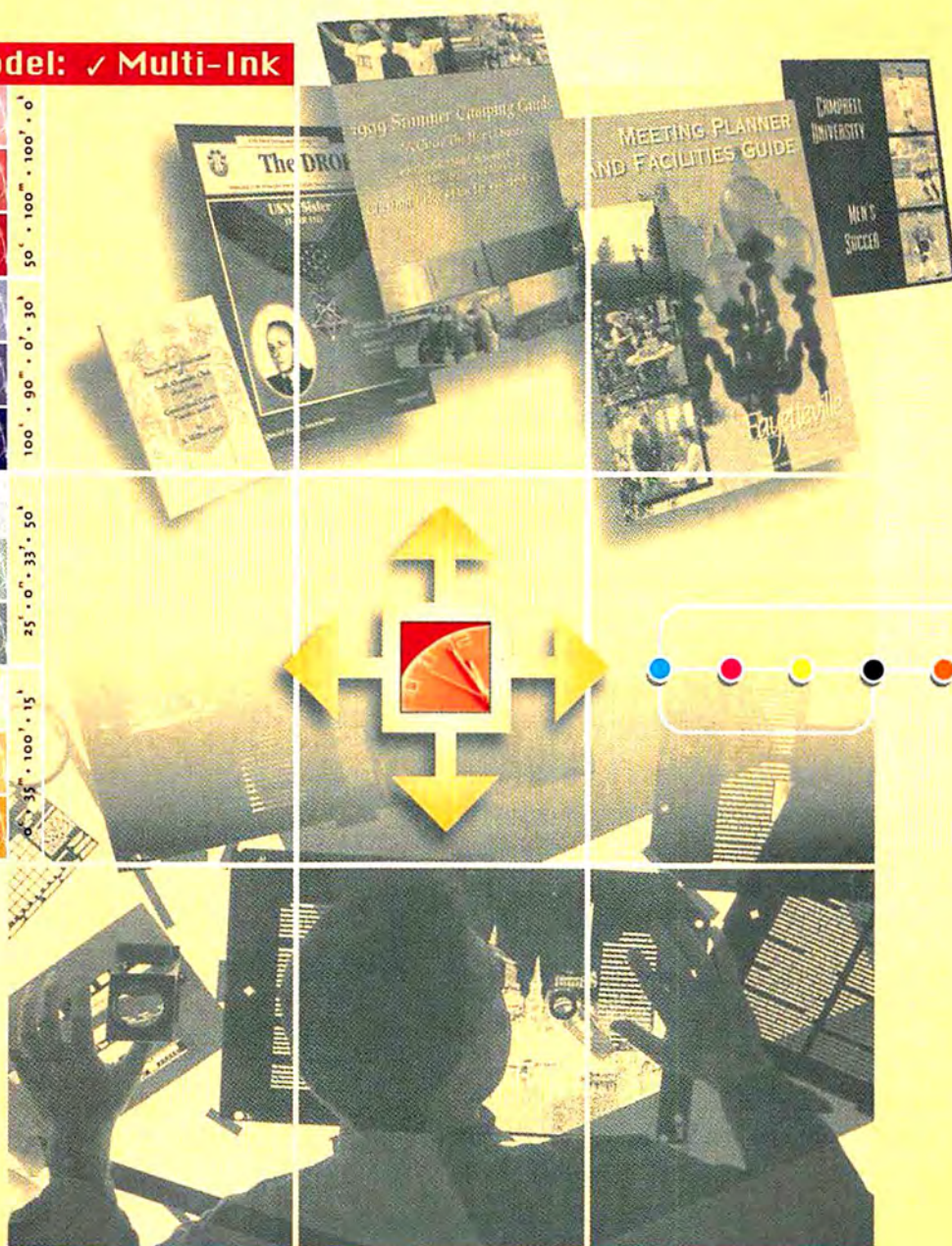


US customers only: Performance Package offer effective via coupon from XLR8 on all new 300-400 MHz purchases, 3/1/99 - 6/1/99.
XLR8 by Interex, Inc., 8447 E. 35th St. N., Wichita, KS 67226, 316-636-5544, 316-636-4616 fax
Other brand and product names are trademarks or registered trademarks of their respective holders. Product specifications are subject to change without notice. ©1999 Interex, Inc.

NO

Wannabees

Model: ✓ Multi-Ink



Print...

⌘ P



ALLOWED



Quark**X**Press

The new design solution for the world.



When you **work** at a **\$3 million** **commercial print facility,**

you want your software to be just as professional as your equipment. For Jim Mowreader, Prepress Manager, that means QuarkXPress™ 4.0. It gives Jim the power and versatility he needs to keep the presses running continually — and keep customers happy. "I called in the order for version 4.0 the day Quark™ announced that it was for sale. I installed it and started using it as soon as it arrived. QuarkXPress is extremely stable, it's fast, and it does what you tell it to."

The multi-ink feature is just one of the new 4.0 features Jim depends on. It lets him create new colors based on percentages — or a combination — of several existing process or spot colors that print to more than one plate. "I use it to mix black ink with PANTONE® colors and to mix two PANTONE colors together. So customers can get three colors for the price of a two-color job — a nice cost savings for them. It's also a great feature to use for varnishing."

"QuarkXPress 4.0 never fails to have one more neat feature, just waiting to be found."

Call (800) 676.4575 to upgrade to QuarkXPress 4.0 now.

<http://www.quark.com>

for a list of resellers, product information,
and to download updaters

QUARK™

Choose 77 at www.macworld.com/getinfo

Quark**X**Press 4.0
FOR MAC OS

Any workstation
can do graphics. Only one
is specifically designed to
make you say,

It's

Introducing the newest addition to the Silicon Graphics® family of visual workstations. The operating system is Windows NT®. And the computer is pure Silicon Graphics. Featuring our Integrated Visual Computing (IVC) architecture with the Cobalt™ graphics chipset, these breakthrough machines move graphics data six times faster than AGP 2X-based workstations*—a massive 3.2GB per second. What's more, our IVC architecture integrates 10/100 Ethernet, IEEE-1394, USB and professional video I/O for a blistering 12-fold increase in bandwidth over other PC workstations.** Finally, you can get the outrageous 2D, 3D and digital media performance you expect from Silicon Graphics—for about the price of a mere clone. The Silicon Graphics 320™ workstation starts at just \$3,395. Or choose the Silicon Graphics 540™ workstation† from only \$5,995. Supporting up to four Intel® Pentium® II Xeon™ processors, it's the most scalable Windows NT workstation around. Either way, your computer will scream. And so will you.

STARTING
@
\$3,395

[Silicon Graphics 320 Visual Workstation]



- Silicon Graphics Integrated Visual Computing architecture with Cobalt graphics chipset
- Supports up to two Intel® Pentium® II processors (up to 450MHz)
- Ultra ATA or optional Ultra2 SCSI drives up to 28GB total capacity
- Microsoft® Windows NT® Workstation 4.0
- Scalable up to 1GB ECC SDRAM
- Add the SuperWide™ 17.3" Silicon Graphics 1600SW™ digital flat panel monitor (shown) for only \$2,495



*Bandwidth based on graphics to main memory. Requires additional software under Windows NT Workstation 4.0. **PCI bandwidth as compared to 32-bit PCI. †For information on the 1999 availability of the Silicon Graphics 540 workstation, please call 1 888 562-4450. Prices quoted are for U.S. only. © 1999 Silicon Graphics, Inc. All rights reserved. Silicon Graphics is a registered trademark, and the Silicon Graphics logo, Silicon Graphics 320, Silicon Graphics 540, SuperWide, Cobalt and Silicon Graphics 1600SW are trademarks, of Silicon Graphics, Inc. Intel, the Intel Inside logo and Pentium are registered trademarks, and Pentium II Xeon is a trademark, of Intel Corporation. Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective owners.

alive



SiliconGraphics

To get information, find a local reseller or to order, call | 888 SGI-4450 or visit us at www.sgi.com/go/visual

Choose 215 at www.macworld.com/getinfo

Think Gig.

Asanté Introduces Gigabit Networking for the Macintosh.

Apple is leading the digital revolution with its new Power Macintosh G3. Asanté is making sure all of your existing machines can keep up.

Our new FriendlyNET™ 7000 series of affordable, easy to install Gigabit switches ensure that no one will be waiting on the network because of large file sizes or Internet traffic.

Combined with our cross-platform GigaNIC™ PCI adapters, your entire office can soon be performing at Gigabit speed.

Our Gigabit solutions offer multiple expansion slots, fiber connectivity, push button uplinks, and more. What does it all mean? What does it matter?

They're incredibly fast. They work on any platform regardless of OS. You can set them up within minutes. And the price can't be beat.



FriendlyNET Gigabit solutions stand up to the bandwidth demands of today with flexible expansion options for the future. And we stand behind our products with free technical support and a limited lifetime warranty.

So what are you waiting for? You won't find a faster, more reliable and cost-effective Gigabit networking solution anywhere. Think Gig.

For complete details on the entire line of Asanté networking solutions call 1-800-303-0283.



APRIL 1999

Letters

On the Road

IN HIS ESSENTIAL EXTRAS FOR THE PowerBook G3 ("Road Gear," January 1999), Stephan Somogyi noted that unless you own the PowerBook G3/300, you'll need to get the DVD-Video Kit from Apple.

I've had an order in for a DVD-Video Kit since July 1998. My local Apple dealer has received zero kits. I've been round and round with Apple's customer relations, all to no avail. The bottom line is, if you already have your PowerBook, forget about getting a DVD-Video Kit. You'd be better off returning your existing machine and purchasing new, because the only way you are going to get the kit is to buy one of the high-end machines that includes it.

CHRISTOPHER RANTS

Sioux City, Iowa

IN "ROAD GEAR," YOU MENTION THE wireless modem service of Metricom's Ricochet but miss the best part. Ricochet works in many airports, in addition to the areas it officially covers. By staying at a hotel close to an airport, I always have access to the Net without any hassles. I used to run an ISP, and I know—Ricochet is a very good ISP.

MARK SHAPIRO

San Jose, California

Ricochet does work in several airports. For a full list of coverage areas, go to www.ricochet.net/coverage/citylist.html.—Ed.

PowerBook Blues

I FOUND MANY OF THE TIPS IN David Pogue's "Survival Skills" very interesting (January 1999). At one point he says there is never any need to shut



down the PowerBook between routine uses. While this is theoretically true, I have discovered some problems with the sleep feature. Often, when the PowerBook is reawakened for the second or third time, I run into memory problems, slower processing, more frequent freeze-ups, and control-strip malfunctions. Overall, the PowerBook G3 has not met my expectations for performance and often does not meet my modest needs.

JONAH VICTOR

Bloomfield Hills, Michigan

Share More

SERIOUS SHAREWARE" ONLY SERVES as a reminder that *Macworld* should regularly cover shareware, since it is such an important part of the Macintosh experience (January 1999). I suggest that you make shareware coverage a monthly feature. I am sure every reader will be disappointed that some favorite item was not

covered (although previous issues have mentioned many shareware applications and utilities in passing). Outside such indispensable interface enhancements as FinderPop, GoMac, Kaleidoscope, and Window Monkey, my favorite is the PIM Consultant, which is so sophisticated it could easily be marketed as a commercial product.

DANA SUTTON

Corona, California

We love shareware and agree that it is worthy of as much coverage as it can get. However, until someone finds a way to download shareware by clicking on paper, the Internet is still the ideal medium for shareware coverage. :-) That is why we maintain the www.macdownload.com site (through ZDNet), which is loaded with reviews of shareware products.—Philip Dyer

Making the Grade

I READ DEKE MCCLELLAND'S REVIEW of Illustrator 8 (*Reviews*, January 1999) and was surprised to see in the summary, "Cons: Gradient Mesh tool is more sizzle than substance." Maybe it needs more control, but I think it is the best tool I have ever seen in 2-D design. What it can do is very impressive and high-quality. In addition, some effects are quicker with this tool than with the previous gradient.

BERRY FARAH

Montreal, Quebec, Canada

NUM-ing Upgrade

I COMPLIMENT STEPHAN SOMOGYI on his review of Norton Utilities for Macintosh 4.0 (*Reviews*, January 1999). It was thorough, fair, and deservedly critical.

I've relied upon Norton's software since
continues

Go home early for a change!



Work faster, not harder, with QuickKeys!

Ever wonder what it would be like to knock off early? QuickKeys turns dreams of extra time into reality. It automates any task you do on your Mac. Launch apps, check E-mail, type your name, select a printer, a server ... whatever. Total control over your Mac is just a keystroke away. Plus, new version 4.0 makes automating your Mac easier than ever. Upgrade for as little as \$35.95 and get all these new features:

- ▶ Compatible with Mac OS 8.5
- ▶ Over 50 brand new features
- ▶ Revised and updated interface
- ▶ Easy-to-use Setup Assistants
- ▶ New drag-and-drop toolbars
- ▶ Plus much, much more

The Anti-Coupon:

Order now!
800-579-9452
www.quickkeys.com
Mention Program Code K2291



©1999 CE Software, Inc. QuickKeys is a registered trademark of CE Software, Inc.

my first Mac purchase five years ago, and I have always found it strong and reliable.

But that changed with my upgrade to version 4.0. Merely opening the program freezes or crashes my PowerBook 1400. Norton hasn't been able to suggest how to get the program to even run. Somogyi hit the nail on the head in stating that this release was not yet ready for sale.

TERENCE A. TUNGSETH
Los Angeles, California

Into Intuos

DEKE MCCLELLAND'S REVIEW OF the Wacom Intuos (*Reviews*, January 1999) described its innovative new axial rotation, simultaneous multiple pointing devices, tool memory, zoom, combination buttons, and ergonomic design (am I forgetting anything?), then marked it down because current software doesn't yet support all of its newest features and its driver isn't compatible with older tablets. This is like docking Sherlock because most Web sites' search engines don't support it. Come on! All other reviews of the Intuos I've read give it excellent marks.

GAGGAN BOPARAI
Pittsburgh, Pennsylvania

The Missing Link

AS CHRISTOPHER BREEN NOTED, MacLinkPlus Deluxe has room for improvement (*Reviews*, January 1998). If MacLinkPlus Deluxe wasn't like the opposite sex (can't live with it, can't live without it), it would be easier to take. When is someone who understands Macs going to work for DataViz? Apart from the problems Breen pointed out, there are several others, ranging from annoyances to serious problems. For instance, AppleWorks 5 isn't supported, and the program crashes regularly on Word files. I'm thinking of divorcing version 10 and going back to my old flame—version 9.7.

DAVID CROWE
via the Internet

Remember the Faithful

WHY IS THERE NO SERIOUS COVERAGE of high-end programs such as Newtek's Lightwave 3D? I appreciate David Biedny's fondness for Electric-

Image Animation System 2.8 (*Reviews*, January 1999), but that is not the only high-end 3-D program on the Mac!

In general, *Macworld* doesn't seem to bother with high-end applications. The iMac is here—we *know* already. I understand that you want to pick up all the new members of the Apple family, but you must remember who else is reading your magazine. A lot of us are trying to push the envelope a little, and we would like to stay on the Mac platform.

SCOTT DAVIS
New York, New York

Game Options

PHILIP DYER FORGOT ONE OTHER low-cost option for playing PC games—the low-end PC (*The Game Room*, January 1999). Especially when compared with the cost of Orange Micro's "solutions," you really come out ahead. Right underneath my copy of *Macworld* is a pile of PC ads and catalogs that have 200MHz to 300MHz PCs for under \$600! A good PC box and an A/B monitor switch work great for my job, where I constantly encounter both platforms. We tried the Orange Micro cards and, for the money, we were sadly disappointed.

JAY DREW
Valparaiso, Indiana

I'VE ALWAYS BEEN JEALOUS OF THE variety of titles available for Windows. As Philip Dyer points out, PC emulation—using software or hardware—is slow and expensive.

There's another, hidden problem with PC emulation: it reduces the incentive for game companies to make Macintosh versions of their games. Why hire Mac-savvy programmers and pay more production costs if the Mac users are buying the Windows versions? PC emulation is fine for translating an occasional spreadsheet, but if we use it as a long-term solution to gaming, Mac-native games will always be too little, too late, and too slow.

The Mac just isn't a gaming platform. Why make a silk purse from a sow's ear? Either bite the bullet and buy a full-fledged PC, or save yourself a thousand bucks and get a game console.

ARTIE MOFFA
Amherst, Massachusetts

continues

Wicked

performance.
Wicked pricing.

Now
available
with Intel®

Pentium® III
processors



SILICON GRAPHICS 320™ VISUAL WORKSTATION

STARTING

@
\$3,395

Silicon Graphics 320, Base System \$3,395

- Integrated Visual Computing (IVC) architecture with Cobalt™ graphics chipset
- Single (dual capable) Intel® Pentium® II processor 400MHz (Intel® Pentium® III processor available up to 500MHz)
- 128MB ECC SDRAM (expandable to 1GB)
- 6GB Ultra ATA hard drive (expandable to 28GB of storage) or optional Ultra2 SCSI hard drive
- 3 available PCI slots on two 64-bit PCI buses
- 1.44MB floppy drive, 32X max. CD-ROM
- Integrated 10/100 Fast Ethernet
- IEEE-1394; parallel, serial, USB, video and audio ports
- Integrated analog video; composite and S-video
- Microsoft® Windows NT® Workstation 4.0
- 3-year limited hardware warranty with 1-year onsite service

Silicon Graphics 320	\$4,134
Single Intel® Pentium® II processor 400MHz	

- 128MB ECC SDRAM
- 10GB Ultra ATA hard drive
- 17" (16" viewable) monitor with Trinitron™ technology
- Upgrade to the Silicon Graphics 1600SW™ 17.3" digital flat panel monitor for \$1,895

Silicon Graphics 320	\$4,604
Single Intel® Pentium® III processor 450MHz	

- 128MB ECC SDRAM
- 10.1GB Ultra ATA hard drive
- 17" (16" viewable) monitor with Trinitron™ technology
- Upgrade to the Silicon Graphics 1600SW 17.3" digital flat panel monitor for \$1,895

Silicon Graphics 320	\$5,154
Single Intel® Pentium® III processor 500MHz	

- 128MB ECC SDRAM
- 14.4GB Ultra ATA hard drive
- 17" (16" viewable) monitor with Trinitron™ technology
- Upgrade to the Silicon Graphics 1600SW 17.3" digital flat panel monitor for \$1,895

Silicon Graphics 320	\$6,704
Dual Intel® Pentium® III processors 500MHz	

- 128MB ECC SDRAM
- 9.1GB Ultra2 SCSI hard drive
- 17" (16" viewable) monitor with Trinitron™ technology
- Upgrade to the Silicon Graphics 1600SW 17.3" digital flat panel monitor for \$1,895



SiliconGraphics

To get information, find a local reseller or to order, call 1 888 SGI-4450 or visit us at www.sgi.com/go/visual

*Requires additional software under Windows NT Workstation 4.0. Prices quoted are for U.S. only.

© 1999 Silicon Graphics, Inc. All rights reserved. Silicon Graphics is a registered trademark, and the Silicon Graphics logo, Silicon Graphics 320, Cobalt and Silicon Graphics 1600SW are trademarks, of Silicon Graphics, Inc. Intel, the Intel Inside logo and Pentium are registered trademarks, of Intel Corporation. Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective owners.

Choose 215 at www.macworld.com/getinfo

put our



to work for

you

Let the Macworld Lab help you make the right purchase decisions. Whether you depend on the stamp of approval of an Editors'



Choice award, a five-mice rating, or the authoritative test data presented in our benchmark charts — you can put our lab to work for you.

Something obvious happens when a publication is backed by the most experienced, capable and thorough product testing in the Macintosh industry — more serious Mac buyers rely on it to make smart purchase decisions.

Macworld



LETTERS

Put the 'Book Back

CANADA'S NEW NATIONAL paper, *National Post*, launched her 26 using Macs from end to end.

Our executive editor gave every reporter a choice: we could take either a desktop or a PowerBook.

After wrestling with the choice, almost every reporter here, including me, went with the desktop. Yes, it would be convenient to take the PowerBook home, but it would be a hassle to plug in the power cord and hook into the corporate network every day.

The desktop's full-size keyboard is still more comfortable than a portable's, and a 17-inch monitor is still a lot more screen real estate than a PowerBook offers. And while the TrackPad is a great pointing device, I've yet to find the person who prefers it to a good old-fashioned one-button mouse.

Portable computing devices, including the PowerBook, may one day free us from our desks. Here in Toronto, though, reporters of *National Post*, when given the chance to be free, decided to stay down on the cubicle farm.

DAVID AKIN

Oakville, Ontario, Canada

Letters should be sent to *Letters*, Macworld, 301 Howard St., 16th Fl., San Francisco, CA 94105; via fax, 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. All published letters become the property of Macworld.

CORRECTIONS

To clear the RAM disk on a PowerBook, press ⌘ -option-P-R ("Survival Skills," January 1999).

In "Comin' at Ya" (January 1999), the captions for Micro Conversions' Game Wizard and ATI Technologies' Xclaim VR 3-D accelerators were reversed. Also, Tomb Raider II needs Rage II or better for RAVE to work, not Rage Pro.

In the infographic "The Lay of the Land" ("Road Gear," January 1999), the VGA-out and S-Video-out labels on the PowerBook G3 were reversed. **m**

We could tell you lots of nice things about **CANVAS™ 6.**

"Deneba's SpriteLayers technology lets you create some interesting transparency effects that would be difficult if not impossible to make in a dedicated drawing program... In the competition of the graphics titans, Canvas 6 is fighting with a unique set of weapons."

Macworld — Feb., 1999

"Version 6 has dramatically improved the software's interface, significantly increased user customization and added lots of useful features... Canvas 6 delivers power and versatility at a competitive price."

eMediaweekly — Jan., 1999

"Canvas 6 is sure to please faithful users... Canvas continues to deliver a vast scope of graphics tools in one convenient application, and does a remarkable job of breaking down barriers between bitmap and vector graphics."

PC World Online — Dec. 28, 1998

"Canvas 6's array of new transparency tools allow you to create awesome depth and layering in your images — and it does so better than other graphics products on the market today."

MacAddict Magazine

"With its elegant interface, Canvas is a compelling alternative to suite-based solutions that require separate illustration and image editing programs to perform the same functions... Canvas has always performed well with technical illustrations, featuring extraordinary dimensioning capabilities and numerous precision drawing aids... The program warrants serious consideration from newcomers seeking an elegant and relatively inexpensive tool."

PC Magazine — Jan., 1999

"SpriteLayer technology represents an industry breakthrough because it allows users to apply an unlimited variety of compositing effects to any type of object or group of objects... [SpriteLayer] technology is an excellent piece of programming wizardry. With it, designers can easily experiment with complex graphic ideas that would have been prohibitive or impossible in any other program... Deneba has given designers a creative tool that makes it more convenient than ever to play around with any and all of their graphic elements in one place."

Digital Design & Production — Jan./Feb., 1999

But these experts beat us to it.

"Deneba has done what Adobe has refused to do: unify graphics apps... Canvas 6.0's unique ability to combine disciplines will lead the designer down previously inaccessible creative paths... SpriteLayers composite like no other program can."

Maximum PC — Jan., 1999

"No program comes close to Canvas' ability to combine vector and bitmapped graphics... No other program provides this level of transparency control."

Macworld — Mar., 1999

Find out for yourself why everyone's talking about Canvas™ 6 and the revolutionary new SpriteLayer™ technology. Visit www.deneba.com/macworld/ to download a FREE fully functional 30-day evaluation kit. The graphics revolution is here, and it begins with Canvas 6.

Order today!



1.800.6CANVAS

D E N E B A
CANVAS™
Designed for the way you design.



Includes:
30,000 Clip Art Images!
2,450 URW™ Fonts!

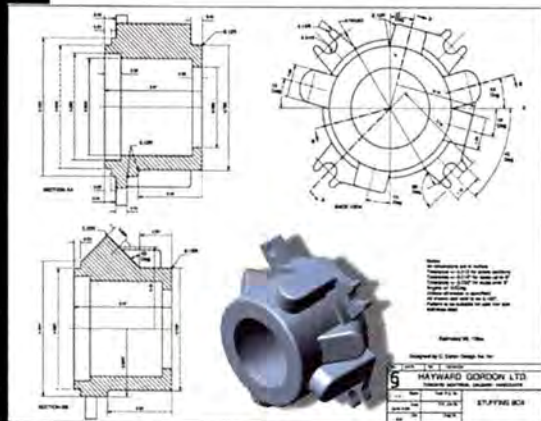


Professional Version* \$375
Competitive Upgrade* \$199

This ad was created and color separated using nothing but Canvas 6.

*Estimated street pricing in US dollars. Pricing does not include shipping and handling. Sixty-day money back guarantee excludes shipping and handling costs. © Copyright 1999 Deneba Software. Limited time offer valid only in North America. All other trademarks or registered trademarks are the property of their respective owners.

Choose 57 at www.macworld.com/getinfo



Carlos Cohen, C. Cohen Designs Inc., Toronto, Canada; Rendered with RenderWorks

Introducing VectorWorks The Next Generation of MiniCAD

Charles Duncan, Pty. Ltd.

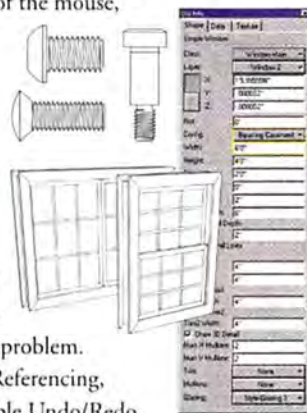


Roberto Candusso, Arquiteros Associados, Sao Paulo, Brazil

After 14 years of constant research and development, Diehl Graphsoft is proud to introduce VectorWorks—the next generation of MiniCAD. VectorWorks improves MiniCAD's proven CAD technology and merges new state of the art Object-Based design philosophy. This integration makes you more productive without sacrificing flexibility and control.

Increased Productivity with Object-Based Design

VectorWorks' state of the art Object Technology helps streamline the design process by making it easy to create common design elements. Now, Objects like doors, windows, nuts and bolts, can be created and edited with a click of the mouse, making it easy to explore design alternatives, consider "what if" scenarios, and handle last-minute client changes.



The Strength of a Proven CAD Technology

VectorWorks offers a solid foundation based on proven CAD technology—giving you the power and flexibility to tackle any design problem. New features such as Workgroup Referencing, DWG (v.14), Round Walls, Multiple Undo/Redo and an improved scripting language, strengthen VectorWorks' core CAD capabilities. And, with RenderWorks, VectorWorks' new photo-realistic rendering plug-in, you can bring your designs to life with textures, shadows and dramatic lighting.

The VectorWorks Advantage

With VectorWorks, you get it all—the flexibility and control of proven CAD technology and the productivity benefits of Object-Based design. VectorWorks ships FREE solutions for Architecture, Landscape Design, DTM and HVAC among others. Best of all, you aren't limited to the solutions we provide. VectorWorks is completely customizable, allowing you to create your own custom business solutions.

Special Offer to Readers of Macworld

Save \$279 by purchasing VectorWorks with photorealistic rendering direct for \$820 or, without rendering for only \$595. Includes FREE Tech Support and a 90-Day Money-Back Guarantee.



Diehl Graphsoft Inc
Software for Today's Professional
1-888-646-4223



The Vision Thing

by Andrew Gore

Bargain Hunters, Beware

WITH A LITTLE COMMON SENSE, YOU CAN SHOP THE WEB SAFELY

IF YOU'VE EVER BEEN IN midtown Manhattan, you've probably seen the Going Out of Business businesses. You know: "Lease Expired! Closing After 20 Years! Our Loss Is Your Gain!" Banners like these are spread across the windows of dozens of little shops, declaring unbelievable discounts. Of course, most of these shops have been going out of business for a decade or more. In fact, the only thing you're less likely to find in New York than a polite cabbie is a Going Out of Business business that actually has. And as for those big discounts, it's true you can save 50 percent or more—if you don't mind that the original price was double the normal retail price. These stores bank on the gullibility of casual consumers, impulse buyers, and tourists. Only in New York, right?

Caveat Emptor

As it turns out, the Internet has proved to be fertile ground for its own unique breed of hucksters. With just a little bit of pocket money, a savvy designer, and a Web server, anyone can set up an electronic storefront that looks slick, professional, and credible faster than you can say *Ponzi scheme*. Internet newsgroups are bulging with stories of Web merchants who have overcharged customers, not delivered products as promised, or just plain taken the money and run.

Even with the Web's honest operators it can still be hard to know if you're really getting the best deal. It's amazing how many Web sites claim to have the lowest prices for a particular item. Let's say you're trying to buy a copy of *The Truman Show* on DVD. First you check out Amazon.com and find your DVD in stock for \$20.99—about 30 percent off the retail price. Not bad, but at VideoBuy.com it's only \$14.99.

And even at that kind of price, the Web's not necessarily a bargain. None of these discount prices include shipping and

handling or taxes. At VideoBuy.com and Amazon.com that's an extra \$4.95. That can kill your savings in a hurry.

Of course, all this assumes that the products you want are in stock. Suppose you're ordering several DVDs, and one is on back order. You have two choices: wait several weeks for that one title to arrive, or split your order in two parts and pay separate handling charges for each.

And just because all this shopping is being done via computer, don't assume there's no opportunity for human error. I've ordered products that weeks later I was told never existed. This past Christmas I used Amazon.com to buy my mother a book about yoga for people

with which buying over the Net is being pushed these days. I believe shopping on the Web is a good thing, since it gives busy consumers another way to save time and money, but it's good only when used wisely. To help you avoid some of the pitfalls I've run into, here are five tips:

1. Size Matters For now, it's too hard to tell the good guys from the bad, so stick with the big-name sites, unless you know someone who's already had a good experience with a no-name vendor.

2. Research Go to a good newsgroup site, like DejaNews, and do a search on the name of a site. If you find 10,000 messages that start off with "Boy, these guys stink," you may want to shop elsewhere.

3. Shop Around Even among the major brands there can be a real difference in price. And don't forget to figure in the shipping charges!

4. Start Small Keep your first purchase from an unfamiliar site relatively inexpensive. This way, if you get stuck, you won't be out much money.

5. Click "No" When in doubt, just click "no." You can always come back later and pick up where you left off, hopefully with a higher comfort level.

Take these few common-sense precautions, and you increase the odds that your online buying experience will be a good one. It amazes me that while people will obsess over sending their credit-card number over the Web, they won't give a second thought to the much more likely possibility that what they order will come late, broken, or not at all.

Oh, yes, and one final tip: just like those Going Out of Business come-ons, if a deal seems too good to be true... it is. **m**

Has Andy got a deal for you: send him your comments at visionthing@macworld.com, and he'll read them—no charge!



over 50. The company shipped her a book on modern architecture, complete with festive holiday gift wrapping.

To its credit, Amazon.com quickly shipped her the correct title and credited me the shipping charge. But still, imagine my mother's surprise when she unwrapped her Christmas present.

Tips for Safe CyberShopping

Now, you might think I'm down on Internet commerce. I'm not. What I am down on is the unqualified enthusiasm



IT TAKES ONLY
ONE LITTLE THING
TO RUIN AN ENTIRE
PRESENTATION.

If your reputation hinges on accuracy, consider that Tektronix has been making color printers for more than 15 years. You might also like to know about the Phaser® 780 color printer.

It's loaded with color management tools that take the guesswork out of getting what you want. There's our exclusive PhaserMatch™ ICC software, which allows you to match the output of a specific press, paper, or ink. Want to know how your work is going to look on newsprint? Use one of the newsprint profiles, or create your own using International Color Consortium standards. And it supports ColorSync, so what you see on your screen is what comes out of your printer.

Avoid embarrassment.
Call toll-free 1-877-362-6567
ext. 1616. Or visit

www.tektronix.com/Phaser780x1616



Tektronix®

© 1999 Tektronix, Inc. Tektronix and Phaser are registered trademarks and PhaserMatch is a trademark of Tektronix, Inc. ColorSync is a trademark of Apple Computer, Inc.

iRobot. iMac. iFix.



Don't let your important data become Lost in Space™

When your Macintosh computer is not functioning properly, it is important that you have the right tool to find and correct the problem. And as any knowledgeable robot will tell you, one can never have too many tools when important data is at stake.

TechTool Pro 2 checks and repairs more aspects of your Macintosh than any other utility available. Besides repairing and recovering damaged drives (including those with the new HFS+ format), you can also test all those other critical parts of your system that other utilities ignore like RAM, CPU, floppy drives, scanners, modems, Internet connections, CD-ROM drives and much, much more. TechTool Pro will even help your computer run faster by optimizing your disk drives.

But just because TechTool Pro is the most advanced Macintosh troubleshooting utility available doesn't mean that it's difficult to use. In fact, we've added an easy-to-use interface that makes checking and fixing your Macintosh a snap. For the advanced user, our expert mode allows you to control and configure TechTool Pro in almost any way you wish.

So if Macintosh troubles are making you feel like a bubble-headed booby, check out TechTool Pro. After all, you have the most powerful computer in the galaxy. Shouldn't you be using the most powerful utility?

MicroMat Inc.
800-829-6227
707-837-8012
FAX: 707-837-0209
info@micromat.com
www.micromat.com



Fix different.™

Choose 67 at www.macworld.com/getinfo

*Limited time offer expires April 30th, 1999. Price subject to change without notice. Upgrade available only from MicroMat Computer and some select distributors. Not all distributors will be offering this special upgrade price.

©1999 MicroMat Computer Systems, Inc. All rights reserved. TechTool is a registered trademark of MicroMat Computer Systems, Inc. Fix Different is a trademark of MicroMat Computer Systems, Inc. Macintosh is a trademark of Apple Computer, Inc. ©1999 Space Productions. Licensed by New Line Productions, Inc. All rights reserved. Norton and MacTools are trademarks of Symantec, Inc.

COMPETITIVE UPGRADE!
If you own
Norton™ Utilities
or MacTools™, you
can upgrade to
TechTool Pro
for only
\$59⁹⁵*

systems

Apple Introduces OS X Server

NETBOOT FEATURE LETS
MACS SHARE SYSTEM
FILES, APPLICATIONS

by Stephen Beale

The scene during Steve Jobs's Macworld Expo keynote was impressive: a network of 49 iMacs, mounted in a grid of metal racks, each running a QuickTime movie from the same server. It was a dramatic demonstration of NetBoot, a feature in Apple's new Mac OS X Server that allows multiple Macs to be booted and configured from a single machine.

NetBoot comes close to fulfilling the dream of a network computer: cheap PCs that share applications, data files, and other resources stored on a powerful server. You don't even need a hard drive or any other local storage on your Mac. Instead, the Mac boots from a partition on the server, which you also use to store your documents and system preferences. On a fast network it should be nearly transparent: you might have to enter a password to access your files, but otherwise the Mac experience won't be much different.

Diskless iMac? Thanks to NetBoot, Apple could theo-



retically offer steeply discounted iMacs, sans local storage, in bundles that include Mac OS X Server. Indeed, as part of his demonstration, Jobs showed an iMac, its hard drive removed, booting from the server.

However, citing economies of scale, Apple says a diskless iMac would not be much cheaper than a standard model, and the company has made it clear that it has no

intention of offering such a machine. NetBoot's main selling point, in Apple's view, is the control and convenience it offers network administrators, not cost savings made possible by stripping down a popular consumer machine.

With NetBoot, you can perform a single installation of system software and applications and make them available to any Mac on the network. NetBoot also includes

system-management tools that allow you to control access to applications and other files. For example, some users on the network might have rights to all applications, while others are restricted to using Microsoft Office. Because the files reside on a server, you can use them from any Mac on the network as long as you have the correct access privileges.

continues

Going to School The centralized control that NetBoot permits will have particular appeal for schools, which can use the software to run a classroom full of iMacs from one Mac OS X Server. Even if schools have to pay close to retail price for the iMac clients, the server itself won't strain most budgets: Apple charges \$995 for a software-only version or \$4,999 for a version bundled with a 400MHz Power Mac G3.

NetBoot, of course, is just one part of Mac OS X Server, which evolved from Apple's Rhapsody development efforts. At the server's core is the same Mach microkernel that will provide the basis for Mac OS X, Apple's next-generation operating system. The server also includes the BSD 4.4 version of Unix; the Apache 1.3.3 Web server; and WebObjects 4, a development tool for large-scale dynamic Web sites. The latter represents the Macintosh debut of the Web authoring software,

which was previously available only for Unix and Windows NT workstations.

online

Adobe Brings CyberStudio into the Fold

GRAPHICS TITAN GETS PRO-LEVEL WEB TOOL

by Jason Snell

When Adobe Systems (408/536-6000, www.adobe.com) announced in January that it was buying GoLive Systems, maker of the popular GoLive CyberStudio Web authoring package, many industry analysts asked, "What took them so long?" But for loyal CyberStudio users, excitement about the acquisition has to be

mixed with some trepidation.

The deal appears to make sense. CyberStudio users tend to be professional designers and developers, the same folks who rely on such Adobe products as Photoshop, Illustrator, and ImageReady. Adobe's only foray into HTML editing is PageMill, a consumer-level tool that has long been eclipsed by CyberStudio, Macromedia's Dreamweaver software, and other packages.

Lessons Learned? Adobe's track record with PageMill is raising fears among CyberStudio boosters that their favorite Web tool will get short shrift. Once the toast of the Mac Web design crowd, PageMill stalled when Adobe turned its attention to creating a Windows version. The result was a dated Mac program that couldn't handle many of the hottest new Web innovations.

CyberStudio loyalists are understandably concerned that Adobe will again turn its attention to the Windows market and deprive Mac users of a top-notch Web design tool. There's no doubt that Adobe will offer a Windows version of CyberStudio: GoLive was working on one even before the Adobe deal went through.

Nevertheless, Adobe marketing vice president Bruce Chizen says that Adobe has learned the lesson of PageMill and recognizes the need to keep CyberStudio as a Web design counterpart to its other professional-level software packages. A cross-platform presence could even offer unexpected advantages for CyberStudio users: many Web authors who prefer CyberStudio were forced to use Macromedia's Dreamweaver when their organizations insisted on purchasing a cross-platform product. Adobe has not said when the program will be available on Windows.

CyberStudio's development team in Hamburg, Germany, will continue to develop the software as Adobe employees, and GoLive CEO Andreas Politza will join Adobe as an Internet-strategy consultant—both signs that Adobe intends to exploit GoLive's Net savvy, not crush it.

PageMill Prospects? PageMill's future is also up in the air. Chizen and Politza say they will compare the technologies in PageMill and CyberStudio and decide whether Adobe needs a consumer-level Web design tool. Their choices? Merge the two programs, continue selling PageMill as a low-end product, or kill PageMill and offer an entry-level version of CyberStudio similar to GoLive's current \$99 CyberStudio Personal Edition.

multimedia

QuickTime Sprites Finally Take Flight

QUICKTIME ANIMATION PROGRAMS DEBUT

by Jeff K. Milstead

The interactive-animation features buried within QuickTime 3 will soon get their day in the sun, courtesy of new tools from Electrifier (formerly Lari Software; 919/968-0701, www.electrifier.com), Totally Hip Software (604/685-6525, www.totallyhip.com), and others. These programs support QuickTime's new *wired sprites*—graphic elements that can perform defined actions based on user input.

Electrified After an extended paid beta period, Elec-



Midrange Scanner Packs In the Pixels

IT'S NOT THE CHEAPEST FLATBED SCANNER YOU CAN BUY, but the new Expression 800, from Epson America (310/782-0770, www.epson.com), offers 36-bit, 800-dpi optical resolution for less than \$1,000. Three versions are available: the \$699 Executive bundle, which includes Xerox Textbridge OCR software and a limited edition of Adobe Photoshop 5.0; the \$799 Artist bundle, which adds Monaco Profiler Lite for scanner calibration; and the \$999 Professional bundle, which further adds a transparency adapter.—MACWORLD STAFF

trifier has finally shipped Electrifier Pro 1.0, a \$595 program that lets designers integrate any QuickTime-supported media into an interactive movie. The program's long gestation has resulted in many refinements for an initial release, including a tab that provides an instant preview of your movie.

Electrifier lets you place graphic elements known as *actors* in a movie window. You can then assign actions to each element by dragging icons from palettes. These actions control how an actor will respond to mouse-clicks or behave over time. For example, you can attach a URL to a moving graphic, or define on/off buttons for playing an embedded QuickTime movie. Movies can incorporate the full range of QuickTime media, including QuickTime VR panoramas. A 30-day trial version is available from Electrifier's Web site.

Electrifier has already announced version 2.0 of the software. Set to ship by mid-year, it is expected to add features relevant to Apple's upcoming QuickTime 4 release. (Apple was set to unveil QuickTime 4 at the recent Macworld Expo in San Francisco but delayed the announcement for unspecified reasons. The new QuickTime will reportedly offer real-time streaming capabilities.)

Scripted Sprites Totally Hip's new LiveStage software takes a different approach. Targeted at Web authors who might otherwise turn to Java, DHTML, or Flash to produce animations, LiveStage provides a QuickTime scripting language that resembles Macromedia Director's Lingo.

A LiveStage project consists of sprites driven by

associated scripts. You can use expressions and variables to program complex behaviors, from simple mouse-over button effects to a complete game of Tetris or Minesweeper. It's all deliv-



ered to the user's Web browser as a single, compact QuickTime file.

Totally Hip offers a \$199 developer release bundled with Web Painter 3.1, the company's Web animation program, and Apple's QuickTime 3 Pro software. The initial version will support only bitmapped and vector images, System 7 sounds, and MIDI sound files. You can build wired QuickTime VR movies by setting up sprites—such as navigational controls—in LiveStage and then using QuickTime Pro to composite them with a QTVR panorama. Totally Hip offers a save-disabled demo version of LiveStage on its Web site.

Although they support multiple data types, Electrifier and LiveStage rely on QuickTime's vector format to keep file sizes small. While LiveStage uses its bundled companion program, Web Painter, to generate still graphics in the vector format, Electrifier can directly import Adobe Illustrator files and convert them to the QuickTime format. Unlike bitmapped graphic formats, these files are minuscule and can be smoothly enlarged to full screen.

More Wires Other vendors have introduced their own tools for creating wired

sprites. Deep Forest Multimedia (www.mountain-inter.net/~bmeikle/) is offering a demo version of its forthcoming WiredZone, which will sell for \$99. Squamish Media Group (www.smgvr.com/msVRmain.html) has announced mapsVR, a \$99 program that lets you add sprite-driven directional indicators and navigation controls to multinode QTVR panoramas. A freeware program called Spritz (<http://home.earthlink.net/~dmcgavran/spritz/download.html>) lets you create wired QuickTime movies that function as simple interactive elements, such as a button bar for navigating a Web site. The program requires Mac OS 8.5.

storage

Media Limited for 8× CD-Rs

VENDORS SLOW TO
OFFER DISCS CERTIFIED
FOR NEW RECORDERS

by Michael Gowan

All CDs are not created equal. If you want to take full advantage of the new 8× CD recorders from APS Technologies, Smart and Friendly, and others, you'll need 8×-certified CD-R media. As of mid-January 1999, only a handful of media vendors were offering certified discs, but most of the leading players plan to offer 8× media in the near future.

Sensitive Layers A recordable CD is constructed of multiple layers, including dye and polycarbonate plastic strata. Because it records at such a high speed, an 8× mechanism requires a dye

continues

Latest LaserJet Is there still a place for monochrome laser printers? Hewlett-Packard (800/752-0900, www.hp.com) thinks so. The HP **LaserJet 2100**, which replaces the LaserJet 6P/M, offers 1,200-dpi resolution and a 10-pages-per-minute print engine in a \$699 package. The **LaserJet 2100M**, with HP's PostScript-clone interpreter and extra RAM, costs \$799. The **LaserJet 2100TN**, with an HP JetDirect EIO print server and an additional 250-sheet paper feeder, costs \$999.

Modeler Marches On Autodesk-sys (614/488-8838, www.formz.com) has released version 3.0 of **Form-Z**, its flagship modeling program for 3-D-graphics professionals. Added features include a customizable user interface, animation tools, and a host of new modeling functions. The base package sells for \$1,495; a version with rendering capabilities costs \$1,995.

XTension Trio Gluon (212/343-1755, www.gluon.com) has released three new QuarkXTensions. **XPressImage** lets you export QuarkXPress documents in a variety of formats, including GIF. The \$149 utility can use hot folders to automate the export process. **QC** is a \$225 quality-control tool that locates problems in text formatting, spot colors, and other document elements. **Cloner XTension**, priced at \$129, copies an element or group of elements to any page or page range.

continues

For Older Macs Looking to resurrect that old Mac Quadra or Centris? Sonnet Technologies (949/261-2800, www.sonnettech.com) has announced the **Presto PPC**, a \$399 upgrade card that features a 100MHz PowerPC 601 and a 1MB L2 cache. Sonnet is also shipping G3 upgrades for the Power Mac 5400, 5500, 6400, 6500, and other "upgrade-challenged" Mac systems; prices range from \$399 to \$599.

Slide to Your Mac The new **SprintScan 4000**, from Polaroid (800/816-2611, www.polaroid.com), scans 35mm slides, filmstrips, and Advanced Photo System film at 4,000 dpi. The scanner, with a street price of about \$2,000, can capture a slide at full resolution in less than a minute. Scheduled to ship in March, it's bundled with PolaColor Insight Pro scanning software and Adobe PhotoDeluxe.

New Homes? Don't be surprised to see some familiar Mac products in unfamiliar territory. Iomega (801/778-1000, www.iomega.com) announced that it has acquired the assets of SyQuest Technology, which declared bankruptcy this past November. SyQuest products include the **SyJet** and **Sparq** removable-media drives; Iomega has not announced its plans for the storage devices. . . . CalComp, developer of the **Creation Station** graphics tablets and **CrystalJet** large-format printers, has ceased operation and is seeking a buyer for its products.

—EDITED BY MICHAEL GOWAN

that marks easily and a polycarbonate layer with clearly defined ridges. You can burn 4X CD-Rs in an 8X drive, but only at the lower speed.

Fortunately, you probably won't have to pay a premium for the higher-speed discs. APS Technologies (800/862-6831, www.apstech.com) and Smart and Friendly (818/772-8001, www.smartandfriendly.com), which sell CD-R drives that use the same 8X Sanyo mechanism, both offer 8X-certified recordable discs for \$20 per 10-pack, about what you'd pay for name-brand 4X discs. The drives themselves sell for about \$500 each, compared with \$300 for 4X drives.

Brand Plans Among name-brand manufacturers, TDK (516/625-0100, www.tdk.com) offers 8X discs for about \$2 each. Imation (888/466-3456, www.imation.com) says it will soon offer 8X media—at prices 10 to 15 percent higher than what it charges for 4X discs. How-



APS Technologies, one of two vendors with an 8X CD-R drive, also offers 8X media.

ever, in *Macworld* testing, we were able to record Imation's 4X-certified discs at 8X on both 8X recorders.

Maxell (888/262-9355, www.maxell.com), Sony (941/768-7669, www.sel.sony.com), and Hi-Val (714/953-3000, www.hival.com) say they plan to offer high-speed discs but have not provided timetables for doing so.

Maxell currently offers 6X-certified media; Sony says its CDs have been tested at up to 6X but are certified only for

4X recording. Hi-Val, a discount brand available at CompUSA, offers 4X CDs for about \$1 apiece.

systems

iMac Boards Use Forbidden Interface

NEW CARDS PLUG INTO
iMAC MEZZANINE SLOT

by Kristina De Nike

When Apple developed the iMac, the company made it clear to hardware vendors that one component was off-limits: the mezzanine slot on the iMac motherboard. But the engineers at Micro Conversions (817/468-9922, www.microconversions.com) and Formac (www.formac.com) didn't listen.

Both companies have developed expansion boards that plug into the forbidden slot—despite warnings from Apple that customers may void their iMac warranty if they use the products.

iMac Wizard

Micro Conversions has announced an iMac version of the Game Wizard, a 3-D-graphics accelerator designed for use with popular computer games. The \$199 board features 3Dfx's Voodoo2 chip, which has become a standard for game acceleration in the PC market. It sports 8MB of RAM, compared with a maximum of 12MB for the PCI version. The card is tightly sandwiched between the iMac motherboard and chassis, and concerns about heat

ventilation preclude additional memory, the company says.

Thin SCSI Formac, a German company that designed the Vision 3D Pro graphics cards sold in the United States by Mactell, has introduced a \$100 Ultra Wide SCSI card that plugs into the mezzanine slot, letting you use scanners, external drives, and other SCSI peripherals with your iMac. The card features a single external SCSI 3 connector; these are thinner than standard SCSI connectors and the cables can be hard to find, but they are available. Drives connected to the card can be used to boot up the iMac.

Formac will bundle the card with its Power RAID Control software, which lets you set up RAID levels 0 and 1 storage systems. Formac says the card will work with other drive-formatting packages as well. The card is scheduled to ship by the time you read this. The company also plans to offer a \$149 mezzanine board that incorporates a SCSI connector, a TV tuner, and an S-Video in port.

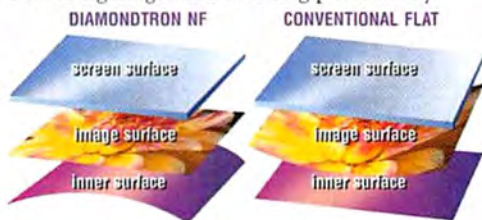
No Piece of Cake Installing a mezzanine card can be tricky: you have to open the iMac and remove five screws that hold the motherboard in place; the slot is on the flip side of the motherboard. To install the Game Wizard, you must also reroute the iMac's internal video cable to a connector on the board. Micro Conversions and Formac expect that most customers will opt for dealer installation.

The new multiflavored iMacs lack a mezzanine slot, so the cards will work only in the original Bondi blue model. However, Formac says it is developing an adapter that will essentially restore the slot to the newer iMacs, allowing use of the mezzanine cards.—JEFFY K. MILSTEAD CONTRIBUTED TO THIS REPORT.

Mitsubishi Is Changing The Face Of Desktop Monitors.

Introducing Mitsubishi's Award-Winning Diamond Pro® 900u With The Breakthrough DIAMONDTRON NF™ CRT.

Mitsubishi's new DIAMONDTRON NF (Natural Flat) CRT technology represents an unprecedented improvement in the way you'll look at monitors from this moment on. The revolutionary, truly flat-faced CRT creates distortion-free, intuitively correct images that are much easier on your eyes. Conventional CRTs produce curves and distortions that are hard on your eyes, increasing fatigue and reducing productivity.



You've come to expect crisp, clear images from Mitsubishi's award-winning DIAMONDTRON monitors, and now the innovative Diamond Pro 900u takes monitor performance to an even higher level. The Diamond Pro 900u delivers consistently accurate image quality – side to side, center to corner. In addition, Mitsubishi's patented CRT manufacturing process makes the Diamond Pro 900u stay brighter up to twice as long as conventional CRT designs. First in a family of DIAMONDTRON NF monitors, the 19-inch (18.0-inch DVI*) Diamond Pro 900u has a maximum resolution of 1600 x 1200/75 Hz. For added flexibility it also features a self-powered USB hub that allows two independent computers to share the display and a single set of USB devices. DIAMONDTRON NF monitors are just flat-out better. For more information contact Mitsubishi Electronics today.



April 1999

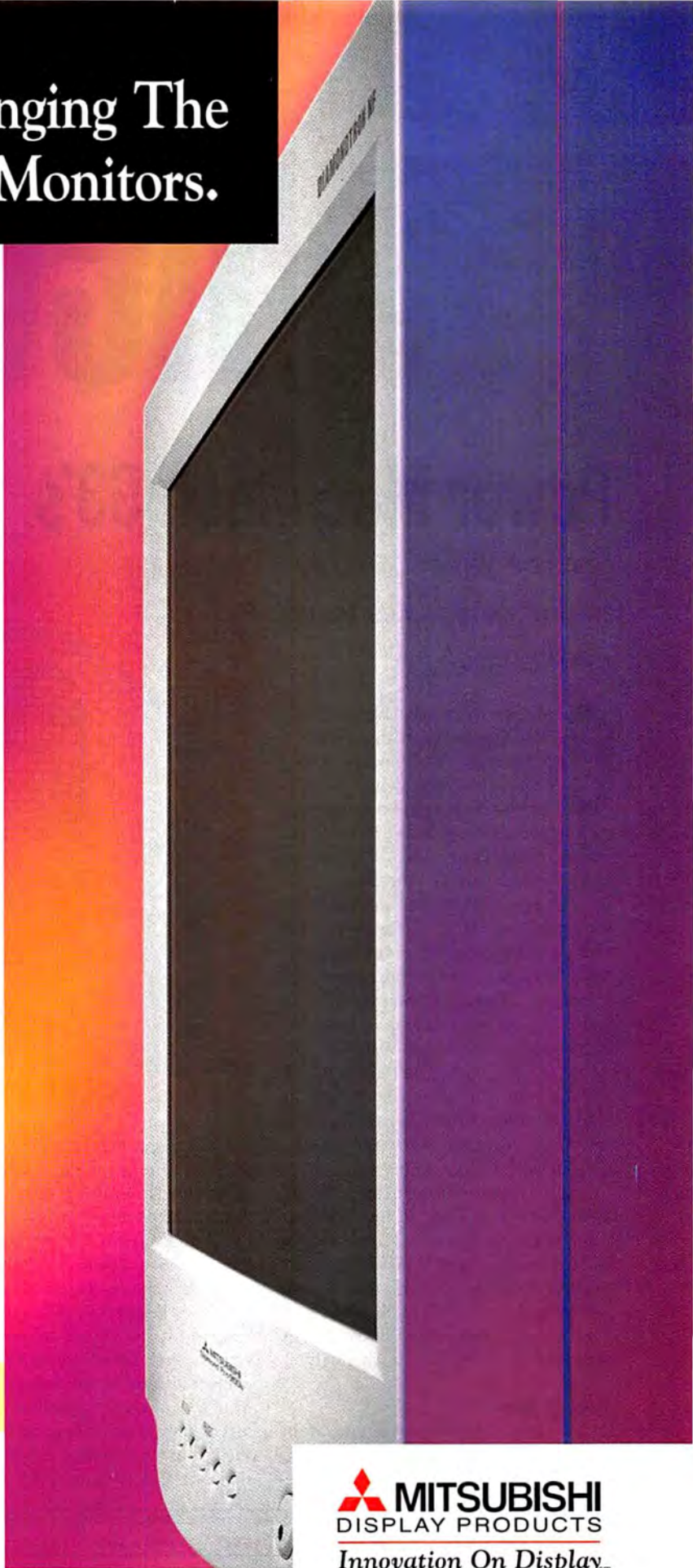


January 19, 1999

USA: 800-843-2515 • Canada: 800-387-9630
QWIKFAX: 800-937-2094
www.mitsubishi-display.com/pb/pwd/900u



©1999 Mitsubishi Electronics America, Inc. DIAMONDTRON NF is a trademark of Mitsubishi Electric Corporation. Microsoft, Windows and the Windows logo are registered trademarks of Microsoft Corporation. Mac and the Mac OS logo are trademarks of Apple Computer, Inc. *DVI (Diagonal Viewable Image)



MITSUBISHI
DISPLAY PRODUCTS

Innovation On Display_{sm}

Choose 261 at www.macworld.com/getinfo

Reviews

Power Macintosh G3's

DESKTOP MACS'

ENHANCEMENTS ARE MORE
THAN SKIN DEEP

ONE GLANCE AT APPLE'S NEW two-toned Power Macintosh G3 series reveals that the iMac was no aberration. With their bold blue-and-white design and inclusion of such new technologies as FireWire and USB, the new Power Mac G3's continue down the road paved by the iMac.

The new desktop Macs are as notable for what they lack as for what they include. For example, you'll find no floppy drives or serial ports on these machines. Thankfully, neither will you find the underpowered graphics chip sets included with earlier Macs. All four models include ATI's powerful Rage 128 2-D/3-D graphics card with 16MB of SDRAM, along with two FireWire ports, two USB ports, an ADB port, and a 10/100BaseT Ethernet port.

You'll notice no mention of SCSI. Apple has drawn a line in the sand with this series of computers—FireWire is in, SCSI is (mostly) out. If you want SCSI, you'll find it in the 400MHz model in the form of an Ultra II PCI SCSI card; if you want it in the less powerful Macs, you must purchase a SCSI card separately.

Kind of Blue

Initially, the most striking features of the new Power Mac G3's are the translucent-blue faceplate, backplate, and top; the ice-



SUZANNE ROACH

colored side panels revealing the ghostly G3 logo beneath; and four sturdy handles protruding from the corners of the case. The front panel sports a CD-ROM or DVD-ROM drive, an empty drive bay, a speaker port, a power switch, and programmer's and reset switches.

The keyboard and mouse—dead ringers for the iMac's—may disappoint some users. This keyboard feels cheap compared with the huge Apple keyboards of old, and some people may mourn the loss of three function keys, the end key, and the option and control keys on the right side of the keyboard. (Kudos to Apple,

however, for including a USB extension cable for those who plan to store their new Mac under a desk.) And although the mouse looks great, many users will find it unacceptable: because of the round design, it's impossible to tell the top of the mouse from the bottom by touch.

Open Sesame

You may forget your disappointment with the input devices of the G3's when you see their side door, which folds down to expose the inner workings. With the door open, you have ready access to every component you're likely to touch—the moth-

REAL PRODUCTS
REAL RATINGS

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

OUTSTANDING: ★★★★★

VERY GOOD: ★★★★

GOOD: ★★★

FLAWED: ★★

UNACCEPTABLE: ★

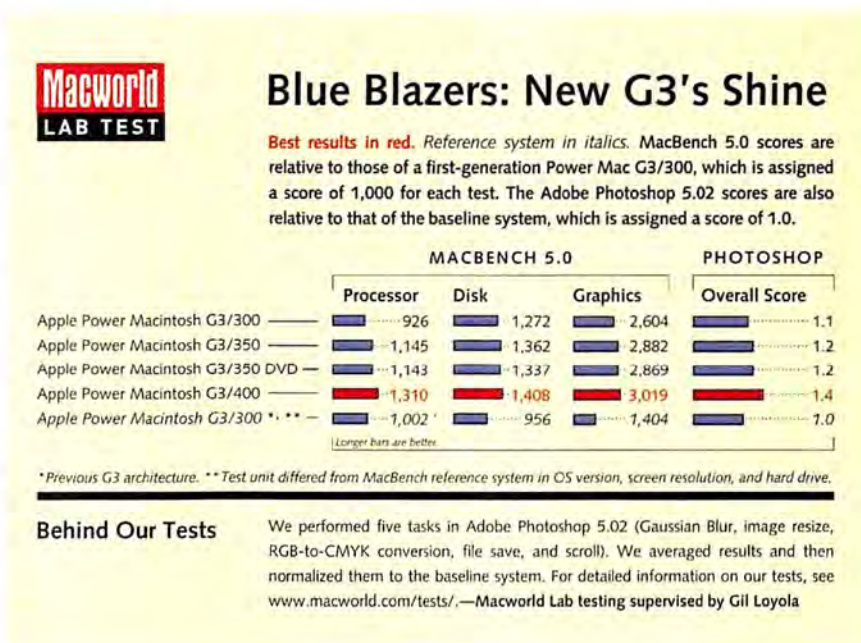
erboard containing the G3 processor, four SDRAM slots, four PCI slots (three 33MHz, 64-bit slots and one 66MHz, 32-bit slot, occupied by the graphics card), modem connector, and internal battery is attached to the door and lies flat when the case is open. This is a brilliant design.

The layout for internal drives is just as remarkable. At the bottom of the Power Mac's case is a metal tray that holds the Ultra ATA drive and offers space for two additional internal storage devices. To mount a new device, simply remove a single screw, disconnect the data and power cables from the ATA drive, and slide out the metal tray. To place additional drives in any of the free, numbered spaces, fasten the drives, put the tray back, and plug in the drives. Note, however, that placing a 1.6-inch drive in the middle space makes it impossible to close the door. Two additional power connectors are included, although you must provide your own data cables.

It's swell that the internal workings of the new Macs are so easily accessible, but it's unfortunate that opening the door reveals so few PCI slots. With virtually no FireWire peripherals available at the moment, users who need fast external storage devices must rely on SCSI and therefore tie up one of the three open PCI slots with a SCSI adapter card.

High Performance

It should come as no surprise that these machines turned in convincing MacBench scores (see the benchmark, "Blue Blazers: New G3's Shine"). As you might expect, the new 300MHz model, with its 512K backside cache, fared worse in the Processor test than our baseline system—the former top-of-the-line Power Mac G3/300, which has a 1MB backside cache. The Processor scores for the more powerful Macs, with their 1MB cache, fell just about where we expected—14 to 30 percent faster than



performance). On the other hand, Photoshop scrolling was much sprightlier on the new Power Macs—approximately twice as fast on all configurations.

Macworld's Buying Advice

The beauty of these new Macs goes much deeper than their striking exteriors. They are clearly the fastest Macs to grace the market; they're also solidly built, easy to upgrade, and attractively priced. Although users with legacy SCSI and serial devices will have to add a SCSI PCI card as well as a serial adapter to use their old peripherals, these components are readily available and not prohibitively expensive. Less forgivable for professionals are the small allotment of PCI slots and the inclusion of input devices that emphasize form over function. But these inconveniences are mitigated by the fact that the new Macs introduce FireWire and USB to the desktop—technologies that are sure to be staples of computing in the twenty-first century.—CHRISTOPHER BREEN

New Desktop Systems Compared

Company	Product	Mouse Rating	List Price (as tested)	Phone	Backside Cache	RAM	Hard Drive	CD/DVD Drive	Zip Drive
Apple Computer	Power Mac G3/300	★★★★	\$1,599	408/996-1010	512K	64MB	6GB Ultra ATA	24x CD-ROM	○
	Power Mac G3/350	★★★★	\$2,499	408/996-1010	1MB	128MB	12GB Ultra ATA	24x CD-ROM	●
	Power Mac G3/350 DVD	★★★★	\$1,999	408/996-1010	1MB	64MB	6GB Ultra ATA	32x DVD-ROM	○
	Power Mac G3/400	★★★★	\$2,999	408/996-1010	1MB	128MB	9GB Ultra II SCSI	24x CD-ROM	○

● = yes; ○ = no.

Macromedia Director 7

MULTIMEDIA TOOL BECOMES MORE POWERFUL—AND MORE APPROACHABLE

TAKE A DEEP BREATH AND recite the full name—all 18 syllables of it. Macromedia Director 7 Shockwave Internet Studio is the most Web-savvy Director yet. Not that Macromedia is ignoring creators of games, CD-ROM titles, or interactive kiosks; many of Director's new features are just as welcome in these non-networked applications. But the program's Internet focus is unmistakable. And for creating hybrid projects—such as a CD-ROM that retrieves updates from a Web site or a multiuser game that enables distant players to lock horns—Director 7 is a dream.

In Director's Chair

Director veterans will feel at home in Director 7. It has all the familiar trappings: the Stage, where you position and arrange your project's media elements; the Cast, which holds media elements that you import or create using Director's built-in tools; and the Score, a timeline-like window where you choreograph your project's flow and interactivity.

Creating a project in Director generally involves working with these key components as well as with Lingo, Director's built-in programming language. You're also likely to work with *behaviors*, which are canned Lingo scripts that perform common tasks. When you've finished, you can create a *projector*, a double-clickable version of your project that you can distribute to others. For Web-destined projects, you can create Shockwave movies that rely on Macromedia's popular browser plug-in. You can also create Java applets, although these provide only limited support for Director's capabilities.

Director 7's body may be similar to that of previous versions, but its engine is new. In Director 7 you can have as many as 1,000 channels in the Score window, up from 120 in Director 6.x. Projects can play back at speeds of up to 999 frames per second, up from 500. In short, it's hard to imagine a project that would exceed Director 7's playback capabilities.

One downside of this engine rebuild: Director 7 bids farewell to 680X0 Macs and to Windows 3.1. It's

bad enough that you can no longer develop projects *on* these systems—you can't even create projectors *for* them. If you want to create titles for elderly computers, Director 7 isn't for you.

New Media, New Control

Director has long provided built-in tools for creating richly formatted text and bit-mapped graphics. In Director 7 there's a new data type on the block: vectors. Director 7's new Vector Shape window provides



Director Behaves Director 7's Library palette is the gateway to dozens of built-in behaviors that simplify authoring.

a FreeHand-like pen tool for drawing bandwidth- and memory-friendly shapes, complete with Bézier control points and optional solid-color or gradient fills. Director 7 automatically antialiases vector shapes. Even better, you can control every property of a vector shape using Lingo scripts. Combine this with Director 7's Internet-access features, and you could create a dynamic bar or line graph that changes depending on certain data retrieved from a Web site.

Director 7 can import bitmaps containing alpha channels, thus simplifying the creation of special transparency effects, such as feathering and drop shadows. Director 7 also adds support for the PNG graphics format and for animated GIFs.

Director 7 greatly simplifies such common animation tasks as rotating media elements. For example, to create an animation of a spinning star in previous versions, you had to create multiple versions of the star, each rotated to a different angle, and then laboriously swap one for the next to animate the rotation. In Director 7 you can simply use keyframes or Lingo to rotate or skew any media element. That means much less work for you, and smaller, more memory-efficient projects.

Better Behavior

Director's heritage as an animation program has always complicated the creation of interactive projects. Implementing simple interactivity—such as creating a set of buttons that enable users to branch to different screens—meant writing scripts in Lingo.

Director 6 streamlined authoring a bit by introducing behaviors—canned scripts that perform common tasks. In Director 7, behaviors are dramatically improved. A new Library palette provides fast access to dozens of behaviors in categories ranging from animation to navigation to Internet streaming (see “Director Behaves”). To assign a behavior to an item, you simply drag and drop that behavior's icon.

Director 7 provides behaviors for the most-common interactivity chores, and they work well. Even if you don't know a lick of Lingo, you can create an interactive production containing branching buttons, QuickTime movies, animations, and streaming audio.

Lingo still lurks beneath the surface of every behavior, and you'll need Lingo mastery to modify a behavior's scripts. But the good news is that unlike Director 6.x behavior scripts, Director 7's are laden with comments that make them easier to understand and tweak.

And speaking of Lingo, it too has evolved. Programmers can now use space-efficient *dot syntax* to get and set properties. Common in modern languages such as JavaScript, dot syntax makes for less verbose scripts.

Text (and HyperText) Power

Director has had first-rate text features since version 5 introduced the word processor-like Text window, antialiased text, kerning, and the ability to import Rich Text Format (RTF) files. But Director developers always faced the specter of missing fonts: to ensure that text would look as intended, they either had to license and distribute custom fonts or settle for using ubiquitous (and often boring)

Tribeworks iShell: Free Authoring at a Price

fonts such as Helvetica and Times.

Director 7 changes this by enabling you to embed any fonts installed in your system directly in a project. Director compresses its so-called Shocked fonts so that they take up only about 10K to 20K apiece. You can trim this even further by embedding only those characters that you actually need. Shocked fonts are available only to the project in which they're embedded, so there are no licensing or copyright issues to contend with.

Also new is the ability to import HTML files with most formatting intact. You can even import Web pages over the Internet by entering a page's URL in the Import dialog box, although this often yielded error messages in our tests. Director 7 does a reasonably good job of retaining a page's formatting, recognizing tables, fonts, and common formatting tags. Director 7 doesn't import images referenced in HTML pages, but it does retain hyperlinks. You must use Lingo programming to have a hyperlink launch a Web page, but one of Director 7's built-in behaviors can handle this for you.

Director 7's other Internet-related enhancements include behaviors that post text entries to a CGI running on a Web server, and a new multiuser server that makes it possible to create networked games and chat spaces.

For bandwidth-friendly audio, Director 7 also includes Headspace's Beatnik Xtra, which includes behaviors that let you play and control Beatnik music files. Director 7 also supports the Shockwave Audio format, which lets you deliver streaming audio using a conventional Web server (see "Making Waves with Streaming Audio," *Create*, February 1998).



Fonts and Vectors Director 7 can embed some or all of a font's characters in a project to ensure typographic fidelity. Also visible here: Director 7's new Vector Shape window.

IF YOU DON'T LIKE DIRECTOR—or you can't spend \$1,998 to develop for both Mac and Windows—look into iShell, from Tribeworks (415/732-7004, www.tribeworks.com). From the developers of Apple's defunct Apple Media Tool, iShell combines solid authoring features with an unbeatable price tag.

Tribeworks has put a unique twist on the open-source software-distribution approach popularized by Linux. iShell is free: register at Tribeworks' Web site, and you get a download password. To create a Mac or Windows run-time version of

a project, you register for a free run-time license file.

Tribeworks hopes you'll like iShell enough to pay \$2,000 for a one-year "full membership," which gets you technical support, the ability to create run-times without registering each project you create, and the full source code to iShell itself.

iShell's interface differs from that of Apple Media Tool (AMT), but the programs are conceptually similar. As with AMT, iShell's only content-creation function is a rudimentary text tool—you create your content in other programs and then import it. As you import media elements, you can assign events and commands that branch to other screens, play movies, move items across

the screen, and so on.

Many of iShell's authoring features pale alongside Director's. But iShell provides excellent support for QuickTime, including QuickTime VR and QuickTime 3 effects. The program can't display HTML pages—as Director 7 can—but can access files over the Web, making possible CD-ROM-Web hybrid projects.

iShell lacks Director's depth and maturity, and its documentation is literally a work-in-progress. Still, iShell deserves a look. Budget-minded developers will love its price tag, and Director haters will appreciate its object-oriented authoring style. If Tribeworks' open-source gamble pays off, iShell could evolve into a major contender.

But remarkably, the Macintosh version of Director 7 provides no way to compress Shockwave Audio files; the manual tells you to use Macromedia's SoundEdit 16, which is no longer included with the Director suite.

Bundle of Joy

How has Director 7's supporting cast changed? Gone are the Xres image editor and Extreme 3D modeler. For image editing you get Macromedia Fireworks, which is a solid, all-around image editor particularly adept at creating Web graphics (see *Reviews*, October 1998).

For sound editing, Mac users get Bias's Peak LE while Windows users get Sonic Foundry's Sound Forge XP. Both are scaled-down versions of first-rate audio editors. We prefer Sound Forge XP to Peak LE—it was more stable in our tests and its interface is less cluttered—but either is sufficient for simple sound-editing and conversion tasks.

Even if you already have sound- and image-editing programs, you cannot buy Director 7 separately unless you're a registered user of a previous version, in which case you can

buy the upgrade for a steep \$449. Macromedia should make Director 7 available separately. You'll still need to buy the Windows version of Director to create projectors for the Windows platform.

Macworld's Buying Advice

For a major upgrade, Director 7 is remarkably well behaved. But it isn't perfect. Some bugs in its text-handling features can cause crashes in text-heavy projects. And a change in the way the Stage works causes display problems with movies in a window, which many Director developers use. A little Lingo script generally fixes this. But by and large, Director 7 is an outstanding upgrade, packing more power and introducing new features that finally make Director approachable for beginners.—JIM HEID

RATING: **PROS:** Simplified authoring; excellent Web features; beefed-up playback engine; vector and alpha-channel support. **CONS:** Mac version can't compress Shockwave Audio files; some text-handling bugs; application not sold separately. **COMPANY:** Macromedia (415/252-2000, www.macromedia.com). **LIST PRICE:** \$999 (Director-only upgrade from earlier versions, \$449; full Studio upgrade from earlier versions, \$499).

Dreamweaver 2

MACROMEDIA DREAMS UP IMPRESSIVE UPDATE

PAST VERSIONS OF MACROMEDIA'S Dreamweaver were solid but hard to love, with a clunky interface that discouraged the exploration that allows mere users to become wizards. But with a new emphasis on usability, added to new cutting-edge features, Dreamweaver 2 promises to delight both designers and code geeks.

Winning Features for Designers

Dreamweaver 2 is packed with improvements to its page-design tools. The best addition, the Tracing Layer, recognizes the fact that in many shops, a designer creates a comp for a Web page in Adobe Photoshop or QuarkXPress and hands a color printout to a Web jockey, who then

apply text and other formatting to rows, columns, or an entire table; select and format noncontiguous cells; and sort table contents. Splitting and merging table cells is a snap, and an included JavaScript extension lets you swap the axes.

Previously, Dreamweaver's many floating palettes were a recipe for screen clutter. In version 2, you can dock palettes together into a single tabbed window. The program now makes excellent use of contextual menus and has fewer annoying modal dialog boxes. It also includes precoded objects, such as one that lets you quickly create image-rollover effects. And a new, smart eyedropper tool lets you pick up a color from anywhere on your desktop; Dreamweaver snaps it to the nearest Web-safe color.

Dreamweaver takes advantage of all the features in the 4.0 browsers but also offers backward compatibility. You can lay out pages using layers and then convert the layers to backward-compatible tables with a single menu command. You can use JavaScript behaviors that target specific browser versions, or go for lowest-common-denominator effects. Because it's available for both Mac and Windows, Dreamweaver tries hard to cover all the platform and browser

bases. As before, you can check your pages for HTML compatibility against profiles of Netscape Navigator and Microsoft Internet Explorer, but version 2 adds profiles for Opera Software's Opera and Microsoft's WebTV browsers.

Happy Geeks Are Productive Geeks

Nothing annoys HTML coders like having a visual tool arbitrarily rewrite their carefully honed code. Dreamweaver has always respected custom HTML, and the new version continues and extends this tradition. The program won't change tags it doesn't recognize, instead highlighting unknown tags in yellow; it also recognizes (and won't change) code that works with server-side tools.

Dreamweaver comes with a nice set of

prewritten JavaScript behaviors, including form validation and layer and timeline control, and can trigger Shockwave or Flash content. You can preview multimedia content right in the Dreamweaver document window, without having to switch to a browser.

The new version catches up to GoLive CyberStudio (now an Adobe product) in site management by adding a visual site map, the ability to check and repair broken links, and an improved FTP tool for uploading and downloading sites. The supercharged find-and-replace function fixes tags and files throughout a site and accepts regular expressions.

A feature unique to Dreamweaver is the program's amazing extensibility, going far beyond mere scripting. While competitors such as CyberStudio allow developers to create new JavaScript functions, Dreamweaver supports a Document Object Model that lets programmers use JavaScript and HTML to write custom menu commands, behaviors, inspector palettes, and objects. There's even a way to create plug-ins in C.

Dreamweaver 2 seems to be faster than previous versions, though just as RAM-hungry; with larger sites, the program complained about memory until I boosted its RAM footprint from the suggested 20MB to 32MB.

Macworld's Buying Advice

Thanks to its interface improvements, Dreamweaver has outgrown its ugly-duckling phase and is much easier and more fun to use. Smart innovations like the Tracing Layer show that Macromedia has been paying close attention to the way designers work in real production environments, and Dreamweaver's first-do-no-harm approach to HTML shows a nice appreciation of the challenges that Web coders face. Fully competitive with CyberStudio, but with unique strengths of its own, this striking upgrade should win Dreamweaver many new converts.—TOM NEGRINO

RATING: ★★★★★/5 **PROS:** Superb table handling; excellent design and layout tools; very good code control; excellent extensibility. **CONS:** RAM-hungry and not always polite about it. **COMPANY:** Macromedia (415/252-2000, www.macromedia.com). **COMPANY'S ESTIMATED PRICE:** \$299.



Comp Tracing I'm moving this Dreamweaver 2 layer into place, based on the position of the comp image in the Tracing Layer (visible as a dimmed image in the background).

re-creates the page in HTML. Dreamweaver lets you take a GIF or JPEG comp image and place it in the background of the document window as a guide (see "Comp Tracing"). New rulers, snap-to guides, and grids make it easy to match the comp.

Once you've created a page, you save it as a reusable template with both editable and locked regions. Combined with check-in/check-out page control (which tells users when a particular page is being changed), Dreamweaver's templates give designers the comfort of knowing that writers and editors can change content without inadvertently mangling the page's design.

Dreamweaver's support for table editing is also vastly improved. You can now

Fool God.

displays *by* sony

©1998 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Sony, the Sony logo, displays by Sony, Trinitron, Multiscan, Digital Multiscan, HiDensity, Electron Gun, GeoLock Plus, DisplayMouse, ASC and Enhanced Elliptical Correction System are trademarks of Sony. Screen image is simulated. Features and specifications are subject to change without notice. SON 8023

Introducing the revolutionary series



of Sony FD Trinitron® displays.

SONY



If you think God is in the details, then we have the display for you. The new, virtually flat FD Trinitron display series is the most revolutionary advancement in image technology since the invention of Trinitron in 1968. The colors are remarkably sharp and bright, the resolution incredibly high, and the focus amazingly precise from top to bottom, side to side and corner to corner. In fact, the images on screen are so real, they can fool just about anyone.

Sony FD Trinitron displays give you the tightest aperture grille pitch (0.22mm) and the broadest horizontal scan range available. Not to mention USB peripheral ports that make connections miraculously simple. Call us perfectionists. But when it comes to image performance, no detail is too small.

DISCOVER THE SONY FD TRINITRON DISPLAYS IN DETAIL:

VIRTUALLY FLAT FD TRINITRON CRT for minimized distortion and reflective glare.

TIGHTEST APERTURE GRILLE pitch available (0.22mm across the screen) for unprecedented sharp and clear images.

DIGITAL MULTISCAN® TECHNOLOGY for broadest horizontal scan range and highest resolutions: 30-121kHz for resolutions up to 1800x1440 @ 80Hz (F500); 30-107 kHz for resolutions up to 1600x1200 @ 85Hz (F400).

SMART CABLE DESIGN for shorter display depth on desktop.

HIDENSITY™ ELECTRON GUN with Enhanced Elliptical Correction System® technology for consistent, accurate focus throughout the screen – even in the corners.

GEOLOCK PLUS™ CIRCUITRY for improved color and brightness uniformity.

ACTIVE SIGNAL CORRECTION (ASC™) technology for one-touch instant image sizing and centering.

DUAL INPUT CONNECTIVITY provides 15 pin mini D-sub and 5 BNC connectors for simultaneous connection to two computers.



Unique DisplayMouse™ control for quick, smooth adjustments of digital controls through comprehensive OSD.



USB Hub connectivity ports (1 upstream, 4 downstream) for easy connection to USB peripherals.

Offline Web Tools

ONCE BENEFICIAL, NOW NECESSARY?

AS THE MAC AND ITS BUNDLED software applications adopt new features, some third-party software is relegated to the "old and in the way" pile. Take Microsoft Internet Explorer 4.0 and Mac OS 8.5's Sherlock search utility, for example. Now that Internet Explorer lets you save Web pages as offline archives, are utilities that perform a similar function still useful? And since Sherlock can search the Web for items that interest you—and

that support Internet Explorer channels.

Each of the applications also has a more comprehensive set of filters than does Internet Explorer. With the latter, you can exclude files attached to a Web page in only a general way—you can filter all images, sounds, and movies. With Web Buddy and WebWhacker, you can be more selective about which MIME types you download.

While Web Buddy and WebWhacker share some advantages over Internet Explorer, they aren't twins. Web Buddy is the easier to use when you're surfing the Web, because it's available to you from within your browser; to use WebWhacker, you must switch from your browser into the WebWhacker application. And if you want to perform scheduled downloads, WebWhacker must be running; Web Buddy launches itself at the appointed time.

Web Buddy offers other convenient features you won't find in WebWhacker: you can create and file bookmarks with a single click, and a translation feature lets you turn Web pages into word-processing documents. (You can export files in WebWhacker as well,

but only as separate HTML and graphics files.) Regrettably, Web Buddy's translation is a hit-or-miss affair—some pages translate complete with text and graphics, while others fail to translate at all.

WebWhacker isn't entirely outdone by Web Buddy, however. Unlike Web Buddy, WebWhacker allows you to search for text in the pages you've downloaded. And most important, WebWhacker is compatible with Mac OS 8.5. In my tests, Web Buddy 2.0 froze three different Macs running OS 8.5 whenever a scheduled event initiated a dial-up Internet connection. (The problem doesn't exist under OS 8.1.)

Sherlock's Smarter Brother?

SurfJet Agent is another program that might fare better if there weren't a free

alternative. Much like OS 8.5's Sherlock, SurfJet Agent logs on to the Internet and queries search sites based on keywords you've entered. As with Sherlock, you can include a wide variety of terms in a single search, but unlike Sherlock, SurfJet Agent lets you indicate your level of interest via sliders to help determine the relevance of the search results.

However, SurfJet Agent failed to find sites easily found by Sherlock. When I tested both applications, using my name as the search term, Sherlock found more than a dozen references; SurfJet Agent failed to locate a single one. And adding search sites to Sherlock is easy—just drop them onto the System Folder. SurfJet Agent requires that you enter the URL for new search sites as well as arcane prefix codes such as `&TERM_1=`. Let's hope a future version of the program searches farther afield and is easier to configure.

Macworld's Buying Advice

Although Web Buddy 2.0 is a more flexible and feature-packed offline Web reader than WebWhacker 3.0, it gets only a conditional recommendation due to its continued problems with OS 8.5. SurfJet Agent 1.0 is off to a good start, but it needs to offer a friendlier way to add search sites.—CHRISTOPHER BREEN

SurfJet Agent 1.0

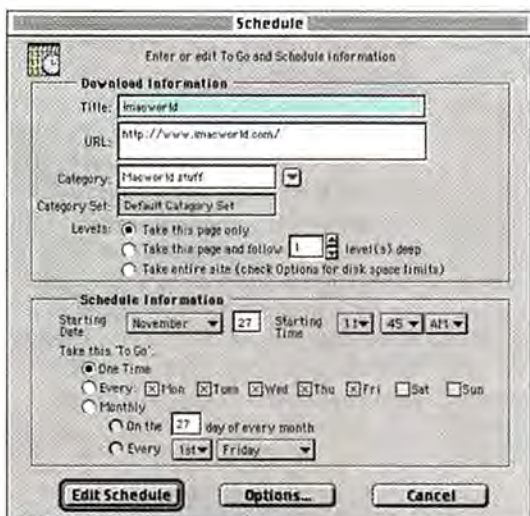
RATING: ★★★ **PROS:** Helpful relevancy ranking. **CONS:** Difficult to add search sites; searches not always broad enough. **COMPANY:** Leptonix Systems (516/424-5857, www.panix.com/~lepton/index.html). **LIST PRICE:** \$50.

Web Buddy 2.0

RATING: ★★★½ **PROS:** Accessible from within a browser; program launches itself to run scheduled downloads. **CONS:** Doesn't translate all Web pages; Mac OS 8.5-compatibility problems. **COMPANY:** DataViz (203/268-0030, www.dataviz.com). **LIST PRICE:** \$50.

WebWhacker 3.0

RATING: ★★★ **PROS:** Compatible with Mac OS 8.5; good search engine. **CONS:** No auto-launch feature for scheduled downloads. **COMPANY:** Blue Squirrel (801/523-1063, www.bluesquirrel.com). **LIST PRICE:** \$50.



Delivery Service You can configure Web Buddy 2.0's schedule to determine when your favorite Web pages are downloaded.

rank them by relevance—do you need a like-minded utility? Those are the questions we put to two offline Web-browsing utilities—DataViz's Web Buddy 2.0 and Blue Squirrel's WebWhacker 3.0—and a Web-searching utility, Leptonix Systems' SurfJet Agent 1.0.

Working the Web

Although Internet Explorer allows you to save a single page as well as anything linked to that page, Web Buddy's and WebWhacker's other tricks are compelling enough to justify buying the programs. Both let you dig deeper into a Web site (up to 99 levels) than does Internet Explorer (5 levels). And both applications let you schedule times to download any page or site. Internet Explorer offers a similar feature, but it works only with sites

Photoshop Plug-Ins

FILTER TRIO OFFERS SHADOW, BLUR, AND 3-D EFFECTS

SOME VENDORS OF ADOBE Photoshop plug-ins use the smorgasbord approach, bundling a variety of special-effects filters and other add-ons into one low-cost package. Andromeda Software takes a different tack, offering individually priced plug-ins that specialize in certain tasks. The latest are Shadow Filter 1.12, for applying elaborate shadow effects; VariFocus Filter

change its position on the object's surface, and create tiled copies. Aside from scaling, however, you can't modify an object's geometry, nor can you import models created in other 3-D programs.

Three-D Luxe displays a wire-frame view of the object in a large window, but you can quickly generate a rendered preview that shows lights and shadows. When you're finished, the plug-in pro-



Aesthetic Appeal Andromeda Shadow Filter 1.12 features a MetaCreations-inspired interface.

1.1, for performing selective sharpen and blur operations; and my personal favorite, Three-D Luxe Filter 3.0, for creating textured 3-D models in Photoshop.

All three plug-ins sport interfaces inspired by MetaCreations' Kai's Power Tools, with controls that resemble what you might find on an alien spaceship (see "Aesthetic Appeal"). The screens appear somewhat cluttered—and baffling—at first, but once you get the hang of the interfaces, the plug-ins are easy to use.

Limited 3-D

Andromeda's original 3-D plug-in, Three-D Filter, let you map Photoshop images to the surface of a cylinder, sphere, box, or plane. The new Three-D Luxe Filter goes beyond its predecessor by letting you add a wide range of photo-realistic textures to 3-D objects.

In Three-D Luxe's 3-D Geometry mode, you use slider controls to set lighting conditions, apply surface and background colors, rotate and scale the object, and determine how the image is mapped to the 3-D shape. You can scale the image,

produces an image of the 3-D object with the photo mapped to it.

The new Texture mode lets you apply a wide range of photo-realistic textures to objects. The plug-in ships with about 75MB of canned textures, organized by type (biological, mechanical, and so on). The textures are beautifully rendered and lend themselves to some eye-popping surface effects. All of them can be bump-mapped, giving the impression that the object's surface is deformed. You can

create your own bump-mapped textures or convert the active Photoshop image into a bump map.

Only the Shadow Knows

Alien Skin's Eye Candy and Extensis PhotoTools both include plug-ins for creating drop shadows, but neither comes close to offering the range of features in Andromeda Shadow Filter. This plug-in lets you generate multiple drop or cast shadows in different colors, at different sizes, with various levels of sharpness. It also offers unlimited undo's.

You can use as many as four light sources and set the angle of the casting plane, the surface on which the shadow appears. For objects (such as fishbowls) that are partially transparent, you can also create transparent shadows. The plug-in can't add noise to a shadow, but you can do that easily enough in Photoshop.

Out of Focus

VariFocus adds a few wrinkles to Photoshop's Gaussian Blur and Unsharp Mask filters by letting you apply these effects

through a mask. You can use the filter to create depth-of-field effects in which selected parts of an image are focused more sharply than others.

The masks in VariFocus Filter are gray-scale images that determine how strongly the blur or unsharp-masking effect is applied; the effect is stronger in light areas and weaker in dark areas. You can scale the masks, or rotate them in increments of 90 degrees.

The plug-in ships with 15 prebuilt masks, but many photographs will require custom-built masks, and creating them can be cumbersome.

Macworld's Buying Advice

Of the three plug-ins, Three-D Luxe Filter 3.0 probably has the broadest appeal. It offers a great way to add perspective effects and other 3-D imagery to pictures, though it's limited to a few standard geometric shapes and can't import models created in other programs. Shadow Filter 1.12 offers a wide range of shadow-generating functions but is probably overkill for most artists, especially if you already have the more modest shadow filter in PhotoTools or Eye Candy. VariFocus Filter 1.1 is probably the least useful of the three, since you can create many selective blur effects almost as easily using Photoshop's built-in tools.—STEPHEN BEALE

Shadow Filter 1.12

RATING: **PROS:** Comprehensive shadow-generating functions. **CONS:** A bit expensive for a one-trick pony. **COMPANY:** Andromeda Software (805/379-4109, www.andromeda.com). **LIST PRICE:** \$99.

Three-D Luxe Filter 3.0

RATING: **PROS:** Easy creation of textured 3-D objects. **CONS:** Can't import models or modify geometry. **COMPANY:** Andromeda Software (805/379-4109, www.andromeda.com). **LIST PRICE:** \$99.

VariFocus Filter 1.1

RATING: **PROS:** Can apply variable blur or sharpen effects. **CONS:** Built-in masks not very useful. **COMPANY:** Andromeda Software (805/379-4109, www.andromeda.com). **LIST PRICE:** \$44 (in bundle with Shadow Filter, \$119).



Show this to
the salesguy who tries
to sell you a printer
with your new Mac

Just because you bought a new Mac doesn't mean you have to buy a new printer. If you already have a PC-printer, you can easily connect it using PowerPrint Serial-to-Parallel or USB-to-Parallel. With PowerPrint, your Mac can print to over 1500 PC-compatible inkjet, laser, and specialty printers.

PowerPrint includes both the cable and printer drivers you need to print. The only things not included are ideas on what to do with all the money you save. Call us today.

Call us at: 800-807-0108
Or visit: www.infowave.com



Win a new printer!



Register at www.infowave.com/contest/april and you'll automatically be entered to win a brand new printer. See our site for details and register now.



INFOWAVE
PowerPrint



4664 Loughheed Highway, Suite 188, Burnaby, BC, Canada V5C 6B7
PHONE: 604 473 3600 FAX: 604 473 3699 E-MAIL: info@infowave.com
© 1999 Infowave Software, Inc. Infowave, the Infowave logo, PowerPrint, and the PowerPrint logo are trademarks of Infowave Software, Inc. which may be registered in certain jurisdictions. Apple, Mac, Macintosh, and the Mac logo are trademarks of Apple Computer, Inc., registered in the US and other countries. All other trademarks are property of their respective owners.



Choose 32 at www.macworld.com/getinfo

Extensis Intellihance Pro 4.0

IMAGE-CORRECTION PLUG-IN CAN'T MATCH TEST STRIP

ALTHOUGH ADOBE PHOTOSHOP offers an array of tools for improving the look of your images, figuring out the best mix of brightness, color cast, and other adjustments for a particular photograph can be a challenge. Extensis Intellihance Pro 4.0, a Photoshop plug-in, makes it easy to see how different combinations of settings will affect your image. Once you've got the right mix of adjustments, you can apply them with a single mouse-click. It's a great idea, but the most significant addition to this upgrade—the new Power Variations mode—is implemented more successfully in a competing plug-in, Vivid Details' Test Strip (see *Reviews*, May 1998).

Sincerest Form of Flattery?

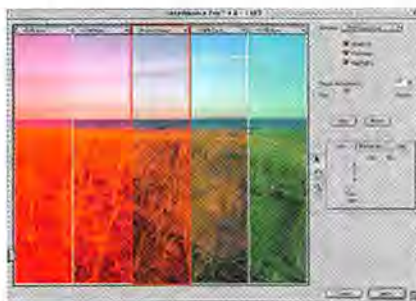
Power Variations, one of Intellihance's three modes, is almost a feature-by-feature copy of Test Strip (prompting Vivid Details to file a patent- and trademark-infringement lawsuit against Extensis). The plug-in presents your image in a multiple-pane layout; each pane shows variations in a single attribute, such as Green/Magenta Cast (see "Copycat?"). Click on the pane that looks best to you, and that becomes the active image. You can also print the variations to proof them on paper.

Some features in Power Variations go beyond their Test Strip counterparts. You get a larger selection of layouts, up to a five-by-five grid. Any layout can include a single subdivided image or repeating images; Test Strip offers a repeating-image option in only one of its color-adjustment modes. And you can store any combination of settings in a single preset and run them directly from an Extensis menu that appears in Photoshop; Test Strip presets can be run only from the plug-in. But where it really counts—making precise color corrections—Intellihance falls short.

Color theory holds that adding a certain percentage of one primary color is the same as subtracting its opposite. For example, adding 10 percent green to an image is the same as subtracting 10 percent magenta, as you can see in Photoshop's Color Balance dialog box. It fol-

lows that if you add 10 percent green and 10 percent magenta, you're back where you started and your image should be unchanged. That's what happens when you add the two colors in Test Strip. But add them—or any other complementary pair—in Intellihance's Power Variations mode, and the colors shift noticeably.

Other omissions make it look as if the upgrade was rushed out the door. In all



Copycat? Intellihance Pro 4.0's Power Variations mode (top) borrows heavily from Vivid Details' Test Strip (bottom).

three modes, Intellihance lacks an Undo feature, and its functions don't show up in Photoshop's Actions palette (Extensis says it will address the latter problem in a forthcoming update). The Power Variations interface is also a bit sloppy: the labels that identify each pane in the layout appear to be pop-up menus until you click on them and see that there are no additional selections.

Plug-in à la Mode

Intellihance's other two modes, Intelligent Adjustment and Fine Tuning, also borrow from Test Strip. These modes let you experiment with different mixes of contrast, brightness, descreening, saturation, color cast, sharpness, despeckling,

and dust and scratch removal. You can compare the effects using the same layouts available in Power Variations mode.

The Intelligent Adjustment mode offers limited options for each setting, but you can adjust those settings manually using the plug-in's Fine Tuning mode. For example, the brightness choices in Intelligent Adjustment mode are Off, Deeper Shadows, Shadow Emphasis, Balanced Tone, Midtone Emphasis, and Highlight Emphasis. In Fine Tuning mode, you can modify brightness through a Photoshop-style Curves function or by entering numeric values for shadows, midtones, and highlights.

As in Power Variations, you can store the effects as presets and apply them directly from the Extensis menu. Presets also appear in a pop-up menu above each pane in the layout.

Intellihance ships with dozens of presets that theoretically cover most common image-correction scenarios, such as compensating for too much flash in a digital photograph. However, only a few presets seem useful where real-world photos are concerned, and there's little you can do with them that you can't do with Photoshop's Actions palette and built-in image-correction tools. One exception is Intellihance's descreening function, which converts scanned halftones from a magazine or newspaper into moiré-free continuous-tone images suitable for printing. Intellihance's Fine Tuning mode also gives you greater control over despeckling than Photoshop does.

Macworld's Buying Advice

Extensis Intellihance Pro 4.0 is easy to use and lets you compare and apply a wide range of image modifications. However, its Intelligent Adjustment and Fine Tuning modes add little to Photoshop's built-in image-correction functions, and the Power Variations mode suffers from a flawed implementation of color theory. Extensis may call it Intellihance Pro, but most imaging professionals are better off sticking with Test Strip.—STEPHEN BEALE

RATING: ★★★ **PROS:** Easy to use; extensive image-correction options. **CONS:** No Undo function; interface quirks; flawed color-correction tools. **COMPANY:** Extensis (503/274-2020, www.extensis.com). **COMPANY'S ESTIMATED PRICE:** \$199.

LOST

IMPORTANT PHOTOSHOP FILES 1.6 GB

Project goes by the name "Atlas"

MUST FIND IMMEDIATELY!

Any information, call
Chuck "Dead Meat" Martin

415-781-3400



It's not just your work. It's your life.

Keep it safe on the Jaz® 2GB drive and disks. The fastest performing Jaz drive with twice the capacity as the original. And it works with the millions of Jaz 1GB disks already out there. 2GB drives now priced as low as \$349. Disks as low as \$99. For more information or to find a dealer near you, visit our Web site at: www.iomega.com



iomega.

DiskWarrior

NEW TOOL FIXES DAMAGED DIRECTORIES

EVERY MAC VOLUME HAS A catalog—a kind of table of contents—that the OS uses to find your files. If the catalog becomes badly damaged and you don't have a backup, your data could be lost. Alsoft's DiskWarrior comes to the rescue by repairing mangled catalogs, displaying impressive stability and reliability for a 1.0 release.

DiskWarrior's sole focus is the reconstruction of catalogs, a process that's beneficial for healthy as well as broken catalogs. Unlike Symantec's Norton Disk Doctor, DiskWarrior doesn't examine your disk, run through a checklist of possible errors, and fix them one by one. Instead, DiskWarrior takes a holistic approach: it looks at the existing catalog data, collects additional information the OS has stored elsewhere on the disk, and uses all the information to recreate an entirely new catalog.

By rebuilding a damaged catalog, DiskWarrior can resurrect previously deleted files as well as those believed to be lost. If the catalog is healthy to begin with, rebuilding has a measurable speed benefit because a fresh catalog is much easier to search. On



Foolproof DiskWarrior's opening window couldn't be simpler: just pick a disk and press the Rebuild button to restore your disk directories' health.

a test volume, the Mac OS's Disk First Aid took 1 minute and 44 seconds to scan the catalog; after rebuilding, it took only 39 seconds. (To rebuild a disk's catalog without DiskWarrior, you'd have to back up, initialize, and restore the disk; simply defragmenting files with a disk optimizer doesn't have the same effect.) And DiskWarrior proved remarkably reliable: not once during testing did the program create a bad catalog or cause any disk-related vexations.

DiskWarrior's user interface is remarkably straightforward. You simply select a disk and press the Rebuild button (see

"Foolproof"), and DiskWarrior builds a new catalog. Once it's finished rebuilding, you can preview how your disk will look with the new catalog: DiskWarrior mounts both the original and rebuilt catalogs as read-only disks and lets you explore them in the Finder. You can then use the preview catalog to copy files off the disk, without changing anything on the disk itself. If you decide you want to keep the rebuilt catalog, DiskWarrior uses it to replace the old one.

Only one noticeable flaw appeared during testing: if a disk was damaged in such a way that the Mac OS refused to mount it, DiskWarrior wouldn't work with it.

Macworld's Buying Advice Although it's not as comprehensive as Norton Disk Doctor, DiskWarrior performs its one crucial function well and should be part of any collection of disk tools. Not only is the program useful for sprucing up healthy disks but it also increases your odds of recovering files that might otherwise be lost.—STEPHAN SOMOGYI

RATING: **PROS:** Reliable; foolproof user interface; useful preview feature; speeds up healthy drives. **CONS:** Can't see unmountable disks; not as comprehensive as Norton Disk Doctor. **COMPANY:** Alsoft (281/353-4090, www.alsoft.com). **LIST PRICE:** \$69.95.

Hard Disk Toolkit 3.0

FORMATTER-DRIVER PACKAGE IMPROVED BUT FAR FROM PERFECT

EVEN THOUGH APPLE'S OWN Drive Setup software originally formatted your Mac's internal drive, the formatter is unlikely to recognize any hard disks you add; it's very picky about which drives it works with. One solution is FWB Software's Hard Disk Toolkit 3.0.1, a collection of disk-driver tools that support hardware from third parties as well as from Apple. This update improves performance and integrates FWB's RAID Toolkit, but the fundamental flaws remain: some features and functions are still hard to find, and the package could be more cohesive.

As in previous incarnations of Hard Disk Toolkit, the core application formats and partitions drives, installs drivers, lets you configure installed drivers, and tests drives for errors. Version 3.0 adds a bit of window dressing, such as tabs in the user interface (see "Just Add Tabs"), but most of the changes lie under the hood.

With the integration of RAID Toolkit, you can now create striped, spanned, and mirrored RAID arrays from within Hard Disk Toolkit. The IDE driver now supports

the hugely useful SCSI Disk Mode for PowerBooks, and the SCSI driver offers improved performance and compatibility—for example, FWB has updated the driver for removables to resolve a long-standing problem that thwarted attempts to repair removable media with Apple's Disk First Aid utility. A smaller but particularly wel-



Just Add Tabs Hard Disk Toolkit 3.0's interface hasn't changed much overall since version 2.5; the only noticeable difference is the addition of tabs to the main window.

come change is the ability to update the driver on the current start-up disk.

Unfortunately, this update doesn't give security the attention it deserves. Unlike Apple's Password Security control panel,

Hard Disk Toolkit demands that you enter a separate password for every partition; ideally, there should be an option for entering a single password for each drive. And although FWB touts the program's encryption as "rock-solid," it doesn't offer any data to back up this claim. Any worthwhile encryption scheme must withstand public scrutiny, yet FWB remains mum about its technology. Network Associates' PGP Disk, despite its limitations, is a much better solution for storing encrypted data.

Macworld's Buying Advice With a user interface that's essentially unchanged from that of version 2.5, Hard Disk Toolkit 3.0.1 is more an incremental upgrade than a major revamp. If you already own the program, you'll find the \$49.95 upgrade worthwhile; if not, version 3.0's fast, reliable driver is reason enough to buy the package. Overall, this collection is indispensable for anyone who maintains many drives or is concerned about drive reliability and performance.—STEPHAN SOMOGYI

RATING: **PROS:** Reliable driver; supports SCSI Disk Mode; integrates RAID features. **CONS:** Interface lacks cohesion; weak security features. **COMPANY:** FWB Software (415/345-4300, www.fwb.com). **LIST PRICE:** \$199.

Sleek, voracious, efficient, smart— and able to kick anybody's butt in the pond.

(No, we're talking about the Intuos graphics tablet system.)



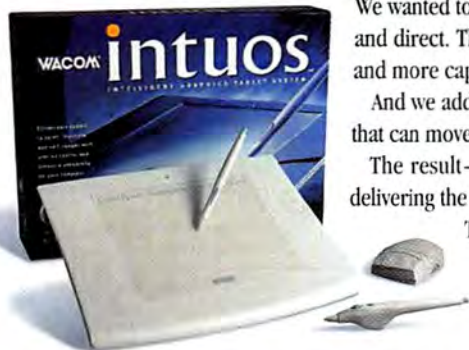
Introducing Intuos. The world's first intelligent graphics tablet system. To create it, we questioned everything, reviewed every datapoint, rethought every purpose and every detail. We started by analyzing professionals who use graphic tablets for hours and days at a time.

We wanted to give you every ergonomic advantage, to make every aspect of Intuos effortless, natural and direct. Then we built a totally redesigned pen—one with 1024 pressure levels, more sensitivity and more capability than ever before.

And we added an integrated set of precise and expressive instruments, including a cordless mouse that can move in four dimensions, a revolutionary new airbrush and more.

The result—the most advanced tablet available. It's light years beyond other tablets while still delivering the superb quality that has made Wacom the universal choice for professionals worldwide.

The Intuos intelligent graphics tablet system. From Wacom. Who else could give you all this?



WACOM
800.922.2585 OR www.wacom.com/shark5



©1999 Wacom Technology Corporation. Wacom is a registered trademark and Intuos is a trademark of Wacom Company Ltd. All rights reserved. Wacom products are available at CompUSA, Microcenter and other fine retail and mail order resellers nationwide. Includes *Maximus* Painter Classic. No goldfish were harmed in the making of this ad.

Choose 84 at www.macworld.com/getinfo

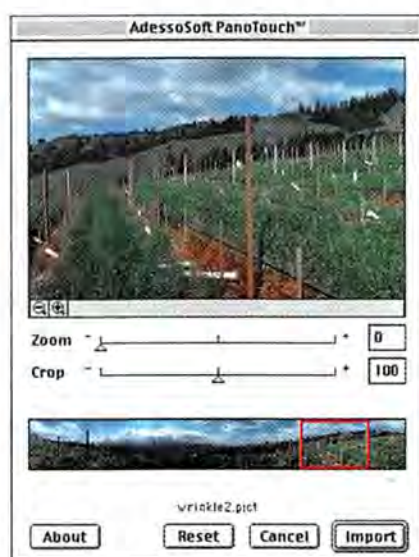
Virtual-Reality Production Tools

NEW QUICKTIME VR SOFTWARE—PLUS SOMETHING COMPLETELY DIFFERENT

YOU CAN CALL IT IMMERSIVE imaging, or you can call it interactive photography, but it's more fun to call it virtual reality. With Apple's QuickTime VR technology, you can create panoramic movies (scenes that users can explore with the mouse and keyboard) and object movies (which let users rotate and examine objects). Although Apple's \$395 QuickTime VR Authoring Studio remains the best all-around VR authoring package (see *Reviews*, March 1998), competing programs have some feature and price advantages. I tested three programs from VR Toolbox (www.vrtoolbox.com): VR PanoWorx 1.01, for creating panoramas; VR ObjectWorx 1.01, for creating object movies; and VR SceneWorx 1.0, for linking multiple VR movies into scenes. I also tested AdessoSoft's PanoTouch 1.01 (www.adesso.com), an Adobe Photoshop plug-in that makes it easy to retouch and enhance panoramas.

The Worx

VR PanoWorx is nearly identical to its predecessor, Roundabout Logic's Nodester 1.5 (see *Reviews*, October 1998). A single tabbed window steps you through importing original images, stitching them, and compressing the final panorama, but new commands facilitate the rotation and reorganization of imported images, chores that Nodester doesn't handle well. VR PanoWorx also supports URL hot spots, which link to Web addresses. When exporting a final



Retouching with PanoTouch PanoTouch shows the full stitched panorama at the bottom of its import window; navigate to the portion you want to import by dragging the red rectangle or by dragging within the preview at the top of the window.

panorama, you can create a low-resolution streaming preview—a feat that even Apple's Authoring Studio can't perform. Like Nodester (and unlike Apple's Authoring Studio), VR PanoWorx has a built-in image editor and lets you reduce a panorama's file size—features that can eliminate side trips to Photoshop for minor touch-ups and Web optimizing.

On the downside, VR PanoWorx's approach to saving files is cumbersome. To simplify moving projects among computers or platforms, the program stores

both the original source images and the stitched panorama in a single file that can be 35MB or more—and that can take a good half-minute to open or save. By comparison, Apple's Authoring Studio stores pointers to your original files, so its documents are extremely small.

Like its panorama-making cousin, VR ObjectWorx is nearly identical to its earlier incarnation—Widgetizer—but adds Mac OS 8.5 interface tweaks and support for URL hot spots. It also shares Widgetizer's biggest shortcomings: no cropping features and the inability to import conventional QuickTime movies.

Although QuickTime VR lets you store multiple movies in a single disk file, with hot spots enabling users to jump from one node to another, Nodester and VR PanoWorx are limited to creating VR movies containing just one node. Enter VR SceneWorx, the only stand-alone program for creating multiple-node VR movies. Boasting features that even QuickTime VR Authoring Studio lacks, VR SceneWorx lets you import existing content—single-node panoramas, object movies, conventional movies, and still images—and link it using hot spots.

VR SceneWorx shares its siblings' tabbed-interface design but, unlike the others, supports Mac OS 8.5 Open and Save dialog boxes. You can import a background image file to aid in scene design, and VR SceneWorx has a set of simple drawing tools for creating a background.

After mapping out a scene, you

Virtual Toolbox

Company	Product	Mouse Rating	List Price	Phone	Pros	Cons
AdessoSoft	PanoTouch 1.01	★★★	\$149	650/903-2289	Simplifies retouching; elegant design; good documentation.	Can't import entire PICT; poor support for partial panoramas; somewhat costly.
VR Toolbox	VR ObjectWorx 1.01	★★★	\$150	412/767-4947	Straightforward interface.	Can't import linear movies; no cropping features.
	VR PanoWorx 1.01	★★★	\$150	412/767-4947	Straightforward interface; convenient Web optimizing features.	Creates large files; slow open and save times.
	VR SceneWorx 1.0	★★★	\$90	412/767-4947	Built-in drawing tools; preview mode lets you test links.	Lacks undo command.

Ipix: The World in a Bubble

An alternative to QuickTime VR is Interactive Pictures' (423/482-3000, www.ipix.com) Ipix, which offers some unique advantages—and also some big disadvantages.

Unlike QuickTime VR panoramas, Ipix scenes are spherical: users can look straight up and straight down. Spherical images often are of little value for outdoor scenes (who wants to look down at a dirty sidewalk?) but are ideal for many interior subjects, such as a room with an ornate ceiling. You shoot Ipix scenes with a fish-eye lens, which captures a full 180-degree hemisphere. While QuickTime VR demands a dozen or more images to

capture a full scene, Ipix requires just two.

Interactive Pictures offers numerous Ipix development tools, including kits that bundle a digital camera, fish-eye adapter, tripod and mounting bracket, and production software. I tested the \$1,995 Ipix Pro kit (♦♦♦), which includes an Olympus D-340L camera. The kit's software, Ipix Wizard, uses a series of straightforward dialog boxes to step you through the production process. My results were only fair, with stitching artifacts frequently visible where the two images met.

For playback, Ipix offers free Windows and Mac OS plug-ins, as well

as a Java applet that eliminates the need to download a plug-in. Version 2.0 of Ipix Wizard, due out by the time you read this, will add the ability to create multiple-bandwidth versions of a scene and improve Java playback.

Ipix Wizard includes serial-numbered keys that enable you to create 12 to 24 scenes, depending on the package you buy. To make more scenes, you buy additional keys at \$25 per scene.

Although Ipix's spherical imaging is potentially valuable for some applications, the stitching quality and per-scene charges put Ipix a distant second to QuickTime VR.

import movies and images, position them on the background, and create hot spots to link them to each other or to Web pages. You can then export everything to a single QuickTime movie, optionally recompressing some or all of the media. A preview mode lets you test your hot spots and links. However, VR SceneWorx lacks an undo feature, and its manual—like those of its siblings—is inadequate.

No-Warp Speed

Experienced VR producers will import a stitched panorama's PICT file into Photoshop, retouch it, and create a new panorama. The problem is that the contents of a stitched PICT appear warped, making many retouching jobs difficult or impossible.

With AdessoSoft's PanoTouch, a plug-in for Photoshop 4 and later, you use the PanoTouch Import command to open a stitched PICT; PanoTouch unwraps the PICT and displays it as a QuickTime VR movie, complete with zoom and pan controls (see "Retouching with PanoTouch"). Navigate to the area of the panorama you want to retouch and

click on Import, and PanoTouch extracts that portion, unwraps it, and opens it as a new image file. The PanoTouch Export command automatically replaces that portion of the original stitched PICT, which you can convert to a panorama using the authoring tool of your choice.

On the downside, PanoTouch can't import and unwrap an entire stitched PICT at once. If you need to retouch several noncontiguous areas, you have to endure the import-export routine for each. PanoTouch can't work with partial panoramas, and the workaround (described in the excellent manual) is cumbersome.

Macworld's Buying Advice

VR PanoWorx and VR ObjectWorx are fine production programs, despite their shoddy documentation and colossal file sizes; VR SceneWorx is a reasonably priced, well-designed program that every serious QuickTime VR developer should consider. For casual VR producers, PanoTouch does too little and costs too much. But for VR professionals, PanoTouch is a genuinely useful, if pricey, tool for polishing panoramas.—JIM HEID

GUTS



GLORY



- ATI RAGE ORION lets you experience more heart-pounding excitement and faster frame rates than you ever thought possible from the hottest new games like Myth II, Unreal and Tomb Raider II
- 16MB of memory for the most realistic game play with massive textures, and cool lighting effects



- Powered by ATI RAGE 128, the revolutionary new graphics chip that gives your Mac the guts for all the glory it can handle



The New Breed of Speed.

www.atitech.com/ad/macwo

© Copyright 1999 ATI Technologies, Inc. All product names, trademarks and/or registered trademarks of their respective manufacturers. Features, performance and specifications may vary by operating environment and are subject to change without notice. Low image © 1998, VR, Edos, Imaginix and Core Design.

Choose 256 at www.macworld.com/getinfo

www.macworld.com April 1999 49

Now Available for Mac!

Pure Digital Visual Magic



Silicon Graphics 1600SW™ flat panel monitor

Digital Flat Panel Solution Pack for Macintosh

Number Nine Revolution® IV-FP Mac graphics card



The Ultimate Digital Flat Panel Solution Pack for Macintosh:

Silicon Graphics 1600SW flat panel features:

- Large 17.3 inch Silicon Graphics 1600SW Flat Panel (equivalent to 19" CRT Monitor)
- 1600 x 1024 pixel screen with 16.7M colors
- Unique SuperWide™ display lets you view two pages or applications side-by-side
- Light table image quality: up to 3X brighter than traditional CRTs and up to 5X the contrast
- .23 mm dot pitch (110 dpi) for laser sharp pictures, text and lines
- Ultra fast LCD pixel performance eliminates ghosting of moving graphics and video

Number Nine Revolution IV-FP card features:

- 32MB graphics memory (standard)
- Powered by Number Nine's 4th generation 128-bit *Ticket to Ride™* IV processor
- Onboard graphics/text/3D texture cache
- Digital output for stunning image quality
- Hot 2D/3D with full-featured QuickDraw 3D & QuickTime acceleration
- Ultra-fast PCI configuration
- Advanced display utilities with color calibration & white balance adjustment

Only \$2895 MSRP.

Available from Silicon Graphics and Number Nine.

Visit www.sgi.com/go/flatpanel, www.nine.com or call 1-888-744-7373 for more information.



SiliconGraphics

www.sgi.com



NUMBER NINE
VISUAL TECHNOLOGY

www.nine.com

StuffIt Deluxe 5.0

COMPRESSION UTILITY RELEASED TOO SOON

OCCASIONALLY WE HAVE TO judge a flawed product even though we've been assured that fixes are on the way. Such is the case with version 5.0.2 of Aladdin Systems' StuffIt Deluxe, the default compression utility for the Macintosh. Although Aladdin has promised that StuffIt's bugs will be squashed in updates to be delivered by the time you read this, it's my duty to report on the current—rather than potential—state of this blemished product.

StuffIt Deluxe allows you to compress files and folders into StuffIt archives and expand just about any compressed file



Revealing the Magic You can reach StuffIt Deluxe 5.0.2's many compression options via contextual menus.

you're likely to find on the Internet. StuffIt SpaceSaver—now included with StuffIt Deluxe—offers background compression and expansion as well as name-based and label-based compression. Just include a user-definable keyword in a folder or file name or give an item a label, and SpaceSaver automatically compresses the item.

And now to the bugs. First, StuffIt Deluxe 5.0's new cross-platform file format purportedly makes it easier to swap StuffIt archives between Macs and PCs. But although my Mac could open StuffIt archives that had been compressed on a PC, the reverse wasn't possible: Mac-compressed StuffIt archives refused to open on a PC with Aladdin Expander 2.0 for Windows.

Another bug involves StuffIt's True Finder Integration (TFI), which lets you convert files and folders into StuffIt archives, self-extracting archives (SEAs), and MacBinary and BinHex files simply by appending a .sit, .sea, .hqx, or .bin suffix, respectively, to the item's name. Under Mac OS 8.5, if you use TFI to convert a StuffIt archive into an SEA,

StuffIt puts the wrong files in the SEA.

Aladdin claims that these kinks will be worked out by the time you read this. What the update won't address is StuffIt Deluxe 5.0's new file format: archives you create with this version can't be opened with an older version of StuffIt Deluxe or StuffIt Expander.

Aladdin claims that StuffIt Deluxe 5.0 increases compression by about 20 percent over previous versions, but that number depends on the files being compressed. Compressing a folder with 25 PICT files, StuffIt Deluxe 5.0 did create a smaller archive—100K versus Aladdin DropStuff 4.5's 116K. But when I stuffed a folder containing ResEdit 2.1.3 and all its components, the StuffIt 5.0 archive was 4K larger than its DropStuff 4.5 counterpart. StuffIt Deluxe 5.0 is also

slower than version 4.5: on a 250MHz PowerBook G3, even with the Fast Compression option enabled, version 5.0 took 4 minutes and 10 seconds to stuff a 103MB folder; DropStuff 4.5 took only 3 minutes and 50 seconds.

Although Aladdin stumbled with this version of StuffIt Deluxe, the program's not *all* bad. Its many compression options are available via contextual menus, and the program now supports the MacBinary III format. You can view the contents of an SEA without expanding the file, by choosing Remove Self-Extracting from the Magic Menu that appears in the Finder's menu bar. And the included DropConverter utility lets you batch-convert old StuffIt archives to the new format.

Macworld's Buying Advice

StuffIt Deluxe 5.0.2 is buggy, slow, and likely to be incompatible with the version of StuffIt Expander you currently have. Let's hope these criticisms are now moot—that Aladdin has fixed the bugs and the compatibility problems, making StuffIt Deluxe once again worthy of our recommendation.—CHRISTOPHER BREEN

RATING: ★★ **PROS:** Batch conversion of old StuffIt files; can browse contents of SEAs. **CONS:** Buggy; files incompatible with older versions of StuffIt. **COMPANY:** Aladdin Systems (831/761-6200, www.aladdinsys.com). **LIST PRICE:** \$80.

GUTS



GLORY



• ATI XCLAIM VR 128 adds multimedia muscle to your Mac with a full range of capabilities including 2D, 3D, and video acceleration

• Capture video or still images and add them to emails or web pages

• Watch TV on your Mac with really cool features you won't find on any TV



• Powered by ATI RAGE 128, the revolutionary new graphics chip that gives your Mac the guts for all the glory it can handle



The New Breed of Speed.

www.atitech.com/ad/macwo

© Copyright 1999, ATI Technologies Inc., All product names are trademarks and/or registered trademarks of their respective manufacturers. Features, performance and specifications may vary by operating environment and are subject to change without notice.

Choose 256 at www.macworld.com/getinfo

job opportunities

800-937-3622

<http://www.hireknowledge.com>

call us

Information Architect

Baltimore: A local advertising and marketing company is looking for someone to head up their new internet services department which will complement their current direct mail business. This high-end management position requires a background in both ad agencies and internet marketing for major corporations.

Web Programmer

Dallas: A small multimedia consulting firm is searching for a top-notch web programmer with programming ability in Perl, CGI, Java, Flash, and HTML. Director and Lingo knowledge is a definite plus. Will start out on a project basis. There is an opportunity to become a permanent member of the team.

Senior Mac Systems Engineer

Philadelphia: Distinguished national bank is seeking an intelligent and resourceful individual to provide high-end tech support for 200+ people. The successful candidate will have an advanced background in computer networking and operating within a highly dynamic, very conservative corporate environment. Certification in both Apple and Windows NT systems a plus.

Tech Writer

Boston: Software developer looking for an efficient, well-organized tech writer capable of handling multiple tasks. Must be proficient in FrameMaker and have at least 2 years of experience writing, editing, and proofreading user's guides and/or online help for computer applications. Knowledge of RoboHelp a plus.

Locations

Baltimore
Boston
Chicago
Dallas
Kansas City
New York
Philadelphia
Providence
San Francisco
St. Louis
Washington DC

putting intelligence to work

putting intelligence to work

HireKnowledge
Specialized Staffing Solutions

Senior Visual Designer

San Francisco: Interactive technologies company perfect match for this position. Must have URLs to successful projects and understanding and experience with web technologies; Adobe Illustrator and Debabelizer as well as HTML and Microsoft Word. 3-5 years combined web, print and CD ROM experience required.

UNIX System Administrator

Washington, D.C.: Large company looking for someone to take on primary technical responsibility for day-to-day management & support of UNIX and NT based computer systems and networks. This person will assist in planning and implementation activities related to these systems and networks. Ability to coordinate with other technical personnel to ensure smooth interaction with various computer systems.

Graphic Designer

Chicago: Creative and witty designer needed for full time permanent position. Job will require internal layout and production of books geared toward the general population. These books are image heavy and a knowledge of RGB and CMYK design issues is vital. Ideal candidate will be able to take the design from concept to final yet sensible style to their work. This well-known company is in the loop.

After Effects Plug-Ins

BORIS AE 2.0 AND CINEMOTION OFFER SPECIAL EFFECTS, ENHANCED VIDEO PROCESSING

BOTH HOBBYISTS AND PROFESSIONALS will find a lot to like in two new and different sets of plug-ins for Adobe After Effects. Artel Software's Boris AE 2.0 should appeal to anyone looking for more variety in his or her special effects, while DigiEffects' CineMotion 1.0 for After Effects is designed for digital videographers looking for the best output quality. Both are impor-

extensions to 3:2 pull-down functionality surpass After Effects' built-in conversion capabilities. The documentation is disappointing, but CineMotion's ten plug-ins ease the process of making video look more like film and offer precise control over captured-video variables. The highlight is Film Motion, a filter that processes fields of video in various ways to yield different looks and gives you full control



Movie Magic Boris AE 2.0 lets you map video onto basic shapes; here, a different movie appears on each face of a cube.

tant additions to any After Effects toolbox.

Boris AE is a compelling collection of 44 filters ranging from fun to functional, with filters for distortion, color correction, lighting, keying, special effects, and simple 3-D object mapping. Many of the plug-ins render noticeably faster than their After Effects equivalents—for example, the critical Unsharp Mask and Blur filters are twice as fast as After Effects' built-in filters, and more controllable to boot.

Another gem is the Pixel Chooser, an incredibly powerful option that lets you mask an effect very precisely with values derived from any other layer in the composition without using any additional After Effects masking techniques. The Digital Video Effects filter delivers a z-axis for "flying" elements, with built-in soft shadows, light sources, and opacity blends; a particle system offers customizable shapes and controllable velocity and gravity effects. But many After Effects users will want Boris AE just for its excellent distortion plug-ins, including an industrial-strength displacement filter.

For video artists looking to push the limits of captured video, CineMotion's

over interframe blurring, which simulates the motion of a camera shutter. Adjustable parameters let you tailor the effect to conditions in the processed footage.

Complementing Film Motion are plug-ins that enhance footage containing digital artifacts. These plug-ins give you fine control over banding, grain, noise, and field interlacing. Selective HSB Noise, for example, delivers separate noise values for a layer's hue, saturation, and brightness channels.

Macworld's Buying Advice

Both of these filter collections are worthwhile investments for serious After Effects devotees. Boris AE 2.0 has more-diverse special effects, while CineMotion for After Effects excels at optimizing video for professional applications. Both deliver exactly what they promise: a picture that will please *any* eye.—DAVID BIEDNY

Boris AE 2.0

RATING: ★★★★★ **PROS:** Wide range of effects; fast performance; great distortion filters.

CONS: A bit pricey for the hobbyist market.

COMPANY: Artel Software (617/451-9900, www.artelsoft.com). **LIST PRICE:** \$495.

CineMotion 1.0 for After Effects

RATING: ★★★★★ **PROS:** Excellent film-simulation effects; good control over shutter parameters and grain reduction. **CONS:** Weak documentation.

COMPANY: DigiEffects (415/841-9901, www.digieffects.com). **LIST PRICE:** \$299.

GUTS



GLORY



• ATI NEXUS 128 delivers fast, true color, ultra high res graphics when using Photoshop or other 2D and 3D design applications

• 32MB of memory lets you manipulate 3D objects with realistic textures and lighting in resolutions up to 1920 x 1200

• Powered by ATI RAGE 128, the revolutionary new graphics chip that gives your Mac the guts for all the glory it can handle



The New Breed of Speed.

www.atitech.com/ad/macworld

© Copyright 1999, ATI Technologies Inc. All product names are trademarks and/or registered trademarks of their respective manufacturers. Features, performance and specifications may vary by operating environment and are subject to change without notice.

Choose 256 at www.macworld.com/getinfo

Font Reserve 2.0

POWERFUL FONT MANAGEMENT

MANAGING FONTS ON YOUR Macintosh can be confusing and tedious, even if you use a suitcase-based font-management program such as Symantec's Suitcase or Alsoft's Master Juggler. Font Reserve 2.0 takes a different approach by eliminating the suitcase metaphor and letting you manage your fonts in a database. Whether you work with dozens of fonts or just a few, it's the most comprehensive and easy-to-use font-management software available today.

The heart of Font Reserve is a database browser that lets you view and manage the fonts in your system. The program automatically scans any local or remote hard drive for fonts and then stores information about each located typeface in a database. You can also load fonts without opening the browser—just drag them into a desktop applet.

Once you've loaded the fonts, you can designate each one as temporarily or permanently open. Font Reserve also supports font activation, which speeds your workflow by automatically activating a font when you open a document that contains it. The pack-



Font Control The Font Reserve Browser makes it easy to view and sort fonts.

age includes a free QuarkXTension that enables automatic font activation in QuarkXPress, but Font Reserve can also activate fonts in many other programs, including Microsoft Word, Macromedia FreeHand, and FileMaker.

Font Reserve's power is not limited to accessing fonts. Once inside the browser, you can use filters to display fonts that meet certain parameters—for example, TrueType faces that begin with the letter Q. You can sort fonts by a wide range of criteria, includ-

ing type foundry and design class. You can also view and print type samples of selected fonts.

In addition to offering a font browser, Font Reserve ships with a control panel that lets you toggle the application on and off with no restarts, and hence no downtime in your workflow. The package also includes 40 Bitstream fonts. Font Reserve 2.0 is Mac OS 8.5-compatible, and—thanks to the new version's support for AppleScript—it can be fully automated.

Macworld's Buying Advice Some of Font Reserve's capabilities, such as sorting typefaces by foundry, may seem like overkill. But they show how DiamondSoft has taken a bottom-up approach to font management. Font Reserve 2.0 is more expensive than other font managers, but it is a must-have application for anyone who uses more than the standard set of Mac-resident fonts. You can also give it a trial: DiamondSoft offers a free, fully functional demo on its Web site, limited only in the number of fonts you can open.—ANDREW SHALAT

RATING: **PROS:** Comprehensive, easy font management. **CONS:** Expensive. **COMPANY:** DiamondSoft (415/381-3303, www.fontreserve.com). **LIST PRICE:** \$119.95.

Nothing is more colorful than real life.



The image in this advertisement was scanned on a Heidelberg CPS CIRCON desktop scanner with LinoColor Elite software at 550% of original transparency. For information about our entire line of professional color publishing solutions, call toll-free: (888) LINO-COLOR. Or visit our website at: www.getrealcolor.com/mw

©1999 HEIDELBERG. HEIDELBERG IS A REGISTERED TRADEMARK. AND LINO-COLOR IS A TRADEMARK OF HEIDELBERG DRUCKMASCHINEN AG. PHOTOGRAPHY BY PAUL FIGURA

Consultant 2.5

PIM SYNCs WITH PALM ORGANIZERS

MAC USERS WHO WANT TO share contact and schedule information with 3Com's Palm family of handheld organizers don't have many options. The original Palm desktop software for the Macintosh was abysmally slow, and Now Synchronize, which was supposed to let you exchange data between the Palm and Qualcomm's Now Up-to-Date/Now Contact bundle, was limited and unreliable.

So, what's an organizationally challenged Mac user with PIM envy to do? An inexpensive Palm-compatible PIM—Chronos's Consultant—has been quietly winning converts among the Mac Palm crowd. Consultant 2.5.3 gives you most of the bells and whistles you'd expect in a PIM, including a full-featured contact manager and a calendar that offers day, multiday, week, month, year, Gantt, and list views.

Consultant sports a colorful, albeit cluttered, interface. Alas, unlike Now Up-to-Date, Consultant doesn't support timed to-do's or zero-duration events, and entering event times is more cumbersome than it could be. On the plus side, automatic word



Easy Events Consultant 2.5.3 translates English phrases into date-book events.


completion and telephone-number formatting help save keystrokes, and you can book events by describing them in plain English; Consultant translates your requests into calendar items, complete with links to the appropriate contact (see "Easy Events").

If memory is tight, you might want to use the accompanying program called Mini-Consultant to look up and enter contact or schedule data; it uses only half as much RAM as the main application (about 1MB). By clicking on icons in the Finder's menu bar, you can also display telephone numbers for your favorite contacts or review the day's events—even if neither program is running. Pop-up alarms notify you of upcoming events, but you can't dismiss or snooze the

alarms without having Consultant or Mini-Consultant open.

To use Consultant's Palm-synchronization feature, you'll need to download the latest version of the Palm conduit-manager software from 3Com's Web site. Data exchange between Consultant and my Palm III was generally reliable, and the online manual did a good job of explaining the rules that govern how individual fields are handled. The most glaring problem is that uncompleted to-do's on the Palm always show up on the current day in your calendar, even if they're due later.

Macworld's Buying Advice By the time you read this, 3Com may have shipped new desktop software based on Claris Organizer. Even so, Consultant 2.5.3 is a fairly good PIM in its own right. If you use a Palm organizer, download the demo version from Chronos's Web site and give Consultant a try.—FRANKLIN TESSLER

RATING:  **PROS:** Translates English descriptions into events; synchronizes with Palm organizers. **CONS:** No timed to-do's or zero-duration events; limited alarms; uncompleted to-do's appear on current day. **COMPANY:** Chronos (801/957-1774, www.chronosnet.com). **LIST PRICE:** \$39.95 (with Palm synchronization, \$49.95).

LINOCOLOR
TECHNOLOGY

When capturing the essence of real life, you need scanners and software that accurately reproduce all the color, detail and subtlety of the real world. LinoColor technology gives you the power to reproduce real color, predictably. Day in, day out, on deadline. Why get anything else when you can get real?

HEIDELBERG
COLOR PUBLISHING SOLUTIONS
GET REAL. COLOR.



GET REAL.

Choose 17 at www.macworld.com/getinfo

Iomega Zip 250

REMOVABLE-MEDIA DRIVE

WITH HIGHER-CAPACITY MEDIA, more polished software, and an improved enclosure, the new 250MB Zip drive is a good product made even better. The \$199 unit reads and writes to Iomega's new \$16.99 250MB cartridges, but also supports 100MB Zip media. While it has a few annoyances, the Zip 250 is a good buy.



SUZANNE ROADY

The drive is housed in a familiar purple enclosure, but with a few improvements. The unwieldy power brick in the original Zip drive has shrunk to the point where the

word *brick* seems a misnomer. The drive now also features a power switch in front. On the downside, it still supports just two SCSI IDs, 5 or 6, and the case still rattles when you shake it.

When reading or writing a file to the new 250MB media, the new Zip is zippier, offering a 40 percent performance boost over the old drive. However, the new drive is a bit slower than the original when writing to 100MB media.

With the original Zip drive, Iomega put its software utilities on the included Zip cartridge, inviting users to install the software and then overwrite the cartridge. IomegaWare now comes on a CD-ROM that includes Mac and PC versions.

Iomega has honed its Tools application, which lets you create a rescue disk with a complete or minimal System Folder and a copy of Apple's Disk First Aid software. After a system crash, you can boot from the cartridge and check the internal drive.

The software also lets you add copy protection to Zip cartridges. However, the interface is vexing; the opening window presents a set of icons with no labels. The only way to use the program is to take a guess and click on a button.

The CD also includes an easy-to-use audio-capture application called RecordIt, which lets you copy songs from an audio

CD or record voices with the Apple microphone. You can then store these sounds on your Zip disks for playback. However, Zip disks are no match for a CD—the RecordIt player pauses frequently during normal computer use.

Macworld's Buying Advice Iomega has reason to crow, as the new Zip drive improves on an already strong product. Thanks to the popularity of the original drive, Zip cartridges remain a good way to share data with coworkers. With the new higher-capacity media, the Zip is now more attractive as a backup device. However, Zip disks, while generally reliable, are not the sturdiest removable media you can buy. If you plan to use the drive for archiving, you'll need to purchase backup software and make multiple backup sets.

Iomega will continue to sell the 100MB drive through 1999, and plans a USB version of the Zip 250 for the second half of the year.—KRISTINA DE NIKE

RATING: ★★★★★ **PROS:** Higher-capacity media; backward compatible with 100MB media. **CONS:** Cryptic software interface; limited SCSI ID choices. **COMPANY:** Iomega (801/778-1000, www.iomega.com) **LIST PRICE:** \$199; 250MB cartridge, \$16.99.



**HE'S GOT
A WEBSITE.
DO YOU?**

E-Commerce
Enabled

Resellers, We Refer
Design Work

30 Day Money Back
Guarantee

The Best Support and Pricing in the Industry.

Yeeehaaaaaw! It's what you'll say when you sign up with or switch to Interland® web hosting. Prices from as little as \$19.95 a month. Dual DS-3 connections for extra speed. A whopping eighty megabytes of disc space. Guaranteed 99.9% uptime. 24x7 toll-free support for the wee hours. And pricing with absolutely no hidden charges. You'll be happy, we guarantee it!

Check out our website and discover why more and more people worldwide are trusting their websites to Interland. Whether you're a computer veteran or just getting started, you'll receive the best service, support and technology the industry has to offer. At a price that's right for you. Not to mention a great reseller program. Give us a call today, and let Interland bring you the world.

Pricing From \$19.95 per Month

**Call Today 1-800-599-0547
(404) 586-9999**

@ Speed. Reliability. Support.
interland®
Web Hosting
www.interland.net



Just mail or fax this completed coupon
for your FREE 68-page Guide to Power
Protection. Better yet, order it today at
the APC Web site!

<http://promo.apcc.com> KEY CODE **i986z**

(888) 289-APCC x8424 • FAX: (401) 788-2797

APC®
Legendary Reliability™

FREE 68-page Guide to Power Protection

- ☐ **YES!** I want to know how to choose the right UPS for my system.
Please send me my FREE 68-page Guide to Power Protection.
- ☐ **NO,** I'm not interested at this time but please add me to your mailing list.



Name: _____

Title: _____ Company: _____

Address: _____

City/Town: _____ State: _____

Zip: _____ Country: _____

Phone: _____

Brand of UPS used? _____ # _____

Brand of PC used? _____ # _____

Brand of Servers used? _____ # _____



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE



KEY CODE: i986z

Department: C

132 FAIRGROUNDS ROAD

PO BOX 278

WEST KINGSTON RI 02892-9920



How to Contact APC

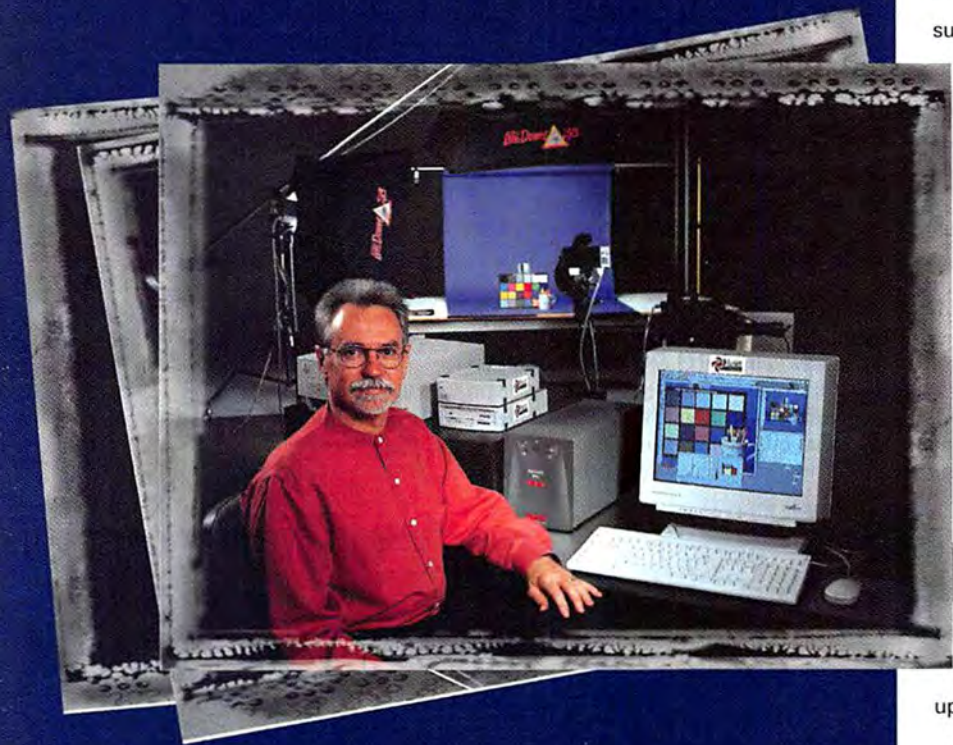
Call: (888) 289-APCC, *use the extension on the reverse side*

Fax: (401) 788-2797

Visit: <http://promo.apcc.com>,
use the key code on the reverse side



What does a digital photographer do in the middle of a lightning storm?



With APC battery backup power,
he gets the picture.
All the time.

You can find APC power protection products at:

STAPLES
The Office Superstore

COMPUUSA
THE COMPUTER SUPERSTORE

**Office
DEPOT Inc.**

PC Connection
800-986-2320

TigerDirect
1-888-666-3500

Choose 72 at www.macworld.com/getinfo

©1999 American Power Conversion. All trademarks are the property of their owners. BP4C8CF-US • PowerFax: (800)347-FAXX • E-mail: apcinfo@apcc.com • 132 Fairgrounds Road, West Kingston, RI 02892 USA



APC Back-UPS Pro®

Dear APC: Bartlett Digital photography studio bills by the hour, which means we cannot tolerate avoidable downtime. The surge suppression and battery power of an APC

UPS lets us finish the job, as scheduled, even with a temporary power outage.

- Tom Bartlett, central Florida

According to research by IBM, a typical computer is subject to more than 120 power problems a month. Surge protectors prevent only a fraction of the power problems that cause keyboard lock-ups, system crashes, corrupted data, and worst of all, motherboard burnout. An APC uninterruptible power supply (UPS) with surge suppression and battery back-

up protects your software, hardware, and most importantly, your work. APC Back-UPS Pro® provides clean, reliable power that lets you function at peak performance, giving you time to shut down during a power outage. Getting the picture? Visit the listed retailers to add APC's Legendary Reliability to your system.

**FREE 68-page Guide
to Power Protection.**

Learn how to choose the right power protection for your system.



Order now Key Code i986z
<http://promo.apcc.com>

888-289-APCC x8424 • Fax: 401-788-2797

APC
Legendary Reliability™

CommuniGate 3.0

MAIL SERVER FIGHTS SPAMMERS

THE DELUGE OF SPAM ON THE Internet is threatening to seize, rather than grease, the wheels of progress. Users swamped with unwanted advertisements are desperately seeking relief, and Stalker Software's CommuniGate 3.01 mail server delivers it. Several new Internet mail features help categorize and filter messages, and new security features prevent spammers from using your server to relay mail to others.

CommuniGate consists of files containing the main server; a client application; various administrative tools; and individual gateway modules for POP, SMTP, UUCP, mailing lists, faxing, printing, and paging. New in this version is an address-book service module, for publicly publishing e-mail-address directories. This release also includes, at long last, an installer application, along with excellent HTML-based documentation. As with previous releases, you must obtain activation codes for each module you intend to buy beyond the LAN-based server-and-client bundle.

CommuniGate's SMTP module controls spam in several ways. First, and most

important, it makes a distinction between local and remote users based on the originating IP address, allowing local users to relay messages to the Internet. You give selected remote users the same privileges by flagging them as "friends," preventing spammers from using the server as an intermediate relay station. Second, it can verify



E-mail Embargo CommuniGate 3.01 not only lets you prevent spammers from relaying mail but can also block incoming spam by verifying return addresses and checking externally maintained blacklists.

return addresses to ensure they're accurate; spammers often use forged or illegal return addresses. Third, it checks your local blacklists to reject mail from known spam sources. Finally, it can check external blacklists that others maintain.

These features, as well as the program's

existing support for MIME content, make CommuniGate an excellent e-mail server. Alas, CommuniGate's client hasn't kept up with the times: it doesn't display MIME or HTML data in its message browser, storing them instead as attachments that you must process using external programs. Users today consider MIME and HTML display essential. An alternative is to use an e-mail client with this support, such as Qualcomm's Eudora or Netscape's Messenger, in conjunction with the CommuniGate server components.

Macworld's Buying Advice With its modular architecture, multiple gateways, MIME support, and excellent spam control, CommuniGate 3.01 is a powerful mail server. Combine it with a MIME- and HTML-capable mail client, and you've got yourself a first-rate Internet and LAN e-mail solution.—MEL BECKMAN

RATING: ★★★★★ **PROS:** Inexpensive; antispam features; multimedia gateways. **CONS:** Mail client can't display MIME and HTML data. **COMPANY:** Stalker Software (415/383-7164, www.stalker.com). **LIST PRICE:** 25-user LAN-only gateway and client, \$200; configured for Internet with POP and SMTP gateways, \$300; other gateway modules, \$100 each.



"I use FontLab 3.0 from PYRUS to help my work stand out from the rest.

And it's getting pretty crowded out there."

Ellen Crawford, Designer

TYPOGRAPHY

THE POWER TO RISE ABOVE THE REST

Do you want to stand out from the crowd? Then welcome to a new era in digital type design. It has never been easier to improve your products with

state-of-the-art type designed to set you apart — with FontLab, the advanced font editor.

Display high quality text on low resolution

monitors with Type 1 or TrueType hinting. Make Multiple Masters in minutes. Get perfect TrueType-Type1 conversions at the click of your mouse. Count

on FontLab for time saving tools for a variety of quick font fixes.

Designing for Mac and PC? FontLab handles both. And with TransType,

our seamless font transformer, you can convert your fonts quickly and easily between Mac and PC format.

To order, call Pyrus at 1-877-FontLab.

FONTLAB 3.0
THE TOOLS TO GET YOU THERE

copyright 1999, Pyrus North America, Ltd. Box 465, Millersville, MD 21108, USA

Call Toll Free TODAY to Order FontLab 3.0

1-877-FONTLAB
visit PYRUS on the web at www.font.bc.ca

Do you Yahoo? Have you seen the difference with... **ViewSonic® on top!**

When you're surfing Yahoo!®, you want the biggest, brightest images you can get. Which is exactly why you should Yahoo! with the new ViewSonic PT795 19" (18.0" viewable) monitor. It performs like a 21" (various viewable) monitor while taking up barely more space than a typical 17" (various viewable) model.

But while the footprint is small, it's big on screen quality. The PT795 is the first 19" (18.0" viewable) PerfectFlat™ SonicTron® monitor. The PerfectFlat screen provides the user a distortion-free image, especially while viewing graphic-intensive images.

The PT795 is equipped with a 4-port Universal Serial Bus (USB)* hub which enables you to instantly connect USB compatible peripherals without having to reboot your Mac. 0.25-0.27mm variable AG pitch, SuperContrast™ screen, flicker-free at 1,600 x 1,200 with an 87Hz refresh rate. TCO '99 certified. For very big performance in a very small space, you can't top the ViewSonic PT795.

For more information on the company that's won over 500 industry awards, visit ViewSonic at: www.ViewSonic.com/mac



YAHOO!®



(Mac® Sold Separately)



www.ViewSonic.com

(800) 888-8583 • Specifications subject to change without notice • Copyright © 1999, ViewSonic Corporation. • All rights reserved.
Corporate names and trademarks are property of their respective companies. • Apple, Macintosh and the Apple logo are registered trademarks of Apple.
*USB is compatible with Windows 98 and may work with some versions of Windows 95. • USB also requires USB-equipped computers and peripheral devices.

Choose 59 at www.macworld.com/getinfo

Monsoon MM-1000 Speakers

FLAT SPEAKERS DELIVER ROUND SOUND

TIME FOR A WORD-ASSOCIATION test. I say *coffee*; you say *tea*. I say *sky*; you say *cloud*. I say *computer speakers*; you say . . . *tinny*? If so, it's time to change your tune. Sonigistix has released the Monsoon MM-1000 Amplified Multimedia Speaker System—a satellite-subwoofer speaker combination that may alter your expectations of how computer speakers should look and sound.

As soon as you unpack the box, you'll notice that the two satellite speakers are a scant half-inch deep. These speakers are based on planar magnetic technology, a design—typically found in high-end stereo speakers—that doesn't require traditional speaker cones and deep enclosures.

Planar magnetic speakers have a tough time creating low bass frequencies, which is where the Monsoon's subwoofer comes in. This four-slot, toaster-size black box sits under your desk, and its 5.25-inch speaker produces enough bottom-end sound to satisfy music lovers and gamers alike. You can adjust the bass with a knob on the front of the subwoofer. Regrettably, there's no way to change the left-right balance of the satel-



SUZANNE KOSNY

lite speakers and there's no on/off button.

In addition to the bass control, the subwoofer's front end features a volume control and a bass-boost button. The back of the subwoofer sports two miniplug stereo inputs, connectors for the satellites' bare-wire leads, and an input for the lightweight remote control.

Good design is nice, but the proof of a speaker's worth is the sound it produces. Because of their small size and inexpensive

components, most computer speakers are a collection of compromises—certain frequencies are artificially boosted or cut to make the speakers sound lively or to produce thumping low frequencies.

From this listener's point of view, such is not the case with the Monsoon speakers. They deliver well-balanced, transparent audio and have more in common with a good pair of home-stereo speakers than with typical computer speakers. High frequencies are readily apparent without being shrill, middle frequencies lack the boxiness found in most computer speakers, and the low end is rich but not thumpy. The sound will also please gamers. There's a nice sense of separation—important when you need an audio clue to tell you where the next intergalactic cootie lurks—and the subwoofer offers enough oomph to enhance the effect of any game's exotic weaponry.

Macworld's Buying Advice If you can afford the \$229 price tag, get these speakers. They are glorious.—CHRISTOPHER BREEN

RATING: ★★★★★/5 **PROS:** Wonderful sound; cool flat-panel design. **CONS:** A little expensive; no on/off switch. **COMPANY:** Sonigistix (501/372-0366, www.monsoonpower.com). **COMPANY'S ESTIMATED PRICE:** \$229.



How Mac friendly is EarthLink?

How about 30 free days and free setup (save \$45)!*

Your EarthLink Sprint membership includes:

- Unlimited Internet access
- Free 6MB Web site
- Fast, reliable email
- Toll-free 24-hour help and much more
- Personal Start PageSM

"EarthLink has become the Macintosh of the ISP world — the way for 'mere mortals' to connect to the Net." [Business Week]

* Monthly rate is \$19.95 thereafter

©1999 EarthLink Network, Inc. and Sprint Communications Company LP. Trademarks are property of their respective owners. Sprint and the Sprint logo are trademarks of Sprint Communications Company LP. EarthLink, EarthLink TotalAccess, and the EarthLink logo are trademarks of EarthLink Network, Inc. All Rights Reserved.

1-800-EARTHLINK Reg #4000-35959
3 2 7 - 8 4 5 4



EarthLink™



**Special limited time offer for MacWorld Subscribers.
SEE ENCLOSED SOFTWARE OR CALL TODAY!**



Your Tribe.



Your Village.



**GLOBAL
VILLAGE**

www.globalvillage.com
(408) 523-1000

The TelePort Internal 56K
for the NEW Power Macintosh G3.

Made exclusively for the Mac.
And just like you, it won't work on a PC.

Available at all Apple® retailers and catalogs.

Myth II: Soulblighter

UPDATE IMPROVES ON PERFECTION

AFTER TWEAKING THE LAST few lines of code in the real-time strategy game Myth: The Fallen Lords, the folks at Bungie must have felt a bit like Michelangelo after applying the final daubs to the Sistine Chapel: "Not bad, but what are we going to do to top this?" The original Myth offered beautifully rendered 3-D terrain, a solid tactical

element, superb physical modeling, free Internet gaming via bungie.net, cross-platform play, and support for 3Dfx-based hardware acceleration. Could the company produce a compelling sequel that wasn't a regurgitation of the original? In a word: yes.

Although Myth II maintains nearly all the elements of the original, the sequel refines rather than reiterates. You continue your battle with the forces of the Dark, but this time you discover a more detailed world in which the legions of both Light and Dark have an expanded set of characters, all with embellished abilities. Bowmen now carry a flaming arrow for setting grass afire—a wonderful tactical enhancement for discouraging or fricasseeing your opponents. Regrettably, your troops are all too willing to march right into the same fire. And as if the too-quick-on-the-draw dwarfs from Myth I weren't nuisance enough, Myth II includes mortar dwarfs who fire deadly—although inaccurate—projectile weapons.

Bungie has also improved Myth's interface. All formations are now mouse selectable in a small menu bar at the bottom of the game screen, and rotating troops is easier—just select

them and use the arrow keys to pivot.

The range of environments is wider in Myth II: you'll have occasion to fight indoors, within the walls of an enemy castle, and on board a ship. Animated 3-D objects such as windmills and drawbridges add to the visual luster of the game. Squeamish players can now turn off the blood and gore. Two powerful but complex editing tools let you alter game elements and create maps. And Myth II supports RAVE 3-D hardware acceleration on systems that carry at least 32MB of RAM and a Rage Pro or Rage 128 chip set.

Oh, and one more thing. Myth II is a kick to play—in single-player mode or against human opponents.

Macworld's Buying Advice Bungie has done a marvelous job of enhancing what was already a stellar game. It's a foregone conclusion that fans of the original will buy Myth II: Soulblighter. If you have the slightest interest in real-time strategy games, check it out.—CHRISTOPHER BREEN

RATING: ★★★★★½ **PROS:** Interface and graphics refinements; RAVE support. **CONS:** Troops are a bit dim about the hazards of fire. **COMPANY:** Bungie Software (312/397-0500, www.bungie.com). **LIST PRICE:** \$49.



Turning Myth into Reality This castle wall is just one of Myth II's environmental enhancements.

OUR EDITORS CAN BEAT UP THEIR EDITORS



MATTHEW ROTHENBERG
Director of Online Content, Mac Publishing LLC.

INDUSTRY EXPERIENCE

Joined MacWEEK in 1990

Broke scoops on Apple's first Power Macs and successive models as well as its first scanners, cameras and color printers; Adobe's Photoshop 5 and K2 DTP packages; QuarkXPress 4.0; and innumerable other products.

Ran MacWEEK's print-news operation, then led its transition from print to the Web.

BACKGROUND

Traded in his manual typewriter for a state-of-the-art Mac SE in 1988. Bitten by the DTP bug, Matthew paid his dues as a publishing consultant before breaking into MacWEEK's mail room. Matthew has served MacWEEK as a speaker and agent provocateur at industry trade shows across the United States and Europe.

MacWEEK.com
www.macweek.com

iMacTM, therefore
iScan, with Agfa.



Introducing
the USB
SnapScan 1212u
in blue!

Agfa's commitment to the Mac community continues with the introduction of the latest product in the award-winning SnapScan line—the 1212u *in blue!*

Once again, Agfa delivers the tools that delight creative minds. The 1212u *in blue* not only looks great, it's built with the quality you expect and is exceptionally easy to use.

Style. Creativity. Quality.
From Agfa.

SnapScan 1212u *in blue* features:

- USB interface
- 600 x 1200 optical dpi, 9600 x 9600 enhanced
- 36-bit color depth
- Fast, 1 MB/sec. scanning



Also available in off-white.

\$129.95 (MSRP 1/99)

www.agfahome.com

AGFA 
The complete picture.

The brands you
trust. From Agfa.

SnapScan
ePhoto
DuoScan
AgfaJet

Available from:

Club Mac • ComputerWare • Fry's •
Mac Connection • Mac Mall •
Mac Warehouse • Mac Zones •
NECX • Tech Squared

AGFA and the Agfa rhombus are registered trademarks of Agfa-Gevaert AG. All other trademarks and tradenames are property of their respective owners.

Choose 158 at www.macworld.com/getinfo

This is your glorious empire moments



To build a Stone Age tribe into a thriving empire, you can rest easy knowing that you can never rest easy. Because what takes thousands of years to build can be destroyed in seconds if you don't plan wisely.

In Age of Empires, your challenge is to take one of 12 ancient civilizations (including Egyptian, Yamato, and Greek) from grass hut beginnings to world domination

in 10,000 years of real-time evolution. Which gives you just enough time to decide whether you want to conquer everyone else, explore the four corners of the globe, or

accumulate great wealth to achieve victory.

And with a 100-node technology tree, you can choose your advancements accordingly. For

instance, you can research gold mining or commerce to



Coming Soon for Macintosh.



Microsoft



Available soon at your local retailer,
or visit the GT Interactive online store:
<http://www.gtstore.com> or call 800/229-2714

MacSoft®

An affiliate of GT Interactive Software Corp.
www.wizardworks.com/macsoft/

before it became their glorious empire.



amass great riches, or ballistics and naval warfare to strike
fear into the hearts of others.

Multi-player capabilities, 40 pre-set scenarios, lavish campaigns, randomly generated maps, and an expansive scenario editor make it a new challenge each time you play. Add in the rich 3-D graphics where you'll see every flaming arrow, marching phalanx, and

charging war elephant, and the pressure
to win becomes downright intense.

But before you think you've got what it takes to
win, make sure you've got the empire to back it up.

AGE of EMPIRES

Choose your favorite form of world domination.

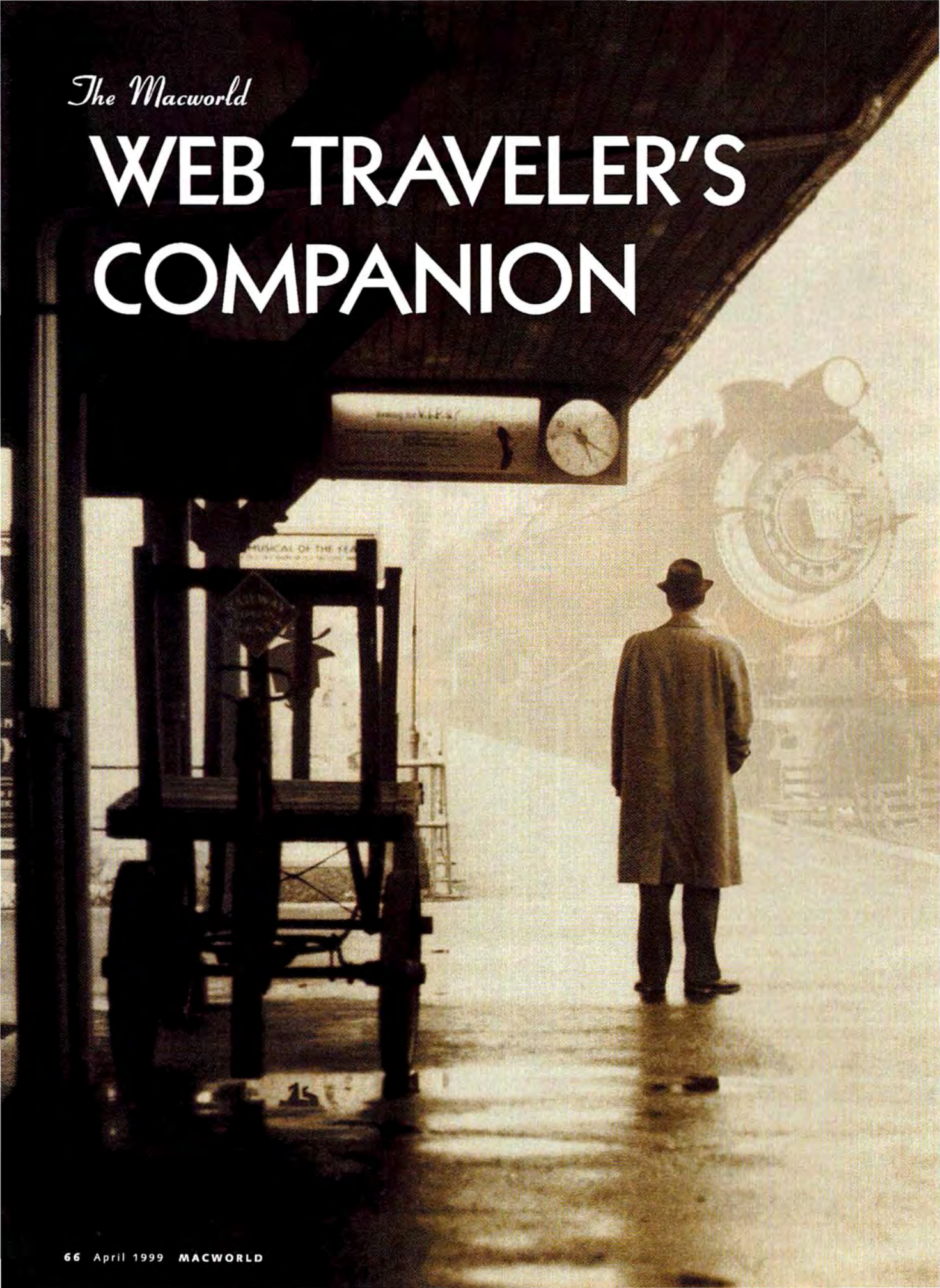
www.microsoft.com/games/empires

©1997, 1998 Microsoft Corporation. All Rights Reserved. MICROSOFT is a registered trademark, and AGE OF EMPIRES is a trademark of Microsoft Corporation. Distributed and published by MacSoft, an affiliate of GT Interactive Software Corp. All other trademarks are the property of their respective companies.

Choose 28 at www.macworld.com/getinfo

The Macworld

WEB TRAVELER'S COMPANION



This Guide Will Help You See the Best Sites and Roam the Net with Ease



It's a beautiful day. You're seated comfortably, with your hands on the keyboard and your modem cranked up to maximum throughput. You've got nothing in front of you but the open road and your favorite Web browser. Where do you go from here?

They don't call it the *World Wide Web* for nothing. New sites appear every day, offering everything from news and information to an opportunity to spend money or play a game. You will never have time to visit every site on the Web, but with help from us you can hit the highlights. We've found some of the best sites on the Web for your journey, named the best browser (see the sidebar "Picking Your Ride: The Best Browser"), compiled essential search tips (see the sidebar "Finding Your Way: Top Search Tips"), and even found utilities to help you en route (see the sidebar "Your Packing List: Essential Web Utilities"). We'll leave the driving to you.

by Shelly Brisbin



MAC-CENTRIC SURFING

The Mac and the Web go way back. Hundreds of sites feature Mac products, shareware, news, and evangelism. Many of the best ones are run by individuals whose work is fueled by love for the Mac.

BEST TROUBLESHOOTING SITE

MacFixIt (www.macfixit.com)

Operated by author and *Macworld* contributing editor Ted Landau, MacFixIt is both a running commentary on Mac OS developments and the home of detailed troubleshooting advice for everything from hard disks to digital cameras.

The site is searchable and is updated three times a week. MacFixIt users are quick to find bugs and conflicts, and they regularly contribute tips and suggestions, making the site a true treasure of the Mac community.

If you're in need of serious Mac help, make sure you also stop in at the Apple Tech Info Library, a.k.a. TIL (<http://til.info.apple.com>). This searchable archive

contains technical notes, product data sheets, and other documents about every Apple product. If you're willing to wade through a massive amount of information, you'll probably find your answer here.

BEST MAC SHOPPING SITE

MacConnection

(www.macconnection.com)

Like a number of online and catalog retailers, MacConnection is part of a larger site that's devoted to computer products for Windows PCs. Unlike most of these Mac site segments, however, MacConnection has its own front page and won't spit out a bunch of parallel-port peripherals when you search for a printer or backup device. The site is well organized and fully stocked with Macs, peripherals, and software. The search feature is easy to use, and the prices, while not rock bottom, are fair.

If you're looking for a

used Mac or for parts and peripherals for older systems, another site will fit the bill: MacWorks (www.macworks.com).

BEST SHAREWARE SITE

Info-Mac HyperArchive

(<http://hyperarchive.lcs.mit.edu/HyperArchive.html>)

Info-Mac, the giant shareware archive housed at MIT and mirror sites around the world, is the granddaddy of all Macintosh-shareware sites. The HyperArchive Web site, hosted by MIT's Laboratory for Computer Science, is a bare-bones search interface to the Info-Mac library that leads to abstracts of each

file and a download link. We recommend this site because of the sheer volume of the archives and the absolute dedication of the volunteers who work to keep it up.



Picking Your Ride: THE BEST BROWSER

EVERY INTERNET TRAVELER NEEDS A BROWSER—THE SOFTWARE that serves as your window to the Web. Although any browser will display Web pages and keep track of your favorite sites, the contenders differ in style and performance. The good news is that choosing the

wrong Web browser won't cost you a dime. Netscape Communicator

and Microsoft Internet Explorer are both free, and you'll find a copy of each included with Mac OS 8.5. The bad news is that each of these applications mixes nifty features with annoying inconveniences.

The Contenders The first thing you should know is that your browser is probably outdated, especially if you're using a version that came with the Mac OS. On the Mac OS 8.5 CD, Apple shipped Internet Explorer 4.01 and Netscape Navigator 4.0.5 (Netscape's older stand-alone browser, which doesn't include features built into the mega-application Netscape Communicator). Here, we concentrate on version 4.5 of both Internet Explorer and Netscape Communicator, available from the respective companies' Web sites as large downloads.

Bigger and Slower Netscape's browser has put on weight: what was once a simple Web browser (Navigator) is now part of Communicator, which includes e-mail and news clients and a Web authoring application. As a result of its bulk, Communicator can require twice the RAM of Internet Explorer and takes up lots more disk space. The Internet Explorer bundle also includes a news and mail client, but it's a separate application (Outlook Express).

Although Communicator takes the booby prize for biggest browser,

both applications suffer from a lack of speed. Communicator seems to take you to Web pages a bit more quickly, but each browser requires the same amount of time to complete a complicated page. Their slowness is particularly noticeable when you compare Communicator or Internet Explorer with Navigator 4.07, the older, browser-only offering from Netscape (still available from Netscape's Web site) that delivers pages in much less time.

Besides its own RAM bulk, another factor that slows down Communicator is the program's preinstalled browser plug-ins. These add substantially to RAM demands. You can trim Communicator's bulk by removing plug-ins you don't need.

Unfortunately, Internet Explorer's slowness can't be blamed on plug-ins or other extras. This makes its performance that much more disappointing. Its only performance advantage is that text elements load first (Communicator loads them only after building the page), making it possible to scan an Explorer page while it's still being drawn on your screen. You might even decide to move on to another page before Explorer gets around to filling in ad banners or navigation elements—a potential time-saver.

Communicator *does* beat Internet Explorer hands down when it comes to rendering Dynamic HTML (DHTML) animation. Communicator positions and rotates images correctly and efficiently. Explorer, on the other hand, often bungles or drops DHTML objects and delivers those it can handle at a painfully slow pace. If you need to view DHTML pages, stick with Communicator, despite its other limitations.

Style Points Each browser includes a selection of clever features that help you surf more efficiently, but Internet Explorer's are more elegant. In Internet Explorer, URLs autocomplete as you type, as do Web-based form fields if you've entered information about yourself (name, e-mail

SHOPPING

With a Web browser and a credit card, you can find and buy just about anything online. The good sites offer secure transaction processing to protect your credit-card number from theft. Most online stores also offer fast delivery and competitive prices. Watch out for e-stores that charge high shipping rates, and be sure to compare prices with those of other sites. You may be surprised how much of a difference there is.

BEST PLACE TO FIND A DEAL

CompareNet (www.comparenet.com)

Here you'll find electronics, home office equipment, automotive items, sports equipment, and lots more. CompareNet isn't a department store, however; its primary function is to help you narrow down a list of products and compare them, based on price and features. With that information in hand, you can click on a CompareNet partner link to go to a commerce site and make a purchase. The

site's comparison criteria are well chosen, and the ability to create a custom table of just the products you're interested in is very slick.

BEST MUSIC STORE

CDnow (www.cdnow.com)

Selection and depth are two major reasons to shop for music at CDnow. True, the prices are not the lowest you will find online, but they are somewhat below retail and sales are frequent. Devotees of a particular artist can even find listings here of compilation CDs that contain songs the artist recorded.

Music Boulevard (www.musicblvd.com) offers a bit less selection but includes a tremendous amount of artist information, including links to album and concert reviews and feature articles.

BEST COLLECTIBLES SITE

eBay (www.ebay.com)

This massive auction site is a treasure trove of stuff, both modern and collectible. It connects sellers and buyers of just about anything that people can collect, ranging from sports memorabilia to old coins, records, and movie posters. Since eBay is an auction site, it is a wild and woolly place. When you bid on and buy items, eBay acts as an intermediary for the auction; you actually purchase goods from individuals or businesses that list items on eBay. Because you must take the seller's word for the condition and value of mer-



address, street address, and so on) in your preferences. Explorer also adds a Sherlock-integration feature, available from the Location bar. Under Mac OS 8.5, you can choose to open Sherlock and use it to search for sites that are similar to the one you're browsing. However, Communicator offers a more useful option—it lets you search for "related" sites. This feature is similar to Explorer's Sherlock tool but more elegant, because it doesn't require a switch to Sherlock and it generates a list of suggested links that are available from an unobtrusive pull-down menu.

Keeping Things Organized Although both browsers do a good job managing bookmarks and the browser window, Internet Explorer offers the most innovative tools. Explorer's main contributions to desktop-management elegance are the four tabs (Favorites, History, Search, and Page Holder) on the left side of the screen. Clicking on one of these tabs displays a narrow pane that allows you to view, for instance, your bookmarked links or a history of your surfing activity organized chronologically. Explorer's Page Holder, new in version 4.5, lets you instead place a Web page in the small windowpane. You can then click on links and see the resulting pages in the main browser window.

Getting It Down on Paper If you print Web pages, you'll find that Explorer does a better job of rendering colored and shaded headings and boxes than does Communicator. Communicator often drops shading and text in shaded areas. Explorer also wins points for its Print Preview feature, which even lets you shrink a page to fit on paper.

Browser Autopilot Microsoft likes to tout its browser's Mac-savviness, including support for themes and other Mac OS features. Internet Explorer is the only browser that lets you download sites for offline browsing. However, both Microsoft and Netscape have held back on at least one major feature available to Windows users—the automatic updating of browser software when new versions are available.

Windows PC users of Communicator and Internet Explorer can set their browsers to notify them when updates are ready and ask if they want to automatically install the new software. Mac users must still

check the Netscape or Microsoft site for new browser versions and download them in the traditional way.

To its credit, Microsoft did bring its drag-and-drop software-installation method over from the Office suite to the Mac version of Internet Explorer. However, using it may mean you lose existing plug-ins or anything else you have stored in your current Internet Explorer folder. Favorites and other preferences, which are stored in the System Folder, are preserved.

Macworld's Buying Advice Internet Explorer ekes out a narrow victory over Communicator, primarily because of its clever timesaving features and smaller RAM footprint. Offline browsing, site subscriptions, and superior printing also give it a leg up on Communicator.

Still, Communicator is the clear choice for viewing DHTML animation and offers a helpful search tool. The browsers are free, so if you have the room, we suggest you keep them both on your hard drive.

Microsoft Internet Explorer 4.5

RATING: ★★★½ **PROS:** Easy access to bookmarks and surfing history; site subscriptions; offline browsing; excellent printing options. **CONS:** Poor DHTML support; slow. **COMPANY:** Microsoft (425/882-8080, www.microsoft.com). **LIST PRICE:** Free.

Netscape Communicator 4.5

RATING: ★★★ **PROS:** Superior DHTML support; collapsible tool bars; smart browsing locates pages without a URL. **CONS:** No autofill features; potentially high RAM overhead from tightly integrated mail and composer tools; poor printing options. **COMPANY:** Netscape Communications (650/254-1900, www.netscape.com). **LIST PRICE:** Free.

chandise you buy, be particularly cautious as you make your purchases.

BEST TRAVEL SITE

MSN Expedia Travel
(www.expedia.msn.com)

Price a trip right from Expedia's front page, and compare prices even without giving a password. Registered users can purchase tickets and save and print itineraries. Expedia includes a full range of travel information, maps, and trip-planning tools to help tourists and business travelers price and route their trips.

Try TheTrip.com (www.thetrip.com) to track flights so that you know when to pick up visitors at the airport.

PERSONAL FINANCE

Money management is among the hottest topics on the Web, because so many people are interested in financial planning and investment and also because the Web is an excellent medium for viewing, calculating, and manipulating numbers. Many major money sites offer educational information as an enticement to subscribe to a more detailed version of the service, while others offer online brokerage, loan services, and other financial products with the advice and free stock quotes.



BEST MONEY-MANAGEMENT SITE

Quicken.com (www.quicken.com)

Quicken.com offers a bit of everything for those interested in keeping track of their money. You'll find financial tutorials, tax planners, mortgage calculators, retirement planners, investment-research features, and lots of great money-management tips and tricks.

BEST INVESTMENT TOOL

MSN MoneyCentral Investor
(<http://investor.msn.com>)

Like Quicken.com, Microsoft's money site offers a wide array of information and services, but MoneyCentral Investor is primarily geared toward those seeking to analyze and manage an investment portfolio. Among its standout features are cus-

tom portfolio tracking and detailed company research for investors.

Check out Morningstar.Net (www.morningstar.net) if you're particularly interested in tracking mutual funds. Morningstar is a well-regarded mutual-fund rating service and offers a dizzying array of information about thousands of funds. Both MoneyCentral Investor and Morningstar.Net offer more in-depth data for paid subscribers.

REFERENCE

Reference sites make it easy to find words, statistics, maps, and just about anything else you might find in dusty books on a reference shelf.

BEST WORD REFERENCE

Merriam-Webster
(www.m-w.com/dictionary.htm)

Simple to use but full-featured, the Merriam-Webster site provides definitions, synonyms, and antonyms for common (and not-so-common) English words. Unlike some online dictionaries, Webster's is nice enough to check your spelling. It also offers alternatives to words it can't locate.

BEST GEOGRAPHICAL REFERENCE

World Factbook
(www.odci.gov/cia/publications/factbook/index.html)

The CIA's World Factbook is not a guide to intelligence activities but a wondrous collection of information about the geography, climate, people, governments, and customs of the world, arranged by region and country. It's updated annually.

BEST MAP SITE

MapBlast (www.mapblast.com)

Type in a street address and MapBlast shows you a map of the neighborhood. You can get driving directions (complete with a choice of the fastest or easiest route to follow). You can also search for area lodging, restaurants, business services, transportation, and much more. The site makes it easy to print or e-mail your map, and zoom in and out to get a better look.

BEST LIFE-SKILLS LEARNING SITE

Learn2.com (www.learn2.com)

The answers to questions you're afraid to

ask (for risk of appearing silly) can often be found at Learn2.com. There's information and instruction on all sorts of everyday tasks, such as changing a tire, applying eye-liner, or shipping a bicycle. You can search or simply browse a selection of categories, including automotive, health and fitness, and travel.



NEWS

Online you can find news tailored to almost any interest. Most well-regarded news outlets have their roots in print or broadcast media, but a few online-only players have gained a reputation for speed and depth of coverage in a particular field.

BEST PLACE TO FOLLOW

BREAKING NEWS

ABC News.com (<http://abcnews.go.com>)

It's an interesting fact of Web life that sites run by television networks can be among the best places to find timely and detailed news coverage. The ABC News site does not usually include in-depth analysis, but it does cover a wide range of news, including politics, health, technology, and sports. The site is updated throughout the day. True to its TV parentage, ABC News.com offers streaming video, via RealPlayer, but there's a lot to like about the site even if you're a reader rather than a watcher.

If you're following a story closely, also check close runner-up CNN (www.cnn.com).

BEST FREE SOURCE OF BUSINESS NEWS

CBS MarketWatch
(www.cbsmarketwatch.com)

Business news is easy to come by on the Net, but more and more sites are charging subscribers for access to a large portion of their content. One exception is CBS MarketWatch. It combines investor-oriented business news, updated throughout the day, with analysis of market activity and with special-interest sections. These include sections on legal issues, tech stocks, international business, and columnists' commentary.

If you have some money to spend, you should give the Wall Street Journal Interactive Edition (<http://interactive>)

Finding Your Way: TOP SEARCH TIPS

THERE IS AN INCREDIBLE AMOUNT OF INFORMATION ON THE Internet, but you can't make use of what you can't find. Whether you use Mac OS 8.5's Sherlock or a Web-based search site, follow these tips to design searches that take you where you want to go—straight to the information and resources you're most interested in.

Most of these techniques apply to searches conducted both with Web-based search engines and with Sherlock. Sherlock allows you to query several search engines at once, which means not only that you will get the widest possible array of responses but also that you'll need to filter those responses carefully.

Start with Yahoo If you want to find lots of good information about a broad topic, *without* wasting your time on obscure links, make Yahoo (www.yahoo.com) your first search stop. Yahoo is a good place to start, because it's both a directory and a search engine. Not only can you browse to find groups of sites within a broad category but you can also type in a search request that brings back farther-flung results.

Why is this helpful? When you're doing a simple search, you want a good mix of information, but preferably without an overwhelming amount of junk. Yahoo first searches its well-organized directory to find matches to your query, only afterward turning to more-random keyword matching. Extra bonuses: Yahoo's interface is uncluttered, and the hierarchical catalog is easy to browse and understand. Yahoo also forgoes the "in your face" commercialism of some competitors that offer shopping opportunities along with legitimate search results.

Cast a Broad Net If you don't have any idea what the Web has to offer on a given topic and want to view as many search results as possible, try a *metasearch*—in other words, make use of several search sites simultaneously. Both Sherlock and MetaCrawler (www.metacrawler.com) allow you to do this. MetaCrawler gives you a wide choice of general-purpose search sites, such as Infoseek and Lycos. Sherlock allows you to search any site for which you have a plug-in installed, including such special-interest sites as Info-Mac and Amazon.com.

Keep Focused If you *do* have a good idea what you're looking for, make your search as specific as possible. This will limit the number of unrelated search results you'll receive. For example, search for *Bengal cat breeders* rather than just *Bengal* to avoid getting back a long list of sites about tigers, Indian provinces, and

the pro football team in Cincinnati. If you don't get enough results when you do this, it means your initial search was too narrow. Try removing one word of the query, say *breeder*, to retrieve more results.

Look for an Exact Match One way to be even more specific is to put quotation marks around your search strings. Doing this tells most search engines that you want items that include the words you've specified only when those words appear as a *phrase*.

Search by Proximity If search terms don't necessarily form a contiguous phrase but are likely to occur close to one another, try a more advanced, *near* search. You can experiment with this using AltaVista's (www.altavista.com) Advanced Search. Just enter your complete query in the search box. For example, "*tropical fish*" *near* *aquarium* will find references to tropical fish that live in aquariums, rather than the ocean-going kind. This search will deliver more results than *tropical aquarium fish* and omit references to unwanted nontropicals.

Try an Advanced Search By now, you may be starting to wonder what else is possible if you can do something as obscure as search for terms that are near each other. Indeed, *near* is just the tip of the conditional-search iceberg. Conditional, or Boolean, searches give you more flexibility to find what you're looking for when using most search engines. You can narrow a search or widen it by using special terms, such as *and*, *or*, and *not*, between your search words. For example, another way to find out about your favorite feline without reading up on its bigger cousins would be to search for "*Bengal cat*" *NOT* *tiger*.

Some search engines require you to enter the separators in uppercase. Others require (or allow) you to use timesaving symbols instead: the plus symbol (+) for *and*, and the minus symbol (-) for *not*. If you're having trouble, check the search engine's help area to find out the engine's particular way of doing things.

Ask a Question Natural-language searching lets you ask a plain-English question, such as "What is Joe DiMaggio's lifetime batting average?" Only a few search engines, including AltaVista and InfoSeek, can do this type of search. Sherlock also supports it. It's a powerful way to combine the best aspects of an exact-match search and a Boolean search. Be warned: you won't often get a precise answer to your question, but you will frequently find links that provide the information you need within a click or two.

Get Help One of the best ways to search the Web efficiently is to learn the rules of the search engine you use most. All major search-engine sites provide a help area with some instructions. Most abide by a general set of rules for phrase searches and Boolean searches, but a few search sites also offer special features that are described only in this area.



.wsj.com) a try. It costs \$59 annually for those who don't subscribe to the print version of the *Wall Street Journal* and \$29 for those who do.

BEST WEATHER SITE

AccuWeather (www.accuweather.com)

Type in a city name or zip code and view the current temperature and forecast. You'll also find weather maps and updated weather satellite photos.

ENTERTAINMENT

Whether you're enamored of a certain movie star or fervently following a football team, you'll find that the Web is an excellent source of information on all forms of diversion. Listings, news, scores, and statistics abound for couch potatoes.

BEST SOURCE OF TV LISTINGS

Gist TV Listings (www.gist.com)

Type in your zip code and the Gist site

will give you a detailed listing of all that's on cable, satellite, or broadcast television in your area.

More than simply providing listings, Gist allows registered users to create a customized TV grid with schedules for their favorite channels, search for movies and other shows by keyword, and receive show reminders by e-mail. The interface is slick and easy to use, and the information is complete.

BEST MOVIE SITE

Internet Movie Database

(<http://us.imdb.com>)

Movies, actors, directors, and screenwriters are cleverly cross-referenced in this true compendium of movie information. The site's listings are surprisingly complete, including all of the films made by most major film personalities and even a list of alternative and foreign film titles. Best of all, Internet Movie Database is interactive, too, allowing viewers to add their opinions in the form of ratings.

If you're trying to find out what's playing in theaters near you, we recommend a trip to MovieLink (www.movielink.com). It's just like phoning 777-FILM (a service available in most cities; you tell the computer your zip code and it tells you what movies are

playing in your area) but without the Moviefone man's . . . distinctive voice.

BEST SPORTS SITE

CNN/SI (www.cnn.com)

Sports Illustrated's in-depth analysis combines with CNN's timely coverage to create a thorough, up-to-date site. Organized by sport, with links to standings, features, statistics, and team rosters, CNN/SI is easy to navigate and chock-full of info on all major pro and college sports, including women's sports.

BEST WORKDAY DIVERSION

The Onion (www.theonion.com)

Arranged like a typical online newspaper, The Onion takes satirical pokes at pop culture, politicians, and the latest news.

THE LAST WORD

Like tour guides trying to show off Europe in a week, we've been able to hit only a few of the Web's highlights. Much more awaits you, whether you use links you find at these sites or—with the help of a search engine—you take off on your own. Bon voyage! **m**

SHELLY BRISBIN is a coauthor of *Mac Answers: Certified Tech Support* (Osborne/McGraw-Hill, 1998).



Your Packing List: ESSENTIAL WEB UTILITIES

ARMED WITH A WEB BROWSER AND THE URLS OF SITES you're interested in, you're ready to venture onto the Web . . . almost. Here are some accessories that can make your travels faster. You probably don't need them all, but the right one may make your journey much easier.

Anarchie Pro 3.5 Upload, download, and search with ease, using this FTP (File Transfer Protocol) client and Internet-file search tool. As an FTP tool, *Anarchie Pro* (★★★★; \$35), from Stairways Shareware (www.stairways.com), is superior to any browser. FTP sites and directories open like folders in the Finder, letting you smoothly maneuver through download sites, viewing directories in their own windows or sorting them by name or date. Since *Anarchie* is a full-featured FTP client, you can upload files to Internet servers in addition to downloading them. It's also an HTTP client (somewhat like a Web browser), so you can use it to get a fast list of links from a Web page. This tool is also among the first to integrate Sherlock's search capabilities and other Mac OS 8.5 conventions into its software.

URL Manager Pro 2.5 Tame large collections of bookmarks and e-mail addresses by using this shareware gem from Alco Blom (www.url-manager.com). *URL Manager* (★★★★; \$25) adds two menus to your browser—one with *URL Manager* bookmarks and another with commands and help. With just a click or a key-stroke, you can access previously stored bookmarks and add new bookmarks to your *URL Manager* collection (some other bookmark managers require you to import bookmarks).

RealPlayer 5.0 It's no longer necessary to load up on third-party browser plug-ins just to make sure you can watch the

QuickTime video of Bill Gates getting cream-pied or hear the latest sound clips on your favorite band's Web site. These days, browsers and the tools that come with them can handle almost all common file types. If you use Internet Explorer, however, *RealPlayer 5.0* (★★★★½; free), from Real Networks (206/674-2700, www.real.com), is an exception worth downloading. (It's bundled with the current version of Netscape Communicator.) It not only plays streaming audio but can also play the streaming video found at many sites, including those run by network and cable TV. At press time, Real Networks released a public beta of *RealPlayer G2*—a version that has been available to Windows users for awhile. No ship date was announced.

Surf Express Deluxe 1.5 This tool's purpose is to make you wait less for the Web pages you go to most. *Surf Express Deluxe* (★★★★; \$45), from Connectix (650/571-5100, www.connectix.com), uses cache-management techniques to optimize the browsing of sites you visit often, making the sites load significantly faster (see *Reviews*, March 1999). You can also search cached files with *Surf Express* to find a URL and the date you last visited it. If you haven't upgraded to Mac OS 8.5, you'll also be interested in the *Supersonic Search* application included in this package. It's not Sherlock, but it does let you pick from a menu of search options—stock quotes, news, Web sites, and newsgroups—and enter a query. *Supersonic Search* displays its results in your browser, opening it if necessary.

Web Buddy 2.0 Several tools—including Internet Explorer—allow you to browse Web sites offline. For those who use Netscape Communicator, however, *Web Buddy 2.0* (★★★★½; \$40), from Data-Viz (203/268-0030, www.dataviz.com), has the best browser integration of the add-on tools (see *Reviews*, in this issue). *Web Buddy* adds an extra tool bar to your browser that lets you download a single page or a complete Web site in just a few clicks. You can also schedule updates to download at intervals you choose.

Vimage[®]

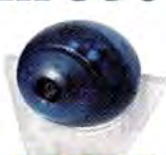
CORPORATION

NEW Motion Cam 350

USB Digital Camera
Motion JPEG Compression

Features

- Speedy hardware compression enables full-motion (30fps) capture
- 350,000 pixels—best picture quality in its class
- Draws power from USB connection
- Real-time color picture preview
- Flicker-free capture
- Stylish case complements iMac and "Blue-and-White" Macs



\$149

NEW for the G3 Mac.

INTERWARE

G3/Z400

\$1299

400MHz ZIF upgrade

G3 acceleration for your Mac!

Apple 54, 55, 64, 65 20th Anniversary Super Mac C500

A Worldwide Exclusive

Owners of the 54xx, 55xx, 64xx, 65xx and 20th Anniversary Macs are no longer left out in the cold! Keep your machine at the forefront of PowerPC technology simply by plugging a Vpower G3 upgrade into its Level 2 cache slot. New copper chip technology runs cooler and faster than ever, making the 320/325-MHz upgrade particularly ideal.



Power Mac 4400 StarMax 3000 & 4000

World's First PM 4400, StarMax 3000/4000 Upgrade

The word is out: Vimage is the industry leader when it comes to producing innovative upgrade solutions for "dead-end" machines. Simple, plug-and-play installation allows you to enjoy all the benefits of a G3 machine in just minutes. There's never been a better time to take your computer to the next level of performance.



PowerBook 1400

Make your PowerBook work for you with the Vpower PB 1400 G3/233. Scorching speed and extra-low power consumption combine to ensure that you'll be at your most productive, whether at home or on the road.



PB1400 233MHz

\$499



PCI Power Mac

Bring your Power Macintosh into the G3 generation with a Vpower G3 upgrade card, and enjoy the best price-to-performance ratio available on the market!



300MHz/1MB

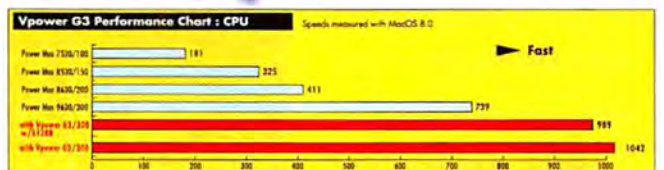
\$599

366MHz

\$999

300MHz/512

\$499



Product	Compatible Machine	CPU	Cache	Price
Vpower G3/300	Power Mac 7300,7350,7500,7600,8500,8550,8600,9500,9600,9650 UMAX S900,S910	G3/300MHz	1MB/150MHz	\$ 599
Vpower G3/233	Power Mac 7300,7350,7500,7600,8500,8550,8600,9500 UMAX S900,S910	G3/233MHz	512KB/117MHz	\$ 389
Vpower PB 1400 G3/233	PowerBook 1400	G3/233MHz	512KB/117MHz	\$ 499
Vpower PM 4400 G3/240	Power Mac 4400 Motorola Star Max 3000, 4000	G3/240MHz	512KB/130MHz	\$ 409
Vpower PM 4400 G3/300	Power Mac 4400 Motorola Star Max 3000, 4000	G3/300MHz	1MB/150MHz	\$ 809
Vpower PF G3/240	Power Macintosh/Performa 54xx, 55xx, 64xx, 65xx, 20th Anniversary Super Mac C500	G3/240MHz	512KB/120MHz	\$ 499

To Order Call Toll Free:

1 - 877 - 4VIMAGE

Mon-Fri 8AM to 5PM (PST) or FAX:(310)225-3989

Vimage is a registered trademark of Interware Co., Ltd. All other trademarks and registered trademarks are the property of their respective owners.

All major credit cards accepted, no surcharge. Government, Corporate and Educational P.O.s welcome. Vimage products are covered by a two-year limited warranty. Prices are subject to change without notice. Returns require authorization and are subject to a restocking fee. Vpower is a trademark of Vimage. ©1998 Vimage Corporation

For the newest information on Vimage products, check out www.vimagestore.com

Choose 44 at www.macworld.com/getinfo

Put Your Files in the Fast Lane

BY BRUCE FRASER

Since the original Macintosh arrived with its built-in networking, Mac users have been using their Macs together to get work done. Today, the arrival of high-speed networking and the pervasiveness of the Internet have made using a network part of most people's everyday lives—and part of the procedures and workflow of nearly every business.

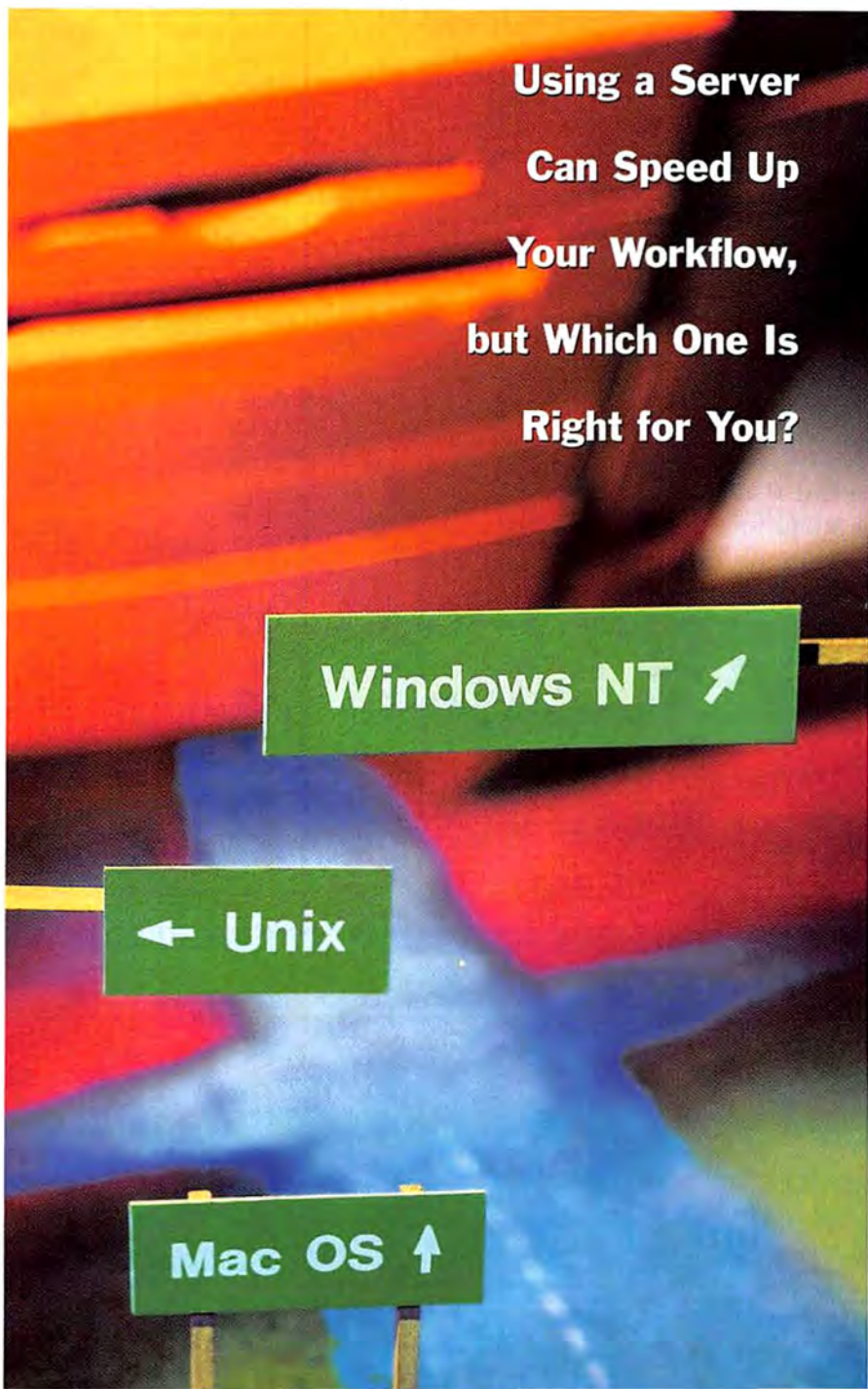
If your workflow isn't networked, it's time to consider getting connected. Even if you *are* connected, your workflow may be stuck in gridlock—a situation that might be remedied with the addition of a speedy server on which to store all your files and spool your print jobs. In this, the first in a series of

**Using a Server
Can Speed Up
Your Workflow,
but Which One Is
Right for You?**

Windows NT ↗

← Unix

Mac OS ↑



Macworld articles to focus on working effectively in a networked world, Macworld Lab tested Mac OS-, Windows NT-, and even Unix-based servers to find which operating system provides the best speed and services.

Are You Being Served?

Considering all the pros and cons of installing a server in your workplace can be enough to drive you crazy. Flashy consultants will tell you that while you may be comfortable with the Mac OS, the Mac's not really a suitable server. You'll hear recommendations that you should jump to Windows NT—or even Unix (see the sidebar “Publishing Powerhouses”).

While Windows NT certainly has its strengths, we found that the current Mac OS is a powerful serving platform that may be able to fulfill all your needs without forcing you to brave the wilds of a foreign operating system. And the upcoming Mac OS X promises even more speed benefits.

To Buy or Not to Buy? Which server is best for you—if you need one at all—depends on what you're looking to gain from a server.

With all the buzz surrounding servers, the general notion is that if you *don't* have a server, you can't possibly have an efficient workflow. That isn't necessarily true—your need for a server really depends on how your workgroup is organized. For example, if most tasks are handled from start to finish by one person, a server may not be much help. But for the vast majority of us, most projects are a collaborative effort and usually involve a good deal of file transmission across a network.

In most cases, it's true that incorporating a server into your workplace will help you transfer data more quickly. A server definitely helps if your machine lags several times a day because someone else on the network is reading a file on, or writing a large file to, your hard drive. Likewise, if your printer gets bogged down processing one large job after another, a server can help there, too. However, if you're still hesitant about adding a server to your family of Macs, you might want to consider a simple file-sharing solution.



AppleShare IP 6.1 Nothing beats Apple's own server package when it comes to general file serving.

The Old-Fashioned Way Using the Mac OS's built-in file sharing works for file transfers, but this approach has two major disadvantages. For starters, if someone else on the network accesses your hard drive while you're working, you'll see a dramatic performance hit. You can address this problem by dedicating a Mac with no server software (usually an older, slower Mac) as a central repository for files. This way, individual workstations on the network don't get clobbered.

However, even if you set up an old Mac in the corner for shared files, a second disadvantage remains. File sharing slows down significantly as network traffic increases. If you try to copy a file while someone else on the network is printing, for example, file copying slows down and the print job takes longer than expected. The frequency of these delays depends on how often people are downloading files, transferring data, and ordering print commands—and your tolerance for these delays will depend on how often they occur and whether they interfere with your daily needs. The only solution to this second dilemma is to add a real server.

Network Upgrade Don't forget that adding a server won't change the top speed at which data can travel on your network. If you're still running slow Ethernet, you should up-

grade to 100BaseT before taking another step. The added muscle of any new server you buy will be wasted if your network doesn't offer the extra bandwidth for moving data. While 100BaseT isn't quite ten times as fast as 10BaseT Ethernet, you'll almost certainly achieve at least an 800 percent speed gain by increasing your bandwidth.

Break the Speed Limit

Be forewarned: a server will do more than speed up your network; it will also change the way you

work. Depending on the choices you make, you may find new challenges facing you, from the small and annoying to the big and pricey. For example, you may need to change your file-naming conventions to accommodate a new platform and you may also need to learn the ins and outs of a new operating system. Regardless of your server-platform choice, you'll need to evaluate your tech-support needs and plan backup strategies in case the server crashes.

Taking all this into account, if you have a Mac-only office, there's a distinct

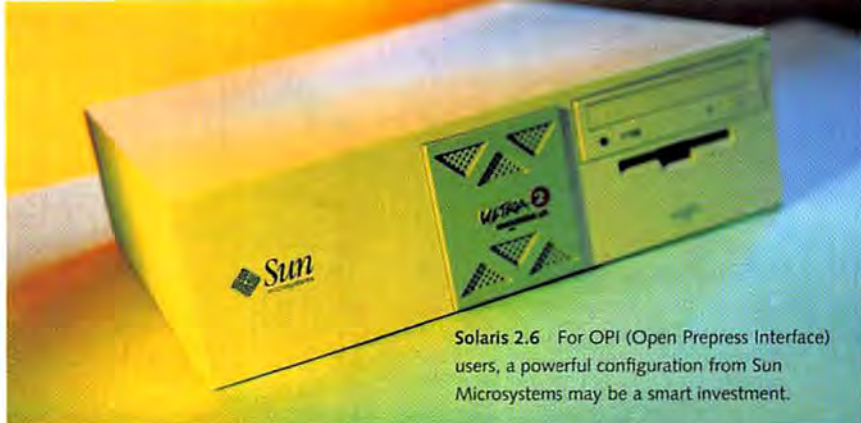


Windows NT For stellar print serving, consider a PC running Windows NT 4.0.

advantage to sticking with the Mac OS as your server platform. Using a Mac server will be less disruptive to your workflow than bringing in a new platform: file naming won't be an issue, and maintenance will be simpler since you probably have experience with in-house troubleshooting.

Windows NT offers serious power for relatively few bucks, but you'll typically have to do everything yourself—unless you buy a more pricey, preconfigured system from a manufacturer, such as Intergraph (256/730-5441, www.intergraph.com), that delivers NT solutions for Mac environments.

With different OS selections to choose from, it's important to consider all factors before making a decision. Although speed should not be the only consideration, it is the initial reason you'd consider adding a



Solaris 2.6 For OPI (Open Prepress Interface) users, a powerful configuration from Sun Microsystems may be a smart investment.

server to your network. Unless a server would accelerate your work, there's little reason for making such an investment.

Clocking the Speed

There are several factors that influence a server's speed. The server's operating system must be compatible with the Mac

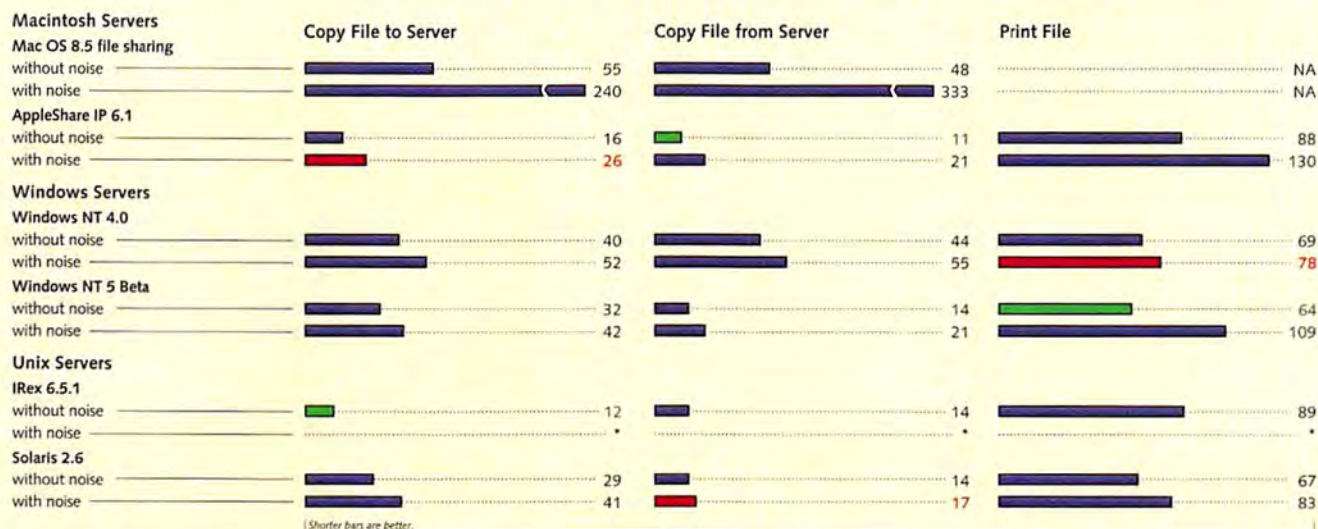
clients, and the server must be powerful enough to handle the simultaneous commands of several workstations. To help you find the best server platform for your small office, Macworld Lab torture-tested servers running both the Mac OS and Windows. We tested the Apple server-software choice (AppleShare IP 6.1) and



Speedy Servers

For general file serving, AppleShare IP 6.1 running on a Power Macintosh G3/333 is hard to beat. Mac OS 8.5 file sharing, using the same hardware, has substantial difficulty when subjected to a heavy load of network traffic. IREx 6.5.1, running on a Silicon Graphics server, beat AppleShare at copying files to the server. The Windows 2000 Server beta looks promising. For print serving, Windows NT 4.0 and Solaris 2.6 are good choices.

Best results with network noise in red. Best results over an idle network in green. All scores are in seconds.



NA = not applicable. *NetBench 5.01 is incompatible with IREx 6.5.1 and Macintosh clients.

Behind Our Tests

To test file sharing and AppleShare IP 6.1, we used an Apple Power Macintosh G3/333 with a 333MHz PowerPC, 128MB of RAM, a two-drive RAID Level 0 array, and a default installation of Mac OS 8.5. We tested both Windows NT 4.0 with Service Pack 3 and the Windows 2000 Server beta version on a Dell Dimension XPS D333 with a 333MHz Pentium II with MMX, 128MB of RAM, and a two-drive RAID Level 0 array. Our Solaris 2.6 server was a Sun Microsystems Ultra2 Model 2200 Creator 3D with dual UltraSparc 200MHz CPUs, 1GB of RAM, and a single 4GB Wide SCSI drive (with Macintosh clients connected via Xinet's K-AShare and K-Spool). We tested IREx

6.5.1 on a Silicon Graphics Origin 200 with a 225MHz R10000 CPU, 128MB of RAM, and a two-drive RAID Level 0 array (with the Macintosh clients connected via Helios EtherShare 2.5.1).

Using a Power Macintosh G3/300, we copied a 100MB file to and from each server and sent an 80MB QuarkXPress document from each server to a print pool. We ran the tests a second time, using Ziff-Davis's NetBench 5.01, creating network traffic with four Power Mac 7300/200's. The computers were on a Fast Ethernet network, connected to a Farallon Fast Starlet 100TX/8.—Macworld Lab testing supervised by Kristina De Nike

Publishing Powerhouses

For high-end publishing shops, a mere file or print server may not do the trick. After all, few things can bring a network to its knees faster than moving print-resolution CMYK images from station to station. Because of this, a growing number of production environments now use Open Prepress Interface (OPI) servers, often on a Unix-based system. In general Unix servers are much more

expensive than other solutions, ranging from \$15,000 to more than \$30,000, but they are also more robust, scalable, and capable of handling difficult tasks such as OPI.

OPI ASAP

For publishing professionals with time-critical projects, Unix-based OPI servers are a viable solution. These pricier, more powerful solutions speed up production by removing large, high-resolution images from the workflow and substituting low-resolution preview images that are linked to the high-resolution files through PostScript comments. When it's time to print, the high-resolution images—which live on the OPI server—are substituted for the low-resolution previews.

The immediate and obvious benefit of an OPI server is that the high-resolution image files are kept entirely off the network. Designers and layout artists work with the smaller preview images to reduce network traffic and allow the design and layout applications to run faster on the artists' workstations. For example, a typical magazine section-opener image is at least 40MB; the OPI preview image can easily be less than a megabyte (much less if JPEG compression is used), subjecting the network to far less overhead.

A second benefit of OPI is that design and layout can proceed concurrently with color-correction and retouching. Typically, an image is scanned directly to the OPI server at a

high enough resolution to allow for any cropping or enlargement. The OPI software then generates the low-resolution preview for use in the design and layout phases. While the designers and layout artists work on the document files, using the preview image, retouchers can work on the color-correction and fine-tuning of the high-resolution image.

OPI-compatible applications, such as QuarkXPress, Adobe PageMaker and Illustrator, and Macromedia FreeHand, record operations such as rotation, cropping, scaling, and positioning as OPI comments in the PostScript stream. Immediately before printing, the OPI server applies the modifications recorded by the OPI comments to the high-resolution image.

In addition, several OPI server-software packages, such as Helios EtherShare OPI and Xinet's FullPress, which generally run on Unix servers, allow you to perform ICC (International Color Consortium) profile-based color management on the server, automatically converting the color for proofers and for final output. Designers don't have to deal with the complexities of color management, and the color conversions are performed on a fast server rather than slowing down the production worker's workstation.

Dueling Servers

To compare the performance of Unix servers to that of the Mac and Windows systems we tested

for this story, Macworld Lab performed the same rigorous file-copying and print-spooling trials on two publisher-focused versions of Unix: Sun Microsystems' Solaris 2.6 with Xinet's K-AShare and K-Spool, and Silicon Graphics' IREx 6.5.1 with Helios EtherShare 2.5.1. For comparison purposes, we tested these machines with configurations similar to those of the Mac and Windows computers, but both Sun and Silicon Graphics have much heavier configurations available for customers. The Solaris server was configured slightly differently, with 1GB of RAM and a single 4GB Wide SCSI drive.

IREx 6.5.1 with Helios EtherShare 2.5.1 We ran IREx (Silicon Graphics' version of Unix) on a \$17,000 Silicon Graphics Origin 200 powered by a 225MHz R10000 processor and connected our Mac clients with Helios EtherShare 2.5.1. Yes, Unix can be intimidating and quite daunting (see "The Beauty of the Beast," elsewhere in this issue), but it makes it very easy for a system integrator to configure and troubleshoot the server remotely via modem. This technical support is usually included as part of the purchase through companies such as Torque Systems (415/252-5521, www.torque.com).

This Silicon Graphics server-software package proved to be a strong performer, turning in the fastest time for copies to the server of any system we tested and tying for second when it came to copying files from the server over an idle network. Due to compatibility issues between Ziff-Davis's NetBench 5.01 and IREx, we were unable to test this configuration under a network load.

Solaris 2.6 with Xinet's K-AShare 9.03 Most Unix systems offer interfaces that are alien to Mac users and can be somewhat difficult to set up—

the \$28,000 Solaris server system was no exception. To its credit, however, the Solaris package offers an easier user interface than that of IREx. And with a little help, we were able to set up the server hardware, a Sun Ultra2 Model 2200 Creator 3D, with Xinet's K-AShare version 9.03 for Mac connectivity.

Copies from the server were very fast with this configuration, but copies to the server were surprisingly slow. The likeliest explanation for this is that Solaris 2.6 is fairly old and makes the drive do a lot of directory updating during writes. This problem was probably compounded by the fact that the server hardware supplied by Sun contained only a single drive. Every other server hardware system we tested contained a two-drive RAID Level 0 array.

Given the high price of this server hardware, we found this configuration's speed somewhat disappointing. However, we did achieve similar performance when running a beta version of Xinet's next-generation software—as well as the newer, friendlier Solaris 7 operating system—on a much less expensive Sun Ultra5. Furthermore, Xinet is preparing a Java-based client application that will run on the Mac. Depending on your OPI requirements, you may find Solaris an adequate, if not stellar, performer. And Sun offers some less expensive configurations that are appealing as well.

Do You Need Unix?

Given the price of Unix-based servers, adding equipment like this is probably an option only for the most bandwidth-greedy—and cash-rich—of workgroups. However, if OPI sounds like something you need to implement in your publishing shop, making an investment in a Unix-based server is a wise choice.

The Road Ahead: Future OSs

Adding a publishing server to your network will certainly speed up workflow, but a server you invest in today should also serve you well tomorrow. Aside from the solutions currently available, we uncovered future server operating systems and saw what they have in store for you. Upcoming operating systems promise improved Mac support, but these platform evolutions shouldn't dramatically affect the Macintosh-friendly solutions of today.

Mac OS X Traditionally, Apple has focused its efforts in the server arena on ease of use at the exclusion of speed. However, Apple (408/996-1010, www.apple.com)—a company that at one point sold Unix servers running IBM's AIX—has turned to a home-grown Unix-based operating system for its server-software strategy.

The \$99 Mac OS X Server, announced at Macworld Expo in January, is based on Rhapsody, the interim Apple operating system that originated at Steve Jobs's Next. Because Mac OS X Server, like Mac OS X, is based on a Unix core, it provides standard Unix networking support, such as TCP/IP and Network File System (NFS, the Unix equivalent of the Mac's AppleShare) in addition to AppleTalk. That means it can be a server for Unix workstations and Windows clients in addition to Macs using AppleTalk or TCP/IP.

However, the first version of Mac OS X Server appears to be most appropriate either for people in the market for a Web server or for system administrators who want to boot many iMacs off of a server, not for people looking for a file server.

Windows 2000 Server More than a year ago, Microsoft (425/882-8080, www.microsoft.com) hyped its Windows 2000 Server—formerly known as Windows NT 5—as providing great support for Macintosh clients. Due to be released late this year or in early 2000, Microsoft's server solution promises more speed and improved manageability.

The biggest change from Windows NT 4 will be faster performance, as evidenced by Macworld Lab tests of a recent beta version of Windows 2000 Server (see the benchmark, "Speedy Servers"). Under Windows 2000 Server, networked Macs are connected via IP, which provides for faster communication. Macintosh clients will also get native support for Apple Remote Access, so PowerBooks can easily dial in to a Windows 2000 Server-based system.

Network managers will finally be able to manage the Mac file services and clients in a standard Windows 2000 control panel, rather than having to use the separate MacFile control panel.

NetWare Novell's (408/967-8400, www.novell.com) NetWare was the first network operating system to support Mac clients, back in 1988. But Novell ceased its Mac support with the release of NetWare 5. (Earlier versions support Mac clients, but their Mac-connectivity software doesn't work with NetWare 5.)

Novell handed over the development of Mac-connectivity software to Prosoft Engineering (925/426-6100, www.prosofteng.com), which should ship NetWare 5 clients by year's end for both AppleTalk- and TCP/IP-based networks. Beta versions are available for download now.—GALEN GRUMAN

the two flavors of Microsoft Windows NT (version 4.0 with Service Pack 3 and a beta version of Windows 2000 Server—formerly known as NT 5). We also tested simple file sharing under Mac OS 8.5 to gauge the performance leaps of each server.

To determine the relative merits of each server-software package, we attempted to level the hardware playing field, testing the packages on comparably configured machines. The Mac server and the Windows server were each equipped with 128MB of RAM and a two-drive RAID Level 0 array.

Transfer Times

Once we had the servers set up, we tested the transfer times of each server-software package by copying files and folders to and from the respective servers. To simulate the real-world workflow of a medium-size office, we timed each server's performance when copying a single 100MB file. (For the results of the tests, see the benchmark, "Speedy Servers.")

You'll get the maximum performance gain when using a server that is not busy. However, in the real world, it's not likely that only one person at a time will be accessing the server. Therefore, we also tested each system's file-transfer speed when the server was busy working on other commands. Using Ziff-Davis's NetBench 5.01, we created a network load of four clients *continuously* hitting the server—an atypically heavy load for mere file serving.

Since we tested each platform both with and without this network "noise," you can see how each server performed in ideal

Here to Serve You: Operating Systems Compared

Operating System	Company	Phone	Server Software	Server Hardware	Comments
Mac OS 8.5	Apple Computer	408/996-1010	AppleShare IP 6.1	Apple Power Macintosh G3/333 with a 333MHz PowerPC, 128MB of RAM, and a two-drive RAID Level 0 array.	Fastest all-around server in file transfers, but disappointing print-spooling results.
Windows NT 4.0	Microsoft	425/882-8080	No software needed for Macintosh compatibility.	Dell Dimension XPS D333 with a 333MHz Pentium II with MMX, 128MB of RAM, and a two-drive RAID Level 0 array.	Affordable server option that shines in print commands but is sluggish at file copying.
IRex 6.5.1	Silicon Graphics Computer Systems	650/933-1980	Helios EtherShare 2.5.1	Silicon Graphics Origin 200 with a 225MHz R10000 CPU, 128MB of RAM, and a two-drive RAID Level 0 array.	Reasonable solution for multiplatform office, but too pricey for mere file sharing.
Solaris 2.6	Sun Microsystems	800/786-0404	Xinet's K-AShare	Sun Microsystems Ultra2 Model 2200 Creator 3D with dual UltraSparc 200MHz CPUs, 1GB of RAM, and a single 4GB Wide SCSI drive.	Costly server with decent print-spooling times.



IRex 6.5.1 Publishing shops concerned with OPI and quick file transfers will be pleased with the strong performance of a Silicon Graphics server.

AppleShare IP 6.1 Loading AppleShare IP 6.1 (\$999 for 50 users) onto the same Power Mac G3 used for file sharing resulted in dramatically improved file-copy times. Although the Mac has traditionally not been held in high regard as a server contender, AppleShare IP, the one solution custom-built for Mac clients, is the fastest all-around performer and includes automatic support for PC clients as well. Apple's new Power Mac G3 line of server solutions starts at \$3,299.

AppleShare IP 6.1 came in first or second on all of our file-transfer tests. For general file serving in a Mac environment, AppleShare IP 6.1 shines—it's fast, even under a heavy network load, and it's relatively easy to set up. Plus, you'll be glad not to have to worry about introducing a different platform to your shop. (The previous version, AppleShare IP 6.0 [see *Reviews*, February 1999], is incompatible with Mac OS 8.5 despite having shipped only a few weeks before that OS upgrade.)

Windows NT We tested Windows NT 4.0 on a Dell Dimension XPS D333 powered by a 333MHz Pentium II with MMX. The NT 4.0 server was easy to configure; we used default settings and encountered no problems connecting the Mac clients.

As a file server, the NT 4.0 solution proved disappointing, giving slower file-transfer performance than all other configurations we tested—with the exception of Mac OS 8.5 file sharing. In part, this is due to the fact that NT can connect to Mac clients using only the slower AppleTalk protocol. However, such performance lags vanish with Windows 2000 Server, which supports the faster IP protocol. An additional alternative on the Windows platform is Thursby Software Systems' Dave 2.0 (see "Mac Life Preservers," April 1998). This \$119 software solution loads on the Mac clients and allows them to connect to a Windows NT 4.0 server via TCP/IP.

When copying to the server with Dave installed, we saw performance gains similar to what we experienced when using the Windows 2000 Server beta (see "Speedy Servers"), but copies from the server were much slower—comparable to what we got when running NT 4.0 without Dave.

Although neither Windows NT package offers the performance boost of AppleShare IP 6.1, you can get a fully configured Wintel server for less than

\$1,500. However, if you decide to add Windows NT to your office, hold out for Windows 2000 Server. This OS is expected to ship before the end of the year, and early tests show greater speed and better compatibility than what you'll find with Windows NT 4.0.

The Paper Trail

In addition to file sharing, print serving is an important test of a server platform's strength in a Mac-centric environment. And even though it's unlikely for a server to be busy transferring files all the time in a small or medium-size network environment, the server will likely need to continuously feed data to output devices such as imagesetters, platesetters, and proofers. To measure each server's ability in this regard, we focused our analysis on how each performed under a heavy load of network traffic.

For the most part, there isn't one configuration that works ideally as both a file and print server. Our tests demonstrate quite dramatically that for print serving, a PC running Windows NT 4.0 outperforms a Power Mac G3 running Mac OS 8.5 and AppleShare IP 6.1. Since print commands are sent using a different protocol than IP, servers optimized for IP may offer little advantage as print servers.

AppleShare, the champ on file serving, was disappointing as a print server. The more affordable Windows NT 4.0, a distinctly lackluster file server, excelled at our printing tests on a busy network.

The Last Word

For general file serving in a Mac environment, don't let anyone force you to abandon the Mac OS. AppleShare IP 6.1 is hard to beat—it's fast, easy to configure, and does not require the use of a foreign operating system. For print serving, Windows NT 4.0 was the true speed champ. Not only is it the fastest in the lot, but the necessary hardware is also affordable.

If you decide to go the server route, consider more than just sheer speed so you won't be blindsided by costly technical support or platform integration. And regardless of your platform selection, remember that integrating a server into your office will undoubtedly put your files in the fast lane. **m**

Contributing Editor BRUCE FRASER is a coauthor of *Real World Photoshop 5* (Peachpit Press, 1999).

settings as well as how each one handled extremely heavy loads of commands.

Mac OS File Sharing Simple file sharing has long been one of the Mac's strong points—it's built into every Mac, it's easy to use, and it's very robust. The most probable scenario for using Mac OS file sharing is to set up an old Macintosh to handle these demands. Macworld Lab tested Mac OS file sharing using an Apple Power Macintosh G3/333 running a default installation of Mac OS 8.5—a setup that is faster and more costly than what you'd typically use for just file sharing.

Although the Power Mac G3/333 is a speedy machine, when it ran the Mac OS's built-in file sharing, it was the slowest of all the servers we tested—even when the network was idle.

With a busy network, though, the main weakness of file sharing became glaringly obvious: copies to the server took well more than four times as long as they did with the next-slowest configuration, Windows NT 4.0, and copies from the server took slightly more than six times as long as they did with Windows NT 4.0, which was again the next-slowest configuration. File sharing may be a reasonable solution for light-duty file serving with a few users and relatively small files, but heavy network traffic—three or four users, for example—will quickly render this approach ineffective. If your network is hitting the wall, it's time to consider adding a real file server.

MAC OS X AND LINUX ARE
BRINGING *unix* OUT OF THE
DARK AND ONTO YOUR MAC

Most Mac users break the world of computer operating systems down into two camps: Us (the Mac OS) versus Them (Windows). But that black-and-white view of the computer world ignores an operating system you probably rely on every day without knowing it—and one with the promise to turn your Mac into a far more powerful computer than you ever imagined possible.

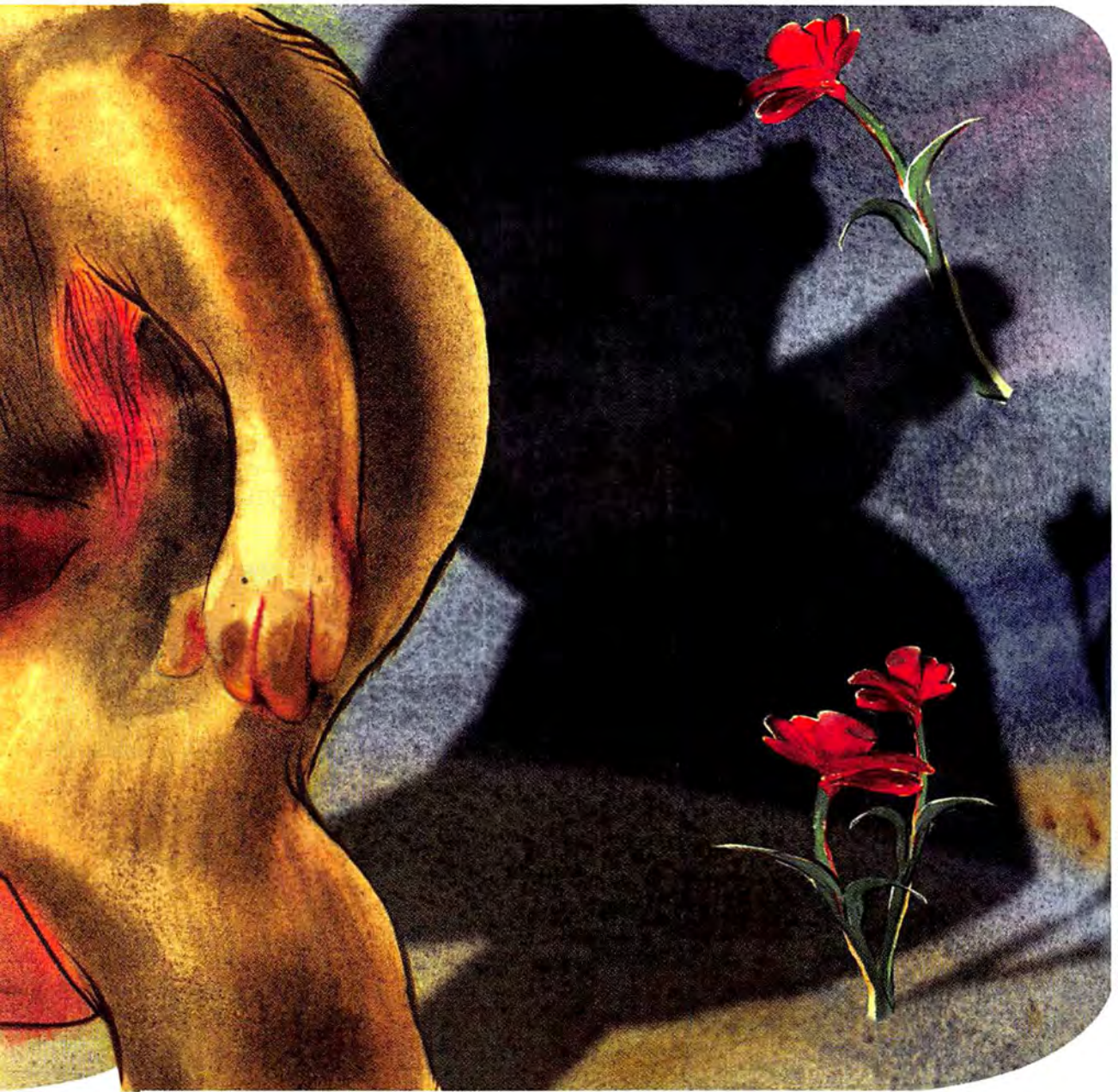
We're talking about Unix, the operating system that keeps the Internet up and running, poses one of the greatest threats to Microsoft's monopoly, and is poised to sweep into Mac users' lives with the introduction of Mac OS X, expected later this year.

Unix has a reputation for being a scary, complicated system that's the polar opposite of the friendly, easy-to-use Mac OS. And that reputation is somewhat deserved—but that's not the whole story. New versions of Unix that run on Mac hardware are giving slow Power



The Beauty

by Stephan Somogyi



ILLUSTRATIONS BY CHRIS CHING

of the Beast

The Beauty of the Beast

Macs new life by turning them into screaming-fast Internet servers. Apple is also hard at work on the upcoming Mac OS X, making the power of Unix more friendly and appealing to the average Mac user. That's why, even if you've made the solemn vow never to type on a command line, knowing about Unix will help bring the future of the Mac (and perhaps the entire computer industry) into focus for you.

Uncovering Unix

The first thing to understand about Unix is that it's not one single product from one developer, like the Mac OS or Windows. It's more of a *specification* for an operating system—in addition to the official Unix versions there are countless clones and variants, including one of the most popular ones around, Linux (www.linux.org). Linux is a free version that is developed by a group of volunteer programmers on the Internet and has taken the software world by storm—mostly because it's free, it's stable, it isn't controlled by any single monolithic corporation, and it doesn't come from Microsoft. Software giant Corel is even working on a Linux version of its WordPerfect Office suite in an attempt to break Microsoft's dominance in both the operating-system and office-suite markets.

Unix has been evolving since the early 1970s, long before the dawn of personal computers. Thus, Unix wasn't designed to run on personal computers at all—it was designed to run on expensive servers, with users logging in remotely from terminals or low-powered computers. As time has passed, personal computers have evolved to the point that they now can run Unix themselves, rather than just logging in to a remote Unix server. While most of the personal computers using variations of Unix are still Intel-based PCs, the number of Macs running Unix has begun to grow rapidly.

Unix's Face Unix's basic user interface (called a *shell*) is about as far from the Mac OS as you can get—it's plain text, just like DOS. Unix doesn't have a built-in graphical user interface like the Mac OS or even Windows. When graphical user interfaces first began their proliferation—still during the days when Unix ran only on servers—researchers at MIT developed *X Windows*, a framework that lets developers write Unix programs that have a graphical interface.

But while the Mac has the Finder, there's no common face for Unix. Many different programmers have developed many different graphical user interfaces—typically called *desktop managers*—for Unix. Most of them will be just familiar enough

What's in a Name: The Many Colors of Unix

Unix isn't just one operating system—it's a term that's often used to describe all sorts of operating systems. The original Unix began life as a research project at AT&T's Bell Labs in late 1969; Unix's built-in clock considers January 1, 1970, the dawn of time. The University of California, Berkeley was also working on a version of Unix, based on AT&T's project, that ultimately saw the light of day in 1975. Berkeley's Unix was known as BSD, short for Berkeley System (or Software or Standard, depending on who you ask) Distribution, and was intended for higher-education, noncommercial use. Over time, AT&T released several revisions of its Unix; the one that really

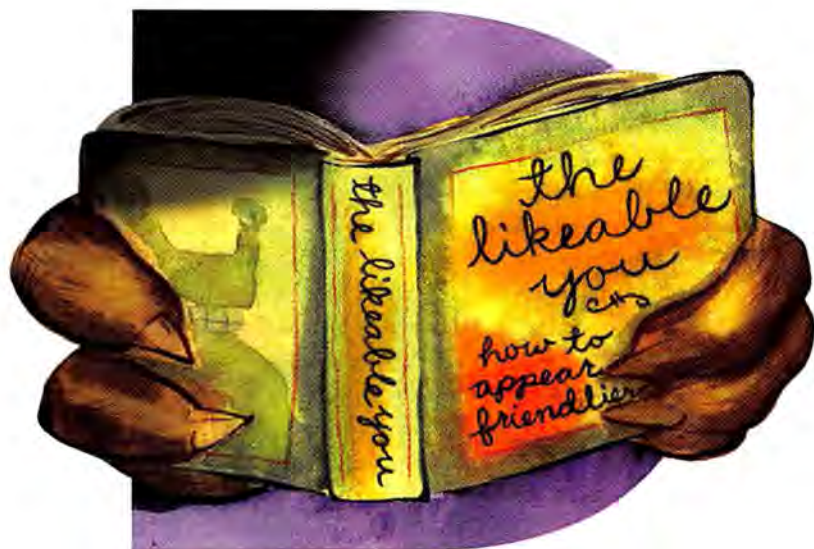
made its mark was called System V.

The Unix name has been a source of legal contention, and its trademark has changed hands several times during various corporate purchases and mergers. Because of licensing restrictions, intellectual-property rights, and also technical preferences, several Unix clones have been developed from scratch over the years, specifically to allow them to evolve independently of the large legal entities that owned the rights to the Unix name and the operating system.

Minix was one such clone, as is Linux, which began development in 1991 under the guidance of then-student Linus Torvalds. In the years since, Linux has remained *open-source software*—all of

its source code is freely accessible to users and modifiable by anyone who would choose to do so.

There are also a number of open-source BSD derivatives out there—FreeBSD, NetBSD, and OpenBSD to name but a few. While they haven't had the public acclaim that Linux has enjoyed, each has its own fans; for example, Yahoo uses FreeBSD on all its servers. Since the different BSDs and Linux are open-source systems, there is occasional cross-pollination between the two camps. MkLinux, for example, uses various bits of device-driver code from NetBSD. Apple's Mac OS X Server is even based in part on FreeBSD.—STEPHAN SOMOGYI AND GEOFF DUNCAN



that users can perform basic work, but they're a far cry from the intuitive interface that Mac users have come to expect—partially because there are no cohesive user-interface guidelines for Unix as there are for the Mac.

Unix's Power So if Unix is complicated and scary, why would any Mac users care to run it on their Macs? The answers are *speed* and *stability*. Underneath its complex facade, Unix is a stable, fast operating system that is especially appropriate for use as an Internet server.

In fact, Power Macs that start to feel too slow for the Mac OS can gain new life as Unix servers, hosting Web sites or routing a workgroup's e-mail. Although the Mac OS of today is a precariously balanced construction of code, Unix is designed to do its business as quickly as possible, leaving your computer's processor mostly free to do actual work.

Unix is far more efficient than the Mac OS in the way it manages processing horsepower and memory. Unix uses *pre-emptive multitasking*, a system of controlling applications so that no single program can hog all the processor power—but programs that need a lot of power can take priority over ones that are less vital. If you've ever noticed how sluggish your Macintosh can run when some other program is working in the background, you've seen the result of the Mac OS's less efficient *cooperative multitasking*.

Unix also offers *memory protection*, a scheme that essentially provides an impenetrable wall around every running program. That way, if one program goes nuts, it not only can't hurt any other program but it can also be shut off without harming your system or forcing you to reboot. If you've ever had to reboot your entire system because of a misbehaving application—and this happens to every single Mac user—you can see what an improvement memory protection is.

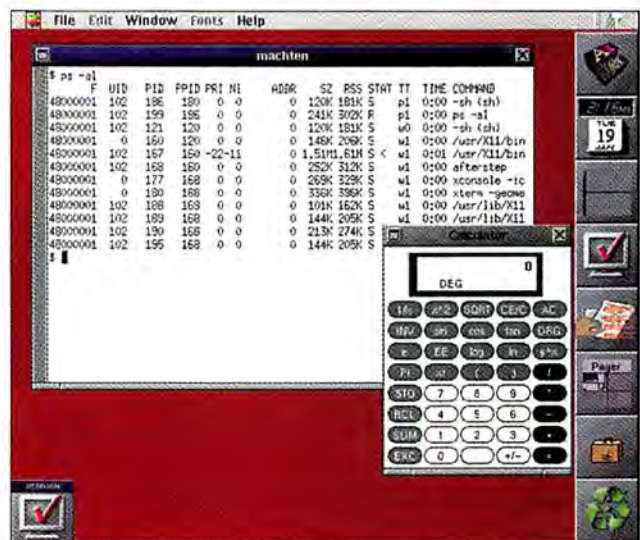
As a result, even the slowest Power Mac can be shockingly fast and stable when it's running Linux. And that means organizations can keep putting those computers to use long after they would've otherwise been written off as useless.

The Mac OS Meets Unix

Sure, Unix's strengths sound great—but its weaknesses (for example, its lack of a consistent, graphical user interface; its complexity; and certain security issues) loom even larger. Thankfully, Apple has decided to merge the best of Unix and the Mac OS, and the result is Mac OS X. Apple has made it clear that the version of Mac OS X intended for regular Mac users will provide the same friendly Mac interface we use every day—perhaps with some new innovations. But hidden away beneath the surface will be Unix, providing the speed and stability that Unix built its reputation on.

The Promise of OS X If Apple does its job right, using Mac OS X will feel like using the Mac OS and not some Mac-Unix hybrid. The same can't be said of Mac OS X Server, Apple's new \$999 server operating system that's an intermediate step between the Unix-rooted NextStep environment and the Mac OS.

Apple is billing Mac OS X Server as a powerful software package for Web serving, and it's hard to argue against this: because of its Unix underpinnings, Mac OS X Server can run Apache, the free Web server software that's the most popular Web server package on the Net. What Mac OS X Server adds to Apache is a user interface—Apple has written Mac-style control panels and assistants to make setting up Apache easier than it would be on, say, a standard Linux system. (Whether it'll be as fast as Apache on Unix is still unknown—at press time, Apple wouldn't allow *Macworld* to test a prerelease version of OS X Server.) This isn't Apple's first time working with Unix—the company used to offer its own variant of Unix, A/UX.



Mach Speed Tenon Intersystems' Power MachTen 4.1.1 lets you run Unix as an application within the Mac OS. Note the Unix-style interface and the lurking command line beneath that friendly Mac menu bar.

The Beauty of the Beast



Running Unix Today

Whether you want to be prepared to be a Mac OS X power user on the day the new OS is released or you just want to see how fast that old Power Mac of yours can be as an office e-mail, Web, or file server, you can get Unix experience today by running a version of it on your Power Mac.

There are two different ways to run Unix on Macs: either

you can run Unix inside the normal Mac OS or you can completely replace the Mac OS with Unix.

Unix Inside The gentlest way to introduce Unix into a Mac environment is to use the \$249 Power MachTen 4.1.1, from Tenon Intersystems (www.tenon.com). It's a full-blown version of BSD 4.4 Unix, with X Windows, networking capability, development tools, and everything else Unix has, but it runs as a Mac application. This means that you can switch from the Mac universe to Unix with the click of a mouse. The downside of this solution is that MachTen is as vulnerable as any other Mac OS app to the misbehavior of other software.

Despite these limitations, don't be fooled into thinking that MachTen is a Unix emulator, in the same way that Connectix's Virtual PC is a Windows emulator. The Unix software inside MachTen executes instructions native to the Mac's PowerPC chip, meaning that MachTen and its apps run at native speeds. If you're careful not to run too much other stuff on your Mac, using MachTen is a particularly convenient option because of the ease with which you can switch back and forth.

Linux Takeover Although it's popular to run Linux on Intel-based PCs as an alternative to Windows, there are also two popular versions of Linux that run on Power Macs: MkLinux and LinuxPPC. (Another variant, Yellow Dog Linux [www.yellowdoglinux.com], is on the horizon.)

Unlike Power MachTen, both MkLinux and LinuxPPC need to take over your entire Mac when they're running. This means that you have to restart your computer whenever you want to switch between Linux and the Mac OS. You'll also have to dedicate at least 500MB of hard-disk space to a Linux installation. Fortunately, however, MkLinux and LinuxPPC are similar enough that despite the differences between the two, both can run the same apps.

MkLinux First introduced in 1995, MkLinux is the oldest Linux for the Mac, and its development was originally funded by Apple. It's completely free—you can download it from <ftp://ftp.mklinux.apple.com>. For those who don't want to spend time downloading its multihundred-megabyte bulk, you can

Unix on Power Mac: Where to Get It

Company	Product	Price	Phone	Comments
LinuxPPC	LinuxPPC Release 4	\$32*	414/427-8555	Fast and stable; doesn't work on NuBus Power Macs.
Prime Time Freeware	MkLinux DR3	\$20**	408/433-9662	Compatible with old Power Macs; slightly slower than LinuxPPC.
Tenon Intersystems	Power MachTen 4.1.1	\$249	805/963-6983	Runs within the Mac OS; susceptible to Mac OS crashes.

* Also available as a free download from <ftp://ftp.linuxppc.org>. ** Also available as a free download from <ftp://ftp.mklinux.apple.com>; two-CD set plus book, \$50.

purchase a copy for \$50 from Prime Time Free-ware (www.ptf.com). This gets you two CDs plus an informative book about MkLinux; if you want just the software on CD, it's \$20. That tome has most of the documentation that you'd otherwise spend a lot of time hunting around for on the Net. At that price, it's a steal.

MkLinux's main advantage is hardware compatibility: it runs on just about every Power Mac out there, including the original 6100, 7100, and 8100 series. Since those are the PowerPC-based Macs that are most likely to be declared too old to use, they're also the most likely candidates for conversion into Linux-based systems. The result: Macs once slated for the giveaway pile can provide solid performance in their new lives.

LinuxPPC The other Mac-based Linux is LinuxPPC (www.linuxppc.com). Unlike MkLinux, whose evolution has floundered, LinuxPPC is under very active development, bringing continuous improvements in usability, speed, and reliability with it. LinuxPPC can also be downloaded for free, but it's much more convenient to purchase the \$32 set of two CDs that contains all the software and source code.

LinuxPPC is leaner and meaner than MkLinux. Its developers have taken advantage of the more open systems that Apple designed and built in the days of Mac clones. The Linux-PPC team has created a Linux that is even more streamlined—and therefore faster—than MkLinux.

Unfortunately, LinuxPPC runs only on Power Macs that have a PCI bus. The good news is that it does work on all PowerPC-based systems *other* than the 6100/7100/8100 family; its Performa siblings; or the PowerBook 1400, 2400, and 5300 models. (The definitive list of supported hardware is at <http://linuxppc.org/hardware/>.) It's a pity that the first Power Mac generation is left out, but unless Apple provides the LinuxPPC team with the necessary documentation, MkLinux will remain the only option for those Macs.

Perhaps the most important thing about LinuxPPC is its attention to making Linux as painless to install as possible. The latest version of LinuxPPC, release 5.0, will include a brand-new graphical installer that will help you set up Linux on your Power Mac fairly easily. You can even set Linux to boot directly into an X Windows graphical user interface rather than a scary command-line interface, if you so desire.

However, all these improvements to the process don't mean that running LinuxPPC is as easy as running a Mac—Linux is still something for people with a techy mentality. And much more than is the case with computers running the Mac OS, Unix-based systems are vulnerable to attack if you're not careful. Unix will often load a number of server applications invisibly and by default. If you're planning on running a Linux



Linux Now This sample X Windows interface from LinuxPPC shows an image-editing program, a program-launching tile utility, and a window containing a Unix command-line session. Unlike Mac apps, however, X Windows apps can have widely varying interfaces.

server that's accessible to the whole Internet, you must learn a bit more about Unix system administration than if you are just setting up a local workgroup server.

And while there are only a few general-use Linux applications out there, the numbers are growing. You can run Netscape Communicator (www.netscape.com) on LinuxPPC, and Applix (www.applix.com) will soon offer a version of its Applixware suite of business apps for LinuxPPC. One by one, the barriers to getting started with Unix are disappearing. Hopefully, by the release of Mac OS X they will have faded away completely.

The Last Word

Unix definitely isn't something to be afraid of; instead, it's something to be curious about. Its performance tweaks make it a faster, more reliable operating system than the Mac OS. Until Mac OS X arrives, you'll have to forfeit some ease of use if you want to give Unix a try. Whether you're just interested in experimenting with the new Linux operating system that everyone's talking about or you're actively preparing for Mac OS X, you have lots of options today for running Unix on your current Power Macintosh.

And although Apple has committed to keeping the "classic" Mac OS alive well into the next millennium, the long-term future of the Mac OS is based on Unix technology. If Apple's engineers do their job right, regular users won't have to know about Unix buzzwords or see its command-line countenance in order to reap the rewards of its power and stability. **m**

Contributing Editor STEPHAN SOMOGYI understands Unix and many of its variations but still prefers the Mac.



CLEARED FOR FINAL APPROACH

FALCON 4.0

COMING SOON

MICROPROSE
www.microprose.com

WESTLAKES
INTERACTIVE

Available soon at your local retailer, or visit the GT Interactive online store:
<http://www.gtstore.com> or call 800/229-2714

© 1997, 1998 MicroProse, Inc. All Rights Reserved. MICROPROSE and FALCON are registered trademarks of MicroProse, Inc. or its affiliated companies. All Rights Reserved. Distributed and published by MacSoft, an affiliate of GT Interactive Software Corp. All other trademarks are the property of their respective companies.

MacSoft[®]

An affiliate of GT Interactive Software Corp.
www.wizworks.com/macsoft/

Choose 30 at www.macworld.com/getinfo

Secrets

URL Magic Tricks

SOME SLEIGHT OF HAND TO ORGANIZE ALL THOSE INTERNET ADDRESSES

by Joseph Schorr

Literally thousands of new Web sites pop up on the Internet every day. Unfortunately, at least half of them seem to end up getting bookmarked on my computer. The result, of course, is a mess: huge lists of bookmarks; unwieldy, disorganized browser menus; and dozens of stray URLs in documents randomly scattered all over my system.

With Web and e-mail addresses coming at you from every direction, it's good to know that there are plenty of powerful URL-management shortcuts built right into the Mac OS. If you know the right tricks, you can wrangle, redirect, and reorganize those URLs with a few simple mouse-clicks.

Detect and Connect

The best way to extract URLs from documents of any kind is by using Apple Data Detectors (ADD) 1.0.2, an incredible free utility from Apple that helps you find, save, and connect to Internet addresses located in documents anywhere on your system. If you're not already using ADD, you should be. To download it, go to <http://asu.info.apple.com> and search for Apple Data Detectors. (You can use ADD with System 7.6 or later.)

With ADD installed, you can simply control-click on a selection of text in a document to create a contextual pop-up menu that lists the URLs in that selection. The pop-up menu also lists a



number of options for launching or saving the URLs (see "Click to Connect"). The detector can recognize e-mail addresses, Web sites, newsgroup names, and FTP site addresses. You can, for example, use ADD on a word processing document to find a Web page's address, add the address to the list of bookmarks in Netscape Navigator, and then launch your browser and open the page—all from one pop-up menu right in your word processor.

One note about ADD: the pop-up menus provide more options than you probably need; the View In Cyberdog

option is one you probably won't use, for example. So after installing ADD, make it a point to visit the Apple Data Detectors control panel, where you can turn off commands you don't plan to use.

Clip Those URLs

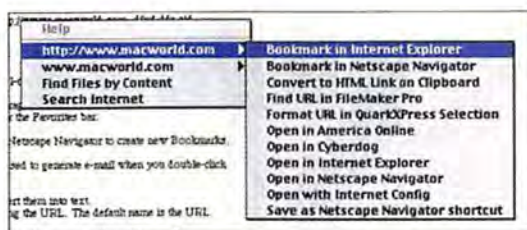
Even without ADD, Mac OS 8.5 has become quite smart about sniffing out URLs and helping you organize them. For example, you can now create two new kinds of text clippings: Web-page locations and e-mail addresses. Simply select a URL (such as [www.macworld](http://www.macworld.com)

.com) or an e-mail address (such as joe@macworld.com) in the text of any drag-and-drop-aware application, such as Microsoft Word or AppleWorks, and then drag the selection to the desktop (or anywhere else in the Finder). The resulting text clipping becomes a document you can double-click on to launch your default Web browser or e-mail program, which then connects to the designated Web page or creates a preaddressed piece of e-mail for you.

Once you've created Web-page-location or e-mail-address clippings, there are a number of different ways you can use them.

- Drag a Web-page-location clipping directly into a browser window to connect to that Web site immediately. If you drag the clipping into Microsoft Internet Explorer's Address bar (instead of into the window itself), the URL appears in the Address bar, although you won't actually connect to the site until you press return.

- If you want to be able to access a clipping from the Favorites submenu in the Apple menu, control-click on a clipping and choose Add To Favorites from the contextual pop-up menu. This places a copy of the clipping in your system's Favorites folder.



Click to Connect With Apple Data Detectors, you don't have to hunt around for the URLs in a document. They pop right out in a contextual menu packed with options.

- You can change the name of a clipping without altering its contents, even though by default these clippings have the name of the URL they contain.

- You can drag the clippings into any drag-and-drop-aware application to insert them as text.

- Drag clippings into Internet Explorer 4's Favorites folder to automatically add them to Explorer's Favorites list. Even cooler, drag them straight onto the Favorites bar and they appear right on the bar. This little trick doesn't work with Netscape Navigator, by the way.

- Double-clicking on a clipping launches your default Web browser or e-mail program. You can change these defaults by opening the Internet control panel and choosing new default applications in the E-mail and Web panes.

Instant Bookmarks

If you generally keep your Web browser running, here's another way you can create shortcuts to your favorite Web sites from URLs you may come across in e-mail and other documents: You can treat a URL within text just as you do a Web-page clipping file. Select the URL, and then drag it directly into the

Favorites folder in Internet Explorer—bypassing the Finder completely. The URL instantly becomes available in Explorer's Favorites list. Or, you can drag the selection right onto Explorer's Favorites bar to install a shortcut button right on the bar itself.

You can do essentially the same thing in Netscape Navigator by dragging a selected URL into Navigator's Bookmarks folder.

Of course, even with these techniques, you still have to sort through your collected URLs, organize them into manageable lists, and periodically, weed out the waste. For that job, alas, no one-click tool exists. **m**

JOSEPH SCHORR coauthored *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide, 1998).

The Keyboard Connection

BOTH INTERNET EXPLORER AND NETSCAPE NAVIGATOR PROVIDE a number of shortcuts for opening your favorite Web pages, but have you noticed that there's no obvious way to navigate to frequently visited sites using only the keyboard? Generally, you have to click on a button or pull down a menu or submenu in order to get to a bookmarked location.

Netscape Navigator 4



Press **⌘-B** to open the Bookmarks window.

Use the up- and down-arrow keys to move to a location in the list.

Once you've selected a bookmark, press return to launch it.

To edit the name or contents of a bookmark, select it and then press **⌘-I**.

Open and close selected folders by pressing return.

Internet Explorer 4



Press **⌘-J** to open the Favorites window.

Use the up- and down-arrow keys to move to a location in the list.

Press **⌘-right arrow** to expand, and **⌘-left arrow** to collapse, selected folders.

To remove an item, select it and press delete.

Once you've selected a bookmark, press **⌘-down arrow** to launch it.

Tips, Tricks, and Shortcuts

by Lon Poole

AppleScript is great for automating everyday tasks, especially when you're using the speedier PowerPC-native AppleScript in Mac OS 8.5. But some AppleScript commands can be troublesome when they run in the background. For instance, consider the following script, which selects the items in the Recent Applications folder, moves them to the Trash, and empties it:

```
tell application "Finder"
  select every item
    of folder "Recent Applications" of
      apple menu items folder
  delete selection
  empty trash
end tell
```

Chris Garaffa of Cos Cob, Connecticut, wrote this script, and while it was running he made the mistake of selecting the folder that contained his Web site. To his surprise, the script didn't delete the items in his Recent Applications folder but instead deleted his Web site. The following script doesn't use a Select command, and would have prevented this calamity:

```
tell application "Finder"
  delete every item of folder
    "Recent Applications" of
      apple menu items folder
  empty trash
end tell
```

The moral of the story: Be careful about selecting items while running a script in the background, beware the Empty Trash command (which never displays a warning), and always back up your files!

Correct Dictionary Mistakes

While using the spelling checker in a WordPerfect 3.5 document, I accidentally clicked Add instead of Replace and added a misspelled word to my dictionary. How can I remove the

added word? And can I remove words from Microsoft Word's dictionary too?

DOUGLAS MEHR
Gurnee, Illinois

Corel WordPerfect stores the words you add to the spelling dictionary in a file named User Dictionary (USA), found in the Language folder inside the WordPerfect folder. To edit this file, double-click it. The file opens in the ST Utility program, which lists the words in the dictio-

can also type in new words, but make sure you press return after each new word to put it on a separate line. When you save this document, Word 98 may advise that you could lose formatting if you continue saving; click Yes and don't worry. To reinstate automatic spell-checking, choose Preferences from the Tools menu, click the Spelling & Grammar tab, and turn on the option Check Spelling As You Type.

To edit a dictionary file in Word 6, choose Options from the Tools menu, and click the Spelling tab to see a list of custom dictionaries. Select the dictionary you want to edit and click the Edit button. When Word asks if you want to edit the dictionary as a Word document, click Yes. When asked how you want to convert the dictionary file, select Text Only and click OK. The file opens in a document window behind the Options dialog box; dismiss the dialog box by clicking its Cancel button. Now you can edit the dictionary in the document window.



Open the .exe Files

How can I open e-mail attachments labeled with the suffix .exe, such as tree.exe?

WILLIAM HAMMOND
Ocean Springs, Mississippi

nary file and lets you delete and add words.

Word 6 and Word 98 store your words in a file named Custom Dictionary. To edit a dictionary file in Word 98, choose Preferences from the Tools menu, click the Spelling & Grammar tab, and then click the Dictionaries button. In the dialog box that appears, select the dictionary you want to edit by clicking its name—not the check box—and then clicking the Edit button. Word 98 opens the dictionary in a document window and turns off automatic spell-checking.

Find the misspelled word in the document window and delete or correct it. You

Files whose names end with .exe (short for *executable*) are PC programs. Some .exe programs are compressed archives, which you can expand on your Mac using the freeware StuffIt Expander together with the shareware DropStuff With Expander Enhancer,

continues

both from Aladdin Systems (www.aladdinsys.com). To run these programs, you need either a PC or PC-emulation software such as Insignia SoftWindows (510/360-3700, www.insignia.com) or Connectix Virtual PC (650/571-5100, www.connectix.com) for your Mac. If your Mac has PCI or NuBus expansion slots, you can also install a PC-compatibility card from Orange Micro (714/779-9332, www.orangemicro.com) and use it to run .exe programs.

Grab 'n' Scroll

TIP In Mac OS 8.5.X you can scroll through a folder or disk window by grabbing its contents. Just press the \mathbb{H} key, click anywhere in the window, and drag—the pointer turns into a little white-gloved hand.

RICHARD HAYES
Chandler, Arizona



Scrollin', Scrollin', Scrollin' You can scroll through a folder or disk window's contents in Mac OS 8.5 by pressing \mathbb{H} as you click and drag. The bonus: your cursor turns into a little white-gloved hand, à la Mickey Mouse.

Force Text in Excel

TIP A leading hyphen causes Microsoft Excel to interpret the contents of a cell as a formula. If you want to use a leading hyphen but not create a formula, use an en dash (option-hyphen) or an em dash (shift-option-hyphen) in place of the hyphen. Excel treats them like any letter or number.

JIM HENDERSON
Lancaster, California

You can also force Excel to treat the contents of any cell as text by typing an apostrophe at the beginning of the cell contents. Alternatively, format the cell as text (choose Cells from the Format menu, click the Number tab, and double-click Text in the category list). After chang-

ing a cell to text format, you may have to press \mathbb{H} -U to make the change take effect.—L.P.

Get an Instant XPress Picture Box

TIP To make an instant picture box in QuarkXPress 4.X that's the same size as the document page, open a new document with the Automatic Text Box option turned on and the four Margin Guides set to 0. Then choose Picture from the Content submenu of the Item menu. Voilà!

RANDY OFST II
Washington, Pennsylvania

Read Mail While Roaming

TIP If you want to read and send e-mail via your regular e-mail account while you're away from your computer, you don't necessarily need a Web e-mail account as described in December 1998's *Quick Tips*. Ned Smith of Erie, Pennsylvania, reports that you can access a POP e-mail account from any computer with a Web browser by visiting the Panda Mail site (www.bstar.net/panda/). There you supply the e-mail log-in or user ID (typically the first part of your e-mail address), e-mail password, and server name (for example, *ISPname.com* or *pop.ISPname.com*).

One caveat: Panda Mail probably won't be able to access your e-mail account if the POP server is behind a firewall—typical with some corporate e-mail servers but usually not so with ISP (Internet service provider) servers. Also, to keep your mail private, don't forget to close the browser window when you're done and clear the browser cache as described in December.

Clarify Phone-Line Quality

TIP Instead of calling a 3Com BBS long-distance to check your phone-line quality as suggested in January 1999's *Quick Tips*, get your modem to report the phone-line quality while it's connected to your ISP, says William C. Roemer of Fort Collins, Colorado.

In the communications module of ClarisWorks or a terminal program such as ZTerm, which is \$30 shareware (not freeware as stated in January), type **AT&F1**

and press return. Then type **ATDT** followed by the phone number you usually dial when you connect to your ISP—for example, **ATDT555-1212**—and press return. After the modem dials and connects, you'll probably see a message from your ISP asking for your log-in name. Ignore this request and type **+++** but don't press return. The terminal program should display OK on the next line. Type **AT&V1** and press return. The program displays connection statistics, including an item labeled something like Line Quality followed by a number. A Line Quality value of 25 or less indicates that the modem can connect at high speeds. Values greater than 25 signify slower connections.

Roemer says factors that affect line quality include your modem's distance from the telephone switching facility and the number of devices (telephones, fax machines, answering machines, and the like) connected to the same line. For example, with all telephones unplugged from the phone line, Roemer's connection speed hovered between 48 Kbps and 50Kbps. But when four telephones were connected to the same line, the connection speed dropped to between 28.8 Kbps and 31.2 Kbps. In addition, Roemer notes that a V.90 modem will frequently not connect at 56 Kbps if the ISP's modem supports only the X2 or K56flex standard.

Antonino P. "Nino" Giuliano of Palm Bay, Florida, observes that if your modem is more than 19,000 feet from the phone company's analog-digital switch, you can only expect a connection of between 24 Kbps and 28.8 Kbps with any kind of 56-Kbps modem. **m**

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 8.5 Bible* (IDG Books Worldwide, 1997).

All shareware and freeware mentioned in *Quick Tips* is available from the Macworld Online software library (www.macdownload.com).

We pay \$25 to \$100 for tips on how to use Macs, peripherals, or software. Please include your full name and address, so that we can send you your payment. Send questions or tips to quicktips@macworld.com or to Macworld Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105. All published submissions become the sole property of Macworld. Due to the high volume of mail received, we cannot provide personal responses.

F/A-18

KOREA

HIGH - REALISM STRIKE FIGHTER SIMULATION

The latest in hardcore realism from the engineers of the award-winning F/A-18 Hornet 3.0

FEATURES:

- * Proprietary ultra high-speed differential scan conversion graphics engine
- * Native 3Dfx* texture mapping and effects
- * Powerful mission creator/editor
- * Highly realistic carrier operations
- * Detailed printed/online documentation
- * Extensive theater of ops with rolling terrain
- * Authentic avionics and flight modeling
- * Network play over LAN or Internet
- * Huge arsenal, including B-57 tactical nuke!
- * Written for Macintosh!



SPECIAL OFFER

FOR A LIMITED TIME!!!

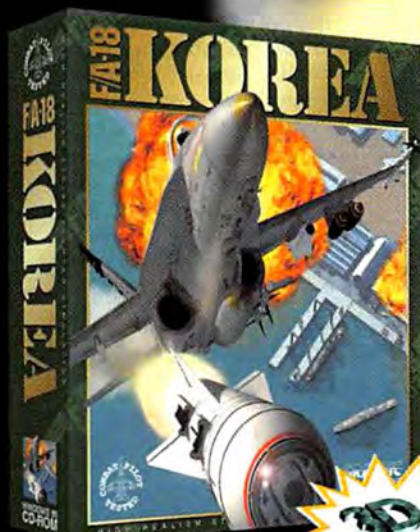
TWO OF THE
GREATEST SIMS EVER -
BOTH FOR ONLY \$29.95
Available online or in stores.



Check out our web page at:
www.graphsim.com

Available at:

COMP USA

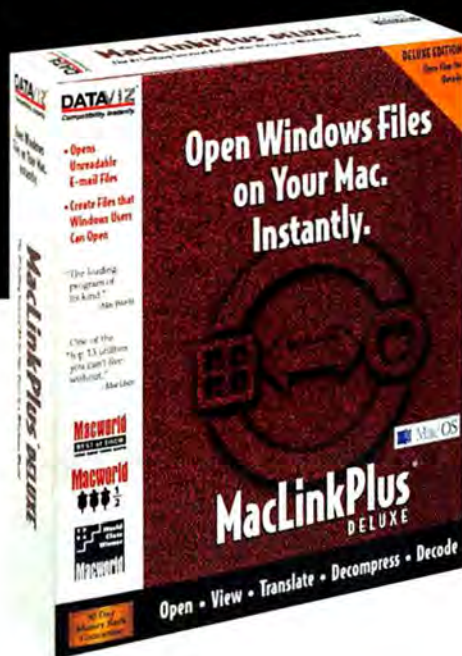


**GRAPHIC
SIMULATIONS
CORPORATION**

*3Dfx texture mapping requires compatible 3D Hardware.

Choose 91 at www.macworld.com/getinfo

Surviving in a Windows world just got easier.



Upgrade to award-winning MacLinkPlus® Deluxe 10.0.

Being a Mac user in a Windows world can be a pain. But with MacLinkPlus Deluxe 10.0, it couldn't be easier. Just double click on a Windows file or use the sleek, new user interface and your pain is gone.

Translate the latest Windows files into Macintosh formats – or vice versa. Translate one file or a whole folder full of files at once. Files retain their original formatting.

Decompress files created using popular compression formats, including Stuffit, Compact Pro, Zip, Gzip and Z.

Get important information on selected files, such as file format, size, creation & modification dates.

Select a file or group of files to recognize, translate, decompress or view.

View files quickly, without opening the application that created them.



View the text of word processing and spreadsheet files without opening the original applications.

Select a folder for translated documents. Then open this folder and access translated documents with just one click!

Files with incorrect Types & Creators cause problems when double-clicked. Solve problems simply by clicking "Fix" then double-clicking the file to open it in the proper application.

The #1 selling survival kit for Mac users in a Windows world just got better. Isn't it great to know there's a software company as committed to Mac as you are?

For more information and to order, call 1-800-270-0030 ext.133.

Visit our Web site at www.dataviz.com/easier

Macworld
BEST of SHOW
1998 NEW YORK EXPO

Also available at fine retailers including:

COMPUSA
THE COMPUTER SUPERSTORE

MICRO CENTER
THE COMPUTER DEPARTMENT STORE

Fry's
ELECTRONICS

DATA/VIZ
Compatibility. Instantly.

Visit us at booth #935 at Macworld Expo

© 1998 DataViz, Inc. All names are trademarks or registered trademarks of their respective companies.

Choose 102 at www.macworld.com/getinfo

Create

Presenting with HTML

USE THE LANGUAGE OF THE WEB TO BUILD BUSINESS PRESENTATIONS

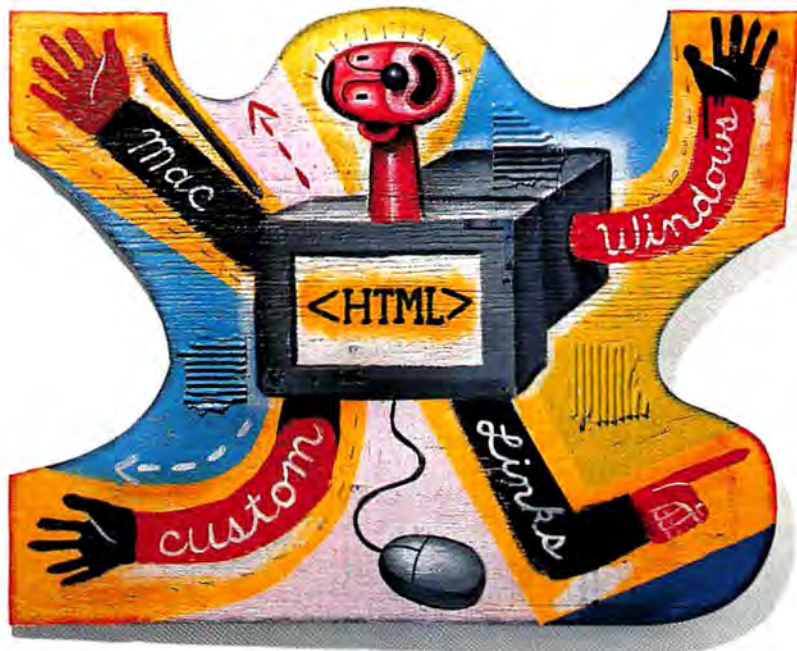
by Jim Heid

About to participate in a dog-and-pony show? Besides washing your dog and brushing your pony, you're no doubt also planning to create an on-screen presentation to accompany your rant. In fact, you were probably about to open PowerPoint 98 when I interrupted you. Good thing. Microsoft PowerPoint 98 is a great program, but in today's Web-centric world, it might not always be the best choice for creating a presentation. A better choice may be an HTML editor such as Macromedia's Dreamweaver 2 or Adobe's GoLive CyberStudio—or even Apple's SimpleText.

Even if you aren't the type who dreams in HTML, you'll find that creating presentations using HTML isn't too difficult. To make it even more painless, I've created a set of template pages to get you started (see "A Simple HTML Presentation"). And if you just can't bear to tear yourself away from PowerPoint 98, you can use its HTML-export features to turn your PowerPoint presentation into HTML (see "Convert PowerPoint Presentations to HTML").

WHAT YOU NEED

- HTML editor or SimpleText
- Web browser
- Graphics program (optional)



Why HTML?

With PowerPoint 98 able to do everything except wash dogs and brush ponies, why would you want to descend into the depths of HTML to create a presentation? Several reasons.

Easy Distribution You can quickly post the presentation on your company's Web site after the event. If you build the presentation using relative links (as I describe shortly), you can also distribute it on floppy disks or CD-ROMs.

More Depth Chances are that the Web is teeming with sites that relate to your topic. In an HTML-based presen-

tation, it's a cinch to include links to those sites. Your presentation then evolves from a simple series of bullet points into a deeper information resource—a pint-size, portable Web site unto itself.

Playback Versatility The nightmare: five minutes until show time and you realize you've forgotten the PowerPoint player—or for some reason you can't install it on the presentation computer. But virtually every personal computer on the planet has a Web browser, making HTML a broadly supported foundation on which to build your pitch.

continues

Multimedia Support Thanks to browser plug-ins and Dynamic HTML, you don't have to strip QuickTime movies, animations, audio, and other glitz from your presentation. You will sacrifice some of its playback versatility, since in order to take advantage of these flashier goodies you'll need to bring and install necessary plug-ins on the presentation machine. But if you're willing to make the effort (and risk the glitches that can accompany using plug-ins), you can do almost anything with HTML that you can in PowerPoint.

A Few Building Tips

Whether or not you use the templates I created, employ these tips for building your HTML presentation. Many of these also apply to conventional Web sites.

Watch Your Screen Size PowerPoint and other presentation programs automatically resize slides to accommodate the screen resolution of the computer you're using. Web browsers reflow text but won't resize graphics and other elements. So, keep your destination screen size in mind when creating the presentation—a good rule of thumb

is to design for a screen resolution of 640 by 480 pixels.

Name Files Carefully To ensure that your presentation will run properly on any Web-aware platform, name your HTML pages and their support files using all lowercase letters, and in the boring 8.3 style (up to eight characters, a period, and a three-character file extension): for example, dogshow.htm instead of Westminster.html.

Keep Your Links Relative When linking to graphics or to other pages in the presentation, use relative links rather

A Simple HTML Presentation

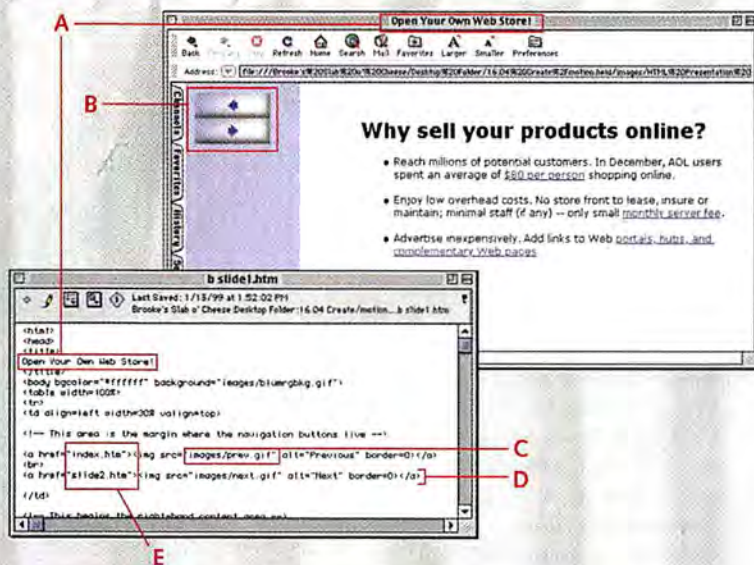
TO GIVE YOU A HEAD START IN BUILDING HTML-based presentations, I created a set of simple template pages, which you can download from www.macworld.com/more/. There's one template for a title slide, one for a bullet-point slide, one for images, and so on. The templates have a simple design that works across different browsers and platforms—they're not built for adding flashy animated effects common to PowerPoint presentations.

You can open and modify the template pages with a text editor such as SimpleText or Bare Bones Software's BBEdit (781/687-0700, www.barebones.com), or with a WYSIWYG HTML editor such as Macromedia's Dreamweaver 2 (415/252-2000, www.macromedia.com) or Adobe's GoLive CyberStudio or PageMill (408/536-6000, www.adobe.com). If using a WYSIWYG editor, switch to HTML view in order to see the comments I've planted in the HTML. Here's how to work with the templates.

1 Adapt the title slide. I called the title slide `index.htm`, the name most commonly used by Web servers to denote a directory's default home page. It simplifies posting your presentation on the Web: simply stash the presentation in its own directory, and refer to it with a nice clean URL such as www.yourdomain.com/speech/. If you're using a Mac-based server such as StarNine's WebStar (510/649-4949, www.starnine.com), you might need to change this file's name to `default.html`. If you're willing to spell out a full URL—like www.yourdomain.com/speech/title.htm—for the online version of the presentation, you can change its name to anything you like. But keep in mind the file-naming recommendations I mentioned in the main text.

You'll also need to replace the text between the template's `<title>` tags (which appears in the browser window's title bar) and any other text in the template that reads "Insert . . . Here."

2 Stash the images. If your presentation contains graphics, tuck them in the folder named `Images` and use relative URLs to refer to them.



Text between the `<title>` tags (A) appears in the browser window's title bar. Images for slide navigation buttons (B) are accessed using relative links (C), which make your presentation portable. Edit each slide's previous and next tags (E) to reflect the file names of the previous and next slides, and omit this entire line (D) in the last slide.

3 Duplicate and modify. If your presentation is like most, many of your slides will contain several bullet points—base these on the template file `slide1.htm`. For slides that have a single idea, statistic, or quote, use `slide2.htm`. Using the Duplicate command (⌘-D) in the Finder, make as many duplicates of these two files as you need and modify each duplicate accordingly. Remember to edit the HTML for each slide's navigation buttons so the next and previous buttons work properly.

4 Install the right fonts. I used Microsoft's Verdana font, which is designed to be legible on low-resolution monitors and is included with the Mac OS and with Windows 98. If your presentation machine doesn't contain Verdana, the browser will fall back to Geneva, Helvetica, or Arial (a Helvetica look-alike in Windows). You can download Verdana and other screen-optimized fonts from www.microsoft.com/typography/fontpack/.

Convert PowerPoint Presentations to HTML

YOU CAN'T IMAGINE STANDING AT A PODIUM without PowerPoint 98, but you still want the distribution flexibility that HTML provides. The answer: PowerPoint's Internet Assistant, which swings into action when you choose Save As HTML from PowerPoint's File menu.

The Internet Assistant's six dialog boxes provide a broad array of options for converting your presentation. You can, for instance, have the presentation's slides displayed within a frame set, with one frame providing one-click access to each slide. You can even make the original presentation file available for downloading.

The Save As HTML feature converts each slide into a graphic, which enables PowerPoint to retain the slide's formatting—all the way down to its color scheme and template design. On the downside, this means that each slide is much bigger than an equivalent screen created in HTML. PowerPoint also creates text-only versions of the slides, but they're bland and bare as bones.

PowerPoint's Internet Assistant does a good job of bridging the gulf between PowerPoint and HTML; there's no better way to quickly convert a PowerPoint pitch for display in a browser. But if your primary goal is to create a truly HTML-based presentation, you're better off using an HTML editor.

The Internet Assistant

- A** Choose between standard and framed layout. (Framed layout provides faster access to each slide.)
- B** Convert each slide into a GIF or a JPEG file. (Opt for GIF unless slides contain photographs.)



- C** Determine how large you want each graphic to be. (The default setting, 640 by 480 pixels, creates the smallest and most portable files.)
- D** Enter your e-mail address, home-page URL, and other descriptive information that you want to appear on the presentation's opening page.
- E** Choose between standard browser colors (the default, which I recommend) or custom colors for the background, text, links, and visited links.
- F** Specify placement of the slide-navigation buttons, and whether to include slide notes on each page.
- G** Click to carry out the conversion.

than absolute ones. A relative link describes a location *relative* to the location of the page with the link—for example, /images/graphic.gif. An absolute link spells out a complete location—for example, hard_drive/presentation/images/graphic.gif.

Relative links make it easier to move the presentation (or site) from one disk drive or server to another. Absolute links tie your project to a specific disk or Web address and won't function when your project is moved.

Most current Web authoring tools create relative links automatically, but it's possible sometimes to wind up with an absolute link. That's why it's always a good idea to . . .

Test It before Show Time After creating your presentation, move it to another machine and test it to make sure all your links work properly. If you don't have a second computer, move the entire presentation folder to a different loca-

tion on your hard drive and test it from there. This will at least let you sniff out any link problems.

Carry It on a PC Disk The best medium for transporting your presentation is a PC-formatted disk or removable-media cartridge. Because all PowerPC Macs can read PC-formatted media, you'll be able to copy your presentation onto either a Mac or a Windows computer with no worries.

After the Show

Your pitch doesn't have to end when the presentation is over. As already mentioned, using relative links throughout makes it easy to post your presentation on a Web site or distribute it on floppies. But to really make an impression, consider distributing it on business card-size CD-ROMs, such as MCI Technologies' Digital Cards (781/431-7030, www.digital-cards.com).

Digital Cards have dimensions iden-

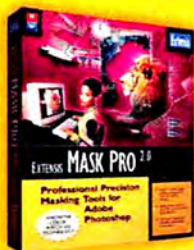
tical to those of dead-tree-based business cards, but they can be used in any standard CD-ROM drive. A Digital Card holds only 18MB, a fraction of the 600MB capacity of a normal CD-ROM but more than enough to hold an ambitious presentation containing QuickTime movies.

Digital Cards are a bit pricey—as much as \$4.50 each, depending on how many you order. But their unique capabilities and high-tech appeal make them a striking finish to big-budget presentations. Anyone who receives one is likely to try it out just to see if it really works. It's a great way to guarantee that someone will take another look at your ideas—all of which are crisply showcased in a snazzy and accessible HTML-based presentation. **m**

A contributor to *Macworld* since 1984, JIM HEID (www.heidsite.com) writes and lectures about Web development and multimedia.



New! Extensis Mask Pro 2.0 It's a TKO!



Powerhouse arsenal. More control. More knock out power. Extensis Mask Pro 2.0 is the newest version of the leading professional masking software for Adobe Photoshop and Corel Photo-Paint. With an expanded tool set, one click masking, the ability to create masks or selections with clean edges and incredibly smooth transitions, Mask Pro 2.0 is loaded with features that slash the time it takes to create professional quality masks with print-perfect clipping paths more accurate than Photoshop.

Whether you're working in print or for the Web, Extensis Mask Pro knocks out perfect masks leaving you more time to knock out great design.



BOTH IN THE BOX

**Extensis
Mask Pro 2.0**
\$299.95



Try award-winning
Extensis Mask Pro for FREE at www.extensis.com/tko
or call 800.796.9798



Extensis Corporation, 1800 SW First Avenue, Suite 500, Portland, OR 97201. Phone: 503.274.2020. Fax: 503.274.0530. Extensis Europe, Zonnebaan 34, 3606 CB Maarssen, The Netherlands. Phone: +31-30-24-75050. Fax: +31-30-24-12039. Extensis, Mask Pro and the Extensis logo are trademarks of Extensis Corporation. Adobe and Photoshop are trademarks of Adobe Systems Incorporated. Corel and PHOTO-PAINT are trademarks of Corel Corporation. All other trademarks are the property of their respective owners.

MPMWNA010199

Choose 14 at www.macworld.com/getinfo

Dynamic HTML without Tears

CREATE SLICK DHTML EFFECTS IN CYBERSTUDIO WITHOUT PROGRAMMING

by Tom Negrino

Web designers benefit from vastly broadened possibilities for their sites with the advent of Netscape's and Microsoft's version 4 browsers. Thanks to technologies such as Cascading Style Sheets and JavaScript, designers can create pages with precisely positioned elements and easy animation, and they have fine control over the look and style of text.

But there's a catch. Cascading Style Sheets are deeply geeky and hard to code by hand, and JavaScript is an honest-to-gosh programming language that requires serious effort to master. In fact, under the rubric of Cascading Style Sheets, there are actually two different critters: CSS1 and CSS-P. CSS1 allows you to specify the look and style of type and some other Web-page objects; CSS-P (*P* for positioning) lets you specify the position of page objects and animate objects on the page. You can manipulate both types of style sheets via JavaScript, and the result is called Dynamic HTML, or DHTML for short.

Another catch is that you can view DHTML effects correctly only using version 4.0 or later browsers. Even then, some effects are Internet Explorer-specific and some are Navigator-specific. It's essential to preview your pages in both browsers, preferably in both the Mac OS and Windows.

Whole books explain how to code DHTML, but we'll leave the program-



ming to people who enjoy that sort of thing. For the rest of us, there's GoLive CyberStudio Professional Edition 3 and later (\$299; 650/463-1580, www.golive.com), which offers friendly, visual DHTML tools. (At press time, Adobe acquired CyberStudio.) While you simply drag objects around on the screen and fill out a few Inspector dialog boxes, CyberStudio hums along behind the scenes, writing the Cascading Style Sheets and JavaScript code.

To illustrate some DHTML elements, we created a few pages of a mythical sporting-goods site called Adventure Tools (you can see this site in action at www.macworld.com/more/). The opening page of the site is an animated splash screen with three elements that fly across

the page and assemble to form the Adventure Tools logo (see "Open with Animation"). A few seconds after the animation ends, the splash screen automatically jumps to the site's home page (shown above).

With DHTML-savvy tools such as CyberStudio Professional Edition, designers get to concentrate more on designing and less on programming, and don't have to rely on Web programmers. You can create sites faster and more easily—and in the world of Internet Time, this is an important consideration. ■

TOM NEGRINO is coauthor of *JavaScript for the World Wide Web, Visual QuickStart Guide*, second edition (Peachpit Press, 1998).

continues

WHAT YOU NEED

- GoLive CyberStudio Professional Edition 3
- Web browser
- Web graphics editor (optional)

Open with Animation

THE SPLASH SCREEN IS YOUR SITE'S SNAZZY "FOYER," WHICH USHERS WEB SURFERS to the main page. This is a great place to employ animation. There are three moving elements on our splash screen: a globe, a skier, and the *Adventure Tools* title. Each element is a transparent GIF image embedded in a floating box. The animation consists of the GIFs flying in along different paths, finally assembling the complete logo (see this in action at www.macworld.com/more/). It's important that the images be transparent GIFs, so you can see one image behind another when they're stacked.



1 Begin by dragging the Floating Box icon (A) from the Basic tab of the CyberStudio Palette onto an empty page you've named *Splash.html*. You do this once for each image in your animation (in this case, three images). Into each floating box, drag an Image placeholder (B) from the Basic tab of the Palette. In the Image Inspector, specify the image file with the Browse button (C) or use the Point & Shoot button (D) to find the image in the Site window. Resize the floating boxes so they fit snugly around their images, and then position the boxes where you want the images to be at the end of the animation.

2 To animate the first floating box, click on the edge of the box to select it. Then open the Timeline Editor by clicking on the Timeline Editor button (E) in the upper right corner of the document window. In the Timeline Editor window, there are three tracks and three keyframes, one for each of the floating boxes. These keyframes represent where the images will end up, so you need to reposition them along the timeline.

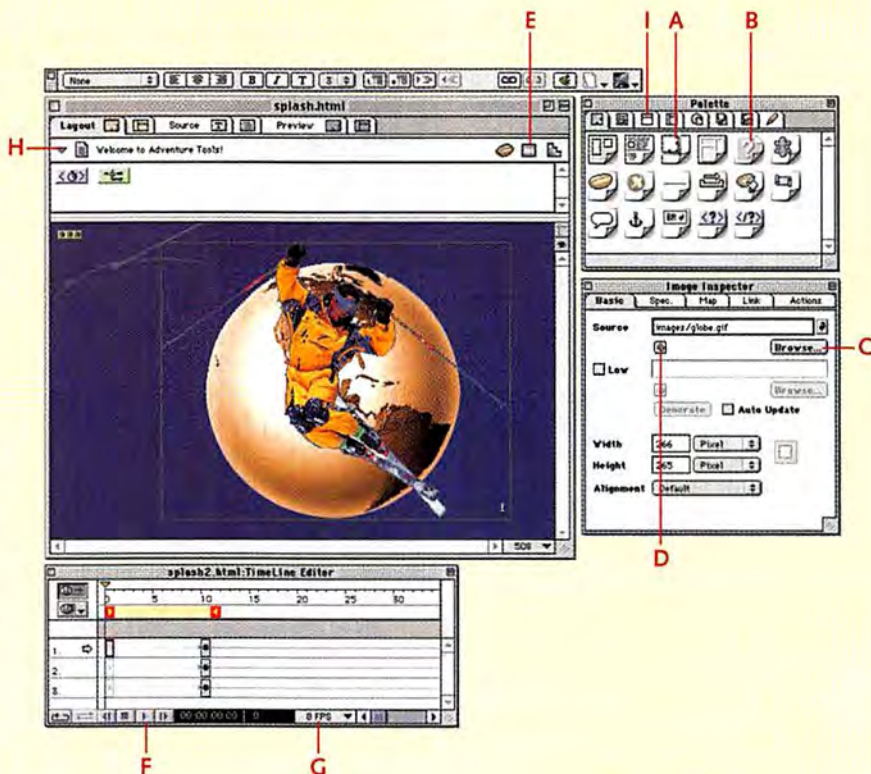
3 Decide how long you want the animation to last, and drag the three keyframes to that spot on the timeline. After you move the keyframes, you'll notice that each track leaves behind a dimmed keyframe at the beginning of the timeline (indicating that the track is not visible at that point on the timeline). Click on the dimmed keyframe on track 1 to select it. Click on the Visible check box in the Floating Box Inspector, and then drag the floating box in the document window to where you want it at the beginning of

the animation. Click on the play button (F) at the bottom of the Timeline Editor to preview your animation. You can adjust the speed of the animation by changing the frames per second via the FPS pop-up menu (G) at the bottom of the Timeline Editor.

4 If you want, you can add keyframes in the middle of the animation by ⌘-clicking on a track on the timeline. This allows you to create a complex path the image will follow. You can smooth the path by choosing Curve under Animation Type in the Floating Box Inspector.

5 Repeat the above processes to animate the other two floating boxes.

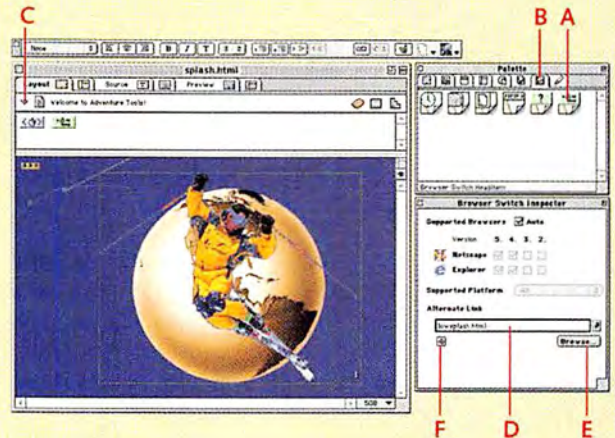
6 Now, to make the splash screen switch automatically to the home page, you'll use an HTML tag that goes in the header of the page. It's a short bit of code, so if you like you can switch to CyberStudio's Source mode and type `<meta http-equiv="refresh" content="5;URL=index.html">` between the `<HEAD>` and `</HEAD>` tags. If you prefer Layout mode, click on the disclosure triangle (H) at the top of the splash page to open up the Head Section of the page. Under the Head tab (I) in the Palette, drag the Refresh icon to the Head Section. In the Refresh Inspector that appears, enter a delay time in seconds (5 is a good number), click on the URL button, and enter the name of the page to which you want to jump.



What Browser Is That?

FANCY DHTML ANIMATION LOOKS GREAT TO PEOPLE WHO have version 4.0 or later browsers, but people with earlier versions (and that includes most people who use America Online) won't see the animation. For these folks, the Adventure Tools splash page will just look like a blank colored page. You can't control what browsers people use, but you can make your page handle older browsers gracefully by having it perform *browser detection*, which sniffs out the browser version that's loading the page. If the browser is capable of handling DHTML, the page loads normally. But if it isn't, the browser switches to a simpler page you've prepared without DHTML. You can use browser detection on the entry page of your site to redirect users with older browsers to a completely different, simpler version of your site.

- 1 To add browser detection to the splash page, drag the Browser Switch Item (A) from the CyberObjects tab (B) in the Palette to the header of the splash page (click on the disclosure triangle (C) to open up the Head Section).
- 2 The Inspector window changes to the Browser Switch Inspector. It's usually fine to leave Supported Browsers set to Auto, but if you have custom JavaScript on your page that you know works

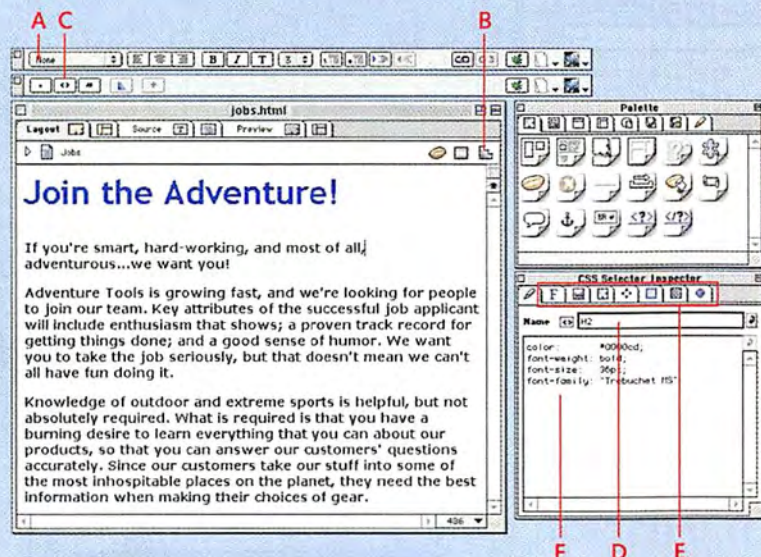


with some older browsers, you can enable those browsers here. In the Alternate Link field (D), type the name of the page to which you want the user's browser to jump if that browser doesn't pass the version test. You can also use the Browse button (E) to find the alternate page on your hard drive, or you can use the Point & Shoot button (F) to select a page in the Site window.



Styling Text

CASCADING STYLE SHEETS HELP SOLVE A PET PEEVE OF WEB DESIGNERS: LACK OF FINE control over the style and appearance of text. The detailed ins and outs of Cascading Style Sheets are beyond this article's scope, but we can show you how to create Tag Styles, which let you apply style rules to any HTML tag within a document. For example, you can apply instant styling to all of the <H2> tags throughout your document so that when you change the style definition, all text in your document tagged as H2 also changes.



- 1 Select some text on your page and choose Header 2 from the tool bar's Paragraph Format pop-up menu (A). To create a text style sheet, click on the Style Sheet button (B) at the top of the document window. A new style-sheet window opens and the style tool bar appears on top. Click the New Tag button (C) on the tool bar.
- 2 In the CSS Selector Inspector, type H2 in the Name field (D). Type in the name of a valid HTML tag, but omit the usual angle brackets (< and >). Set the font, style, background, alignment, and other attributes for the new H2 style using the rest of the tabs (E) in the CSS Selector Inspector. Note that as you change the attributes, the text you designated as H2 also changes. When you're done, the formatting you selected appears under the Basics tab (F).

Make Easy Rollover Buttons

ONE OF THE MOST USEFUL AND COMMON DHTML EFFECTS IS the button rollover. This simple animation makes a button change appearance when the user moves the mouse cursor over the button or clicks on it. What actually happens is that the browser swaps one version of the button image for another. The Adventure Tools site uses rollovers in the navigation bar on the main page. Here's how.

1 First, make a button. Adobe's ImageStyler and Macromedia's Fireworks make creating rollover buttons a snap, much easier than with Adobe Photoshop. But no matter what you use, make sure the different images for the button's various states (rollover, click on, and so forth) are exactly the same size and resolution. Otherwise, the browser will scale the second image to fit into the same space the first image took up, and the transition between the images will look awkward.

Also make sure your buttons are opaque GIFs or JPEGs, not transparent GIFs. If the image is transparent, the user will see one button on top of another, instead of one button replacing another.

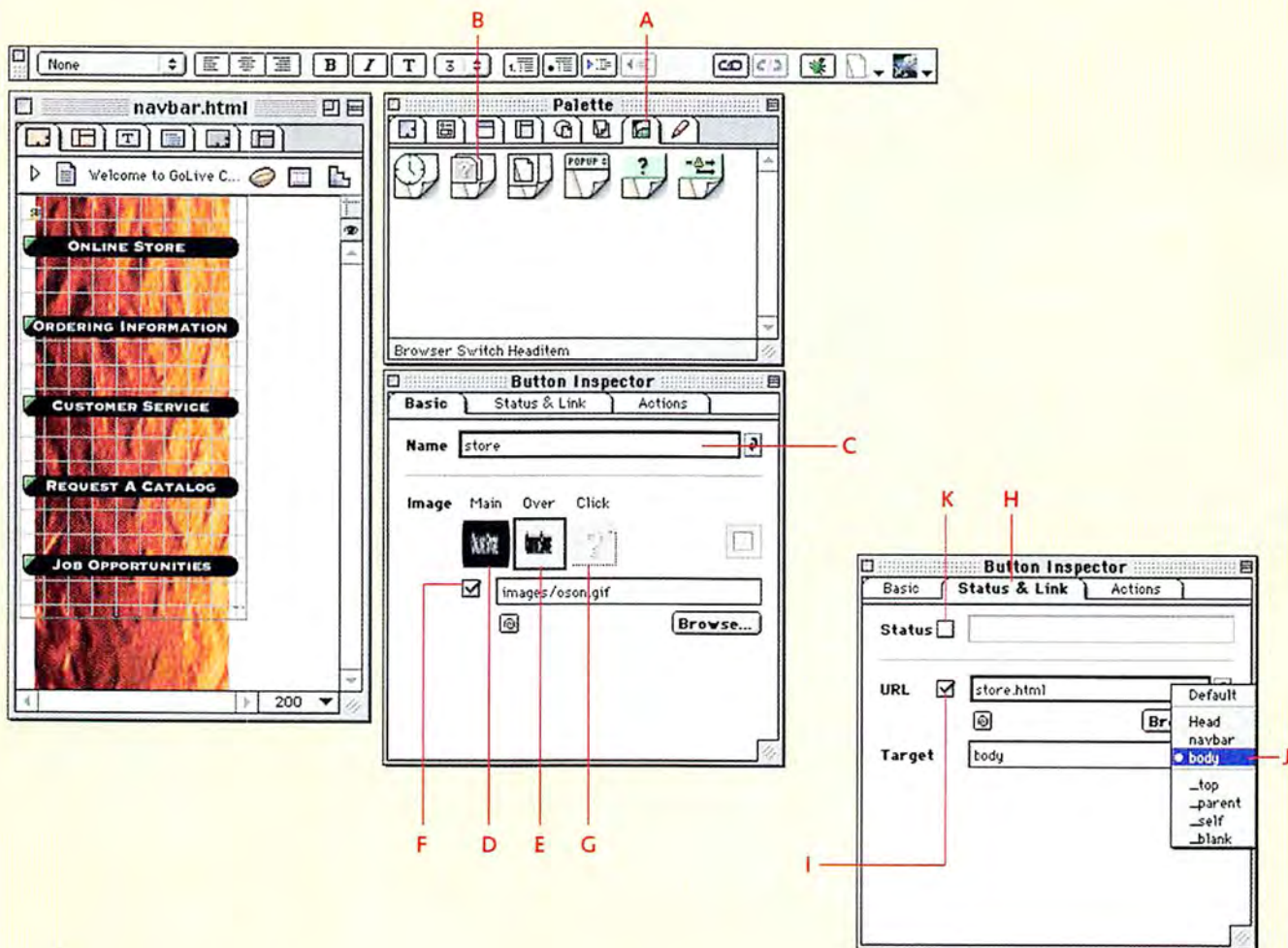
2 Now open the page that will contain the button. In the CyberStudio Palette, click on the CyberObjects tab (A), and then drag the Button Image icon (B) to the document window.

3 Name the button in the Button Inspector (C), and then click on the square marked Main (D). This is the image you'll see when the cursor is not hovering over the button. Use the Browse button or Point & Shoot button to select the image.

4 Click on the box in the Button Inspector marked Over (E). Click on the check box next to the Image Path field (F), and then use Browse or Point & Shoot to select the image you'll see when the cursor is over the button. If you like, you can repeat the process a third time with the Click box (G), which replaces the button image with a third image when the user clicks on the button.

5 Buttons are usually linked to other pages. Click on the Status & Link tab (H), click on the URL check box (I), and then use Browse or Point & Shoot to create the link to the new page. Because the navigation bar on this page is part of a frame set, you'll need to set the target of the link. Choose Body from the pop-up menu next to Target (J).

TIP If you want a text message to show up in the status bar of the browser when the user rolls the cursor over a button, click on the Status check box (K) and enter your message.



Think Again.

Finally, A Cross-Platform Multi-User Internet Connection

Thinking of upgrading your home or business with a local network? Do multiple users need to get on the Internet at the same time?

Then you better think about the new FriendlyNET™ Dual 56K Internet Connection from Asanté Technologies.

It's fast. It's easier to set up than anything on the market. It fits right on your desk. And it comes from the leader in small-office/home-office networking.

Hog blazing-fast bandwidth for yourself or share it among multiple users without the cost of additional Internet accounts. Connect a second phone line for 112Kbps of uninterrupted

Internet access—eight times faster than standard 28.8Kbps modems. You can even use your existing fax line without worrying about missed calls.



With browser-based software, plug-and-play design and cross-platform compatibility, you can have your whole office networked and everyone online within minutes. It's that simple.

Or, you could pay more for something else and struggle trying to make it work. The choice is yours. The answer is clear. FriendlyNET—Speed, Simplicity, Savings.

For complete details on the entire line of Asanté networking solutions call 1-800-303-0283.



Simply fun
Simply creative
Simply educational
Simply great for business

Simply **Macworld**
EXPO

There's nothing else like it!

It's simply amazing. In a very short time, vast new horizons have opened up in the Mac market. Anything--and everything--is now possible! Discover the most exciting new possibilities at MACWORLD Expo!

See and demo all the hot new products from hundreds of industry-leading vendors. Stay on top of new developments that could impact your buying decisions. Take advantage of money-saving specials when you buy products right on the show floor! Network with industry experts and make deals with other professionals. MACWORLD Expo is the best place to learn about the hottest solutions for:

- education and development
- advertising and graphic design
- printing and publishing
- home computing
- digital content creation, management and delivery
- the Internet
- software development
- new media
- gaming

Sponsored by:

Macworld
MacWEEK

eMediaweekly.com

Managed by:

IDG
EXPO MANAGEMENT
COMPANY

Experience
the best at
MACWORLD Expo --
the coolest place to visit this
summer! You simply have to be at
MACWORLD Expo!
Visit **www.macworldexpo.com**
or call **800-645-EXPO**

Yes! Please send me more information on
MACWORLD Expo! I'm interested in:

☐ Attending ☐ Exhibiting

Name

Title

Company

Address

City/State/Zip

Phone Fax

Email

(If you would like to receive information via email about MACWORLD Expo)

Mail to: MACWORLD Expo, 1400 Providence Highway,
PO Box 9127, Norwood, MA 02062. Or Fax to: 781.440.0357

THIS IS NOT A REGISTRATION FORM.

MCW

Extend QuarkXPress

FREWARE AND SHAREWARE XTENSIONS THAT BOOST PRODUCTIVITY

by David Blatner

Almost all QuarkXPress users know about XTensions—those plug-ins that add functionality to XPress—but relatively few people go out of their way to use them. This is unfortunate, because although QuarkXPress is a good program, you won't really see it shine until you start using it with XTensions.

There are two reasons people tend to shy away from XTensions: First, it's often cost-prohibitive for small companies to buy more than one or two (so some don't buy any at all). Second, people still feel the burn of the worst disaster in desktop publishing history: Pasteboard XT.

When Pasteboard XT first came out, it changed people's documents so that you had to have this free XTension loaded to be able to open the document. People were so angry that the developer soon released a new version to fix the problem. But in the short time that lapsed, the old XTension made its way around the world. Even though every version of the XTension since then has removed the requirement, the old version still haunts us. (If you run into this problem, visit the Markzware Web site [www.markzware.com] to get a newer version of the XTension or PBFix; then just open the file and resave it. Also from Markzware, Pasteboard XTterminator batch-removes the requirement from all the XPress documents on your hard drive.)

If you suffer from XTension woes, the antidote is an abundance of other XTensions that are free or really inexpensive and that cure headaches rather than cause them. We can't guarantee that the XTensions in this article are bug-free, but most of them are so simple that not much can go wrong. For all of you who have asked, "Why won't XPress let me do this?" the answer is just a download away.



Watch Out

One of the most important rules of XTensions is: Be careful of the outdated ones. Some older XTensions—such as the Bob and Son of Bob XTensions from Quark—can cause major crashing problems with newer versions of XPress. Other older XTensions may cause subtle problems or simply won't run. It's best to avoid using an XTension on important documents until you know that it works for you.

Another potential pitfall is not having enough RAM allocated to QuarkXPress. The more XTensions you have loaded, and the more complex those XTensions are, the more RAM XPress needs.

Maximum Efficiency

While some users still balk at using XTensions, it's clear that adding functionality to XPress will increase your productivity. Sure, there are expensive XTensions out

there—and the people who need them are happy to pay for them. There are also low-cost bundles of XTensions—such as QX-Tools, from Extensis (www.extensis.com); XPert Tools, from a lowly apprentice production (www.alap.com); and Xdream, from Vision's Edge Software (www.visionedge.com)—that offer a lot of punch for a little money. Nothing beats the joy of a freeware or shareware XTension that saves you an hour's worth of time. Of course, not every XTension in the sidebar "Essential Shareware XTensions" will be a perfect fit for what you need, but you should be able to find at least a few jewels here. **m**

DAVID BLATNER is the author of *The QuarkXPress 4 Book* (Peachpit Press, 1998) and *Real World Photoshop 5* (Peachpit Press, 1999). You can find him at www.peachpit.com/blatner/.

continues

Essential Shareware XTensions

DOWNLOADS TO FINESSE QUARKXPRESS



QUARK'S XTENSIONS Quark (www.quark.com/ftp007.htm) has released several XTensions, including two that are must-haves for anyone who makes pages in QuarkXPress.

Type Tricks adds Make Fraction and Make Price features (which automatically format fractions and prices), plus the ability to remove all manual kerning or add word spacing to selected text.

Jabberwocky fills any text box with (sometimes humorous) dummy text. If you're tired of the old *lorum ipsum*, then this is the XTension for you.

Quark's Web site offers several other XTensions, such as a filter that lets you import GIF images and another that lets you import text from Microsoft Word 98.



TEXT QuarkXPress lets you do a lot with text, but there's always room for improvement. These four XTensions help you manage your text better than ever.

Sort Text (Durrant Software; www.durrant.co.uk) sorts every paragraph in a selection alphabetically or numerically (as long as the paragraphs are numbered).

Text Insets (Durrant Software) lets you change the text-inset amount for each of the four sides of a text box.

Word Counter XT (Markzware; www.markzware.com) counts the number of characters, lines, and words in your selection, your text box, or even the entire page. If you're an editor or a writer, this XTension is essential.

Overflow XT (Markzware) provides you with a palette that lists all *overset* text boxes (boxes that contain more text than they can hold). It even lets you automatically enlarge boxes until the text fits. Very nice.



PICTURES Any way to speed up working with pictures in XPress will put a smile on a production artist's face. Here are three XTensions that should do the trick.

DavidsPlace XT (Jintek; www.jintek.com) lets you import graphics or text without first having to make a picture or text box (it does so by creating a Place menu item you can choose from XPress's File menu). What's more, the XTension builds picture boxes on the fly that are exactly the size of the picture.

PictAttributes XT (Markzware) saves the scaling, rotation, skew, and offset of your graphics when you use Get Picture to replace an image in a picture box.

Drag-n-Drop XT (Extensis; www.extensis.com) lets you import pictures by simply dragging them from your desktop to your QuarkXPress page. If you've got a big monitor, you'll love this convenience.

EnhancePreviewXT-SE (Koyosha; www.koyosha.com) replaces XPress's murky screen previews of TIFF files with high-resolution images. It lets you see how your pages really look.



PREFERENCES Why can't you lock guides in XPress? Why is there no way to tell a spot color from a process color in the Colors palette? Fortunately, there are XTensions that let you control these and other preferences.

S&R Default Folder (Durrant Software) fulfills one of the most common requests: the ability to change the default settings in the Step And Repeat dialog box. It's easy, it's quick, and it's essential for any hard-core XPress user.

PageBorder XT (Vision's Edge Software; www.visionsedge.com) places a border around your page when you print your document. This is extremely useful when you're printing a proof of any page that's smaller than the paper you're using.

Bold Spot XT (Markzware) is the best at helping you determine which colors are spot colors and which are process in the Colors palette: when the XTension is loaded, all the spot colors appear in bold type.

Lock Guides XT (Markzware) gives you two options: lock all the guides or unlock all the guides. It's basic, but anyone who has ever accidentally moved a guide knows this could be a real lifesaver.



GENERAL PRODUCTIVITY Here are a handful of other XTensions that give you some clever shortcuts.

QX-Shadow (Extensis) is a godsend for anyone who has to make more than one drop shadow per week. It automatically builds drop shadows behind any object on your page. There are commercial XTensions with more features, but this one has everything that many people need.

xStyle (Em Software; www.emsoftware.com) lets you create, edit, and apply style sheets much faster and more conveniently than with XPress's built-in Style Sheets palette.

PasteBox XT (Markzware) lets you paste a box or group of boxes to another page, giving the box exactly the same placement on the new page that it had on the original. You can even paste the box or group to the same spot in another document.

Navigator XT (Vision's Edge Software) opens a palette that displays your page geometry and lets you navigate around your document quickly. Again, there are commercial XTensions that do this better, but this one is free.

Script Manager XT (Vision's Edge Software) is a natural for anyone using AppleScripts with XPress. It lets you list and run your scripts and even offers script sets and on-screen object naming (instead of making you do this through a script).

Say you saw it in Macworld. To purchase products advertised in this issue call the phone numbers below or log onto Macworld GetInfo at www.macworld.com/getinfo for FREE product information.

Page No.	Advertiser	getinfo	Phone	Page No.	Advertiser	getinfo	Phone	Page No.	Advertiser	getinfo	Phone
10	AEC Software	203	800/450-1982	4,5	GCC Technologies	43	800/422-7777	IBC	Newer Technology	55	316/943-0222
63	Agfa Corporation	158	—	91	Graphic Simulations	91	—	50	Number Nine	175	—
8	Agio Designs	265	800/688-2446					7	Palm Computing	—	—
6	ALSOFT	140	800/257-6381	54,55	Heidelberg CPS	17	—	135	ProDirect	135	800/524-9952
57	American Power Conversion	—	888/289-APCC	52	Hire Knowledge	207	800/937-3622	58	Pyrus North America	—	—
124-129	APS Technologies	62	800/285-0638								
16,101	Asanté Technologies	—	—	43	Infowave	—	800/663-6222	43	Quark	32	800/663-6222
49	ATI Technologies, Inc.	256	—	56	Interland, Inc.	10	800/599-0547	12,13	Quark	77	800/995-4343
51	ATI Technologies, Inc.	256	—	45	Iomega-JAZ	—	—	19	Silicon Graphics	215	888/744-4450
53	ATI Technologies, Inc.	256	—					14,15	Silicon Graphics	215	888/744-4450
				134	J&R Computerworld	282	800/221-8180	37-40	Sony	14	—
61	Boca Research	—	—	BC	Kensington	1	—				
139	Bottom Line Distribution	221	800/990-5693					24,25	Tektronix	—	—
				1,1FC	La Cie	—	—	59	ViewSonic	—	800/888-8583
137	CDW Computer Centers, Inc.	2	800/509-4239	130,131	Mac Zones	—	800/436-0606	73	Vimage	44	877/4VIMAGE
18	CE Software	—	—	107-115	MacMail	131	800/222-2808	8	VST Technologies, Inc.	73	508/263-9700
132,133	Club Mac	96	800/CLUBMAC	86	MacSoft	30	800/229-2714				
				64,65	MacSoft	28	800/229-2714	47	Wacom Technology Corp.	84	800/922-2585
92	Dataviz	—	—	116-123	MacWarehouse	150	800/434-3035				
21	Deneba Software	57	800/733-6322	136	Mega Haus	229	800/786-1184	9	Xerox Corporation	100	—
22	Diehl Graphsoft	46	410/290-5114	26	MicroMat	67	800/829-6227	11	XLRB by Interex	—	800/513-9744
				31	Mitsubishi Electronics America, Inc.	261	800/843-2515				
60	Earthlink Network	—	888/EARTHLINK								
96	Extensis	14	—								

Macworld

Product Index

A quick and easy product index from Macworld. Simply use this index to find the page or advertiser of the products which interest you. Then log onto GetInfo at www.macworld.com/getinfo to request more information. You can choose to have the information delivered too you by e-mail, postal mail or telephone.

Page No.	Advertiser	getinfo	Page No.	Advertiser	getinfo	Page No.	Advertiser	getinfo	Page No.	Advertiser	getinfo
SOFTWARE			HARDWARE			1, IFC			MAIL ORDER		
BUSINESS			BOARDS			136			124-129		
10	AEC Software	203	49	ATI Technologies, Inc.	256		Mega Haus	229		APS Technologies	62
			51	ATI Technologies, Inc.	256	135	ProDirect	135	139	Bottom Line Distribution	221
CAD/CAM			53	ATI Technologies, Inc.	256	INPUT DEVICES			137	CDW Computer Centers, Inc.	2
22	Diehl Graphsoft	46	IBC	Newer Technology	55	BC	Kensington	1	132,133	Club Mac	96
COMMUNICATION			73	Vimage	44	MISCELLANEOUS			134	J&R Computerworld	282
92	Dataviz	—	11	XLR8 by Interex	—	57	American Power Conversion	—	130,131	Mac Zones	71
ENTERTAINMENT			COMPUTER SYSTEMS			7	Palm Computing	—	107-115	MacMall	131
91	Graphic Simulations	91	124-129	APS Technologies	62	47	Wacom Technology Corp.	84	116-123	MacWarehouse	150
86	MacSoft	30	107-115	MacMall	131	MODEMS			136	Mega Haus	229
64,65	MacSoft	28	132,133	Club Mac	96	61	Boca Research	—	135	ProDirect	135
GRAPHICS/DTP			DIGITIZERS/SCANNERS			NETWORKING			SERVICES		
21	Deneba Software	57	63	Agfa Corporation	158	16,101	Asanté Technologies	—	MISCELLANEOUS		
96	Extensis	14	54,55	Heidelberg CPS	17	POWERBOOK			52	Hire Knowledge	207
58	Pyrus North America	—	DISPLAY			8	VST Technologies, Inc.	73	ON LINE		
12,13	Quark	77	31	Mitsubishi Electronics America Inc.	261	PRINTERS			60	Earthlink Network	—
37-40	Sony	14	50	Number Nine	175	4,5	GCC Technologies	43	60	Earthlink Network	—
UTILITIES			59	ViewSonic	—	24,25	Tektronix	—	56	Interland, Inc.	10
6	ALSOFT	140	EXPANSIONS/UPGRADES			9	Xerox Corporation	100	ACCESSORIES		
43	Infowave	—	73	Vimage	44	SECURITY			FURNITURE		
26	MicroMat	67	11	XLR8 by Interex	—	57	American Power Conversion	—	8	Agio Designs	265
43	Quark	32	HARD DISKS/STORAGE			SYSTEMS			DIRECTORY		
			139	Bottom Line Distribution	221	19	Silicon Graphics	215			
			45	Imega-JAZ	—	14,15	Silicon Graphics	215			

April 1999, Volume 16, Number 4. Macworld (ISSN 0741-6647) 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.

New iMac... Colors, Colors, Colors

iMac™ Essentials!

iMac™ Starter Kit

Includes:

- ▶ iMac Blue 7-outlet surge protector
- ▶ iCatch ergonomic mouse adapter
- ▶ iMac Blue CD-rack
- ▶ Web Buddy 2.0 software

MacMall Exclusive!



\$29.99

Ask for #42105
Shipped in
promotional
packaging

Epson Stylus Color 740 Printer

The Ideal Business Choice!

\$249.99

Ask for #34786

EPSON



SuperDisk 120MB Removable

\$149.99

Ask for #33844



Apple Computer Loan Disclosure — Based on 67 monthly payment amounts of \$22.90 per \$1000 purchased. 14.89% Annual Percentage Rate Subject to increase or decrease. Introductory Rate of 5.9% for 90 days. Loan origination fee of 4% of the amount financed added to loan balance on day 91. Payments deferred for the first 120 days. No prepayment penalty. On approved credit. Tax and shipping not included. ©1998 Apple Computer, Inc. All rights reserved. The Apple logo is a registered trademark and iMac™ is a trademark of Apple Computer, Inc.



iMac's starting

Grab an iMac for an incredible low price!

The translucent iMac combines all the possibilities of the Internet with the magic of the Macintosh. And now, you can own one for less than ever! This iMac offers the high

speed, easy-to-use USB, a built-in modem, a Pentium-toasting 233MHz G3 processor, 32MB of fast SDRAM, and surround sound—plus Mac OS 8.5 and a ton of outstanding software!

A technological wonder. And it's all yours.

Processor and Memory

- 233MHz Power PC G3 Processor
- 512K backside level 2 cache on processor module
- 133MHz dedicated 64-bit backside bus
- 66MHz system bus
- Integrated floating-point unit and 64K on-chip level 1 cache (32K data and 32K instruction)
- 32MB of SDRAM; two SODIMM slots support up to 256MB
- 64-bit memory bus

Storage

- Internal 4GB IDE hard disk drive
- Internal 24X (maximum) CD-ROM drive

Connectivity

- Two high speed Universal Serial Bus (USB) ports (12 Mbps), which support USB devices such as keyboard, mouse, printer, storage devices, and USB hubs

Communications

- Built-in 10/100BASE-T Ethernet
- 56Kbps modem supports K56flex and V.90 standards

Multimedia capabilities

- Incredible, high resolution display... MultiScan, tilttable shadow mask color display; 15-inch (13.8-inch diagonal viewable image size); .28mm dot pitch



Exclusive
Apple® iMac™
only
\$899*
#42999

*Regular price \$997. Price reflects MacMall \$50 Instant Rebate and \$49.95 mail-in rebates with the purchase of 32MB of memory upgrade at \$99, plus installation fee of \$30. Price before mail-in rebate is \$1076.99. 64MB or 128MB upgrades also available.

Order Any Time.
Open 24 Hours.

Order Today by 10pm EST—Get it Tomorrow by 10:30am

1-800-217-9492

Colors, Colors!

as low as \$899!

Order
and register to
WIN!
Register at: www.macmall.com



Win a 1999
Porsche Boxster!

What flavor is your new iMac?

Now, the world's best selling personal computer comes in colors! Choose from blueberry, grape, lime and strawberry translucent shades. Best of all, this iMac also offers

you more power, including a massive, 6GB hard disk, a faster-than-ever, 266MHz Power PC G3 processor, 32MB SDRAM, 24x CD-ROM drive, 2 built-in USB ports and more!

266MHz

It looks like the future. And it takes you there.

Not just a pretty face: this model has power!

- 266MHz Power PC G3 Processor
- Internal 6GB IDE hard disk drive for
- Internal 24X (maximum) CD-ROM drive
- Two high speed USB ports (12 Mbps), which support USB devices such as keyboard, mouse, printer, storage devices, and USB hubs
- 512K backside level 2 cache on processor module
- 133MHz dedicated 64-bit backside bus
- Mac OS 8.5 pre-installed
- AppleWorks, Adobe PageMill, and more!

Multimedia capabilities

- Incredible, high resolution display... MultiScan, tilttable shadow mask color display: 15-inch (13.8-inch diagonal viewable image size), .28mm dot pitch
- Supports millions of colors at up to 1024 x 768 resolution (24-bit)

MacMall Exclusive!

New!
iMac™
in 5 Yummy
Colors!

FREE Microtek Scanner!

\$1,198
only



● #42627 Blueberry ● #42623 Grape ● #42626 Lime ● #42625 Strawberry ● #42624 Tangerine

MacMall EXCLUSIVE!

**Take Your
Pick From
These 3
Promotions!**

With your
flavored iMac only!

Mystery Giveaway!

FREE



**With Every Purchase
call or visit macmall.com**

**Instant
Cash Back!**

\$50 off All products in this advertisement priced between \$1,197 & \$2,299
\$100 off All products in this advertisement priced between \$2,300 & \$2,499
\$150 off All products in this advertisement priced between \$2,500 & \$2,999
\$200 off All products in this advertisement priced between \$3,000 & \$3,499
\$250 off All products in this advertisement priced between \$3,500 & \$4,396
\$300 off All products in this advertisement priced between \$4,397 & up

No coupons to mail in. No checks to wait for. Just instant savings! Best of all, there is no limit—so order as many times you want, and keep saving.

**FREE Microtek
Color Scanner
w/your iMac™ Purchase!**

\$80 Value

Scanner is free after mail-in and instant rebates. Rebates valid through 2/28/99. While supplies last.



See our Web site for more deals!
savebig.macmall.com

Mention your Priority Code: #ZMWD941

MacMall
The Mall With It All...For Less!

Most Powerful, Best Graphics, Most Exp

Power Mac G3 Desktop!

with Microsoft Office 98!



266MHz

was \$1,798
now
\$1,598
#42613
Call for even
lower prices!

PowerPC G3
64MB RAM / 4GB HD
24X CD-ROM / 56K Modem
Microsoft Office 98
(pre-installed) Monitor sold separately.
Check out our Web site for the latest computer deals!
www.macmall.com

New Power Mac

The most powerful, expandable, revolutionary Mac ever built!

You could say it's like getting twice the computer at half the price—but it's more than that! The new Power Mac G3 isn't just a redesign. It's a revolution. With greater processing power.

Cutting-edge connections. Easy access inside and out. Remarkable affordability. And a fresh, new look inspired by the iMac. Put simply, it's faster, smarter, and easier to own than anything out there!

A new standard in speed and design!

Outrageous performance.

- PowerPC G3 processor running at 300, 350 or 400MHz
- Supports up to 1GB of low cost, high performance PC100 SDRAM
- Up to 1MB of performance-boosting backside cache running at up to 200MHz
- 6 or 12 GB Ultra ATA hard disk or a 9GB Ultra 2 LVD SCSI hard disk
- System bus running at 100MHz (instead of the 66MHz bus on earlier models) boosts performance speeds, reduces bottlenecks
- Support for hard disk storage up to a staggering 100GB
- Built-in 10/100BASE-T Ethernet networking; optional Gigabit Ethernet

Advanced capabilities.

- Two high speed FireWire ports for digital video and still cameras, printers, scanners and other multimedia peripherals
- Two USB ports for keyboards, mice, printers—up to 127 devices at once
- Four PCI slots running on a 100MHz

system bus—50% faster than in previous Power Macintosh G3 computers

Design elegance.

- Translucent case, inspired by the iMac
- Easy, drop down accessibility for installing cards, drives, and memory
- Convenient, built-in handles for easy carrying

Great graphics and video features.

- ATI RAGE 128 Graphics Accelerator provides incredible 2D/3D performance for graphics intensive games
- 16MB SDRAM video memory
- Built-in FireWire—ideal for digital video

BYTEmark integer test

Power Macintosh G3/400	13.31
Power Macintosh G3/350	11.51
Power Macintosh G3/300	9.85
Pentium II/450	6.22
Pentium II/400	5.6
Pentium II/350	4.9

MacMall EXCLUSIVE!
Take Your Pick From These 2 Promotions!

1 **Mystery Giveaway!**
FREE
with Every Purchase
call or visit macmall.com

2 **Exclusive Instant Cash Back!**

\$50 off All products priced between \$1,197 & \$2,299

\$100 off All products priced between \$2,300 & \$2,499

\$150 off All products priced between \$2,500 & \$2,999

\$200 off All products priced between \$3,000 & \$3,499

\$250 off All products priced between \$3,500 & \$4,396

\$300 off All products priced \$4,397 & up

No coupons to mail in. No checks to wait for. Just instant savings! Best of all, there is no limit—so order as many times you want, and keep saving.

All offers expire 3/22/99, unless otherwise noted or while supplies last.

We'll Beat ANY Advertised Price
on any Computer in stock! We'll beat any price on any Mac® or PowerBook from any authorized Apple® catalog reseller, retail store, online store or apple.com!

Add these to your order!

New Apple 17" Display

- 17" (16.0" viewable image size)
- .25mm aperture grille pitch
- Up to 1600 x 1200dpi @ 60Hz
- High-contrast, anti-reflective, anti-static coating

only **\$499⁹⁹** #42243



The SmartOne USB 56K V.90 Modem

- **FREE** Get Connected CD-ROM full of software to help you surf faster!

only **\$99⁹⁹** #42252

BEST DATA



Order Any Time.
Open 24 Hours.

Order Today by 10pm EST—Get it Tomorrow by 10:30am

1-800-217-9492

Available & Best Design



Authorized
Catalog Reseller

Speeds up to 400MHz!

Complete your Power Mac G3 system with a stunning new display! Apple's new 17 and 21-inch Studio Display monitors mount on a space-saving tripod—you can stow your keyboard underneath it when not in use!



only
\$1,598

#42614
or lease for as low as
\$64 per month

Check out our Web site for
the latest computer deals!
www.macmall.com

up to **400MHz**

Monitor sold separately

New Power Mac MiniTowers

Order	MHz	RAM	HD	Cache	CD/DVD-ROM	Price	Or Lease
#42614	300	64MB	6GB Ultra ATA	512K @ 150MHz	24X CD-ROM	\$1,598	\$64/mo.
#42615	350	64MB	6GB Ultra ATA	1MB @ 175MHz	DVD-ROM	\$1,998	\$80/mo.
#42616	350*	128MB	12GB Ultra ATA	1MB @ 175MHz	24X CD-ROM	\$2,498	\$100/mo.
#42617	400	128MB	9GB U2 LVD S	1MB @ 200MHz	24X CD-ROM	\$2,998	\$120/mo.

Monitor sold separately on all models. *Comes with Zip Drive.

Fast and Easy Access to Everything Inside!

The new Power Mac G3 lets you snap open a convenient side panel for immediate access to memory, cards and drives. At the heart of the system is a Power PC G3 processor, running at speeds up to 400MHz!



See our Web site for more deals!
savebig.macmall.com

Mention Your Priority Code: **#ZMWD941**

MacMall

The Mall With It All...For Less!

PowerBooks starting at \$1,998!

PowerBook Essentials!

HP DeskJet 340 Printer

- 600 X 300dpi black; prints up to 3ppm
- 300dpi color prints at 2ppm
- Includes FREE HP color kit with Color-Smart technology

#74711 **NEW!** HP DeskJet 340 w/Mac Adapter \$299⁹⁹

HP DeskJet 340
w/Mac Adapter
\$199⁹⁹ #41529
factory refurbished



HEWLETT
PACKARD
Expanding Possibilities

Internal Zip® for Your PowerBook

- 100MB capacity per disk
- 11.2MB/sec. transfer rate
- 29ms average seek time

Zip Drive
PowerBook G3
\$199⁹⁹
w/PowerBook purchase
#32071



Road Rocket!

- True 128 architecture for awesome graphics performance!

ixmicro



Road
Rocket
\$249⁹⁹
#33200

SPECIAL!

MacMall Offer

Get \$20 off off the price of this new Targus leather Notebook case when you order it with any notebook from MacMall!

TARGUS
A TRADITION OF EXCELLENCE



Notebook
Carrying Case
\$79⁹⁹
#30881

PowerBooks Price

Blazing Speeds up to 300MHz!

These PowerBooks are the sleekest, fastest, best-equipped notebooks you've ever seen! With the high-performance G3 processor, they outperform comparable Pentium and

Pentium II processor-based desktop systems, with go-anywhere, do-anything PowerBook convenience. Order the fastest performance ever in a notebook computer!

Stellar Features at an Affordable Price!

Processor and Memory

- 233, 266 or 300MHz PowerPC G3 processor—fastest performance ever in a notebook!
- 66MHz system bus speed
- Integrated floating point unit and 64K on-chip Level 1 cache (32K for data and 32K for instruction)
- 32 or 64MB RAM; 2 SO-DIMM slots support up to 192MB RAM; 4MB ROM

Storage

- 2, 4 or 8GB IDE hard drive
- 20X CD-ROM drive for use in expansion bay (comes w/DVD drive #41613)
- Removable 1.44MB floppy disk drive for use in expansion bay (see grid for details)

Expansion & Networking Ports

- Two hot-swappable expansion bays
- ADB port, SCSI port, Serial port
- Built-in 10BASE-T Ethernet
- RJ-11 modem port, 4Mbps Infrared (IrDA) port
- PC Card Slots for two Type II or one Type III PC Card

Graphics, Video & Sound

- Features high-quality display, up to 14.1 inches (diagonal)
- 2 or 4MB SGRAM video memory
- 2D/3D graphics, through integrated video controller

- Up to 14.1 inch (diagonal) displays feature built-in TFT XGA active matrix displays, supporting millions of colors at 1024 x 768 pixel resolution
- S-video output for connecting to a TV (13.3" & 14.1" displays only)
- 16-bit CD quality stereo input/output
- Two built-in stereo speakers

Portability

- Includes one Lithium-ion battery for up to 3.5 hours of normal use; supports two batteries for as much as 7 hours of use

Software

- Mac OS 8.5



VIKING
COMPONENTS

DON'T FORGET MEMORY! Upgrades for your PowerBook

#31437	16MB PowerBook G3	\$89 ⁹⁹
#31438	32MB PowerBook G3	\$115 ⁹⁹
#31440	64MB PowerBook G3	\$209 ⁹⁹
#31442	128MB PowerBook G3	\$409 ⁹⁹

Have your RAM professionally installed by one of our factory-trained technicians, for only \$30. Ask for #2214.

Order Any Time.
Open 24 Hours.

Order Today by 10pm EST—Get it Tomorrow by 10:30am

1-800-217-9492



Win a 1999
Porsche Boxster!

Drops up to \$601!

**Only
\$1,998**

#42618
or lease for as low as
\$80 per month

Check out our Web site for
the latest computer deals!
www.macmall.com

Faster than ever and
elegantly equipped!
Choose a G3 PowerBook
up to 300MHz, with an
optional DVD drive and
a luxurious, 14-inch display!

up to **300MHz**

MacMall EXCLUSIVE!

Take Your Pick From These 3 Promotions!

1
**Mystery
Giveaway!**
FREE
with Every Purchase
call or visit macmall.com

2
**Exclusive Instant
Cash Back!**

\$50 off All products priced
between \$1,197 & \$2,299
\$100 off All products priced
between \$2,300 & \$2,499
\$150 off All products priced
between \$2,500 & \$2,999
\$200 off All products priced
between \$3,000 & \$3,499
\$250 off All products priced
between \$3,500 & \$4,396
\$300 off All products priced
\$4,397 & up



No coupons to mail in. No checks to wait for, just instant savings! Best of
all, there is no limit—so order as many times you want, and keep saving.

3
FREE 64MB RAM
with your
**PowerBook®
Purchase!**



**\$209.99
Value!**

Huge Price Drops! New Models!

Order	MHz	RAM	Cache	HD	CD-ROM	Modem	Display	Weight	Was	Now	YOU SAVE	Or Lease
#42618	233	32MB	512K	2GB	20x	56K	12.1" Active matrix	7.8lbs.	\$2,299	\$1,998	\$301	\$80/mo.
#42652	233	32MB	512K	2GB	20x	56K	14.1" Active matrix	7.8lbs.	\$2,799	\$2,498	\$301	\$100/mo.
#42619	266	64MB	1MB	4GB	20x	56K	14.1" Active matrix	7.8lbs.	\$3,499	\$2,998	\$501	\$120/mo.
#42621	300	64MB	1MB	8GB	20x	56K	14.1" Active matrix	7.8lbs.	\$4,499	\$3,998	\$501	\$160/mo.
#42622	300	64MB	1MB	8GB	DVD	56K	14.1" Active matrix	7.8lbs.	\$4,999	\$4,398	\$601	\$176/mo.
#31414	Floppy Drive Disk			\$99								

See our Web site for more deals!
savebig.macmall.com

Mention your Priority Code: #ZMWD941

MacMall
The Mall With It All...For Less!

If You Don't See it,

USB Peripherals for the iMac and New PowerMac G3s!

COMPU CABLE **NEW! iDock Swivel and Docking Station!**
Make your iMac adjustable! This swivel base unit comes w/3 USB, 2 serial and 1 parallel port for connecting all peripherals.

\$199⁹⁹
#41679

Epson Stylus Color 740 USB Printer

Epson's advanced Micro Piezo™ technology produces smaller than ever inkdrops for rich, finely-detailed printing!

\$249⁹⁹
Ask for #34786

AGFA SnapScan 1212U Scanner

- 1200 x 600dpi true optical resolution
- 36-bit ultra-high color sensitivity
- Captures images up to 8.5" x 11.7"

\$129⁹⁹
#41512

SuperDisk

120MB Removable drive
The perfect drive for the iMac!
Two drives in one—uses both 120MB SuperDisk diskettes and conventional 1.44MB diskettes.

\$149⁹⁹
#33844

Includes a FREE 120MB disk

NEW USB Graphics Drawing Tablet! PenPartner features:

4" x 5" active-area tablet with pressure sensitive pen. Includes paint & draw software.

WACOM

\$99⁹⁹
#42112

Now! Reserve One Now!

Sony Multiscan 100ES Monitor

CPD-100ES 15"/14"
1280 x 1024/60Hz/.25mm

\$199⁹⁹
#23949

1 YEAR WARRANTY

\$30 Price Drop!

SONY

PaperPort Strobe™ Scanner

- 24-bit color
- 300 x 600dpi optical resolution
- 2400dpi only

\$99⁹⁹
#32976
Factory refurbished. While supplies last.

PAPERPORT Strobe

1 YEAR WARRANTY

Palm III™ 2MB Organizer

Includes cradle, desktop software, stylus, flip cover, backlit screen and batteries

\$299⁹⁹
#32548
Reg. price \$345.99. While supplies last!

Palm III

3Com

Sony 200ES 17" Display

- 17" CRT, 16.0" viewable image
- 1280 x 1024 res.
- .25mm AGP

\$349⁹⁹
#38431

With purchase of a Mac. Regular price \$399.99, #24681

SONY

SAVE \$50!

HP LaserJet 4MV Tabloid-Size Printer

- Up to 11" x 17" prints
- Up to 16ppm
- PostScript and Ethernet ready

\$999⁹⁹
#66364
While supplies last.

HEWLETT PACKARD
(Expanding Possibilities)

Up to 11" x 17"!

Epson Expression 636 Professional 2

With full Photoshop 4.0 (free upgrade to 5.0 from Adobe) and transparency adapter!

\$749⁹⁹
#41364

Factory refurbished. While supplies last.

Mac User
MAC TODAY

EPSON

1 YEAR WARRANTY

Imega® Zip® 250MB SCSI External

Reads 250MB & 100MB Zip®

\$199⁹⁹
#41332

Factory refurbished. While supplies last! 1 Year Warranty! Call for more details!

zip
Imega

Smart One 33.6 External Modem

The lowest price around on an external modem!

\$199⁹⁹
#28937

Price reflects \$20 mfr. mail-in rebate. Expires 3/31/99.

BEST DATA

FREE Integrated data/fax software



SPECIAL! 56K V.90 External Modem

Get V.90 right out of the box.

\$69⁹⁹
#39443

Blowout! While supplies last! No rebates, no hassles.



Olympus D-600L Digital Camera with FREE Starter Kit

Includes 8MB FREE Memory and Battery Pack from Lexar Media

\$776⁹⁹
#42595

While supplies last!

OLYMPUS DIGITAL VISION™

SAVE \$100!

Internal Zip for Your PowerBook

Faster than desktop Zip Drives. No cables or batteries required! 100MB capacity per disk; 11.2MB sec. transfer rate.

\$199⁹⁹
#32071

With notebook purchase. Regular price \$299.99

VST TECHNOLOGIES INCORPORATED



Stylus Color 800 Printer

Award-winning photo-quality, high-performance business printing!

\$199⁹⁹
#41386

with CPU purchase. Reg. price \$249.99

EPSON

SAVE \$50



HP DeskJet 340 Portable Printer

The Perfect Companion to Your Apple PowerBook®
• 600 x 300dpi black; prints up to 3ppm
• 300dpi color prints at 2ppm

\$199⁹⁹
#41529

Factory refurbished. While supplies last!

HEWLETT PACKARD
(Expanding Possibilities)



Microtek ScanMaker 4

- Scans Slides Too... Two Scanners in One!
- Trilinear array color CCD
- 4096 shades of gray
- 600dpi x 1200dpi max.
- Cold Cathode lamp

\$659⁹⁹
#42329

Shipped in promotional packaging. While supplies last!

MICROTEK
(Better Images Through Innovation)

Get CorelDRAW 8 w/ScanMaker 4 purchase



Tripp Lite UPS BC Internet 325

- 4 AC outlets
- 2 Telco outlets

\$49⁹⁹
#41215

\$25 mail-in rebate

TRIPP LITE
(Power Protection)



Order Any Time.
Open 24 Hours.
Order Today by 10pm EST—Get it Tomorrow by 10:30am

1-800-217-9492

Call Us!

Over 1,200 Products

Introducing the
All New Mac Software Buyers Guide!

Call For Yours Today!
1-888-425-MALL
Visit our Online catalog at
software.macmall.com



HOTTEST SOFTWARE DEALS!

Adobe Photoshop
upgrade for as low as
\$129.99*
#30885
SAVE up to \$100

Adobe Illustrator
upgrade as low as
\$69.99*
#34389
*Prices reflect \$50 mfr. mail-in rebate good with purchase of new Macintosh G3. Upgrade purchase qualifies for \$50 rebate. Full version purchase qualifies for \$100 rebate. Rebate coupon included in G3 box. Limited time offer. Call for details.

New Spring Cleaning 3.0
New and faster features make hard drive clean-up a breeze!
new version for only \$18.99*
#42035
*Price after mfr. mail-in rebate for previous users. Offer expires 6/30/99.

Sidewinder Pro 3D Joystick
with any software purchase over \$100
FREE!
Ask for #39120 \$9.99 S&H applies. Shipped in promotional packaging. MacMail special discount price \$29.99 when sold separately. #39119

We do our best to be accurate, but occasionally mistakes occur. We are not responsible for any typographical, photographic or technical errors. Products and packaging may differ from stock available at time of shipment. We reserve the right to substitute equivalent items.

Norton Utilities 4.0

The #1 selling utility for the Mac.
Upgrade for only

\$44.99
#34661
Price reflects \$50 mfr. mail-in upgrade rebate for previous users.



#28475 Norton AntiVirus 5.0 **\$24.99***
*Price reflects \$40 upgrade/rebate. Price before rebate \$64.99

Stuffit Deluxe 5.0

Get 20% Better Compression!
New Version only \$29.99*
#36969
*Price reflects \$50 mfr. mail-in upgrade rebate for previous users. Offer expires 3/31/99.



Mac OS 8.5
Includes new Sherlock "find" technology.
for only \$88.99
#42990

FREE 30 day access to Art Today Website - 750,000 fonts & images!
Call for details



FileMaker Pro 4.1

Upgrade for only \$127.99

#35820
Price reflects \$50 mfr. mail-in competitive upgrade rebate for previous users. Price before rebate is \$177.99. Call for details.



Microsoft Office 98

Upgrade for only \$258.99
#26155
Ask your Account Manager about special offers with purchase.



SoftWindows 98 5.0

The fastest, most compatible software solution for running PC software on your Mac.

\$119.99
#34482
Price reflects \$40 mfr. mail-in rebate. Expires 3/31/99.



Adobe Acrobat 4.0

New! Call for details #43104



Director 7 Shockwave Internet Studio

The standard for creating powerful multimedia!
upgrade for only \$489.99
#38066



Myth II Soulblighter

Sequel to the Game of the Year!

only \$44.99
#42094



Get Ready for Tax Season and Make the Most of Your Money with Intuit

QuickBooks 4.0

#1 Best selling accounting software. The fastest and easiest way to manage your business.

- Speeds bill paying and invoicing
- Tracks customers, vendors, projects, accounts receivable and payable
- Includes integrated payroll

only \$114.99
#78817
CD Mac/Power Mac



#78919 QuickBooks Pro 4.0 CD Mac/Power Mac **\$184.99**

Quicken Deluxe 98

Get more for your money!

- Save money on taxes, insurance and mortgages
- Invest smarter
- Prepare for emergencies
- Customize reports

\$39.99
#14425
Price reflects \$20 mfr. mail-in rebate. Price before rebate \$59.99.



#14426 Quicken Basic 98 **\$29.99***
*Price reflects \$10 mfr. mail-in rebate. Price before rebate \$39.99

MacInTax Deluxe

with **FREE Spring Cleaning 2.0!**

\$49.99
#42964



#38562 MacInTax Mac/PPC CD **\$38.99**



See our Web site for more deals!
savebig.macmall.com

Mention your Priority Code: **#ZMWD941**

MacMall
The Mall With It All...For Less!



MacWAREHOUSE

Look for this symbol and **SAVE!**

Get an Apple

Apple • Epson • Iomega • Hewlett-Packard • Umax • Brother • Belkin

Epson Stylus Color 740 Printer

Now only **\$249⁹⁵!**
was \$279.95
PR14065

New low price!

- 1440 x 720 dpi w/smaller ink drops
- 60ppm black; 50ppm color
- USB compatible



Iomega Zip® USB Value Pack

Only **\$249⁹⁵!**
BND3035

- Includes:
- Translucent blue Zip drive
- 10 color disks
- Carrying case
- Disk caddy
- Media wallet



HP DeskJet 697c Color Printer

Only **\$219⁹⁵!**
BN5686



Expanding Possibilities

- 5ppm black; 1.7ppm color
- 600 dpi black; 600 x 300 dpi color
- iMac G3 USB compatible only
- Manufacturer's 1-year warranty



iMac USB Hubs

As low as **\$79⁹⁵!**
DEH4075



- Provides 4 additional USB ports for expanding your peripherals.
- iMac color case



DEH4075: 4-port USB iMac hub \$79.99
DEH4074: 7-port USB iMac hub \$129.99

Astra 1220u Duo Color Scanner

As low as **\$129⁹⁵!**
IN7260



- 600 x 1200 dpi resolution
- 36-bit color images



*Price after \$20 manufacturer's mail-in rebate. Price before rebate is \$149.95. Ask for coupon # AA1203. Offer expires 3/31/99.

NEW iMac/266MHz - available in 5 colors!



Blueberry
CPU1292

Grape
CPU1293

Lime
CPU1294

Strawberry
CPU1295

Tangerine
CPU1296

iMac 233MHz BLOWOUT!



Now only **\$899!**

Ask for item # CPU1260.

NEW iDock!

Adds Serial and Parallel ports to your iMac!

iMac 233MHz/4.0GB HD/original Bondi Blue
Ask for item # CPU1260Lease! for only \$32/mo.* **Only \$899**

iMac 233MHz/4.0GB/original Bondi Blue with additional 64MB RAM (not installed)
Ask for item # CPU1261Lease! for only \$37/mo.* **only \$1068.95**

iMac 233MHz/4.0GB/original Bondi Blue with additional 64MB RAM INSTALLED
Ask for item # CPU1262Lease! for only \$38/mo.* **only \$1098.90**

NEW! iDock, from CompuCable, expands iMac's connectivity. iDock is a swivel base with an Integrated 3-port USB Hub plus 2 Apple Serial/Geo Ports and 1 Parallel Port. With iDock, iMac can be connected to native Mac serial devices and multi-platform parallel devices. iDock is molded in Bondi Blue to match iMac perfectly.

Ask for item # DEH4254 **\$199.99***

CompuCable ISpeakers for iMac

Ask for item # EX9774 **\$34.99**

*Leases are only available to business customers with approved credit on product orders where at least one product totals \$750, or more. Lease payments are based on a 36-month, Fair Market Value. Call today to see how you can qualify. Lease terms are subject to change. **Savings based on individual products sold separately as of this magazine printing.

iMac GAMES BUNDLE

Get 5 great gaming software titles*

FREE!
when you purchase an Apple iMac G3.

Item # AAA0715

Includes: You Don't Know Jack 2, Marathon, Soitaire Mania, Abuse and Video Casino



Save over \$130!



*Retail packaging shown for promotional purposes only. Shipped in promotional packaging on CD-ROM. Games Bundle must appear on the same invoice as iMac. Offer good while supplies last.

MYST

Broderbund®

- Challenge your puzzle-solving skills in the island world that is Myst!

FREE

with any purchase from MacWAREHOUSE®
Item # AAA0742



*\$3.95 shipping and handling applies. Shipped in promotional packaging. Hurry! Offer good while supplies last.

PAGE 1 OF 8

EXTENDED KEYBOARD & MOUSE

Only **\$49⁹⁵!**
w/iMac purchase
Ask for item # BND2908.

Save over \$50!



- Keyboard features quiet soft touch w/tactile feedback Keypress control
- Mouse features an excellent feel, shape, and 275 dpi resolution



*Keyboard/mouse and iMac must appear on the same invoice.

BROTHER HL-1040 LASER PRINTER

Only **\$379⁹⁵!**
Ask for item # BN6035.

NEW!



- Includes USB connectivity kit for the iMac
- Fast! Prints 10ppm
- 600 x 600 dpi resolution



iMAC ACCESSORY KIT

Only **\$49⁹⁵!**
w/iMac purchase
Ask for item # DSP1642.

Save \$30!



- Includes: SurgeMaster surge suppressor, iMac CD holder (holds 10 CDs), ErgoPad Premiere wrist rest, ErgoPad Premiere mousepad.



*Accessory Kit and iMac must appear on the same invoice.

iMac G3 as low as \$899!

See below for details.

CALL FOR A
FREE
FULL-COLOR
CATALOG!



Grolier • Imation • Farallon • DataViz • MetaCreations • Agfa

New!
**266MHz
iMac!**

The brand new 266MHz
iMac blows the doors
off anything else
on the information
superhighway!



See the complete line of G3s at
www.apple.warehouse.com

Visit us at:
buymacgames.warehouse.com

for our full
selection of
great games
for the Mac!



Blueberry: item # CPU1292!
Grape: item # CPU1293!
Lime: item # CPU1294!
Strawberry: item # CPU1295!
Tangerine: item # CPU1296!

\$1199
Only

Lease! for only \$42/mo.!

- 266MHz PowerPC G3 Processor
- Built-in 15" Color Monitor (viewable size: 13.8")
- 32MB (256MB max.) • 6.0GB hard drive
- 512K Backside Level 2 Cache • 6MB of Video RAM
- Built-in 24X CD-ROM drive
- Built-in 56Kbps Modem • Mac OS 8.5
- Built-in 10/100Base-T Ethernet

**iMac SuperDisk
USB Drive**

Only
\$149.95!
ORI2793

- 120MB capacity
- USB interface for easy plug and play, hot-swappable storage
- Reads and writes 3.5" diskettes

iMac LS-120MB SuperDisks (5-pack), only \$64.99. Ask for item # ME7927.

**Farallon® EtherMac iMac
iPrint Adapter**

Only
\$109.99!
DEP1734

- Connects your iMac to LocalTalk printers and other Macintosh computers
- Easy plug-and-play installation

**Agfa 1212u
Scanner**

Only
\$99.95!*

after \$30 rebate* with the purchase of an iMac or Apple Power Mac G3.

- Translucent blue! • 36-bit color

*Price after MacWAREHOUSE \$30 mail-in rebate. Price before rebate is \$129.95. Offer expires 3/31/99. Rebate coupon available at www.warehouse.com/rebate/napacn, or ask for coupon # AA1429.

Stuffit Deluxe 5.0

Only
\$29.95!*

w/iMac purchase
AAP0580

- Offers 20% better compression than previous versions

*Apple iMac G3 and Stuffit Deluxe must appear on the same invoice. Price for Stuffit Deluxe without iMac purchase is \$79.95. Ask for item # AAP0580. While supplies last.

**DataViz MacLinkPlus
Deluxe v.10.0**

Only
\$59.95!*

w/iMac purchase
AAP0545

- Open, use, and convert files for the latest applications.

*Apple iMac G3 and MacLinkPlus Deluxe must appear on the same invoice. Price for MacLinkPlus Deluxe without iMac purchase is \$99.95. Ask for item # AAP0545. Offer expires 3/31/99.

**Savings based on individual products sold separately as of this magazine printing.

iMac FAMILY COLLECTION

4 great learning titles
the whole family can
enjoy for only
\$49.95!*

when you purchase
an Apple iMac G3.
Item # AAP0562

Includes: Grolier Encyclopedia 98, Mavis Beacon Teaches Typing 5.0, PrintMaster Gold Suite, and Math Blaster Jr.

*Retail packaging shown for promotional purposes only. Shipped in promotional packaging on CD-ROM. Family Collection must appear on the same invoice as iMac. Offer good while supplies last.

iMac GAMES BUNDLE

Get 4 great
gaming software
titles to enjoy
for only
\$39.95!*

when you purchase
an Apple iMac G3.
Item # AAP0581

Includes: 3D Ultra Pinball-Lost Continent, Civilization II, Myth, and F/A-18 Hornet 3.0

*Retail packaging shown for promotional purposes only. Shipped in promotional packaging on CD-ROM. Games Bundle must appear on the same invoice as iMac. Offer good while supplies last.

1-800-725-1450 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

**MacWAREHOUSE EXPRESS DELIVERY
OVERNIGHT!**

In-stock items,
call by midnight (E),
or order online by 10pm (E).



Hi, I'm Chris. Call me
for more great deals!



MacWAREHOUSE

New! Screamin'-Fast Apple

Apple • Global Village • Iomega • Olympus

BestData 56K USB Modem

New! BEST DATA

Only \$99.99!
DMD4188

- 56,000 bps modem delivers data throughput up to 230,400 bps
- Mfr's 5-year limited warranty

BEST DATA

USB 56K V.90 Speakerphone:
Item # DMD4187 ONLY \$119.99!

100MB Zip USB Drive

Only \$149.95!
DR9464

New!



- Translucent ice blue
- USB compatible, works with your iMac!

Iomega 100MB Zip Disks

Only \$9.99!
each, in 10-pack



Gray 100MB Zip Disk 10-pack
Item # ME7756 ONLY \$99.95

Multi-color 100MB Zip Disk 10-pack
Item # BNS265 ONLY \$99.95

Olympus D-620L Camera

Only \$1199.95!
IN7515



- 1280 x 1024 ppi resolution
- 3X zoom with TTL SLR viewfinder

Accessories Kit: Includes leather camera case, 8MB SmartMedia Card, rechargeable batteries and recharger, AC adapter and software. Item # AC23606 ONLY \$199.95!

16MB SmartMedia Cards

Only \$79.95!
MY10247



- Digital film for digital cameras
- Compatible with most new digital cameras

NEW! Apple Power Mac G3s

Design, Features, and Speed You've Never Seen Before!

As low as \$1599!

ALL NEW POWER MAC G3s INCLUDE:

- Built-in ATI Rage 128 graphics card with 16MB of SDRAM graphics memory
- NEW!** Two ultra-fast FireWire ports — much faster than SCSI ports, and together they handle up to 63 devices
- Two USB ports — handle up to 127 USB peripherals
- 100MHz System BUS • One ADB port
- Built-in 10/100Base-T Ethernet connector

300MHz PowerPC G3/64MB SDRAM/6.0GB hard drive/24x CD-ROM drive/512K cache
CPU1282 ... LeaseIt! for \$56/mo.¹ \$1599

See the complete line of G3s at
www.apple.warehouse.com



APPLE 17" MONITOR
Only \$499!
Item # MON0786

NEW! POWER MAC G3/350MHZ MINITOWER

- 350MHz PowerPC G3 processor
- 64MB SDRAM (1.0GB max.)
- 6.0GB hard drive
- DVD-ROM drive (5X DVD/32X CD)
- 1MB backside level 2 cache

Only \$1999!
Item # CPU1283

LeaseIt! for only \$69/mo.¹



NEW! POWER MAC G3/350MHZ MINITOWER

- 350MHz PowerPC G3 processor
- 128MB SDRAM (1.0GB max.)
- 12.0GB hard drive
- 24X CD-ROM • Zip drive
- 1MB backside level 2 cache

Only \$2499!
Item # CPU1284

LeaseIt! for only \$87/mo.¹



NEW! POWER MAC G3/400MHZ MINITOWER

- 400MHz PowerPC G3 processor
- 128MB SDRAM (1.0GB max.)
- 9.0GB Ultra 2 SCSI hard drive
- 24X CD-ROM drive
- 1MB backside level 2 cache

Only \$2999!
Item # CPU1285

LeaseIt! for only \$104/mo.¹



NEW! MACINTOSH SERVER G3s

- 350MHz PowerPC G3 processor
- 128MB SDRAM (1.0GB max.)
- 9.0GB Ultra 2 SCSI hard drive
- 24X CD-ROM • AppleShare 6.1
- 1MB backside level 2 cache

Only \$3299!
Item # CPU1286

LeaseIt! for only \$114/mo.¹



400MHz PowerPC G3 Server/256MB SDRAM/Two 9.0GB Ultra 2 SCSI hard drives/24X CD/1MB backside L2 cache CPU1287 ... LeaseIt! for only \$173/mo.¹ ... \$4999

• Our sales staff is ready to take your order 24 hours a day, 7 days a week. We accept the following major credit cards: Visa, MasterCard, Discover Card/Novus, AmEx. Your credit card will not be charged until each item is shipped (no surcharge). CT, IL, NJ, OH, VA and WA residents add applicable sales tax.

• Overnight delivery just \$9.95 per order up to 5 pounds. For all orders over 5 pounds, shipping is \$9.95 plus an additional \$1.50 per pound or fraction thereof. (Example: shipping for a 6 pound order is \$11.45). Please add an additional \$3.00 for all orders \$50.00 and under.

• Orders for "in-stock" items placed on weekdays up until 12:00 midnight (E), 10:00 pm (P) for internet orders, ship same day for

overnight delivery (barring system failure, etc.). We anticipate being able to ship "out-of-stock" items within 30 days.

• All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects. Call our Customer Service Department at 1-800-925-6227 for a Return Merchandise Authorization (RMA) number within 30 days of the original invoice date. Defective software will be replaced immediately upon receipt of the defective product. Defective hardware will be replaced or repaired at our discretion, except for products from Apple 1-800-SOS-APPLE (1-800-767-2775), or Tektronix (1-800-835-6100). These manufacturers must be contacted directly, and will repair or replace products at their sole

discretion. Should you return hardware to MacWAREHOUSE from Apple or Tektronix, you will be assessed a 15% restocking fee which will be charged to your account. All returns are subject to the following: 1. All products must be returned in original packaging. 2. Shipping and handling charges are not refundable. 3. Software and consumables are not refundable unless returned unopened in original packaging with documentation. 4. Custom orders and cables are not refundable. 5. Products designated as "all sales final" are not refundable.

Copyright © 1999 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. Item availability and price subject to change without notice. We regret that we cannot be

responsible for typographical errors. All prices shown in U.S. dollars. Micro Warehouse makes no representations or warranties of any kind and assumes no liability concerning whether any of the products or services sold by us are Year 2000 Compliant. Year 2000 representations and warranties may be supplied directly to our customers by the manufacturers or publishers of certain products.



We accept these major credit cards.

Power Mac G3s as low as \$1599!

Power Mac G3/300MHz Minitor. See left page for details.



Newer Technologies • Global Village • VST Technologies

Apple PowerBook Prices Slashed!

PRICE SLASHED \$300!

Now only **\$2199!**

WAS \$2499. ASK FOR ITEM # CPU1238.
Lease! for \$76/mo.*

- 233MHz PowerPC G3 processor • 32MB SDRAM
- 2.0GB hard drive • 20X CD-ROM drive
- 56K modem • 10Base-T Ethernet
- 512K backside level 2 cache
- 14.1" active-matrix color display

32MB G3 MEMORY UPGRADE
for PowerBook
only **\$159^{95!}**
Ask for item # CHP9820.



233 MHz!



APPLE POWERBOOK G3/266MHZ

- 266MHz PowerPC G3 processor
- 64MB SDRAM • 4.0GB hard drive
- 20X CD-ROM drive • 56K modem
- 10Base-T Ethernet
- 1MB backside level 2 cache
- 14.1" active-matrix color display



PRICE SLASHED \$300!

Now only **\$2699!**

was \$2999
Item # CPU1239
Lease! for only \$94/mo.*

APPLE POWERBOOK G3/300MHZ

- 300MHz PowerPC G3 processor
- 64MB SDRAM • 8.0GB hard drive
- DVD-ROM drive • 56K modem
- 10Base-T Ethernet
- 1MB backside level 2 cache
- 14.1" active-matrix color display



PRICE SLASHED \$900!

Now only **\$3499!**

was \$4399
Item # CPU1240
Lease! for only \$121/mo.*

APPLE POWERBOOK G3/300MHZ

- 300MHz PowerPC G3 processor
- 64MB SDRAM • 8.0GB hard drive
- 20X CD-ROM drive • 56K modem
- 10Base-T Ethernet
- 1MB backside level 2 cache
- 14.1" active-matrix color display



PRICE SLASHED \$1000!

Now only **\$2999!**

was \$3999
Item # CPU1259
Lease! for only \$104/mo.*

NEW! VST ZIP 100 DRIVE

- For PowerBook G3 Series
- Bootable (Mac OS 8 boot disk provided)

Internal
as low as
\$199^{95!}

Item # AAP0552
Iomega 100MB Zip disks 6-pack,
only \$79.95. Item # MED0394.
Apple PowerBook G3 Floppy Drive
Only \$109.95! Item # DRI2661.



*With the purchase of a 6-pack of Iomega Zip disks. Must appear on the same invoice.

PowerBook G3 Accessories

Zip Drive MEGA Kit!

All for only
\$249^{95!}
Item # BND3042

- Zip Drive (standard Zip) • Zip Wallet
- Ten Multi-color 100MB Disks*
- Carrying Case Zip Caddy
- Disk Drive TuneUp



* Zip Tools Utility software included on CD-ROM.

Newer BookEndz PowerBook Docking Station

Only
\$239^{95!}
DRI2765

- Easily connect your PowerBook to your desktop peripherals



PowerBook sold separately.

VST VST PowerBook G3 Battery

Only
\$199^{95!}
ACC3403

- Works with 1998 model G3 PowerBooks
- Lithium-ion battery



56K V.90 FaxModem PC Card

Only
\$159^{99!}
DMD3824

- K56 Flex and V.90 technology cuts Web page downloading time almost in half!



PowerBook Memory Upgrades

Call For
Our Latest
Low Prices!

- Installation available
- SDRAM



PAGE 4 OF 8

1-800-725-1450 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!

In-stock items, call by midnight (E), or order online by 10pm (E).





MacWAREHOUSE

Wow! Buy Mac OS 8.5

Apple • 3Com • Hitachi • Global Village • Sony • Macromedia • Microtek

NEW VERSION! Macromedia Dreamweaver 2.0

Upgrade only
\$129⁹⁵!
UPG0953

- Make complex site-wide changes quickly with integrated site map, global search and replace, and automatic link management

Serial number required at time of purchase. macromedia



Microtek ScanMaker X6EL

Only
\$249⁹⁵!
IN7420

MICROTEK

- 36-bit color images
- 600 x 1200 dpi optical resolution
- 8.5" x 14" legal size
- SCSI interface



Palm III Connected Organizer

Now only
\$269!
was: \$329
BN5506

New low price!

- Includes MacPac translation software
- Flash upgradable memory
- Easy-to-read screen



8MB Compact Flash Storage Cards

Only
\$39⁹⁵!
MY7648

- 8MB compact flash
- Digital film for brand name digital cameras including:



Nikon Kodak Konica

Global Village 56K V.90 Modem

As low as
\$99⁹⁹
when purchased at the same time as an Apple Power Mac G3 system!
AAP0491

Save
\$40!*

*Savings based on regular MacWAREHOUSE pricing as of this magazine printing.

Kensington USB-to-Serial Converter: A USB-to-Serial Converter must be purchased for any standard Mac Serial Modem to connect to a new Power Mac G3, only \$79.95. Ask for item # DAD1577.



Apple iMac G3

\$799!*
Only

Ask for item # RCPU1260.

APPLE POWER MAC G3 DESKTOP

only **\$1449!***
Ask for item # RCPU1204.

- 266MHz PowerPC G3 processor
- 32MB RAM (768MB max.)
- 4.0GB hard drive
- 24X CD-ROM drive
- 10Base-T Ethernet

- 233MHz PowerPC G3 processor
- 32MB RAM (256MB max.)
- 4.0GB hard drive
- 24X CD-ROM drive
- 56K modem • 15" color monitor

*Reconditioned system. Reconditioned computers may not include original application software. 90 days parts and labor warranty. All sales final. While supplies last.

Many other reconditioned Power Mac G3 models available. Call for details.



Monitors sold separately.

APPLE POWERBOOK 180C

- 33MHz 68030 processor • 14MB RAM
- 160MB hard drive • 14.4Kbps modem
- 8.4" active-matrix color display

Only
\$399!*
Item # RCPU1273

RCPU1195: PowerBook 180: 33MHz 68030 processor, 8MB RAM, 120MB HD, 14.4Kbps modem, 10" grayscale active-matrix display, ClarisWorks 3.0: ...only \$499*

*Reconditioned system. Reconditioned computers may not include original application software. 90 days parts and labor warranty. All sales final. While supplies last.



APPLE POWERBOOK 520C

- 25MHz 68LC040 processor • 20MB RAM
- 240MB hard drive • 19.2Kbps modem
- 9.5" passive-matrix color display, ClarisWorks 3.0: ...only \$799*

Only
\$699!*
Item # RCPU1107

RCPU1196: PowerBook 540C: 33MHz 68LC040 processor, 20MB RAM, 240MB HD, 19.2Kbps modem, 9.5" active-matrix color display, ClarisWorks 3.0: ...only \$799*

*Reconditioned system. Reconditioned computers may not include original application software. 90 days parts and labor warranty. All sales final. While supplies last.



HITACHI 17" MONITOR

HITACHI

- 17" monitor (15.9" viewable)
- Resolutions up to 1152 x 870 @ 75Hz
- 28mm dot pitch
- Manufacturer's 3-year warranty

Only
\$399⁹⁵!
Item # MON0548



SONY 420GS 19" MONITOR

SONY

- 19" monitor (18" viewable)
- 1600 x 1200 resolution
- 75Hz
- Manufacturer's 3-year warranty

Only
\$639⁹⁵!
Item # MON0762



Jaz 2.0GB Cartridges

Only **\$99⁹⁵!** each, in 5+ quantity
Ask for item # MED0508.

Quantity: 1-2 3-4 5+
Price: \$124.95 ea. \$109.95 ea. \$99.95 ea.

APC 500VA UPS

Only **\$149⁹⁹!**
Ask for item # DUP097.

• Manufacturer's 2-year warranty

• Full-time surge protection and instantaneous battery back-up to protect your equipment against brownouts, overvoltages, and blackouts.

Power Mac G3 32MB Memory Upgrade

Only **\$99⁹⁵!**
Ask for item # CHP0541.

• 32MB SDRAM DIMM

• Call for full selection

SUPER SAVINGS

Save up to 74% on Macworld—the magazine that keeps **you** on the cutting edge. PLUS get the Macworld Clip Art CD-ROM, loaded with an extensive collection of clip art images, digital stock photos and fonts! **FREE** with your paid subscription!

**74%
OFF**

Macworld Gaming Guide: 3-D Card Shoot-Out

Macworld

POWERBOOK G3 SUPERGUIDE

Top Mobile Secrets
Essential Add-Ons

MACWORLD PICKS
The Best Portable
Projectors

REVIEWS

Illustrator 8.0
Epson Stylus Color 200 Printer
Mortgage Utilities for Mac & PC
Professional Shareware



- ☐ 2 years • SAVE 74% • Just \$49.97 for 24 issues!
- ☐ 1 year • SAVE 64% • Just \$34.97 for 12 issues!

NAME _____ (PLEASE PRINT) _____ 5SRN1

COMPANY _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

E-MAIL _____

☐ Payment enclosed, ☐ Bill me later.

Annual newsstand price \$95.88. Non-U.S. add US\$20 postage per year. Canadian GST included.

Check us out on the Web —
<http://www.macworld.com>



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

Macworld®

Subscription Department
PO Box 54506
Boulder CO 80323-4506



& Get FREE Software!

*\$3.95 shipping and handling applies. Shipped in promotional packaging.



Nikon • Epson • Symantec • UMAX • Microsoft • Sony • Fuji • Wacom

Mac OS 8.5

As low as **\$89.95!**

Ask for item # SYS0292.

FREE Software

with your Mac OS 8.5 purchase!

- Cyber Patrol • Solitaire Mania
- Compton's Interactive Encyclopedia
- Virex • Art Mania 10,000

Ask for item # AAA0735

A \$135 VALUE!

Apple Authorized Catalog Reseller

*\$3.95 shipping & handling applies. Shipped in promotional packaging. †Price after MacWAREHOUSE \$10 mail-in rebate. Price before rebate is \$99.95. Offer expires 4/15/99. Limit one rebate per customer (or total of 5 rebates per customer site). Rebate coupon and full details available at www.appleos85.warehouse.com or call customer service at 1-800-390-0706.

Epson Stylus Photo 700 Printer

Only **\$249.95!**
PR13706

- 1440 x 720 dpi, 6-color technology
- Print up to 8.5" x 44" panoramas

Prints real photos & laser-sharp text!

Epson Stylus Photo EX: Enlargements up to 11.7" x 17", only \$499.95. Ask for item # PR13705.

Sony Digital Cameras

As low as **\$499.95!**

Sony FD51 Digital Camera:

- High speed 2x disk drive
- Only \$499.95. Ask for item # IN7214

Sony FD81 Digital Camera (shown):

- 1024 x 768 dpi • 10X zoom lens • Whole disk copy
- E-mail mode • 2.5" color LCD w/Solar Window™ Panel
- Only \$799.95. Ask for item # IN7364.

WACOM Intuos 6x8 Graphic Tablet

Only **\$329.95!**
INP1584

- Intelligent graphic tablet system for drawing, painting, and image editing.
- Intuos Pen with 1,024 levels of pressure sensitivity, built-in erase and programmable DuoSwitch

Designed for 2-D, 3-D and video applications!

FUJIFILM CD-Rewritables

Only **\$12.99!** each, in 30+ quantities
ME7730

- 650MB • 74 minute
- Jewel case

Quantity:	1-9	10-29	30+
Price:	\$15.99 ea.	\$13.99 ea.	\$12.99 ea.

NEW! NORTON UTILITIES 4.0

- HFS Plus compatibility
- Power PX native
- Enhanced SCSI/IDE support

Upgrade only **\$49.95!** after rebate
Item # UTI1383

\$50 rebate!

*Price after publisher's \$50 mail-in upgrade rebate. Price before rebate is \$99.95. Proof of ownership of previous version of Norton Utilities for Mac required. Limit one per customer. Rebate expires 30 days after purchase date. Copy of invoice required.

MICROSOFT OFFICE 98

Includes: Word 98, PowerPoint 98, Excel 98 and Outlook Express

Upgrade only **\$259.95!**
Item # UPG0778

BUS1150: Microsoft Office 98 Full Version... only \$449.95

HP PHOTOSMART C30 DIGITAL CAMERA

Only **\$399.95!**
Item # IN7521

- 1152 x 872 resolution
- 2x digital zoom
- 1.8" color LCD
- 4MB compact flash

WWW.WAREHOUSE.COM

Get a FREE gift* when you order online.

Every time you order from our full line of Mac products on the Web, you can get one of these FREE*:

- MYST, Vertigo 3D Dizzy, Newpoint Surge SAFE Protector, 3,000 Mega Clipart Pack & more!

*\$3.95 shipping and handling applies. Limit one per customer per order. Shipped in promotional packaging. While supplies last.

See our BLOWOUT SPECIALS and SUPER OFFERS — every day! Place your order online by 10:00 pm, (E) and get it the next day!

UMAX Astra 2400S Scanner

As low as **\$299.95!**
IN7230

- 36-bit color
- 600 x 1200 dpi resolution

*Price after mfr's \$50 mail-in rebate. Price before rebate is \$349.95. Ask for coupon # AA1442. Offer expires 3/31/99.

\$50 rebate!

1-800-725-1450 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!

In-stock items, call by midnight (E), or order online by 10pm (E).





MacWAREHOUSE

Upgrade to Adobe

Adobe • Kodak • Asante • Epson • Mactell • US Robotics • Amazon

DC210 Plus Digital Camera

Now only \$499⁹⁵!
IN7315
 was: \$699.95

Kodak

• 2X zoom lens
 • 1152 x 864 max. resolution
 • 1.8" color LCD display

AC adapter & BMB card now included!

DC210 Mac Connection Kit, only \$24.95! Item # AC63243

SoftWindows 98

Only \$129⁹⁵!
 after rebate
COM1055

• Enables Power Mac and iMac users to run Windows 98 applications

"Price after publisher's \$40 mail-in rebate. Price before rebate is \$169.95. Product must be purchased between 10/1/98-3/31/99. See sticker on packaging and coupon inside box for details."

INSIGNIA

Asante Fast 10/100 PCI Adapter

Only \$49⁹⁹!
DEC3343

• 10/100 PCI adapter (Mac/PC)
 • Auto negotiation

10/100 PCI Adapter 5 pack (Mac/PC), only \$239.99! Ask for item # DEC3344.

ASANTE

Extended On-Site Service

Six great reasons to get complete system coverage:

- 1 Toll-Free Technical Help available 24 hours a day!
- 2 Fast On-Site Support with next business day response in most areas for most items!
- 3 Free Replacement if unit cannot be repaired!
- 4 No Deductible — 100% coverage on parts and labor!
- 5 24- and 48-Month Coverage available from date of purchase!
- 6 Fully Insured — underwritten by A.M. Best!

Service you can depend on! Support and repairs are provided by DFS, which has been providing superior, price-competitive programs for over 20 years!

Consult the chart below to see which warranty best fits your needs:

Cost of Computer and/or Peripherals	Warranty Price (48 months)	Ask for item #
\$701 - \$1,200	\$99	WAR0001
\$1,201 - \$2,000	\$149	WAR0002
\$2,001 - \$3,000	\$189	WAR0003

Call your Account Manager for details on orders over \$3,000.

Call your sales representative today!

*Note: This promotion is not a service agreement, but an outline of coverage available through DFS. Please call Micro Warehouse, Inc. for information and read the complete Service Agreement from DFS for exact coverages, terms, and conditions. On-site service beyond manufacturer's warranty expires. Plan not available on international or Florida orders. All Returns not covered under the standard Micro Warehouse RETURN POLICY are subject to a \$25 Return Fee assessment.

PAGE 7 OF 8

Adobe Illustrator 8.0

• Art Brush: Save objects as Art brushes and apply to any path.
 • Smooth and Erase Tools: Quickly smooth and erase paths.
 • Actions Palette: Record and play back a series of steps to automate commonly illustrated tasks.

Full version, only \$359.95!
 Item # GRA2649.

Upgrade only \$119⁹⁵!
 Item # UPG0887

Adobe Photoshop 5.0

Upgrade only \$189⁹⁵!
 Item # UPG0836

• Multiple undo: Quickly undo or redo several steps.
 • Magnetic Tools: Precisely follow the edges of an image.

Full version, only \$629.95!
 Item # GRA2551.

Adobe Photoshop 5.0 upgrade for PC, item # UP4060.

SAVE UP TO \$100!
 when you buy Photoshop 5.0 or Illustrator 8.0 and a New Apple Power Mac G3.

\$100 REBATE! when you buy a full version of Photoshop 5.0 or Illustrator 8.0.
OR
\$50 REBATE! when you upgrade to Photoshop 5.0 or Illustrator 8.0.

Both New Power Mac G3 & Photoshop 5.0 or Illustrator 8.0 must be purchased between 1/5/99 & 4/30/99. See rebate coupon inside Apple G3 box for details.

More powerful tools!

Adobe GraphicStudio

Three great design programs in one package!
 Includes: Adobe Photoshop 5.0, Adobe Illustrator 8.0 and Adobe PageMaker 6.5!

Only \$949! Item # GRA2674.
 *Savings based on individual full versions sold separately as of this magazine printing.

EPSON STYLUS COLOR 1520

EPSON

• Prints 6ppm black/5ppm color
 • Handles media up to 17" x 22"
 • Optional networking

Only \$499⁹⁵!
 Item # PR12430

Color ink cartridge for Epson 1520, item # PR12202. \$27.95

1440 x 720 dpi!

MACTELL GRAPHICS ACCELERATOR

mactell

• 128-bit graphics processor
 • 8MB VRAM • 250MHz PCI

Vision3D Pro II only \$619⁹⁵!
 Item # EX9346

Resolutions up to 1920 x 1200 dpi!

FREE F/A-18 HORNET 3.0*

with purchase of any of these three CD-ROM drives from MacWarehouse. Ask for item # AAA0520.

16X external CD-ROM drive only \$129⁹⁵!
 Item # DRI2663

24X External, item # DRI2553: \$149.95
 32X External, item # DRI2552: \$169.95

*\$3.95 shipping and handling applies. Shipped in promotional packaging on CD-ROM.

While supplies last!

QUARKXPRESS 4.0 & CORELDRAW 8

QuarkXPress 4.0 features:
 • Character based style sheets
 • Magnification from 10% to 800%

CoreDraw 8 features:
 • Powerful design tools including, CoreDRAW 8, Photo-Point 8 and CoreTRACE 8

Together for only \$769⁹⁵!
 Item # DTP0688

NEW! Save over \$350!

*Savings based on individual products sold separately as of this magazine printing.

CD-Recordables

• 74 min. • 650MB
 • Jewel cases included

Only \$1.89! each, in 30+ quantities
 Ask for item # ME3853.

Quantity: 1-9 10-29 30+
 Price: \$2.49 ea. \$1.99 ea. \$1.89 ea.

USR V.90 56K FaxModem

NEW LOWER PRICING! Only \$97⁹⁹! after rebate
 Ask for item # BND3178

\$20 rebate!

"Price after manufacturer's \$20 mail-in rebate. Price before rebate is \$117.99. Offer expires 4/30/99."

3Com U.S. Robotics

Free Nova Software 3,000 Images** with the purchase of 2 inkjet cartridges.

Amazon Inkjet Cartridges

As low as **\$15⁹⁹!** each, in 2-pack

Ink cartridges for Epson Stylus Photo 700 (1 blk/1 color): Item # BN6064, 2-pack only \$31.99.
 Ink cartridges for Epson Stylus Color 400/600 (1 blk/1 color): Item # BN6066, 2-pack only \$31.99.
 Ink cartridges for Epson Stylus Color 800/850 (1 blk/1 color): Item # BN6065, 2-pack only \$33.99.

**\$3.95 shipping and handling applies. While supplies last.



Illustrator 8.0 for only \$119⁹⁵!

See left page for details.

Hewlett-Packard • Optiquest • Iomega • Caere • Olympus • Entrega

HP LaserJet Printers

HP LASERJET 8000N

Only \$2629⁹⁵!

Ask for item # PR13724.
Lease! for \$91/mo.*

- Prints 24ppm • 1200 dpi maximum resolution
- 133MHz RISC processor



NEW!

HP LASERJET 8000 SERIES
BLACK TONER CARTRIDGE
As low as
\$179⁹⁵ each
Item # 63223.
Call for details.



HP LASERJET 2100M

Only \$795⁹⁵!

Ask for item # PR14691.
Lease! for \$28/mo.*

- Prints 10ppm
- 1200 dpi resolution
- HP Postscript Level 2
- LocalTalk port

HP LaserJet 4000N
\$1399!

Item # PR12975
Lease! for \$49/mo.*

- Prints 17ppm
- 1200 dpi maximum resolution
- 100MHz RISC processor
- Ethernet 10BaseT/10Base2 + LocalTalk



NEW!



HP LASERJET 5000N (not shown)

• Prints 16ppm • 1200 dpi • Prints 3 x 5 thru 11 x 17

Ask for item # PR13449.....Lease! for \$71/mo.*\$2049

*Leases are only available to business customers with approved credit on product orders where at least one product totals \$750 or more. Lease payments are based on a 36-month Fair Market Value. Call today to see how you can qualify. Lease terms are subject to change.

OPTIQUEST V73 17" MONITOR

Optiquest
OPTIMIZE YOUR IMAGE

- 17" (16" viewable) screen
- 26mm dot pitch
- 1152 x 870 resolution @ 75Hz
- Manufacturer's 3-year warranty

Only
\$369⁹⁵!

Item # MON0725



IOMEGA JAZZ 1.0GB CARTRIDGES



Only
\$89⁹⁵! ea. in 5+ quantity
Item # MED0177

Quantity	1-2	3-4	5+
Price per disk	\$99.95 each	\$94.95 each	\$89.95 each



OMNIPAGE PRO 8.0 UPGRADE

caere

- Optical character recognition (OCR) software enables you to quickly and easily convert scanned pages into computer editable documents.

Only
\$99⁹⁵!

Item # UPG0781



www.webauction.com

Many bids \$1 starting at
on Mac computers and lots of other great products.

Join the action at

WEBAuction.com

Products shown not necessarily being auctioned currently.



New products arriving daily!

Broderbund MYST

FREE! w/any purchase from MacWAREHOUSE AAA0742

- Challenge your puzzle-solving skills in the Island world that is Myst!

*\$3.95 shipping and handling applies. Shipped in promotional packaging. Hurry! Offer good while supplies last. **Value based on MacWAREHOUSE price as of this magazine printing.



USB to Parallel Printer Converter

Only
\$49⁹⁹!

DAD1565

- Connects your computer to any parallel printer through your USB port



entrega.

74 Minute CD-Recordables

Only
\$159!
each, in 30+ quantities
ME7553

- Branded single w/Jewel Cases
- 650MB capacity



Kodak digital science

NEW! Olympus D-400Z

Only
\$799⁹⁵!

IN7514

- 1280 x 960 ppi resolution
- 3X optical lens
- BMB Smartmedia card
- Point and shoot ease-of-use



OLYMPUS

SupraExpress V.90 Modem

Only
\$99⁹⁹! after rebate
DMD3503

- Supports 56K ITU standard V.90 & K56flex technology
- Serial interface

*Price after mfr's \$20 mail-in rebate. Price before rebate is \$119.99. Coupon in box. Offer expires 3/31/99.



PAGE 8 OF 8

1-800-725-1450 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!

In-stock items, call by midnight (E), or order online by 10pm (E).

Choose 150 at www.macworld.com/getinfo

MACWORLD April 1999 123




Hi, I'm Mona. Call me for more great deals!



Don't you deserve

APS I 9100 Ultra Wide SCSI


- Fastest hard drive APS has ever offered
- 9GB capacity at 10,000 rpm
- Top performance for graphics and video editing workstations, demanding servers

 For the absolute maximum hard drive performance on an Ultra Wide SCSI-based system, ramp up with the APS I 9100 W. Based on the Ultrastar 9ZX mechanism, this drive offers seek times as low as 6.3ms and outstanding sustained data transfer rates (up to 17MB/s). Upgrade your high-performance workstations and servers to one of the fastest mechanisms in the world with the APS I 9100 W.

As low as **\$549.95**
EL Configuration

APS ST 4000 Ultra Wide SCSI


- 7200 rpm Medalist Pro offers adequate performance for most business applications
- Excellent replacement drive for workstations

 The ST 4000 is an excellent choice when you want to upgrade your corporate workstation storage. At a price like this, you can upgrade an entire accounting department without burning up your entire budget.

As low as **\$229.95**
EL Configuration

APS Q 2000 Ultra SCSI


- Exceptional 2GB value for home computing
- Trusty Fireball Stratus mechanism

 Based on the 5400 rpm Fireball Stratus, this economical drive gives you 2GB of basic storage for Internet finds, digital photos of your family and more.

\$209.95
EL Configuration


APS ST 9000 Ultra Wide SCSI

- Third-generation Barracuda 7200 rpm drive with 9GB capacity
- Optimized for multi-user graphics and A/V

 The ST 9000 W gives you blazing fast data transfer rates for graphics, prepress and multimedia applications. It is especially valuable in client/server environments. The ST 9000 features advanced technology to make you more productive. And with a third-generation mechanism, you can rest assured about its reliability.

\$469.95
EL Configuration



 Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

"UB: The Hand Behind the Mouse,


produced and directed by Leslie Iwerks, is a documentary about one of the greatest motion picture pioneers of this century.

We are digitizing hours of animation, live action footage, music and narration. Our storage needs are incredible. APS ST 9000 AV-capable drives have helped make our film possible."

Ron Stark
Associate Director

APS Q 4500 Ultra Wide SCSI


- New 7200 rpm mechanisms have 30% faster internal data transfers
- Up to 11.5 MB/s sustained transfers and Ultra Wide SCSI for workstations, workgroup servers

 The new Viking II mechanism boasts higher buffer-to-host (external) sustained data rates for increased productivity. And it contains fewer moving parts than the original Viking for greater reliability and longevity.

\$289.95
EL Configuration

APS Q 18000 Ultra Wide SCSI


- 7200 rpm and over 18GB for creative/marketing department and enterprise servers
- 1MB cache, average seek time of 7.8ms and 12MB/s transfers

 The high-performance, dual-microprocessor architecture of the new Atlas III makes this drive ideal for demanding business applications. And this third-generation drive assure you the highest reliability.

\$809.95
EL Configuration

APS I 9000 Ultra Wide SCSI


- Blazing Ultra Wide SCSI drive from the inventors of the hard drive
- 9GB capacity for video, departmental and workgroup servers
- 7200 rpm Ultrastar mechanism

 The APS line of Ultrastar drives with Ultra Wide SCSI interfaces can boost productivity throughout your network. Excellent seek times and data transfer rates.

As low as **\$459.95**
Internal Configuration

APS I 36000 Ultra Wide SCSI

- Brand-new 7200 rpm Ultrastar mechanism
- Amazing 36GB in convenient 3.5" form factor
- Top value for departmental and enterprise server storage

 Just a few months ago, you had to deal with a bulky, awkward 5.25" mechanism to get the kind of capacity you needed (and that was only 23GB). Now, you can add over 36GB of storage to your high-volume servers in a handy 3.5" size. The I 36000 gives you mammoth capacity and superior price/performance. Call today.

As low as **\$1,689.95**
Internal Configuration

Order from our special
Online Catalog at
<http://www.apstech.com/mwspecial/>

more than just a drive?



A great enclosure makes all the difference

The APS Pro enclosure gives you a combination of features that no one else offers. Like a powerful 40W universal power supply that helps your drive spin up to full speed. A full-metal RF/EMI shield that protects your data from interference from your other devices. A huge 60x60mm fan and patented ICE® drive-cooling technology to keep even 10,000 rpm drives from overheating. And patented DA-Term® (Digital Active Termination) for smoother SCSI communications with other drives and your CPU. So demand APS drives in the exclusive APS Pro enclosure. Anything else is just a drive.



Best server storage value ever


APS I 18000

\$799.95

7200 rpm Ultrastar mechanism - 18GB - Ultra SCSI interface

APS Q 6400


- Economical server storage with over 6GB
- Trusty Fireball Stratus Plus mechanism

 If you want to upgrade your file server or small office network storage without breaking the bank, here's your answer. The Q 6400 gives you the capacity and low cost of ownership you want. And the field-proven Fireball Stratus Plus will serve you well now and into the future. Choose the APS Pro enclosure for easy integration.

As low as **\$359.95**
EL Configuration

APS Q 4500 Ultra2 Wide SCSI


- Jump into Ultra2 SCSI with dependable 7200 rpm Viking II
- 4.5GB for corporate workstations

 The Viking II Series offers solid performance and reliability for your executive-level workstations. This line also offers advanced multi-layer data integrity features and high internal data transfer rates.

As low as **\$299.95**
Internal Configuration

APS 12000 Ultra ATA

- 5400 rpm hard drive (12GB) with inexpensive Ultra ATA interface
- Excellent choice for economical file and Web server storage

 Save time, save effort AND SAVE MONEY with the APS Ultra ATA series of drives. When all the drive mechanisms out there don't vary by more than 5% or so in performance, why drive yourself crazy trying to make a buying decision? We've done the research for you, picking the best Ultra ATA storage options from the world's premier mechanism manufacturers. You always get the best price/performance possible with an APS Ultra ATA drive.

As low as **\$279.95**
Internal Configuration



Advanced tools for digital visionaries

Call 800-285-0638

24 HRS/7 DAYS A WEEK

Corporate Sales (800) 554-3941

International (816) 920-4109

APS Technologies • 6131 Deramus • Kansas City, MO 64120

MACWORLD April 1999 125

APS ULTRA SCSI HARD DRIVES

Model	Description	EL	Int.	Pro
APS Q 2000	Quantum Fireball SE, 2073MB, 5400 rpm	1209 ^h	1219 ^h	1279 ^h
APS Q 3000	Quantum Fireball ST, 3118MB, 5400 rpm	219 ^h	229 ^h	289 ^h
APS Q 4000	Quantum Fireball ST, 4136MB, 5400 rpm	269 ^h	279 ^h	339 ^h
APS ST 4000	Seagate Medalist Pro, 4520MB, 7200 rpm	229 ^h	239 ^h	299 ^h
APS I 4500	IBM Ultrastar, 4357MB, 7200 rpm	259 ^h	269 ^h	329 ^h
APS Q 6400	Quantum Fireball ST, 6236MB, 5400 rpm	359 ^h	369 ^h	429 ^h
APS ST 6000	Seagate Medalist Pro, 6580MB, 7200 rpm	369 ^h	379 ^h	439 ^h
APS Q 8000	Quantum Fireball SE, 8191MB, 5400 rpm	429 ^h	439 ^h	499 ^h
APS I 9000	IBM Ultrastar 9ES, 8715MB, 7200 rpm	459 ^h	469 ^h	529 ^h
APS ST 9000	Seagate Medalist Pro, 9142MB, 7200 rpm	399 ^h	409 ^h	469 ^h
APS I 18000	IBM Ultrastar, 17501MB, 7200 rpm	799 ^h	809 ^h	869 ^h
APS Q 18000	Quantum Atlas II, 17366MB, 7200 rpm	799 ^h	809 ^h	869 ^h

APS HIGH-PERFORMANCE ULTRA2 WIDE SCSI HARD DRIVES

Model	Description	Int.	Pro
APS Q 4500 U2W	Quantum Viking II, 4240MB, 7200 rpm	1299 ^h	369 ^h
APS Q 5000 U2W	Quantum Viking II, 8682MB, 7200 rpm	519 ^h	589 ^h
APS ST 9000 U2W	Seagate Barracuda, 6683MB, 7200 rpm	509 ^h	579 ^h
APS ST 9100 U2W	Seagate Cheetah, 8681MB, 10,000 rpm	729 ^h	799 ^h
APS ST 18100 U2W	Seagate Cheetah, 18201MB, 10,000 rpm	1,149 ^h	1,219 ^h

APS HIGH-PERFORMANCE ULTRA WIDE SCSI HARD DRIVES

Model	Description	EL	Int.	Pro
APS ST 4000 W	Seagate Medalist Pro, 4520MB, 7200 rpm	1249 ^h	1259 ^h	1339 ^h
APS I 4500 W	IBM Ultrastar 9CS, 4357MB, 7200 rpm	273 ^h	289 ^h	369 ^h
APS Q 4500 W	Quantum Viking II, 4345MB, 7200 rpm	269 ^h	299 ^h	379 ^h
APS ST 6000 W	Seagate Medalist Pro, 6520MB, 7200 rpm	373 ^h	389 ^h	469 ^h
APS I 9000 W	IBM Ultrastar 9ES, 8715MB, 7200 rpm	469 ^h	479 ^h	559 ^h
APS Q 9000 W	Quantum Viking II, 9000MB, 7200 rpm	509 ^h	519 ^h	599 ^h
APS ST 9000 W	Seagate Barracuda, 8683MB, 7200 rpm	469 ^h	479 ^h	549 ^h
APS I 9100 W	IBM Ultrastar 9ZX, 8705MB, 10,000 rpm	549 ^h	559 ^h	639 ^h
APS I 18000 W	IBM Ultrastar 18XP, 17501MB, 7200 rpm	809 ^h	819 ^h	889 ^h
APS Q 18000 W	Quantum Atlas II, 18201MB, 7200 rpm	809 ^h	819 ^h	889 ^h
APS ST 18000 W	Seagate Barracuda, 18000MB, 7200 rpm	799 ^h	809 ^h	889 ^h
APS I 36000 W	Seagate Barracuda, 18000MB, 7200 rpm	799 ^h	1,689 ^h	1,769 ^h

APS ATA HARD DRIVES


Model	Description	Internal
APS 3000 ATA	5400 rpm	139 ^h
APS 6000 ATA	5400 rpm	179 ^h
APS 10000 ATA	5400 rpm	229 ^h
APS 12000 ATA	5400 rpm	279 ^h



How to protect and

APS CD 40


- New 40X CD-ROM whips through challenging multimedia titles, training discs
- Multiread capabilities recognize virtually any disc, including CD-R and even CD-RW
- APS PowerTools™ CD software included

 Now, you can get 40X CD speed at a 36X price. The APS CD 40 gives you the fastest speeds around. But it costs about the same as our previous generation, the CD 36. This new CD speedster handles your most demanding CD-ROM titles with ease. It also reads your custom CD-R and CD-RW discs, so it's perfect for using training discs at the desktop. Shift into high gear with the APS CD 40 today.

As low as **\$149.95**
External Configuration

APS CD-R 4x12


- Excellent price/performance
- Top value for multimedia producers, music, design and prepress pros

 The APS CD-R 4x12 is one of our best recordable CD values. With 12X read and 4X write capabilities, you can burn multimedia and audio CDs at 1X, 2X or 4X speeds in any standard recording format. Includes all the CD recording software you need.

As low as **\$329.95**
External Configuration

APS CD-R 4x8

- Excellent value for burning CDs for personal or small business uses
- Includes PC/Mac recording software

 The APS CD-R 4x8 gives you excellent price/performance for CD production at home. Powered tray-loading eliminates inconvenient caddies.

As low as **\$269.95**
External Configuration

APS CD-ROM/R/RW DRIVES & CD CHANGERS

Model	Description	External
APS CD40	40X CD-ROM in Slimline Case	149.95
APS 5-CD Changer	Nakamichi S Disc/16X CD-ROM, Pro Enclosure	259.95
APS CD-R 4X8P	4X record/8X read CD-R in SR 2000 or APS Pro Enclosure	269.95
APS CD-R 8X20	8X record/20X read CD-R in Pro Enclosure	489.95
APS CD-R 4X12	4X record/12X read CD-R in Pro Enclosure	329.95
APS CD-RW	2X record/2X rewrite/6X read CD-RW in Pro Enclosure	319.95
APS CD-RW	4X record/4X rewrite/16X read CD-RW in Pro Enclosure	399.95
APS CD-R Media 10pk.		199.95
APS CD-RW Media 5pk.		43.95




"Although I have purchased drives from other vendors, I have yet to find the levels of service and support both before and after the sale as I have experienced while working with APS. I have even had help on restoring lost data. I choose APS because I know that if I need a product fast, well made, and a company to stand behind it, there is no one else to call."

John P. Grace
Abbott Laboratories Research



APS CD-R 8x20

- Super-speedy CD burner for creative professionals
- 8X record/20X read mechanism
- Includes full-featured CD recording software for Mac and PC


 Hit the afterburner! The CD-R 8x20 is our fastest CD recorder ever. The blazing 8x20 mechanism cranks out your CDs in record time, so you spend less time burning and more time creating. If your payday depends on producing CDs, punch in with the APS CD-R 8x20.

As low as **\$489.95**
External Configuration



APS CD-RW 4x4x16


- 167% faster reads and 100% faster rewrites than CD-RW Pro 4x2x6
- The ultimate rewritable CD drive for professional environments

 APS proudly introduces our fastest rewritable CD drive ever. The 4x4x16 is fast enough to handle all CD functions, including 16X reads for power users. This tray-loading drive offers a huge 2MB buffer to prevent underruns and failed recordings. The 4x4x16 is Flash ROM-upgradeable for future formats and operating systems. Plus, you get full-featured, professional-level recording software for both Mac and PC. No matter if you develop demanding multimedia or software, produce music or graphic designs, the CD-RW 4x4x16 is the only CD drive you need.

As low as **\$399.95**
External Configuration

APS CD-RW 2x2x6

- Record, read, and edit any kind of data on CD-RW media
- Also records on inexpensive, play-anywhere CD-R discs

 Whether you're producing a multimedia title or just want to send your mother a QuickTime movie of your honeymoon, this versatile drive is the inexpensive solution for writing and reusing CD-RW discs. The APS CD-RW 2x2x6 also writes to cost-effective CD-R discs. It can even play your gaming CD-ROMs and music CDs. This drive provides 2X recording, 2X rewriting, and 6X playback. The APS CD-RW drive includes all the Mac and PC recording software you need to master your CDs. Ships in the APS Pro enclosure.

As low as **\$319.95**
External Configuration

Order from our special
Online Catalog at
<http://www.apstech.com/mwspecial/>

distribute your projects faster

APS HyperDAT®

- Up to 8GB (compressed) of storage on one 120m DDS-2/DAT tape
- Excellent desktop/workstation backup

As low as **\$549.95**

Internal Configuration

Backup Special

APS DLT 40

\$1,999.95

Surf on over to www.apstech.com for information on the APS DLT 40

APS HyperDAT® III

- 12GB native backup for high-end workstations, entry-level networks
- New, more reliable DDS-3 technology

The APS HyperDAT III provides a cost-effective solution to the backup storage needs of data-intensive systems. Using DDS-3 technology, the APS HyperDAT III delivers a narrower track width than DDS-2 for a much higher density and more data storage. The increased density combines with Sony's precise tape control system to deliver a sustained data transfer rate of 1MB per second.

As low as **\$979.95**

Internal Configuration

APS HyperDAT® Pro

- Backup and restore speeds as high as 50MB per minute
- Up to 8GB of storage per 120m DAT/DDS-2 tape cartridge

Backup in less time! The APS HyperDAT Pro is perfect for high-end desktop backups. With standard 120m DDS-2 tapes the APS HyperDAT Pro can backup up to 8GB of data (assuming 2:1 hardware compression). The HyperDAT Pro can also use economical 60m and 90m tapes. Comes with backup software and includes a two-year warranty.

As low as **\$699.95**

Internal Configuration

APS HyperQIC®

- Up to 8GB per TR-4 tape with new NS8 hardware compression
- The worldwide standard in desktop backup is now better than ever

Our HyperQIC drive uses Travan-4 tape cartridges to deliver up to 4GB on a single tape without compression! (8GB with 2:1 data compression.) The APS HyperQIC is read/write compatible with QIC3095 and QIC3080 cartridges. This drive can also read QIC80, QIC3010, and QIC3020 tape cartridges. The APS HyperQIC includes backup software and a two-year limited warranty.

(While the APS HyperQIC will accept all of the media listed, compatibility issues with the software used to record those tapes may make it impossible for you to read those tapes with your current backup software.)

As low as **\$299.95**

Internal Configuration

APS HyperQIC® II

- Brand-new Travan-5/NS20 technology - safeguard up to 20GB per cartridge
- Hardware data compression for faster, more efficient backups

Next-generation Travan-5 cartridges give you up to 20GB compressed (10GB native) capacity. That's two and a half times more storage than previous Travan media. And new Travan NS technology adds hardware compression for more efficient data compression and faster transfers. If you need reliable, fast backup for a desktop or workstation, move up to the APS HyperQIC II. Includes backup software for Macintosh (Retrospect or NovaBack) or Windows (NovaBack and Cheyenne).

As low as **\$499.95**

Internal Configuration

APS AIT Plus

- Brand-new drive safeguards up to 35GB native on AIT Plus tape (70GB compressed)
- Super-fast backup speeds for mid-range and application server backup, even video storage

If you thought DLT was your only choice for mammoth backups, think again. The new AIT Plus overtakes even the DLT 70 in capacity and transfer speeds. Self-cleaning technology makes maintenance virtually effortless. Exclusive reliability features and exceedingly-low cost of ownership make this an IT/IS dream come true.

As low as **\$2,199.95**

Internal Configuration

APS TAPE BACKUP SYSTEMS			
Model	Description	Internal	External
APS HyperQIC [®]	Travan-4/NS8/QIC	1,299 ⁰⁰	1,349 ⁰⁰
APS HyperQIC [®] II	Travan-5/NS20/QIC	499 ⁰⁰	549 ⁰⁰
APS HyperDAT [®]	DDS-2/DAT 14-8GB	549 ⁰⁰	599 ⁰⁰
APS HyperDAT [®] Pro	Quad-speed DDS-2/DAT 14-8GB	699 ⁰⁰	749 ⁰⁰
APS HyperDAT [®] III	DDS-3/DAT 12-24GB	979 ⁰⁰	1,029 ⁰⁰
APS HyperDAT [®] IV	DDS-4/DAT 120-40GB	1,299 ⁰⁰	1,349 ⁰⁰
APS Mini Library	4mm DDS-2 Autoloader (32-64GB)	N/A	2,399 ⁰⁰
APS DLT40	DLT 4000 (20-40GB)	N/A	1,999 ⁰⁰
APS DLT70	DLT 7000 (35-70GB)	N/A	4,999 ⁰⁰
APS AIT Plus	8mm Advanced Intelligent Tape (35-70GB)	N/A	2,199 ⁰⁰
APS AIT Autoloader [®]	8mm AIT, 200GB on 4 tapes	N/A	4,799 ⁰⁰



Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.



Corporate Sales (800) 554-3941

International (816) 920-4109

APS Technologies • 6131 Deramus • Kansas City, MO 64120


MACWORLD April 1999 127



Finally, professional

APS Jaz II

- A staggering two gigabytes of removable storage
- Perfect for multimedia producers, graphic designers and service bureaus

 Introducing the next big thing: the APS Jaz II. Based on revolutionary Jaz technology, this drive offers a whopping two gigabytes of removable storage. And the new Jaz II is even faster, coming closer still to hard drive access and read/write speeds. This drive will also read and write to your current 1GB Jaz disks, so you don't have to worry about wasted investment. For digital video, multimedia and publishing businesses, the APS Jaz II is perfect for carrying huge files and quickly accessing client data. It's time to move up to the APS Jaz II. Includes one 2GB Jaz disk.




As low as **\$399.95**

External Configuration

Sony HiFD

- Excellent replacement/upgrade to your old floppy drive
- 200MB storage per HiFD diskette, plus it uses all your 1.4MB floppies
- Parallel interface for quick, easy installation



 Have you outgrown your floppy drive? The new Sony HiFD gives you 200MB per diskette, and it also reads and writes to your collection of 1.4MB floppies. The HiFD promises to be more reliable than some other removable media technologies. And the parallel interface means you can be up and running in just moments. Get the floppy of the future today with the Sony HiFD.


As low as **\$199.95**

External Enclosure

APS 640 MO

- Read/write compatible with 640, 230 and 128 MO
- New Direct OverWrite technology cuts rewrite time in half with LIMDOW MO disks



 Stunning formatted capacity of up to 606MB on 3.5" 640 MO media. Store large graphics and database files and transport large amounts of data when traveling. Sustained reads of up to 2.19MB per second and sustained writes of up to 6.28MB per second, plus LIMDOW technology eliminates the erase cycle of rewriting. Available externally in the APS Pro enclosure with DATerm and our patented IC'E technology. Backed by one-year limited warranty.

As low as **\$349.95**

External Configuration

APS 640MO Media Spk. \$129⁹⁵

Sony Multiscan CPD-L150 15" LCD Display

- Reclaim your desk space - only 6.5" deep
- Sharp 1024 x 768 at 85Hz reduces eyestrain
- Perfect for cramped studios and content creation cubicles

Sometimes, it's good to be shallow. The CPD-L150 takes up so little valuable desk space. But it packs a sharp, vivid picture into its convenient LCD display. Digital FlexRes technology gives you a crisp full-screen image no matter what resolution you choose. The high refresh rates reduce eye problems associated with computer work, including eyestrain, blurred vision and headaches. On-screen display and lock-out features let you set and keep the perfect settings for you. So reclaim your desk space with the Sony Multiscan CPD-L150. Just try not to use the extra space for another in-box.

\$1,499.95

Surf on over to
<http://www.apstech.com>
for more multimedia tools



Sony CPJ-D500 Portable Projector

- Lightweight projector for heavyweight presentations
- 8.3lbs. and sets up in seconds

The CPJ-D500 helps you hit your audience right between the eyes, but takes it easy on your back. Fully VGA-compatible, the CPJ-D500 gives you 24-bit color output at 640 x 480 resolution from a bright, long-lasting 80-watt metal halide bulb. Includes an RCA video input jack, microphone input jacks and stereo headphone output jack to drive external speakers. Accepts PC, Macintosh, NTSC and PAL input. Includes RGB and power cables, presentation software and carrying case.



\$1,999.95

Level tools for content creators



APS Hardware RAID Systems

- Fast access, mammoth capacity and increased availability
- RAID 0, RAID 1, RAID 0 + 1, RAID 4, RAID 5
- Hot-swappable redundancy in drives, power supplies and cooling fans
- Perfect for centralized storage of digital images, graphic design, digital video editing

There is no better way to store, work with and protect your files and data than with the APS Hardware RAID System. With your choice of RAID levels, you can choose from maximum speed (striping), maximum data availability (mirroring) or a combination of both. This advanced RAID system offers powerful features like fault detection, background reconstruction, five hot-swappable hard drives, and an Ultra Wide SCSI interface. If you work in CAD/CAM, 3D modeling, animation, multimedia, non-linear digital video editing or high-end design and imaging for print, there is no substitute for the sheer power of the APS Hardware RAID.

AS LOW AS \$9,999.95

Five 10,000 rpm Cheetah drives, 42.4GB capacity



Advanced tools for digital visionaries

Call 800-285-0638

24HRS/7DAYS A WEEK

Corporate Sales (800) 554-3941

International (816) 920-4109

APS Technologies • 6131 Deramus • Kansas City, MO 64120



Mac OS is a registered trademark of Apple Computer, Inc. APS and APS Technologies are registered trademarks. Other brand or product names are registered trademarks or trademarks of their respective holders.

- 30-day money-back satisfaction on all APS brand drives and accessories. Your risk is the cost of shipping.
- Monitor and 3rd party products carry warranties from their respective manufacturers.
- SCSI cables sold separately.
- APS warranty is a pass-through of the manufacturer's warranty which will be serviced by APS for one year. APS warrants APS branded enclosure, brackets and power supplies for a period of one year from the date of purchase 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.
- Latent capabilities are tentative.
- Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
- Prices and specifications are subject to change without notice.
- You must install system software appropriate to your machine before using our hard drives.
- Not responsible for typographical errors.
- Your APS Drive unit may contain one or more components that were in prior use, but which have been repaired and returned 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.
- © 1999, APS Technologies. All Rights Reserved.

Sony DCR-TRV9 Digital Video Camcorder

- 1/4" 680K pixel CCD for excellent DV picture quality
- 15X optical/180X precision digital zoom lens for field work
- iLINK/IEEE 1394 interface for totally digital transfers – no loss of quality

The DCR-TRV9 gives you professional quality and features at a budget-conscious price. This DV camcorder gives you smooth, colorful video that you can watch on your TV, add to your Web site or use in your presentation. The IEEE 1394 interface means there is no conversion from digital to analog formats, preserving the image and sound quality. The LP mode lets you record 90 minutes of digital video on one 60-minute DV cassette. You can even capture 16-bit stereo audio for a complete multimedia experience. So explore the world of digital video for business and pleasure with the DCR-TRV9.

\$1,799.95



Sony MVC-FD81/91 Digital Mavica Cameras

- Convenient digital cameras capture photos and video
- Store and transfer content on standard floppy disks
- Add images and multimedia to presentations, Web sites, e-mail

You don't have to spend thousands of dollars to get visual content for business or personal use. The MVC-FD81/91 Digital Mavica Cameras grab digital photos and video quickly. And these smart cameras store their contents on standard floppies that you can use to transfer your images to your Mac or PC. The FD81 offers a 3X zoom lens. The FD91 really gets in there at 14X. You also get professional features like 3-mode auto exposure, manual exposure, flash and self-timer. These cameras use a 1/3" progressive CCD to capture 850K pixel

images. And you can record up to 15 seconds of presentation-quality MPEG video or 60 seconds for a video e-mail. So why not add some multimedia to your business and your life? Pick up a MVC-FD81/91 Digital Mavica Camera today.



MVC-FD 81 \$779.95

MVC-FD 91 \$979.95



Choose 62 at www.macworld.com/getinfo

MACWORLD April 1999 129

The Mac Zone

Since 1986

Think different.



GUARANTEED LOW PRICES!

Computer prices change all the time. If you find any item advertised for less in a current national catalog or publication, we'll match their in-stock price. Call for complete details.

- ✓ Shop and order online
- ✓ Order 24 hours a day, 7 days a week
- ✓ Serving Mac enthusiasts since 1986
- ✓ Publicly traded NASDAQ company: MZON
- ✓ Complete Mac product selection - call for products not listed!
- ✓ Affordable leasing options
- ✓ Tech Support and Customer Service
- ✓ 100% Apple "Learn and Earn" Gold certified sales staff!



\$300 Price Drop on Apple iMac!

NOW ONLY

\$997

Own an iMac for ONLY **\$22.99/mo.**

Consumer Finance Program for the Apple iMac. CALL NOW FOR DETAILS!

Ask for #07949

FREE iMac Starter Kit with cool iMac bundles!

While supplies last!

"One sold every 15 seconds"

- Steve Jobs

Now play **Sony PlayStation games** on your Mac
CALL NOW FOR DETAILS!



New! iMac ONLY \$1199

Choose a flavor!
Tangerine Lime Strawberry Blueberry Grape

USB Products for your Mac!



AsanteTalk 10T to LocalTalk

ONLY **\$99.98**
#16630



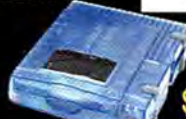
Imation USB Superdisk

ONLY **\$149.99**
#12196



Microtek ScanMaker X6 USB

ONLY **\$149.98**
#97153



USB Zip Drive #12237 Zip Media (6 pk). \$79.95

ONLY **\$149.95**
#95251



iBall USB Trackball #31906

Business Software		
55871	MS Office 98-Mac	\$449.98
55870	MS Office 98 Upgrade	\$259.98
55872	MS Office 98 Upgrade Gold Edition Mac	\$359.98
55873	MS Office 98-Gold Edition Mac	\$539.98
55868	MS Word 98 Upgrd Mac	\$134.98
08329	Appleworks	\$87.98
05231	Act! 2.8 iMac	\$149.98
80582	Now UpToDate/Contact Polish Synze 3.65	\$88.98
03972	Corel WordPerfect 3.5.1	\$159.98
Utilities		
103716	Micromat TechTool Pro 2.11 upgrade	\$59.98
20634	Connectix Virtual PC 2.1.98	\$138.98*
	*After \$30 Upgrade Rebate Low Zone Price \$168.98	
02077	Virex 5.9	\$59.98
25006	Insigma SoftWindows 98	\$148.98
41956	StuffIt Deluxe 5.0	\$24.98*
	*After \$50 Mfr Mail-in rebate for upgraders.	
00555	Hard Disk Toolkit 2.5	\$122.98
32550	Connectix Triple Pack includes RAM Doubler 8, Speed Doubler 8, Surf Express Deluxe	\$84.98
32558	Retrospect 4.1	\$149.98
73702	RealPC	\$44.98
91300	Conflict Catcher 8	\$72.98
00642	PowerPrint 4.0	\$94.98
54048	RAM Doubler 8	\$45.98
00116	Norton AntiVirus 5.0	\$23.98*
	*After \$40 Mfr Mail-in rebate for upgraders.	

Games/Education		
Call for other titles!		
74149	Shanghai Dynasty	\$39.98
72741	Carnagadon	\$29.98
41484	Tomb Raider 2	\$48.98
34779	Myth 2: SoulBlighter	\$29.98
82303	WarCraft/Battlechest	\$49.98
82936	Eric's Ultimate Solitaire	\$38.98
72734	FA 18-Hornet	\$44.98
74846	Civilization 2	\$28.98
53467	Jack Nicholas 4	\$44.98
74847	Quake	\$27.98
74166	Riven: The Sequel to Myst	\$39.98
07427	Extreme Mac 12-Pack	\$39.98
71251	Marvis Beacon Teaches Typing 9.0	\$36.98
80635	Family Tree Maker Deluxe II	\$79.98
79710	Encyclopedia Britannica 1999 CD	\$59.98
05984	Reunion 3.0: Family Tree	\$99.98
46434	Complete National Geographic: 108 Years	\$169.98
Internet		
59636	Macromedia Fireworks 2	\$199.98
73486	Macromedia Dreamweaver 2	\$298.98
07535	Macromedia Dreamweaver 2 upgrade	\$129.98
77545	Adobe ImageReady	\$199.98
14182	Adobe ImageStyler	\$128.98
83932	Adobe PageMill 3.0 Upgrade	\$48.98
71916	GoLive CyberStudio 3.1 Professional Edition	\$289.98
83320	Microsoft: FrontPage	\$139.98

Graphics		
95320	QuarkXPress 4.0	\$689.98
88205	Adobe Illustrator 8.0 Upgrade	\$114.98
71273	Adobe Graphic Studio	\$924.98
83068	Adobe Pagemaker 6.5 Upgrade	\$109.98
83063	Adobe Photoshop 5.0	\$298.98
83084	Adobe Photoshop 5.0 Upgrade	\$178.98
83930	Adobe Type Manager Deluxe 4.0	\$64.98
14158	Macromedia FreeHand 8 Upgrade	\$148.98
86007	Macromedia Director 7 Shockwave Internet Studio Upgrade	\$489.98
89657	PANTONE Color Survival Kit	\$154.98
59682	Kai's SuperGoo	\$44.98
17246	Kai's Power Tools 5.0	\$124.98
38248	Kai's Photo Soap 2	\$44.98
53541	Extensis PhotoFrame Vol I & II	\$198.98
72905	Bryce 3D 3.0	\$179.98
72981	Metacore Painter 5.5 Web Edition Upgr from 5.0	\$79.00
00815	Metacore's Infini-D 4.5	\$538.98
91289	Metacore's Poser 3.0	\$179.98
104508	Art Explosions \$25.000	\$149.98
71241	PANTONE ColorSuite for Graphics	\$229.98
13733	FLIGHTCHECK 3.45 for Power PC	\$369.98

Digital Cameras		
73282	Kodak DC220 Digital 2x Zoom Camera	\$699.98
73283	Kodak DC260 Digital Camera	\$899.98
20250	Sony FD71 Mavica Digital 10x Zoom Digital Camera w/ FREE 10pk of Floppy Diskettes	\$699.98
93849	Sony FD81 Mavica Digital 3x Optical Zoom Digital Camera w/ FREE 10pk of Floppy Diskettes	\$799.98
53947	Olympus D-600L Digital Camera	\$729.98
96863	Olympus D-400 Zoom Digital Camera	\$799.98
96864	Olympus D-620L Digital Camera	\$1199.00
03588	Epson PhotoPC 700 Digital Camera	\$499.98
52813	Agfa ePhoto 1280 Digital Camera	\$599.98
08571	Agfa ePhoto 1680 Digital Camera	\$879.98
Fixed HD/CD Drives		
70443	La Cie 6.4GB Internal SCSI hard drive	\$409.98
70448	La Cie 6.4GB External SCSI 5400RPM	\$479.98
70444	La Cie 9.1GB Internal SCSI 5400RPM	\$549.98
38221	La Cie DVD-RAM External SCSI Drive	\$799.98
95396	La Cie 4x8 External SCSI CD-Recorder	\$289.98
95359	La Cie 2x6x2 CD-RW External SCSI	\$375.98
59776	Fuji CD-R 10 pack	\$19.98
21258	Fuji CD-R 25 pack with jewel cases	\$39.98

we're open 24 hours a day 7 days a week



Corporate bids welcome! Fax to 1-800-684-8080

1-800-436-0606 WWW.ZONES.COM

Source Code MW904

A NASDAQ COMPANY Ticker Symbol: MZON

Buy different.

zones.com™
SHOP HERE!

Mac Zone Best Sellers!

	Mac OS 8.5 FREE OS 8.5 Sherlock T-shirt with purchase! \$2.98 shipping & handling #41970	\$85.85
	Norton AntiVirus 5.0 #00116	\$23.98*
*After \$40 upgrade rebate. Low Zone price \$63.98		
	Norton Utilities 4.0 #04890	\$44.98*
*After \$50 upgrade rebate. Low Zone price \$94.98		
	NEW! StuffIt Deluxe 5.0 #41956	\$24.98*
*After \$50 upgrade rebate. Low Zone price \$74.98		
	Microsoft Office 98 Upgrade #55870	\$259.98
	Quark QuarkXpress 4.0 #95320	\$689.98
	Adobe Illustrator 8.0 Upgrade #88205	\$114.98
	Virtual PC 2.1 with Windows 98 #20634	\$168.98
	NEW! Myth II: SoulBlighter #34779	\$49.98
	Global Village 56K Modem #60339	\$125.98
	Hitachi MC7515 17" Monitor #76535	\$599.98
	Hewlett-Packard 6MP Laser Printer #82666	\$879.98

Power Mac G3

- Up to 400MHz PowerPC™ G3 processor
- Outstanding video performance with 16MB video memory and an ATI RAGE 128 graphics accelerator
- Built-in 10/100 Ethernet
- Two super-fast 400Mbps FireWire ports
- Two industry-standard 12Mbps USB ports

AS LOW AS

\$1599

Easy access!

New!

Apple® Power Mac G3

Processor	RAM	HD	Cache	CD	Zip Drive	Item #	ONLY
G3/300	64MB	6.0GB	512k	24X	-	#102922	\$1599
G3/350	64MB	6.0GB	1MB	DVD	-	#102923	\$1999
G3/350	128MB	12.0GB	1MB	24X	YES	#102924	\$2499
G3/400	128MB	9.0GB UW2	1MB	24X	-	#102925	\$2999



SAVE up to \$700

Apple® PowerBook® G3 Series

Processor	RAM	HD	Display	CD	Item #	ONLY
G3/233	32MB	2.0GB	14.1" TFT	20X	#19056	\$2299
G3/266	64MB	4.0GB	14.1" TFT	20X	#19057	\$2799
G3/300	64MB	8.0GB	14.1" TFT	20X	#07968	\$3199
G3/300	64MB	8.0GB	14.1" TFT	DVD	#19058	\$3699



NEW!
CoZo "iMac" Speakers

#101373 CoZo Speakers (Blue)	\$94.98
#101374 CoZo Speakers (Red)	\$94.98
#101375 CoZo Speakers (Amber)	\$94.98

- AC Powered!
- Works with any Mac computer!
- GREAT sound!

ONLY \$94.98 EA



HP 697c with USB

ONLY \$229.98
#60288



Ares USB Joystick
#101329

Epson Stylus 740

ONLY \$249.98
#31720



Zip Drives and Media

51752 Zip Internal ATAPI w/5.25 mounting	\$99.95
73832 Zip Internal SCSI w/5.25 mounting	\$119.95
55181 Zip External SCSI Remanufactured*	\$89.95
12220 Zip External SCSI	\$119.95
52581 ZipPlus External SCSI & Parallel	\$159.95
32251 Zip large carrying case	\$29.95
88195 Fuji Zip Color 5pk with \$10 rebate	\$59.98
37185 Fuji Zip Color 10pk with \$10 rebate	\$99.98
54009 Fuji Zip Gray 20pk w/4 Free Disks by mail	\$185.98

Removable HD and Media

101701 Jaz 1GB SCSI Int Drive Remanufactured*	\$199.95
101702 Jaz 1GB SCSI Ext Drive Remanufactured*	\$199.95
95233 Jaz 2GB SCSI Int Drive	\$349.95
95234 Jaz 2GB SCSI Ext Drive	\$349.95
43360 Jaz Card PCMCIA Fax SCSI 2	\$124.95
75663 Jaz 1GB Cartridge 3 Pack	\$269.85
73836 Jaz 2GB Cartridge 3 Pack	\$299.85

Modems

13079 Performant 56K PC Card Fax/mod Mac	\$119.98
60385 SupraExpress 56K D/F For Mac	\$94.98*
*Price after \$20 mail-in rebate. Exp. 3/31/99	
60339 Teleport 56K v.90 ext Fax/Modem for Mac	\$125.98
60313 3Com/USR 56K v.90 D/F for Mac	\$97.98†
†Price after \$20 mail-in rebate. Exp. 3/31/99	
36229 Viking 56K v.90 external fax/modem	\$99.98
84690 Global Village 56K v.90 PC Card	\$169.98

Input

71112 Macally Two Button Mouse	\$29.98
87484 Kensington Mouse in a Box	\$39.98
03727 Kensington Keyboard in a Box	\$49.98
89379 Kensington Mouse 1.0	\$59.98
93628 Kensington Thinking Mouse	\$69.98
78420 Kensington Orbit	\$69.98
87483 Kensington Turbo Mouse 5.0	\$99.98
65553 Address Touch Extended Keyboard	\$39.98
75111 Macally MK-6000 Keyboard with Touch Pad	\$72.98
65594 Address Tru-Form Ergo. Keyboard w/Touchpad	\$89.98
75109 Macally Post Kpander	\$55.98

PowerBook Essentials

07157 Targus Leather Notebooks	\$99.98
42445 Kensington Saddle Bag for PB G3 (blk)	\$89.98
06421 Kensington Security Cable	\$39.98
07159 VST G3 Zip Drive	\$239.98
57714 HP 340 cbi portable Inkjet Printer	\$329.98
43690 Konexx Mobile Connector	\$119.98
82633 PB Universal SCSI Adapter	\$31.98
81849 DAVE Mac 2.1	\$119.98
00642 PowerPrint 4.5	\$93.98
03765 Road Rocket	\$289.98
55677 IREZ Capsure zoomed video PCMCIA	\$109.98
55678 Kitterkam	\$239.98
44546 VST auto adapter	\$78.98

Monitors

77015 Apple Studio Display 15" flat panel	\$1,299.00
76514 ViewSonic G5711 17" Monitor (16" View)	\$359.98
76513 Sony Multiscan 200ES 17" Monitor	\$359.98
76517 Sony Multiscan 100ES 15" Monitor	\$199.98
75914 ViewSonic Optiquest 071 17" Monitor	\$269.98
76501 ViewSonic E771 17" Monitor	\$329.98
93755 Princeton 90 Ultra 19"/18" 25 SM 1600	\$449.98
03581 ViewSonic P5790 19"/18" 25 SM 1600	\$559.98
101417 Sony Multiscan 220S3 17" Monitor	\$439.98
77049 Apple/ision 720 17" Display	\$499.98
75956 Optiquest G51 15" Monitor	\$169.98
78611 ViewSonic Optiquest 053 15" Monitor	\$174.98
46794 Sony Multiscan 500PS 21" Monitor	\$1,099.00
46793 Sony Multiscan 400PS 19" Monitor	\$729.98
84147 ViewSonic G810 21" Color Monitor	\$949.98

Printers

31720 Epson Stylus 740	\$249.98
80666 Epson Stylus 800	\$249.98

00583 Epson Stylus EX	\$499.98
40920 Epson Stylus 1520	\$499.98
57715 HP Deskjet 1120se Printer	\$398.98
82666 HP Laserjet BMP Printer	\$879.98
53213 HP Laserjet 4000N Printer	\$1,399.00
57728 HP Laserjet 5000N Printer	\$2,059.00
57736 HP Laserjet 8000N Printer	\$2,639.00
76646 Tektronix Phaser 740 Color Printer	\$1,995.00
74757 Apple LaserWriter 8500	\$1,499.00
52851 Costar LabelWriter Turbo	\$249.98

Call for your **FREE CATALOG!**
All the latest Macintosh products at discount prices!



Expect the Best!™
Low Prices • Selection • Expertise

If for any reason you are not satisfied, please call our No Excuses Hotline: 1-800-258-0270.

1-800-436-0606 **www.zones.com**

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors.
©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh™ and PowerBook™ are registered trademarks of the Apple Computer, Inc.

Choose 71 at www.macworld.com/getinfo

MACWORLD April 1999 131

ClubMac® SAVE BIG BUCKS!

CDRW Value!

The ClubMac 4x4x16x Drive is based on the high-quality Yamaha 4416 mechanism. Add a ClubMac Universal Case and CD recording software for both Mac and PC, and you've got a multi-purpose wonder. It may not slice and dice, but it definitely is a great multimedia recording and archiving tool.



CLUBMAC 4x4x16x CD-RW WITH SOFTWARE

\$399

Don't Forget to Backup Your Data!

The new ClubMac Lightning DAT brings backup to a whole new level! The Lightning DAT includes one 125M Data Media Cartridge for a complete backup solution, providing ease of operation for the Network Administrator. With a 24GB data storage capacity it is easier to handle larger LAN systems. DDS-3 drives are typically 60% faster than other DDS-2 drives based on published specifications. The Lightning DAT is also backward compatible with DDS-2 media, so you can still read all of your existing 120M, 90M, and 60M tapes. With all of these features and ClubMac's great low price, you can't go wrong!

CLUBMAC 12-24GB DDS-3 LIGHTNING DAT EXTERNAL W/RETROSPECT

\$999

Everyone could use a Jaz or Zip!



ZIP 250 250MB EXT.SCSI DRIVE	\$199 ⁹⁵
ZIP USB 100MB EXT. DRIVE	\$139 ⁹⁵
ZIP 100 100MB EXT.SCSI DRIVE	\$119 ⁹⁵
ZIP 250 MEDIA	as low as \$16 ⁹⁵
ZIP 100 MEDIA	as low as \$9 ⁹⁵

JAZ 2GB INTERNAL SCSI DRIVE	\$349 ⁹⁵
JAZ 2GB EXTERNAL SCSI DRIVE	\$349 ⁹⁵
JAZ 2GB MEDIA	as low as \$99 ⁹⁵
JAZ 1GB MEDIA	as low as \$84 ⁹⁵

Media sold separately

Get a CDR and get an Encyclopedia!

ClubMac is offering Groliers 1998 Encyclopedia FREE with our 4x8x CDR drive. Call today as supplies are limited!



CLUBMAC 4x8x CDR WITH SOFTWARE

\$289

CDRW/JAZ Combo

Get the best of both worlds!

\$749

A 2GB Jaz Drive and a CDRW make an outstanding mastering tool! Other configurations are available so call for information. Duplicators are available, too! Call today!



CLUBMAC 4x4x16x CDRW/JAZ 2GB COMBO

\$749

Play DVD Movies!

The ClubMac External DVD Reader Kit includes an external SCSI DVD ROM, PCI decoder board, software and all the cabling you need to play movies on your PCI based Mac.



CLUBMAC INTERNAL ATAPI DVD READER KIT FOR NEW G3
CLUBMAC EXTERNAL SCSI DVD READER KIT

\$399

\$399



Adaptec Ultra2Wide and UltraSCSI Controllers

ClubMac carries the full line of Adaptec SCSI cards. Whether you need the 2930U for your new Yosemite G3, or you need the 2940U2W for Ultra2Wide speed, ClubMac has the card you need at the price you want!

UP TO 80MB PER SECOND!

ADAPTEC 2930U ULTRA SCSI CONTROLLER KIT MAC	\$149 ⁹⁵
ADAPTEC 2940UW ULTRAWIDE CONTROLLER KIT MAC	\$275 ⁹⁵
ADAPTEC 2940U2W ULTRA2 WIDE CONTROLLER KIT MAC	\$459 ⁹⁵

CLUBMAC SCSI DRIVES

Seagate
4.5GB
7200RPM

\$239⁹⁵
Bare



CLUBMAC SCSI WIDE DRIVES

IBM
UltraStar 9ZX
9.1GB

\$239⁹⁵
Bare

- 10,000 RPM
- 7.2ms Seek Time



CLUBMAC ULTRA2 WIDE DRIVES

Quantum
18.2GB
7200RPM

NEW LOW PRICE

\$819⁹⁵
Bare



			BARE	EXT
SEAGATE	Medalist Pro	4.5GB Ultra SCSI	\$239 ⁹⁵	\$309 ⁹⁵
SEAGATE	Barracuda 9LP	9.1GB Ultra SCSI	\$459 ⁹⁵	\$529 ⁹⁵
QUANTUM	Atlas III	18.2GB Ultra SCSI	\$819 ⁹⁵	\$919 ⁹⁵

			BARE	EXT
QUANTUM	Viking II	4.5GB Wide	\$279 ⁹⁵	\$369 ⁹⁵
IBM	Ultrastar 9ZX	9.1GB Wide	\$499 ⁹⁵	\$589 ⁹⁵

			BARE	EXT
QUANTUM	Viking II	4.5GB Ultra2 Wide	\$289 ⁹⁵	\$389 ⁹⁵
QUANTUM	Viking II	9.1GB Ultra2 Wide	\$439 ⁹⁵	\$539 ⁹⁵
SEAGATE	Cheetah	9.1GB Ultra2 Wide	\$719 ⁹⁵	\$819 ⁹⁵
QUANTUM	Atlas III	18.2GB Ultra2 Wide	\$819 ⁹⁵	\$919 ⁹⁵
SEAGATE	Cheetah	18.2GB Ultra2 Wide	\$1169 ⁹⁵	\$1269 ⁹⁵

CHECK OUT OUR WEBSITE!

ClubMac carries a wide variety of SCSI and IDE hard drives. For our full line, check out our website at www.clubmac.com, or call 1-800-ClubMac for more information.

INTERNAL HARD DRIVE KITS

Need a bracket and formatting software for your hard drive? ClubMac Internal Hard Drive Kit's include Charisma's Anubis Hard Drive Utility (with Power Control), a bracket and screws- ask your customer service representative which one you need.

ClubMac has many more single drive and multistyle drive configurations available! Call Today!

**CALL 1-800-260-8549
FOR A FREE CATALOG**

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when supplied. RETURNS: Call for RMA number! Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.



Strawberry • Lime • Tangerine
• Blueberry • Grape
* \$20 Installation fee applies.

SONY S106 1048
200ES
17"
\$379

A Sony S106 1048 200ES 17 inch monitor is shown. The screen displays a vibrant image of a bowl of fruit, including apples and oranges. The monitor has a silver bezel and a black base. The Sony logo is visible in the top left corner of the bezel. The model number S106 1048 is printed in the top right corner of the bezel. The price \$379 is displayed in large, bold, yellow letters at the bottom left of the advertisement.

EPSON
Stylus 3000
\$1299

FD47 1057

1440
DPI


A photograph of the Epson Stylus 3000 printer, a compact inkjet model, shown from a side-front perspective. It is white with a black top cover and a black output tray. A color photograph of a person is being printed and is partially visible in the output tray. The printer is set against a plain white background.

MICROTEK
SlimScan
C3 USB

\$49

*After \$30 Mail-In Rebate M150 107

MODEMS			
GLOBAL VILLAGE MODEMS			
95	Teleport V40 56K Fax/Modem		\$138.95
U.S. ROBOTICS MODEMS			
95	56K V90 FAX/Modem External		\$119.95
LINKMATES			
95	56K V90 PCMCIA FAX/Modem		\$69.95
MEMORY UPGRADES			
72pin SIMMs			
	16MB	8MB	*29.95
95		32MB	*99.95
168 pin DIMMs			
95	16MB		*49.95
95	32MB		*89.95
95	64MB		*189.95
95	128MB		*359.95
PowerMac G3 DIMMs			
	64MB	32MB	*69.95
99		128MB	*259.95
PowerBook G3			
	16MB	125MB	*549.95
99	64MB	32MB	*799.95
99		128MB	*2499.95
iMac			
	16MB	32MB	*799.95
99	64MB	128MB	*2499.95
Memory prices subject to change.			
Please call for current prices.			



Apple®

Powerbook™ G3

Available in
Catalog Reader

\$3699



PowerBook G3 233MHz 14.1" TFT 32MB RAM, 2GB HD, 20X CD, 56K,	\$2299
PowerBook G3 266MHz 14.1" TFT 64MB RAM, 4GB HD, 20X CD, 56K	\$2799
PowerBook G3 300MHz 14.1" TFT 64MB RAM, 8GB HD, 20X CD, 56K	\$3199
PowerBook G3 300MHz 14.1" TFT 64MB RAM, 8GB HD, 56K, DVD	\$3699

**Apple LaserWriter
8500**

\$1449

A107 1271



ClubMac® SOURCE CODE 69049

ORDER TODAY! 24 HOURS A DAY
7 DAYS A WEEK

E-Mail: ClubMac Sales....cmsales@clubmac.com
Customer Service...custsvc@clubmac.com
Technical Support...techsup@clubmac.com
Mail: ClubMac, 7 Hammond Irvine, CA 92618

1-800-260-8549
Order On-line <http://www.clubmat.com>

Modems



TDK CyberExpress 5600
56K v.90 PCMCIA Fax/Modem
for Macintosh/Windows
\$99.99 (TDK 04600012)

U.S. Robotics External v.90 Modem (56K)
(USR EXTM35990) **\$139.99**

Global Village External v.90 Modem (56K)
(GLV EXT9056K) **\$149.99**

Global Village PCMCIA v.90 Modem (56K)
(GLV 56K90MAC) **\$169.99**

Scanners



Microtek SlimScan C3
36-Bit USB Color Scanner
\$49.99 after \$30 mail-in rebate
(MTK SLIMSCAN03P) exp. 4/30/99

UMAX Astra 1220 with USB (36-bit)
(UMAX AST1220UD00) **\$129.99**,
after \$20 mfr. rebate (exp. 3/31/99)

Microtek ScanMaker X6EL (36-bit, scans legal)
(MTK SCANMAK6ELP) **\$249.99**

UMAX Astra 2400S (36-bit, scans legal size)
(UMAX AST2400SD00) **\$299.99**,
after \$50 mfr. rebate (exp. 3/31/99)

Networking



SOHOware 5-Port 10/100 Switch
from NDC Communications
•Auto-negotiating and auto-sensing on every port •Plug & switch •1MB buffer
\$219.99 after \$30 mail-in rebate
(NDC NSH500S) rebate ends 3/31/99

Asante AsanteTalk
Ethernet-to-LocalTalk Connection for iMac
(ASA 99-0050S-B1) **\$99.99**

Mac Software

Kai's PowerTools (5.0)
by MetaCreations



•Explore fantastic textures, vast fractal vistas, complex 3D objects, and endless permutations of image-altering algorithms
\$109.99 (MTB POWERTOOLS-C)

AppleWorks (5.0)
by Apple **\$84.99**

Encyclopedia Britannica 99 Standard Ed.
by Broderbund **\$49.99**

MacTax 98
by Intuit **\$39.99**

Myth II: Soulblighter
by Bungie **\$39.99**

Norton AntiVirus (5.0)
by Symantec **\$59.99**

Tomb Raider 2
by Aspyre **\$44.99**

J&R COMPUTER WORLD

Walk In
15 Park Row
New York, NY

Phone In
(800) 221-8180
J&R Mail Order

Log In
www.jandr.com
AOL Keyword: J&R

Apple® Power Macintosh® G3 iMac™

233MHz All-In-One Computer



- 233MHz PowerPC™ G3 processor •32MB SGRAM, expandable to 128MB •4GB hard drive •24X CD-ROM drive •Built-in 15" monitor (13.8" viewable image size) •6MB SGRAM video •56Kbps V.90 modem •Cable modem ready

\$999.99 (APP M6709LL/B)

Apple® Power Macintosh® G3 iMac™

266MHz All-In-One Computers



- 266MHz PowerPC G3 processor •32MB SDRAM, supports up to 256MB •6GB IDE hard disk drive •SRS surround sound


Choose Your Favorite Flavor!

Strawberry (APP M7389LL/A)
Lime (APP M7391LL/A)
Tangerine (APP M7391LL/A)
Grape (APP M7390LL/A)
Blueberry (APP M7345LL/A)

\$1199.99 each

Apple® Power Macintosh®

Workgroup Server G3-266 128MB



- 266MHz G3 processor •128MB RAM, exp. to 384MB •512K L2 cache •Two 4GB wide SCSI hard drives •24x CD-ROM •10/100Base-T ethernet and LocalTalk™ •2MB video RAM •OS 8.1, AppleShare® IP 5.0, and Virex 5.8 •Monitor sold separately

\$2199.99 (APP M6461LL/A) + (PAN E70)

FREE Panasonic 17" Monitor with purchase!

Apple® Power Macintosh® G3 MiniTowers



- 300MHz, 64MB RAM, 6GB hard drive, CD**
\$1599.99 (APP M6670LL/A)
- 350MHz, 64MB RAM, 6GB hard drive, DVD**
\$1999.99 (APP M6668LL/A)
- 350MHz, 128MB RAM, 12GB hard drive, CD, Zip**
\$2499.99 (APP M6666LL/A)
- 400MHz, 128MB RAM, 9GB Ultra2 hard drive, CD**
\$2999.99 (APP M6665LL/A)

J&R CORPORATE SALES BUSINESS LEASING:

No Money Down, No Payments for 30 Days!
Call J&R Corporate Sales at
1-800-221-3191 or 1-212-238-9080

Printers



EPSON Stylus® COLOR 440
Ink Jet Printer
•720 x 720 dpi for Photo Quality color & laser-sharp black text •Fast print speeds •Windows compatible •Parallel interface
\$129.99 (EPS STYLUS440)

EPSON Stylus Adapter Cable and Drivers
(dedicated adapter for connection of Epson Stylus 440 and Apple iMac)
(EPS CUSBFK2) **\$34.99**

Data Storage



Iomega Jaz® 2GB
Portable External SCSI Drive
•2GB cartridges sold separately
\$349.99 (BER JAZ2G61WC)

Iomega USB Zip Drive
100MB External USB Drive
•100MB Zip cartridges sold separately
\$149.99 (BER ZIP100USB)

Imation USB Drive



Imation SuperDisk™
USB Drive for the Apple iMac™
•Connects easily with iMac •Reads and writes 120MB SuperDisk •Also reads and writes standard high-density 3.5" floppy diskettes (both Mac & PC formats) •Sleek design complements iMac
\$149.99 (IMT 4400227806S)

Imation SuperDisk Diskettes
(IMT 4402278470) **\$49.99 per 5-pk.**

Apple Monitors



Apple® Studio Display
17" Monitor (16" VIS)
•Diamondtron technology for vivid colors and sharp text •Designed to allow the storage of keyboard under monitor
\$499.99 (APP M6221LL/A)

15" Studio Display (Flat-Panel 15.1" VIS)
(APP M6358LL/B) **\$1099.99**

21" ColorSync Display (20" VIS)
(APP M6704LL/A) **\$1499.99**

Order from
www.jandr.com
AOL Keyword: J&R

To Order Toll Free and Receive a Free Catalogue
800-221-8180
24 Hours, 7 Days, Anywhere In The USA
PARK ROW • NEW YORK • NY • 10038 FAX: 1-800-232-4432

All Major Credit Cards Accepted
Overnight Delivery Available!
Order Code: **MW904**
(prices good until 4/30/99)

Not responsible for typographical or pictorial errors. Merchandise is brand-new, factory-fresh & 100% guaranteed! Some quantities may be limited.
Choose 282 at www.macworld.com/getinfo

Seagate CHEETAH
4.5GB Wide **\$399**
 (ST34501W) External: \$489
9.1GB Wide **\$619**
 (ST19101W) External: \$709
9.1GB U2W **\$649**

5.25s Seek (ST39102W)	External: \$739
18.2GB U2W	\$1119
(ST18202U)	External: \$1209
10000 RPM 1024K BUFFER	5.9M5 SEEK
36.4GB U2W	\$1989
(ST136403L)	External: \$2089
10000 RPM 1024K BUFFER	5.9M5 SEEK
 Seagate	BARRACUDA
 4.5GB U2W	\$359
(ST34573LW)	External: \$449
9.1GB U2W	\$399

18.2GB WW External: \$489
(ST39173W)
36.4GB U2W External: \$845
(ST118273W) **\$1,589**
(ST118273W) External: \$1689
50.1GB U2W **\$2,995**
(ST150176W) External: \$3095
7200 RPM 512K BUFFER 7.1MS SEEK

 **Seagate** **MEDALIST**
4.5GB NARROW/IDE **\$219**
(ST34520NW) External: \$279 Wide Ext: \$308

6.5GB NARROW/WIDE \$289
(ST36530N/W) External: \$349 Wide Ext. \$378

9.1GB NARROW/WIDE \$379
(ST39140N/W) External: \$439 Wide Ext. \$468

7200 RPM 512K BUFFER 8.5MS SEEK

 **Seagate** **ELITE**

23GB NARROW/WIDE \$1395
(ST423451N/W) External: \$1495 Wide Ext. \$1525

5400 RPM 2048K BUFFER 11MS SEEK

46GB Wide \$2377
4096K BUFFER (ST463451W) External: \$2462

For Maximum Data Transfer Rates

PowerRAID™

es.com/merchant/MacRaid.html




AlPowerRAID components are covered by our 5 Year, 48 Hour Replacement Warranty.




PowerRAID
is on MEDIA 100's
"Recommended Rack" List
Call or visit our website for our
complete line of Open System
Architecture PowerRAIDs.



18GB PowerRAID SCSI II

36GB PowerRAID SC36
 FIXED: \$1885 REMOVABLE: \$2035
 LEASE FOR: \$82/MO. LEASE FOR: \$90/MO

72GB PowerRAID SC72
 FIXED: \$3265 REMOVABLE: \$3445
 LEASE FOR: \$128/MO. LEASE FOR: \$135/MO

144GB Power RAID SC144
FIXED: \$9,995 **REMOVABLE: \$12,475**
 LEASE FOR: \$157/MO. LEASE FOR: \$177/MO.

144GB Power RAID SC144
FIXED: \$11,775 **REMOVABLE: \$12,475**
 LEASE FOR: \$305/MO. LEASE FOR: \$335/MO.

www.pdisales.com **DAILY WEB SPECIAL**

Click find and order  it now on our website! *

00-524-9952

612-941-1109	Internet:	www.pdisales.com
1-800-524-9952	E-mail:	info@pdisales.com

*CUSTOMERS PAY ALL SHIPPING CHARGES. ALL SHIPPING CHARGES ARE NON-REFUNDABLE.
*CUSTOMERS ARE RESPONSIBLE FOR SHIPPING CHARGES TO RETURN PRODUCT.

ULTRA SCSI

				Int	Ext
2111MB	5400rpm	512K	FB32100S	3yr	\$205 \$265
3228MB	5400rpm	512K	FB33200S	3yr	\$235 \$295
4855MB	5400rpm	512K	FB38400S	3yr	\$349 \$409
9100MB	7200rpm	1024K	XP309100S	5yr	\$429 \$489
18200MB	7200rpm	1024K	XP318200S	5yr	\$749 \$809

ULTRA WIDE SCSI

4550MB	7200rpm	512K	VK304550W	5yr	\$249 \$339
9100MB	7200rpm	512K	VK309100W	5yr	\$389 \$479

ULTRA 2 SCSI

4550MB	7200rpm	512K	VK304550LW	5yr	\$249 \$349
9100MB	7200rpm	512K	VK309100LW	5yr	\$389 \$489
18200MB	7200rpm	1024K	XP318200LW	5yr	\$749 \$849

We also stock Ultra-2 drives with SCA connector

Quantum Approved Audio Visual drives specifically tuned to meet demanding A/V apps.

ULTRA 2 SCSI A/V (Minimum sustained 10MB/sec)

4550MB	7200rpm	512K	VK304550LV4	5yr	\$279 \$379
9100MB	7200rpm	512K	VK309100LV4	5yr	\$419 \$519
18200MB	7200rpm	1024K	XP318200LV4	5yr	\$779 \$879

We are the #1 source for Quantum

Capacity for the Extraordinary

Ultra-2 Special
Step up to 80MB/sec
Drive with Adaptec controller

9GB VK9MACI \$780
External VK9MACX \$900

18GB XP18MACI \$1140
External XP18MACX \$1260

CD RECORDERS

Smart Storage Solutions CDR Drives Include:

- ✓ Toast Mastering Software
- ✓ 5 FREE disks
- ✓ Toll Free support



Includes Toast & DirectCD Software!

DirectCD from Adaptec now makes a CD Recorder as easy to use as a hard drive.

Compare our price and you will see we are the #1 source for CD Recorders!

4x8 CDR \$259



CD RECORDABLE Includes 5 Free Recordable Disks!

4x8 Panasonic mechanism, tray load, 1MB buffer	\$259	\$319
4x12 Teac mechanism, tray load, 1MB buffer	\$269	\$329
4x12 Plextor mechanism, caddy/tray load, 2MB buffer	\$379	\$439
8x20 tray load, 2MB buffer	\$389	\$449
8x20 Plextor mechanism, tray load, 4MB buffer	\$509	\$569

PRICE BREAKTHRU

CD REWRITABLE Includes 5 Free ReWritable Disks!

4x4x16 Yamaha mechanism, tray load, 2MB buffer	\$389	\$449
--	-------	-------

Stomper CD label kit only \$35 with CD-R drive!



The professional's choice for backup. We will not be undersold on Quantum DLT Tape drives!

Native	Compressed	Internal	External (our case)	External (Quantum case)
15GB	30GB	\$769 DLT2000XT	\$869 DLT2000XTX	n/a
20GB	40GB	\$1849 DLT4000	\$1949 DLT4000X	\$2059 DLT4000QX
35GB	70GB	\$4589 DLT7000	\$4689 DLT7000X	\$4799 DLT7000QX

DLT MEDIA SALE

	1-4	5-9	10-49	50+
DLTHH 10-20GB Media (DLT3)	\$38	\$37	\$35	\$33
DLTHHX 15-30GB Media (DLT3XT)	\$40.5	\$40	\$38	\$36
DLTIV 20-40GB Media (DLT4)	\$80	\$79	\$77	\$75

DLT Cleaner

	1-4	5-9	50+
(DLTCLEAN)	\$41	\$38	\$36

SCSI HARD DRIVES



				Internal	External
4.5GB	7200rpm	512K	ST34520N	3yr	\$225 \$285
4.5GB	7200rpm	512K	ST34573N	3yr	\$369 \$429
6.5GB	7200rpm	512K	ST36530N	3yr	\$305 \$365
9.1GB	7200rpm	512K	ST39140N	3yr	\$380 \$440
9.1GB	7200rpm	1024K	ST39173N	3yr	\$405 \$465
18.2GB	7200rpm	1024K	ST118273N	3yr	\$765 \$825

ULTRA WIDE SCSI

4.5GB	7200rpm	512K	ST34520W	3yr	\$225 \$315
4.5GB	7200rpm	512K	ST34573W	3yr	\$369 \$459
6.5GB	7200rpm	512K	ST36530W	3yr	\$305 \$395
9.1GB	7200rpm	512K	ST39140W	3yr	\$380 \$470
9.1GB	7200rpm	1024K	ST39173W	3yr	\$405 \$495
18.2GB	7200rpm	1024K	ST118273W	3yr	\$765 \$855

ULTRA 2 SCSI

4.5GB	7200rpm	1024K	ST34573LW	5yr	\$369 \$479
4.5GB	10,000rpm	1024K	ST34502LW	5yr	\$529 \$639
9.1GB	10,000rpm	1024K	ST39102LW	5yr	\$639 \$749
9.1GB	10,000rpm	4096K	ST39102LW4	5yr	\$739 \$849
9.1GB	10,000rpm	1024K	ST39173LW	5yr	\$405 \$515
18.2GB	7200rpm	1024K	ST118273LW	5yr	\$765 \$875
18.2GB	10,000rpm	1024K	ST118202LW	5yr	\$1159 \$1269
18.2GB	10,000rpm	4096K	ST118202LW4	5yr	\$1399 \$1509

IBM

4.5GB	5400rpm	512K	IBM34560N	5yr	\$255 \$315
9.1GB	7200rpm	512K	IBM39130N	5yr	\$459 \$519
18.2GB	7200rpm	1024K	IDGHS18Z	5yr	\$789 \$849
18.2GB	7200rpm	1024K	IDGHS18Z	5yr	\$789 \$849
18.2GB	1" High	2MB	IBM318350N	5yr	\$959 \$1019

ULTRA WIDE SCSI

4.5GB	5400rpm	512K	IBM34560W	5yr	\$239 \$329
9.1GB	7200rpm	512K	IBM39130W	5yr	\$449 \$539
18.2GB	1" High	2MB	IBM318350W	5yr	\$959 \$1049

ULTRA-2 SCSI

9.1GB	7200rpm	512K	IBM39130U2	5yr	\$459 \$569
9.1GB	10020rpm	4096K	IDRV59U2	5yr	\$629 \$739
18.2GB	7200rpm	1024K	IDGHS18U2	5yr	\$799 \$909
18.2GB	10020rpm	4096K	IDRV518U2	5yr	\$1069 \$1179
36.4GB	7200rpm	4096K	IDRH536U2	5yr	\$1599 \$1709



SCA Drive Enclosure - Perfect for RAID
• Holds three 1" high SCA drives. • Drive modules are hot swappable. • Heavy duty construction and cooling. Enclosure with modules (SCA3CASE) \$329

CD ROM DRIVES

		Internal	External
16X - 5 disc changer	Nakamichi	MJS16M/XM	\$189 \$249
24X - 6 disc changer	Pioneer	DRM6324XM	\$419
32X - 512K buffer	Plexor	PX32TSM/XM	\$119 \$179
36X - Slot load	Pioneer	DRU706M/XM	\$89 \$149
40X - tray load	Toshiba	XM6401BM/XM	\$99 \$159

MISCELLANEOUS

IOmega 2GB Jaz JAZ2X \$339
JAZ Media Sale 1GB qty 2-9 / 10+ \$79 / \$77
2GB qty 2-9 / 10+ \$87 / \$85

ADAPTEC Controllers
PCI Wide Single Channel A2940MUW \$259
PCI Wide Dual Channel A3940MUW \$439
PCI FireWire + Wide SCSI AH8945 \$559
PCI Ultra 2 A2940MU2W \$399

ATTO Controllers
PCI Fibre Channel ATTOPCFC \$769
E4 Cool DVD Kit
Complete kit for Mac G3 computers DVDMAC \$199

DVD-RAM Kit
Complete ext kit w/ 1 disk 5.2GB rewritable DVD-RAM \$679
DVD RAM media #DVD-RAMDISK 1-4 \$40 5-9 \$37 10+ \$35

Maxopix Optical Drives
2.6GB TS-2600 \$1149 5.2GB TS-2600 \$1499
2.6GB media 2-4/5-9/10+ \$40/36/34 5.2GB media 2-4/5-9/10+ \$95/91/89

Sony Tape Drives with Retrospect
Turbo (up to 90MB/min) 4-8GB external kit SDT7000XM \$699
Turbo (up to 144MB/min) 12-24GB external kit SDT9000XM \$929

120Meter Tapes 2-4/5-9/10+ \$17/14/12 125Meter Tapes 2-4/5-9/10+ \$31/28/26

Nobody knows more about drives than MegaHaus. Call us with your needs. Custom configurations are just a call away.

RAID



These preconfigured RAID's can be run in RAID 0 or 1 mode. The capacity listed is for RAID 0 configuration. In RAID 0, the data is striped across a pair of drives. This is perfect for digital video such as Media 100, TrueVision, Avid, or other applications that require extremely high data transfer rates. Includes - Ultra 2 LVD SCSI drives - Adaptec PCI Ultra-2 SCSI controller - Adaptec Remus Lite RAID software - Necessary cables

Removable	Fixed
18GB 7,200rpm	2 9.1GB Quantum Viking drives \$1659 \$1559
18GB 7,200rpm	2 9.1GB Quantum Atlas drives \$1859 \$1659
18GB 7,200rpm	2 9.1GB Seagate Barracuda drives \$1829 \$1629
18GB 10,000rpm	2 9.1GB Seagate Cheetah drives \$2289 \$2089
36GB 7,200rpm	2 18GB Quantum Atlas drives \$2599 \$2399
36GB 7,200rpm	2 18GB Seagate Barracuda drives \$2629 \$2429
36GB 10,000rpm	2 18GB Seagate Cheetah drives \$3579 \$3379

NETWORK READY CD TOWER



Connects directly to your Ethernet network. Easy to install. Auto switches between 10 and 100Mbps network. Also has built-in http support for easy connection to Internet. Includes 8 32X drives SSS32X8N \$1599

Since 1987 The Drive Authority



1-800-786-1184

Sales lines open: M-F 8-8 Sat 9-3 CST

www.megaHaus.com

Secure ordering • Daily Specials • #1 Drive Store on the Web!



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. Defaced items may not be returnable. 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. ©1999 MegaHaus Inc.

REAL WORLD



Now landing on your
desktop – only \$1199

Apple® iMac™

- ◆ 266MHz PowerPC G3 processor ◆ 15" display, 13.8" viewable, with 1024 x 768 resolution ◆ RAM: 32MB SDRAM ◆ 6GB hard drive
- ◆ 24X CD-ROM drive ◆ 56Kbps modem ◆ 10/100BASE-TX Ethernet
- ◆ Two 12Mbps Universal Serial Bus (USB) ports ◆ 6MB video memory
- ◆ Built-in stereo speakers with SRS sound

Blueberry
CDW 145309

Strawberry
CDW 145294

Tangerine
CDW 145304

Grape
CDW 145307

Lime
CDW 145302

CDW is a \$1.7 billion, Fortune 1000 company. In September 1998, Fortune magazine listed CDW as one of "America's Fastest Growing Companies" for the second consecutive year. CDW is an Apple® Authorized Catalog Reseller.



Setting new standards for power and performance

Apple® Power Macintosh G3 Series

- 300MHz PowerPC G3
- 512KB backside cache
- 100MHz system bus
- 64MB SDRAM
- 6GB Ultra ATA hard drive
- 24X CD-ROM drive
- 16MB video memory

\$1599.00
CDW 145053

- 350MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 64MB SDRAM
- 6GB Ultra ATA hard drive
- 5X/32X DVD-ROM drive
- 16MB video memory

\$1999.00
CDW 145055

- 350MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 128MB SDRAM
- 12GB Ultra ATA hard drive
- 24X CD-ROM drive
- 100MB Zip drive
- 16MB video memory

\$2499.00
CDW 145062

- 400MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 128MB SDRAM
- 9GB Ultra2 SCSI hard drive
- 24X CD-ROM drive
- 16MB video memory

\$2999.00
CDW 145057

MONITORS

APPLE

AppleStudio display 17"	
(16" view) 0.25mm AG	499.00
AppleStudio display 21"	
(19.8" view) 0.25-0.27 mm AG	1499.00
AppleStudio display 15.1" LCD	1099.00

MITSUBISHI

87TXM 17" (16" view) 0.25mm AG	519.05
91TXM 21" (19.7" view) 0.28mm AG	1038.98

PHILIPS/MAGNAVOX

105S 15" (14" view) 0.28mm	166.57
107S 17" (16.2" view) 0.28mm	267.00
109S 19" (17.9" view) 0.26mm	459.00

NEC

MultiSync A500 15" (13.8" view) 0.28mm	197.45
MultiSync E500 15" (13.8" view) 0.25mm	276.76
MultiSync A700 17" (15.6" view) 0.28mm	337.25
MultiSync E700 17" (15.6" view) 0.25mm	475.27
MultiSync P750 17" (15.6" view) 0.25mm	539.31
MultiSync E900 18" (18" view) 0.28mm	595.04
MultiSync P1250+ 21" (19.6" view) 0.28mm	1099.46

SONY

100ES 15" (14" view) 0.25mm	199.28
200ES 17" (16" view) 0.25mm	379.18
400PS 19" (18" view) 0.27mm	739.21
500PS 21" (19.8" view) 0.26mm	1233.79

VIEWSONIC

GS771 17" (16" view) 0.27mm	368.50
G790 19" (18" view) 0.26mm	587.64
G800 20" (18.4" view) 0.28mm	975.88
G810 21" (20" view) 0.25mm	949.23
P775 17" (16" view) 0.25mm	508.60
PS790 19" (18" view) 0.25mm	617.54
PT813 21" (20" view) 0.28mm AG	1108.64
P815 21" (20" view) 0.25mm	1218.17

VIDEO BOARDS

ATI TECHNOLOGIES

Nexus GA 8MB PCI	499.11
Xclaim TV external TV tuner	86.82
Xclaim VR bundle PCI	256.76
Xclaim 3D RAGE PRO 8MB PCI	117.06
Xclaim 3D RAGE PRO 4MB PCI	158.73

IX MICRO

Ultimate Rez 2D/3D 8MB PCI	468.80
ix3D Pro Rez 8MB PCI Power Mac	287.91
Road Rocket PC Card	284.61

COMMUNICATIONS

3COM

Courier I-modem	346.82
-----------------	--------

GLOBAL VILLAGE

TalePort 56K V.90 external	134.03
56K bps fax/modem/Ethernet PC Card	218.66

3COM/U.S. ROBOTICS

Sportster 56K Faxmodem external	117.99
---------------------------------	--------

DATA STORAGE

IOMEGA

Zip drive 100MB external USB for iMac	149.95
ZipPlus drive 100MB external	169.95
100MB Zip disk 3-pack	39.95
Zip drive 250MB external SCSI	199.95
250MB Zip disk 4-pack	69.95
Jaz drive 2GB internal	349.95
Jaz drive 2GB external	349.95
2GB Jaz disk 3-pack	299.95

LACIE

36X CD external	159.00
4X8 CD-Recordable external	499.00
4X12 CD-Recordable external	399.00
DVD-RAM external	799.00
2.1GB Quantum Ultra SCSI-3 internal	239.00
3.2GB Quantum ST Ultra SCSI-3 internal	239.00
6.4GB Quantum ST Ultra SCSI-3 internal	419.00
9.1GB Quantum Ultra SCSI-3 internal	529.00
3GB Apple drive Ultra SCSI-3 external	379.00
4GB Apple drive Ultra SCSI-3 external	419.00

QUANTUM

2.1GB Fireball SE Ultra SCSI-3	228.85
3.2GB Fireball SE Ultra SCSI-3	276.26
6.4GB Fireball SE Ultra SCSI-3	403.76
8.4GB Fireball SE Ultra SCSI-3	397.84

SCANNERS

AGFA

SnapScan 1236S scanner	237.88
SnapScan 1212U flatbed scanner	126.46
Duoscan T1200 flatbed scanner	643.72

EPSON

Expression 800 Artist scanner	799.00
Expression 800 Professional scanner	999.00
Expression 836XL scanner	2499.00

MICROTEK

ScanMaker 4 Dual scanner	657.19
ScanMaker 9600XL scanner	1406.10
ScanMaker X6 scanner	154.43
ScanMaker X6EL scanner	228.95

NIKON

Super CoolScan LS 2000 film scanner	1837.69
-------------------------------------	---------

UMAX

Astra 610S flatbed scanner	118.63
Astra 1220S flatbed scanner	179.00
Astra 1220U USB flatbed scanner	149.00
PowerLook II Duo Advance flatbed scanner	1099.00
Mrage Iise flatbed scanner	
w/MagicScan software	2595.00

VISIONEER

PaperPort Strobe scanner	244.97
--------------------------	--------

PRINTERS

APPLE

LaserWriter 8500	1448.57
------------------	---------

EPSON

Stylus Color 740	249.00
Stylus Color 850	349.00
Stylus Color 1520	499.00
Stylus Color 3000	1299.00
Stylus Photo 700	249.00
Stylus Photo Ex	499.00

HEWLETT-PACKARD

HP DeskJet 340 portable ink jet printer	277.08
HP DeskJet 1120Cse printer	499.00
HP DeskJet 1600CM printer	1948.93
HP LaserJet 6MP printer	895.92
HP LaserJet 4000N printer	1389.99
HP LaserJet 8000DN printer	3028.76

DIGITAL IMAGING

AGFA

ePhoto 780 digital camera	275.55
ePhoto 1280 digital camera	599.05

EPSON

PhotoPC 700 digital camera	499.00
----------------------------	--------

KODAK

DC210 plus zoom digital camera	399.00
DC260 zoom LCD digital camera	899.00

CDW® DIRECTORY

PC sales	800-800-4239
Mac sales	800-509-4239
Corporate sales	800-280-4239
Corporate software sales	800-294-4239
Government and Education sales	800-808-4239
Networking sales	800-377-4239

CDW® TELEPHONE HOURS

Sales

Monday-Friday 7 a.m.-9 p.m. CT	
Saturday 9 a.m.-5 p.m. CT	
Tech Support/Returns for Customers	
800-383-4239	
Monday-Friday 7 a.m.-9 p.m. CT	
Saturday 9 a.m.-5 p.m. CT	

All products sold by CDW are third party products and are subject to the warranties and representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, CDW makes no representation or warranty with respect to the Y2K compliance of products sold.

56K modems are capable of 56Kbps downloads, however, current regulations limit download speed to 53Kbps. Internet connectivity requires access services from an Internet access provider. Contact your local access provider for rates, terms and conditions.

©1999 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 MW4450A 4/99



Computing Solutions
Built for Business™

800-509-4239
www.cdw.com

Choose 2 at www.macworld.com/getinfo

DON'T MISS THE BUS!



Get on board with Macworld Live!

The San Francisco production of Macworld Live continued the tradition of unsurpassed show coverage and editorial excellence by delivering the best of Macworld Expo SF '99 to both show attendees on-site, and virtual attendees tuning in from cyberspace. More than **240,000** cyber attendees dialed in to see and/or hear archives of Macworld Live programming and the Steve Jobs' keynote, brought to them exclusively by Macworld and ZDNN.

Did you miss the bus and the show?

Not to worry! Macworld has the Best of the Show and you covered!

Check it all out at: **www.macworld.com** where you'll find everything you may have missed—hear the inside scoop from top executives of Apple, Microsoft and industry insiders; learn software secrets and hardware tips from award-winning developers and Macworld Lab's technicians; find out what all the "iCandy" buzz is about—digest the Steve Jobs' keynote at your leisure.



Attention Marketers!

Capture the attention of over a quarter of a million Macintosh enthusiasts, live and on-line, at the Boston Macworld Expo in August '99! Put your products in touch with the most active Macintosh buyers—don't miss this opportunity for maximum brand exposure! Find out how Macworld Live can work for you; call your local Macworld sales rep today. Or contact Karla Kyrias at 415-278-8542, karla_kyrias@macworld.com for more information.

Special Of The Month

More Games For Your Mac

Turn Your G3 Mac Into A Sony Playstation!

\$48.99



Connectix Virtual Game Station

Bottomline DISTRIBUTION

Mac On!

www.blol.com

1-800-622-5698



Bottom Line CDR/CDRW Store

Panasonic CDR Media: 10-Pack \$13.99, 25-Pack \$32.25, 100-Pack \$119

Yamaha Case 4416S CDRW: 4x/4x/16x (w/Toast 3.5.5) \$529

External 4416S CDRW: 4x/4x/16x (w/Toast 3.5.5) \$419

Yamaha Internal: ReRecordable 4x/4x/16x ..\$339

Teac 6x/20x Drive \$479.99

8x/20x Internal! Burn A CD In 9 Minutes!

Adaptec Toast/Direct CD\$69.99
CDR Media From.....\$1.19
SKF CDRW Media\$3.99

Retrospect Express v4.1.....\$38.99
85/9500 Internal CD-KIT.....\$24.97
86/9600/G3 Int. CD-KIT.....\$19.79

The Bottom Line iMac Store

The New iMac From Apple Computer **\$1195**

USB Devices:

Ariston USB Joystick\$49.99
Ariston iSee Video Camera.....\$127
Ariston iView Video Capture.....\$144
iMacAccessories USB PC1 Card \$49.99
iMacAccessories iStick Joystick.....\$49
iMacAccessories iPad Gamepad.....\$27
Microtek USB to SCSI.....\$79.99
Agfa 1212U Scanner USB.....\$109.99
Macally iMouse.....\$23.99
Macally iHub 4-Port USB.....\$49.99
Macally iBall USB Trackball.....\$49.99
Farallon iPrint LocalTalk.....\$109
iMac iMouse Superdisk USB Card.....\$38.99

Get More RAM!

iMac 32MB Module.....\$69
iMac 64MB Module.....\$109
iMac 128MB Module.....\$129
iMac 2MB VRAM.....\$119
iMac 4MB VRAM.....\$119

Keep That Mac! G3 Upgrade Cards

RAILGUN from Bottomline

G3 250MHz/1MB 2-1\$359
G3 275MHz/512k 2-1\$379
G3 333MHz/1MB 1.5-1.....\$649
G3 366MHz/1MB 2-1\$699
G3 400MHz/1MB 2-1\$999

POWERLOGIX

G3 220MHz/512k 2-1\$299
G3 300MHz/1MB 2-1\$579
G3 333MHz/1MB 2-1\$789
G3 400MHz/1MB 2-1\$1179

ZIF Upgrades

G3 333MHz/1MB 2-1\$739
G3 400MHz/1MB 2-1\$1299

7mactell

GMAX 280MHz For C5/600 \$499
G3 333MHz/1MB 2-1\$799
G3 400MHz/1MB 2-1\$899
G3 366MHz/1MB 1.5-1.....\$1099
G3 400MHz/1MB 2-1\$1099

XLR8

G3 300MHz/1MB 3-2.....\$599
G3 333MHz/1MB 2-1.....\$999
G3 366MHz/1MB 2-1.....\$1099
G3 400MHz/1MB 2-1.....\$1289

ZIF Upgrades

G3 300MHz/1MB 2-1.....\$559
G3 333MHz/1MB 2-1.....\$739
G3 400MHz/1MB 2-1.....\$1199

MAXpower G3 6100/7100/8100 \$from 438
MAXpower G3 250/125MHz 512k\$382
MAXpower G3 300/150MHz 512k\$559
MAXpower G3 366/183MHz 1MB\$1299
MAXpower G3 400/200MHz 1MB\$1549
N3power G3 233 512k 140091\$439

ZIF Upgrades

G3 333MHz/1MB 2-1.....\$1199
G3 400MHz/1MB 2-1.....\$1499
Cache Slot Upgrades:
MAXpower 260/512k\$489.99

PowerBooks And Accessories

PowerBook G3 Series From:

32MB Memory Module.....\$99.99
64MB Memory Module.....\$121.99
128MB Memory Module.....\$139.99

PowerBook Accessories:

Apple PowerBook Battery.....\$239
Apple PowerBook Floppy Drive \$119
Apple G3 AC Power Adapter.....\$78
Apple DVD Player Option.....\$499
VST Internal iMation 120MB.....\$197
VST Internal Zip Drive.....\$223
Skynrunner PowerBook Case.....\$49.98

G3 PowerBook Prices:

233MHz 32/2GB/20x/14.1".....\$2399
266MHz 64/4GB/20x/14.1".....\$2899
300MHz 64/8GB/20x/14.1".....\$3899
300MHz 64/8GB/DVDD/14.1".....\$4299

New G3 Macs From Apple

Apple's "New Blue" G3 Macs:

400MHz/1MB 128/9GB-U2/24x **\$2989**

300MHz/512k 64/6GB/24x **\$1589**

350MHz/1MB 64/6GB/DVD **\$2489**

350MHz/1MB 128/12GB/24x/ZIP **\$1989**

New Features Include:

- 2 Firewire Ports
- 2 USB Ports
- NO SCSI Connection
- Rage 128-Bit Graphics

Must Have Accessories:

Apple's "New Blue" Displays:

21" Studio Display **\$1499**

15" LCD Display **\$1099**

17" Studio Display **\$499**

SCSI Cards:

Adaptec 2906.....\$53.99
Adaptec 2930U \$132.99
Initio Ultra/Wide.....\$189
Jackhammer Wide \$289
ATTO Ultra/Wide.....\$265

Floppy/Modem:

iMation 120MB.....\$154
iMacAccessories.....\$94.99
VST Floppy.....\$95.99
Apple Internal Modem: 56k v.90\$99.99

Diamondtron CRT
25mm aperture grill
16" viewable

Bottom Line's Best Prices On RAM. Lifetime Warranty!

<p>168-Pin DIMM EDO 5-Volt</p> <p>UMAX C Series, 65/6400/PowerCC</p> <p>16MB 168-Pin DIMM 60ns\$49 32MB 168-Pin DIMM 60ns\$89 64MB 168-Pin DIMM 60ns\$139</p> <p>168-Pin DIMM FPM</p> <p>PCI PowerMac 7300-9600, PowerCC, 9900</p> <p>16MB 168-Pin DIMM 60ns\$49 32MB 168-Pin DIMM 60ns\$89 64MB 168-Pin DIMM 60ns\$139 128MB 168-Pin DIMM 60ns\$289</p>	<p>"Old" G3 RAM SDRAM</p> <p>Exclusively for the old G3 Macs</p> <p>32MB 100MHz SDRAM\$69 64MB 100MHz SDRAM\$95 128MB 100MHz SDRAM\$195 256MB 100MHz SDRAM\$559 4MB VRAM Upgrade\$39</p> <p>DIMMs 168-Pin 3.3 volt</p> <p>Starmax, Apple 6500, 4400</p> <p>32MB 168-Pin DIMM 60ns\$89 64MB 168-Pin DIMM 60ns\$139</p>	<p>SIMMs 72-Pin</p> <p>6171/8100, LCII, 6200, 6300, etc.,</p> <p>16MB SIMM 60ns\$59 32MB SIMM 60ns\$79 256k L2 Cache SIMM\$9.99 128k L2 Cache Card\$149.99</p> <p>"New Blue" G3 RAM PC100</p> <p>32MB SIMM 60ns\$69 64MB SIMM 60ns\$109 128MB SIMM 60ns\$239 256MB SIMM 60ns\$599</p>	<p>iMac RAM</p> <p>32MB SIMM 60ns\$69 64MB SIMM 60ns\$109 128MB SIMM 60ns\$239 4MB VRAM Upgrade\$39 2MB VRAM Upgrade\$19.99</p> <p>PowerBook 1400 RAM</p> <p>32MB SIMM 60ns\$139 48MB SIMM 60ns\$189</p> <p>PowerBook 5300, 3400, 1xx Series CALL For Pricing!</p>	<p>Digital Camera RAM</p> <p>Smart Media:</p> <p>4MB Smart Media\$28.99 8MB Smart Media\$35.99 16MB Smart Media Card\$49.99 Smart Media PCMCIA Adapter Card\$79.99</p> <p>Flash RAM:</p> <p>16MB Compact Flash w/Adap\$79.99 24MB Compact Flash w/Adap\$117.99 32MB Compact Flash w/Adap\$135.99 48MB Compact Flash w/Adap\$249.99</p> <p>Smart Media And Flash Ram Readers CALL For Pricing!</p>
--	---	---	--	---

We Carry Over 3000 Macintosh Related Products. Check Them Out On Our Website! www.blol.com

<p>64MB</p> <p>64MB 168-Pin DIMMs FPM/EDO Lifetime Warranty From Bottom Line</p> <p>\$139.99 Bottom Line's Low Price</p>	<p>Norton Utilities v4.0</p> <p>Now Compatible With HFS+</p> <p>\$97.99</p>	<p>Norton Anti-Virus v5.0</p> <p>Keep Your Mac Clean!</p> <p>\$62.99</p>	<p>Klingon Honor Guard CD-ROM</p> <p>\$48.99</p>	<p>Fuze</p> <p>Digital Video Capture Card</p> <p>Captures Video At 30fps/60fields</p> <p>\$499</p> <p>Fuze™ rocks!</p>	<p>UMAX 1212u USB Scanner 600x1200</p> <p>Perfect Scanner for your iMac or USB equipped Mac system. • 8.5x11.7 Scanning Area</p> <p>\$148</p>
<p>Media 100qx Professional Digital Video Capture Card</p> <p>\$1799</p> <p>*Component System \$3698</p>	<p>IDE Hard Drives</p> <p>IDE Drives:</p> <p>MAXTOR Pro 10.2GB EIDE\$295 MAXTOR 17.2GB EIDE.....\$359 Seagate 10.2GB Medalist EIDE \$209 Quantum 12.7GB Fireball ES\$269</p>	<p>iMac Swivel Stand</p> <p>\$59.99</p>	<p>iCatch Mouse Extender</p> <p>\$9.99</p>	<p>iomega 250MB</p> <p>iomega Zip 250MB SCSI Mac/PC</p> <p>\$189</p> <p>The Next Generation Zip Drive</p> <p>Reads and writes to old 100MB Zip Disks</p>	<p>128MB</p> <p>128MB SDRAM DIMMs For G3 Apple's PowerMac Systems Lifetime Warranty From Bottom Line</p> <p>Bottom Line's Low Price \$195</p>

<http://www.blol.com/>

Bottomline DISTRIBUTION

1-800-990-5697

M-F 9-8
Sat. 10-4

Shipping: \$5. 5 lbs., UPS Ground Payment. No credit card surcharge. Corporate POs welcome. Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be in original condition, opened software is non-refundable. All orders subject to a minimum 15% restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for credit. Bottom Line Distribution cannot be responsible for errors in typography or photography, Apple specs subject to change. Customer Service: 512-485-4602. International Sales: Bottom Line Distribution is committed to the needs of international Macintosh users. We offer discounted rates with DHL. 2 to 3 day delivery to most countries. Dealer inquiries welcome. Language interpreters available. Address: 715 West 23rd St. Ste. N, Austin, TX 78705 Fax: 512-485-4601. Hours: M-F 9-8 / Sat 10-4 All trademarks are the sole property of their respective owners.

Bottom Line Offers Business Leasing on all items we carry (orders over \$1000.00). Call today for details, or fill out a lease form online!

Choose 221 at www.macworld.com/getinfo

Free UPS Ground Shipping When You Order On-Line. Surf to: <http://www.blol.com/>

Free UPS Ground Shipping When You Order On-Line. Surf to: <http://www.blol.com/>

PRODUCT INDEX

Category	Page No.	Category	Page No.
Business Operations140-141		Peripheral Products144-145	
Bar Code		CD ROM	
Print Utility		Digital Media	
Software		Magnetic Media	
Communications/		Services161-163	
Networking143-144		Data Recovery	
Cross Platform		Digital Imaging/Production	
Networking Peripherals		Printing	
		Repair	
Education/		Systems & Peripherals . . .145-158	
Entertainment141-143			
Discount Software			
Graphics142		Account Manager:	
CAD		Carol Johnstone.....415.243.3691	
Fonts		carol_johnstone@macworld.com	
Memory & Upgrades . . .159-161		Account Manager:	
Memory Upgrade		Niki Stranz.....415.243.3664	
		niki_stranz@macworld.com	
Digital Advertising Coordinator:		Assistant:	
Dennis McKown415.243.3523		Alissa Mach.....415.243.3628	
production@macworld.com		alissa_mach@macworld.com	

Create your own bar code graphics.



CALL FOR FREE DEMO

Bar Code Pro[®] v3.5 with Veribar[®]

For guaranteed readability!

SNX www.snx.com Call 800 619-0299
Tel 718 499-6293 Fax 718 768-3997

Create perfect PostScript (EPS) bar code graphics for Quark, PageMaker, Illustrator, Freehand, etc. All popular bar code types (UPC, Postnet, 39, EAN, 128, ITF, ISBN) included. Works with any printer resolution, with no fonts required! Mac/Win95/NT

Choose 401 at www.macworld.com/getinfo

BAR CODE SOLUTIONS

- Labeling Applications
- Bar Code Font Packages
- Scanners & Lasers
- Thermal Label Printers

Visit us online at:
www.bearrock.com

Bear Rock Offers:
Free Expert Consultation,
Lifetime Technical Support
and Satisfaction Guaranteed
on ALL Bar Coding products!

Bear Rock Welcomes VARs.



FREE Handbook
"Guide to Understanding Bar Code Basics"

Call Today for a FREE Consultation!

800 232-7625

Int'l: (530) 672-0244 Fax: (530) 672-1103

Choose 403 at www.macworld.com/getinfo

PrintChef[®] - "it's not printing magic, it's printing science..."

When it comes to printing:

Booklets
Toner/Ink Control
New Paper Sizes
Multi-Ups & Labels
Mail Merging
Bar Codes
Logging & Security
Collected Files
Sign Your Faxes
Serialization
Tiling & Banners
Letterheads
Previews & Covers
Fronts & Backs
to your design...

...there is no equal!

print different

Add the **printChef** button
to your print dialog today...

Street priced at \$60
\$95 printChef (personal)
\$45 Tiling Helper
\$35 Fill-in-the-Blank
\$350 printChef Pro
60-day money-back guarantee

printChef is a print extension that sits between any application & any printer driver... it takes **Print Recipes** that you design to control any application's output...

for ANY printer and ANY application— all in one package!
To boost the printing power of **any application**, call **(800) 648-6840**...or try our demos, print recipes, & multimedia tutorials at www.mindgate.com

...for international callers
Worldwide: (931) 937-6800
Fax Orders: (931) 937-6801

System 7 or 8. For 680x0 & any PowerMac. Works with ANY printer & ANY application. printChef's miracles require only 32K of memory.

*Tiling Helper is a printChef plug-in. MindGate, printChef, and their logos are registered trademarks. "print different", Tiling Helper, Fill-in-the-Blank, PrintRecipes, and PrintMixer are trademarks, and "it's not printing magic, it's printing science" are slogans of MindGate Technologies, Inc.



MindGate[®] Technologies, Inc.
164 Oliver Smith Road
Fayetteville, TN 37335-5335

Order direct from us
VISA
MasterCard
or by
Phone: 800-255-4227

Choose 402 at www.macworld.com/getinfo

Finally, a Powerful Thermal Transfer Printer for FileMaker Pro®, Quark®, Illustrator®, or Mac-Barcode® ProLabel!

One Stop Shopping with Friendly Support from the Experts. Call Us for Free Bar Code Consulting and Information.

- Mac-Barcode® ProLabel v2.0
- Desktop SmartScanners for Windows & Mac
- Thermal Transfer Printers
- Walk-Around for Newton® and Other HPC's

Mobile! Simple! Fast! Accurate!

The Mac-Barcode Co.
800-733-7592
or Visit Our Web Site at:
www.mac-barcode.com
Tel: 508-746-4242 Fax: 508-746-6030



Choose 405 at www.macworld.com/getinfo

MBC The new version of **MAC-BARCODE**

Over 170 bar code variations! A totally new MACBARCODE package including over 30 variations of Code 128, UPC, PostNET, ITF, Codabar, Code 39, book and magazine codes, coupon codes, SSC codes and much, much more!
• Apple Scriptable! • Color control! • Most accurate bar code creator available! • Unlimited free telephone support
• PowerMac and OS8 compatible and 68000/System 7.x

Also PostScript & Thermal Label Printing Solutions

Computalabel
INTERNATIONAL
28 Green Street, Newbury, MA 01951
Tel: 800-289-0993 Fax: 978-462-9199
www.zoo.co.uk/~computalabel

Choose 406 at www.macworld.com/getinfo

STUDENTS!

Save up to 75% OFF Popular Software!

Call for a FREE Student Software Guide:
(800) 874-9001

Adobe • Microsoft • Autodesk
Kinetic • Corel • Macromedia
MetaCreations • Wacom
Symantec • Extensis • More!

www.JourneyEd.com
JOURNEY
Education Marketing

CALL FOR A FREE CATALOG: (800) 874-9001

Bar Code Headquarters



- Portable Batch Readers
- Cordless Interactive RF Bar Code Readers
- ADB Bar Code Readers
- Wand, Laser, CCD, Magstripe or Slot Badge
- PostScript Bar Code Fonts

- 30 Day \$ Back Guarantee
- Free Shipping in USA
- Toll Free Tech Support

WORTHINGTON
DATA SOLUTIONS

1-800-345-4220
Or Call 831-458-9938
Website: www.barcodehq.com



\$69

Turn Your Mac into a Powerful Groove Station!!!

GrooveMaker™ is the revolutionary software and sound-loops package that allows you to produce professional dance tracks in a snap!!! Includes 650MB of high quality dance-loops. GrooveMaker will have you raving.™ MacWorld

call now...
800-747-4546
e-mail: info@groovemaker.com

Choose 464 at www.macworld.com/getinfo

MegaMac Deals!

Apple 1.2GB HD - \$89
HP Laserjet 4ML - \$349
PowerMacs from - \$319
GV PowerPort Pro - \$47
PB 5300c 16/750 - \$779
12/660 Toner/Acc Kit - \$349
Over 60 Software Titles
Only \$9 Each!
New/Used/Refurb items
We buy/sell/trade Mac hardware!
All prices reflect 3% cash disc.

MEGA WATTS.COM
918-250-5546/918-252-7260 (fax)

<http://www.scientific.com>

Professional Software Developers

Looking for career opportunities?

Check out our website!

- Nationwide Service
- Employment Assistance
- Resume Help
- Marketability Assessment
- Never a fee

Scientific Placement, Inc.

800-231-5920 • 800-757-9003 (Fax)

das@scientific.com

"MACWORLD MAGAZINE'S SHOPPER

SECTION HAS CONSISTENTLY OUT-PERFORMED OTHER MAC PUBLICATIONS THAT WE'VE ADVERTISED IN WITH HIGHER RECALL AND QUALITY LEADS. A LOT OF MAGAZINES TALK ABOUT THEIR 'VALUE ADD', BUT MACWORLD MAGAZINE TRULY DELIVERS."

Renee Cooper,
Director of Marketing,
Miramar Systems, Inc.

www.miramarsys.com

STUDENTS / TEACHERS SAVE UP TO 75%

Electronic Image We'll Beat ANY Advertised Price!!

Adobe, Microsoft, Lotus, & Borland products also available at the same great discount.

3D Suite 3.0289	EndNote 3.0 Stu.99	LightWave 3D 5.689	QX-Tools 4.089
Authorware Edoc399	Eye Candy 3.0.179	Logomotion 2.169	Ray Dream 3D69
Canvas 5.0.3159	FileMaker Pro 4.1119	Mathematica Stu129	Ray Dream Studio . . .119
CodeWarrior 4.0119	Final Draft 4.1145	MiniCAD 8.0339	SoftWindows 98 . . .169
Conflict Catcher 879	Fireworks99	NetObjects Fusion99	Studio Pro 2.5.3 . . .495
CorelDRAW 8.0169	Flash 3.099	OmniPage Pro 8.0 . . .349	Total Xaos Bundle . . .89
Cyber Studio 3.1 . . .169	FreeHand 8.099	PageTools 2.0.169	Videoshop 4.0 3D . . .149
Debabelizer 3289	HomePage 3.059	Painter 3D129	Virex 5.955
Director 7 Edoc349	Infini-D 4.5329	Painter 5.5 Web219	VirtualPC Win98 . . .159
Director 7.0 SIS679	Inspire 3D289	Phototools 3.089	Wacom Intuos 6x8 299
Dreamweaver 2.099	Kais Power Tools 5 . . .79	Poser 3.0119	WordPerfect 3.5.1 . . .79
Electric Image 2.9 1295	KPT Bryce 3D 3.0 . . .115	PreFlight Pro 2.0 . . .279	Xenofex39

WebSite www.electronicimage.com • Fax (925) 798-2464 • FREE Catalog

1-888-EDU-SOFT

Choose 473 at www.macworld.com/getinfo

PHOTOANIMATOR™
PERSONALIZED SCREEN SAVER
For you and your MAC!
Load your own pictures of anything you like! Features dynamic image motion control!
Only \$19.95!
POWERED BY
Living Images™
www.COQUISYSTEMS.COM
(888)-229-1972
Macintosh is a registered trademark of Apple Computer, Inc.
Choose 463 at www.macworld.com/getinfo

Precision Type
Font Reference Guide™ and FontLink™ CD-ROM
Over 15,000 fonts from more than 60 foundries
\$59.00 plus \$8 shipping
FontLink CD-ROM
Includes over 1200 of FREE fonts
800.248.3668
Precision Type, Inc.
47 Mall Drive, Commack, NY 11725
Tel 516.864.0167 Fax 516.543.5721
Choose 463 at www.macworld.com/getinfo

ACADEMIC DISCOUNTS
check out our products and prices on-line, 'cause this ad is too small!
30% to 75% OFF!
MAC & Windows software at student-teacher discount prices!
"we make software affordable"
1-800-333-8571
www.adwonline.com
Choose 410 at www.macworld.com/getinfo

Students-Teachers-Faculty
We'll beat any advertised price!
CorelDRAW 8.....99
CyberStudio 3.x.....159
Director 7.....329
Dreamweaver.....99
Filemaker Pro 4.1.....109
Infini-D.....269
Microsoft Office 98....Call
Painter 5.5.....199
Poser.....105
Stuffit Deluxe.....49
Call now for pricing on over 25,000 other titles!
ACADEMIC DISCOUNT WAREHOUSE
Toll Free **1-800-333-8571**
www.ADWonline.com
Choose 407 at www.macworld.com/getinfo

CADMOVER® v.5.1 What good is a built in translator if it doesn't work?
You've worked hard and now it's time to use those files in another program. You try to import them & all you get is garbage. Not with CADMOVER - For over ten years we've been helping people beat their deadlines, no re-drawing, no touch-ups.
File formats: DWG, DXF, EPSF, PICT, CGM, IGES, HPGL, STL, MiniCAD, DDES2, etc... Internal Features: scaling, 2D/3D views, font mapping and more. With 16 decimal place accuracy redrawing is a thing of the past.
800-579-2244 • http://www.kandusoft.com/macworld
KANDU software corporation

The Software Showcase
Savings for Students, Teachers, & Schools
<http://www.softwareshowcase.com> **SAVE UP TO 80%**

Amapi Studio 4	\$125.00	Intelligence 4.0 Pro	\$139.00
AppleWorks 5.0 Office	\$99.00	Intelligence ZipPlus 100 Ext	\$195.00
Auto/FIX Photo Edges 1.2,3 or 4	\$49.00	Ka's Power Tools 5.0	\$95.00
BBEdit 5.0	\$79.00	LightWave 3D 5.6	\$899.00
Boris FX 3.5 Media 100	\$449.00	Mac Academy Tutorial Videos	\$35.00
Bryce3D 3.0	\$119.00	MacCraft 4.3	\$145.00
CADTools 1.2	\$99.00	MacLinkPlus 10 Deluxe	\$89.00
Canvas 6	\$0.00	Mask Pro 2.0	\$75.00
Coda Finale 98	\$269.00	Mathematica 3.0	\$199.00
ColorDrive 7.5.3	\$69.00	Mailbox 5.0	\$99.00
Conflict Catcher 8.0	\$75.00	Media Cleaner Pro 3.1	\$249.00
CyberDRAW 8.0	\$169.00	MultiAd Creator 2.1.5	\$149.00
DeLabelizer 3.0	\$299.00	Myrmidon 2.1	\$39.00
DenebaCAD 1.5	\$269.00	Neat's Eflex Bundle	\$99.00
EdgeWizard	\$139.00	NetObjects Fusion 4	\$99.00
ElectronicImage Broadcast 2.6	\$139.00	Nexus Writer 5.1	\$79.00
EndNote 3.0 Student	\$105.00	ObjectDancer 1.5	\$199.00
EuroPro 4.0	\$35.00	PM2Q 5.6	\$75.00
Eye Candy 3.1 AE	\$349.00	Painter 3D	\$129.00
FLIGHTCHECK 3.4	\$149.00	Painter 5.5	\$219.00
Final Draft 4.1	\$99.00	PhotoTools 3.0	\$69.00
FileMaker Pro 4.1	\$99.00	Poser 3.0	\$125.00
Flash 3.0	\$0.00	RayDream Studio 5.0	\$125.00
Form 2.3	\$0.00	SoftWindows 98 5.0	\$169.00
FreeHand 8.0	\$99.00	Spocket Doubler 8	\$55.00
Genuine Fractals 2	\$129.00	Spring Cleaning 2.0	\$35.00
HotMetal Pro 3.0	\$75.00	Strata StudioPro 2.5	\$549.00
Hollywood FX Silver 3.1	\$359.00	Stuffit Deluxe 5.0	\$59.00
HomePage 3.0	\$59.00	Total Kaos	\$119.00
HyperStudio 3.1	\$119.00	Virex 5.8	\$69.00
Infini-D 4.5	\$329.00	Virtual PC 2.1 Mac w/Win 98	\$159.00
Inspiration 5.0	\$79.00	Wacom Intuos 6x8 Tablet	\$285.00
Inspire 3D	\$299.00		

(800)699-1836
"WE WILL BEAT ANY ADVERTISED PRICE"
* CALL FOR PRICES ON COREL & SYMANTEC Items
School P.O.'s Welcome!
SOFTWARE SHOWCASE INC., 417 EUCLID AVE, LOCH ARBOUR, NJ 07741
PHONE (732) 660-8820 FAX (732) 660-8828
Choose 409 at www.macworld.com/getinfo

3D Suite 3.0
Includes: Bryce 3D, Poser 3, Ray dream Studio 5, Painter 3d
\$299

CodeWarrior Pro R4
The world's most powerful integrated Development Environment!
\$119

Director 7.0
The most powerful tool for multimedia and the web!
\$349

CALL FOR A FREE CATALOG
(800)699-1836
PRIORITY CODE: 2000

Ports for Your PowerMac!

SX Serial Card



"Fast, Solid and Reliable" - MacWorld

Keyspan USB Card



Better than a Switch or Juggler

- Provides simultaneous, trouble free use of multiple serial devices
- 2 or 4 port PCI serial cards available
- For Comm Toolbox savvy software
- SX-2 just \$199 SX-4 only \$299

Add USB to your PowerMac

- PCI card with 2 USB ports
- Use all the new USB devices on your existing Mac
- UPCI-2 just \$59!

Expand your iMac!

Keyspan USB Serial Adapter

Add 2 Mac serial ports to your iMac

- For use with tablets, PDAs, cameras and many printers
- Get two ports for the price of the single port solutions!
- USA-28 just \$79

Keyspan USB Hub

Connect more USB devices to your iMac

- USB compliant 4 port Hub
- UHUB-4X just \$69



www.keyspan.com (510) 222-0131

USB Cables

- 6 ft. Device Cable (A-B) \$10
- 6 ft. Extension Cable (A-A) \$12

All products include 5 year warranty



(800) 213-6356
code: KWM8

Choose 412 at www.macworld.com/getinfo

MAC — — — — — WINDOWS

THE SHORTEST DISTANCE BETWEEN TWO PLATFORMS IS PC MACLAN

PC MACLAN and PC Migrator shorten the distance between Windows and Macs. Together PC MACLAN and PC Migrator eliminate cross-platform hassles and file transfer and renaming headaches that cost you time and money.

PC MACLAN for Windows 95/98 allows you to share printers, files, and drives with Macs, and PC Migrator makes moving files from Mac to PC an ocean breeze - renaming and adding the proper file extensions on the way.

PC MACLAN & PC Migrator - bridging the gap between Windows and Macs.



Call Now for a Free Demo!
1-877-462-2272

www.miramarsys.com/mw.htm



Miramar Systems, Inc.

Choose 472 at www.macworld.com/getinfo

Your Connection to Student, Teacher and School Discounts!

\$299



3D Suite III includes RayDream Studio 5, Bryce 3D, Poser 3 & Painter 3D



FileMaker Pro 4.1
"1st Relational Database"

\$119



PhotoTools 3.0
"Professional Effects"

\$79



CyberStudio Pro 3.1
"Professional Web Publishing Tool"



\$179

- Astound 3.0 \$99
- Authorware 5.0 E-Doc \$399
- BBEdit 5.0 \$79
- Boris FX 3.5 \$299
- Bryce 3D \$119
- Canvas 6.0 \$199
- CineLook Broadcast \$399
- Coda Finale 98 \$249
- CodeWarrior Pro R4 \$119
- Conflict Catcher 8 \$69
- CorelDRAW 8 \$Call
- Creator2 1.1 \$149
- DeBabelizer 3.0 \$275
- Director 7.0 E-Doc \$349
- Dramatica Pro 3.0 \$199
- ElectricImage Broadcast 2.8 \$1349
- Eudora Pro 4.0 \$35
- Eye Candy 3.0.1 \$79
- Final Draft 4.1 \$149
- Final Effects Complete \$799
- FireWorks 1.0 \$99
- Flash 3.0 \$99
- FLIGHTCHECK 3.4 \$199
- form.Z 3.0 \$Call
- FreeHand 8.0 \$99
- HomePage 3.0 \$59
- Infini-D 4.5 \$299
- Inspiration 5.0 \$69

- Kai's Power Tools 5.0 \$89
- LightWave 3D 5.6 \$889
- MacLinkPlus Deluxe 10.0 \$65
- MagicMask 2.0 \$75
- MARKETOOLS III 7.0 \$99
- Mask Pro 2.0.1 \$149
- Mathematica 3.0 Student \$139
- Media Cleaner Pro 3.1 \$249
- Neal's Type Efex \$79
- NetObjects Fusion 3.0 \$99
- OmniPage Pro 8.0 \$349
- Photo/Graphic Edges Vol 1,2,3, or 4 \$99
- Poser 3.0 \$119
- RayDream Studio 5.0 \$119
- ReelMotion \$529
- Retrospect 4.1 \$109
- Scriptware 1.0 \$139
- SoftWindows 98 5.0 \$169
- SoundEdit 16 2.0 \$249
- StudioPro 2.5 \$449
- StuffIt Deluxe 5.0 \$49
- Test Strip 2.0.2 \$89
- Total Xaos \$99
- Wacom Intuos 6X8 Tablet \$299
- WebSpice Animations \$55
- WebSTAR 3.0 \$399
- WordPerfect 3.5.1 \$Call

Xenofex 1.0
"Powerful set of Photoshop Plug-ins"



\$79

\$219

Painter 5.5 Web Edition
"Digital Painting & Image Creating Tool"



Dreamweaver 2.0
"Professional Web Site Design"

\$99

\$339

MiniCAD 8 VectorWorks
"CAD solution of choice"



Visit our new Web Site
www.software-connection.com

Software Connection

(800) 568-6837

2640 Highway 70 Bldg. 7 Manasquan, NJ 08736
(732) 223-8770 Fax# (732) 223-8768
e-mail macuser@software-connection.com

Major Credit Cards accepted



- PC products also available
- Software Connection has the right to refuse any order(s)
- Not responsible for typographical errors
- Prices & availability subject to change
- Microsoft & Symantec products also available to qualifying customers
- School Purchase Orders accepted

We will match or beat any advertised price.

CALL for a FREE CATALOG

The European Standard for Mission Critical ISDN File Transfer is Now Available in the U.S. and Canada!

- Easy to Use
- Auto Multi-Protocol Detection
- Built-in High Speed Codec
- Lifetime Hardware Warranty

HERMSTEDT
Communication Products

www.hermstedt.com
888-650-ISDN

Choose 414 at www.macworld.com/getinfo

CD-ROM PRODUCTION

1000 Retail-Ready Stamped CDs
Includes two color discs, four color glossy insert & tray cards, jewel case, and poly wrap. Complete turnkey — just send a CD-R and art files! Call for details.



CATALOGIC

Your CD-ROM Production Source™
http://www.catalogic.com

935 Sierra Vista Avenue • Mountain View, CA 94043
Telephone: 450-961-4449 Fax: 650-962-5333

- Easy to use labeling kits
- CD-R silk screening service
- Short run CD-R duplication
- 4.1Gb/hour standalone duper

CD-R media as low as \$1.49

800-255-4020



BEST BUYS!

SHOP HERE FOR GREAT DEALS!

Macworld
SHOPPER

CD-R BUNDLES		DUPLICATORS:	
Panasonic 4x8 CD-R bundle.....	\$295	Replica SA1000 1CD-R	\$989
TEAC 4X12 CD-R bundle...	\$349	MediaFORM CD5900...	\$5,499
Yamaha 4x4x16 CD-R bundle....	\$449	SA3000 3CD-R	\$2,399
Plexor 8x20 CD-R bundle...	\$649	SA8000 8CD-R	\$4,499
Sanyo 8x20 CD-R bundle...	\$649	CD3704...	\$7,499
Jaz 2GB + Yamaha 4x4x16 ext. bundle.....	\$899	CD 37068 w/printer...	\$15,999
AFEX CD Color Printer 1440 dpi.....	\$1,399	FOR CD DUPLICATION...	CALL
LabelMaker for CD's.....	\$39		

CD-R BLANKS
as low as **99¢**
also available
Ricoh & More

Shimad
1-888-4-SHIMAD toll free 888-474-4623
PH. 650-493-1234 www.shimad.com FAX: 650-493-1333

YOUR ONE-STOP CD-R SUPERSOURCE!

CD-R DUPLICATORS

CALL!

MEDIAFORM CD-5900

The CD-5900 will duplicate up to 24 650mb CD-Rs per hour, and with add-on tower units can duplicate up to 64 CDs simultaneously. *That's almost 100 CDs per hour!* Call for details on this new low priced powerhouse from MediaFORM & AMC.

MediaFORM Duplicators selected as "E-Media Magazine's "Editor's Choice" 2 years in a row!

MediaFORM

Other MediaFORM models available:

CD-5300 1-4 CD Duplicator	starting at \$2,599
CD-4300 1-4 CD Duplicator	starting at \$1,999
CD-2701 50 CD Duplicator	new lower price! \$4,399
CD-3704 100 CD Duplicator	NEW! CALL!
CD-3707 200 CD Duplicator	NEW! CALL!

* Offer good only on select MediaFORM CD-ROM Duplicators. Call for details.

secure online ordering!

www.mwm.amc-direct.com



CD-R PRINTERS

PRIMERA SIGNATURE II COLOR CD PRINTER

\$1,195



The Signature II CD Color Printer from PRIMERA is the perfect way to add a professional touch to your CD-Rs.

PRIMERA
TECHNOLOGY, INC.

CD-R MEDIA



DiscWRITE Blank (no logo) 50 pk w/ jewel case.....	\$69.99
Mitsui CD-R (silver) 25 pk w/jewel case.....	\$49.99
Mitsui CD-R (silver) 100 pc spindle.....	\$159.99
Ricoh Printable (thermal) CD-R 100 pc bulk.....	\$159.99
Ricoh CD-RW 10 pk.....	\$99.99
Ricoh CD-R (platinum) 100 pk w/ jewel case.....	\$169.99
AMC DiscWRITE special formulation CD-R Pens 4 pk.....	\$6.95

Check our Website for other types, quantities & specials!

CD-ROM SERVICES

AMC/iS

AMC's Imaging and Information Services division can provide you with:

- Mastering • CD-ROM Replication • Duplication
- CD-R Printing • Packaging • Silk-screening

Call us at 888.494.9470

or visit our Website at www.amciis.com

iMAC PERIPHERALS

FOR USB - CALL AMC!



AMC has a complete selection of USB peripherals for your iMac, including scanners, printers, digital cameras, joysticks, hubs, cables, etc.

Check our Website
for a complete
selection today!

AD CODE:
MW0499

Advanced Multimedia Concepts • P.O. Box 3456 • Redmond, Washington 98073-3456 • 425.558.3100 • Fax: 425.861.8391 • www.amc-direct.com

ORDER TODAY! 888.494.9470

Choose 416 at www.macworld.com/getinfo

USED MACS & POWERBOOKS FOR SALE WANTED

9500/200	32/4gb/12x	\$ 2,350
9500/132	16/1gb/4x	1,050
8500/120	16/1gb/4x	800
7200/75	8/500/4x	450
6100/60	8/0	225
PwrBook G3/266	64/4gb/20x/56k	2,450
PwrBook 1400cs/117	12/750	875
PwrBook 170	8/80	300

Prices subject to change. Limited to stock on hand, subject to prior sale. Call for up-to-the minute inventory & prices.

11933 Wilshire Bl., W. Los Angeles, CA 90025

(800)873-3726

**WE
BUY
USED
MACS!**

**TOP
\$\$\$
PAID**

Any Quantity • FedEx check delivery
Fax a list for a quote (310) 966-4433

**MAC
Solutions**

www.macsolutions.com

(800)80-WE-BUY

**HAWKE
SYSTEMS**
2550-A Chimney Rock Rd
Hendersonville, NC 28792
(800) 875-2610

Specialist in Refurbished
Macintosh Computer Equipment

Visit our Web Site at
www.MacHawke.com
For a full list of our current
Systems, Parts & Pricing.

Six Month System Warranty

Fax - (828) 693-7271
Email - MacHawke@AOL.COM
Choose 419 at www.macworld.com/getinfo

CD COPIER

Please call or visit
our web site for
more info. on all of
our products.

Rapid CD Dupli-
cation service
also available.

**PRINCETON
DISC**

From \$1495
800-426-0247
www.princeton-disc.com

Editors' Choice

CD Duplication

Multidrive Duplication

MediaFORM 4300 CD-2-CD Duplicator	\$2610
MediaFORM 5300 CD-2-CD PLUS	\$3280
MediaFORM 5900 8-CD/2-CD Pro	\$5575
CD Clone 30-CDR Teac Drives	\$23995
CD Clone 20-CDR Panasonic Drives	\$19995
CD Clone One-2-One Duplicator	\$1295

Autoloader Duplication

Canon CD Duplicator & Printer	\$7685
Champion 150-CDR 100-CDs, 2 drives	\$6499
MediaFORM 2701-50-CDs, 1 drive	\$4405
MediaFORM 3704-100-CDs, 4 drives	\$7155
MediaFORM 3707-200-CDs, 7 drives	\$10755

**Networking
Duplication Systems**

Range systems allow for network connectivity to
Windows NT. Share the benefits of publishing
and printing with only a Range system.

Systems range from 1 to 16
recorder systems. Call for pricing.

CD-R Duos

Get the Jaz 2GB drive at a Jaz
1GB price! Includes cartridge, cables,
software, media and more!

JAZ 2GB giveaway!

Plextor 8X/20X CD-R	\$1549	ext. \$1599
Teac 6X/24X CD-R	\$1449	\$1499
Yamaha 4X/4X/16X - CD-RW	\$399	\$449
Teac 4X/12X CD-R	\$299	\$349
Panasonic 4X/8X	\$249	\$299
Panasonic 4X/8X, bare drive	\$235	online only

CD Labeling

Picasso
\$1299

SO-CD Autolocator for
PrinterOptions
\$1395

ORDER TOLL FREE!
800.555.5551

MEDIASTORE
www.mediastore.com

FAST CASH

www.mactraders.com

For All Macs & Peripherals - Working or not

TOP DOLLAR PAID

MacTraders (800)990-0995
(310) 664-0664 Mon.-Fri. 9 AM-6 PM Sat. 10 AM-4 PM (P.S.T.) Fax (310) 664-0665
2300 Lincoln Blvd. (One Light South of Pico), Santa Monica, CA 90405

SECURE TRANSACTIONS ORDER ON-LINE AND SECURE TRANSACTIONS

SAVE SAVE SAVE

**www.
ForComputers.com**

G3 S-DRAM 64MB \$75
G3 S-DRAM 128MB \$109

- MAC & PC
- PARTS
- NOTEBOOKS
- MONITORS
- HARD DRIVES
- PERIPHERALS
- MEMORY
- TONER

COMPUTER EXPERTS (310) 581-1500

Yamaha 4416
4x/4x/16x CD-R Drive

\$369

All drives include Adaptec Toast 3.5.4 &
Direct CD, Cables, Media & Toll Free Support!
External \$429

CDR Media

Mitsui	\$1.39
MegaMedia	.89c
TDK Digital Audio	\$4.99
80m CD-R Media by Ritek	\$1.75

All prices based on 200pc. Spindle Quantities

8x CD-R \$549

PLEXWRITER 8/20

All drives include Adaptec Toast 3.5.6 &
Direct CD, Cables, 8x compatible
media, & Toll Free Support!
External \$599

www.mediasupply.com

New Hours!
8:30am to
7:00pm EST.

All packages ship by
Federal Express

800-944-4237

400 Eagleview Blvd. • Exton, Pennsylvania 19341
Phone: 610-458-9100 • Fax: 610-458-9464

800-673-MACS

800-652-1880

FAX 916-652-1881

916-673-6227

www.poweron.com

Visit our Online Catalog

E-TECH GOLD
Macintosh Ready!
56K v.90 Data/Fax Modem
\$79

24x BOOTABLE
Macintosh Ready!
10 CDs F
External
\$119
Internal
\$89
CD ROM

MacOS 8.1
\$34.99
MacOS 7.6
\$24.99
Upgrade, FULL INSTALL

Apple Multiscan
15" Display **\$229**
20" Display **\$599**
(Used 90 day warranty)

68k Macs

Quadra/Centris 610 16/160 (U)
16/160
13" Clr Mtr.
Ext Kybd.
\$299

Quadra 650 16/240/CD-ENet (U)
16/240/CD
13" Color Mtr.
Ext Kybd.
\$399

Power Macs

PwrMac 6100-66 16/1.2g/CD (U)
PACKAGE
28.8 Modem
13" Color Monitor
\$549

PwrMac 7100-80 16/500/CD (U)
Power PC
601 66MHz
Upgradable to G3
\$449

PM 7200-120 16/500/CD (U)
Power PC
601 120MHz
Includes Ethernet
\$599

PowerBooks

PB 170-battery, Carrying Case (U) FROM **199.00**
PB Duo 270c-battery, Carrying Case (U) **349.00**
PB Duo 280c-battery, w/DuoDock (U) **449.00**
PB540-battery, Carrying Case (U) **449.00**
PB540c-battery, Carrying Case (U) **599.00**
PB 5300ce 16/750-100MHz Case (U) **749.00**
PB 5300ce 32/1.1G-117MHz Case (U) **849.00**
PB 1400ce 32/750-117MHz Case (U) **949.00**

Monitors

Apple 13" RGB External (U) **119.00**
Apple 14" M1212 Display (U) **189.00**
Apple 15" Multiscan Display (U) **229.00**

Keyboard/Mice

Apple Mouse I... 22 JoyStick-Macally (N) 29
Apple Mouse II... 32 Gamepad-Macally 29
Mouse, 1 button (N) 16.50 Trackball-Macally 29
Mouse, 2 button (N) 25 Apple Ext Kybd II (U) 29
Apple Ext Kybd I (U) 25 Ext Keyboard (N) 29

WE BUY MACS

FAX TO 916-652-1881



*All Sales Final. No Cash Refunds Given
*All Prices include 2% cash discount
*Prices subject to change without notice
Govt & School PO's Accepted
All brand or product names are registered trademarks of their respective holders and are respectfully acknowledged.

Choose 471 at www.macworld.com/getinfo

THE BEST IN REMANUFACTURED Macintosh COMPUTERS & PARTS

Spring Specials!

- Power Mac 6100/66 24MB RAM/500MB HD/CD-ROM COLOR DISPLAY/KEYBOARD **\$669!**
- Apple 17" Multiscan 60% MORE WORK AREA THAN A 14" MONITOR **\$399!**
- EXT. CD-ROM DRIVES STARTING AT **\$ 49!**
- POWERBOOKS MODELS STARTING AS LOW AS **\$299!**

Pre-Owned Electronics

1-800-274-5343
Offices: 781-778-4600
Fax: 781-778-4848

VISIT US ON-LINE AT:
www.preowned.com

DIS0062
Choose 470 at www.macworld.com/getinfo

Online Micro

800-720-4400
www.onlinemicro.com
Intl: (714) 338-1900 Fax: (714) 338-1905
Email: info@onlinemicro.com

Desktop & Tower (PCs)

7200/80*	8/500/CD	\$389	520C*	16/750	\$799
7500/100*	16/500/CD	\$649	540C*	8/320	\$469
7300/180*	16/1.2/CD	\$899	5300CS*	8/500	\$629
4400/200*	16/200/CD	\$659	5300CS*	16/750	\$799
4400/200*	32/200/CD/ROG	\$799	1400CS/117*	16/160/CD	\$979
5500/120*	16/180/CD	\$739	1400C/133*	16/160/CD	\$1149
5500/150*	16/160/CD	\$849	2400C/180*	16/1.300/CD	\$1299
5500/200*	16/200/CD	\$1109	2400C/200*	16/200/CD	\$1399
5500/300*	32/200/CD	\$1599	2400C/240*	16/300/CD	\$1499
5500/320*	16/160/CD	\$899	83/250/12.1**	16/500/CD	\$1899
5500/200*	32/200/CD	\$1399	83/233/14.1**	32/200/CD	\$2099
5500/200*	64/400/CD	\$1499	83/200/14.1**	32/400/CD	\$2299
5500/233*	64/400/CD	\$1599	83/300/14.1**	64/800/CD	\$3299
5500/300*	64/400/CD	\$2299	83/300/14.1**	64/800/CD	\$3499
5500/350*	64/400/CD/ZIP	\$2899	Duo 2300C/180*	8/700	\$629
63/2330T*	32/400/CD	\$1199	Duo ROCK PLUS		\$189
63/2500T*	32/400/CD	\$1329			
63/2600T*	64/800/CD	\$1499			
63/3000T*	64/800/CD	\$1899			
6300/160*	16/1.200/CD	\$599			
6300/180*	16/1.600/CD	\$629			
6400/200*	16/1.600/CD	\$699			
6500/250*	32/200/CD	\$899			
3200/75*	8/500/CD	\$599			
3200/100*	16/800/CD	\$699			
3200/120*	16/1000/CD	\$799			
3300/120*	16/1.200/CD	\$849			
3400/180*	16/1.200/CD	\$899			
3400/200*	16/1.200/CD	\$949			
Mac G3 8.1		\$39			

Desktop & Tower (Mac)

6100/66*	8/230MM	\$249	32MB SDRAM/PC100	\$59/\$62
7100/80*	8/500/CD	\$229	64MB SDRAM/PC100	\$99/\$105
8100/100*	16/100/CD	\$489	120MB SDRAM/PC100	\$189/\$197
8100/110*	16/100/CD	\$579	200MB SDRAM/PC100	\$429/\$459

Prices reflect cash discounts & subject to change without prior notice. No refund on shipping charges or special order items. Resocking fee may apply. CD-ROMs not included. Online Micro is not an authorized Apple dealer. *Reconditioned product w/90 day on warranty.

PRINTERS

SW1500 COLOR*	\$139
SW4100 COLOR*	\$189
SW4500 COLOR*	\$219
LW4600*	\$599
LW7240*	\$899
LW16/600*	\$999
LW8500*	\$1199

ALPS FREE
GLIDEPOINT TRACKPAD
ADD
WITH ANY CPU
PURCHASE. \$49 Value

HAND DRIVE

QUANTUM 9.1GB ATLAS III	\$499
QUANTUM 4.5GB VIKING II	\$299
QUANTUM 16.2GB ATLAS III	\$819
SEAGATE 9.1GB BARBACUDA SLP	\$459

PRICES REFLECT INTERNAL DRIVE

MEMORY

32MB SDRAM/PC100	\$59/\$62
64MB SDRAM/PC100	\$99/\$105
120MB SDRAM/PC100	\$189/\$197
200MB SDRAM/PC100	\$429/\$459

PLEASE CALL FOR SIMM MEMORY

We carry Apple Parts

Choose 423 at www.macworld.com/getinfo



1-800-533-9005

We are open Mon-Sat, 9am-6pm

Fax Bids: (310) 475-7441 compuamer@artnet.net
10435 Santa Monica Blvd., Los Angeles, CA 90064

Check out our Web!

WWW.COMPU-AMERICA.COM

Government, University and
Fortune 1000 P.O.'s are welcome!
Business Leasing is Available!
International Orders Please call
tel: (310) 446-1771

POWERMACS!

Starting at \$799	
G3/450MT 128/2-4G/24X	2699
G3/350MT 128/2-4G/24X	2299
G3/350MT 64/6G/24X	1849
G3/300MT 64/6G/24X	1499
G3/333MT 128/2-4G/24X	CALL
G3/300MT 64/6G/24X/ZIP	1999
G3/266MT 128/4G/24X/ZIP	1799
G3/266MT 32/6G/24X/ZIP	1599
G3/266MT 32/4G/24X	1399
G3/233MT 32/4G/24X/MODEM	1399
G3/233MT 32/4G/24X/CD	1199
9600/350 64/6G/24X/ZIP	CALL
9600/300 64/6G/24X/ZIP	CALL
9600/200 32/4G/24X/CD	CALL
8600/300 32/4G/24X/ZIP	CALL
7300/200 32/4G/24X/CD	899
6500/300 32/4G/24X/CD	899
6500/250 32/4G/24X/CD	799
6500/225 32/4G/24X/CD	699
4400/200 32/2G/24X/CD	799

WORKGROUP SERVERS

G3/400 256/2-9G/24X/SHARE	CALL
G3/350 128/9G/24X/SHARE	CALL
G3/333 128/2-9G/24X/SHARE	CALL
9650/233 64/6G/24X/SHARE	CALL

I-MACS

Starting at \$899

I-MAC G3/233 32/4G/24X/56K	899
I-MAC G3/266 32/4G/24X/56K/BLUE	1129
I-MAC G3/266 32/4G/24X/56K/LIME	1129
I-MAC G3/266 32/4G/24X/56K/STRAW	1129
I-MAC G3/266 32/4G/24X/56K/TANGER	1129

POWERBOOKS

Starting at \$599

3400C/240 16/3G/CD/MOD	1399*
3400C/200 16/2G/CD/MOD	1299*
3400C/180 16/1G/CD/MOD	1199*
2400C/180 16/2G/CD	1199*
1400C/166 16/2G/CD	1199*
1400C/133 16/1G/CD	1099*
1400C/117 12/1G/CD	899*
5300C/100 16/750	599*

NEW G3 POWERBOOK!

Starting at \$1599	
G3/233 32/2G/20X/12.1STN	1499*
G3/233 32/2G/20X/12.1STN/56K	1599*
G3/233 32/2G/20X/12.1STN/FLOP	1849
G3/233 32/2G/20X/13.1STN/56K	2299
G3/250 32/4G/20X/13.1STN/56K	1999*
G3/266 64/8G/20X/14.1STN/56K	2499
G3/300 64/8G/20X/14.1STN/56K	2999
G3/300 64/8G/20X/14.1STN/56K	3199

SONY

Starting at \$199

Sony 110G5/210G5	199/369
Sony 220G5/420G5/520G5	429/599/899
Sony 200P5/400P5/500P5	499/699/1099
Sony F-500	CALL
Sony F-150	CALL
Sony PRESANTION W7000/W9000	CALL
Sony MAVICA FD51/FD71/FD91	469/649/899

ViewSonic

Starting at \$139

Q41 14"	134
Q51/Q53 15"	159/169
Q71/Q100	249/599
E641/E655	139/189
V73/V75 17"	319/379
V95/V115	499/849
G771/G773	329/379
G775/G790	479/499
P775/P777/P771	499/549/549
G810/P810	869/969
P813/P815	1099/1099
29GA	CALL
VIEWSONIC VWPAN VPA138	789
VIEWSONIC VWPAN VPA 145	799
VIEWSONIC VWPAN VPA 150	1029
PROJECTOR R800	CALL

EPSON

Starting at \$139

STYLUS COLOR 700/850	229/279
STYLUS COLOR 600/800	139*/199
STYLUS COLOR Photo-EX	449
STYLUS PRO-XL	269*
STYLUS COLOR 1520/1900	449/1099
EXPRESSION/636-EXEC	529
EXPRESSION/636-ART	699
EXPRESSION/636-PRO	899
DESKJET 540	269
4000N/4000TN	1199/1299
6MP	729
4MP	999

intuos

Starting at \$129

INTUOS 4 X 5	129
INTUOS 6 X 8	299
INTUOS 9 X 12	CALL
INTUOS 12 X 12	CALL

iomega

Starting at \$79

ZIP DRIVE 100 MB	110
ZIP DRIVE PLUS	139
ZIP CART 10 PACK	79
JAZZ DRIVE 2 GIG	299
JAZZ DRIVE 1 GIG	199*
JAZZ CART 1 GIG	69
JAZZ CART 2 GIG	79

GLOBAL VILLAGE

Global Village Flat 56K EXT	120
Global Village 28.8 PCMCIA	59
Global Village 28.8 ETHERNET PCMCIA	99
Global Village 56.6 PCMCIA	129
Global Village 56.6 ETH/PCM	189

YOUR #1 COMPUTER SUPERSTORE!

newer technology VST Seagate Quantum GCC TECHNOLOGIES AGFA Tektronix NEC

All prices are cash discounted. * denotes a refurbished product. Not responsible for types, Apple, logo, GeoPort, HyperCard, ImageWriter, LaserWriter, Mac, Mac OS logo, Macintosh, MessagePad, Newton, OpenDoc, PowerMacintosh, PowerBook, QuickTake, QuickTime, QuickTime logo and StyleWriter are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. All other names & logos are trademarks by their respective owners. We are Not Apple Authorized.

"Custom Configuration Specialists"

- Dealers & International sales welcome!
- Govt., University & Corporate P.O.'s Welcome.
- Best Prices, Service & Delivery.

Infinity Micro

800 • 589 • 1234

Toll free: (800) 589-1234

Int. (310) 470-9426 Fax: (310) 470-4956

2289 Westwood Blvd., Los Angeles, CA 90064

www.infinity-micro.com

Email us at: Sales@Infinity-micro.com

PowerMacs

IMAC G3/233 32/4G/24X/15"	929
IMAC G3/266 ANY COLOR	1185
G3/233 32/4G/24X/CD/15"BLTN	1495
G3/266 32/4G/24X/CD	1295
G3/300MT 64/6G/24X/CD/6MB	2195
G3/333MT 128/9G/24X/CD	2695
G3/300MT 64/6G/CD NEW	1545
G3/350MT 64/6G/CD/DVD NEW	1879
G3/350MT 128/12G/CD/ZIP NEW	2295
G3/400MT 128/9G/CD NEW	2795
9600/350 64/6G/24X/CD/Zip	2995
9600/200 32/4G/24X/CD	CALL
8600/200 32/2G/24X/CD	1095
8600/300 32/4G/24X/CD	1595
7300/200 32/2G/24X/CD	1095
7300/180 16/2G/CD/KB	895
7300/180 16/2G/CD/DOS	1195
7100/80 8/500 CD	295
6500/300 32/4G/12X/CD/56K/ZIP	295
6500/275 32/6G/24X/CD/56K/ZIP	395
4400/200 32/2G/CD/DOS	185
5500/225 32/2G/12X/15"	1095
7200/90 24/500/8XCD	495
7200/120 32/1 2/8XCD*	585

APPLE PRINTERS

ColorStyleWriter 4500*	199
LaserWriter 12/640*	795
LaserWriter Color 12/600	2195
LaserWriter 8500	1395

DIGITAL CAMERA'S

SONY MAVICA-FD51/8191	495/749/899
SONY MAVICA-MVC-FDR1/FDR3	295/495
AGFA EP1070 780/1280	379/549
AGFA EP1070 1680	795

POWERBOOKS

G3/300 64/8G/CD/56K/14.1"	3395
G3/300 64/8G/CD/56K/14.1"	3695
G3/266 64/8G/20X/56K/14.1"	2895
G3/266 64/4G/20X/56K/14.1"	2695
G3/250 32/5G/20X/56K/14.1"	2295
G3/233 32/2G/20X/56K/14.1"	2295
G3/233 32/2G/20X/13.1"	1995
G3/233 32/2G/20X/56K/12.1"	1695
G3/233 32/2G/20X/12.1"	1695
3400C/240 16/3G/12X/CD	1495
3400C/200 16/2G/8X/CD	1395
3400C/180 16/1G/8X/CD	1295
1400C/133 16/1G/8X/CD	1295
1400C/117 16/2G/8X/CD	895
5300C 16/1G/IG	895
5300C 16/750	595
2300C 20/1G/IG/14.4"	695
2400C/180 16/1G/IG	1095
5400C 32/500/19.2M/DM	1595
180 14/120/14.4 Fax*	395
Apple Duo Dock 11PLUS	95

PRINCETON

E0750/E0720	419/329
E0705/E0710/E074	299/319/459
E02010 21"	949
E0900 19"/AGX900 19"	479/649
Ultra 72/75/100	259/269/795
Ultra 90/80	519/995
14"LCD/15"LCD	849/1049

APPLE MONITORS

Apple Studio Display 17"/211395/475	1095
Apple Studio Display 15"	1095
Apple ColorSync 17/20"	645/1395
Apple 15" Multi 705/170	279
Apple 20" Multi 850/40	795/995

EPSON STYLUS

COLOR PRO-XL 11x17

\$249.00

Postscript option only \$229.

WE BUY, SELL, TRADE

CALL US NOW!

WE WILL BEAT YOUR BEST PRICE!

HP

LaserJet 5MP

495

LaserJet 5P

695

DeskJet 8900ci

389

DeskJet 1600CM

1095

DeskJet 11000i

399

LaserJet 4000N

1089/1145

LaserJet 4000TN

1295

LaserJet 4000

979

LaserJet 5000

1295

LaserJet 5000N

1495

LaserJet 5000GN

2095

LaserJet 551M

1895

LaserJet 8000i/DN

2249/2995

LaserJet 8000N/8100

2495/2595

AGFA

SnapScan 1212U/1236SA

179/279

SnapScan 1236S

229

Duoscan 11200/SOLO

599/1295

Duoscan w. photo shop

2295

EPSON

Expression 836XL 11X17

2045

Expression 635 Artist 2

599

Expression 636 Pro/636 Exec.

949/499

MICROTEK

ScanMaker E3Plus / V310

119/89

ScanMaker V600/X6

109/129

ScanMaker 4 / ScanMaker 5

609/2149

ScanMaker 6000XL

829

ScanMaker 9600XL

1195

ScanMaker 35T Plus

689

Specials

Powerbook 170 8/80/14.4

195

PowerBook 180 11/20/14.4

295

PowerBook 520C 12/240/19.2

395

PowerBook 540c 16/500/19.2

495

PowerBook 500 Series Battery

49

PowerBook 500 series 8MB Mem.

189

PowerBook 630 series battery

299

Magnavox 20" Color

395

Apple Stylus ProXL



Mac Global

Systems and Peripherals • Sales and Service

4750 ALHAMBRA EXPRESSWAY STE. # M • SAN JOSE, CA 95118

PowerBooks	PowerBooks
G3 233 DT \$1175	520 4/160 \$325
G3 266 DT \$1375	520c 12/240/19.2 \$450
7200 8/500 Call	540 12/240 \$375
7500 16/500 Call	540c 12/320/19.2 \$575
8500 16/1G Call	5300cs 8/500 \$625
9500 32/2G Call	1400cs 11/713/166 Call
8600 & 9500's Call	
Memory	Performance
4Mb 72-pin \$8	410/466/476 Call
8Mb 72-pin \$15	580 5/500-CD Call
16Mb 72-pin \$30	631 8/500-CD Call
32Mb 72-pin \$60	6200 8/1G-CD \$399
	5200 8/500-CD \$699
Printers	Chargers
Ch. Styl/Writer \$215	630 8/250 Call
Styl/Writer II \$175	650/800/840/950 Call
Styl/Writer 1200 \$155	
Laser 300 \$299	
Laser 320 \$449	
Laser 4600 Call	
*We repair Macs!	

TOP DOLLAR Mac's Memory, Peripherals, and CPUs

1-800-722-8864

PHONE: 408-265-6653

FAX: 408-265-6660

WWW.GLOBALDEALS.COM

Choose 428 at www.macworld.com/getinfo

Think COMPUTER REVELATIONS



ALL APPLE PARTS & ACCESSORIES IN STOCK

Leasing
Rentals / Supplies
Service available in NYC area

1 800
275-9924
in NY 516 737-0800
FAX 516 737-0923

331E Dante Court
Holbrook, New York 11741

NEW & USED BOUGHT & SOLD

Choose 469 at www.macworld.com/getinfo



800-951-1230 MACBASE.COM

Int'l (714) 428-0777 University, School, Gov. & Fortune 1000 P.O.'s Accepted! FAX (714) 428-0778

RECONDITIONED

PM 7200/75	8/500/CD	359
PM 7200/90	8/500/CD	449
PM 7600/132	16/1.2G/CD	799
PM 8500/233	16/1G/CD	899
PM 9500/233	16/2G/CD	1199
PM 8100/110	16/1G/CD	629
PM 8100/100	16/1G/CD	549
PM 7100/80	8/500/CD	399
PM 6100/60	8/230/CD	319

CALL FOR OTHER SYSTEMS

NOTEBOOKS

G3/233 32/2G/CD/12.1 TFT	1999
G3/233 32/2G/CD/14.1 TFT	2329
G3/250 32/4G/CD/13.3 TFT	2199
G3/266 64/4G/CD/14.1 TFT	2825
G3/300 64/8G/CD/14.1 TFT	4159
G3/300 64/8G/DVD/14.1 TFT	CALL
1400C 133 or 166	CALL
DUO DOCK II PLUS	179
EMATE 300 / NEWTON	CALL
540C 20/500/MDM	CALL

REFURBISHED

PB 1400C 16/1.3GB/CD	CALL
PB 3400C/180 16/1.3G/CD	1289
PB 3400C/200 16/2G/CD	CALL
PB 3400C/240 16/3G/CD	1489
6360 16/1.2G/CD	649
6400/180 16/1.6/CD	659
PM 5500/225 32/2G/CD	CALL
PM 8600/300 32/4G/CD/ZIP	CALL
PM 9600/300 OR 350	CALL
Apple 15AV	198
Color Stylewriter 4500	CALL
Color Stylewriter 6500	CALL
LaserWriter 12/640	799
LaserWriter 8500	1199

NEW SYSTEMS

G3MT/300 64/6GB/CD	1599
G3MT/350 64/6G/DVD	1999
G3MT/350 128/12G/CD/ZIP	2399
G3MT/400 128/9GU2/CD	2999
G3MT/333 128/9UW/CD	CALL
G3MT/300 64/8G/CD/ZIP	CALL
G3DT/300 64/6G/CD/ZIP	CALL
G3 DT/233 32/4G/24XCD	1259
G3 DT/266 32/4G/24X/	1449
G3 DT/266 32/4G/24X/Zip	1549

1000'S OF PRODUCTS
IN STOCK. CALL US FOR
LATEST PRICING!



* Indicates refurbished product. MacBase is not an Authorized Apple Dealer. Returns subject to restocking fee. Prices reflect C.O.D. or CASH and are subject to change without notice. P.O.'s subject to approval. All trademarks are property of their respective companies.

Choose 429 at www.macworld.com/getinfo

COMPU-D

International, Inc.

Toll Free 1-800-929-9333
www.compu-d.com

VISA MasterCard MW 0499

* = Factory Refurbished with warranty. All prices are Cash Order Prices & subject to prior sale & change. Apple, MAC, iMac, Mac OS, PowerMac, & PowerBook are registered trademarks of Apple Computers Inc.

Get the Best for Less! Sales: (818) 787-3282 Fax: (818) 787-5555 e-mail: csales@compu-d.com



PowerBooks

G3/300 \$3395
64/8GB ▲ DVD ▲ Video ▲ 56K ▲ 14.1" TFT

G3/250 64/5GB ▲ CD ▲ 33.6 Mdm. ▲ FDD \$1599

G3/300 64/8GB ▲ 20xCD ▲ 56K ▲ 14.1" TFT	\$2995
G3/266 64/4GB ▲ 20xCD ▲ 56K ▲ 14.1" TFT	\$2195
G3/250 64/4GB ▲ 20xCD ▲ 56K ▲ 13.3" TFT	\$1899
G3/233 32/2GB ▲ CD ▲ 56K ▲ 12.1" TFT	\$1695
G3/233 32/2GB ▲ CD ▲ 12.1" DSTN	\$1495
2400C*180 16/1.3GB ▲ Floppy	\$1159*
2300C* 8/750 ▲ Floppy Adapter	\$779*
5300cs/100* 8/500MB ▲ 14.4" Extra Bttry.	\$595*



Graphic Tablets

Best Prices!

4x5 / 6x8 MAC or PC	\$159/289
9x12 W/4D Mouse MAC or PC	\$389
12x12 / 12x18 W/4D Mouse	\$399/639

Printers

5M \$899
4000N \$1195



MAC/PC
PSL2
Ethernet

LaserJets

4MV 16ppm, Eth, 11x17", PSL2	\$989
6MP/5SIMX 600dpi, PSL2	\$735/1649
4000/4000TN 17ppm, PSL2	\$945/1375
5000/5000N 16ppm, 1200dpi, 11x17	\$1295/1845

CD-R Drives

Yamaha CD-RW 4x4x16	\$399
CD-Rewritable Ext., Inc. media, cable	
Panasonic CD-R 4x8	\$279
CD-writable Ext., Inc. media, cable, software	
CD-R Media 10 Pack with case	\$13
CD-RW Media single with case	\$9

PowerMacs

iMAC G3/233 \$979
iMAC G3/266 \$1159

G3/400 MiniTower - \$2695
128/9GB ▲ 32xCD ▲ 10/100BT

G3/350 MT 128/12GB ▲ CD ▲ Zip ▲ 16MB	\$2299
G3/300 MT 64/6GB ▲ CD ▲ 10-100BT	\$1449
G3/300 MT 32/4GB SCSI ▲ CD	\$1629
G3/266DT 32/4GB ▲ 24xCD	\$1399
9600 & 8600 Series	\$Call

G3 Upgrade Cards

All Models Available. Call

SCSI Card for G3 Macs	\$129
Apple DOS Card	
Pentium 166, 16MB, Win 95, Dos 6.22	\$199



We Offer A Great Selection of Major Name Brand PC Computers For Microsoft Windows.

Choose 431 at www.macworld.com/getinfo

The Lowest Finance Rate Plug & Play Ultimate Workstation

Get the PowerMac G3/333MHZ or PowerTowerPro G3/400MHZ Workstation for only \$249 per month! It includes the fastest Mac yet, and it comes with all the hardware tools you need to blast through production work. Save a bundle with this exclusive package!

ALL LEASED EQUIPMENT MARKED "L" IS COVERED BY A 48 HOUR WARRANTY REPLACEMENT GUARANTEE—333MHZ, 366MHZ, 400MHZ SYSTEM AVAILABLE. CALL

PLUG&PLAY
\$279
PER MONTH

- Apple G3/333MHZ or PowerTowerPro G3/400MHZ
- Internal 24X CD-ROM
- **768MB RAM**
- 18.1 GB hard drive - 7200 RPM AV
- Extended keyboard & Mouse
- **SONY 21", 1600 x 1280 monitor**
- iXMicro UltimaRez Graphic accelerator card, 1600x1200, w/8MB
- **UMAX PowerLook III w/Transparency**

- **\$1299** External combo drive w/Jaz, ZIP, 18GB RAID
- **\$1199** Epson Stylus Color 3000 w/ Post Script III software
- Active SCSI terminator
- One 25/50 SCSI cable, five 50/50 cables
- **\$89** UPS Battery Back-Up
- Image Solutions Extended Services



PowerMac G3/333 Mini-tower Ultimate Graphics Workstation



COMBO Drives:

9GB + CD-R Ext. SCSI	\$789
JAZ + CD-R Ext. SCSI	\$399
JAZ+ZIP+9GB+CD-R	\$1089
18GB + JAZ + CD-R	\$1199
36GB AV RAID + CD-R	\$2289

\$399!
JAZ+CD-R

Software Specials

Apple Mac OS 7.6/8/1/8.5 \$49/59/69/89
Canvas 5/ CyberStudio Pro V3 \$99/269
Claris Works V4/5/AppleWorks \$49/69/89
Caere OmniPagePro V5/8/Direct\$89/189/29
DeBabelizer V3/ Dantz Retrospect4\$269/99
Extensis MaskPro/PortFolio \$269/159
Extensis PreFlight Pro/ PhotoFram \$329/89
FileMaker Pro. V2.1/4/4.1 \$49/99/175
Infiniti V4.5/ KPT 4/Painter5 \$349/99/249
Microsoft Office4.2.1/97/98 \$199/229/299
MediaCleanerPro/Norton Utilities \$289/89
StrataStudioProV2.5/ Word5/6\$365/99/199



\$49!
FileMaker Deluxe

External Drives w/Cable, Terminator, SCSI ID, SW

Hard Drive, SyQ & CDR Devices

	Ext.	Turbo
400MB/1GB/2GB/3GB	\$99/139/189/209	+ \$29
4GB/6GB/9GB	\$259/329/369	+ \$29
Quantum Atlas II 4GB/9GB	\$299/489	+ \$39
Quantum Viking LVD 9GB/18GB	\$489/889	+ \$49
Quantum Atlas III 9GB/18GB	\$589/949	+ \$59
Seagate 4GB Hawk/Barracuda	\$279/299	+ \$39
Seagate 9GB Elite/Barracuda	\$399/489	+ \$39
Seagate Cheetah 4GB/9GB	\$549/769	+ \$49
Seagate 18GB Barracuda/Cheetah	\$999/1289	+ \$59
SyQuest 270/200MB Ext. Drive	\$299/319	+ \$25
SONY 650MB/1.3GB M.O. Ext. Dr.	\$589/989	+ \$39
Philips CD-R 2X/4X w/Toast	\$279	+ \$19
Yamaha CD-RW 4X/4X/16Xw/Toast	\$489	+ \$29

Get M.S. Office 98 for \$199 w/ any drive purchase

\$199!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

\$589!

CD RECORDER SPECIALS:



Philips 2X/4X CD-R

Dr. only

\$279!

Processor Upgrade

604E 120/150\$49/69
604E 180/200\$109/149
604E 233/250\$179/249
604EMP 180/200\$249/289
G3 233/266 \$389/585
G3 300/400 \$769/1489

Basic Systems

	Buy!	Lease!
G3/266 32/4GB/24XCD		
w/ 17" monitor, XKeyboard, Mouse	\$2199	\$49
G3/300 128/8GB/24XCD		
w/ 19" monitor, XKeyboard, Mouse	\$2599	\$65
G3/ 333 256/9GB/24XCD		
w/ Apple 21", XKeyboard, Mouse	\$4199	\$99
PowerTowerPro - 225MHZ/ 96/9GB/CD		
w/ 19" monitor, XKeyboard, Mouse	\$2399	\$59
PM8100-Targa 2000/96/4GB/CD Video Edit.		
w/ 15" monitor, XKeyboard, Mouse	\$1899	\$45

Display & AV Card

Model	Type	Price
iXMicro UltimaRez 8mb	PCI, 1600x1280	\$289
RasterOps PaintBoard	NuBus, 24-bits	\$189
Pinnacle DC30+	PCI, AV Editing	\$679
Targa 2000	Nubus - Demo	\$789*
Targa 2000 Pro	PCI - Demo	\$2489*
Targa 2000 DTX	PCI - Demo	\$3889*
Targa 2000 RTX	PCI - Demo	\$6889*
Targa 2000 SDX	PCI - Demo	\$8889*
Break out box	DTX, RTX, SDX-Demo	\$1389*

Jaz/Zip & DiskArrays

Jaz ext. Dr. 1GB/2GB \$169/\$289
10Mega Zip ext. Dr. w/Cart. \$129
Jaz + CDR ext. Dr. w/SW \$1399
8GB F&W DiskArray \$689
18GB F&W DiskArray \$989
36GB F&W DiskArray \$1889
54GB F&W DiskArray \$2999
72GB F&W DiskArray \$3999
108 F&W Disk Array \$5999
144GB F&W RAID \$8489



Jaz Dr. \$169!



Zip Dr. \$129!



\$79!

\$11!

\$79!

\$11!

\$79!

\$11!

\$79!

\$11!

\$79!

\$11!

\$79!

IOmega CARTRIDGES

1.0GB Jaz \$79
100MB Zip \$11

\$39!

\$39!

\$39!

\$39!

\$39!

\$39!

\$39!

PowerMac PM9600/G3 Video Editing Station

- PowerMac 9600 / G3 - 233MHZ
- 256 MB RAM, 6 PCI Slots
- iXMicro UltimaRez 8MB display
- Internal 24x CD-ROM
- Quantum Atlas II 9GB SCSI III hard drive
- Extended keyboard & Kensington Mouse
- Sony 17 color multisync monitor
- Adaptec 2940UW SCSI III
- 36GB RAID + JAZ + CD-R COMBO Drive
- TrueVision Targa 2000
- Pro Audio/Video Capture Editing PCI
- Epson 1520 Color Printer
- Premiere V5 & After Effect
- UMAX S1220 Scanner

PLUG&PLAY
\$299
PER MONTH

\$6.30 A DAY!

Quantum Super RAID SCSI III Fast & Wide, LVD

- AV Qualified High Performance Disk Array
- Low Voltage Differential Drive allows 12' SCSI Chain
- High Quality Construction, Gold Plated Connections.
- Features built in Cooling fan, SCSI ID, Metal frame.
- Grab handles of Removable drive for easy Plug in-out.
- Key locking door to prevent unwanted removal.
- Stripping software - REMUS for RAID 0, 1 & 5 - \$149
- Adaptec 2940U2W upto 80MB/sec. - \$455
- Adaptec 8945 FireWire & UltraWide SCSI - \$555
- JackHammer SCSI Fast&Wide Diff. \$399
- 18GB RAID - \$ 1089
- 36GB RAID - \$ 2089
- 54GB RAID - \$ 3389
- 72GB RAID - \$ 4989
- 144GB RAID - \$ 8999
- Add \$399 for Removable



Memory

	30/72 Pin	168 pin	G3
8MB	\$25	\$19	-
16MB	\$39	\$39	-
32MB	\$79	\$69	\$69
64MB	-	\$99	\$119
128MB	-	\$289	\$229
256MB	-	-	\$589

KINGSTON, VIKING, NEWER TECH. AVAILABLE

800-352-3420

Fax: 310-782-5974

Email: imagesol@aol.com

http://www.imagesolutions4u.com

385 Van Ness Ave. #110 • Torrance, CA 90501



Order from 7 to 6 weekdays, Saturday from 10 to 2. Visit our showroom 9 to 6 weekdays, weekends by appointment.

Prices subject to change without notice. Not responsible for typographical errors. 24 hour replacement limited to products in stock.



Image Solutions

The solution provider for print shops, service bureaus and imaging professionals

voice: 925-689-9488 fax: 925-689-9487

PRICES & QUANTITIES SUBJECT TO CHANGE

Place Your Orders OnLine!

1-888-447-3728 • MacResQ • www.macresq.com

Toll Free
Mac OS
software

8.1: \$39
&
7.6: \$39
w/ Claris 4.0



Mac OS

**Ready for G3
UPGRADE!**

Specs include:

- 3 PCI slots
- SCSI hard drive
- 1mb vram
- ethernet ready(AAUI & 10BT)
- Dimms
- 90 day MacResQ warranty •

Apple **1.2 Gig** Hard Drives
(Quantum, internal, 3.5", SCSI) **\$99**

Power Computing

Power Curve:

.....from
\$399 !!



Please visit our website for all of our inventory
including CPU's, PowerBooks, Printers,
Monitors, Hard drives, Floppy drives, etc.!!

*** TOWER CASE***
Customize your
own machine!
(no ram, hard drive, cd rom, OR processor)
We sell the components to build your own system!

0/0/0: \$399
16/1.2 Gig/12xCD: \$699
Bundle Special!
Add a 14" monitor & keyboard for
only \$100 more!

Internal APPLE CD Rom Drives
CD 300i-caddy load (2x) \$19-R
CD 3600i (24x) \$169-R CD 1800i (12x) \$149-N

New!
Sony internal
12x CD Rom's



\$99
mac bootable

MR
Mac-Res-Q.

15% restocking fee- ALL ITEMS REFURBISHED UNLESS NOTED AS NEW - All Parts Sold With a 90 Day MacResQ Exchange Warranty - Excl. Required For ALL Power Supplies-All Major Credit Cards With NO Surcharge -
Choose 434 at www.macworld.com/getinfo

MacWorks 800-482-2705

e-mail: sales@macworks.com

Voice 913.599.6227 • Fax 913.599.6111 • 9am-6pm Mon-Fri CST
Prices Subject to Change • Visa/MasterCard/AmEx
We only ship FedEx • 15% minimum restocking fee on all returns

PowerMac 7100/80

- 16/500/2xCD
- Apple 17" MultiScan
- keyboard & mouse
- GeoPort modem
- 30-day Warranty



ONLY \$649.99

Apple/Quantum 1.2 GB SCSI

- Internal Fireball Tompest drive
- make external for \$80 more

ONLY \$99.99

PowerMac Bundles

- All bundles include 16/230/2xCD, Apple 17" MultiScan keyboard, mouse, GeoPort modem.
- PowerMac 7500/132** \$899.99
- PowerMac 7200/120** \$699.99
- PowerMac 7100/80** \$649.99
- PowerMac 7100/66** \$549.99
- PowerMac 6100/66** \$499.99

Upgrade to Sony 12xCD at no extra charge!
Add Color StyleWriter 2500 for only \$99.99

FROM \$499.99

Apple CD-ROM Drives

- Apple 24x (CD3600)** \$179.99
- Sony 12x* (CDU415)** \$99.99
- *includes FWW, OS 8 bootable

Newton 120

- 2mb/modem \$199.99
- 1mb \$149.99
- software bundle \$49.99

Apple Video Upgrades

- New Factory Sealed
- Apple Video System** \$29.99
- Apple TV/Video System** \$49.99
- Apple MPEG Media System** \$20.99
- *with video or television system
- Apple PowerMac AV Card** \$149.99

FROM \$29.99

Apple Processor Cards

- 604/604e cards for PM 7300-9600
- Apple 604/132** \$19.99
- Sonnet 604e/233** \$179.99
- PowerLogic 63/300** \$699.99

FROM \$19.99

Apple StyleWriters

- Refurbished
- Incl. New Ink
- 90-day Warranty
- Local Ink & Ethernet available
- Color SW 2500** \$179.99
- Color SW 1500** \$149.99
- StyleWriter 1200** \$129.99

FROM \$19.99

www.macworks.com

Choose 433 at www.macworld.com/getinfo

*** think mac ***

liquidation

BUY

Apple Power Macintosh
8600/300 32/4GB/24XZip

\$1499

GET

Apple Multiscan
1705 Display

(a \$300 Value)

FREE!

Call me today,
I'm Clint the
cyber penguin!

Silicon Graphics Indigo2 200Mhz 128/2GB with Sony 20" Monitor
ONLY \$7995!!! WOW!!!

Macintosh CPUs 615-904-1070

Macintosh LCII 4/80	\$79
Macintosh IIfx 5/80	\$99
Macintosh IIfx 4/80	\$149
Macintosh Quadra 650 16/230	\$299
Power Mac 6100/66 24/700 CD/DOS	\$449
Power Mac 7100/80 24/700 CD	\$449
Power Mac 7100/80AV 24/700 CD	\$499
Power Mac 8500/120 32/2GB CD	\$799
Power Mac 8500/150 32/2GB CD	\$849
Power Mac 8600/300 32/4GB/24XZip	\$1499
Apple Powerbook 520c 12/160/19.2	\$479
Apple Powerbook 540c 12/320/19.2	\$579

Monitors

Apple 12" RGB Display	\$99
Apple 13" RGB Display	\$129
Apple 14" Color Display	\$149
Apple 14" Multiscan Display	\$199
Apple 17" Multiscan Display	\$249
Apple Multiscan 1705 Display	\$299
Apple 20" Multiscan Display	\$549
Apple 21" Color Display	\$699

Printers

Apple Color Printer (11x17)	\$499
HP 4 Plus Jet Direct/Postscript	\$799

We accept all major credit cards. 1035 Samsonite Blvd. Suite C • Murfreesboro, TN 37129 • PH: 615-904-1070

1-800-334-KIWI

Kiwi Computers • Save on refurbished Macs

Computers & Parts

Computer prices do not include keyboard, mouse or monitor.

Performa 630 20/1.2 GB 4xCD	\$299
Performa 6200/75 24/1.2 GB 4xCD	\$449
PowerMac 7200/120 32/1.2 GB 8xCD	\$599
PowerMac 6500/275 and 6500/300mhz	Call
GV internal 56k modem (exchange)	\$75
Performa 6200 logic board (exchange)	\$249
PM 6100, 7100, 7200, 7500, 8500 logic board	Call
Performa 6400/6500 power supply	\$69
PowerMac 6100 & 7100 power supply	Call
Manual inject 1.44 internal floppy drive	\$38
Apple Design Keyboard	\$25
Platinum 28.8 internal modem for P5200/6200	\$49
GV internal 56k modem for PM6500/5500	\$79
Avid Video Editing System for 6400/6500	Call
Apple 6 GB internal IDE hard drive	\$139
Apple 24x internal CD-ROM	\$135
Internal ZIP drive	\$65
16mb 72 pin SIMM	\$32
32mb 72 pin SIMM	\$64

Upgrades

Logic board upgrade prices are with exchange.

PowerMac 7200/75 to 7600/120mhz	\$425
PowerMac 7200/90 to 7600/120mhz	\$399
PowerMac 7200/120 to 7600/132mhz	\$385
Performa 6200 to 6500/225mhz	\$499
Performa 6300 logic board (exchange)	\$449
Performa 6320 to 6500/225mhz	\$425
Performa 5200 to 5500/225mhz	\$499
Performa 5300 to 5500/225mhz	\$449
Performa 630 series to 6200/75mhz	\$249
Performa 630 series to 6300/100mhz	\$349
Quadra 610 to PowerMac 6100/60mhz	\$275
Quadra 660AV to PowerMac 6100/60mhz	\$249
Performa 6000/11x to PowerMac 7100/80mhz	\$375
Quadra 650 to PowerMac 7100/80mhz	\$299
Math Coprocessor for Q605, Q610, P575, P630	\$75
Powerbook 190 series to 5300/100mhz	\$399
Powerbook 500 series to 100mhz PowerPC	\$349
PB 520c/5300cs upgrade to active matrix	\$349
PB 1400cs upgrade to active matrix	Call

Visa/Mastercard/American Express No Surcharge.

Refurbished products have a 90 day warranty • Returns subject to a 15% restocking fee • Prices subject to change without notice.

Toll Free: 800-334-5494 International: 310-553-4507 Fax: 310-286-9667

Kiwi Computers, P.O. Box 67381, Los Angeles, CA 90067

Kiwi Computers is not an Apple Authorized Dealer. Mac, Power Mac, Performa, Powerbook, are trademarks of Apple Computer, Inc.

LA computer center

800-689-3933
450 N. Oak St.
Inglewood, CA 90302
E-mail: lacc@lacc.com
Service (310) 671-4444
Fax (310) 671-9865
5 minutes from LAX Airport
www.lacc.com
For up to the minute pricing
check our web site

G3/300
4GB RAM
24KCD
\$1499

G3/350
4GB RAM
24KCD
\$1849

G3/350
4GB RAM
24KCD
\$2299

G3/400
4GB RAM
24KCD
\$2699

EPSON Stylus Pro XL \$279*

Performas
6300/120 16/1 2G/CD
6400/200 16/2 4G/CD
6400/180 16/1 6G/CD
6400/330 12/500 CD/DOS
6320/120 16/1 2G/CD/TV
6220/75 16/1 2G/CD
6200/75 8/1 2G/CD
5400/120 16/1 6CD/15" built in

Powerbooks
8500/180 16/1 GB/CD/KB
8500/132 16/1 GB/CD/KB
7800/132 16/1 GB/CD/KB
7500/100 16/1 GB/CD/KB
7300/180 16/2 GB/12X/KB
7200/120 16/1 GB/CD/KB
7200/90 8/500MB/CD/KB
6500/300 32/4 GB/24X/KB/MOD
6500/250 32/4 GB/24X/KB/MOD
6500/225 32/3 GB/12X/KB/MOD

We also carry:
Rasterops, Viewsonic, Sony,
Hip printer, Vst, Agfa,
Sonnet upgrade card,
smcra, Umax, Apple printers
and monitors, Global village
and much more.....
For most recent pricing
please check our web site.

www.lacc.com

4400/200 DOS
32MB
2GB
24KCD
DOS Card
799

G3/233MHz
32MB
2GB
24KCD
12.1" TFT
133Tz Mac
\$1849

G3/250MHz
32MB
2GB
24KCD
12.1" TFT
133Tz Mac
\$2049

G3/266MHz
64MB
4GB
24KCD
12.1" TFT
133Tz Mac
\$2499

G3/300MHz
64MB
4GB
24KCD
12.1" TFT
133Tz Mac
\$2999

G3/300MHz
64MB
4GB
24KCD
12.1" TFT
133Tz Mac
\$3199

Mac Pro Systems & Software

Since 1988

Buy • Sell • Trade • Upgrade • Repair
New • Used • Refurbished

Small Ad Lowest Prices

Any Ad is a Mac Pro Ad
Check out our Wholesale Specials @
www.mac-pro.com

800-525-3888
fax: 408-369-1205

Mac Sales

www.macs4sale.com

Centris 650 Bundle
Desktop Computer
16 MB Ram/230 MB HD
Scale \$299
with Color Monitor & Kyb

Computers

Centris 610 8/230	\$199
Centris 650 8/230	\$249
Quadra 650 8/230	\$269
Quadra 950 16/230	\$279
Quadra 700 8/160	\$179
Quadra 800 8/230	\$279
PowerMac 6100/66 16/160	\$299
PowerMac 7100/80 16/230	\$399
PB Duo 250 12/120/14.4	\$249
PB Duo 280 12/250/14.4	\$299
* Duo Dock & Dock II	\$59/\$79

Monitors

13" Apple RGB	\$99
14" Apple Touchscreen	\$129
15" Apple Multiscan	\$199

Printers

Imagewriter II	\$99
Laserwriter IINT	\$199
Laser Select 300	\$179

* Much More In Stock *

1-888-MACSALE
Buy • Sell • Repair • Parts

1-888-622-7253
Prices represent a Cash Discount.
*Mac Sales are used for 15 days after purchase.

BUY/SELL/TRADE			MediaGuide		Prices Listed Reflect a 3% Cash Discount
OLDER MACS			POWERBOOKS		
Mac Plus 4/0.....\$49	SE 4/20 (800k).....\$49	PB 140 4/40.....\$199	PB 170 8/80.....\$249	1.44 floppy drives.....from \$69	
SE FDHD 4/40.....\$89	Classic 4/40.....\$89	Powerbook 160 8/80/14.4.....\$299	Powerbook 165 12/120/14.4.....\$349	Apple 2x tray-loaded CD-ROM (int).....\$49	
SE/30 8/80.....\$129	Classic II 4/40.....\$119	Powerbook 165c 12/120/14.4.....\$429	Powerbook 180 8/120/14.4.....\$449	Apple 730mb 2.5" Powerbook SCSI HD.....\$249	
Mac II 4/40/Video.....\$39	LC 10/40.....\$79	Powerbook 180c 14/160/14.4.....\$529	Powerbook Duo 270c 12/240/14.4.....\$399	New external HD case w/cable.....\$49	
Ilx 8/40/Video.....\$79	Ilx 5/350.....\$79	Powerbook 520 12/240/19.2.....\$529	Powerbook 520c 12/240/19.2.....\$599	256K L2 cache for 6100/7100.....\$9	
LC II 10/80.....\$89	LC III 8/80.....\$109	Powerbook 540c 12/320/19.2.....\$699	Powerbook 1400's & 3400's.....BEST PRICES!	6100 486/66 DOS card (w/cable & sw).....\$45	
Ilci 8/350.....\$89	Ilx 8/350/Video.....\$79			Syquest Cartridges 44/88/200.....\$9/\$19/\$49	
Ilvx 8/350.....\$119	Ilfx 8/160.....\$129			PrecisionColor Pro 24x NuBus video.....\$199	
QUADRA & CENTRIS			MONITORS		
Perf 475 8/230.....\$189	C610 16/500.....\$179	Apple 12" Mono.....\$79	Apple 12" RGB.....\$99	MS Excel '98.....\$98	MS Office '98.....\$249
Q605 8/230.....\$199	Q610 16/500.....\$199	Apple 13" RGB.....\$149	Apple 14".....\$179	QuickKeys 3.0.....\$10	Tons more.....CALL
Q630 8/250.....\$249	C650 16/500.....\$299	Apple 15" MS.....\$249	Apple 16" RGB.....\$279	POWERBOOK ACCESSORIES	
Q650 16/500.....\$349	Q700 20/500.....\$299	Apple 17" MS.....\$349	Third Party.....\$CALL	Powerbook video cable.....\$25	Powerbook HDI29 to DB25 SCSI adaptor.....\$29
Q800 16/500.....\$379	Q900 20/500.....\$399	PRINTERS			Powerbook 5xx internal floppy drive.....\$99
Quadra 660AV 16/500/CD.....\$399		Imagewriter II.....\$99	Laserwriter.....\$99	Powerbook 1xx battery charger.....\$19	Powerbook Nylon carrying case.....\$19
Quadra 840AV 16/500/CD.....\$499		Laserwriter IInt.....\$199	LW IIntx.....\$249	Powerbook Leather carrying case.....\$59	Powerbook Duo floppy drive.....\$119
POWER MACS			Laserwriter IIf.....\$299	LW IIf.....\$399	Color Lid upgrade for Duo Dock.....\$29
6100/60 8/500/CD/DOS.....\$449		LW Pro 630.....\$699	LW16/600.....\$899	Duo Dock powersupply.....\$49	Apple 14.4 modem for PB Duo.....\$79
7100/66 8/500/CD.....\$459		Laserwriter Pro 810.....\$999		Logic boards, Power supplies, RAM — CALL!	Parts, Accessories, other CPUs — CALL!
7100/80 8/500/CD.....\$499		Super Match Dye Sub printer.....\$499			
8100/80 8/500/CD.....\$549		HP Deskjet 1600c (new).....\$999			
7200/75 8/500/CD.....\$499		HP Deskwriter (no ink).....\$79			
7200/90 8/500/CD.....\$549					
7500/100 16/1gig/CD.....\$699					
8500/120 16/2gig/CD.....\$799					
Many other Power Macs in stock.....CALL!!					

Toll free: (888) 466-2271

Fax: (303) 571-5020 • Local & Int'l: (303) 571-1900 • Hours: M-F 8-6, SAT 10-5 MST • 777 N. Santa Fe Dr., Denver, CO 80204
Sales E-mail: Sales@MediaGuide.com • Purchasing E-mail: Purchasing@MediaGuide.com • http://www.mediaguide.com

SHREVE Systems

For all this and more check out our website!
http://www.shrevesystems.com



WE BUY MACS & MAC STUFF (318) 424-9791
WE STOCK MAC PARTS!
1-800-227-3971

FAX (318) 424-9771 • Technical Support (318) 424-7987
Customer Service (318) 424-9791 • Purchasing/Information (318) 424-9791
1200 Marshall Street • Shreveport, Louisiana 71101

PowerMac 5400/120
• 16MB of RAM
• 1.6GB Hard Drive **PowerPC**
• 8X CD-ROM
• 180-MHz PowerPC 603e
• Refurbished **\$849**

PowerMac 6500/275
• 48MB of RAM
• Iomega ZIP™ Drive **zip**
• 6GB Hard Drive **PowerPC**
• 24X CD-ROM
• 275-MHz PowerPC 603e
• Refurbished **IN STOCK!**

PowerBook 5300cs

- Supports ext. video
- 100-MHz 603e
- Dual-scan color
- Refurbished



FREE!! ClarisWorks 3 and Carrying Case!

ADD VIKING™ V.90 PC CARD MODEM FOR \$100!

Macintosh LC580

- 33-MHz MC68LC040
- Built-in display **\$599**
- 8MB of RAM
- 800MB Hard Drive
- Includes mouse and keyboard



\$699 with Internal 4XCD

PowerMac Upgrades

Quadra/Centris 610 to PowerMac 6100/60 (refurbished)
As low as \$299!
with exchange of your working board

Quadra/Centris 650 to PowerMac 7100/80 Upgrade (refurbished)
As low as \$349!
with exchange of your working board

Quadra 800/840av to PowerMac 8100/80 (refurbished)
As low as \$399!
with exchange of your working board

Performa 630 to PowerMac 6300/100 (refurbished)
As low as \$399!
with exchange of your working board

Performa 6200/75 120-MHz Upgrade (refurbished)
As low as \$299!
with exchange of your working board

PowerMac 6400/200

- 16MB of RAM **PowerPC**
- 2.4GB Hard Drive
- 200-MHz 603e processor
- 8X CD-ROM

Factory Refurb **CALL**



Newton MessagePad 130

FREE refurbished
Genuine Leather Carry Case and faxmodem!



PowerMac 4400/200

- 200-MHz 603e processor
- 32MB RAM, 2GB Hard Drive
- Internal 12X CD-ROM
- 586 DOS Compatibility Card

Factory Refurb **\$999**



MACINTOSH LOGIC BOARDS

7200/90 logic board, refurbished	\$349
LC logic board, refurbished	\$49
LC II logic board, refurbished	\$179
Mac LCIII logic board, refurbished	\$249
Performa 630 logic board, refurbished	\$199
Quadra 800 logic board, refurb. (no processor)	\$99
Quadra 840AV logic board, refurb. (no processor)	\$99
Quadra 900 logic board, refurb. (no processor)	\$99
PowerBook 540 logic board, refurbished	\$99

PRINTERS

Apple 11x17 Color Inkjet Printer NEW , #M9500	\$199
Apple StyleWriter 1200, refurbished	\$139
Apple StyleWriter 1500, factory refurbished	\$199
Apple Color StyleWriter 2400, refurbished	\$199
Color StyleWriter 4500, refurbished	\$269
LaserWriter 8500 (tabloid, fast engine) refurbished	\$1349
LaserWriter IInt, refurbished	\$299
LaserWriter IIf w/5MB RAM, refurbished	\$699
LaserWriter IIf w/5MB RAM, refurbished	\$799
Texas Instruments Micro Laser Pro E NEW	\$749
NEC SilentWriter 1765, 17ppm NEW	\$999

Laser toner cartridges sold separately

APPLE WORKGROUP/WEB SERVERS

WGS 8550/200 16/2GB/CD, refurbished	\$1149
WGS 8550/132 24/2GB/CD, refurbished	\$949
WGS 7250/120 16/2GB/CD/Internet, NEW	\$1099
WGS 6150 16/500/CD, refurbished	\$649
WGS 9150/120 16/1GB/CD, refurbished	\$999
WGS 80 16/500/CD, refurbished	\$749
Network Server 500 32/2GB/4XCD, refurbished	\$1199
Network Server 700 48/4GB/DAT-2, refurbished	\$1699

VIDEO CARDS

ATI XClaimVR RAGE II 2MB with FREE TV Option	\$149
E-Machines DoubleColor SX Nubus Card NEW	\$49
RasterOps 24MX NEW , 24-bit Nubus	\$149
Supernova 8.24 PDQ Plus, 24-bit Nubus card	\$449
*PowerMac HPV Card (1MB)	\$79
*PowerMac AV Card (2MB)	\$249

MONITORS

AppleVision 850 Display, refurbished	\$1099
Apple 14" A/V NEW	\$249
RasterOps 24MX NEW , 24-bit Nubus	\$149
Apple 14" Multiscan, refurbished	\$149
Apple 15" Multiscan, refurbished	\$279
Apple 15" AV, factory refurbished	\$299
Apple MultiScan 17", refurbished	\$299
Apple 20" Multiscan, refurbished	\$999
Radius IntelliColor/20e, factory refurbished	\$999
Voxon 14" Multiscan NE W	\$179
Voxon 15" Multiscan NEW	\$229
Radius Color Pivot LE, refurbished	\$299

APPLE PC COMPATIBILITY CARDS

Pentium 166-MHz, 12" PCI card, refurbished	\$299
586 100-MHz, 7" PCI card, refurbished	\$149
486 66-MHz for 6100 series, NEW	\$59

FREE PC CD pack with PC Card Purchase!

NUBUS ADAPTERS

Quadra 660AV NuBus Adapter	\$79
Quadra 610 NuBus Adapter	\$79
Isi NuBus adapter with math co-processor	\$69

IMAGING PRODUCTS

Apple Color OneScanner refurbished	\$199
Apple Color OneScanner 600/27 refurbished	\$299
UMAX UC840 Scanner NEW	\$199
Apple QuickTake 200 refurbished	\$329
Apple QuickTake 150 refurbished	\$199

QuickTake Cameras

Refurbished



STARTING AT \$129!!

Save A Mac Foundation

MacAly Extended Keyboard



NEW!

1.44 SuperDrives



STARTING AT \$49!
REFURBISHED
NO EXCHANGE REQUIRED!



NEW 7200/75 LOGIC BOARD ONLY \$149

Logic Board Blowout!!

Ilfx logic board, refurbished	\$99
Centris 650 logic board, refurbished	\$99
Quadra 800 logic board, *refurbished no processor	\$99
Quadra 840AV logic board, *refurbished no processor	\$99
Quadra 900 logic board, *refurbished no processor	\$99
PowerBook 520 logic board, refurbished	\$99
PowerBook 540 logic board, refurbished	\$99

\$49

Genuine Apple ADB Mouse II **NEW!**



XClaim VR with FREE XClaim TV! NEW OEM \$149
• 3D RAGE II, 2MB VRAM



Color StyleWriter LocalTalk Module

Connect your StyleWriter 2400 or 2500 directly to a LocalTalk network!



\$39!

ClarisWorks 4 Internet Edition

NEW!

FREE Claris HomePage!

*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.

TRADE YOUR MAC FOR A NEW ONE. We Pay Top \$\$\$ For Your Mac & Mem.

CALL FOR UPGRADES
Email: cgn @ cgnusa.com

BUY • SELL • TRADE 310-441-4771

PowerMacs

G3 266 Mhz/32-4gb/CD 1345
G3 233 Mhz/32-4gb/CD 1250
G3 300 Mhz 64/4gb/CD1575
9600 200 Mhz 1690
8600 200 32-4gb-CD 1140
G3 350 MT AV Call
G3 300 MT AV Call

Powerbooks

G3 300 Mhz DVD 3750
G3 300 Mhz 14" 3495
G3 266 Mhz 2625
G3 233 Mhz 1595
3400cs 240 Mhz 1485

Upgrades

Special G3 292 Mhz
1400CS 16/12gb/cd 990
5400 12/500/Mod 595
5300c 16/750 725
145 - 170 - 180c-165c CALL
5300 cs 16/750 725

Demo Powerbooks

5400 12/500/Mod 595
5300c 16/750 725
145 - 170 - 180c-165c CALL
5300 cs 16/750 725

Demo Macs

Same day Upgrade No down Time!!
3400 to PB G3 Call
7200 to 7600 425
8100 to 8500 499
7500 to G3 250 Mhz 535
Call for G3 Upgrades!!!
Q800- Q840 to 8500 649
9600 to G3 300Mhz Call
Q 610/660 to 6100 199
Q800-840 to 8100 349

Storage

8500 32-2gb-cd 795
7600 635
8600 1130
9600 300 0/0/cd 1850
8100 16/500/CD 590
Q 650 16/120 150
6100 16/250 245
Q/C 610 \$99

Parts

Laser Pro 630 \$650
15" Apple 189

Special

CD 2X-4X-12X-24X Call
CD Recod. Yamaha 4x2x6 435
Yamaha 400AT 429
2GB HD 175

Exchange ON!

Logic Boards, Power Supply Call

Call For:

Monitors, Printers, Scanners.
All Apple Parts In Stock and
We do Advance exchange.
Leasing Available.

Computer Graphics & Networking

Floppy 1.44 55
POWER SUPPLIES CALL
AV Card \$135
Power supply Cx Ci 7100 35
Call for Logic Boards & more

Computer Graphics & Networking

All prices Reflect cash Discount
Visa, Mastercard, Amex Accepted
<< Prices are subject to Change >>

TEL: 310-441-4771

10922 W. Pico Blvd. Los Angeles, CA 90064 Fax: 310-441-4770

Choose 438 at www.macworld.com/getinfo

Save On Reconditioned Macs & Peripherals From DataTech

\$599

PowerMac 7500
24/1G with CD

PM 7200/75
24/500/CD \$399
Apple Twisted-Pair
Transceiver \$25

Centris 650 \$149
8/230

Asante NuBus
Ethernet Card \$29

Apple DuoDisk \$89

OLDER MACS

Mac Ilii 8/80 \$59
Mac Ilix 8/80 \$99
Centris 610 8/230 \$149
Quadra 610 8/230 \$179
Quadra 650 8/230 \$229
Quadra 800 8/230 \$229

MONITORS

Apple 14" Trinitron \$149
Apple 15" MultiScan \$199
Apple 17" MultiScan \$299

POWERMACS

6100/66 16/350/CD \$349
7100/66 16/230/CD \$349
7100/80 24/500/CD \$449
8100/110 24/2GB/CD \$549
7200/75 16/500/CD \$399
7200/90 16/500/CD \$499
7500/100 24/1G/CD \$599
7600/120 24/1G/CD \$699
8500/120 32/2GB/CD \$799
9500/132 32/2GB/CD \$899

PRINTERS

LaserWriter IIntx \$179
LaserWriter IIntx \$229
LaserWriter IIntx \$329
LaserWriter Select 360 \$599
LaserWriter Pro 630 \$849
LaserWriter 16/600 \$749

- All CPUs include mouse
- 6-month warranty
- VISA & MasterCard accepted

TO ORDER CALL

1-800-281-3661

DataTech
REMARKETING, INC.

TEL: 615-880-4422
Fax-On-Demand: 615-860-0109
Fax: 615-860-0390
Web: www.datatech-rmk.com
471 Myatt Dr, Madison, TN 37115

D-2-99

www.PowerBook1.com

Secure Online Ordering!

Your Source for all PowerBook
Upgrades and Accessories

FAST!! MCE COMPACT

Xcarét Media Bay Hard Drives

PB 3400, 3500, 5300, 190; Xcarét Pro for PB G3 Series
6GB 4GB 2GB 0GB (empty)
Xcarét/Pro \$549 \$399 \$319 \$149

newer tech

NUPowr 1400/G3 250MHz \$659

NUPowr 1400/G3 233MHz \$519

NUPowr 2400/G3 240MHz \$719

VIEWowr 1400 (16-bit video) \$239

Bookendz Dock for 3400/G3 Series \$189/199

MCE powrUP 1400/G3 Bundle:

Includes: NUPowr 1400/G3 233MHz/512K cache

& MobileStor 6400i PB Hard Drive **\$849**

MEMORY

Viking Components

PB G3 Series	32MB	\$129	\$229
PB G3 Original	64MB	\$149	\$249
PB 3400	128MB	\$149	\$249
PB 2400		\$99	\$129

WOW!! 96MB module for PB 2400 only \$399

IT'S BACK!

MCE ADB

FlexLight

FREE

whenever order over \$100.

or \$29 separately in the dark! Plugs into ADB Port.

Lights up your PowerBook

or \$29 separately in the dark! Plugs into ADB Port.

O'Grady's Macworld Best of Show Pick

MadsonLine ADB adapter

for PB 3400, G3, 2400 & 1400

only \$85

half the size/weight of Apple's adapter!

Also, MadsonLine Auto Adapter w/Airline Plug

for PB G3 Series, 3400, 1400, 2400 & Duo... only \$95

VST ZIP

PowerBook Drives

PB 1400 \$199

PB 3400, G3, 6300, 190 \$219

PB G3 Series \$219

PB G3 Series SuperDisk \$219

EX MICRO Road Rocket! only

24-bit Video Output for PB G3 Series \$279

Kritter Cam \$249

CapSure Card \$129

640x480, 30fps

Video for 3400/2400/G3

POWERBOOK PRODUCTS

MCE PowerBook Drives

For use in PB 3400, 2400, 1400, 5300, 190, 150 & Duo 2300

MobileStor 2100i	2.1 GB	TOSHIBA	\$189	3yr
MobileStor 3200h	3.2 GB	HTACHI	\$219	3yr
MobileStor 4300i	4.3 GB	TOSHIBA	\$239	3yr
MobileStor 4300i	4.3 GB	IBM	\$249	3yr
MobileStor 6400i	6.4 GB	TOSHIBA	\$349	3yr
MobileStor 6400i	6.4 GB	IBM	\$359	3yr
MobileStor 8000i	8.0 GB	IBM	\$559	3yr

All MCE PowerBook hard drives include the MCE PB Hard Drive Installation Kit which includes an installation manual, torx tool, mounting bracket and anti-static wrist strap.

Flip Disk
Portable Drive

Flip 20 (2GB)	\$399
Flip 40 (4GB)	\$499
Flip 60 (6GB)	\$599

MCE PC Card
Diskeeper

Keep your old PB hard disk! Use your original internal hard disk as an external! Great with MobileStor drives!

High capacity, portable storage for your PowerBook... Just plug it in

Type II PC Card

30 Hughes Suite 203 • Irvine, CA • 92618

Visa / MC / AmEx / Discover / P.O.'s

1-800-5000-MAC • 949-458-0800 • fax 949-458-1803

Choose 437 at www.macworld.com/getinfo



www.icni.com

For Our Most Current Prices Please Visit Our Web Site



HUGE SELECTION OF MAC, TOSHIBA, IBM, COMPAQ AND SPARE PARTS IN-STOCK

lomega Internal
100MB Zip Drive
\$75*

PowerBook 5300c
100MHz/16Ram/750HD
\$679*

Apple Monitor
17" 1710 Vision (trinetrun)
\$299

PowerMac 6500
225MHz/32RAM/3GB/CD
\$739*

PowerMac 8100
80MHz/16RAM/500HD/CD
\$499*

Video Card
ATI Exclaim VR 2MB
PCI video Card (AV) **\$79**

Apple 1.44 Floppy
Drive (Manual Insert)
\$59

PowerMac 9500
233MHz/32RAM/2GB/VC/KB
\$1189*

POWER MACS RECONDITIONED

9600	200MHz	64/2GB/CD/VC/KB	..\$1745
9600	233MHz	64/2GB/CD/VC/KB	..\$1845
9600	300MHz	64/4GB/CD	..\$2290
9500	233MHz	32/2GB/CD/VC/KB	..\$1189
9500	200 MP	32/2GB/CD/VC/KB	..\$1229
9500	132MHz	32/1GB/CD/VC/KB	..\$989
8600	250 Mhz	32/4GB/CD/KB	..\$1479
8600	200 Mhz	32/2GB/CD/KB	..\$1299
8500	180MHz	32/1GB/CD/KB	..\$969
8500	132MHz	32/1GB/CD/KB	..\$839
8500	233MHz	32/2GB/CD	..\$1049
7600	132 Mhz	16/1GB/CD/KB	..\$689
7500	100 Mhz	16/1GB/CD/KB	..\$669
7300	180 Mhz	16/2GB/CD/KB	..\$895
7200	120 Mhz	16/1GB/CD/KB	..\$579
7200	90Mhz	8/500MB/CD/KB	..\$479
6500	275MHz	32/6GB/CD/KB/MOD	..\$1030
6500	250MHz	32/4GB/CD/KB/MOD	..\$995
6500	225MHz	32/3GB/CD/KB/MOD	..\$739
4400	200MHz	32/2GB/CD/KB	..\$690

POWERBOOKS & DUOS RECONDITIONED

3400c	240MHz	16/3GB/12XCD/Modem/ETH	..\$1579
3400c	200MHz	16/2GB/6XCD/Modem/ETH	..\$1395
3400c	180MHz	16/1GB/6XCD	..\$1349
1400cs	166MHz	16/1GB/12XCD	..\$1349
1400c	133MHz	16/1GB/8XCD	..\$1379
1400cs	117MHz	12/750MB	..\$969
5300ce	117MHz	32/1GB	..\$795
5300c	100MHz	16/750MB	..\$679
5300cs	100MHz	8/500MB	..\$649
540c	33MHz	8MB/320MB/Modem	..\$499
180c	4MB/160MB/Modem		..\$395
DUO 2300c	100MHz	20MB/1GB/Modem	..\$729
DUO Dock Plus			..\$159
DUO Dock			..\$89

POWERMACS (NUBUS) RECONDITIONED

8100	110MHz	16/1GB/CD	..\$590
8100	100MHz	16/700MB/CD	..\$549
8100	80MHz	16/500MB/CD	..\$489
7100	80MHz	8/250MB	..\$359
6100	66MHz	8/250MB	..\$299

PERFORMAS RECONDITIONED

6400	180MHz/16/1.6GB/Mod/CD/KB	..\$799
6360	160MHz/16/1GB/Mod/CD/KB	..\$749
5400	180MHz/16/1GB/CD/Mon 15"	..\$1095
5200	75MHz/8/500MB/CD/Mon 14"	..\$695

SONET G3 UPGRADE CARDS

G3/240MHz	For 61/71/81	..\$579
G3/293MHz	For 61/71/81	..\$759
G3/300MHz	For 7300-9600	..\$490
G3/333MHz	For 7300-9600	..\$775
G3/400MHz	For 7300-9600	..\$1289
Processor	233MHz 604e	..\$189
G3/240MHz	For 54/64/6500	..\$395
G3/300MHz	For 54/64/6500	..\$495
G3/L2/1M	300MHz For 54/64/6500	..\$595

CD-R / CD-RW / DVD

Yamaha	4x4x16 CD-RW	..Int. \$335/Ext. \$449
TEAC	4x12 CD-R	..Int. \$235/Ext. \$349
Panasonic	4x8 CD-R	..Int. \$235/Ext. \$339
Sanyo	8x20 CD-R	..Int. \$375/Ext. \$475
COOL DVD	Kit SCSI	..Int. \$425/Ext. \$499
DVD RAM	Kit SCSI	..Int. \$549/Ext. \$749

External Drives include choice of Toast/EZ Creator Media Cable & Terminator

TAPE DRIVES DAT, AIT & DLT

Sony SDT 7000	4/8GB Int.	..\$469/Ext. \$559
Sony SDT 9000	12/24GB Int.	..\$699/Ext. \$825
Sony AIT	25/50GB	..Int. \$1549/Ext. \$1749
Quantum DLT4000	20x40GB Int.	..\$1495/Ext. \$1649

1.800.472.4921

Fax: (310) 445-6611 Tel: (310) 445-6600
FAX TOLL FREE FROM JAPAN: 00-31-114211
11755 Exposition Blvd., Los Angeles CA 90064

MONITORS

APPLE VISION Colorsync 20"	..\$1079*
APPLE VISION 850AV 20"	..\$1259
APPLE VISION 850AV 20"	..\$999*
APPLE VISION 850 20"	..\$829*
APPLE Multiple Scan 20"	..\$589*
APPLE Multiple Scan 720 17"	..\$349*
APPLE Vision Colorsync 17"	..\$429*
APPLE Vision 750 17"	..\$355
APPLE Vision 1710 17"	..\$295*
APPLE Studio 17"	..\$589
APPLE Multiple Scan 15 15"	..\$195*
APPLE Multiple Scan 15AV 15"	..\$225*
APPLE Hires 14 14"	..\$119*
APPLE RGB 13 13"	..\$99
APPLE Mono 12"	..\$79
SONY 15" 100ES/15" 100GS	..\$239-279
SONY 17" 200ES/17" 200GS	..\$389-485
SONY 21" 500PS/19" 400PS	..\$1195-759
VIEWSONIC 15" E655/ G653	..\$229-235
VIEWSONIC 17" G771/ EA771	..\$389-399
VIEWSONIC 20" P810/ P815	..\$1049-1195
OPTIQUEST 15" Q53-Q51	..\$185/179
OPTIQUEST 17" V75-V73	..\$399/\$345
OPTIQUEST 19" V95	..\$499

PRINTERS

APPLE LaserWriter 12/640PS	..\$849*
APPLE LaserWriter 16/600	..\$969*
APPLE LaserWriter IINT	..\$189*
APPLE LaserWriter INTX	..\$209*
APPLE LaserWriter 8500	..\$1295
APPLE LaserWriter 2500	..\$169*
APPLE Color StyleWriter 4500	..\$209*
APPLE Color StyleWriter 6500	..\$299*
APPLE 1500	..\$169

VIDEO CARD

ATI EXCLAIM VR 2MB PCI Video Card W/In-Out	..\$79
ATI EXCLAIM VR 2MB VRam Upgrade	..\$39
ATI EXCLAIM 3D 8MB Rage PCI Video Card	..\$139

APPLE HARD DRIVES

Hard Drive 1.2 GB 3.5" SCSI	..\$95
Hard Drive 1.6 GB 3.5" IDE	..\$95
Hard Drive 1.1 GB 2.5" SCSI (PowerBook)	..\$259
Hard Drive 750 MB 2.5" IDE (PowerBook)	..\$85

Prices Subject to Change Without Notice • All Prices reflect 3% Cash Discount • * Refurbished
ICN Is Not An Authorized Apple Dealer • All Trademarks Are Property Of Their Respective Companies.

Open Monday-Friday: 9am-8pm & Saturday: 10am-5pm CST E-Mail Us at: owc@macsales.com

Other World Computing

Serving the Mac Universe Since 1988

Competitive Prices, Quality Products and NEVER a Surcharge for Credit Cards!



800-275-4576



**FAST!
EASY!
SECURE!**

Other World Computing
has Easy, Fast,
Secure Internet
Ordering Now.



SCSI hard drives

Apple ROM 1.2 Gig Quantum Fireball

\$99

Internal
External: **\$149**



HardDrives Include
30mb of free software INSTALLED. External version
features platinum case with dual SCSI ports, Push-
button SCSI ID AND 40 watt power.

Int. Ext.

9.1gb Viking II	7.5ms 7200rpm 512k	\$449	\$499
9.1gb Atlas III	7.5ms 7200rpm 1024k	\$499	\$549
18.2gb Atlas III	QMS1820T05 7.5ms 7200rpm 1024k 5yr	\$799	\$849

SEAGATE

2.15gb Barracuda	ST12250WC 8ms 7200rpm 512k Cache 5yr	\$165	\$215
4.5gb Medallist Pro	ST34520N 9.5ms 7200rpm 512k Cache 3yr	\$245	\$299
6.5gb Medallist Pro	ST36530N 9.5ms 7200rpm 512k 3yr	\$339	\$389
9.1gb Medallist Pro	ST39140N 9.5ms 7200rpm 512k 3yr	\$419	\$469
9.1gb Barracuda	ST39173N 9.5 7.1ms 7200rpm 1024k 3yr	\$469	\$519
18gb Barracuda	ST116273N 9.5 7.1ms 7200rpm 1024k 5yr	\$829	\$889

Call or Visit www.macsales.com for other IBM, Seagate, & Quantum UltraVium and UltraVium SCSI Drives

IDE hard drives

6.4 Gig IDE Quantum Fireball EX

\$195

5400 RPM
9.5ms
3 Year Warranty

IBM Deskstar GP 8.4gb	5400rpm 9.5ms IDE 3yr Warranty	\$225
IBM Deskstar GP 13.5gb	5400rpm 9.5ms IDE 3yr Warranty	\$315
IBM Deskstar GP 16.8gb	5400rpm 9.5ms IDE 3yr Warranty	\$375
IBM Deskstar GP 20.2gb	5400rpm 9.5ms IDE 3yr Warranty	\$490

SEAGATE

Seagate Medallist 6.5gb	5400rpm 12ms 3 Year Warranty	\$195
Seagate Medallist 8.6gb	5400rpm 12ms 3 Year Warranty	\$229
Seagate Medallist 10.2gb	5400rpm 12ms 3 Year Warranty	\$245

QUANTUM

Quantum Fireball EX 6.4gb	5400rpm 9.5ms IDE 3.5" w/3yr	\$175
Quantum Fireball EX 12.7gb	5400rpm 9.5ms IDE 3.5" w/3yr	\$280

Removable Storage

Iomega Zip 100MB SCSI (No Cartridge)	\$99	\$115
Iomega Zip 250MB SCSI (With Cartridge)	N/A	\$195
Iomega Jaz 2GB SCSI (No Cartridge)	\$304	\$314
Iomega Zip 100MB Cartridges \$11 each / 10 for \$85		
Iomega Zip 250MB Cartridges \$18 each / 4 for \$69		
Jaz 1Gb Cartridges \$79 each. / Jaz 2Gb Cartridges \$85 each.		
Panasonic CDR 4x8 with Toast & Media	\$379	
Yamaha CDRW4260	\$449	
Verbatim 74 Minute Gold CDR Media w/level Case \$22 each. 50 for \$99 100 for \$185		

IDE PowerBook Drives

HAVE MORE ROOM TO ZOOM with a bigger PowerBook Hard Drive from OWC

for PowerBook150/190(cs)/5300/1400/3400 & G3 Series		
4.0GB IBM Travelstor 4200rpm 12mm Slim with 3 Year Warranty	\$239	
6.4GB IBM Travelstor 4200rpm 12mm Slim with 3 Year Warranty	\$299	
8.4GB IBM Travelstor 4200rpm 12mm Slim with 3 Year Warranty	\$449	

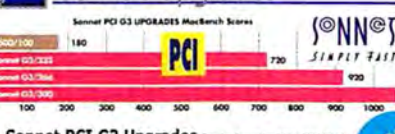
Level 2 Cache Upgrades

6100 PowerMacs/Performas	256k	\$15	
7100/8100 PowerMacs/Performas	512k	\$15	
73/75/76/85/8600 & Compatible Clones		\$69	\$99
6300/6400/6500; StarMax; & PowerBase		\$89	\$169

Plug In More Power!



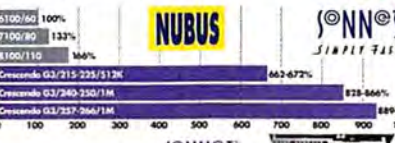
G3 Mac Upgrades



Sonnet PCI G3 Upgrades For the PowerMac 7300/7500/7600/8500/8515/8600/9500/9515/9600; Workgroup Server 7350, 8550, 9650; Power Comp. PowerWave, UMAX 1700 & 5900; and DayStar Genesis 538.

MacWorld Editors Choice!
MacWEEK *****

G3/233mhz	w/512k 2:1 Backside Cache	\$339
G3/300mhz	w/1024k 2:1 Backside Cache	\$475
G3/300mhz	w/1024k 2:1 Backside Cache	\$579
G3/333mhz	w/1024k 2:1 Backside Cache	\$759
G3/366mhz	w/1024k 2:1 Backside Cache	\$899
G3/400mhz	w/1024k 2:1 Backside Cache	\$1199



Sonnet Crescendo Nubus G3 Upgrades For the PowerMac 6100/7100/8100 & 8115; Performa 6110/6112/6115/6116/6117/6118; Workgroup Server 6150/6150/6150; Radius 8111/10.

G3/215-225mhz	w/512k 2:1 Backside Cache	\$379
G3/225-231mhz	6100 Series ONLY	\$449
G3/266mhz	w/1024k 2:1 Backside Cache	\$569
G3/300mhz	w/1024k 2:1 Backside Cache	\$769

XLR8 Adjustable G3 Upgrades

For the PowerMac 7300/7500/7600/8500/8515/8600/9500/9515/9600; Workgroup Server 7350, 8550, 9650; Power Computing PowerCenter, PowerCurve, PowerWave, PowerPower, UMAX 1700 & 5900; and DayStar Genesis 538.

G3/220mhz	w/512k 2:1 Backside Cache	\$325
G3/233mhz	w/512k 2:1 Backside Cache	\$365
G3/266mhz	w/512k 2:1 Backside Cache	\$409
G3/300mhz	w/512k 2:1 Backside Cache	\$499
G3/300mhz	w/1mb 2:1 Backside Cache	\$629
G3/333mhz	w/1mb 2:1 Backside Cache	\$919
G3/366mhz	w/1mb 2:1 Backside Cache	\$999
G3/400mhz	w/1mb 2:1 Backside Cache	\$1299

Sonnet and Vimage G3 Upgrades

for Motorola StarMax, PowerMac 4400/5400, Performa 6400, UMAX C500, and PowerBook 14uu FROM **\$379!**



24hr. OnLine
Ordering &
Product Info
Daily Updated
Prices & Specials

Find Other World Computing on the Web at: **www.macsales.com**

Get the details on Accelerating your Mac at: **www.fastermacs.com**

SAVE BIG ON SIMMS, DIMMS, SDRAM & VRAM



Mac Memory Products

Memory listed by OWC is New with Lifetime Warranty and 30 Day Money Back Guarantee. All Memory products meet or exceed Apple Specifications.

30 PIN SIMMS Non-Parity for Older Macs
4 MEGABYTE 70 or 80 NanoSeconds \$15
16 MEGABYTE 70 or 80 NanoSeconds \$35

SPECIAL!
72 PIN SIMMS 2k Refresh 60ns
8MEG\$25 16MEG\$42 32MEG\$79



168 PIN DIMMS 2k Refresh 70 or 60ns (specify)
5V EDO5V EDO3.3V

16 MEGABYTE	\$42	\$35	\$49
32 MEGABYTE	\$79	\$85	\$89
64 MEGABYTE	\$169	\$175	\$179
128 MEGABYTE	\$279	\$279	N/A

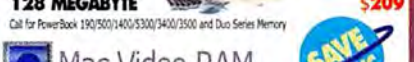
Memory for New G3 PowerMacs

10ns SDRAM 66mhz (original) (for New G3's)
32 MEG \$59 \$61
64 MEG \$109 \$115
128 MEG \$199 \$209
256 MEG \$479 \$899



WallStreet & iMac G3 Computers Memory

32 MEGABYTE	\$59
64 MEGABYTE	\$105
128 MEGABYTE	\$209



Mac Video RAM

256k PMac 7100/Quadra800/650	\$12
512k PMac 8100/Quadra's/LC's	\$15
1MEG PMac 72/73/75/76/85/8600 & Compat.	\$19
4 MEG Motorola StarMax/PowerMac 4400	\$19
4 MEG G3 Video SGRAM	SPECIAL! \$25

OWC is a Techworks Authorized Reseller. Call or Visit www.macsales.com for the best prices on Techworks Brand Memory.

Other World Computing

224 West Judd St., Woodstock, IL 60098
International: (815) 338-8685
Fax: (815) 338-4332

Buy ■ Sell ■ Trade We Pay Top \$ for Your Old Computer! Call for an estimate.

PowerBooks®

G3 300MHz DVD \$3,695

■ 64 MB/8 GB IDE/DVD/Video/
56K Fax/Modem/14.1" TFT Active

G3 266MHz \$2,495

■ 64 MB/4 GB IDE/20xCD-ROM/
56K Fax/Modem/14.1" TFT Active

G3 250MHz \$1,645

■ 32 MB/5 GB IDE/CD-ROM/
33.6 Fax/Modem/14.1" TFT Active

G3 233MHz \$2,095

■ 32 MB/2 GB IDE/CD-ROM/14.1" TFT Active

G3 233MHz \$1,795

■ 32 MB/2 GB IDE/CD-ROM/12.1" TFT Active

PB. 5300cs/100 ■ 8 MB/500MB/Extra Battery \$595*



Photo
quality
printing
Inkjet
printer

EPSON
Stylus Color 740

**Bundle
Starting
as low as**

\$1,199

EPSON Color Printers

740/850/850N \$249/333/449

Photo 700/Photo EX \$225/439

1520/3000 \$469/1033

macuniverse

(800)254-3150

macuniverse.com

sales@macuniverse.com

Sales:(818)609-0525

Fax:(818)609-9435

Choose 467 at www.macworld.com/getinfo

PowerMacs®

G3 400MHz Minitor \$2,795

■ 128MB/9GB UUI SCSI/24xCD-ROM/100BT

G3 350MHz Minitor \$2,395

■ 128MB/9GB UUI SCSI/24xCD-ROM/100BT

G3 350MHz Minitor \$1,895

■ 64MB/6GB UUI SCSI/24xCD-ROM/100BT

G3 300MHz Minitor \$1,485

■ 64MB/6GB/24xCD-ROM/ATI 128

G3 Upgrade Cards \$Best Prices

32/64 MB PC-100 G3 Memory \$59/99

128/256 MB PC-100 G3 Memory \$189/CALL

Apple Studio Displays

Studio Display 15" \$1049

Studio Display 17" \$479

Studio Display 21" \$1449

Best Deals on all CALL Now!

Printers/Scanners/Displays

Digital Cameras/Software/Games!



Yamaha 4x4x16 Ext.CD-RW with Software \$399

Panasonic 4x8 Ext.CD-R with Software \$299

WACOM Intuos Graphic Tablet 4x5/6x8 \$169/295

Imega Zip Ext. SCSI/USB \$109/185

Imega Jazil Ext. SCSI \$299

Imega 250MB Ext. SuperFloppy Zip Drive \$185

IX Micro ix3D Ultimate Rez 128-bit 2D/3D \$279

Best Deals on all USB Port Products CALL Now!



19100 Ventura Blvd., Tarzana, CA, 91356

macuniverse.com

Choose 467 at www.macworld.com/getinfo

Monitors Mac Surplus Video Cards

MONITORS

GRAPHICS CARDS

DIGITAL VIDEO

PRINTERS

**Radius
Intellicolor 20e
20" Trinitron 1600/1450
NOW \$799!!**



Thunder IV GX from \$599

WORLD'S LARGEST SUPPLIER OF NUBUS PRODUCTS!

NUBUS CARDS

24bit Accelerated Graphics Cards

Compatible G3 Upgrade & OS8 Nubus Cards

Futura Series (up to 1024X624) \$89

Radius 24xp (832X768) \$149

Spectrum 24 Series V (1024X768) \$199

Spectrum Power (1152X870) \$299

Thunder II GX (1152X870 up to 1600X1200) \$199

PhotoEngine increase PhotoShop 15x's FREE*

Thunder IV GX (1152X870 up to 1600X1200) \$599

PCI CARDS

RasterOps Twin Turbo 24bit 4mb \$179

Radius ThunderColor 30/1152 \$449

Radius ThunderColor 30/1600 \$599

Radius ThunderPower 30/1920 \$649

Radius Thunder 3D \$899

Radius Thunder TX \$699

Radius Tempest \$349

Radius PrecisionColor 8/1600 \$199

Radius PrecisionColor24/1600 \$399!

Most Radius, SuperMac & Emachine monitors in stock

***With Qualifying Monitor or Video Card Purchase**

Spigot Pro AV and Power AV

• For 650AV, 640AV, 6100AV, 7100AV, 8100AV

Video Spigot Cards

• Spigot Native, LDC, S1, Spigot II Tape

VideoVision Telecast

• Ask how to qualify for an additional \$100 off

VideoVision Nubus and PCI

• Broadcast quality video output

• Proven Non-Linear Video editing

technology \$699!!

Digital Video Workstation!

\$1749!

• PowerMac 81/110

• 32/2GB/cd

• 15" Color Monitor

• VideoVision Studio 2.5.1

• Adobe Premiere

Graphics Workstation!

\$1499!

• PowerMac 81/110

• 32/2GB/cd

• 21" Two Page Color Monitor

Apple LaserWriter

• 300dpi, 8ppm, Postscript

Apple Personal LaserWriter NT \$299

• 300dpi, Small Footprint, Postscript

Apple LaserWriter IIF \$399

• 300dpi, Postscript Level 2

QMS 860 Hammerhead NEW! \$1299

• 600 dpi, Tabloid 11x17, Postscript Level 2, Mac & PC

Dye-Sub Blowout!!!

Proof Positive Color Printer

• Continuous-Tone, Photo-Realistic, Print to Print Color Substrates

• Full Page & Two Page Options Available

• True Postscript Level 2

• Prints Mac OS Files

\$1599!

COMPUTERS

Mac Ilex \$249!

• 4mb/160 HardDrive

• 15" Grayscale Pivot

• Color Monitors Available

Mac Surplus- macsurplus.nubus.com- 800-444-9088



Mac Surplus, Inc. 14609 Dartmouth Dallas, TX 75244 Monday thru Friday 9AM to 6PM CST
Domestic Sales macsurplus@nubus.com Fax 254.299.2705 Consultants/Dealers 254.299.2705 International Sales 254.299.2705
Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. Dealers and consultants call for quantity pricing. We ship anywhere.
All Monitors, Printers, and CPUs are Factory Recertified unless otherwise stated. Call for latest pricing & availability on NEW Options.
Choose 441 at www.macworld.com/getinfo

CALL THE MAC EXPERTS!

Your one-stop source for everything Macintosh®. Complete solutions and expert advice our specialty!
Call for the absolute lowest prices and immediate delivery on over 30,000 Mac® products!

If there could be only one Macintosh® reseller in the world, why you'd want it to be PowerMax:

- Our salespeople are some of the most knowledgeable in the business. They're not order takers and they don't push for a one time sale. Well over half our business comes from repeat and referred customers!
- We have 800 line tech support for as long as you own your computer!
- We load over 160 megabytes of useful software on every computer.
- Every Mac® system is thoroughly bench tested, and then personally verified and approved by your specific consultant.
- We will customize your computer any way you need, and always with an exact description as to what we're including.
- We give you a free mouse pad with every system.
- We have no voice mail—there's always a human being on the other end of the line for tech, sales and management.
- We answer the phone: "how can we help you?" not "may I take your order?"
- We live in Oregon, where there is no sales tax and the people are friendly and polite!
- Even customized systems usually ship within 24-48 hours.
- Government and corporate purchase orders normally approved the same day.
- We take trade-ins, and we sell every style of quality Macintosh® possible, from extreme hi-end to quality used Macs®.
- We have competitive prices on over 30,000 Macintosh® items.
- All we do is Macintosh®—our company is run entirely on Macs®.
- We offer you choices: buy over the phone, over the internet, or in person, all with the same great prices and super service!
- We listen.

The other guys

- They sell you a box.
- If you have a problem, they tell you to call the manufacturer. And then you get to wait on hold for a long, long time.

PowerMax Trinitrons®

Look at these new displays from PowerMax!

# PM15-501 25 mm dot pitch—best at 1024 x 768 @ 85Hz	\$249
# PM17 25 mm dot pitch—best at 1024 x 768 @ 85Hz	\$449
# PM17TE+ 25 mm dot pitch—best at 1152 x 870 @ 75Hz	\$549
# PM20T 30 mm dot pitch—best at 1152 x 870 @ 75Hz	\$749
# PM1000T 21" Trinitron! 25 mm dot pitch up to at 1600x1280 @ 80Hz	\$1188
# PM4000T 24" Trinitron! 25 mm dot pitch up to at 1920x1200 @ 95Hz	\$1999

PowerMax Trinitron® monitors are designed specifically for the rigorous demands of the Macintosh®. They ship complete with Mac®-ready cables and adapters, a five year warranty, and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!

POWER MAX
Knowledge is Power

GUARANTEED BEST DEALS ON MAC SOFTWARE!



MS Office Included!

Package 26DW994

New PowerMac® G3 266 desktop, 64 mb RAM, 4 Gb Drive, 24x CD, 15" Color Display and Microsoft Office 4.21 plus Premiere 4.21! Only \$1599 or just \$64 per month!

Pictures may not match monitor in package



We're USB Specialists!

Package 26TW994

Ref PowerMac® G3 266 MHz Tower w/64 Mb RAM, 6 gb drive, 24x CD, internal Zip drive, a 17" Trinitron® display, plus Premiere 4.21! Only \$2088, or just \$84 per month!

iMac Packages— all colors available!

We offer a complete iMac® solution with more RAM & a printer! Includes 96 Mb RAM and a new Epson 720 dpi color printer. Call for the new lowest prices ever!

Package 44W994

Includes brand new 200 MHz Mac® with 32 Mb RAM, 2 Gig hard drive, 24x CD, a new 15" color display and extended keyboard. Only \$888, or just \$38 per month!



Media

Nationally Authorized Reseller



Perfect Trinitrons® from 15" to 24"!

SUPER 8 CD BUNDLE! ONLY \$29!!

Includes: Angel Devoid: 4 CD Interactive Game • Space Shuttle: 50 mission multimedia experience • How Your Body Works: 3D encyclopedia • Panzer General strategy game • US Atlas & Almanac!

Norton Utilities 3.5 CD ONLY \$19!!

Norton Utilities 4.0 ONLY \$69!!

Microsoft Excel 4.0 ONLY \$25!!

Norton Antivirus 5.0 CD ONLY \$29!!

M/S Office 4.21 CD ONLY \$49!!

Mac OS 8.1 ONLY \$69!!

AI Unser Jr. Racing ONLY \$19!!

Adobe Illustrator 8.0 ONLY \$349!!

Adobe Photoshop 5.0 ONLY \$449!!

Microsoft Office 98 ONLY \$319!!

Adobe PageMaker 5.0 ONLY \$449!!

AppleShare 4.1 ONLY \$199!!

PLUS GREAT PRICES ON OVER 4,000 MAC® TITLES!

Only while supplies last

THE BEST VALUES ON USED MACS EVER!

Due to overwhelming response to our used and demo offerings, we have expanded our selection to include many new models & configurations! Remember, with PowerMax, you get:

- Fully bench-tested Macs® at the best possible pricing.
- Sensational warranties—buy with confidence!
- Wide selection of G3 upgradable models—our Mac® experts will go over every detail with you!
- With used Macs® you get: better expansion, best price/performance, upgradability and more!

This month's inventory list: plus new arrivals daily!

7100/66 16/500 Mb/CD/KB	\$349	All-in-1 5200/75 24/750 Mb/CD	\$649
Performa 6220 32/1 Gb/CD	\$399	7500/100 32/500 Mb/CD	\$729
Pwbk 180C 14/160 Mb/bag	\$399	Pwbk 5300C/100 16/750	\$688
6100/60 16/250 Mb/CD	\$399	Performa 6500/225 32/3 Gb/CD	\$799
Performa 6116 16/700 Mb/CD	\$419	8500/120 32/1 Gb/CD	\$829
Performa 6320 48/1.2 Gb/CD	\$429	9500/120 32/1 Gb/CD	\$849
Performa 6200 40/1 Gb/CD	\$429	Pwbk 1400CS/117 12/750/CD	\$849
6100/66 24/500 Mb/CD/KB	\$439	Radius 81/110 72/2 Gb w/Video	
Performa 6115 40/350 Mb/CD	\$449	Vision & Premiere!	\$999
7200/90 16/500 Mb/CD	\$469	9500/200 32/1 Gb/CD	\$1088
6216 16/1 Gb/CD/TV Tuner	\$469	9500/233 32/2 Gb/CD	\$1299
7100/80 16/500 Mb/CD	\$499		
8100/80 40/1 Gb/CD	\$529		
8100/100 16/500 Mb/CD	\$569		
8100/100 16/1.2 Gb/CD	\$599		

—Who else has this kind of selection at these kind of prices? Call PowerMax Today!

Trade in your old Mac for a powerful new G3!

New 4400/200 (7220) 16/2 Gb/24x	\$739	Ref G3/266 Tower 32/6 Gb IDE/CD/Zip	\$1788
New StarMax 5000/250 32/2.5/16x	\$879	Ref G3 300 Tower 64/4 Gb UW/24x	\$1999
Refurb 6500/225 32/2 Gb/12x	\$888	G3 266 Tower 128/4 Gb UW/24x/8 Mb Ultra	\$2288
Refurb 6500/225 32/3 Gb/12x	\$928	G3 300 Tower 64/8 Gb IDE/24x/Zip	\$3411
Refurb 6500/250 32/4 Gb/12x/Zip	\$999	Yosemite Blue G3 300 64/6 Gb/24x	\$1529
Refurb 6500/250 48/4 Gb/24x/0 KB	\$988	Yosemite Blue G3 350 64/6 Gb/24x/DVD	\$1869
Refurb 6500/250 48/4 Gb/12x/Zip	\$1049	Yosemite Blue G3 350 128/12 Gb/24x/Zip	\$2349
Refurb 6500/275 32/4 Gb/12x/Zip	\$1079	Yosemite Blue G3 400 128/9 Gb UW/24x	\$2799
New 6500/275 32/4 Gb/12X Creative Studio	\$1079		
20th Anniversary Mac!	\$3411		

Thought you'd never be able to find a 9600?

New 9600/200 32/4 Gig/12x- 6 Slot Mac!	\$1988
Ref 9600/300 64/4 Gig/12x- 6 Slot Mac!	\$2388
Ref 9600/300 64/4 Gig/12x/Zip- 6 Slot Mac!	\$2488
New 9600/300 64/4 Gb/CD/Zip- 6 Slot Mac!	\$2848
Ref 9600/350 64/4 Gig/24x- 6 Slot Mac!	\$2888

Customizable G3 systems like only PowerMax does!

iMac® G3/233 32/4 Gb/ Rev B	\$988
iMac® G3/266 32/6 Gb/ Choice of 5 Colors!	\$1199
G3 266 Desktop 32/24x/Enet	\$1299

Powerbook® Blowout! Call while supplies last!

G3 233 32/2 Gb/56K/12.1 Active	\$2039
G3 233 32/2 Gb/FDHD/12.1 Active w/DVD!	\$2149
G3 233 32/2 Gb/56K/10BT/14.1 Active	\$2369
G3 250 32/5 Gb/FDHD/20x 12.1 Active	\$2379
G3 250 32/4 Gb/FDHD/13.3 Active	\$2388
G3 266 64/4 Gb/56K/10BT/14.1 Active	\$2879
G3 292 32/2 Gb/20x/14.1 Active	\$3088
G3 300 64/4 Gb/DVD/56K/14.1 Active	\$3999
G3 300 64/4 Gb/DVD/FDHD/56K/14.1 Active	\$4099
G3 300 64/8 Gb/56K/DVD/14.1 Active	\$4199
Ref Pwbk 5300C/100 16/750	\$899
Ref Pwbk 1400C/133 16/1 Gb/CD	\$1388
Ref Pwbk 3400C/180 16/1 Gb	\$1399

OR ORDER ON LINE AT
WWW.POWERMAX.COM!
OVER 30,000 MAC® ITEMS AT
YOUR FINGERTIPS!

We accept educational and corporate purchase orders, and are experts in financing for virtually any size business!



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.

Mac POWER

Sales & Service, Inc.
BUY • SELL • TRADE
UPGRADE • REPAIR
New • Used • Refurbished
• Powerbooks • Monitors
• PowerMacs • Printers
• Performas • Peripherals
• Quadras • Ram
• MacII-LC • Parts
www.macpowerinc.com

888-275-POWER

Fax: 408-448-6132
San Jose, California, 95123

Choose 465 at www.macworld.com/getinfo

MacBYTE

SERVING MAC USERS SINCE 1987
GREAT DEALS ON USED MACS NOW!

BUY • SELL • TRADE

CASH FOR MACS

New & Used MACS
WITH WARRANTIES



800-432-2983

1024 Harding Ave., Suite 203
Venice, CA 90291
Fax: 310/448-4494

USED MACINTOSH!

- PowerBooks
- PowerPCs
- G3s
- 68040 & 68030 MACs
- Large Monitors

ALL
QUALIFYING
PO's
WELCOME



The Computer
Exchange

800.304.4639

sales/service: 404.355.5144 fax: 404.355.5461
500 Bishop Street • Suite E-3 • Atlanta, GA 30318

www.misttermac.com

Digital Reality Rebuilt Imagesetters & Video

phone 714-574-3939 • fax 714-574-3947

3101 W.PCH suite 150
NewPort Beach Ca 92663

email: CLucero126@aol.com

Process Color

Complete Pro Press System
• PowerMac G3
• AGFA Scanner
• Imagesetter/Rip
• Color Proler
\$22,950

Spot Color

Complete System for Spot Color
• PowerMac G3
• Dye Sub Printer
• Imagesetter/Rip
• Densitometer
\$17,950

Howtek Scanner

D4000
• Drum-Factory
Refurbished
• 3.9D Range
• 4000 DPI
\$9,950

ECRM Marlin

• Marlin 18.1"
• Harliquin Rip
• G3/300 MHz
• Densitometer
\$call

Dolve

• Dolve 400/4up
• PSM Software
• 6 Months Warranty
• Install/Delivery
\$40,000

AVID Used

- Storage
- MC Offline
- MC1000
- Parts
- Elastic Reality
- Call for Pricing

Linotronic

• 530 18"
• 560 18"
• 330 12"
\$call

AGFA Rebuilt

• 9800/9400
• Accuset Selectset
• Avantia
\$call

ECRM Make

The Best Available Imagesetter
• Punch Registration
• Make 3600 14"
• Harliquin Rip G3
• Densitometer
\$945

Sphaire Scanner

• High Quality Line
• Value of \$4500!
• Factory Refurbished
• Ultra/ Ultra2 options
\$945

Harliquin

Mac & Windows
Only Two In Stock
\$5695



Choose 444 at www.macworld.com/getinfo

Great Deals on USED MACS

Check It Out!

9500/200	32/4gb/12x	\$ 2,350
9500/132	16/1gb/4x	1,050
8500/120	16/1gb/4x	800
7200/90	8/500/4x	500
7200/75	8/500/4x	450
6100/60	8/0	225
PwrBook G3/266	64/4gb/20x/56k	2,450
PwrBook 1400cs/117	12/750	875
PwrBook 5300c/100	16/750	800
PwrBook170	8/80	300

Prices subject to change. Limited to stock on hand, subject to prior sale. Call for up-to-the minute inventory & prices. 1211

WE BUY, SELL & TRADE MACS!

www.macsolutions.com



Authorized
Value-Added Reseller
Service Provider

(800) 80-WE-BUY

MEMORY

ABSOLUTELY, POSITIVELY,
THE BEST PRICES!
Plus, Lifetime Warranty on all RAM!

* iMAC & PB G3 RAM *	PowerBook Memory	Cache/VRAM	Storage Specials
32/64 mb \$ 55/94	48/64 G3/3400 \$110/130	44/64/6500 512k \$ 49	Quantum 3.2 gb SCSI \$225
128 mb 192	128 G3/3400 225	61/7100 256k 10	Qntm 9.1 gb Atlas SCA 405
128 mb low profile 330	16/24/32 1400 53/68/94	75/8500 512k 57	Quantum 4.3 gb IDE 195
SDRAM-In Stock!	32/48 5300 92/150	1 mb VRAM 17	Seagate 4.5 gb MedPro 250
64mb \$ 90	16/32 500 52/86	4mb G3 VRAM 22	lomega Zip w/o cart 99
128mb 180	168 Pin DIMMs	SIMMs 72 & 30 pin	lomega 2/1 R/W Jaz ext 320
256mb 445	16/32 mb \$ 35/68	72 16mb/32mb \$ 37/71	lomega Zip 10 pak 90
	64/128 mb 137/244	72 64mb 122	Jaz Carts 1gb (each) 75
	64 mb 3.3v/EDO 137	30 4mb/16mb 9/27	iXMicro UIRez 8mb 300

All prices are subject to change.
Not responsible for typographic
errors. Limited to stock on hand.



Authorized
Value-Added Reseller
Service Provider

MacSolutions, Inc. Fax: (310) 966-4433
11933 Wilshire Blvd, West Los Angeles, CA 90025
University & School P.O.'s Welcome . Ad code #122

Secure Online Ordering @ www.macsolutions.com

(800) 873-3RAM



**MAC
Solutions**

MACINTOSH MEMORY UPGRADES

YOUR MACHINE	4MB	6MB	8MB	10MB	12MB	16MB	20MB	24MB	32MB	48MB	64MB	128MB	256MB
Apple PowerBook G3 & Wallstreet, Mainstreet													
Apple PowerBook 160, 165, 165C, 180, 180C, 190, 190CS	89	129	159	199		69			99	139	179	239	Call
Apple PowerBook 520, 520C, 540, 540C Notebook	49		49		75	69	89	109	129	169			
Apple PowerBook Duo 210, 230, 250, 270c, 280, 280c Notebook, 2300c/100 Notebook			49					99	129	169			
Apple PowerBook 1400			39			59			89		139		
Apple PowerBook 2400						79			119	149	169	279	
Apple PowerBook 3400						69		89	109	149			
Apple Macintosh IIx, IIfx (Kit)	19		49			79					279		
Apple Macintosh IIx (64 pin), IIfx & IIfx (Kit)	28					98					356		
Apple Macintosh Classic II, LC, LCII (Kit)			29										
Apple Macintosh LCIII, LC475, LC550, LC575, LC580, LC499, LC520, LC580, LC630, LC5200 (Kit)			19			49			89				
Apple Macintosh II, IIfx, IIfx (w/PA) (Kit)	32		64			98			196				
Apple Macintosh SE30 (Kit)	20					75							
Apple Performa 400, 405, 410, 430 (Kit)	16		38										
Apple Performa 450, 460, 466, 467, 475, 476, 550, 560, 575, 577, 578, 580	8		19			49			89				
Apple Performa 6110CD, 6112CD, 6115CD (pairs), 6117CD, 6118CD (pairs)	8		19			49			89				
Apple Performa 630, 630CD, 631CD, 635CD, 636, 636CD, 637CD, 638CD, 640CD	8		19			49			89				
Apple Performa 5200 Series 5200CD, 5215CD, 5300, 6100 Series 6116CD (pairs)	8		19			49			89				
Apple Performa 6200 Series 6200CD, 6216CD, 6218CD, 6220CD, 6230CD, 6290	8		19			49			89				
Apple Performa 6205CD, 6214CD, 6300CD, 6320	8		19			49			89				
Apple Performa 6400CD, 6560 (2K Refresh)	8		19			49			89		169		
Apple Centris 610, 650, 660 AV	8		19			49			89				
Apple Quadra 605, 610, 630, 650, 660AV/800 (pairs), 840AV	8		19			49			89				
Apple Quadra 700, 900, 950, Apple Performa 600, 600CD (Kit)	20		40			79			158		275		
Apple iMac (SDRAM)						59			89		139	259	499
Power Macintosh G3 (all models)						39			89		109	209	
Power Macintosh 4400/160, 5200, 5260, 5300, 5400, 6400/200, 6500/225, /250, /275, /300 (Eds)			29			49			89		169		
Power Macintosh 6200/75, 6100/50, 6100/66, 6100/66AV (pairs)	8		19			49			89				
Power Macintosh 7100/86, 7100/80, 7100/86AV (pairs)	8		19			49			89				
Power Macintosh 7200/75, 790, /120, /120PC, 7300/166, /169, /200, 7500/100, 7600/100, /120, /132, /200	8		19			49			89				
Power Macintosh 8100/80, /100, /110, 8100/80AV, /100AV, /110AV (pairs)	8		19			49			89				
Power Macintosh 8500/120, /132, /150, /160, 8600/200, /233, 9500/120, /132, /150, /160MP, 200, 9600/200, /233, /200MP						49			89		169		

ORDER ONLINE AND RECEIVE UP TO A 10% DISCOUNT!
WE ALSO BUY BACK YOUR OLD MEMORY KIT FOR QUOTE.

The Memory Liquidators, Inc.

(800) 718-7755

www.memoryliquidators.com or E-mail: sales@memoryliquidators.com

531 Main St., El Segundo, CA 90245 Ph. 310-326-5656 • Fax 310-326-7790 • M-F 7 to 5; Sat. 8 to 12 noon PST

• Secure Web Site • Prices subject to change without notice • 20% restocking fee on all returns.

POWER COMPUTING/MOTOROLA

POWER 80, 100, 110, 120	16 MEG	32MEG	64MEG	POWER TOWER PRO 200, 225	16 MEG	32MEG	64MEG
49.00	89.00	169.00	169.00	49.00	89.00	169.00	169.00
POWER CENTER 122, 132	49.00	89.00	169.00	POWER WAVE 604/120	49.00	89.00	169.00
POWER CENTER 150, 166	49.00	89.00	169.00	POWER WAVE 604/132, 150	49.00	89.00	169.00
POWER CENTER 190	49.00	89.00	169.00	POWER BASE (EDO)	49.00	89.00	169.00
POWER CURVE 601/128	49.00	89.00	169.00				
POWER TOWER 150/180	49.00	89.00	169.00	MOTOROLA STARMAX 3000			
POWER TOWER PRO 180	49.00	89.00	169.00	EDO/160, 200, 4000/160, 200	49.00	89.00	169.00

APPLE POWERBOOK BATTERIES

Powerbook 140, 145, 150, 160, 165, 170, 180	69.00
Powerbook 1400, 150, 190CS, 3400, 5300	133.00
Powerbook 2300, 520, 520C, 540, 540C	123.00
Powerbook Duo 200, 210, 230, 250, 270, 280	112.00

CHECK OUR WEBSITE FOR ALL BATTERIES!!!

Powerbook 1400/3400/G3 Hard Drives

2.1 Gb	3.2Gb	4.0 Gb	5.0 Gb	8.4 Gb
349.00	449.00	499.00	549.00	699.00

Powerbook Fax Modem

56K Fax Modem — 139.00

MEMORY MADNESS

FROM THE LLB COMPANY

DIMMs \$190

POWERMAC G3
16x64x10

16MB 4x64.....	\$52
32MB 8x64.....	\$100
128MB 16x64.....	\$190
256MB 32x64.....	\$549

\$147

8x64x60EDO 3.3V	
8MB 2x64.....	\$45
16MB 4x64.....	\$65
32MB 8x64.....	\$147

\$153

8x64x60EDO 5V	
8MB 2x64x.....	\$40
16MB 4x64.....	\$72
32MB 8x64.....	\$153

DIMMs \$119

NEW POWERMAC
G3 8X64-8
(PC100-8NS)

64MB 8x64.....	\$119
128MB 16x64.....	\$231
256MB 32x64.....	\$649

\$72

4x64x60FPM

32MB 4x64.....	\$72
64MB 8x64.....	\$159
128MB 16x64.....	\$350

SIMMs \$80

4x32x60	
8MB 2x32.....	\$24
16MB 4x32.....	\$37
32MB 8x32.....	\$80

IOMEGA

Zip Drive	\$119
Zip Drive USB	\$151
ZIP 100 disk	\$10
ZIP 100 disks -3-pk	\$28
ZIP 100 disks -10-pk	\$89
Jaz 1GB disk	\$89
Jaz 1GB disks - 5-pk	\$405
Jaz 1GB disks - 20-pk	\$1524

NEWER TECHNOLOGY

For the PowerMac 6100 Series	
Maxpower G3 210MHz/512K Cache	\$442
Maxpower G3 240MHz/1MB Cache	\$540
NEW! For the PowerMac 7500/8500/ Etc.	
Maxpower G3 333MHz/1MB Cache	\$989
Maxpower G3 400MHz/1MB Cache	\$1581
NEW! For the PowerMac G3 Series	
Maxpower G3 333MHz/1MB Cache	\$889
Maxpower G3 366MHz/1MB Cache	\$1285
Maxpower G3 400MHz/1MB Cache	\$1581

Powerbook

WALL STREET	PB DUO SERIES	PB 500 SERIES	PB 3400 G3
128MB \$231	36MB \$212	32MB \$92	128MB \$235
64MB \$118	28MB \$115	16MB \$52	64MB \$160
32MB \$60	20MB \$98	8MB \$45	32MB \$94
16MB \$51	14MB \$85	4MB \$40	16MB \$83
PB 3400 SERIES	PB 5300 SERIES	PB 1400 SERIES	PB 2400 SERIES
128MB \$235	48MB \$141	48MB Kit \$151	64MB \$135
96MB \$180	32MB \$95	24MB \$75	32MB \$95
64MB \$164	16MB \$60	16MB \$59	24MB \$80
32MB \$68	8MB \$65	8MB \$52	16MB \$75

COMPARE OUR LOW SHIPPING RATES

E-Mail: sales@llb.com •
PO's accepted upon approval
No surcharge on credit cards
• Returns subject to restocking fee
• Prices subject to change, not responsible for errors •
International orders welcome
Mail PO's to:
2513 152nd Avenue N.E.
Redmond, WA 98052

DESKTOP/MINITOWER

IMAC 233 32/4GB/24X CD/56K	\$1039
IMAC 266 32/6GB/24X CD/56K	\$1299
G3/300 (MT) 64/6GB/24X CD	\$1582
G3/350 (MT) 64/6GB/DVD	\$1976
G3/400 (MT) 128/9GB/24X	\$2970

POWERBOOKS

G3/233 32/2GB/20X12.1 DSCAN	\$2299
G3/233 32/2GB/20X14.1TFT	\$2415
G3/266 64/2GB/20X14.1 TFT	\$2892
G3/300 64/8GB/DVD/14.1 TFT	\$2892

The LLB Company, Inc.
1-800-848-8967

www.llb.com International:425.881.1880 Fax:425.881.1930

Choose 447 at www.macworld.com/getInfo

AWARD-WINNING UPGRADES!

G3

SONNET
SIMPLY FAST™

**3 YEAR WARRANTY!
FREE TECHNICAL
SUPPORT!**



Macworld
EDITORS'
CHOICE



Sonnet™ Technologies manufactures the finest Macintosh processor upgrade cards for a wide range of computers including '020, '030, '040, NuBus, PCI, and G3 Power Macs. All Sonnet G3 cards:

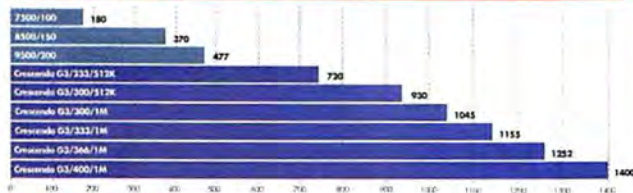
- match or beat the CPU performance of a new G3 system.
- are consistently built to run well within engineering design specifications for speed, temperature and power consumption.
- are backed by a three-year warranty.
- feature plug-and-play installation.
- have no switches or control panels to set.
- are 100% software compatible.

We now have video card support for the 6100AV. If you have a 7100 or 8100 with a video card in the PDS slot just install one of our 7100 or 8100 Adapter Kits. Or install a Sonata Pro 24 for comparable or superior performance to the Apple PDS AV and High Performance Video Cards.

Other PCI Power Macs (Upgrade Challenged) can now be upgraded through the Level 2 (L2) cache slot.

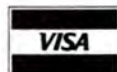
Got a Quadra or Centris? You can now run Mac OS 8.5 and realize all the performance of Power PC native applications.

G3 Speeds Up to 778% Faster for Your PCI Power Mac!



(MacBench 4.0 scores)

Sonnet Technologies, Inc.
18004 Sky Park Circle, Irvine, CA 92614-6428
Tel: 949-261-2800 Fax: 949-261-2461
E-mail: sales@sonnettech.com



Visa, MasterCard and American Express no surcharge. Government, corporate and education P.O.s welcome. Sonnet products are covered by a three-year limited warranty. Prices are subject to change without notice. Returns require an authorization and are subject to a restocking fee. Sonnet, the Sonnet logotype, Crescendo, Encore, Presto PPC, Simply Fast, and the Simply Fast logotype are trademarks of Sonnet Technologies, Inc. ©1999 Sonnet Technologies, Inc.

CRESCENDO CARDS FOR NUBUS MACS

Power Mac 6100/7100/8100/8115 • Wrkgrp Svr 6150/8150/9150

Performa 6100/6112/6115/6116/6117/6118 • Radius 81/110

Crescendo G3 233 MHz/117 MHz/512K Cache (except 6100AV)	\$399 ⁹⁵
Crescendo G3 233 MHz/117 MHz/512K Cache (6100AV only)	\$449 ⁹⁵
Crescendo G3 266 MHz/133 MHz/1MB Cache (except 6100AV)	\$599 ⁹⁵

Video Options

7100 PDS AV/Video Adapter Kit for Crescendo G3	\$99 ⁹⁵
8100 PDS AV/Video Adapter Kit for Crescendo G3	\$99 ⁹⁵
7100/8100 Sonata Pro 24 Accelerated NuBus Video Card	\$199 ⁹⁵

CRESCENDO CARDS FOR PCI MACS

Power Mac 7300/7500/7600/8500/8515/8600/9500/9515/9600

Wrkgrp Svr 7350/8550/9650 • PowerWave • Power Tower

UMAX J700/S900 • DayStar Genesis 528

Crescendo G3 233 MHz/117 MHz/512K Cache	\$349 ⁹⁵
Crescendo G3 300 MHz/150 MHz/1MB Cache	\$599 ⁹⁵
Crescendo G3 400 MHz/200 MHz/1MB Cache	\$1299 ⁹⁵

CRESCENDO G3 UPGRADES FOR "UPGRADE-CHALLENGED" PCI POWER MACS



Power Mac 54/55/6500 • Performa 54xx/6360/64xx

20th Anniv. Mac • PowerBase

Crescendo G3 L2/PCI 240/120 MHz/512K Cache	\$399 ⁹⁵
Crescendo G3 L2/PCI 300/150 MHz/512K Cache	\$499 ⁹⁵

ENCORE G3 CARDS FOR G3 POWER MAC

Power Mac G3 All-in-one/Desktop/Tower/Server

Encore G3 400/200 MHz/1 MB Cache	\$1299 ⁹⁵
----------------------------------	----------------------



PRESTO PPC UPGRADES FOR QUADRA & CENTRIS

Quadra 700/800/900/950 • Quadra/Centris 610/650
(610 Requires Adapter)

Presto PPC 100 MHz/1MB Cache	\$399 ⁹⁵
Quadra/Centris 610 Adapter	\$49 ⁹⁵

Run Your NuBus Power Mac at G3 Speeds Up to 1047% Faster!

Now Supports 6100 AV!



(MacBench 4.0 scores)

800-786-6260
<http://www.sonnettech.com>

WHY IS THE COMPETITION
SHAKING?

BECAUSE
1-800-4-MEMORY
IS HERE

WE CAN BEAT
ANY QUOTED PRICE ON ANY
MEMORY FOR ANY COMPUTER
(NOTEBOOK, DESKTOP,
PRINTERS) ANYWHERE ...
PERIOD!

- LIFETIME WARRANTY
- FREE TECH SUPPORT
- NO CREDIT CARD SURCHARGE
- MOST ORDERS SHIPPED SAME DAY

**CALL AROUND
THEN CALL US**

CHECK OUR WEB SITE FOR SPECIALS
WWW.18004MEMORY.COM

MEMORY SPECIALISTS



Serving the Mac Users
memory needs since 1991.
We sell only NEW, Grade A,
Full Apple Spec RAM

800-440-5343

Fax 702-823-2200
760 Margrave, Ste. 100, Reno, NV 89502
www.tahoeperipherals.com

Choose 449 at www.macworld.com/getinfo

MEMORY

"Computer Show" Prices Everyday!

Mohawk Memory Co., Inc.

SIMMS ♦ DIMMS ♦ EDO ♦ ECC ♦
VRAM ♦ CACHE ♦ PRINTER ♦
SDRAM ♦ POWERBOOK

Fax: (978) 897-0009
Email: simdim@mohawkmem.com
Webstore: www.mohawkmem.com
16A Waltham St. Maynard MA 01754
Visa MC Discover AMEX PO's O.A.C.

1(800) 986-6429

Good Old-Fashioned New England Service
Choose 450 at www.macworld.com/getinfo

Now with SECURE Online Ordering!

DMS Data Memory Systems

1-800-662-7466

WORKS WITH **EPSON 740 Ink Jet Color Printer**

UMAX USB Color Scanners

iMac Memory Upgrades

iomega USB Zip Drives

Pentium II Systems

Hard Drives & CD-ROM

Fax/Modems v.90

Networking Products

Color Scanners

CPU Upgrades

Data Memory Systems Inc. 24 Keewaydin Dr., Salem, NH 03079
Fax: 603.898.6585 / Email: sales@datamem.com

Shop online: www.datamem.com

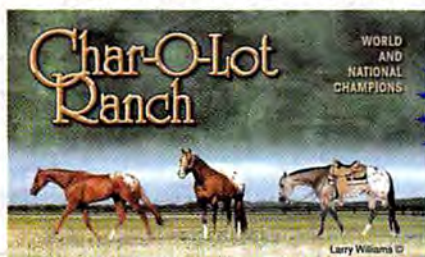
Government, Commercial, Educational P.O.s accepted with prior approval

Choose 451 at www.macworld.com/getinfo

WHOLESALE WATERLESS COLOR PRINTING FROM YOUR COMPUTER FILES

1000 FULL COLOR BUSINESS CARDS FOR \$100 Sug. retail price \$179
1000 FULL COLOR POSTCARDS FOR \$149 Sug. retail price \$249

Printed waterless at 300 line screen from your
computer files on Super Premium 10pt. Kromekote
with our FREE scratch-resistant aqueous coating.



**Try Our
Fast 4/C Print
Quotes!**

- BUSINESS CARDS
- POSTCARDS
- CD INSERTS
- CD TRAY LINERS
- BROCHURES
- BOOKLETS
- NEWSLETTERS
- POSTERS & MORE



FEATURING 300 LINE SCREEN WATERLESS OFFSET PRINTING

Rates for Brochures, Booklets and Flat Sheets are also available.

4-COLOR WATERLESS SPECIAL **1,000 12" x 28" POSTERS** **\$599**
12" x 18" 4-Color Posters printed 4/0 from your
files on 80 lb. gloss cover with full bleed and
FREE aqueous coating. Shipping not included.
Get 2,500 for only \$849 SUGGESTED RETAIL \$922

GRAPHIC ARTS
AVAILABLE



Copycraft
PRINTERS, INC.

4413 82nd Street • Lubbock, TX 79424 • FAX: 806.794.1305

Email your requests for printing quotes to request@copycraft.com

1.800.794.5594
CALL TODAY FOR A **FREE** COPY OF OUR **NEW 28-PAGE FULL COLOR CATALOG**

Visit www.copycraft.com for more 4-Color Specials!

Choose 452 at www.macworld.com/getinfo



DEADLINES?
www.regentdigital.com

Fast & affordable Indigo & Heidelberg Digital Printing

Visit our web site for prices and file transfers.
or call toll free 1-888-999-2638

Digital Imaging

Slides & Negatives \$3.75
4x5 Chromes/Negs \$30
Large Posters & Displays \$45
Scanning: Hi & Lo Res
Photo CD Scans & LVT Output
Short Run 1200 dpi Color Output
Quantity Prints, Slides, Overheads

Show & Tell 39 W 38th St., NY, NY 10018
212 840-2912 • 212-840-7953 (fax)

Choose 454 at www.macworld.com/getinfo

"If we had to place just one ad, it would be in Macworld Shopper. It just plain works better for us than the others ..."

We know, we've tried them."

—David Ash
Mac Solutions



1000 ultra-thick full color business cards \$60!

Full color, thick stock and glossy UV coating included!

Ready in 5-7 workdays from your digital file!

Call now for a FREE sample kit!

800 957-5787
www.postcardpress.com

New! 500 full color postcards!



POSTCARD PRESS

MAC REPAIR & UPGRADE

24 HOUR SERVICE TURNAROUND • LONGER WARRANTY
FREE DIAGNOSTIC • COMPETITIVE PRICE



DT & T
MACINTOSH
SERVICES, INC.

- * Specialize in component repairs:
• Power Mac • Power Book • Logic boards
- * Advance Exchanges

800-622-7977

3095 Osgood Court, Fremont, CA 94539 • Tel: 510-661-0999 • Fax: 510-661-6788
http://www.dttservice.com

Choose 457 at www.macworld.com/getinfo

PLUG IN!

Create Your Own Full Color Custom Promotional Cards To Market Your Business, Products & Services • Feature Websites, CDs & New Technology • Ideal for Mailers, Self-Promotion, Invitations & More!
• Call Now For More Information & Free Samples!

Full Color
Promo Cards

\$95
500 copies

Modern Postcard[™]
1-800-959-8365
www.modernpostcard.com

©1999 Modern Postcard. All rights reserved.

Choose 456 at www.macworld.com/getinfo

Go Online!



How can we help you today?

Get Great Prices & Quality Work... We offer direct to press print on our Indigo, Heidelberg, Xerox Docucolor, Large Format Graphics, Pro & Master PhotoCD, & Fuji Color Pictro Prints. Our Special Services Teams will be sure you're pleased with your work.

Free Shipping...Call for details

Send PC/Mac files by FTP or Priority AirExpress to Imagers and for most output services, your finished work is in your hands the very next morning.

We guarantee our work!



Go online for tech help, instant quotes, job submit! www.imagers.com

1575 Northside Dr. Ste. 490 Atlanta 30318

800.672.7029/404.351.5800

Choose 455 at 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



www.macworld.com/getinfo

**Macworld's
NEW Online
Reader Service**

www.macworld.com/getinfo

DATA RECOVERY: 800-440-1904

7 good reasons to choose DriveSavers:

1. We're the most trusted and respected data recovery specialists.
2. 24-hour, onsite, and weekend service available.
3. Proprietary techniques so advanced we retrieve data others might simply abandon.
4. Over 12 years of data recovery experience.
5. Certified to maintain most drive warranties.
6. Featured by CNN, NextStep, C-Net, Forbes.
7. All storage devices: Mac OS, DOS, Win95, WinNT, OS/2, UNIX, Sun, SGI, Novell.



©1997 DRIVESAVERS, INC.

Clip and save this ad. Visit DriveSavers at: www.drivesavers.com

DRIVESAVERS, INC. 400 BEL MARIN KEYS BLVD., NOVATO, CA 94949, INTL: 415-382-2000, FAX: 415-883-0780
Choose 462 at www.macworld.com/getinfo

PROFESSIONAL DATA RECOVERY SERVICES.

Hard Drives, Floppy Drives, Syquest,
EZ-135, ZIP, JAZ, Optical & Bernoulli.

TOTAL RECALL[®]
THE DATA RECOVERY COMPANY



800 743-0594 VISIT US AT: www.recallusa.com

2462 WAYNOKA ROAD • COLD SPRING, NY 10516 • TEL (719) 380-1616 • FAX (719) 380-7022
Choose 459 at www.macworld.com/getinfo

MacTECHS

INTERNATIONAL

Macintosh Repair, Sales
& Upgrades

24 Hour Turnaround

Powerbook Specialists

\$99 iMac Floppy Drive

Great Memory & Hard
Drive prices

3337 El Camino Real
Palo Alto, CA 94306
Phone: 650.845.6400
Fax: 650.845.6411
www.mactechsinc.com



1-888-622-3493

WE GET TO THE CORE OF THE PROBLEM

"AS A LEADING DEVELOPER OF
PC-TO-MAC CONNECTIVITY
SOFTWARE, MIRAMAR SYSTEMS
RELIES ON REACHING A CAPTIVE
READERSHIP OF MAC OS-BASED
BUYERS AND DECISION MAKERS.
MACWORLD MAGAZINE'S
SHOPPER SECTION
HAS CONSISTENTLY
OUT-PERFORMED OTHER MAC
PUBLICATIONS THAT WE'VE
ADVERTISED IN WITH HIGHER
RECALL AND QUALITY LEADS.
A LOT OF MAGAZINES TALK
ABOUT THEIR 'VALUE ADD',
BUT MACWORLD MAGAZINE
TRULY DELIVERS."

Renee Cooper,
Director of Marketing,
Miramar Systems, Inc.

www.miramarsys.com

800-WE-FIX-MACS

THE ONLY NUMBER FOR ALL MACINTOSH PARTS

- Free Diagnostics
- 24 Hour Turnaround
- Longest Warranties
- Largest Inventory of Parts
- Advance Exchanges



**PowerComputing
Specialists**

2202 N. FIRST STREET, SAN JOSE, CA 95131 • 800 933-4962 • www.allmac.com

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.

415-495-5558 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
361 Clementina Street • San Francisco, California 94103



LAZARUS
DATA RECOVERY

Working at the speed of business.

800-341-DATA

Choose 461 at www.macworld.com/getinfo

ALSO IN CALIFORNIA DATA RECOVERY

For MAC - (Hard Drives, Opticals, Removables)

By Nick Majors' DATA RECOVERY LABS

"The Best Data Recovery Service available
- Anywhere - at any Price!"

Dedicated in-house MAC specialists are available to work
on your emergency data recovery. Complete facility with clean
rooms and full MAC capabilities.

Free evaluations. All recoveries are 100% satisfaction
guaranteed. Complicated / top priority projects are
our specialty.

Datarec.com
DATA RECOVERY LABS

USA • Canada • Japan

1-800-563-1167
www.datarec.com

CLIP ART

GET FREE CLIP ART!

3000 Image Mega Pack FREE from
Nova Development! Premium-quality
color clip art ideal for beginners and
experts. Fully scalable, compatible with
all popular word processing, graphics
and desktop publishing programs.
Guaranteed to print perfectly on all
printers (B&W or color) Mention Code
617 to get this CD for \$4.95 S&H.

**NOVA DEVELOPMENT
CORPORATION**

800.395.6682-US or
Canada/818.591.9600-Outside

COMPUTER INSURANCE

INSURES YOUR MAC

The ComputerownersSM insurance policy
repairs or replaces hardware, media and
purchased software. \$49 a year covers up
to \$2,000 of equipment against theft,
fire, accidents, power surge, natural
disasters and more! \$50 deductible. Call
for immediate coverage or information.
1-800-800-1492.

**SAFWARE,
The Insurance Agency, Inc.**

5620 N. High Street, PO Box 656
Columbus, Ohio 43085

Choose 460 at www.macworld.com/getinfo

The Desktop Critic

by David Pogue

Differently Cabled

A CABLE MODEM ISN'T JUST AN EXPENSIVE GADGET—REALLY, IT'S NOT

I TRY NOT TO BE A BLEEDING-edge, early-adopting gadget freak, I really do. Yes, I admit that I bought an original Newton, and an early digital camera, and the very first Pilot organizer. But I'm not an addict—no way. I can stop any time I want. So when I learned that my area was to be the lucky recipient of a cable-modem trial, you can imagine my inner struggle.

A cable modem is one of those futuristic Internet technologies that promises to be 100 times faster than a normal modem. Only 350,000 were installed in the United States by the end of 1998, mainly because so few cable-TV companies offer them.

On one hand, the \$35 monthly fee seemed steep, especially since I was already paying \$20 a month for my Internet account and \$25 for a second phone line. On the other hand, *Macworld* hasn't written much about this important new technology; I could get a cable modem as a noble journalistic experiment, making the financial sacrifice for the good of the Mac community. (Can you say "tax deduction"? In all, I must have weighed the pros and cons for a good four seconds before calling to sign up.

Three technicians came to set up the thing, a black box about the size of a 1980s-era external hard drive. One end connects to your cable-TV jack (which I had to have installed near my desk—another \$100 sacrifice in the name of journalistic pursuits). The other end connects to your Mac's Ethernet jack.

With my first e-mail, I discovered the greatest cable-modem benefit: you're spared the usual 90 seconds of dialing, connecting, and modem shrieking. You're online instantly; you're *permanently* connected to the Internet, 24 hours a day.

I yelled downstairs for my wife and dog to come watch my first attempt at turbosurfing the Web. But after they'd

gathered around the screen, I was horrified to discover the dirty little truth about cable modems: they don't, in fact, make Web surfing much faster. I clicked on a link—and waited. Twelve seconds for *honda.com*, 23 for *weather.com*, 24 for *Macworld.com*. My jaw hung open in disbelief. Where was the 100-fold acceleration? "Neat, honey," my wife reassured me before heading back downstairs. The dog was even less impressed.

The problem: even if your pipe to the Internet is a fire hose, the computers on the other end still dish out Web pages with a teaspoon. Instead of waiting for



my Mac to receive each page, I now wait for the other end to send it.

The problem isn't quite as bad in the wee hours, when my neighbors aren't sucking away my bandwidth by using their cable modems or watching CNN. Still, I was bummed. "Up to twice as fast at certain times of day" wasn't quite the advertised 100× speed bump. Nor was *uploading* any faster; TV's cables are designed to carry data into your home, not out of it.

On the other hand, in my experience, downloading files with a cable modem is, for some reason, astonishingly fast. My first 3MB download wrapped up in under

a minute—about 50K per second. You start to feel as though the Internet is one whoppin'-big external hard drive. Suddenly Internet video isn't a jerky, postage-stamp-size mess—you can actually watch TV-style video in a three-inch window without waiting.

It got better. One morning it hit me: I wasn't using my second phone line any more! See? I wasn't an out-of-control spendthrift gadget freak at all. I could cancel my second line *and* my ISP account, saving all kinds of money.

Furthermore—hold on a sec—no phone line, no modem. Why not sell my phone line, no modem. Why not sell my Mac's precious modem port was suddenly free to accommodate my PalmPilot cradle full-time. Yep, things were improving quickly around the Pogue Mac.

There was only one little glitch: how would I go online when traveling? Without a 3,000-mile-long Ethernet cable, my PowerBook clearly wasn't going to reap the benefits of the Internet monster machine back home. The cable company cheerfully offered its dial-up service—a toll-free number that lets me dial in to my cable-modem account from the road, for only \$15 more a month plus \$9 an hour. Riiiiight. So much for canceling my ISP.

Still, here's how I look at it: I'm saving six minutes a day in connect/disconnect time. If my time is worth \$25 an hour, that's \$912.50 a year my cable modem saves me. And if that sounds like a gadget freak trying to justify another high-tech purchase, well, you're probably right. I promise to get rid of the thing—just as soon as my satellite-dish modem comes in. **m**

DAVID POGUE (www.davidpogue.com) is a co-author of *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide, 1998).



Sometimes Newer Is Better Than New.



Introducing the Latest Apple G3.

Want G3 power for your trusty old Power Mac? Simply plug in a Newer Technology MAXpower™ G3 processor upgrade card, and for a fraction of the cost of a new machine, your old Mac will go toe to toe with Apple's new G3 models. A MAXpower card is easy to install, and it's available for most Power Macs and clones. So, order a Newer Technology MAXpower G3 card today, and breathe new life into your older Mac.



Newer Technology is #1 in U.S. Mac CPU enhancement sales.*
To learn how to beef up your Mac, visit us at www.newertech.com.

*Information based on PC Data Retail Hardware Report, 1998.
Choose 55 at www.macworld.com/getinfo

Think Kensington.



Here's to the crazy ones. To those who've stuck with their Macs through thick and thin. To those who've endured the scorn of PC geeks, and the infuriating rise of the Redmond Empire. We salute you Mac loyalists, and we're going to keep right on bringing you the very best in Mac input devices—like our high performance Turbo Mouse® and Orbit® trackballs, our wildly popular Mouse-in-a-Box®, and our new, smartly-designed Keyboard-in-a-Box™. After all, it's not just craziness that makes Mac users so resolute. It's also your totally superior intelligence.

KENSINGTON®www.kensington.comKensington, Mouse-in-a-Box, Turbo Mouse and Orbit are registered trademarks and Keyboard-in-a-Box is a trademark of ACCO World Corporation. All other registered and unregistered trademarks are the property of their respective owners.
©1998 Kensington Technology Group, a division of ACCO Brands, Inc.

Choose 1 at www.macworld.com/getinfo