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Macworld

Photoshop

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EXCLUSIVE
FIRST LOOK

X

Plus: | Optimizing Classic | All-New AirPort | Virtual PC 5.0 | Flatbed Scanners

GIGAHERTZ G4

We Test Apple's Power
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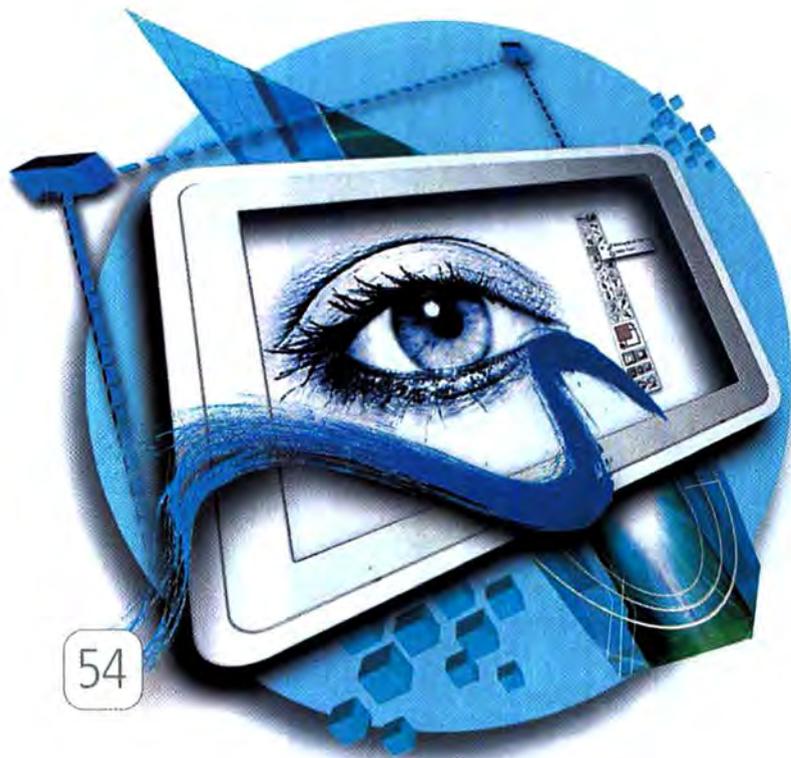
Incorporating MacUser

COVER STORY

- 54 The Wait Is Over**
DEKE McCLELLAND AND KELLY LUNSFORD
Adobe Photoshop for Mac OS X has at last arrived. Whether you need to get organized, get better images, or get up-to-date with Apple's next-generation OS, Photoshop 7.0 has something for you. Here's our exclusive first look at one of this year's most highly anticipated new programs.

FEATURE

- 62 Become an iExpert**
JONATHAN SEFF AND JASON SNELL
Apple's "i-products" (from iPhoto to the iPod) are admirably easy to use, but they still have hidden depths. Join us as we delve into the digital hub, and learn how to get the most out of these products.



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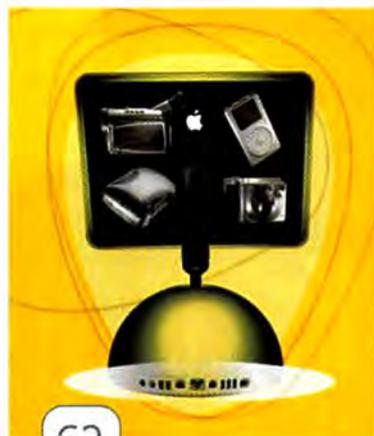
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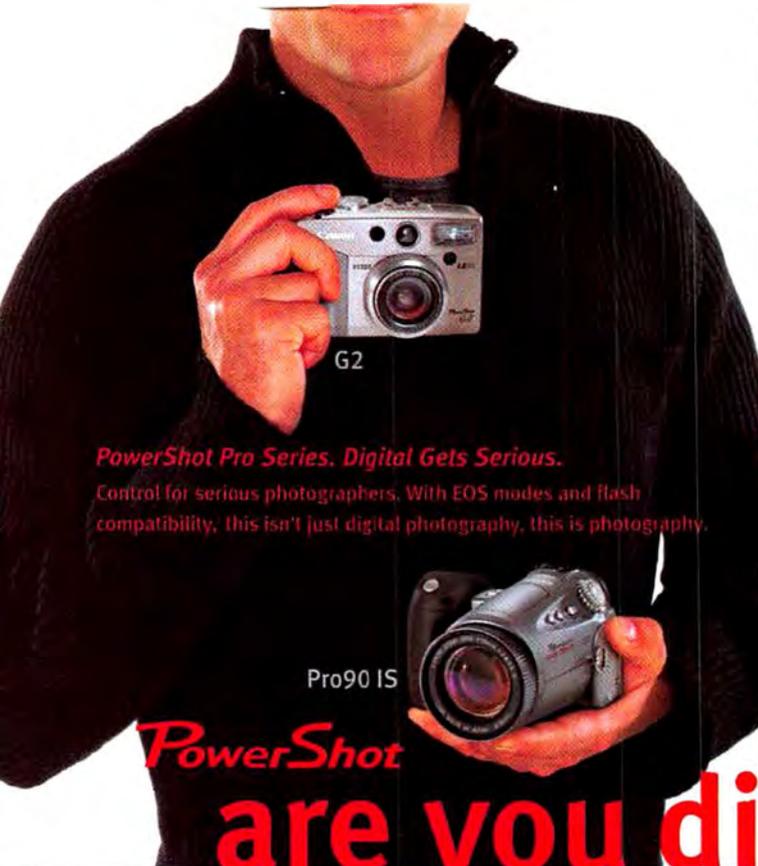


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G2

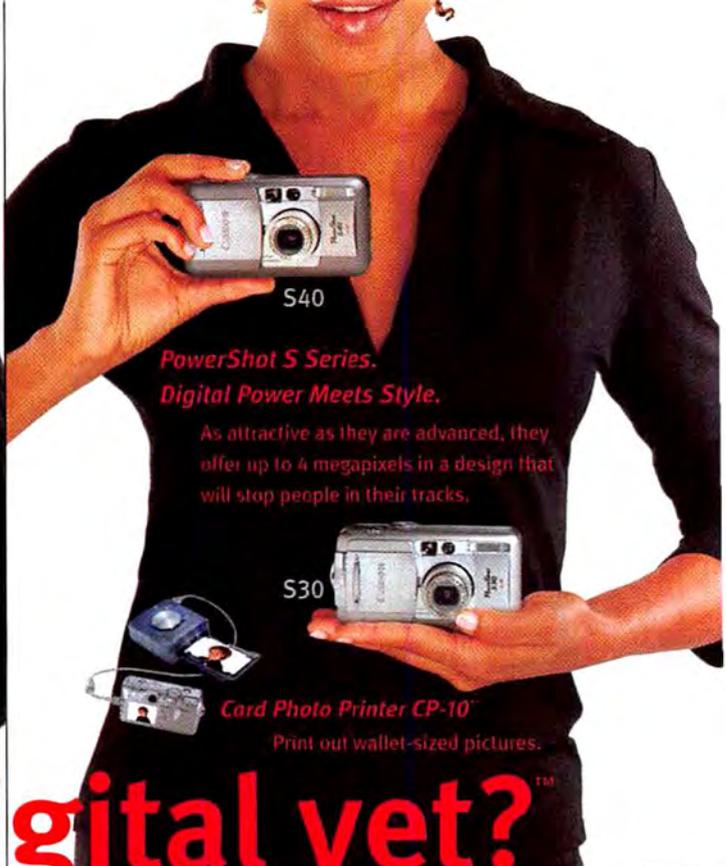
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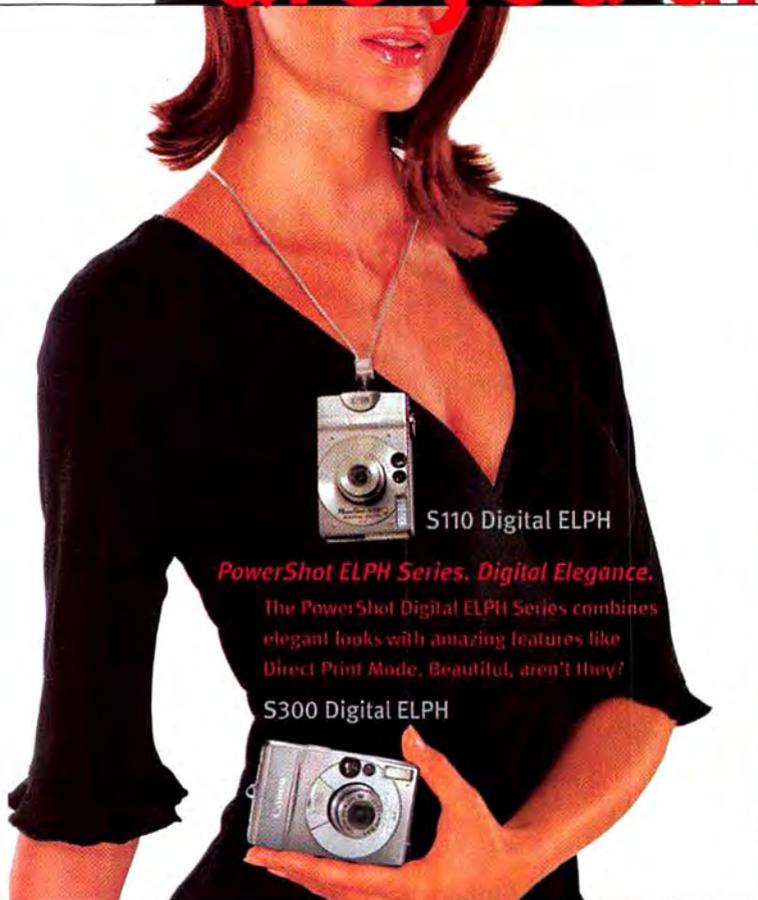


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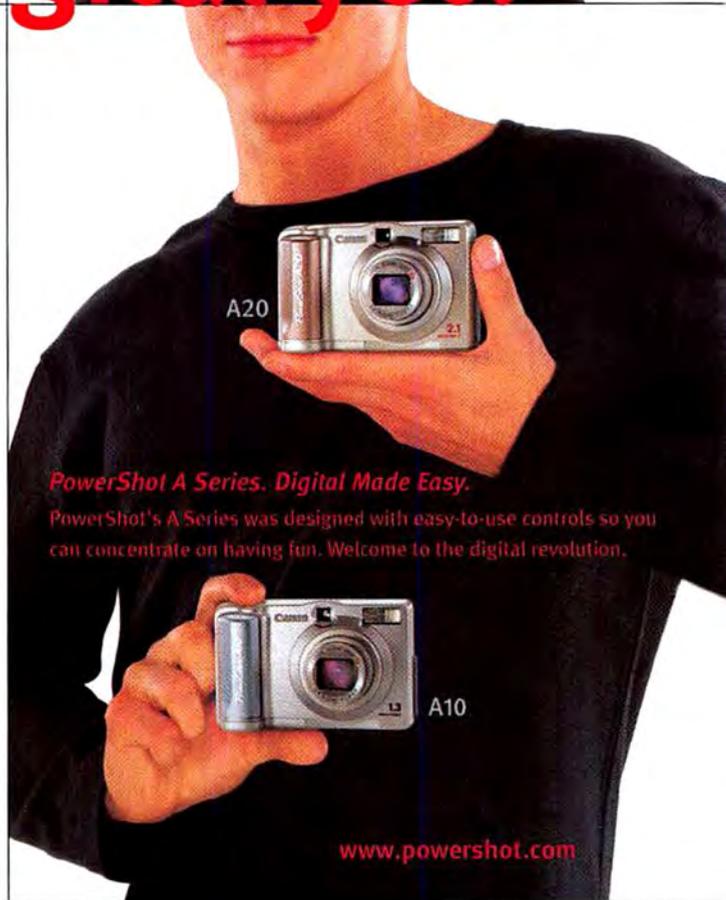
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Mac OS Evolves, and So Does Macworld

Classic Begone!

I'VE BEEN RUNNING MAC OS X IN ONE FORM OR ANOTHER since September 2000, and last August it became my daily operating system. Since then, I've become more and more impressed by Apple's efforts. Sure, I miss a lot of things from Mac OS 9 (could I please have a full Location

Manager that switches *all* my settings, including printers?), but I've finally stopped going to the upper right-hand corner to switch applications, and I'm much more adept at working with some of the, uh, *nuances*, shall we say, of the marriage between Unix and Mac OS.

What I don't like about OS X is using its Classic mode. Yes, being able to run unmodified OS 9 apps inside OS X is an awesome technical achievement, but it's also a huge pain in the ass. I'm tired of watching that old happy Mac and its sorry trail of extensions rumbling across my PowerBook's screen.

Last November, Microsoft Office v. X finally got me to the point where I no longer needed to run Classic all the time. And a number of cool OS X applications and utilities have kept me happy. But until recently, one reason to run Classic remained: Adobe Photoshop. I spend nearly as much free time in Photoshop as I do work time in Word and Entourage.

I've looked at a number of intriguing OS X-based programs, including Caffeine Software's very capable TIFFany (\$233; www.caffeinesoft.com) and the open-source GIMP (\$30; www.openosx.com or www.macgimp.com). But after more than ten years of Photoshop, I'm not quite ready to move away from it.

With Adobe's announcement of Photoshop 7.0—detailed in this issue by Deke McClelland, Kelly Lunsford, and Jason Snell—Classic will quickly become a distant memory for me and, I think, many other users. In addition to Carbonizing its flagship program, Adobe has managed to add quite a few new features. (To those who complain about the wait, I answer that such a crucial application must be brought to OS X properly; I'd rather have a clean, stable upgrade than a quick port any day.)

Some will feel that Adobe didn't go far enough, but after playing with a beta version for a few weeks, I can tell you that the company seems to have done a fine job. And anything that keeps Classic away from my Mac is a step in the right direction.

A New Look

As you can see, we're unveiling a new look for *Macworld*. Redesigns are very subjective; whenever you change a magazine's appearance, you'll find as

many people angry about it as happy about it—and a sizable group of people who just shrug their shoulders. And we all move on.

We tried to give *Macworld* a cleaner look and more flexibility in its different sections. Most important, this redesign increases the amount of text we can fit on our pages, giving us more room to write about what matters most to you: the Mac. With the previous design, our reviews, for example, were quite a bit shorter than they had been in earlier designs. That amount of space is appropriate for some products, but there are plenty that deserve more space—and many others that we haven't had the room to cover before now.

OS X, Step Forward

Starting with this issue, most of the products we evaluate and report on will be OS X products. There will be some exceptions (for example, QuarkXPress 5.0), and we'll still look at OS 9 compatibility during the review process. But for the most part, we plan to be even more aggressive in our coverage of OS X. As we've been doing for the past year, we'll continue to provide you with tips and tricks for getting up-to-speed on OS X, reviews of new programs and upgrades, and plenty of product news.

For longtime Mac users, making the switch to OS X is not as easy as jumping from OS 8 to OS 9 (although once you're there, OS X's stability makes it much easier to use). But the long-term benefits will be huge, especially once hardware and software developers get over the initial compatibility hurdles. And when we see new applications developed specifically for OS X—along with the maturation of long-lived Next applications (such as Stone Design's Stone Studio and the aforementioned TIFFany)—OS X will be a great place to be. We'll help you get there. □

Let me know what you think—good or bad—about our new look, *Macworld* in general, or anything else related to the Mac. Drop me an e-mail at rlick_lepage@macworld.com, or join the discussions in our forums, at www.macworld.com. I'd love to hear from you.



The long-term benefits of Mac OS X will be huge, especially once developers get over the compatibility hurdles.

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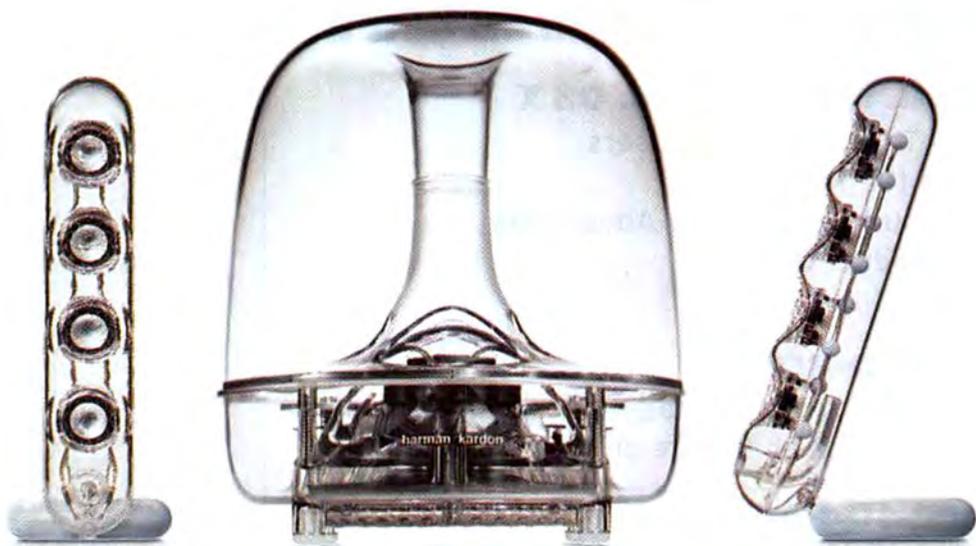
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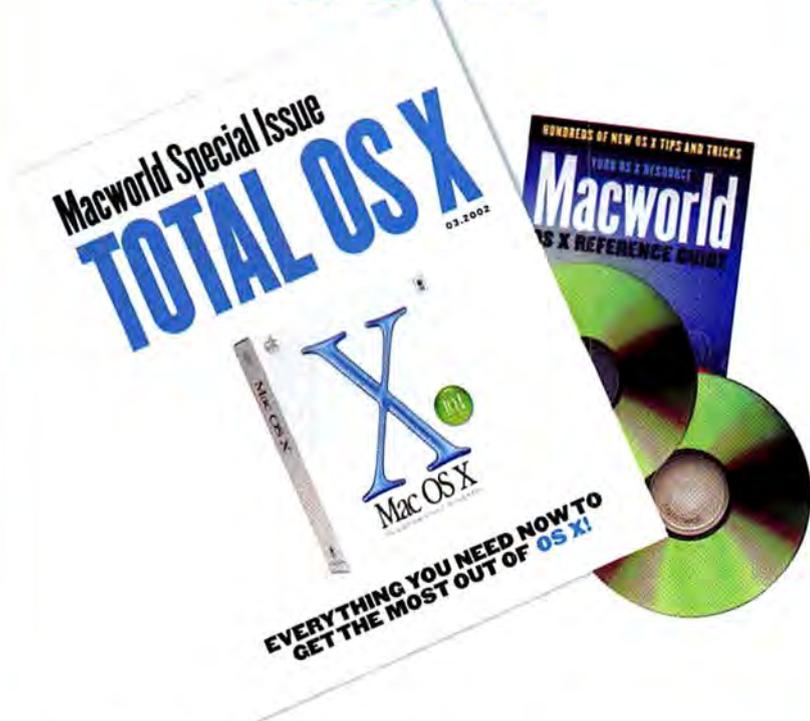


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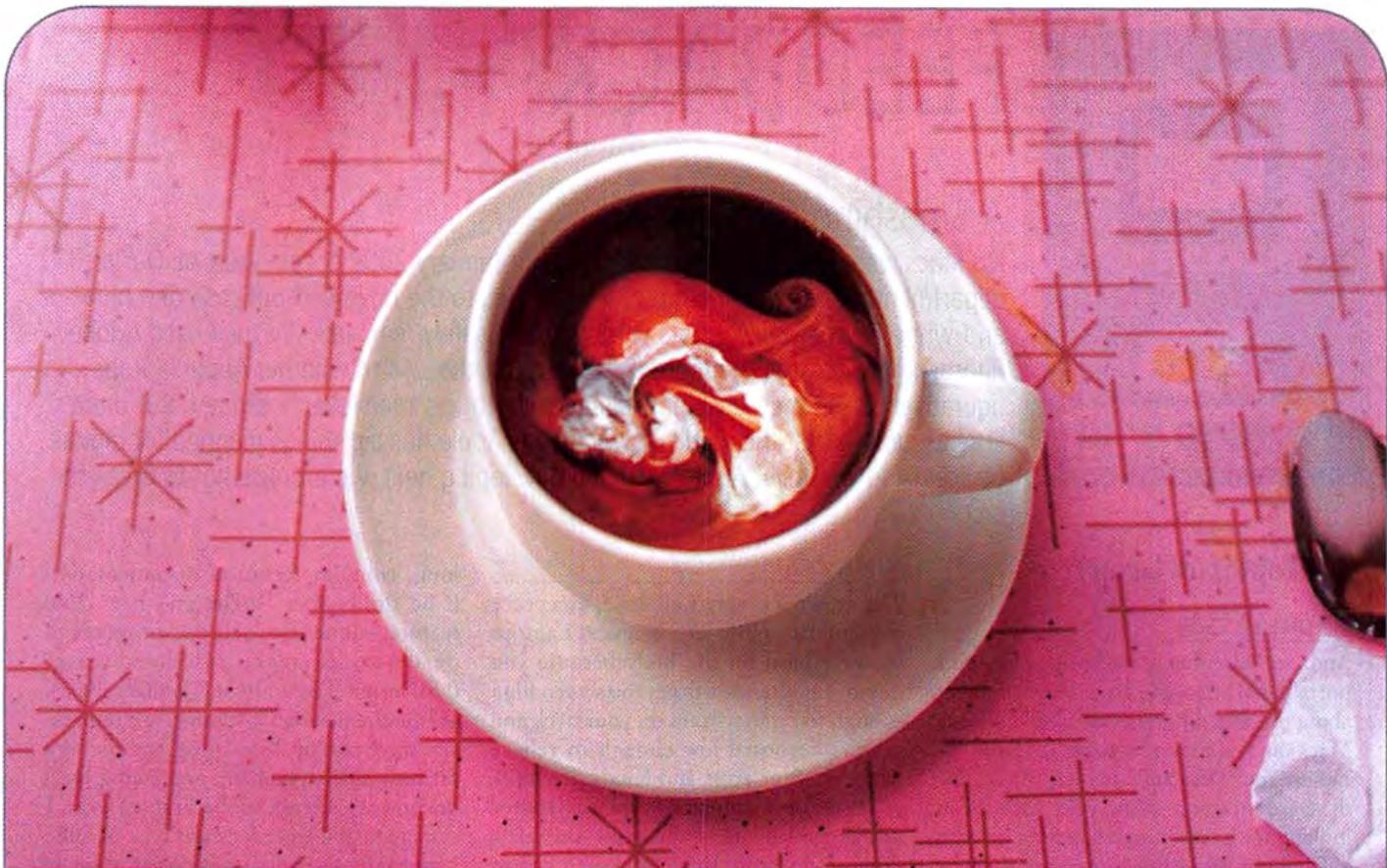
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A Smashing Good Time

No Macs were harmed in the making of our January 2002 cover—sort of. Our art department made a few cosmetic adjustments to the hollowed-out case of a blue-and-white Power Mac G3—its working parts safely removed. We then used Adobe Photoshop to provide the more destructive touches. As to whether Apple laptops figuratively crush their desktop siblings, our readers seem evenly divided. But there's little argument that the iPod's arrival means Apple has big things planned for digital devices. And whatever Apple winds up developing next, we promise not to break it.

The Laptop of Luxury?

MELONIE JACKSON

Andrew Gore finally said what a lot of us portable-Mac people have been noticing about the slim difference between portable Macs and desktop systems ("Time to Desert Your Desktop?" January 2002). For die-hard desktop users who have been looking for a reason to try getting by with a Titanium PowerBook or one of the new iBooks, this article is a must-read.

MARY JO DISLER

I took the plunge more than a year ago when I replaced my trusty Power Mac 8100 with a Pismo 400MHz G3 PowerBook. I've got the Pismo hooked up to a new 19-inch Mitsubishi monitor; a 30GB FireWire backup drive; a USB Zip 250; speakers; and my ever faithful Apple LaserWriter Select 360, through an AsantéTalk Ethernet-to-LocalTalk adapter. As much as I drool over pictures of the new tower, my setup allows me to run a small print-publishing business quite adequately, using a variety of apps. The biggest bonuses: a quiet environment, a second monitor, and of course, laptop portability when needed.

MARK SHAW

I've never bought a Mac for myself before because I've moved a lot in the last few years—a desktop would have had little use for me. And Apple's laptops were not powerful enough or were too expensive. Then the dual-USB iBook came along. I still think \$400 is a big enough difference to warrant buying a desktop if it suited my life, but it doesn't, so the current iBook is perfect. Computers are entering a new phase where portability is king, so prices and features will continue to improve, and desktops will have less of an advantage.

PAUL LINDEN

The article was very well done, except for one crucial point—ergonomics. Laptops are very hard on the body because you cannot simultaneously get the screen high enough to relieve strain on your neck and get the keyboard low enough to relieve strain on your arms and hands. If you're going to use a laptop as a replacement for a desktop—and use it at a desk—the safest thing to do is put the laptop on a box to raise the screen and add an external mouse and keyboard.

PHILLIP HARRIS

While I appreciate the many points offered on the subject of portability, you made a glaring omission. Most of us who have experience working with portable computers know that it would be impossible to see the screen under the conditions presented in the article's photos. I'm a photographer, and the computer is not a fashion accessory for me; rather, it's a tool for use under all possible conditions.

MIKE WOFSEY

When I saw the cover, I wondered how the *Macworld* special-effects crew managed to show a desktop G3 crushed under the weight of the Titanium PowerBook. Then I picked up a Titanium PowerBook for the first time. It was slim, dense, and a whole lot heavier than laptops by Sony and others. A few hours of lugging one of these beasts around the city would make me as tired as I was when I used to deliver newspapers as a kid.

InDesign, Table for One

SCOTT TURNER

David Blatner clearly does not understand the needs of people who create

long, complex technical documentation if he thinks that "InDesign's new table features alone may sell the program to designers of technical documents" ("InDesign Takes Flight," January 2002). While the new table features are impressive for a pasteup-based program, they are pitifully inadequate for processing long documents. Using Adobe FrameMaker, I can create a format for each type of table I normally use and apply that format at will. I don't have to create a new table and reformat each time. I don't want to have to fool around with manually intensive actions such as text frames for each page. I need to apply page, paragraph, and character formats. I need to create cross-reference formats that will dictate what appears in the reference. I need live cross-references that change if the position of the referenced text changes. I need features InDesign doesn't offer.

WHITNEY CENTER

While I look forward to the release of the new InDesign, I'm not as excited as you seem to be about the transparency feature. Admittedly, my experience is limited to Illustrator 9, but I have been most unhappy with the results and limitations of transparency in that program. Issues that Adobe must greatly improve upon include the guaranteed ability to use and spot colors; the use of duotones and tritones; overprinting; and the need to embed photos so as to avoid conflicts with transparency effects. These are problems in Illustrator 9, but I can't imagine how smoothly an InDesign document will rip if you place an Illustrator file with transparency effects in InDesign and then apply more transparency. Not all of us will be using the new, supposedly improved Illustrator 10.

Music to Your Ears?

JONATHAN R. WING

I think the iPod will be another one of Apple's failures, just like the Newton. It's only for the Mac; not a lot of the MP3 world uses Macs, compared with PCs. It costs \$400; you can get so many other players that work well for much less. Apple could have done more-innovative things with an MP3 player than just make it look cool and give it some fast features.

PAUL SAMAAAN

The iPod is the center of a Mac user's digital world. Sure, it plays music. But it can also store a backup disk image of my files. When I'm on the road, I can back up everything on my iBook before I restore the factory software. I can edit videos on my PowerBook and save them on this little gadget. When I get home, I simply drag and drop files to my desktop Mac. In addition, I see more in store for this device. If there's a reason to criticize Apple, it's for the lack of emphasis on what you can do with the iPod besides listening to music.

Moneydance Review

JAY COLSON

I am a very happy Moneydance user and can't imagine that any customer would be unhappy with the product (*Reviews*, December 2001). There must have been minimal research put into the review, as I didn't see the URL for Moneydance 2002 (www.moneydance.com/preview). This work-in-progress version has online banking and bill payment, as well as improved Quicken Interchange Format (QIF) importing.

JOHN BRENDLER

Tom Negrino admits to being a Quicken user—hardly the right person to review a competing application like Moneydance. He completely missed the boat on the potential value to Mac users of this new entrant in the field. Granted, the purpose of the review was to tell people what to buy today, and maybe Moneydance is almost ready for prime time, as opposed to being a good alternative to Quicken. The tone of the article is what was wrong—it ridiculed the program. Moneydance offers things that Quicken doesn't, because Moneydance has a better interface, and it will be better than Quicken. It should have been portrayed as an up-and-coming competitor

offering value in areas Quicken has not addressed. Negrino breezed over the fact that Moneydance is a pure Java application—a landmark achievement, compared with Quicken's lack of cross-platform compatibility. Furthermore, Moneydance's Java basis makes it uniquely suitable for future evolution into hybrid architectures.

JOE DELUCA

Although the entire Quicken package is very good, Intuit's first attempt at bringing brokerage-account connectivity to Quicken for the Mac is horrible. To really get it right, Intuit should have waited until the next release to include this feature. About the only thing the brokerage connectivity is good for is downloading stock or bond transactions. Outside that, this feature has major shortcomings.

Two Views on X

EDWARD DITTERLINE

I have to tell someone, anyone, everyone how much I love Mac OS X. And I am about as picky, cantankerous, and impossible to please as anyone could be. OS X has really changed my creative, business, educational, and personal lives, all for the better. Working in an inherently creative environment like OS X is a great deal of fun, and it exponentially increases my ideation—which puts more money in my pocket. I love the artistic integrity of the Aqua interface. It's beautiful and brilliantly conceived and executed. I am totally psyched by the ultimate customizability of OS X and the remarkable intelligence that has gone into the platform's design.

JOHN CHIASSON

I can understand the excitement over the new operating system that seems to permeate *Macworld* these days. I'm usually the first one on the block to try the latest system. However, I am very skeptical about OS X. It will be a long while before all my favorite software companies catch up, with Carbon-based versions of their products. On top of that, I think we're setting ourselves up for the same quagmire of virus troubles our PC friends have been dealing with for years.

Tracking the Mac

PAUL SAHNER

"Don't Know Much about History" (*Mac Beat*, January 2002) failed to mention

a great freeware app called MacTracker (<http://plaza.powersurfr.com/mactracker>). While it won't give you the history of Apple Computer, as www.apple-history.com will, it does an excellent job of telling you about Apple's products. It has information ranging from start-up chimes to the number of ports a computer has.

An EPS Secret

CHRISTOPHER LEE

Bruce Fraser states that QuarkXPress 3.3 and later can break down an EPS file into its current plate data (*Print Publishing Secrets*, January 2002). How does he accomplish this?

The EPS files have to originate from Photoshop, you have to be printing separations, and the EPS files can't be JPEG encoded. If all these things are true, you should see near-identical print times for EPS and TIFF versions of the same image, provided you haven't cropped them in XPress. Reportedly, InDesign 2 will offer the same functionality.—Bruce Fraser

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Include a return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters and posts. All published letters and forum comments become the property of *Macworld*.

CORRECTIONS

In our review of the Epson Stylus C80 (February 2002), we inadvertently misreported results in the section that referred to printing photographs. The C80 does print photographic images very well on matte-finish and semigloss paper. Photos printed on glossy paper, however, will appear dull, due to inherent qualities of the pigment inks that Epson uses in the C80. As the review noted, if you are looking for the best photographic output, we recommend a six-color, dye-based photo ink-jet.

Stephen Sugg was the Photoshop artist for our March 2002 cover.

EYE-PO



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With Xerox color, details pop and get noticed. The Xerox Phaser® 7700 tabloid color laser printer will surprise you in countless ways. It not only prints 22 ppm, color or black &

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POWER MACS REACH THE GIGAHERTZ MARK |

A Whole New Gig



>> Mac users know that it takes more than megahertz to make a fast computer. Everything from the system architecture to the operating system can affect your Mac's performance.

But there's something satisfying about reaching a numerical milestone—and for many Mac users, that milestone is 1GHz. While Pentium processors have surged past the gigahertz mark, the PowerPC chip has picked up speed more gradually. The PowerPC G4 debuted in 1999 with a top speed of 500MHz. When Apple upgraded the Power Mac last summer, the top-of-the-line processor was an 867MHz G4.

Apple's latest Power Mac update leaves that machine in the dust.

Along with single-processor 800MHz and 933MHz configurations, Apple offers a dual-processor Power Mac with two 1GHz G4s. Boosting the speed of its Power Mac desktops meets two important objectives for Apple. First, it gives pro users a more powerful computer, matching many of the improvements introduced in the consumer-friendly flat-panel iMac. Just as important, hitting the gigahertz mark breaks a psychological barrier, defanging the Wintel crowd's argument that Macs are obviously slower than Pentium-powered PCs.

Power Play

The updated Power Macs feature the same silver-tone face, flat and buttonless drive-bay doors, and recessed speaker as the models

introduced last summer. And inside, you'll find largely the same architecture—except the new top-of-the-line machine is powered by two G4 processors running at 1GHz.

But there's more to the new Power Macs' performance than just a faster processor. All three models feature the same 133MHz system bus found in previous generations. Both the dual-processor machine and the single-processor 933MHz model include 2MB of double data rate L3 cache to further bolster performance. Macworld Lab's tests on the new Power Macs showed that with everyday tasks involving the hard drive, the dual-processor Mac was only slightly faster than the 933MHz model. The 800MHz G4, which does not have the additional L3 cache, lagged behind

The Speed of Gigahertz: The New Power Macs

	Speedmark 3.1	Photoshop 6.0.1	iMovie 2.1.1	Cinema 4D XL 7.3	iTunes 2	Quake III v 1.30b1
	SCORE	SUITE	RENDER	RENDER	ENCODE	NORMAL
G4/800	157	35	59	8:59	60	66
G4/933	197	28	44	7:17	43	88
G4/1GHz DP	213	22	37	3:42	30	150
<i>G4/867</i>	184	33	48	8:37	47	78
<i>G4/800 DP</i>	186	27	47	5:10	36	112
	BETTER >	< BETTER	< BETTER	< BETTER	< BETTER	BETTER >

BEST RESULTS IN BOLD. REFERENCE SYSTEMS IN ITALICS.

Speedmark scores are relative to those of a 500MHz iMac (Flower Power), which is assigned a score of 100. Photoshop, iMovie, and iTunes scores are in seconds. Cinema 4D XL scores are in minutes:seconds. Quake scores are in frames per second. We tested all the Power Macs with Mac OS X 10.1.2 installed and 256MB of RAM, except for the dual-1GHz Power Mac, which ships with 512MB. We set displays to 1,024-by-768-pixel resolution and 24-bit color. The Photoshop Suite test (which runs in the Classic environment) is a set of five scripted tasks using a 50MB file on systems upgraded to 512MB of RAM. Photoshop's memory partition was set to 200MB and History was set to Minimum. In the Cinema 4D XL test, we rendered a model at 640-by-480-pixel resolution with oversampling set to 4 by 4. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long and converted it using the Better Quality setting of 160 Kbps in iTunes. We tested Quake III at a resolution of 640 by 480 pixels with Graphics set to Normal. For more information on Speedmark, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY ULYSSES BRAVO

WHAT'S NEXT

Does Apple have anything else up its sleeve? Find out at Macworld Expo Tokyo, which begins March 21. Apple debuted an updated iMac at last year's Tokyo Expo and released new laptops at 2000's.

More Power to Your Mac

PROCESSOR SPEED	INSTALLED MEMORY	STORAGE CAPACITY	OPTICAL DRIVE	GRAPHICS PROCESSOR	PRICE
800MHz G4	256MB	40GB	CD-RW	ATI Radeon 7500	\$1,599
933MHz G4	256MB	60GB	SuperDrive	Nvidia GeForce4 MX	\$2,299
1GHz G4 (DP)	512MB	80GB	SuperDrive	Nvidia GeForce4 MX	\$2,999

the previous Power Mac models (see "The Speed of Gigahertz").

The dual-processor Power Mac will especially benefit from OS X. Apple's new operating system supports symmetric multiprocessing, which means speedier performance. "It isn't just a handful of applications that take advantage of the dual processors," says Greg Joswiak, Apple's senior director of hardware product marketing. "It's the entire OS."

So when you run multiple apps simultaneously, you'll see better performance in the dual-processor system—and our tests bear that out. The dual-1GHz Power Mac was dramatically faster than its competition in tests of multi-processing-enabled applications such as Photoshop and Cinema 4D XL.

More Memory, Cooler Graphics

In addition to ratcheting up the processor speed, Apple has increased the installed memory. The former low-end configuration shipped with 128MB of RAM; the new low-end configuration has 256MB. Buy a dual-processor machine, and you'll get 512MB of memory (a build-to-order option lets you assemble a dual-1GHz Power Mac G4 with 1.5GB of RAM).

The other major addition to the Power Mac involves new graphics processors. Apple says the dual-1GHz and 933MHz Power Macs are the first computers to ship with Nvidia's GeForce4 MX

graphics card, which features 64MB of DDR SDRAM and the ability to generate 1.1 billion textured pixels per second. Essentially, that translates to improved 3-D-graphics performance, a boon for Power Mac—using graphics pros. Indeed, in our Quake III test, the GeForce4 MX-equipped dual-1GHz machine achieved the highest score yet. The 933MHz Power Mac also produced better results than the 867MHz model, which features an Nvidia GeForce2 MX graphics card.

Continuing a trend begun with the flat-panel iMac, the updated Power Macs ship with OS X as their default operating system (OS 9 ships on the machines as well, so you can switch the default OS if you so desire). To emphasize OS X's status as the operating system of choice, Apple is including native applications aimed at graphics and pro users on its computers.

The Price of Power

The dual-800MHz Power Mac released last summer cost \$3,499. The new dual-1GHz Mac, with the same hard-drive capacity and SuperDrive, and twice the memory, costs \$500 less: \$2,999. And the prices of the 933MHz and 800MHz models have fallen by \$200 and \$100, respectively (see "More Power to Your Mac").

Having reached the gigahertz mark, what new milestone lies ahead for the PowerPC processor? Apple isn't saying. But Mac users hope the company gets there as quickly as these new Power Macs run.—PHILIP MICHAELS



COOL STUFF

More Drives Go Driverless

For portable and compact storage, it's hard to top USB flash drives, which can hold dozens of megabytes and are small enough to fit on a key chain. Now you can add convenience to the slender storage devices' growing list of benefits. The first flash drives required you to download drivers before you could plug them into a Mac's USB port. But the latest models offer true plug-and-play functionality—no drivers are necessary. The driver-free devices, such as Sonnet Technologies' Piccolo USB flash drive, are compatible with the USB 1.1 specification, explains Sonnet product marketing manager Debbie Michelle, so you can mount these drives on any machine running Mac OS X or the classic Mac OS. But flash drives have added more than just convenience; some have also expanded capacity to 1GB. After all, bigger is better, especially when it's small.—PHILIP MICHAELS

Storage in a Flash

COMPANY	PRODUCT	ESTIMATED PRICE	CONTACT	CAPACITY
Agaté Technologies	Q USB Hard Drive	\$70 to \$300	877/982-4283, www.agatetech.com	16MB–128MB
CD Cyclone	Cyclone Flash Key	\$39 to \$179	714/247-0099, www.cdyclone.com	16MB–128MB
EasyDisk	EasyDisk	\$59 to \$299	www.easydisk.com	32MB–256MB
JMtek	USBDrive	\$40 to \$900	253/952-7000, www.usbdrive.com	16MB–1GB
M-Systems	DiskOnKey	\$30 to \$150	866/347-5665, www.diskonkey.com	8MB–128MB
Sonnet Technologies	Piccolo USB Flash Drive	\$100 to \$250	949/587-3500, www.sonnettech.com	32MB–128MB
T&M Corporation	FlashDio	\$46 to \$1,000	630/886-7893, www.flashdio.net	16MB–1GB
Trekstor	ThumbDrive Smart	\$39 to \$149	888/873-5199, www.trekstorusa.com	16MB–128MB

WEIRD STUFF

Icon? I Can

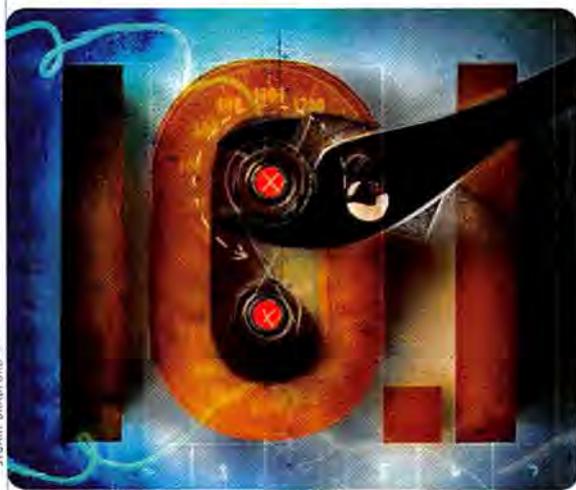


If nature abhors a vacuum, then it probably can't stand wasted screen real estate either. And few things occupy as much space and provide so little benefit as the browser throbber—that bouncing, twirling, pulsating icon in the upper right-hand corner of your browser window.

There are a handful of free or nearly free applications that let you customize the throbber on most major Web browsers so you can put this screen space to use. Two of the most user-friendly are shareware programs from Vizspring (www.vizspring.com): ThrobberDeveloper 2.1.1 (\$10) lets you create your own throbber. ThrobberEdit 2.0 (\$5) imports your creation into a browser, preventing you from deleting a line you'll need in a ResEdit file. Both programs are ideal for anyone running an online presentation, creating browser-based Mac software, or daring to tinker with their browser's look-and-feel. The shareware apps run only in Mac OS 9 and earlier, though Vizspring's teenage developers say they plan to develop OS X-native versions.—MATHEW HONAN

OS X HAS MADE GREAT STRIDES, BUT MORE WORK IS STILL NEEDED

What's Next for OS X?



>> The release of Mac OS X 10.1 changed Apple's next-generation operating system from an OS for early adopters into one that could conceivably be used by the rest of us. The update offered improvements in performance and such sorely missed features as DVD playback, support for CD burning, and OS X-native AirPort-configuration software.

But even Apple would admit that work remains to be done on the interface and under the hood. Here are some changes to hope for in future updates.

Aqua Absentees

When Apple tweaks OS X's interface, it usually restores OS 9 features. Familiar elements still miss-

ing from OS X include labels; spring-loaded folders; a Control Panels-like hierarchical menu for system preferences; an application menu; pop-up folders; contextual menus that offer more than a scant few commands; a windowshade feature that doesn't send you to the Dock to find minimized windows; and of course, Trash on the desktop. OS X's Open and Save dialog boxes—impossible to navigate with the keyboard—also call out for more attention. Many users would be pleased to find support for the AirPort Software Base Station and USB Printer Sharing in OS X.

More-technical users will be pleased when the SMB (Server Message Block) networking protocol, which allows Macs to log on to Windows networks, is easier to configure and use. And AppleScripters will feel more at home when OS X supports folder actions.

Hardware Hitches

The old Mac OS's plug-and-play prowess has yet to be achieved in OS X. There's no game-controller-input API. And even if a native version of Adobe Photoshop came out today, some users would stick with older versions—and OS 9.2—because many people require TWAIN support for their scanners and compatible drivers for their production printers.

Many USB and FireWire devices function in OS X 10.1; SCSI hasn't fared as well. A number of SCSI adapter cards don't work with a Mac running OS X, and those that do don't work as well as they could.

Pitfalls for Publishers

Systems that developers depend on must also be finished. OS X-compatible drivers for MIDI devices are starting to appear, but the CoreAudio and CoreMIDI systems that make up OS X's music and audio architecture are far from complete.

And many developers we spoke with wish that Apple would provide more ways for applications to tap into OS X. For example, OS X's preemptive-multitasking scheme allows a host of applications to grab the attention of the Mac's processor, but game developers would be tickled if they could tap into a high-level function that shut down all nonsystem processes, thereby gaining more processor time for their games and boosting performance.

Looking Forward

While OS X is a work in progress, it will get better with each new version, providing better performance, greater support for attached devices, and more compelling reasons to forget about the Mac OS of old.—CHRISTOPHER BREEN

QUARKXPRESS UPDATE

Web Now, X Later

QuarkXPress 5.0 is the first major update to Quark's desktop-publishing standard in more than four years (800/676-4575, www.quark.com). Mac OS X users hope the next release will arrive much more quickly.

But until that version comes—and brings OS X compatibility with it—we have QuarkXPress 5.0, a page-layout application that looks to make print and Web design as seamless as possible (see "Quark's Leap of Faith," October 2001). The program now sports Web-design tools for creating image maps, forms, hyperlinks, and rollovers. Those tools

use the same palettes, menus, and dialog boxes as the print-design features, easing the learning curve for QuarkXPress veterans. Version 5.0 has also picked up the ability to import and export XML files, making it easy to publish the same content in print and online form.

Other highlights in the QuarkXPress update include new Tables tools that help you build tables more quickly. A new Layers palette lets you group objects into named layers that can be hidden, locked, suppressed, and moved.

What's missing is OS X compatibility. Quark says the next version of QuarkXPress will run natively in the new OS; it won't say when that release will come.

QuarkXPress 5.0 sells for \$899. XPress 4.X users can upgrade for \$299; XPress 3.X users, for \$399.—PHILIP MICHAELS



XPress Yourself

Version 5.0 puts greater emphasis on the Web.

Effect-ive

The film world lost one of its top special-effects artists late last year, when Stephanie Powell suffered a fatal heart attack on December 5. Powell was a longtime visual-effects supervisor—and Mac user—whose work can be seen in a host of films, including *The Devil's Advocate*, *Waterworld*, and *The Flintstones*. Before her untimely death, Powell spoke to *Macworld* about the part that Macs play in creating movie magic and how Mac OS X could mean a starring role for the platform.—ANTON LINECKER

How long have you worked with Macs?

I was involved with Steve Wozniak when he was still working at Hewlett-Packard. He designed some computer systems for me, and then when he built his first Apple II, he called me up and he said, "I built a color computer." I said, "Sure you did," and hung up on him. Then he called me back and said, "No, I really, really did." So he brought it down here and we sold the first ten circuit boards ever.

How do you use Macs at your company, Out of the Blue Special Effects?

We have an iMac as our main machine for our accounting. For business correspondence, I'll use my PowerBook. I'll also use it for accessing the Internet. I do a lot of pre-visualization for the movies that I work on—3-D rendering or blue-screen rendering. There's also breaking down scripts, budgeting—everything that's needed for the motion picture work that I do.

Where do you see the special-effects business heading in the next few years?

It's exciting, especially now that OS X has become a reality and is working much, much better. You'll start seeing more and more high-end software porting over to Mac OS, programs from companies like Discreet Logic. And that'll be good for everybody. It really is all about software. We've seen Maya come over. Having Flame or Inferno software would make it easier for me to work on my own, without always having to go to a [post-production] house.

More Info:

www.macworld.com/2002/04/macbeat/powell.html
Read more about Stephanie Powell's favorite special effects in our extended online interview.

CLICK HERE

Art for Art's Sake

Computer animation's greatest thrill, the ability to create anything, can also be one of its most tedious requirements—the need to create everything from scratch. You can animate characters spouting witty dinner conversation, but unless they're chowing down in a void, they're going to need forks, chairs, candles, and other background paraphernalia. For animators with no interest in designing virtual cutlery, the folks at Turbo Squid are ready to help—www.turbosquid.com offers thousands of prop and character models, textures, and motion-capture files. But Turbo Squid doesn't offer its own animation. Think of Turbo Squid as an electronic farmers' market where artists can sell

their work to anyone who wanders by. It offers material for LightWave, Maya, Poser, and Shockwave—the Mac version of LightWave even has a Turbo Squid button for one-touch access to the online vault from within the application. Turbo Squid is developing similar plug-ins for other Mac 3-D programs—just one more way it's making the animation process more animated.—GREGG WRENN



MACS AT WORK

X-ing Out Unix



Used for decades at colleges, Unix has become the platform of choice for generations of research and data-acquisition software. But try telling that to Dr. Thomas Lewellen, director of nuclear medicine physics at the University of Washington School of Medicine in Seattle.



Lewellen was looking to build a positron-emission tomography (PET) scanner for laboratory rodents. The cancer-research device lets researchers observe lab animals' biochemistry so they can track the progress of the disease and the effectiveness of treatments.



Instead of a Unix system, Lewellen and his team (assistant professor Robert Miyaoka, graduate student Ki Sung Lee, and staff scientist Charles Laymon) picked a Power Mac G4 running Mac OS X to power the PET. An AltiVec-enhanced G4 offered the requisite processing power for the iterative image-reconstruction systems, and the Mac's use of FireWire provided an inexpen-

sive high-bandwidth I/O channel for the dozens of emission collectors within the scanner. All that remained was to get the scanner's Unix-based software to run on a Mac.

Fortunately for Lewellen, OS X gives Mac users unprecedented access to Unix software. With only minimal code changes, savvy OS X users can download Unix applications and run them on their Macs.

"We decided to use the Mac because of its intuitive ease of use, high-quality hardware, and our own user preference," Lewellen says. "But the strength of OS X for us is in the Unix part."

The ease of porting software over to OS X impresses Lewellen. "Aspire, the general medical-imagery software tool package, was a two-hour special," he says. "We changed one line in the make file, and it compiled." That's no small feat, Lewellen adds, since the software's creator "has never touched a Mac."—DAVID READ

X-Men From top: Lewellen, Miyaoka, Lee, and Laymon.

Coming Attraction

The latest version of Apple's QuickTime will feature full support for MPEG-4, which will let you create and view higher-quality streaming video at lower bit rates that require less bandwidth. The only catch is, you'll have to wait to get your hands on it.

Apple previewed the latest version of its multimedia technology in February. And while the company says QuickTime 6 is ready to go, Apple is waiting for a change in MPEG-4 video licensing terms before it releases the new version. The MPEG-4 licensing terms include royalty payments from companies, such as Apple, that ship MPEG-4 compression and decompression software (codecs), as well as royalties



from anyone who uses MPEG-4 to stream video. Apple objects to the latter licensing restriction. At press time, QuickTime 6's official shipping date had not been determined.

The upcoming version of QuickTime features an Apple-developed video codec for encoding and decoding MPEG-4 video content. It includes support for Dolby's Advanced Audio Coding (AAC) and CELP, the MPEG-4 speech codec for the reproduction of natural speech. QuickTime will now sport MPEG-1 and, for the first time, MPEG-2 playback, as well as support for Flash 5 and DVC Pro (PAL). In addition, QuickTime 6 has an updated interface and skip-protection enhancements.

Apple has also added a new member to its QuickTime product family, QuickTime Broadcaster, which permits live broadcasting of events over the Internet. QuickTime Broadcaster captures and encodes QuickTime content, including MPEG-4, for live streaming via the Web. Other features include live encoding with real-time preview, recording and hinting in real time to the computer's hard disk for quick video-on-demand posting, support for all QuickTime codecs and AppleScript, and autoconfiguration of the connection between the broadcaster and the server.

As with QuickTime 6, Apple isn't distributing QuickTime Broadcaster until MPEG-4 licensing issues are resolved. When it does ship, Apple will make QuickTime Broadcaster a free download that requires QuickTime 6 running on Mac OS X and a compatible streaming server. Apple recently released QuickTime Streaming Server 4, the latest update to its free streaming-media server.—DENNIS SELLERS

PRODUCT WATCH

APRIL 2002

Symantec Steps Up

Symantec (800/441-7234, www.symantec.com) first introduced its Mac OS X-ready software last June, but even the company would characterize those releases as temporary solutions for early adopters of the new operating system.

"People were glad to have [the native releases] out there," says David Loomstein, group product manager for Symantec's consumer products division. "They got us to the next step with minimal complaints. But people want the added functionality."

Symantec's latest updates add missing features to Norton AntiVirus and Norton Personal Firewall, and make Norton Utilities fully native. The updates, which also run in Mac OS 8.1 and higher, include:

NORTON UTILITIES 7.0

The disk-repair and optimization utility offers repair and recovery for OS X, with features such as Norton Disk Doctor, UnErase, and FileSaver (\$100; upgrades, \$50).

NORTON ANTIVIRUS 8.0

Autoprotect, SafeZone scanning, and LiveUpdate scheduling run in OS X, as does a new command-line scanner (\$70; upgrades, \$40).

NORTON PERSONAL FIREWALL 2.0

The firewall utility adds a Stealth Mode feature that prevents denial-of-service attacks and allows for easier FTP transfers (\$70; upgrades, \$40).

NORTON SYSTEM WORKS 2.0

The utility suite includes OS X-native versions of Utilities, AntiVirus, Dantz Retrospect Express Backup, and Aladdin Spring Cleaning (\$130; upgrades, \$80).

NORTON INTERNET SECURITY 2.0

The AntiVirus, Personal Firewall, and Aladdin iClean bundle adds Norton Privacy Control, which stops personal data from being sent without permission and blocks online flash ads (\$100; upgrades, \$70).

Hardware



Displays

Two conversion boxes from Gefen (800/545-6900, www.gefen.com):

The **Ex-tend-it VGA to**

DVI Conversion Box (\$399) lets you attach a DVI-equipped (Digital Video Interface) display to a Mac with only VGA output. The **Ex-tend-it DVI to VGA Conversion Box** (\$399) lets you attach a DVI Mac to a monitor that supports only VGA.

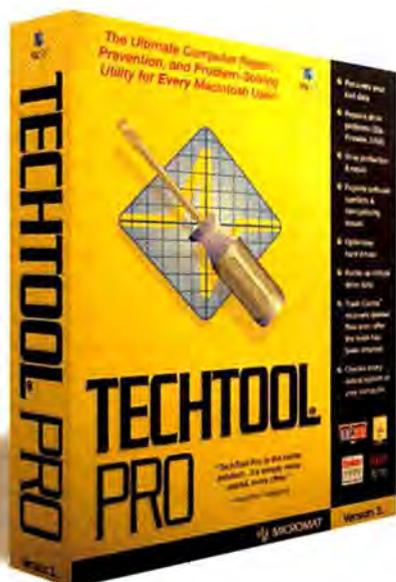
Two LCD monitors from NEC-Mitsubishi (888/632-6487, www.necmitsubishi.com): The **LCD1720M** (\$799) is a 17-inch screen that sports front-firing stereo speakers and a 160-degree horizontal and vertical viewing angle. The **LCD1850E** (\$899) is an 18.1-inch display. Both analog LCD monitors use VGA inputs, have native resolutions of 1,280 by 1,024 pixels, and feature internal power supplies.

MP3 Players

A multimedia player from Archos (949/453-1121, www.archos.com): The **Jukebox Multimedia** (\$325) is a 10GB MP3 player and real-time recorder with a built-in microphone and photo and video viewer. It has an expansion port for add-on modules, including a flash-memory card drive, a 1.3-megapixel camera, and MP3 and video recorders. The **Rio Riot** from SonicBlue (800/468-5846, www.riohome.com): The \$400, 20GB portable musical player features the new Rio LogicTrack user interface, a scroll wheel, and dedicated one-touch buttons and play controls. It comes bundled with Apple's iTunes software.

In with the new...

In with the newer...



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

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

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

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



Micromat Inc.

800-829-6227

707-566-3831

info@micromat.com

www.micromat.com

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Choose 37 at www.macworld.com/getinfo

Printers

A color ink-jet printer and color scanner from Hewlett-Packard (800/752-0900, www.hp.com): The **DeskJet 920c** (\$99) prints nine pages per minute in black-and-white and 7.5 pages per minute in color. It offers color resolution as high as 2,400 by 1,200 dpi. The **ScanJet 5400c** (\$199) scans at resolutions as high as 2,400 dpi with true 48-bit color.

Storage Devices

An internal CD-RW drive from Plextor (800/886-3935, www.plextor.com): The **PlexWriter 40/12/40A** optical disk drive (\$209) offers 40x CD-recording, 12x CD-rewriting, and 40x read speeds. It also features Burn-Proof technology designed to prevent buffer overrun errors.

A FireWire-based flash storage device from WiebeTech (316/744-8722, www.wiebetech.com): The **FireWire KeyChain** (\$100) stores as much as 1GB on a 1.75-by-2.35-by-0.75-inch device. The flash-memory storage device, which incorporates the Oxford 911 bridge chip set, should be shipping by the end of March.

Software



Graphics Software

VectorWorks Mechanical 9.5, from Nemetschek (888/646-4223, www.nemetschek.net):

The latest addition to the VectorWorks Industry series, this CAD application provides 2-D-drafting and 3-D-modeling capabilities for designers, drafters, and fabricators (\$1,190; upgrade from VectorWorks 8.X, \$465).

Multimedia Software

Combustion 2.0, from Discreet (800/869-3504, www.discreet.com): The latest version of the painting, animation, and 3-D-compositing program provides new multi-format project capabilities for film and video, including 64-bit image-processing, advanced film grain tools, and color Lock-Up Table management. It runs in OS X and OS 9 (\$4,995; upgrade, \$795 until May 2002, \$1,495 afterward).

Discribe 5.0, from CharisMac Engineering (530/885-4420, www.charismac.com): The CD/DVD-mastering software now supports DVD Audio and Video formats and runs in OS X, as well as Mac OS 8.6 and higher (\$70; upgrade, \$30).

Productivity Software

Final Draft 6.0, from Final Draft (800/231-4055, www.finaldraft.com): This update to the screenwriting application runs in OS X. It also adds Ask The Expert and Format Assistant features, as well as the ability to save scripts as PDF files (\$249; upgrade, \$69 before April 30, \$99 afterward).

RagTime Solo, from ComGrafix (727/585-7799, www.comgrafix.com): The release is a free version of RagTime, a \$495 business publishing suite that includes word-processing, spreadsheet, drawing, charting, and

slide-show programs. The free version of the software is available for private, non-commercial use.



Online Banking

An end to online banking support for Quicken for Mac by Bank of America (800/792-0808, www

.bankofamerica.com): The bank was slated to automatically switch Quicken for Mac users to its Online Banking with Bill Pay service in February, due to changes in Bank of America's online banking platform.—COMPILED BY PHILIP MICHAELS

powered by



Aladdin Spring Cleaning 4.0.2

Update lets utility delete Internet history files

Aliens vs. Predator Gold 1.0.2

OS X-only patch for game

Apple Mac OS X Server 10.1.2

Improves performance and adds security fixes

Auto FX Photo/Graphic Edges 5.0

Tool adds edges to images

Barcode Producer 1.1

Bar-code-generation and EPS-export software

Brother OS X Drivers updates

Drivers for printers and SOHO devices

Captain Bumper 1.12

Bug fixes for cartoon-style game

CyberGauge 4.0

SNMP-based bandwidth-monitoring tool

Discus X 2.5

CD/DVD-labeling software

Font Doctor X 5.0

Diagnosis and repair tool for font problems

Graphic Converter X 4.2.1

Views, edits, and converts graphic file formats

iContact X 1.1

Stores data such as URLs, addresses, or dates

iPhoto Librarian 1.0

Scriptlet runs iPhoto from a different library folder

iPhoto Toast Export Plugin 1.0

Burns directly from iPhoto using Toast Titanium

JBuilder Personal 6.0

Java application-development environment

Macintosh Explorer X 3.0

File-browser and file-management tool

Macromedia Shockwave Player 8.5.1

Adds OS X compatibility to browser plug-in

Mariner Write 3.0.1

Bug fixes for word processor

MYOB AccountEdge 2.0 5.6.2

Update to accounting and business-management application

OmniGraffle 2.0b6

Bug fixes for beta of diagram and charting program

PhotoFixer 1.0

Fixes photos iPhoto won't accept

Pic2Icon 1.1

Creates 128-by-128 icons for picture files

Rosetta 1.4.5

Decodes archive formats and rejoins binary files

Spy 2.0.2

Displays CPU and network usage in menu bar

Tri-Catalog 5.0

Catalogs files and pictures on CDs and disks

XFree86 4.2.0

Implementation of the OS X window system

For these and other current updates, visit:

www.macworld.com/subject/updates

WHAT'S HOT

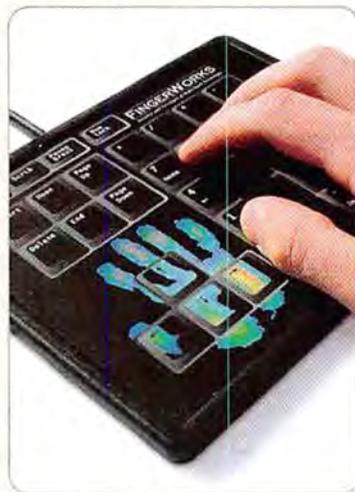
A Quick Look at the World of Tech

1. Power Macs reach the 1GHz mark. You've heard of Moore's Law? Well, this is Motorola's corollary: Processor speeds will double when we're damn good and ready.
2. Netscape sues Microsoft for anticompetitive practices in the browser wars. They laughed at Bill Gates a few years ago for buying his lawyers in bulk, but who's laughing now?
3. Apple takes 150,000 iMac orders in the first three weeks after the machine debuts. Unfortunately, Apple made only one of the new iMacs, so all 150,000 people will just have to share.

MAC STUFF

Let Your Fingers Do the Clicking

Mice and keyboards have been standard issue with Apple computers since the days of the Lisa. FingerWorks (302/831-8615, www.fingerworks.com) thinks it's time for another input device to provide some relief for your aching body. Enter the iGesture Pad, a 7.1-by-5.5-inch mouse pad-like surface that plugs into your Mac's USB port and runs in either OS 9 or OS X. As with a trackpad, you slide your finger on the iGesture Pad to move your Mac's cursor. Unlike a trackpad, though, the ergonomically friendly iGesture Pad lets you use your fingers to select text, copy and paste, open files, and perform all sorts of tasks that would normally require a keystroke or mouse click. Using a patented 2-D touch technology, the device recognizes specific gestures by monitoring the movement of your fingers. The \$189 iGesture Pad has a numerical pad that responds to the lightest touch; the company's \$329 TouchStream Stealth features a QWERTY keypad. Computers have gotten easier to use in the nearly two decades since the Lisa's debut—FingerWorks wants input devices to do the same.—PHILIP MICHAELS



APC introduces the best protection available for your Mac

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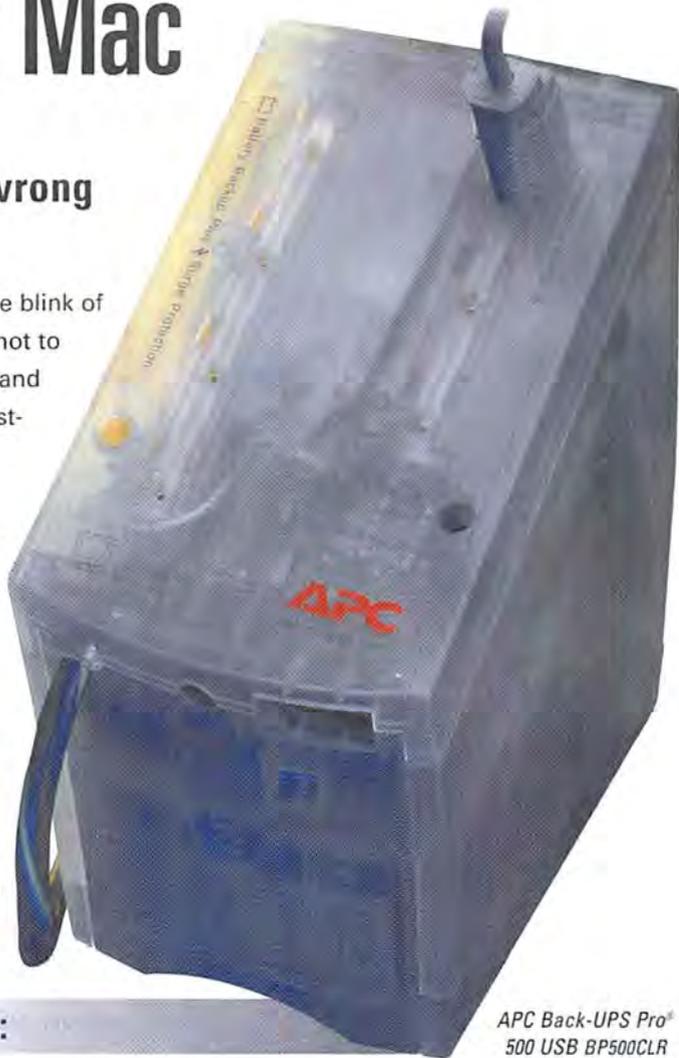
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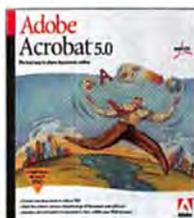
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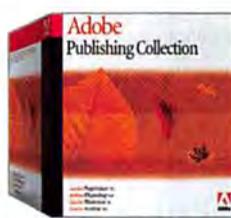
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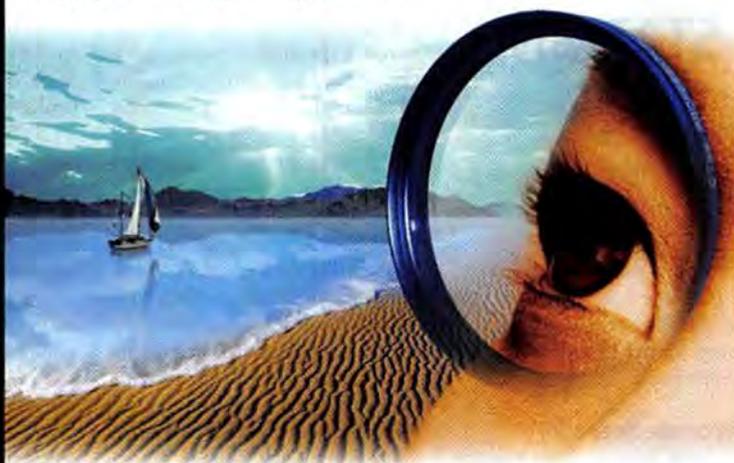


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AIRPORT BASE STATION

Though Newest Iteration of Apple's Wireless Network Product Offers Improvements, It Still Lags Behind Similar, Less-Expensive Competitors

BY SHELLY BRISBIN

The wireless-networking revolution, which has spread from a few hotels and airports to the coffee shop down the street and homes everywhere, began in late 1999, when Apple released the silver, flying-saucer-shaped AirPort Base Station and the AirPort card—the first commercially available 802.11b wireless products. But three and a half years later, the AirPort is one product in a crowded wireless-networking market. With its new and improved AirPort Base Station, Apple is finally respond-

ing to users' demands; however, our testing revealed that this new AirPort leaves Apple following, rather than leading, the wireless pack.

New on the Network

This new Base Station has the same unique shape as the original, but the new model is white, not silver. The other visible difference is the addition (a long-overdue one) of a 10/100-Mbps Ethernet port next to the original 10-Mbps Ethernet port and modem ports. This new LAN port lets you connect

the AirPort to an existing, wired Ethernet network, or a single, non-AirPort-capable Mac, at high speed, leaving the 10-Mbps port for WAN, DSL, or cable-based access to the Internet.

Apple has added firewall and DHCP-bridging capabilities as well, making for a seamless link between wired and wireless networks. This feature alone may make the AirPort worth its price to anyone who operates a network that includes both wired and wireless Macs. It uses NAT (Network Address Translation) to share a single IP address among as many as 50 clients (up from the original AirPort's 20), or it can function as a DHCP server.

Unique AOL Support

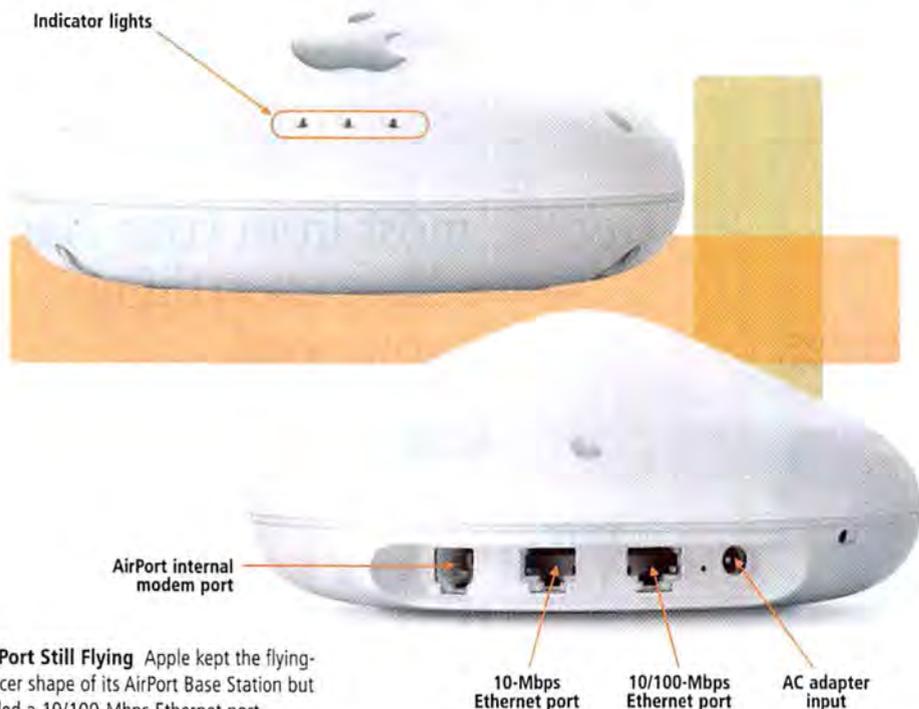
With the first AirPort products, it was not possible to dial up to

AOL and deliver Internet access to the other machines on a network. The new AirPort fixes this problem. Though AOL provides TCP/IP access to its content, other wireless access points—even those equipped with a modem—cannot connect to AOL as an ISP. Owners of the original AirPort can access AOL by upgrading their Base Station with the AirPort 2.0 software, available for free from Apple.

Batten Down the Hatches

Data security is a significant concern with wireless networks, which are vulnerable to any mischief maker wielding an 802.11b-equipped laptop who comes within range, so it's easy for just about anyone to read everything that is transported over your network. The AirPort, like other 802.11b access points on the market, relies on WEP (Wired Equivalent Privacy) for encryption of network data. The new AirPort software has increased WEP encryption: 128 bits (up from 40), and though WEP is still a fundamentally flawed security mechanism, the update brings the AirPort's security in line with that provided by competing products. The 128-bit WEP upgrade is also part of the AirPort 2.0 software upgrade, so it's available to owners of the original AirPort Base Station.

Upping the security ante for education and corporate environments, the AirPort now supports user authentication through RADIUS (Remote Authentication Dial-In User Service) servers. RADIUS servers use a wireless network card's MAC (Media Access Control) address to authenticate users seeking access to the network. The AirPort Base Station and AirPort 2.0 software also support Cisco Systems' LEAP (Light-



AirPort Still Flying Apple kept the flying-saucer shape of its AirPort Base Station but added a 10/100-Mbps Ethernet port.

- 28 Wireless-networking router**
Apple AirPort Base Station
- 30 Midrange flatbed scanners**
Canon CanoScan D1230UF
Epson Perfection 1650 Photo
Hewlett-Packard ScanJet 5470CXI
Microtek ScanMaker 5700
- 32 Accounting software for Mac OS X**
MyBooks 5.1
MYOB AccountEdge 2
Oracle Small Business Suite 7.5

- 34 Graphics suite**
Canvas 8
- 35 Font-management utility**
Suitcase 10.1
- 36 Speech-recognition software**
ViaVoice for Mac OS X
- 37 PC-emulation program**
Virtual PC 5.0
- 39 Video-compression utility**
Sorenson Squeeze 1.0

- 40 PowerBook dock**
BookEndz Titanium Docking Station
- 40 VST-compatible software sampler**
Halion 1.1
- 41 Web-searching utility**
Watson 1.1
- 42 3-D-animation program**
LightWave 3D 7b
- 44 Graphics plug-ins**
KPT Effects

- 44 Cross-platform-networking software**
Dave 3.1
- 45 Photoshop plug-in**
Grain Surgery 1.0 for Photoshop
- 45 TV tuner**
VBSOHRV

OUTSTANDING: VERY GOOD: GOOD: FLAWED: UNACCEPTABLE:

weight Extensible Authentication Protocol) security protocol. Although those features will not be useful for home users, they may allow AirPort users and Base Stations to join some large wireless networks that use non-Apple equipment. Some comparably priced competitors of the AirPort offer RADIUS support, but very few offer both RADIUS and LEAP.

Though flaws in the WEP-encryption scheme have been confirmed and well documented in the press and are not a failing of the AirPort product, Apple makes no attempt in its documentation to warn users that WEP is subject to attack by "war drivers," who search for and infiltrate wireless networks by running programs that can quickly disarm WEP. Apple should be warning AirPort users against transferring sensitive data over wireless networks or choosing passwords that would compromise data if discovered.

Competing Interests

Apple has benefited from a widespread belief among Mac users that only the AirPort can connect Macs wirelessly. This may explain why updates to the original Base Station have been so long delayed and why the AirPort's price, \$299, has failed to keep pace with less-expensive products. A number of vendors sell wireless routers and access points in the \$150-to-\$400 range, and most of these products are compatible with Mac-only networks.

The majority of wireless access points can be configured in a Web browser and used to provide wireless connectivity for Macs or any other computer that employs TCP/IP and Ethernet. But just as AirPort requires a Mac application for configuration, some non-Apple

devices must be configured using Windows software. These are not practical choices for a Mac environment. Similarly, AirPort, though it's compatible with PCs, requires at least one Mac on the network for configuration purposes.

While Apple has only now added a second networking port to the AirPort, many access-point vendors include 10/100-Mbps multiport switches, allowing you to connect wired devices directly to the access point, eliminating the need for a wired Ethernet hub, at least in small LANs. Several vendors have added full routing capabilities (in addition to selling bare-bones access points at a lower cost), and a few provide VPN (virtual private network) support for those who need a completely secured connection between a wireless network and a corporate VPN. There are access points that include Windows print servers, DHCP servers (the AirPort includes one), and more. In this competitive market, the AirPort holds its own in terms of features—at a much higher price. There are devices that have comparable features—such as the D-Link DI-714 and the Proxim Skyline Wireless Broadband Gateway—available for \$200, about \$100 less than the AirPort.

Advantage, AirPort

Though the AirPort isn't the most feature-rich product on the market, most Mac users will find that the intuitive configuration interface is quick and easy to use, whether they are setting up the AirPort for the first time or making configuration changes later. The AirPort Setup Assistant and AirPort Administration Utility, both of which can be launched from OS 9 or OS X, bear Apple's trademark ease of



In-Flight Adjustments The AirPort Admin Utility's easy-to-use, multitabbed interface makes changing AirPort settings after the initial configuration a straightforward process. Tabs along the top of the window give you access to options for IP-address sharing, access control, security protocols, and more.

use, which is especially welcome in a networking product that might seem daunting to the casual technophile. But if the software fails you, don't look to the skimpy printed documentation to bail you out. A few of its pages skim the basics of setting up the AirPort for the first time, but you won't find much beyond that in the way of help, and there is no discussion of alternative network or Internet-access scenarios.

Macworld's Buying Advice

If friendly Mac software and an intuitive configuration interface are your paramount concerns, the AirPort Base Station is the right choice for building your wireless network. People who depend on AOL for Internet access over a network will also find that the AirPort provides a simple and unique solution.

However, cost-conscious buyers and those who require advanced networking features

may want to look into other products that cost less and do more, such as providing the flexibility of Web-based configuration and multiple network ports.

Owners of the original AirPort will find that most features included in the new model will be available to them in the AirPort 2.0 software update, which is a good reason not to replace an old unit with a new AirPort—until Apple releases updates available only for the newer Base Station. □

RATING:

PROS: LAN port adds network flexibility; easy to configure; AOL support; easy bridging and firewall.

CONS: Expensive compared with similar products; skimpy troubleshooting documentation.

ESTIMATED PRICE: \$299

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

MIDRANGE FLATBED SCANNERS

New Models Provide Higher Resolution, Great Value

BY TONY A. BOJORQUEZ

For less than \$100, you can buy a flatbed scanner that will give you decent results. But if you want higher-resolution scans and the ability to scan 35mm slides and color negatives, you'll have to look a bit higher in the price and feature range.

Picking from the crowded desktop-scanner market, Macworld Lab looked at four USB flatbed scanners that had an optical resolution of at least 1,200 dpi and could handle scanning 35mm slides and film: Canon's CanoScan D1230UF and Microtek's ScanMaker 5700, which have an optical resolution of 1,200 by 2,400 dpi; Hewlett-Packard's ScanJet 5470CXI, 2,400 by 2,400 dpi; and the Epson Perfection 1650 Photo, 1,600 by 3,200 dpi.

All the units we tested connect to the Mac via a USB port. The ScanMaker also sports a FireWire port, while the ScanJet includes a parallel port, which is compatible only with PCs. Basic setup for all these scanners was a painless task. Mac-specific documentation from these veteran scanner vendors is thorough and helpful.

As of press time, native OS X support hadn't yet arrived for these scanners, but with the pending arrival of the Carbonized Adobe Photoshop 7, OS X scanner drivers should not be far behind. (Check the vendors' Web sites for the latest driver updates.) All of the scanners we tested worked well in OS X's Classic mode and in OS 9 using the existing drivers.

Mission Control

Scanning software should be easy to use and flexible enough to guide novices through useful presets while allowing experts to change parameters such as gamma curves, shadow

and highlight control, brightness and contrast, and color correction. All the scanners' software had these controls, but HP's PrecisionScan Pro software and Canon's CanoScan software lead the rest in terms of usability. PrecisionScan Pro's interface, for example, felt very Mac-centric, with intuitive controls and menu structures that put the important features in the main window. All the scanners include TWAIN drivers to pro-



Epson Perfection 1650 Photo

vide easy access to applications that support this feature, such as Adobe Photoshop, Microsoft Office, and OCR (optical character recognition) software such as OmniPage.

High-resolution scanning isn't the only thing these scanners are good for. All but the CanoScan let you send a scanned image directly to a printer, attach it to an e-mail, run it through an OCR program to convert it to editable text, and even share it on the Web, by using buttons on the scanners themselves. These timesaving features are useful, but you can achieve the same results with a scanner and the appropriate software.

The Trouble with Bits

These scanners offer more than the 24 bits of color (8 bits each for red, green, and blue) you'll find on lower-end models. The CanoScan and the ScanMaker offer 42-bit color depth, while the ScanJet and the Epson Perfection offer 48-bit color depth. For many users, this higher bit depth will add up to one noticeable difference—a doubling of file sizes. This advanced feature captures trillions of colors instead of the 16.7 million you get with 24-bit color. Though you may assume that the more colors captured, the better the scan, this is not always the case. The quality of the scanned image depends on your software and the output device's ability to process information.

Image-editing applications such as Adobe Photoshop and Adobe Photoshop LE can open and manipulate 42- and 48-bit scanned files. But Adobe Elements (bundled with the Epson Perfection) doesn't support 48-bit image files and will convert files down to 24-bit images.

The key advantage of a higher bit depth is that if you capture more data, you'll have much more headroom for editing images that need major corrections to tone or color. If you don't need to make big adjustments using an image editor that supports 48-bit images, we recommend that you save storage space by avoiding this option.

From cropping a scan to removing red-eye, the image-editing software included with these scanners is your ticket to a better final image. The CanoScan and the ScanMaker include Adobe Photoshop LE, and the Perfection bundles Adobe Photoshop Elements. The ScanJet includes ArcSoft PhotoStudio.

Scanning Speed

If you're scanning low-resolution images for the Web or on-screen viewing, the amount of time it takes to complete the scan is minimal. On the other hand, higher-resolution scans can take much longer because the file is so much larger.

Midrange Flatbed Scanners Compared

COMPANY	PRODUCT	MOUSE RATING	ESTIMATED PRICE	OS COMPATIBILITY	CONTACT	OPTICAL RESOLUTION (DPI)	COLOR BIT DEPTH	INTERFACE	PROS	CONS
Canon	CanoScan D1230UF	★★★	\$299	Mac OS 9	800/652-2666, www.canon.com	1,200 × 2,400	42-bit	USB	Fastest USB performance.	Mediocre transparency scanning.
Epson	Perfection 1650 Photo	★★★★	\$249	Mac OS 9	800/463-7766, www.epson.com	1,600 × 3,200	48-bit	USB	Least expensive; excellent reflective scans.	Mediocre transparency scanning.
Hewlett-Packard	ScanJet 5470CXI	★★★	\$299	Mac OS 9	800/752-0900, www.hp.com	2,400 × 2,400	48-bit	USB and parallel	Excellent driver software.	Mediocre transparency scanning.
Microtek	ScanMaker 5700	★★★	\$380	Mac OS 9	310/687-5940, www.microtek.com	1,200 × 2,400	42-bit	USB and FireWire	Fast performance over FireWire.	Expensive; mediocre transparency scanning.

How Midrange Flatbed Scanners Measure Up

Macworld LAB TEST	1,200-DPI SCAN		Photographic Print		Color Negative	
	Time	Port	COLOR QUALITY	DETAIL	COLOR QUALITY	DETAIL
Canon CanoScan D1230UF	2:29	(USB)	●●●	●●●	●●	●●●
Epson Perfection 1650 Photo	3:08	(USB)	●●●	●●●	●●	●●●
HP ScanJet 5470CXI	4:15	(USB)	●●	●●●	●●	●●
Microtek ScanMaker 5700	4:31	(USB)	●●	●●●	●●	●●
	1:10	(FireWire)				
< BETTER			●●● EXCELLENT	●● ACCEPTABLE	● POOR	

BEST RESULTS IN BOLD.

Timed scores are in minutes:seconds. We recorded the time it took to scan our 4-by-6-inch photographic test target at 1,200 dpi and 24-bit color depth. We tested the ScanMaker using its USB port and its FireWire port. Our panel of experts rated a color print of the scan, printed on an Epson Stylus Pro 5000. We scanned a color negative at 1,200 dpi and 24-bit color depth, and we rated the scans on screen. Our test system was a Power Mac G4 500MHz with 512MB of RAM, Mac OS 9.2.2, and Photoshop 6.0.1 installed.—MACWORLD LAB TESTING BY JAMES GALBRAITH

We tested the scanners' speeds by scanning a 4-by-6-inch photograph at a high resolution of 1,200 dpi in 24-bit scanning mode. The scanners' performance varied widely: When connected via USB, the CanoScan, which employs hardware compression to send image data over USB, took top honors, completing our high-resolution time test in 2 minutes and 29 seconds. The Epson Perfection came in second. When connected via FireWire, the Microtek ScanMaker proved to be the fastest contender, with a scan time of only 1 minute and 10 seconds.

Image Quality

Low-end scanners have a limited ability to reproduce high-quality images. Higher-resolution scanners can enlarge an image without losing all its subtle details—this justifies their higher prices.

To judge image quality, we printed scans from these scanners on a high-end graphic-arts ink-jet printer, the Epson Stylus Pro 5000. The quality of the images was superior to that of output from these scanners' lower-resolution counterparts. The Epson Perfection 1650 had the best overall image quality, with good color reproduction, as well as excellent highlights and shadow detail. Our only complaint with the Epson Perfection—and with the ScanMaker—was that the scanned image lacked the sharp, crisp details of the original. The ScanJet and the CanoScan had great image detail, though the images were dark in some areas. The CanoScan's color accuracy beat out that of the ScanJet, which exhibited a subtle red cast. The output from Microtek's ScanMaker 5700 looked soft and the color quality seemed dull when compared with the original image.

Transparency Scanning

Scanning photographic prints and other reflective media is the core job of a desktop scanner. These four scanners are also capable of scanning transparent media such as slides and color negatives. If you're scanning transparency media, you'll need a backlight unit to assist the scanner in capturing data. The CanoScan, Epson Perfection, and ScanMaker have this functionality built into the scanner lids, and the ScanJet comes with an external unit that you place over the flatbed scanner's glass. For simplicity and ease of use, we preferred having the transparency unit built into the lids.

While this dual functionality makes sense, our image-quality tests made it very clear that the resulting scans would need some retouching help from an image-editing program. The Epson Perfection 1650 Photo and HP ScanJet 5470CXI yielded good detail but suffered (along with the other scanners) from brightness and contrast problems. The CanoScan, ScanJet, and ScanMaker scans also showed some noise that affected image quality. If scanning transparencies is an important part of what you do, we recommend that you invest in a slide scanner, which will yield much better results. (For a review of slide scanners, see *Reviews*, October 2001.)

Macworld's Buying Advice

If you occasionally need to scan transparencies, these scanners will do the job, but expect to do some cleanup work after you scan.

But if you're looking for a speedy midrange scanner that offers excellent color and a strong feature set, we recommend the Epson Perfection 1650 Photo. It not only placed first in our image-quality tests, but also costs less than the other scanners in this roundup. □

Being familiar with your scanner's settings and capabilities will help you achieve the best scans. If you don't fully grasp the concept of resolution, your scanned image may end up in one of two camps: a large file with extraneous, imperceptible information or a file that looks distorted when viewed or printed.

The optical resolution of a scanner represents its ability to capture data using only the available hardware. When you start coming across maximum resolution specifications like 12,800 dpi or "unlimited resolution" (especially in the midrange flatbed scanner class), it means the scanner will interpolate—a process of estimating the scan values between two known scan values—to reach that resolution. This allows you to enlarge scans to more than what your optical resolution supports. But because the scanner estimates data where there is none, image quality may suffer. Try to stick with the optical resolution when considering a scanner and its uses. Here are some general guidelines that will help you choose the right scanning resolution.

Web and On-Screen Viewing

The average computer monitor's resolution is less than 100 dpi; therefore, the scanning resolution for images meant only for on-screen viewing should be around 72 dpi (the standard display resolution for a Mac). Anything higher will just use more disk space without improving the quality of the image.

Photo Prints

Scanning photos for print is a little trickier. Try sending that 72-dpi scan to your printer, and you'll get a blocky mess. When scanning photos, however, there's a point at which the file size will grow but your resulting output won't look any better.

For the current generation of photo ink-jet printers (the Epson 1280 Photo, for example), plan on scanning at 240 dpi if you'll be printing to matte paper and at 360 dpi if you'll be printing to glossy paper.

You should scan at higher resolutions (such as the ones available in the scanners in this roundup) if you intend to enlarge the print. A good rule of thumb is to scan at 200 dots per printed inch. For example, if you intend to print the scanned image at 600 percent, you would scan at 1,200 dpi.

Text and Line Art

There are no levels of gray involved in scanning text and line art, so the scanner will represent what it scans with either a black dot or a white dot. This is also how a monochrome printer outputs information, so it's best to scan text and line art at your printer's resolution. The size of a dot on the scanned image will correspond to the size of a dot on the printer, minimizing the jagged edges on your output.

Transparencies

Usually, when you scan a transparency or film, you plan to enlarge the image before printing it. In this case, you should scan at 100 to 200 dots per printed inch of the desired enlarged size.

Mileage will vary, but if you stick with these guidelines, you can achieve the best and most efficient images your scanner has to offer.

ACCOUNTING SOFTWARE FOR SMALL BUSINESSES

Oracle Small Business Suite 7.5, MyBooks 5.1, and AccountEdge 2 Broaden Your Choices

BY JEFFERY BATTERSBY

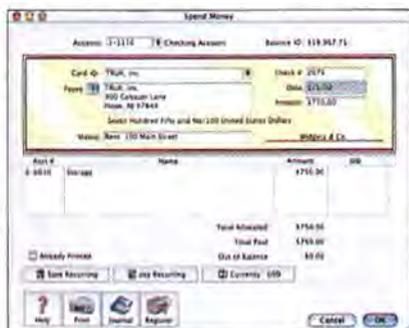
Before the days of low-cost, high-speed Internet access and Java applications, MYOB AccountEdge 1—a versatile cross-platform application powerful enough to satisfy even the pickiest accountants—was the only viable accounting package for the Mac. Now DSL, cable, and a new wave of Java applications give Mac users a wider range of options when it comes to handling their business finances. The three products in this review achieve their goals with varying degrees of success: AccountEdge 2 and NetLedger's Web-based Oracle Small Business Suite have what it takes to handle all your accounting needs, while the Java-based MyBooks 5.1, from AppGen, falls far short.

3 Packages, 3 Worlds

When it comes to application software, AccountEdge, MyBooks, and Oracle come from three completely different worlds. AccountEdge is a traditional Mac application: you buy it in a box, install it from a CD, and run it as a native OS X application from your hard drive. MyBooks can also be bought in a box, but it's a Java-based application—which means that it can run on both Windows and Linux systems, as well as your Mac. Oracle exemplifies a completely new paradigm for computer software: the Application Service Provider (ASP). With an ASP, you don't buy a box of software and install it on your computer; instead, you pay a monthly fee to use the application via the Web and store all your data remotely. It doesn't matter what operating system you use, as long as you have a version 4 or later Web browser.

AccountEdge Enhances Ease of Use

MYOB AccountEdge was the first accounting application optimized for the new, untested OS X, and it was clear from the start that MYOB had gone



Speaking Your Language AccountEdge has dispensed with accounting jargon and replaced it with everyday terms that make the program easy to use.

to great lengths to create an accounting package that took advantage of everything OS X had to offer. With version 2—which is designed to run on OS X 10.1 and OS 8.6 and higher—the program continues to be an excellent all-purpose Mac accounting package. It sports a streamlined setup process that is less confusing than setting up previous versions; it will have you up and running in six quick steps.

Several new features, as well as some redesigned ones, make AccountEdge easier to use and more intuitive for anyone who cringes at the thought of crunching numbers. The new Bank Register gives you an immediate overview of all your accounts (in a way that is reminiscent of Quicken) and lets you directly edit transactions from within the register window. Version 2 has dispensed with accounting jargon,

replacing it with easily understood terms such as *Spend Money*, *Receive Money*, and *Pay Bills*. You can also view your accounts either by account number or, for those of us who are accounting-impaired, by account name. So instead of having to remember that account number 6-1080 is Telephone Expenses, you can simply enter **Telephone**, and AccountEdge will take care of the rest.

The program can now import your bank and credit card statements, as long as your bank allows you to download them in OFX, QFX, QIF, or OFC format. But bear in mind that this is an import, not a direct connection to your banking data (as you may have come to expect if you use Quicken). In our testing, importing data was not intuitive. Additionally, we experienced unspecified import errors (with unclear error messages) while importing some Quicken data. We had to dig through an import log to resolve the problem.

Unfortunately, MYOB has not addressed a few issues we mentioned in our review of AccountEdge 1.0 (★★★★); *Reviews*, March 2001): sending e-mail to anyone other than a company's primary business contact requires you to change the e-mail address to reflect the alternate contact's address; the HTML-based manual remains difficult to navigate;



Looks Can Be Deceiving MyBooks looks great—it's pure Aqua—but it can't withstand the rigors of even rudimentary business tasks.

and searches of the manual rarely yield useful results. Also, at press time, AccountEdge ran only in single-user mode under OS X 10.1. The MYOB Web site stated that if you attempt to run the program in multiuser mode, you run the risk of irreparably corrupting your AccountEdge data. Check with MYOB to make sure this problem has been rectified if you plan to run AccountEdge with multiple users.

MyBooks Looks Good, Works Bad

If there's any question as to why Java hasn't succeeded as an application platform, MyBooks 5.1 may provide most of the answers. While MyBooks is beautiful visually—the interface is pure Aqua, right down to the icons—it's incapable of handling even basic business tasks such as data entry.

When MyBooks first loads, you have the option of using it with test data or setting up your own company via a wizard. The setup process is simple, and we had our initial business data loaded in a matter of minutes. But as soon as we began using the program, MyBooks fell flat on its face.

No customers, no vendors, no sales—essentially, there was no data in the database whatsoever. And the program appeared to be running in slow motion—so slow that there wasn't a moment during our use of MyBooks that we weren't either watching a window redraw on almost a line-by-line basis or wondering whether we'd actually pressed the button that was supposed to take us to the next module. This slowness pervaded every aspect of the program, including data entry. For instance, MyBooks couldn't keep up with normal typing speed, sometimes resulting in words with missing letters.

Other interface quirks include data fields that aren't wide enough to display the single-character data they contain; the inser-

tion point moving from field A to B to C to D when you're clicking in field L; and buttons (with labels such as WP and Turn It Up A Notch) that have no contextual help and make no sense until you click on them. To its credit, MyBooks does have excellent contextual help for every data-entry field, but the program runs so slowly and has so many interface problems that it's truly unusable.

Oracle Reveals the Future

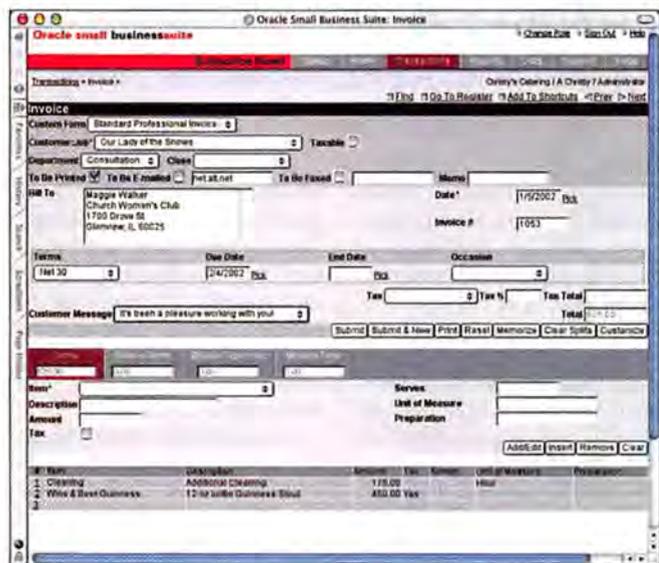
On the surface, the idea of renting a piece of software seems ludicrous. First, you never own the software, so if you stop paying the monthly fee, you don't have it anymore. Second, the software and your financial data never really exist on your hard drive; it's stored on someone else's computer—a thought that may terrify some users. But if you listen to Microsoft, NetLedger, and a variety of other software vendors, this is the application-software wave of the future. Oracle Small Business Suite 7.5 makes it clear that this is one wave that's worth the ride.

Here's how it works. For \$100 a month, you get business accounting, sales-force automation, a 100-item Web store, customer-support tools, online bill payment (with as many as 20 checks per month), payroll, employee-expense management, time billing, unlimited telephone and e-mail support, and backups of your data twice a day. The price also includes full access for two master users and your accountant, as well as limited access for ten employees.

Want to add more master users? It'll cost \$50 a month for each. Have more employees? You'll pay \$50 dollars a month for each block of ten. Need to write more checks? It's \$13 for each additional block of 20 checks. And so it goes for every other feature that Oracle offers: if you want more functionality than you have in your existing plan, you can get it for a monthly fee.

While Oracle lacks the visual appeal of the other two packages, it remains a powerful and versatile program. Like the two desktop-based applications, it uses a simple setup process to help you get your company in order. But unlike AccountEdge and MyBooks, Oracle will take you a couple of hours to get set up and ready to go. Once your accounts are in order and you've set up employees, vendors, and customers, you can give them all varying degrees of access to your data; for example, you can let customers and vendors see their account history and order information on the Web.

Oracle handles estimates, orders, and invoices seamlessly, pulling inventory items from your database—whether they're entered by a salesperson or via your Oracle Small Business Web store—and it allows you to have multiple price points for your customers. The Web store does have some limitations. While it's easy to put together and maintain a Web store when it's hosted on the Oracle Web site, if you want to integrate the store into your existing site, you can expect to spend quite a bit of time cutting



Oracle Small Business? Sweet! Web-based services give your employees, customers, and vendors access to their business data from almost anywhere, anytime.

and pasting HTML into your Web pages.

Invoices and checks that you want to print locally are downloaded to your hard drive as PDF files, but you can also e-mail or fax invoices directly to your customers from within Oracle. There are dozens of reports, from standard accounting to Web-store-traffic reports. You can view them online or download them to your hard drive as either Excel or Word files.

If Oracle has one major shortcoming, it's the need for speed. NetLedger strongly suggests that you have a DSL, cable, or T1 connection to the Internet. In our experience, even at DSL and T1 speeds, the Oracle Web pages were not always snappy and sometimes the data took several seconds to load.

Macworld's Buying Advice

At \$100 for five users, MyBooks is far less expensive than either AccountEdge or Oracle Small Business Suite, but the program is unusable in any work environment. Both AccountEdge and Oracle Small Business Suite are superior accounting programs. AccountEdge's more intuitive interface makes it a compelling option for non-accountants, but Oracle Small Business Suite may provide a slight advantage to users willing to spend \$100 per month and unafraid to store their data on the Web. That's partly because AccountEdge lacks support for multiple users and because Oracle offers a broader range of features—including Web stores and secure, worldwide data and application access for all your vendors, customers, and employees. □

Accounting Software Compared

COMPANY	PRODUCT	MOUSE RATING	ESTIMATED PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
AppGen	MyBooks 5.1	★	\$100 (for five users)	Mac OS X	800/231-0062, www.appgen.com	Nice Aqua look-and-feel; easy setup; good contextual help.	Unusable due to lack of responsiveness and interface design problems.
MYOB	MYOB AccountEdge 2	★★★★	First license, \$250; subsequent licenses, \$100	Mac OS 9, Mac OS X	800/322-6962, www.myob.com	Improved ease of use due to new Bank Register, viewing options, and jargonless language; can import banking and credit card data.	Difficult to import banking data; Web-based manual difficult to use; no multiuser capability.
NetLedger	Oracle Small Business Suite 7.5	★★★★★	\$100 per month (for basic package)	Mac OS 9, Mac OS X	800/762-5524, www.oracle-smallbusiness.com	Excellent online accounting tools; application available to any employee with Internet access.	Expensive for smaller businesses; Web store is not easy to integrate into your own site; service sluggish at times.

CANVAS 8

All-in-One Graphics App Has Important New Features

BY BEN LONG

Canvas, from Deneba, brings together drawing, painting, page-layout, business-presentation, and Web-design applications in one package. The latest version, Canvas 8, has an improved tool set, new scripting features, and important interface improvements, and it's Carbonized for OS X. Canvas is a good tool for some graphic designers and business graphics users; however, high-end designers will probably want to stick with dedicated apps.

With this version, Canvas's interface shows off a number of good tweaks and improvements. Floating palettes are now "magnetic" and automatically stick to each other, à la Photoshop 6's palettes. And by programming the keyboard, you can select any vector or image-editing tool with a single keystroke.

The most conspicuous change to Canvas's interface is the addition of the new Undo palette. The Undo palette stores a user-defined number of actions. At



Jack of All Trades With version 8, Canvas's interface has seen a few changes for the better. The program's new Undo palette allows multiple, nonlinear undos.

Though other painting and image-editing programs (such as Adobe Photoshop) may have vector tools, and other vector illustration programs (such as Adobe Illustrator) may have bitmap support, no other package offers such tight integration of the different drawing modes. In Canvas, you can apply the same effects to any type of object, whether it's bitmapped or vector.

What's more, Canvas's interface changes depending on the type of document you want to create, giving you a PageMaker-like interface for page layout, a PowerPoint-like interface for presentations, and so on. No matter which type of document you're working on, though, your tools remain the same.

any time, you can undo an action by clicking on it. Unlike Photoshop's History palette, Canvas 8's Undo palette is nonlinear; you can undo any action anywhere in the queue. However, the generic action names in the Undo palette can make it difficult to know which action you're undoing. If you undo the wrong item, you can opt to redo the action, but this further changes the Undo queue.

Enhanced Tools

Though Canvas 8 doesn't provide any revolutionary new drawing tools, it does implement some long-overdue changes to the program's drawing features. In the past, you had to double-click on an object to edit it. The new Direct Edit Select and

Lasso tools let you operate on any object's control points without a lot of extra clicking. And Canvas now automatically enters Paint mode when you click on a paint object, making it much easier to switch between vector and paint objects.

Other handy features include the ability to convert an object to paths, and new tools for automatically distributing objects. With these additions, Canvas is just catching up to other illustration packages such as Illustrator and Macromedia FreeHand, but they are welcome improvements just the same.

Although Canvas's painting tools are no substitute for the variety of tools available in a full-blown painting app such as Procreate's Painter, Canvas 8 offers some cool enhancements. You are no longer limited to painting with flat colors; you can now paint with any gradient or texture—a great way to create complex texturing and highlighting effects.

Canvas 8 also has several new effects filters, including natural-media effects such as oil painting. With Canvas's SpriteEffects technology, you can apply these filters to any bitmap or vector object without losing the ability to edit the original object. SpriteEffects is still one of Canvas's biggest strengths.

Autopilot

The most substantial improvement in Canvas 8 comes in the form of new scripting facilities. The Sequence palette allows you to quickly and easily record a sequence of operations that can be played back at any time on any object. Analogous to the Actions palette in Photoshop, the Sequence palette lets you easily automate simple tasks, from applying filters to resizing objects. However, though most tasks can be recorded with the Sequencer, individual paint strokes cannot.

As with Photoshop Actions, sets of sequences can be exported to other documents, making it easy to create a standard set of style scripts for use across multiple documents.

For more-advanced automation, Canvas now offers complete support for AppleScript. While the Sequencer is great for creating quick little macros, Canvas's new AppleScript facility allows you to create complex scripts that can interact with other programs, including databases and spreadsheets.

Performance

Canvas 8 delivers good performance in both OS 9 and OS X. Deneba seems to have done a bit of work on Canvas's memory management, and the program is better at handling large bitmap images (20MB or more) than previous versions.

Canvas 8 is fully Carbonized for OS X, and as we've experienced with other graphics apps, its performance in OS X is a little sluggish compared with its performance in OS 9. However, most users probably won't feel hampered by this slight performance loss.

Macworld's Buying Advice

It's unlikely that the improvements in version 8 will make Canvas converts out of users of other graphics applications. For the most part, a dedicated illustration, painting, page-layout, presentation, or Web-design application will provide more-refined functionality than Canvas, with its integrated approach. But if you need a graphics package, this one is an excellent place to start. And for current users, the decision to upgrade will probably be a no-brainer; the tool enhancements and interface tweaks alone are well worth the \$250 upgrade price. □

RATING: ★★★★★

PROS: Improved interface; excellent scripting features; good integration of many different illustration functions.

CONS: Lacks some of the more refined tools of separate, dedicated graphics applications.

ESTIMATED PRICE: \$400

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Deneba, 305/596-5644, www.deneba.com

SUITCASE 10.1

Excellent, Intuitive Font-Management Application Brings a Familiar Interface to Mac OS X

BY ANDREW SHALAT

If you thought managing your fonts was confusing or difficult in Mac OS 9 and earlier, then the very idea of having to do it in Mac OS X may give you shivers: the new OS poses several font-management problems, and the built-in Font Panel looks more like an Aquafed version of System 4.1's Font/DA Mover utility than a state-of-the-art font-management application. This is where Suitcase 10.1 comes in. With a familiar interface and a knack for doing what it's supposed to—quick, on-demand activation and deactivation of fonts, with a minimum of conflicts—this new version is a winner.

Suitcase Does It Better

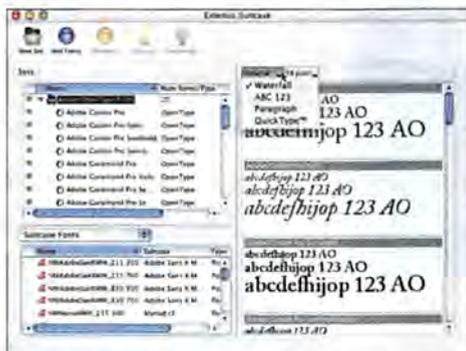
Suitcase 10.1 solves one of the most frustrating parts of handling fonts in Mac OS X—not knowing where to access and store them. In OS X's confusing font-storage system, fonts can live in at least four different places. For instance, you can have system-wide fonts in the System: Library: Fonts folder and at the same time have fonts in your User: Library: Fonts folder. And each of a Mac's users can have a unique set of active fonts. There can be shared fonts and network fonts. You can also keep fonts in their original OS 9 folders. But with Suitcase 10.1, you don't need to employ this complicated system. As in the good old days, you can store a font where you want, and Suitcase sorts and accesses it for you.

Suitcase 10.1's interface will be familiar to anyone who has used Suitcase 8 or higher. If this is your first experience with Suitcase, consider yourself lucky to be starting with this version. It's so easy, you probably won't even need to look at the manual. All

the hard work is done under the hood, and there's no need to tangle with the command line.

What's New?

Thankfully, you won't notice a lot of changes in this new version, other than how to get it started. Most important, Suitcase runs as an application in OS X, rather than as a control panel or an extension. If you quit Suit-



Familiarity Breeds Contentment Suitcase's default three-pane view is uncomplicated and customizable.

case, it will close any fonts you may have opened via the application. After installation, Suitcase will launch automatically at system start-up. You can, however, undo that default setting either by selecting the appropriate option during installation or by changing it in the Preferences panel.

If It Ain't Broke

After you install it, Suitcase 10.1 greets you with its familiar three-pane view. This uncomplicated window gives you all the font access and preview information you'll need. The default pane setup is the same as it has been since version 8: the Sets pane is at the top of the left-hand side, the Fonts pane is beneath that, and the Preview pane is on the right side. Just as with previous versions, there are several customizable view settings. You can hide or resize any of the three panes,

After your initial setup, the application window is hidden. You activate this window via the Dock or the application icon in the Suitcase folder. But as long as the Suitcase icon is in the Dock, you don't have to start the whole application in order to activate a particular font set. Simply clicking on and holding the icon in the Dock will make a list of your font sets appear on screen. You can select any font set you've already created directly from the Dock.

Easy Font-Set Creation

You can make font sets with Suitcase's Add To button or by dragging and dropping fonts or font folders directly into the Sets pane from the Finder. Suitcase will let you know if there's a font conflict and allow you to either deactivate the offending set on-the-fly or use a dialog box that instructs you on a proper course of action.

In the Preview pane, you can choose to view font families in one of several different ways: Waterfall (three sample lines of type in increasing size), ABC 123, Paragraph, or QuickType (a single line of type). You can choose to preview at almost any point size. Text in Paragraph and QuickType is fully customizable. The QuickType option lets you see exactly how a line of text will look in as many fonts as you choose from either the Sets or Fonts panes.

Suitcase 10.1 hasn't forgotten about auto-activation. It installs Suitcase XT, its convenient auto-activation extension for QuarkXPress and Adobe Illustrator. Suitcase XT has been around since version 9. It not only locates and activates missing fonts but also checks for duplicates and opens embedded fonts that have been placed in EPS files.

Suitcase 10.1 works in OS 9.1, OS X's Classic environment, and OS X 10.1. Unfortunately, Suitcase also installs MenuFonts, a small utility that

creates WYSIWYG font menus in most applications. Running MenuFonts in OS 9 can create an incompatibility: the Chooser won't work if MenuFonts loads before ATM does. The way around the problem is to either deactivate MenuFonts or reorganize the load order in Extensions Manager. We had no such problems, however, with MenuFonts in OS X.

Bridge the OS Gap

If you must work in both the Classic environment and OS X, you don't have to worry about losing your activated OS 9 fonts. Suitcase 10.1 has a consistent interface in both systems, and it installs a new feature called Suitcase Bridge. This keeps automatically activated fonts in both Classic and OS X functioning when you must cross the gap between operating systems.

Macworld's Buying Advice

In this time of transition from Mac OS 9 to Mac OS X, it's important that we have the fundamental utilities available to us. For professional designers and those who need to organize and access numerous fonts, Suitcase 10.1 helps make the transition smooth. It's the first comprehensive font-management application for OS X to come out of the gate—and with its ease of use and comprehensive font-management capabilities, Suitcase 10.1 sets the pace at a full-on sprint; the Mac's other font-management applications will now have to catch up. □

RATING: ★★★★★

PROS: Easy and familiar interface; uncomplicated and powerful font-set management; fast font activation; excellent previews.

CONS: MenuFonts incompatibility in OS X's Classic mode and OS 9.

ESTIMATED PRICE: \$100; upgrade from Suitcase 3, 8, and 9, \$50; upgrade from competing product, \$60

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Extensis, 800/796-9798, www.extensis.com

VIAVOICE FOR MAC OS X

First Speech-Recognition Program for OS X Shows Promise but Doesn't Offer Complete Control

BY SCHOLLE SAWYER
MCFARLAND

For years, Mac users have waited for an application that would let them dictate with natural speech and control their Macs by voice—abilities that, until recently, have been available only in Windows. Previous versions of IBM's ViaVoice allowed Mac users to dictate, but ViaVoice for Mac OS X harnesses the power of the new operating system, promising to bring freedom from the keyboard and mouse. (See "Listen Up," June 2000, for an in-depth discussion of voice technology.) That's more than cool: it's *critical* for people who have limited use of their arms because of an injury or a disability.

But although ViaVoice is a fine dictation program, it will disappoint users who are looking for full-featured command-and-control capabilities.

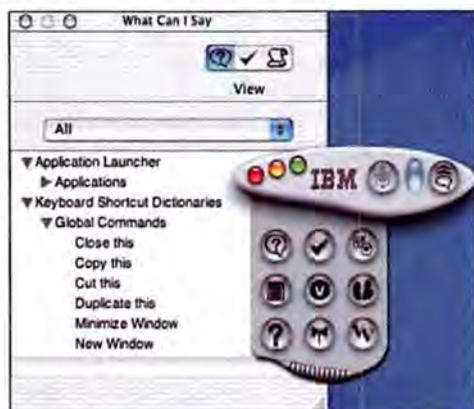
Getting Started

Installing ViaVoice takes a little time up front. You must spend about 20 minutes setting up the included USB headset microphone, testing sound levels, and reading a passage of text. (New in this version is the ability to analyze a set of documents to learn the vocabulary you typically use.) Then you're ready to go. ViaVoice lets you dictate into any Mac OS X or classic-Mac OS application, but you'll be able to work most efficiently in SpeakPad, ViaVoice's SimpleText-like text editor.

Dictation and Editing

You'll get respectable accuracy from ViaVoice's SpeakPad right away. Depending on the diffi-

culty of a document's vocabulary and punctuation, SpeakPad's accuracy rate was between 88 and 95 percent in our tests. And as ViaVoice learns your voice, accuracy improves.



Voice Command Central Open the drawer in ViaVoice's slick VoiceCenter to access windows such as this one, in which you can see all the commands at your disposal.

You can dictate into Word X with comparable accuracy (an improvement over the performance of ViaVoice Enhanced Edition), but the pace is slower. To avoid this, dictate longer passages in SpeakPad and then use ViaVoice to transfer your efforts to a word processor or an e-mail program. This works surprisingly well, but it is an inconvenience.

Unfortunately, correcting mistakes in ViaVoice isn't as easy as it could be. You can make corrections by voice only in SpeakPad. (This is a step back from ViaVoice Enhanced Edition, which let you make corrections in AppleWorks and Microsoft Word.) If you dictate a letter into Word, you'll need to use the keyboard to fix goofs. ViaVoice also can't learn and improve from corrections you make by hand.

Even in SpeakPad, correction lacks some niceties. There are few shortcuts, such as the ability to correct a misinterpreted phrase

by saying "Correct this" right after the text appears on screen. Instead, you must say the words themselves or select them with the mouse and then choose from a list of possible fixes. You do have the ability to play back a section of text after the fact so you can figure out what you said—a big help when you need to correct errors that are hard to decode.

SpeakPad gives you some basic tools for editing your text.

You can italicize words by saying "Italicize this," for example. But the program lacks most of the editing options standard to Windows speech-recognition programs such as Dragon NaturallySpeaking. For example, you cannot change text size or style by voice.

And the program has some bugs. During our tests, the microphone sometimes stopped responding, and SpeakPad quit unexpectedly several times.

Command-and-Control Limitations

Sadly, what *should* be the breakthrough feature of this product—the power to control by voice almost everything you can do with your Mac's mouse or keyboard—is disappointingly limited. Unlike other speech-recognition programs—from the venerable Dragon PowerSecretary for Macintosh (discontinued in 1998) to Dragon NaturallySpeaking for Windows—ViaVoice does not give you built-in access to every menu and every key on the keyboard. For example, you can't say "Click File" to call up the File menu and then say "Click Print Preview" to open that window.

Instead, ViaVoice includes voice shortcuts for some common actions. You can open many programs by voice—for example, saying "Open iMovie" does just that. (But there are inconsistencies: instead of say-

ing "Open," you say "Launch" to start Microsoft Word.) You can also press some keys by voice no matter where you are, including the enter, delete, and tab keys; all the function keys; and the arrow keys.

If you want to go further than this, you must make the shortcuts yourself, by using ViaVoice's keyboard-shortcut editor, KSD (Keyboard Shortcut Dictionaries) Editor, or by writing a custom AppleScript. It's fairly easy to create a Word macro and then use KSD Editor to create a voice command, but the program would have been immeasurably enhanced if IBM had done this work for us.

One place speech-technology novices *can* get an inkling of the power of command-and-control features is with Microsoft Internet Explorer. Almost every option in the program's menus is accessible by voice.

Macworld's Buying Advice

If you currently use the OS 9 version of ViaVoice, there's no question that this upgrade is reasonably priced (\$20) and good for dictation—and it's the only speech-recognition and command-and-control option currently available for OS X. If you like to tinker, you may enjoy seeing how far you can take ViaVoice with keyboard shortcuts and AppleScripts. There's power to be tapped here if you're willing to put in the time and effort. But if you're injured or disabled, ViaVoice may not be ready for you, unless you have a friend willing to enter the necessary scripts and shortcuts for you. □

RATING: ⚡⚡

PROS: Improved dictation accuracy; makes it easy to surf the Web.

CONS: No speech-controlled correction in Word; limited built-in command-and-control capabilities; some bugs.

ESTIMATED PRICE: \$180; upgrade, \$20

OS COMPATIBILITY: Mac OS X

COMPANY: IBM, 800/825-5263, www.ibm.com

OUTSTANDING: ⚡⚡⚡⚡ VERY GOOD: ⚡⚡⚡ GOOD: ⚡⚡ FLAWED: ⚡ UNACCEPTABLE: ⚡

VIRTUAL PC 5.0

OS X Support and Speed Improvements Highlight Upgraded Emulator

BY JONATHAN A. OSKI

For Mac users on a quest for the holy grail of just-like-the-real-thing PC emulation, the search is coming to an end. Connectix's Virtual PC 5.0—now Carbonized to run in either Mac OS X or Mac OS 9—performs flawlessly; hosts almost all PC operating systems past and present, including Linux variants; and provides some improvements that can make using these guest operating systems with Virtual PC preferable to running them on their native platform.

Virtual PC's target market is Mac users who need to use Windows-only productivity programs or Web-based applications that don't work with Mac browsers, and the program meets this group's needs extremely well. However, Virtual PC lacks support for accelerated 3-D graphics and is therefore not suited to running many games.

The Virtual PC 5.0 base application's price depends on the version of Microsoft Windows that's included. You can buy Virtual PC along with Windows 98 Second Edition, ME, or 2000 (an XP version should be available by the time you read this). You can also buy Virtual PC with PC-DOS alone if you already hold a license for a version of Windows or another OS. With the PC-DOS version, or one bundled with a version of Windows, all you need to do is follow Connectix's simple instructions for adding guest operating systems.

Only the Best Will Do

The typical Virtual PC user has a PC at work and a Mac at home, or uses a Mac exclusively but needs to do something only a PC can do. We found that Virtual PC's performance was comparable to our IBM ThinkPad's and well suited for the everyday use of Windows programs, networking and Web-based applications, and services that work only on a PC.

For our tests, we installed Virtual PC with Windows 98 and Windows 2000 Professional on an 867MHz Power Mac G4 with 896MB of RAM, and on a 550MHz Titanium PowerBook G4 with 256MB of RAM. To compare performance, we used an IBM ThinkPad 600X, with a 500MHz Pentium III processor and 192MB of RAM, running Windows 2000 Professional.

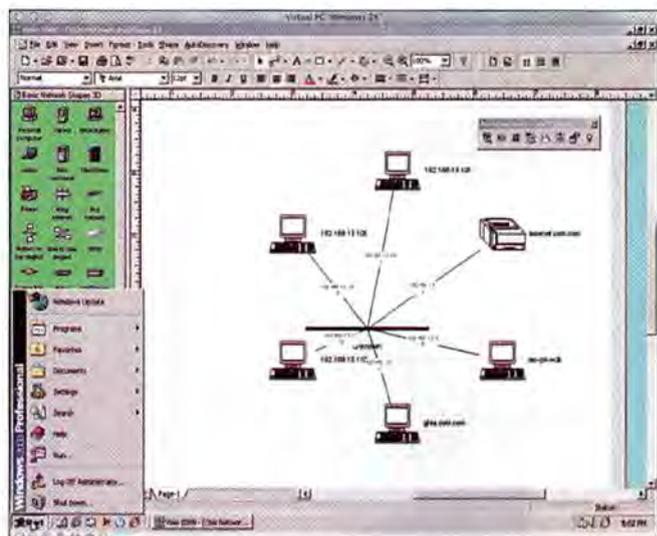
You can run a single installation of Virtual PC in both OS X and OS 9, but you need to install it first in OS X and then follow the provided instructions before launching it in OS 9. With virtual memory turned off in OS 9, as Connectix recommends, Virtual PC performed marginally better than it did in OS X. Unlike some Virtual PC 5.0 users, we did not experience any aberrant behavior in either environment, and the program's performance was comparable to that of the IBM ThinkPad.

Virtual PC's memory management has become quite sophisticated, so you no longer have to allocate a lot of RAM to the application in OS 9. Virtual PC requires between 64MB and 256MB of physical RAM (depending on the guest operating system) and does not support processor upgrade cards; Connectix recommends CPUs with clock speeds greater than 400MHz when the program is used with OS X.

To run multiple guest operating systems concurrently (a feature new in version 5.0), you need to make sure you have enough free memory to accommodate them all. Given the current low cost of memory, we would encourage Virtual PC users to load up on it, especially if they plan to run Windows 2000 or XP.

It Looks Like a PC

We installed and used several PC-only applications, including



Slaying a PC Killer Surprisingly, Microsoft Visio 2000 Enterprise Edition, a program that can humble even a well-equipped PC, runs soundly under Virtual PC.

Microsoft Visio 2000 Enterprise Edition, Austin-Hayne's Employee Appraiser, and Wild-Packets EtherPeek—a group representative of the applications that a Mac user might run in Virtual PC. We were impressed with the program's usability, and with its ability to perform some very complex tasks with Visio, a program that can humble even a well-equipped PC.

We also tried running browser-based applications, including IBM's iNotes and the Citrix ICA client, because these applications do not work properly (or at all) on any browser available for Mac OS. These apps worked without a hitch in Virtual PC. Finally, we tested network connectivity to printers, Windows "shares," and a remote office network using Microsoft's virtual private network (VPN) client—all of which went smoothly.

In some ways, running Virtual PC is better than using a real PC, as long as you're not trying to play games. For example, the program can save the "state" of a guest PC, significantly reducing the time that relaunching a Virtual PC session takes. Undoable drives, another new Virtual PC feature, allows you to reverse any changes made to a Virtual PC volume—even after you've rebooted the guest PC. This feature is great for testing unstable

applications, since you can reset your PC to a known working configuration. You can also dynamically change a session's screen resolution simply by resizing the application window. Show these features to PC users and watch them swoon with envy.

Macworld's Buying Advice

With Virtual PC 5.0, PC emulation on the Mac has truly come of age. If you have a Mac with a fast processor and you need to run PC applications other than games, Virtual PC is an inexpensive and incredibly useful alternative to buying a PC (for \$1,000 or more). The elegance and usability enhancements that Connectix provides to Mac users make Virtual PC 5.0 a pleasure to use. □

RATING: ★★★★★

PROS: Excellent performance; supports a variety of PC operating systems; undoable drives.

CONS: Not suited for many PC games; requires high-end Mac.

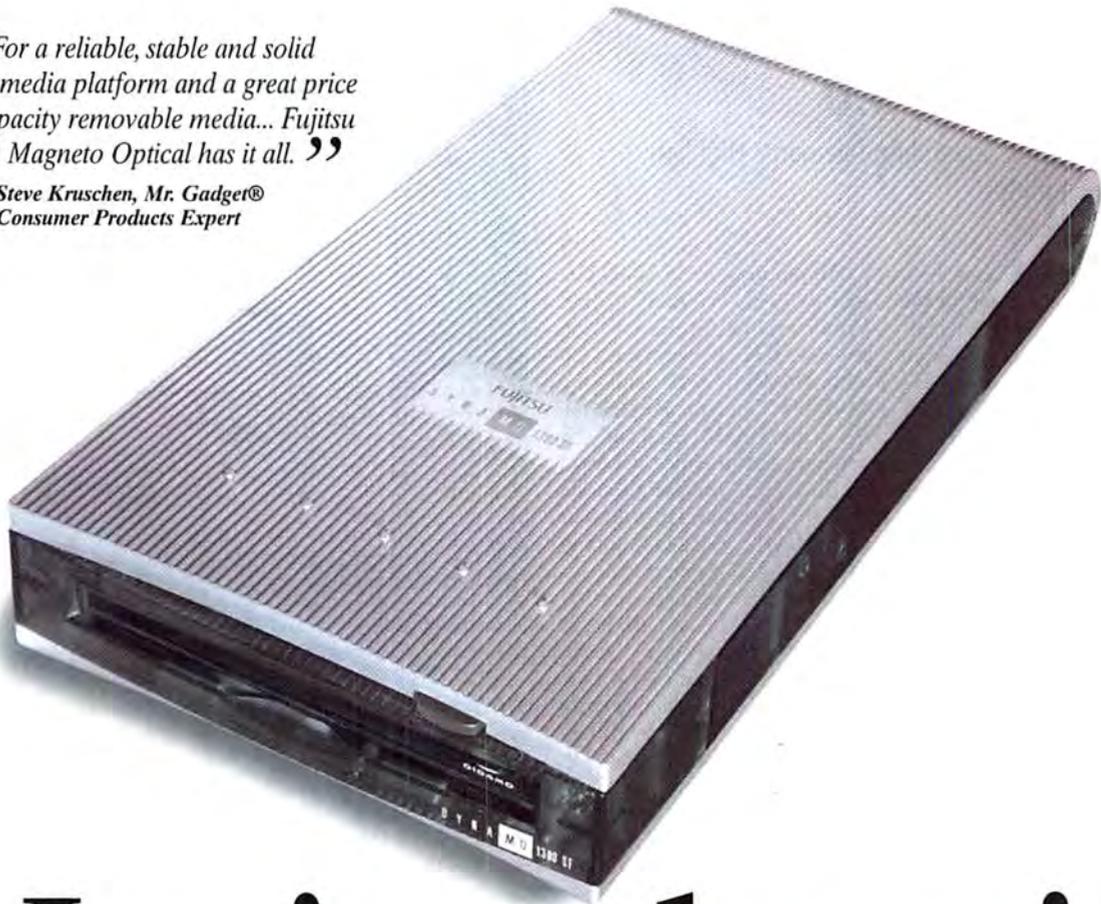
ESTIMATED PRICE: with Windows 98 Second Edition, \$199; with Windows 2000, \$249; with PC-DOS only, \$99; upgrade from version 4.0, \$79

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Connectix, 800/950-5880, www.connectix.com

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SORENSEN SQUEEZE 1.0

Inexpensive Utility Simplifies Video Compression, Lacks Advanced Workflow Conveniences

Sorenson Squeeze is a few-frills video-compression utility that occupies the middle ground between Apple's \$30 QuickTime Pro and Discreet's \$599 Cleaner 5. Squeeze lacks Cleaner's full arsenal of quality-optimizing features, but it does provide more control over video com-

utility such as Apple's free MakeRefMovie to create the reference movie.

You can modify the presets in Squeeze to apply the program's image-tweaking features, which include contrast, brightness, and gamma adjustments, as well as white- and black-level controls. Squeeze also provides a simple auto-crop

feature that slices ten pixels off the top and bottom of your movie—terrific for cleaning up the video noise that often accompanies content captured from analog tape, such as VHS videocassettes.

In general, the quality of Squeeze's compression results far exceeds that of QuickTime Pro's but tends to fall short of

Cleaner's results. In addition, Squeeze lacks some of the workflow conveniences that Cleaner offers. For example, you can't save a modified compression setting for future reuse.



Squeeze Play With Sorenson Squeeze, you can compress several versions of a movie at once by clicking on multiple preset buttons.

pression than QuickTime Pro. Squeeze also costs far less than Cleaner, and unlike Cleaner, it runs natively in Mac OS X.

One-Window Compression

Squeeze compresses video using the Sorenson Video compressor/decompressor, or codec, the most widely used codec for Web-destined QuickTime movies.

The program's features are all accessible in a single, straightforward window. At the top of the window, seven buttons correspond to presets for common connection speeds, while an eighth button lets you create a custom preset from scratch.

If you want several versions of a movie for users with different connection speeds, choose more than one preset and Squeeze will create a separate movie for each target bandwidth (see "Squeeze Play"). Unlike Cleaner, however, it doesn't create the QuickTime reference movie that's required to deliver these bandwidth-tuned alternate movies to Web users. You have to use a

Macworld's Buying Advice

There's no reason to buy Squeeze if you already have Cleaner 5 or if you're just getting started with Web video and can afford Cleaner instead. But if you're on a tight budget, or if you want to integrate OS X into your production workflow, embrace Squeeze. It provides higher-quality results than QuickTime Pro and is easier to use than Cleaner.—JIM HEID

RATING: ★★★

PROS: Easy to use; excellent results.

CONS: Cannot save custom settings; doesn't create QuickTime reference movies.

ESTIMATED PRICE: \$299

OS COMPATIBILITY: Mac OS 9, Mac OS X

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



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REVIEWS

BOOKENDZ TITANIUM DOCKING STATION

Ends PowerBook G4 Cable Troubles for the Truly Organized



Dealing with cord clutter can be the most irritating aspect of turning your Titanium PowerBook G4 into your primary desktop system. If you want better organization, Photo Control's BookEndz Titanium Docking Station is your best option.

The dock contains pass-through connectors for all the ports on the back of the PowerBook. Because Titanium PowerBooks' audio-out ports are on the side and not the back, there is no audio-out connector on the dock, but there is a groove that holds an audio cable in place.

Getting the PowerBook into and out of the dock is easy, but sometimes it seemed that we

had to apply a little too much force to get the PowerBook to seat fully, and there were times when the portable's rear door got in the way when we tried to connect the dock. (Inserting the PowerBook at a slight angle generally fixed the latter problem, however.)

Macworld's Buying Advice

Many people considering the \$230 price of the BookEndz dock will be content to deal with cable clutter in other ways. But that doesn't take away from the value of the dock—it provides a simple solution for organized people who want their portable to act as their primary desktop system.—RICK LEPAGE

RATING: ★★★★★

PROS: Sturdy; well designed.

CONS: Insertion can require a fair degree of force; PowerBook door can get in the way.

ESTIMATED PRICE: \$245 (titanium coloring); \$230 (black)

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Photo Control, 800/787-8078, www.bookendzdocks.com

HALION 1.1

Software Sampler Offers Extensive Format Support, Ease of Use

Steinberg's Halion is a full-featured software sampler for use with VST-compatible music applications (such as Steinberg's Cubase family) that offers a number of unique features not found in samplers from Emagic, Bitheadz, and other companies.

Most other software samplers have to load the entire contents of a sample into RAM, but the \$399 Halion can play samples of virtually any length—regardless of the amount of RAM installed in your Mac. This is because Halion can play audio directly from a hard disk; when working with long samples, Halion preloads the initial portion of the sample into RAM and streams the rest directly from disk. You will still need a fast system—preferably a Power Mac G4, although a G3 will do—and as much RAM as you can get, but Halion's streaming support is a step above anything offered by competing samplers.

Each Halion virtual instrument can have up to 256 voices that will play sampled parts on up to 16 MIDI channels simultaneously (Cubase lets you load up to eight virtual

instruments at one time). Halion supports file resolutions from 8 to 32 bits and can import Akai, E-MU, and REX sample files, as well as AIFF and WAV sound files. Filters with extensive modulation features are provided for importing, editing, and layering. Steinberg also includes a high-quality sample library on four CDs to get you started.

Halion is a fairly complex and deep program, but the controls are laid out clearly and logically. Extensive use of drag-and-drop functionality makes it easy to navigate and to adjust, loop, modulate, and layer samples.

Macworld's Buying Advice

Thanks to its ease of use, extensive file support, and ability to play long samples directly from a hard disk, Halion is a very good choice for music producers looking for a versatile software sampler with clear advantages over its rivals.—MIKE COLLINS

RATING: ★★★★★

PROS: Sample playback from disk; extensive sample-format support; easy to use.

CONS: Best results require fast system and plenty of RAM.

ESTIMATED PRICE: \$399

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Steinberg, www.steinberg.net

WATSON 1.1

Specialized Web Searching Made Elementary

Watson, the new Web-searching program from Karelia, complements Sherlock and Web search engines by providing specialized tools for specialized searches. Watson's slick, uncomplicated interface makes finding specific, detailed information much easier, and that will save you significant searching time.

A Cocoa application (for OS X only), Watson 1.1 includes tools for finding eBay items, airline arrival times, phone numbers, television listings, package-tracking information, and recipes.



Movie Sleuth There's no faster way to find movie times than with Watson's Movies tool.

Watson remembers your preferences for each search tool, so you don't have to redo searches every time you use a tool. Once you enter your zip code and how far you're willing to travel, the Movies tool displays local theater listings, including movie titles, show times, posters and summaries, and even Quick-Time movie trailers. Or you can reverse the search by choosing a particular movie from a list, and Watson will tell you where in your area that film is showing.

Using Watson is easy. When you use it to search for information, Watson queries one or more Web sites. In effect, Watson doesn't do anything you couldn't do on your own; the program just does it a lot faster than you could, and then consolidates and presents search results in an efficient and easily understandable form.

For example, you can use the TV Listings tool to retrieve the program grid for local broadcast, cable, or satellite TV, at times you select, as far as two weeks in the future. Watson also displays program descriptions and, better yet, lists alternative times and channels for programs. Getting the same information from www.tvguide.com (which is the source of Watson's TV listings) takes quite a bit longer and requires opening multiple browser windows.

Improvements to Come

Watson does have some minor drawbacks. One of them is a relatively limited selection of search tools, but this will most likely be resolved in time. Karelia offers a developer's kit so Cocoa programmers can create their own Watson search tools; the company is also developing additional search tools, including dictionary information, local weather reports, and access to street maps.

Some of these tools would be more useful if you were able to drill down a bit deeper into your retrieved data or if you could manipulate data; for example, finding eBay auction listings is easy with Watson, but you can't sort those listings by bid price.

Macworld's Buying Advice

The ability to find information in a flash is the key to effective Web searching. Watson 1.1 provides this and more, using an eye-pleasing interface. Even though its tools are somewhat limited, it will make a valuable addition to your searching toolbox.—TOM NEGRINO

RATING: ★★★★★

PROS: Fast, targeted Web searches; elegant interface.

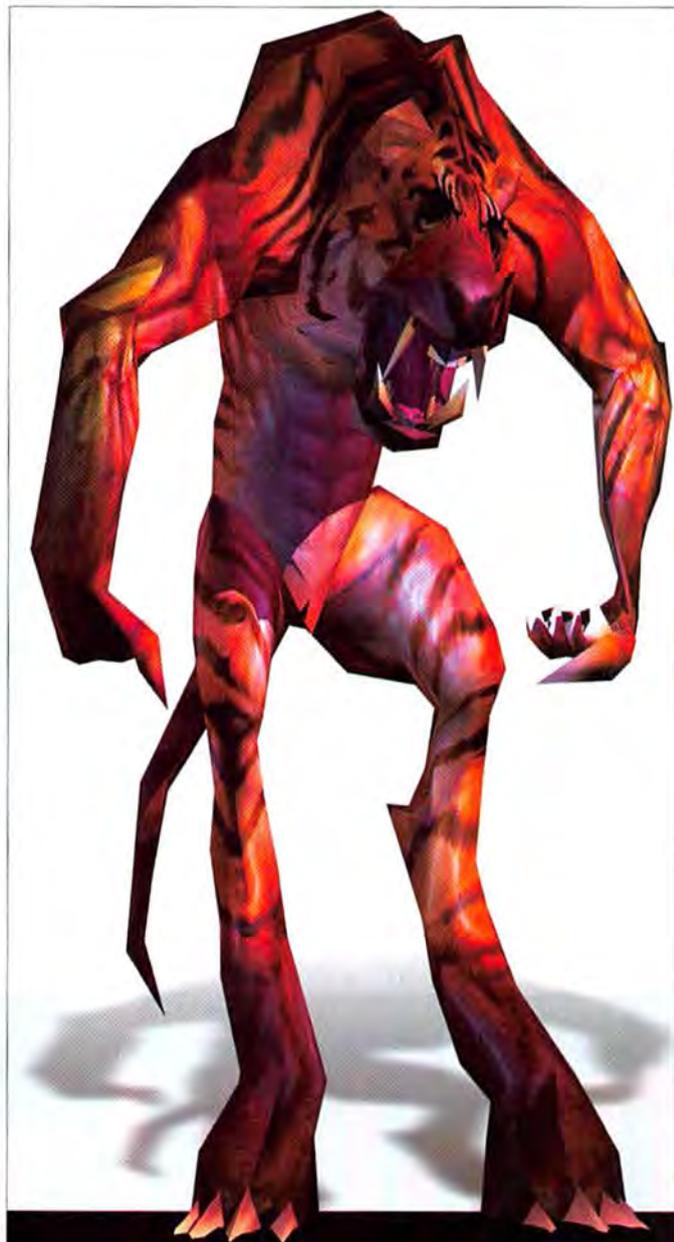
CONS: Limited set of search tools.

ESTIMATED PRICE: \$29

OS COMPATIBILITY: Mac OS X

COMPANY: Karelia,

www.karelia.com



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LIGHTWAVE 3D 7b

3-D Animator Much Improved, but Hub Outdated

NewTek's LightWave 3D 7b is a major development for Mac 3-D artists. By taking advantage of OS X's OpenGL support and multithreading performance, the \$2,495 do-everything 3-D-animation and -effects system has made a quantum leap in performance and productivity.

LightWave's three main competitors on the Mac are Alias|Wavefront's Maya for OS X 3.5 (\$7,500; [★★★★](#); *Reviews*, January 2002), Electric Image's Universe 4 (\$995), and Maxon's Cinema 4D XL 7.3 (\$1,695). In terms of abilities, price, and performance, LightWave falls in the middle of this spectrum, but it may be the best choice for many users.

Faster Performance

Version 7b doesn't have a lot of new features, but there are gems

in this release. The foremost change in this edition is fast, reliable performance in OS X. Earlier versions of LightWave were plagued by bugs and inexplicable crashes in OS 9, and unfortunately, LightWave is still generally unreliable in OS 9.

Version 7b is one of the best examples we've seen of multiprocessor performance on a dual-processor Mac (our test system was a dual-800MHz G4 with 1GB of RAM). The result is the fastest high-quality ray tracing we've seen on the Mac platform. This version also sets the bar for OpenGL performance in OS X; manipulating a scene in the program's preview mode is fast and fluid, as long as it's a scene with

fewer than 10,000 polygons. However, if LightWave for the Mac is going to match LightWave's Windows performance levels, Apple needs to introduce true workstation OpenGL acceleration in its next professional desktop systems.

Split Personality

LightWave includes three applications. Modeler is where you

build geometry and add texture to models. Layout is where you create environmental and particle effects, set lighting, and do all of your animation and rendering. Hub runs in the background, monitoring and controlling the flow of data between the two main modules. This split personality (necessary when RAM costs were higher) is outdated.

We've experienced a lot of problems with getting changes between modules to update properly. Moreover, there is a compelling case for tight integration of the modeling and animation modules. Maya, for example, allows an artist to create diverse relationships between any part of a scene, such as animating points on the control curves that define an object's shape. This type of relationship isn't possible in LightWave, though there are ways to



Skin and Bones Inverse and forward kinematics, and a new motion mixer, can be used to control a character's skeleton.

DiskWarrior® has than



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



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

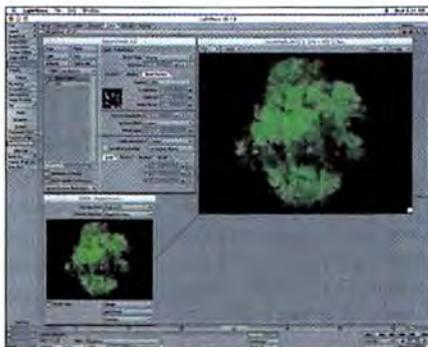
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work around Hub, such as frequently issuing a Save All Objects command.

LightWave's modeler includes excellent polygonal tools and a subdivision modeler, called Subpatch Surfaces, which allows you to build complex organic forms by manipulating simple polygon cages. But it's missing surface-continuity tools like those found in Universe and Maya; these tools are essential for building accurate representations of seamless surfaces such as a car's or an airplane's.

Feature-Rich Layout

LightWave has several tools for creating animation, mechanical and skeletal motion with inverse and forward kinematics, a huge range of particle effects and dynamic simulations, and facial motions and expressions driven by target morphing. Its best new feature is a nonlinear motion



Hyper Toxic Hypervoxels let you create highly realistic atmospheric and liquid effects, such as this green gas cloud, within a volume.

mixer that lets you drag and drop animation segments on a familiar video-editor-style timeline, to combine various actions into new sequences.

LightWave now offers a very good Shockwave 3D exporter. A new spreadsheet editor lets you rapidly modify an animation by entering numeric values at any keyframe. And similar to Maya, LightWave has an expres-

sions editor that allows you to drive the action of one object with the parameters of another.

Outstanding Renderer

LightWave's greatest asset is its rendering, which rivals Universe in versatility and sheer speed. The software offers ray tracing with radiosity and caustics, which realistically represent inter-object illumination.

The Hypervoxels particle system creates amazing particle simulations, such as realistic ground fog, within geometric volumes. This version of LightWave also features a cloth simulator and Sasquatch Lite, a limited version of the very good \$599 hair-, grass-, and fur-rendering plug-in from Worley Labs. The SkyTracer component, optimized for better performance in version 7b, realistically renders background skies and clouds of any type.

Macworld's Buying Advice

LightWave 3D 7b is well suited to all kinds of 3-D work. Although its three-module design and Hub component are flawed, the software is overall a versatile and high-quality animation and rendering tool. Those who own an earlier version may want to upgrade for improved performance; but if you're looking only for new features, the upgrade isn't worthwhile.—SEAN WAGSTAFF

RATING: 

PROS: Rich feature set; beautiful and quick rendering; fast, reliable performance under Mac OS X; helpful online support.

CONS: Outdated Hub component; poor Mac OS 9 performance; no NURBS modeling.

ESTIMATED PRICE: \$2,495 (upgrade, from \$495)

OS COMPATIBILITY: Mac OS 9, Mac OS X

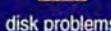
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powerful disk repair utility,
which is able to fix your



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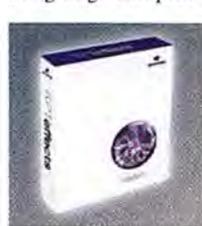
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KPT EFFECTS

New Photoshop Plug-ins for Productivity and Play

KPT Effects, a recent offspring of Procreate, is a set of nine plug-ins for Adobe Photoshop and other programs that accept Photoshop plug-ins. The CD contains versions for both OS 9 and OS X—the new, OS X-compatible version of Photoshop will have these Carbonized plug-ins waiting for it. But users of other KPT sets will find that, as with previous iterations, the plug-ins vary in usefulness.

The most practical of the lot is Gradient Lab, which presents a powerful approach to designing complex gradients and blends.



Designers can achieve spectacular results by combining blurring, contrast, and blending modes in the filter's built-in layers palette. Channel Surfing puts a welcome spin on Photoshop's

Channel Mixer; it lets you base the sharpening, blurring, or adjusting of a channel's contrast on influence from another channel.

Less practical but still fun, Scatter distributes user-defined particles over an image, and if you want swirling drops of fluid on your image, Ink Dropper will do the trick. Frax-Flame II is the more powerful sequel to a KPT 5 plug-in, and Fluid is similar to KPT 6's Goo, down to its ability to create animated QuickTime movies.

KPT has clung so persistently to its non-standard interface that this interface has become something of a standard. Though it may take a bit of getting used to, KPT does have elegance and consistency going for it. The Recall panel lets you quickly compare combinations of parameter settings, which can be added to the already ample Presets library.

Macworld's Buying Advice

Graphic artists who own other sets of KPT plug-ins probably won't find enough here to justify a \$200 investment. But OS X compatibility is a plus, and if you're starting a plug-in collection, this set offers a nice balance of practical and playful effects.—GALEN FOTT

RATING: ★★★★★

PROS: Good variety of effects; printed manual.

CONS: Nonstandard interface takes getting used to.

ESTIMATED PRICE: \$199

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Procreate, 800/772-6735,

www.procreate.com

DAVE 3.1

Essential Tool Gives Macs Hassle-Free Access to Windows Networks

Despite new cross-platform-networking features built in to Mac OS X and Windows NT, Mac users have not been equal citizens on a Windows-based network until now. Thursby Software's Dave 3.1 lets you share files and printers over a Windows network more easily than ever, making this version an indispensable tool.

Updated for OS X, Dave 3.1 goes beyond simple Aquafication to add new features such as a more intuitive configuration interface and live access to Windows resources, as well as support for long file names and for sharing files larger than 2GB.

Hop on a Windows Network

Dave 3.1 has a setup wizard that helps you configure access to shared PC resources, including Microsoft networks, and a drag-and-drop interface on the Mac side for sharing folders with Windows users. To share a Mac folder or printer, just open the Dave Sharing pane (in OS X's System Preferences), drag the folder you want to share into the main window, and set access permissions.

Share Some Printers

Printer sharing is much improved in Dave 3.1. In addition to drag-and-drop support for sharing Mac printers with PCs using the same interface as Dave's file-sharing components, this version of Dave—when running on OS X—adds support for sharing Mac ink-jet printers with PCs (to its existing support for PostScript printer sharing under OS 8 and OS 9). PC users simply set up the shared printer using the Add Printer command, as they would set up any networked printer.

A big downside for some users is that under OS X, Dave doesn't let Macs access PC printers, though this feature is available under OS 9 and earlier. Thursby says the structure of OS X limits this feature, but a forthcoming maintenance release of Dave will add support for sharing PC-based PostScript printers.

Share Some Files

Giving PC users access to shared Mac folders is as easy as dragging them into a window. From a PC, a Mac (with its contents) is just another item in the Network Neighborhood. From an OS 8 or OS 9 Mac, shared PC resources appear in the Chooser and require a few clicks to mount for the first time, as was the case in previous versions of Dave; however, now you can ease this process by creating aliases to PC volumes.



Locked Out When you drag a Mac folder into Dave 3.1's Dave Sharing pane, you can choose a user name, as well as passwords for read-only and write access to the newly shared item.

Running in OS X, Dave adds the Dave Network item to the Connect To Server window, allowing you to browse a list of PCs and workgroups currently on the network.

Freshened Interface

Criticism of previous Dave versions frequently concerned the program's clunky interface—many dialog boxes were not modal—and complex configuration. The addition of a setup wizard has eliminated the need for most Dave users to learn Windows terminology. Furthermore, the ability to view and connect to live, shared PC resources makes Dave a snap to use on a daily basis.

Macworld's Buying Advice

At \$149, Dave 3.1 may be a tough sell in a budget-conscious company, especially if retaining or acquiring a Mac is already a source of conflict. But if your office network is dominated by Windows servers and you need to use a Mac to exchange files, this product is a must-have. Because there's no need to make modifications to a PC network or its clients to use Dave, the program provides a hassle-free way for Mac users to keep their office Macs, without any intervention from a company's IT department.—SHELLY BRISBIN

RATING: ★★★★★

PROS: Effortless cross-platform file sharing; simplified configuration; file-browser access to Windows servers in OS X.

CONS: Somewhat expensive; file access remains clunky in OS 8 and OS 9.

ESTIMATED PRICE: \$149

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Thursby Software, 817/478-4070,

www.thursby.com

VB50HRTV

Watch TV on Your Desktop Monitor



Whether you're a college student in a tiny dorm room or you just want to check in on the

happy couples of *Temptation Island* between downloads, you can use ViewSonic's affordable VB50HRTV TV tuner to transform your VGA display into a television set capable of displaying seamless video at resolutions as high as 1,024 by 768 pixels at 75Hz.

Setup is easy and requires no software or internal hardware. Other products that let you watch TV on your computer's monitor require you to either install a PCI card or attach a USB device, allowing you to capture or view a small 640-by-480-pixel window on your Mac's desktop. But the VB50HRTV is a switch that allows you to choose between viewing computer data or a full-screen TV signal on your monitor. (There is no picture-in-picture feature, but this would be a welcome improvement in a future release.)

To use the VB50HRTV, plug your monitor into the unit and use the supplied cable to connect your computer's VGA-out port to the VB50HRTV's RGB-in port. Then hook up some speakers to the unit's minijack audio port, connect your video source (antenna or cable TV, VCR, game console, or digital camcorder) to one of the video-in ports (RF, S-Video, or Composite), and then use the included remote control to switch between computer data and *The Dating Game*.

The VB50HRTV's buttons let you select input, adjust volume, and change channels. You can set preferences such as default input, resolution and refresh rates, and sleep timers using the 28-button remote control and the on-screen display. Unfortunately, the VB50HRTV doesn't support universal remotes.

Macworld's Buying Advice

It's not for everyone, but college students and TV addicts with limited home or office space will love this clever little box that turns your VGA monitor into a high-resolution TV set.—JAMES GALBRAITH

RATING:

PROS: Inexpensive; easy setup; no software needed.

CONS: Lacks support for universal remotes; for use with VGA displays only.

ESTIMATED PRICE: \$130

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: ViewSonic, 800/888-8583, www.viewsonic.com

GRAIN SURGERY 1.0

Powerful Photoshop Plug-In

Grain Surgery, Visual Infinity's new plug-in for Adobe Photoshop 5.5 and later, is a powerful and easy-to-use noise-manipulation program that lets you remove noise from an image, add noise to an image, and copy one image's noise to another.

What's All This Noise about Noise?

Experienced designers typically employ blur or despeckle filters to reduce noise from digital cameras or grain from scanned images. Although these tools can be effective, they also have a tendency to eliminate important image detail.

Grain Surgery takes a more intelligent approach to noise removal. To understand present noise, the program checks areas of your image that contain simple, flat colors. It then removes recognized noise patterns from the image.

The plug-in's simple dialog box includes a large preview window with an easy-to-use slider control for specifying how much noise reduction to apply. You can also set the number of noise samples to use and where they should be taken from.

Grain Surgery's results are impressive but not perfect. Though it does a very good job of removing noise, it also tends to soften fine image detail.

Got a Match?

You can use Grain Surgery's Add Grain tool to add noise and grain to an image. In addition to controlling grain size, intensity, and saturation, you can select grain options that mimic specific kinds of film.

The plug-in's Match Grain feature can analyze the grain in one image and then add it to another image to help you create more-believable composites.

Macworld's Buying Advice

Grain Surgery will be a good addition to almost any editing arsenal. There are other techniques that may remove noise as well as Grain Surgery does, but the program's adding and matching features make it worth its price.—BEN LONG

RATING:

PROS: Simple interface; powerful noise-manipulation tools.

CONS: Noise removal often softens fine detail.

ESTIMATED PRICE: \$199

OS COMPATIBILITY: Mac OS 9

COMPANY: Visual Infinity, 877/596-0931, www.visinf.com

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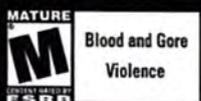
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Deimos Rising, Spider-Man

All about Action

THE EXPRESSION *TWITCH FACTOR* IS MOST COMMONLY ASSOCIATED with arcade games. It describes the level of action that a game provides: the more frenetic the game, the greater its twitch factor. In this month's installment of *The Game Room*, we'll be discussing two new titles that unquestionably have heart-poundingly high twitch factors—Deimos Rising, from Ambrosia Software, and Spider-Man, from Aspyr Media.

Rising Star

David Wareing has once again joined forces with Ambrosia Software to create a twitch masterpiece: Deimos Rising, the long-awaited sequel to Mars Rising. Inspired by classic coin-op arcade games of the 1980s, Deimos Rising is a futuristic shooter that puts you in the cockpit of an assault fighter as you fight to quell a rebellion that has broken out on the terraformed Martian moon Deimos. That's all the pretext you'll need, because when you're playing Deimos Rising, it's all about the action.

This title harks back to the days when arcade games cost a quarter. Waves of enemy ships assault you from the air while ground installations such as cannons and tanks fire at you. Successfully vaporizing your enemies generates goodies, which you collect for point bonuses, shield power-ups, bonus multipliers, and more.

Because Mars Rising is a Mac-game classic, Deimos Rising had big shoes to fill. This game is more difficult than its predecessor, as it was developed to appeal to Mars Rising veterans. Its challenging learning curve can even lead to frustration: ground targets are tougher to take out, and enemy aircraft are more aggressive.

Deimos Rising has better graphics than Mars Rising, and the action is as smooth as silk. Each new level equips your craft with new arrays of offensive and defensive hardware to help keep the wolves at bay.

You can play new games at the start of whatever level you last completed, but there's a catch: you'll start that level with only a single ship. To start with a full set of ships, you have to play from the beginning. Such a limitation seems unnecessary outside of an



Demonstrating Air Superiority In action-packed Deimos Rising, you'll take out targets in the air and on the ground.

arcade, but the challenge helps make the game last longer. Perhaps some folks will feel they get more for their money that way.

third-party utility such as CarvWare's GamePad Companion (www.carvware.com).

Deimos Rising is a worthy successor to Mars Rising, and it's everything we've come to expect in a game authored by David Wareing. With better graphics and sound and the same smooth game play, it'll definitely appeal to fans of classic arcade games. And it should grab some new recruits, too. Download it and try it out for yourself.

Does Whatever a Spider Can

At long last, we have a spider-sensitizing action adventure for the Mac. Westlake Interactive and Aspyr have brought the new Spider-Man title to the Mac, courtesy of Activision. In this game, you take on the role of Peter Parker, student-turned-superhero (thanks to a radioactive spider bite).

The upcoming opening of *Spider-Man* the motion picture will undoubtedly bring a continued interest in this title, but Aspyr's game is more influenced by the comic book than by the movie. Comic-book-style covers mark new levels, and narration from Spider- >>

The game's two-player mode lets you and a friend blast away at Deimos's rebels from the controls of one Mac. You and your wingperson can use either different areas of the keyboard or different game controllers. Mac OS X doesn't support game pads natively, though you can get one to work with a

arcade, but the challenge helps make the game last longer. Perhaps some folks will feel they get more for their money that way.

Deimos Rising harks back to the days when arcade games cost a quarter.

Man cocreator Stan Lee peppers the game.

The plot: Spider-Man has been framed by his archenemy, Dr. Octopus. The cops, Spider-Man's other enemies, and thugs galore swarm the city, and Spider-Man has to save the day and clear his name before it's too late.

No Spider-Man epic would be complete without confrontations involving costumed supervillains. And this game doesn't skimp—Spidey will take

on enemies such as Scorpion, Venom, and Rhino. He'll also hook up (briefly) with his friends Black Cat, Daredevil, and The Human Torch.

Spider-Man is a twitch-laden, 3-D-action game rendered in a third-person perspective. You control Spider-Man from just over his shoulder, and in this way the game is evocative of *Tomb Raider* and *Oni*. Spider-Man can climb walls and ceilings, rappel using his special

web formula, spray sticky webs on his foes, and apply some martial-arts-style kicking and punching to take down his many enemies. Like most third-person games, there's a lot of puzzle work: you must trigger a button to open a lock, for example, or find a safe place to store a bomb before it explodes.

This game's roots are in the video-game-console world, and it shows. Spider-Man is ideally suited for use with a game pad or some kind of game controller. Spider-Man works adequately with the keyboard, but the default key map is cramped and awkward (it can be customized, however). Because of system limitations in Mac OS X, there was no support for game pads at the time of this writing (although Spider-Man may work with GamePad Companion).

You can save your game between levels, so don't worry about having to beat this title in a single sitting. Don't look for multiplayer capabilities, though—Spider-Man's single-player limit is another manifestation of its video-game-console roots. But it has some nice amenities—a training mode helps you hone your skills (and there's a Kid mode that provides a less frustrating approach for younger gamers). You can check out custom Spidey costumes and enter cheat codes if you get too frustrated (they're available at various Web sites). You can also adjust graphics resolution, sound effects, and keyboard and game-controller layouts. A Gallery area lets you watch movies and check out images and biographies of the game's characters.



Catches Thieves Just Like Flies Spider-Man confronts countless scoundrels—as well as supervillains such as Scorpion.

Spider-Man's graphics are simple and a bit on the blocky side. Characters don't lip-synch dialogue (their mouths stay still), and interstitial movies are indistinct. These are all understandable and unfortunate problems, given the title's pedigree as a Sony PlayStation game.

Camera control is my single biggest complaint. Automatically controlled, the game's camera is usually positioned behind and above Spider-Man, but in

certain locations, the camera swivels around to awkward positions. This occasionally caused action to pause at inopportune times as I waited for the camera to reorient itself, allowing the bad guys to get in a few licks before Spidey could take them down. I would have preferred a customizable way of tracking Spider-Man's moves or the ability to switch quickly between fixed camera positions.

Spider-Man is a fantastically fun and challenging title. Like many Mac game titles brought over from the console world, it has a few warts, but none serious enough to keep you from buying it. If you're looking for some web-slinging superhero fun, grab this game.

Macworld's Buying Advice

Deimos Rising offers some classic, albeit occasionally frustrating, Mac arcade-game action. Spider-Man may have a few flaws because of its video-game-console heritage, but it's still superfun for lovers of this comic-book superhero. □

DEIMOS RISING

RATING: ★★★★★

PROS: High twitch factor; lovely graphics; smooth action.

CONS: Frustrating learning curve; annoying limitations on restarts.

ESTIMATED PRICE: \$20

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Ambrosia Software, 716/325-1910, www.ambrosiasw.com

SPIDER-MAN

RATING: ★★★★★

PROS: Lots of fun for fans of third-person-action games and fans of the comic-book superhero.

CONS: Awkward keyboard layout; poor camera control.

ESTIMATED PRICE: \$45

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Aspyr Media, 512/708-8100, www.aspyr.com

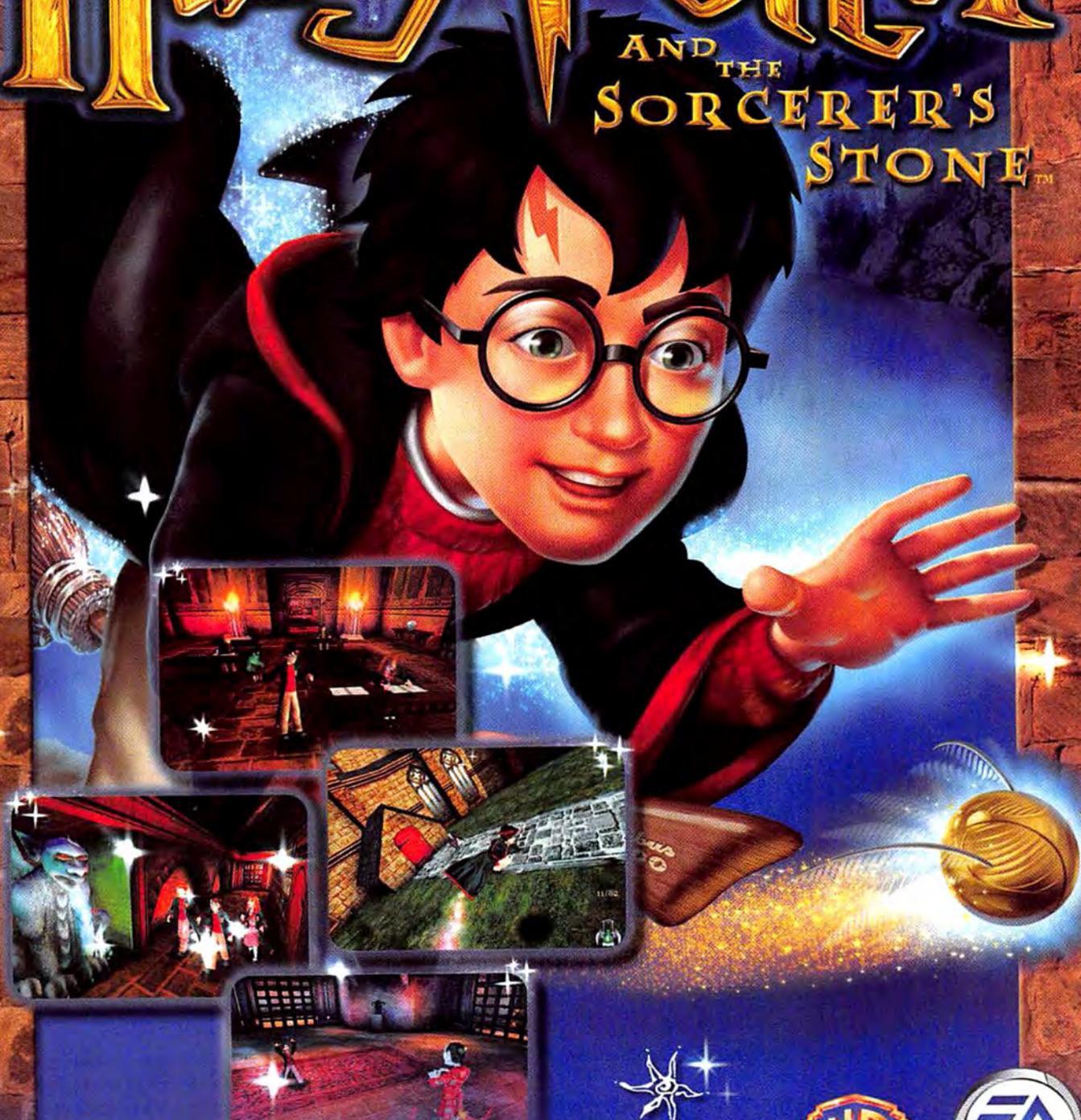
Once bitten by a radioactive banana slug, MacCentral.com senior editor PETER COHEN has a special superhero outfit he wears when reviewing games for *Macworld*. He can't sling webs, but he leaves a mean trail of slime in his wake.

At last, it's a spider-sense-tingling action game for the Mac.

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BY DEKE McCLELLAND
AND KELLY LUNSFORD

The Wait Is Over

PHOTOSHOP FOR MAC OS X ARRIVES: OUR EXCLUSIVE FIRST LOOK

Apple has spent the last four years promoting Mac OS X as the future of the Macintosh—that Apple's existence hinges on the public's adoption of the new operating system is not an overstatement. And yet, for many Mac users, moving to OS X has been contingent on a factor that Apple can't control: the availability of an OS X–native version of Adobe Photoshop.

With Adobe's announcement of Photoshop 7.0 for OS X, the wait is finally over.

But OS X compatibility isn't Photoshop's only new feature. Building on the improvements in previous versions—which saw the introduction of the History palette, editable text, layer effects, vector-based drawing, and a host of Web tools—Adobe (800/833-6687, www.adobe.com) offers several innovative new tools

designed to make graphics professionals more productive, whether they spend their time painting, retouching, sorting through large image collections, or building rollover effects for the Web.

Adobe says it will ship Photoshop 7 this spring. Since the program is still a beta, we can't yet test it for speed or reliability. But we can give you an in-depth sneak peek at one of this year's most anticipated software releases.





OS X Native

In addition to running on OS 9.1 and 9.2, Photoshop 7 is fully compatible with OS X 10.1.1 and higher. This is good news for designers, photographers, and pre-press professionals who have been cautiously waiting for Adobe before making the transition to OS X.

An OS X version of Photoshop fills the last remaining gap in Adobe's suite of graphics and publishing tools (OS X versions of InDesign and Illustrator are already on store shelves) and affirms the company's commitment to Apple's new operating system. But don't expect any OS X-only features. As with Adobe's other OS X applications, Photoshop 7 offers the same features and functionality on both operating systems. However, the move to OS X does mean that Photoshop, notorious for hogging system resources, can now take advantage of OS X's inherent strengths, such as protected memory and preemptive multitasking.

One problem Photoshop 7 users may face in OS X is a lack of plug-in support; plug-ins have yet to run natively in OS X (see "The Waiting Game"). But according to Adobe, most Photoshop 6 plug-ins will work with version 7 in OS 9 or in OS X's Classic mode. However, plug-ins that require direct access to SCSI devices, such as scanners and printers, may not work even in Classic. Therefore, if you depend on a third-party plug-in for your day-to-day work, you should find out whether the manufacturer has plans to update it.

Painting and Retouching

Photoshop has never been known for its painting abilities, so one of Adobe's priorities for Photoshop 7 was to overhaul the program's painting engine. To that end, Adobe enlisted programmer Jerry Harris, codeveloper of the Mac's first color painting program, PixelPaint. The results are some of Photoshop 7's most impressive new features—not just for artists, but for anyone who uses a brush, whether it's to retouch, mask, dodge, or smear.

Painting Tools With Photoshop 6, Adobe axed the floating Brushes palette. In version 7, they've brought it back (with its old keyboard shortcut, F5) and put it on steroids. The revised Brushes palette features multiple panels and more than 50 new settings and variables; combined, they give you new levels of control over your brushstrokes (see "A Better Brush").

Although they're not as powerful as those in Procreate's Painter 7 (800/772-6735, www.procreate.com), Photoshop 7's painting tools let you easily create effects you couldn't in previous versions of the program. For example, you can now add jitter to your brushes, spread paint droplets, mix foreground and background colors, paint textured strokes, and scale custom brushes. Most brush parameters respond to input from pressure-

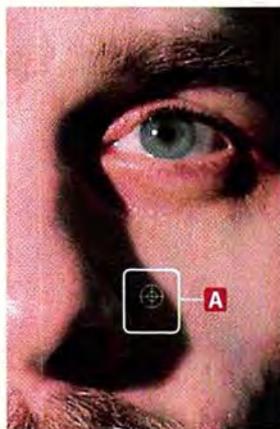
Brush Me, Heal Me



You can quickly fix a multitude of flaws with Photoshop 7's Healing brush and Patch tool; both let you copy texture from one part of an image to another while preserving the latter area's original color. To show you how to put these two new tools to work, I started with a less-than-perfect photo of myself (left) taken with an Olympus E-10 digital camera. I then went to work on giving myself a digital makeover.

Using the Healing Brush

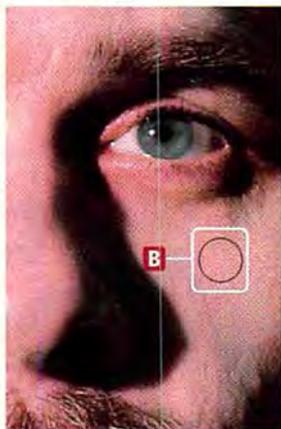
My first task was to erase the tiny bumps from under my eyes. I selected the Healing brush by pressing the J key (the shortcut previously assigned to the Airbrush tool). Then I option-clicked inside the image to set the point from which I wanted to clone the texture. In this case, I chose the shadow to the side of my nose, where the skin appeared smoother **A**.



Having set the source point, I painted over the flawed portion of the image. I began my brushstroke inside the shadow just below my eye. This ensured that the shadows from the source and destination areas would align properly. After Photoshop completed the drag, it took a moment to blend the colors around the brushstroke **B**.

with the texture from the source.

If you're not satisfied with the results, you can undo the healing, deselect the Align option in the Options bar (to avoid replaying the same stroke), and try your drag again.

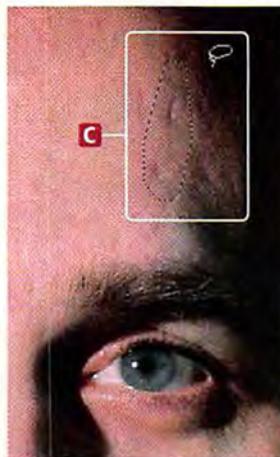


Using the Patch Tool

For larger areas that don't respond well to the Healing brush, such as the scars on my forehead, the Patch tool can offer an easier solution.

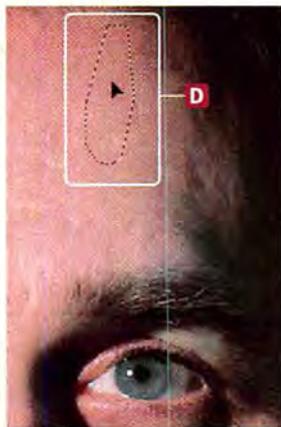
First, I selected the area I wanted to fix with the Lasso tool **C**. (You can use any selection tool or method you like for this part.) I feathered the selection slightly to blur it and soften the transitions.

Then, with the Patch tool selected (shift-J), I dragged the selection outline to an area of the image with smoother skin. The moment I released, Photoshop healed the selection, using texture from the



new area **D** and the colors that surround the original selection outline.

The results are smooth skin and a much-improved complexion.—DEKE McCLELLAND





sensitive tablets. Photoshop 7 even introduces support for more-sophisticated stylus input such as tilt and thumbwheel, bringing the program up-to-speed with the present generation of tablets from Wacom (800/922-9348, www.wacom.com).

Of course, all these settings take some getting used to. Fortunately, the bottom of the Brushes palette includes a live preview window, so you can immediately see the effect of different parameters on your brush. The program also ships with hundreds of brush presets, so you can start painting without having to set your own.

The Healing Tools Photographers and designers who find themselves spending a lot of time laboriously fixing scratches, blemishes, and other imperfections with Photoshop's Stamp tool will appreciate Photoshop 7's two new cloning tools, the Healing brush and the Patch tool. They provide quicker, more-consistent results for basic touch-ups.

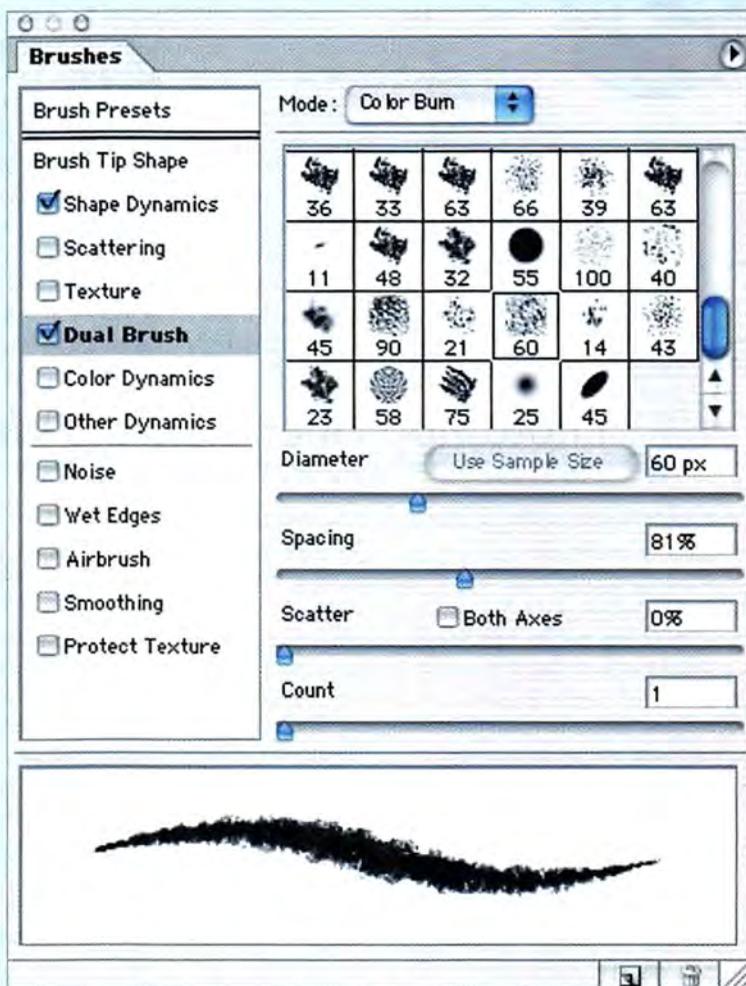
Like the Stamp tool, the Healing brush clones pixels to cover up flaws. But instead of copying colors from one portion of an image and applying them to another, the Healing brush clones only the *texture*, drawing the color from the area around the imperfection (see "Brush Me, Heal Me"). This makes the tool well suited to touching up wrinkles and other facial imperfections, since the color in such areas may be fine even though the texture needs to be fixed. The Patch tool performs the same function as the Healing brush, but it lets you select large areas for healing rather than manually brushing on the effect. Neither tool will take away all the mundane work of retouching photos, but by sampling color and texture independently, Photoshop is often able to create patches that appear entirely consistent with their surroundings.

Good-bye, Airbrush Some longtime users will be surprised by the disappearance of the Airbrush tool from the toolbox. The Airbrush feature is now available to painting and editing tools via a toggle in the Options bar. This means that you can use any brush to lay down a continuous stream of color, even when you hold the cursor still—useful when you want to gradually build up color for an effect such as dodging. You can also control the rate at which an effect flows, analogous to the old Airbrush tool's Pressure setting.

The File Browser

Managing your digital images sometimes takes more time than editing them. You must sort through meaningless file names, rotate portrait shots, and review multiple versions of the same scene. For years, less-expensive image editors, including Adobe's \$99 Photoshop Elements, have addressed this problem by offering image browsers, windows that let you preview entire folders of images. Now Photoshop includes one as well. The File Browser feature offers an efficient way to view, manage, and select your files without ever leaving the program.

Getting the Big Picture As in Photoshop Elements, the File Browser palette in Photoshop 7 is resizable, and



you can dock the File Browser when it's in the way. But this is where the similarities end. Whereas Photoshop Elements' browser is bare-bones and difficult to navigate, Photoshop 7's is full-bodied and handy, giving you a folder explorer that shows all of the thumbnails for a selected file (with three options for thumbnail size), as well as the ability to view metadata and EXchangeable Image File (EXIF) data imported from your digital camera (see "Rank and File"). The latter is especially useful for digital photographers, since it can contain everything from the date and time an image was captured to the exposure and flash settings.

Controlling Your Photos Photoshop 7's File Browser also helps you manage your files. Instead of having to repeatedly switch between the Finder and Photoshop, you can now move and rename your files from within the File Browser. You can sort thumbnails by several different criteria (such as the date modified or color profile), or you can assign your own ranking values—useful when you're trying to sift through proofs and compare the best shot with several close runners-up. You can also rotate a portrait shot so that it's upright; Photoshop then automatically rotates the image when opening it.

A Better Brush

The reinstated Brushes palette contains eight panels, 50 new options, and a wealth of presets. A large preview window at the bottom of the palette shows you how your creation will look.

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There's one problem: Photoshop 7 saves all the information from its File Browser in an independent cache file linked to the folder name, so if you rename the folder, all the thumbnails—as well as ranking and rotation instructions—are lost. This is bad news for designers who share networked volumes: ranking and rotating applied from one computer on a network cannot be seen by others.

To address this shortcoming, Photoshop 7 lets you save a separate browser catalog for a folder of images. Networked Photoshop users can use this catalog to access previews and ranking and rotation

instructions. You can also include the catalog with your images when archiving them to a CD. Although this information is readable only by Photoshop, it ensures that any work performed inside the File Browser won't be lost later.

Workspace and Presets

You may spend a lot of time moving palettes, adjusting tool settings, and generally tweaking your environment, especially if you occasionally change your monitor's resolution, as when you're gauging artwork for the Web. To expedite these

Photoshop Fine-tunes the Web

When Adobe began bundling its stand-alone Web-graphics application, ImageReady, with Photoshop 5.5, the pair were a powerful one-two punch for Web designers. Photoshop, with its advanced image-editing features, provided the tools necessary for everyday graphics work, while ImageReady came packed with tools for creating dynamic Web elements such as rollovers and animations. In the latest versions of Photoshop and ImageReady (which has jumped from version 3 to version 7, to bring it into parity with Photoshop), Adobe adds some clever twists on image optimization, as well as several interface improvements geared toward increasing the productivity of Web-graphics pros.

Straight to the Web

The most essential and frustrating day-to-day task Web designers face is optimizing graphics for the Web—finding that delicate balance between maximum image quality and minimal image size. So it's not surprising that when Adobe looked at upgrading Photoshop and ImageReady, it focused most of its attention on the programs' optimization tools. ImageReady 7 and Photoshop 7 both feature several new tools aimed at giving designers more flexibility and better results when exporting their images to the Web.

Setting Your Priorities Optimizing Web output is all about making tough decisions. For example, keeping your company's name crisp and legible may be more important to you than preserving every detail of a background image.

Photoshop 7 and ImageReady 7 make it easier to tailor your GIFs and JPEGs by letting you prioritize layers of text and vector art, keeping them relatively intact when it's time to compress your images.

By clicking on a small button in the Optimize palette, you can set a range of quality levels for your images; the software then calculates appropriate settings (dither and lossiness for GIF; quality for JPEG) for your image and attempts to maintain as much quality as possible in those text and vector layers. The end result can be GIFs and JPEGs that retain crisp, clear text even though other parts of the images are dithered or show greater evidence of artifacts.

Transparent Changes The GIF file format doesn't support partial transparency. As a result, when you create a semitransparent

effect on a GIF image—a feathered drop shadow, for example—you currently have to matte that image, replacing the semitransparent pixels with opaque ones, to match the background color of your Web page. If you don't, you'll be left with a strange halo effect where your smoothly antialiased text or drop shadow ought to be. Unfortunately, matting your graphic also requires that you open and re-export the image with a different matte every time you change your page's background color.

To address this dilemma, Photoshop 7 and ImageReady 7 offer *dither transparency*. This option creates the illusion of partial transparency by combining transparent and opaque pixels in a dither pattern. As with standard image dithering, you can choose from three different dither-pattern algorithms when setting up a transparency dither.

It's a clever idea that works, more or less—a GIF with dither transparency will look equally good on any solid-color background and will look fine even on a multicolored pattern background, unlike images with solid-color mattes. Unfortunately, the dithering is still rather visible (see "A Different Dither"), and most conscientious Web graphics designers will likely continue to use matte colors (and create multiple iterations of graphics for pages with different background colors) rather than sacrifice the quality of their images.

Easy Access Another addition to both programs is a simplified way to define a GIF file's transparency. You can now quickly map any color to transparency by clicking on a button in the Color Table.



A Different Dither Traditional transparent GIF effects (left) are attractive but must be matted to a particular background color. Using ImageReady 7's dither-transparency feature, you can create a transparent effect that looks the same on any background (middle and right).



housekeeping tasks, Photoshop 7 lets you save workspaces and tool presets for easy access anytime.

When you save a workspace, Photoshop records the locations of all on-screen palettes and toolboxes. This means that you can set up multiple workspaces, each customized to a specific task, such as file browsing, retouching, or Web design. Workspaces come in handy when you're sharing a computer with one or more coworkers.

Tool presets can save you even more time. These let you store a tool's settings for reuse later. For example, say you have a printer that creates 3.25-by-4-inch snapshots. Rather than manually setting these specifications

In both programs, the Color table has also been changed to give users much better feedback about changes to their images. Now when you change a color in your image—including making it transparent—the Color Table displays both the original color and the new color in diagonal wedges of its square.

Rollover Redesign

In previous versions of ImageReady, creating rollovers—images that change when you move your mouse over them—could get confusing, requiring numerous, repetitive trips between the Rollover palette and the Layers palette. And it was far too easy to misassign layers or button states. ImageReady 7's new Rollover palette aims to change all that.

Unlike the old Rollover interface, which was modeled on the timeline-based Animation tab, the new Rollovers palette more closely resembles the Layers palette. The Rollovers palette lists each separate rollover action of your image, and beneath each action there's a breakout of what button states you've currently got programmed. By using the palette, you can make changes to rollover states with ease, especially if you're creating disjointed rollovers (where mousing over one item causes another item to change). You can also opt to have the Rollovers palette display animation states, making it your one-stop interface for modifying your design's dynamic characteristics.

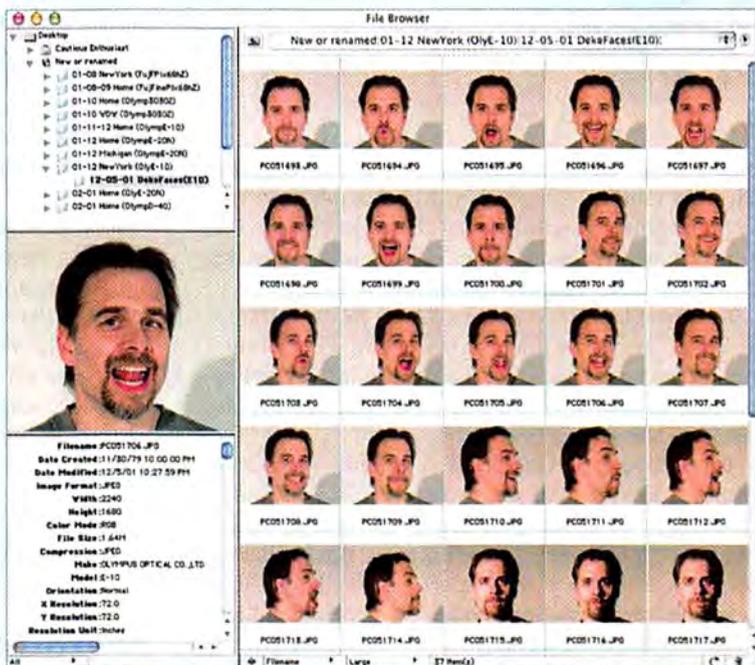
Secure Galleries

Users of Photoshop's Web Gallery feature, especially those who are concerned with copyright infringement, will be happy with the new Watermark feature, which automatically generates watermarks, including ones that contain copyright information, photo or illustration credits, and just about anything else you might imagine.

ImageReady Re-Emerges

In general, the new Web features of Photoshop and ImageReady 7 are modest in nature. But there's one big exception: ImageReady's Rollovers palette. If you've ever struggled while creating complex dynamic interfaces in ImageReady, you may feel that this one feature addition is worth the upgrade price.—

JASON SNELL



with the Crop tool each time you want to print, you can just select the appropriate preset. Likewise, you can use presets to store custom brushes, clone settings, selection modifiers, and more. Presets also let you keep a record of how you create an effect, so you can replicate it without a lot of fuss.

The Small Stuff

The rest of Photoshop 7's changes are minor modifications. Some are intended to address user complaints and suggestions; others advance Adobe's mission to expand promising technologies. Here are a few of the new Photoshop's highlights:

Spelling Checker If you create a lot of text in Photoshop, you'll appreciate the addition of the Check Spelling command, which is identical to the same command in other Adobe applications. In addition, you can now search for and replace text.

Liquify Introduced in Photoshop 6, the Liquify filter lets you distort an image by twisting or stretching its pixels. Version 7 brings some nice improvements to this filter—for example, the ability to zoom and scroll inside the Liquify dialog box, save a distortion grid for use on another image, and take advantage of unlimited undos. To get a better sense of how your distortion will fit in with the rest of your image, you can view other layers within the Liquify dialog box.

Auto Color The quick-fix commands Auto Levels and Auto Contrast correct the lightest and darkest colors in an image, but they scrupulously avoid the mid-tones. In Photoshop 7, Adobe introduces the Color command, which attempts to automatically correct an image's gamma values and remove color casts.

Blend Modes Photoshop 7 offers five new Blend modes, which let you mix the colors in brushstrokes

Rank and File In addition to image thumbnails, Photoshop 7's File Browser provides a navigation tree (top left) and access to EXIF data saved with digital photographs (bottom left).

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and layers to create custom dissolves and other effects. To help minimize confusion, Blend modes are now organized more logically than they were in previous versions, with all modes that lighten an image in one group and all that darken an image in another.

Renaming Layers To rename a layer in Photoshop 6, you had to option-double-click on it. Photoshop 7 finally lets you rename a layer directly inside the Layers palette simply by clicking on it. The same is also true for channels and paths.

Better Eyedropper You can now sample any color visible on screen by dragging it from the image window into the background. This means that you no longer need to copy and paste a color from, say, Adobe Illustrator; you can sample it without ever leaving Photoshop.

Visible Transformation Handles When you applied a transformation to a very large layer in Photoshop 6, the transformation handles sometimes extended outside the visible area of the window, meaning that you had to zoom way out to see what you were doing. Transformation handles now behave as they did in the old days; they're always visible inside the window.

Pattern Maker Photoshop 7 lets you use repeating patterns as textures, useful for emulating paper or canvas effects. The program will ship with predefined patterns, and you can use the Pattern Maker filter to create your own. This filter saves time by automatically generating multiple complex patterns from a selected portion of an image, but there's no way to paint or edit the patterns.

Picture Package Whereas previous versions of the Picture Package command let you print multiple copies of a single photo on one page, Photoshop 7 lets you combine multiple photos—great when you're trying to make the most of expensive coated ink-jet paper stock. You can also label the pictures, although you have little control over the label's position on the page.

PDF Passwords When saving Photoshop documents as annotated PDF images for viewing in Adobe Acrobat, you can now assign passwords and disable printing or copying. This is particularly useful when you are distributing photos from a Web site for approval.

WebDAV Like many of Adobe's applications, Photoshop 7 lets you check out and edit files from a WebDAV server, even if that server isn't located on the local network.

Scripting Improved scripting support helps you automate tasks such as cropping. You can use AppleScript or JavaScript to build and debug your scripts directly within Photoshop 7.

The Last Word

There are some issues that Adobe didn't address with this update. For example, you still can't edit keyboard

The Waiting Game

An OS X version of Photoshop means that graphics and prepress professionals can, for the first time, seriously consider moving to Apple's new operating system. The only question is: Will their favorite Photoshop plug-ins move with them?

Many Photoshop users depend on plug-ins for everything from high-end color correction to unusual image effects. But although most Photoshop 6 plug-ins should work fine with Photoshop 7 running in OS 9 or in OS X's Classic mode, they do not yet run natively in OS X.

Many plug-in developers say they're already working to convert their products to OS X; however, the process—rewriting hundreds, if not thousands, of lines of code—takes time. As a result, many companies are taking a selective approach to Carbonizing their software. Instead of trying to rewrite code for every program it offers, Alien Skin Software (888/921-7546, www.alienskin.com), maker of the popular Eye Candy plug-in series, says it will focus on having OS X versions of its newest products, such as Eye Candy 4000, available when Photoshop 7 is finally ready to ship. As a result, anyone who depends on Alien Skin's older plug-ins, such as Xenofex, will have to wait for the next versions to get OS X compatibility.

Andromeda Software (800/547-0055, www.andromeda.com), which offers more than a dozen Photoshop filters and plug-ins, is taking the slow and steady approach to OS X compatibility. "We're definitely planning to Carbonize everything," says Product Manager Louann Barbeau. "But it'll be gradual. We'd love to see them all at once, but our engineers are swamped." According to Barbeau, Andromeda will Carbonize each of its plug-ins as it updates them—usually within a year of the last release.

Of course, if you aren't the patient type and are looking for some instant OS X satisfaction, there are a number of OS X options already available. For example, Procreate (800/772-6735, www.procreate.com) began shipping its masking tool, KnockOut 2, and its suite of image filters, KPT Effects, last year. Likewise, Auto FX Software (205/980-0056, www.autofx.com) has released OS X versions of two of its plug-in suites—Dreamsuite 1.10, and Photo/Graphic Edges 5.0—with its color-correction software, AutoEye, soon to follow.

With Adobe at last making a full commitment to Apple's new operating system, more and more third-party plug-in developers will begin making the switch as well. Until then, if there's a particular Photoshop plug-in you just can't work without, you'll need to backtrack to OS 9.—KELLY LUNSFORD

shortcuts in Photoshop, the program lacks a good red-eye reduction filter similar to the one in Photoshop Elements, and it has no resizable previews in filter dialog boxes (or in the Variations window). Photoshop's effects filters remain unchanged and static, despite the introduction of equivalent dynamic filters in Adobe After Effects several years ago. (As a result, a growing number of motion designers use After Effects for their still-image work.)

But in the end, most of these are quibbles for the hard-core Photoshop geek. For most users, Photoshop 7.0 offers enough new features—OS X support; the rewritten paint engine, with its innovative Healing brush and "natural media" feel; the integrated File Browser feature and new workspace tools; AppleScript support; and small but important Web-productivity enhancements—to make upgrading more than worthwhile. □

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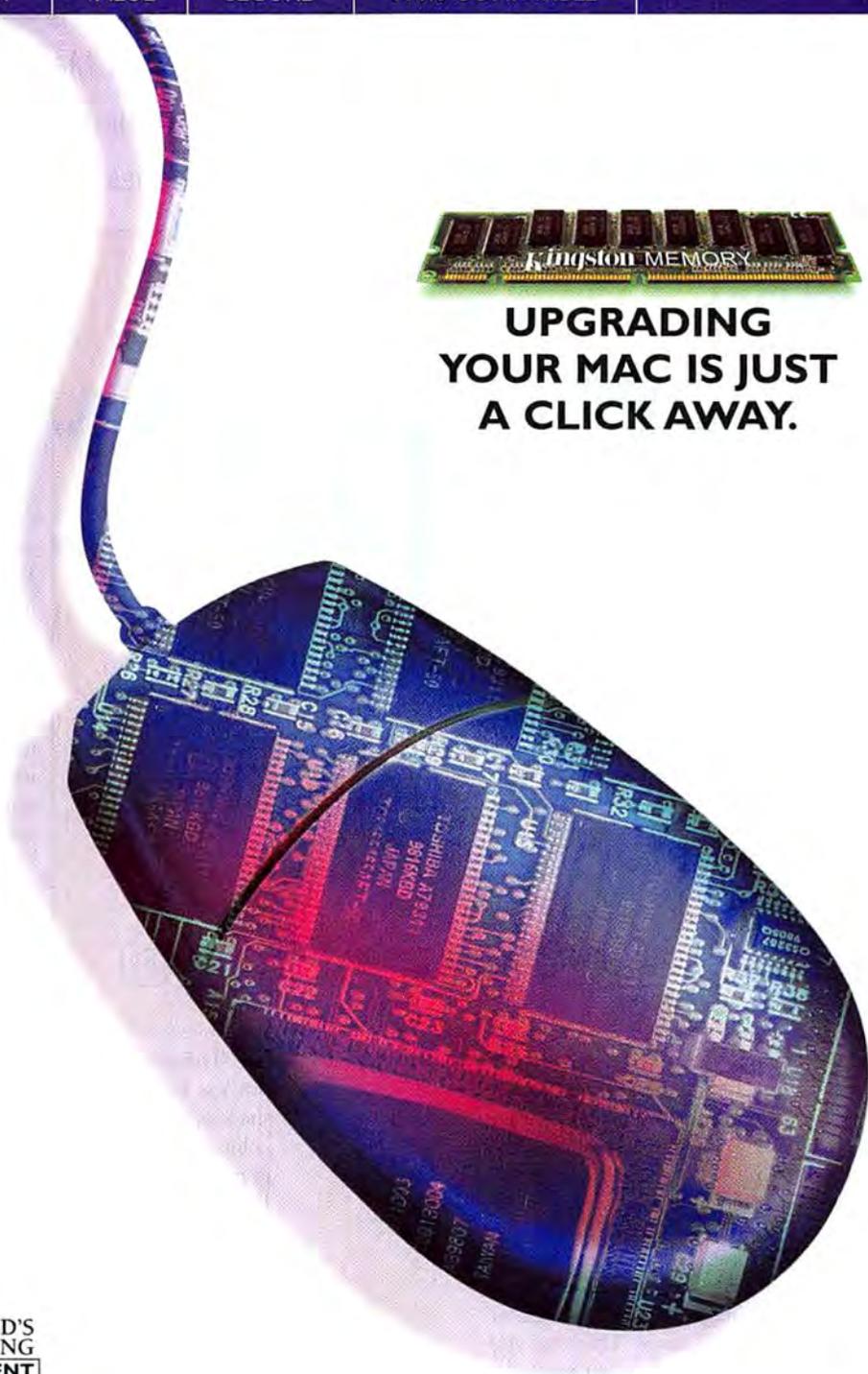
VALUE

SECURE

100% COMPATIBLE



**UPGRADING
YOUR MAC IS JUST
A CLICK AWAY.**



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DV camcorders, digital cameras, and DVD players are everywhere these days. But until recently, there wasn't anything that linked all these digital devices, making each an extension of the whole. That's the idea behind Steve Jobs's *digital-hub* strategy, unveiled at Macworld Expo in January 2001 and completed this year. Now all Macs ship with a well-rounded suite of creative tools: iPhoto, for capturing, cataloging, and printing digital photos; iTunes, for organizing and playing

music; iMovie, for capturing and editing movies; and (for SuperDrive-equipped Macs) iDVD, for burning movies to DVD. Add Apple's \$399 iPod music player, and you've got the digital lifestyle firmly in your grasp.

Want to get the most out of your own digital hub—your Mac? Read on for tips and advice about making expert use of all these Apple products that begin with the letter *i*.

Inside iPhoto

Apple's latest addition to its digital-hub strategy is the OS X-only iPhoto, a free, easy-to-use program for organizing and sharing digital photographs (see "iPhoto 1.0"). But just because iPhoto is easy to use doesn't mean that it has no undiscovered depths.

Shortcuts iPhoto makes it easy to download photos from a digital camera, and importing photos already on your hard drive is just as elementary. Sure, you can choose Import from the File menu, but you can also add images to your library just by dragging them from your desktop to iPhoto. All your iPhoto images are stored in the iPhoto Library folder (within your OS X Pictures folder). Photos are organized by the date they were created, in nested folders for years, months, and days.

Each time iPhoto imports a group of images, it saves that collection as a *roll*, similar to a roll of film (see "Roll 'em"). If you've got a lot of images to import, consider adding them in small, related collections. That way, you can separate vacation photos by location, for example, instead of creating one gigantic roll by dragging all your images in at the same time.

If you've got limited hard-drive space, be warned: iPhoto doesn't move your photos when you import them, it *copies* them. Delete the originals to save space.

Want to get a copy of a photo from iPhoto? Just drag the image out of the program—a copy will be made automatically. If you want to create an alias, hold down

Become an
iExpert
Master Apple's
Digital Hub,
from iPhoto
to the iPod
BY JONATHAN SEFF AND JASON SNELL

the ⌘ and option keys; to move the alias out of your library, hold down the control key.

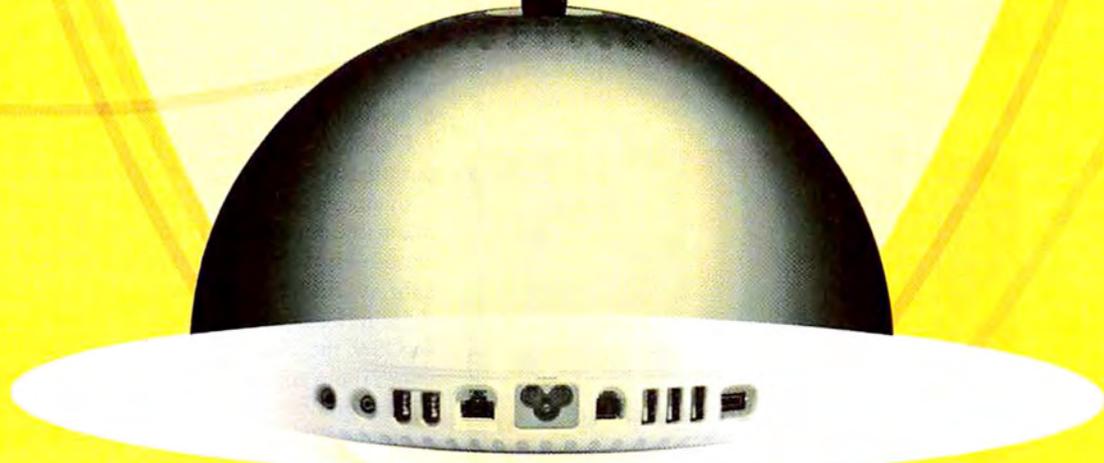
Once your images are in iPhoto, the first thing you'll want to do is rotate them to the proper orientation. You can click on iPhoto's Rotate button, but it rotates images counter-clockwise—a pain when all you need is to rotate your image 90 degrees clockwise. But that button *can* rotate your images clockwise: to reverse the default rotation, just hold down the option key while clicking. You can rotate images one at a time or in a group—hold down the shift key while clicking on images to select consecutive images, or the ⌘ key, to select several noncontiguous pictures.

Clever Preferences A lot of iPhoto's features are hidden in its Preferences window, which is accessed via the File menu. For example, you can opt to have the program place an on-screen frame around images

(see "Different Shades"), replacing the default drop shadow. You can change the default white background to any shade of gray or black. You can even keep this background color when you use a drop shadow—though the option is grayed out when the Shadow option is selected in the Preferences window. Just click on the Frame button, choose a color, and click on the Shadow option again.

Perhaps the most powerful iPhoto preference allows you to select what happens when you double-click on a photo. By default, iPhoto toggles into Edit mode, letting you quickly crop photos, remove red-eye, or transform color images into black-and-white. But the other two options are the ones with the most hidden potential: opening the image in a separate window or in an external editor.

Editing Window iPhoto's separate editing window is the most powerful section of the program. Open that window and click on the clear button in its top right corner; iPhoto presents you with a toolbar that includes several features unavailable anywhere else in the program.



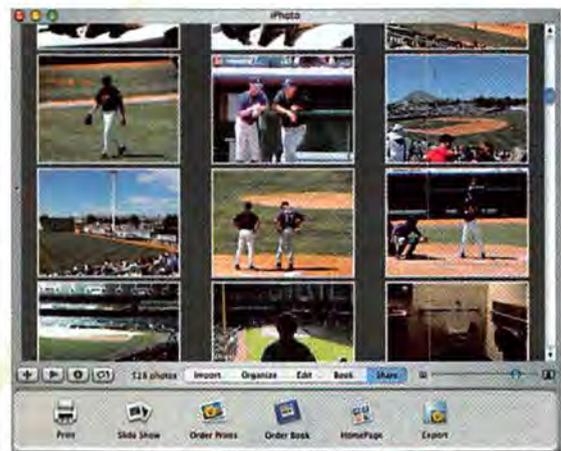
From this toolbar, you can still rotate, crop, and remove red-eye. But in addition to cropping by iPhoto's built-in presets, you can also choose custom crop dimensions, a useful ability when you want to print an image to fit a favorite picture frame, for example. Click on the Customize button, and you can modify the toolbar to give you instant access to the cropping dimensions you use most often. And you can always undo any editing errors by choosing Revert To Original from the File menu.

Roll 'em Every time you import a group of photos into iPhoto—from your camera or from your hard drive—the program places it in a single “roll” of film.



Different Shades

You can alter iPhoto's interface so that photos are matted on any shade of gray. You can also choose a solid border instead of a drop shadow.



Fix Photos for Free If you need color-correction tools, you can make Caffeine Software's free PixelNhance launch when you double-click on images in iPhoto. It adjusts brightness, levels, color, saturation, tones, sharpness, and noise.



Outside Help Even with its expanded toolbar, iPhoto's image-manipulation capabilities may not be enough. You can make one of several programs launch when you double-click on images in iPhoto. If you want only basic color- and contrast-editing tools, Try Caffeine Software's PixelNhance (www.caffeinesoft.com), a free, OS X-native program that lets you adjust an image's brightness, levels, color, saturation, tones, sharpness, and noise—all from a fairly straightforward interface (see “Fix Photos for Free”). Just be warned: once you've altered an image outside of iPhoto, its Revert To Original command won't work. To be safe, create a duplicate of your image by choosing Duplicate from iPhoto's File menu and then open *that* version of the photo in your external image editor.

Add-ons One notable iPhoto add-on comes from Apple itself: AppleScripts that you can download from www.apple.com/applescript/iphoto. Although iPhoto isn't scriptable, these scripts provide a workaround. Perhaps the most useful of the four primary scripts is Show Image File, which reveals in the Finder the source file of any iPhoto image you drag onto it.

Check out VersionTracker.com (www.versiontracker.com) to find other add-ons, such as the freeware plugins iPhoto Toast Export, from El Gato, and iPhoto Library Manager, by Brian Webster.

Tuning iTunes

The second incarnation of iTunes packs plenty of new features (see “iTunes 2.0”). Taking advantage of them all requires a little extra knowledge.

Get Visual For a bit of visual fun at your next party, create a sound and light show with the commands under iTunes' Visuals menu. Like many MP3-playing applications, iTunes lets you customize its graphical accompaniments, known as *visualizers*, via a simple plug-in architecture. You can find free visualizer plug-ins on the Web. Some of our favorites are David H. Goeb's DHG-BlueStarWarp (<http://homepage.mac.com/peagreen>), ArKaos Visualizer (www.arkaos.net), and Andy O'Meara's G-Force (www.55ware.com). Or, of course, you can try searching VersionTracker.com.

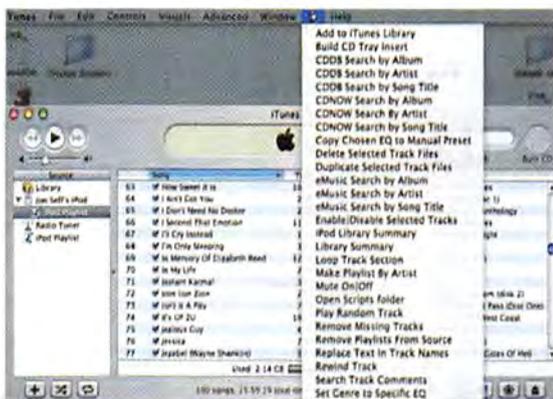
Once you've downloaded the plug-ins, you need to put them in the right place. If the plug-in doesn't come with an installer—most don't—you'll have to install it manually. First, quit iTunes. If you're using OS X, choose Home from the Finder's Go menu, open the Library folder, and then open the iTunes folder therein. Inside, you'll find the iTunes Plug-Ins folder. In OS 9, the Plug-Ins folder lives in the same folder as your iTunes application. Once you've opened the Plug-Ins folder, drop your add-ons into the Visual Plug-Ins subfolder. Restart iTunes, and the new plug-ins will be available under the Visuals menu.

Floating Player The iTunes interface harnesses OS X's new power by allowing you to control your music player while it's running in the background. Even when you're working in Adobe Illustrator, for example, you can use your mouse to toggle the iTunes play/pause button,

adjust the volume, and change tracks, all without leaving your Illustrator document—a big advantage with an application that shows or hides numerous palettes and windows when you bring it to or from the foreground.

Keep Rockin' When you use iTunes to listen to tracks that flow into one another—from a live album, for example—you'll notice a tiny, annoying gap between tracks. Get around this by setting iTunes' Crossfade Playback slider to 0 (zero) seconds. Open Preferences under the iTunes menu, click on the Effects tab, and click to activate Crossfade Playback. Make sure the slider is all the way to the left.

You can control iTunes 2.0 with AppleScripts. To get you started, Apple provides 28 scripts, at www.apple.com/applescript/itunes/, for playing random tracks, making text lists of your iTunes and iPod libraries, removing deleted MP3s from a library, applying equalization, applying EQ settings for music genres, and much more (see "Scriptable Songs").



TIP
TO PAN AROUND A MAGNIFIED IMAGE IN iPHOTO'S EDIT MODE, CLICK AND DRAG THE MOUSE WHILE HOLDING DOWN THE ⌘ KEY.

Scriptable Songs You can use AppleScripts with iTunes 2.0.3. To get you started, Apple has provided 28 scripts, at www.apple.com/applescript/itunes/, for playing random tracks, making text lists of your iTunes and iPod libraries, removing deleted MP3s from your library, applying EQ settings to entire genres of music, and more.

iTunes 2.0

FREE MP3 APPLICATION MATURES

Amidst the hubbub surrounding Apple's release of the iPod (iMacWorld; Reviews, January 2002), Apple released version 2.0.3 of its iTunes audio program, adding the support necessary for transferring files to the portable player. But that doesn't make this version a one-hit wonder—it has several new features that users have requested.

New and Improved

Foremost among iTunes 2.0's improvements is a 10-band graphic equalizer with 22 presets (or EQ settings) for rock, hip-hop, classical, and everything in between (see "EQ IQ"). You can move each slider individually and save the results as your own presets.

There's also a Sound Enhancer that helps add some of the warmth stripped from songs when they're compressed into the tiny MP3 format. The result is better-sounding music from iTunes.

Another new feature is the ability to cross-fade tracks, overlapping the end of one with the beginning of the next—you can set a cross-fade to last as long as 12 seconds. It's a great feature for parties, but it would be nice if these cross-fades carried over when you burned your songs to audio CDs.

iTunes can now burn MP3 CDs—that is, data CDs in the ISO 9660 format—filled with 650MB to 700MB of MP3 files. This allows you to get more than 10 hours of music on a single CD-R playable in some CD players and many newer DVD players. Of course, you could do this before by popping in a blank CD and formatting it as an MP3 CD, but being able to do so from within iTunes is an added convenience.

Apple has also added AppleScripting capabilities to iTunes, meaning that you can create scripts to control most iTunes actions. Still missing, however, are ways to easily change skins (the GUI's look), record directly into iTunes, and broadcast over the Internet—all features that iTunes' predecessor, Casady & Greene's now-defunct SoundJam MP, offered more than a year ago.



EQ IQ iTunes 2.0.3 has a 10-band graphic equalizer with presets for music genres and treble, bass, and voice boosts. The Sound Enhancer adds warmth stripped away by the MP3 compression process.

Macworld's Buying Advice

With its new features, iTunes 2.0.3 has become a fully capable MP3 player, encoder, and jukebox. Its few missing features are overshadowed by an easy-to-use interface—and the fact that it's free.—JONATHAN SEFF

RATING: ★★★★★

PROS: iPod integration; equalizer; cross-fader; understandable yet powerful interface; free; direct burning to audio and MP3 CDs.

CONS: Little skin support; no direct recording of audio; some features don't carry over when burning to disc or transferring to iPod.

ESTIMATED PRICE: free

OS COMPATIBILITY: Mac OS 9, Mac OS X

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

FRIENDLY AND FREE BUT FALLIBLE

Easy-to-Use Photo Utility Still Missing a Few Key Features

BY JASON SNELL

In many ways, iPhoto 1.0—Apple's new, free, digital-image-management program—is cut from the same cloth as previous i-apps iMovie, iTunes, and iDVD. With each, Apple identified a hole that needed to be filled, developed software with key features that had broad appeal, and polished those features until they shone. iPhoto is no different: it offers easy-to-use photo-organization features that will please many casual digital-camera users who want to organize and share their growing image collections. More-advanced digital-photography enthusiasts, however, will likely be disappointed by this program's many feature omissions.

Digital Shoebox

The program's primary interface is a large window of digital-image thumbnails; at the bottom of the window, a slider lets you select the size of those thumbnails. The thumbnails are generally good quality; however, when we imported some high-resolution, multimegabyte TIFF files into iPhoto, the thumbnails were grainy with banded color.

Below this window, there are five buttons that activate the program's primary functions: Import, Organize, Edit, Book, and Share.

The left-hand pane of iPhoto's single-window interface lets you manage virtual photo albums, in which you can collect your images; you can also click on the Photo Library icon to view all the images you've imported into iPhoto. A small button below that pane lets you rotate one or many photos quickly and easily.

Adding Images

Importing images into iPhoto from a digital camera is a relatively easy process; iPhoto automatically launches when you plug in a compatible digital camera (see www.apple.com/iphoto/compatibility/ for a list), and it can import the images directly. A handy option even lets you delete the photos from the camera once they're downloaded.

If you have old images or an incompatible digital camera, you must import the images by dragging them into the iPhoto window or choosing Import from the File menu. iPhoto makes a copy of your imported images in its iPhoto Library folder, leaving your hard drive with two copies of every image you import.

iPhoto doesn't export or link its library with mounted removable media; if you archive photos on CD-R discs to save hard-drive space, you can't keep those images in your iPhoto library.

Rolling On

When you bring images into iPhoto, either from a camera or from preexisting files, iPhoto treats each import process as a "roll," similar to a roll of film. You can view your library by roll, but iPhoto doesn't intelligently process images by date: if you drag in 1,000 photos taken over a span of three years, for example, iPhoto groups them in one inconveniently large roll.

If you'd prefer not to organize images in this limited way, you can sort images by the date they were created—just choose Edit: Arrange Photos: By Date. iPhoto tries to use the dates embedded in images by digital cameras, so even if your image doesn't have



Keyword: Cute Got a mound of images? iPhoto offers several ways to find the needle in your digital haystack, including sorting by keywords you assign.



Beautiful Books The Book option, though limited, can yield gorgeous results. Just don't expect the flexibility of a real page-layout program.

a proper creation date in the Finder, iPhoto usually displays the real date and time the picture was taken. In our tests, iPhoto was generally good at recognizing an imported image's embedded creation date, and it placed images in the proper context in our library.

Crop and Edit

Behind iPhoto's Edit button is a limited collection of image-mod-

ification tools. The Crop tool is excellent, allowing you to choose from preset sizes, such as 4 by 6 inches and 3 by 5 inches, and trim images with ease. iPhoto's Red-Eye tool is a serviceable way to salvage snapshots that would otherwise be wrecked by blazing red corneas.

It's with color that iPhoto's editing features fall down. A Black & White button lets you quickly convert an image to gray

scale. But the program lacks even rudimentary tools for color correction—and as any digital-camera owner will tell you, there are often times when an image needs tweaking because of an unwanted yellow or blue cast. While a complicated, Photoshop-style Levels command wouldn't be appropriate, iPhoto's omission of a one-button color-correction tool or a simple slider-based interface is unfortunate.

Tracking Images

Categorizing photos in iPhoto is easy. You can use Apple's preset keywords, or you can make as many as 14 of your own by choosing Edit Keywords from the Edit menu (or pressing ⌘-K). To assign keywords, slide the switch on the Keywords window's left side to Assign, select one or more photos, and click on the appropriate keyword.

Sorting images by keyword is just as easy: slide the switch from Assign to Search, and then select as many keywords as you'd like to filter your photos by. This makes it easy to find, for example, all photos of your pets and your daughter together (see "Keyword: Cute"). However, iPhoto's filtering system is strictly additive (pets *and* daughter); you can't search for all photos of your pets *without* your daughter, say, nor can you see all images *except* those with your pets in them. You are also unable to display only images without keywords.

Show and Share

Realizing that one of the great strengths of digital photography is the ability to quickly share images with others, Apple has built iPhoto with a collection of image-sharing features, from on-screen slide shows to linen-bound books. All are available by clicking on the Share button.

Slide Shows iPhoto's Slide Show feature lets you display images with musical accompaniment in a full-screen format. It's

a fine idea, but it has some limitations. Slide Show's only transition effect is the dissolve, and it can play only one audio track over a slide show. Also, most images in the slide show we created tended to appear blurry, an obvious drawback.

You can export slide shows in QuickTime format to share with others, but soundtracks and transitions don't carry over into the QuickTime movie.

Photos on the Web iPhoto also lets you export your photos for the Web by using either the HomePage feature on Apple's iTools Web site (integrated with iPhoto via the HomePage button in iPhoto's bottom pane when you click on the Share button) or the Web Page tab of iPhoto's Export Images window. The Apple-hosted HomePage option is easy to use and generates beautiful Web-based slide shows; however, the images it exports are quite large and don't make the most of the JPEG format's ability to compress images, so people with slow modem connections will need a lot of patience to view all the images. iPhoto's do-it-yourself Web

Page export method gives you more control over the size of your images and their thumbnails; however, the HTML pages it generates are very basic, and there's no way to crank up the JPEG compression here, either.

Prints

It's easy to print images from iPhoto. If you're printing to your own photo printer, iPhoto's Print command gives you control over many options, including paper type and page layout, via a series of pop-up menus.

More intriguing is the program's unique built-in support for online photo processing. Thanks to integration with Kodak's Ofoto digital-printing service, iPhoto users can buy digital prints by selecting the images they want, clicking on the Order Prints button, and choosing the preferred size and number of prints. The resulting prints, on high-quality Kodak paper, look very good—certainly much better than what you'd likely get after dropping off a roll of film at your local supermarket.

Apple also offers iPhoto users a unique service: the creation and

professional printing of a high-quality, bound hardcover book. Just click on iPhoto's Book button, and you can place as many as 32 photos on each page, in any of six templates. You can also add text. However, the book-building tools are awkward. Moving and reordering photos and pages can be a frustrating task more like a brainteaser puzzle than a page-design tool.

The resulting \$30 book (for 10 pages; \$3 per additional page, with a maximum of 50 pages), while pricey, is beautiful to behold. Printed on acid-free archive-quality paper, these books will certainly make great gifts. However, the nature of the Web printing-press method used to print book pages means that book photos are noticeably screened and therefore don't look as crisp as prints.

Macworld's Buying Advice

Like all of Apple's i-apps, iPhoto is a remarkably user-friendly program that fills a vital need for many Mac users—in this case, consumers with digital cameras—and it's got a price that can't be beat. With its easy organizing and solid integration with an online photo-printing service, iPhoto makes good on Apple's promise to integrate digital devices and the Mac. However, many digital-camera users will quickly find themselves butting up against iPhoto's limitations.

RATING: 

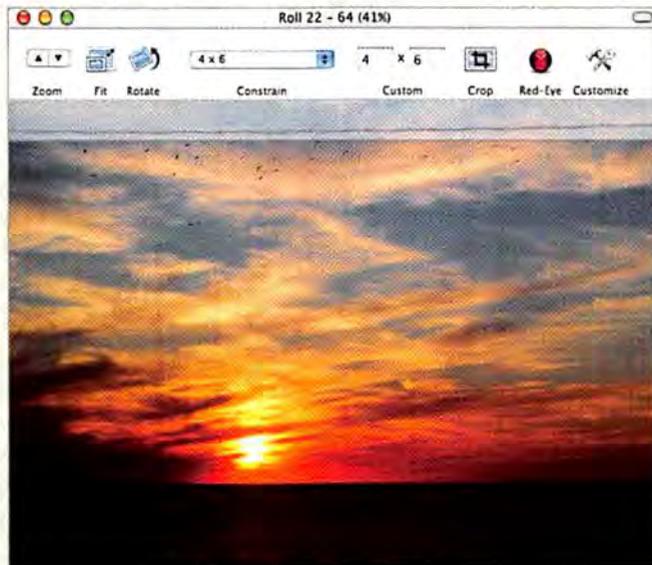
PROS: Easy importing; solid and easy-to-use organization and categorization features; strong links to online services.

CONS: No color-correction tools; no offline-storage options; limited Slide Show feature; no JPEG compression options; weak book-building interface.

ESTIMATED PRICE: free

OS COMPATIBILITY: Mac OS X

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



Crop the Top—or Anywhere Else This iPhoto toolbar lets you manipulate your image by rotating it, removing red-eye, and cropping. If you require a cropping size that isn't an iPhoto preset, just click on the Customize button to add those dimensions to the toolbar.

Pretty iPod

Apple's iPod is one of the most exciting things to come out of Cupertino in a while. Before the iPod, there had never been a portable MP3 player designed specifically for Mac users, with Apple technologies such as iTunes and FireWire. Our tips will help you get more out of it.



A Roomy Interior
The 6.5-ounce iPod can hold as much as 5GB of data.

Specialized Sync With the advent of high-quality MP3 encoders and large hard drives, many people are turning their entire CD collections into MP3 files. And if you're one of them, chances are you're going to have more than 5GB (the iPod's limit) of MP3s on your Mac and in your iTunes library. If you want iTunes to automatically sync with your

iPod, create a special iPod playlist in iTunes—one that contains less than 5GB of music—and set the iPod to sync only with that playlist.

To do this, open the iPod Preferences window by clicking on the iPod icon that appears in the lower right corner of your iTunes window when your iPod is attached to your Mac. Next, select the Automatically Update Selected Playlists Only option, then choose the playlist you created. Your iPod will now sync with the contents of that playlist, rather than your entire music library.

The iPod can sync with only one copy of iTunes at a time. If you use your iPod with multiple Macs—say, at home and at work—you'll probably want to forgo automatic synchronization. To switch to manual mode, open the iPod Preferences window and click on Manually Manage Songs And Playlists. When you plug in your iPod, it will mount normally but won't attempt to synchronize with iTunes. To add songs to your iPod, simply drag them from your iTunes library to the iPod window.

Party Pod Because of its large storage capacity, the iPod is perfect for parties or any occasion when you want to have music playing for a long time without having to change CDs. The built-in headphone jack can connect the iPod directly to your stereo system. Using an inexpensive Y-cable (available from electronics stores such as Radio Shack for less than \$10), you can plug the 1/8-inch minijack into the iPod, and the pair of RCA-type plugs into a spare input on your stereo—often the AUX, or auxiliary, input.

And if you're worried about the battery running out during your bash, you can use the included power plug to power (and charge) the iPod while it's playing.

Expand Your Reach Since the iPod's release, many utilities that extend your favorite portable music device have come out. Bitcom's Xpod (free; <http://bitcom.ch>) and CodeFab's Podestal (free; www.codefab.com) both let you copy MP3s from your iPod to your hard drive in OS X—perfect if you have multiple computers—and

I Want My iDVD

Although the original iDVD brought us the power to design and create DVDs in an amazingly easy-to-use package, it was clearly ahead of its time—buggy and not quite complete (see *Reviews*, July 2001).

With much better stability and customization, iDVD 2 changed that, and we recently devoted an entire feature to getting the most out of the new version. Check out "Go Pro with iDVD 2" (March 2002) to get tips on removing and customizing watermarks, getting the best-quality video, creating top-notch slide shows, making your own motion menus, and much more.

Podestal even accesses files stored on the hard-drive portion of your iPod. Rich Goldman's Contacts-iPod (free; http://files.macscripter.net/ScriptBuilders/Utilities/Contacts_to_iPod.hqx) synchronizes your contacts from Entourage, Outlook Express, or Now Contact with the iPod.

And Apple built in its own extra. Go to the iPod's About menu and hold down its center button for several seconds, and you'll bring up the classic game Breakout, which you can play via the iPod's jog wheel.

Directing iMovie 2

iMovie is the oldest of Apple's "i-apps." In many ways, iMovie was the first program to define Apple's digital-hub strategy. iMovie fulfilled a need—easy-to-use editing software for the new generation of digital camcorders—in a way that no other product had done before.

In the time since iMovie arrived, *Macworld* has written several detailed articles full of tips about the program. You can see a list at www.macworld.com/subject/imovie/.

Add-ons iMovie ships with a limited collection of transitions and effects. The free iMovie Plug-In Pack (www.apple.com/imovie) adds a few interesting options, but iMovie's palette of transitions still isn't that impressive.

Many people will never want to use a transition any flashier than a cross-dissolve, but variety can be the spice of life. To that end, GeeThree offers Slick Transitions and Effects (\$30 each, \$50 for both; 650/328-2359, www.geethree.com), two collections of iMovie transitions and effects that include many subtle, attractive options, as well as plenty of gaudy ones. They're worth their cost, even if you use only a quarter of the provided plug-ins.

The Last Word

As the maker of both the hardware and the operating system that runs it, Apple is uniquely qualified to create software and add-ons that let us get the most out of our Macs. With iPhoto, iTunes, iMovie, iDVD, and even the iPod, Apple's commitment to making it as easy as possible to live the digital lifestyle is clear. To ride the wave, all you need is your creativity and your Mac. □

Associate Editor JONATHAN SEFF has been using an iPod since the day it was announced. Editor JASON SNELL uses all of Apple's digital-hub products on a regular basis.

TIP

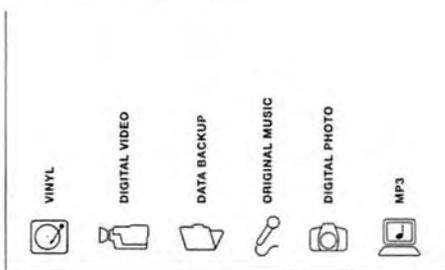
IN iDVD 2, YOU CAN MAKE ANY QUICKTIME MOVIE A MOTION-MENU BACKGROUND—JUST PRESS THE  KEY WHILE DRAGGING THE MOVIE INTO iDVD.

room to burn



Get organized, and take your files with you wherever you go. Burn all your data, video, photography, MP3s, vinyl, cassettes and whatever else you've got to CD with Toast[®] 5 Titanium, from Roxio. The best selling CD burning software in the world for the Mac.[®] You can even create your own personalized jewel cases for each disc. Hit roxio.com to find out how. Use a PC? Look for Roxio's Easy CD Creator[®] 5.

Built for Mac OS X.



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Teach Word New Tricks

Much too often, we find ourselves performing some tedious editing task for the fifth time in a month, a week, or even an hour—and wishing we could cash in on some of the productivity gains computers were supposed to give us.

In Microsoft Word, the powerful but often overlooked macro feature is a software robot that can automate a wide range of repetitive actions, from changing the names of three characters in each chapter of a novel to putting standard text into a sales report and exporting the result as a Web page.

One situation that screams out for a macro is cleaning up text that you've copied from an e-mail message and pasted into Word; such text is often littered with unnecessary line breaks and marred by unattractive straight quotation marks, double hyphens (instead of em dashes), and other clumsy characters.

Of course, there are plenty of shareware programs that can do this kind of basic text cleanup. But if you create a macro that does the dirty work for you, you never have to switch out of Word—and you can

tailor your Word macros in ways that shareware programs can only dream about.

We'll show you how to create a cleanup macro using Word's errorproof Watch Me mode. We'll also show you how to dabble with Visual Basic for Applications—the code Word uses to write macros—to further customize and troubleshoot your macro. Once you've learned how this macro works, making up your own should be simple. (The steps here work equally well in Word 98, Word 2001, and Word X.) □

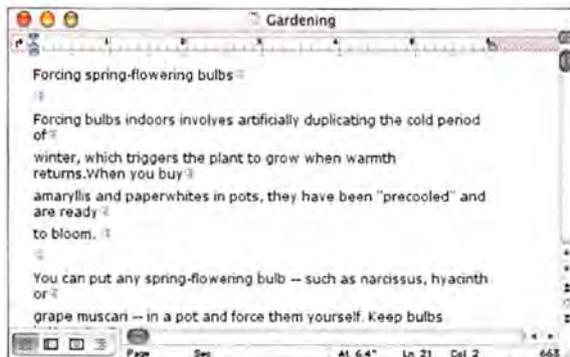
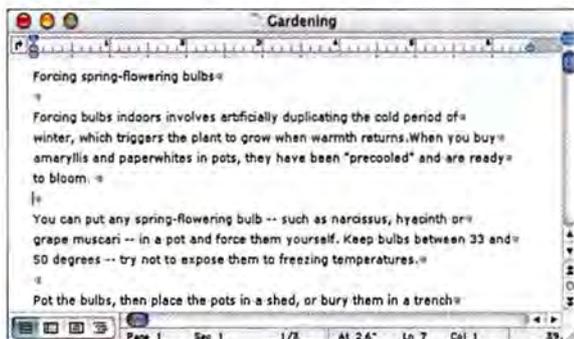
NAN BARBER is a coauthor of *Office 2001 for Macintosh: The Missing Manual* (Pogue Press/O'Reilly, 2001). Contributing Editor DAVID POGUE (www.davidpogue.com) is the author of *Mac OS X: The Missing Manual* (Pogue Press/O'Reilly, 2002). He writes the weekly technology column "State of the Art" for the *New York Times*.

1 Set Up the Document

Before you can create a macro, you must transfer text from an e-mail message into a Word document. In Word, you'll get confusing, truncated lines of text. You can use a couple of quick tricks to make the text easier to read before creating the macro.

To begin, copy some text from an e-mail message and paste it into a new Word document. You'll probably spot the line-break problem right away: every other line within each paragraph stops partway across the page. Most e-mail programs introduce these hard line breaks automatically when they send plain-text messages—a tradition left over from the days of text-only e-mail messages whose lines

could be no longer than 80 characters wide without being chopped off by the edges of fixed-width windows.



You can do two things to help make sense of the strange formatting. First, turn on the Show Invisibles command by clicking on the Show/Hide ¶ button in the Standard toolbar (View: Toolbars: Standard). Now you can see all the extra paragraph marks at the end of each line.

Second, shrink the point size so that each hard-ended line sits on a single line (press ⌘-A to select all text, then press ⌘-shift-< repeatedly). Alternatively, widen the window and shrink the right margin. Doing so eliminates all the truncated half-lines and lets you see clearly how many lines of text you really have.

2 Designate a Macro Trigger

Before you begin building your macro, you must answer this question: How will you trigger your macro once it's ready? You can choose any of Word's three different methods. In this step, we'll explain how to set up two of the methods: selecting the macro's name from a menu, and clicking on a toolbar button. You can also press a key combination to trigger a macro (see step 3).

From the Tools menu, choose Macro; then choose Record New Macro from the submenu (or you can double-click on the Rec button on the bottom edge of the Word 2001 or Word X window). The Record Macro dialog box appears.

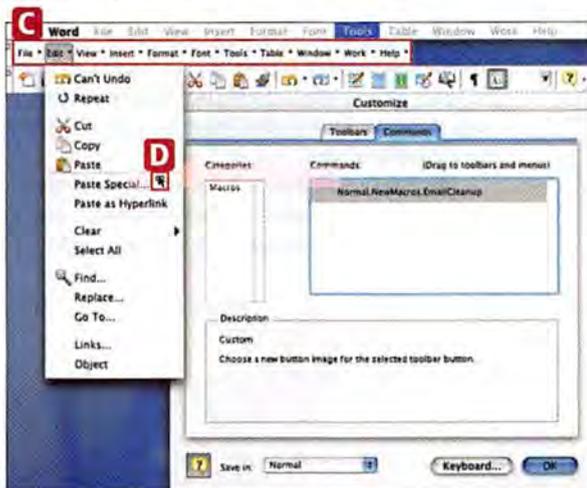


Name the macro **EmailCleanup** or something else easy to remember **A**. (No spaces or punctuation are allowed. Thanks, Microsoft.)

Whether you want your macro's trigger to be a

toolbar button or menu command, start by clicking on the Toolbars button **B**. The Customize dialog box will open, along with a new (or duplicate) toolbar representing the Word menu bar **C**. From here, you can drag the name of your new macro to the Standard toolbar, where it appears as a new button. To stash it in a different toolbar, click on the Toolbars tab, turn on the toolbar you have in mind, and then drag the macro name onto it.

To turn your macro into a menu command, drag the macro name from the Customize window to one of the menu titles (such as File or Edit). Then, without releasing the mouse, drag downward to place the macro among the other menu commands where you'd like it to appear **D**. For instance, you might want to put it at the bottom of the Tools menu or near the top of the Edit menu.



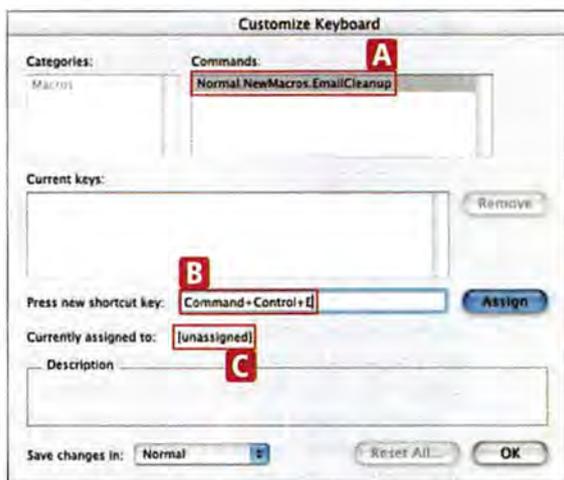
Don't worry about the clumsy macro name you get in your toolbar or menu (Normal.NewMacros.EmailCleanup). You'll have a chance to change it later.

3 Add a Keyboard Trigger

Putting a macro's name in a menu or toolbar is convenient because you don't have to remember a key-combination trigger. But it also takes up a lot of screen space, and triggering your macro requires several mouse clicks, as opposed to the simultaneous pressing of two or three keys. Creating a keystroke trigger for your new command is quick and easy and adds a backup method, an especially handy feature for macros you use often.

Whether or not you added a toolbar or menu trigger, the Customize dialog box should still be open on screen. (If you did add your macro to a toolbar or menu, the toolbar or menu is also probably still hanging open on your screen. That's perfectly OK.)

Click on the Keyboard button at the bottom of the Customize dialog box. Doing so opens the Customize Keyboard dialog box.



This box shows the name you gave your soon-to-be-recorded macro **A** and gives you a chance to assign a key combination that will trigger it. Put your cursor in the Press New Shortcut Key field **B**, and then press a key combination, which must include control, ⌘, ⌘-control, or control-shift, plus one or two other keys, such as letters and numbers. For example, you might press ⌘-control-E. Or if you prefer the unusual two-letter method, you could press control-E-C (the macro's initials); whenever you want the macro to whirl into action, you'll have to press all three of those keys.

If the combination you press is already assigned to another Word command, a message lets you know that you're about to wipe out an existing keyboard command. In our example, the key combination is unassigned **C**.

Click on Assign. Then click on OK twice to close the two remaining dialog boxes and begin recording the macro.

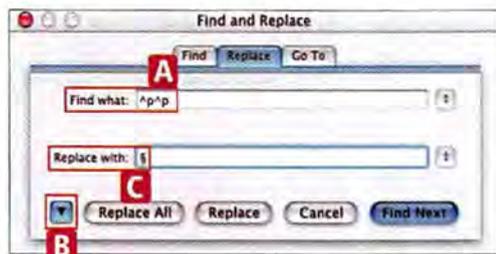
4 Clean Up the Hard Line Breaks

You might think that fixing those ugly hard line breaks would be a simple matter—but you can't just nuke all return characters with a search-and-replace operation, because you'll also wipe out your legitimate returns. You'll wind up with one gigantic paragraph, with no trace of the original paragraph breaks. You can use the Replace command, but you have to be sneaky about it.

At the moment, double return characters represent all legitimate paragraph breaks. You want to preserve these, wiping out only *single* return characters.

From the Edit menu, choose Replace. You can either type $\wedge p \wedge p$ (which represents two return characters) in the Find What box **A** or expand the box (click on the More button or the Expand button **B**, or press ⌘-M); then, from the Special pop-up menu at the bottom of the dialog box, choose Paragraph Mark twice.

In the Replace With box **C**, type a symbol that probably doesn't appear in the text itself, such as § (option-6). Click on Replace All (⌘-A) and then OK to dismiss the message box after Word has completed the replacements.



You've just succeeded in setting aside all double returns for safekeeping. Now perform another find-and-replace operation, this time searching for single returns ($\wedge p$) and replacing them with nothing (leave the Replace With box empty).

Finally, it's time to turn all those § characters back into standard single returns. Perform yet another find-and-replace operation, this time putting § into the Find What box and $\wedge p$ into the Replace With box. When Word is finished with all these search-and-destroy missions, close the Find And Replace dialog box.

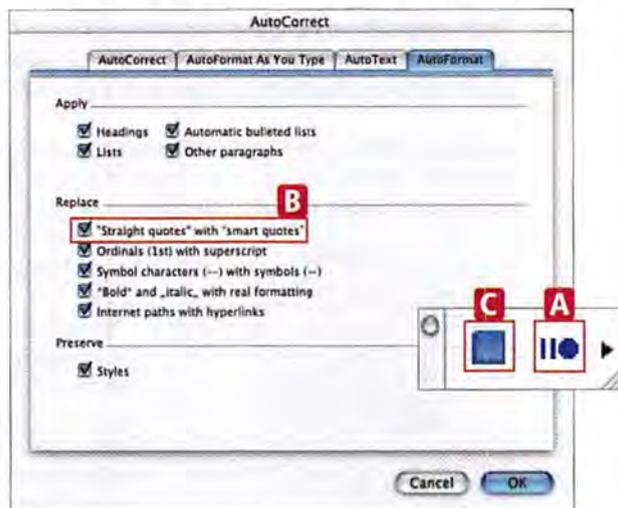
5 Make It Typographically Correct

There are just a few more find-and-replace operations involved in transforming your e-mail text to properly formatted Word text. Teach your macro to perform such operations as turning straight quotation marks into smart ones and replacing amateurish double hyphens ($--$) with proper em dashes ($—$).

It's a little-known fact: if you search for apostrophes and replace them with apostrophes, Word makes them all smart (typographically correct) in the process—if that feature is turned on in the AutoCorrect dialog box.

To see if yours is already set for smart apostrophes and quotation marks, click on the Pause button **A** on the Record

Macro toolbar—a useful button that pauses recording whenever you need to do something that's not part of the macro, such as check out a menu command without recording it.



Open the AutoCorrect dialog box (Tools: AutoCorrect) and click on the AutoFormat tab. Make sure the "Straight Quotes With "Smart Quotes"" option is selected **B**.

Click on OK to close the dialog box. Click on the Pause button again to resume recording.

From the Edit menu, choose Replace. Type an apostrophe ($'$) in the Find What box, press the tab key, and then type another apostrophe in the Replace With box. Click on Replace All and then on OK. You've just made all your document's apostrophes smart.

Now make the quotation marks smart. Put a quotation mark ($"$) in both the Find What and Replace With boxes. Click on Replace All and then on OK.

Finally, use the Find And Replace box to turn all double hyphens ($--$) into proper em dashes ($—$). (To specify the em dash, press shift-option-hyphen.)

You can keep recording more find-and-replace routines until you've satisfied your every obsessive e-mail-cleanup preference. Just leave the Find And Replace dialog box open and continue making substitutions. For example, you might consider replacing one, two, or three angle brackets ($>$) with nothing (leave the Replace With box empty), deleting any of the standard Internet "quoting" marks that may crop up in your messages.

When you've completed all the replacements you'd like the macro to do for you, close the Find And Replace dialog box and click on Stop Recording **C** to end the recording.

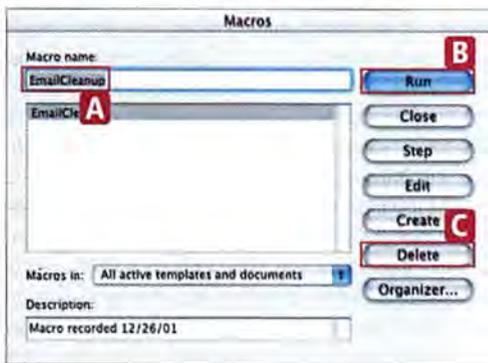
6

Test-Drive Your New Macro

The moment has come to make sure your new macro works. You'll get your first opportunity to see the speed and efficiency of a macro in action.

To get ready, repaste the original text into a new document (or use the Undo command repeatedly until the document looks the way it did before your cleanup began). Place the insertion point at the beginning of the document or choose Select All from the Edit menu. (If you don't, Word will start doing its search-and-replace routine from wherever the insertion point is. Each time it reaches the end of the text, a dialog box will ask you if it's OK to wrap around to the first part of the document again.)

To run a macro that you've recorded, use the method you chose when you created it, such as pressing a key combination. If you've forgotten what trigger you created, you can always choose the macro by name from a list of all your macros in the Macros dialog box (Tools: Macro: Macros). Click on the macro's name **A**; then click on Run **B**.



If your macro gets stuck or fails to perform one of the steps, either delete it and start over, or see step 9 for debugging help.

If you decide to delete your macro, this dialog box is the place to do it (select the macro's name and click on Delete **C**). You should also take this opportunity to do away with any toolbar button or menu command you created, since the macro associated with it no longer exists. Choose Customize from the Tools menu and then, once the Customize dialog box is open, drag the macro off the menu or toolbar. In other words, reverse the procedure you used when installing the macro on the menu or toolbar in step 2.

7

Add a Dialog Box

The macro you've built is just fine for your own purposes. You designed it, so you know what it's about to do. But for the benefit of unsuspecting coworkers or family members, you may want to create a dialog box warning them that something automated is about to take place.

From the Macro submenu of the Tools menu, choose Macros. Click on the name of your macro; then click on Edit. Visual

Basic Editor opens, containing the tools programmers use to hand-code macros. It shows all the code for any macros you've created, separated by dotted lines.



It may look intimidating, but a little study will show you that it's fairly straightforward. The various lines containing equal signs, for example, show Word what the status of the various controls in the Find And Replace dialog box is supposed to be.

Now you'll create the code that makes a dialog box appear. At the top of the code window, you'll see a few lines of text that begin with an apostrophe **A**. These are the comments that define your macro. Just below the comments, type the following on a new line **B**:

```
If MsgBox("I'm about to eliminate extra line breaks from the text in your document. While I'm at it, I'm going to turn any quotation marks and dashes into typographically correct ones. OK for me to go ahead?") = vbExclamation + vbYesNo) = vbYes Then
```

When you finish typing, be sure to press the return key. If you don't leave a space between **Then** and the code that follows, you'll get an error message when you run the macro. (While you're at it, make sure your inserted line doesn't begin with an apostrophe.)

The command **MsgBox** tells Word to open a dialog box; it's followed by the actual text that will appear in the box. The text at the end of the parentheses (**vbYesNo**) gives your dialog box Yes and No buttons. The last two words (**vbYes Then**) tell the macro what to do when the user clicks on Yes. In this case, it should do all the find-and-replace operations you just recorded.

Of course, all you've created in your code so far is the IF statement of the standard IF-THEN-ELSE programming statement. You also need an ELSE statement to tell the macro what to do if the user clicks on No—to cancel the macro without altering the document. In the next step, you'll fill in the conclusion to this programming cliff-hanger.

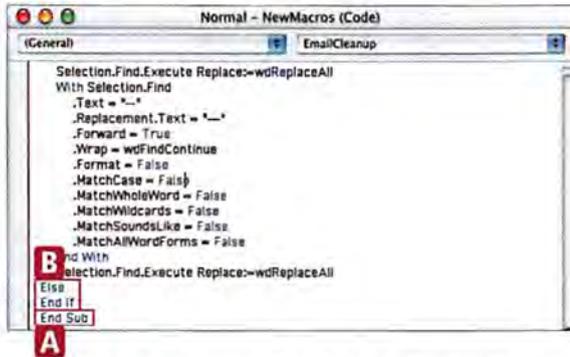
8

Complete the Code

By this time, you're probably wondering what happens if the user clicks on No. Just a few more words of code take care of that alternative and complete the IF-THEN-ELSE argument you started coding in the previous step.

Scroll down in the Visual Basic window to the end of the macro. Taking care not to delete or alter any existing code, click just before the **End Sub** function **A** at the very end. Press return to create a new line just above it. On that line, type **Else**, press return to add another new line, and type **End If** **B**.

TIP: If you suspect you've typed something in error or deleted part of your recorded code, you can always use the Undo command repeatedly to back out of any changes you've made to the code.



From the Word menu (Mac OS X) or the File menu (Mac OS 9), choose Close And Return To Microsoft Word. Clicking on the pale-blue *W* in the upper left corner of the Visual Basic window does the same thing. You've just returned from Visual Basic Editor to the familiar comfort of Word.

9

Test and Debug the Macro

When you record a macro using Word's Watch Me mode, Word ensures that your code is free of errors. When you type code yourself, however, you risk introducing typos and other glitches. Fortunately, since this is fairly simple code, the debugging process is simple, too.

Back in your document, choose Undo (or press **⌘-Z**) until the e-mail text needs cleaning up again.

Open your macro in Visual Basic Editor, just as you did at the beginning of step 7. From the Tools menu, choose Macro and then Macros. Double-click on your macro's name (EmailCleanup) to run it. If you made any typos when you typed code into Visual Basic Editor, you'll get an error message, and part of your code will turn red or green.

The color tells you where to look for the error. Maybe you deleted part of the End Sub command or used incorrect punctuation in the MsgBox code. Using the code shown in steps 7 and 8 as a guide, correct the typos and try running the macro again.

When your code is perfect and you run the macro, you'll see the dialog box you created. Click on Yes to make Word clean up your text.

10

Customize the Macro Trigger

After you've used the macro for a while, you may decide you'd like to change the way you use it. Maybe you'd like to change its keyboard trigger or choose a better name than Normal.NewMacros.EmailCleanup.

To edit the trigger for your macro, begin by choosing Customize from the Tools menu.

If your macro is triggered by a keyboard combination, click on the Commands tab, and then click on Macros in the Categories list. Click on the macro name in the list at the right side of the dialog box, click on the Keyboard button, and then reassign the keystrokes—click in the Press New Shortcut Key field to specify the new key combination, click on Assign, and click on OK twice. (In Word 98, click on Close twice.)

If you turned your macro into a toolbar button, on the other hand, control-click on the toolbar button. From the resulting menu, choose Properties to open the Command Properties dialog box. In the Name box, type a different name for the button—and this time you can use spaces and punctuation. (In Word 98, control-click on the toolbar button and choose Customize; then control-click on the toolbar button again and change the name in the resulting pull-down menu.)

Below that, you can choose to have the text display, or you can select Default Style to display an icon only. For the most fun, you can even use this dialog box to give your new macro an icon of its own: click on the button in the upper left corner of this box and choose an icon from the palette **A**. (In Word 98, after choosing Customize, control-click on the toolbar button and choose Change Button Image from the pull-down menu.)

Finally, if you gave your macro a menu command, click in the lower, duplicate menu bar to open the necessary menu (see step 2). (In Word 98, if you don't see the duplicate, customizable menu bar, click on the Toolbars tab in the Customize dialog box and select the Menu Bar option to make it appear.) You can now drag the macro command to a different position on a different menu or drag it off the menu completely to



remove it. To change the menu command's name, control-click on it in the phony, duplicate menu bar; then choose Properties to open the Command Properties dialog box, where you can edit its name.

Now it's time to save all your hard work. When the macro is clean, shiny, and working perfectly, save it by quitting Word. Word stores the macro in your default

template file—but not until you quit the program. If your Mac crashes before you've quit Word, you'll lose the macro.

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Mon., 5/27	Vancouver, B.C.	—	5pm	6pm, Bon Voyage Cocktail Party
Tues., 5/28	Cruising the Inside Passage	—	—	8:30 – noon & 1:30 – 5pm; 6pm – 7pm
Wed., 5/29	Juneau	2pm	11pm	8:30 – noon
Thurs., 5/30	Skagway	7am	8pm	—
Fri., 5/31	Scenic Glacier Bay Cruising	—	—	1:30 – 5pm; 6pm – 7pm
Sat., 6/1	Ketchikan	10am	6pm	6pm – 8pm
Sun., 6/2	Cruising the Inside Passage	—	—	8:30 – noon & 1:30 – 5pm; 6pm – 7pm
Mon., 6/3	Vancouver, B.C.	8am	—	—

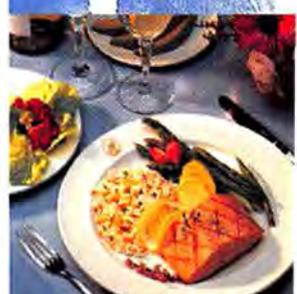
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Create Sophisticated Style Sheets

Cascading Style Sheets (CSS) can streamline the design process, make Web sites more accessible, and shave precious kilobytes off every page. But that's not all. Using CSS instead of traditional Web-design methods can also give you creative advantages. Not all browsers support the tricks we'll explore here, but these techniques will give you a glimpse of the future.

Whiz and Bang

The Independents Day launch site (www.independentsday.org/launch/), which I co-founded and designed, combines scrolling and nonscrolling elements, overlapping layers with translucent visual effects, and a "liquid" layout that resizes to fit a visitor's browser window.

When the site loads, the Independents Day logo appears at the top left corner of the screen. As a visitor scrolls down for more content, the logo stays fixed in its original position, rather than scrolling up and out of sight, as it would in a traditional HTML layout (see "Doin' the Logo Motion").

This nonscrolling logo serves two purposes. It continuously reinforces the site's brand as a visitor scrolls down, and at the same time, it fills in the left side of the page but doesn't require that the visitor download additional graphics, thus conserving bandwidth.

Such designs sound complicated, but they're actually quite easy to implement in CSS. More important, they're impossible to produce using conventional HTML tables or frames.

Such designs sound complicated, but they're actually quite easy to implement in CSS. More important, they're impossible to produce using conventional HTML tables or frames.

CSS versus Frames You *could* use old-fashioned HTML frames to position one element at the top of a Web page while allowing another part of the page to scroll. However, you'd miss this simple layout's niftiest trick: the scrolling content *overlaps* the nonscrolling logo. Where the two meet, the

content area's background partially masks the logo, causing it to fade.

Furthermore, by designing with CSS, we have avoided the problems associated with frames, including a visitor's inability to bookmark individual pages, and a designer's need to craft more than one frame set to accommodate browser and platform inconsistencies.

The CSS layout is visible in 4.0 and higher browsers (that's nearly 80 percent of the market, according to the analysts at WebSideStory's StatMarket). But even browsers that can't render CSS still can display the content—another advantage of using CSS instead of frames.

Getting Started

Style sheets save development time and visitors' bandwidth by using one or two lines of code rather than heaps of noncompliant HTML. CSS even provides byte-saving shortcuts. (For instance, in CSS you can specify hexadecimal color #FFCC33 as #fc3.)

In the global style sheet that controls the design of all pages in the launch site www.independentsday.org/launch/indie.css, I begin with this CSS declaration:

```
body {
  margin: 0;
  padding: 0;
  font: 11px/1.5 verdana, lucida, arial, helvetica,
  sans-serif;
  color: #fff; background-color: #369; background-
  image: url(images/bgbiggun.gif);
  background-attachment: fixed;
  background-position: top left;
  background-repeat: no-repeat;
}
```

This establishes the fonts, sizes, leading, and colors used throughout the site. By setting the margin and padding to zero, it also turns off browser offsets in



ILLUSTRATION BY ANDERS WENNGREN

Microsoft Internet Explorer 4 and higher, Opera 4 and higher, Netscape 6 and higher, and Mozilla. (In Netscape 4, a slight browser offset will remain, but the design still looks pretty good.)

It also places the logo—`bgbiggun.gif`—in the background at the top left of the page, instructs the browser not to tile the image (**no-repeat**), and tells the browser not to let the image scroll (**attachment: fixed**).

Cautions and Caveats Nonscrolling CSS background images can be positioned almost anywhere on a Web page. Alas, Netscape 4 sticks them at the top left no matter what the style sheet says, so you may as well design accordingly. (Fortunately, the top left is a pretty good place for a logo to live.) Lamentably, Netscape 4 also ignores the style sheet's instruction for nonscrolling, but the site will still work just fine.

The div of Labor

We have our background in place; now where does the text go? Instead of toiling over tables, we wrap all our content in a block-level HTML element called a **div** (short for *division*) tag. Think of this element as a box for your content. The rules of CSS give designers total control over the box's placement, size, and appearance.

In a complex layout, you might need more than one such box to hold your content. If you do, in your HTML you assign each **div** a name, preferably one associated with its function:

```
<body>
<div class="menu">
    Menu goes here.
</div>
<div class="content">
    Content goes here.
</div>
</body>
```

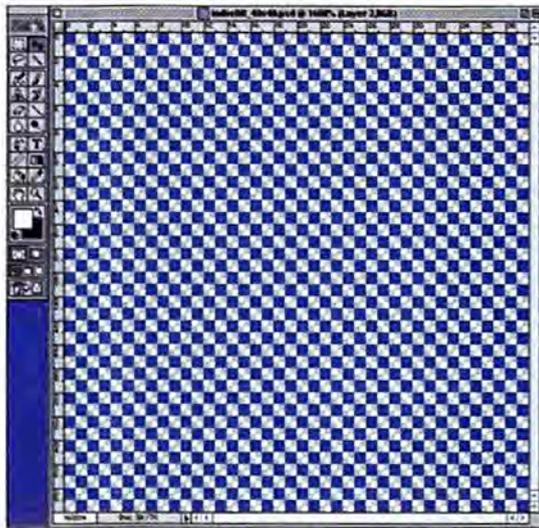
In the style sheet, you would then specify the particular design requirements for each named **div**.

Macromedia Dreamweaver users beware: Dreamweaver 4 has a tendency to spew **divs** all over the place in an attempt to control layout. You will need to remove unnecessary **divs** or manually massage Dreamweaver's HTML.

In a basic CSS layout like the one we're examining here, you may need only one **div**. If so, there is no need to name it. The style sheet simply lists its attributes:

```
div {
margin: 10px 10px 10px 40%;
padding: 10px;
border: 1px dotted #036; background-image :
url(images/indiefill.gif);
}
```

This CSS declaration tells the browser that anything inside your **div** tag should have inner white



A Twist on Transparency This 40-by-40-pixel semi-transparent graphic was saved as a GIF file and used as a background for the content area. It alternates colored pixels with transparent pixels and thus masks every other pixel of the image beneath, creating the effect of translucence wherever it overlaps the logo behind it.

space (**padding**) of ten pixels and be surrounded by a dotted one-pixel border of the color #003366 (or #036 in shorthand). Like the earlier CSS body declaration, this one instructs the browser to use a background image, which we'll discuss in a moment.

Clockwork Precision Finally, our CSS declaration tells the browser how big the content area should be—and where it should appear—in relation to the visitor's browser window.

This information is in the **margin** line:

```
margin: 10px 10px 10px 40%;
```

Think of the four numbers as positions on a clock face: the first is 12 o'clock (the top margin, here specified as 10 pixels). The second is 3 o'clock (the right-hand margin, 10 pixels again). The third is 6 o'clock (the bottom margin, also 10 pixels). And the last is 9 o'clock (the left margin, specified as 40 percent of the visitor's browser window).

Since the left margin is 40 percent, the **div** will take up the remaining 60 percent of the width of the browser window, minus the right-hand margin of 10 pixels.

Accentuate the Negative Notice that our layout instructions are dictated in terms of *negative*, rather than positive, space. Instead of telling the browser how big we want our content area to be (as we would with a conventional HTML table-based layout), in CSS we specify the size of the margins surrounding the content area and let the browser do the math for us.

This seems odd at first to those of us experienced in traditional Web (or print) design. But once you grasp the positive value of negative space, it's easy to begin creating fluid, resizable designs.

Specifying negative space has another advantage: it works regardless of differences in the ways browsers render CSS. (In some browsers, layouts that specify sizes and positions using positive space often generate unwanted horizontal or vertical scroll bars.)



Doin' the Logo Motion The Independents Day launch site uses CSS to position the logo at the top left corner of the page (left) and keep it there, even when a visitor scrolls down (right).

Background Check

We now have a CSS layout that works in all 4.0 or higher browsers (*any* browser or Internet device can access its content). We also have a problem: the content area partially covers the logo, and that could make the text harder to read. Moreover, since our layout's proportions are based on the size of the visitor's browser window, our text could overlap the logo just a little or quite a lot. How can we retain the look without harming legibility?

That's where the previously mentioned **div** background image comes in:

```
background-image : url(images/indiefill.gif);
```

Created in Adobe Photoshop, indiefill.gif is a 40-by-40-pixel image in which alternating pixels are transparent (see "A Twist on Transparency"). To fashion such an image, create a 4-by-4-pixel Photoshop file (File: New) and choose Transparent Background in the resulting dialog box. Use the pencil tool to color every other pixel,

select all, and then define your image as a pattern (Edit: Define Pattern).

Next, open a new 40-by-40-pixel Photoshop file with a transparent background and fill the background with the pattern you created in the previous step. (Choose Edit: Fill, select Pattern from the Use pop-up menu, pick your pattern from the Custom Patterns pop-up, and click on OK.) Finally, save the image as a two-color GIF with transparency.

The **background-image** line tiles the image in the background of the content area. Where it overlaps the CSS background color for the entire page, the image is invisible. Where it overlaps the logo, it masks every other pixel of that logo. The result is a logo that recedes into the background, creating a subtle effect while making the text easy to read. Other sites that use this technique include iBlog (<http://homepage.mac.com/iblog>) and Happy Cog (www.happycog.com).

By the way, even if you're not ready to explore CSS, you can use this technique in conventional table-based layouts. Apply the semitransparent image to the background of a table cell to partially mask distracting background content:

```
<td background="images/background.gif">
```

For an example of this, see www.happycog.com/oldbrowser.html.

To Boldly Go

As you begin to understand the true potential of CSS-based design, you'll begin dreaming up whole new vistas of Web design—and your pages will become more accessible to all.

Check out "More CSS Resources" for sites that can help you along the way. You may also want to review my other articles about CSS (*Web Publishing Secrets*, September 2001 and December 2001). Happy styling! □

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).

+ MORE CSS RESOURCES

Do you want to learn more? There are many great resources on the Web. Visit these sites to learn the ins and outs of CSS.

- John Allsopp's CSS Guide offers an extensive online tutorial that's absolutely free. www.westciv.com/style_master/academy/css_tutorial/
- These practical CSS layout tips can help you bone up on the basics. www.alistapart.com/stories/practicalcss/
- Little Boxes lets you learn by viewing a CSS layout and grabbing the code that created it. www.the noodleincident.com/tutorials/box_lesson/index.html
- At Glish's CSS Layout Techniques, you'll find a catalog of cross-browser CSS layout techniques. This is also an open-source site; as they say, "feel free to steal all the code you find on this site." <http://glish.com/css/>
- A Web designer's journey will help you deepen your understanding of how CSS-based layouts work. www.alistapart.com/stories/journey/

Make Videos More Efficiently

In the complicated world of video, everyone can use some pointers. With a little coaching, you can use Adobe After Effects, Apple's Final Cut Pro, and Roxio's Toast more efficiently. Our techniques will help you make sexier videos, export better sound, create broadcast-ready clips, blur the edges of split screens, and distribute your work on multiple-platform CD-ROMs.



Export Better Sound

Exporting audio from Final Cut Pro (\$999; 800/538-9696, www.apple.com) via Open Media Framework (OMF) files can streamline the postproduction process for large video or film projects, saving a good deal of time and money. OMF files contain your cut's edit information—the edit points, cross-fades, and track separations—along with all the required source

audio, so an audio postproduction facility can quickly rebuild your sequence with full video sync. But building a successful OMF export requires some careful planning.

For good-quality OMF files, pay extra attention when digitizing your sound into Final Cut Pro; make sure that the levels are good—not overmodulated, distorted, or underrecorded. You should also make sure that the sample rate of your sound material is at least 44.1kHz or 48kHz (32kHz isn't good enough).

When you prepare your edited sequence for export, collect your tracks into sound groups. Organizing your tracks before you export will make it easier for a sound editor to adjust the audio later. For example, collect your dialogue on tracks 1 through 4, special effects on tracks 5 and 6, and music on tracks 7 and 8. If you're exporting your audio to the free sound editor Pro Tools Free, from Digidesign (800/333-2137, www.protools.com), you can export only as many as eight tracks. The professional versions of Pro Tools can handle a far greater number of tracks.

To export a sequence as an OMF file, highlight the sequence in Final Cut Pro and select File: Export:

Audio To OMF. If you're working with Pro Tools Free, choose 44.1kHz as the sample rate (the program can't handle 48kHz). Otherwise, you can choose either 44.1kHz or 48kHz. Set the handle length between 5 and 10 seconds. This gives a sound facility room to make any necessary adjustments.

To change the OMF file into a format your audio application can read, you'll need a translation program. Some translation programs, such as Digi-design's free OMF Tool (www.digidesign.com/download/omf.html), have had problems with cross-fade transitions in the past. For this reason, you can deselect the Crossfade Transition option on the export. But if your sound house uses Digitranslator to convert the OMF files into a Pro Tools session, leave the crossfade option selected.

Note that an OMF file is limited to no more than 2GB (about 7 hours of mono sound). If your project's sound is long and complicated, you may need to divide the project into two parts. Because the time codes will remain the same, this division won't cause any problems.—ANTON LINECKER

Add Instant Sex to Video Footage

Instant sex may sound like the subject line of an e-mail you wouldn't bother to read, but it's actually the name of an easy procedure that adds visual punch to video footage. The term and the technique were created by Trish Meyer, a video-graphics artist, instructor, and author. She developed the technique for Adobe After Effects (\$649; 800/833-6687, www.adobe.com), but it also works well in Apple's Final Cut Pro 2 and 3.

Here's an overview of the steps behind the instant-sex technique; later we'll show you how to implement the technique using After Effects and Final Cut Pro. The secret to instant sex is to duplicate a video clip, blur and otherwise modify the duplicate, and then layer it atop the original. The results depend on the modifications you make and the layering method you use, but in general, this technique adds an oversaturated, filmlike look

Instant Sex in the

Water The instant-sex technique can lend a film-like, oversaturated look to footage and add a warm glow to highlights such as the sparkling water of a brook.



<< to clips. Applied sparingly—with only slight amounts of blurring, for example—this technique can add visual emphasis to a scene. It's also great for adding a romantic glow to scenes that have bright highlights such as candles and glittering water (see “Instant Sex in the Water”). With larger blur settings, the technique adds a dreamy, surreal look to scenes, which may be appropriate for a music video or any piece that would benefit from a more dramatic look.

Finally, a caveat: The instant-sex technique may yield great results, but they don't happen instantly. Prepare to twiddle your thumbs while your video program renders the effect.

Adobe After Effects First, add the video clip to the composition as you normally would. Next, select the clip in the Timeline window and choose

File: Duplicate (⌘-D). In the Timeline window, drag the duplicate so that it's above the original clip.

Now you're ready to modify the duplicate. Begin by changing its opacity: in the Timeline, select the duplicate and press the T key to display the opacity parameter. For starters, change the opacity to 50 percent. Next, with the duplicate still selected, choose Effects: Blur & Sharpen: Gaussian Blur. Specify a blur value of about 30. Finally,

from the Layer menu's Transfer Mode submenu, choose Add or Screen for a subtler look.

Final Cut Pro After adding the video clip to the current sequence, copy it and then paste the copy into the V2 track. (You can also option-drag a clip to duplicate it.) Select the duplicate in V2 and apply the Gaussian Blur filter, setting its radius to 30.

Next, go to the Viewer's Motion tab to change the V2 clip's opacity to about 50 percent. The final

step is to choose Add or Screen from the Modify menu's Composite Mode submenu.

Variations You can vary your results by experimenting with different blur, opacity, and transfer-mode settings. For a dreamlike look, shift the duplicate forward in time slightly—the blooming highlights will appear to lag behind the original clip. In After Effects, try applying the blur to only the horizontal or vertical dimension. (Final Cut Pro doesn't provide this option.)—JIM HEID

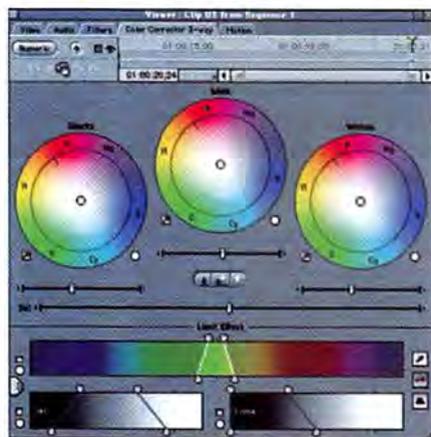
Stay inside the Boundaries

Broadcasters in the United States have strict guidelines for luminance and chrominance. To prevent your broadcast-bound video from exceeding these levels, you need to first identify the problematic elements in your video. Final Cut Pro 3 includes a new range-check utility (View: Range Check) that lets you easily identify areas with excessive luminance or chrominance. With Range Check engaged, Final Cut Pro 3 alerts you when the signal enters dangerous levels. It also identifies problem areas, using a zebra pattern overlay (as professional video cameras do).

Besides identifying video that exceeds NTSC broadcast specifications, Final Cut Pro also lets you correct it. The simplest method is to apply the Broadcast Safe color-correction filter (Effects: Video Filters: Color Correction: Broadcast Safe). For more control, you can choose the Three Way Color Corrector (Effects: Video Filters: Color Correction: Color Corrector 3-Way). (See “Third Time's the Charm.”) Both methods give you great control over the entire range of color and luminance values. You can adjust the whites until the zebra stripes disappear and Range Check gives you a green check mark.—ANTON LINECKER

Split Screens with Soft Edges

Sometimes you want to split the screen between two video images (for example, when two people are talking on the phone). In Final Cut Pro, the default divider between these two images is a hard line. In

**Third Time's the**

Charm Final Cut Pro corrects “illegal” video that violates U.S. broadcast standards in two ways. For more control, choose the 3-Way Color Corrector.

Final Cut Pro 3, you can blur that line without having to use convoluted tricks involving a composited gradient or a large nested sequence.

Place the two clips you want to split on top of each other, one on track V1 and the other on track V2. Ideally, your material was shot for the split screen, framed with one person on the left and the other on the right. If not, you may have to slide the material to the left or right to make it fit better on the screen.

To access the effect, select Effects: Video Filters: FXScript DVE's: 4-Point Garbage Matte and apply the effect to the clip on V2 (see "Soft Edge and Soft-Shoe"). You can adjust the matte's position by moving points 2 and 3 in from the right (just click on the Crosshair button and then place a point in the canvas). To adjust the softness of the edge, move the Smooth Edge slider from side to side.

Note that we moved the points beyond the image, out into the grayboard. This is because the smooth values go down to 1, not to 0. So even at their lowest values you would see a little of the underlying image (the clip on V1) at the top, bottom, and left edge of V2.—TOM WOLSKY

Take Over Voice-Overs

Thanks to Final Cut Pro 3's new Voice Over feature, you can record narration while playing back the timeline (see "It Ain't Over till the Voice-Over"). This allows you to see the sequence while recording the track—particularly useful for recording temporary test narrations before capturing a final narration. You can also use Voice Over for automatic dialogue replacement (ADR).

Begin by setting the sequence's In and Out points to bracket the lines of dialogue you want to replace. Set Final Cut Pro into Looping playback mode (control-L). Play the section a few times so the actor can practice dialogue timing and intonation. When the actor is ready, simply click on the red Record button. Repeat this process as often as necessary. Note that every time you record the passage, Final Cut Pro adds a new audio track. When you think you've got it, go through the tracks and pick the one that works best for you, discarding the others.—TOM WOLSKY

Create Hybrid CD-ROMs with Toast 5

People often distribute video on CD-ROM. To reach the widest audience, you'll want a CD that can be read by both Macs and Windows PCs. If you're a Mac stalwart, you may not know that Macs and PCs look at CD-ROMs differently. For example, Macs tend to disregard Microsoft's Joliet naming standard, which allows for file names as long as 64 characters. Macs will usually truncate these names when you burn a CD-ROM, meaning that if you burn an interactive video player on your CD, it may not autoloading when you pop it into a PC because your Mac changed the required file name impression.exe to impres-1.exe.



Likewise, a CD-ROM burned on a PC may not behave properly when you load it into your computer, even if the original files were formatted for Macs. For example, an MPEG-1 file won't automatically load into QuickTime.

You can work around this by creating a hybrid CD-ROM. A hybrid CD shows only the Mac files to a Mac and only the PC files to a PC. To make one, you need Roxio's \$99 Toast 5 (866/280-7694, www.roxio.com).

Start by creating a temporary partition (Utilities: Create Temporary Partition), a place on your desktop where you can collect your Mac files. Name this partition appropriately, as its name will also be that of your CD-ROM when viewed on a Mac system. Copy all the Mac files and apps you need to the partition.

Click on the Others button in Toast's main window and continue holding down the mouse. A variety of disk options will appear in a drop-down window. Choose Custom Hybrid.

You'll now see two buttons: Select Mac and Select ISO. Click on Select Mac. You will be prompted to select a volume. Choose the temporary partition you created. All the files in the partition will load. Now the Mac side of the CD-ROM is complete.

Click on Select ISO. Drag the files you want Windows users to see into the files window. Name the PC disc. Click on Toast's Settings tab and select Joliet (MS-DOS + Windows) from the Naming menu. Click on Record, and you'll have a custom hybrid CD-ROM that can cross platforms without a hitch.—ANTON LINECKER □

Soft Edge and Soft-Shoe Softening the edge between split screens is no longer a headache in version 3 of Final Cut Pro.



It Ain't Over till the Voice-Over You can record narration while playing back Final Cut Pro 3's timeline, handy for ADR and recording temporary test narrations before capturing a final narration.

Contributing Editor JIM HEID specializes in digital-media technologies and writes the weekly, nationally syndicated "Gear" column for the *Los Angeles Times*. ANTON LINECKER is a video technical advisor and writer based in Los Angeles. TOM WOLSKY is a former producer for ABC News in New York and London, and is the author of *Final Cut Pro 2 Editing Workshop* (CMP Books, 2001).

Optimize Classic

To run older Mac apps in Mac OS X, you must use the operating system's Classic environment. But if Classic is too slow for you, do not despair—there's a lot you can do to speed up Classic's start time, increase its overall stability, and even reduce the amount of hard-drive space it requires.

Classical Beauty

Because everyone uses OS X's Classic mode differently, there's more than one right way to optimize it. Generally speaking, you want to remove the control panels and extensions not required for the tasks you perform in Classic. You have three ways of doing this—optimizing your existing System Folder, creating a new customized System Folder, or creating a new optimized System Folder. Your needs will determine the best method for you. If you want the smallest, fastest-loading Classic possible and don't plan to boot directly into OS 9, create a new optimized System Folder. If you want a relatively small Classic mode that's capable of serving as an OS 9 System Folder, create a new customized System Folder.

And if you're not all that concerned about Classic's loading speed, continue to use your existing OS 9 System Folder, but remove superfluous extensions to get a faster, stabler Classic environment.

Optimize an Existing OS 9 System Folder

If you use your existing OS 9 System Folder as your Classic environment, you won't have to reinstall programs, fonts, or extensions for use in Classic—everything you need is

already in your System Folder. However, you'll need to do a fair amount of work to make it stable and quick to load.

Open the Extensions Manager control panel and duplicate your OS 9 set; that way, you'll have your full set when you boot directly into OS 9. Then name your duplicate set—for example, "Classic Set."

A nice alternative for controlling your extension sets is Casady & Greene's \$80 Conflict Catcher 9 (800/359-4920, www.casadyg.com). It runs in Classic

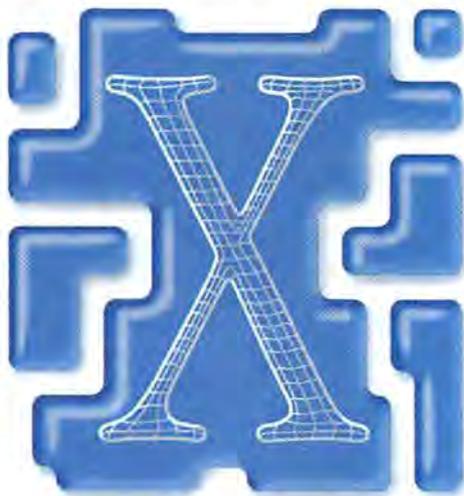
and provides an intelligent boot feature that loads one set when you launch Classic and another when you boot into OS 9 (see "Set Control").

Whichever you choose, begin browsing the Control Panels and Extensions folders for Apple-supplied bits that are unnecessary in Classic. For example, OS X provides video drivers for Classic, so there's no need to load your ATI or Nvidia drivers. Unfortunately, except for pieces the OS adds or updates when you first run Classic, there's no set list of what is and is not required for Classic to function properly. To truly optimize your existing OS 9 System Folder for Classic, you'll have to experiment by disabling control panels and extensions on a case-by-case basis. Disable some extensions and/or control panels (via Extension Manager or Conflict Catcher), restart Classic, and see if everything you need still functions. If it does, disable more files and try again. When something stops working for you, add the last file(s) you disabled. As a general guideline, OS X provides most of the hardware support for Classic, so you can disable things such as mouse drivers, video drivers, Ethernet controllers, and so on.

Some third-party extensions and control panels may be incompatible with Classic or simply nonfunctional in Classic—you should disable them. Incompatible third-party drivers are fairly easy to identify, as their presence prevents Classic from loading. By disabling third-party extensions one by one, you'll be able to determine which ones prevent Classic from loading. Nonfunctional third-party drivers can be identified by testing in Classic. For example, if your scanner's driver doesn't allow the scanner to work in Classic as it did in OS 9, there's no reason to load the extension. At press time, Dan Frakes was updating his \$15 InformINIT (www.informinit.com), a System Folder guide that will include information on Classic and how start-up files interact with it.

Create a New Classic Environment

If you have multiple hard drives (or more than one partition), you can create a new OS 9 System Folder



that's optimized for use only in Classic and keep your full OS 9 installation for times when you need to boot into OS 9—to use a scanner that isn't supported in OS X, for example.

In many ways, it's easier to start from scratch and install a new OS 9 for Classic, since you won't have a large batch of third-party extensions and control panels to work through. However, there are trade-offs to consider: you'll need to reinstall programs—such as Internet Explorer and FileMaker Pro—that put pieces of themselves in the System Folder. (You can identify these programs by looking in your existing OS 9 System Folder.) Look at the top level of the System Folder for third-party folders (Eudora Folder and Claris, for example) and inside the Extensions folder for the same thing (Macromedia, for example). The Preferences folder, although used primarily for easily re-created preference files, may also contain application code, so it's worth a quick look.

Setting up a sparse System Folder will save disk space and allow Classic to load faster. For example, a full OS 9 installation requires 285MB of drive space on my iBook and takes roughly 45 seconds to launch as Classic. In comparison, my fully optimized Classic folder takes only 87MB of drive space and loads in about 30 seconds.

Despite the differences in size and launch times, both the customized and fully optimized Classic installations support printing to a LaserWriter over AppleTalk, Internet connectivity, viewing Java applets in Classic browsers, and the ability to run Software Update in Classic. There are some disadvantages to the smaller, fully optimized installation, such as disabled Text-To-Speech and Apple Guide in Classic, but if you find these features necessary, you can always add them to your Classic System Folder.

You can optimize a new OS 9 installation for Classic by choosing a customized installation or a fully optimized one. The fully optimized installation will require a bit more effort to create, but it will save 50MB of drive space and shave off a few more seconds at launch time.

Customized Install When you use this option, you'll save more than 100MB of drive space. It's also very easy to do. Boot your machine from your OS 9 installation CD, launch the installer, and identify the target drive or partition for the new installation. After reading and accepting the license agreement, click on the Customize button in the dialog box.

Leave the Mac OS 9.X option selected, and then deselect all the remaining options except Mac OS Runtime For Java. Although OS X includes Java, you will need to install Java in Classic to view Java applets in Classic browsers—for use when testing Web pages, for example. In addition to the services mentioned earlier, this method will give you a full set of standardized Apple-menu items and control panels.

Fully Optimized Install A fully optimized installation creates the smallest, fastest-loading Classic envi-



ronment possible. You may not be able to boot into OS 9 with this system, but it will provide a fully functional Classic environment. Start by following the instructions from the previous method to customize the installation (leaving just two options selected), and then select the Customized Installation option from the pop-up menu located to the right of the Mac OS 9.X label.

For this optimized Classic environment, leave the Core System Software option selected, and then deselect all the remaining options except Fonts.

Once you've done that, you'll need to go back and enable a few individual items. Select QuickTime in the Multimedia category, LaserWriter 8 in the Printing category, Chooser in Apple Menu Items, and Software Update in Control Panels.

Finally, you have a bit of additional work to do in the Network & Connectivity category. First enable AppleShare, and then open the Security subtopic and select Network Security. This last step is necessary for making Software Update able to function in the Classic environment—useful if you're creating a Classic that cannot also boot into OS 9.

Launching Pad

You now have a baseline for creating a System Folder for use in the Classic environment, but if you have other needs—such as Text-To-Speech or the use of the Apple Guide—boot from the Mac OS 9 installation CD and then add the other pieces that you want.

The purpose of optimizing Classic, no matter which method you choose, is to create the smallest, fastest-loading, and stablest Classic environment possible. If you invest the time it takes to do this well, you will find that an improved Classic environment makes for a much more productive Mac OS X experience. □

Set Control Casady & Greene's Conflict Catcher 9 will load the correct extension set for either Mac OS 9 or Mac OS X's Classic mode, depending on which one you launch.

Your goal is to remove unwanted extensions and control panels.

The Choice Is Yours

Ours is anything but a one-size-fits-all world, so I do my best to provide my readers with many ways to solve their Mac problems. This installment of *Mac 911* provides a plethora of solutions—for launching applications with the press of a key, mating old Macs with new scanners, forcing a Power Mac to stick out its tongue and say *ahhh*, and recording “unrecordable” audio files.

Key Commandeering

Mac OS 9's Keyboard control panel has a function that lets you launch applications by pressing function keys. I love this feature but find that it's unavailable in Mac OS X. How can I get it back?

George Mennel, *Kansas City, Missouri*

Although this feature is missing from OS X, you can launch OS X applications from your Mac's keyboard—with some help from third-party utilities.

I've plundered the Web for solutions and come up with some dandies.

I'll begin with Michael Kamprath's Keyboard Maestro 1.0 (www.keyboardmaestro.com). This nifty \$20 utility (which is also available in a free, light version) allows you to assign hot keys to applications and use hot keys to enter boilerplate text, switch to the next or previous application, and hide all applications. You can even use the program to remap key commands

(a very handy feature for those of us who will never get used to the fact that pressing $\#$ -N creates a new window, rather than a new folder, in OS X's Finder).

Among its myriad talents, James Thomson's indispensable \$25 palette-based file-launching utility, DragThing 4.2 (www.dragthing.com), allows you to launch applications via your keyboard.

CE Software's \$60 QuickKeys X (515/221-1801, www.cesoft.com), in addition to being a fine macro utility, lets you launch applications with a keystroke. As with DragThing, you can place shortcuts in easily configurable palettes (known as Toolbars in QuickKeys parlance).

LaunchBar 3.1.2, from Objective Development (\$20; www.obdev.at), takes a slightly different approach. Instead of assigning a hot key to an application, you press $\#$ -spacebar and begin typing the name of the item you want to launch—an application, file, Web address, or e-mail address, for example. As you type, LaunchBar narrows the list of matching items. The utility also learns as you type—if you type **word**, for example, and select Microsoft Word from LaunchBar's list, Microsoft Word appears at the top of the list the next time you type these letters.

Old Mac, New Scanner

I'd like to find a new scanner to use with my Power Mac 7200/120. Unfortunately, all the new scanners seem to have USB ports, which my Power Mac doesn't have. What can I do?

Dick Snedeker, *West Windsor, New Jersey*

Although your Power Mac's youthful glow may have faded, you have a couple of options: you can either procure a scanner that's compatible with your Mac as it is now or make your Mac compatible with many of today's scanners.

The first option requires the purchase of a scanner with a SCSI interface. Though most consumer-grade scanners made today offer only a USB port, SCSI scanners are still available from companies including Epson (800/922-8911, www.epson.com), Umax (510/651-4000, www.umax.com), and Hewlett-Packard (800/752-0900, www.hp.com).

These SCSI scanners—which transfer data more quickly than their USB counterparts—are intended for professionals and are priced accordingly. Whereas you can purchase a fine USB scanner for less than \$200, you should expect to pay \$500 or more for a SCSI scanner.

If you, like me, know the value of a dollar, I'd suggest that you make your Power Mac compatible with today's USB scanners by adding a USB adapter

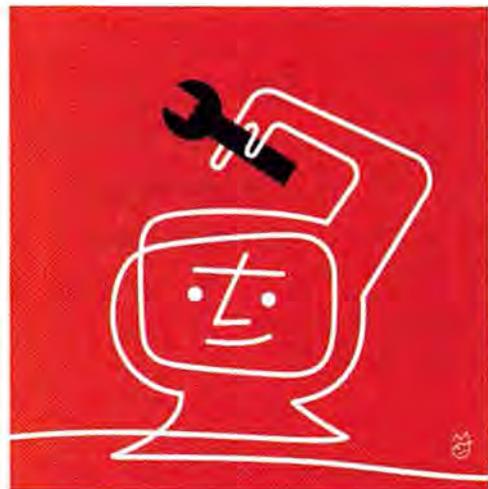


ILLUSTRATION BY FELIX SOCKWELL

to one of your 7200's three PCI slots. Companies such as Keyspan (510/222-0131, www.keyspan.com) and Belkin (800/223-5546, www.belkin.com) offer two-port USB PCI cards for around \$40. With one of these adapters snugged down inside your Mac, you're at liberty to use one of the many inexpensive USB scanners on the market.

Open Sesame!

The media drive on the new Power Mac G4 lacks an eject button. Instead, Apple asks that you use the Apple Pro Keyboard's eject button. Does this mean there is no hope for using a different keyboard with this Mac?

Tim Smalley, Lansing, Michigan

Fear not, Tim. With the Power Mac G4, you can use your ergonomic keyboard to eject discs. Though the SuperDrives inside the top-of-the-line Power Macs do not have manual eject switches (such as the switches, found on earlier Mac models, that you engage by shoving a straightened paper clip into a tiny hole in the drive slot), you have oodles of options for making these drives open wide. May I count the ways?

One: You can highlight the disc and drag it to the Trash. Two: You can highlight the disc and press ⌘-E. Three: In Mac OS 9 and earlier, you can highlight the disc and press ⌘-Y. Four: You can launch iTunes and then press the Eject button in the main iTunes window. Five: In OS X 10.1, pressing the F12 key opens the media drawer (yes, even when it's empty). Six: You can hold down the mouse button on start-up. Seven: If the disc is a start-up disc (for either OS 9 and earlier or OS X), you can hold down the option key at start-up, select the disc, and then press ⌘-period (.) to eject it. Eight: If you can't remove the disc by any other means, hold down the ⌘, option, O, and F keys at start-up to boot into Open Firmware; at the prompt, type `eject cd` and then `mac-boot` to continue start-up. Nine: You can turn on the Mac's built-in speech recognition, highlight the disc, and trigger the Eject This Disk AppleScript verbally. Ten: If you're running OS 9.2, open Eject Extras (Applications: Apple Extras) and double-click on the Eject application. To make this process easier, use the Eject control strip.

Real to Reel

I have found some Real Audio files I would like to convert to MP3 files and transfer to my iPod, but there seems to be no way to save them to my hard drive. How can I listen to them on my iPod?

Corey Sevett, Minneapolis, Minnesota

Corey, as you probably suspect, Real Audio files that stream across the Internet were not meant to be downloaded or transferred. But what you ask is not impossible. To achieve your goal, you must be running Mac OS 9 or earlier and you must record the output from your Mac's sound-out port into your Mac. Here's how it works:

On the software side of things, you'll obviously need a copy of Real Player (www.real.com) to play the Real Audio files. The job also requires a sound-editing application for recording sound. Felt Tip Software's \$35 Sound Studio (www.felttip.com) is the one that I prefer (see "Sound Advice").

If you have a Mac with a sound-in port, the only hardware you need is your Mac and an audio cable that has a stereo miniplug (a Walkman-style plug) on both ends. If your Mac lacks a sound-in port, you'll also need some kind of audio adapter—a PCI audio card or a USB audio-input device such as Griffin Technology's \$35 iMic adapter (615/399-7000, www.griffintech.com). String the audio cable between the Mac's sound-out port and the sound-in port on your sound-input device. Open the Sound control panel, click on the Sound window's Output tab, and then select Built-in from the list of devices. Launch Sound Studio, select Sound Input Source from the Audio menu, and choose the sound source (the Mac's sound-in port or USB audio, for instance). Click on OK to confirm your choice. Then select New from Sound Studio's File menu to open a new audio document.



Sound Advice

With the right cable, audio adapter, and audio editor, you can record Real Audio files using Sound Studio.

Open Real Player and load the Real Audio file you want to play. Press Real Player's Play button; then immediately switch to Sound Studio and press the Record button (don't worry, it will take Real Player a while to stream the audio to your Mac—you won't miss anything). When the Real Audio file finishes playing, press Sound Studio's Stop button to end the recording. Save your recording in Sound Studio as an AIFF (Audio Interchange File Format) file. You are now able to open this file in iTunes, convert it to an MP3 file, and then upload it to your iPod.



TIP OF THE MONTH

In OS X, you can print your Adobe Photoshop files to networked printers, including LPR (line printer) devices.

Run Photoshop in OS X's Classic mode. When you're ready to print, save your creation as a normal Photoshop file, including layers (no need to flatten them). Then open the saved file with GraphicConverter for OS X (this app opens Photoshop files just fine) and print it. The Carbon version of GraphicConverter X is shareware (\$35), and it's worth every penny. Download it from Lemke Software, at www.lemkesoft.com.

Terrell Smith, Madison, Wisconsin

<< Imperfect Words

I have years of work I created in WordPerfect, Corel's now-abandoned word processor. Since it's not supported, I need to convert my files to Microsoft Word. I have Office v. X but can't find a translator. Is there a way to convert?

Thomas H. Suttles, *Magalia, California*

As with all the questions in this month's column, you can approach this problem from a couple of different angles. You can do your work in WordPerfect and create Word-compatible files, or you can convert your WordPerfect files with a third-party utility.

If you want to make WordPerfect more perfect, I suggest that you trip on over to VersionTracker (www.versiontracker.com); enter the word **WordPerfect** in the Search field; and from the resulting Web page, download Corel WordPerfect Enhancement Pack 3.5.e, WordPerfect Updater 1.0, and WordPerfect Conversions 2.0. The first of these is a free, full version of the application. WordPerfect Updater 1.0 patches the program so it's more compatible with OS 8 and OS 9, and WordPerfect Conversions 2.0 adds a host of new converters to WordPerfect—allowing you to export your WordPerfect documents in a format Word X can understand. John Rethorst created both utilities. Both are free and are totally unsupported by Corel. To add the converters to Word Perfect, drop the MacLinkPlus WordPerfect 3 file on your Mac OS 9.X System Folder (WordPerfect Conversions 2.0.1: For Extensions Folder). Then select everything else in the WordPerfect Conversions 2.0.1 folder and move it to WordPerfect's Conversions folder (inside the Corel WordPerfect 3.5 Enhanced folder). Restart your Mac or, if you're using OS X, relaunch the Classic environment.

When you next launch WordPerfect and select Save As from its File menu, you can save files as Microsoft Word 6, 4.0, or 5.X documents. To open your files in Word X, save them as Word 6 documents. Most of the formatting from your Word-

UNSOLICITED ADVICE

As lush as the Aqua interface may be, I spend far too much time navigating OS X's directories, looking for the stuff I need. For this reason, I've dropped a few helpful items into the Dock. Read on to see how you can do as I do:

Preference Panes If you'd like to bring a touch of the old, hierarchical Apple menu to OS X, try this trick: Create a new folder on your OS X desktop, and name it Preferences. Open the PreferencePanels folder within the Library folder inside OS X's System Folder, and press ⌘-A to select everything in it. Then hold down ⌘-option, and drag the highlighted items to the Preferences folder you just created. Doing so moves aliases of each system preference into this folder.

So you can distinguish this folder from other OS X folders, paste the icon from the System Preferences application onto the folder: click once on System Preferences (inside OS X's Applications folder), press ⌘-I to bring up the System Preference Info window, click once on the icon, and press ⌘-C to copy the icon. Then click once on the Preferences folder you created, again press ⌘-I to produce the Info window, click on the folder icon, and press ⌘-V to replace the icon with the one you copied earlier. Given that you'll

soon be able to select system preferences individually, you'll no longer need the System Preference icon that currently resides in the Dock. Click and drag it out of the Dock to make it vanish. Drag the Preferences folder to the Dock. Now when you want to select a system preference, simply click and hold on your Preferences folder and select the system preference you desire from the resulting menu.

Classic Control Panels There's no need to launch an application in the Classic environment to access OS 9's control panels. Just drag the Control Panels folder from OS 9's System Folder into the Dock. Click and hold to launch a control panel in Classic (note that not all control panels work in OS X).

Networked Volumes Mount every network volume you'll ever need (including your iDisk), copy their icons into a folder, and place that folder in the Dock. To mount a volume later, click and hold on the folder and select the volume you want.

Applications and Utilities Folders To avoid having to maneuver through directories or use a window's toolbar, move these folders to the Dock. To remove any of these folders, just drag it to the desktop.

Perfect documents remains, although any hyperlinks they contain no longer function.

To bend documents more completely to your will, purchase a copy of DataViz's MacLinkPlus Deluxe 13 (800/733-0030, www.dataviz.com). This \$100 utility can translate files from just about any format into just about any format—and that includes files created on the PC!

In OS 9 and earlier, you can perform this translation from within an application—just select a file in the Open dialog box, and MacLinkPlus Deluxe takes care of the translation. Regrettably, this isn't possible in OS X. Instead, you must drag the file you want into the MacLinkPlus Deluxe application, press the Translate button, and select the format into which you'd like to translate the file. □

Contributing Editor CHRISTOPHER BREEN occasionally uses this space as an advertising vehicle for his book *Mac 911* (Peachpit Press, 2002).



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Feel free to adjust its height, depth and angle—you can do it with one finger. Rotate it 180 degrees, tilt it 35 degrees, and adjust its height by 7 inches, up or down!

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New!



Includes

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- Import & organize digital photos
- Share photos online
- Create slide shows with music soundtracks
- Edit and improve images
- Print photos and create photo books

Apple Pro Speakers:

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Now available with SuperDrive:

SuperDrive (DVD-R/CD-RW) let you burn your own movies and photos that play in almost any standard DVD player!



\$1,294!

New Apple iMac G4 starting at

Order	MHz	RAM	FREE RAM	TOTAL RAM	FREE Printer	Hard Drive	56K Modem	Optical Drive	USB/FireWire Ports	Apple Pro Speakers	Price!	or as low as
#967054	700MHz G4	128MB	256MB*	384MB	Yes	40GB	Yes	CD-RW	5/2	No	\$1,294*	\$37/mo**
#967055	700MHz G4	256MB	256MB*	512MB	Yes	40GB	Yes	DVD/CD-RW	5/2	Yes	\$1,494*	\$42/mo**
#967056	800MHz G4	256MB	256MB*	512MB	Yes	60GB	Yes	SuperDrive	5/2	Yes	\$1,794*	\$50/mo**

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Up to 600MHz with either CD-ROM or DVD-ROM/CD-RW Combo drives!

Sports a dazzling 14.1" screen!

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Turbocharged with a fast 600MHz PPC G3 processor, 256K on-chip cache

running at full processor speed, a 100MHz system bus, this new iBook model packs some serious power.

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- Optional AirPort™ Base Station & Card
- 16-bit CD-quality stereo sound output minijack through AV port

Contains electronic documentation. Most of the software applications are preinstalled. A backup copy of the software is provided on CD-ROM.



Digital camera shown is an additional purchase. (#980465)



14.1" Display 1024 x 768 pixels 12.1" Display 1024 x 768 pixels

New!
Now with 14.1" Display and DVD-ROM/CD-RW Combo Drive!

Apple iBook G3 starting at **\$1,194!**

Order	MHz	RAM	FREE RAM	TOTAL RAM	FREE Printer	Hard Drive	56K Modem	Optical Drive	USB Ports	FireWire Ports	Screen Size	Weight	Price Drop!	Price!	or as low as
#964797	500MHz G3	128MB	128MB*	256MB	Yes	15GB	Yes	CD-ROM	2	1	12.1"	4.9 lbs.	\$100	\$1,194*	\$34/mo*
#964798	600MHz G3	128MB	128MB*	256MB	Yes	15GB	Yes	DVD-ROM	2	1	12.1"	4.9 lbs.	\$100	\$1,394*	\$39/mo*
#964799	600MHz G3	128MB	128MB*	256MB	Yes	20GB	Yes	DVD/CD-RW	2	1	12.1"	4.9 lbs.	\$200	\$1,494*	\$42/mo*
#957057	600MHz G3	256MB	128MB*	384MB	Yes	20GB	Yes	DVD/CD-RW	2	1	14.1"	6 lbs.	New!	\$1,794*	\$50/mo*

*Own an iBook 500MHz for as low as \$34/month with the New MacMall EZ Payment Plan! Call for details. *Professional installation fee of \$30 is required for free RAM offer. Lexmark Z23 Printer is free after \$50 mfr mail-in rebate and \$19.95 MacMall mail-in rebate. Initial price of printer is \$69.95. Offers valid through 03/31/02.

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USB External Floppy Drive
only \$67⁹⁵! #997127 See page 45.

\$774!

iMac G3 starting at



Order	MHz	RAM	FREE RAM	TOTAL RAM	FREE Printer	Hard Drive	Optical Drive	56K Modem	FireWire/USB Port	Price Drop!	iTunes & iMovie 2	Price!	or as low as
#965182	500	64MB	128MB*	192MB	Yes	20GB	24X CD	Yes	2/2	\$25	Yes	\$774*	\$23/mo*
#965184	500	128MB	128MB*	256MB	Yes	20GB	CD-RW	Yes	2/2	\$100	Yes	\$894*	\$28/mo*
#965186	500	128MB	128MB*	256MB	Yes	20GB	CD-RW	Yes	2/2	\$100	Yes	\$894*	\$25/mo*

Order	MHz	RAM	FREE RAM	TOTAL RAM	FREE Printer	Hard Drive	CD-RW Drive	56K Modem	FireWire/USB Port	Price Drop!	iTunes & iMovie 2	NEW Price!	or as low as
#965188	600	256MB	128MB*	384MB	Yes	40GB	Yes	Yes	2/2	\$300	Yes	\$994*	\$28/mo*
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\$1,994!

Choose 1 FREE!

With purchase of PowerBook G4 model with DVD/CD-RW drive.



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#964800	550	128MB	128MB*	256MB	Yes	20GB	DVD	N/A	56K	Two/One	Yes	\$200	\$1,994*	\$56/mo**
#964802	667	256MB	256MB*	512MB	Yes	30GB	DVD	Yes	56K	Two/One	Yes	\$200	\$2,794*	\$78/mo**
New PowerBook G4 Models—Now with DVD/CD-RW Combo drive!														
#966178	550	256MB	Promo††	256MB	Yes	20GB	DVD/CD-RW	Promo††	56K	Two/One	Yes	New!	\$2,294*	\$64/mo**
#966311	667	512MB	N/A	512MB	Yes	30GB	DVD/CD-RW	Yes	56K	Two/One	Yes	New!	\$2,994*	\$84/mo**

*Own this Titanium PowerBook G4 550MHz DVD for as low as \$56/month with the **New MacMall EZ Payment Plan!** Call for details.
 *Free RAM offer requires an additional \$30 professional installation fee. †Lexmark printer is free after \$50 mfr. mail-in rebate and \$19.95 MacMall mail-in rebate. Initial price of printer is \$69.95.
 ††AirPort offer available only on PowerBook 550MHz model and requires an additional \$30 professional installation fee. †††Excludes PowerBook G4 D667MHz models. Free RAM offer requires an additional \$30 professional installation fee except for PowerBook DVD 667MHz model that has additional RAM installed by Apple Computer, Inc. Offers expire 3/31/02.

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Features iPhoto which allows you to import and organize digital photos, create slide shows with music soundtracks, edit & improve images, share photos online & print photos and create photo books!

New!



speeds up to 1GHz!

SAVE up to \$500!
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Power Mac G4 starting at

\$1,294!

Display sold separately.

Price Drops up to \$500!

Order	MHz	RAM	FREE RAM	TOTAL RAM	FREE Printer	Hard Drive	56K modem	Drive	Gigabit Ethernet	Video	Price Drop!	Price!	or as low as
#965200	733	128MB	128MB*	256MB	Yes	40GB	Yes	CD-RW	Yes	NVIDIA GeForce2 MX	\$400	\$1,294*	\$37/mo**
#965202	867	128MB	256MB*	384MB	Yes	60GB	Yes	DVD-R/CD-RW	Yes	NVIDIA GeForce2 MX	\$500	\$1,994*	\$56/mo**

New Power Mac G4 Models—Speeds up to 1GHz!

#968014	800	256MB	256MB*	512MB	Yes	40GB	Yes	CD-RW	Yes	ATI Radeon 7500	New!	\$1,594*	\$45/mo**
#968045	933	256MB	256MB*	512MB	Yes	60GB	Yes	DVD-R/CD-RW	Yes	NVIDIA GeForce4 MX	New!	\$2,294*	\$64/mo**
#968048	1GHz	512MB	512MB*	1GB	Yes	80GB	Yes	DVD-R/CD-RW	Yes	NVIDIA GeForce4 MX	New!	\$2,994*	\$84/mo**

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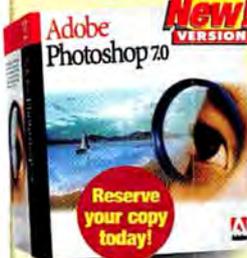
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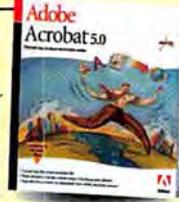


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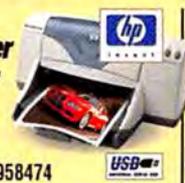
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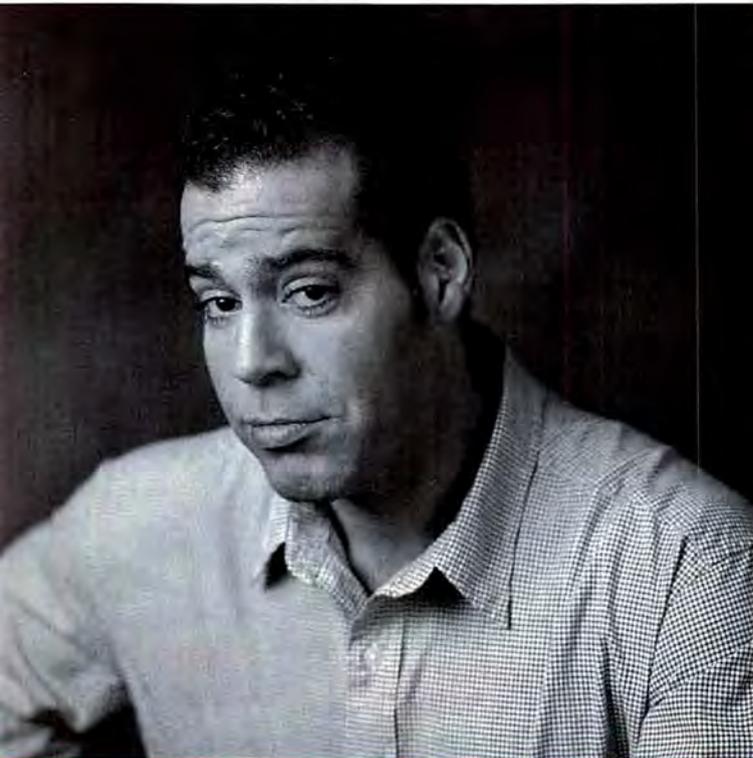
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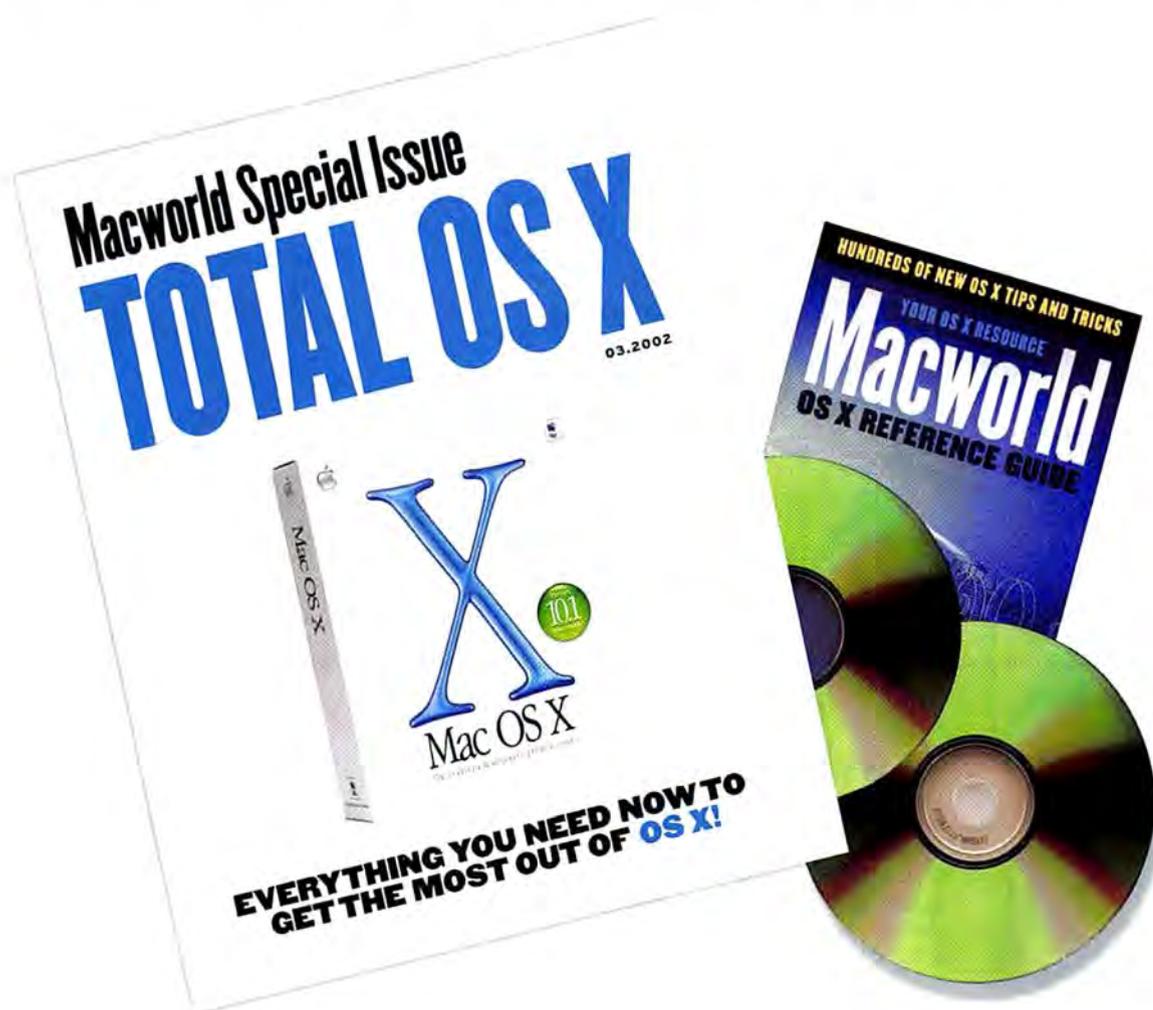
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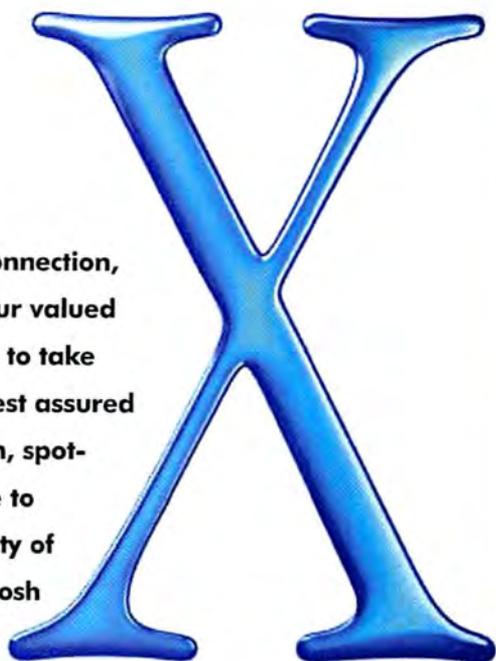
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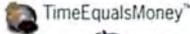


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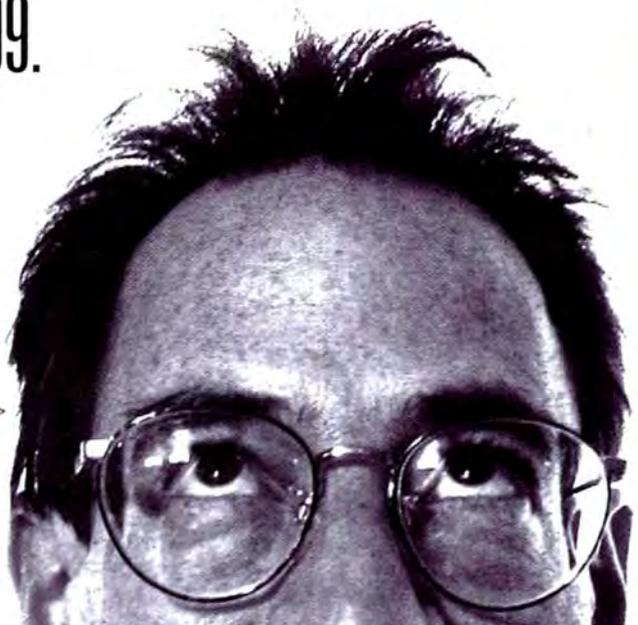
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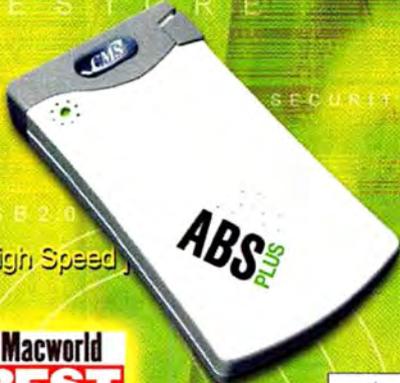
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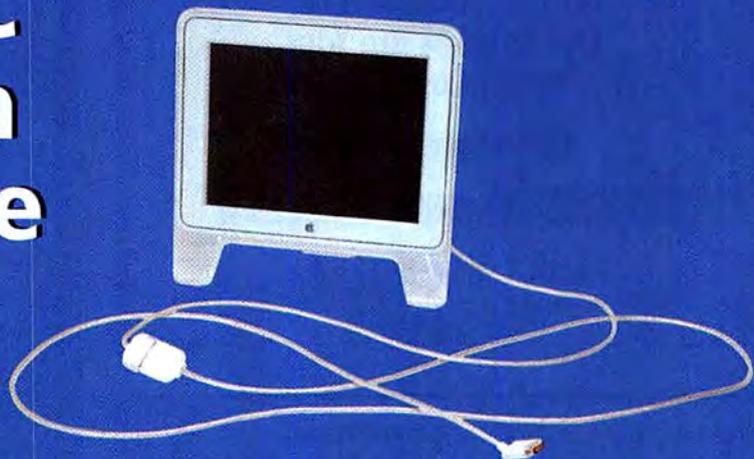
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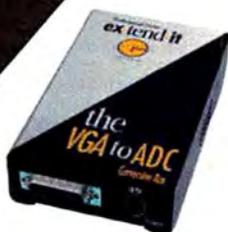
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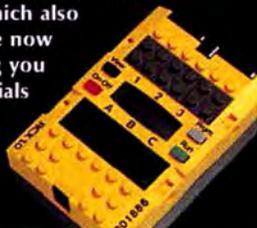
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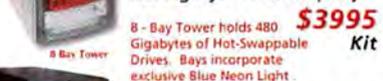
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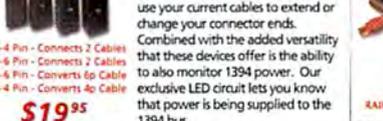
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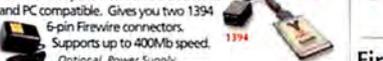


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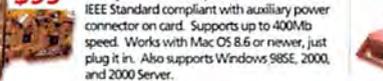


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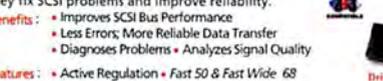
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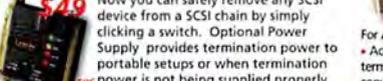
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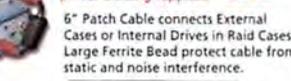


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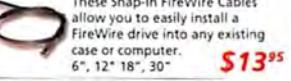


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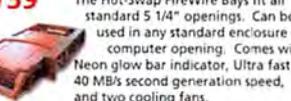


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FireVue™ FireWire Hot-Swap Bay

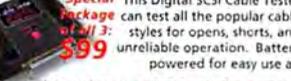
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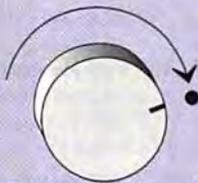
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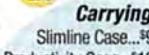
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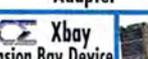
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ANDY IHNATKO

< continued from page 120

Bull. I've got boxes of legally acquired videos, and burning my own DVD versions of these not-on-DVD-in-America classics makes me feel like the lead singer for Rage Against the Machine, except I doubt that Zack de la Rocha would get all giddy about having a Patrick McGooohan episode of *Columbo* on DVD. I also believe that Burger King makes a damned nice grilled-chicken sandwich, and I'm more than willing to let it continue to do so after the Revolution comes.

Enthusiasm for movies and TV should not be restricted, any more than enthusiasm for music should. Distributors, being businesses operating in a free society, have to pick and choose the movies they release. But an app like iDVD removes a barrier; it puts you at a higher level of intimacy with the material: I made this DVD because I *love* this movie. So what if not enough people to justify publishing it on DVD want to watch it? I've got it on video, and I *can* make my own DVD.

Ihnatko on Film

The ultimate expression of this is my ongoing project to produce my own director-style commentary track. This is as far beyond iDVD's limitations as building a working cesium clock is beyond a planarian worm's, but if iDVD isn't the right tool, it was the inspiration.

I cannot make a copy of *Star Wars* featuring my own commentary track with iDVD, and even if I could, I couldn't distribute it. But I have a lifetime of arrogant hypermegageekoid trivia, speculation, and opinions to share, and I *can* plug a microphone into Griffin Technology's \$35 iMic USB audio adapter (www.griffintech.com), record my commentary with Felt Tip Software's \$35 Sound Studio (www.felttip.com), and convert that to an MP3 file, which can be played anywhere. So telling the listener to pause the tape after the 20th Century Fox logo and press Play on my mark is nearly as good as an official DVD commentary track.

It might be going a little overboard to argue that a new \$2,000 iMac with SuperDrive represents a step toward the Ultimate Freedom of the Proletariat. Still, it's an important weapon in the ongoing struggle to make digital media something for *users*, instead of something just for *consumers*.

Of course, by default, iDVD stamps the lower corner of each menu screen on each disc with a big, fat Apple corporate logo. But look: Steve Jobs makes a damned nice grilled-chicken sandwich, too. 1

An app like iDVD removes a barrier; it puts you at a higher level of intimacy with the material.

When he's not writing about the Mac, ANDY IHNATKO (www.andyi.com) can be spotted in the pages of Roger Ebert's "Movie Answer Man" column in the *Chicago Sun-Times*.

If Burning DVDs Is Wrong, I Don't Want to Be Right

Slave to the SuperDrive

MY APOLOGIES FOR THE UPCOMING APOCALYPTIC SHIFT in our planet's climate. I'm just positive that in the weeks since I've started burning discs with iDVD, the ozone hole has widened a skosh—and yet I'm unrepentant. It's a sad thing to deliver $\frac{1}{10}$ of 1 percent of all mammalian species—including one's own—to extinction. But to the hyperintelligent race of ducks who will have inherited the mantle of Earth's Dominant Species from us 10,000 years hence—and who will be reading this via a chronometastical media panel based on compressed-bread-crumbs technology—I wish it to be known that Andy Ihnatko wasn't one to duck (pardon the pun, O overlords) responsibility for his actions.

I know I'm mortgaging our kids' future a bit more with each disc I burn. But damn it, I want to be able to watch the big "Battle of the Bands" finale of VH1's *Bands on the Run*—on an airplane.

My new Mac cost thousands, but the way I figure it, Apple could make far greater profits if it just gave away the hardware and made its bones selling DVD-R media. My office is now littered with identical jewel cases that have Apple logos on them. It's not the technology that's at fault—you just have to go through a slightly modified form of the grieving process, stage by stage and DVD-R by DVD-R:

Denial. There's no way this machine can burn playable DVDs. Even if it can, they've got to look like crap, right? Proving otherwise will cost you a few discs.

Bargaining. OK, cool; the discs aren't as flawless as, say, the *Star Wars Episode I: The Phantom Menace* DVD, but damn, they're good. Now it's time to test the limits of iDVD's authoring system. I can't add in all those cool extended features I enjoy on commercial discs, but surely I can sort of fake things such as integrated bonus scenes and interactive play?

Anger. I have all sorts of ideas I can implement only in rampagingly lame fashion unless I pay \$999 for DVD Studio Pro, Apple's "real" authoring app. If I had known that I'd own a DVD burner in 2001, I'd never

have let my sister recycle my digital cassettes of her wedding. And I haven't been out of the house in four days and now I smell all funny and it's all Apple's fault.

Depression. I'm still working with my three-year-old

Bondi Blue iMac because my dual-processor G4 tower is always tied up acquiring, compressing, or burning video. I'm a superatomic turbo-powered loser.

Acceptance. You know, burning every single episode of a TV show won't seem so stupid five years from now, when *Ricki Lake* is off the air.

An Empowered Viewer

Fortunately, I was able to sail through all of these stages in fairly swift order. "Yes, a disc costs five bucks, but I *have* five bucks" is my sprightly refrain, giddiness overpowering my ability to multiply \$5 by, say, 133.

Burning DVDs does give you a feeling of real power, something I haven't known since the day I got my first CD burner. You're not *supposed* to be able to make these things; recording your own DVD should be as hard as building your own helicopter from scratch, à la *Junkyard Wars* (one episode of which I watched on my PowerBook last week while flying to Los Angeles).

It's a bit of payback, really. It annoys me that, for instance, I can't watch the great Rik Mayall and Ade Edmondson TV series *Bottom* on my DVD player. It's a smash hit in Britain, and I'm told that there is indeed an NTSC-format DVD out there, but it's not encoded for North American DVD players. The makers of DVDs have determined that just because I'm willing and able to pay for a disc doesn't mean I should actually be able to *play* it.

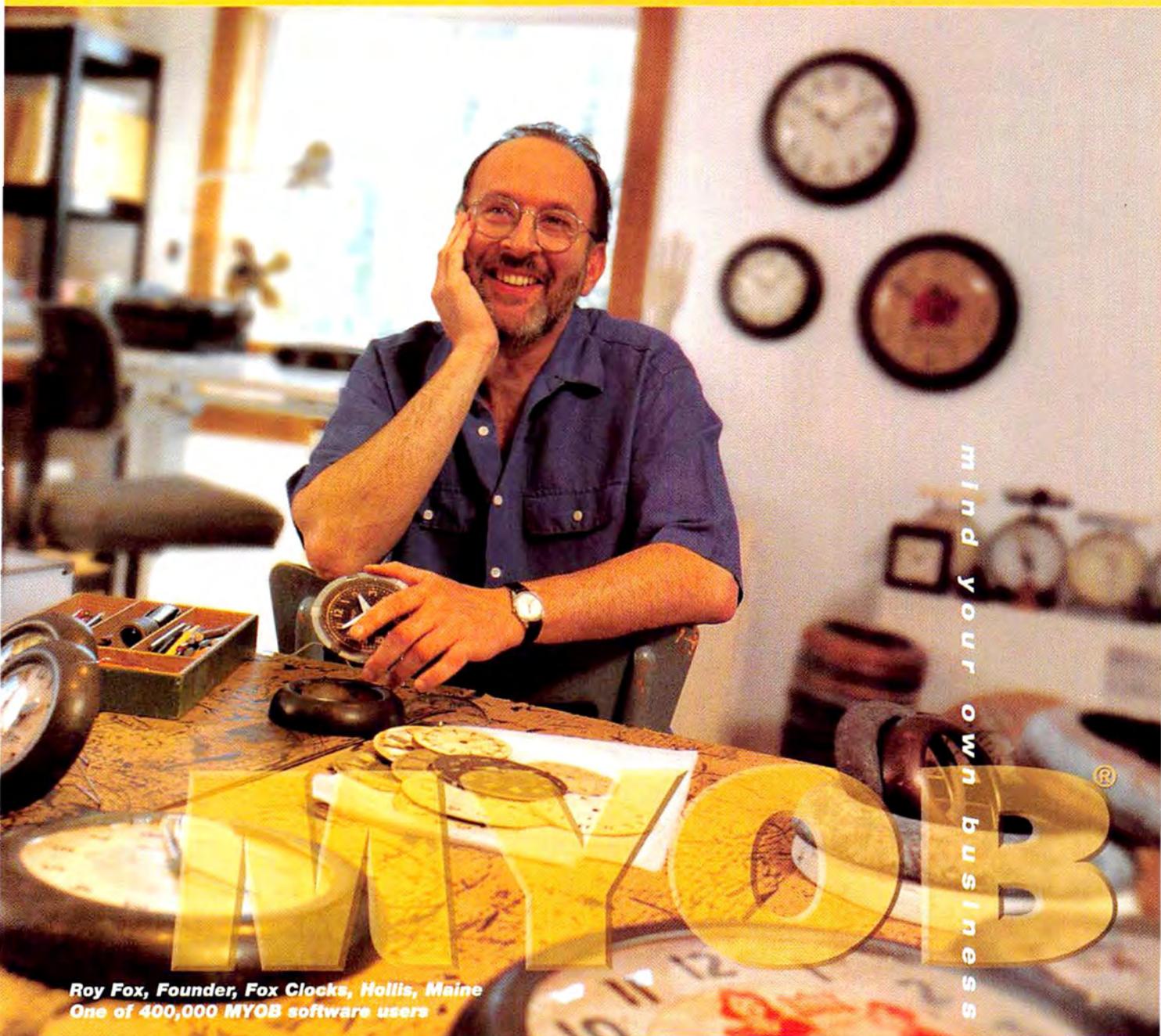
I haven't been out of the house in four days and now I smell all funny and it's all Apple's fault.



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