HELP!

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SHE CLICKED Print

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THAT PRINTED WITH SUCH DEPTH AND CLARITY

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October 2001

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

Pro File: Steven Heller
ANDREW SHALAT Macworld talks with Steven Heller, graphic designer extraordinaire.

On the Cover:
Photograph © Frans Lemmens/Getty Images/The Image Bank
Photoshop Artists: Dan Doerner and Stephen Sugg
Quark's Leap of Faith
DAVID BLATNER  With the impending release of QuarkXPress 5.0, Quark is poised to break new ground on the Web. Macworld looks at the newest version of the publishing standard.

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

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

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

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

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

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

No Print for Writer
ANDY MENNICK I was sad to see your online-only, truncated review of Nisus Writer 6.0. In addition to Microsoft Word, there are several Mac word processors. Burying their reviews on the Web won’t encourage users to look at the variety out there. The folks at Nisus (who incidentally may provide the best customer support in the business) deserve better, as do Mac users.

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

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

When Apple added built-in CD-RW drives to its desktop line in early 2001, Mac users joined the digital-audio revolution en masse. But just as they were beginning to burn their favorite tracks onto CD, the revolution's rules began to change. You've no doubt heard of the online music-swapping service Napster and its legal troubles. Facing a court order, Napster has filtered out many copyrighted songs from its servers, and pretty much anything you'd want to listen to can't be downloaded anymore—unless you're a huge fan of rocking versions of public-domain songs (such as "Twinkle, Twinkle, Little Star").

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

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

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

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

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

But Is It Legal?
As for whether or not it's against the law to make CD copies of music, things get a little fuzzy. Everyone—from the Recording Industry Association of America (RIAA) to the Electronic Frontier Foundation (EFF), a civil-liberties advocacy group—seems to agree on one point: “It's perfectly legal for you to make copies of your own music for your own personal use,” says Robin Gross, EFF's staff intellectual-property attorney. “It's called 'fair use.' It's your legal right to do so, even if the copyright holder doesn't want you to.”

So if you want to take all your Radiohead albums, rip selected tracks from each of them, and burn a mix...
CD for your own use, there’s nothing wrong with doing so.

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

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

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

So who’s right?

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

Web-Channel Surfing

The producers at TechTV had a problem. The San Francisco-based cable network is one of dozens of companies that provide online streaming-media content for Apple’s QuickTime Player. But TechTV’s QuickTime channel was somewhat static. Whenever TechTV producers wanted to update content, they had to do so manually. So TechTV put Ryan Francesconi on the case. Francesconi is an in-house developer for the network’s Vignette StoryServer, a popular content-management database. StoryServer is where all the graphics and stories on TechTV’s Web site are stored.

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

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

And because of Francesconi’s efforts, TechTV’s QuickTime presence is more dynamic, too.—Jeffy K. Milstead


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

Cool Stuff

You Can Judge a CD by Its Label

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

Q&A with STEVEN HELLER

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

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

Q: It seems that when you got into graphic design, digital technology had not yet taken hold. The medium was still the handicraft one that made Milton Glaser and others of his generation famous.
A: Well, the first thing I ever worked with was an IBM MTST [Magnetic Tape Selectric Typewriter] computer in 1968, or maybe late 1967. It was the first time I was introduced to what typesetting was. And when I came to the New York Times years later, I worked on hot type, Linotype, hot-type chases, on the stone. I was actually the last person to work on a hot-metal page at the New York Times. An art director or pasteup editor would stand over the printer who was putting type into the page. And you'd watch as they put the slugs of metal onto the page. I worked with rotogravure printing, but when I came up I learned you printed it out on the MTST; you cut it up and pasted it down with wax. You'd get Velox, you'd cut those down, you'd make silhouettes, and you'd make borders with ruling tape. And then later on, when we lost so much money that QuarkXPress, I felt like I had finally learned French.


Steven Heller talks about the graphic-design program at the School of Visual Arts in this extended interview.
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Basically, Peerless offers all the space you need in one incredible, compact drive. It's the next big thing in removable digital storage. Would you expect anything less from Iomega?
X Doesn’t Mark the Spot

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

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

Office 10.

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

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

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

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

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

Then again, there are Windows users who might say the same thing.—MATHEW HONAN
Apple's Sequel to iDVD

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

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

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

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

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

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

**HARDWARE**

**PERSONAL STORAGE**
- Two storage devices from Imaition (888/877-3456, www.imation.com): The FlashOz (S80) is a USB flash-memory-card reader that recognizes all existing flash-memory-card formats. The RipOz ($490) is a small-format CD burner and music player that supports MP3 and WMA. Both should ship in September.
- A high-capacity storage system from MicroNet Technology (310/320-7772, www.micronet.com): The SANcube ($3,698) can store 600GB of data and deliver 38MB-per-second data throughput.

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

**SCANNERS**
- Five scanners from Epson (800/687-7766, www.epson.com): The Perfection 2450 Photo ($399) features 2,400-by-4,800-dots-per-inch resolution and USB and FireWire interfaces. It will ship in October. The Perfection 1650 ($199) is a USB-only scanner with 1,600-by-2,400-dpi resolution. A Perfection 1650 Photo model ($249) includes a built-in 35mm filmstrip adapter. The Perfection 1250 ($129) offers 1,200-by-2,400-dpi resolution. A Perfection 1250 Photo model ($149) is also available. The 1650 and 1250 scanners will ship in September.

**SOFTWARE**

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

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Breathing Easy

Chronic asthma sufferers have to keep track of everything from symptoms to medications. The way FireLogic (703/415-0180, www.healthengage.com) sees it, the Mac is the perfect tool for storing that data. So the company developed HealthEngage. Available for Mac OS 8.6 or later—including OS X—HealthEngage is a $60 database that charts asthma information. Users can enter their peak flow results—measurements of an asthmatic’s ability to push air out of the lungs—and print out the data in a chart that's easy for doctors to read. FireLogic plans to release similar software for other chronic diseases later this year, making the Mac a hub not just for the digital lifestyle, but for a healthy one as well.—PHILIP MICHAELS
TechTool Pro 3 is the super utility for your Macintosh. Besides repairing and recovering data, TechTool Pro can help you circumvent problems in the first place. Our new virus detect and repair feature, as well as our software conflict check feature, lets you keep your computer in tip-top shape. When booted from the included emergency CD, you can even check, repair and optimize your OS X computer.

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

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

While Drive 10 is a new product, it is derived from TechTool Pro, Micromat’s world-class diagnostic and repair utility. Using TechTool’s time-tested routines as well as some new routines developed exclusively for OS X, Drive 10 offers many tools for checking and repairing any drive on your system. Don’t entrust your OS X drive to ancient utilities. Protect your data and drive safely with Drive 10.
1. Steve Jobs boasts that new features in iDVD 2.0 let you produce DVDs that surpass Hollywood products in quality. You'd say the same thing if Mission to Mars had been your in-flight movie on the way to this year's Macworld Expo in New York.

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

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

Maya from Alias/Wavefront (800/447-2542, www.aliaswavefront.com): The company is taking advance orders for the OS X-native version of its high-end 3D animation software. Anyone who orders Maya before December 31, 2001, will receive 12 months of maintenance. Those who order the program before it ships will also receive a free productivity pack. Maya is IS to ship by September 25 ($7,500).

Painter 7 from Corel (800/772-6735, www.procreate.com): Features new to the popular painting tool include a watercolor effect that drops and smudges paint across the canvas, and a Liquid Ink tool that mimics the gluey viscosity of ink or paint ($499; upgrade, $199).

Networking Software
- A free OS X-native version of Dave from Thursby Software Systems (617/478-5070, www.thursby.com): The PC-to-Mac file-sharing software will run only on OS X 10.0.4. Thursby decided to offer a free beta for early adopters of the new operating system. The company plans to continue developing a commercial version of Dave for OS X.
- A beta release of Virtual PC for OS X from Connectix (800/950-5880, www.connectix.com): Registered Virtual PC 4 users can download Virtual PC Test Drive for free. The beta, which will expire on January 31, 2002, lets OS X users run PC-based operating systems on their Macs.

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

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

- Apple's Mac OS X 10.1 and its 867MHz Power Mac G4
- Asante's FriendlyNet wireless-ready cable/DSL router
- Canon's D2400UF scanner
- DiamondSoft's Font Reserve Server for OS X
- IBM's ViaVoice for OS X
- Micromat's Drive 10 disk-repair utility
- Microsoft's Office 10 for OS X
- SmartDisk's FireLite SGB FireWire hard drive
- Toon Boom's Toon Boom Studio 1.0
- Xerox's Phaser 660 color printer

For these and other current updates, visit:
www.macworld.com/subject/updates
Sonnet Technologies Extends Mac OS X Support to PCI Machines

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

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

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

- Power Mac G3 & G4 Series
- Power Macintosh 7300, 7500, 7600 Series
- Power Macintosh 8500, 8600 Series
- Power Macintosh 9500, 9600 Series
- G3 All-in-one
- G3 Blue & White
- G3 Desktop
- G3 Minitower
- G3 Server
- PowerTower Pro
- PowerWave
- UMAX J700, 5900

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


Circle 133 on card or go to www.macworld.com/getinfo
When Steve Jobs failed to unveil a redesigned iMac at July's Macworld Conference & Expo, many people felt that Apple's summer offerings were little more than a rehash of its current product line. Although it's certainly true that the most recent Expo brought no revolutionary new designs from Apple, the company deserves credit for placing more power in the hands of its customers for a substantially reduced price.

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

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

**POWER MAC G4/867**
Rating: ★★★★
Pros: Good price; SuperDrive allows DVD authoring; fast 3-D performance.
Cons: SuperDrive lacks manual eject; no audio-input port; paltry RAM.
Company's estimated price: $2,499
OS compatibility: Mac OS 9, Mac OS X

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

The 867MHz Power Mac contains only 128MB of RAM—half the 256MB found in the dual-processor model. Given how memory-hungry Mac OS X (and its Classic mode) can
be, Apple shouldn’t have skimped. (In fact, we boosted the 867MHz G4’s RAM to 256MB for our tests, in order to run Adobe Photoshop.)

**Nod to Titanium Design**

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

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

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

**Predictably Powerful**

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

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

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

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

**Macworld’s Buying Advice**

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

### Up to Expectations

<table>
<thead>
<tr>
<th>Reference systems in italics.</th>
<th><strong>Speedmark 2.1</strong></th>
<th><strong>Adobe Photoshop 6.0.1</strong></th>
<th><strong>Cinema 4D XL 7.1</strong></th>
<th><strong>iTunes 1.1</strong></th>
<th><strong>Quake III</strong></th>
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</thead>
<tbody>
<tr>
<td>Best results in bold.</td>
<td>Overall Score</td>
<td>Gaussian Blur</td>
<td>Unsharp Mask</td>
<td>RGB to CMYK</td>
<td>Lighting Effects</td>
</tr>
<tr>
<td>Apple Power Mac G4/867 (256MB)</td>
<td>215</td>
<td>5</td>
<td>6</td>
<td>12</td>
<td>5</td>
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<tr>
<td>Apple Power Mac G4/733</td>
<td>183</td>
<td>3</td>
<td>6</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Apple Power Mac G4/533 DP</td>
<td>176</td>
<td>5</td>
<td>5</td>
<td>25</td>
<td>4</td>
</tr>
</tbody>
</table>

*Speedmark 2.1 scores are relative to those of an iMac 350MHz (1999), which is assigned a score of 100. Photoshop scores are in seconds. iTunes and Cinema 4D scores are in minutes:seconds. Quake scores are in frames per second. We tested all systems with 256MB of RAM (the G4/867 topped with 512MB), a default system disk cache, and virtual memory enabled (except for Photoshop tests). We set displays to 1024-by-768-pixel resolution and 24-bit color. The reference systems had Mac OS 9.1 installed; the G4/867 ran on OS 9.2. For Photoshop tests, we used a 5GB file, with the memory partition set to 150MB and History set to Minimum. We set Cinema 4D XL’s memory partition to 160MB and rendered a 640-by-480-pixel model with oversampling set to 4 by 4. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using iTunes’ Better Quality setting of 160 Kbps. We ran Quake III’s Time Demo 1 at 640-by-480-pixel resolution, with graphics set to Normal. For information on Speedmark, visit www.macworld.com/speedmark.—Macworld Lab testing by Ulysses Bravo and Jason Cox*
Film Scanners
Latest Models Yield Great Scans and Are More Affordable

BY BRUCE FRASER

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

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

The scanners fall into two classes: the Canon CanoScan FS4000US, the Microtek ArtixScan 4000t, the Nikon Super Coolscan 4000ED, and the Polaroid SprintScan 4000 all offer 4,000-pixels-per-inch (ppi) resolution; the others—the 2,438-ppi Minolta Dimage Scan Dual II AF-2820U, the 2,820-ppi Minolta Dimage Scan Elite F-2900, and the 2,900-ppi Nikon Coolscan IV ED—capture fewer pixels. All the high-resolution scanners have SCSI interfaces except the Super Coolscan, which is FireWire-only; the CanoScan has both SCSI and USB.

Alone among the lower-resolution scanners, the Dimage Scan Elite has a SCSI interface; the Dimage Scan Dual and the Coolscan are USB-only.

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

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

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

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

We found that the Super Coolscan, for which Nikon claims a dMax of 4.2, did a somewhat poorer job of pulling detail out of shadow areas than the more conservatively rated scanners when used in single-pass mode. The only way we could get the Super Coolscan to live up to its dMax claim was to enable the 16× multiscanning option (which averages 16 separate scans and hence takes 16 times longer than a single pass) and to turn off both auto-exposure and color management.
The ArtixScan pulled the most detail from the shadows, but it also introduced a lot of noise. The SprintScan produced the best detail with the least noise, and both Minolta scanners yielded decent shadow detail despite their more conservative ratings. The Coolscan and the CanoScan both lost detail in the darkest areas, rendering them as almost solid black.

**Negative Findings**

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

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

**Speed Bumps**

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

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

**Controlling Behavior**

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

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

**Macworld’s Buying Advice**

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

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**Film Scanners Compared**

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>PRODUCT</th>
<th>MOUSE RATING</th>
<th>COMPANY'S ESTIMATED PRICE</th>
<th>CONTACT</th>
<th>RESOLUTION (IN PIXELS PER INCH)</th>
<th>INTERFACE</th>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canon</td>
<td>CanoScan FS4000US</td>
<td>☭ ☭ ☭</td>
<td>$999</td>
<td>800/652-6266, <a href="http://www.usa.canon.com">www.usa.canon.com</a></td>
<td>4,000</td>
<td>USB, SCSI</td>
<td>Least expensive in its class.</td>
<td>Rudimentary software; slow.</td>
</tr>
<tr>
<td>Microtek</td>
<td>ArtixScan 4000D</td>
<td>☭ ☭ ☭</td>
<td>$1,795</td>
<td>888/722-6255, <a href="http://www.microtekusa.com">www.microtekusa.com</a></td>
<td>4,000</td>
<td>SCSI</td>
<td>Includes calibration target and profiling software.</td>
<td>Expensive; grainy results from color negatives.</td>
</tr>
<tr>
<td>Minolta</td>
<td>Dimage Scan Dual II AF-2820U</td>
<td>☭</td>
<td>$399</td>
<td>888/264-6658, <a href="http://www.minoltausa.com">www.minoltausa.com</a></td>
<td>2,438</td>
<td>USB</td>
<td>Inexpensive; good results with color negatives.</td>
<td>Lowest resolution; limited dynamic range; rudimentary software.</td>
</tr>
<tr>
<td>Nikon</td>
<td>Super Coolscan 4000ED</td>
<td>☭ ☭ ☭</td>
<td>$1,699</td>
<td>800/645-6689, <a href="http://www.nikonusa.com">www.nikonusa.com</a></td>
<td>4,000</td>
<td>FireWire</td>
<td>Very good software; automatic dust and scratch removal; good dynamic range.</td>
<td>Needs multipass scanning to obtain best results, hence slow.</td>
</tr>
<tr>
<td>Polaroid</td>
<td>SprintScan 4000</td>
<td>☭ ☭ ☭</td>
<td>$1,295</td>
<td>800/816-2611, <a href="http://www.polaroidwork.com">www.polaroidwork.com</a></td>
<td>4,000</td>
<td>SCSI</td>
<td>Excellent software; speedy; excellent results from positives.</td>
<td>Grainy scans from color negatives.</td>
</tr>
</tbody>
</table>
OmniWeb 4.0
Cocoa Browser Missing Important Features

BY TOM NEGRINO

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

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

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

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

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

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

Because of OmniWeb's JavaScript problems and some issues with its implementation of SSL (Secure Sockets Layer), which encrypts transactions with e-commerce sites, you won't be able to access some sites. And OmniWeb supports Web animations created with Macromedia's Flash 4 but not those created with the newer Flash 5. Using Internet Explorer and Opera is a pleasure because they draw pages quickly and display cached pictures almost instantly when you click on the Back button. With OmniWeb, a fast cable-modem connection often feels like a 56K dial-up link. Pages load slowly, and going back to pages you have already viewed takes nearly as long. If you increase text size, OmniWeb fetches and renders the entire page all over again. The browser also crashed repeatedly during testing.

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

28 October 2001 www.macworld.com
System-Management Utilities
Chaos Master, Spring Cleaning Offer Halfhearted Help

BY CHRISTOPHER BREEN

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

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

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

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

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

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

Notes:

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

CHAOS MASTER 1.2
Rating: ★★★½
Pros: Finds duplicate and extraneous files; helps locate online updates.
Cons: Can’t distinguish between necessary and unnecessary files; poor filtering; limited options for removing files.
Company’s estimated price: $40
OS compatibility: Mac OS 9
Company: Casady & Greene, 800/359-4920, www.casadyq.com

SPRING CLEANING 4.0
Rating: ★★★½
Pros: Finds duplicate and extraneous files; helpful iClean utility; multiple options for dealing with files.
Cons: Can’t distinguish between necessary and unnecessary files; poor filtering.
Company’s estimated price: $50
OS compatibility: Mac OS 9, Mac OS X
Now Up-to-Date and Contact 4.0
PIM Gets a Modern Look but Too Few New Features

BY TOM NEGRINO

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

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

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

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

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

The Contact and Calendar servers have been revised to use TCP/IP as their sole networking protocol, dropping AppleTalk support. The 4.0 servers communicate faster with the clients and fix problems in the old servers. But because older clients can’t connect to 4.0 servers, and 4.0 clients can’t use the older servers, you have to upgrade all your users at once. This version runs in Mac OS X’s Classic mode, but the Carbonized version, 4.1, should be available by the time you read this.

Macworld’s Buying Advice
Now Up-to-Date and Contact 4.0 is an improvement, but its $50 single-user upgrade price is steep when you consider that it doesn’t provide much more functionality than version 3.9. If you’re still using 3.6.5 or earlier, version 4.0 is clearly worth its upgrade cost. If you paid to upgrade to 3.8 or 3.9, you might want to wait for the Carbonized version and then upgrade your OS and PIM at the same time.
PowerShot G1 and Pro90 IS. Digital Gets Serious.
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iShell 2.2

Cross-Platform Authoring for Multimedia Designers and Programmers

BY BREN NAN YOUNG

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

Outlines, Not Timelines
iShell's interface is unusual: its interlocking, L-shaped panels, called outlines, collapse or expand when you double-click on them and tile neatly inside one another. iShell is built closely around QuickTime and its supported file types (fewer than Director, but enough for most projects).

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

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

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

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

Macworld's Buying Advice
iShell is ideal for anyone who wants to create cross-platform CD-ROMs and stand-alone multimedia titles, particularly those containing QuickTime content. Although its feature set remains slim compared with Director's, iShell's easier learning curve and free authoring tool make it more accessible. Seasoned Lingo programmers, however, will find little in the free version to prompt them to jump ship.
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FileMaker Pro 5.5
Classic Database Software Makes the Move to Mac OS X

BY JASON SNELL

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

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

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

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

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

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

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

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

Versatile Sound Card Hindered by Limited Compatibility

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

Audio Accessories

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

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

The Sound and Our Fury

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

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

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

Macworld’s Buying Advice

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

Rating: 3.5/5
Pros: Versatile; inexpensive; decent software bundle.
Cons: Incompatible with latest Power Macs; weak audio editor.
Company’s estimated price: $150
OS compatibility: Mac OS 9
Company: Creative Technology, 800/998-5227, www.creative.com
Adobe Acrobat 5.0
PDF Creator Adds Impressive Feats to Its Act

BY VIC LENNARD

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

Transformations
One of the most significant additions
in Acrobat 5.0 is the ability to repurpose
PDF files. You can reuse a PDF's

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

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

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

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

In fact, Acrobat's entire color-
management system is flexible and
yields reliable results. For the first
time in Acrobat, you can view and
print an image's transparency effects.
And Acrobat's Overprint Preview
gives an on-screen warning of over-
print and knockout problems in a file.

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

An important feature missing
from the Mac version is the Convert
to Adobe PDF function. In the Win-
dows version, this macro preserves
the structure of a Microsoft Word
2001 file, including links to indexes

ADOBE ACR OBAT 5.0

Rating: ★★★★★

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

Cons: Not OS X native; not fully inte-
grated with Microsoft Word.
Company's estimated price: $249;
upgrade, $99

OS compatibility: Mac OS 9
Company: Adobe Systems, 800/833-
6667, www.adobe.com

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

Macworld's Buying Advice
With version 5.0, Adobe has taken
Acrobat to a new level. Its Web inte-
gration, content repurposing, and print
and soft-proofing features make this
a tempting upgrade for anyone with a
previous version, and a must-buy for
anyone new to PDF creation.

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Amapi 3D 6.1
3-D Modeler-Renderer Stumbles in Object Management and Animation

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

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

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

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

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

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

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

Rating: 2 1/2
Pros: Capable organic-modeling tools; enhanced smoothing tools.
Cons: Inadequate object management; limited rendering features and effects; outdated keyframe animation.
Company's estimated price: $399
OS compatibility: Mac OS 9
Company: Eovia, 888/394-2307,
www.eovia.com

"Strategy Game of the Year." —Gamespot

AGE OF EMPIRES
"The Age of Kings"
Coming in October for Macintosh from BOSCO

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Where It All Comes Together—Seybold Seminars

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

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Test Strip 3.1
Photoshop Plug-in Eases Color Correction

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

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

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

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

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

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

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

Rating: ★★★★☆
Pros: Provides easier color correction than Photoshop; new Metamorphosis feature is a great time-saver.
Cons: Interface can be unintuitive; Metamorphosis fails with some images.
Company’s estimated price: $200; upgrade, $50
OS compatibility: Mac OS 9
Company: Vivid Details, 800/948-4843, www.vividdetails.com

“May be the best real-time strategy game ever.”
—Computer Games Online

Age of Empires: The Age of Kings
Coming in October for Macintosh from BOLD

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www.macworld.com October 2001 39
Asset Trustee 6.0
Network Inventory Manager Keeps Your Assets Covered

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

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

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

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

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

Rating: ⭐⭐⭐
Pros: Cross-platform support; numerous report options; integrated Web server.
Cons: Weak SNMP-scanning feature.
Company’s estimated price: 20 users, $840; 100 users, $3,700
OS compatibility: Mac OS 9

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

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

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

1999 MacToday’s “Every Mac on the planet can benefit from DiskWarrior!”

5 Out Of 5 Stars

Repairs disk problems such as disks that won’t mount, files you Now with DiskShield™ to prevent damage to your disks before it
Flowcharting programs are some people's bread and butter. But for most, they're side-dish apps used only occasionally to redraw an org chart or create a technical illustration. For such users, the simple, OS X-native OmniGraffle 1.0.1 may be an alternative to costlier illustration programs.

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

Macworld's Buying Advice
Though heartier flowcharting applications, such as the $125 ConceptDraw Order Up Used correctly, OmniGraffle's Auto Layout tool can help you bring order to chaos.

Rating: 
Pros: Good basic tool set; decent price.
Cons: Lacks pro-level features; incomplete help; often unintuitive interface.
Company's estimated price: $110
OS compatibility: Mac OS X

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

won more top awards any disk utility ever.
My files are important.
Very important.
I only share my files with those I trust.
I trust DAVE.

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Kodak DX3500
Olympus C-2100 Ultra Zoom
Olympus C-700 Ultra Zoom
Olympus Camedia D-510 Zoom
Samsung Digimax 210 SE
Toshiba PDR-M61

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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


TONY HAWK’S PRO SKATER 2
Rating: ★★★★
Pros: Multiplayer support and customizable skate parks and skaters give the game longevity; Mac OS X support included.
Cons: Soundtrack gets irritating fairly quickly; no game controller support under Mac OS X.
System requirements: PowerPC G3/233MHz or faster, 32MB of RAM, Mac OS 8.6 or later (including Mac OS X), 4x CD-ROM, hardware-based 3-D acceleration using an ATI Rage Pro or faster graphics processor
Company’s estimated price: $45
OS compatibility: Mac OS 9, Mac OS X

SUMMONER
Rating: ★★★★
Pros: Macs and PCs can play together; unique blend of 3-D action and role-playing puzzles.
Cons: Control system occasionally too complex; graphical “popping” and texturing problems; no Mac OS X support.
System requirements: PowerPC G3/300MHz or faster, 64MB of RAM, Mac OS 8.6 or later, 8x CD-ROM, hardware-based 3-D acceleration using an ATI Rage Pro or faster graphics processor
Company’s estimated price: $45
OS compatibility: Mac OS 9
Company: GraphSim Entertainment, 972/386-7575, www.graphsim.com
Macworld and Mac OS X
We're closer than you think.

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

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

It's that simple.
If you're wondering why Macworld is making such a bold move, it's because our research shows that you, our readers, are already making that bold move: by July, 68% of you will have already purchased Mac OS X. And by year-end, we expect almost all of you to be working to make this new OS your OS.
Macworld will be there with you, delivering the most objective, lab-based buying advice available anywhere. Together, we'll save you some costly mistakes, point you toward the best Mac OS X products and help make your transition to the new OS a positive one.
The Blue Mice are coming.
And that's a very good thing.

Macworld

1 Karlin Associates - Macworld OS X Study, 4/01
• use in case of system freeze

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

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

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

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

2. **Use Process Viewer** In Mac OS X, some programs (the Dock, for example) run behind the scenes. Since you didn't launch them, they aren't listed in the Force Quit Applications window. Still, you may someday need to quit one. A Dock icon may stop working, for example, or the "puff of smoke" that appears when you drag an icon off the Dock may not disappear.
Your log-in status determines your ability to access the contents of each and every file on your Mac OS X system’s hard drive. To check your status with regard to a particular file or folder, select its Show Info window (⌘-I) and select Privileges from the pop-up menu. You’ll then see the privileges assigned to each of three categories: the owner of the folder, the group whose members can access the folder’s contents, and everybody else. If you are the owner, you can modify the privileges assigned to the various categories. For example, if a folder is Read Only for everybody and you want others to be able to modify the contents, you can change that category’s privileges setting to Read & Write.

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

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

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

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

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

Folders Trump Files Folder privileges have priority over the privileges of files within the folder.

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

Make Unix Your Friend Show Info’s privileges are actually a subset of the full Unix-based permissions settings that OS X uses. If you want to easily take advantage of the available settings, try a $10 shareware utility called Get Info (www.gideonsoftworks.com/getinfo.html). It allows an administrator to change the owner and group of any file and to modify the read, write, and execute permissions.
two. This gives it a chance to write cached data from RAM to the hard disk (something it may still be able to do, despite the freeze), possibly preventing data corruption. After you've done that, use whatever method works with your particular model (pressing the control with the power button on laptops or with the reset button on desktop Macs).

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

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

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

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

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

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

TIP
You can apply Force Quit to any open application from the Dock. Just click and hold the mouse on the application's Dock icon. When the pop-up menu with a Quit option appears, hold down the option key and Quit will change to Force Quit.
whether you have the latest version), as earlier versions may cause problems when you try to switch to OS X. Then select an OS X system and restart. With luck, OS X will now start up.

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

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

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

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

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

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

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

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

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

- Click on the file and select Show Package Contents. Open the Contents folder therein, then open the Resources folder inside that. Now find a file that ends in .pax.gz. For example, with the 10.0.4 update, you’ll want 10.0.4Update.pax.gz (see “Package Deal”). Drag the file to the desktop to make a copy of it.
- Once you’ve done so, decompress the file with a utility such as the free OpenUp (www.stepwise.com/Software/OpenUp/). You now have a copy of everything that the OS X update installs. If a file you want to replace is in your System Folder, you can log in as the root user to replace it.

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

- Using the free utility TinkerTool (www.bresink.de/osx/TinkerTool.html), select the Show Hidden And System Files option. After the Software Update is finished downloading, installing, and optimizing the new software, a dialog box appears. Ignore it for the moment. Select Go To Folder from the Finder’s Go menu. Enter /private/temp. The resulting window will typically contain a folder with a three-digit number as its name (such as 501). Open this folder.
- Inside will be the update.pkg file. Hold down the option key and drag the icon to the desktop to make a copy of the file. Go back to the Software Update dialog box and click on Restart. When you log back in, the Installer file will be on your desktop.

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

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**Package Deal** Inside OS Update packages, such as 10.0.4Update.pkg, will be a file whose name ends in .pax.gz. It contains all the new and updated files installed by the Update.
then refuse to delete it. If that happens, try placing the file in a folder and dragging the folder to the Trash before selecting Empty Trash. You can also try to reboot in OS 9 and delete it. If that happens, try placing the file in a folder and dragging the folder to the Trash before selecting Empty Trash. You can also try to reboot in OS 9 and delete it. Be careful to remove the file from the Trash before switching to OS 9, or you may have trouble locating it.

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

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

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

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

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

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

TIP: The Reset Password command is useful if you ever forget your Administrator password. Just boot from your Mac OS X CD, and then find the command in the Installer menu. After that, select your account name and create a new password for yourself.
There's much more than meets the eye in Mac OS X—that is, there's a lot going on that you won't even notice most of the time. Located at the root level of the drive, and normally invisible, is the true power behind Aqua's throne: the dozens of files and directories that constitute OS X's version of Unix. To truly master OS X, you'll need to grapple with Unix. And the primary way to do this is via the Terminal application.

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

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

**Still Can't Empty the Trash?**

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

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

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

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

**Take Out the Trash**

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

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

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

When entering the name of the file, type the first letter, and press the tab key. If no other files in the Trash have a name that begins with that letter, Terminal completes the name for you.

If you want to delete everything in the Trash, type `rm -R`. But be very careful: if you're somewhere other than in the Trash directory, this could irrevocably delete files you never intended to erase, because `rm` deletes even items not in the Trash.

**MAKE DOCUMENTS AND APPLICATIONS GET ALONG**

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

Here's how to avoid that problem:

1. **Check for Updated Applications**

The version of Microsoft Internet Explorer that came with the initial release of Mac OS X has a problem decompressing files: it tries to launch a version of Expander from OS X's continues
Classic mode rather than one available in OS X. Update to the latest version of Explorer to fix this.

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

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

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

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

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

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

**THE LAST WORD**

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

Contributing Editor TED LANDAU is the editor of MacFixIt, where you can find new information about troubleshooting Mac OS X every weekday (www.macfixit.com/osx).
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Quark has something to prove with this upgrade. Many customers are anxiously waiting to compare the next generations of XPress and its page-layout competitor, the $699 Adobe InDesign (888/724-4508, www.adobe.com). The forthcoming version of InDesign (it doesn’t have a firm arrival date, either) will add innovative capabilities such as object transparency to its already impressive feature set. Quark needs to produce an upgrade that will satisfy wavering customers and show them that it has an eye on the future.
XPress 5.0 represents an attempt to do both. This new version adds features—such as a table editor—that longtime print designers will welcome. But it also demonstrates Quark's belief that the future of publishing is inextricably linked to the Web.

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

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

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

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

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

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

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

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

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

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

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

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

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

Laying It Out
When you export your HTML page, XPress 5.0 tries
to re-create your page geometry (the way objects are placed on the page) by using HTML tables; doing this ensures that most Web browsers will display the page correctly.

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

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

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

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

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

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

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

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

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

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**The New Tools** Print and Web documents are built with many of the same XPress tools. New features include the Web Tools palette, the Layers palette, the Hyperlinks palette, and the AppleScript Scripting menu. The Colors palette now shows whether colors are spot or process inks, and includes special HTML colors for Web documents.
receive content in this form, that'll be a big pain. Also, you still have to do some formatting manually—such as the common practice of placing a colored tint behind every other row.

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

**The New Layers Palette**

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

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

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

**Interface Improvements**

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

**Contextual Menus**

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

**Convenient Color**

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

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

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

**Opaque Boxes**

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

**Text Insets**

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

**Character Lists**

The current Lists feature can create a table of contents by collecting a list of all the paragraphs tagged with particular paragraph style sheets (such as Heading1 and Heading2). QuarkXPress 5.0 goes further, letting you also gather text tagged with...
character style sheets. You can tag all the company names mentioned in your magazine with a character style, for example, and then use the Lists feature to quickly build an index of them.

**Better Books** To help people create long documents, QuarkXPress 4.0 made it possible to bundle separate documents into a book, which acts much like one long document. You can use the Synchronize button in the Book palette to force the grouped documents to use all the same style-sheet definitions, colors, hyphenation and justification settings, and so on.

XPress 5.0 lets you control which settings get synchronized—so you can synchronize the style sheets but not the colors, for example.

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

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

**Printing Progress** The cost of ink-jet printers has fallen dramatically in recent years—so dramatically that almost everyone has bought one. Designers find ink-jets particularly handy for printing out rough copies of their designs. (See "Macworld's Ultimate Buyers' Guide: Printers," August 2001.) The problem is, QuarkXPress has always assumed that users are printing to a PostScript printer, which most ink-jets are not.

The results of this conflict—if the document prints at all—are poor color and poor graphics quality.

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

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

**Better PDF Support**

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

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**QuarkXPress 5.0 Features at a Glance**

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

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

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

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

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

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

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

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

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

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

To preview your file in a Web browser before your final export, click on the Preview button (it looks like a globe) in the lower left corner of the document window. This exports a temporary HTML file and launches your Web browser. When you're happy with your Web page, export a final HTML document by selecting File: Export: HTML.
package (888/724-4508, www.adobe.com) to create PDF files.

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

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

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

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

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

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

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

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Upgrade an iMac

BY JENNIFER BERGER, CHRISTOPHER BREEN, AND JASON COX

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

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

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

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

What You’ll Need

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

1. A 5,400-rpm ATA or Ultra ATA hard drive (faster drives may be too hot for iMacs).
2. Your Mac OS installation CD, for help in backing up the old hard drive and reinstalling the OS when you’re finished upgrading.
3. New RAM. The first slot-loading iMacs accommodate up to 512MB of RAM; iMacs released in the summer of 2000 and later take a maximum of 1GB. Check out www.ramseeker.com for a list of RAM vendors and prices.
4. A way to back up your old hard drive’s contents: an external CD-RW drive, a Zip drive, a hard drive, or a network backup solution. (See “Save Your Data,” September 2001.)
5. Old-fashioned hardware: a magnetic Phillips screwdriver, to reduce the risk of your dropping screws into your iMac; a flathead screwdriver; and needle-nose pliers, helpful for grabbing and holding the tiny screws you’ll find in your iMac.
6. A small box, to hold the removed screws so they don’t roll away and to keep them easy to find.
7. A grounding strap, to keep your iMac safe from static electricity (they cost less than $1 at electronics and computer stores).
8. A soft surface, such as a pillow, blanket, or towel, to prevent scratches on the monitor or case.
9. One hour of your time (or less).

Contributing Editor CHRISTOPHER BREEN wrote the directions for tray-loading iMacs. Associate Editor JENNIFER BERGER and Associate Technical Analyst JASON COX wrote the directions for slot-loading iMacs.
TRAY-LOADING IMACS
Prepare the iMac and Crack the Case
Before you can expose the inside of your tray-loading iMac to the outside world, you must prepare it for the operation.

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

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

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

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

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

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

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

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

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

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

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

Venture inside the iMac
During this stage, you’ll protect your iMac from a shocking experience, dislodge a few cables, remove more screws, and extract the iMac’s core from the case.
Upgrade the RAM  These iMacs ship with a scant 32MB of RAM. You can add as much as 256MB of RAM (144-pin, PC100 SO-DIMM) to the RAM slot. As we went to press, RAM was inexpensive, priced at around $70 for a 256MB module.

Position the motherboard/drive assembly so that the CD-ROM drive is closest to you. Near the top of the motherboard is a shiny metal cover. To access the iMac's spare RAM slot, remove this cover by prying the side of the cover open with a flathead screwdriver. The cover's edges are sharp! To avoid injury, don't touch the edges with your hands.

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

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

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

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

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

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

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

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

With the new drive, reverse this process by attaching the bracket and cables, slipping the bracket back into the cage, screwing the bracket to the cage, reinstalling the clip over the drive, and replacing the CD-ROM drive.
Put It Back Together  Putting Humpty-iMac back together again is largely a matter of following the preceding steps in reverse order. However, you should be aware of some places where the process isn’t as simple as it may seem.

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

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

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

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

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

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

Replace the cables, and turn on your iMac.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Use a magnetic Phillips screwdriver to remove the four tiny screws around the outside of the metal grid that acts as a heat shield and the two on top of the heat shield ①. Take care not to drop a screw into your iMac. Leaving the screw inside could result in its tripping a wire or otherwise causing damage. Wiggle the heat shield gently while lifting it upward. It should come completely off.
Install the New Hard Drive
Now that you've removed the old hard drive, you're ready to install a larger-capacity hard drive. It's time to check the jumper configuration, line up the drive, and fasten the screws.

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

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

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

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

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

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

continues
Replace the Outer Case and Install the RAM

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

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

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

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

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

Start Up the iMac and Restore Your Data

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

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

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

**Initialize**

Initializing will destroy all data on the following volumes:

- [ ]

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

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

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

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

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

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

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


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

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

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

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

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

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

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

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

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

**Xdata** Anyone who regularly publishes information from a database or spreadsheet should have Em Software’s $300 Xdata (877/984-1010, www.emsoftware.com).

There are more-expensive XTensions that offer greater database connectivity, but Xdata is brilliantly simple and powerful enough for most database-publishing tasks.

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

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

Making Book

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

**Autopage** Many book publishers depend on KyTek’s powerful Autopage ($7,500, network version; $945, single-machine version; 603/529-2512, www.kytek.com) to auto-

mate laying out pages, footnotes, figure references, and so on. It ain’t cheap, but if you produce a lot of books, it’s worth the money.

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

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

A Bit of This and a Bit of That

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

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

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

Add One On Today

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

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


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**Where to Find XTensions**

While some XTension developers sell their own programs, many others depend on one or more distributors. For more tips on locating freeware and shareware XTensions, see www.macworld.com/1999/10/copy.html.

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<td>ThePowerXChange</td>
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<td>XTensions it sells.</td>
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<td>Quark</td>
<td>800/676-4875,</td>
<td>Free XTensions.</td>
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How-to

QuarkXPress XTensions

www.macworld.com October 2001
Web Publishing Secrets

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

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

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

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

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

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

One forum duty that took me by surprise was dealing with frequent new posters who would barge in on a board I was moderating, ignore the plentiful open discussions, and post a deluge of questions other people had already answered. I developed a deep reserve of patience and tried to teach other posting members by example. I politely thanked users for their enthusiasm, redirected them to the forum thread that would answer their questions, and then closed the redundant thread.
Another forum duty every moderator has to face is restoring order when your visitors argue viciously. In flame wars, bulletin-board moderators often get strafed when they try to intervene. Do you want to take the high road by engaging the poster off list, or invoke your rank as the host and drop-kick him or her into the great beyond?

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

Choosing the Right Software

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

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

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

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

Integrate Discussion Into Your Site

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

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

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

The Host with the Most

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

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

### Mac-Friendly Bulletin-Board Software

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<tr>
<th>PRODUCT</th>
<th>COMPANY</th>
<th>COMPANY’S ESTIMATED PRICE</th>
<th>PROS</th>
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<tr>
<td>DiscussionApp 3.0</td>
<td>Server.com</td>
<td>Free if you display</td>
<td>Threaded interface lets you display several conversations simultaneously.</td>
<td>Offers limited options for customizing and administering the forum.</td>
<td>Good choice if you want to be able to modify your forum’s interface without venturing into server or software administration.</td>
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<td>Lusenet</td>
<td>Phil Greenspun</td>
<td>Free</td>
<td>Greenspun site hosts the bulletin board, so you don’t have to perform complex setup and administrative tasks.</td>
<td>You cede some control to the people running the tool.</td>
<td>Visible option for people who simply want to fill out a form and host a no-frills, threaded discussion area.</td>
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<td>Threads</td>
<td>Antone Roundy</td>
<td>$12</td>
<td>You can host and administer this software on your Mac, giving you control over the board. Customizable software offers e-mail notification and other user perks. Easy for visitors to use.</td>
<td>Requires you to do the installation and troubleshooting.</td>
<td>A good combination interface for those who want to have the option of viewing either threaded discussions or full comments.</td>
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<td>(<a href="http://www.mouken.com/threads/">www.mouken.com/threads/</a>)</td>
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<tr>
<td>Ultimate Bulletin Board</td>
<td>Infopop</td>
<td>Starts at $99; depends on level of customer support</td>
<td>Elegant and customizable interface; setting up varied topics and individual threads is easy.</td>
<td>You must have the time and expertise it takes to configure and administer a Web server on your Mac. Expensive.</td>
<td>The most hands-on and professional of the applications here; an excellent tool for those who run vital bulletin boards.</td>
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As far as the classic Mac OS is concerned, a user is a user is a user. But the Unix core of Mac OS X introduces different user levels. At the top of the heap in every Unix system is a single, all-powerful superuser—also named root (after the topmost directory of the Unix file system). If you have root access, you have ultimate power: you can alter or delete any file or folder in that system.

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

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

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

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

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

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

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

To execute a single command as the superuser, insert `sudo` and a space in the command line, before the Unix command that you want to issue. For example, you can
The Root of the Matter  By typing ls / at the command-line prompt, you can see a list of the folders at your machine's root level (you can't seem them via the Finder) and change permissions using sudo.

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

```
sudo chown jsmith test.html
```

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

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

Example: Run CGI Sample Scripts

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

```
cd /Library/WebServer/CGI-Executables
sudo chmod a+x printenv test-cgi
```

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

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

Example: Edit Message of the Day

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

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

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

Example: Install Unix Software

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

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

The Bottom Line

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


More Info: www.macworld.com

For more information about sudo and other forms of root access in Mac OS X, visit Macworld.com and type OSXSecrets in the Search box.
Step right up, ladies and gentlemen. You say your iMac’s hard drive has given up the ghost? Never fear, I have a solution. And sir, you find Sherlock sluggish? A fix is at hand. And yes, young fella, I can retrieve your e-mail. How’s that, ma’am? Sure, I can wake that sleepy PowerBook. And don’t you fret, miss, of course I can end Britney Spears’s infernal caterwauling. After all, I’m here to help.

Broken and Entering

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

HAROLD LANDRETH
Juneau, Alaska

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

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

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

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

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

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

Interminable Indexing

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

TRAVIS ROLLMAN
Enfield, New Hampshire

A. I’d begin by not panicking. Clever as Sherlock may be, it’s not terribly good at deducing how long it takes to index a drive when it first begins the process. If you were to sit with stopwatch in hand while Sherlock chugs
through your drive, you'd find that its initial estimate is shockingly inaccurate. That's not to suggest, however, that indexing a drive is a brisk procedure. It isn't, and because of this, it's best to begin the operation when you'll be away from your Mac for a while—overnight, for example.

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

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

**Corrupt Correspondence**

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

**MARTY HARPER**

Grass Valley, California

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

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

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

**Comatose PowerBook**

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

**ZOE SARANTIS**

Melbourne, Australia

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

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

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

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

Noisy Lab

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

CAROLYN M. NICHOLS
Santa Fe, New Mexico

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

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

One of Multiple Users' niftier features is its ability to bar access to control panels. This is how we'll mute your iMacs. First, create a new user account in the Multiple Users control panel and extension that allows a Mac's administrator (the owner) to create individual user accounts on that computer and limit what people using them can do. For example, you can configure the lab's iMacs so your students can only use AppleWorks.

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

When you’ve run through this riggeraw, log out of that user account (by selecting Logout from the Finder's

Special menu), and then log back in as the owner. Next, open the Multiple Users control panel and assign Limited privileges to the user account you created. Finally, click on the Show Setup Details triangle, select the Privileges tab, and make sure that the user doesn’t have access to the Control Panels folder.

What have you accomplished? Anyone using the account you just configured shouldn’t hear a peep out of that computer and, unless he or she circumvents Multiple Users, can’t restore sound to the iMac. As you can probably see, this kind of chicanery can serve any number of prohibitive purposes. You can keep your kids from dimming the iMacs’ screens, changing the screen settings in a multicomputer environment? There are a couple of answers—one built in and another available through a third party. Let's begin with the built-in solution.

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

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

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**iMacs starting at $999!**

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- Hot-swappable
- Blazing 24X record speed
- Burn full CD in just three minutes
- Mac and PC compatible

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<th>Price</th>
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<td>299.95*</td>
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* price after $30 mail-in rebate.

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- Affordable DVD-RW/CD-RW writer in one drive
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- Records and reads DVD-R/RW and CD-R/RW discs
- Produce digital content on DVD and CD media
- Easy connectivity

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<td>APS DVD/CD Rewritable FireWire</td>
<td>$989.95</td>
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**APS CD-RW 4x4x32 USB**
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- Reliable performance, little expense
- Convenient USB interface — no setup hassles
- Hot-swappable to share among workstations
- Perfect for iMacs, G3s, G4s, other USB computers

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* price after $30 mail-in rebate.

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**APS HyperDAT® III FireWire**
- Reliable DDS-3 technology
- 12GB native backup
- Ideal for entry-level networks
- Fast FireWire interface for high-end workstations
- Ships with Retrospect for Mac and PC

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
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<tr>
<td>APS HyperDAT® III DDS-3 SCSI</td>
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Ships with Retrospect software for Mac and PC.

**APS AIT+ FireWire**
- 35GB native backup
- Native SCSI adapted for FireWire
- Perfect for 3-D graphics workstations
- 4MB sustained data transfer rate
- Ships with Retrospect for Mac and PC

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<th>Model</th>
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Ships with Retrospect software for Mac and PC.

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Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.
LaCie 20GB PocketDrive™

- Powerful, pocket-sized hard drive
- U&I technology — FireWire and USB ports
- Mac and PC compatible

LaCie PocketDrives

<table>
<thead>
<tr>
<th>Model</th>
<th>Price</th>
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<tr>
<td>LaCie 10GB PocketDrive</td>
<td>$249.95*</td>
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* price after $30 mail-in rebate.

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LaCie electron22blueli

- High dot pitch minimizes eye strain
- Large viewable area
- Maximum resolution for large layouts
- Advanced flat-screen technology eliminates distortion
- Color-enhancing blue hood reduces glare

APS Ultra 160 LVD SCSI Drives

<table>
<thead>
<tr>
<th>Model</th>
<th>RPM</th>
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<th>External</th>
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Drives listed above carry a five-year warranty, except those marked.
1 Marked drives carry a three-year warranty.

APS Ultra SCSI Drives

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Drives listed above carry a five-year warranty.

LaCie 20GB USB Hard Drive

- 7200 rpm hard drive
- Hot-swappable
- Convenient USB interface
- Affordable storage

LaCie monitors

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<th>Linksys BEFSR41</th>
<th>Netgear RT11</th>
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<tr>
<td>Web-Based Configuration</td>
<td>Yes</td>
<td>Yes</td>
<td>Command line required for many features</td>
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<td>Ideal for Mac/PC Networks</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
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<tr>
<td>Advanced Security: Log intrusion attempts</td>
<td>Yes</td>
<td>No, always open</td>
<td>No, always open</td>
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<td>Ports open on-demand</td>
<td>Yes</td>
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<td>Group security</td>
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<td>No</td>
<td>No</td>
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<td>Print Server</td>
<td>Yes</td>
<td>Add $170</td>
<td>Add $245</td>
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<tr>
<td></td>
<td></td>
<td>for 1 port (PPX11)</td>
<td>for 3 ports (PS113)</td>
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<tr>
<td>Performance</td>
<td>Best</td>
<td>Slower**</td>
<td>Slowest**</td>
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<tr>
<th>Model</th>
<th>Features</th>
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<tr>
<td>OLYMPUS C-3040</td>
<td>440s i515Mx Resolution, 1280x1024, 50x Optical 4x Digital zoom, 12.1 mega</td>
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<td>pixel, LCD Monitor, SD Card, Card Slot, White Balance, Multi Spot Metering</td>
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<td>SONY MVC-D300</td>
<td>2048x1368 Resolution, 3x Optical/4x Digital zoom, 5.8cm LCD Monitor</td>
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<td>3-C CD-ROM drive, Program modes Move &amp; Voice mode, Color LCD, Movie</td>
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<td>Mode, Variable ISO</td>
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<td>CANON DSC-P1</td>
<td>1.3 Mega pixel, 2.0 Optical/0x Digital Zoom</td>
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<td>1.5 LCD Monitor, Underwater Housing, Digital stills, Exclusive new GIP</td>
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<td></td>
<td>animation features</td>
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<td>NIKON Coolpix 995</td>
<td>1080 x 1600 Resolution, 1/3x Optical, 4x Digital zoom, 3.3 Megapixel,</td>
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<td>16MB Memory Stick, HQ Movie Mode, 2 color LCD, Spot Metering, Variable</td>
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<td>CANON PowerShot S-110 Zoom</td>
<td>160/128 Resolution, 3.2x Optical zoom, 3.3 Megapixel, 1080i, Built-in</td>
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<tr>
<td></td>
<td>flash</td>
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<td></td>
<td>35-140mm Lens, Fully multi-coated glass optics</td>
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<td>LUMIX C-700</td>
<td>8 Mega Pixel, 'Holds SmartMedia Media &amp; Compact Flash card 2, 2.4x Optical/</td>
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<td>2x Digital Zoom, 3 Frame Per Second Burst Mode, 2 Program Modes, Spot</td>
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<td>&amp; Multi Spot Metering, 10x Image Stabilized Optical, 2.7x Digital</td>
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<td>3.5 Optical Zoom, 23.4 Mega Pixel, Memory Stick, HQ Movie Mode, 2 color</td>
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<td>LCD, Spot &amp; Multi Spot Metering, and Variable ISO</td>
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<td>EOS D-30</td>
<td>3.31 Million Pixel Resolution, 1280x1024, 4.3 x Optical zoom, 3.3 Megapixel</td>
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<tr>
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<td>➔ Built-in flash, Built-in high-speed USB interface, Variable ISO</td>
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<tr>
<td>CANON PowerShot G-1</td>
<td>35-140mm Lens, 4.3x Optical zoom, Built-in flash, 3.3 Megapixel, Built-in</td>
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<td>3.3 Megapixel, 1280x1024, 720p, 3 Frame Per Second, 3 Custom Function,</td>
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<td>Easy Control, High Quality Still images</td>
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<td>CANON PowerShot S2000</td>
<td>4.3 Optical zoom OIS, 35-140mm Lens, Built-in flash, Built-in high-speed</td>
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<td>USB interface, Variable ISO</td>
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<td>CANON PowerShot A10</td>
<td>4.3 Optical zoom, 35-140mm Lens, Built-in flash, Built-in high-speed USB</td>
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<td>CANON PowerShot A20</td>
<td>4.3 Optical zoom, 35-140mm Lens, Built-in flash, Built-in high-speed USB</td>
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<tr>
<td>FUJIFILM FINE PIX 4000</td>
<td>24 Megapixel, 3.5 Optical zoom, 4.3 Optical zoom, 3 Frame Per Second, 3</td>
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<td></td>
<td>Custom Function, Easy Control, and High Quality Still images</td>
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<tr>
<td>KODAK DC-5000</td>
<td>3.1 Megapixel CCD, 1280x1024, 2 X Optical zoom, 35-140mm Lens, Built-in</td>
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<td>flash, Built-in high-speed USB interface, Variable ISO</td>
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<td>CANON FINEPIX 3000</td>
<td>3.5 Optical zoom, 4.3 Optical zoom, 3 Frame Per Second, 4.3 Optical zoom,</td>
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<td>3 Frame Per Second, Built-in flash, Built-in high-speed USB interface</td>
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<td>Variable ISO</td>
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<td>CANON FINEPIX 40i</td>
<td>4.3 Optical zoom, 35-140mm Lens, Built-in flash, Built-in high-speed USB</td>
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<td>CANON G1000</td>
<td>2.1 Optical zoom, 35-140mm Lens, Built-in flash, Built-in high-speed USB</td>
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<tr>
<td>CANON GRDVL-2000</td>
<td>10 Optical / 200 Digital zoom, 3.5x Optical zoom, Image Stabilizer, Multi</td>
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<td>Frame &amp; Spot Metering, 3.1 Mega Pixel, Built-in flash, Built-in high-speed</td>
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<td>USB interface, Variable ISO</td>
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<tr>
<td>CANON GRDVM-615</td>
<td>4.3 Optical zoom, 35-140mm Lens, Built-in flash, Built-in high-speed USB</td>
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<td>interface, Variable ISO</td>
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<tr>
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<th>15&quot; Monitor</th>
<th>17&quot; Monitor</th>
<th>19&quot; Monitor</th>
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<td>$199 refurnished</td>
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### PowerMac CPU SALE!

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<tr>
<th>PowerCurve 120</th>
<th>7200/75</th>
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<tr>
<td>$399 refurnished</td>
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But why are there so many Macs here, month after month? I've often thought about that. You do see Wintel boxes, but chiefly in the form of the contents of an entire office that got upgraded. Macs are everywhere, in threes, fours, and singles. And they usually move pretty fast, too. Color Classics get snapped up at hefty prices. SE/30s fetch only ten bucks or so, but they often find buyers—they make great Unix boxes. You'll see people lugging around Mac Portables and fiddling with Newtons, and there's usually a table of PowerBooks.

The Quadras and transitional Power Macs are permanent installations, practically Stonehenge-like. I often come home with a peppy pizza-box Quadra: for less than $60, you can buy what is essentially a complete '040-based alternative to the iMac, just perfect as an e-mail- and-Web box for a kid or favored aunt. They're useful, but they don't generally sell.

People don't form the attachment to a IIci or Centris that they do to a Color Classic. Yes, a Mac Plus may be nearly useless, but it offers two features that boxy Spindler- and Amelio-era Macs (and Windows machines) don't: character and personality.

You don't see any Jobs-era Macs at all—even original Bondi iMacs are still being used by their first owners. But when an iMac or a Power Mac G3 rower gets jettisoned, it'll find a buyer, just like the Pluses and Color Classics. Character and personality are the Mac's greatest strengths, something that was forgotten until iSteve came back to Apple and began shrieking it to his new underlings. The company's success comes from designing gear that resonates with the user. For good or bad, people buy Macs because they feel right. Like a spouse, a city to live in, or clam chowder, a Mac sells itself with that initial feeling of yes, this one, definitely—whether it's brand-new at $2,499 or used at $10, five for $20.

As I'm musing on this, a pal spots me and trots over to bring me news: Lisa is in the building.

I trot around until I spot it, and all of a sudden, there it is. It doesn't have a Twiggy drive (which remains a Holy Grail for me), but it's a Lisa nonetheless, sitting patiently beneath a table. It's also positively filthy, but it has retained its original dignity, and I soon fork over ten bucks for it.

I heave it into the car (along with a quack medical device from 1911 and a 2.7GB mainframe hard drive the size and weight of a cello filled with mercury). It's stupid anthropomorphism; I acknowledge that. But I will take this Lisa apart and scrub off the grime and peel away the stickers and patch that one hole drilled into the side. And although I will store this Lisa away with the rest of the group, I take some very small pride in having saved another distinguished member of the Mac family from the scrap heap.
I T'S THE THIRD SUNDAY OF THE month in Cambridge, Massachusetts. And just as axe-wielding undead psychopaths are drawn to remote forest cabins where teenagers are drinking and making out, geeks of every size, gender, race, creed, and operating system can't help but heed the siren call emanating from the corner of Albany and Main Streets—for there, in the shadow of one of the Massachusetts Institute of Technology's cyclotrons, lies the MIT Flea Market.

The MIT Flea is where old technology goes to die. It's also where old technology goes to be reborn. And occasionally it's where technology that the CIA has steadfastly denied to Congress that it owns is disposed of without paperwork. I mean, it's sort of a mixed bag; the earlier you arrive, the greater the sense of exhilaration and fear at what you'll discover. Suffice it to say that one of the things drawing me back month after month is the dead certainty that one of these days I'll come across a footpad from an Apollo lunar lander on a card table marked “$40 OBO.”

Here's a whole box of pagers, two for a dollar; I buy a couple just to get the little motors that make them vibrate. I examine but don't buy a Resusc-Cinnie CPR dummy—the guy wants $250 for it. His son gleefully shows me that her pupils are dilated and of unequal size. This kid is headed for the cover of Time magazine—one way or another.

What's in that bin there? It seems to be the discards of some research lab that has upgraded its facilities. Some automated pill dispensers will make perfect network-controlled goldfish feeders—that is, they will after the hoppers are cleaned of barbiturates.

If the Flea has a motto, it's Sic transit gloria mundi. The hypermegasupersexy gear that once graced the covers of Macworld, Byte, and PC World is now gracing a Chiquita banana box underneath a folding table. I could give a toss for homeless puppies or lost kitties, but there's something about a Hewlett-Packard 75C priced at $10 that tugs at my heartstrings. Apri-cots, Sparcstations, Osbornes, Grid-Pads, and computers that loaded their software from eight-track tapes—it's the Island of Misfit Toys in a parking lot.

My father gave away my old Apple II+ when I went away to college, but I was recently able to put together an even better system for about $30. I bought the black Bell & Howell Apple and all flavors of IIe and IIc, and after a morning in which my movements were clearly blessed by God, I assembled the IIe of my dreams. It was just like new, and I managed to populate every slot for pennies—and to top it off, it was a Woz Special Edition.

There's no shortage of Macs. They're stacked everywhere, and people who brought some to sell keep chasing me down. I am indeed the person who wrote and published a set of plans for converting classic Macs into MacQuariums, and I would like to believe that these folks hunt me down because I encourage people to build and sell them to benefit charities. But I know the true motivator: CRTs are hazardous waste that can't be thrown away with regular trash, so these folks must find some rube who'll take them. I already have plenty, thank you, although I'm always pleased when I come across a Fat Mac or original Mac 128K that I can restore and conserve.

ANDY IHNATKO

Island of Discarded Macs

Be They Quadra, Lisa, or Newton, All Old Macs Have a Home Here

continues on 119
Need more space? Try a digital solution. Back up your data, burn all your video, MP3s and multimedia presentation files onto CD. Anyone can do it with Toast™ 5, by Roxio. The world’s best selling CD burning software for the Mac. Check out roxio.com/toast5. Use a PC? Look for Easy CD Creator™ 5.
Meet the new Mac OS.

Thinking of upgrading your operating system? Start with the new Turbo Mouse Pro trackball. It's a USB-ready operating system in its own right—with all the professional features you need to guide you through Mac OS X in comfort and style. Its six DirectLaunch™ buttons launch apps and transport you to your favorite web sites instantly. Four programmable buttons reduce repetitive tasks to a single productive click. An integrated scroll wheel races effortlessly through even the largest documents. All while you're pampered by the silky-smooth precision of steel bearings and an extra large ball. Check out the Turbo Mouse Pro—the perfect touch for any Mac. Visit your nearest Kensington dealer or www.turbomousepro.com.