BLUETOOTH

This Wireless Technology Could Change the Mac Forever

See Our Preview, page 72

www.macworld.com The Mac Product Experts August 2002

Macworld

Inside the New Update

OS X EVOLVES

Plus | Photoshop 7 Review and Tips | New Digital Cameras | Stopping E-mail Spam

RACK MAC

Apple's New Xserve Server Breaks Boundaries, page 68

Sends other UNIX

"My PowerBook G4 is now running every major UNIX app that we had on our Suns, AlphaStations and SGIs – and running them faster."

–Mark S. Cohen, Ph.D., Professor, UCLA Brain Mapping Center

"This new OS has accomplished in a short period of time what others have struggled to do for years: bring a compelling, widely accepted GUI (called Aqua) to UNIX."

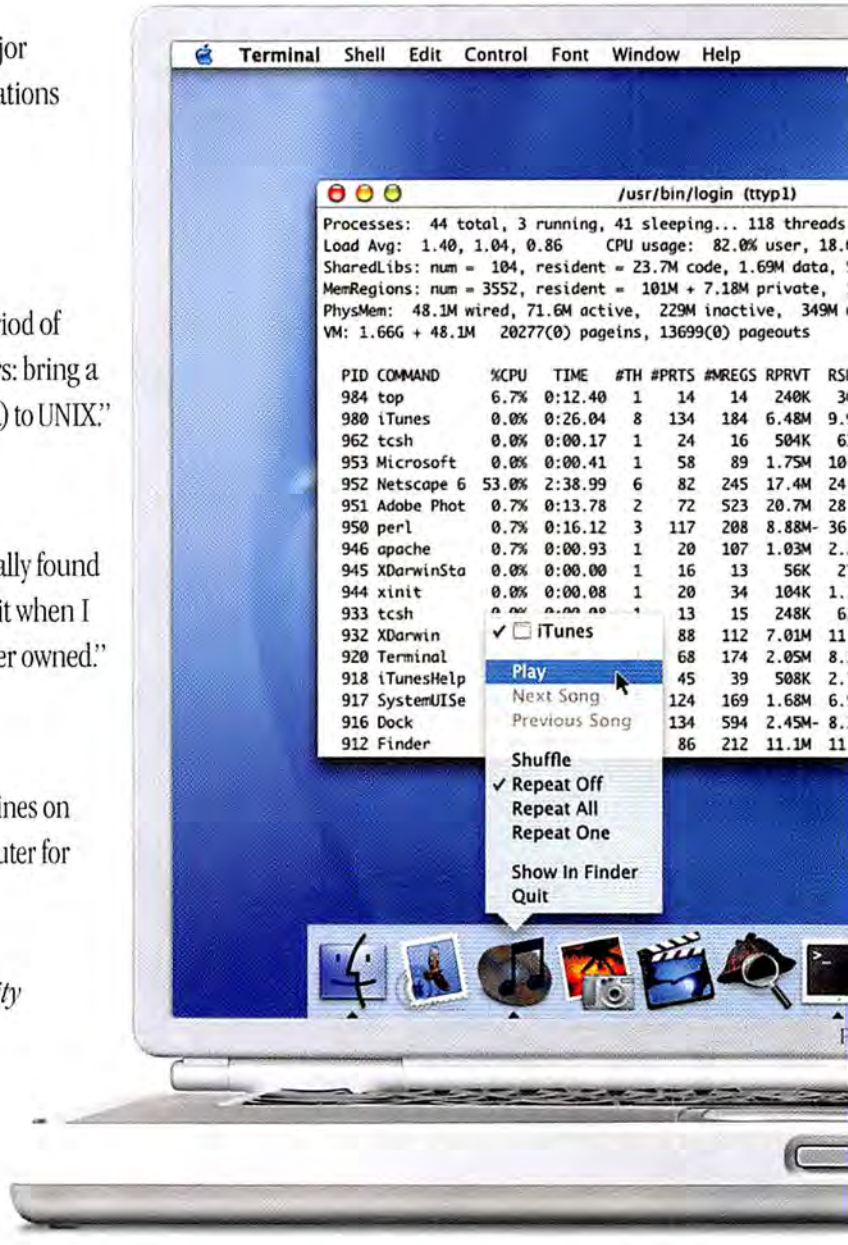
–Tim O'Reilly, O'Reilly Network

"After two-and-a-half years of Linux, I've finally found joy in a UNIX operating system. And I found it when I purchased a Macintosh – the first one I've ever owned."

–John Hummel, Jr., The Gamers' Press

"Until Mac OS X came along, I had three machines on my desk. Now with Mac OS X, I use one computer for writing, coding, research, everything."

–Dr. Michael Cherry, Associate Professor, Department of Genetics, Stanford University



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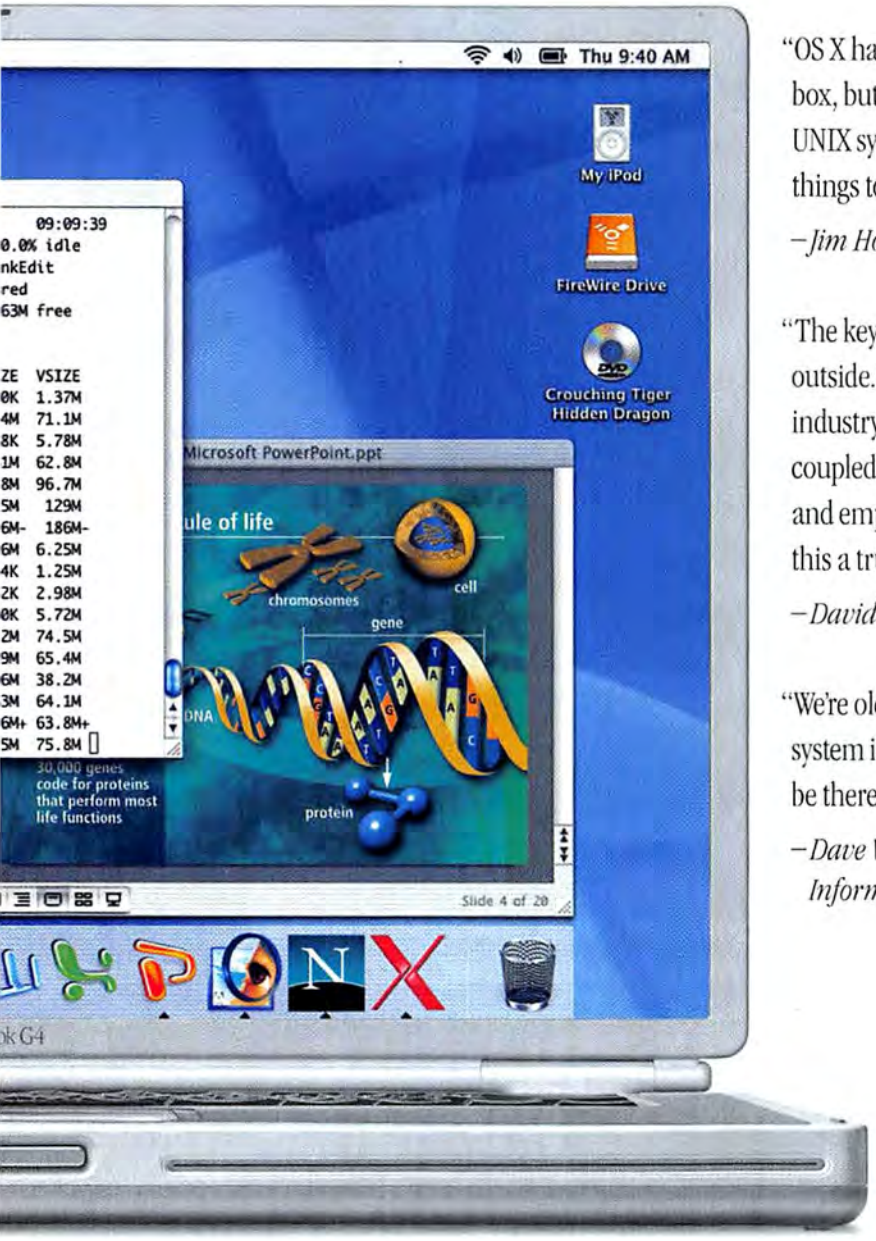

"OS X has all the power you expect from a UNIX box, but none of the hassle associated with basic UNIX system administration. You can expect things to work and they do."

–Jim Hourihan, Tweak Films

"The keys to OS X are that it's UNIX inside and Mac outside. This combination of stability, support for industry standards, and wide developer support coupled with Apple's Aqua graphical user interface and emphasis on graphic performance makes this a truly great operating system."

–David Coursey, ZDNet AnchorDesk

"We're old hardcore UNIX hackers, so a BSD-based system is mother's milk. Everything you expect to be there is there, and it works right."

–Dave Weininger, President, Daylight Chemical Information Systems, Inc.

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Incorporating MacUser

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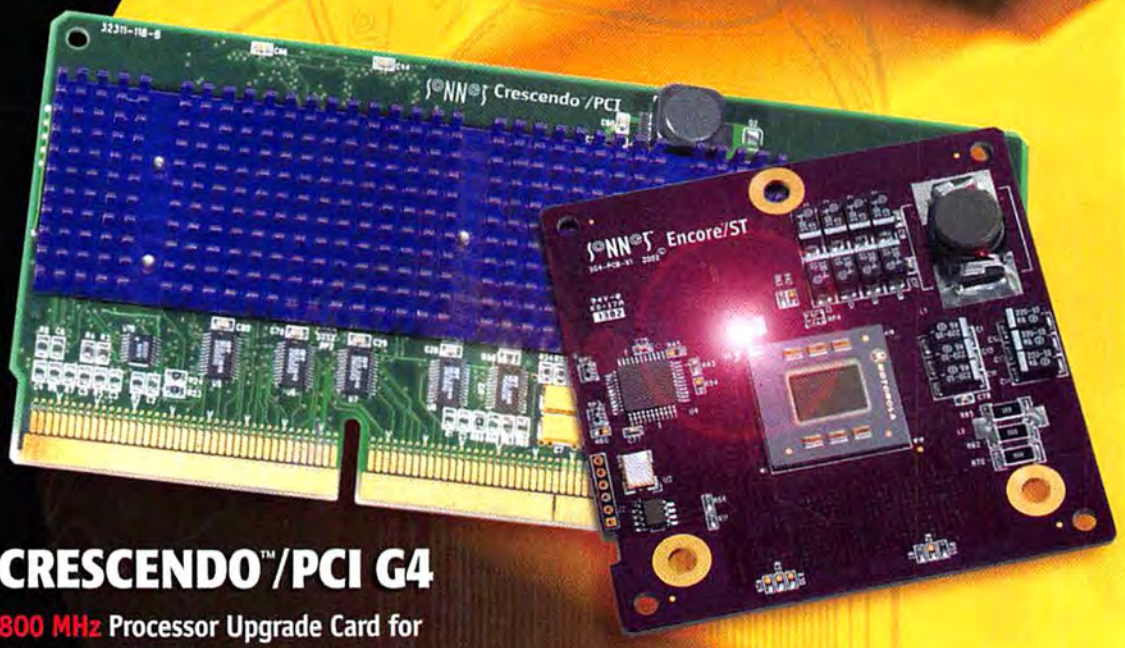

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BY JASON SNELL

Sailing into New Territory Can Be Scary—and Exciting

Uncharted Waters

AS ONE OF THE SPEAKERS ON THIS SPRING'S MACMANIA cruise to Alaska—a joint production of *Macworld* and GeekCruises.com—I was fortunate to spend a week with 15 top Mac experts and more than 100 hard-core Mac fans. I admit that none of my dreams about a one-week Alaskan cruise have included spending time talking about Web design, wireless networking, Microsoft Office, and e-mail programs. But MacMania turned out to be a fantastic mixture of travel, education, and camaraderie—and it taught me a lot about what's on Mac users' minds.

MacMania was an immersive experience that exposed me to just how exciting and terrifying OS X is to many of the Mac faithful. Most of the cruise participants I met had already made the move to OS X, at least part-time. And all of them were curious about it, which wasn't surprising—these people are the Mac experts in their families, offices, and circles of friends. They need to be OS X experts, too—and they're hungry for as much information as they can get.

We at *Macworld* continue to devote ourselves to making sure that our readers become as expert in OS X as they were in the classic Mac OS. This month, our cover story gives you an in-depth look at the next version of OS X, code-named Jaguar, which is due out in late summer. This story is is just the beginning of what we have to say on the subject—expect more news and tips about the update in the months to come.

The good news about Jaguar is that with this release, Apple has begun innovating in Mac OS again. OS X 10.1 was, quite rightly, a release designed to fix bugs, fine-tune features, rectify numerous key omissions, and dramatically improve the poky performance of version 10. It made OS X worthy of use by regular Mac users. The Jaguar release of OS X offers new and updated applications, as well as new system features such as a shared address book and dramatically improved file-finding tools.

All of these additions are great to see because Apple, as the loyal opposition of the computer industry, can't afford to stop innovating. But I hope that Apple hasn't lost sight of the fact that OS X is still a brand-new operating system with many rough edges and quirks that need to be addressed. A system update that adds features while fixing bugs and improving performance is the sort of one-two punch everyone is hoping for, and it will go a long way toward rewarding the trust of Mac users who have made the big leap from the familiar into the unknown future.

Serve Yourself

Also in this issue is an under-the-hood look at Apple's Xserve (see "Inside Xserve"). Granted, many Mac users will never even consider buying the Xserve, a powerful Unix-style server meant to be mounted in an industry-standard equipment rack. But the Xserve stands out as an intriguing piece of hardware that may point the way toward advances that could appear in future generations of Power Macs.

For that reason—and because this may be the only way many people can see an Xserve close up—we're laying it out *Alien Autopsy*–style, with large photos and captions (by former Macworld Lab Director Kristina De Nike) that explain exactly what makes it tick.

The Bluetooth Revolution

A few years ago, when Apple unveiled the first iMac, I edited a *Macworld* story, by Henry Bortman, that introduced everyone to an exciting new connection technology bound to change the Mac forever—USB ("The USB Connection," October 1998). Back then, there were essentially no Mac-compatible USB devices in existence, although a few companies had announced plans to create them once the iMac finally shipped.

Fast forward to 2002. This month, Henry Bortman once again has the difficult task of introducing Mac users to a potentially revolutionary technology, one that Apple has announced support for—but one that's not fully formed yet, at least on the Mac. This time, the technology is Bluetooth, a way to connect devices wirelessly over short distances (see "Bluetooth Breaks Through"). Bluetooth is still in its infancy on the Mac, but it's an exciting technology that could radically change how you connect devices to your Mac.

> Apple can't afford to stop innovating.

New operating systems, strange Apple hardware, and intriguing-yet-foreign wireless technologies—yes, now is an exciting time to be a Mac user, even if it's also a bit scary. Still, when I'm sailing into unknown waters, the people I want with me are those who love the Mac. □

Let us know what you think about *Macworld* or anything else related to the Mac. You can drop me an e-mail, at jason_snell@macworld.com; send an e-mail to Editor in Chief Rick LePage, at rick_lepage@macworld.com; or join the discussions in our forums, at www.macworld.com.

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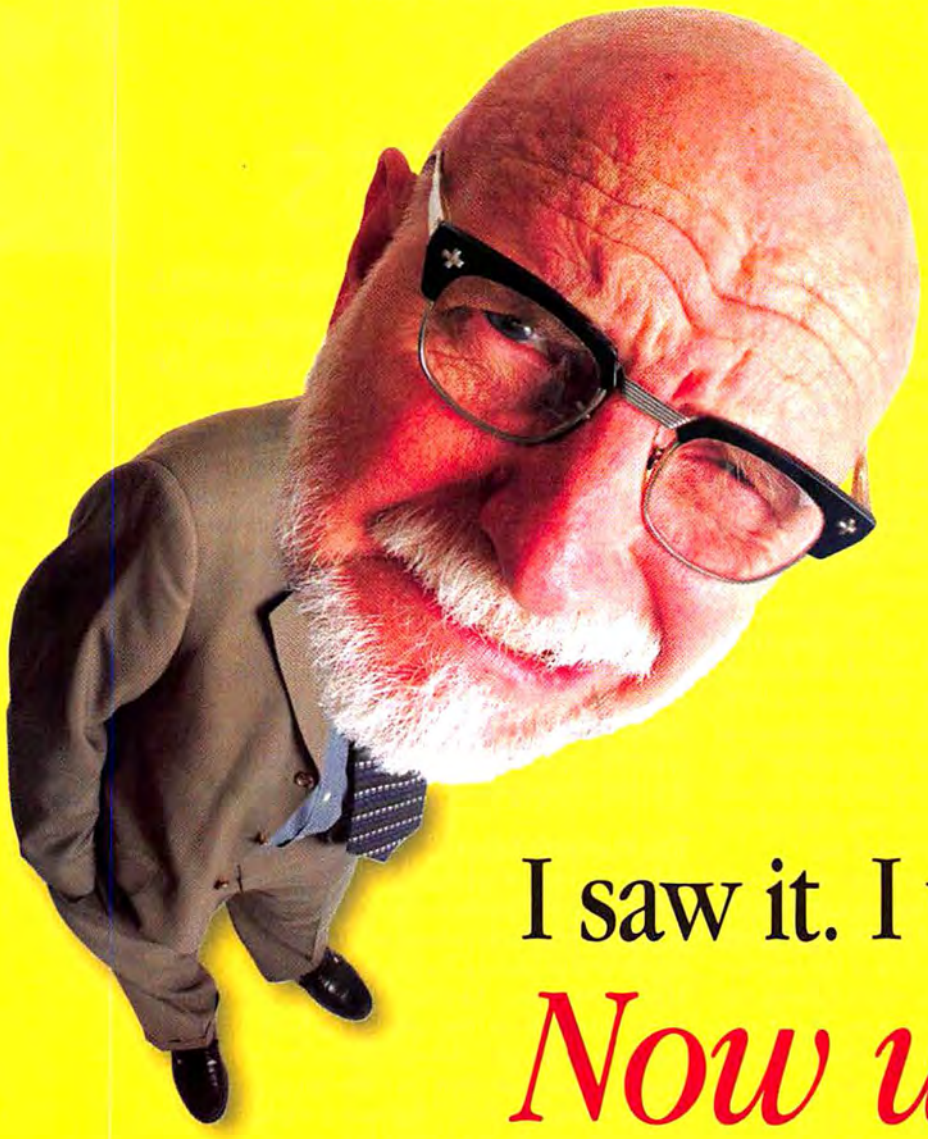

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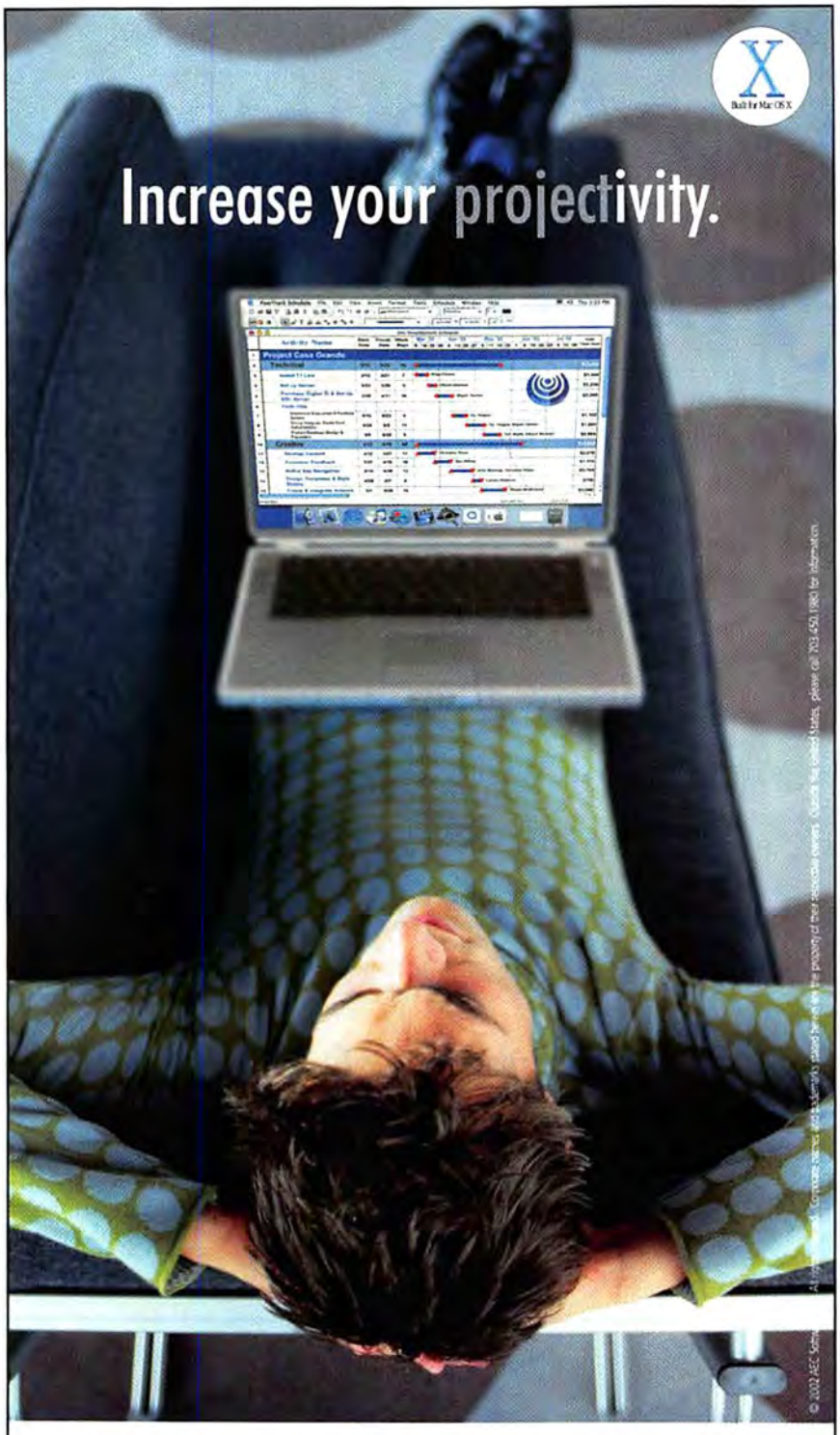

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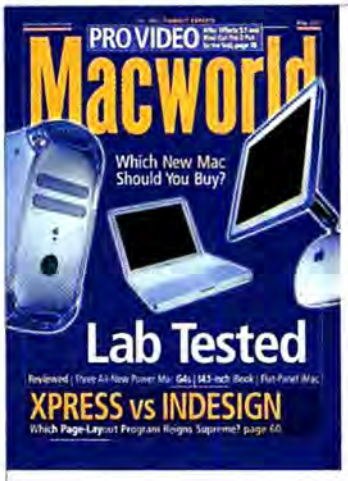

FEEDBACK

Fight Club

Macworld readers *love* a good fight, particularly when Adobe and Quark are slugging it out. We provide an overview of Apple's latest hardware offerings; you nod and go back to debating the relative merits of InDesign and QuarkXPress—everything from color management to which program would triumph in a no-holds-barred steel-cage match. We're happy to offer in-depth reviews of the latest Mac products; how you use that information—whether to make buying decisions or to fuel speculation about a mythical battle royal between two Mac developers—is up to you. □

Layout Shoot-Out

CRAIG HALL

I found it very interesting that InDesign seemed to come out on top in the head-to-head battle for supremacy ("QuarkXPress versus InDesign," May 2002). But even though InDesign may have several stronger features, it's more important to me as a graphic designer that the people receiving my files support the program I use. The printers and film houses I work with say they rarely see an InDesign file.

STEVE SHUB

There was no mention of one of InDesign's biggest claims to fame: that it opens QuarkXPress files. In my limited tests, the files open but are a mess. I opened a ten-page XPress file in InDesign and, after waiting several minutes, was horrified to see that the graphic elements of all the pages were everywhere but where they were supposed to be. All text had changed as well; any manual tracking I'd done to get rid of widows and orphans was lost. In my opinion, the core question is, Are companies with huge installed bases of QuarkXPress going to switch to a program that, at best, only a few of their employees know?

JON MARKEN

In the "Who Wins the Features Race" chart, you list "add pages upon text import" as a feature offered only by XPress. InDesign will also add columns and pages when importing text; it simply won't add pages as you're typing.

SALLY JACKSON

After reading your glowing review of InDesign 2, I thought I would give it a try. I am a longtime QuarkXPress user, but the program has some annoying quirks. The free, fully functional trial version of InDesign is very slow to load, but I can cope with that. Can I use it to open a JPEG created in Photoshop? No. What happens when I try to print something? My 400MHz Power Mac G4 slows down to a turtle-like crawl and finally freezes. Can I print those troublesome fonts and graphics from InDesign? Who knows? I think I'll stick with QuarkXPress.

Missing Macs?

NICK LANCASTER

I'm wondering if anyone else noticed that "The Fast Crowd" (May 2002), which looked at all the current Mac models, left out the Titanium PowerBook G4, even though there's a picture of it, along with the iBook, iMac, and Power Mac, on the front page of the article.

CAMERON HILL

For your 14-inch iBook review, couldn't you find a picture of one?

The Titanium PowerBook G4 was, in fact, mentioned in the main story and in the product table on page 58. It wasn't reviewed in that issue because the most recent version had been reviewed in our January 2002 issue ("Time to Desert Your Desktop?"). The updated PowerBook announced in late April was reviewed in our July 2002 issue (Reviews)*. As for the iBook picture, congratulations on spotting something we missed. Rest assured, the iBook we reviewed was the 14.1-inch model.—Ed.*

Just the Fax

DAVID C. JONES

James Bradbury's Faxstf X review (May 2002) was right on the money. Even at version 1.0.3, the program is pretty disappointing. It doesn't tell you when sending a fax fails, and it stops trying after just one attempt. My phone rang just as I was about to send my first fax. The fax modem tried to send the fax, but it didn't get a dial tone, and the attempt failed—without trying again and without warning. On top of this, the software works only with the Mac's built-in modem. I wanted an OS X–native faxing solution. This program is OS X native, but it's not yet a solution.

KENNY MINSTER

I agree with your review Faxstf X. Does anyone make a better fax program for the Mac? Or can I use my old Global Village software with OS 9? With all the advances we've made over the years, you'd think someone could create a substantial fax program for the Mac.

We know of absolutely no easy-to-use, OS X–native fax software alternatives to Faxstf X. While you could try using your old GlobalFax software in OS 9, we can't vouch for the consequences. Unlike their successor, Faxstf 5 and Faxstf 6 are dandy programs that run in OS 9, although you may need to boot into OS 9 instead of using Classic.—Ed.

QuickTime without Limits

THERESA-MARIE RHYNE

I was happy to read Shelly Brisbin's "Macs without Limits" (*Secrets*, May 2002). I wanted to add some information about providing hearing-impaired users with captioned text content in QuickTime movies on a Mac. Detailed instructions on creating text tracks, starting with transcription for QuickTime, are provided on Apple's Web site (www.apple.com/quicktime/products/tutorials/texttracks.html).

Excel-lent Question

MONTY LEE

"Open Excel to the Web" (*Secrets*, May 2002) is excellent. One item not addressed that I sure would appreciate an answer to is how to edit a user-created query file (step 7) so that it automatically refreshes when the worksheet is opened.

This works the same way that setting the Microsoft-supplied example files to refresh does. You click on the Refresh Data On File Open option in the External Data Range Properties dialog box, which you can open by clicking on the Properties button when you place your query on the worksheet.—James Bradbury

OS X Insecurity

ROSS BISHOP

Dan Frakes wrote about the wonders of OS X security features ("Many Users, One Mac," *Secrets*, May 2002). I totally disagree. As a sole user, these features are simply a monumental pain. Brother's printer drivers don't work well in OS X, and before I realized that, an Apple tech-support representative had me change identities on my computer. Suddenly, I lost control of my entire system. Because I lacked privileges, I couldn't empty the Trash, delete items, or, more important, edit certain data files. Getting control back was a real pain. This is a lack of foresight on Apple's part (or perhaps a rush to get OS X out). I should be able to change the level of security on my machine, not have it rigidly decided by Apple or Unix. It often seems to me that *Macworld* puts itself in the position of defending and cheerleading Apple. I see this a lot around OS X, which, other than being pretty, has a hell of a long way to go toward achieving real sophistication.

URLs Not AWOL

ADAM ABRAMS

I was overhauling my office not long ago when I came across a dusty issue of *MacUser* from March 1996—well before it was absorbed by *Macworld*. Following the rush of nostalgia I always get from old Mac magazines—ooh, Power Computing clones! PageMill 1.0!—I noticed one article, "Welcome to the Web!" which presented "101 must-see sites" and an irresistible "Where are they now?" challenge. I checked every address, because I was curious to see just how hot these 101 sites were after almost six years (and one dot-bomb meltdown). Forty-eight are still going strong—and 38 of these are at the same, sometimes obscure, address. Ten sites live at a new URL, which is linked from the old one. They may not all be in good repair—the Online Confession Booth now hands out error codes instead of redemption—but they're there. Thirty-one sites have gone to that big Web server in the sky—either they're not found at all, or their domain is under new, unrelated ownership. A moment of silence, please, for the late Mr. Showbiz and the dearly departed Captain James T. Kirk Sing-Along Page. Finally, ten sites are still plugging away, but they moved so long ago that there's no direct connection from the 1996 link. So in the end, 69 percent of the "must-see sites" are still alive and clicking. In a medium not known for permanence, that's a very good showing indeed.

Why, Andy, Why?

JAMES SHOOP

I was disappointed in Andy Ihnatko's "Open-Source Showdown" (*Ihnatko*, May 2002). What kind of geek can't build the GIMP? And if he *really* couldn't figure it out, why not just use Fink? You can do that in two Cokes.

MICHAEL V. POLSINELLI

Although I had no clue as to what Andy was writing about (except for the "24 12-ounce units" measurement), I found the article entertaining.

In Focus

BOB KASPER

I'm happy to see that you, like most photo magazines but unlike some computer publications, are quoting focal lengths with their 35mm equivalent ("Keller on Cameras," *Reviews*, May 2002). Without this, the actual focal length and zoom ratios are rather useless (an 8–24 zoom and 100–300 zoom are both 4:1, but the results are a bit different). One suggestion: tabulate camera specs (zoom, lens focal length, speed, image size, media type, warranty, and so forth) in a quick reference guide.

Thoughts on Fees

ERIK NEILSON

I think that Apple is doing the right thing with QuickTime 6 ("Apple's Fee Fight," *Mac Beat*, May 2002). Apple's concern is the 2-cent-per-hour royalty for commercial content streaming. MPEG LA may not fully understand what it would be doing to its popular protocol with this pay-by-usage royalty. When it comes down to it, the most popular use of coding and decoding streaming video will hinge on cost, not quality. Most companies spend money to stay on the Web. If MPEG LA goes through with the per-hour royalty, it will spend too much money keeping track of royalty charges and lose on revenue in the long run when MPEG-4 declines in popularity. So I stand by Apple, knowing that its intention of coming to terms with licensing is positive for, and could even save, MPEG LA and MPEG-4.

Myth III? Not for Me.

BRIAN HOLBERT

I have to disagree with Peter Cohen about Myth III: The Wolf Age ("Myth, Magic, and Mutton," *The Game Room*, May 2002). Either he didn't play the first two games or he's being nice to the remaining developers still making games for the Mac. Myth III made several mistakes, the most devastating being the sacrifice of game play for graphics. I played the first two Myths for more than three years and never cared how good the sprites looked. What made the games great was the ability to control a large force of men and execute maneuvers with them in the way you intended. The game play in Myth III makes doing this sort of thing impossible.

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WITH OFFICE UPDATE, MICROSOFT SQUASHES BUGS, EXPANDS SUITE'S BAG OF TRICKS

Cleaning Up the Office

PHILIP KAAKE

>> The arrival of Office v. X late last year introduced a completely new interface and OS X compatibility for Microsoft's flagship suite of productivity apps. It also brought along a handful of unexpected and decidedly less welcome features—bugs.

With the first significant update to the OS X–native version of Office, Microsoft has called in the exterminator. Microsoft Office v. X for Mac Service Release 1—or SR1, as it's also known—aims to eradicate the most troublesome and persistent software glitches that appeared when Office made the jump to OS X. But the update, which is available as a free download from Microsoft's Mactopia Web site (www.microsoft.com/mac), is more than just a quick fix for bugs—it also introduces a few new features in each of the four Office applications.

Word X

SR1's improvements to Word are subtle; if you hadn't a clue as to what they were, you might notice only that your work was flowing more smoothly.

Specifically, SR1 substantially improves the management of multiple Word documents. When you open an additional document, it no longer pops up behind the active document, thereby forcing you to tediously click around before you can begin working. Instead, documents become active when opened. SR1 also makes it easier to switch between several open documents—the Windows menu now lists *all* open documents, even the ones minimized in OS X's Dock.

Long documents were sometimes tough to navigate in Word X: the scrolling buttons were sluggish, and the scroll bar caused sudden jumps in position. With SR1, even 100-page documents scroll smoothly.

If you often use characters that require the option key (such as the *é* on the end of *sauté*), you'll be happy to note that you don't have to press the option key combination twice to access them in the updated Word.

Most important, you'll spend less time restarting Word—and your Mac. Printing Word X documents no longer causes the Print Center's print queue to fail, so you should see fewer print errors. You can also drag and drop items within tables—even large ones—without fear of crashing.

Entourage X

For Entourage X users, the most striking thing about SR1 may be what's missing. The update lacks any support for synchronizing a Palm PDA with Entourage X's personal information management tools. Microsoft says that Palm compatibility is on the way with an upcoming free download—it's expected to be ready July 15.

Still, the SR1 update does offer enhancements to Entourage—most of them under the hood. Entourage's database isn't accessed as often, so your laptop's hard drive will spin up less often. As a result, battery life should improve. The database is also larger, giving you more room for messages and other items. And the database now informs you when it's getting full.

Improvements to IMAP mail include the ability to synchronize folders for a more accurate indication of what's on the mail server. The Entourage Database Daemon, which launches automatically when you start your Mac and always runs in the background, is not only faster but also stabler.

SR1 also fixes a number of pesky Entourage X bugs, such as problems with text encoding—for example, e-mail in which apostrophes turn into commas.

WHAT'S NEXT

Apple typically has a major presence at Seybold San Francisco. The design and publishing conference begins September 9.

Excel X

You'll also find several bug fixes for Excel X, including a solution to one particularly frustrating problem that made it impossible for Excel 98 users to open some Excel X files. To get around the glitch, you had to copy and paste a workbook's contents into a new document. But with SR1, any workbook saved in Excel X will open properly in Excel 98.

SR1 also expands some of Excel's features. Excel X let you import information from FileMaker databases; you could even update imported information to reflect modifications to a database. The only problem was that the database had to be on the same Mac as the Excel workbook, making the feature awkward to use in workgroup situations. SR1 solves this problem by letting you access a FileMaker database located on a server.

PowerPoint X

PowerPoint users will appreciate the much needed boost in performance provided by SR1—particularly for presentations containing lots of imported graphics. Display accuracy is also noticeably better with animated transparent objects.

The update fixes the most troubling glitches in PowerPoint X. When you use mirrored monitors for a presentation, slide shows no longer disappear from the second monitor or projector when you switch applications on the primary monitor. Also, PowerPoint no longer quits when you wake a laptop after disconnecting from a second monitor or projector.

The Whole Package

As a testament to the tight integration between the various Office v. X programs, several of the changes introduced in SR1 cross program boundaries to affect the entire Office suite. The most significant of these are speed and stability. From improved printing in Word to improved battery life in Entourage, every program has benefited in some way from this power boost.

If you use the latest version of Apple's operating system, OS X 10.1.5, you may also notice clearer, more attractive text throughout the Office suite. Office now uses OS X's Quartz drawing engine to smooth the edges of text. Quartz smoothing has no effect on the quality of printed text; you can turn it off through Preferences.

And although you may not have missed him, Microsoft's Office Assistant—the equally beloved and despised animated character that offers suggestions and help topics as you work—no longer opens as an empty white box. With SR1, the Assistant appears immediately—assuming you don't turn the feature off.—TOM NEGRINO, NAN BARBER, AND TONYA ENGST

LACIE PERIPHERALS FEATURE NEW ENCLOSURE DESIGN

Case Closed

It's easy to take the cases your peripherals come in for granted. But if you stare at them every day—especially if you've got a whole stack of them—their design can become more important than you might imagine. That's the concept behind the d2, LaCie's latest case design, which now encloses the company's FireWire hard drives, CD-R and DVD-R drives, and other peripherals (503/844-4500, www.lacie.com). The heat-dissipating aluminum and the enclosure's lack of an internal power supply mean that most of these drives don't need fans, making them ultraquiet. A blue LED on the front of the enclosure doubles as a power button, and the external power cord locks into place so you don't risk an accidental blackout when you pull on the wrong plug. But perhaps the most intriguing thing about the d2—which measures 6.3 by 6.8 by 1.7 inches, for 3.5-inch hard drives, or 10.5 by 6.8 by 1.7 inches, for 5.25-inch drives—is its versatility. You can lay it flat like any other external drive, and a slide-on base allows you to stand it upright. Even more interesting is its ability to fit into a standard equipment rack—similar to the way you would mount Apple's Xserve server—or a single "minirack" (via optional stacking kits).—JASON SNELL

SMOOTH SAILING FOR MACMANIA CRUISE; SECOND VOYAGE PLANNED

Macs Ahoy: Geek Cruise in Alaska

It was a Mac first—more than 100 Mac users and their families sailing to Alaska and joined by a boatload of Mac experts, including David Pogue, Adam C. Engst, and Bob LeVitus. The weeklong MacMania cruise, a joint production of GeekCruises.com (650/327-3692) and *Macworld*, offered participants a unique mixture of Mac tips and tricks and spectacular Alaskan scenery. Sessions on Office v. X, wireless networking, AppleScript, digital photography, and other Mac topics alternated with time spent in the scenic Alaskan ports of Juneau, Skagway, and Ketchikan, as well as on deck watching glaciers in Glacier Bay (pictured here).

"This is the best conference I've ever been to, and I have more than 200 of them under my belt," LeVitus told the assembled crowd on the cruise's last night.

Neil Bauman, captain of GeekCruises, said that the May 2002 MacMania cruise had the largest attendance of any similar outing thus far—topping previous events such as Java Jam and Linux Lunacy. The event was such a success that Bauman has announced that a second MacMania cruise is in the works. That weeklong cruise, which is set to sail to four Hawaiian islands from Honolulu June 1–8, 2003, will also let Mac users mingle with Unix geeks—the Perl Whirl GeekCruise will take place simultaneously on the very same ship.—MACWORLD STAFF

FILEMAKER PRO 6 LOOKS TO SAVE TIME, STEPS WITH NEW FEATURES, XML SUPPORT

New Tricks, Fewer Clicks

FileMaker (800/325-2747, www.filemaker.com) was among the first major Mac developers to offer support for OS X, coming out with the native FileMaker Pro 5.5 less than two months after Apple shipped its next-generation operating system. Its upcoming release—FileMaker Pro 6—continues to refine its OS X capabilities, while maintaining support for OS 8.1 and higher. But more important, the updated version of the database program sports a number of productivity boosters that should allow you to assemble and maintain databases in fewer steps. It also includes fully integrated XML support, making it easier to exchange data and integrate with other applications. FileMaker Pro 6, available in mid-July, will ship for $299. Existing FileMaker users can upgrade for $149.—PHILIP MICHAELS

The Sharper Image

You'll notice a change as soon as you launch FileMaker Pro 6. The application has 21 new templates, now organized by category. A drop-down menu lets you choose between templates filed under Home, Education, and Business.

The new version of FileMaker features batch-import capabilities that let you import any folder of files into a FileMaker database with one click. Importing downloaded digital images has also been streamlined; version 6 imports everything in a single step, instead of one image at a time.

If you're using OS X, you can import images and data, such as aperture, exposure length, and flash setting, directly into a database from your camera, in a single step. Version 6 recognizes cameras supported by OS X, so there's no need for any driver software.

A Real Find

FileMaker's find-and-replace tool is now more like a word processing program's, capable of finding and replacing text throughout a database. You can use the tool to change a specific text string, which is all or just part of a field's contents. It can also replace field labels and text that appear in multiple layouts and fields, respectively.

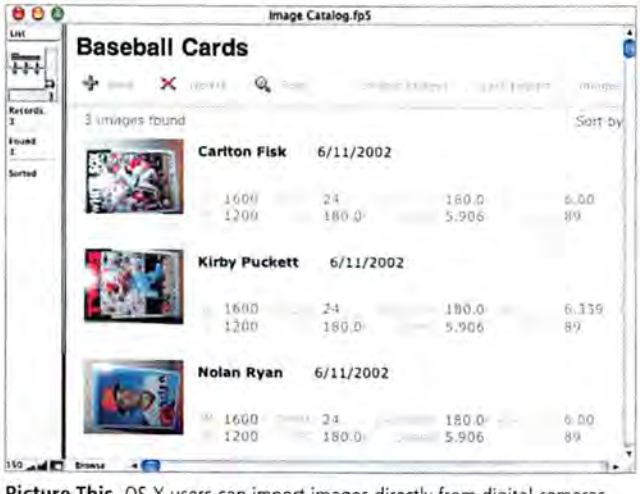
FileMaker's Find tool performs OR and AND finds more easily. The application also lets you choose a sort criterion with one click in a field's context menu. A new Format Painter tool lets you copy text-block and object attributes such as color, font, and size and apply them to other objects and text in a matter of clicks.

As Easy As X, M, L

Version 6's major addition—fully integrated support of Extensible Markup Language, or XML—isn't as immediately visible as digital-image capture and new productivity tools. But it's just as important when it comes to allowing FileMaker users to share data with colleagues and other applications.

The lingua franca of data organization, XML provides the means for communicating exactly how a data set should be organized. And thanks to FileMaker 6's new XML capabilities, any program that can accept XML-supported data can share information with FileMaker.

Version 6 is capable of exporting XML data to any text-based format. It can also import XML data from the Web, corporate data sources, XML-aware applications, and other FileMaker databases. That makes it easier to share reports and data, even with users who aren't running FileMaker.



Picture This OS X users can import images directly from digital cameras.

Find Replaced FileMaker's revamped find-and-replace tool has a familiar feel.

The missing piece of the Mac OS X puzzle

Introducing Drive 10 version 1.1.
Optimizes and defragments your Mac OS X drives and much more.

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 Mac OS X's native environment.

And with the introduction of version 1.1, you can now optimize and defragment your Mac OS X drive from within Mac OS X. Plus, we've added a whole host of new repair routines that allows you to find and correct drives problems that other utilities would simply abandon.

Drive 10 is a world-class diagnostic and repair utility. Using time-tested routines developed exclusively for Mac OS X, Drive 10 offers many tools for checking and repairing any drive on your system. The included Drive 10 CD-ROM will boot your machine to repair hard drives that won't even appear on the desktop.

Don't entrust your Mac OS X drive to ancient and outdated utilities. Protect your data and drive safely with Drive 10.

From the makers of TECHTOOL PRO

See us at the MacWorld N.Y. Expo., July 17-19, Booth #1346

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

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The C-700 and C-720 feature a powerful optical zoom lens and ultra-compact body. And Auto Connect USB to easily download and share the most realistic digital images yet. **Nothing's impossible.**

PRO FILE | Q&A WITH JÜRGEN KURZ

X FOR XPRESS

While a number of critical Mac applications have added Mac OS X compatibility, QuarkXPress is not among them. In an interview with *Macworld*, Jürgen Kurz, Quark's vice president of product management, reaffirmed his company's commitment to producing an OS X–savvy product and explained the decision to release the latest version of the popular page-layout program without OS X support.—ANDREW SHALAT

AT A GLANCE

JÜRGEN KURZ
Vice President of Product Management, Quark
MAC: 500MHz Titanium PowerBook G4
SOFTWARE: Adobe Photoshop, Microsoft Outlook Express

Was the decision to release QuarkXPress 5.0 without OS X compatibility a conscious one, or was it a production issue?

Basically, when we started out doing the final release cycles, we had a significant beta-test program. The OS X platform was not actually ready at that time. It had just started shipping. So we decided to get [version 5.0] out the door. We started building a parallel OS X build, and we did a lot early on. But from a production perspective, for our customer base, [and because of] some of the significant changes in the [OS X] print engines, we had to get a 5.0 release out and work full speed on a native release. And we feel that with [the upcoming Jaguar update], which has a lot of changes that start making it look like a very professional printing engine, [OS X] is getting ready for prime time, and we're getting ready for prime time, too.

When is the OS X version of XPress going to be released?

We're going to have something out to the print shops relatively soon. If we get the print stuff to work well, the other stuff is obviously just as important from the user and interface perspective. But I can't make a prediction.

So the OS X version of your product won't be taken to the marketplace until it's bulletproof?

We have to do that. You can expect that from us. Again, one of the most important things for Quark is producing quality software and protecting our customers' workflows, helping them be productive. We've been in professional publishing for well over a decade, and we'll continue to be absolutely dedicated to the creative community. We're not goofing off into all kinds of different directions. Of course, there are new challenges we need to face, media-independent publishing being one of the foremost, and making that a reality from a cost and quality perspective. I think the publishing community will be very fond, as we are, of the product we'll release in OS X and very proud of the quality of QuarkXPress 5.0.

More Info:

www.macworld.com/2002/08/macbeat/kurz.html
Is Quark worried about increased competition from Adobe InDesign? Find out in *Macworld*'s online interview with Jürgen Kurz.

USB 2.0 MEANS FASTER THROUGHPUT—BUT CAN IT TOP FIREWIRE?

Faster USB? It's in the Cards

Think of USB as a two-lane country road—it can manage a little traffic, but a steady flow results in bumper-to-bumper congestion. In the same way, USB 1.1's 12-Mbps throughput is fine for a mouse and keyboard but woefully inadequate for a CD-R or hard drive.

Intel hopes to change that with USB 2.0. Rated at 480 Mbps, the new connectivity standard is better able to handle high-speed peripherals than its slower predecessor. But the faster throughput is lost on most Mac users—since Apple has eschewed USB 2.0 in favor of FireWire, your Mac will treat USB 2.0 devices as if they were USB 1.1 peripherals.

If you're an OS X user who's eager to enjoy the benefits of USB 2.0, a growing number of vendors offer cards you can install in a PCI slot. In our burning and copying tests, USB 2.0 was markedly faster than USB 1.1. (OS 9 users won't see any benefit, USB 2.0 card or no.)

Although FireWire is rated only for 400 Mbps, it still tops or matches USB 2.0 in every one of our tests. The reason is that USB relies on a computer's processor, while the FireWire chip can do more of the processing itself—so USB 2.0 is faster on faster computers.

But as the drivers and ATA-to-USB bridge chips improve, we could see USB 2.0 move closer to its theoretical maximums. That will be good news for offices that want to share peripherals between Macs and FireWire-less PCs without feeling like they're stuck in traffic.—KRISTINA DE NIKE

Winning Combination of Speed and Capacity

Macworld LAB TEST	Burn 700MB to External CD-R	Copy 680MB from External Drive	Duplicate 100MB File on External Drive
USB 2.0	3:41	1:08	0:14
FireWire	*3:41*	*0:34*	*0:7*
USB 1.1	*22:00*	*13:00*	*4:02*
	< Better	< Better	< Better

BEST RESULTS IN **BOLD**. REFERENCE SYSTEMS IN *ITALICS*.

Scores in minutes:seconds. All tests were run in OS X 10.1.4 on a dual-1GHz Power Mac G4 with an OrangeUSB 2.0 PCI card, from Orange Micro, and 512MB of RAM. We connected a LaCie U&I 40×12×48 CD/RW drive and used the bundled Roxio Toast Lite 5.1.3 for our CD-burning tests. For external hard-drive tests, we used an 80GB WiebeTech Desktop GB drive.—MACWORLD LAB TESTING BY JAMES GALBRAITH

Shrink Wrap

COMPANY	PRODUCT	PRICE	CONTACT	PORTS
Adaptec	USB2connect 3100LP	$50	800/442-7274, www.adaptec.com	4
	USB2connect 5100LP	$70		6
FirewireDirect	PCI FireWire/USB Combo Adapter	$100	512/302-0012, www.firewiredirect.com	6
Iogear	Hi-Speed USB 2.0 PCI Card	$35	888/999-2836, www.iogear.com	2
	Hi-Speed USB 2.0 PCI Card	$60		5
	USB 2.0/FireWire PCI Card	$130		3
Keyspan	USB 2.0 Card	$59	510/222-0131, www.keyspan.com	5
Orange Micro	OrangeUSB 2.0 Hi-Speed PCI	$49	714/779-2772, www.orangemicro.com	5
	OrangeLink+ FireWire/USB 2.0 Hi-Speed	$99		4

FIREWIRE CASES LOSE SIZE, ADD PORTABILITY

Smallville

The makers of FireWire-drive enclosures are pushing the envelope by shrinking it. With users clamoring for portability, the cases for enclosing hard drives are now small enough to fit in the palm of your hand—and the smallest fits on a key chain.

The FireWire Depot Cutie

Scarcely larger than the drives they hold, most enclosures support 2.5-inch drives—the kind found in most laptops. Some enclosures house 1.8-inch hard drives, such as those found in iPods. No matter what their size, these enclosures can do without an AC adapter, as they draw power from the FireWire bus. Some, like FireWire Depot's Cutie, don't even come with power adapters (though they're available as an option).

These enclosures offer portability but suffer a little in performance. The small drives they encase have slower rotation speeds; 2.5-inch drives top out at 5,400 rpm, with the majority running at 4,200 rpm—the bare minimum for editing digital video and a far cry from the 7,200-rpm speeds full-size hard drives offer. To offset this performance hit, these newer enclosures sport Oxford 911 chip sets to improve transfer rates.

One of the smallest FireWire enclosures in the 2.5-inch drive line is the 6.75-ounce Cutie. Also available for USB 2.0, it accepts only 9.5mm-thick drives, giving it a maximum capacity of 40GB with an IBM Travelstar 40GN or a Toshiba Super Slimline 40GB drive. FirewireDirect's Spark III EmPowered Enclosure is a 9.5mm enclosure that adds an integrated LiIon battery for portable use without an AC outlet—important for laptops that lack a powered FireWire bus, such as Wall Street and Bronze PowerBooks.

Other enclosures can accept both 9.5mm- and 12mm-thick drives, upping capacity to 60GB. Add a hard drive to one of these, and you truly *can* take your DV show on the road.—ANTON LINECKER

Shrink Wrap

COMPANY	PRODUCT	PRICE	CONTACT
FireWire Depot	Cutie 2.5 FireWire	$125	707/251-9228, www.fwdepot.com
FirewireDirect	Spark III EmPowered Enclosure	$129	512/302-0012, www.firewiredirect.com
	MP 2.5 eDrive 911	$125	
Other World Computing	Mercury On-The-Go Portable Kit	$90	800/275-4576, www.otherworldcomputing.com
Transintl.com	Ultra Compact Portable FireWire	$89	714/634-1583, www.transintl.com
WiebeTech	MicroGB	$160	316/744-8722, www.wiebetech.com

PRODUCT WATCH

AUGUST 2002

Messenger Service

As Microsoft (800/426-9400, www.microsoft.com) releases an update to MSN Messenger, it's getting so that you need a scorecard to identify the players in the increasingly crowded market for instant-messaging applications. More than half a dozen such programs run in OS X—and now Apple is about to leap into the fray.

iChat, Apple's spin on AOL's instant-messaging client, is scheduled to appear in a future OS X update. Microsoft hopes that MSN Messenger 3.0—which runs only in OS X—will stand out from the crowd. It includes improvements to the communication and contact-management features, as well as an overhauled interface.

On the communications front, MSN Messenger adds file-transfer capabilities. Users will be able to transfer digital photos, MP3 files, and other documents to anyone on their Buddy Lists. Since file transferring is interoperable, Mac users will be able to send files to anyone using the Windows version of Messenger.

The updated Messenger lets users organize their contacts into groups, matching a feature available in AOL Instant Messenger and Yahoo Messenger. Version 3.0 also lets users import and export their contact lists.

The most visible change in MSN Messenger 3.0 is the application's new interface. The program has adopted OS X's look-and-feel, even using the OS's Quartz drawing engine to improve the readability of on-screen text. A new contextual menu lets you sign out of Messenger, change your status, transfer files, and view your contact list directly from the Dock. The toolbar and icons are now dynamically resizable. And the latest version adds a drop-down list of emoticons for easy reference.—PHILIP MICHAELS

Hardware

Displays

Four displays from ViewSonic (800/888-8583, www.viewsonic.com): The **P95f+** ($345) is a 19-inch CRT monitor with a maximum resolution of 1,920 by 1,440 pixels. The **P75f+** ($235) is a 17-inch CRT display with a 1,792-by-1,344-pixel resolution. The 15-inch **VE510+** ($499) is an LCD monitor with a 1,024-by-768 optimum resolution, 300 nits of brightness, and a 450:1 contrast ratio. The **VX500+** ($539) is also a 15-inch LCD monitor, with an optimum resolution of 1,024 by 768, 330 nits of brightness, and a 550:1 contrast ratio.

Printers

Two color printer lines from Xerox (800/835-6100, www.xerox.com): The **Phaser 8200** solid-ink color printer uses single-pass technology to deposit all colors on the paper in one pass. It comes in four models that vary in resolution, network connectivity, paper input capability, and other features: the **8200/B** ($1,499), **8200/N** ($1,899), **8200/DP** ($2,199), and **8200/DX** ($3,499). The **Phaser 6200** color laser printer also uses single-pass technology and comes in four models: the **6200/B** ($1,999), **6200/N** ($2,399), **6200/DP** ($2,599), and **6200/DX** ($3,999).

Scanners

A network-capable scanner from Microtek (310/687-5940, www.microtek.com): The **ScanMaker 6700** ($400) offers 48-bit color depth and a 4,800-by-2,400-dpi optical resolution. It has FireWire and USB connections.

Software

Animation

MotionBuilder 4.0, from Kaydara (888/842-6842, www.kaydara.com): The 3-D–animation software, formerly known as FilmBox Animation, has a redesigned drag-and-drop interface, automatic character rigging, lip-sync and facial-

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WHAT'S HOT

A Quick Look at the World of Tech

1. **Macromedia and Adobe win patent-infringement lawsuits against one another.** *The separate rulings will certainly prove to be an obstacle in the upcoming releases of Adobe FireFlash and Macromedia FotoShoppe.*

2. **Apple rolls out the Xserve, a rack-mounted server for the enterprise market.** *Next up: the iServe, a consumer-friendly rack-mounted server available in an array of fruity flavors.*

3. **Apple is slated to open a retail outlet in Las Vegas.** *The Las Vegas Apple Store will feature the latest hardware and software, tech support from helpful Mac Geniuses, a two-drink minimum, and two nightly performances by Wayne Newton.*

4. **Steve Jobs kicks off Macworld Conference & Expo New York with a keynote address.** *In lieu of product announcements, the Apple CEO spends his entire two-hour speech reenacting his favorite scenes from the latest Star Wars movie.*

animation tools, and real-time display. Available in August, it runs in OS X ($3,495).

Development Software

RealBasic 4.5, from Real Software (512/328-7325, www.realsoftware.com): The application-development tool adds vector graphics support, lighting improvements, and collision detection for the 3-D engine, as well as an enhanced database engine, including MySQL support. (Pricing varies [starts at $100]; upgrades start at $30.)

Networking Software

BoxIT, from SysteMacs (650/968-0549, www.systemacs.com): The program allows network administrators to install system software and applications on multiple Macs from a remote computer by creating a disk image of a Mac and deploying it across a network. BoxIT also offers backup and restore functionality. (Prices vary, starting at $5,500 for a single computer.)

Productivity Software

Eudora 5.1.1, from Qualcomm (800/238-3672, www.eudora.com): The e-mail client software adds OS X compatibility, a Secure Sockets Layer, and enhancements to the Mood Watch ($40; upgrade, free if you've bought Eudora in the past year, $30 otherwise; sponsored and light versions, free).

Meeting Maker 7.1, from Meeting Maker (781/487-3538, www.meetingmaker.com): The latest version of the calendaring and group scheduling system adds OS X compatibility and Palm Sync conduits ($95 per seat; upgrade, check with company).

Science/Engineering Software

CalculationCenter 2, from Wolfram Research (800/965-3726, www.wolfram.com): The calculation application adds new statistics capabilities and enhanced error-correction technology. It also supports MathML 2.0 and the DXF and STL 3-D file formats ($295; upgrade, $89).

Utility Software

Spring Cleaning 5.0, from Aladdin Systems (800/732-8881, www.aladdinsys.com): The uninstaller utility, which runs on OS 8.6 and higher, including OS X, adds drag-and-drop capabilities, customizable searches, and an enhanced Cookie Editor. The OS X version features a System menu, QuickCompare optimization, and Root-Access allowances ($50; upgrade, $30).

Workstrip X, from SoftChaos (44 [0]20 7434 0775, www.softchaos.com): The productivity utility adds OS X compatibility to offer an alternative to OS X's Dock. The utility also returns Trash to the desktop ($39).

Announced

Court Ruling

A legal victory by Macromedia (800/470-7211, www.macromedia.com) in a patent-infringement countersuit against Adobe (800/833-6687, www.adobe.com): Macromedia claims that Adobe infringed on patents for a draw-based editor for Web pages and a hierarchical-structure editor for Web sites. It was awarded $4.9 million. Macromedia's victory follows a court ruling in favor of Adobe that found that Macromedia had violated two of its patents (see "Product Watch," *Mac Beat*, July 2002).

Apple Moves

A **QuickTime 6** preview, from Apple (800/692-7753, www.apple.com): Along with the free multimedia player, Apple released a preview of **QuickTime Broadcaster**, which encodes content in MPEG-4 for live Web streaming. Apple's **eMac** desktop system, formerly sold only to education customers, is now available to consumers for $1,099.—COMPILED BY PHILIP MICHAELS

Mac OS X Updates

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Aladdin iClean 5.0
Tool for deleting cookies and caching files

Boris Calligraphy X 1.1
Final Cut Pro plug-in that controls fonts

CADintosh X 4.2
2-D CAD program for technical and architectural drawings

Canon S520 1.3
Canon S520 printer driver

Chimera 0.2.8
Web browser based on Fizzilla

Connectix Virtual PC 5.0.3
Update for Windows-emulation program

Dantz Retrospect VXA driver update 2.6
Update for Retrospect 5 users with VXA drives

DropSite Courier 2.0
Automated file-transfer utility

Font Explorer 1.0 X
Font browser that finds specific characters in a font

Griffin iMate X 1.5.1
Adapter connects ADB devices to USB ports

iBot 1.0.1b3
FireWire desktop video-camera driver

Investor/RT 5.6.3
Real-time charting and analysis tools for stocks

iTunes Remote 1.5.1
Controls iTunes from any application and across networks

Linksys wireless cable/DSL 4 port router 1.42.7
BEFW11S4 firmware

MegaPEG QT 1.5.9
Plug-in exports QuickTime movies to MPEG-1 or MPEG-2

Moo 1.0
Optimizes machines and helps load apps faster

MP3 Rage 5.0
MP3 ID3 tag editor, player, and cataloger

Netscape X 7.0pr1
Preview release of Web browser

Nikon Scan X 3.1.3
Coolscan/LS film scanner driver

Nisus Email 1.6.1
Adds OS X compatibility

OmniWeb 4.1b7
Web browser

Procreate KnockOut 2.0 update
Addresses issues with Photoshop 7 compatibility

Snapz Pro X 1.0.3
Bug fix for screen-capture tool

Time Cache X 5.0.1
Time and expense project tracking app

Vindigo X 2.0
Mac conduit for Palm OS city guide

VueScan 7.5.30
Scanner software for flatbed and film scanners

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www.macworld.com/subject/updates

DAVID PAPAS

PAINT COVERS LAPTOP SCRATCHES

Brush Up Your TiBook

Like all Titanium PowerBook G4 owners, Ian Sanderson appreciates the sleek design and appearance of Apple's high-end laptop. What he's not so keen on is how easily nicks and scratches can cause the PowerBook's pristine paint to flake off. After one too many chips appeared on his laptop's outer bezel, Sanderson spent a week mixing enamel paints until he found a match for the PowerBook's distinctive shade of light silver. "Then I thought, 'Why not make a business of it?'" says Sanderson, the 19-year-old Southern Californian who started TiPaint.com. For $13, you get a vial containing enough paint to cover about a third of the laptop's bezel, as well as an applicator—a wooden toothpick. It's a low-tech approach, Sanderson concedes, but the toothpick's small, sharp point dabs on enough paint to cover scratches without causing unsightly splotches. If blemishes have found their way onto your PowerBook's casing, don't fret—TiPaint also sells Titanium-colored touch-up paint for $13. A combo pack including both shades is available for $20. Sanderson is no art critic, but he knows what he likes. "You have to look pretty close to tell that it's patched," he says. "It's certainly better than seeing the black flecks underneath the paint."—PHILIP MICHAELS

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ADOBE PHOTOSHOP 7

Image Editor Emerges for Mac OS X, Provides Handy New Features for Every User

BY BRUCE FRASER AND BEN LONG

Adobe Photoshop is now 12 years old—in software years, that makes it at least an octogenarian. It has a depth and maturity that few other applications can match, and its latest iteration, Photoshop 7, not only offers Mac OS X support but also makes the program even more helpful for OS 9 and OS X users alike. Digital photographers and fine artists will be pleased with Photoshop 7's organizing and painting features, and longtime Photoshop users will find this upgrade essential.

The OS X Question

Photoshop 7's most significant attribute is that it runs natively in OS X. Given this, you may guess that the interface has changed greatly, but it hasn't—you'll find the familiar palettes, toolbar, menus, and shortcuts. However, a welcome addition in Photoshop 7 is the ability to rename a layer or channel simply by clicking on its name in its respective palette and then typing—much easier than the option-double-click routine required in previous versions. And even though it may take you a while to get used to looking for the Preferences option in the Photoshop application menu rather than in the Edit menu, Photoshop 7 looks and feels like the Photoshop you've come to know and love.

Photoshop 7 runs almost as fast under OS X as it does under OS 9, and in our quantitative tests, we found that actual speed differences were slight. If you're in a high-volume production situation where you're running automated batch operations, you may be better off sticking with OS 9, to reap the accumulated speed benefits. But if you're working interactively and using any Mac upward of a 933MHz or dual-500MHz Power Mac G4, the speed difference will likely be trivial. We performed standard operations such as Gaussian Blur, rotating, and resizing on a 100MB image, and the difference in elapsed time between OS 9 and OS X was generally only a couple of seconds.

Of course, there are other reasons, besides speed, to choose OS X; among them are improved system stability and the ability to run other applications concurrently with almost no negative impact on performance.

When we compared Photoshop 7 with Photoshop 6.0.1, both running in OS 9, we found that version 7 runs as fast as, and in some cases faster than, its predecessor. Mode changes, for example, are dramatically faster in Photoshop 7, mainly because they have been optimized for AltiVec acceleration, which was left out of Photoshop 6. But for the most part, when running in OS 9, Photoshop 7 doesn't offer any major speed advantages over Photoshop 6.

Photoshop Productivity

Even given negligible speed differences, you can still work faster in Photoshop 7 than you could in Photoshop 6, especially using two new features in Photoshop 7 that have an enormous positive impact on productivity: Workspaces and Tool Presets.

Unless you're lucky enough to have a dual-monitor setup, you probably spend a good deal of time rearranging palettes in Photoshop. The new Workspace feature helps reduce the amount of time wasted on this activity; it lets you name and save different arrangements of palettes, including the current configuration of the Info palette. Saved workspaces appear on the Workspace submenu of the Window menu, so you can recall them quickly and easily. For example, when you're working on text layers, you usually need access to the Character and Paragraph palettes, but the rest of the time those palettes just take up valuable screen real estate. But if you save a workspace, you can bring up the Character and Paragraph palettes while hiding, say, the Actions and History palettes with a single menu command.

Equally valuable is the new Tool Presets palette, which lets you name and save settings for any tool and then recall the settings with a single click. For example, you can make presets for the Crop tool that crop an image to 4 by 5 inches or 8 by 10 inches at 360 pixels per inch for ink-jet prints, and 4 by 5 inches or 8 by 10 inches at 266 pixels per inch for offset printing. This is much faster than typing numbers into the Options bar every time you use the Crop tool.

Find What You Need

Photoshop 7 also offers a new feature, the File Browser, that lets you find and organize your files much better than OS X's limiting Open dialog box. Photoshop's new File Browser means that you may never have to visit the Open dialog box again (see "Browse with Abandon").

Like digital-asset managers Canto Cumulus and Extensis Portfolio, the File Browser shows you your volumes, folders, and subfolders, and it displays previews of the images contained therein. You can select one or more thumbnail previews and then double-click to open the actual images.

But there's more to the File Browser. You can move files by dragging them to a different folder or volume in the hierarchical-folder panel at the left of the Browser window, delete them by selecting them and pressing the delete key (which

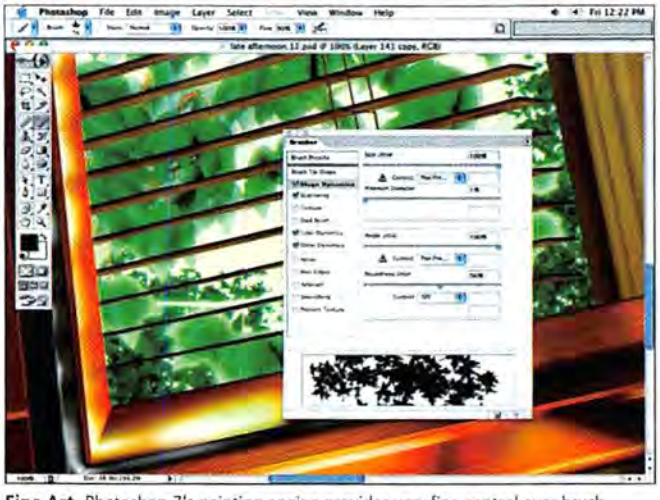

IMAGE COURTESY OF BERT MONROY

Fine Art Photoshop 7's painting engine provides very fine control over brush shape, texture, color, and many other characteristics. A preview based on your selections appears at the bottom of the Brushes palette so you know what to expect.

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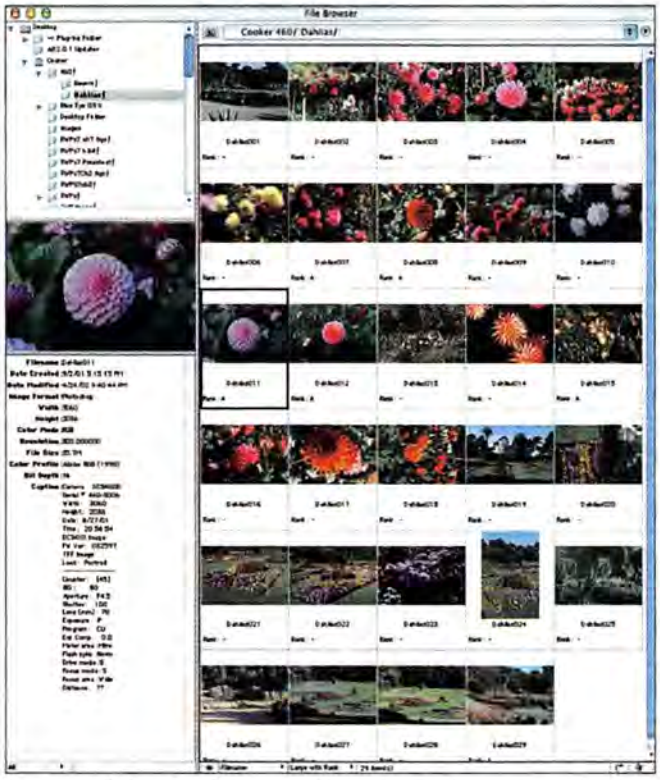
47 Keller on Cameras

This month, Jeff weighs in on three unique 2-megapixel point-and-shoot cameras: the Fuji FinePix 2800 Zoom, the Minolta Dimage X, and the Nikon Coolpix 2500.

OUTSTANDING: ●●●●● VERY GOOD: ●●●● GOOD: ●●● FLAWED: ●● UNACCEPTABLE: ●



Browse with Abandon The new File Browser not only lets you see your images and open them by double-clicking, but also lets you move, delete, organize, and rename them. At the lower left is the metadata for the currently selected image.

moves them to the Trash), or rename them by clicking on the file name and typing a new name. For those pesky digital-camera files with obscure default names, you can use the File Browser's Batch Rename feature to change the names "DCS00710.TIF" through "DCS00950.TIF" to something more descriptive, such as "Dahlias 001" through "Dahlias 024."

The File Browser also lets you mark images for rotation, and Photoshop will apply that rotation when you open the image. You can sort images by file name, resolution, width, height, file size, copyright information, color profile, or creation and modification dates. You can also rank them from A to E, either by selecting a single image and typing the desired ranking in the Rank field or by selecting one or more images and choosing the desired ranking from the context-sensitive menu. This can be convenient if you want to see

ImageReady 7

As with previous versions of Photoshop, Adobe has chosen to place many of its Web-authoring features in ImageReady, a separate, bundled application that has also been upgraded for this release. (Users of the last release might be a bit surprised to see that ImageReady is now at version 7. Don't worry—you didn't miss out on versions 4, 5, and 6. Adobe has simply opted to match ImageReady's version number to Photoshop's.)

Because ImageReady includes all of the same exporting and Save For Web features as Photoshop, the new version has been upgraded with all of Photoshop 7's image-exporting enhancements (see "Photoshop on the Web"). Unfortunately, though, it lacks a notable new feature introduced in Photoshop 7: implementing the File Browser in ImageReady, too, would have made sense.

The biggest addition to ImageReady 7 is the improved Rollovers palette, which works in concert with the Layers palette to create JavaScript rollovers and is now much easier to navigate. You can use the Rollovers palette to automatically slice your document and create rollover states for each slice.

Say, for example, that you have a Web page with a tabbed menu, and as you roll over each tab, you want a graphic on another part of the page to change. In Photoshop, you create each tab and each separate graphic on its own layer. Then, using ImageReady, select each tab layer and click on the Create Layer-Based Rollover button in the Rollovers palette. ImageReady will create a slice for each layer and allow you to create a separate state for every user action—mousing over, down, up, and so on. Then, to see each state, you can use the helpful, expandable drop-down menus.

As in ImageReady 3, you can click on a state in the Rollovers palette and then configure your Layers palette to define the settings for that state.

Adobe has done a good job with the Rollovers palette, but it can take a while to remember that the Rollovers palette affects the state of your Layers palette. If you realize that the opacity on several of your layers has suddenly changed, it might be that you've clicked your document over to a different rollover state. It would be nice if Adobe could devise some kind of visual cue to remind the user that the Layers and Rollovers palettes are tied together.

ImageReady 7 also provides support for data-driven graphics, using the same approach that was introduced in Illustrator 10 (●●●●; *Reviews*, March 2002). Using the Layers palette, you can configure graphic elements as variables and then replace those elements with data grabbed from an ODBC-compliant server.

As with previous versions, Adobe has engineered good integration between Photoshop and ImageReady. In Photoshop, you can simply click on the Jump To ImageReady button at the bottom of the main tool palette to open your document in ImageReady. The file stays open in Photoshop, and any changes that you make in ImageReady are automatically reflected in Photoshop.

Adobe's division of labor among separate applications may seem a little bulky when compared with a product such as Macromedia Fireworks, which offers vector and bitmapped painting, as well as animation and JavaScript-authoring tools. However, when you factor in Photoshop's superior interface and its raw image-processing power, Adobe's approach, though much more expensive, makes sense, and ImageReady 7 is a valuable upgrade for users who regularly use Photoshop for Web development.

RATING: ●●●●½

PROS: Healing brush, File Browser, and Auto Color are huge time-savers; powerful new painting engine; numerous small interface improvements.

CONS: Lack of text import makes Check Spelling command less useful; changes to TIFF and PSD support may cause confusion.

PRICE: $609; upgrade from previous versions, $149

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

Auto Color Me Beautiful Auto Color provides a quick but precise means of setting basic tone and color. The initial image (left) would require considerable work with levels and individual channel curves before you saw anything close to reasonable tone and color. Using its default settings, Auto Color improves the image (center), but the contrast is still too high, and the color balance is too cold. With three very quick tweaks, we set highlight clipping to 0.01 percent, set shadow clipping to 0.00 percent (shadows were already dark enough), and adjusted the midtone target color until the clouds appeared neutral, which required increasing the red and decreasing the blue (right). The image updates in real time as you change the settings, and you can check the numbers on the Info palette while the various dialog boxes are open.

only your best or favorite images, to which you might assign an "A" rank, for example. The File Browser doesn't let you perform the kinds of sophisticated searches you can perform in a dedicated digital-asset manager, but it has all the features most users are likely to need.

Last but not least, the File Browser displays *metadata*—literally, data about data—that's embedded in the images, including Photoshop's File Info, EXIF (Exchangeable Image Format) data embedded by many digital cameras, and information that Photoshop extracts, such as file format, resolution, width and height, color mode, bit depth, and color profile.

We encountered only one problem when using the File Browser's metadata support. We've yet to see a camera that captures sRGB, but many cameras that embed EXIF metadata incorrectly tag photos as sRGB. Photoshop honors this tag and opens the image as sRGB. If the camera software also embeds an ICC profile, Photoshop honors the profile over the EXIF tag, but in the case of at least one camera, the Nikon D1X, it embeds the correct profile in TIFF files but fails to do so in JPEG files. As a result, even if you've set the camera's software to convert images to Adobe RGB, if you save them as JPEG files, they'll get the sRGB tag. This isn't Photoshop's fault—it's a problem for the camera vendors to solve—but it's something to watch for.

Heal It, Patch It

Retouching an image—spotting out defects such as dust, scratches, or digital-camera artifacts, or removing moles, scars, and wrinkles—has always been a tedious process. With the Clone Stamp tool, which remains in Photoshop 7, it's easy to move pixels from another area to cover a blemish, but it's also easy to produce an unnatural-looking result when the textures don't match, particularly around the edge of the repair. One hard-won solution is to be very careful with your selection of source points, brush hardness, opacity, and use of the blending mode, but the new Healing brush produces seamless repairs with a minimum of fuss in much less time.

The Healing brush works by first making a Clone Stamp tool edit and then taking the result of that edit and blending it seamlessly into the surrounding texture in a way that's simply impossible to replicate using the older tools. Using hard brushes seems to work somewhat better than using soft ones, but you can be much more casual about selecting the source point when you're using the Healing brush than you ever could with the Clone Stamp tool.

For quick fixes on larger areas, Photoshop 7 offers the Patch tool, which shares a slot in the Tool palette with the Healing brush. To use it, just select the area you want to correct, choose the Patch tool, drag the selection to an area that has the approximate color and texture you want in the repair, and presto, you're done. If you spend a lot of time doing retouching work, the Healing brush and Patch tools alone are worth the price of the upgrade. (For more on the Healing brush, see "The Wait Is Over," April 2002.)

Auto Color

In the past, Photoshop's various autocorrections have not been very accurate or finely controlled, but the new Auto Color option has real potential for making initial corrections for tone and color. We say *potential* because if you use it with its default settings, you'll likely wind up with rather harsh, contrasty results (see "Auto Color Me Beautiful"). The beauty of Auto Color is that you can tweak the settings interactively and very quickly obtain good tone and color balance without fiddling with individual channels' levels and curves (for tips, see "Master Photoshop 7," elsewhere in this issue).

Just Like the Real Thing

Removing the Brushes palette was one of the few unpopular moves Adobe made with Photoshop 6. Many users clamored to get it back, and the Photoshop team reinstated it as a much-enhanced feature. A boon for fine artists, the new painting engine doesn't provide the wealth of natural-media brushes offered by Procreate's Painter 7 (★★★★; *Reviews*, December 2001), but it offers most of the tools you'd need to build those brushes, and it comes with a healthy collection of presets for various brush types both natural and unnatural.

The variety of brush options may be bewildering at first, but as you adjust each brush stroke, the preview area at the bottom of the palette shows you the result (see "Fine Art"). Graphics-tablet support has also been beefed up: Photoshop's brushes now respond not only to stylus pressure but also, with suitably equipped styluses, to tilt and thumbwheel control, each of which you can set to control a large variety of brush parameters.

The More Things Change . . .

Photoshop 7's lack of new color-management features could be

What about My Plug-Ins?

Third-party plug-ins that work with Photoshop 6 should also work with Photoshop 7 when it's running in OS 9 or in OS X's Classic mode. But when you run Photoshop 7 in OS X, you need plug-ins that have been updated specifically for OS X—non-native plug-ins won't even appear in the menus. A good number of OS X–native plug-ins are already available, including Alien Skin Software's EyeCandy 4000 (★★★★½; *Reviews*, February 2001) and Auto FX Software's DreamSuite (★★★★; *Reviews*, March 2002), and plenty more are on the way. But if your work relies on a particular plug-in that hasn't yet been updated, you'll need to stick with running Photoshop in OS 9 for a little longer.

called a feature in itself. Photoshop 5 and 6 both introduced sweeping changes in the way the application handled color, and the general consensus was that Photoshop 6 got color management right, so Photoshop 7 leaves well enough alone. The one major fix is largely invisible to the user—the Adobe Color Engine has been revamped to address a problematic situation that occurred with some CMYK profiles, where using dithering on 8-bit-per-channel images resulted in a "scum dot" (1 percent ink in one or more channels) instead of paper white.

Photoshop on the Web

Though Photoshop's new tools and interface improvements will ease the graphics chores of all Photoshop users, version 7 builds on Photoshop 6's export facilities for Web-graphics creation.

The first of these improvements is the ability to define one or more colors in a GIF or PNG-8 graphic as transparent. In the Save For Web dialog box, you can now tag any color as transparent simply by clicking on its color swatch and then clicking on the new Transparency button. This is a very simple mechanism that allows you to make any color transparent (and later remove that transparency) without affecting the colors in your original file.

GIF files don't support partial transparency, but Adobe has come up with a clever workaround that lets you create the effect of partial transparency. If you select Transparency Dither in the Save For Web dialog box, Photoshop will render transparent colors in your graphic as a dithered pattern of color and transparent pixels. If you select a matte color—say, the background color of your target Web page—Photoshop will mix some of that color into the dither pattern to better blend your graphic into the background. Though this is a clever idea, the chunky, bitmapped-looking results leave a lot to be desired.

Photoshop 7 retains its predecessor's facility for remapping color values when exporting a GIF image, but it improves on these features by letting you automatically favor the colors of text layers or vector graphics layers. For example, if you tell Photoshop to weight its color reduction in favor of any text layers, then the colors of those layers will be more accurate. For ensuring color fidelity in logos and other corporate imagery, this is a great feature.

You can also choose to favor a particular channel, such as an alpha channel. For example, if you want to prioritize the colors of a specific element in your image, you can create an alpha-channel mask of that area and tell Photoshop to weight its color reduction in favor of the colors within that mask. Before, doing these sorts of optimizations required maniacal adjustment of individual colors within a graphic's palette.

Photoshop 6 added some handy Web features that let designers do many basic Web-authoring tasks—slicing, assigning URLs, naming files, and so on—within Photoshop, while a graphic was being created. Photoshop 7's enhancements, along with the upgraded ImageReady (see "ImageReady 7"), provide a practical set of Web tools. But these features are no replacement for a full-fledged Web-authoring tool. They provide exactly the utilities you need to create Web-ready images.

Sundry Improvements

Adobe threw in a few other minor features to improve the already efficient workflow. Photoshop 7 is scriptable, using either AppleScript or, for cross-platform applications, JavaScript. Scripting support is relevant even to users whose eyes glaze over at the mere mention of scripts or macros—besides creating your own scripts, you can expect to see plenty of useful scripts developed by the scripting-inclined among us.

The new Check Spelling command does a credible job of checking spelling on words you type in Photoshop 7. The Find And Replace Text feature also performs as claimed, but we'd find both features a lot more useful if Photoshop let us import text through a better mechanism than copy and paste.

Other enhancements include significant reworking of the Liquify and Picture Package features, support for PDF security, a new PatternMaker plug-in, and support for Adobe's XMP (Extensible Metadata Platform) schema, which may one day do for workflow automation what PostScript did for page layout.

Documentation and Support

Photoshop 7 comes with a printed manual and HTML-based online help. The printed manual is considerably better than the one that accompanied Photoshop 6, with improved reference information. The online help has more detailed information, but it's not very deep.

Free (but not toll-free) telephone technical support is available for 90 days from the date of your first call, for new purchases (30 days for upgrades). After that, you pay for support (through Adobe, from selected third-party help providers)—you pay a $25 fee, but only after the issue is resolved to your satisfaction. Adobe's Web site also offers a searchable help database, and a wonderful resource in the form of the User-to-User forum.

Macworld's Buying Advice

Photoshop 7 is quite simply the best version of Photoshop ever. With the File Browser, the Healing brush, and the Painting Engine, Photoshop 7 provides something new and useful for just about every user, and the $149 upgrade price is less than the cost of many third-party plug-ins. If you use Photoshop more than a few hours a week, you must have Photoshop 7. □

If you're used to thinking of PSD files as including layers and TIFF files as flattened, Photoshop 7's changes to the these file formats could cause you grief. In Photoshop 6, Adobe introduced the ability to save layers and vector data in TIFF files, but it hid the options behind a Preferences setting. In Photoshop 7, all the TIFF options are enabled by default, so anything you can save in a PSD file—layers, vectors, spot channels, alpha channels, transparency, and annotations—you can save in a TIFF. You can also choose several different compression options for a TIFF, including LZW, ZIP, and JPEG.

But just because you can save all those elements in a TIFF doesn't mean that applications other than Photoshop can understand them. Layers included in TIFFs don't seem to present a problem, because other applications ignore the layers and read the flattened composite that is always saved in a TIFF. But vector data will get rasterized, and we don't know of *any* application other than Photoshop that understands ZIP- or JPEG-compressed TIFFs, or spot colors in TIFFs. You need to be aware of the capabilities of the application that will next open the file, and plan accordingly.

The reason for the changes is commendable—Adobe's goal is a single-file workflow, where one file will contain all the Photoshop information in editable form, yet can be placed in page-layout or illustration applications, so you don't have to save both a flat file and a layered one. But it's going to take a while for other applications to rev up their TIFF support.

Photoshop 7 also makes it quite difficult to save PSD files without including a flattened composite, so if your image is just a background with adjustment layers, adding the flattened composite doubles the file size. There are two reasons that Adobe tries to force you to save a composite in a PSD. One is to let applications that claim to read Photoshop files (such as InDesign) interpret the image correctly, because they actually read only the flattened composite. The other is to guard against future changes in Photoshop's layer-blending logic—the idea is to make sure that future versions of Photoshop can retrieve the correct appearance from the composite. If neither of these applies to you, it's perfectly safe to turn off the Always Maximize Compatibility For Photoshop (PSD) Files option (in the File Handling section of the Preferences dialog box) and ignore the scary warning that Photoshop insists on showing you every time you save a PSD without a composite.

DVD STUDIO PRO 1.5

DVD-Authoring Program Adds OS X Compatibility and Final Cut Pro 3 Integration

BY JIM HEID

While Apple's entry-level iDVD (♦♦♦½; *Reviews*, March 2002) is good for publishing movies and photographs on DVDs, it's not a professional authoring program; Apple's DVD Studio Pro picks up where iDVD leaves off. What DVD Studio Pro lacks in iDVD's drag-and-drop simplicity, it makes up for with full support for all of the DVD-Video specification's capabilities. DVD Studio Pro lets video pros create Hollywood-quality DVDs, complete with alternate audio tracks, menus in multiple languages, parallel video angles, subtitles, Web links, and anything else DVD-Video can do.

Pro Authoring Arrowed lines indicate relationships between menu items and other assets. Also visible: the menu editor, which lets you create buttons.

Though Apple's latest release, DVD Studio Pro 1.5, isn't a major upgrade, it does add time-saving integration with Final Cut Pro 3.0.2 and support for Mac OS X, so you no longer have to boot into OS 9 to do your authoring. However, the program still has some user-interface flaws and poor documentation.

Easier Markers and More

DVD Studio Pro 1.5's most exciting new features are its enhanced ties to Final Cut Pro 3. You can create chapter markers in Final Cut Pro, and DVD Studio Pro will import them when you import your video. This will eliminate hours of tedium for developers who use markers extensively, and it will provide more control than DVD Studio Pro alone.

You can also import compression markers created in Final Cut Pro 3. These give you increased command over how Apple's MPEG-2 compressor crunches a video stream; careful application of these markers can improve the quality of your video, especially in scenes involving a good deal of motion.

DVD Studio Pro 1.5's integration with Final Cut Pro 3 is generally well implemented, although the program's poor documentation may be misleading. The PDF file that addresses DVD Studio Pro 1.5's new features contains incorrect instructions on exporting chapter and compression markers. But once we figured out the correct steps, we were able to export both types of markers without difficulty. This export ability alone makes version 1.5 a must-have upgrade for producers who also use Final Cut Pro 3.

> continues on page 36

RATING: ♦♦♦½

PROS: Supports all DVD-Video capabilities; improved ties to Final Cut Pro 3; more reliable Preview Mode.

CONS: Interface needs usability improvements; poor documentation; complicated bit-budgeting process.

PRICE: $1,000; upgrade from previous versions, $200

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

LASSO PROFESSIONAL 5

Powerful Database Middleware Brings New Features and Strong Performance to Mac OS X Web Servers

BY GEOFF DUNCAN

Blue World Communications' Lasso began as a simple way to Web-enable FileMaker Pro databases, but the company has restructured Lasso to offer greater performance and flexibility, integrate other database platforms, and respond to the increasing needs of today's Web sites. Lasso now supports new technologies such as XML and wireless devices, session management, and more-powerful programming techniques.

Lasso's latest iteration, Lasso Professional 5, comes in two editions: for production servers, a Standard Edition, which handles an unlimited number of users and connections on a single machine, and a single-user Developer Edition that has the same capabilities but is geared for programming and testing. With version 5, Lasso *is* getting more complicated to learn, use, and administer; but its new features compensate for its complexity. The program not only embraces OS X but also includes a Lasso-specific version of the popular MySQL database and an updated version of Lasso Dynamic Markup Language (LDML 5), and it continues to support many Lasso 3 solutions.

Lasso Professional 5 operates with OS X's built-in Apache Web server and with 4D's WebStar V. (Version 5 doesn't support OS 9 and earlier.) And while some expertise always helps in configuring a site and handling security, you don't have to be an authority on either server to get Lasso up and running.

Dexterous Databases

Lasso Professional 5 ships with its own database software, Lasso MySQL, a version of the popular MySQL open-source database. Lasso MySQL stores Lasso's settings and options, and it can act as a local data source. For some sites, accessing local databases this way may be a complete solution—Lasso MySQL is fast, multithreaded, and reliable, and it supports temporary tables, which stick around until you restart it.

You can also connect the application to separate MySQL databases, keep them on different computers, and upgrade them independently from Lasso itself; or you can connect Lasso to FileMaker Pro 4 and 5 databases using FileMaker's Web Companion. MySQL and FileMaker databases are either stored on the same machine

A Lasso Primer

Lasso is *middleware*, which means that it moderates communication between other programs—in Lasso's case, between a Web server and a database. A Web-site visitor requests something by following a link or filling out a form, and the Web server then recognizes that Lasso should handle the request and passes it along. Lasso acts on the request and returns a result—usually an HTML page—to the Web server, which passes it back to the user.

Lasso's power lies in *processing* the request. Typically, Lasso will retrieve data from a database, perhaps on a separate computer; integrate it into an HTML file; and send it back to the Web server. But Lasso might also send e-mail; trigger another process; communicate with yet another application, such as a credit card–processing system; or modify items in other databases. The Web developer uses format files written in LDML (Lasso Dynamic Markup Language) to specify the action(s) Lasso should take and to customize Lasso's response. LDML files contain the programming logic for Lasso, often intermingled with standard HTML or XML.

as Lasso or distributed on separate hosts; the latter is a great way to improve performance and enhance security. (At press time, third-party database connectors had also been announced for 4D, FrontBase, and PrimeBase; they were not yet available.)

New and Improved

In addition to a built-in version of MySQL, Lasso Professional 5 introduces LDML 5, a new version of Lasso's markup language. LDML 5 is generally compatible with Lasso 3, and it provides several major new features, such as inline math and string expressions, session management, data typing, array support, and commands for managing SQL databases. These LDML enhancements offer developers creating Lasso sites more direct control of values and program logic, as well as mechanisms for maintaining and creating databases and tables on-the-fly. Version 5 also supports LassoScript, an alternative way of expressing LDML as embedded scripts within a page; this can help with both large pieces of code and LDML pages edited using visual tools such as Adobe GoLive.

Lasso Professional 5 includes a completely revamped e-mail engine (built in LDML, using cool new low-level TCP/IP commands). It also has a new scheduler, which you can use to back up databases or perform other maintenance tasks, send status messages, and do anything else within Lasso's scope. Advanced programmers can define custom LDML tags and functions, spawn background processes, and create custom data types—all useful for expanding Lasso's reach or integrating it with other systems.

In addition to these improvements, Lasso now provides more-extensive documentation with detailed instructions for setting up and administering databases, tips, clear examples of configuration, specific techniques, and categorical definitions of LDML tags. The documentation comes as a series of PDF files; you can purchase printed documentation separately, and Lasso provides an online LDML reference implemented as a Lasso MySQL database.

Browser-Based Control

Lasso Professional 5 uses a Web-browser–based administration facility to control access privileges for users, settings, and databases. Security and administration options range from entire databases to individual fields—including useful LDML-based filters that can restrict or modify search behaviors, and the capability to enable or disable specific LDML tags.

Web-server applications such as Apache Web server or WebSTAR V handle logging, but you can use LDML to write to the Web-server log or maintain separate log files. You can also compile solutions into platform-independent LassoApps, high-performance stand-alone libraries that work with version 5 without revealing source code—great for distributing solutions to clients or customers.

Call and Response

In our testing—48 simultaneous connections sustained over 12 hours from four machines on a local network, with each connection making one to five database queries during that half-day period—Lasso's performance with WebSTAR V was essentially indistinguishable from its performance with Apache, and both servers managed the load with apparent ease. The biggest factors in a Lasso-driven site's efficiency are the database back end and any ancillary programs with which Lasso must interact, although many Lasso Professional 5 features are faster than those that provide backward compatibility with Lasso 3.

Movin' On Up

In the majority of cases, site administrators using Lasso 3 will have an easy time converting to Lasso Professional 5. A handful of well-documented syntax changes make existing

Under Lock and Key Lasso Professional 5's Web-based administration lets you determine and control database elements. Here, you can set up permissions and filters for the BodyASCII field in a FileMaker Pro database.

format files work properly. But in a few cases, it will be more difficult: site administrators using a 4D or ODBC database as a back end will need to wait for connectors, and developers communicating with other programs via Apple Events will need to rebuild or replace their solutions. In addition, Lasso no longer supports FileMaker 3, and the Instant Web Publishing and alternative LDML syntaxes (such as Server-Side JavaScript) are gone.

Upgrading is more complicated for developers who want to change from FileMaker Pro to MySQL or Lasso MySQL for the sake of performance, stability, and standardization; to some degree, they'll have to redesign and reengineer Lasso solutions. However, most developers will be able to use FileMaker Pro databases in version 5 without adjustments, making possible a well-executed transition to new database platforms. Of course, if FileMaker Pro's performance meets your needs, there's no need to migrate—the program's FileMaker Pro support is as strong as ever.

Macworld's Buying Advice

Getting started is simpler with Lasso than with competing database-middleware products, such as Apple's WebObjects, but using Lasso effectively nonetheless requires significant programming skills and learning time, as well as a solid command of database software, security, and Internet services.

If you're already using Web-enabled FileMaker Pro databases and need more power and performance, Lasso Professional 5 is an excellent choice and offers a manageable migration path to other database platforms. And if you're just getting started with data-driven Web sites, the program's power and flexibility merit serious consideration. □

RATING: ♦♦♦♦

PROS: Solid performance; good documentation; built-in Lasso MySQL data source; MySQL and FileMaker Pro support; expanded LDML capabilities; good support for Lasso 3 solutions.

CONS: Takes time to learn; connectors currently available for FileMaker Pro and MySQL only.

PRICE: Standard Edition, $1,299 (download, $1,199); Standard Edition upgrade from Lasso 3, $699 (download, $599); Lasso Professional Developer Edition, $449 (download, $349)

OS COMPATIBILITY: Mac OS X

COMPANY: Blue World Communications, 425/646-0288, www.blueworld.com

NOW UP-TO-DATE & CONTACT 4.2

Palm Synchronization Allows This Personal Information Manager to Leave OS 9 Behind

BY TOM NEGRINO

Power On Software's Now Up-to-Date & Contact is a mature, powerful personal information manager (PIM) that provides an excellent way to organize your time and information, whether you work alone or in a group. The PIM includes two applications: Now Up-to-Date is a full-featured calendar that lets you create appointments, to-do items, call reminders, and banners depicting events over multiple days; Now Contact keeps track of all your contact information, with custom fields and shared keywords and categories, and it links contacts with their respective appointments in Now Up-to-Date. And the program's Contact and Calendar servers let users share and synchronize information over a local network or the Internet.

Newly OS X native, Now Up-to-Date & Contact 4.2.1 syncs with your Palm handheld device, and it provides a more full-featured alternative to the calendar and contact-management capabilities in competing products, such as the single-user Microsoft Entourage X. For users of OS X, it's an important, must-have upgrade. (If you're running OS 9, you should continue using version 4.0 [●●●●; October 2001].)

Almost Equal

Like many developers, Power On has struggled to create equivalent functionality in its OS X and OS 9 editions, but because OS X lacks some of OS 9's capabilities (due to its different architecture), Now Up-to-Date & Contact hasn't quite hit the mark. However, version 4.2 is close to parity with its OS 9–compatible sibling.

The closing gap between the OSs is most apparent in the implementation of the program's QuickDay and QuickContact utilities, which let you create and view appointments and contact information without opening Up-to-Date or Contact. In OS 9, these utilities were conveniently available in the menu bar, but in OS X, they're also available as *docklings* (helper components that stay in OS X's Dock and provide pop-up menus with information and commands). The OS 9 edition allowed users to create new events, contacts, or to-do items—without opening the PIM applications—using a third utility called QuickPad. In version 4.2, creating an item with QuickDay or QuickContact launches the applications and opens a new item window. This eliminates a step, but it also requires that you wait for the application to load before you can enter a new item.

A useful feature restored to version 4.2 is Grab-n-Go, which allows you to use contextual menus to create calendar entries and look up contact information from selected text in any other application.

But feature parity between the OSs is not quite complete; if you've used the OS 9 version, you may miss some conveniences not included in version 4.2, such as flashing reminder alerts in the menu bar, hot keys for creating new events or contacts in QuickDay or QuickContact, and telephone dialing.

PIM in Your Pocket

Now Up-to-Date & Contact 4.2's headline feature is native Palm synchronization in OS X. To synchronize your Palm device, you'll need to have installed the Palm Desktop 4.0 package (free from Palm), which includes the necessary synchronization software (though you can trash the Palm Desktop application after installing Now Up-to-Date & Contact, as you'll be using that PIM instead).

In our tests, synchronization mostly went well, though the Mac occasionally failed to connect with the Palm; when this happened, we had to disconnect the Palm cradle from the USB port and plug it back in before we could sync correctly. (We found that this was a bug in Palm's software, not Power On's.) Apart from this glitch, data flowed smoothly between the Mac and the Palm.

Palm users will continue to be annoyed by Now's inability to sync with the Palm Memo Pad application. Competing products—such as Chronos's Group Organizer 4 and Palm Desktop 4.0—allow you to create and synchronize notes, and it's long past time for Power On to add this feature.

At press time, none of Handspring's products supported Palm Desktop 4.0 software, and many users have reported that they encounter problems when syncing their Visors with Now Up-to-Date & Contact 4.2. Until Handspring releases its own OS X–native software, Power On recommends that you forgo an upgrade to version 4.2 and continue using version 4.0.3 and syncing in Classic mode.

For those who don't have a Palm device but do have an iPod, Power On now offers NowPak, a free utility that transfers contact information from Now Contact to your iPod via FireWire. The information appears on the iPod, sorted alphabetically by either last or first name. Unlike data synchronized via Palm, data from Now Contact that travels to your iPod takes a one-way trip; there's no way to make changes on the iPod and then synchronize them with Now Contact on your Mac. But NowPak is great if you want to carry your contacts along with your music.

Macworld's Buying Advice

Now Up-to-Date & Contact 4.2.1 is almost equivalent to past versions running in OS 9 and earlier, so if you're a Now user who has yet to make the jump to OS X, there's one less reason to hesitate. If you want to sync your Palm with your PIM software, and especially if you need to share your calendar or contacts with other people, Now Up-to-Date & Contact 4.2.1 is the clear choice. □

It's Aqua-licious When Now Up-to-Date & Contact moved to OS X, it received an Aqua face-lift, but for the most part, the interface remains the same.

RATING: ●●●●½

PROS: Well-implemented Palm synchronization; exports contacts to iPod.

CONS: Cannot sync with Palm Memo Pad.

PRICE: $119; upgrade from version 4.0, free; upgrade from version 3.9 and earlier, $49

OS COMPATIBILITY: Mac OS X

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

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DIGIDESIGN MBOX

Portable USB Audio Workstation Fits the Bill for Digital-Recording Beginners

BY DAVID LEISHMAN

When picking the right gear to convert analog sound to digital data on your Mac, you'll weigh price, bit-rate and sampling options, the number and type of inputs and outputs (I/O), transfer protocols, and other music-related functions. And, of course, you'll consider sound quality.

With its included industry-standard software, good-quality mike preamps, and portability, Digidesign's USB-based Mbox is a reasonable option. It may be just what you need if you're venturing into digital recording, or if you want to use your PowerBook or iBook to record on the road.

Ins, Outs, and Arounds

The attractive Mbox will look right at home next to a stylish Mac. Its inputs and outputs are on its back (with the exception of a front headphone jack), and the controller knobs and buttons on the front of the unit are clearly marked, work smoothly, and reduce the need to use your mouse during a recording session.

On the unit's back, you'll find two jacks that combine XLR and ¼-inch TRS/TS inputs for microphones, instruments, or lines; two ¼-inch TRS analog I/O for effects devices; and 24-bit stereo digital I/O via S/PDIF. There is also a second headphone jack on the back of the unit; either jack enables you to hear what you're recording (and monitor previously recorded tracks at the same time).

The ¼-inch TRS inputs can be used to route a signal through off-board effects devices, such as reverbs or compressors, but the Mbox won't let you record both the modified and unmodified sound, as you can with more-expensive gear. However, the included Pro Tools 5.2 LE software has plug-ins that let you add effects after you record.

The Mbox provides two channels of 24-bit A/D/A (analog/digital/analog) conversion at either 44.1kHz or 48kHz with more than 100 decibels of dynamic range, which should suit the needs of most beginners. The Mbox also contains two Focusrite mike preamps with 48 volts of Phantom power, so you can use condenser mikes, which work well with acoustic instruments and voices. That the Mbox sits outside your Mac is also a plus: by converting analog audio into digital in an external box instead of via a PCI card, you negate the risk of adding noises that originate inside your Mac.

We used the Mbox comfortably with an early Power Mac G4 and a Titanium PowerBook G4. For outdoor recording, however, be sure to carry extra batteries for your portable Mac—the Mbox is power-hungry.

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RATING: ♦♦♦½

PROS: Easy to use; good external audio conversion, combined with mike preamps; Pro Tools LE software included; lightweight and portable.

CONS: Four channels of audio stream can be limiting; MIDI integration is cumbersome.

PRICE: $499

OS COMPATIBILITY: Mac OS 9

COMPANY: Digidesign, 650/731-6300, www.digidesign.com

> DVD Studio Pro 1.5

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Just Add Aqua

DVD Studio Pro's support for OS X means that video producers not only have one less reason to boot into OS 9, but also can take advantage of OS X's stability. In our testing on a dual-processor 800MHz Power Mac G4, we even found a slight performance advantage in OS X for MPEG-2 compression.

In OS 9 and X, we noted improved playback quality when using DVD Studio Pro 1.5's Preview Mode (which lets you test your DVD's navigation before burning it to disc). In all previous DVD Studio Pro versions, the Preview Mode had atrocious synchronization problems—the sound and picture could be several seconds out of sync. This problem seems to be a thing of the past.

The quality of video compressed using the MPEG-2 compressor included with the program was also better. Apple says it has added a pre-filter that cleans up video before compressing it, and we could see the difference. Hollywood studios and other quality-obsessed DVD producers may still turn to other products for MPEG-2 compression, particularly when trying to shoehorn 90 minutes or more onto a DVD-5 (the lowest-capacity DVD format available), but many users will find that Apple's MPEG-2 compressor meets their needs.

Flaws in the Process

DVD Studio Pro 1.5's authoring process is nearly identical to that of version 1.0, as are its problems with usability and documentation.

Once you've finished editing your video, you use Apple's QuickTime Player or your video-editing program to compress video into MPEG-2 format, and you use DVD Studio Pro's A.Pack application to convert audio files into Dolby Digital format. These compressed elements, along with menu graphics, are imported into DVD Studio Pro, where you implement your project's user interface, and then you burn a DVD using a SuperDrive or a third-party DVD burner. (Unlike iDVD, DVD Studio Pro supports FireWire DVD burners.)

This division of labor across multiple programs is both an asset and a liability. On one hand, separating compression from authoring speeds up the authoring process; one team member can compress assets while another creates menu buttons in DVD Studio Pro. But on the other, it complicates "bit budgeting"—determining whether your content will fit on a DVD, given the amount you have and your desired compression settings.

DVD Studio Pro tries to offer assistance; its compression programs tell you how much space an audio or video stream will take, and DVD Studio Pro itself indicates how much of a DVD's capacity you've used. But arriving at compression settings that achieve the best balance between quality and disc space is often a trial-and-error exercise. Apple could do a better job of integrating DVD Studio Pro's components to make it easier.

DVD Studio Pro's authoring process is complex, and its interface and documentation don't help. Version 1.5 includes the same inadequate manual that accompanied version 1.0, and its interface lacks Final Cut Pro's niceties, such as contextual menus and numerous keyboard shortcuts. As a result, authoring is often slower and more wrist taxing than it should be.

Macworld's Buying Advice

DVD Studio Pro 1.5 offers welcome improvements such as OS X compatibility, more-reliable previews, higher MPEG-2 compression quality, and tighter integration with Final Cut Pro 3, and the program remains the only viable choice for professional DVD authoring on the Mac. But Apple needs to deliver another version that improves usability, the bit-budgeting process, and documentation, so that new users can get up-to-speed faster and experienced users can work more efficiently. □

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business, from one efficient,
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> Digidesign Mbox
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Haves and Have-Nots

If you need to integrate MIDI audio, the Mbox may not be right for you. To monitor MIDI hardware, you'll need to surrender one of the Mbox's recording inputs, and you won't hear the MIDI parts in stereo. One workaround is to use a software synthesizer such as Native Instruments' Absynth (www.nativeinstruments.de), which Digidesign's Direct Connect engine supports. This will restore the use of the "lost" input, but it's an additional cost.

You can also record your MIDI tracks to audio separately. The Mbox handles 24 mono tracks of playback on "Digidesign-qualified" systems, which include all Macs with built-in USB ports. However, hubs and PCI card–enabled USB ports aren't supported.

Something else to consider: To avoid costly redundancies, you'll need to carefully weigh the Mbox's feature set against the functions of any gear you already own. If you own a mixer with mike preamps, for example, you may want to look instead at PCI card converters from vendors such as Midiman (www.midiman.com), or other external units such as Tascam's US-428 converter/mixer (♦♦♦½; www.macworld.com/2001/04/18/reviews/us428.html). The latter costs a bit more but offers fader controllers and a MIDI interface.

The Mbox's minimum requirements are OS 9.1 and 128MB of RAM, but Digidesign strongly recommends you run OS 9.2.2 with 192MB of RAM installed for the best performance. The unit isn't supported in OS X or Classic, and the company declined to specify future plans for the Mbox's OS X compatibility.

What's That Sound?

To test the Mbox's sound quality, we converted, at 48kHz, the audio output of a MIDI track via a higher-end Apogee Rosetta unit, a 16-bit Audiomedia III PCI card (to represent the low end), and the Mbox. As we'd expected, the Apogee's audio clearly sounded the best, but the Mbox's audio sounded very good, certainly better than the Audiomedia's.

Macworld's Buying Advice

As long as you don't already have hardware that performs some of the Mbox's functions or need to set up a band that includes MIDI instruments, the Mbox is a very nice way to start your digital-recording career (or hobby); it provides portability and easy-to-use software at a decent price relative to similar products. □

LIVE 1.5

Sequencing Instrument Successfully Bridges Studio and Live Performance

BY CHRISTOPHER BREEN

The line between musicians and live DJs has become increasingly blurred, as musicians add sampled sound to their live performances and DJs enhance prerecorded material with live electronic instruments. Ableton's Live 1.5, a sample sequencer, further blurs this line. Live allows you to easily construct electronic, hip-hop, and trance dance music on-the-fly by triggering and layering sound snippets with your Mac or MIDI keyboard. With its intuitive interface and beat-matching capabilities, Live is sure to find a following on both sides of the line.

A Groovy Thing Live 1.5 lets you trigger single clips and multiple tracks via your keyboard or MIDI controller.

A Break from the Past

Like music-creation apps such as Sonic Foundry's Acid and BitHeadz's Phrazer (which are intended for dance-club music makers), Live lets you piece together sampled audio files to create musical arrangements, and it then lets you scale the tempo of your arrangements without altering the music's pitch. Live can also determine the rhythmic landscape of a sound file by analyzing its waveform. If the program guesses incorrectly, you can use adjustment sliders to put beats where they belong. But what sets Live apart from other programs is that it offers more control over triggering samples, turning what seems to be a tool for creating loop-based compositions in the studio into an interactive performance instrument.

Environmental Impact

Live operates in two environments: Session and Arranger. In the Session environment, you can trigger clips, tracks, and scenes (collections of tracks), as well as record your performance. Each track has volume, pan, and signal-routing controls and can contain multiple audio clips, which you can arrange into one of several scenes. In the Session environment, you'll usually trigger clips, tracks, and scenes with your mouse, keyboard, or MIDI controller.

To tweak recorded tracks—for example, to edit the length and location of audio bits or to automate adjustments to volume and pan—you use the Arranger environment.

Whoa, Trigger

Triggering is what gives Live its power. You can assign most of Live's functions to your keyboard or MIDI controller and then trigger and record the various clips, tracks, and scenes you've loaded into Live. You can also preview clips while your tune is playing before adding them to your arrangement.

This may sound daunting, but almost all of Live's functions are displayed on screen with intuitive icons, and an Info View window indicates each item's purpose. Live operates beautifully with the included samples and does a reasonable job of beat-matching samples not included with the program.

Minor Snags

Live is easy to use, but the manual could use additional detail—more information on signal routing and buses, for example. And although the Live 1.5 update has desirable additions such as the Render-To-Disk function, which gives you the ability to render your finished product as a single AIFF file, Live sometimes mistakes these rendered files for files created by a later version of the program and won't open them. (You can resolve this problem by opening the file in a program capable of reading AIFF files—QuickTime Player Pro, for example—and saving the file as a QuickTime AIFF file.)

Macworld's Buying Advice

Though the manual is short on specifics, and despite the program's minor glitches, Live 1.5 is an easy-to-use performance tool that's equally at home in the studio and on stage. Musicians and DJs looking for a new groove, particularly one they can take on the road, should give Live a try. □

RATING: ♦♦♦♦
PROS: Intuitive interface; solid time-scaling and beat-matching tools; multiple triggering options.
CONS: Lack of detailed documentation.
PRICE: $370
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Ableton (distributed by Midiman), 800/969-6434, www.ableton.com

CANON EOS D60

6.3-Megapixel Digital SLR Camera Boasts Film-Camera Quality and Design

BY RICK LEPAGE

Canon took the prosumer digital-camera market by storm two years ago with the introduction of the EOS D30, a 3.1-megapixel digital camera based on traditional 35mm single-lens reflex (SLR) camera designs. Now, with the $1,999 EOS D60—an impressive 6.3-megapixel camera that produces higher-resolution images and costs nearly $1,000 less than the D30—the company is poised to take the lead over its competition.

Film-Camera Looks

Instead of the fixed zoom lens found on most digital cameras, the D60 uses interchangeable lenses designed for Canon's EOS film cameras. This lets you attach a broad range of lenses—from wide-angle to telephoto—made by Canon and a number of third parties. Generally, the lenses you can purchase for use with the D60 will be of higher quality than those on a lower-end digital camera—which translates into sharper pictures overall—but they do add to the camera's expense unless you already have Canon EOS lenses.

The D60 has the D30's excellent design and feel, as well as improvements such as better autofocus capabilities, shorter shutter-release lag, and a 3-frame-per-second shooting speed (with a maximum burst capture of eight images). Anyone familiar with the smooth operation of a 35mm SLR camera will love the D60's smart interface and ease of use.

Great Photo Quality

The D60's 6.3-megapixel images are of extremely high quality and color fidelity. We printed photo-lab–quality images as large as 11 by 17 inches, and the extra resolution let us crop images while producing a crisp, clear, 8-by-10-inch print.

The only negative we ran into was the lack of OS X support. The camera is not currently recognized by OS X's Image Capture or iPhoto, though pictures can be transferred to your OS X system from the camera's CompactFlash card via a media reader or PC Card adapter. Canon says it's working on an update for OS X, which should be available sometime in the second half of 2002.

Macworld's Buying Advice

We highly recommend the EOS D60 if you want the look-and-feel of a 35mm camera, or if most digital cameras are not advanced enough for your needs. Canon has preserved the strengths of film cameras while adding the best attributes of digital imaging. The lack of direct OS X support is our only complaint, but if you have other ways of getting images into your Mac, this isn't a big problem. □

RATING: ♦♦♦♦

PROS: Excellent image quality; feels and operates like a 35mm film camera; accepts Canon EOS lenses.
CONS: Lacks OS X support.
PRICE: $1,999; kit with battery, charger, and adapter, $2,199
OS COMPATIBILITY: Mac OS 9
COMPANY: Canon, 800/652-2666, www.powershot.com

CINTIQ 18SX

Larger LCD Graphics Tablet Nails Good Design, Proves Ideal for Video Pros Needing Extra Space

BY BEN LONG

Released last year, Wacom's 15-inch Cintiq was a breakthrough combination of a high-quality LCD monitor and Wacom pressure-sensitive pen technology (♦♦♦♦½; *Reviews*, January 2002). Now Wacom has expanded its line of displays that you can draw or paint directly on: the Cintiq 18SX is an 18-inch model with an improved industrial design. Its increased resolution and faster refresh rate make it suitable for graphics professionals of all types, including animators and video producers.

The 18-inch model has a much improved, spring-loaded stand, which allows the screen to tilt to any angle between completely vertical and almost flat. Two sturdy levers let you adjust the screen without fear of dropping or bumping the unit. You can also turn the display while you're painting or drawing, just as you would rotate a piece of paper to get a better angle with your pen. And removing the screen from its stand is a snap if you want to set it in your lap.

Our only complaint is with the unit's cabling. The Cintiq provides support for many different video connections, including VGA, DVI-I, and DVI-D. Unfortunately, all of these connectors, as well as the power cord, are carried in a single cable. While it's nice to have only one cable coming out of the back of the device, the extra connectors and the cable's thickness can be a real hassle if you're trying to move the tablet. We would much prefer the option of attaching only one connector at a time.

Image Matters

Like all of Wacom's LCDs, the Cintiq 18SX provides an excellent display with bright colors, a wide viewing angle, and good contrast. Its larger screen and higher maximum resolution of 1,280 by 1,024 pixels are certainly good for users of palette-heavy programs, and its faster refresh time (how long it takes an LCD to refresh all of its pixels) of 27 milliseconds makes the screen well suited to video work—movies play smoothly and clearly.

Macworld's Buying Advice

If you're already used to drawing on a tablet, you may not need the Cintiq 18SX's extra functionality. Like drawing on a piece of paper, using the Cintiq has drawbacks—your hand often gets in the way of what you're drawing, for example. But if you're looking for the most natural painting interface for your computer, you won't find anything better than Wacom's Cintiq series, and this larger version is a treat. □

RATING: ♦♦♦♦½

PROS: Excellent image quality; true "drawing on the screen" feel; much improved stand.
CONS: Bulky cable.
PRICE: $3,499
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Wacom, 800/922-9348, www.wacom.com

REVIEWS IN BRIEF

BOSWELL 2.0

●●½; Copernican Technologies, 831/429-1775, www.copernican-tech.com; $90

Limited import capabilities and a difficult learning curve made Copernican Technologies' Boswell 1.0 (*Reviews*, July 2001) feel like a work-in-progress. Alas, despite laudable improvements—including rewritten documentation—Boswell 2.0 has further to go before it can become the "personal librarian" it claims to be.

Based on the premise that you should keep every noteworthy text clipping forever, Boswell stores blocks of text as large as 32K in a temporary holding area called the Journal before transferring them to its permanent Archive. The program's cataloging and search features are as powerful as ever, but Boswell's odd terminology and nonstandard interface make them tough to master.

In addition, the program still falls short when it comes to importing text from existing documents. For example, it processes only the text files at a folder's top level, ignoring any documents in subfolders. If you want to preserve text formatting, you have to copy the contents of each file into Boswell's Journal—a laborious task.

Boswell runs in either OS 9 or Classic. Copernican is working on an OS X–native version and promises free upgrades to current users. We're hoping for Boswell's sake that the third time's a charm.—FRANKLIN N. TESSLER

iPHOTO 1.1.1

●●●½; Apple Computer, 800/692-7753, www.apple.com; free

The first version of Apple's iPhoto (see our review, in "Become an iExpert," April 2002) had numerous feature omissions that limited its usefulness; iPhoto 1.1.1 addresses some (but not all) of those limitations and adds a few nice touches.

Images in iPhoto 1.0's slide shows were blurry, but in this update they're crystal-clear. Importing images from Kodak Picture CDs is now supported, and images dragged in from the Finder are no longer collected in one of iPhoto's "film rolls"; instead, each folder of images is assigned its own roll, which you can rename and redate. An image's brightness and contrast are now adjustable; however, the program still offers no color-correction features.

New features in this version include the ability to e-mail images with just one click, set desktop pictures and screen savers from within iPhoto, and view extended image data such as shutter speed and the exact time a picture was taken. iPhoto lets you edit an image's date (convenient for scanned-in images) and choose to use image information as an image's iPhoto title. And a new Comments pane allows you to go beyond the program's user-definable 14 keywords by typing full-text image descriptions that can be used as search terms later on.—JASON SNELL

10GB iPOD

●●●●; Apple Computer, 800/692-7753, www.apple.com; $499

The 5GB iPod (*Reviews*, January 2002) was a masterful synergy of design and interface that showcased what Apple does best. The company has since released a second model, priced at $499, with twice the original storage.

Apple has added two welcome features: a sound equalizer with 20 presets for different types of music improves the already high overall sound quality of the iPod and integrates well with iTunes, letting you tailor the equalization parameters on a song-by-song basis. And the ability to store and display contact information on your iPod lets you drag contacts from Apple's Address Book, Microsoft Entourage, or Palm Desktop to a folder on your iPod, where they are quickly accessible from the iPod's new Contacts menu.

You can get MP3 players with more storage for less money (and players with FireWire support will be available later this year), but the iPod remains the best compact music player available for any platform. Its compact size, elegant interface, and FireWire support make it a dream to use.—RICK LEPAGE

HDD PORTABLE HARD DRIVE

●●●; Iomega, 858/795-7000, www.iomega.com; $280

Iomega's entry into the portable hard-drive market, the HDD Portable Hard Drive, faces stiff competition from similar 20GB and 30GB drives from companies such as LaCie, EZQuest, and SmartDisk (*Reviews*, January 2002). The HDD Portable is a ¼-inch-thin, rectangular drive (measuring about 8 by 4 inches). It's lightweight, at about 8 ounces, but feels flimsily constructed.

The 30GB FireWire-only configuration worked as expected: its data-transfer rates were up to par, and it mounted easily in both OS 9 and OS X. (It's also available with USB compatibility in 20GB and 30GB capacities.)

Though you must choose between USB and FireWire when purchasing Iomega's drive, many competing products include ports for both right on the hard drive and don't require the HDD Portable's strange, additional module. For USB *and* FireWire compatibility with the HDD Portable, you'll have to pay about $50 for the extra USB module (which Iomega says will be available in July). So you'll get the extensibility you want, but at a higher price and with more pieces that can be easily lost.—JENNIFER BERGER

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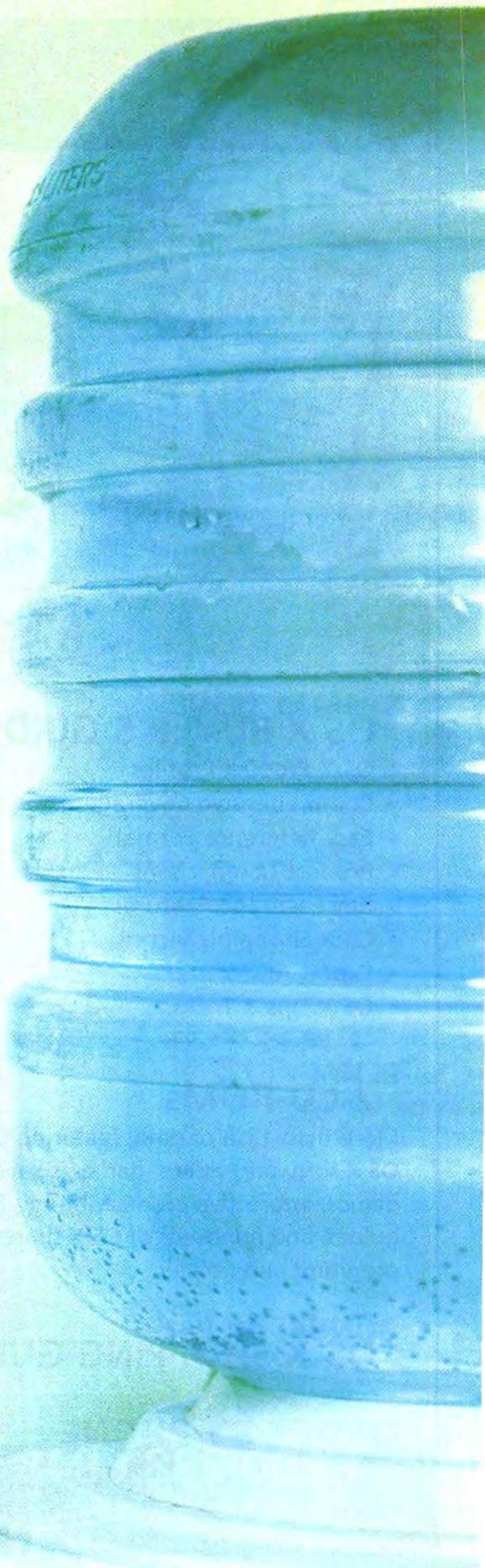

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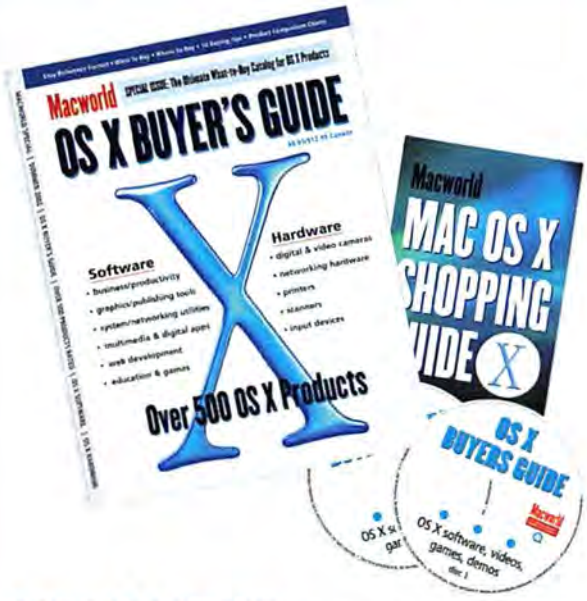
ANNOUNCING

Macworld OS X BUYER'S GUIDE



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REVIEWS

MAILSMITH 1.5

E-mail Client's Great Text-Editing and Search Functions Accompany Interface Quirks

TOM NEGRINO

The OS X–native Mailsmith 1.5.3, the new version of Bare Bones Software's e-mail client, has a smattering of new features that longtime users will appreciate, including improvements in message creation and in importing from other mail programs. For example, Mailsmith now lets you save messages in draft form and view images or movie attachments within the program.

But some important changes haven't yet arrived, such as support for IMAP, a key e-mail protocol. Nor does Mailsmith support LDAP, a protocol for online address books that is favored by many large organizations.

Just the Text, Ma'am Mailsmith automatically converts HTML to text-only format for fast rendering.

Powerful but Not Always Clear

At first glance, Mailsmith's uncluttered interface promises an easy-to-use program. But the interface sometimes makes the program more confusing than it needs to be. For example, the text menu contains selections, such as Zap Gremlins and Balance, that mean little to the average user.

Mailsmith makes up for many of its difficulties by offering the powerful Query feature, which lets you search using a number of criteria, with a full array of logical operators (such as AND, OR, and NOT). Like Bare Bones' BBEdit text editor, Mailsmith lets you use regular expressions to find and select your text using grep, a difficult-to-master but very effective search method. The grep engine has been updated so that it works like grep in the Perl scripting language. Mailsmith's mail filters, essential tools for managing e-mail and eliminating spam, are very flexible and also let you use grep.

Pure Text, No Waiting

Mailsmith renders messages as text only, so rendering HTML messages won't cause delays, as it does with Apple's Mail or Microsoft's Entourage X. But if you want to see the HTML version of an e-mail message, you must view it in your Web browser—an irksome step.

If you're a faithful BBEdit user, you'll love the powerful tools Mailsmith gives you for text entry and editing, such as multiple clipboards and undos, keyboard commands for moving and transposing text, and superb support for AppleScript.

Macworld's Buying Advice

Mailsmith 1.5.3's flexible text-editing and search functionality, as well as its ability to render HTML messages in text-only format, make it an attractive choice. However, the program's interface oddities—and its lack of support for some standard protocols—may lessen its allure. □

RATING: ♦♦♦½

PROS: Excellent text editing, searching, and filtering; extensive AppleScript support.

CONS: No IMAP or LDAP support; quirky interface.

PRICE: $99

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Bare Bones Software, 781/687-0700, www.barebones.com

Server 4D, and others do in OS 8.6 through 9.

If an application crashes frequently, the PowerKey can restart the machine—great for servers and other unattended Macs that must be running 24 hours a day. And if the hardware can't communicate with the software for a set period of time, it can turn off power to your Mac, turn it back on, and then send a restart signal via USB. You can implement a similar method to effectively restart your Mac after a power failure.

These restart features were completely reliable in our testing, but some Macs (iBooks, for example) don't support USB start-up (so you'll want to enable the Restart Automatically After Power Failure energy-saver option), and some USB hubs don't let the start-up signal get all the way to your Mac (so you'll want to test your hub or make sure the PowerKey Pro is connected directly to one of your Mac's USB ports).

Macworld's Buying Advice

The PowerKey Pro USB 650 is reliable, flexible, and elegant. The question is whether power management is worth the premium price. It may not make sense for home users—who should perhaps check out the Kick-Off 1.5 (see "Kick-Off 1.5 Keeps You in the Game")—but it's worth every penny to server administrators and others who manage unattended Macs in offices or labs. □

RATING: ★★★★½

PROS: Flexible, reliable power management; OS X support; Admin version can restart Macs after crash or power failure.

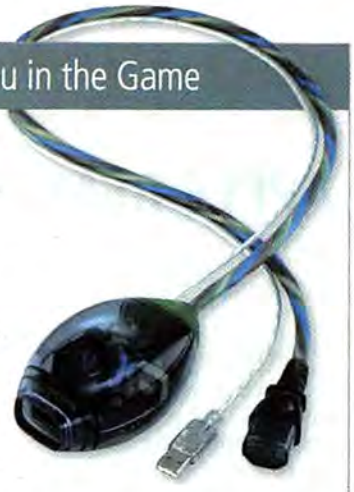
CONS: No support yet from Mac OS X server applications.

PRICE: SOHO edition, $199; Admin edition, $299; upgrade from SOHO to Admin, $100

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Sophisticated Circuits, 425/485-7979, www.sophisticated.com

Kick-Off 1.5 Keeps You in the Game



★★★★½; Sophisticated Circuits, 425/485-7979, www.sophisticated.com; $179

If you'd like to have your Mac restart after a crash or power failure but don't need the PowerKey Pro USB 650's six programmable power outlets to do it, then Sophisticated Circuits' Kick-Off 1.5 is for you.

The Kick-Off is a mouse-size, transparent plastic nodule with a USB cable and a power cable; just plug your computer into the Kick-Off, connect the USB cable, and configure the software—version 1.5 now supports OS X, as well as OS 8.6 through 9. (Unfortunately, though, no OS X server applications support it yet.)

The Kick-Off doesn't offer the scheduling capabilities of the PowerKey Pro, but it can monitor server applications for crashes or detect any application crash in OS 8.6 through 9. It can then restart those applications, or restart the machine after a predetermined number of program crashes.

Like the Admin version of the PowerKey Pro, the Kick-Off will power cycle your Mac and send a start-up signal via USB if it can't communicate with its software for a certain period of time. The Kick-Off has LEDs that tell you its status at a glance, such as normal operation, computer asleep, outlet turned off, and so forth; however, the unit inevitably seemed to tilt so that the LEDs were out of sight—a downside of its rounded shape.

At $179, the Kick-Off is certainly not a casual purchase, but it will bring your computer back online after a power failure and help keep it running, and that alone can be priceless.—GEOFF DUNCAN

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APPLE REMOTE DESKTOP

Network-Management Software Combines Classroom and Remote Desktop Access—with Some Glitches

BY JONATHAN A. OSKI

You're a teacher, and your rambunctious sixth graders are paying attention to everything but the task you want them to be doing. Or you're an IT helpdesk staffer, and your end users don't know the cursor from the Finder, so they're not about to configure their own software installations. For situations like these, Apple Remote Desktop 1.0's unique combination of features provides remote control of client Macs, the ability to distribute files over a network, and some well-conceived tools that let classroom instructors explore new teaching methods. But these features come with some problems: Apple Remote Desktop suffers from some annoying peculiarities in setup, and it's missing essentials that would allow it to live up to its potential.

I See You Apple Remote Desktop's principal interface displays the status of workstations in the selected list. The customizable toolbar includes buttons for quick access to functions.

The Dirty Work

Planning an Apple Remote Desktop deployment is straightforward, provided you take some time to read Apple's documentation. First, you'll want to make sure your network fits Apple's specifications. Apple Remote Desktop works on networks composed of workstations running OS 8.1 to OS X 10.1 or later, and it requires a Mac running OS X 10.1 or later for administration. For many functions, such as observation or control of remote workstations, Apple Remote Desktop requires either a wired Ethernet or wireless 802.11b network. (Apple recommends a wired connection for the administrator Mac.) Furthermore, if you plan to carry out functions that require more bandwidth, such as transferring files, Apple Remote Desktop will perform better on a switched network than on a shared one.

Also note that if your TCP/IP addresses are assigned via a DHCP server, as most are, Apple Remote Desktop will not let you add clients by using their host names—you must use their IP addresses or specify a range of addresses to search for a particular client.

Apple Remote Desktop comes with administrator and client software on the same CD. To set it up, you must install the client portion on each desktop and the administration application on an OS X workstation. We had no trouble with installation on any of the OS 9 machines we used during our test, but installing the OS X client was aggravating. A bug prevented the client software from installing properly, and once installed, it wouldn't load at startup until we had created an additional user with administrative privileges on each OS X client.

To keep the number of clients from becoming unwieldy, the

> continues on page 48

There's no such place as "far away"

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Macworld 4½

2-Megapixel Point-and-Shoot Digital Cameras

Three Unique, Well-Priced Cameras Bound to Suit Enthusiasts

BY JEFF KELLER

In my last column (*Reviews*, May 2002), I took a look at 4-megapixel digital cameras for shooters who wanted high-resolution images and were willing to pay for the privilege. This time around, I examine three lower-priced 2-megapixel cameras aimed at the general photo enthusiast.

Each camera reviewed here is unique. Fuji's FinePix 2800 Zoom is a low-cost camera with a long zoom lens, the only one in its class. Minolta's Dimage X has garnered quite a bit of attention with its tiny size and one-of-a-kind lens system. And Nikon's slim Coolpix 2500 uses an interesting variant of the company's well-known rotating lens system.

These cameras are designed for the casual photographer, so you won't find manual-shooting modes, lens-attachment options, autofocus aids, external-flash support, or other bells and whistles. However, they will allow you to take good snapshots for prints as large as 5 by 7 inches. All of the cameras work with OS 9, OS X, and iPhoto, although there are a few issues with OS support; read on for more details.

Fuji FinePix 2800 Zoom

A major request from digital-camera users is a low-cost camera with a big zoom lens. Priced at $399, the FinePix 2800 Zoom has an f2.8 lens with a 6× optical zoom. It comes with a 16MB SmartMedia card, a USB cable, and Fuji's mediocre FinePix-Viewer software. As far as batteries go, you're stuck with disposables: instead of rechargeables, Fuji gives you four AA alkaline batteries.

The FinePix 2800's main event is its zoom, which is equivalent to that of a 38mm-to-228mm lens on a 35mm camera. The lens has no image stabilization, so you'll need a tripod, or a very steady hand, for shots taken at full telephoto, but overall the images are sharp throughout the zoom range.

Unlike most digital (and film) cameras, which provide an optical viewfinder to look through when you frame your picture, the FinePix 2800 uses an electronic viewfinder in addition to a regular-size, 1.6-inch LCD on the back of the camera. The electronic viewfinder is a tiny LCD that displays what your lens sees; the benefit of this is that you see the exact field of view of your intended image, something you don't usually get with optical viewfinders. It drains the battery much more quickly, however, and seeing a scene can be hard when lighting isn't perfect.

Although the FinePix 2800 has no manual controls, you can adjust the exposure compensation and annotate images with a voice caption. It can also record as much as 60 seconds of video with sound.

The FinePix 2800 Zoom has very good photo quality for a 2-megapixel camera, with great color accuracy. Overall, it's a great value for people who want a little more zoom, and I have very few complaints about it beyond its lack of rechargeable batteries.

Minolta Dimage X

In the looks department, the $399 Dimage X is a knockout. Square in shape, it's much thinner than any other camera with an optical zoom. And while nearly every other digital camera has its lens elements arranged in a linear fashion from the front to the back of the camera, Minolta puts a prism directly behind the lens and runs the elements along the length of the body, perpendicular to the lens. This is what allows the camera to be so thin.

The Dimage X uses Secure Digital cards and includes a skimpy 8MB card, along with a rechargeable battery and a charger. Minolta's Dimage Image Viewer software does a lot, but it's not OS X native (it runs in Classic) and it's fairly clumsy.

The f2.8 lens has a 3× zoom with a 35mm equivalent of 37mm to 111mm. Like the Fuji camera, it has limited manual controls, although it lets you save images as uncompressed TIFFs and annotate them with voice captions. Its movie mode can capture 35 seconds with sound.

The Dimage X starts up faster than almost every other camera I've tested, and overall operation is snappy. One downside is poor low-light focusing (due in part to the lack of an autofocus illuminator).

The Dimage X falls short of other 2-megapixel cameras in the most important area: photo quality. Photos from the camera remind me of frame grabs from a camcorder; they have a soft, fuzzy quality. The photos aren't bad—there are just better options available, especially if the camera's tiny size doesn't grab you. Combine this with a poor bundle and not a lot of features, and the Dimage X isn't up to par.

Nikon Coolpix 2500

While not as small as the Dimage X, the $379 Coolpix 2500 has a small, colorful body that looks more like a fashion accessory than a camera. Unlike earlier Coolpix cameras, which had a rotating lens on the end of the camera body, the 2500 has a lens on the >>

The Fuji FinePix 2800 Zoom

The Minolta Dimage X

The Nikon Coolpix 2500

2-Megapixel Point-and-Shoot Digital Cameras Compared

PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
Fuji FinePix 2800 Zoom	●●●●	$399	Mac OS 9, Mac OS X	800/755-3854, www.fujifilm.com	Long zoom lens; very good picture quality; movie mode with sound.	No rechargeable batteries; poor bundled software; electronic viewfinder difficult to use in dim or bright light.
Minolta Dimage X	●●●	$399	Mac OS 9, Mac OS X	201/825-4000, www.minolta.com	Tiny and stylish; includes rechargeable battery and charger; movie mode with sound.	Image quality not as good as that of comparable digital cameras.
Nikon Coolpix 2500	●●●½	$379	Mac OS 9, Mac OS X	800/645-6689, www.nikon.com	Lightweight and slim; very good image quality; includes rechargeable battery and charger; scene modes for different picture-taking situations.	Movie mode limited to 15 seconds without sound; no optical viewfinder; prone to red-eye; noisy images in low-light situations.

inside. You rotate the lens by sticking your fingers into the space between the lens mount and the camera's body, turning the lens as you go. It's not elegant, but it works.

The camera comes with a 16MB CompactFlash card, a rechargeable battery and charger, a NikonView 5 image viewer, and ArcSoft's PhotoImpression image-editing and -browsing software. NikonView 5 is OS X native and much improved over version 4, but it's still sluggish and buggy. For image-editing purposes, however, the OS X–native PhotoImpression is very good.

The f2.7 lens has a 3× zoom, equivalent to that of a 37mm to 111mm on a 35mm camera. Nikon adds a scene mode to help you out in various situations (fireworks, beach and snow, and night portrait, for example). And a Best Shot Selector feature lets you take a maximum of ten shots (you simply hold down the shutter-release button) and then chooses the sharpest shot for you. But the Coolpix's movie mode is limited to 15-second silent movies.

The 2500's most glaring omission is an optical viewfinder. You use this camera's LCD as a viewfinder, which puts more strain on the battery and makes it hard to frame a picture outdoors in bright light. Fuji's approach, the electronic viewfinder, is better than relying solely on the rear LCD for taking pictures.

The Coolpix takes very good pictures in most situations, producing sharp and properly exposed images with accurate colors. One area where I had problems was with flash portraits, which showed a lot of red-eye, even when I chose the red-eye–reduction feature. The camera also automatically boosts the ISO sensitivity in low-light situations, resulting in much noisier pictures.

Weighing In on the 2-Megapixel Market

If you want an inexpensive "big zoom" camera, the Fuji FinePix 2800 Zoom is really your only choice, and it boasts very good image quality to go with its long lens. Minolta's diminutive Dimage X, while stylish, suffers from image-quality problems that other 2-megapixel cameras don't have. If you're looking for a small camera, the Nikon Coolpix 2500 is a good buy, with nice image quality and a better battery than the Dimage's.

Cameras with higher resolutions have the "wow factor" going for them and draw a lot of attention, but a 2-megapixel digital camera can be the perfect solution if you're looking for simplicity; the ability to take quick, easy snapshots; and low cost. In addition to the cameras reviewed here, other small cameras to consider are the Canon PowerShot S200 and S330, the Olympus D-520Z, and the Sony DSC-P71. □

JEFF KELLER is the editor of the Digital Camera Resource Page (www.dcresource.com), which includes reviews and ratings of more than 360 digital cameras, and dvspot (www.dvspot.com), a consumer-oriented DV-camcorder site. Send feedback about this column to reviews@macworld.com.

> Apple Remote Desktop

continued from page 46

program lets you create groups to manage them. These groups come in quite handy, because you can include a client in more than one group (such as physical location, function, and hardware type).

Interact Better

Apple Remote Desktop lets administrators interact with other Mac users on your network through their workstations, execute operations on remote workstations, and generate reports about those workstations. Apple organizes these functions into three menus: Interact, Manage, and Report.

To use Apple Remote Desktop's features, you simply select the name of the target workstation from any Apple Remote Desktop window and click on the corresponding icon—Observe, Control, or Share Screen, for example—in the customizable toolbar at the top of the window. But you're limited in how many features you can activate simultaneously (for example, you cannot observe some workstations while controlling others), and you can't adjust the size of the window that displays the screen of a remote workstation.

The program's Interact functions are quite similar to those in Netopia's mature Timbuktu Pro 6.0.1 (●●●●½; *Reviews*, March 2002), which allows you to remotely observe and control another computer, as well as perform file exchanges. But Apple Remote Desktop extends the notion of control to include sharing your screen with that of anyone on the network, viewing the screens of as many as four users simultaneously, and locking students' screens when you want to focus their attention elsewhere. Using Apple Remote Desktop, for example, a teacher can demonstrate a task and then observe the desktop of one or more students as they perform the task on their own. And since instructors can control students' desktops, they can provide help without leaving the front of the classroom.

Apple Remote Desktop also includes Text Chat, which is similar to instant messaging, and Broadcast, which lets you send a text message to more than one desktop. We found the chat feature helpful and easy to use, but it wasn't nearly as easy as alternatives such as AOL's Instant Messenger. Broadcast proved troublesome, especially when running in OS 9.1, where it sometimes caused application crashes.

Not Quite Software Distribution

Apple Remote Desktop also allows you to copy or delete files on remote workstations, but these tasks are not quick and easy, as Apple claims. In a classroom, you can use the Copy Items feature to replace a folder of documents used during a class with a fresh set of files. But if you want to update an application that relies on files spread throughout the file system, you will have to go through the tedious process of placing them manually, because Apple Remote Desktop cannot interpret installation scripts or packages. You can copy a folder of files from a location on the administrator's workstation to the same relative location on a managed remote Mac, but if you need to update many files, this isn't helpful.

What's on Those Machines, Anyway?

When you need to find out what software is installed on your client Macs or count how many you need to upgrade, Apple Remote Desktop's reporting feature comes in handy, allowing you to collect hardware information and a limited amount of software information from your network.

Built-in reports with set parameters are included to help the administrator identify particular workstations for follow-up or troubleshooting. If you need to know which applications need updating, the Software Version Report shows the various software versions installed on the administrative workstation and on one or more network workstations. However, you can only compare the versions on client Macs with those on the administrator Mac—Apple Remote Desktop will not let you create an inventory of all the applications installed on a computer. And although you can search for specific items on a remote desktop, you cannot browse the file system (as you can with Timbuktu Pro), so locating applications or files can turn into an unnecessarily time-consuming hunt.

Macworld's Buying Advice

With its combination of remote-control, management, and reporting features, Apple Remote Desktop 1.0 brings together management tools that network administrators won't find in any other single application at such a reasonable price. But due to problems with OS X–client installation, limited ability to manage software on remote desktops, and imperfect reporting capabilities, this initial iteration needs improvement before it will meet network administrators' standards. □

RATING: ●●½

PROS: Useful, innovative features for classroom instructors and help-desk staff.

CONS: Buggy OS X–client installation; can't distribute or install software remotely; some interface quirks.

PRICE: Ten-user license, $299 ($149 for education); unlimited license, $499 ($299 for education)

OS COMPATIBILITY: Mac OS 9 and Mac OS X (client workstations), Mac OS X (administrator)

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

IRISPEN II

Pen Scanner Puts Optical Character Recognition at Your Fingertips

BY CHARLES PURDY

Researchers, students, and others who use snippets of text in their writing will applaud the IRISPen II's ability to scan text—a line at a time—directly into almost any program, for later editing. PowerBook-toting business travelers and data-entry workers, too, may find IRIS's lightweight and accurate (but OS 9–only) OCR scanner very handy.

Smaller than the average TV remote control, the IRISPen, which attaches to your Mac's USB port, is a snap to set up—as is the accompanying software, which you can configure for right- or left-hand scanning. The pen has a button that can be programmed to act as two keyboard commands (for example, one click for a tab and two clicks for a return).

IRISPen's software comes in two editions, Standard and Executive, both of which let you scan text into either the program's clipboard window (where it isn't editable) or another program. The Executive edition adds impressive features such as bar-code scanning; recognition of handwritten numerals; and rudimentary speech synthesis, which lets you hear what you're scanning.

The program supports 56 languages, and it recognized just about any typeface we put under the pen's tip. It even read material from a dot-matrix printer and spreadsheet data, but it couldn't scan large type and pale-colored text. And although the IRISPen approached the company's promised scanning speeds of 100 characters per second in our tests, high-speed scans compromised accuracy. Slower scans yield much better results, and holding the pen firmly is a must.

Macworld's Buying Advice

With its intuitive, customizable software and data-reading abilities, the IRISPen II can be used in countless ways. If you need to do line-by-line text scanning or many types of data-entry work, it's the tool to have on hand. □

RATING: ♦♦♦♦

PROS: Accurate; easy to use; impressive data-reading abilities; new data-entry and speech-synthesis features in Executive edition.

CONS: High-speed scanning compromises accuracy.

PRICE: Standard edition, $141; Executive edition, $176

OS COMPATIBILITY: Mac OS 9

COMPANY: IRIS, 561/395-7831, www.irislink.com

OMNIGRAFFLE 2

Improved Chart-Drawing App Helps You See the Big Picture

BY CHARLES PURDY

The potential shown by The Omni Group's OmniGraffle 1.0 (*Reviews*, October 2001) is fulfilled in the more mature OmniGraffle 2.0.2. This version of the OS X–native chart-creation program includes enhancements such as the ability to implement AppleScripts and incorporate hyperlinks in charts. There are also several cool new design tools.

OmniGraffle is generally reliable—though one inexplicable crash served as a reminder to save work often—and it was fairly easy to use, once we got the hang of its unique interface. The printed manual walks you through the creation of a simple diagram and gets you acquainted with OmniGraffle's tools, panels, and palettes. Via this interface, you can generate and color shapes, insert text, connect objects, and otherwise structure your chart.

For organizational pros and developers, OmniGraffle's more-advanced new features include support for Project Builder files. The comprehensive Selection panel gives you myriad fine-tuning options, and you can export finished charts in many standard formats, such as JPEG, GIF, TIFF, and PDF.

As in version 1.0, the Auto Layout tool, which you can use to reorganize a chart in a way that "makes sense" to the program, often had us scurrying for the undo command. Complex hierarchical charts aren't served well by this tool—it can misinterpret parent-child relationships and randomize a chart's order.

Macworld's Buying Advice

If you have a diagram to draw in OS X, OmniGraffle 2.0.2 is for you. You may have to invest some time in learning the program, but you'll be more than compensated by its organizational wizardry. □

RATING: ♦♦♦♦

PROS: Excellent tool set; good for both professional and casual users.

CONS: Enigmatic Auto Layout tool.

PRICE: $65; download, $60; upgrade from version 1.0, free

OS COMPATIBILITY: Mac OS X

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

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POWERKEY PRO USB 650

Ingenious Power-Saving Device Also Provides Reliable Crash Recovery

BY GEOFF DUNCAN

For complete power control, Sophisticated Circuits offers the PowerKey Pro USB 650, a programmable six-outlet power strip. Mac owners can easily manage the strip either from a computer or remotely via telephone. They can then determine when devices such as Macs, other peripherals, or even lights are on or off. Even better, the PowerKey Pro can restart crashed Macs or relaunch failed applications—a godsend for server administrators and others responsible for unattended Macs.

The PowerKey Pro takes its direction from the well-designed PowerKey 4.1 software, which is now available for OS X, as well as for OS 8.6 through 9.

Fire It Up

With six numbered outlets spaced far enough apart to accommodate most AC adapters, the PowerKey Pro looks like an oversize, translucent blue power strip. Six switches let you turn outlets on and off, and each outlet has an LED that indicates whether it's receiving power. A custom cable connects the PowerKey Pro to a USB Mac, and a standard telephone jack lets you connect it to a phone line for remote management.

The hardware is cool, but the heart of the system is the PowerKey software, where you tell the PowerKey Pro how you want it to behave. For each of the six outlets, you can schedule when the power is on, as well as one-time or recurring events that make your Mac wake up, start up, shut down, or go to sleep. You can also assign systemwide keyboard equivalents to PowerKey actions. For example, with one keystroke, you can turn off power to your printer or turn on a bank of video-production equipment.

Connecting the PowerKey Pro to a telephone line enables you to trigger PowerKey events remotely: you determine how many rings it should wait before answering the line and then designate touch-tone key combinations that effectively serve as passwords for your events—a great feature for off-site administrators who might need to restart a Mac server without driving across town.

Like magic, both scheduled and phone-controlled events work even if your Mac isn't turned on, allowing you to shut down when you leave for vacation and know the PowerKey will turn the office printer on and off each weekday for everyone else while you're away.

Take Control Over Crashes and Restarts

Two versions of the PowerKey Pro are available: the $199 SOHO version includes scheduling, hot keys, and remote management via telephone; the $299 Admin version adds comprehensive logging and the ability to restart your Mac after a system crash or power failure.

In OS 8.6 through 9, the Admin version can attempt to relaunch any application that crashes. And in OS 8.6 through 9 *and* X, the PowerKey software can also monitor certain server applications directly; no servers support it yet in OS X, but WebStar, LetterRip Pro, Web

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BY | PETER COHEN

From Pinball to Action, Take a Mac-Gaming Nostalgia Trip

Everything Old Is New

A CONSTANT CYCLE OF CHANGE GOES ON IN THE COMputer industry, and that's especially obvious when it comes to games. But as the saying goes, the more things change, the more they stay the same. So today you can play a red-hot 3-D action game that's got roots in the Apple II, a kids' game that is clearly from the creators of a clutch of all-time classics but features all-new characters, a familiar swords-and-sorcery role-playing game that tosses genetic engineering into the mix, and an old-style arcade game that has found new life on the Mac. And what if you're longing for the days when you could sit in a molded-plastic chair at the arcade and play games until you lost all feeling in your legs? We've got you covered there, too.

Third Yuck Splattering Nazi-spawned zombies is just one of the gross attractions in Return to Castle Wolfenstein.

An Old Favorite

If your experience with Apple computers predates the Macintosh, you may remember a great old Apple II game called Castle Wolfenstein. Featuring voice synthesis and color graphics laid on a black background, the original Wolfenstein game was a marvel of its age, and it later inspired the folks at Id Software to create a 3-D version with the not-so-clever name Wolfenstein 3-D.

Fast-forward more than a decade. Id Software's place in computer-gaming history is secure, with its Doom and Quake among the best-selling games of all time. And the company has just released a new game based on the Quake III Arena engine: Return to Castle Wolfenstein. Brought to the Mac by Aspyr Media, Return to Castle Wolfenstein puts you in the classic role of Office of Secret Actions agent B. J. Blazkowicz—but times have certainly changed.

As Blazkowicz, you're charged with a variety of missions put forth by a clandestine Allied organization during the darkest days of World War II. Hitler's right-hand man, Heinrich Himmler, is coordinating efforts to mix science and the occult to build an invincible army, and you're the one who must put a stop to it. To that end, you're a one-man fighting force pitted against the combined might of Nazis and horrific creatures from beyond the grave.

If the plot sounds like a little bit of *Raiders of the Lost Ark* mixed with a healthy dose of *Dawn of the Dead*, you're not far off track. The single-player mode of Return to Castle Wolfenstein is deep, with a variety of missions: you'll blast your way through hordes of slavering zombies who are intent on eating you alive, and you'll use a wide range of weapons to hammer legions of Nazi henchmen. Some missions emphasize stealth and skill with specific weapons, such as sniper rifles and silenced submachine guns, while others are just flat-out fragfests where you shoot everything in sight until it stops moving.

What makes any Quake-derived game fun is the multiplayer mode, and Return to Castle Wolfenstein delivers here, too. This game emphasizes team-based play, with each player assuming a different identity such as medic, ordnance expert, and so on. Your playing style will determine which particular role you prefer to fill.

Multiplayer support works across platforms, so whether you're using a Mac or a PC, you can play on the same server and against the same people. One shortcoming of Aspyr's initial Mac release is that it lags behind the PC version, preventing Mac gamers from participating on some PC servers that have been updated to the most recent version. As we went >>

RETURN TO CASTLE WOLFENSTEIN

RATING: ♦♦♦♦

PROS: Dazzling graphics; extensive single-player missions; great multiplayer capabilities.

CONS: Steep system requirements; disparity between PC and Mac versions may make finding online servers difficult.

PRICE: $50

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

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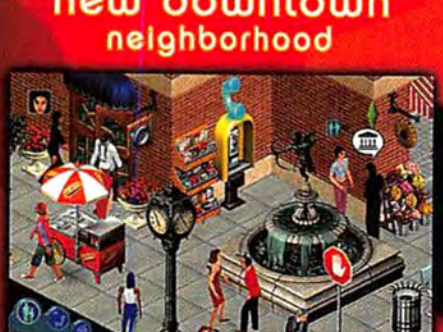

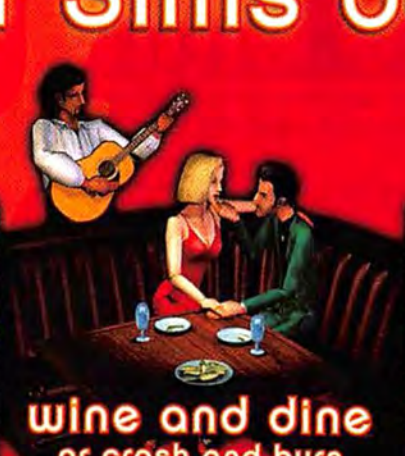

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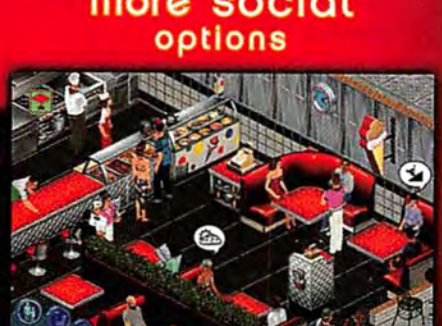

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to press, the game's developers were working on an update.

Return to Castle Wolfenstein also imposes fairly harsh system requirements: you'll need a 500MHz processor to get the most out of the game, and an ATI Radeon or Nvidia GeForce2 MX card is recommended for the best graphics results (though I had luck with an ATI Rage 128 card).

The Bottom Line Return to Castle Wolfenstein delivers all the hallmarks of an Id Software release: gorgeous graphics, compelling online game play, and loads of nasty monsters and evil bad guys to battle. If the steep system requirements and the lack of parity between Mac and PC releases don't put you off, this is definitely a good take.

Fantasy with a Twist

There's a timelessness to Spiderweb Software's games that I find undeniably appealing. They're not as flashy to look at or as buzzword compliant as other role-playing games, but they're unquestionably solidly crafted and fun to play. That brings me to Geneforge, the company's most recent creation.

Geneforge is a swords-and-sorcery adventure game with a twist. The game revolves around the Shapers, an order of mystics that can use a combination of magic and genetic engineering to create life-forms. You find yourself on a long-abandoned island populated by *serviles*—servant creatures who were created by previous Shapers living in the island realm and who are now independent.

At key points in the story, you interact with nonplayer characters. The manner you take with these characters, as well as the answers you give them, determines how the story progresses. It's this sort of depth that separates Spiderweb from some of its competitors: Geneforge presents a rich and varied tapestry of characters and situations that are very rewarding to interact with.

GENEFORGE
RATING: ♦♦♦
PROS: Clever twist on standard adventure story line; varied and intensely immersive gaming experience.
CONS: Clunky inventory control.
PRICE: $25
OS COMPATIBILITY: Mac OS 9
COMPANY: Spiderweb Software, 206/789-4438, www.spiderwebsoftware.com

Along the way, you'll find plenty of monsters to hack and slash. How you do that is partly determined by what class of character you decide to be at the beginning of your adventure: Shaper, Guardian, or Agent. Each has a different mix of magical and physical strength.

The Geneforge game view is a three-quarters perspective, so its interface will be familiar to gamers weaned on titles such as Diablo and Baldur's Gate. There's no mistaking Geneforge for one of those games, but Spiderweb has done a marvelous job of crafting an easy-to-use interface around an engine modern enough to appeal to a wide swath of gamers.

Unfortunately, Geneforge isn't OS X compatible. The game runs well in Classic mode, but waiting for Classic to boot just to play the game is a bit of a turn-off. The interface has some quirks, too—while it's easy to use and understand, I had issues with parts of it, especially inventory control.

The Bottom Line While it lacks the spit and polish of more-mainstream commercial efforts, Geneforge is an immersive adventure, and it has great game play. I just wish that it were OS X native.

DNAgents Magic and genetic engineering collide in Spiderweb Software's swords-and-sorcery adventure Geneforge.

Not Quite a Comeback

Under the leadership of cofounders Ron Gilbert and Shelley Day, Humongous Entertainment developed popular children's-game franchises including Freddi Fish, >>

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LucasArts

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Bubble Boys Moop and Dreadly have colorful adventures—with the help of kid game players—on Bing Bong Island.

Putt-Putt, and Pajama Sam. When Gilbert and Day left Humongous two years ago, they didn't get out of the game business—instead, they started Hulabee Entertainment, which is responsible for a new game published by Disney's Plaid Banana Entertainment: Moop & Dreadly in The Treasure on Bing Bong Island.

Moop is a big purple creature somewhere between an ape and a cat, and he's a friend and foil to Dreadly, an energetic youngster who goes in search of adventure on the high seas. Together, the two meet a variety of colorful characters along the way.

Like Humongous's Junior Adventure series, Hulabee's Moop & Dreadly game emphasizes game play over learning. While kids might hone their problem-solving skills, the game is really just an escapist romp that puts them in the midst of a fun, well-crafted story.

Most developers and publishers of kids' software take a conservative approach to system requirements, but Hulabee is taking a bit of a risk: Moop & Dreadly runs only in OS X.

MOOP & DREADLY IN THE TREASURE ON BING BONG ISLAND

RATING: ♦♦♦♦

PROS: Lots of clickables in each scene to help amuse younger players; super production quality.

CONS: No replay value.

PRICE: $20

OS COMPATIBILITY: Mac OS X

COMPANY: Plaid Banana Entertainment, 800/289-7949, www.plaidbananagames.com

The Bottom Line If you're looking for some fine adventure entertainment for a youngster in your house, you can't go wrong with Moop and Dreadly's first adventure. Hopefully, it won't be their last.

Open Sesame

Pinball games come and go on the Mac, but over the years LittleWing has set itself apart by crafting really fine simulators of solid-state pinball games. Now the maker of Crystal Caliburn, Tristan, and Loony Labyrinth adds Jinni Zeala to its library.

Published in the United States by MacPlay, Jinni Zeala looks and plays like some Las Vegas variation on the Arabian Nights, complete with flashing neon and bright lights. Featuring ramps, multiball traps, and five different bonus stages, Jinni Zeala is the real deal when it comes to Mac pinball simulators.

Injinnious LittleWing's Jinni Zeala strikingly re-creates arcade pinball machines, right down to the tilt.

If your experience with Mac-based pinball has been limited to arcade-style stuff, then Jinni Zeala will seem like a very different animal. LittleWing carefully creates solid-state pinball games with the appropriate physics and a board design you'd expect to see in a real coin-op arcade pinball game. The ball moves realistically over a complex table with a lot of different challenges.

You can spend hours (and who knows how many virtual quarters) trying to activate bonus stages by collecting items on the playfield in the correct order. Using

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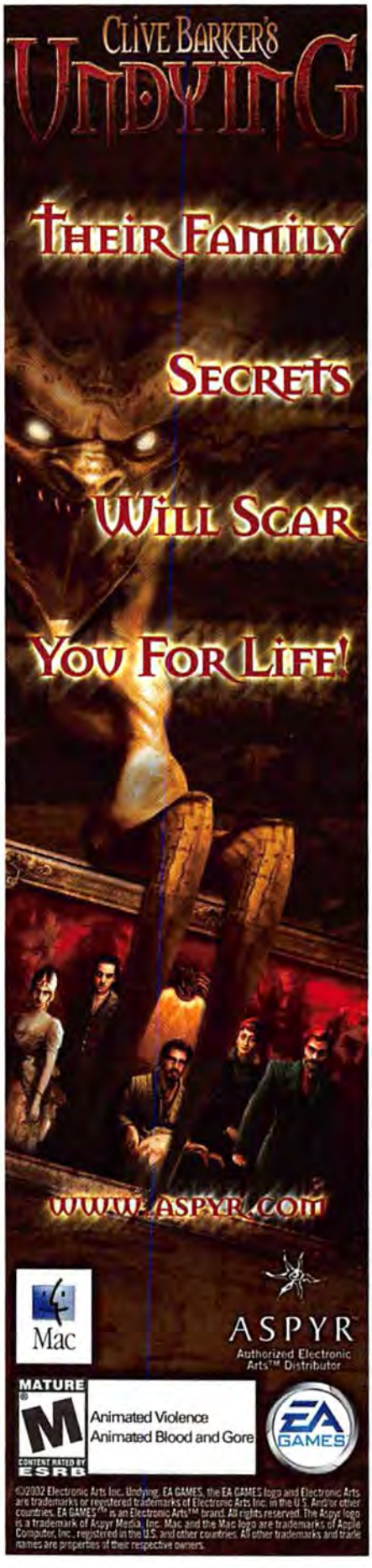

JINNI ZEALA

RATING: ♦♦♦♦½

PROS: Loads of challenge in bonus level; realistic physics and gorgeous table work.

CONS: No way to zoom in on the action.

PRICE: $20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: MacPlay, 214/855-5955, www.macplay.com

a careful combination of flipper action, tilt, and luck, you can hit drop targets and then sink the kick-out ball from those targets into the hole associated with them.

Jinni Zeala is particularly good at telling you what you should do next: it fills the sides of the screen with hints and tips. Its sound effects and music go along well with the whole Arabian-fantasy theme.

However, a less-than-intuitive interface and a total lack of documentation hamper the game. For example, it's easy to change the default key assignments for flipper, plunger, and nudging characteristics—but it's impossible to figure out what the defaults are.

The Bottom Line Pinball may be a niche market for Mac gamers, but you can't do better than what this game has to offer. Jinni Zeala is a near-flawless execution of a challenging solid-state pinball game for your Mac.

Sit on It!

If you're looking for something a bit out of the ordinary to enhance your Mac gaming rig's audio abilities, consider Interactive Seating's BattleChair. It's a chimera—a combination of an office chair and a two-speaker stereo system equipped with satellite and subwoofer.

Basically, the BattleChair is a molded-thermoplastic one-piece shell similar to chairs you see in many sit-down arcade games these days. It has a five-leg base equipped with a pneumatic lift mechanism that gives it some of the basic mobility of an office chair. Hidden behind a tough metal screen in its back is an 8-inch woofer that pushes thumping bass right into your lower back—just the thing to immerse you in the action as you're fragged by a rocket launcher in a Quake III Arena deathmatch. Trust me. Two 5.25–inch speakers sit on either side of the headrest, providing a stereo field that points right at your ears—or at the back of your ears, anyway.

The basic BattleChair plug-and-play kit includes an amplifier that you can hook up to your Mac's headphone speakers and a cable that attaches your Mac's audio output to the amp. The amp sits on or underneath your desk and plugs into a special adapter cable that attaches to the bottom of the chair. The cable, about 17 feet long, may occasionally get wrapped around the base of the chair or caught in the wheels, but it gives you plenty of maneuvering room.

Interactive Seating offers options such as adjustable armrests, cushioning (which I highly recommend if you don't enjoy losing all sensation in your legs), and "action trays" for your game pad, joystick, or beverage.

The Bottom Line Sure, you could spend less by buying a modest office chair, a decent pair of stereo speakers, and a subwoofer for your Mac. But would the results look as cool as the BattleChair? Heck, no. □

BATTLECHAIR

RATING: ♦♦♦½

PROS: Pounds bass into your back; great for action-oriented games and not so bad for DVD movies, either.

CONS: Uncomfortable without padding; cable can occasionally get caught in undercarriage.

PRICE: $299 (options extra)

COMPANY: Interactive Seating, 805/650-9956, www.battlechair.com

Conjuring servants, battling Nazis and shambling zombies, finding pirate treasure, and suffering tinnitus while testing noisy chairs: it's all in a day's work for MacCentral.com Senior Editor PETER COHEN, who'd take this over a regular job any day.

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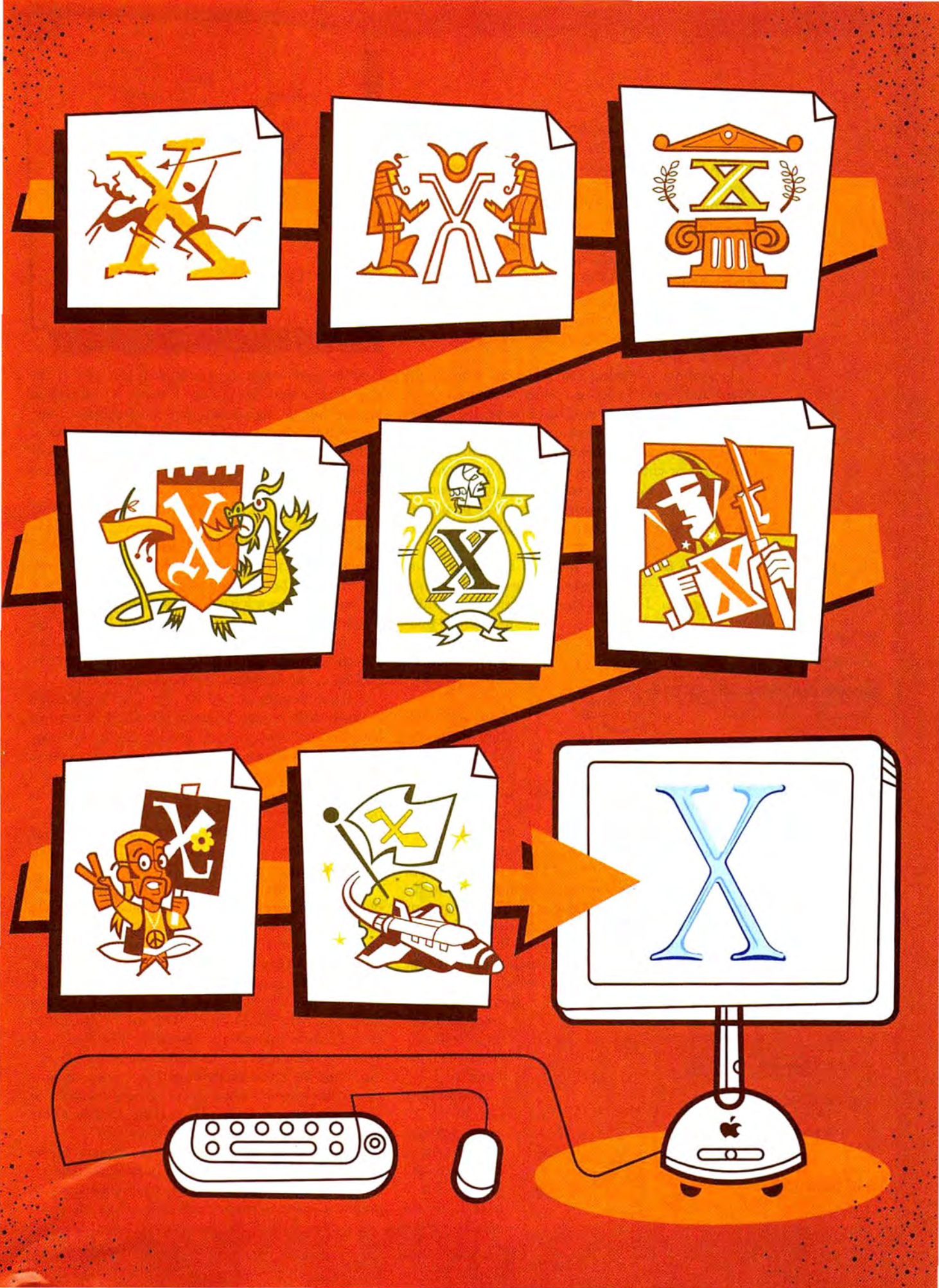
MAC OS X EVOLVES

Apple's Update Takes the Next Step

More than a year after its release, Mac OS X has grown from a curiosity into a full-fledged operating system. Even ardent classic-OS loyalists recognize that the future of the Mac lies in OS X. Apple's latest OS X update—code-named Jaguar and expected by the end of the summer—can't be described in mere bug fixes and interface tweaks. It brings new applications, new features, and exciting new technologies to OS X: it's an important step in Mac OS's evolution.

This article is based on information released by Apple and on development editions of Jaguar; as a result, some of the features we describe may be different in the final version, or may not appear at all. In the months before Jaguar's debut, Apple is sure to produce a few more tricks from its sleeve. Look for our reports in future issues of *Macworld*.

ILLUSTRATION BY PAUL HOWALT



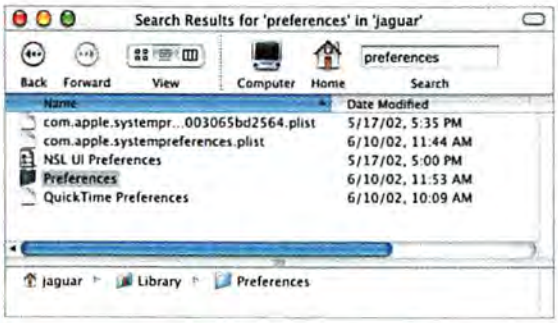
Interface Changes

OS X's interface can evolve in two basic ways: Apple can restore classic Mac OS features or strike off in new interface directions made possible by OS X's power. In Jaguar, we'll get a bit of both.

Spring-Loaded With the help of shareware developers, many OS 9 features (including a customizable Apple menu, the application-switching menu, and the ability to windowshade on-screen windows) have already returned to OS X. But some features require OS support that only Apple can provide. One such feature is *spring-loaded folders*, which let you use the Finder to navigate quickly through multiple levels of your hard drive.

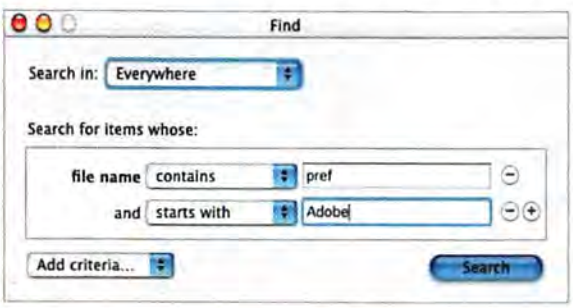
Here's how it works: You select an item in the Finder and drag it on top of a folder, without releasing your mouse button. After a brief pause, the folder's window opens, and you can drop the item inside or drag it onto a folder within that window. That process can continue until you reach the most deeply nested folder. You can toggle the feature on and off from the Finder's Preferences window, where you can also set the length of hovering time required before a folder pops open.

Find with Finder Until now, the Finder has been poorly named—it has never been particularly good at finding files. That's not the case with Jaguar, which moves file-finding capabilities out of Sherlock and into the Finder.



Finder Finds Use the Finder to find files quickly from within a window (above), or do more-detailed searches by choosing Find from the File menu (below).

An early development version of OS X sported a search box built into the Finder's toolbar. This seemed like a great idea, but the feature was conspicuously absent when OS X shipped. Now that box is back—just type the name of the file you want, and press return: the Finder searches every folder within the currently selected folder. A list of results appears in the same Finder window. To open an item in the list, double-click on it. You'll find more-powerful search tools behind the Find command (in the File menu), which you can use to search your entire hard drive and to make complicated searches based on several criteria (see "Finder Finds").



Smarter Dock One of OS X's most polarizing features has been the Dock. Some hail it as an interface innovation; others think it just gets in the way. If you hate the Dock, beware: it remains in Jaguar—but it looks a little different. It now has a transparent background, and minimized windows appear with the appropriate application icons attached to their lower right corners; you can close those windows from the Dock by control-clicking and choosing Close.

In case you're not a big fan of minimizing windows into the Dock, Jaguar offers an alternative: Minimize In Place, an option in the Dock preference pane. With Minimize In Place selected, clicking on a window's yellow Minimize button reduces the window to icon size but leaves it on your screen. You can drag this small icon where you want it, for temporary storage. (You can also drag minimized windows into and out of the Dock.) Whichever minimizing method is your default, control-clicking on the Minimize button will do the other.

Get Info Returns In OS X 10.0, Get Info's name changed to Show Info. In Jaguar, the Get Info window has returned—with a major face-lift. All the information about your Finder selection is viewable via a series of disclosure triangles (and as many segments as you'd like can be open at once), rather than appearing in parts behind a pop-up-menu interface. And Get Info lets you set permissions for files and folders, although you need an administrator password to change a file's owner or group (see "More Info").

Smaller Touches Jaguar's Finder also offers a few tweaks and improvements on a smaller scale. When you open and close windows, you no longer see rectangular outlines of your window swooshing in and out—instead, the entire contents of the windows zoom in and out, as if they were being minimized or maximized. You can now use the keyboard to navigate through Open and Save dialog boxes. The size of the text in every Finder window is now adjustable. The Finder can generate thumbnail previews of many more file formats. And the green Resize button on Finder windows now works properly when you're resizing a window in Icon view, automatically reducing the window to the smallest size that still displays all your icons.

The Preference Shuffle OS X 10.1 reorganized the placement of icons in the System Preferences application; with Jaguar, there's even more movement, as new preference panes arrive and others depart. In a new cat-

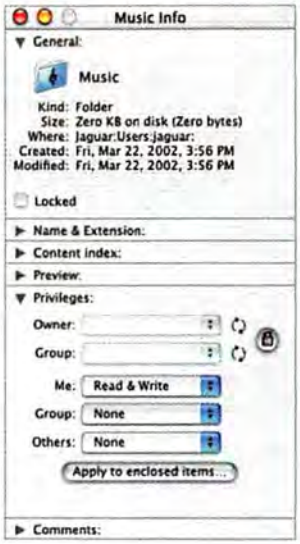
egory of panes, Digital Hub, you can tell your Mac what to do when you insert an audio CD, connect a digital camera or hard drive, or press a scanner's scan button. For each action, OS X can do nothing, open a particular application, or even run an AppleScript. This opens up a lot of possibilities—for example, if you carry data between work and home on a FireWire drive, you might set your Mac to run an AppleScript that synchronizes your local hard drive with the FireWire drive as soon as you plug the drive in.

In Jaguar, adjusting user preferences is more straightforward. You don't need the Users pane unless you're creating or removing users (and you have an administrator password). You now drag items that you want to launch automatically at login to the new Login Items pane, formerly a tab within the Users pane. And the new My Account pane lets you alter basic user settings such as your name, picture, and contact information.

Universal Access and Sharing have major updates in Jaguar. Universal Access promises to improve the OS X experience for disabled users (see "Macs without Limits," May 2002). With the help of settings in Universal Access, you can use a few keyboard shortcuts to zoom in and out or invert your screen's colors. And instead of a system beep, a white flash that goes across your entire screen can get your attention.

The Sharing pane's tabbed interface has been overhauled. The Services tab lets you turn OS X's numerous built-in server features (file sharing, FTP, Web sharing, Telnet, printer sharing, and more) on and off. The Firewall tab finally brings an Apple-supplied interface to OS X's built-in firewall, previously configurable only via shareware programs (see "Share Alike"). The Firewall interface is simple but highly configurable, allowing you to protect custom ports and offering several presets for commonly used networking programs, including Timbuktu and Retrospect.

Other updated panes include Energy Saver, where you can now choose and create preference presets; Network, which helps AirPort-enabled systems to better find a network when they wake up; Classic, which now lets different OS X users use their own OS 9 preferences; and Date And Time, which lets you turn the 24-hour clock on and off without going to the International pane.



More Info The Get Info window has been revamped so you can modify file privileges directly.

New Software

Jaguar is about more than interface enhancements. As a part of this release, Apple is introducing a new application and providing major updates to existing programs.

Apple-Style Chat The iChat application is Apple's take on instant messaging. Functionally, iChat is much like AOL Instant Messenger—in fact, they both use AOL's instant-messaging service. But iChat has a highly stylized interface that includes comic strip–style word balloons for message text. In addition to standard buddy lists, iChat shows you everyone on your network who's logged in to iChat—making it easy to send notes to logged-in friends or coworkers, even if you don't know their nicknames or have them in your Buddy List.

The version of iChat we saw certainly delivered in terms of its unique look and approach to live chatting; however, it's unclear whether iChat offers anything that AOL Instant Messenger and shareware programs such as Adium and Fire don't.

Sherlock Reborn With Find features appropriately moved to the Finder, Sherlock has been transformed into a tool that gets information via Web services.

Share Alike Built-in firewall controls are among the new features in the reworked Sharing preference pane.

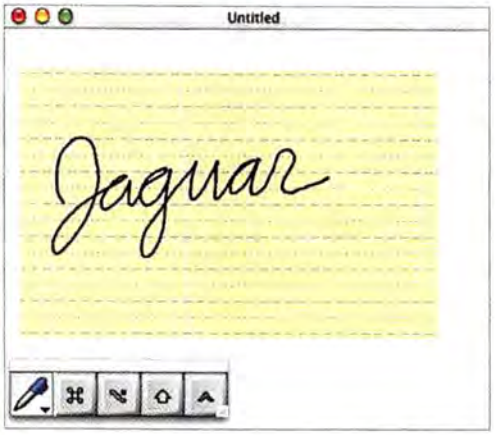
>>

Personal Database

For years, Mac OS has had a repository of preferences that allows every Internet-using program on your Mac to have a common frame of reference. For example, if you change your e-mail address in your Internet preferences, every program knows about it. With Jaguar, Apple has applied that concept to something a little more touchy-feely than TCP/IP settings: human beings.

The home of Apple's new shared database of information about people is Address Book, a mostly useless program in previous versions of OS X. Now Address Book information is accessible by any program that has been modified to support this new system (see "Address You Up"). Your e-mail program can use the Address Book database to store e-mail addresses, iChat can store screen names, and a contact manager can add addresses and other information.

Keeping a master Address Book means that you don't have to update a person's contact information in multiple places. For example, a college friend might send you an e-mail message containing her new e-mail address and home phone number. After you update that information once on your Mac, it will appear everywhere—even on devices that sync with your Mac, such as Palm organizers and cell phones.—JASON SNELL



Virtual Ink With Inkwell, Newton-style handwriting recognition arrives in Mac OS. But what new Apple hardware will take advantage of this technology?

Jaguar's Sherlock—which appears to be an entirely new app—works by taking your requests for information and querying Internet servers to find the answers. For example, this version of Sherlock can show you all the movies playing near you, look up words in a dictionary, find someone in the online yellow pages, and even let you track a package.

To be fair, many of these features have existed in various tools before, most notably Karelia Software's $29 Watson (www.karelia.com), which provides almost exactly the same search features as the prerelease version of Sherlock we saw.

Remade Mail In the first version of OS X, Apple introduced Mail, a free e-mail program with a basic set of features. Jaguar brings a new version of Mail with significantly improved functionality. Mail's most promising new feature is perhaps intelligent filtering, which analyzes a message's content and decides whether the message is spam.

Address You Up The new Address Book is the center of a master database that lets any OS X app share information about people with any other app.

By default, this feature is set to training mode, meaning that you see all your e-mail and can tell Mail whether a message is in fact spam. Once Mail learns from your cues to differentiate between spam and valid e-mail, you can switch to the Mail filter's automatic mode, and it will divert spam into a separate mailbox.

Other new features in Mail include more-flexible mail rules, the ability to merge multiple accounts into one set of mailboxes, the ability to perform a search across multiple mailboxes, and several security improvements, including support for SSL and Kerberos.

New Technologies

An operating system is more than its interface and collected applications—its underlying technologies often determine how usable it is. With Jaguar, Apple introduces several intriguing technologies that promise to take the Mac in new directions. In addition to the new, systemwide Address Book (see "Personal Database"), Jaguar will have a new version of QuickTime (see "QuickTime Beefs It Up with New Codec").

Quartz Extreme You may not notice the new imaging technology that Apple has dubbed Quartz Extreme, but if you've got the required hardware—a recent AGP 2× video card with 32MB of memory—all the graphics on your Mac, including 2-D, 3-D, and video, will be accelerated by your video hardware. Since all video content is run through the single Quartz Extreme pipeline, Jaguar can perform compositing tricks Mac OS could only dream of before. For example, when Quartz Extreme is enabled, DVD video can shine through partially transparent windows and menus, continue to play as it's minimized into the Dock, and even play inside the Dock itself.

Half-Newton When Steve Jobs killed the Newton handheld computer, a lot of handwriting-recognition software—which had gotten pretty sophisticated, despite many people's memories of the device's early days—died with it. Or so we thought. But as Jobs said in May when he unveiled Jaguar, "You'd think spending hundreds of millions of dollars on Newton would get us something." That something turns out to be Inkwell, a new handwriting-recognition technology. Using a graphics tablet and Inkwell, you can turn your handwriting into editable text—a yellow legal-pad window appears as you write (see "Virtual Ink").

Illustrators and designers often have graphics tablets, but many other people probably won't buy a graphics tablet just to get handwriting recognition on their Macs. We assume that Apple has grander plans for Inkwell. Its appearance augurs the appearance of Macs with integrated touch-sensitive screens, or even

Networking at Random with Rendezvous

One great asset of AppleTalk networking is that all you need to do to get it working is plug in a bunch of computers. They'll automatically sense one another—without routers, DHCP servers, or any intervention from a networking expert. Apple has long been committed to moving from AppleTalk to TCP/IP, the language of Internet networks—but TCP/IP's inability to create self-configuring networks has been a constant frustration.

Now Apple is a driving force behind ZeroConf, a proposed Internet standard that can create such networks. Apple's implementation of that technology, Rendezvous, will debut in Jaguar.

What will Rendezvous mean to you? It may usher in a new era of interoperability, because networked devices will be able to sense the presence of other devices nearby and swap information with them.

At Apple's 2002 Worldwide Developers' Conference, the company demonstrated a Rendezvous-enabled version of iTunes: When a PowerBook running iTunes woke from sleep near a Power Mac, the PowerBook's iTunes Library appeared in a window on the Power Mac. That Power Mac could browse and play music from the PowerBook, streamed over the network from one Mac to the other.

That's an interesting example, but Rendezvous's killer feature is probably not iTunes sharing, or even iChat's ability to create an automatic Buddy List of iChat users on your local network. With Rendezvous, Apple has developed a framework for on-the-fly data sharing; now it's up to some enterprising programmers to blow us away with Rendezvous's killer app.—JASON SNELL

QuickTime Beefs It Up with New Codec

Also shipping as part of Jaguar is QuickTime 6, the newest version of Apple's media player and authoring environment. The most significant addition in QuickTime 6 is support for MPEG-4, a scalable standard promising higher-quality audio and video at lower bit rates—ideal for streaming and for low-bandwidth devices such as cell phones.

With three main (and competing) multimedia file formats—Real, Windows Media, and QuickTime itself—there have been many complications for viewers and creators. Viewers have been forced to download and use multiple players, and creators have turned to encoding content in multiple formats—and now a new generation of devices, such as PDAs and phones, has complicated things even further. MPEG-4, which is based on the QuickTime file format, is designed to quell that confusion.

Apple's Codec Apple has developed its own MPEG-4 video codec, so other applications that use QuickTime—such as Final Cut Pro—have instant access to all the benefits of MPEG-4.

You can set Apple's encoder to a target data rate so that, for example, a Web surfer with a 56K modem will automatically receive a file formatted for that narrow bandwidth. You can also choose to encode for higher accuracy or greater speed.

Audio Upgrades The MPEG-4 format also includes a new audio codec, Advanced Audio Coding (AAC). AAC files can be smaller than comparable MP3 files but have better sound quality—closer to that of uncompressed CD audio. With support for multichannel audio, higher audio resolution, and true variable bit rate (VBR), AAC offers many advantages over MP3.

Better Experience Although MPEG-4 is the big news in QuickTime 6, there's more that makes the update faster and easier to use.

Streaming audio and video are good because you don't have to download a complete file before experiencing the material, but all Internet connections suffer from hiccups that result in awkward pauses and dropped data. QuickTime 6 (when paired with QuickTime Streaming Server 4) includes better skip protection, and Apple's new Instant-On technology means more-immediate playback for broadband users, as well as scrubbing of streaming content as if it were a local file on your hard drive.

New Features QuickTime 6 has plenty of other new features that make it a valuable upgrade. These include a new DVC Pro PAL video codec, support for Macromedia Flash 5, a new JPEG 2000 still-image codec for OS X, and better AppleScript support. MPEG-2 playback is also supported in QuickTime 6, but it will be available only as an add-on, for a fee.

The Best Things Are (Nearly) Free QuickTime 6 Player is free, as are QuickTime Broadcaster and QuickTime Streaming Server. To run QuickTime 6 Pro ($30) and QuickTime 6 Player, you'll need a PowerPC with at least 32MB of RAM, and OS 8.6 (or later) or OS X 10.1.3 (or later).—TERRI STONE AND JONATHAN SEFF

a tablet-shaped Mac with a pen as its primary interface. With Inkwell, those hardware possibilities are a little closer to reality.

Networking and Security

OS X 10.1 added several features that improved networking and compatibility with Windows PCs. Jaguar takes those capabilities one step further and throws in improvements for OS X workgroups, particularly those in the education market. The most interesting new networking technology, Rendezvous, suggests that a whole new generation of ad hoc collaborative networking is just around the corner (see "Networking at Random with Rendezvous").

Cross-Platform Improvements OS X has been able to connect to Windows servers via the standard Windows SMB/CIFS protocols for some time now—but those features have been hidden away and not particularly easy to use. With Jaguar, connecting to a Windows file server is as easy as connecting to a Mac: they all show up in the Finder's Connect To Server window. Even better, when you turn on File Sharing via the Sharing preference pane, your Mac doesn't just offer up your files to Macs—it also runs an SMB server, allowing PCs to connect to your Mac without any special software. With Jaguar, Macs will be able to coexist on PC-dominated networks right out of the box, with no additional software necessary.

VPN Connections If you've ever tried to connect to your office's servers from your Mac at home, you've probably run into the downside of having a company firewall: legitimate users outside the office network are shut out just as effectively as hackers are. The solution is VPN (Virtual Private Network), which allows outside computers to route their network traffic through an encrypted connection to a private office network.

Mac support for VPN has been spotty in both OS 9 and OS X. But with Jaguar, Apple is attempting to natively support the most-common VPN protocols: IPsec and PPTP, which are often used by Microsoft VPN servers.

PPTP support is built into Jaguar via the updated Internet Connect application. Just choose New VPN Connection from the File menu; type in your PPTP server name, user name, and password; and then click on Connect.

Workgroup Features Some other features that will be of particular interest to administrators of Mac workgroups and computer labs are the reintroduction of the Simple Finder (a simplified version of the Mac interface), the ability to install system software and boot OS X from remote file servers, and the return of USB Printer Sharing, which lets multiple Macs share a single USB printer.

The Last Word

Operating systems that don't evolve risk becoming irrelevant. With Mac OS X, Apple has to carefully balance the addition of innovative features with productivity boosts and bug fixes. Jaguar addresses both needs in exciting ways. □

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BY | KRISTINA DE NIKE

Apple's New Server Proves That Good Things Come in Small Packages

INSIDE XSERVE

Given that this is the man who transformed boxy beige desktop computers into works of art, it's a little ironic that Steve Jobs's latest project is meant to be hidden from sight. But there you have it. Jobs and his team of engineers at Apple recently brought their talent for compact design and powerful performance to the back rooms of the computing world. The result is the Xserve, Apple's sleek new server built from the inside out for speed and convenience.

Apple is by no means a newcomer to the server market. In fact, the company has been selling server hardware and software for almost ten years. But the release of the Xserve represents the first time Apple has used its prowess at industrial design to create a server from the ground up.

The Xserve is a marvel of compactness and accessibility. Unlike the servers Apple has been selling since 1993—basically, modified versions of its high-end desktops—the Xserve looks like a true server. Measuring just 1.75 inches (1U) high, the Xserve is one of the smallest servers on the market. It also boasts some of the fastest motherboard components on a Mac. (In fact, some 3-D–graphics and audio professionals may be tempted to sneak the Xserve onto their desktops just because it's so fast.) The Xserve's drive controller chips, PCI slots, and system RAM are each almost twice as fast as those on the current top-of-the-line Power Mac G4, making the Xserve ideal for serving up dynamic Web pages and database files, as well as for rendering audio or video files.

But in many ways, the creation of the Xserve has been driven by its software. In Mac OS X Server 10.1, Apple at last has a serious Unix operating system. Unix is the leading Web-server platform, and it's growing in popularity as a file server because of its speed and stability. Every Xserve comes with Mac OS X Server preinstalled and offers a license for unlimited users—a bonus for cash-strapped IT departments.

Mac OS X Server (*Reviews*, November 2001), unlike most other versions of Unix, has a graphical interface for setting up file serving for Mac, Windows, and Unix clients, as well as easy-to-use tools for setting up an Apache Web server and Apple's QuickTime Streaming Server software for streaming video. Once the Xserve is mounted in a rack, you can use built-in administration tools to manage it and detect potential problems remotely over the network from any Mac OS X client.

With basic configurations starting at $3,000, the Xserve is priced to compete with Linux servers from Dell and IBM. Apple is aiming its new server primarily at small and medium-sized offices—including traditional Apple strongholds such as design, publishing, audio, and video businesses. It's likely that the Xserve will fit nicely in schools and colleges, where IT departments are already familiar with Macs. The Xserve may also find a home in scientific and technical environments, where researchers are entrenched in Unix and need the power to build large server clusters for processor-intensive projects.

Here's a closer look at the nuts and bolts of Apple's newest entry in the server market. □

KRISTINA DE NIKE has been testing Macintosh servers since 1994. She spends her free time troubleshooting the network at Community Educational Services, a San Francisco–based nonprofit.

IMAGES COURTESY OF APPLE COMPUTER

DISTRESS SIGNAL

Using the Server Monitor software, you can keep an eye on the health of your server hardware—checking for drive errors, poor fan performance, improper internal temperature, and other prefail conditions—from any OS X computer on the network. If you notice anything amiss with one of your machines, you can remotely activate a light on its front and back. Then, when you enter the server room, you won't waste time trying to locate the offending machine among the racks of Xserves.

WIRE TRANSFER

In addition to two FireWire ports on its back, the Xserve includes a third FireWire port on the front of its case, so you can perform data transfers quickly and easily. You can use this port to connect to an external storage device or to put the Xserve in Target Disk mode and mount its drives on another Mac—a PowerBook, for example—for emergency restores or other maintenance.

SLIM CD-ROM

Above the hard drives is a tray-loading 24× CD-ROM drive, for installing applications.

OPEN SESAME

You don't need tools to access the internal components of the Xserve. When you loosen the screws on the front of the case, the internal tray slides out, letting you easily add RAM or replace malfunctioning parts.

SWAP MEET

The Xserve comes with four hot-swappable drive modules—so if one of your drives fails, you can pull it out and replace it without shutting down the server. You remove a drive by first pushing on its front panel. This sends a message to the system and asks it to unmount the volumes that reside on that drive. When the drive is ready, its light turns off, letting you know that you can safely slide the drive out. (For more on the Xserve's hard drives, see "Room to Grow.")

SLIM SERVINGS

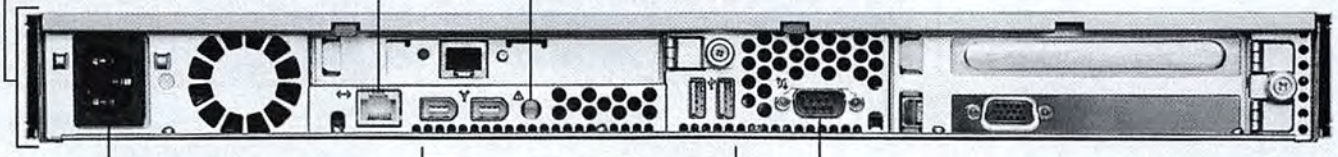
One of the smallest servers available, the Xserve is 1.75 inches high (1U), 18 inches wide, and 28 inches deep. Apple designed the server to fit perfectly in standard 19-inch equipment racks.

IN THE ETHER

There's no shortage of Ethernet options on the Xserve. It not only gives you the option of inserting as many as three additional Ethernet PCI cards (see "Playing the Slots" and "Choices, Choices"), but also comes with Gigabit Ethernet built-in. This port can connect to your network at 10, 100, or 1,000 Mbps, depending on the speed of your other hardware.

BACK LIT

A small light, which you turn on remotely, can help you identify which Xserve needs your attention (see "Distress Signal").



POWER LOCKS

The power-cord connector has a cable-locking clip to prevent accidental unplugging.

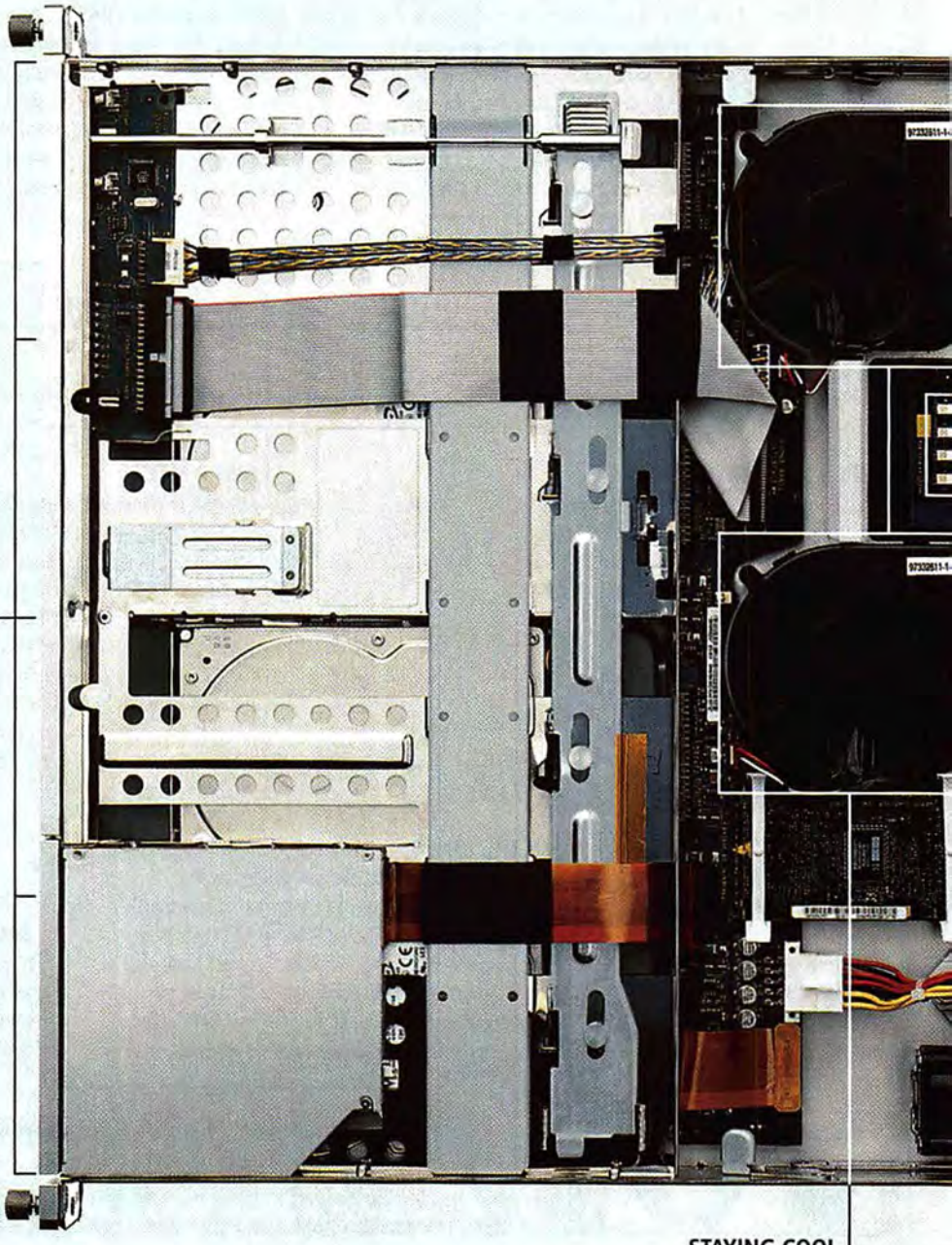
PORT OF CALL

The back of the case has two USB and two FireWire ports. Although you'll probably manage the Xserve remotely, you may occasionally need to attach a USB keyboard and mouse.

SERIAL'S COMEBACK

A PC-standard DB-9 serial connector is featured on the Xserve. When the network is down, you can use this connector to access the server via a serial console (but you cannot use the serial port to access the server in the event of a power failure—to start up the Xserve, for example). You can also use the serial connection to configure devices such as hardware RAID (Redundant Array of Independent Disks) arrays.

FRONT



ROOM TO GROW

Apple gives you the option of installing a 60GB or 120GB drive running at 7,200 rpm in each of the four drive bays—for a whopping total of 480GB of internal storage. (Although Apple highly discourages it, you can swap the Apple-supplied drive with one from a third-party vendor.) Each Xserve drive has its own ATA/100 controller for maximum throughput. While ATA/100 controllers can be slower than the SCSI controllers used by most servers, they're significantly cheaper. Mac OS X comes with software for RAID levels 0 and 1. If a drive in a RAID 1 array fails, the system automatically switches to a healthy drive. However, it's worth noting that you can't combine RAID levels 0 and 1, so you'll have to choose between getting maximum speed and ensuring fail-safe data.

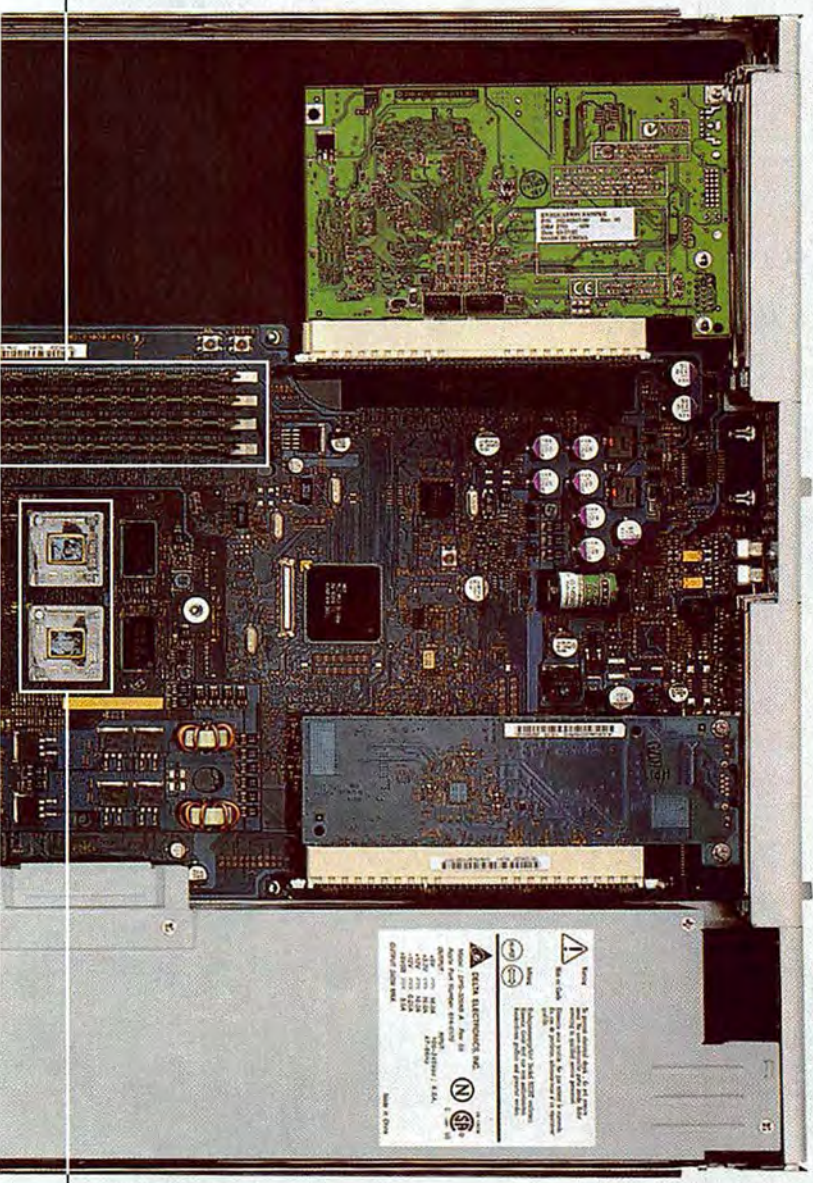
STAYING COOL

The case comes with two system-cooling fans. If one fan begins struggling, the other will attempt to compensate. If you discover that one of the fans is malfunctioning, you can slide the case out and replace the bad fan without shutting down.

LONG-TERM MEMORY

The Xserve's four RAM slots hold up to 2GB of PC2100 DDR (double data rate) SDRAM. DDR memory is twice as fast as conventional SDRAM, thus improving processor speed and helping the Xserve handle peaks in demand. The server's base configuration comes with a single 256MB DIMM.

BACK



PLAYING THE SLOTS

In spite of its slim size, the Xserve can hold two full-length PCI cards in its 64-bit, 66MHz PCI slots. Apple's standard configuration puts an ATI VGA-only 32MB DDR SDRAM graphics card in one slot and leaves the second slot empty. This is useful if you need to connect a monitor to the server. Upon request, Apple will preconfigure the slots for you with an Ultra 160 SCSI card, for connecting external SCSI tapes or RAID arrays, or a Fibre Gigabit Ethernet (IEEE 802.3z) card, for long-distance networking. If none of these options satisfies you, you can purchase and install any PCI card yourself. For instance, you could add a Fibre Channel card for high-speed storage.

CHOICES, CHOICES

A half-length 32-bit, 66MHz PCI/4× AGP slot comes preconfigured with your choice of a Gigabit Ethernet card (the default) or an ATI Radeon 8500 video card. You can use this second Ethernet port in conjunction with the Xserve's built-in Ethernet port (see "In the Ether") to increase your server's network throughput or to create a secure firewall.

POWER FAILURE

Although many of the Xserve's parts are redundant (so they can cover for each other should one of them fail), there's only one power supply. If the power supply fails, the system is unusable until you replace it.

PROCESSING POWER

The Xserve can include one or two 1GHz PowerPC G4 processors, each sporting a 2MB L3 cache. (You cannot upgrade to two processors after purchasing a single-processor system.) Thanks to OS X's symmetric-multiprocessing capabilities, the second processor—which adds roughly $800 to the price—offers a noticeable speed boost to processor-heavy tasks such as high-bandwidth networking, 3-D and video rendering, and dynamic Web-page generation. The L3 cache adds extra speed by retrieving and storing data before it's required by the processors. Although the processors are shown here, they're hidden under heat sinks in the shipping version of the Xserve.

ILLUSTRATIONS BY GOEFF SPEAR

BY | HENRY BORTMAN

Bluetooth Breaks Through

This Wireless Technology Could Change Your Mac Forever

PICTURE THIS: On your way out the door for a business trip, you drop your cell phone and headset into your briefcase. In the cab on the way to the airport, you open your PowerBook and—without hooking up or even touching your phone—dial up your ISP to check your e-mail. Remembering that it's your daughter's birthday, you don the headset and recite her phone number into the microphone. Moments later, you're connected and discussing birthday plans—all within the confines of the cab, and all without wires.

How, you ask? Meet Bluetooth, the new wireless technology quickly being adopted by Apple. And even though you can't do everything in this scenario yet, it provides a small example of the potential that Bluetooth brings to the Mac.

Although it has been built into many devices in Japan and Europe for several years, Bluetooth has been slow to catch on in the United States. But with the recent announcement of a Bluetooth USB adapter and accompanying "technology preview" software, Apple has started the ball rolling—and piqued the interest of the Mac community. Come see what all the fuss is about.

What Is Bluetooth?

Bluetooth is a protocol that allows short-range communication among computers, cell phones, printers, keyboards, mice, and other electronic devices. Unlike AirPort, Apple's technology for wireless networking, Bluetooth's purpose is to replace the cables between your Mac and its peripherals—usually USB devices (for more on the differences between Bluetooth and AirPort, see "AirPort and Bluetooth: Wireless Cousins").

Range All Bluetooth-enabled products require a tiny built-in radio transceiver. Devices can usually communicate with each other at distances of up to 30 feet. With a clear line of sight, the range can increase. But just as a good path can benefit Bluetooth, large, solid obstacles can block the signal, significantly reducing transmission range.

Speed Bluetooth's maximum throughput is 1 megabit per second (Mbps)—compare that with 11 Mbps for AirPort; 12 Mbps for USB; 400 Mbps for FireWire; and either 10 Mbps, 100 Mbps, or 1,000 Mbps (1 Gbps) for Ethernet. All of these require overhead, however, that decreases the actual bandwidth available; with Bluetooth, the usable data throughput is about 650 kilobits per second (Kbps) or 80 kilobytes per second (KBps). My Mac-to-Mac file transfer using Bluetooth topped out at around 63 KBps—and that was at very close range with no obstacles. When my two Macs were separated by about ten feet, with a chair and a Power Mac G4 in the way, the rate dropped to 50 KBps. (In a similar test, AirPort was about four-and-a-half times as fast as Bluetooth—see our review of the AirPort card [*Reviews*, February 2000] for more details.)

AirPort and Bluetooth: Wireless Cousins

AirPort and Bluetooth are both wireless technologies Apple has adopted, but that's pretty much where the similarities end. At first glance, they look somewhat alike—they both use the 2.4GHz (gigahertz) unlicensed radio band for wireless data. ("Unlicensed" means that although the equipment is approved by the FCC, individual users don't require a frequency license to operate them.)

But each technology works in a different way and fills a unique role when it comes to wireless computing and your Mac—Apple's Bluetooth preview software helps make that clear.

The Specs AirPort—also known as Wi-Fi or 802.11b (its official name)—is a networking protocol that's very similar to plain old Ethernet. The only difference is in how Ethernet and AirPort send data: Ethernet sends data over a wire; AirPort sends it over a radio wave. Data is packaged, assembled, and passed around in more or less the same way. Bluetooth, on the other hand, lacks the overhead and complexity of Ethernet-like networking; therefore, it can talk to only a few similar devices at one time.

AirPort currently runs at 11 Mbps, and two new versions operate even faster. The 802.11a variant is already shipping, and it offers 54 Mbps of bandwidth. But Proxim (800/229-1630, www.proxim.com) is the only 802.11a vendor that has committed to making Mac drivers available for its equipment. 802.11a uses the 5GHz band, a relatively unoccupied part of the spectrum—meaning less competition for the airwaves. 802.11g will soon replace AirPort—at twice its speed. Although Bluetooth shares the band with AirPort, it runs at only 1 Mbps.

AirPort is also built to work over dozens—to hundreds—of feet indoors, while Bluetooth's limit is about 30 feet, inside or out. This makes sense: Bluetooth is intended to replace the wires of USB peripherals such as printers and PDAs. One benefit of Bluetooth's limitations is that they make Bluetooth lighter on processor requirements and battery use. AirPort certification requires encryption support and a host of other factors, all of which are a drain on CPU cycles and battery life.

AirPort requires a network setup, a central hub (for network access), and, typically, applications designed for TCP/IP or other networking protocols. Bluetooth is built to work on an ad hoc basis, setting up and breaking down connections quickly and for specific purposes—synchronizing a Palm handheld to a desktop machine or handing a phone number from a personal-organizer program to a cell phone, for example.

Overlap AirPort and Bluetooth can interfere with each other. The Bluetooth Special Interest Group says that having both types of device within about six-and-a-half feet of each other can degrade performance—closer than that, and significant loss of throughput results.

AirPort uses a broad swath of spectrum to handle its higher bit rate, much like a huge truck occupying several lanes of a superhighway. It doesn't change lanes, and it's hard to get around. Bluetooth is more like a motorcycle gang, zipping back and forth across lanes of traffic. It's inevitable that some motorcycles will be pushed off the road in this scenario, and enough motorcycles can push the monster truck around as well.

However, a standards committee has approved a new system that allows Bluetooth to avoid frequencies used by AirPort devices. This new technique will be incorporated in future releases of Bluetooth.

It's important to remember that AirPort and Bluetooth are not likely to be in competition for your Mac's wireless needs. While AirPort is designed mainly as a way to share high-speed Internet connections and transfer files between computers, Bluetooth creates the temporary connections that may very well end the need for USB cables altogether.—GLENN FLEISHMAN

Access Bluetooth changes the way devices interact. Currently, even with AirPort in the picture, the resources to which your Mac can gain access are fixed, stationary, and tied to a network. Sure, when you carry your iBook into an AirPort-enabled area (and you have a password or permission to join that network), you gain wireless access to network servers and printers—which may require additional drivers and more login permissions. You also typically have access to the Internet via this network. But when you walk out of range, you leave the network behind, and your PowerBook becomes isolated.

With Bluetooth, no fixed networks are needed—anywhere. Connections are temporary and spontaneous, and any and all devices can be mobile. Whenever Bluetooth-enabled devices come within range, they can *discover* each other, make a connection, and exchange information.

How It Works

Though Apple's current beta Bluetooth driver supports only a few uses—Mac-to-Mac file transfer, synchronization with a Palm OS PDA, and Internet access over Bluetooth-enabled cell phones—the core Bluetooth protocols are in place. The specifics of how Bluetooth works are set as well.

Discoverability Just like items on an AppleTalk network, Bluetooth devices constantly listen for an inquiry from other devices. When they receive one, they respond, announcing their presence. But this happens only when discoverability is enabled. Take the Sony Ericsson T68, a popular Bluetooth-enabled phone, for example. It's not normally discoverable, so if you want to connect your Mac to the Internet via the phone, you have to wind your way through the phone's menus to turn discoverability on. Only then can the Mac find it. Another type of device—say, a printer—might remain discoverable all the time.

When one device discovers another, the discovering device becomes the *master* and the discovered device becomes the *slave*. Clearly establishing these roles is important in keeping the two devices in sync (more on this later). They exchange their unique IDs and, if they have them, names.

Typically, the master then asks the slave to list the services it can provide. In the case of a phone, this might include the ability to initiate voice and data calls. For a multifunction printer, it might include faxing and printing services. Once the master knows what devices are available and what services they can provide, it can pass this information on to apps that may want to use them.

Connectability You need to decide when you want devices to be receptive to establishing a connection with other Bluetooth devices—connectability is a way

to set that willingness. You may decide to turn your Mac's connectability off if you don't want anyone to bother you with file-transfer requests.

When two or more devices are connected, they constitute a *piconet*. A piconet can contain as many as eight active devices: one master and seven slaves. It can also contain more than 250 inactive devices. And a device can be a master in one piconet and a slave in one or more other piconets at the same time. Such overlapping piconets are referred to as *scatternets*.

Pairing In order to establish a trusted connection, two devices engage in a process known as *pairing*. For two devices to pair, they must first exchange a sequence of characters known as a *passkey*, and you often have to enter identical passkeys on both devices. Some devices—including your Mac under Apple's Bluetooth software—have the ability to remember pairings, so the pairing process need not be repeated each time two devices reconnect. Pairing is required before an encrypted connection can be established.

Encryption To protect your data from unwelcome eyes while it's being transmitted through the air, Bluetooth employs a 128-bit encryption method called Safer+. Though some people have raised concerns about the security of Bluetooth connections and wireless networks created on-the-fly, 128-bit encryption is considered adequate for the transmission of nonsensitive data. But for credit card transactions or restricted corporate or government information, it may not be enough.

Frequency Bluetooth radio transceivers operate in a range of frequencies between 2.4GHz and 2.4835GHz; the range is divided into 79 channels, each 1MHz wide. Every second, all the Bluetooth devices in a piconet change from one channel to another 1,600 times in synchronization, a process known as *frequency hopping*. The hopping sequence is calculated independently by each device in a piconet, but they all use the unique ID of the master as the basis for their calculations. This is what enables them to stay in sync.

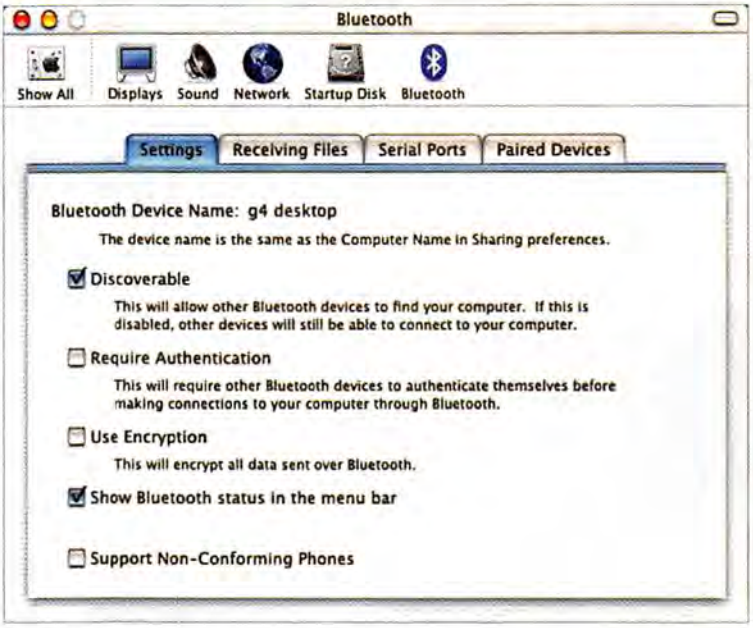
The State of Things

Bluetooth on the Mac is in its infancy, much as USB was back in 1998, when Apple shipped the first iMac. As mentioned previously, all Bluetooth devices have a transceiver to communicate with others and transfer information back and forth. Unlike those first iMacs with USB, no Macs have transceivers built into them—you need to add one if you want to take advantage of the benefits Bluetooth has to offer.

Hardware Installing Bluetooth on your Mac is as easy as purchasing a $50 adapter manufactured for Apple by D-Link. It's a tiny hunk of black plastic about the size of a piece of Bazooka bubble gum, with a USB plug on one end and a green LED on the other. It plugs into any available USB port. (At press time, Apple's Web site said that this adapter was temporarily unavailable.)

More Info:

www.apple.com/bluetooth, www.bluetooth.com
For the latest on this new technology, check out Apple's Bluetooth page and the Official Bluetooth Website.



Out of the Blue Apple's Bluetooth software adds a preference pane for setting up and controlling your wireless connections.

Software The preview software bundled with the adapter (currently version 1.0p2) is also available for download from Apple and is equally easy to install. OS X 10.1.4 or later is required—Apple will not be adding Bluetooth support to OS 9.

The software adds a preferences pane to OS X's System Preferences application. This is where the bulk of your interaction with Bluetooth takes place, for now. From here, you can configure preferences, such as whether your Mac is discoverable, whether it requires a passkey to establish a connection, or whether it uses encryption. This is also where you can search for and pair with other Bluetooth-enabled devices.

Included is an application called Bluetooth File Exchange—just drag a file onto its icon, and up pops a dialog box from which you can discover and select other Bluetooth-enabled Macs to send the file to. One very cool feature is that when the file arrives at its destination, the recipient's Bluetooth software, if configured appropriately, automatically opens the required application, which displays the file. (Note that file transfer can be initiated only by the sender.)

Products Although some companies view Bluetooth as a low-cost wireless extension to IP networks (and some even sell stand-alone Bluetooth hubs), Apple is not among them. In Apple's view, Bluetooth belongs in products such as mice, keyboards, PDAs, ink-jet printers, headsets, and digital cameras. And Bluetooth-enabled cell phones are a great way to establish fully wireless

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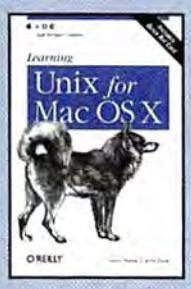

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20197

Bluetooth in the Palm of Your Hand

Of all the wonders Bluetooth has to offer, one of the few things that Apple's Bluetooth technology preview lets you do is synchronize Palm OS devices with your Mac. If your PDA has a Secure Digital slot, you can get a taste of the future by synchronizing it with your Palm Desktop software and other conduit programs. However, the process is anything but plug-and-play.

For starters, to take advantage of Bluetooth on the Mac, you'll need the $50 D-Link DWB-120M Bluetooth USB Adapter, for sale only by Apple (at press time, it was temporarily unavailable). Add the $129 Palm Bluetooth Card (800/881-7256, www.palm.com) in the Secure Digital slot of a Palm m125, m130, m500, m505, m515, or i705, and you've got all the hardware you need.

Set Up Your Palm The Bluetooth Card comes with Mac software, but the installer itself isn't OS X native. You can run the installer in Classic mode, which places all of the installable items for the Palm in a folder at the root of whatever drive has Classic installed on it, rather than in your Palm Desktop folder.

Launch Palm Desktop, and select Install Files from the HotSync menu. Instead of adding files one at a time, select the files in the Finder and drag them onto the Install dialog box. Although you don't need to install every file—some work just with cell phones—there's no indication of which are actually required to sync. Because they take up so little memory, however, you might as well install them all.

Synchronize and install your new software, and the Palm will display a dialog box with a Reset button. Click on Reset and let the Palm restart, and your Palm is ready for the Bluetooth Card. If you haven't used this card slot before, know that it's a push-push model—pushing a card in locks it, pushing it again releases a spring to remove it. Don't pull, or the mechanism will be ruined. Remove the dummy card that comes with your Palm, and insert the Bluetooth card—once the card is recognized, your Palm will play a tone (if you have sound enabled).

Configure Your Mac Then you'll configure the Mac software. Under the Bluetooth System Preference's Settings tab, make sure that the Discoverable and Require Authentication options are both selected.

Click on the Serial Ports tab. The Bluetooth-PDA-Sync option should be selected. If it isn't, click on New and select the Use With A Palm Handheld option.

With this serial device created and enabled, you can select it in the HotSync Software Setup menu (HotSync: Setup, in the Palm Desktop application). Select the appropriate Bluetooth device from the list under the Connections tab.

Configure Your Palm You must now instruct your Palm's HotSync software to talk to your Mac. Select the HotSync icon; then either use the menu icon to select Connection Setup or simply write **S**.

Click on the New button and select PC from the Connect To Popup menu. In the Via menu, you should have Bluetooth as an option—select it. Then click on Tap To Find (under Device).

A Bluetooth Discovery dialog box will appear, showing its search for local machines. When it finds the Mac, the Palm displays the Discovery Results dialog box, which lists local devices. Select your Mac from the list. The Mac software will prompt for a passkey to secure the connection between the Palm and itself. Enter a short phrase or password.

The Palm likewise now prompts you with the Bluetooth Security dialog box. Enter the identical passkey, and select Add To Trusted Device List—the two are now paired, and you will not have to enter passwords for them again.

The synchronization should begin. If it doesn't, try deselecting and selecting the Connection options in HotSync Software Setup and enabling and disabling HotSync.

If you normally use a USB cradle, your HotSync speeds will be slightly slower using Bluetooth, but you'll notice a speed improvement over the older serial cradles. Either way, once you get it working, you'll never sync the same again.—GLENN FLEISHMAN

dial-up connections to the Internet. Wireless networking, however, is AirPort's job.

It should come as no surprise that many of the Bluetooth products available today are phones and phone accessories—after all, Bluetooth originated at Ericsson, a cell-phone company. Bluetooth-enabled phones are just beginning to appear in the United States. But even though Apple's preview software supports them, not many cellular service providers have upgraded their networks to allow cell-data services, known as third-generation wireless. Those that do offer cell data typically charge by the minute or kilobyte, and they offer the service only in limited parts of major metropolitan areas. Phone accessories, such as wireless headsets and hands-free car kits, will work with these phones but won't yet work directly with the Mac.

Even the iPod is a candidate for a Bluetooth upgrade. Bluetooth headsets for use with Bluetooth-enabled phones are already on the market; with improvements in audio quality, they could conceivably be used with iPods as well.

Bluetooth products in many other categories are PC-only right now—such as HP's $400 Bluetooth-enabled DeskJet 995c printer (888/999-4747, www.hp.com); 3Com's $250 Bluetooth Printer Kit (800/638-3266, www.3com.com), for adapting printers so they support Bluetooth; and Bluetooth keyboards and mice—but expect all that to change.

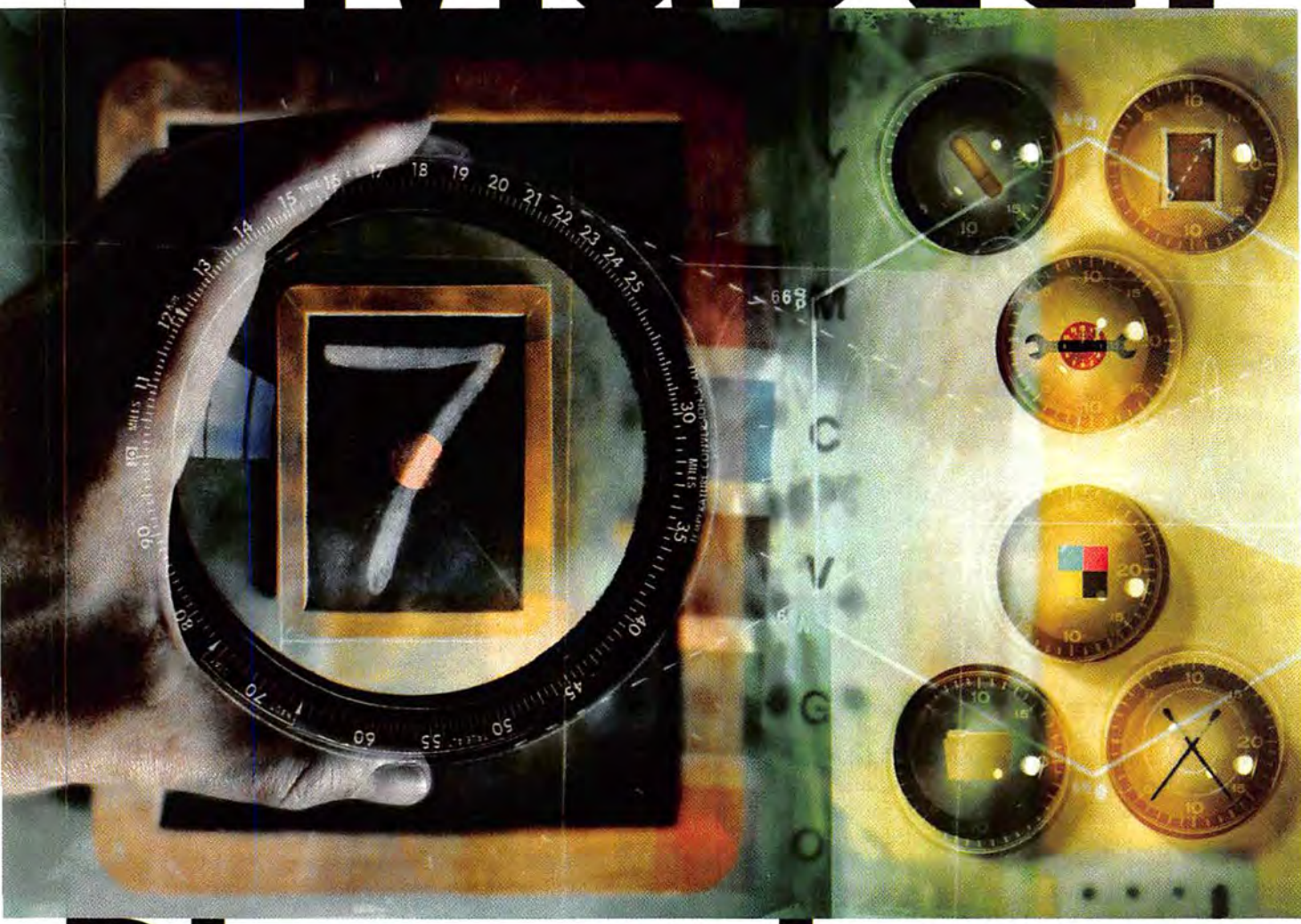
The Last Word

Bluetooth's potential is enormous. Given the interest in Bluetooth that Apple is attempting to generate among developers, it's not unlikely that within a year or two, Macs will have built-in Bluetooth transceivers. And don't be surprised if the next major release of OS X, due late this summer, includes Bluetooth connectivity software.

Early adopters can expect to struggle with using their Bluetooth phones to get online, and they'll suffer through the arcane setup process for wirelessly synchronizing their Palms with their Macs (see "Bluetooth in the Palm of Your Hand" for more details). But just as Ethernet, AirPort, USB, and FireWire are taken for granted today, Bluetooth will be a natural part of the Mac's future landscape. And the changes it will bring to the way we interact with computers may well turn out to be as profound as the introduction of point-and-click, in 1984. □

HENRY BORTMAN writes about science and technology from his home in San Francisco, where he frequently trips over wires.

Master Photoshop 7



Focus Your Skills with Our Expert Tips

BY | BEN WILLMORE

Adobe Photoshop 7 (800/833-6687, www.adobe.com) may not have as many significant changes as previous upgrades, but it'll still give you a lot to get accustomed to. Our guide will help you explore Photoshop's new features and take advantage of the program's improvements. For more on Photoshop 7, see "The Wait Is Over" (April 2002) and our review of the program (*Reviews*, elsewhere in this issue).

Improve the New

Photoshop's new features can boost your creativity and efficiency, but they're not perfect out of the box. Here's how to maximize their performance.

Patch It Up The Patch tool can do wonders when retouching faces or getting rid of dust and scratches, but its results are often a little too dark. To remedy this, choose Edit: Fade and lower the tool's opacity setting.

Heal It Thyself Though the Healing brush provides the Patch tool's smart blending, it samples texture in much the same way that version 6's Clone Stamp tool did. Getting a good sample texture can be difficult if your source image lacks a clean area with the proper type of texture. In such cases, try selecting the Pattern option in the Options bar—this applies a pattern's texture to fix flaws instead of using the texture within the source image.

When the Healing brush can't repair a problem area, you may have to replace the underlying image completely instead of blending the patched information into it. Simply go to the Options bar and change the brush's mode from Normal to Replace.

Just Browsing The File Browser (File: Browse) lets you easily find and manage files. The first thing I do after opening the File Browser is hide my palettes by pressing the tab key. Then I use the following key commands to navigate through my hard drive: the up and down arrows to move between folders, the right arrow to open a folder, and the left arrow to close it.

After clicking on a file name, you can move from file to file by pressing tab to go forward and shift-tab to go backward. Click on the back-to-back arrows at the bottom of the dialog box to hide the three panes on the left of the dialog box.

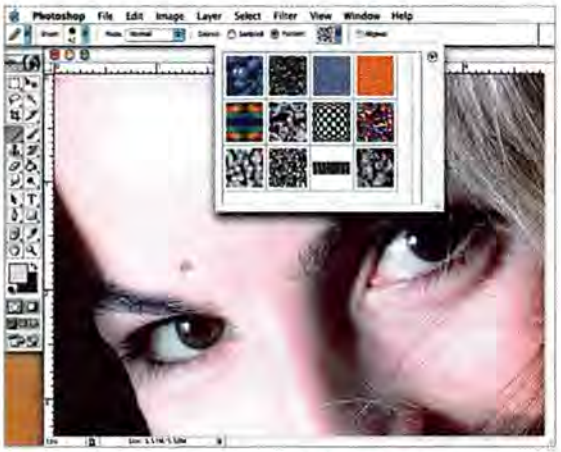
Sometimes the File Browser won't show a mounted CD. To make the CD visible, choose Refresh Desktop View from File Browser's side menu.

Preset Time Saver The new Tool Presets feature (Window: Tool Presets) lets you customize and save tool settings for your specific needs. I use Tool Presets in many ways: for example, to store my favorite settings for the Crop tool (such as 3 by 5 inches at 300 ppi), to include my foreground color with my brushes, and to make consistent interface elements using the shape tools (you can use Tool Presets to save a color and style). You can access the presets via the Tool Presets palette or by clicking on the tool icon at the far left of the Options bar.

Correct Color The new Auto Color feature attempts to automate color correction, but it tends to blow out the highlights on some photos. You can prevent that by fine-tuning its settings. Choose Image: Adjustments: Levels, and click on the Options button. Blown-out highlights happen when clip values are set too high. I recommend changing both clip values to 0.05 percent. While you're at it, choose Find Dark And Light Colors and select the Snap Neutral Midtones option. Finally, click on the highlight color and choose H:0, S:0, and B:96 so the bright areas of your image don't become pure white.

Make a Pattern If you've been creating patterns (for backgrounds or other purposes) the painstakingly manual way, version 7's Pattern Maker tool (in the Filter menu) will seem promising. But after experimenting with Pattern Maker, I'm back to the manual method because Pattern Maker adds obvious seams when it tiles textures I've created. You can turn a photo into a pattern that includes many of the photo's colors, but the pattern usually looks nothing like the original photo.

If you're determined to use Pattern Maker when tiling, try increasing the Smoothness setting. If Pattern Maker chops up a photo's objects beyond recognition, bring the Sample Detail setting up a bit. Or limit yourself to certain kinds of images: I've found that Pattern Maker works best on images with a lot of sharp-edged detail.



Brush Up When editing images with the Healing brush, you can sample texture from the source or from patterns.

Brush Up on Brushes Photoshop's new Brushes palette lets you create everything from grass to a sponge effect in seconds. With more than 50 new options, using brushes effectively can be a challenge, but once you understand a few key terms—*Jitter*, *Minimum*, and *Control*—it becomes easier.

In general, Jitter settings vary a brush's dynamic elements randomly; for example, Size Jitter varies the size of your brush while you paint. Minimum determines how small Photoshop can scale a brush; for instance, a Minimum setting of 30 percent lets the program use any amount between 30

ILLUSTRATION BY STUART BRADFORD

Web Work

Adobe didn't forget about Web designers when it created version 7. The following features should improve your Web-graphics work.

Hide Auto Slices When I create complex Web graphics, I finish by slicing them so I can use more than one file format or add rollovers in ImageReady. Photoshop's auto slices used to result in on-screen clutter (top image). To clean up the clutter, choose the Slice Selection tool and click on the Hide Auto Slices button in the Options bar. Only the slices you've made will appear (bottom).

Sharp Antialiasing Web designers constantly strive to improve the display quality of small text. Antialiasing is a potent ally, and in version 7 we have a new choice—Strong, which provides results that are a little darker than Crisp's.

Include Zero Margins Sliced Web graphics created in Photoshop or ImageReady have always been offset from the top and left of browser windows. In version 7 there's a fix for this, but you have to dig deep to find it. Start by choosing File: Save For Web. Click on the Save button, choose Other from the Settings pop-up menu, and choose HTML from the pop-up menu near the top of the resulting dialog box. Select the Include Zero Margins On Body Tag option.

and 100 percent of the currently selected brush size. Control determines when these changes happen. When Control is set to Off, Jitter controls when changes will happen. Other options in the Control menu relate to pressure-sensitive graphics tablets. With those selected, Photoshop bases the variations on how hard you press down with the pen (no Jitter setting is necessary).

Dual Brushes Another feature can radically transform the look of your brush: the Dual Brush option. It combines two brush tips so that the primary brush limits where the second brush can affect the image, effectively cropping it. Choose your primary brush shape from the Brush Tip Shape menu; then select the Dual Brush option and select a second brush. To control how the brushes interact, experiment with Dual Brush's Spacing and Mode settings.

Brush Previews By default, the Brushes palette shows you a small version of the selected brush, with a stroke preview to its right. I love this preview, but a standard-size palette fits only eight brushes. If you select Small Thumbnail from the palette's side menu, almost 50 brushes are displayed in the same space. To get a stroke preview for a brush, just pause over its thumbnail until a yellow tool tip appears.

Switch Brush Shortcuts Switching brushes in Photoshop 6.0.1 is easy: press the enter key when any painting tool is active, and the Brushes palette opens by your cursor. Before version 6.0.1, pressing enter activated the first option highlighted in the Options bar. In version 7, Adobe has returned this key command to its roots. But you can still get your brush presets to show up next to your cursor by holding down the control key and clicking your mouse button.

Super Tweaks

In addition to adding new features, Adobe has refined many of Photoshop's existing tools. With a little help, you can make the most of these updates.

Blending Modes There are five new blending modes, and the Modes menu is now divided into six categories: *Generic*, *Darken*, *Lighten*, *Contrast*, *Comparative*, and *Limiting*. Although these divisions are a step in the right direction, the names' meanings aren't immediately clear.

In the Generic grouping, Normal, Dissolve, and Behind are carryovers from version 6; Clear, which makes pixels transparent, is new. As their category name implies, the Darken modes darken colors. In this category, Adobe has added Linear Burn, which delivers higher-contrast results than the familiar Multiply mode. A new Lighten mode is Linear Dodge, which produces higher contrasts than the Screen mode.

The Contrast modes are a little more complex. When your blend color is lighter than 50 percent gray, the Contrast modes (including newcomers Vivid Light, Linear Gray, and Pin Light) lighten the image. When your blend color is darker than 50 percent gray, they darken the image. Vivid Light is a combination of the Color Dodge and Color Burn modes. Linear Light is a combination of Linear Dodge and Linear Burn. And Pin Light is a combination of Lighten and Darken modes.

The two new Comparative modes, Difference and Exclusion, help you line up layers: the on-screen blend results turn black

when you match the active layer to an underlying one.

The Limiting modes apply a particular quality of the active layer (color, saturation, and so on) to the underlying image.

Editing Document Presets The File: New dialog box now contains preset document sizes, but you'll find only the most-common dimensions. To add your own presets, open the New Doc Sizes.txt file (Photoshop: Presets) in a word processor, follow the directions contained therein, and then save the file in text-only format in the same location.

Layers Adobe has made several changes to the way layers—and the Layers palette—work in Photoshop. Because layers are such an integral part of the program, these improvements should have an immediate effect on your ability to use Photoshop more efficiently.

Delete Layers The new Delete Hidden Layers command (in either the Layers menu or the side menu of the Layers palette) helps those of us who keep layers that don't make it to the final composition. You can also now delete all the layers that are linked together by choosing Layer: Delete Linked or by ⌘-clicking on the Trash icon at the bottom of the Layers palette.

Fill on the Move The Fill Opacity setting is now at the top of the Layers palette. It lets you hide the contents of a layer while keeping any layer effects (such as bevel and emboss) at full strength. In Photoshop 6, you had to double-click on a layer to find the Fill Opacity setting.

Name Change In Photoshop 6, Adobe introduced Layer Clipping Paths, which let you use the Shape tools to hide parts of a layer. The feature remains, but it's now known as Vector Mask.

Relative Canvas Size If you've ever had to add, for example, 0.375 inches to an image that was already 4.928 inches wide, you probably used a calculator to add those numbers and then entered the sum in the Canvas Size dialog box. Now you can trash that calculator—the new Relative option lets you enter the amount of space you'd like to add to your document's dimensions, instead of the total width you desire.

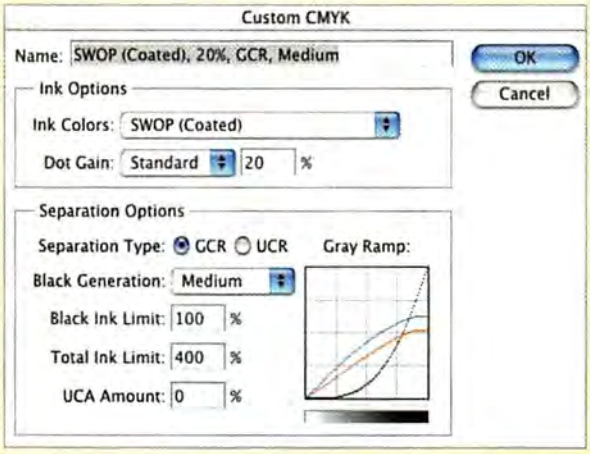
Dimension Display You can display an image's dimensions at the bottom of a document window by choosing Document Dimensions from the pop-up menu at the bottom of the image.

Illustrator and Photoshop If you run OS X and copy and paste from Illustrator 10 to Photoshop 7, you're in for a surprise. In the past, when you copied an object from Illustrator, Photoshop asked whether it should paste the object as pixels, a path, or a Shape layer. Illustrator 10 uses PDF as its clipboard format, which Photoshop imports as PDF. To restore the pasting options, launch Illustrator, go into your Files & Clipboard preferences, and activate the AICB option.

Dig Around

To get the full impact of this upgrade, you have to put on your miner's helmet and do some spelunking in Photoshop's crevices. The following tips may not be major breakthroughs, but they can make a big impact on your productivity over time.

- If you're running OS X, change one setting right away. By default, Photoshop 7's ink-coverage setting for Custom CMYK is 400 percent, which is far too much for commercial printing (see right image). Instead, choose Photoshop: Color Settings, select Custom CMYK from the CMYK pop-up menu, and change Total Ink Limit to 300 percent.
- When you use the new Check Spelling command, don't click on the Add button unless you really mean it. Unlike Illustrator and InDesign, Photoshop 7 gives you no way to remove a word from the user dictionary—even deleting your preferences file won't do it. Your only option is to remove all added words. To do so, go to the System Folder: Application Support: Adobe: Spelling folder. Delete the file called "user.clm."
- You can organize multiple images on your screen by choosing Cascade or Tile from the Window: Documents menu.
- The File: Automate: Contact Sheet II command is a good choice for squeezing many images onto a single page.



- A new link symbol in the Shape tools tracks the last layer style you've used and can apply that style to additional shapes.
- Changes you make to the Layer Style setting in the Options bar of the Shape tool affect the currently active layer.
- Can't find the Extract and Liquify commands that used to be in the Image menu? Check the Filter menu.

The Last Word

When a core program such as Adobe Photoshop undergoes significant changes, there are usually trade-offs: before you learn how to use improvements and enhancements, they can make a program seem awkward and uncomfortable. But with this guide (and a little practice), Photoshop 7 will soon be as cozy and familiar as your favorite pair of jeans. □

BEN WILLMORE is the founder of Digital Mastery, a training and consulting firm (www.digitalmastery.com), and the author of *Adobe Photoshop 6.0 Studio Techniques* (Adobe Press, 2001).

Stop Spam!

Poor Hormel. Not long ago, the term *Spam* referred exclusively to a pinkish potted meat. Now the word is also associated with unsolicited commercial e-mail—the most hated aspect of Internet use. Here's an idea of how severe the problem has become: I received about 2,900 pieces of spam in 1998 and about 5,900 in 2001, and I'm on track to receive more than 12,000 in 2002. Spam now makes up more than 15 percent of all my e-mail!

Spam happens because e-mail technology doesn't prevent it, because our laws don't prevent it, and because the economics of the Internet don't prevent it. Realistically, you and I can't fix those problems, so here's some real-world advice on avoiding spam and, if you're already receiving it, handling it efficiently. (If you run a mail server, see "Server-Side Spam Stomping" for tips.)

ILLUSTRATION BY BRIAN CAIRNS

Run Silent, Run Deep

Most people ask, "How the !@#$%! did they get my e-mail address?" The unfortunate answer is that using the Internet as intended—participating in mailing lists or Usenet news, including your contact information on a Web page, and so on—guarantees that your address is out there, waiting to be discovered by a program that trawls for e-mail addresses. (For more on e-mail–address trawling, see www.private.org.il/harvest.html.) But there are ways to protect that address.

Keep It Off Web Pages E-mail–address trawlers work by visiting a Web page, recording any e-mail addresses, and then following each link to other pages, where they repeat the process. Although many Web masters try to block these automated programs, it's impossible to stop them all, since they can masquerade as normal users. It's up to you to remove or conceal your address.

On your own Web pages, you could simply delete your address to frustrate trawlers, but this would have the same effect on legitimate visitors. One solution is to write out your address in a sort of code—for example, **ace at the domain tidbits period com**. For a more secure solution, use a graphics program to create a small GIF graphic that contains your e-mail address—most people can read it, but no trawler can. Either way, don't add a **mailto** link; trawlers can suck addresses directly out of HTML code.

If you want a clickable address, you can use JavaScript to conceal it from some (but not all) trawlers while still letting visitors click on it to send you messages. Such a script breaks your address into obscure chunks that most trawlers won't recognize as parts of an e-mail address, and then reassembles it on-the-fly when someone clicks on the link.

For simple JavaScript concealment, use Railhead Design's free SpamStopper (www.railheaddesign.com) to generate the HTML and JavaScript code automatically in both OS 9 and OS X. Or try Matterform Media's $19 Spam Vaccine Pro (505/747-1220, www.matterform.com), which creates more-obscure code and can batch-process an existing Web site. It, too, works in both OS 9 and OS X.

If you control your own Web and mail server, the most secure way for people to contact you from your site is via a Web form that uses a CGI, a small program on your server, to send you the form's content as an e-mail message. That way, no one ever sees your address. However, you must have server access, know how to install and configure the CGI, and make sure you don't reveal your address in the Web form's HTML code.

Change Addresses Your Web page or online staff directory may be obvious places for spammers to grab your address, but they aren't the only places. Posting to a Usenet newsgroup, participating in a mailing list with a Web archive, registering a domain name—all these activities can reveal your address to spammers, often without your knowledge.

If you've used the Internet for long, it's too late to protect your existing e-mail address from exposure by these seemingly innocuous activities. The damage

is probably done. (But a good set of filters can help. We'll talk about that later.)

If you're totally fed up with the amount of spam you receive, one solution is to create a private e-mail address that you can keep spam-free, maintaining the old one for use in public situations. When you check e-mail every day, you can be assured that important mail from family, friends, and colleagues won't compete with spam for your attention. Think of it as the Internet equivalent of an unlisted phone number. Your old address will still receive spam, but you can increasingly ignore mail to that address unless it comes from a known source such as a mailing list. Luckily, all decent e-mail programs let you check multiple e-mail addresses.

Why keep the old address at all? If you use the new one for anything other than personal e-mail, it will eventually leak out. And switching addresses for mailing lists and informing your correspondents takes time and effort. This approach gives you the privacy of a new e-mail address and the flexibility of a public address.

Shop for an Address Resist the temptation to use a free e-mail service such as Yahoo or Hotmail. Both do some spam filtering for you at the server level, but it's haphazard at best, sometimes erroneously labeling mailing-list e-mail as spam and missing obvious spam. Also, you'll almost *certainly* receive some unwanted mail because spammers use automation to guess common addresses at large e-mail services. For example, the address bill@*example.com* would be far more vulnerable than billg2athome@*example.com*. Apple's free Mac.com e-mail service (www.itools.mac.com) seems to suffer from less spam than many others.

A better option is an account with a commercial e-mail service such as Pobox ($15 per year; www.pobox.com) or SpamCop ($30 per year; www.spamcop.net). Spammers don't target these services as much, and both can perform some automatic filtering. Pobox's service has been around longer than SpamCop's and offers significantly better information about how to use its services, but it can only forward mail received at your Pobox address to your existing account. You'd then need to filter the mail that came via Pobox to its own mailbox, which would remain spam-free.

SpamCop can both accept messages to your SpamCop address and pick up mail from your existing e-mail account. You can read the mail via the Web or retrieve it via POP; the latter option lets you apply SpamCop's filters to mail at your public address as well. Reports from longtime users of both services indicate that SpamCop's filters change frequently to keep up with new spamming techniques and are more successful than Pobox's.

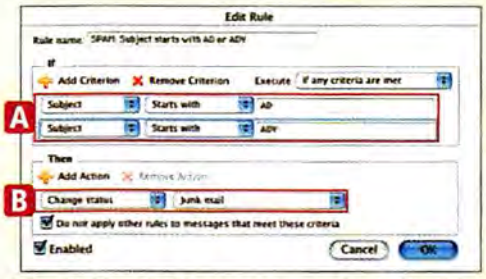
Pobox is better if all you want is an inexpensive new address; SpamCop wins if you want an additional spam-fighting tool.

Mail with Care Once you have your new private address, pay attention to how you use it. Give it only

E-MAIL FILTERS 101

You haven't created a filter before? Don't worry—it's easy. Follow these simple steps, and you'll be blocking spam in no time.

Get Started First, open the window that your e-mail program uses for filter creation. In Apple's Mail, look for the Rules pane in the Preferences dialog box. In Entourage and Outlook Express, choose Rules from the Tools menu. Eudora users should choose Filters from the Window menu. And if you use Mailsmith, choose Mail Filters from the Window menu.



Out with the Ads It's easy to create a simple filter (also known as a *rule*). This Entourage rule will look for any e-mail that has a subject line starting with **AD:** or **ADV:** (short for *advertisement* A). It will label these messages as junk mail B so they're easy to ignore; you might also choose to send them to straight to your spam folder.

No matter which e-mail program you use, you'll see places to enter four pieces of information: where to look in the message, how to search, what to search for, and what to do if a match is found.

Pick Your Target When you're creating a new filter, the first step is to define where in an incoming message the filter should search: the body of the message, the header as a whole, or a specific header line.

(Most e-mail programs hide these other header lines in message windows. To display them in Mail, select Show All Headers from the Message menu; in Entourage and Outlook Express, select Internet Headers from the View menu; and in Mailsmith, select Display Headers from the Message menu. Eudora users should instead click on the BlahBlahBlah button in the upper left area of the message window.)

The e-mail programs let you choose common search locations—Body, To, From, Subject—from a pop-up menu, but for other header lines such as Received and Content-Type, which can be more useful in identifying spam, you must enter the header name manually. That doesn't require extra steps in Eudora, in which you can type the header line. In Mail, though, you must choose Expert from the first Criteria pop-up menu, and in Entourage and Outlook Express, you must choose Specific Header from the If pop-up menu. In Mailsmith, you search the entire header with a custom grep pattern.

Specify Your Search After telling your e-mail program where to search in a message, you must tell it *how* to search. All the programs offer a number of choices such as Contains, Does Not Contain, Starts With, and so on. In most of my filters, Contains is all that's necessary.

Next, enter the text you want the e-mail program to search for in each message. Here's where you enter the filter suggestions outlined in the "Lay Your Nets" section of the main article, or other filters that work better for the particular spam you get.

Don't Can Your Spam The last step is to tell your e-mail program what to do if it finds the specified content in an incoming message. All the programs can either mark the message or transfer it to another mailbox. The latter is the best way to go. If you delete messages, you could end up trashing mail you don't want to lose.

Cast a Wider Net Although spammers share similar ideas, sometimes they express themselves in different ways. Entourage, Outlook Express, Eudora, and Mailsmith (Mailsmith is shown here) let you enter multiple search criteria to catch these variations on a theme. For example, this rule looks for common ways spammers say that they are compliant with a (nonexistent) spam law. The current version of Apple's Mail limits you to one criterion, although the next version—due late this summer—won't.

to people you know, to ensure that you'll receive only legitimate mail at the private address.

Put Spam in Its Place

Whether you use a new e-mail address or tough it out with your existing e-mail address, the only way to stay sane in a world filled with spam is by filtering your mail so that spam occupies as little of your time as possible. Filters, sometimes called *rules* or *actions*, are simple if-then tests that your e-mail program applies to every incoming message: for example, if the message subject contains the words *Herbal Viagra*, then mark it as spam.

Most people who use filters for normal mail rely on them to separate mail by sender. When, for example, I receive a message from my running club's mailing list, my e-mail program automatically moves it to my High Noon Athletic Club folder. With spam, though, that approach falls flat, since spammers try hard to disguise their messages. Filtering spam requires that you identify common patterns in your spam.

Canned Spam Filters Microsoft Outlook Express 5 and Entourage 2001 and X have built-in junk-mail filters that can identify some types of spam with little or no effort on your part, once you turn them on. The new version of Apple's Mail, due out late this summer, should offer a similar feature.

If you use another e-mail program and either don't want to create your own filters or are limited by your program's filtering capabilities, try Matterform Media's clever $29 Spamfire Pro. Working in either OS 9 or OS X, it checks your e-mail, uses a set of frequently updated filters to try to pull out the spam, and then instructs your e-mail program to pick up the rest of the messages.

In my experience, however, these tools both miss obvious spam and incorrectly see legitimate messages as spam. For instance, Entourage's junk-mail filter didn't notice my e-mail invitation from Karla, who has apparently appointed herself my Free Sex Planet hostess. Though these canned spam filters are better than nothing, this is one of those times when you don't send software to do a human's job.

Keep Filters Fresh Although all e-mail programs support filters, one nice feature of Eudora is that it tells you when each filter last activated and (via a little dinosaur icon A) lets you know when a filter hasn't run in the last 30 days.

Lay Your Nets

All filters can treat legitimate mail as spam, but when you've created your own filter, you'll have a better idea of what to change to prevent that from happening. If you've never worked with filters in your e-mail program, see the sidebar "E-mail Filters 101" before reading the following suggestions. These spam filters fall into four basic groups: header filters, language filters, content filters, and egregious-offender filters.

Header Filters E-mail message headers serve much the same purpose as addresses on envelopes. They show the sender and recipient, along with the message's path through the Internet. Since spam usually obscures or even forges header information, you can often identify spam by the way it tries to disguise itself. Header filters I've successfully used include the following elements.

If the header doesn't contain your e-mail address in the To or CC lines, that means someone has blind carbon copied (BCC'd) the message to you. That's often a good indicator you've just received spam, but it's never a guarantee—I receive plenty of legitimate BCC'd mail.

If **you@**, **friend@**, or **Undisclosed.Recipients@** is in the To line, you're dealing with the e-mail equivalent of postal mail sent to "Occupant."

Messages in which the From line contains "" (a pair of straight quotation marks, generally followed by an e-mail address), are either spam or the products of an improperly configured e-mail program.

Many spammers forge the From line so it *appears* that the message came from an account with one of the large e-mail services, such as AOL, Yahoo, Hotmail, Juno, and MSN. However, spammers who forge these addresses don't usually use the same services to send the spam. Try searching for messages in which the From line contains **aol.com**, for instance, but the Received headers that trace the path of the message through the Internet do not contain **aol.com**. This filter isn't perfect—it may, for instance, also catch messages from people who send mail from a work account but set the return address as their personal Hotmail account.

Language Filters Over the last few months, we've seen an explosion of spam in languages other than English. If you can't even identify which language a message uses, you would do well to filter it out. Luckily, these messages generally identify the character set they use, so that people with the appropriate software and language skills can read them, and that's how we can catch them.

Successful language filters must look for the character-set markers in the Content-Type header *and* in the body of the message, because some of this spam doesn't have a standard Content-Type header but does carry the appropriate character-set information in the HTML-formatted body of the message.

For messages in Chinese, look for **gb2312** and **big5**. For Japanese, look for **iso-2022-jp**. For Korean,

look for **euc-kr** and **ks_c_5601-1987**. For Turkish, filter on **iso-8859-9**. Those character sets show up most frequently in my spam; if you're seeing other character sets, add them to your filters.

Content Filters Since spam generally revolves around the same topics and uses the same methods to pretend it's legitimate, certain bits of text form common patterns.

In the Subject line, it's safe to assume that any message that starts with **AD:** or **ADV:** (meaning *advertisement*) is a piece of spam. Searching for **$$$** or **?subject=remove** in message bodies uncovers a lot of spam but may also catch legitimate mail. (The **subject=remove** bit is generally part of a **mailto** URL purporting to let people unsubscribe.)

Also, since spammers inherently aren't trustworthy, you can often identify spam by its claims about the legitimacy of its message. In message bodies, look for the phrase **not MLM** (meaning "not multilevel marketing," as in a pyramid scheme). Also common are **one time mailing** and **one-time mailing**. Other telltale signs are the words **S.1618** or **s. 1618** in the message body, or **in compliance of, in compliance with**, and **in full compliance with**. These refer to a spam-related bill (S.1618) that went before the U.S. Senate and didn't pass. Spammers love to say that they're compliant with its provisions in an attempt to pretend they're for real.

Egregious Offenders Although I don't generally recommend creating filters for a specific spam message you're receiving, doing so can work well on occasion. For instance, I'm on a spam list that claims I receive mailings because I'm a "Miss Cleo" member. (Even worse, the psychic Miss Cleo thinks my name is Cheryl.) Needless to say, Miss Cleo is now in my spam filters, and that filter has spared me from 115 unwanted psychic messages.

Use Filter Finesse

Whether you use the built-in tools in your e-mail software or build filters on your own, you'll need to figure out what to do with potential spam. Legitimate mail that looks like spam in some unexpected way can fool even the best filters. Therefore, it's important that your filters *not* delete messages outright. Instead, they should either mark them or transfer them to a separate mailbox. That way, you can scan the marked messages occasionally to see if any are legitimate.

Also think about what you'll do with spam your filters miss. I recommend moving it to a separate mailbox and examining it every so often to see if you can discover new patterns to improve your filters. Unfortunately, dealing with spam is an ongoing task, since spammers constantly change their tools and tactics in an effort to sneak their messages through.

Finally, you should pay attention to the order of your filters for faster and more accurate filtering. In general, you should put your specific filters for mailing lists up front, and your spam filters should follow. That way, the spam filters won't have to look at most of your legitimate mail—making mistakes less likely and speeding up the filtering process every time you check e-mail.

Spam annoys just about everyone, but if you expend a little bit of effort and set up the appropriate e-mail accounts and filters, you can reduce the amount of time you spend dealing with these unwanted messages. □

SERVER-SIDE SPAM STOMPING

If you run your own e-mail server, you have a few more options—and more responsibility—when it comes to helping your users avoid spam.

Turn Off Relaying The most important thing you can do is turn off relaying (if your server didn't come with it turned off). Relaying is the act of accepting and passing on mail from anyone on the Internet, even when that mail isn't for that server's users. Spammers regularly exploit e-mail servers set to do this—called "open relays"—to avoid the costs of running a server and to conceal the spam's origin.

Unfortunately, turning off relaying can make it harder for legitimate users to send e-mail. The preferred solution, supported by most current e-mail servers and programs, is SMTP Authentication, which requires that an e-mail program log in before sending messages. Refer to the documentation for your server and e-mail programs if you need help with SMTP Authentication.

Use Server-Side Filters Many e-mail servers can use a set of if-then rules to filter incoming e-mail, just as individuals' e-mail filters do. The main advantage of this is that the filtering can work for everyone who has an account on that server, thus reducing the spam's impact on user time, disk space, and network bandwidth. Users never see the spam, and in many cases, the server simply refuses to accept it. Unfortunately, this approach cuts both ways—if a server-side filter rejects legitimate mail, you may never find out. Be especially careful with server-side filters, or you may hear from irate users wondering where their mail has gone.

One filter type that's possible only on servers is a DNS-based blacklist. This checks all incoming connections against a list of servers known to send spam and rejects connections from these known offenders. The best-known source of such lists is the nonprofit Mail Abuse Prevention System, or MAPS (www.mail-abuse.org). For a collection of other DNS blacklists (and prebuilt filters you can use with Eudora Internet Mail Server, one of the most popular e-mail servers for OS 9), see the Eudora Internet Mail Server page at www.moensted.dk/eims/. As with any other filter, it's possible that a DNS-based blacklist filter could reject legitimate mail, although the better-known blacklists, such as those run by MAPS, are generally considered quite safe.

Two useful tools for Mac administrators using Eudora Internet Mail Server are Robert Woodhead's helper application TOLD (www.madoverlord.com/projects/told.t) and MCF Software's $75 SimpleText Filter (845/735-0210, www.mcfsoftware.com). TOLD matches incoming messages against a sophisticated set of filters, determines a spam score for each message, and puts that score in a custom header line. Users can then look for specific spam scores when creating filters in their e-mail programs. TOLD can automatically update its filters over the Internet, and administrators can add their own filters. SimpleText Filter, on the other hand, lets Eudora Internet Mail Server reject mail based on text found in messages; it works essentially like the filtering in most e-mail programs.

I have one last piece of advice: Keep your users informed about the server-side filters you use. They'll know you're working to protect them from spam, and they'll have a better idea of what might have gone wrong if expected e-mail doesn't show up in their in-boxes.

Contributing Editor ADAM C. ENGST is the publisher of TidBits, the president of Info-Mac, and the author of numerous books, including the just-released *iPhoto for Mac OS X: Visual QuickStart Guide* (Peachpit Press, 2002).

Design Accessible Sites

Few laws have caused as much confusion among Web designers as Section 508 of the Workforce Investment Act. It requires certain Web sites to accommodate people with disabilities ranging from blindness to limited mobility, and it spells out what *accessible* means. (Hint: Adding **alt** attributes to image tags is not enough.) Faced with this task, some designers may conclude that accessible designs must be unattractive, "low-end" designs. This isn't so.

Images, table layouts, style sheets, JavaScript, and other staples of contemporary Web design are perfectly compatible with Section 508; they simply require a little extra care. In this article, I'll examine some of what Section 508 compliance entails and explore how you can use online tools and your judgment to make your Web site compliant.

Law and Order

Section 508 directly affects federal departments and agencies, as well as Web designers who work with them. (For its other effects, see "Macs without Limits," *Secrets*, May 2002.) The law also applies to government-funded projects and to states that choose to adopt it. (You can check your state's status at www.resna.org/taproject/policy/initiatives/508/508Stateactions.htm.)

ILLUSTRATION BY ANDERS WENNGREN

In a nutshell, Section 508 requires that these Web sites offer *equal or equivalent access to everyone*, including people who have visual or hearing impairments, physical disabilities, and photosensitive epilepsy.

The challenges these Web users face may surprise you. For example, small, nonresizable text can prevent some people from reading content; minuscule navigation buttons can thwart others. The law explains common accessibility problems and suggests—but does not dictate—solutions.

Section 508 doesn't forbid the use of Cascading Style Sheets (CSS), JavaScript, images, or table layouts. Nor does it prevent you from incorporating rich media such as Flash and QuickTime, as long as you follow certain guidelines (see "Play Well with Others"). Naturally, most sites will look spiffier in new browsers. That's no problem under the law, as Web users can download browser upgrades for free.

Tools of the Trade

If you use a visual editor to create Web pages, several tools and plug-ins can simplify the compliance process. For example, the free SSB InSight LE for Adobe GoLive (www.adobe.com/products/golive/ssb.html) automatically identifies accessibility violations.

UsableNet's $249 Lift for Macromedia Dreamweaver 4 (www.usablenet.com/lift_dw/lift_dw.html) offers numerous features. Many of its capabilities have been incorporated into Dreamweaver MX, including a built-in Section 508 validator, a Section 508 reference guide, and tools for adding accessibility features to images, tables, and frames.

Whether you use these products or code by hand, visit Bobby Worldwide (www.cast.org/bobby/). At the click of a button, Bobby can test any page for basic compliance, though some nuances require judgment and analysis.

Section 508 relies on a *manual checklist* to assure compliance. Unlike the W3C HTML and CSS validators, Bobby's 508 validator cannot provide you with an unconditionally clean bill of health or a list of mistakes to be fixed. Instead, you must interpret Bobby's output. That's where things get tricky.

Building and Testing

We don't have the space to describe every situation you may encounter, but this example will show how to understand and apply the checklists Bobby generates.

Recently, I submitted my site (www.zeldman.com) to Bobby, and I got back a mixed message. Bobby blessed my site as 508 compliant, but approval was contingent on my interpretation of a checklist. To transform Bobby's Section 508 User Checks into

action items, I had to read each carefully, consult the linked text that explained it, and make decisions.

Tab, You're It Bobby's first User Check said, "Consider specifying a logical tab order among form controls, links, and objects." The **tabindex** attribute specifies the tabbing navigation order among form controls. If you don't create a logical tab order, users who rely on tabbing (instead of a mouse) will tab from link to link in the order that links appear in your XHTML source. This may not be the most useful way to guide them through your site.

After thinking about which links I'd want to click through and in what order I'd click through them, I arrived at the following tab-order mapping:

Tab 1 snaps visitors to the main page header, so they can reload the page if they want to and get a firmer grasp of the page's contents.

Tab 2 takes visitors to a button that lets them choose the default type size and style sheet.

Tab 3 shifts to a button that lets visitors choose a more legible font size.

Tab 4 brings the Search field into focus.

Tab 5 moves to the Search button itself.

Tab 6 goes to the Previous Reports button at the bottom of the page, so visitors can navigate to older pages in reverse chronological order.

Tab 7 goes to a Top Of The Page button that saves visitors the trouble of scrolling.

After those seven steps, normal tabbing resumes.

Changing the tab order was easy. I merely assigned a **tabindex** value to any item I wished to prioritize. For instance, here is a simplified version of the XHTML for my default font-size button *before* retooling for Section 508 compliance:

```
<form action="send">
<input type="button" />
</form>
```

Here is the same button *after* retooling for Section 508 (the changed element is in italic):

```
<form action="send">
<input type="button" tabindex="2" />
</form>
```

The next item in the sequence was marked **tabindex="3"**, the one after that was **tabindex="4"**, and so on. Quantum physics, it's not.

I also might have placed basic HTML links at the very top of my page, a technique referred to as "skip navigation." (To see it in action, visit http://docmorph.nlm.nih.gov/docmorph/.) Starting your page with raw hypertext links can simplify Web navigation for users of wireless devices, as well as for those with certain disabilities. But such a technique profoundly impacts visual layout, and it's not for every site.

Most Section 508–related chores are equally easy to conceptualize and code. Typical tasks Bobby may suggest are creating keyboard shortcuts for form elements, and testing to see if a page is readable and usable with style sheets turned off.

PLAY WELL WITH OTHERS

The following guidelines offer ways to bring commonly used Web-page elements into Section 508 compliance. For more on the ins and outs of compliance, visit the World Wide Web Consortium's Web Accessibility Initiative site (www.w3.org/WAI/GL/).

Image Use the **alt** attribute of the **<img>** tag to describe the purpose of each image. For meaningless images, such as spacer GIFs, use **alt=" "**.

QuickTime For video, use a captioning tool or a Web standard such as SMIL (www.w3.org/AudioVideo/) to provide descriptive text and captions equivalent to audio tracks. (See www.alistapart.com/stories/smil/ for more on SMIL.)

Flash Macromedia Flash provides limited accessibility options, such as the ability to create audio tracks describing navigational buttons. Use these options and provide HTML alternatives. Flash MX has greatly improved accessibility features, including screen-reader compatibility, though most of these enhancements work only in Windows.

Screen readers, sometimes referred to as "voice browsers" or "text readers," are browsers that read Web text aloud. At press time, only Windows-Eyes, by GW Micro (www.gwmicro.com/press/flash.htm), can take advantage of this accessibility improvement in Flash MX.

Color If you use color to denote information (such as clickability), reinforce it with other methods (for instance, use boldface type for links). Avoid referring to color in your text: "See the Yellow Box for More" means nothing to someone who can't see (or can't see color).

CSS Test your pages with and without style sheets to be certain they are readable either way. Don't worry about changes to graphic design with styles turned off, unless those changes render the site unusable.

Rollovers Code to ensure that links work even when JavaScript is turned off. Test by turning off JavaScript in your browser.

Forms Test forms in Lynx (http://network.macworld.com/lynx/) or Jaws (www.freedomscientific.com/fs_downloads/jaws.asp). You'll need Connectix Virtual PC (or a real PC) to run Jaws.

Image Maps If you must use image maps, use client-side image maps and provide redundant text links. Avoid old-fashioned, server-side image maps.

Tables Identify table headers **<th>** and use the **name** or **id** attributes to associate data cells and header cells for tables that have two or more logical levels of row and column headers. In an XHTML table listing employees, a typical table header might be *Name,* and **<td>** table cells associated with it might include *John Smith, Mary Jones,* and so on.

A graphical browser shows the connection between *Name* and the column of names directly below it, but those who use screen readers require additional help. Source code at www.w3.org/wai/wcag-curric/sam45-0.htm shows how the **id** attribute clarifies the connection between headers and the table cells.

Frames and Applets Don't use frames, applets, or flashing or blinking elements.

One Page, Two Designs

After a Section 508 face-lift, my Web page looks the same as it always has. But in a sense, the page now has *two* user interfaces: one is for graphical-browser users who use a mouse to navigate; the other is for those who tab in graphical or nongraphical browsers. The two designs coexist peacefully, requiring no special, "accessible" page versions and creating no change to the design most visitors see.

Even if your site, like mine, is not legally required to comply with Section 508, implementing techniques such as these can make it accessible to greater numbers of potential visitors, deepen your understanding of design, and increase your professional value as a Web designer.

JEFFREY ZELDMAN (www.zeldman.com) is the author of *Taking Your Talent to the Web: A Guide for the Transitioning Designer* (New Riders, 2001) and the creative director of A List Apart (www.alistapart.com).

SANDEE COHEN, AMY CONGER, AND BRUCE FRASER

Fast-Track Tips

Sometimes one small piece of advice can make all the difference in your work. As a print professional, you use certain applications daily, but you probably don't know *everything* about them. To fill those knowledge gaps, we offer a heaping handful of tips on using programs familiar to many print publishers: QuarkXPress (800/676-4575, www.quark.com), Adobe Photoshop and InDesign (800/833-6687, www.adobe.com), and Macromedia FreeHand (800/457-1774, www.macromedia.com).

Copy XPress Paragraph Formats

Want to copy paragraph formats (such as tabs, indents, rules, and styles) from one paragraph to another in the same XPress document? Use this shortcut: click on the paragraph you want to copy to, and then shift-option-click on the paragraph you want to copy from.—AMY CONGER

Right-Align XPress Tabs

You can make a right-aligned tab without dealing with XPress's Tabs dialog box. When you press option-tab, the program will insert a tab that automatically right-aligns the text following it on that line. Unlike a right tab, an option tab adapts when you change the right-side indent, the size of the column, or the width of the text box.—AMY CONGER

ILLUSTRATION BY MARK DANIELSON

Get Better XPress Previews

To improve the way XPress displays 1-bit (black-and-white) pictures, hold down the option key when importing one. This changes the preview of the image to gray scale and lets you use gray-scale editing features such as contrast and screening on it.—SANDEE COHEN

Use Your Discretion in XPress

Ragged-right columns of text in XPress look better when lines end at around the same spot. To get an even rag, you may have to break a word at a place where XPress hasn't automatically done so. Don't be tempted to simply stick a regular hyphen (-) into the word—if text reflows and that word ends up in the middle of a line, you'll have a misplaced hyphen. To hyphenate the smart way, press ⌘-hyphen, which creates a discretionary hyphen. This character shows up only when it's needed at the end of a line; otherwise, it disappears.

To *prevent* a word from breaking, place the cursor in front of the word and press ⌘-hyphen—the word will stay unbroken on one line.—AMY CONGER

Control InDesign Smart Quotes

You set InDesign to convert straight quotation marks (") into proper (curly) quotation marks (“ and ”) by turning on the Typographer's Quotes setting in the Preferences: Text dialog box. If you want a straight quotation mark (or apostrophe), you can quickly turn off this preference: press ⌘-option-shift-", and then type the quotation mark or apostrophe. Restore the preference by pressing ⌘-option-shift-" again.

InDesign can't convert these characters if the Language setting in the Character palette is set to No Language. This seeming limitation can be an advantage. For instance, when you type instructions for HTML or scripting languages, you want straight quotation marks around the commands. Create a Character style that consists only of the change to the Language setting, and you can apply it to text as needed.—SANDEE COHEN

Transform Two Ways in InDesign

You can use InDesign's Transform palette to resize objects. If you enter a new size for either the height or width, you may want to resize the object proportionally. To do so, enter an amount in either the Height or the Width field. Then hold down the ⌘ key as you press return. Both the height and width of the object will be resized proportionally. Similarly, you can enter

just one value for scaling either the height or width and then press ⌘-return. The object will be resized proportionally.—SANDEE COHEN

Mix It Up in FreeHand

In Macromedia FreeHand 10, you can mix colors in the Color Mixer and then click on the Add To Swatches button to add the colors to the Swatches palette. When you click on the button, FreeHand gives you a dialog box where you can change the default color name (which is based on the color values) and define the color as Process or Spot. You can bypass this interim dialog box by holding down the ⌘ key as you click on the button. The color will be added using the default name and whatever definition was chosen previously. Hold down the ⌘ key again when you click on the Add To Swatches button in the Tints panel.—SANDEE COHEN

View FreeHand's Strokes and Fills

FreeHand 10 provides custom and PostScript fills and strokes, as well as textured fills, that are based on specialized code. Usually these fills are visible only when you print the document. But if you place a FreeHand EPS file in Adobe InDesign, you can see an on-screen representation of the fill by using the View: High Quality Display setting.—SANDEE COHEN

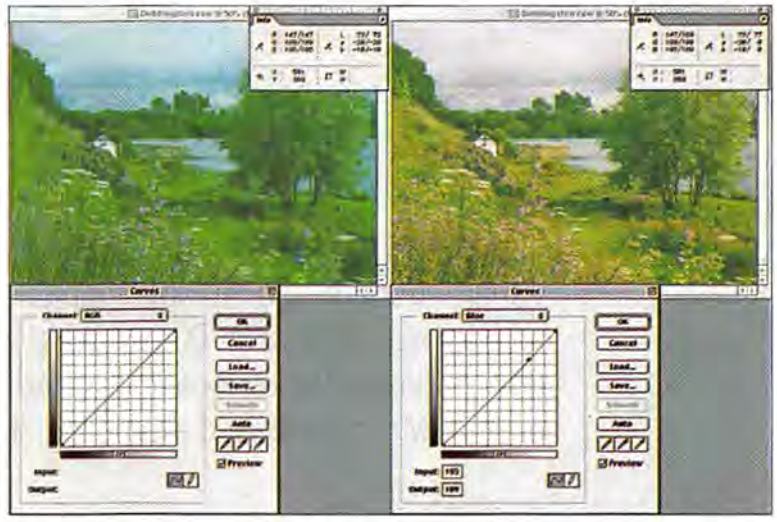
Edit Digital Images in Photoshop

Whether they come from a scanner or a digital camera, most digital images need to be edited in three ways: you must optimize the dynamic range, correct the color balance, and optimize the contrast. You can quickly do all three using the Levels and Curves tools in Photoshop.

Optimize Dynamic Range Scanners and cameras can capture a much wider dynamic range than any one printer can reproduce. To get the best possible print, make sure your images use the whole dynamic range of your output. To do so, open Photoshop's Levels palette (Image: Adjustments) and move the black and white input sliders in to the start of the "hill" where the data appears. You can also hold down the option key to see what part of the dynamic range, if any, is clipped as you move the sliders.

Correct Color Balance Most unedited images have a color cast—they appear too red, too blue, or (like the left-hand image in "Green around the Gills"), too green. The easiest way to fix color-balance problems is to find something in the image that you know should be close to a neutral gray, and then use curves to make the R, G, and B values for that point equal. Do that, and the rest of the color will fall into place.

To begin correcting the color balance, open the Curves palette (Image: Adjustment), and then move the cursor to an area that should be neutral gray. (In this case, I chose the water. Other likely candidates are clouds, gray stone, and shadows.) Next, ⌘-shift-click to place a point on each of the individual channel curves.



Green around the Gills A few basic Photoshop techniques take this image from overly green (left) to a good likeness (right).

For this image, the original values in the Info panel were R: 147, G: 189, and B: 195. I left the G channel alone, as it has the middle value, and balanced the R and B channels to the G value. I pressed ⌘-1 (one) to switch to the R channel, pressed the tab key twice to select the output field, and entered 189 (the target value I obtained from the G channel). Then I pressed ⌘-3 to switch to the B channel, pressed tab twice to highlight the output field, and again entered the target value of 189. The "after" values in the Info palette read R: 189, G: 189, and B: 189, indicating a neutral gray. As you can see in the right-hand image in "Green around the Gills," the color cast largely disappeared.

On some images, you may need to choose more than one point to correct, but you rarely need more than three: one in the midtones, one in the quarter tones, and one in the three-quarter tones.

Optimize Contrast To make a subject snap, you usually need to add contrast by making an *S*-shaped curve in the Curves' composite RGB channel. Press ⌘-~ (tilde) to switch to the composite channel, ⌘-click in the image on a bright area that you want to emphasize, and ⌘-click again on a dark area. This places two control points on the composite curve. Move the point for the bright area upward and to the left, and the point for the dark area down and to the right, until the contrast looks right. You can select different points on the curve by pressing control-tab to move from one to the next, and use the arrow keys to move the selected point up, down, left, and right. With a little practice, you can do this in much less time than it takes to explain.—BRUCE FRASER

SANDEE COHEN is the author of the *InDesign Visual Quickstart Guide* and *FreeHand Visual Quickstart Guide* (Peachpit Press, 2001 and 2002). AMY CONGER is a graphics instructor at City College of San Francisco. Her fonts can be found at www.abecedarienne.com. Contributing Editor BRUCE FRASER is a self-confessed color geek and a coauthor of *Real World Photoshop 6* (Peachpit Press, 2001).

Seeing Is Believing

In this month's *Mac 911*, the "eyes" have it. The column begins with all things visual—from driving multiple monitors, to capturing pictures from a DVD, to adding material to a DVD, to making an LCD display shine. Then we explore a few less-visual topics, including speed-testing Web browsers, revealing what's on your Mac's mind, and examining Sherlock indexing in Mac OS X.

Double Your Pleasure

My Power Mac G4 display card can drive either a flat-screen or a CRT monitor. Is there OS X–compatible software that will let me drive both monitors simultaneously, or does that require a special video card?

John Garrison, *Orinda, California*

The ability to drive two displays is determined by hardware rather than software. To run both displays, you must pony up for either a separate display card or a replacement graphics card that supports simultaneous display on two monitors.

ILLUSTRATION BY LEO ESPINOSA

Most new graphics cards support two monitors. ATI Technology's entry-level offering, the $129 Radeon 7000 Mac Edition (905/882-2600, www.atitech.com), sports DVI and VGA connectors, as well as an S-Video connector for sending video output to a TV, but it doesn't support Apple's proprietary Apple Desktop Connector. It can display video on two monitors at the same time, either mirrored or in extended video mode (which divides the viewing area between the two monitors).

The Radeon 7000 is a capable card, but if you're a hard-core gamer or a graphics professional who needs more oomph from a graphics card, you may want to opt instead for ATI's $299 Radeon 8500 Mac Edition. This AGP-based card (compatible with both 2× and 4× AGP slots) also carries DVI, VGA, and S-Video ports.

If you're a bargain hunter, check eBay for the original ATI Radeon Mac Edition card. Although ATI continues to sell this card for $179, you should be able to get a used one for a lot less.

Color Bind

My new Titanium PowerBook G4 has a tiny red spot in its display that won't change colors, no matter which program I'm running. What can I do?

Molly Cruz, *San Diego, California*

Take up massage. Wait—before you dash out for a gallon of almond oil and a case of frangipani-scented candles, allow me to explain.

Your PowerBook is suffering from a stuck pixel—meaning that the light-emitting element responsible for changing that pixel's color is jammed or broken. LCDs commonly have a few stuck and dead pixels. To create nothing but pixel-perfect displays would be too costly for manufacturers, and a few of these faulty elements are therefore considered acceptable.

That doesn't prevent them from being annoying, though—particularly on a PowerBook that set you back the equivalent of half a San Francisco mortgage payment. You might be able to coax this pixel back to life by *gently* pressing and massaging the screen directly over the pixel (you may have to add a little pressure from the back as well). This technique isn't guaranteed to revive the pixel, but it's worth a shot.

Frame Game

How can I capture screen shots of a DVD video that's playing on my Mac?

Sam Inglis, *Springfield, Massachusetts*

If you have a Mac that's running OS X 10.1 or later and that has an Nvidia graphics chip set, you can capture screen shots from a DVD with Ambrosia Software's Snapz Pro X version 1.0.1 or later (www.ambrosiasw.com). Just start playing the DVD on your Mac, pause playback at the point where you want to capture an image, invoke Snapz Pro X, and use the Selection tool to capture the screen.

With the $49 version of Snapz Pro X, you can create QuickTime movies of the material playing from a DVD. Note that Snapz Pro can't capture the DVD's sound, and the resulting QuickTime movie will stutter badly unless you reduce DVD Player's screen size by at least half before capture.

A host of other tools can extract files directly from DVDs instead of capturing their output (these applications require only a graphics card that supports DVD playback). The film industry would like you (and members of the U.S. Senate) to believe that employing tools such as Yet Another DVD Extractor, or YADE (www.opuscc.com/download/FTP/yade.sit), and Fair Use (http://homepage.mac.com/fairuse)—free tools that you can use to extract DVD data and, potentially, to copy a DVD—violates the law. Until more laws are passed, that view remains opinion, not fact. If you extract material from a DVD and distribute it—for profit or not—you've certainly violated the law and can be prosecuted. However, if you capture a frame of a DVD for your own use—to create a Spinal Tap desktop picture, say—the feds are unlikely to toss you into the hoosegow.

For more information, take a look at this discussion on Ric Ford's MacInTouch site: www.macintouch.com/dvdcapture.html#apr15.

Making Movies

How do I create a DVD of files I've downloaded from the Web?

Joe Moilaneu, *Tukwila, Washington*

Please bear in mind that downloading and using copyrighted material without the owner's permission is of questionable legality. Therefore, let us confine our discussion to legal material—the movie your son took of your granddaughter and posted on the Web, for example.

You may be stopped before you start if the downloaded file is incompatible with QuickTime. In the March 2002 *Mac 911*, I discussed the difficulty of playing certain types of video files on the Mac because the codecs necessary to play these files aren't available in Mac-compatible form. To determine whether a movie will play on your Mac, attempt to open the file in QuickTime Player. If it opens and plays, you're well on your way. (Note that MPEG-1, QuickTime VR, and QuickTime movies that feature sprites won't play from a DVD.) If the file isn't QuickTime compatible, either follow the advice in the aforementioned column and try to convert it, or contact the person who created the movie and ask him or her to create a Mac-friendly version. When you have that Mac-friendly file, just import it into iDVD or DVD Studio Pro and burn like there's no tomorrow.

Browser Battle

I hear a lot of arguments about the benefits of one Web browser over another. I care only that my browser runs as quickly as possible. Can you give me a rundown on how the various Mac Web browsers perform?

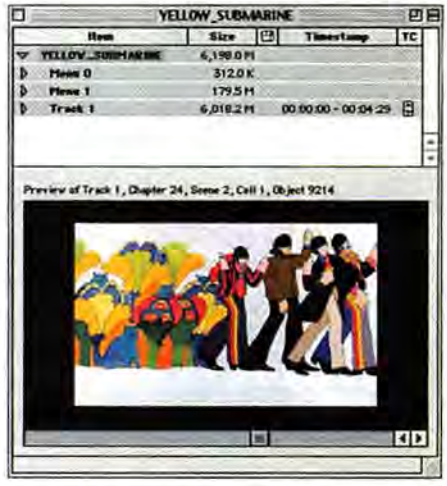
Jackson Lowe, *Houston, Texas*

With pleasure. I asked the Big Brains in Macworld Lab to devise a test suite that would measure each browser's performance in both OS 9 and OS X. To keep Internet congestion from influencing the test's results, the Lab folk created a Web site on a 500MHz Power Mac G4 running Mac OS X Server and used a crossover cable to connect that server to an 800MHz Power Mac G4 running first OS 9.2.2 and then OS X 10.1.3. The test site consisted of four pages of images, text blocks, and QuickTime movies. The testers measured how long each browser took to fully load the site.

In the OS 9 tests, Netscape 6.2.2 (650/254-1900, www.netscape.com) took the prize by loading the site in 48 seconds. Mozilla 1.0.0 Release Candidate (www.mozilla.org) came in next, at 53 seconds. Internet Explorer 5.1.4 (800/426-9400, www.microsoft.com) and iCab Preview 2.7.1 (www.icab.de) lagged way behind—the first took 2 minutes and 22 seconds; the second, 2 minutes and 25 seconds.

In OS X, Internet Explorer 5.1 bested the rest, at 33 seconds. Netscape 6.2.2 followed close behind, at 35 seconds. Mozilla 0.9.9 took the bronze, at 40 seconds. OmniWeb 4.1 beta 1 (800/315-6664, www.omnigroup.com) was just behind, at 41 seconds; Chimera Navigator .02 (http://chimera.mozdev.org) finished in 45 seconds; and iCab Preview 2.7.1 clocked in at 49 seconds. Opera 5.0 (www.opera.com) took an astonishing 13 minutes and 21 seconds.

The browsers bogged down in different places. In OS 9, for example, Internet Explorer had a tough time with the last page, >>



Copy Frames With a DVD-extraction application such as YADE, you can copy frames from DVDs.

TIP OF THE MONTH

Are you seeking an easy way to log on to your iDisk in OS 9? Use AppleShare. After establishing a connection to the Internet, open the Chooser, click on the AppleShare icon, and click on the Server IP Address button. In the resulting dialog box, enter **idisk.mac.com** and click on Connect. The next dialog box will prompt you for your iTools user name and password. Enter this information, and click on Connect. A dialog box will appear, containing the name of your iDisk. Click on OK, and the iDisk will show up on your Mac's desktop.

Nathaniel Black, *Lancaster, California*

UNSOLICITED ADVICE

Some Mac users who have moved to OS X miss OS 9's Encrypt, an often underutilized command, found in the File menu, that allows you to easily password-protect a file. OS X's Disk Copy lets you create encrypted archives, but using it is a frustrating experience. You must create a new blank image, size the image so it will hold whatever it is you want to encrypt, mount the blank image, copy the stuff you want to encrypt to the mounted image, unmount the image, convert the image so you can choose the Encrypt option, enter and confirm the password, and finally save the dratted thing. *Yeesh!*

Thankfully, there's an easier way if you're running OS X 10.1 or later. That way is Michael Tsai's $5 DropDMG (www.c-command.com/dropdmg). Just launch DropDMG, select Preferences from the DropDMG menu, and select Encrypt Images in the resulting window. To create an encrypted image, just place the items you want into a folder, drag that folder onto the DropDMG icon, and enter and confirm a password when you are asked to do so.

Some of you may already have an easy-to-use alternative on your hard drive—Aladdin Systems' DropStuff (831/761-6200, www.aladdinsys.com). Part of the $80 StuffIt Deluxe 6.5 (or sold separately for $30), DropStuff works with both OS 9 and OS X and can compress and encrypt a file or folder dropped on its icon. To turn on the encryption option, launch DropStuff, select Preferences from the DropStuff menu (or from the File menu if you're running OS 9), choose the Stuffing option in the resulting window, and select the Encrypt Archive With Password option.

which was heavy on text and GIFs. iCab had an equally difficult time with animated GIFs in OS 9. And the first page, which contained four QuickTime movies, nearly killed Opera running in OS X.

Bear in mind that we designed these "torture tests" to expose obvious weaknesses and provide a general idea of how the browsers performed when pushed. Your mileage may—and probably will—vary.

Regardless of which browser you choose, you can do a few things to speed up its performance. For example, you can switch off images, disable the JavaScripts that produce pop-up windows, and either completely allow or deny cookies so you're not constantly bombarded with requests to accept or reject these little info nuggets.

Hot Topic

My 600MHz iMac running OS X bogs down after I've worked with it for a while. I launch ProcessViewer to see what's causing the slowdown and notice that something called LaunchCFMApp is using a high percentage of the CPU. I've even seen multiple instances of this thing. What is LaunchCFMApp and how can I keep it from slowing down my iMac?

Robert Cattel, *Cincinnati, Ohio*

The LaunchCFMApp name is deceptive. It refers not to a *specific* application but to any Code Fragment Manager Carbon application that runs natively in both OS 9 and OS X. AppleWorks and Adobe Acrobat 5 are examples of this kind of application. That's why ProcessViewer may reveal several instances of LaunchCFMApp.

You can determine which of these LaunchCFMApp applications is putting the hurt on your iMac's performance by randomly quitting running applications and seeing if performance improves. But you'll likely encounter more success if you launch the Terminal application and type **top** instead.

The top command lists all running processes and, among other things, tells you what percentage of the CPU each uses. Unlike ProcessViewer, this command displays the actual names of your applications rather than the obscure LaunchCFMApp. Top itself will take up most of your processor's attention, but if you scan the list under the %CPU heading, you should get a good idea of which applications most tax your iMac.

Inscrutable Index

How can I force Sherlock to index my OS X volume?

Scott Girardot, *Wolverine Lake, Michigan*

You can't, for good reason. Sherlock's inability to index an entire OS X volume—and the fact that your Users folder appears within Sherlock's list of searchable items—is Apple's fairly broad hint that OS X views the world differently from OS 9. OS X is a multiuser environment where each user owns his or her own files. A pretty shoddy multiuser environment this would be if Uncle Karl could grab Auntie Di's Users folder, index the items in that folder, and then search for the phrase "Karl is a fathead" in her personal correspondence. And do you really need Sherlock to index the tens of thousands of files—full of so much gobbledygook—that the OS X installer shoves onto your hard drive?

Instead, Sherlock asks that you drag folders you want indexed into its main window. (Unlike OS 9, OS X doesn't let you index an item by control-clicking on it in the Finder and then selecting the Index Selection command from the contextual menu.) If you don't have privileges to index a particular item—and yes, Karl, this means you—Sherlock will tell you so and refuse to index that item.

If all this folder dragging sounds like a drag, I suggest that you download a copy of Christian Grunenberg's free EasyFind 2.5 (www.devon-technologies.com/freeware.html). EasyFind allows you to select an entire volume and rummage through the contents of any file that you have permission to see on that volume. □

Contributing Editor CHRISTOPHER BREEN is the author of *Mac 911* (Peachpit Press, 2002), a tips and troubleshooting guide.

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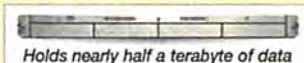

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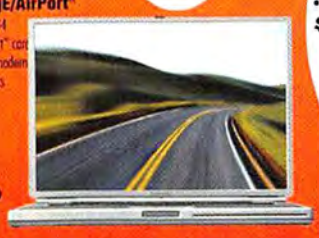

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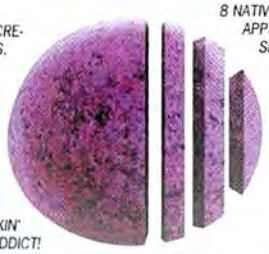

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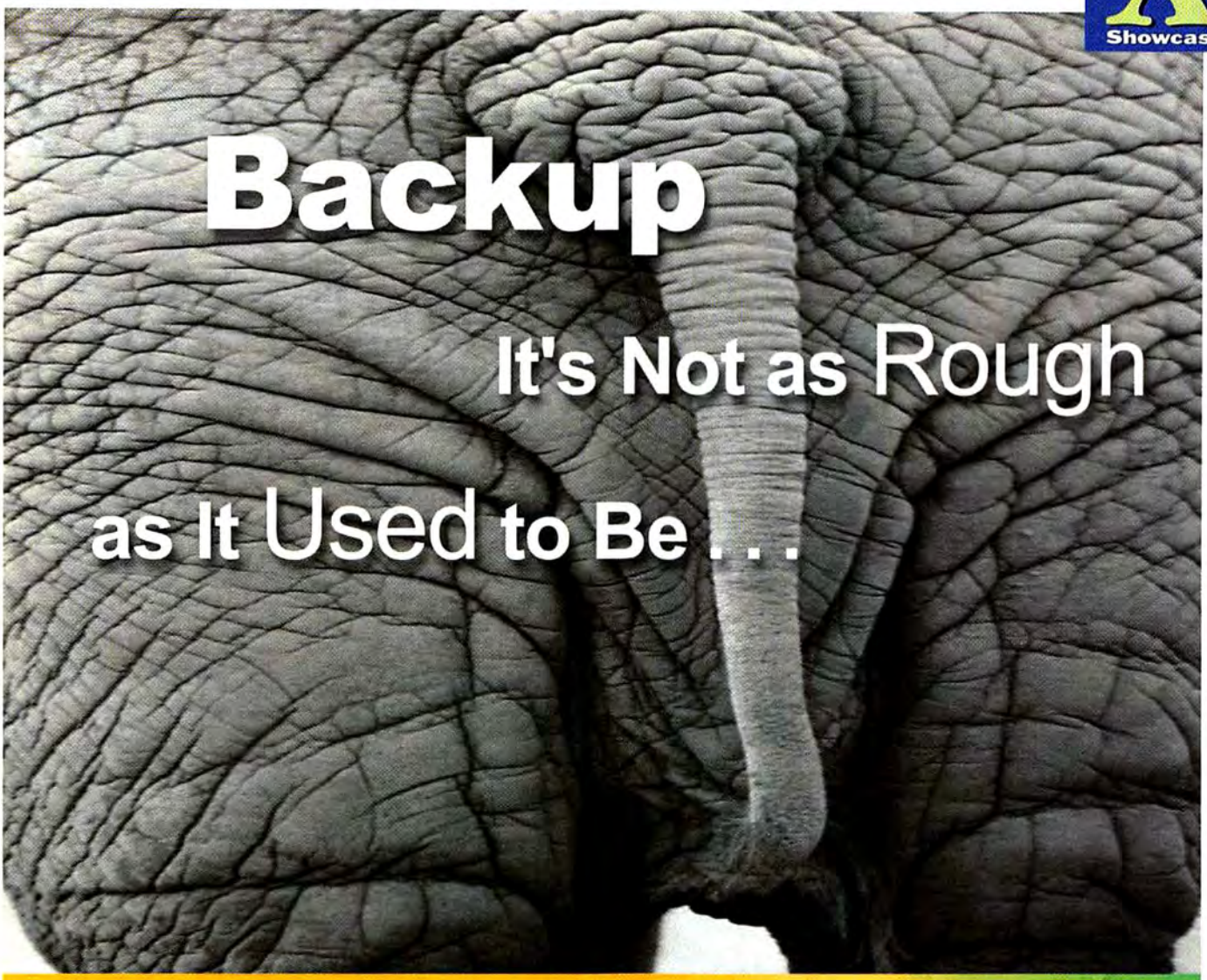

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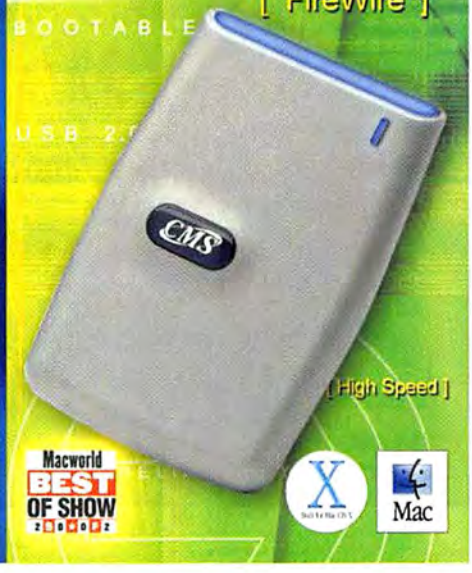

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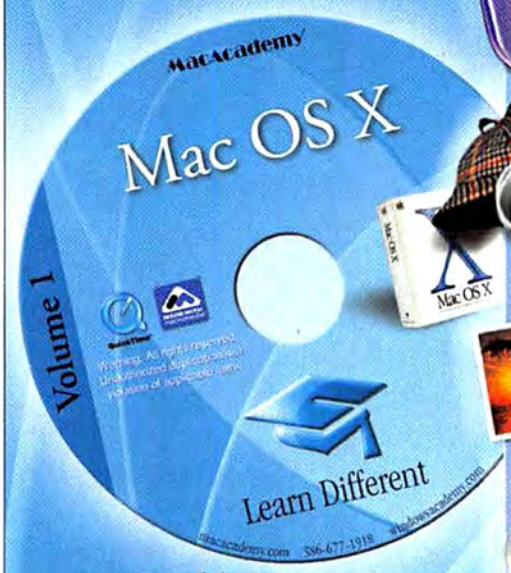

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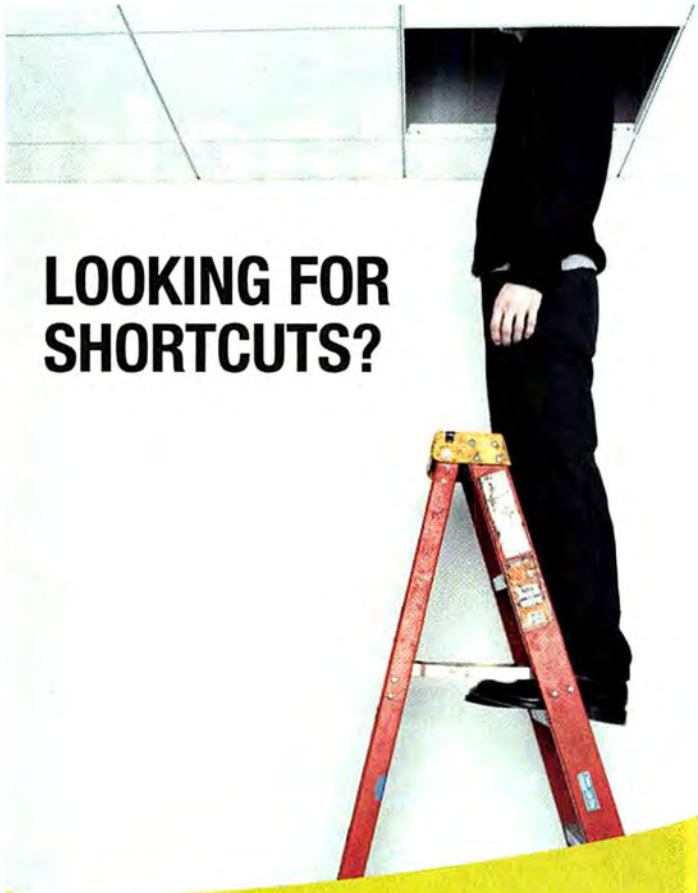

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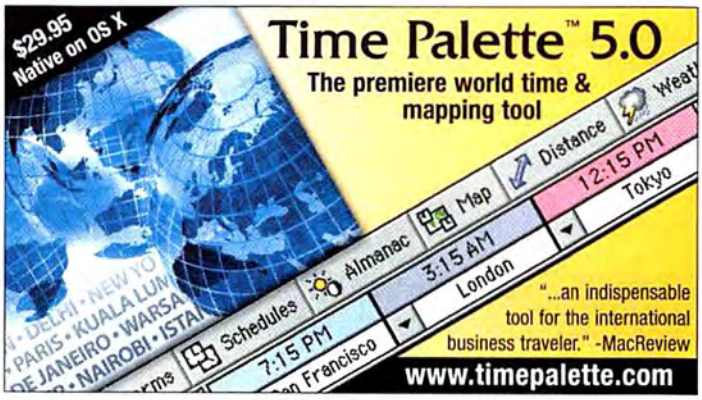

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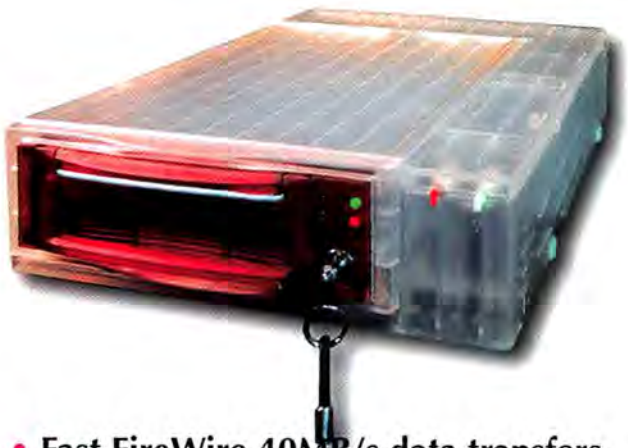

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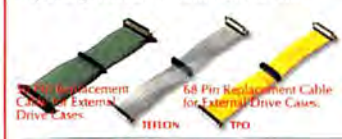

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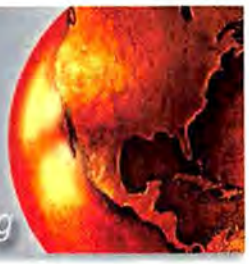

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Road Tools Podium CoolPad™ review by MacHome Magazine, March, 2002

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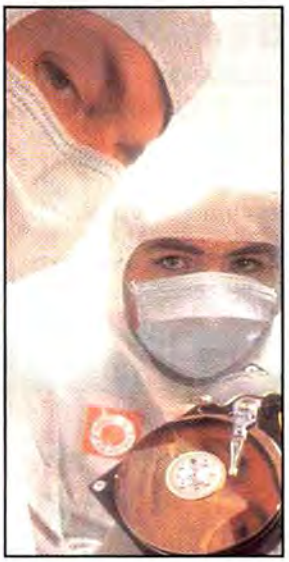

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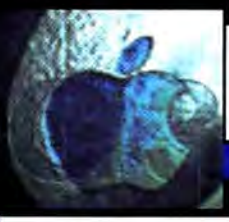

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shouldn't be. Like German rocket scientists fleeing their overlords at the end of World War II, most of the team behind Claris Emailer fled their offices after the product's cancellation and, with the Soviet army nipping at their heels, found asylum at Microsoft.

So Entourage only *looks* like a boring "Enhance office productivity through workgroup connectivity!" e-mail, contact, and calendar app. It looks, walks, and breathes like a native OS X app—more than Mailsmith, even. It's AppleScripted from here to the Second Coming but isn't as flashy about AppleScripting as Mailsmith. It also supports IMAP, the protocol you lust for if you like to leave your mail on the server. My ISP doesn't support IMAP, and neither does Mailsmith.

Mailsmith and Entourage are cut from largely the same cloth. They're both absurdly powerful programs that reward any user who wants to customize an app to create a precisely tailored experience. If you're one of those rich corporate-executive types who buy a new car every ten years whether you need one or not, though, Entourage tightly integrates the threads connecting individual e-mails to each other and to entries in your calendar and contact database.

Mailsmith is not as pretty as Entourage. But it focuses on the task of e-mail. And, um, you don't have to buy a $499 suite of office apps to get it.

The Big Decision

I still don't know which program I'm going to stick with. Like I said right at the top: I'm not a real big fan of personal growth. I'm *still* going to use my original mail client—elm, a Unix shell app (text interface, 80 by 24 characters). I've even set up my PowerBook's Terminal window to show amber letters on a black background, like my old monochrome monitor.

> Entourage only *looks* like a boring productivity app.

Its feature set doesn't move past the fundamentals of reading mail and composing replies. But it works *exactly* the way I expect a client to. No wonder—it's the mail client I started using when I made the transition from CompuServe. It's definitely old-school, but I *like* being able to sort through 100 incoming messages and leap tall buildings with just three keystrokes. And after all this time, I can't take an e-mail seriously unless I'm reading it in amber on black.

So who cares if I haven't changed anything? It's a big win for all of us. Having just one e-mail application for OS X is like allowing the Department of Energy to define a national pants policy for all Americans. As my own choice of e-mail client and casual wear attests, anything that lets us avoid wearing yellow spandex bike shorts is a good thing. □

Contributing Editor ANDY IHNATKO has often wondered which e-mail application Sisyphus would have used.

ANDY IHNATKO

Entourage? Mailsmith? Eudora? I Just Can't Decide.

E-mail Options Aplenty

THERE IS ABSOLUTELY NO PERSONAL GROWTH BEING documented in this month's column. Yes, I'm flogging myself over whether I should switch to a different e-mail program, but I'll tell you right at the top that I'll wind up using the same program I've been using since the first George Bush was president.

I feel for that guy in Hades, pushing his rock up a hill only to see it tumble back down when he's within a few feet of the peak. It's not about having a goal, making progress, and becoming a better person for it. It's about living in hell and, instead of doing the courageous thing (that is, rebelling against the evil hegemony even though you know full well that the evil hegemony has been in charge for years and that just cursing the universe when its back is turned is much more dignified), simply drooping your shoulders as you continue to do the stupid, futile task anyway.

Decisions, Decisions

What brought this on? Bare Bones Software has finally decided to create a version of Mailsmith for OS X (see our review elsewhere in this issue). Qualcomm has finally released an OS X version of Eudora ($40; 800/238-3672, www.eudora.com). And after using Microsoft Entourage for the past few months—*just because it came with Microsoft Office and I don't want to use Classic apps on this machine if I can help it*—God help me, I'm actually really liking it.

You may ask why I don't just use Apple's built-in Mail program. Because it's a somewhat limited application, I answer quickly. (But to be honest, my biggest problem with Mail is that it's a program built into Mac OS by Apple. I'd no sooner use the mail client that shipped with the operating system than Dale Earnhardt Jr. would drive his rental car straight from the hotel onto the track.)

I've been using Eudora regularly since version 5. My copy is on a G4 Cube that runs 24-7, constantly archiving mail. Eudora's a (pleasantly) dirty-looking program with lots of (endearingly) punk features; it clearly started off as a geek's mail client—the Mac version of a Unix mail reader—and over the years, the lenses of Eudora's black-rimmed glasses have only gotten thicker and smudgier.

But although Eudora hasn't exactly been orphaned by Qualcomm, it's definitely one of those latchkey kids the neighbors spend a lot of time worrying about. Qualcomm assures people that the latest version will run on Mac OS 8.1 or later—oh joy, so my IIsi is still good to go! Meanwhile, Steve Jobs is on a stage, carrying OS 9 out in a coffin.

Geek Cred

Mailsmith isn't unappreciated at all. In fact, it's like the Christmas tree that Charlie Brown buys at the end of the Peanuts Christmas special—runty, definitely, but all it needs is a little love.

The upgrade cycle goes like this: The people at Bare Bones send me prerelease versions of their software. I install them. I don't like them. I hate the error reporting, for instance. I tell the program to fetch mail but cancel midway through, and a floating window appears. "An error occurred," Mailsmith tells me, "but I won't tell you what it is until you click on this button and open the error log." *Click. Scroll scroll scroll.* And then I see the most recent entry. "The operation didn't work because [judging from the number of digits in the error code it provides] nearly the 100,000th-worst thing that could have happened, happened." So I contact Bare Bones' (very helpful) tech-support people, and they tell me that the error code translates to "The user clicked on the Cancel button."

But hard-disk space is so cheap that deleting files is a waste of electricity, so I keep all these alphas, betas, and Final Candidates around. And I start using the program. I start liking its superheroic level of AppleScriptability. I start figuring out the somewhat complicated but rip-hammer–strong filter tools. And because Bare Bones Software has a wonderful plan for your life, it has added grep to Mailsmith's search feature. Grep-style queries allow Mailsmith to search as a human would. Instead of saying "Look for Elvis Costello," you can, with a little bit of effort, say "Look for *someone who looks like* Elvis Costello," which returns Buddy Holly and that guy from *Whose Line Is It Anyway?* And I don't think there's a better app for managing multiple mail accounts.

> The biggest problem with Mail is that it's built into the OS.

See? You start to love it, and at that point Mailsmith's posture immediately improves, its branches start to fill in, and it begins attracting carolers.

Emailer Expatriates

I could make Mailsmith my regular client, sure. But even *I'm* surprised at how much I love Entourage. I

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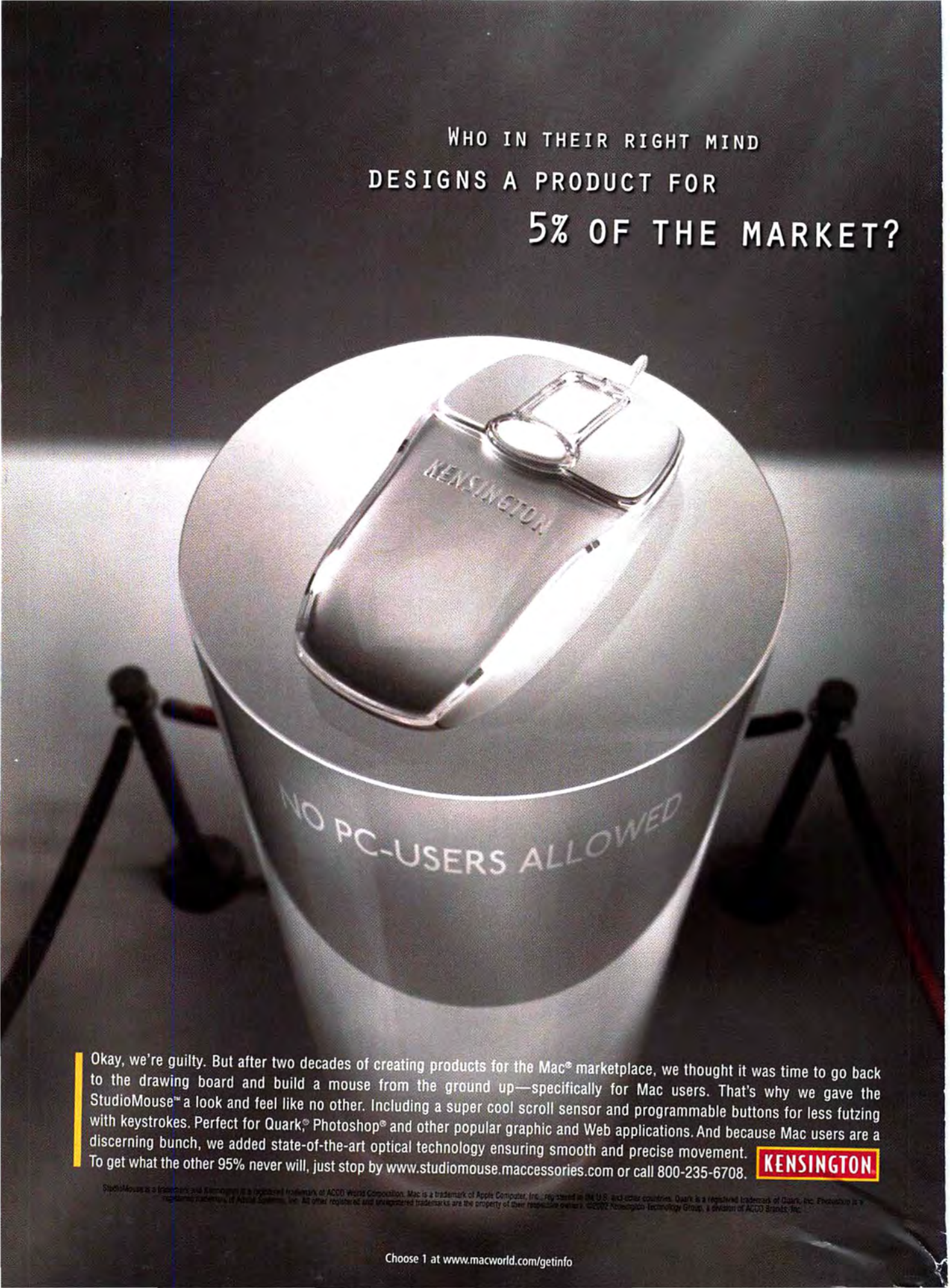

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