YOUR ILLUSTRATED GUIDE TO PANTHER X

WHAT YOU NEED TO KNOW BEFORE—AND AFTER—YOU UPGRADE, p. 66

Macworld

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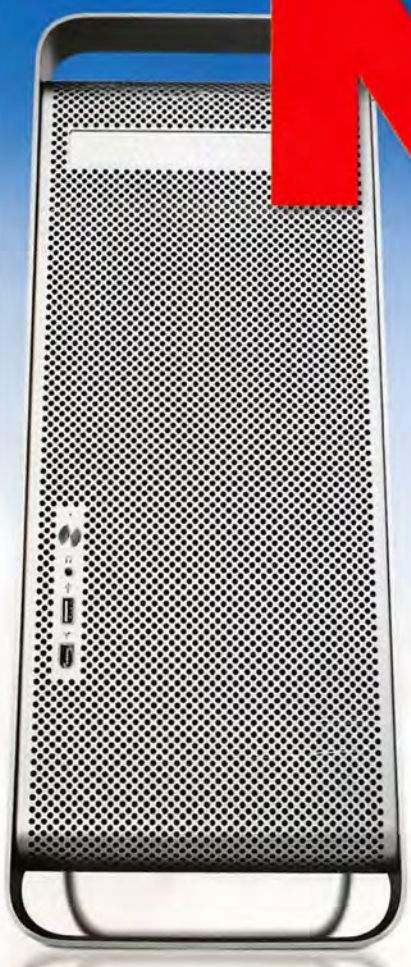
The Mac Product Experts



MAC VS. PC

THE POWER MAC G5 CHALLENGES THE PC COMPETITION IN SIX SPEED TESTS

4 NEW POWERBOOKS REVIEWED

PREVIEW G4 iBOOKS | **MOBILE MAC** NEW LAPTOP BAGS

The new PowerBooks. Now available in three sizes. Meet the PowerBook® G4 family. The 12" PowerBook is the only ultra-compact portable with a slot-loading CD/DVD-burning SuperDrive.™ The 17" PowerBook offers the largest, most stunning display to ever grace a notebook. And the family is now joined by the all-new 15" PowerBook,

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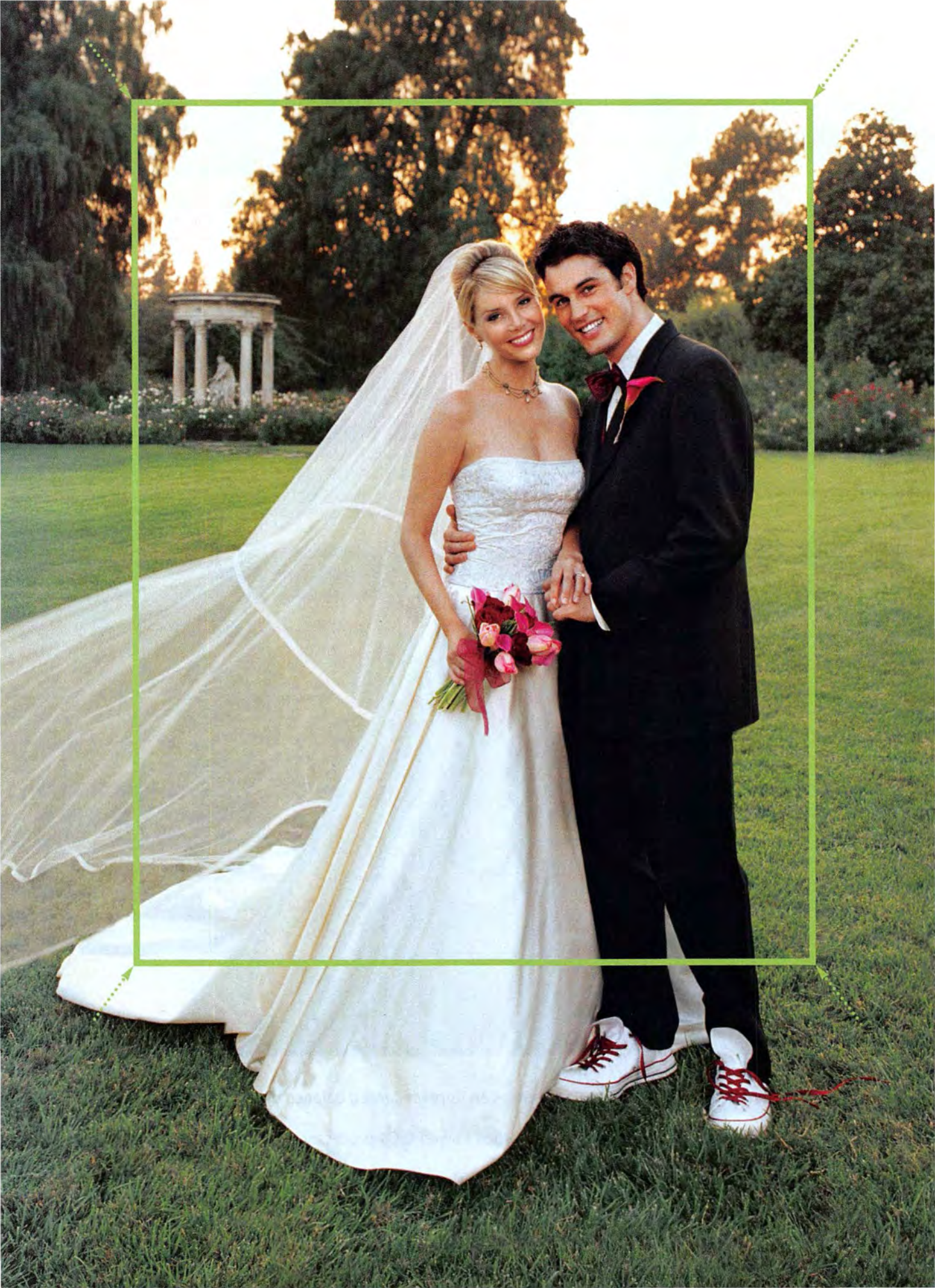
which shares its siblings' all-aluminum design and strikes an unprecedented balance of power and portability. Regardless of which one you pick, you'll get a turbocharged PowerPC G4 processor, a DVD-burning SuperDrive (available on all models), and the fastest wireless networking. The new PowerBooks. It's one amazing gene pool.



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Direct Printing From Memory Cards*
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Direct Printing From Digital Cameras**
And we mean practically any new camera. The i900D works with all the big brands.

The Canon i900D Photo Printer.

Any printer can print your photos. How many can enhance them? On the i900D, you can preview your shots and even crop them. To learn more, visit us at www.usa.canon.com/consumer or call 1-800-OK-CANON. Canon KNOW HOW®

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Picture Perfect

THE NEW PHOTO PRINTERS FROM CANON DEVELOP A BUZZ WITH NEXT-GEN FEATURES

DIGITAL PHOTOGRAPHY CONTINUES TO GAIN MORE AND MORE ENTHUSIASTS— some 20 million digital cameras are forecasted to be sold this year in the United States and another 16 million in Europe. The good news for all those shutterbugs, both amateur and professional, is that the process of printing high-quality photos is becoming easier and faster, thanks to longtime technology innovators like Canon.

Canon (www.usa.canon.com/consumer), a global leader in consumer and business electronics, has had its ear to the ground listening to the needs of digital photography aficionados: They don't like replacing costly color cartridges as soon as one color runs dry, they want faster photo printers, and they want the ability to print directly from their digital cameras. Now Canon has answered their call for high-quality, easy, and affordable photo printing with a six-color printer that is as fast as it is innovative.

Canon's i960 Photo Printer is one of the fastest photo printers in its class.

Featuring the emerging industry standard PictBridge technology for printing directly from a PictBridge-compatible digital camera or camcorder, the i960 Photo Printer is housed in a sleek design and can deliver up to 4,800 x1,200 color dpi* for superb print quality.

ECONOMICAL

The i960 Photo Printer features 3,072 total print head nozzles and can output crisp, clear 4x6 inch borderless prints in about 37 seconds.**

Compatible with both Macintosh and Windows platforms,*** this Canon printer is uniquely economical, too. The i960 features the Canon Think Tank System, which is designed to reduce waste and save users money.**** This intelligent ink management system manages six individual ink tanks. If one ink color runs dry, you replace that one only, not an entire cartridge.

USER-FRIENDLY SOFTWARE

Canon realized that not only do users want an economical printing experience, but they also want printing as well as photo enhancements to be truly user friendly—in other words, easy. "Easy" is not a word applied to much of the digital photo

software routinely loaded onto PCs.

In contrast, the Canon i960 printer comes equipped with Easy-PhotoPrint software, with the built-in smarts to automatically size digital photos to print without borders on 4x6, 5x7, and 8.5x11 inch paper. The printer's VividPhoto driver enhancements allow colors to print beyond the limits of the computer's monitor. And Canon Easy-PhotoPrint Plus easily reduces common red-eye problems and helps to smooth out facial imperfections. What amazes many first-time users is just how simple it is to customize digital photos, or to make a so-so photo a real winner with digital touch-ups.

But perhaps more than anything else, digital photography enthusiasts want to easily print photos that reproduce scenery and people as accurately and as sharply as possible. And it is with high-quality reproduction that Canon technology and innovation shine so brightly in the i960 printer.

VIRTUALLY GRAIN-FREE PRINTS

The bottom line is that with Canon's MicroFine Droplet Technology™ and print head design, the i960 printer offers outstanding print density. For users, this translates into virtually grain-free digital photo prints with peerless clarity, high color contrast, and realism.

Frequently, users of photo printers like to change paper sizes. With most printers, this means stopping what you are doing to change from one size to another. In contrast, Canon's new printer includes a 4x6 inch photo paper tray that serves as a dual-paper feed so the printer can accommodate two different sizes of paper simultaneously. Thus, you can alternate between printing modes or two different printing sizes without having to stop to change paper.

Seldom has a technology vendor responded to specific user needs and requirements the way Canon has with its i960 Photo Printer. It offers high-quality prints in a format considerate of users' time and budget. For more information visit www.usa.canon.com/consumer or call 1-800-OK-CANON.

Canon Makes Easy Work of Crisp Photo Printing

For digital camera enthusiasts, the Canon i960 Photo Printer with PictBridge technology removes a stumbling block to printing digital photos: Users can hook their PictBridge-compatible cameras or camcorders directly to the i960 printer and print beautiful borderless photos.

As a result, Canon i960 users spend less time fiddling with complicated controls and gizmos, and more time printing the vibrantly clear digital photos they really want. That's because the i960 was built with ease of use and high quality from the ground up. Users have only to pop the camera memory card into the printer to:

- Print multiple copies quickly and easily
- Create a fast and simple production of an index print of all images
- Take advantage of easy date stamping of digital photos

Canon

KNOW HOW®

Camera must be purchased separately. Specifications subject to change.

* Resolution may vary based on printer driver setting.

** 4x6 print speed based on the default printer driver mode using Canon Photo Pro for borderless printing. Print speed will vary based on system configuration, software, document complexity, print mode, and page coverage.

*** Visit an authorized Canon U.S.A. dealer or www.usa.canon.com/consumer for specific OS compatibility information.

**** Ink savings will vary based on composition of documents/images printed.

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Incorporating MacUser

Macworld

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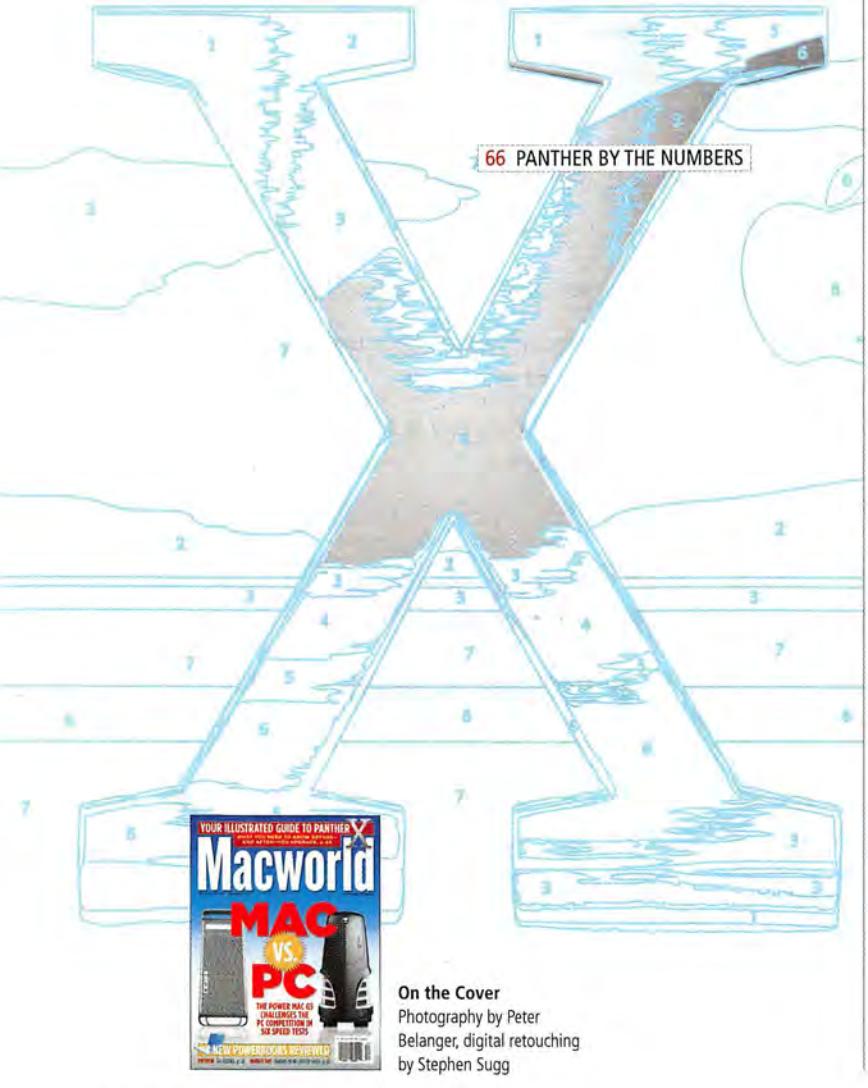

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Photography by Peter Belanger, digital retouching by Stephen Sugg

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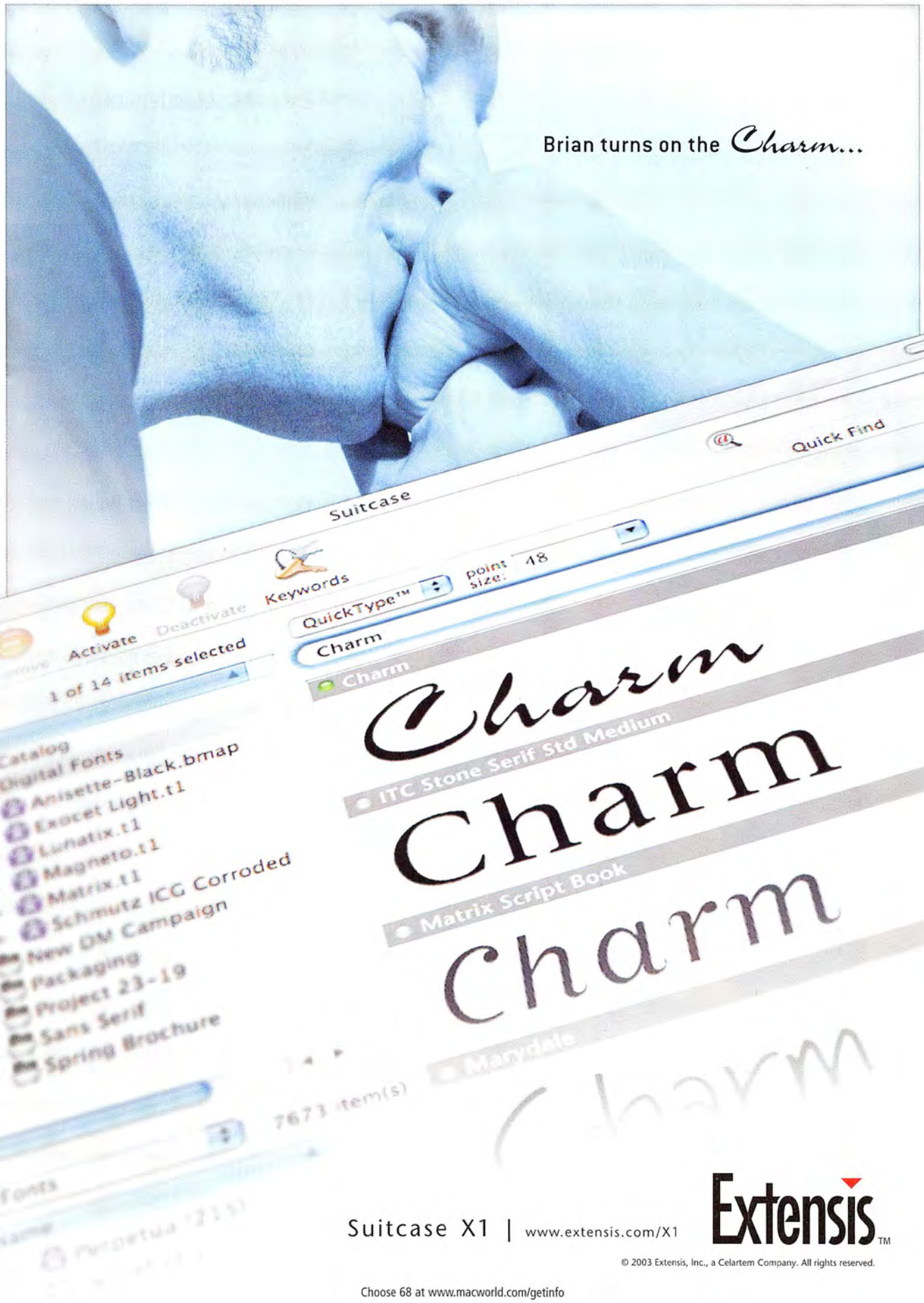

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Processor Showdown

I'VE BEEN WRITING ABOUT THE MAC FOR TEN YEARS, AND the hardest story to write is the one that tries to compare Apple's products with those from the other side of the fence—computers made by companies such as Dell or Gateway, powered by processors from Intel or AMD, and run by an operating system from Microsoft. I've seen attempts to compare the usability of Windows with that of Mac OS; stabs at measuring Photoshop's performance on Macs against its performance on Windows and Unix workstations; and efforts to quantify, somehow, the complete cost of owning a Mac versus that of owning a PC.

The results often prove little. One reason for that can pretty much be summed up by that old *Sesame Street* song about how one of these things is not like the other. A Mac is not a PC. Mac OS doesn't behave the same way Windows does. Applications with the same names and version numbers behave differently on different platforms.

But a stickier issue is the one that we, as a Mac magazine, must face: What exactly are we trying to show our readers? If the Mac wins the tests we lay out, we can point our fingers at the Wintel crowd and claim superiority. If the Mac runs behind, we can explain it away by saying how it's the ease of use, the friendliness, the you-name-it of the Mac that's better, no matter what the tests say. Put simply, we are Mac users because we prefer the Mac. So why do any comparison at all?

The G5 Challenge

The magazine you're reading features a lengthy comparison of Mac and PC performance ("The Race Is On," page 60), so we obviously have reasons to go down the perilous path of platform competition. Some have to do with a general perception over the past few years that the Mac is hopelessly behind the PC in terms of speed. But a primary reason is Apple's claim that its new Power Mac G5 system is the fastest desktop computer in the world.

Our results, gathered by Macworld Lab and our colleagues at the PC World Test Center, show that Apple's claim is a mix of merit and marketing spin. But what we learned should give all Mac users—whether they're fighting to keep their office Macs, deciding if they should invest in the G5 for graphic-design work, or simply tiring of the guff they get from PC-using pals—a better idea of the Mac's strengths and weaknesses.

For me, the good news is that the G5 offers a major speed boost, making the Mac a relevant player in terms of speedy personal computers. Can Apple leap ahead of its competition? That depends on the innovations of the next year, not only from Apple and IBM, but also from Intel and AMD.

Cat, Out of Bag

With the October 24 release of Panther—Mac OS X 10.3—Apple has settled into a routine, releasing major OS X updates on an almost yearly basis. This new version offers numerous interface changes and feature additions, many of which we've detailed in "Panther by the Numbers" (page 66). Sure, I've got some interface quibbles—most of which enterprising shareware developers will take care of in the next couple of months. But just as the G5 marks an important performance milestone for Power Macs, Panther represents a huge step forward in Mac OS X's evolution. □

ABOUT THIS MACWORLD

So we've been thinking about the G5 a lot these days. There's the lust factor—we want our G5s and we want them now! We also needed the G5s to test against fast PCs for this month's cover story. And our design and production departments need G5s so they can begin the arduous process of transitioning from OS 9 and QuarkXPress 4 to OS X and QuarkXPress 6. (You should've seen the flash of anger in our OS 9–using executive editor's eyes when we told her she should be using iChat AV, as the rest of us do.) Imagine our rejoicing when a truckload—literally—of G5s arrived outside *Macworld*'s offices (above). Armed guards weren't necessary, but we did have to shoo away a few envious *InfoWorld* editors.

If you don't have something to say about our Macs-versus-PCs story or the new version of Mac OS X, I'll be quite surprised. E-mail me at jason_snell@macworld.com or join the conversation in the Macworld.com online forum community.

PORTRAIT BY SVEN WIEDERHOLT; TRUCK PHOTOGRAPH BY PHILIP MICHAELS

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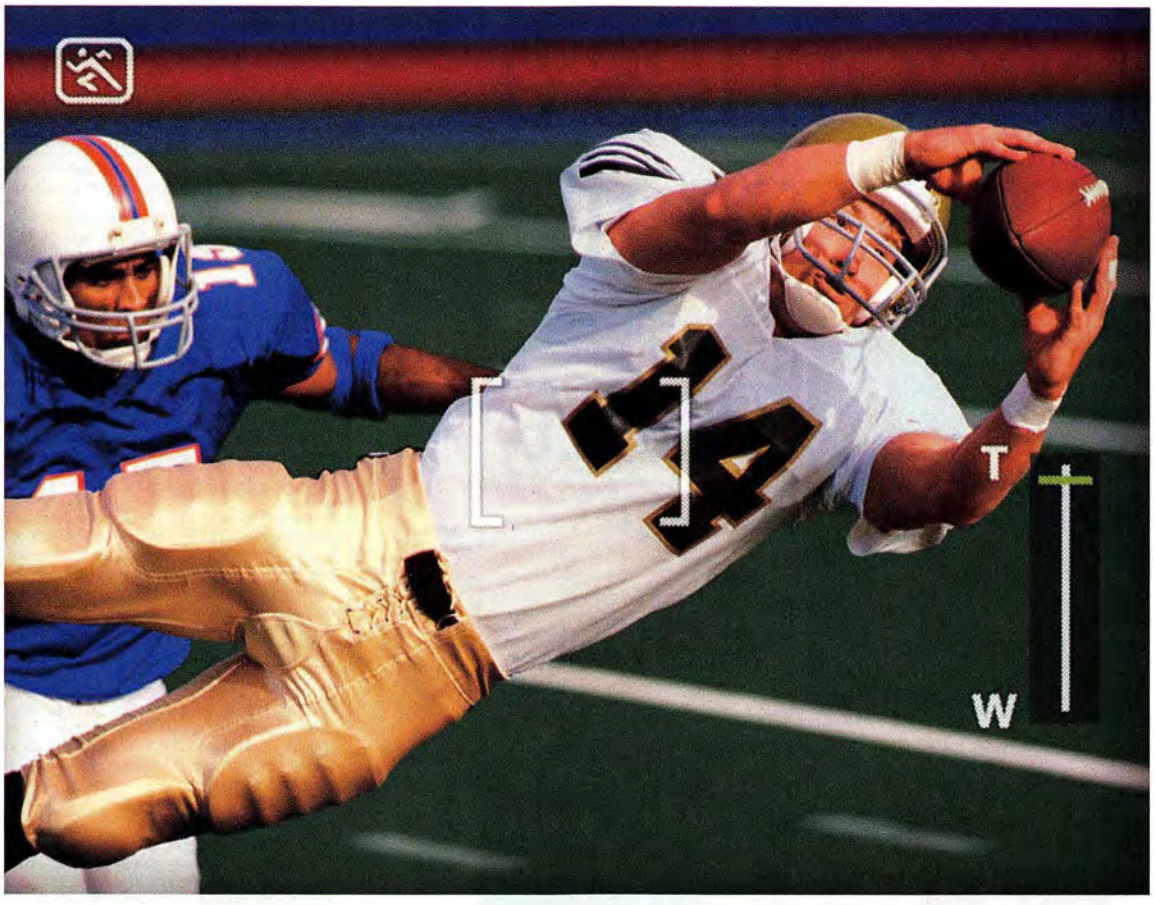

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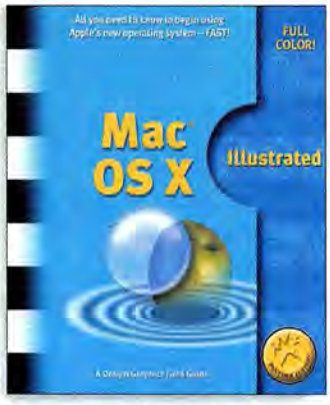
How a Panther becomes a pussycat.



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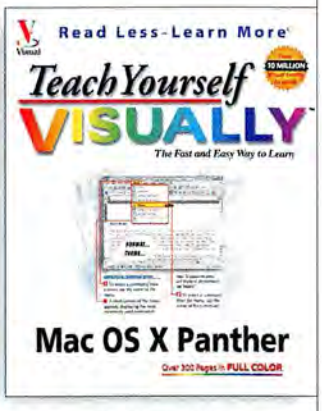

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FEEDBACK

Agreeing to Disagree

Readers shared some strong opinions about September's *Macworld*, which was packed with controversial content. They had complaints about QuarkXPress 6.0 (and the way Quark does business). They shared their disappointment with OS X's Panther update. They professed love for the new G5s (and disdain for our preview of the new machines), though they lamented love's high price. And they even had a few harsh words for a longtime *Macworld* advertiser. But we welcome debate. Mac users are an opinionated bunch, and frankly, that's exactly how we like it.

Little Things Mean a Lot

RAY HORTON

I've read nothing about Panther ("Take a Peek at Panther," September 2003) that indicates whether Apple will bring back the Print Window option. Can someone *please* tell Apple that graphic designers (at least) *need* this feature so they can send a disc directory along with discs to a service bureau? I know there's an independent app out there, but unfortunately, it isn't as quick and easy to use as the old Print Window feature was. Please?

DICK TRIPP

The Action button in the Panther Finder window is an example of fixing something that wasn't broken. I fail to see how my efficiency will be improved by having to select an object (which could be located at the bottom right corner of my screen), position the cursor over the Action button, and then click on it to see a contextual menu. I can control-click on a selected object and achieve the same end.

SHEPHERD HOODWIN

I've never seen anything written about this, and I'm astounded that such a flaw made it into OS X 10.0, let alone version 10.2: when I'm saving a file and I try to name it with too many characters, OS X accepts the name and *then* tells me there are too many. However, it doesn't tell me how many letters too long the name is, so I have to figure that out through trial and error. I guess Apple expects me to count the characters in each name I try to use. OS 9 didn't let you type too many letters. And why are we still limited to, what, 31 characters? Will this be corrected in Panther?

G5: Gee Whiz!

BRIAN CAPUTO

Apple has done it again. With the Power Mac G5, it has created another of the "insanely great" machines that only Apple has been known for ("The Next Generation," September 2003). Yet even with this powerhouse on the market, the company has one flaw: price. For the average family, the G5's great power is out of reach. Apple needs to offer the G5 the same way it offered the G4. Soon after the Power Mac G4's release, Apple offered the G4 Cube, which provided the power of the G4 processor in an affordable package. This strategy would now give Apple a way to combat lower-priced Intel- and AMD-powered computers.

JAN MAHLER

While the G5 article was an interesting read, it was essentially flawed, due to its quoting of Apple's corporate propaganda and the author's lack of research.

Jason Snell states that Apple is trumpeting the G5 as the first 64-bit desktop computer. Unfortunately, Apple marketing has decided to ignore AMD's Hammer processors (also known as Opteron). While they aren't being sold by Dell or HP for consumers, there are a number of smaller vendors that make and sell Opteron-based machines. The AMD Opteron is targeted at both the server level *and* the desktop (and even the supercomputer) level.

Snell also claims that the Wintel world has had trouble making the transition to 64-bit processing. But the AMD Opteron can run 32-bit code natively—just like the PowerPC 970. Not every PC user uses an Intel processor, as Intel isn't the only game in town.

Yes, our preview of the new machines mentioned Apple's claims that the G5 was the first desktop PC with a 64-bit CPU—but it specifically noted that these were Apple's claims (which are based on the idea that 64-bit PC chips appear only in servers and workstations, while the G5 is classified as a desktop system). Macworld's first review of the Power Mac G5s appeared in our November issue; this month, look for more lab tests, as we compare Power Mac G5s with high-performance PCs, including an Opteron-based machine (page 60). As for 64-bit chips running 32-bit applications, we reported that the Wintel side has generally "had trouble moving to 64-bit chips"—not that 64-bit chips were incapable of running 32-bit code, either natively or in emulation.—Jason Snell

Acrobat Tumbles

DENNIS McELROY

After reading Jim Felici's Adobe Acrobat 6.0 Standard review (★★★★½; September 2003), I simply had to write. He comments only on what he considers to be good features and overlooks glaringly bad aspects.

First, the program is incredibly slow to load. I usually start it and go get a cup of coffee while I wait on it. Second, the search function is no longer clear and available in the menu. It's hidden away at the bottom of the Find window, which no longer floats—instead, it intrudes on valuable desktop space, forcing your document to be smaller. Even worse, indexes created in Acrobat 5.0 are not compatible with Acrobat 6.0, and vice versa. For developers, this is a critical flaw.

For those reasons alone, our company has decided not to upgrade to 6.0. I hope Adobe corrects these flaws, and soon.

continues

Lies, Damn Lies, and Chart Art

DR. JAMES CASEBOLT

As a professor of statistics, I must disagree with Helen Bradley's recommendations for making "chart art" with Microsoft Excel X (*Secrets*, September 2003). A chart, or a graph, is not art—it's a means of communication. Its purpose is to help a viewer understand complex numerical information. Her suggestions will make a graph more attractive but harder to understand: 3-D charts are difficult enough to interpret correctly, given the lack of a consistent origin for bars or pictograms. Deleting the axes, as she suggests, will make understanding the graph even more difficult. The creator of a graph needs to keep the image's purpose in mind. Just because Excel's bells and whistles allow you to do something pretty doesn't mean it's a good idea. Many of these features will result in graphs that are confusing at best and purposefully misleading at worst. I may use this article in my classes as an illustration of how *not* to create a graph.

Many people reproduce Excel charts in Adobe Photoshop or Illustrator to get the visual effects they want; however, I acknowledge that many of those effects would not meet a statistician's requirements. I wanted to show that Excel was capable of many of these techniques, thus saving time and effort. I encourage debate on the best way to format a chart to communicate its point.—Helen Bradley

Fond o' Fonts

MIKE DAWSON

I just read "A Font-Management Free-for-All?" (*Mac Beat*, October 2003), and I have to say that I can see this ultimately being a good thing for Mac users and for third-party font-manager developers. Right now Font Book is a separate application, but Apple should consider making it part of the core OS and offering APIs so developers can access the features. This would be similar to what I remember from Mac apps, most notably MacDraw, in the late 1980s.

One of the features built into MacDraw was the ability to add and remove fonts on-the-fly, from within the application. When MacDraw was launched, only a core set of fonts was available unless launching was done via opening a drawing that contained additional fonts that were then made accessible. If Font Book becomes an OS feature, this would give all Mac apps this functionality without the user having to go to another app to activate and deactivate fonts.

Dedicated utilities from Extensis, DiamondSoft, Insider Software, and Alsoft would still be needed for creating font sets (which Font Book would be able to activate and deactivate just like individual fonts), checking for corrupted fonts, previewing a font's character sets and sizes, and providing any number of other features that Font Book does not.

Apple provides basic font management for the average user. The third-party companies provide advanced features for those with more-demanding font-management needs. I see a win-win situation brewing.

Judged by Our Cover

PATRICK VALELLA

September's cover is very nicely designed—I love the art. It's a beauty, even down to the spot metallics. *Macworld*'s art department is cookin'! As a student of design, I can rest assured that you're in good hands.

KELLY BROWER

Macworld! How about showing some professionalism and decency, and pulling Kensington's back-cover ad (September 2003)? I'm ashamed of you for allowing such advertising tactics. What is our world coming to when strong companies such as *Macworld* allow advertisers to use sex to sell computer products? Sad. If this practice continues, I will be finding other ways to get my Mac news.

"PAULINSAUDI"

OK, what was on the back cover of September's issue that inspired the local censors to rip that page off of every *Macworld* in Saudi Arabia?

Get the Balance Right

MICHAEL WILHELM

I read your review of the Canon EOS 10D (September 2003) with genuine interest since one of the cons you cited was one of my primary reasons for purchasing this camera. No white-balance fine-tuning? You'd better have another look at the manual. In addition to the standard white-balance modes found on many digital cameras (including Nikons), the 10D lets you fine-tune the white balance in increments of 100 degrees Kelvin—a feature that was previously available only on the much more expensive Canon EOS-1D and is still unavailable on Nikon's flagship D1X and the D100. While using the 10D in a professional environment, I've found that its ability to render accurate color in its automatic white-balance mode is superior to that of any other digital camera I've used.

There is no "white-balance fine-tuning" of the type found on other cameras—most notably Nikons—that offer a "fine-tuning" feature. While there are many different white-balance modes, there's no way to tune the preset cloudy or daylight functions, for example. Since most users aren't accustomed to thinking in degrees Kelvin, and since white balancing manually isn't always practical, a fine-tuning feature would be very handy.—Ben Long

XPressing Opinions

MATT BLITZ

I'd hoped that the emergence of Adobe InDesign might knock the folks at Quark off their pedestal of arrogance. While I've been using InDesign as much as possible, it still has some production-based limitations that force me to resort to QuarkXPress. I'd hoped version 6.0 (*Reviews*, September 2003) would have enough new features for me to abandon InDesign. But with a retail price hundreds of dollars higher than InDesign's, and with virtually no benefits beyond not having to run Classic, XPress has proved to me that Quark is a doddering behemoth, incapable of listening to its customers or the marketplace. Quark is in business in spite of itself. The end users don't like the company; the service bureaus don't like the company. I'm certain that as soon as a product such as InDesign matures enough to be a viable alternative for most users and service bureaus, Quark will disappear faster than you can say "Aldus."

LISA ROBERTSON

If you're thinking about upgrading to QuarkXPress 6.0, think again.

It makes huge PDF files. A document that used to produce 448K PDF files now produces 8.9MB files. Quark's tech-support solution? Save the document as an EPS file, open it in Adobe Photoshop, and then make a PDF file.

If you work on a desktop and a laptop, you now have to buy two copies of XPress. Quark says it's working on an alternative plan. I imagine that it will cost less than another program, but I also imagine that it won't be cheap. No other software company I deal with does this to customers.

If you want to save down to version 5.0, look out—XPress may suddenly quit, or it may produce a file that inexplicably cannot be opened by your coworkers who were wise enough not to upgrade. This is especially problematic if you're saving over a network. Quark's solution? First save the new document to your desktop, and then drag it to the shared volume. Your workflow just got more difficult.

Continuing the tradition of not caring about its customers' convenience or productivity, Quark's tech support closes at 5 p.m. MST. Sometimes there's no answer. And when I called customer support and finally got a live person, he put me back in the same circuitous queue that got me to him in the first place. I think Quark is overwhelmed with upset 6.0 users.

Just Drop It

LOUIS DEAETT

In September's *Mac Gems*, Rob Griffiths laments that Mac OS doesn't offer a way to interrupt a drag-and-drop operation. This surprised me a bit since the mechanism for aborting a drag and drop is the same as it's always been: simply drop whatever you're dragging onto the menu bar.

Second-Class Mail

JOHN FORSAYETH

Normally, I'm a big fan of Apple software, but I just have to say that Apple's Mail isn't very good. And "Take a Peek at Panther" (September 2003) didn't encourage me to hope for better. Far easier to use is the beautifully integrated Microsoft Entourage. I'm not sure what Apple is trying to achieve with its package, but the company ought to look at the competition. I've used a broad range of e-mail programs over the years, and Entourage beats the pants off everything else.

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CORRECTIONS

In our review of iListen 1.6.1 (*Reviews*, October 2003), we implied that previous versions of iListen included a select-by-saying capability. In fact, 1.6.1 is the first version of iListen to include this feature.

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LISTEN UP—IT'S MACWORLD'S AUDIO GIFT GUIDE

Headphone Heaven

The Year of the Laptop? Try the Year of Music. Apple may have rolled out a steady stream of laptop releases in 2003, but its musical maneuvers—redesigned iPods and a popular online music store—have made an equally significant splash (see page 26 for more on changes to the iTunes Music Store). With the holidays approaching, the perfect gift for musically inclined Mac users may be high-end headphones that make their favorite songs sound as pristine as the iPod looks.

Air Buds

Portable music has come a long way since the days of the Walkman—and Mac users are at the front of the hit parade. Armed with Apple's innovative iPod—filled with songs downloaded from the company's iTunes Music Store, of course—Mac users can wander where they will; the iPod carries their favorite tunes and delivers them in crisp digital sound.

But bring your iPod up to 35,000 feet, and you'll wonder where the music went. Airplane cabins are noisy places, and Apple's bundled earbuds simply don't cut it when you want to keep the music in and the noise out. If cranking up the iPod's volume to levels that would make The Who wince doesn't sound like music to your ears, consider upgrading to a better pair of headphones.

Some headphone manufacturers have promoted active-noise cancellation as the ultimate antidote to the acoustic assault of airborne ambience. Active-noise–canceling headphones have built-in microphones that sample ambient noise; battery-powered electronic circuitry then removes said noise—especially low-frequency noise—from the sound delivered to your ears. (Most of a jet engine's noise, often referred to as a *whine*, is actually a low-frequency roar.)

Earful Etymotic Research's ER-6 Isolator (top) and Sony's MDR-NC11 earbuds (right) take the music straight to your ears.

But how do you pick the right combination of audio quality, comfort, price, and portability? On a recent transcontinental flight, I plugged four pairs of headphones into my iPod, three of which offered active-noise cancellation (see "The Sound of Music"). With each, I sampled a trio of tunes: the second movement of Beethoven's Symphony no. 3 ("Eroica") conducted by Leonard Bernstein; "So What," from Miles Davis's *Kind of Blue*; and "Purple Haze," from *Are You Experienced?* by the Jimi Hendrix Experience. And I set out to discover which model offered the greatest comfort without approaching my plane ticket's price.

Cancel That

The $200 Koss QZ/2000 (www.koss.com), an open-air, over-the-ear model, produced disappointing sound. I also found its design cumbersome. It consisted of three pieces: the phones themselves, which are connected by a metal band and sport foam-padded earpieces two inches in diameter; a plastic box, which was about the size of a bar of soap and contained the noise-cancellation circuitry and a pair of AA batteries; and a cable, for connecting the box to an audio source.

Sony's $150 MDR-NC11 (www.sonystyle.com) was an innovative earbud model. Hanging down from the earbuds were teardrop-shaped

PHOTOGRAPHS BY RICK RIZNER

pieces of plastic, about an inch and a half long, that contained tiny microphones. The MDR-NC11 delivered a clean, warm sound, with full, rich bass, even on soft passages. Detail was audible throughout the frequency spectrum. But Sony's device was hard to store, and its inline clip, a triangular affair about two inches long, was awkward to use while sitting on a plane.

The $299 Bose QuietComfort 2 (www.bose.com) was both the quietest and the bulkiest of the models I tried out. The well-padded oval earpieces—about 3 inches across and 4 inches tall—were connected by a thick padded plastic band. While the sound quality was good, it wasn't great. Bass tones were full and rich, but I'd expect such a pricey unit to have a crisper high end and stronger presence—the experience of listening to recorded music and feeling as if you were sitting in the same room as the musicians, hearing each voice and instrument distinctly.

Farewell to Noise Bose QuietComfort 2 headphones offer good sound and a comfortable fit.

In Your Ear

Despite its lack of active-noise cancellation, the $139 Etymotic Research ER-6 Isolator earbuds (www.etymotic.com) sounded better than any of the noise-canceling models. Weighing almost nothing and taking up very little space, these diminutive headphones pumped out astonishingly rich sound, with tremendous presence. I had trouble hearing good bass when I used the default plastic eartips, but after switching to the alternative foam eartips that come with the product, my results were excellent.

If you're looking for earphones that can stand up to the roar of a 747, remember that the goal is to be able to hear the full spectrum of sound, from the deepest bass notes to the highest-pitched overtones of delicate cymbal brushwork, without having to crank up the volume so high that you blow out your eardrums. There's even a relatively easy way to test-drive your headphones without having to hop on an intercontinental flight: Make sure you can return your purchase if you don't like the way the headphones sound. Then find someplace noisy—under a busy freeway overpass, for example—and listen to both soft and loud passages. What you hear should give you a good idea of what to expect when you're up in the air—or simply on the move.—HENRY BORTMAN

THE SOUND OF MUSIC

Mac users looking for headphones that deliver superior sound even in noisy conditions would do well to consider some of these models as ideal iPod accessories.

COMPANY	PRODUCT	CONTACT	TYPE	ACTIVE-NOISE CANCELLATION	PRICE	COMMENTS
Bose	QuietComfort 2	www.bose.com	closed	yes	$299	Good sound; comfortable; bulky; expensive.
Etymotic Research	ER-6 Isolator	www.etymotic.com	ear bud	no	$139	Stunning sound; very lightweight; good price.
Koss	QZ/2000	www.koss.com	open	yes	$200	Disappointing sound; cumbersome.
Sony	MDR-NC11	www.sonystyle.com	ear bud	yes	$150	Very good sound; flawed design.

Music to My Ears

Mac users may have plenty of choices when it comes to noise-canceling headphones. But if you *really* want the only sound you hear to be the music blasting from your iPod, nothing beats in-ear monitors that were designed specifically for your ears. Once restricted to rock musicians performing in arenas full of screaming fans, these earphones are now available to anyone who doesn't balk at pristine audio quality's hefty price.

Ultimate Ears (www.ultimateears.com), a Las Vegas company that designs earpieces for everyone from Blue Man Group to J. Lo, is making its products available to mere mortals like you and me. Like the woofers and tweeters in your home stereo speakers, Ultimate Ears' UE5c earphones have separate drivers for high and low frequencies. That translates to better, clearer sound than you'll get from any earbuds that come with an iPod.

Getting your hands on a set of these earphones requires some effort and a lot of cash. You'll need to have impressions of the inside of your ears made—a 15-minute, roughly $20 procedure (at your friendly neighborhood audiologist's office) in which silicone foam is injected into your ears to create a mold (pictured). You send the impressions off to Ultimate Ears, which uses them to design your very own earpieces for a paltry $550. (Don't gasp—celebrity clients pay $700 or so for the company's handiwork.)

Is it worth the price? While riding on a crowded, noisy streetcar, I could easily hear George Harrison sing "Here Comes the Sun" with my iPod's volume at only one-third of its maximum. On the other hand, it's hard to justify spending more on earphones than you would on a 40GB iPod. But audiophiles with money to burn and a desire for a little star treatment should like the sound of what Ultimate Ears has to offer.—JONATHAN SEFF

FILEMAKER EXPANDS SOFTWARE OFFERINGS

Databases at Work

FileMaker Pro (www.filemaker.com) is all about storing information. But when it comes to putting that information to use, users of the database program have been pretty much on their own.

"There is a class of users who may recognize [FileMaker], but they aren't ready to develop their own solution or hire someone to do it for them," explains product manager John Dasher. So the company has launched FileMaker Applications—ready-to-use programs aimed at users who don't have the time or the wherewithal to develop their own database-driven applications. The programs will run on top of FileMaker Pro 6.

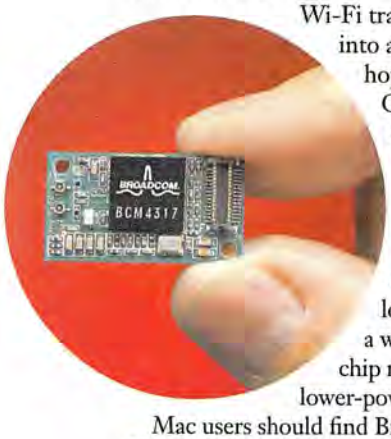
Currently, two releases bear the FileMaker Applications name. FileMaker Meetings ($49; pictured here) lets users create agendas, store minutes, and follow up on post-meeting tasks. FileMaker Recruiter ($299) helps professional recruiters manage searches, track candidates, and stay in touch with clients or hiring managers.

Meetings and Recruiter will soon have company, as FileMaker looks to build up a portfolio of similar apps: a task-management tool for workgroups; a program for managing fundraising and donor lists for nonprofit groups; and a sales-prospecting program.—PHILIP MICHAELS

LOW-POWER CHIPS AIMED AT PORTABLES

Wireless Becomes Less Power Hungry

Bigger isn't necessarily better, especially when it comes to wireless networking. The smaller a set of wireless chips is, the less heat it produces, the less power it consumes, and the easier it is to add to a portable device. For that reason, chip makers have put their efforts toward transforming the radio and network components that constitute a Wi-Fi transmitter and receiver, from a handful of chips and circuits into a compact set of silicon. Broadcom (www.broadcom.com) hopes to make a big impact with a small offering—its AirForce One wireless chip. The company has taken the slightly older 802.11b wireless protocol used in the original AirPort and shrunk the chip set and circuit board from 2.0 by 2.4 inches down to a single chip on a tiny 0.6-by-1.0-inch card.



While 802.11g zips along at 54 Mbps, Broadcom believes that it can light a fire with the low-power consumption of this 802.11b chip. A PDA might last days or even weeks longer on a charge because of Broadcom's radical reduction in a wireless circuit's power usage. Broadcom has also joined fellow chip makers Atheros, Philips, and Texas Instruments in announcing lower-power 802.11g chip sets aimed at the laptop market.

Mac users should find Broadcom's single chip significant since the company supplies Wi-Fi chip sets not only for Apple's AirPort Extreme system but also for 802.11g products from consumer-hardware makers Linksys, Buffalo, and Belkin. Low-power chips from Broadcom and other companies will start to make their way into cell phones, digital cameras, games, music players, and other personal portable electronics as 2003 draws to a close. With power-saving Wi-Fi in these devices, slower Bluetooth and messy, proprietary USB cables might finally have stiff competition.—GLENN FLEISHMAN

CREATIVE BEAT

Design

MacDraft 5.5 Quartz Edition, from Microspot (www.microspot.com): This 2-D CAD application has been developed for OS X and features Quartz graphics. Other additions include Import Picture, which allows users to import PICT, TIFF, GIF, JPEG/JFIF, and Windows BMP formats ($349; upgrade from version 5.X, $99).

Plug-in

InPosition 6, from Dynagram (www.dynagram.com): The OS X version of the imposition XTension will be fully compatible with QuarkXPress 6 and include new filters for Adobe InDesign and Acrobat 6 PDF files ($2,995; upgrade from version 5.X, $595).

Preflighting

FlightCheck Professional 5, from Markzware (www.markzware.com): This preflighting tool adds OS X support, as well as expanded support for native applications including Microsoft Word and PowerPoint. The update also gains a special PDF object model that allows access to most details within a PDF file, and a new PDF FlightPlan that checks for accredited file-format standards ($499; upgrade, $199).—COMPILED BY PHILIP MICHAELS

PRODUCTIVITY BEAT

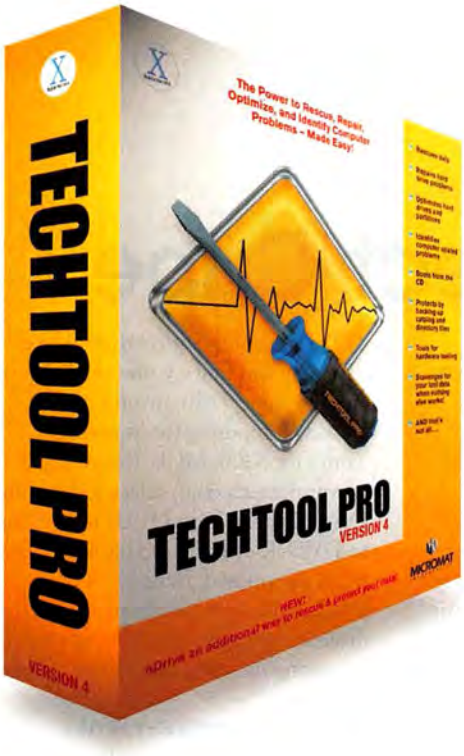
OCR

Readiris Pro 9, from IRIS (www.irisusa.com): This updated optical character recognition program has a new OCR engine, new autoformat technology, and a new interface. The scanning software is compatible with OS 9 and OS X (Standard version, $149; Corporate version, $399).

Utility

StuffIt Deluxe 8.0, from Aladdin Systems (www.aladdinsys.com): The OS X version of the compression utility features faster compression and lets users schedule backups automatically ($80; upgrade, $30). **StuffIt Standard 8.0** is also available ($50; upgrade, $20).—COMPILED BY PHILIP MICHAELS

ICONS BY PAUL HOWALT



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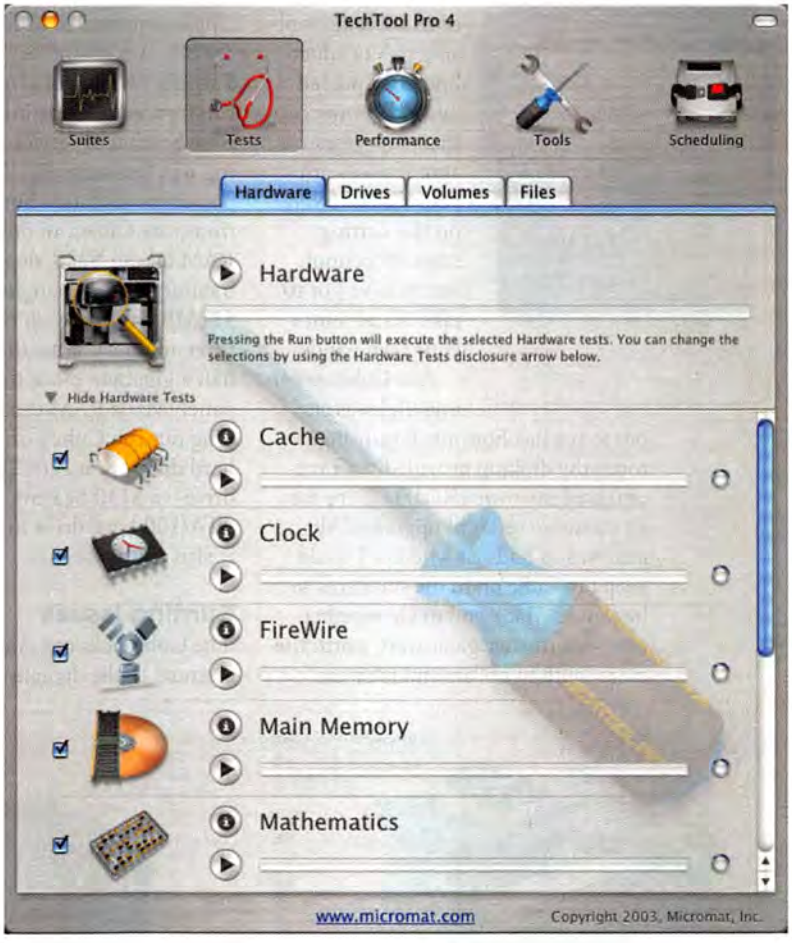

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CUBE UPGRADE OPTIONS ABOUND

Building the Perfect Cube

The star that shines the brightest burns out the quickest, and few stars burned as brightly as Apple's Power Mac G4 Cube. Introduced in July 2000, the Cube won praise for its stylish good looks and amassed a small but devoted legion of fans—and then it felt the back of Apple's hand, when the company stopped producing the desktop less than a year later.

Not many of the Cube faithful would give up this petite computer without a fight. But even the most devoted owner has to look on with envy as other Mac desktops grow ever faster, sprout SuperDrives, and add an array of features unavailable to a product line last updated by Apple more than two years ago. If you want your Cube to stay on the cutting edge of technology, you've got to take matters into your own hands.

As a Cube owner myself, I was curious to see just how much growing room the desktop provided. So I volunteered my own 450MHz Cube for an extensive series of upgrades. My goal was to find out whether I could keep my Cube up to the standards set by today's Macs, and to see whether any performance gains were worth the cost—both in dollars and in sweat.

The Easy Stuff

While some Cube improvements aren't for the faint of heart, adding RAM, a new hard drive, and an AirPort card are simple, straightforward tasks that are explained clearly on Apple's Web site (http://docs.info.apple.com/article.html?artnum=58688). A $79 AirPort card—AirPort Extreme won't work on the Cube—can turn your Cube into an AirPort Base Station or let you join an existing wireless network. To maximize power for memory-hungry applications, the Cube can hold 1.5GB of RAM (about $228, depending on memory's ever-changing price). With 512MB chips in each of the Cube's three memory slots, that's roughly half a gigabyte more than the flat-panel iMac's RAM capacity. Swapping out the Cube's original 20GB hard drive for a 120GB internal drive—a $130 Seagate Barracuda ATA/100 hard drive in my case—is also relatively easy.

Burning Issues

The Cube lacks one component that's essential to the digitally inclined user: a DVD-burning SuperDrive. These days, you can find a Cube-ready Mercury Ti-SuperDrive, from Other World Computing (www.macsales.com), for $400. MCE Technologies (www.mcetech.com) sells a $389 Multi Drive that can burn DVDs in addition to DVD-R discs (it also burns DVDs at 2×, as opposed to the 1× of the OWC drive). Installing the OWC drive in my Cube was about as easy as putting in a new hard drive.

Graphic Improvements

The original Cube was a letdown to avid gamers—the standard ATI Rage 128 video card wasn't quite on a par with other graphics processors of the time. The card has no support for either Quartz Extreme or 20- and 23-inch Cinema displays. Unfortunately, upgrading can be difficult; just finding a video card that fits the Cube's small frame is a challenge. The two most popular choices among Cube devotees—Nvidia's GeForce2 MX and GeForce3—aren't even made anymore, so your best bet is looking for them on eBay. Due to limited availability, neither card comes cheap; you could easily pay upwards of $300. While the GeForce3 includes a fan, a stock GeForce2 MX doesn't. If you want to keep your Cube's insides from melting into slag, a fan should

continues on page 28

Fixer Upper

Not all upgrades to a Power Mac G4 Cube are created equal—some can be pretty challenging. Getting a processor upgrade card into your Cube requires that you remove the heat sink from the motherboard (far left). By comparison, installing a SuperDrive in the machine (near left) isn't nearly as daunting. It's no more difficult than putting in a new hard drive.

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RICK RIZNER

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E-MAIL CLIENT, BROWSER GET LEAN

Birds on the Wing

The idea of merging an e-mail client with a Web browser probably looked good on paper. But when Netscape did it in the late 1990s, with Netscape Communicator, the finished product was like two cars bolted together at impossible angles—all the tires were never on the road at any one time. Yes, the contraption worked, but at the expense of overall performance and individual features.

Now the open-source Mozilla project (www.mozilla.org) is building a pair of leaner, meaner machines: two separate applications sporting automotive monikers: Thunderbird, an e-mail client, and Firebird, a streamlined reworking of the Mozilla Web browser. The apps are designed to work the same whether you're running OS X, Linux, or Windows.

Thunderbird's core functionality is based on Mozilla Mail—it offers standard send and receive capabilities, junk-mail filtering, a built-in address book, and mail searching. What Thunderbird introduces is an extensible architecture for adding features (such as macro creation and execution), a clean user interface that can be swapped with other themes, and customizable toolbars.

Firebird incorporates that same level of user-interface and extensibility improvements in Mozilla's Gecko rendering engine, but with an eye toward simplifying the user experience. As the browser's developers say on their Web site, if Firebird is missing a feature found in Mozilla or Opera, "it's probably for good reason."

Taken together, Firebird and Thunderbird promise to operate without the sundry features and enhancements that typically get welded onto the Web-browser frame. Although both 'birds are still early, publicly available betas, they follow an increasingly popular approach among Mac Internet tools such as Apple's Safari and Bare Bones Software's Mailsmith: simpler, focused applications can be more agile and useful than the online Hummers that used to hog the road.—JEFF CARLSON

MULTIMEDIA BEAT

Education

mPower 5, from Multimedia Design (www.mmdesigncorp.com): This multimedia-authoring tool aimed at K-12 and higher education adds native OS X support, full-screen authoring and playback, and enhanced image editing (individual school edition, $80; site license, $800).

Music

Cubase SX 2.0, from Steinberg Media Technologies (www.steinbergusa.net): The updated music-creation and -production system adds a new VST audio engine with 32-bit floating point audio resolution, real multichannel surround, and a Stacked Recording mode ($800; upgrade from 1.X, $150).

FM7 1.1.1, from Native Instruments (www.native-instruments.com): The updated FM synthesizer now supports OS X Audio-Units along with RTAS and VST formats ($299; upgrade, $29).

Intuem 2, from Companion Engineering & Design (www.intuem.com): This MIDI-based music-authoring program adds audio capabilities with AudioUnit instruments, AudioUnit effects, and a full audio and MIDI mixer ($79; upgrade, $49).—COMPILED BY PHILIP MICHAELS

INTERNET BEAT

E-mail

Eudora 6.0, from Qualcomm (www.eudora.com): This e-mail client for OS 9 and OS X adds spam filtering and contextual filing ($50; upgrade from version 4.3 and later, $40; upgrade for users who registered in the last 12 months, free).

Web Development

Lasso Professional 7, from Blue World Communications (www.blueworld.com): The updated Web application server software has an embedded MySQL 4 database server and SOAP, WSDL, and XML support. It's been optimized for the Power Mac G5 ($999; upgrade from version 6, $399; upgrade for users who bought since September 9, free).—COMPILED BY PHILIP MICHAELS

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MUSIC STORE, IPODS HIGHLIGHT MUSICAL MOVES

Windows in Tune

Apple delivered on its promise to offer a Windows version of its iTunes Music Store. And the company did so just as this issue went to press. Announcing Windows compatibility with a version of iTunes that runs on Windows 2000 and XP, Steve Jobs declared, with typical braggadocio, that his company had just released "the best Windows application ever written."

But Mac users, too, have plenty of reason to cheer. In addition to the release of iTunes 4.1—which enables musical file sharing between Macs and PCs—Apple has made a number of musical maneuvers that expand both the offerings of the iTunes Music Store and the capabilities of the latest generation of iPods.

Music Store Remodeling

A host of changes await Mac and Windows users visiting the iTunes Music Store. In addition to more

than 400,000 music tracks available for download, Apple now offers 5,000 Audible.com audio books. A new Gift Certificate feature lets users give as much as $200 worth of store credit, while a similar Allowance tool lets parents provide a monthly stipend for their music-buying kids. Other changes include new album sorting options, album notes, artist biographies, lists of essential albums for easier shopping, and Celebrity Playlists.

New iPod Capabilities

iPod Software 2.1 adds a lot of enhancements to Apple's dockable (third-generation) portable music player, including faster browsing and access to large music libraries and the ability to synchronize On-The-Go playlists back to iTunes. But the two biggest additions are voice recording and photo-storage capabilities.

With the $50 Belkin Voice Recorder (www.belkin.com; shown above), iPod users can record mono WAV files that sync with an iTunes library. The photo-storage feature requires the $100 Belkin Media Reader for importing images to the iPod from digital camera media (CompactFlash, SmartMedia, Memory Stick, SD, or MMC). When you plug in your iPod, your Mac recognizes it as a digital camera and launches iPhoto.—PHILIP MICHAELS

WHAT'S HOT

A Quick Look at the World of Macs

1. **Dell plans an online music service of its own.** *In keeping with the company's "Direct from Dell" strategy, Michael Dell phones you up and hums a few bars of each song you purchase.*
2. **The Beatles' Apple Records sues Apple over the iTunes Music Store.** *Apple files a countersuit, citing irreparable harm from listening to Paul McCartney's lackluster post-Wings solo career.*
3. **Virginia Tech deploys a supercomputer cluster based on Power Mac G5s.** *The university plans to use the cluster for research projects, cell modeling, and figuring out how to beat the University of Miami, Florida, in football.*
4. **Apple releases Panther.** *Animal-control officials subdue the OS X 10.3 release with tranquilizer darts before Apple can explain that* Panther *is just a code name.*

PRO FILE Q&A

with Glenda Adams

Game Theory

Glenda Adams's Mac experience has been mostly fun and games—after all, she first began developing Mac games 15 years ago. The founder and former president of Mac game-conversion developer Westlake Interactive, Adams now works as the director of PC and Mac development at Aspyr Media. This outlook has given Adams plenty of perspective on what needs to happen before Mac gaming can give the Windows side a run for its joystick.—PETER COHEN

AT A GLANCE

GLENDA ADAMS Director of PC and Mac Development, Aspyr Media
MAC: 1GHz PowerBook G4
SOFTWARE: Apple's iChat, Microsoft Entourage X

Q: What needs to happen to make the Mac a better gaming system?

A: The Mac is getting into a tight spot trying to run games that come from the PC, where 2GHz is a low-end CPU. Getting faster CPUs in Macs has to be Apple's number one priority for gaming. A secondary but also important issue is sound hardware. If gamers could have 5.1-sound output with hardware acceleration on the Mac, they'd have much better audio quality and faster game play.

Q: Why doesn't the "megahertz myth"—the notion that clock speed isn't the only factor in determining performance—apply to games the same way it does to, say, Photoshop?

A: For games, megahertz are megahertz. It's very difficult to optimize a game—especially a port of an existing game—to use the Velocity Engine extensions, which is how you get great performance on Photoshop filters.

Q: How does the Power Mac G5 change things?

A: The G5 and the new hardware that comes with it—faster system bus, faster RAM—are great steps in the right direction as far as making the Mac a top-notch gaming platform. What Apple needs to do is continue to push the speed gains from the desktop G5 into the iMac. Avid game players who will splurge on a G5 desktop will love it, but average gamers who buy an iMac for everyday use will also want a fast system for their games.

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Building the Perfect Cube

continued from page 22

accompany any upgrade—video card, processor, or hard drive—that generates more heat. Interestingly, Apple seems to have foreseen this, since every Cube included a handy fan mount in its base.

Chip Ahoy

Upgrading the Cube's processor turned out to be the scariest task—it required prying the old processor free from its heat sink, disassembling much of the computer, and installing a fan deep in the machine's bowels. But it brought the most-visible improvement. Thanks to the $499 PowerForce G4 1.4G Cube upgrade card, from PowerLogix (www.powerlogix.com), my Cube now zips along at 1.4GHz.

Counting the Cost

Following through on all these upgrades would cost more than $1,500—just about what you'd pay for a brand-new 17-inch flat-panel iMac. But for just $500, you can either triple the speed of your desktop with a processor upgrade or add DVD-burning capabilities via a SuperDrive—all without sacrificing the eye-catching look that drew you to the Cube in the first place.—DAVID SAWYER MCFARLAND

G4 CHIPS ADDED TO iBOOKS

Four Score

Say goodbye to the G3 chip. Now all Apple desktops and laptops run on at least a PowerPC G4, after the company added G4 processors to its iBook product line.

But the G4 processors—which range in speed from 800MHz to 1GHz—aren't the only changes to the entry-level laptop line. The iBook also adds double data-rate memory; a faster, 133MHz system bus; a new ATI Mobility Radeon 9200 graphics processor with 32MB of video RAM; USB 2.0; support for AirPort Extreme wireless networking; and the ability to use an internal Bluetooth module for wireless peripheral connectivity. All iBooks ship with 256MB of memory and a slot-loading CD-RW/DVD-ROM Combo drive.

There are three iBook configurations: an 800MHz model with a 12-inch display and a 30GB hard drive costs $1,099; a 933MHz model with a 14-inch display and a 40GB hard drive costs $1,299; and a 1GHz model with a 14-inch display and a 60GB hard drive costs $1,499.

Apple's main challenge will be to differentiate its iBook offerings from the 1GHz 12-inch PowerBook G4. The company points out that the PowerBook has features more likely to appeal to professional users, such as its aluminum design and dual-display and DVI capabilities. The 12-inch PowerBook also has 512K of Level 2 cache (twice the amount in the iBook) and an Nvidia GeForce FX Go 5200 graphics card. And for laptop users who need to burn DVDs, a SuperDrive-equipped PowerBook is the only choice; the SuperDrive is not an option for iBook users.—MACWORLD STAFF

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15-Inch PowerBook G4s

Apple Hits the Sweet Spot, but Machines Have Inconsistent Quality

BY CHRISTOPHER BREEN

Eight months after Apple announced its smallest and largest PowerBook G4s—the 12-inch and 17-inch PowerBook G4s, in aluminum, not Titanium—Apple released the laptop many professional Mac users had been waiting for—the aluminum 15-inch PowerBook G4. With its slick performance, bright screen, and support for USB 2.0, FireWire 800, AirPort Extreme, and Bluetooth, this laptop was worth the wait. But people who've received PowerBooks with loose latches or video problems may wish that Apple had taken a bit more time to iron out kinks.

All This and More

Until this laptop came along, professionals who needed every bell and whistle Apple could pack into a PowerBook—Bluetooth, AirPort Extreme, FireWire 800, S-Video output, a SuperDrive, Gigabit Ethernet, and a backlit keyboard—had to purchase the 17-inch PowerBook G4, an expensive, and *expansive*, computer. The faster of the two new 15-inch PowerBooks not only provides all these features in a smaller package, but also offers a faster processor, 20GB more hard-drive capacity (80GB), and USB 2.0, which we found to be 12 times faster than USB 1.1.

In addition to the aforementioned amenities, the 1.25GHz PowerBook G4 includes 512MB of RAM (the machine can accommodate as much as 2GB of RAM), an ATI Mobility Radeon 9600 graphics processor with 64MB of RAM, a DVI connector (a DVI-to-VGA converter is included), S-Video–out ports, audio line-in and -out ports, a 167MHz system bus, 512K of L2 cache (but no L3 cache), a PC Card slot, and a built-in 56K V.92 modem. The bright, 15.2-inch screen offers resolutions as high as 1,280 by 854 pixels, and you can run an external display at 2,048 by 1,536 pixels and millions of colors. The $1,999, 1GHz version of this machine is nearly the same as the 1.25GHz version, but it has a 60GB hard drive, 256MB of RAM, and a Combo drive. It also lacks the standard backlit keyboard and built-in AirPort Extreme card. (Aside from the faster processor, all the elements the 1GHz PowerBook lacks can be added as build-to-order options.)

Portable Performance

The 1.25GHz 15-inch PowerBook is a noticeably snappy performer. Finder menus flick down in an instant, applications launch in next to no time, and iTunes visuals are as smooth as velvet. The keyboard is solid and crisp—both it and the trackpad button require slightly more pressure than the Titanium PowerBook's keyboard.

At 5.6 pounds, this laptop is also slightly heavier than the 15-inch Titanium PowerBook, which weighs 5.3 pounds. And it's a little larger by a few fractions of an inch. Like its 12- and 17-inch siblings, the 15-inch model has ports on its left and right sides—a configuration that may be a little cumbersome. And this PowerBook—like its aluminum relations—gets very warm around the rear bottom corners.

Perhaps the most sought-after feature in these new PowerBooks is improved AirPort reception. We tested this in a room about 45 feet away from our Base Station, where an 800MHz iMac G4 gets solid AirPort reception (three or four bars in the AirPort menu-bar icon) and a 400MHz Titanium PowerBook G4 gets no reception whatsoever. The new PowerBook found the Base Station and registered two or three bars—not as good as the iMac's reception but far better than that of the older PowerBook.

This PowerBook's battery life is unimpressive. When the Energy Saver system preference is set to Highest Performance (the setting used for our tests), you can expect to get two hours at most out of a fully charged battery under constant use. After setting

Macworld LAB TEST

	Speedmark 3.2	Adobe Photoshop7.0.1	iMovie 3.0.3	iTunes 4.0.1	Quake III v1.32	Cinema 4D XL 7.303	Compressor
	OVERALL SCORE	SUITE	RENDER	MP3 ENCODE	FRAME RATE	RENDER	MPEG-2 ENCODE
12-inch PowerBook G4/1GHz	142	0:56	0:53	0:45	64	7:00	14:45
15-inch PowerBook G4/1GHz	138	0:52	0:49	0:43	73	6:54	13:59
15-inch PowerBook G4/1.25GHz	159	0:43	0:43	0:35	86	5:33	12:30
17-inch PowerBook G4/1.33GHz	161	0:42	0:41	0:33	89	5:12	12:14
15-inch Titanium PowerBook G4/1GHz	*144*	*0:53*	*0:51*	*0:42*	*74*	*6:55*	*16:58*
17-inch PowerBook G4/1GHz	*143*	*0:53*	*0:50*	*0:43*	*79*	*7:20*	*14:09*
	>Better	<Better	<Better	<Better	>Better	<Better	<Better

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

Speedmark 3.2 scores are relative to those of a 700MHz (G4) eMac, which is assigned a score of 100. Photoshop, iMovie, iTunes, Cinema 4D XL, and Compressor scores are in minutes:seconds. Quake III scores are in frames per second. We tested the systems with 512MB of RAM, Mac OS X 10.2.7 installed, and Processor Performance set to Highest. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, converting it from the hard drive using iTunes' Better Quality setting. We tested Quake III at a resolution of 1,024 by 768 pixels with Graphics set to High Quality. The Photoshop Suite test is a set of ten scripted tasks using a 50MB file. Photoshop's memory was set to 100 percent and History was set to Minimum. We tested MPEG-2 encoding with a DV file that was 6 minutes and 46 seconds long, using the MPEG-2 60min Fast Encode preset in Apple's Compressor application. For more information on Speedmark 3.2, visit www.macworld.com/speedmark.—MACWORLD LAB TESTING BY KRISTINA DE NIKE AND JAMES GALBRAITH

32 **Laptop computers**
Apple 12-inch PowerBook G4/1GHz
Apple 15-inch PowerBook G4/1GHz
Apple 15-inch PowerBook G4/1.25GHz
Apple 17-inch PowerBook G4/1.33GHz

34 **FireWire Web cams**
ADS Technologies Pyro 1394
Apple iSight
Orange Micro iBot Standard
Unibrain Fire-i

36 **Motion-graphics and -effects tool**
After Effects 6.0 Professional

37 **DVD-authoring program**
DVD Studio Pro 2.0

38 **CD- and DVD-burning app**
Toast 6 Titanium

40 **Entry-level 3-D application**
Pixels 3D 5.0

41 **Music-authoring tool**
Soundtrack 1.0.1

42 **Data-charting application**
Chartsmith 1.2

44 **Reviews in Brief**
24U Email OSAX 2.2, Cookie Muncher 1.0, JumpDrive Secure, KidzMail 1.1.2, MacAstronomica 2.0, MacResponder 1.0, Mystical Lighting, PodQuest 1.0, Time-Cache 5.1, WorkStrip 3.0, Zoom & Pan 3.0

49 **The Game Room**
Aliens vs. Predator 2, Burning Monkey Solitaire 3, Crazy Golf, Imaginext Pirate Raider, Neverwinter Nights, Second Life

57 **Mac Gems**
Business Card Composer, PDF Browser Plugin, PodSleevz, TNEF's Enough

Energy Saver to DVD Playback, we were able to watch two hours and four minutes of a DVD before the battery ran out of juice.

Small Performance Differences

Although the 1.25GHz model is spunky, it's not 25 percent spunkier than its 1GHz sibling, which performs on a par with the previous 1GHz Titanium model. In our Speedmark tests, the 1.25GHz 15-inch PowerBook performed about 13 percent better than the new 1GHz model. In other tests, the 1.25GHz PowerBook was between 11 percent (the Compressor test) and 20 percent (the Cinema 4D XL test) faster. And demonstrating that an Apple laptop can be a respectable gaming machine, the 1.25GHz PowerBook G4 cranked out 86 frames per second in our Quake III test; the 1GHz machine cranked out 73 frames per second.

Quality-Control Issues

We can't check the vital signs of every computer Apple ships. We can, however, report on the quality of the PowerBooks we've received, and that report is not encouraging. Of six 15-inch PowerBooks *Macworld* ordered from a non-Apple retailer, three had to be returned. One repeatedly locked up and experienced kernel panics after being unplugged from an external monitor, another's fan ran constantly, and another displayed only the magenta video channel when plugged into an external display. So if you absolutely must have this PowerBook now, be prepared for potential problems.

The screen on the 1.25GHz 15-inch PowerBook used for this review exhibited a white blotch about the size of a dime when we put a white background (such as a blank Microsoft Word document) on the desktop. And the latch on this PowerBook locked inconsistently—the lid occasionally popped up after it had been closed for a couple of seconds. Reports of such latch problems are widespread on the Discussions area of Apple's Web site and on other Mac-related sites.

We understand that the first version of a computer is likely to have a few problems, but if our small sampling is any indication of how other 15-inch PowerBooks are leaving the factory, Apple might benefit from cocking a sterner eye toward quality control.

Macworld's Buying Advice

The new 15-inch PowerBook G4s are impressive pieces of engineering, with stunningly bright screens, plenty of power, all the right ports, and a solid feel. We hope that by the time you read this, Apple will have worked out the kinks in the consistency of its PowerBooks, so the laptop you receive will be the laptop you love. □

1GHZ 15-INCH POWERBOOK G4

RATING: ♦♦♦½
PROS: Lots of ports; bright screen; very good performance; good keyboard; reasonable AirPort reception; not much slower than 1.25GHz model.
CONS: Mediocre battery performance; inconsistent quality in first shipments; lacks some features.
PRICE: $1,999
OS COMPATIBILITY: Mac OS X
COMPANY: Apple Computer, 800/692-7753, www.apple.com

1.25GHZ 15-INCH POWERBOOK G4

RATING: ♦♦♦½
PROS: Lots of ports; bright screen; solid performance; good keyboard; reasonable AirPort reception; includes updated technologies.
CONS: Mediocre battery performance; inconsistent quality in first shipments.
PRICE: $2,599
OS COMPATIBILITY: Mac OS X
COMPANY: Apple Computer, 800/692-7753, www.apple.com

1GHZ 12-INCH POWERBOOK G4

♦♦♦♦½; Apple Computer, 800/692-7753, www.apple.com; with Combo drive, $1,599; with SuperDrive, $1,799

The biggest news about this 12-inch PowerBook G4 is the speed of its processor: 1GHz. Like the 867MHz model (♦♦♦♦; April 2003), this version of Apple's 12-inch pro laptop combines an iBook's size with PowerBook-level performance.

133MHz might not seem like much of a difference, but Macworld Lab's tests of the new 12-inch PowerBook show that its twofold increase in L2 cache amplifies the processor's performance. The new Nvidia GeForce FX Go5200 graphics card also makes a big difference. This 4.6-pound PowerBook is not only an improvement upon its predecessor; it also holds its own against its 1GHz siblings.

The standard RAM has also doubled, from 128MB to 256MB, and this PowerBook can hold as much as 1.25GB of RAM.

This 12-inch PowerBook's ports are largely unchanged—there's still no support for FireWire 800, for example, but its two USB ports are now USB 2.0 compliant. The major port addition is the replacement of the original 12-inch PowerBook's mini-VGA port with a mini-DVI port, so you can attach the 12-inch PowerBook to a variety of displays, including DVI displays (using various adapters) at resolutions as high as 2,048 by 1,536 pixels.

For users who so value smallness in a laptop that they're willing to sacrifice some speed, this 12-inch PowerBook G4 requires very little sacrifice indeed.—JASON SNELL

1.33GHZ 17-INCH POWERBOOK G4

♦♦♦♦½; Apple Computer, 800/692-7753, www.apple.com; $2,999

When I first reviewed Apple's 17-inch PowerBook (♦♦♦♦; June 2003), I was quite taken by its expansive screen, speedy performance, and cool features, such as its illuminated keyboard and built-in support for AirPort Extreme, FireWire 800, and Bluetooth. With the release of the 1.33GHz G4 model, Apple has increased this laptop's appeal, adding a bigger hard drive, a better video card, a 2× DVD-R drive, USB 2.0 support, and the ability to handle as much as 2GB of RAM—while dropping the original price by $300.

Performance junkies will not be disappointed with the new PowerBook, thanks largely to a processor-speed boost, from 1GHz to 1.33GHz; the addition of 512MB of on-chip Level 2 cache; and a new video card, ATI's Mobility Radeon 9600.

The result is the fastest Mac portable (see benchmark chart)—and a portable that is a joy to use. The gorgeous 17-inch display makes it very easy to get work done without having too much window clutter. And as a portable Photoshop or Final Cut studio, the 17-inch PowerBook is the best game in town.

After months of traveling with the original 17-inch model, I still think its size and weight (6.9 pounds) mean that it really isn't well suited for average business travelers, especially those who have to work on airplanes or in tight spaces. But with the improvements and the reduced price, this powerful 17-inch PowerBook is a great mobile Mac for people who don't want to compromise on speed or size.—RICK LEPAGE

FireWire Web Cams

Apple's iSight Goes Up Against Established Products

BY MATHEW HONAN

Apple's iChat AV software (in beta at press time) has made videoconferencing as easy as plugging in a cable and turning on your smile. To make chatting even easier, Apple released its own camera, the iSight, to work with iChat AV. But the iSight is the new kid on the block; FireWire Web cams have been around for a couple of years. So we wondered how the iSight would stack up against established products, notably Orange Micro's iBot Standard, ADS Technologies' Pyro 1394 WebCam, and Unibrain's Fire-i.

We tested the cameras with an 800MHz iBook, a 1GHz Titanium PowerBook G4, and a dual-processor 533MHz Power Mac G4, and we used DSL, cable modem, T1, and AirPort (802.11b) connections. We also evaluated the cameras to see how they performed under a variety of conditions. All of these cameras have video rates as high as 30 frames per second, capture video to applications such as QuickTime Broadcaster, and work out-of-the-box with iChat AV. The iSight outperformed the others in nearly every situation, but all of the cameras performed well.

Ready for Your Close-Up?

None of the cameras' output comes close to DV-camcorder quality. But thanks to FireWire's much faster data-transfer rate, all of them produce smooth video far superior to the jerky USB and serial video of Web cams from a few years ago. The iSight's overall picture quality was noticeably better than that of the other cameras. It almost always provided a sharp, crisply defined image and did the best job with movement and backlighting. The Pyro slightly edged out the iBot in image quality, but the two were closely matched. The Fire-i had the lowest overall picture quality, but it made up for this in other areas.

The iSight also had the best color of the bunch, followed closely by the Pyro and then the iBot. All three of these cameras performed tremendously well in our informal color tests. However, one of our testers, a film and video editor who uses iChat AV to connect to remote sets, noted that the iSight gave him the best sense of what a final shot would look like.

The iSight is the only camera with an autofocus feature, which is both good and bad. We liked the autofocus for its ability to focus on specific items, follow a moving object, and quickly change from an extreme close-up to a regular shot—particularly handy if you want to display a document during a chat. But the iSight's autofocus sometimes focused on the wrong area, such as the background when another person entered the shot from behind.

The other three cameras rely on manual focus, so users must twist the lens to change the focal length. Of these, the Pyro had the best quality at an infinite setting, while the iBot produced the best close-ups.

The only scenario where the iSight wasn't the top performer was in low light. In fact, the iSight's picture was noticeably dimmer than that of the other cameras. None of the cameras were exceptional in the dark, but the Fire-i was the best performer here.

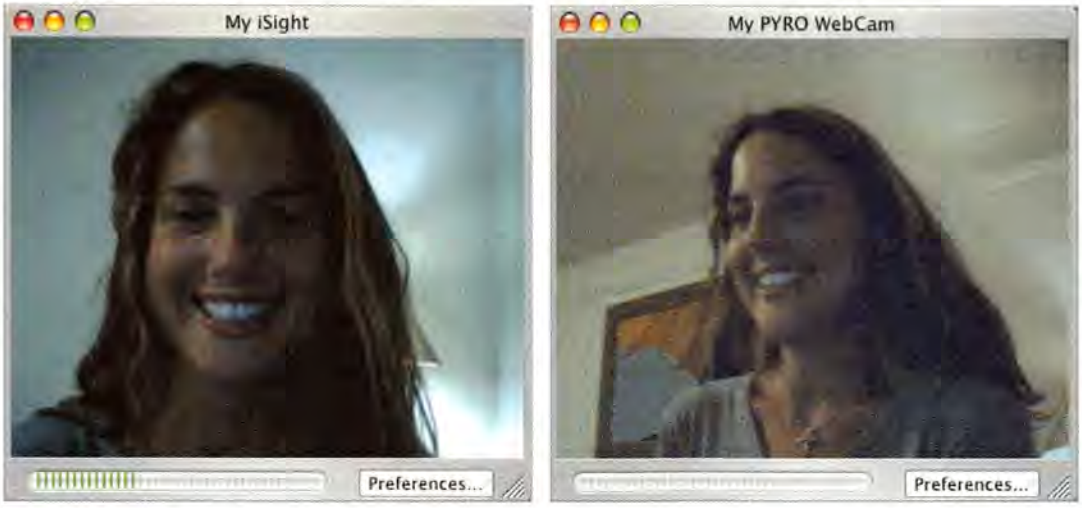
Sound It Out

When you're videoconferencing, it's easy to get caught up in seeing someone else on your computer, so you may forget that without audio, video is pretty useless. For the most part, Web cams have neglected sound. The focus has always been on the picture. Although the built-in microphones on many Macs will work for this task, the iSight's built-in microphone was an unexpected—and very pleasant—surprise.

The Stars of Our Show From left to right, ADS Technologies' Pyro 1394 WebCam, Apple's iSight, Unibrain's Fire-i, and Orange Micro's iBot Standard.

FireWire Web Cams Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT	PROS	CONS
Unibrain	Fire-i	●●●½	$99	9X	925/866-3000, www.unibrain.com	Great in low-light; compact; additional FireWire port.	Mediocre color accuracy and picture quality.
Orange Micro	iBot Standard	●●●½	$99	9X	714/779-2772, www.orangemicro.com	Great picture quality.	Bulky; hard to position at eye-level; poor OS X software bundle.
Apple Computer	iSight	●●●●½	$149	X	800/692-7763, www.apple.com	Excellent picture quality; built-in mike; fantastic industrial design; best for "face-to-face" chatting.	Performs poorly in low-light; no additional software.
ADS Technologies	Pyro 1394 WebCam	●●●●	$109	9X	800/888-5244, www.adstech.com	Great picture quality; best software bundle.	Bulky; hard to position at eye-level.



Face-to-Face The iSight's mount sits at eye level, so your chatting-session experience mimics face-to-face conversation and feels more natural (left). The Pyro sits only at desk height, so the video's perspective is somewhat odd (right).

A Web cam's microphone should be a tremendous decision-making factor for people whose systems lack a built-in mike or mike input (for example, owners of the G4 Cube). Both of those configurations leave you tethered to your desk by a microphone cable—one with a minijack or USB connection—while the iSight gives you the freedom to move about.

The iSight's built-in microphone was dramatically different from any other in terms of sound quality, and it proved to be one of the camera's best features. In situations with ambient background noise, such as an industrial setting or a room with background TV noise, the iSight's mike cut down on those noises more than any other microphone setup. Although the mike works best when you're seated directly in front of it, we found that it outperformed the Mac's built-in mike even when we were up and moving around.

You can also use the iSight as a standalone microphone for capturing audio; download QuickTime Broadcaster and change a few settings to capture iSight's stream to your hard drive. This works well for most amateur needs.

The iBot Standard comes in another edition, the $129 iBot Pro (not tested here), which comes with a USB microphone headset.

The Shape of Things

In terms of aesthetics, the iSight is another industrial-design triumph from Apple. It matches PowerBooks and the new G5, and it happened to complement an aluminum trash can and paper-clip holder at our offices.

The iSight comes with three different stands, and it works equally well on a notebook, a flat-panel display, a CRT monitor, and an eMac. No matter which system you mount your iSight on, it will always point directly at eye level. This may seem trivial, but having the camera directly in your line of sight makes for a radically improved videoconferencing environment, as the "face-to-face" experience more accurately mimics natural conversation (see "Face-to-Face"). Finally, the iSight's base rotates, allowing you to adjust the camera's angle without unseating it.

Videoconferencing is often a mobile affair for far-flung travelers who use it to link up with distant home offices or loved ones. So having a compact and safe way to carry your Web cam is important. The iSight comes with a snug-fitting, hard-plastic case for travel, and the whole apparatus fit neatly into the cell-phone pouch in a laptop case. Likewise, the minuscule Fire-i travels well—it fit into the same side pouch as a mouse, with room to spare. Conversely, the Pyro and iBot are rather top-heavy and oddly shaped, and neither fits well in laptop cases or comes with a protective carrying case.

The only other camera that comes with a mount specifically designed for laptop computers is the Fire-i, which has a clip that can attach it to an iBook or PowerBook. The other cameras sit only at desk height, which may give your iChatting friends a good view up your nose. Meanwhile, the Fire-i's clip was clumsy when it wasn't attached to anything, and the Web cam was prone to falling over when the FireWire cable was jostled.

But the Fire-i has an additional FireWire port built into the camera—a boon for iBook users and anyone who has multiple devices to connect to a machine that has only one FireWire port.

Included Software

All of these cameras work with iChat AV. If that's all you want to use it for, you don't need to install anything else. But if you want to use your camera to do a Webcast or to videoconference with a Windows user (as all of the cameras let you do), you're going to need additional software.

The Pyro has the best software selection of the bunch, with ISPQ (4 mice; June 2001), a videoconferencing application that you can use to chat with Windows users; BTV (4½ mice; July 2002), a great little video-capturing and -editing application; and Oculus, iVisit, ImageCaster, and PhotoShow—software for Web cams, videoconferencing, Webcasting, and slide shows, respectively. The Web-cam software is a nice addition; you don't get this capability with the iSight. iVisit is great videoconferencing software for users of older systems that don't support iChat AV. The Fire-i has a nice software bundle, with ISPQ and BTV. The iBot Standard also has a good selection of software for older versions of Mac OS, but it offers little for OS X, and it comes with only a trial version of BTV. (The iBot Pro comes with a software selection similar to that of the Pyro.) The iSight is the only camera that doesn't come with additional software.

Macworld's Buying Advice

In terms of overall quality, none of these cameras can touch the iSight, thanks to its excellent picture and sound capabilities and its industrial design. In terms of value, the Pyro's price, software bundle, and picture quality make it the best budget-conscious alternative. That said, all of these cameras are acceptable.

Performance Tips

Want to get the most out of your iChat AV experience? No matter which camera you use, here are a few simple tips to follow:

Get the Light Right Ideally, you want your light source in front of you and overhead. Fluorescent and ultrabright light washes out colors and make many skin tones look wan. Natural light is best.

Cut Out the Chatter Background noises, particularly if you're using your Mac's or your iSight's built-in mike, can kill a conversation. Similarly, lots of movement in the background can pixelate the background or cause your camera to focus on the movement.

Remain Seated Even at 30 frames per second, Web cams have problems with motion. You shouldn't expect DV-quality performance. Although you don't need to remain still, moving about quickly, particularly from side to side, will pixelate your image.

After Effects 6.0 Professional

Titling and Keying Tools Provide Terrific New Core Capabilities

BY SEAN WAGSTAFF

RATING: ♦♦♦♦♦

PROS: Multilayer animation; intuitive interface; cross-application support; text animation; improved performance, particularly in 3-D operations; vector-based painting.

CONS: Limited performance for extremely complex projects; editable text can't be used directly as a mask; scripting not intended for content manipulation.

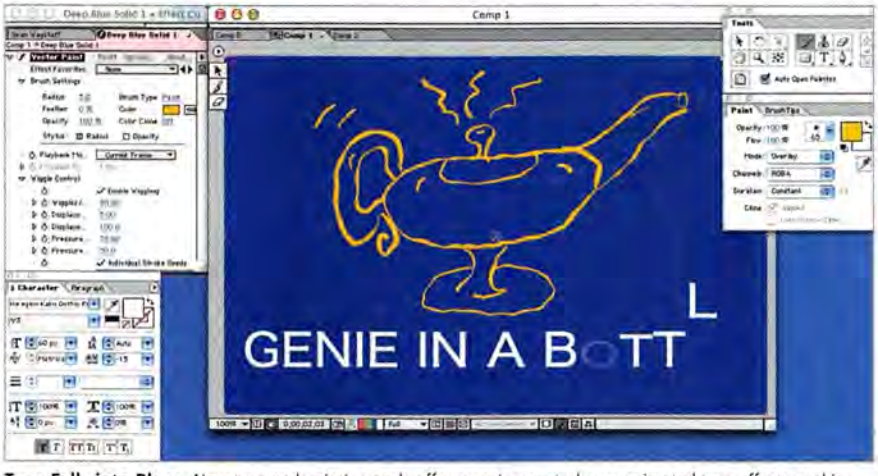
OS COMPATIBILITY: Mac OS X

PRICE: Professional edition, $999; Standard edition, $699; upgrades from earlier versions, from $199

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

Adobe After Effects is an all-in-one animation, compositing, and postprocessing tool kit that has long been deservedly popular with multimedia professionals, videographers, and filmmakers. And version 6.0 is the most important upgrade we've seen to After Effects in many years.

Despite its sophisticated masking techniques, versatile effects, and well-designed tool palettes, After Effects has been limited for some animation and compositing tasks, such as rotoscoping (painting on live-action frames), creating animated titles, and working with 3-D effects. And it worked with other Adobe programs only on a rudimentary level.



Type Falls into Place New type and painting tools offer amazing control over animated type effects, making After Effects 6.0 a stand-alone titling system that also works well with other Adobe products.

This version addresses some important limitations in earlier versions, introduces vector-based painting, works with other Adobe applications in a number of productivity-boosting ways, and implements OpenGL standards to greatly accelerate the display of 3-D effects (see www.adobe.com for a list of supported features for different graphics cards). And best of all, its new system for handling type finally gives After Effects titling and text-animation capabilities that rival those of Illustrator and Photoshop.

Adobe has lowered the price of the top-end version of After Effects. The Professional edition, which we reviewed, has gone from $1,499 to $999, while the Standard edition's price has gone up, from $649 to $699. As you'll see, you get a lot more in the Professional edition.

Our Type of Upgrade

The new type engine alone makes After Effects 6.0 a successful upgrade. In previous versions, text creation and animation were appallingly poor, considering Adobe's prowess in the typography world.

Type-creation tools in version 6.0 are like those in Illustrator; they even give you control over kerning and other spacing. You can click on a composition with the type tool and start typing directly into a new layer, or you can drag a box to define a text block's boundaries. You can also place type on a path. As with all features in After Effects, almost every parameter can be animated.

Our favorite new type feature, the Animation Range tool, lets you control the range of characters or words influenced by an effect. By animating the range, you can have single letters fly onto the screen to form complete words, or make text appear on screen as if it were being typed. And you can layer multiple effects and ranges on a block of type, making different letters or words do different things simultaneously. You can even add *wiggles*, which randomize type elements such as character size or even the characters themselves, for *Matrix*-style cascades of random letters.

The type tools really prove themselves in the nondestructive nature of effects applied to type. Effects are calculated without rendering text to a bitmap, so you can go wild animating transformations and effects and then simply double-click on the animated type to edit the text. It makes for fast work when an art director or a copy editor calls for a small type change in a complicated finished sequence. Unfortunately, you have to convert type to outlines—breaking the link to the original text—before you can use type as a mask.

Other New Effects

After Effects also has a new feature that generates keyframes from the peaks and valleys in a soundtrack. For instance, you can create a scripted expression that links keyframe values to animated characters—great for generating type elements that move in sync with the soundtrack.

The software also now has versions of Photoshop's distortion tools, which let you animate portions of an image as if the whole thing were painted on a sheet of stretchy latex.

Scoping Out Paint

After Effects 6 has completely revamped its painting and cloning tools. They look like the corresponding tools in Photoshop, but After Effects paints with vectors, to which color and other effects are applied. At any time, you can apply all sorts of transformations and effects to the paint layer, animate the individual paint stroke's beginning and end points, and change the brush parameters. Unlike the Paint tool in previous versions, this one lets you freely edit and animate all paint effects, brush shapes, and opacity. The new Clone brush is great for wire or rig removal, and you can use the Paintbrush tool far more effectively to add color and detail to existing layers.

Also new is the ability to automatically trace objects on the basis of channel information, such as a blue background, to generate editable Bézier-path masks.

Production Features

High-end production work often involves hundreds of composited layers. In this setting, After Effects' interface, which puts all layers in one vertical stack, becomes unwieldy. (Apple's Shake performs better on such behemoth projects, and like Discreet's Combustion, it offers a tree-structure view of project elements that makes navigating huge projects easier.)

But this is one of the program's few weaknesses. The good news for producers is that the Professional edition of After Effects is now scriptable. In particular, there are many advanced options for automating output and some types of batch compositing. However, scripting is primarily an output solution, and it falls short of letting you manipulate all of a file's content, such as text in titles.

For users of Adobe's other graphics tools, After Effects 6.0 offers welcome cross-application functionality. Imported Photo-

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DVD Studio Pro 2.0

Elegant New Interface, Feature Refinement Streamline Authoring

BY JIM HEID

RATING: ♦♦♦♦

PROS: Elegant, scalable interface; excellent MPEG-2 encoding; thorough documentation; thoughtful feature refinements throughout.

CONS: Some bugs; occasionally sluggish performance; demanding system and display requirements.

PRICE: $499; upgrade from previous versions, $199

OS COMPATIBILITY: Mac OS X

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

Those sounds you've been hearing are professional DVD developers popping champagne corks to celebrate the arrival of DVD Studio Pro 2.0, a major upgrade to Apple's high-end DVD-authoring software.

Like iDVD, DVD Studio Pro lets you create and burn DVDs containing video, audio, and photos. But unlike iDVD, it supports multiple language tracks, subtitles, Dolby audio encoding, complex navigation menus, and other advanced features. When DVD Studio Pro debuted in 2001 with these goodies, it was the only sub-$1,000 professional authoring program available. Now it's the only one available for less than $500.

Alas, version 1.5's power was trapped behind an awkward, inefficient interface (♦♦♦½; August 2002). With version 2, Apple has given DVD Studio Pro a magnificent makeover that streamlines and simplifies advanced DVD authoring. Add a beautiful new interface, a thorough 600-page manual, and a 50 percent price cut, and you have software worth celebrating—despite some flaws.

Big in Every Way

The program demands a fast Mac—Apple recommends a 733MHz or faster G4, but 1GHz is a more realistic minimum, and a dual-processor machine is ideal. On our dual-1GHz G4, the program performed well but was occasionally sluggish. Version 2 also calls for Mac OS X 10.2.6 and QuickTime 6.3.

DVD Studio Pro 2 demands a lot of screen real estate. On a display resolution of 1,024 by 768 pixels, the interface feels cramped and some windows are cut off.

Then there's disk space. Apple says version 2 requires 20GB, but the software itself uses only a tenth of that. The rest is needed to store the MPEG-2 clips and other files the program creates as you work. If your startup drive is low on space, have DVD Studio Pro 2 store these files on another drive.

Choose Your Interface

When you launch DVD Studio Pro 2 for the first time, a dialog box asks you to choose one of three operating modes: basic, extended, and advanced. The three modes have a similar glitzy look, but as you climb the ladder from basic to advanced, more features become available. This elegant approach accommodates a spectrum of users, from recent iDVD graduates to experienced developers.

All three modes provide access to dozens of menu and button templates. Using the new Menu Editor window, you can design menus within DVD Studio Pro 2, taking advantage of rulers, alignment guides, and other layout aids (see "Making Menus"). In previous versions, you had to create menu and button graphics in Photoshop and then import them. You can still work that way in version 2, but I built menus in a fraction of the time in the Menu Editor.

In basic mode, DVD Studio Pro 2 works much like iDVD. You drag movies into the Menu Editor window to add them to your project and create buttons for them. A palette next to the window provides access to menu templates, button styles, and your iTunes and iPhoto libraries.

In its extended and advanced modes, the interface grows to include a Track Editor window, where you can set and adjust DVD chapter markers (you can also import markers from Final Cut or iMovie projects), create subtitles, trim and work with video clips, add alternative-language audio tracks, and more (see "DVD Timeline"). In previous versions, working with markers and subtitles was cumbersome and confusing; now it's efficient and intuitive.

Making Menus Layout guides and templates make short work of menu design. When you drag an element to a menu, a drop-down palette presents relevant options. This screen shows DVD Studio Pro 2 in its basic mode.

The extended and advanced modes also provide access to the program's scripting features, which let you add smarts to a title, such as menu buttons that change color depending on which clips have already played. And a script made with DVD Studio Pro 2's proprietary scripting language could query a DVD player to determine its language setting, and then play back the appropriate audio track or subtitles.

Scripting is still not for the faint of code, but DVD Studio Pro 2's revamped scripting environment makes it more approachable—if you're careful. I found that if our scripts contained a programming error, DVD Studio Pro 2 often crashed when I previewed my work.

As I worked on a 90-minute training DVD containing numerous menus and nearly 100 chapters, I came to love the new keyboard shortcuts and the context-sensitive shortcut menus that lurk behind almost everything on screen. I also liked the way I could perform common tasks—such as linking a button to a specific chapter—in several different ways.

Working with Assets

DVD Studio Pro 2's approach to importing and managing assets also makes authoring more efficient. In previous versions, you couldn't import video until you'd encoded it into MPEG-2 format. You can still encode video before importing if you like, but you can also import a movie and have DVD Studio Pro 2 encode it as you work, just as iDVD does. However, the program slows down when background encoding is on.

DVD Studio Pro 2 also includes a new MPEG-2 encoder that supports variable-bit-rate encoding and delivers sharper video at lower bit rates than its predecessors did. You also get Compressor, the fine but somewhat funky encoding program included with Final Cut Pro 4 (see *Reviews*, September 2003).

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Toast 6 Titanium

A Good Program Gets Even Better

BY JONATHAN SEFF

RATING: ★★★★½

PROS: Easy VCD, SVCD, and DVD authoring; refined, efficient interface; burning via a network; Motion Pictures and CD Spin Doctor 2 included.

CONS: Inconsistent progress bars; limited control of encoding options.

OS COMPATIBILITY: Mac OS X

PRICE: $100 ($20 mail-in rebate for registered users of competing products); download, $90

COMPANY: Roxio, 866/280-7694, www.roxio.com

The Mac's built-in CD- and DVD-burning capabilities are great, but they may not be sufficient for burning a lot of CDs or DVDs. For people who demand powerful burning software, there's Roxio's Toast.

Toast 5 Titanium (★★★★½; July 2001) got high marks from *Macworld*, and the new version does, too. Roxio has improved the product's interface and video capabilities, and it has added features for burning via a network. Toast 5 was a fine example of why Toast is the leading application in its field, and Toast 6 secures the application's top position.

Neat Interface

Toast 5's interface was leaps and bounds better than its predecessor's, as is Toast 6's. There are four tabs along the top of Toast's main window: Data; Audio; Video, which replaces the mysterious grab-bag Other tab; and Copy. Each has format options you can easily access via a new drawer on the left side, with Basic and Advanced settings for each.

Video Maker Toast 6 lets you import QuickTime video, photos, and slide-show movies to author VCDs, SVCDs, and DVDs on CD and DVD burners.

Roxio has finally resolved some of our pet peeves about Toast. An indicator that measures used and free disc space now accompanies the record button, in the lower right corner of Toast's window. Also in the lower right corner is a smaller button that lets you choose from the different burners you have access to—a nicely placed time-saver. The program lets you turn off verification ahead of time, and it lets you eject finished discs or mount them on the desktop.

Video Burning Made Easy

The most impressive of Toast 6's improvements involves video. Toast 5 could encode video files to MPEG-1 format and burn them to Video CD (VCD). But Toast 6 adds MPEG-2 encoding, which lets Toast create a Super Video CD (SVCD) or a DVD, with simple menus, from any video format that QuickTime understands. Now that Toast can author a DVD, users with external DVD burners—which iDVD doesn't support—can create DVDs, and quick DVD creation is now easier for everyone. Toast 6 can even take an MPEG-1 file—which has audio and video multiplexed into a single track—and create a DVD from it at the click of a button.

The new Plug & Burn feature lets you capture video from a DV camcorder and burn it to VCD, SVCD, or DVD. In our tests, it captured and burned an SVCD of footage from a Canon Optura 20 DV camcorder flawlessly. Toast encoded 5 minutes of video in about 14 minutes on a dual-867MHz Power Mac G4 at high quality. (The program gives only high or standard video-quality options, with no indication of bit rates, so you can't fine-tune your compression.) Toast gives you basic trimming functionality for files; when burning, you can choose to insert chapter markers either at timed intervals or at scene breaks.

We were annoyed by Toast's lack of progress bars to indicate the time remaining for encoding video or burning data DVDs—the two most time-consuming uses of such an application. Also, for drives that burn to both DVD-R/RW and DVD+R/RW, buffer-underrun protection isn't currently supported. This should be fixed by the time you read this.

Burning Enhancements

Toast 6 also has several new networking features for burning discs. ToastAnywhere lets Mac users without built-in CD or DVD burners burn to another computer running Toast 6. Toast can use Rendezvous to discover shared burning machines on a local network; it can also burn over the Internet if you enter an IP address. Since you need a fast connection to transfer all the data to the other com-

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DVD Studio Pro 2.0

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In our testing, we were bitten by a bug that other users have also reported. If you change an asset—for example, by revising a menu background created in Photoshop—DVD Studio Pro 2 doesn't reflect your change until you quit and relaunch the program.

Simulating and Burning

Previewing menus and video tracks was unreliable in previous DVD Studio Pro versions, but it's much better in version 2. A new Simulator window displays accurate previews and can be configured to simulate different language and display settings. Some users on Apple's discussion boards have reported problems with unreliable previewing, but aside from the script-crashing bug, previewing worked reliably for me.

DVD Studio Pro 2 provides several new burning and mastering features. Among the most noteworthy is support for the Cutting Master Format when you're burning to authoring media (the kind used by specialized authoring drives such as Pioneer's DVRS-201). This lets you burn replication masters containing copy-protection information.

Macworld's Buying Advice

DVD Studio Pro 2.0 is a spectacular update, but we recommend that veteran users ease into the new version of the program. By all means, buy the upgrade and start learning to use it. But as with any major upgrade, don't switch to it in the middle of a project, and don't make your first DVD Studio Pro 2 project a complex one that has a very tight deadline. If you're new to pro DVD authoring and you have sophisticated hardware, you shouldn't hesitate to buy DVD Studio Pro 2. You probably won't encounter the program's most serious problems if you create relatively simple projects, and by the time you start to use this version's most-advanced features, Apple will likely have released updates that fix its flaws. □

DVD Timeline Extended and advanced modes have more windows and palettes. The Track Editor window (bottom) shows separate language tracks for English and Spanish, subtitle tracks, and chapter markers.

After Effects 6.0 Professional

continued from page 36

shop and Illustrator files with multiple layers now appear as multilayer subcompositions. You can import Photoshop and Illustrator layers as trimmed to their minimum dimensions or cropped to the size of the composition, and type is imported from both programs as active type layers, rather than rendered bitmaps. (However, vectors are not automatically imported as masks.)

Performance Enhancements

Adobe has overhauled After Effects' performance, and in the case of 3-D effects and some types of compositing effects, we found that the speed of operation, using recent OpenGL graphics cards, was vastly improved. You can now work with and preview 3-D effects in real time instead of relying on wireframe previews, and moving and animating 3-D objects is now very smooth.

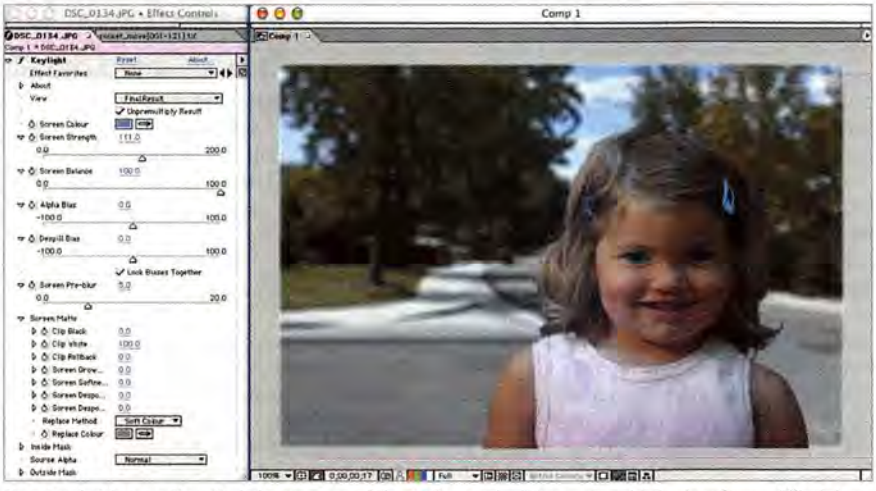
Tracking is as much as 10 times faster in version 6.0 than in version 5.5. The tracker (Professional edition only) now defaults to 1/256-of-a-pixel accuracy, and it runs about as fast as version 5.5 running at ½-of-a-pixel accuracy.

The Key to Happiness

After Effects has always offered a range of tools for key compositing, but they left room for improvement. The Professional edition now includes the Keylight keying tools previously available from The Foundry for $5,000. Keylight is about as good as it gets, and the plug-in handily dealt with difficult-to-solve problems such as compression artifacts in the edges of compressed DV video. The Professional edition also includes Zaxwerk's $495 Invigorator Classic, a highly effective tool for generating an infinite variety of beveled 3-D objects from type and vector outlines.

Macworld's Buying Advice

After Effects 6.0 is a terrific upgrade—especially considering the lower price—for its new type-handling features alone. We recommend it to anyone involved in dynamic media. Other improvements, including the Paint tool, OpenGL support, and scripting, dramatically improve it as a production-oriented compositing and animation tool. The Standard edition will appeal to users who need only the compositing, animation, and type effects, but the Keylight and Invigorator tools alone are easily worth the extra $300, and the new scripting and improved tracking are a bonus. □



New Tools Sing on Key Keylight, now part of the Professional edition, makes child's play of even difficult keying jobs such as layering noisy, DV-compressed blue-screen video.

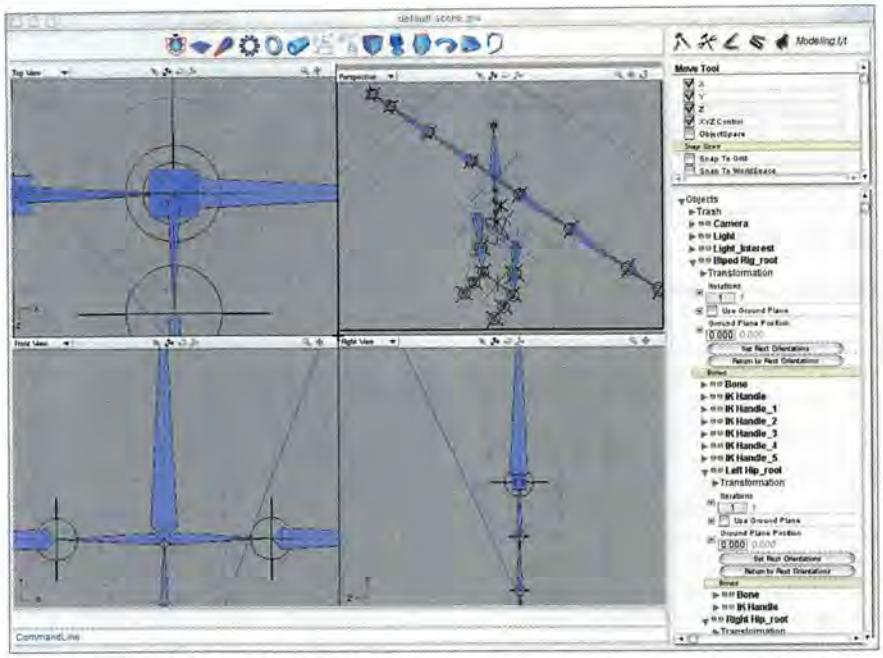
Pixels 3D 5.0

3-D–Modeling and –Rendering App Blends Function and Low Price

BY SEAN WAGSTAFF

As a general rule, you have two choices when you're choosing a 3-D–modeling and –rendering program: a rich set of features or a pauper's price (less than $400). But at $399, version 5.0 of Pixels Digital's Pixels 3D breaks that rule. Similar to low-end 3-D programs such as Eovia's Carrara Studio (★★★½; November 2002), Pixels 3D has a user-friendly interface that gives you easy access to tools and features. Its system of pop-up menus functions in a way that's very similar to the pop-up Hot Box menus in Alias's Maya Complete (★★★★½; January 2003), which are for object selection modes.

Like most do-everything 3-D packages, Pixels 3D offers modeling in a variety of styles, surfacing with bitmapped and procedural textures, a range of dynamic effects such as smoke and fire, and a high-quality ray-trace renderer. But it doesn't offer many of the features found in high-end programs—radiosity rendering, for example. And the level of control offered in areas such as texture mapping and particles is not nearly as deep as in higher-end programs. So Pixels 3D is appropriate for print, Web, and multimedia artists, and for some broadcast environments, but it won't meet the needs of sophisticated studios and advertising agencies.



Totally Automatic Pixels 3D 5.0's fast automatic rigging system—for creating inverse kinematic controls in biped or quadruped characters—lets you give your characters the gift of motion.

NURBS Modeling

One thing you won't find in most low-priced 3-D packages is NURBS modeling. Nonuniform rational B-splines, also known as b-splines, are great for modeling smoothly blended, curved shapes, such as the compound curves in the panels of car bodies. And with advanced capabilities including tangency controls and stitching, NURBS are also well suited to creating realistic organic forms such as animals and humans.

Unfortunately, the NURBS in Pixels 3D lack these capabilities, so they're better for making objects out of individual patches joined by hard seams, rather than out of multiple patches that blend together smoothly. For entry-level 3-D artists, this distinction can be academic. But for character work—in particular, modeling faces, which have many smoothly blended surfaces—or for scenes that will be viewed or printed at a high resolution, it's a significant limitation. On the other hand, the program's polygon-modeling tools are useful for creating surfaces with points you want to easily manipulate. These tools also come in handy when you need to use Boolean operations to cut holes and quickly join surfaces. However, being able to split and weld them more easily would be very useful. Ultimately, Pixels 3D would benefit most from an easy-to-use subdivision surface modeler, which would be far more accurate and more user friendly than NURBS.

While it would be difficult to create very realistic character models in Pixels 3D, it's a great place to do simpler character modeling where parts of a face, such as the ears, nose, and eyes, are "glued on." It's also a great place to begin exploring character animation. Version 5.0 offers a new automatic character-rigging system that makes it easy to set up both biped and quadruped characters for animation, using a skeleton linked with inverse kinematic (IK) controls. And these controls, in turn, simplify the task of getting your character to move.

Another area where Pixels 3D is lacking is in facial animation. It's more than adequate for creating cartoon-style expressions, where eyebrows float in front of the face, instead of bending and deforming along with the adjacent forehead skin, for example. But the program simply doesn't have the depth of control necessary for the shaping, tweaking, and blending that very emotive facial expressions require.

Into the Atmosphere

Pixel 3D's rendering quality is quite impressive, considering the program's cost. The renderer does ray tracing and includes Skydome, an approximation of global illumination (a rendering technique that simulates the light from a natural sky). Version 5.0 adds atmospheric rendering effects, such as volumetric fog, so you can create much richer, moodier lighting and renderings. The set of particle effects adds to the renderer's potential with the ability to create convincing smoke, clouds, and other dynamic effects. And the particle systems are fast to set up and preview (however, we'd appreciate the ability to render particles in OpenGL hardware, which would be significantly faster than software-only rendering).

The shading system, which lets you use both bitmapped textures and procedural (mathematically described) surfaces, is remarkably flexible. And it lets you create almost any type of surface quality you can dream up. For example, you can easily layer multiple textures by using the color and luminance values of several image maps to affect the rendering qualities, such as specularity, bumpiness, reflectivity, and transparency. You can also combine these with procedural shaders, such as fractals and noise, for relatively painless creation of complex surfaces such as riveted, painted metal with corroded, dented, and rusted areas.

Macworld's Buying Advice

Pixels 3D 5.0 doesn't provide the ultimate tool set for creating 3-D animations and still images. But at $399, it's certainly an excellent choice for beginners. And it may be a reasonable option for professional artists who don't need the elaborate features of high-end, and more expensive, 3-D tools. □

RATING: ★★★½

PROS: Clean interface; good overall feature set for its price.

CONS: Limited for modeling complex organic surfaces; limited facial animation.

PRICE: $399; upgrade from version 3.X, $249; upgrade from version 4.1 or later, $199

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Pixels Digital, 866/474-9357, www.pixels3d.com

Soundtrack 1.0

Apple's Flexible Music-Creation Application Is Fun and Easy to Use

BY ANTON LINECKER

Apple's Soundtrack made its debut last June, as part of the massive video-editing bundle Final Cut Pro 4. But now the same Soundtrack software is available as a stand-alone product. This puts Soundtrack within reach of video editors, Web designers, and content providers who don't need the rest of the Final Cut Pro 4 package.

Soundtrack 1.0.1 is a fun program based on sound loops. It lets you quickly create original, royalty-free music for video and multimedia projects.

It requires at least a 500MHz Power Mac, Mac OS X 10.2.5, and 5GB of available hard-drive space. Apple's official specs say that you can install the program with a CD and that the sound loops, called Apple Loops, on the included DVD are *optional*, but this isn't really the case. Soundtrack's entire appeal lies in the fact that it lets you mix and match the 4GB of material it provides. So, at some point, you'll need a DVD-ROM drive to install the Apple Loops.

You've Got Rhythm Apple's Soundtrack 1.0.1 makes it easy to match your video to your background composition.

Soundtrack is in some ways similar to Sonicfire Pro 3 (★★★★; November 2003); both programs are designed to create background music for your video productions. But the two programs differ significantly in their approach. Sonicfire Pro lets you quickly adjust previously composed pieces to fit any length. In Soundtrack, you're the composer, arranging the supplied instrument loops into a unique composition.

Working with Soundtrack is a very tactile experience—you achieve almost everything via drag and drop. The program's finer adjustments are just as easy to use, although they're hidden from ready view. To set volume and to pan keyframes, for example, you must first reveal the volume and panning adjustment tracks via a drop-down arrow at the head of each instrument track.

When you start adding Apple Loops to your composition, Soundtrack automatically adjusts the tempo and key of the added audio to match the composition you're building, so instruments that aren't traditionally paired often sound great together. You can experiment for hours as you nail down exactly what you want—this is fun, but beware of the temptation to play around when you're on a tight deadline.

To make sure your Soundtrack composition matches your video project well, you can import the video into the program and play it with your developing music. The stand-alone version of Soundtrack does lack some features that the bundled version includes. For example, when you import video tracks from Final Cut Pro 4, the scoring markers embedded in the track also get imported; anyone using Avid Xpress DV, Adobe Premiere, or previous versions of Final Cut Pro and Final Cut Express won't have the embedded scoring markers. But for the most part, Soundtrack worked flawlessly, playing back the video and dozens of instrument tracks. On one occasion, the video window stopped updating properly after the computer woke from sleep mode, but restarting the program cleared up that problem.

If 4GB of sound loops isn't enough, you can easily record your own sound into the program if you have an audio-input device. Soundtrack also natively supports third-party sound loops, like those in Sonic Foundry's Acid. The application also ships with a respectable array of sound filters and effects, including a set of eMagic effects from Apple's pro sound application, Logic Platinum.

Macworld's Buying Advice

Soundtrack won't instantly transform you into Mozart, but its easy-to-use workflow does make creating music a pleasure. If you want to use it for business, make sure to keep your eye on the clock, because the hours can melt away when you're playing with Soundtrack. □

RATING: ★★★★½

PROS: Royalty-free music creation; easy to use; fun.

CONS: Interface sometimes slow to update; requires a DVD-ROM for installation.

PRICE: $299

OS COMPATIBILITY: Mac OS X

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

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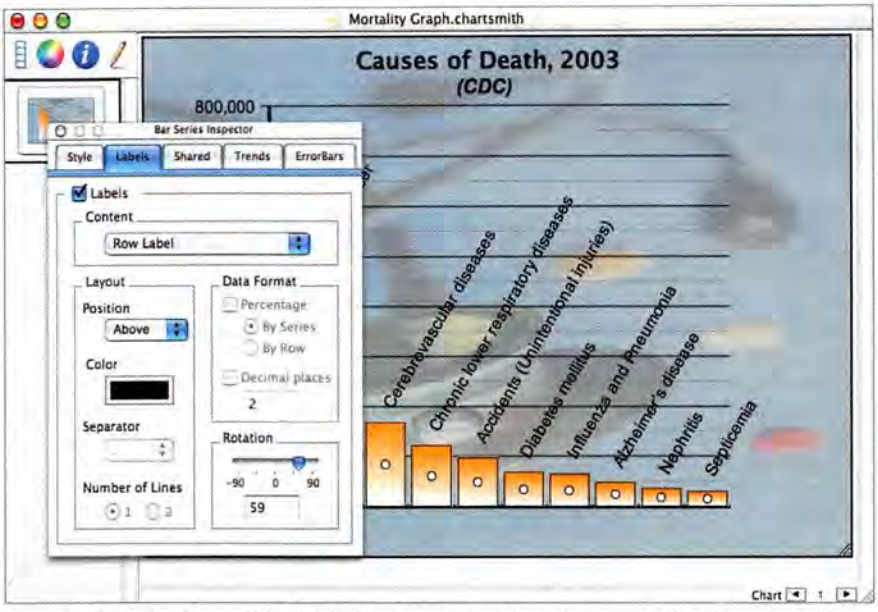
17. I certify that the statements made by me above are correct and complete: Rick LePage, President; September 30, 2003.

Chartsmith 1.2

Innovative OS X Charting Program Has a Few Rough Edges

BY FRANKLIN N. TESSLER

Whether you're explaining scientific research or discussing a PTA fundraiser, charts can help your audience quickly grasp complex numerical relationships. Chartsmith 1.2.3, from Blacksmith Technologies, lets you turn raw data into spiffy graphs, but a few interface quirks and frustrating documentation may sometimes slow your progress.



Inspector Gadgets Chartsmith's 1.2.3's tabbed Inspector windows give you tools that allow you to adjust the appearance of your chart's data labels and many other elements.

From Data Entry to Dragging and Dropping

Getting data into Chartsmith is a snap. Chartsmith's Data Viewer has a standard rectangular grid for numbers, with space reserved for labels along the top and left side. You can enter data manually, cut and paste it from any other application, or import it from tab-delimited text files or Excel files. In programs that support OS X services, such as TextEdit, you can also select the data with your mouse and choose a graph style from the Chartsmith Services submenu, and Chartsmith will automatically transfer the figures into a new document.

After you've entered all the data into the Data Viewer window, Chartsmith generates a chart using a default style that you set in the program's Preferences window. Chartsmith's repertoire of a dozen chart types is less extensive than that of its primary competitor, Red Rock Software's DeltaGraph (♦♦♦♦; October 2003)—Chartsmith doesn't represent 3-D surface plots, for example. (Blacksmith plans to add more charts late this year.) However, Chartsmith makes it easy to change designs as you enter the data, and you can specify a different type of graph for each data series.

Chartsmith's interface relies extensively on dragging and dropping. For example, you can drag a swatch from Chartsmith's color palette onto any chart element to alter the element's

THE CONQUEST

DiskWarrior is Now OS X Native

It's the indispensable utility that repairs problems such as disks that won't mount, files you can't trash, and folders that have disappeared. MacUser magazine said, "It's the fastest and safest data recovery utility you can buy."

Macworld magazine said, "DiskWarrior is by far the best disk utility available for the Mac; it can repair virtually any disk problem you may encounter...and it is likely to become the only tool you'll want to keep with you at all times."

David Coursey, ZDNet AnchorDesk, agrees in an article comparing disk utilities. He used it to fix a disk that no other utility could. "DiskWarrior is a great product, not just because it fixed a pretty serious screw-up, but because it showed me what it planned to do in minute detail before doing it."

But disk damage isn't the only threat to your data. As hard drives get older, the drive mechanisms

THE UTILITY COMPANY
ALSOFT

Phone: 1-800-257-6381 Fax: 281-353-9868 Email: sales.info@alsoft.com Web Site: www.alsoft.com

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hue. If you press the option key while you're dragging the swatch, you can preview the effect before you commit. Chartsmith also lets you drag entire charts into the document windows of other running applications—including Microsoft PowerPoint—in PDF or TIFF format. In addition to letting you export individual charts in several graphic formats, Chartsmith lets you save an entire document as an Apple Keynote presentation (♦♦½; April 2003). If the file contains multiple charts, each one becomes a separate slide, and you can even choose which Keynote theme to use for the presentation.

Chartsmith's chart-editing interface suffers from a few annoying inconsistencies. For example, to set attributes for most chart elements, you first select the component with the mouse and then click on an icon to reveal an Inspector window (see "Inspector Gadgets"). But to hide or reveal the chart's legend or grid, you have to select options in the Data Viewer window; there are no corresponding controls in any of the Inspector windows.

Unlike other chart components, which display handles when you click on them, the chart background doesn't give you any visual feedback to let you know when you've selected it. I also encountered sporadic screen-refresh problems while I was resizing text, and the program occasionally truncated the text labels at the tops of the bars in one of my charts.

Part of the frustration I felt when dealing with Chartsmith's interface was caused by the program's lack of a reference manual. Three tutorial documents do a good job of introducing the program's features, but they're no substitute for an indexed guide. Chartsmith's online help provides more detail, but finding the answer to a specific question using Apple's Help Viewer seems to take forever.

Macworld's Buying Advice

Despite a few rough edges, Chartsmith is a highly capable charting tool that's easy to use once you learn its idiosyncrasies. It sells for less than half the price of DeltaGraph, and even lower educational pricing makes it attractive for students and teachers. You can download a demo, with only printing and exporting disabled, from Blacksmith's Web site, so it's easy to audition the product before you buy. □

RATING: ♦♦♦½
PROS: Excellent drag-and-drop support; Keynote integration.
CONS: No reference manual; interface quirks; limited chart repertoire.
PRICE: $129; teachers, $99; students, $65
OS COMPATIBILITY: Mac OS X
COMPANY: Blacksmith Technologies, 703/771-9440, www.blacksmith.com

Toast 6 Titanium

continued from page 38

puter, however, the feature makes sense only on a wired Ethernet network.

Toast It is a nice contextual-menu item that lets you send files or folders to Toast for data backup, and you can now compress and encrypt Mac-only data discs on-the-fly. Since the files become part of an OS X disc image, you don't need additional software to read them. In our tests, this worked fine, but we achieved only limited compression.

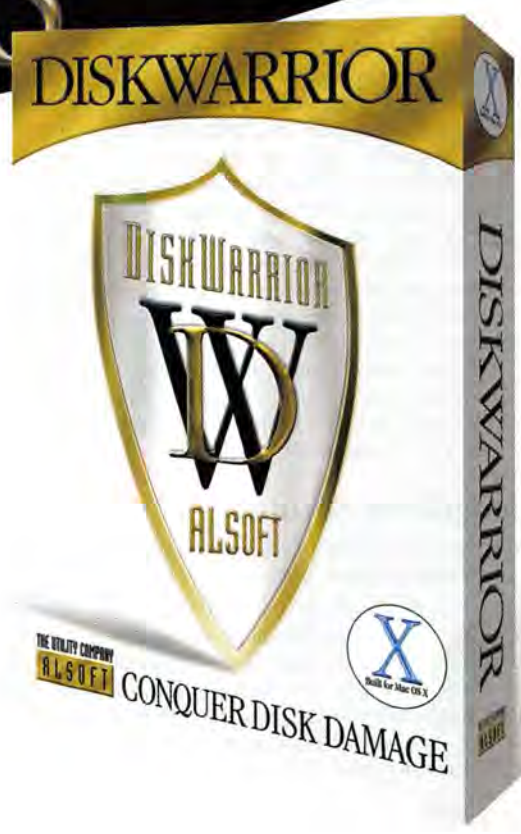
Extra Goodness

Toast 6 includes four applications that extend its overall usefulness. Motion Pictures lets you create slide shows that pan and zoom. CD Spin Doctor 2 is an updated version of Toast's digitizing application. Discus RE helps you create labels for your CDs and DVDs. And Propaganda Productions' Déjà Vu backup software is integrated with Toast 6.

Macworld's Buying Advice

Toast 6 Titanium's power and flexibility outshine anything you can get from Toast 5 Titanium or a Mac's built-in burning capabilities. Toast 6 includes every feature you can reasonably expect from this type of app. It's ideal if you have an external DVD burner that didn't come with DVD-authoring software, or if you burn a lot of CDs and DVDs. □

CONTINUES



begin to malfunction. Eventually, the malfunctions become so severe that the drive simply stops working. DiskWarrior can automatically test for hardware malfunctions, giving you the chance to back up your data before it's too late.

Be prepared. Don't wait until after you have a disk disaster to buy your copy of DiskWarrior. Bob LeVitus, aka Dr. Mac, said, "I feel naked without DiskWarrior." You can believe MacHome magazine when they said, "DiskWarrior is a quick, one-click solution to faster, more stable hard drives."

24U Email OSAX 2.2 9X

♦♦♦♦; 24U, info@24usoftware.com, www.24usoftware.com; $17

Every so often, we run across a widget that makes us fall in love with our Macs all over again. A good example of this is 24U Email OSAX 2.2, a simple AppleScript tool that adds a new statement—send email—to your library. It lets you create e-mail messages without an e-mail client.

Aside from being a neat trick by itself, 24U Email integrates smoothly with other applications. For example, imagine sending e-mail directly from inside a database without having to manage its interaction with disparate mail clients across an organization.

You'll need an SMTP host for 24U Email to send through—that's true for any e-mail client—and the statement lets you send data via all the standard e-mail headers (To, Cc, Bcc, From, and Reply-To). 24U Email OSAX 2.2 is a great help. Best of all, it won't break your bank.—SCOTT LOVE

Cookie Muncher 1.0.6 X

♦♦♦; dot software, www.dotsw.com; $8

If you delete all Web-browser cookies from your work machine to protect your privacy (or to cover your tracks at the office), Cookie Muncher is a handy tool. It generates a list of all the cookies loaded in Internet Explorer, Mozilla, OmniWeb, or Chimera. You save the cookies you want to keep—in the program's My Cookies pane—Cookie Muncher deletes everything else.

Cookie Muncher does its job well, but it doesn't tell you which browser a cookie is installed in; this can get confusing if you use separate browsers to manage multiple logins to the same site. And navigating the My Cookies pane can be awkward—after you delete a cookie, the selection area doesn't automatically drop down and highlight the next cookie in the list, so you have to reach for the mouse and click to select your next target. You can, however, shift-click to select more than one cookie at a time.

Despite these minor inconveniences, Cookie Muncher is a tasty solution for Web surfers who prefer to keep their browsers cookie-free.—SARA ASTRUC

JumpDrive Secure X

♦♦♦½; Lexar Media, 510/413-1200, www.lexarmedia.com; 128MB, $60; 256MB, $90; 512MB, $180

No matter how perilous the situation, James Bond never compromises the secret files by losing his lighter-sized drive. Less-debonair folks might welcome the JumpDrive Secure.

The JumpDrive Secure is a portable USB flash memory device that comes with Lexar Safe Guard software, which lets you create public and private partitions so you can password-protect private files. After it alerts you, Safe Guard erases all existing data when you partition the drive, but it puts a copy of itself back on the public partition.

The public partition mounts automatically on PCs and Macs. To get to the private space, you just install Safe Guard from the JumpDrive and enter your password. However, Safe Guard for Macs runs only on OS X 10.1.5 or later.

Occasionally, Safe Guard failed to recognize the drive or gave us an error message when we tried to switch partitions. Unmounting and reconnecting the drive fixed the problem, and we didn't lose any data.

The JumpDrive is cross-platform, but it has a few nice Mac-specific features. You can add the password to the Keychain or format the drive so it works only on a Mac.

Flash drives are perhaps the cheapest, most convenient way to transfer data between USB-equipped computers. And since its prices are in line with those of other flash memory drives, the JumpDrive Secure makes sense for your top-secret data.—KRISTINA DE NIKE

KidzMail 1.1.2 9X

♦♦♦♦; KidzCan, www.kidzcan.net; $10

For kids who are just getting started with the Internet, or even just getting started reading, e-mail programs such as Mail, Eudora, or Outlook can be overwhelming and confusing. KidzMail provides a simplified e-mail interface that's designed for a younger audience.

KidzMail can send and receive standard e-mail messages, and it includes a nifty feature that reads letters to kids who need a little bit of help. The program also has an integrated paint program—similar to MacPaint—that lets kids create art and send it as part of an e-mail message. Unfortunately, KidzMail can't send or receive images that weren't created in KidzMail, so you can't send school pictures to Grandma, for example.

Beyond basic e-mail functionality, KidzMail also provides simple but effective security features that let parents monitor correspondence, filter illicit messages, and determine whom their kids can exchange e-mail with.

If you have a child who's just learning to use the Internet, KidzMail is an ideal program. It meets the interface needs of young users for whom reading is not yet a lifelong habit. Although it lacks some features, such as a spelling checker, its overall functionality and security provide an excellent introduction to the world of electronic mail.—JASON CRANFORD TEAGUE AND JOCELYN CRANFORD TEAGUE

MacAstronomica 2.0.2 X

♦♦♦♦; EasySoft Creations, alexandre.trottier@videotron.ca, http://pages.infinit.net/trottier; $25

Need a map to the stars? MacAstronomica 2.0.2 is a simple but powerful tool that can turn any iBook or PowerBook into a portable guide to the nighttime sky.

MacAstronomica 2.0.2 (there's an earlier version for OS 9) comes with presets for hundreds of cities, because the night sky looks different from every place on Earth. If your city isn't listed, just specify your latitude and longitude, and the software instantly generates a map of the overhead view. Move your mouse onto any object and a pop-up box shows its name and astronomical coordinates. A find function lets you search for celestial objects by name, and the map updates in real time. You can change the display to red, to minimize its effect on your night vision, and shift the view direction to north, south, east, or west.

MacAstronomica's object database isn't as comprehensive as that of dedicated astronomy programs such as Space Holdings' Starry Night, but the program's ease of use makes it an excellent tool for neophyte stargazers.—FRANKLIN N. TESSLER

MacResponder 1.02

♦♦♦♦½; Bruno Blondeau, contact@brunoblondeau.com, www.brunoblondeau.com; $20

If setting up your e-mail program to send an automated reply while you're out is the one task standing between you and your next vacation, you can give yourself an early checkout by using MacResponder 1.02.

This handy utility is a breeze to set up and customize. You use the setup window to fill in your account information and change the sample response; you have ample space for a lengthy missive. Just be sure you've quit your e-mail client—MacResponder doesn't work with it running.

MacResponder's real strength is in how customizable it is. You can set up e-mail rules so that some of your e-mail correspondents get autoreplies while others—such as likely spammers—don't get any confirmation from your e-mail address. You can also set up MacResponder to handle multiple e-mail accounts and send out varying autoresponse messages to different recipient domains, so your friends don't get the same scrupulously professional autoresponse that MacResponder sends to your coworkers.—LISA SCHMEISER

Mystical Lighting 9X

♦♦♦♦½; Auto FX Software, 800/839-2008, www.autofx.com; $179

The photo-editing tool Mystical Lighting comes with 16 creative lighting and shading

continues

Think of them as a Mute button for the world around you. Whether it's the engine roar on airplanes, noise of the city, bustle in the office or the blare of neighborhood yard work, these headphones let you hush them all. And they do it with the flick of a switch. You savor delicate musical nuances in places where you couldn't before. And when you're not listening to music, you can use them to quietly enjoy a little peace. Clearly, Bose QuietComfort® 2 headphones are no ordinary headphones. It's no exaggeration to say they're one of those things you have to experience to believe.

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effects and hundreds of preset variations, all designed to impart a dramatic flair to your photographs. Some of the effects are subtle; others, such as Rainbow and Fairy Dust, give your photos otherworldly hues.

The practical, down-to-earth program works as a stand-alone app or as a plug-in to Adobe Photoshop (or Photoshop Elements) and Corel Photo-Paint. The flexible interface lets you toggle your original image on and off, and the Undo option lets you reverse any visual effects you apply. Both the plug-in and the application options are a snap to operate, and they function identically. However, certain effects render more slowly than others.

This program will dominate your monitor, blocking access to the desktop and other programs; some users may find this inconvenient.—JACKIE DOVE

PodQuest 1.0.1

X

●●●●½; MibaSoft, www.mibasoft.dk; $10

I rarely get lost—thanks to online driving directions. However, it isn't always practical to read directions from a printout perched on the dashboard while you're driving. Enter PodQuest, a handy little application that downloads MapQuest directions to your iPod. PodQuest is quite helpful at times when reading printed directions is inconvenient; I found it very useful while bicycling.

PodQuest adds a car-shaped icon to OS X's menu bar. Click on it, and a menu appears with options for looking up directions on MapQuest. Once MapQuest displays your directions, clicking on the car again lets you choose to download them to an iPod. Once downloaded, driving directions show up on your iPod as contact files; you follow them by scrolling the jog dial. Since each set of directions can have a unique name, such as "Home to Half Moon Bay," they're easy to find at a glance.—MATHEW HONAN

TimeCache 5.1.5

X

●●●; PandaWare, www.pandaware.com; $50

PandaWare's TimeCache 5.1.5 is a program designed for consultants and other professionals who need to account and bill for time spent on specific projects; this makes it similar to Modesitt Software's TimeSlice. TimeCache includes several useful features, including an extensive set of reporting options that detail time spent and expenses incurred during the course of a project.

TimeCache has a few quirks. You start timing a new project by clicking in any blank area beneath the Client or Project columns of the program's main window. But unless there's activity on your computer—such as cursor movement or typing—TimeCache stops the timer after a couple of minutes. You can turn this option off by setting the timer to zero, but information on how to change it wasn't obvious anywhere in the application or documentation. TimeCache is also confusing when you click on a project entry after the timer has stopped, because TimeCache doesn't open the original project-entry window. Instead, it opens a window displaying data from whatever column—be it Notes, Category, Charges, or Hours—you happened to click. This is apparently by design, but it's fairly unintuitive for what should be a simple process.—JEFFERY BATTERSBY

WorkStrip 3.0

X

●●●●; Softchaos; www.softchaos.com; $38

When we last reviewed WorkStrip (●●●; November 2002), we felt that the program's excellent features weren't well organized and that it had too onerous a learning curve. Version 3 brings a happy change. While the previous version required that you keep one hand on the manual when you began using the program, this version is much easier to learn. Creating Workspaces—collections of applications, documents, and folders that WorkStrip makes available at a single click—is much easier, and you can now assign each Workspace a unique desktop picture, so you have a visual cue as to which Workspace you're currently using.

WorkStrip's one shortcoming is that, while you can hide the majority of the Dock and leave a Workspace icon peeking over the edge of your screen, you can't move the icon to a more convenient location on the desktop. (You can choose to hide the Dock completely.) Aside from that, WorkStrip 3.0 is a stellar program.—JEFFERY BATTERSBY

Zoom & Pan 3.0

9X

●●; Virtix, support@virtix.com, www.virtix.com; $30

The Ken Burns Effect, a signature feature of iMovie 3, lets you add movement to still photographs by simulating the pan and zoom of a motion picture camera. As great as that is, you'll want more control over iMovie's virtual camera. Virtix's Zoom & Pan 3.0 plug-in collection offers more control, but only if you can decipher a confusing and awkward interface (which Virtix says was prompted by a bug in iMovie 3).

Unlike the Ken Burns Effect, Zoom & Pan 3.0 isn't limited to stills—you can create effects on existing video clips, including rotating the screen or cropping. After you choose your image or clip, the plug-in's main control window appears. Applying pan, zoom, and rotation settings is straightforward, but you must exit the window to preview the effect. If you're using a high-resolution image, the effect is stored in the plug-in's memory, and you must then apply it to an existing clip in your iMovie timeline. Unfortunately, once you apply any effects, you can't tweak the settings.—JEFF CARLSON

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- Aliens vs. Predator 2
- Burning Monkey Solitaire 3
- Neverwinter Nights
- Imaginext Pirate Raider
- Crazy Golf
- Second Life

Survival of the Fittest

MY FIRST MISTAKE WAS TURNING OUT THE LIGHTS IN MY office. My second mistake was leaving the door open. As a battle-hardened Colonial Marine, I was creeping down a dark hallway lit only by a flickering strobe light—my finger poised on the trigger of a Pulse Rifle—when I practically jumped out of my skin at the sound of a voice to my right. My eight-year-old son had entered while I was absorbed in the game.

That pretty much sums up Aliens vs. Predator 2, a new adrenaline-pumping first-person shooter from MacPlay. The company ought to consider including a pair of clean underwear in the box.

Happy Hunting MacPlay's Aliens vs. Predator 2 re-creates the tension and the suspense of the movies for which its named.

AVP2 brings you to planet LV1201, where humans and the Aliens and Predators of Hollywood fame must battle for dominance. The game's intertwining story line ultimately requires that you play as each species.

And each brings a unique set of skills to the fight. Humans are physically weak but technologically sophisticated. They pack plenty of handy tools, from flashlights to cutting torches, on top of a standard arsenal of explosives and guns. Predators are strong, and they employ some nifty weapons, such as a multispectrum viewfinder and a razor-sharp Frisbee. But they're most effective at sneaking up on their opponents. Lacking guns or other tools, Aliens may seem a bit naked—until you realize that they can crawl along walls and ceilings, and recharge themselves by eating their opponents.

Like its predecessor, AVP2 stands out in the crowded market of first-person shooters; it adds plenty of suspense to game play, really putting players in the action. If you jumped in your seat while watching any of the *Alien* or *Predator* movies, you'll probably do just the same here. In fact, the game surpasses the last version when it comes to visuals. Thanks to new graphics technology, images are crisper, characters are more detailed, and shadows and highlights are much more dramatic. You can also exert extensive control over the game's performance and graphics quality by changing its graphics options. But with all this graphics power, it's disappointing that the game can't take advantage of widescreen resolutions.

Multiplayer gaming in AVP2 is varied, with six different modes including Deathmatch, Hunt, Survivor, and Overrun. A built-in game finder makes cross-platform online gaming possible. You can also host your own games.

The Bottom Line MacPlay took its sweet time getting this game out the door—the company originally planned to ship Aliens vs. Predator 2 in 2002. But it was worth the wait. This is a first-class first-person shooter.

ALIENS VS. PREDATOR 2
RATING: ♦♦♦♦
PROS: Frightening effects; varied game play.
CONS: Late to the party; no support for wide-screen resolutions.
OS COMPATIBILITY: Mac OS X
PRICE: $50
COMPANY: MacPlay, 214/855-5955, www.macplay.com

Monkeying Around

Solitaire is about as plain vanilla as you get in a computer game. The rules are relatively simple, and the game is ubiquitous enough that you can readily find freeware and shareware options online. So how do you make a solitaire game that's worth buying? If

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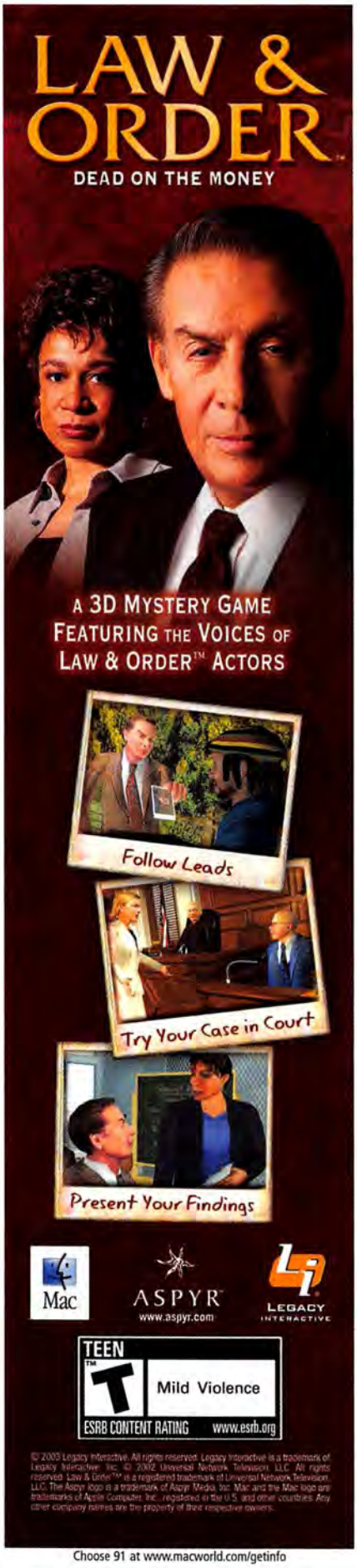

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you're Freeverse Software, you fill it with animated, wisecracking monkeys and plenty of variety. Enter Burning Monkey Solitaire 3, the latest edition of Freeverse's long-running Burning Monkey series.

Burning Monkey Solitaire includes staples such as Klondike, Freecell, Golf, and Pyramid, along with some unusual options—the fun but useless 52 Pickup, for example. In fact, there are 26 games in all. Players have plenty of colorful and eye-catching deck designs to choose from, along with a cornucopia of background images. And, of course, there are the monkeys—lots of them. On the bottom, left, and right sides of the screen, this animated cast spends much of its time transfixed on your game, breaking in every now and again with mocking comments, suggestions, and corny jokes. Clicking on a monkey often yields additional surprises, such as funny dialogue or an occasional flatulence problem.

Solitaire is by definition a solitary game, but Freeverse has made good use of the Internet and introduced a competitive element by providing users with online rankings. (As I wrote this, my wife had a top-20 worldwide ranking for Klondike.) This connectivity also lets Freeverse update the game's jokes, keeping the corn fresh. However, you don't need to be online to play.

Burning Monkey includes detailed rules for every variation of solitaire, so once you've grown tired of your favorites, you can learn some new games. There's also a cheat menu with tips, but you'll sacrifice your global rankings if you use it.

Burning Monkey Solitaire comes with a few built-in songs. But for more variety, you can add your own MP3 soundtrack with the game's Custom Soundtrack option. However, I wish there were a way to select iTunes playlists, rather than just single songs.

BURNING MONKEY SOLITAIRE 3
RATING: ★★★★½
PROS: Lots of variety in artwork and animation; online rankings add competition.
CONS: Doesn't support iTunes playlists.
PRICE: $25
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Freeverse Software, www.freeverse.com

The Bottom Line This game is more fun than a barrel of monkeys—burning or not. With Internet rankings and tons of variety, Burning Monkey Solitaire 3 is a worthy successor to a great title.

Never Say Never

Languishing for more than six years in the development process, and for more than a year after the release of its Windows counterpart, the Mac version of Neverwinter Nights seemed as if it would never ship. But thanks to the efforts of MacSoft, this hefty role-playing title is out for OS X and ready for action.

Neverwinter Nights returns players to the Forgotten Realms—the same mythical land that has served as the backdrop for other Bioware-crafted RPGs, such as Baldur's Gate. This time, the residents of the fair city of Neverwinter have fallen victim to a horrific plague that turns ordinary people into flesh-hungry zombies.

As the game's hero, you've been sent on a mission by Lady Aribeth, a paladin of Tyr, to recover magical creatures that hold the secret to an antidote for the plague. Along the way, you'll uncover a dark plot to overthrow the forces of good and to betray your mission.

The game looks great and plays beautifully. Eschewing the simple isometric display of games such as Baldur's Gate and its sequels, Neverwinter Nights offers a fully realized 3-D environment with gorgeous lighting and shadowing effects. The game play will definitely appeal to RPG purists. However, fans of faster-paced fare such as Dungeon Siege may find Neverwinter's tempo and combat system a bit plodding and cumbersome.

Ultimately, though, deciding whether Neverwinter Nights is the game for you will boil down to one key question: How important to

continues

Monkey Business Burning Monkey Solitaire 3's 26 card games are rife with wisecracking simians.

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TEEN T CONTENT RATED BY ESRB

Violence
Blood

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you is crafting your own story? While you'll find more than 60 hours of game play and the option to play online with other Mac and Windows gamers, you *won't* find the ability to create your own modules. The vaunted Aurora Toolset available in Windows versions of the game didn't make it to the Mac. Of course, you can coordinate an adventure of your own as a Dungeon Master (as in a pen-and-paper RPG) or download others' modules. But it will put the kibosh on your plans to create a module of your own—a huge disappointment for many RPG fans.

An Epic Adventure D&D fans can enjoy more than 60 hours of game play in Neverwinter Nights.

The Bottom Line Neverwinter Nights is long overdue—but it's still a fun romp that can cause enough sleepless nights and missed work to make it a worthwhile purchase.

NEVERWINTER NIGHTS
RATING: ♦♦♦½
PROS: Beautiful graphics; more than 60 hours of play; online play compatible with PC module.
CONS: No editing tools; late in coming to the Mac.
PRICE: $50
OS COMPATIBILITY: Mac OS X
COMPANY: MacSoft, 866/512-9111, www.macsoftgames.com

Avast, Ye Scurvy Dogs!

Few things stir the imagination of youngsters (and more than a few adults) like adventure on the high seas—witness the recent box-office success of *Pirates of the Caribbean*. That's certainly part of the appeal of Imaginext Pirate Raider, a new Vivendi Universal title aimed at ages four and older, and based on the Fisher-Price action play set of the same name. (In fact, the game even includes an action figure you can use in your Pirate Raider set.)

Featuring more than 25 missions of increasing complexity and challenge, Pirate Raider puts young players in the

Second Life Coming

Over the past couple of years, Mac gamers have witnessed the release of several MMORPGs (massively multiplayer online role-playing games). These games eschew the concept of solo play in favor of a massive shared environment that lets *thousands* of players interact online—typically to kill critters, collect valuable virtual cash and prizes, and become the biggest, baddest warrior or wizard on the block.

But what if, rather than just blasting or hacking things all day, players built things instead? This is the basic concept behind Linden Lab's Second Life, an innovative OS X MMORPG scheduled to hit store shelves by the end of the year (www.secondlife.com).

In Second Life, you receive the tools and resources to create items—everything from vehicles to clothes to weapons—and then trade or sell them to other Second Life players. The result is a world in which the gamers who do the best are those who give the most back to the community—by either facilitating interaction or creating products that others want. Building your heart's desire is a matter of constructing primitive objects (with the game's built-in tools), adding embellishments and details, and then using a scripting technology to bring these objects to life with simple or complex interactions. Of course, in some cases, it's more effective to buy ready-made products. But the bottom line here is that Linden Lab has given all players the ability to visualize their dreams, rather than restricting such abilities to folks who buy expansion packs or add-ons.

This infinite level of customization extends to your online identity. Give your character freckles and green spikes, or buy a fancy leather jacket that a Second Life tailor made—it's up to you. Hey, it's a utopian idea, but it's worth a try.

Players can download the Mac version of Second Life for free and then pay a $15 monthly service fee to participate in the online happenings.

IMAGINEXT PIRATE RAIDER
RATING: ♦♦♦♦
PROS: Fun and varied missions; supports Mac OS X.
CONS: Linear game play may frustrate younger players.
PRICE: $20
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Vivendi Universal Games, 310/431-4000, www.vugames.com

role of a pirate captain. They'll seek treasure, shanghai crew, and try to avoid the many dangers of life on the high seas. Along the way, they'll build up a ship—improving armor and cannon, adding sail to make it faster, and eventually trading it in for a larger, faster vessel.

Missions include firing cannonballs at forts, engaging in naval battles, and even boarding vessels on quests for gold. You can explore the ocean to find new treasure, or take on new foes. And since the game randomly generates maps, it's a bit different each time you play. Game play is relatively linear—you have to complete a mission successfully to progress to the next. This may lead to frustration for younger players who have a tough time getting the hang of the activities.

Rest assured that all this action involves no direct injury or destruction. It's all in the spirit of fun and imaginative play. The game even lets players print out an image of their ships, so they can continue the fun away from the computer. And unlike so many educational titles, this game actually runs natively in Mac OS X.

The Bottom Line Imaginext Pirate Raider is just the thing for wannabe Captain Sparrows looking to hoist the mainsail and weigh anchor.

Golf Ball, Corner Pocket

Minigolf is a beloved pastime, and it's a common subject matter for computer and video games—unless you're on a Mac. Now Danlab Games brings the genre to OS X, with its release of Crazy Golf, a minigolf action game full of creative course designs and traps.

Your goal in Crazy Golf is to complete all 18 holes. That's not as easy as it sounds. To stay in the game, you must minimize the number of strokes you take—go too far past par (four strokes), and you'll end up back at the beginning. If that isn't enough challenge, you can also play against the clock.

The holes get progressively more difficult. The hole designs include the standard fare of a minigolf course, such as steeply banked corners, ramps, and multiple levels, as well as some less common elements. For example, you'll have to putt over platforms that rise from and fall into a pool of water. Dunlab has also done a good job of imbuing Crazy Golf with an original identity, thanks to unique music.

Before you can master the holes, you'll have to learn how to putt. The game's aiming mechanism reminds me a bit more of pool than of golf. To hit the ball, you click the mouse button and move the cursor in the opposite direction from where you want the ball to go. The farther the cursor is from the ball when you let go, the higher the ball's velocity. It's a bit counterintuitive, but you should get the hang of it with some practice.

A Pirate's Life for Me Little ones can take to the high seas as pirate captains in Imaginext Pirate Raider.

Crazy Golf is available as a free two-hole demo. If you like it, pay the registration fee, and you'll get a registration code to unlock all 12 levels.

The Bottom Line Crazy Golf is a competent, hardy little shareware offering that will challenge minigolf enthusiasts. □

CRAZY GOLF
RATING: ♦♦♦
PROS: Clever course design; unique artwork and sound.
CONS: Counterintuitive aiming mechanism.
PRICE: $19
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Danlab Games, www.danlabgames.com

MacCentral.com Senior Editor PETER COHEN wishes he had more time for his first life, let alone a second one.

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Hearing Notice

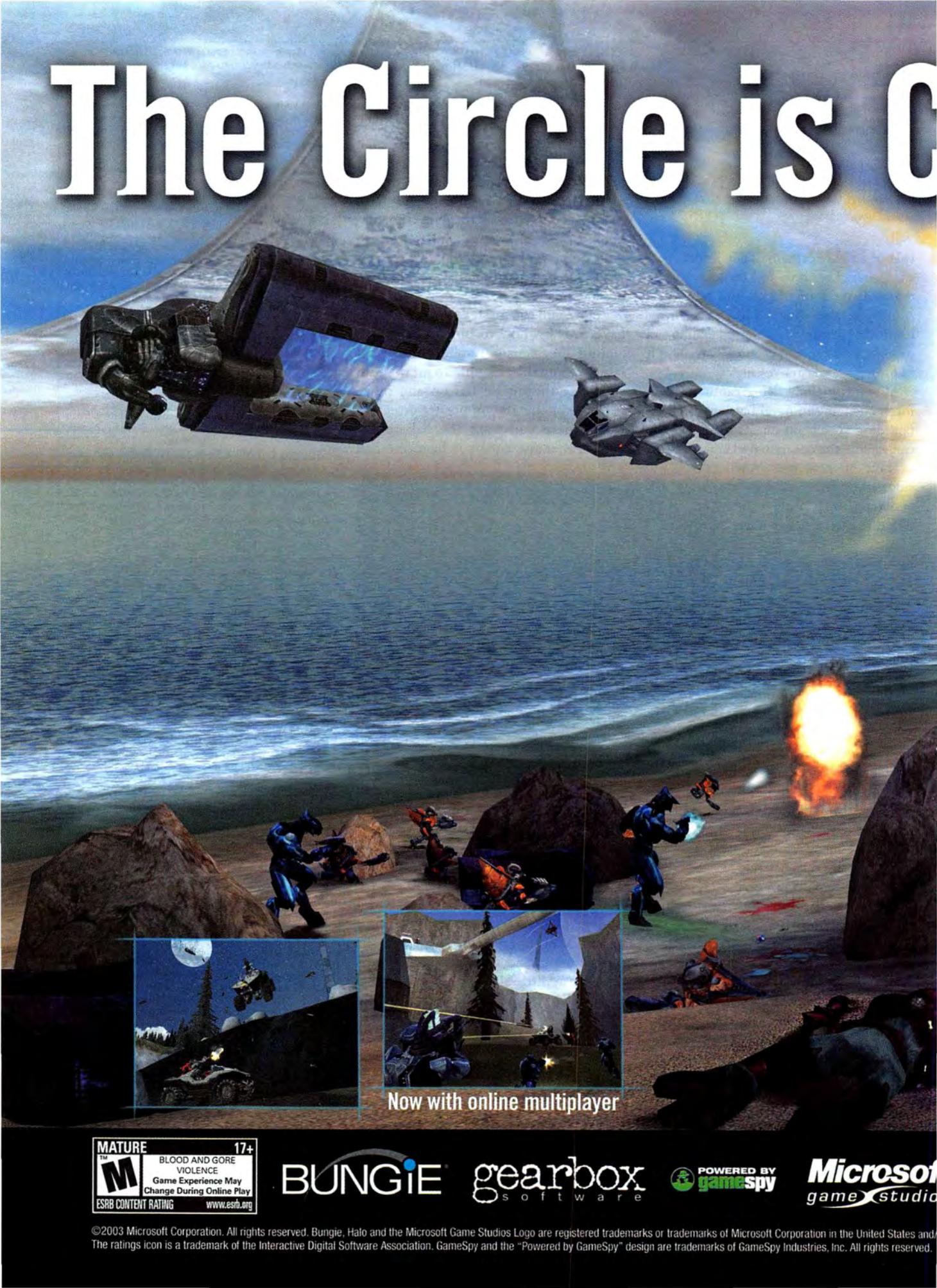
A Final Hearing will be held before the Honorable Victoria G. Chaney of the Superior Court of California for the County of Los Angeles, located at the Central Civil West Courthouse, Courtroom 324, 600 South Commonwealth Avenue, Los Angeles, California 90005 on January 26, 2004, at 10 o'clock a.m. to determine: 1) whether the proposed settlement is fair, reasonable and adequate and should receive final approval; 2) whether a settlement class should be certified; and 3) whether the application of counsel for the class for an award of attorney's fees and expenses in an amount up to $350,000 should be granted.

Right To Object, Request Exclusion or Seek To Intervene

If you are a member of the proposed Settlement Class, you also have the right to exclude yourself from the settlement, object to the settlement or to the payment of attorneys' fees and expenses, or seek leave from the Court to intervene. **These rights must be exercised by December 30, 2003.** The full Class Notice explains how to exercise these rights.

DO NOT CONTACT THE COURT OR THE CLERK'S OFFICE FOR INFORMATION.

DATED: September 2, 2003



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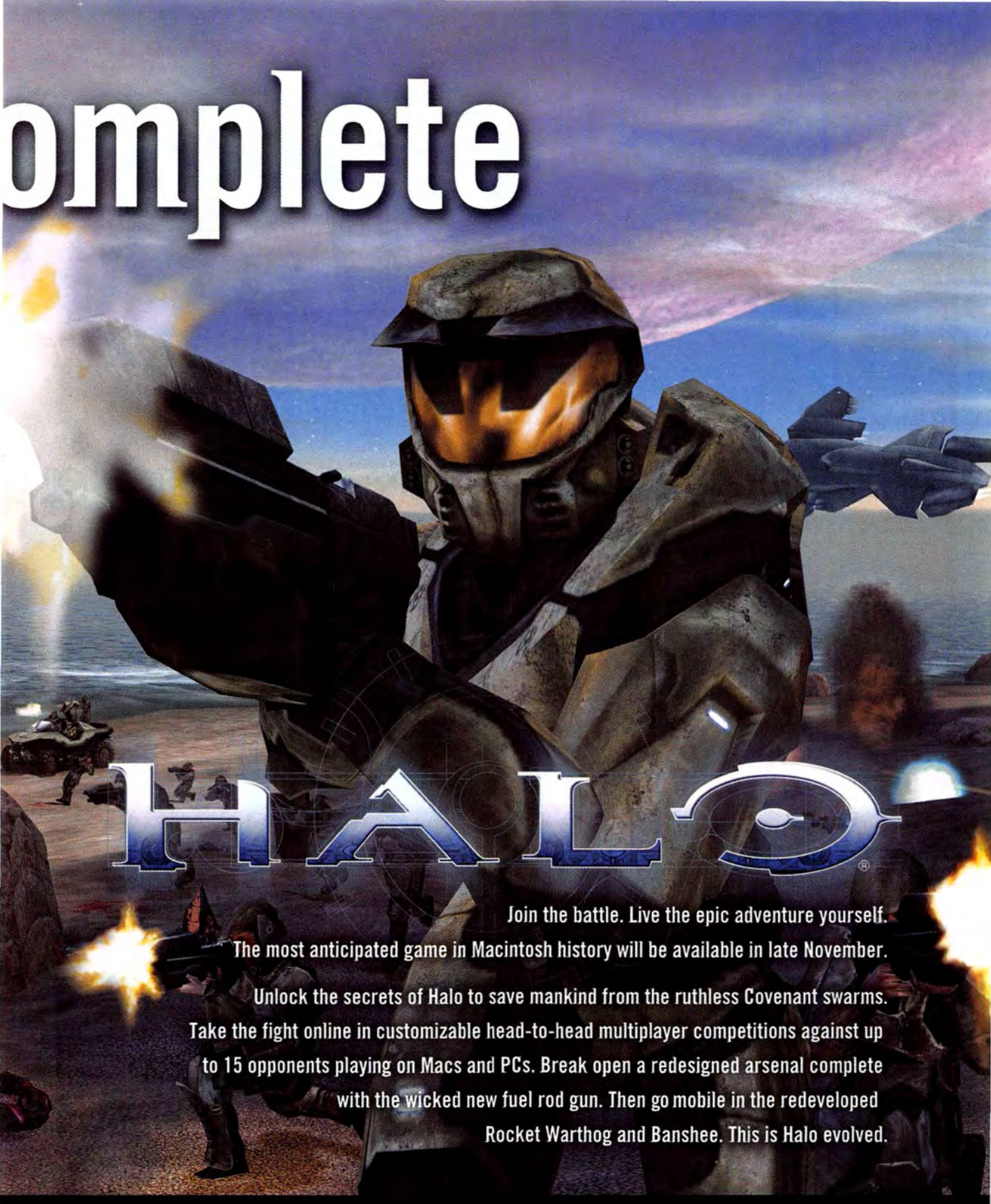

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- PDF Browser Plugin
- PodSleevz
- Business Card Composer
- TNEF's Enough

More Fully Functional

SOME OF THE BEST GEMS ARE THOSE THAT LET YOU DO what you should have been able to do in the first place. For example, PDF files have become a common way to exchange information—even Web sites often provide information via PDF. But clicking on a PDF link in your OS X Web browser generally downloads the file to your computer—you then have to open it in Preview or Acrobat Reader. Wouldn't it be nice if you could view those PDF files right in your Web browser, as you can with other files?

Manfred Schubert's **PDF Browser Plugin** (★★★★) is a free plug-in that turns your Web browser into a very capable PDF viewer. Clicking on a link to a PDF file loads it in your browser—and even scales it to fit the current browser window. (Note that the latest version of PDF Browser Plugin isn't compatible with Internet Explorer; you can download an earlier compatible version from the developer's Web site.)

Preset keyboard commands allow you to navigate viewed PDF files. The PDF Browser Plugin menu lets you open the PDF file in your normal PDF viewer (such as Preview or Acrobat), print the file or save it to your hard drive, and zoom in and out. Although you can save or print via your browser's File menu, using the plug-in menu to perform these tasks provides a few extra features. When you save a PDF file, PDF Browser Plugin puts the file's URL in its Finder comments field; this can be helpful if you need to return to the source. When you print, you can choose to scale the print job to fit your paper, and to print odd or even pages (so you can create double-sided printouts).

PDF Perusal PDF Browser Plugin lets you view online PDF files without leaving your browser.

Note that if you have PDF Browser Plugin installed, you can still download a PDF file without viewing it; simply control-click on the link to the PDF file and then select Download or Save, depending on the browser you're using.

Given Apple's focus on PDF as a document format, I suspect that Safari will eventually support PDF files. Until then, PDF Browser Plugin is a useful addition to your browser repertoire.

Thin Sleevz

One great thing about Apple's iPod is the music player's svelte form. One not-so-great thing is the fact that its chrome-and-white surfaces pick up more scratches than a new car in a supermarket parking lot. As a result, a cottage industry has sprung up—iPod cases. But unfortunately, although most of these cases protect your iPod, few do so without adding considerable bulk, thus presenting iPod owners with a difficult choice: a svelte music player or a scratch-free one.

Skintight Sleevz A PodSleevz iPod case protects your iPod's surface without adding bulk—and it actually helps the buttons work the way they should.

Enter RadTech's $20 **PodSleevz** (★★★★) for Apple's newer-generation iPods. Based on RadTech's excellent PowerSleevz for PowerBooks and iBooks, PodSleevz are thin (less than 1mm thick) microfiber covers that fit your iPod like a glove. Their material, which RadTech calls Optex, is tough enough to withstand tearing and scuffing, but soft enough that you can use a PodSleevz case as a polishing cloth for your iPod or your PowerBook screen. And with a little wiggling, you can fit your PodSleevz-wrapped iPod in Apple's iPod belt case.

Many cases force you to remove your iPod to use it, but your iPod remains fully functional while inside a PodSleevz case. A clear plastic window lets you view the screen, a slot on the bottom provides room to connect the dock cable, and embossed areas on the PodSleevz

continues

case's face correspond to the controls on your iPod—the material is thin enough that the touch-sensitive controls still work. In addition, one unintended—but welcome—consequence of using a PodSleevz case is that it ever so slightly desensitizes the iPod's touch-sensitive controls. When you accidentally brush against a button, your iPod no longer skips songs or stops playback—a maddeningly frequent occurrence in my experience.

A PodSleevz iPod cover won't protect your iPod from a fall onto concrete, but when you just want to slip your iPod into your pocket or toss it into a bag, a PodSleevz is perfect. You get protection without bulk.

Card Creativity

Despite the proliferation of electronic vCard files and Palm handhelds that let you beam contact information across a room, business cards are still very popular. In fact, good printers are so inexpensive these days that many people design their own cards and print them on business-card stock. But there are two hurdles to this approach. First, it isn't easy to create an effective card design—there's a reason people get paid good money to do it for you. Second, laying the card out to print properly can be a real hassle.

In the Cards Using Business Card Composer, you can be your own business-card designer and printer.

A solution to both of these problems is BeLight Software's $40 **Business Card Composer** (●●●●½). It lets you create, lay out, and print professional-looking business cards. But what makes Business Card Composer (BCC) so great is how easy it is to use. Choose a general design from more than 100 included templates. Next, enter your personal information—you can type data into text fields or, thanks to excellent integration with OS X, simply select any record from OS X's Address Book. (If you're the creative type, you can start with a blank slate and build your card from scratch, skipping these first two steps.) Then pick your card stock—popular stocks from most major vendors are included. Finally, click on Finish to preview your card.

While previewing, you can take advantage of BCC's impressively customizable layout and design features. You can change the size, color, or orientation of any design element; add image masks (more than 50 are included); use gradients and fills; edit backgrounds and borders; and even add graphics or pictures (more than 500 are included, or you can drag and drop your own onto the card). When you're ready, click on the print icon and out come your cards, ready for cutting.

You can save your card design to print more in the future, or you can use the current design as a template for creating cards for several people. Even if you don't have a printer that can produce business cards, you can use BCC to create and lay out your cards, and then have them printed professionally. Either way, you'll appreciate how easy it makes creating cards.

The Treasure Chest

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT
BeLight Software	Business Card Composer	●●●●½	$40	X	info@belightsoft.com, www.belightsoft.com
Joshua S. Jacob	TNEF's Enough	●●●●	free[A]	9X	josh.jacob@joshjacob.com, www.joshjacob.com
Manfred Schubert	PDF Browser Plugin 1.2	●●●●	free	X	info@schubert-it.com, www.schubert-it.com
RadTech	PodSleevz	●●●●	$20	N/A	info@radtech.us, www.radtech.us

[A] Donations accepted. N/A = not applicable.

Promising Prospect

In the keep-an-eye-out-for-this department, Raging Menu recently released a beta of SideTrack, its replacement for OS X's trackpad driver. SideTrack lets you designate a portion of your PowerBook or iBook trackpad as a "scrollpad"—simply drag your finger up and down (or left and right) to scroll through windows. In addition, pressing the trackpad button and tapping on the trackpad can do two different things; for example, one can be a standard click and the other a control-click. Once you've tried it, doing without the ability to easily scroll and control-click with the trackpad will be difficult. (SideTrack is currently a beta version of a kernel extension; make sure to read the documentation provided *before* you install it.)

This and Dat

If you frequently receive e-mail from Windows users, you may have received attachments called winmail.dat (or files identified as application/ms-tnef) and found that you couldn't open them, no matter what you tried. These attachments are sometimes viruses, but you may know that there are legitimate files hidden inside. The problem is that some combinations of Windows Exchange e-mail servers and Windows Outlook e-mail clients result in attachments encoded as Microsoft TNEF stream files, without regard to the recipient's ability to receive files in that format. The solution is **TNEF's Enough** (●●●●), a free utility from Joshua S. Jacob.

After saving a problematic attachment to your hard drive, drag it to the TNEF's Enough icon, or choose File: Open and select the file. Depending on how you've set up Enough's preferences, the application will either save embedded files to your hard drive or present you with a dialog box that lets you save each one. If there are multiple files, you can also choose to create an enclosing folder.

The interface is fairly sparse, and TNEF's Enough doesn't have a lot of bells and whistles, but if you ever experience this problem and need to get to the enclosed files, this app is the only game in town. □

DAN FRAKES is the author of *Mac OS X Power Tools* (Sybex, 2003) and an editor at MacFixIt.com. He hides out at www.danfrakes.com. Send your thoughts on this column, or on things you'd like to see in future columns, to macgems@macworld.com.

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THE RACE IS ON

Macworld Lab Tests Apple's Power Mac G5 Against High-Performance PCs

BY JONATHAN SEFF

UNTIL A FEW MONTHS AGO, a race between a Mac and a PC wasn't much of a race at all. Macs were fast—but PCs were usually faster.

The megahertz gap—the difference between the clock speeds of the PowerPC chips inside Macs and the speeds of the Athlon and Pentium chips inside PCs—had grown so large that Apple went on the offensive. The company campaigned against a "megahertz myth," arguing that clock speeds were only one factor in a system's overall speed and that chip architecture also needed to be considered. And Apple had a valid point (see "Does MHz Matter?" July 2001). But try telling that to consumers mulling over a computer purchase while watching the Power Mac G4's clock speed slowly crawl toward the gigahertz mark. Even the most passionate Mac defender had a hard time making a case for the Power Mac's prowess against a top-of-the-line PC. And over time, even wrangling over the megahertz myth faded, as PCs' processor speeds so outstripped those of the Mac that not even a difference in chip architecture could explain the gap away.

Then, this summer, Apple introduced the Power Mac G5, which features the new 64-bit PowerPC G5

chip (see "The Next Generation," September 2003). Topping the revamped product line was a model with two processors running at 2GHz. Suddenly, the Mac was taking its place at the starting line, and the race was on again.

Testing the Limits

Apple deserves much of the credit for replacing the white flag with a checkered one. After unveiling the new Power Mac G5 (and promising a 3GHz model within 12 months), Steve Jobs hailed the new machine as the world's fastest personal computer. Not just the fastest Mac, and not just faster than some PCs—faster than even high-powered systems with Intel or AMD processors running at much higher clock speeds: "The new Power Mac G5 combines the world's first 64-bit desktop processor, the industry's first 1GHz frontside bus, and up to 8GB of memory, to beat the fastest Pentium 4 and dual-Xeon–based systems in industry-standard benchmarks and real-world professional applications," the Apple CEO boasted at June's Worldwide Developers Conference in San Francisco.

Does the Power Mac G5 live up to its advance billing? To find out, we teamed up with our fellow IDG-owned publication *PC World*. In testing conducted by Macworld Lab and the PC World Test Center, we pitted the G5 against some fairly powerful PCs to measure the new Mac's performance against that of its Windows-based counterparts.

Our results might make for some spirited barroom discussions between you and your PC-using pals, but

ABOUT THESE TESTS

Our testing involved three Mac systems: the 1.8GHz Power Mac G5, the dual-2GHz Power Mac G5, and the dual-1.4GHz Power Mac G4. As the most recent top-of-the-line Power Mac before the G5's arrival, that dual-G4 system provides an important point of comparison for measuring the G5's performance. We loaded up all three systems with 1GB of RAM. The dual-1.4GHz G4 and the 1.8GHz G5 both had video cards with 64MB of video memory; we installed an ATI Radeon 9800 card with 128MB of memory in the dual-2GHz G5, to match the graphics processor in the PC systems.

On the PC side, we tested several new PCs that use AMD's 2.2GHz 64-bit Athlon processor, a chip that wasn't available when Apple first introduced the G5. We used the Alienware Aurora in our final comparison because it was a top performer in our joint testing with *PC World*. (Because the Aurora ships with an internal RAID—atypical for a desktop Mac—we configured the Aurora as a non-RAID system.) We also included an Alienware Area-51 system running on a 3.2GHz Pentium 4 processor. To see how the dual-G5 Mac compared with a dual-processor PC, we added a Polywell Poly Station 2020A system with dual-2GHz Opteron chips. All systems had 1GB of RAM and a Radeon 9800 Pro video card. The Pentium 4–based Alienware system had 256MB of video RAM, while the other two PCs had 128MB. For a complete list of system specifications, see "The Starting Line: What We Tested." —JAMES GALBRAITH AND JONATHAN SEFF

G5 AND ALIENWARE PHOTOGRAPHY BY PETER BELANGER

The Starting Line: What We Tested

SYSTEM	PROCESSOR	MEMORY[A]	HARD DRIVE	OPTICAL DRIVE	GRAPHICS CARD/VIDEO RAM	PRICE[B]
Apple Power Mac G5	1.8GHz PowerPC G5	1GB	160GB serial ATA drive, 7,200 rpm	SuperDrive (4× DVD burner)	Nvidia GeForce FX 5200 Ultra/64MB	$2,649
Apple Power Mac G5	dual-2GHz PowerPC G5	1GB	160GB serial ATA drive, 7,200 rpm	SuperDrive (4× DVD burner)	ATI Radeon 9800 Pro/128MB[C]	$3,549
Apple Power Mac G4	dual-1.4GHz PowerPC G4	1GB	120GB ATA drive, 7,200 rpm	SuperDrive (4× DVD burner)	ATI Radeon 9000 Pro/64MB	$2,949[D]
Alienware Area-51	3.2GHz Pentium 4	1GB	two 80GB serial ATA drives, 7,200 rpm[E]	4× DVD burner, 52× CD-RW	ATI Radeon 9800 Pro/256MB	$3,143
Alienware Aurora	2.2GHz Athlon 64 FX-51	1GB	two 80GB serial ATA drives, 7,200 rpm[F]	4× DVD burner, 52× CD-RW	ATI Radeon 9800 Pro/128MB	$3,445
Polywell Poly Station 2020A	dual-2GHz Opteron	1GB	18GB SCSI drive, 15,000 rpm; 200GB ATA drive, 7,200 rpm[F]	4× DVD burner, 52× CD-RW	ATI Radeon 9800 Pro/128MB	$3,995

[A] Systems were configured with 1GB of RAM; amount of memory in standard configurations may vary. [B] Prices listed are for systems ordered as configured directly from vendor. [C] The ATI Radeon 9800 Pro video card is a build-to-order option on the dual-2GHz Power Mac G5. [D] The dual-1.4GHz G4 is no longer available from Apple; this estimated price is the base price of a dual-1.4GHz G4 added to the cost of 512MB of RAM purchased from the Apple Store. [E] While both Alienware systems featured two 80GB hard drives, only one was used in our testing. [F] Only the Polywell system's 18GB drive was used in our testing; the 200GB drive is installed in the system and included in the price.

that wasn't the goal of our testing. We also didn't set out to prove or disprove Apple's marketing claims; the company uses a set of tests that's very different from ours, and the hardware landscape is always changing—even as recently as a few months ago. (The Athlon 64 FX-51 chip in the Alienware Aurora system used in our tests, for example, hadn't even been announced when Apple introduced the Power Mac G5.)

Instead, we're hoping that these tests offer a definitive view of how much progress the Mac has made, after recently lagging behind PCs. We didn't approach these tests with the idea that if the Mac fared poorly, loyal Mac users should abandon the platform. We all choose to be Mac users for plenty of important reasons that don't involve hardware speed. And our tests didn't measure intangibles such as ease of use, total cost of ownership, or any of the other topics strewn across the floor of every knock-down-drag-out argument between Mac mavens and PC partisans.

We expect that our test results will interest users in multiplatform environments who need the fastest computer available so they can be productive. When we began our work on this story, we anticipated that a strong showing from the Mac might provide some useful information for Mac users in cross-platform environments who are under pressure to give up their Macs for PCs, or even for OS 9 users deciding whether they should upgrade to OS X or switch to Windows. Even if you're a dyed-in-the-wool Mac user, we figure you'll have at least a rooting interest in our results.

Now on to the tests: we pitted the dual-2GHz Power Mac G5 and the single-processor 1.8GHz

WHERE THE CHIPS FALL: A LOOK AT PC CPUS

Mac fans might quickly grasp the advantages that the IBM PowerPC 970 chip in the new Power Mac G5 systems has over older PowerPC processors (see "How the Chips Stack Up" in "The Next Generation," September 2003). But with the latest high-end PC desktop chips from Intel and AMD, the differences—and advantages—aren't always easy to see.

AMD just began shipping its first four 64-bit desktop PC chips—including the Athlon 64 FX-51, which is a 2.2GHz chip with dual-channel memory, and the Athlon 64 3200+, a 2GHz chip with single-channel memory. Like other 64-bit chips, including the PowerPC 970, these chips handle more data at once than 32-bit CPUs. AMD gave these new Athlons a 1MB Level 2 (L2) cache (older chips use a 512KB cache), a new system bus, and an efficient memory controller located right on the processor.

"The main advantage of the FX-51 is in its main memory controller, which has a wide 128-bit path to communicate with main memory," says Shane Rau, a senior analyst with the industry research firm IDC. "In contrast, the Intel Pentium 4's main memory controller is on a separate chip, and the regular Athlon 64 processor's memory controller has a 64-bit path to communicate with main memory."

To fully harness the power of 64-bit chips, Windows-PC owners will need a 64-bit version of Windows, revamped apps, and updated hardware drivers. (That OS remains in testing, and few 64-bit apps other than games have been announced.) But today, with current 32-bit software, Athlon 64 FX-51 systems are still ideal for CPU-hungry tasks such as gaming, video and music editing, and AutoCAD.

By comparison, AMD's 64-bit Opteron chip ships only in servers and workstations. While it has the same 1MB L2 cache as the Athlon 64 FX-51, the Opteron chip scales well for added power; the chip often ships in dual-processor systems or servers with two or eight CPUs.

AMD's best 32-bit chips—Athlon XP chips such as the XP 3200+—continue to ship in performance- and gaming-oriented desktops, where their direct rival is the Intel Pentium 4. The Athlon XP 3200+ chips use a 400MHz frontside bus, compared with an 800MHz frontside bus in Intel's Pentium 4 chips. But the slower bus speed doesn't seem to hurt them much: systems based on the XP 3200+ outrun 3GHz Pentium 4 systems in most *PC World* application tests.

For now, Intel will stick with 32-bit chips on the desktop, reserving 64-bit technology for its Itanium chips aimed at servers and workstations. (Unlike the PowerPC 970 and AMD's 64-bit chips, the Itanium has to run 32-bit software using emulation.)

But Intel will turn up the heat on AMD with a processor that's coming soon—a chip code-named Prescott, the next-generation successor to the Pentium 4. Intel is tight-lipped about the chip's release date, but industry watchers are guessing it will arrive by early 2004 at the latest. With the Prescott, Intel is expected to double the L2 cache, from 512KB to 1MB, and improve hyper-threading (an Intel technique that aims to help one processor behave as two, though gains have been spotty in *PC World* testing). The Prescott should also more fully take advantage of the 800MHz bus. These moves should help the systems handle demanding apps such as video and music editors, games, and AutoCAD programs. But we'll have to wait and see how the power of the Prescott matches up to the memory controller advantages of AMD's Athlon 64 FX-51—and to the power of the PowerPC 970.—LAURIANNE McLAUGHLIN

Power Mac G5 against an Alienware Aurora PC running on AMD's 2.2GHz, 64-bit Athlon 64 FX-51 processor; an Alienware Area-51 PC running on Intel's 3.2GHz Pentium 4; and a Polywell Poly Station 2020A running on two 2GHz AMD Opteron processors. (For more on the system configurations, see "About These Tests.") We picked several applications available in comparable versions on both platforms—Adobe Photoshop 7.0.1, Adobe Premiere 6.5, Id Software's Quake III 1.32, and Microsoft Word (Word X on the Mac and Word 2002 on the PC). In a second round of testing, we turned to processor-intensive task-based activities—MP3 audio encoding and MPEG-2 video encoding—using similar, customary applications for each platform.

Which processor clocked the competition? To find out, read the results of our six tests (see "Application Tests" and "Task Tests").

More Info:

If you want another view of G5-versus-PC testing, you can check out the November 2003 issue of *PC World*. Our Windows-based neighbor published its findings in "64-Bit Computing According to Apple" (in "64-Bit Takes Off").
www.pcworld.com/news/article/0,aid,112749,pg,7,00.asp

APPLICATION TESTS

Many software developers understand that Mac users and PC users need to get the same work done, so they've come out with versions of their applications for both platforms. By performing the same tasks with each version of a program, we can get an indication of which system is the fastest.

THE PHOTOSHOP TEST

Adobe Photoshop is a bread-and-butter app for thousands of designers and photographers. We had each system run a series of tasks on a 150MB file. We picked this file size because it was large enough to provide a somewhat lengthy test but small enough to stay completely in RAM without hitting the hard drive and adding a variable other than processor speed to our tests.

THE RESULTS

Using the G5-optimized version of Photoshop 7, the dual-2GHz G5 completed a series of actions on the 150MB file in 51 seconds. This system beat two of the PCs we timed, and it bested the fastest Power Mac G4 by around 40 percent. However, the other dual-processor system, a PC featuring dual-2GHz Opteron processors, beat the Mac by roughly 10 percent. The single-processor G5 in our test lost to even the slowest PC by several seconds, and it wasn't much faster than the dual-processor G4.

THE WINNER

If you're using Photoshop, you should be using a computer with more than one processor. The dual-2GHz G5 is clearly superior to single-processor PCs; however, the dual-2GHz Opteron system was slightly faster than the dual-2GHz Mac. Then again, the Opteron PC we tested costs $3,995 as configured—$400 more than our built-to-order G5—suggesting that even among PCs, power is not without its price.

Macworld LAB TEST

	Adobe Photoshop 7.0.1
	SUITE
Power Mac G5/dual-2GHz	0:51
Power Mac G5/1.8GHz	1:16
Power Mac G4/dual-1.4GHz	1:23
Alienware Area-51	1:09
Alienware Aurora	1:00
Polywell Poly Station 2020A	**0:47**
	< Better

BEST RESULT IN **BOLD**.

All scores are in minutes:seconds. The Photoshop Suite test is a set of ten scripted tasks. We used a 150MB file. Photoshop's memory was set to 100 percent and History was set to Minimum.—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

THE WORD TEST

Microsoft Word is one of the most used programs in the world. We measured the speed at which each system found and replaced a word repeated 17,448 times in a document, and at which it performed Word's AutoSummarize function on a 255-page document.

THE RESULTS

The Pentium and Athlon systems were twice as fast as even the dual-processor G5 in the Find And Replace test, with the Pentium-powered Alienware system taking the crown. Adding to the disappointment, the 1.8GHz G5 scored slightly worse than the dual-processor G4. The 64-bit Alienware and dual-Opteron Polywell machines fared best in the AutoSummarize test. When testing Mac systems against one another, we often test scrolling speeds in Word and in Adobe Acrobat. We thought the Mac might make up some ground here. However, those tests were not as relevant when we compared a Mac with a PC—Windows sets a constant scrolling rate for readability. The Mac would trounce a PC in any scroll test, but only because of differences in the OS. Since that says little about hardware performance, we dropped our normal scrolling tests from these results.

THE WINNER

There's no sugarcoating it: PCs are clearly faster when it comes to the two tasks we tested in Word.

Macworld LAB TEST

	Microsoft Word	
	FIND AND REPLACE	AUTOSUMMARIZE
Power Mac G5/dual-2GHz	0:16	0:12
Power Mac G5/1.8GHz	0:19	0:14
Power Mac G4/dual-1.4GHz	0:18	0:14
Alienware Area-51	**0:07**	0:07
Alienware Aurora	0:08	**0:06**
Polywell Poly Station 2020A	0:09	**0:06**
	< Better	< Better

BEST RESULTS IN **BOLD**.

All scores are in minutes:seconds. In Microsoft Word (Word X on the Macs and Word 2002 on the PCs), we timed a Find And Replace task and an AutoSummarize function performed on large documents.—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

Back in the Game

A PC wound up topping the G5 Power Mac in four of our six tests. But the reality is not nearly so cut-and-dried—on either side. While we tried to make sure that the applications and tasks we tested were as similar as possible, it's almost impossible to produce directly analogous results. Photoshop's G5 optimization may skew results in the Mac's favor. And Microsoft has clearly done a better job of optimizing Office for Windows. As for the Premiere testing, few Mac users would turn to an application Adobe no longer develops for the Mac when an Apple-built program offers better OS X performance.

But we believe that you can draw two conclusions from our testing. First, in many cases, the Mac-versus-PC debate comes down to what you plan on using your computer for. For games, the PC is still the better bet, as our Quake III results indicate. However, given how strongly the Mac performed in both the Photoshop and the MPEG-2 encoding tests—meeting or beating comparable PC systems in both cases—it's safe to conclude that creative professionals have plenty to gain by upgrading to the Power Mac G5.

Second, our tests show that even if the Power Mac isn't the fastest personal computer in the world, as Apple boasted this summer, it can certainly hold its own against similar PCs. A G4 Mac shouldn't even be in the same race as Pentium- and Athlon-powered systems; the Power Mac G5's ability to keep pace with PCs indicates that Apple has made great strides in clos-

APPLICATION TESTS

THE QUAKE III TEST

We measured Quake III frame rates at both 1,024 by 768 pixels and 1,600 by 1,200 pixels, during a built-in time demo. Although our Quake III test is not a speed test, frame rates are important for gamers.

THE RESULTS

We were very impressed with the gains made by the dual-G5 Mac, which managed to pump out 294 frames per second (fps) at the lower resolution and 207 fps at the higher one. These scores were double and nearly triple, respectively, those of the dual-processor G4 (which had 64MB of video RAM—other than the single-processor G5, all test systems had at least 128MB of video RAM). The dual-G5 Power Mac even beat the dual-Opteron system. The 1.8GHz G5 was less impressive, especially at the higher resolution. Still, it managed to beat the dual-G4 Power Mac with the same amount of video memory.

However, neither G5 could match the frame rates of either the Pentium 4 system or the Athlon system. The Athlon cranked out 335 fps at the lower resolution, 41 fps more than the dual-2GHz G5—about 14 percent better. It performed very well at the higher resolution, too, topping the dual G5's results by 50 fps. The Pentium 4 was only a few frames behind the Athlon.

THE WINNER

PC users have bragging rights when it comes to games such as Quake. With the G5, the Mac has made remarkable strides as a gaming machine, but PC processors and video cards remain a more powerful combination for gamers.

Macworld LAB TEST	Quake III 1.32 Time Demo	
	1,024 × 768	1,600 × 1,200
Power Mac G5/dual-2GHz	294	207
Power Mac G5/1.8GHz	138	85
Power Mac G4/dual-1.4GHz	133	72
Alienware Area-51	307	254
Alienware Aurora	**335**	**257**
Polywell Poly Station 2020A	250	199
	> Better	> Better

BEST RESULTS IN **BOLD**.

All scores are in frames per second. We ran Quake's Time Demo Four with Graphics set to High Quality, at two resolutions.—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

THE PREMIERE TEST

Adobe Premiere remains popular on the PC side for video editing; it's far less popular among Mac users, due to the ascendancy of Apple's Final Cut Pro. We tested the last version common to both platforms—Premiere 6.5. Our results say more about the sad state of Adobe's discontinued Mac version of Premiere than they do about the Mac itself. We timed the export of a movie to QuickTime format at 720-by-480-pixel resolution and 30 frames per second (fps). We used the Planar RGB codec (a generic codec available on both versions of QuickTime).

THE RESULTS

Don't look for Apple to tout the G5's Premiere prowess. Exporting the movie to QuickTime produced terrible results for the new Power Macs. The PCs were generally twice as fast as both G5s.

THE WINNER

Given the results of our tests, is it any wonder that users of Premiere for the Mac switched either to Final Cut Pro or to Premiere for Windows? Although both of the apps we ran were called Premiere 6.5, they are quite different programs. In this case, testing the same application doesn't necessarily show which system is faster; rather, our test demonstrates which version of the program better takes advantage of its platform. Premiere simply runs better on Windows than it does on OS X. So good riddance to this poor-performing Mac version.

Macworld LAB TEST	Adobe Premiere 6.5
	CONVERT TO QUICKTIME
Power Mac G5/dual-2GHz	1:12
Power Mac G5/1.8GHz	1:24
Power Mac G4/dual-1.4GHz	1:15
Alienware Area-51	0:46
Alienware Aurora	0:37
Polywell Poly Station 2020A	**0:30**
	< Better

BEST RESULT IN **BOLD**.

All scores are in minutes:seconds. We exported a movie to QuickTime format, at 720-by-480-pixel resolution and 30 fps, and timed the results.—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

ing the performance gap. Apple and IBM have said that they will increase G5 speeds by another 50 percent in 2004—but, of course, Intel and AMD are also working hard to create faster new processors of their own. Who will end up on top in a year's time? It's anyone's guess. But for Mac users who despaired of ever seeing a computer with an Apple logo included on a list of the world's fastest personal computers, these results are good news indeed. □

Senior Associate Editor JONATHAN SEFF writes about Mac hardware regularly. He also wrote "Does MHz Matter?" (July 2001).

TASK TESTS

Today's powerful computers let us perform multimedia feats that once required expensive, dedicated workstations. People expect home computers to work with audio and video as easily as they work with words and pictures. Since most of the software that performs these functions is designed for a particular platform and operating system, we picked apps with identical purposes to see how well they performed. (We eliminated the Pentium 4 PC from this round of testing, focusing on the higher-performance systems.)

THE MP3-ENCODING TEST

Music is a big part of many computer users' lives—just look at all the online music services competing with Apple's iTunes Music Store. As the popularity of portable music players such as the iPod grows, the ability to quickly get a music collection into a format these players can use is becoming more important to more users. We took an audio CD that was 45 minutes and 15 seconds long, and we encoded it as MP3 files. For the Power Macs, we used iTunes 4.0.1; our Windows systems ran Musicmatch Jukebox Plus 8.0 (a $20 version that doesn't limit encoding speed). Because the speed of each machine's optical drive varies (and this would have a big impact on encoding times), we tested ripping the CD from uncompressed files on the hard drive.

THE RESULTS

The PCs beat the Macs soundly. On the Athlon system's hard drive, Musicmatch converted WAV files to 128-Kbps MP3 files in a blazing 38 seconds. The dual-processor Opteron took 53 seconds. Since Musicmatch is not multiprocessor-aware, it was unable to take advantage of the system's two processors. The dual-processor G5 took 1 minute and 14 seconds to convert the same CD from AIFF format to 128-Kbps MP3 files—nearly twice as long as the Athlon system, and 40 percent longer than the Opteron system (however, the dual-G5 Mac was 33 percent faster than the dual G4). The single-processor G5 fared worse, taking more than three times as long as the Athlon system (and slightly longer than the dual G4).

THE WINNER

We're surprised at how thoroughly the PCs clobbered the Macs in this test. True, PC users would have to buy the $20 version of Musicmatch to get these results, while iTunes 4 is free to Mac users. Still, the numbers are a little disappointing to any music-loving Mac user.

Macworld Lab Test	MP3 Encode
	ENCODE CD TO MP3
Power Mac G5/dual-2GHz	1:14
Power Mac G5/1.8GHz	1:56
Power Mac G4/dual-1.4GHz	1:51
Alienware Aurora	0:38
Polywell Poly Station 2020A	0:53
	< Better

BEST RESULT IN **BOLD**.

All scores are in minutes:seconds. We tested MP3 encoding with an audio CD that was 45 minutes and 15 seconds long, converting it from the hard drive using iTunes 4.0.1's Better Quality setting (Macs) or Musicmatch Jukebox Plus's 160 Kbps setting (PCs).—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

THE MPEG-2-ENCODING TEST

People who have made DVDs on their Macs know that compressing edited footage can take a long time and require a lot of processing power. On the Mac side, we tested the Compressor application that comes with Apple's Final Cut Pro 4 and DVD Studio Pro 2. For the Windows computers, we used Adobe Premiere Pro and Pinnacle Studio 8 (there are many MPEG-2 encoders on the PC side, and we didn't want to unfairly select a slower program). For both Compressor and Premiere, we used a DV file. For Studio 8, we used an AVI file captured from a DV camcorder (Studio wouldn't recognize our DV file). We tested movies that were about 6 minutes and 45 seconds long and chose single-pass variable-bit-rate (VBR) encoding at an average data rate of 7 Mbps.

THE RESULTS

Running Compressor, the dual-processor G5 was faster than real time, taking 6 minutes and 4 seconds to complete the task. The 1.8GHz G5 took almost three minutes longer, but it was still quite fast. However, the dual-processor G4 was more than a minute faster than the single-processor G5; this shows the importance of two processors in this type of work. Using Premiere Pro, the Athlon system took more than 11 minutes to encode the same amount of video as the Mac systems, while the dual-Opteron system took more than 14 minutes for the same task. We discovered that Premiere was using only about half of each processor instead of maxing them out. Pinnacle Studio made the Mac look even more impressive. The Athlon system took nearly twice as long as the 1.8GHz G5 and nearly three times as long as the dual-2GHz G5, while the dual-Opteron system limped in at more than 26 minutes.

THE WINNER

The excellent compression achieved with Compressor makes the Mac a great platform for DVD creation.

Macworld Lab Test	MPEG-2 Encode		
	ADOBE PREMIERE PRO	PINNACLE STUDIO 8	APPLE COMPRESSOR
Power Mac G5/dual-2GHz	N/A	N/A	6:04
Power Mac G5/1.8GHz	N/A	N/A	8:53
Power Mac G4/dual-1.4GHz	N/A	N/A	7:50
Alienware Aurora	11:14	15:45	N/A
Polywell Poly Station 2020A	14:07	26:18	N/A
	< Better	< Better	< Better

BEST RESULTS IN **BOLD**.

All scores are in minutes:seconds (N/A=not applicable). We encoded a DV file that was 6 minutes and 45 seconds long, using the MPEG-2 60min Fast Encode (7 Mbps, average VBR, single pass) preset in Apple's Compressor. On the PCs running Adobe Premiere Pro and Pinnacle Studio 8, we used custom settings to match the Compressor settings.—LAB TESTING BY MACWORLD LAB AND THE PC WORLD TEST CENTER

By Jason Snell

Panther by the NUMBERS

40 MAC OS X 10.3 FEATURES, TIPS, AND TRICKS

Trying to add up the new features and enhancements you'll find in Panther? Prepare for a long count. For every feature Apple has highlighted since it unveiled OS X 10.3 this summer, there are even more additions and improvements that have escaped much attention.

Now that Apple has unleashed Panther, we've gotten a firsthand look at the changes in the latest version of OS X. Apple claims that OS X 10.3 includes more than 150 new features and innovations. We haven't found *that* many—but then again, we're still counting. We've already told you about some of Panther's most conspicuous changes, such as Exposé, Fast User Switching, and Font Book (see "Take a Peek at Panther," September 2003). Here are some of our favorite hidden gems, as well as a collection of tips that will help you get the most out of this major update.

ILLUSTRATION BY JOHN FARNSWORTH

New Features

1. Universal Security The new Security preference pane puts all of Panther's security features in one place. From here, you can set up your Mac to require a password when it wakes from sleep or a screen saver. This pane also lets you disable automatic login of users, password-protect your system settings, and enable automatic logging out after a set duration with no activity. Unfortunately, there's no option for automatically locking Keychain—for that, you have to use the Change Settings For Keychain command in the Keychain Access utility.

2. DVD Player's Big Step Apple's DVD Player application jumps forward in Panther. DVD Player 4.0 features built-in support for 5.1 surround-sound audio tracks. It can also display closed-captioning information in a separate window, which you can move away from your video. Plus, DVD Player now supports full-screen presentation modes on Macs with multiple monitors, and it lets you bookmark spots on your DVDs for quick reference.

3. iDisk Anywhere .Mac members have access to at least 100MB of storage space on Apple's servers. This can be a useful place to stash files, especially if you're moving from one computer to another. However, before Panther, you had to remember to mount your iDisk and copy files before you unplugged and headed out for parts

All Panther, All the Time

Want more news about Panther, in-depth tips and troubleshooting advice, reviews of OS X software, and more? Check out *Macworld's Total Panther* special issue, available on newsstands beginning in December!

Feature No. 2 Panther's remodeled DVD Player puts closed-captioning text in a separate window.

unknown. With Panther, you can permanently integrate iDisk into your Mac. In the new .Mac preference pane, select Create A Local Copy Of Your iDisk. Panther will do just that—it places your iDisk on your Mac's hard drive. If you set OS X 10.3 to synchronize automatically, it'll upload any changes you make to the local copy of your iDisk. If you're not connected to the Internet, Panther will synchronize the changes the next time you connect. You can also synchronize manually—a useful option if you have a slow Internet connection.

4. Your Disk Keeps a Journal A new feature in Panther (it was previously only in Mac OS X Server) is *journaling*. When your hard drive is journaled, the operating system keeps a log of every modification made to the disk. So if your Mac crashes or the power goes out, your Mac knows exactly where it was when things went south, and it will start up much faster following a system crash than it otherwise would. Journaling is on by default. To enable journaling on other drives, open Disk Utility and choose Enable Journaling, or select Mac OS Extended (Journaled) when you format a drive.

Returning Favorites

5. Disk Utility Megamerger In previous versions of OS X, the Disk Utility application was an unassuming program for formatting and partitioning drives. It still does all that, but it has also assumed the responsibilities of the eliminated Disk Copy and Software Restore utilities. If you want to create or burn a disk image, or restore your hard drive with the contents of a disk image, Disk Utility is now the place to go.

6. Return of Desktop Printers An OS 9 feature that reappears in Panther is desktop printing. When you use OS X 10.3's Printer Setup utility—formerly Print Center—to add a new printer, you create a tiny application for that printer in your user folder's Library: Printers folder. You can make aliases of as many printers as you like and place them on your desktop, or just drag them into the Dock. If you drag PDF files onto a printer icon, they'll print to that printer. Other documents will automatically open in the appropriate application and prompt you with a Print dialog box.

7. Check, Mate Don't play chess? Then you won't care that Apple's included Chess game, now at version 2.0, features improvements such as a rotating board and new options that let you change the look of the board and the pieces.

Finder Fixes

8. Introducing the Sidebar New to Finder windows is the sidebar, a pane on the left side that shows mounted disks, file servers,

Feature No. 7 Chess sports a new look—which you can change.

3 PRODUCTIVITY TIPS BY ROB GRIFFITHS

1. The Key(board) to System Preferences Want to navigate the System Preferences panes in a hurry? You can use your keyboard. With System Preferences open, you can load the QuickTime panel, for instance, by pressing Q followed by the spacebar. Press E and the spacebar for Energy Saver; to select Exposé instead, press E, then X, and then the spacebar. The letter highlights the pane; the spacebar opens it. This trick works with both Apple-supplied and third-party panes.

2. Expose Yourself to Exposé If you're still using a single-button mouse, you're missing out on much of Exposé's power. When you plug in a multibutton mouse, the Exposé pane gains an entirely new Mouse section, which lets you assign Exposé's functions to the extra buttons. With one hand, you can now hide, manage, and switch windows like a pro.

3. Application Switcher's Hidden Tricks Pressing ⌘-tab in Panther brings up a new version of the on-screen application switcher (see "4 Hidden Features"). And three keys provide even more useful features. Press H to hide the currently selected application, M to minimize it, and Q to quit it.

ROB GRIFFITHS runs the Mac OS X Hints Web site (www.macosxhints.com) and works on *Macworld's Mac OS X Hints* column.

4 HIDDEN FEATURES

BY DAVID POGUE

1. Easier Program Switching In Jaguar, you could cycle through your open programs by holding down the ⌘ key and then repeatedly pressing the tab key until the desired program was highlighted in the Dock. The process is much

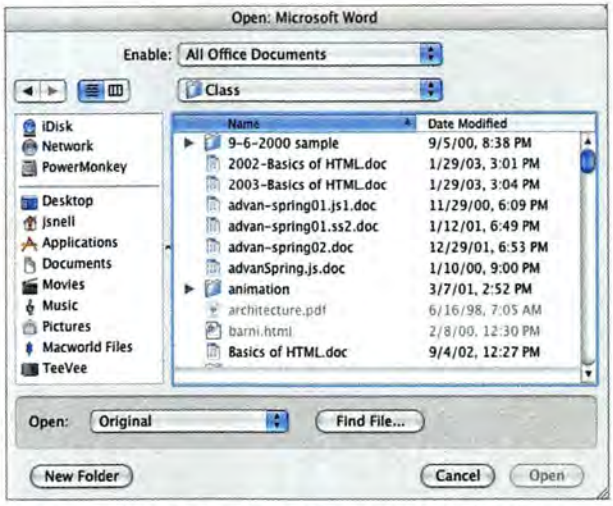
improved in Panther. As soon as you press ⌘-tab for the first time, a huge floating palette appears, showing icons for all open programs. Hold down the ⌘ key and press the tab key to move to the next icon in the list. Release both keys when you reach the one you want—or, while the ⌘ key is still held down, click on an icon with the mouse.

2. Secure Empty Trash Although the contents of the Trash disappear from view when you empty it, the *data* in each file is still on the hard drive. The space occupied by the dearly deleted is now marked with an internal "This space available" message. Until some other data comes along to take its place, a savvy family member or coworker could use a program such as Norton Utilities to resurrect those files. If you're concerned about security, you probably want deleted files to be truly *deleted*. This is possible in Panther. When you choose the Secure Empty Trash option from the Finder menu, Panther doesn't just obliterate the parking spaces around the dead file, it records *new* information over the old—random 0s and 1s. Your records will be gone forever.

3. Keyboard Selection in Menus Forget searching through long menus or windows. To quickly find what you want in an open menu, simply press the first couple of letters in the desired command's name. Panther will automatically highlight the option. (Press return, enter, or the spacebar to access the highlighted command.) This trick also works for folder icons on the Dock that you've popped open by ⌘-clicking. For example, ⌘-click on your Applications folder in the Finder, and you can jump to the exact program you're looking for.

4. An Easier Way to Burn When you insert a blank CD or DVD and load it up with stuff you want to copy, simply click on the new Burn button next to its name in the Finder's sidebar.

DAVID POGUE (www.davidpogue.com) is the weekly tech columnist for the *New York Times* and the author of *Mac OS X: The Missing Manual, Panther Edition* (O'Reilly & Associates, 2003)



Feature No. 9 Panther has list views for Open and Save dialog boxes.

and favorite folders. The sidebar is aimed at making it easier to find what you're looking for on your Mac. To quickly add favorite items to the sidebar, just select them in the Finder and press ⌘-T.

9. Open and Save, Redeemed When Apple first showed us OS X, the Finder offered only one way to display files: column view. By the time the operating system arrived, other traditional ways of viewing files—as icons or as a list—had returned to the Finder. But they were still missing from Open and Save dialog boxes, which kept column view as the only option. With Panther, the process of navigating to the right folder in which to open or save a file has gotten *much* easier. The new Open and Save dialog boxes include a Finder-inspired sidebar containing your favorite locations for quick access. You can also opt for an OS 9–style list view.

10. Instant Compression Panther's Finder lets you compress files and folders without

Feature No. 11 Finder labels return!

any add-on applications, using the Zip file-compression standard common on Windows. To compress items in the Finder, select them and then choose Create Archive Of *File Name* or Create Archive Of *Number* Files from the Action menu, found in either the contextual menu you get by control-clicking on your selection or the Finder's File menu. To uncompress a Zip file, just double-click on it in the Finder.

11. At Long Last, Labels Panther may just restore the goodwill of grumpy OS 9 users who never quite forgave Apple for getting rid of Finder labels. Now you can label items in the Finder by control-clicking on them and selecting a color label, by using the toolbar's Action menu, or by choosing a color at the bottom of the File menu. To edit label names (by default, they're just the names of the label colors), choose Finder: Preferences and click on Labels. Panther's labels don't look like OS 9's labels: the background behind the item's name is tinted, rather than the item's icon. (In list view, the entire row devoted to a labeled item is colored.)

12. Network in the Finder In OS 9, you browsed your network for a file server via the Chooser. In OS X, you did it via the Finder's Connect To Server command. In Panther, local servers simply show up in the Finder—just choose Network from the Go menu to see a list of servers in the familiar Finder interface. If the server you're connecting to isn't local, you can enter remote server addresses by choosing Connect To Server.

13. Control the Finder OS X is based on Unix, an operating system with a complex series of file permissions that prevent users from deleting or moving files that don't belong to them. The problem is, Mac users are used to moving files anywhere they please—and they aren't happy when OS X tells them what they can't do. Fortunately, Panther's Finder isn't quite as obstinate about moving files into protected areas; it gives a certain amount of control back to

users. If you try to move something into a protected location and you have administrative privileges, you can enter your password and force the action to happen, permissions be damned.

Other Interface Tweaks

14. Subtler Interface Elements You'll see a lot less of OS X's trademark striping in Panther. The texture behind the menu bar is much subtler, and active window title bars now have a slight gradient. Inactive windows are no longer translucent; instead they have no color or gradient.

15. Good-Bye Tabs, Hello Chiclets The original OS X interface featured lots of tabbed items. Apple has eighty-sixed tabs from Panther. Instead of blue tabs at the top of windows, the interface now features blue buttons on the perimeter of a shaded box that contains the window's content. The areas under tabs used to appear as square windows with slight drop shadows; now they're rounded areas that appear to be etched into the surface of the parent window. It's a subdued but attractive effect.

Feature No. 15 Blue buttons replace tabs.

16. Highlighted Toolbar Items In Panther, applications that let you toggle between windows now highlight the currently selected toolbar item. For instance, if you click on the Displays icon in the System Preferences toolbar, its background will become shaded to show that it's selected.

Productivity Boosts

17. Smooth Scrolling In the new Appearance preference pane—the pane formerly known as General—there's a Use Smooth Scrolling option. When this option is selected, applications that support smooth scrolling will—as the option's name suggests—*scroll more smoothly*. For example, if you hit the Page Down key while you're in Safari, the browser will scroll line by line down to the next page. This feature's appeal is matter of taste, but it's growing on us.

Feature No. 16 Highlighted toolbar items are a highlight of OS X 10.3.

18. Integrated iPhoto With Panther, Apple has integrated iPhoto even more deeply into OS X. Before, if you wanted to select specific iPhoto albums or your entire iPhoto library for screen-saver images or desktop pictures, you had to do so from within the application. Panther lets you do so from the Desktop & Screen Saver preference pane.

19. Network at a Glance The Network preference pane now has a friendly face—the Network Status view. It shows you at a glance what's going on with your various connections. For example, it can tell you that you're currently using Ethernet, but that you're also

Feature No. 18 iPhoto gets even more integrated.

7 ANSWERS FOR 7 INSTALLATION QUESTIONS

BY JONATHAN SEFF

1. I've got a Pismo PowerBook. Will I be able to use Panther? Sure. To run OS X 10.3, you need a Mac that shipped with a PowerPC G3, G4, or G5 processor and built-in USB. You'll also need either a built-in display or a display connected via an Apple-supplied video card supported by your Mac. Apple lists supported systems at http://www.apple.com/macosx/upgrade/requirements.html.

2. How much memory do I need? OS X 10.3 requires a minimum of 128MB of RAM; given how inexpensive memory is these days, you may want to upgrade to 256MB or even 512MB to get the most out of the new OS.

3. How much will upgrading cost? It depends. Panther costs $129 for a single user and $199 for a five-license Family Pack. If you bought a qualifying new Mac (Apple has a list at http://www.apple.com/macosx/uptodate/list.html) on or after October 8, or a Power Mac G5, you can upgrade through Apple's Up-to-Date program for $20.

4. Can I download Panther as I did most OS X updates? Nope. Panther contains more than 1GB of data—far too much to download. You have to buy the box. It's available at Apple's brick-and-mortar and online stores, as well as other retailers such as MacMall, CompUSA, and MacWarehouse.

5. Will my OS X–native applications run on Panther? Many programs will run just fine—especially those that have been updated in the last few months. Some programs will need future updates, but many of them will be available at the same time as Panther.

6. How about my OS 9 applications? OS 9 applications are unaffected. You can still run them in OS 9 (assuming that your Mac can boot into OS 9) or in the Classic environment.

7. How do I install Panther? You have several options when installing a new OS such as Panther. If you're installing OS X for the first time, the discs will install everything you need for running OS X. If you already have a version of OS X, simply choosing the Upgrade option allows you to install Panther without copying over files or erasing your hard drive. However, many users had problems—including unstable systems and crashes—with this method when they upgraded to Jaguar. The safest way to upgrade—assuming you don't mind erasing your entire hard drive—is to choose Erase And Install, which will wipe all information from your hard drive and put a fresh system on it. Your other option is Archive And Install, which installs a new OS but keeps your applications, user folder, and preferences. Your previous system remains in a folder at the root of your hard drive, allowing you to move items to the new system (for more on Archive and Install, see "Panther Migration: Archive and Install").

There's no question that *Macworld* Senior Associate Editor JONATHAN SEFF will use Archive And Install when he upgrades to Panther.

3 TROUBLESHOOTING TIPS

BY TED LANDAU

1. Diagnose Problems with Fast User Switching A popular bit of advice for people dealing with unexplained problems in OS X is to log out and then log in as another user. If the problem goes away, it means that the cause of the symptom is in the Home directory (a preferences file, most often). Some users set up a separate account solely for this troubleshooting test.

But Jaguar required that you truly log out of your account—closing all your open applications and documents—before you could switch. In Panther, you can enable Fast User Switching from the Login Options section of the Accounts preference pane. A menu will then appear in the far right of the menu bar. From here, select your test account and log in. Both accounts remain open.

2. Fix Font Hassles Having trouble installing or using fonts? Panther's Font Book will come to your rescue, with two useful troubleshooting features:

Resolve Duplicates Launch Font Book, click on All Fonts in the Collections column, and scan the list of fonts. A bullet next to any font's name means that you've installed at least two versions of that font. To fix this, locate and highlight the version you want to use. Then click on Resolve Duplicates in Font Book's Edit menu. The selected version is enabled and any duplicates are disabled.

Install Fonts Say you want to use a new font after downloading it to your desktop. By double-clicking on the font, you launch Font Book, which opens a special window that displays a sample of the font. Click on the Install Font button that appears at the bottom of this window, and the font is installed in the Fonts folder of your Home directory. From this location, the font is available only to you. If you want it to be available to all users of your Mac, select Font Book's Preferences command and change the Installing Fonts option from For Me Only to For All Users Of This Computer before clicking on the Install Fonts button.

Bullet Point Font Book highlights duplicate fonts.

3. Use Classic's Secret Memory Adjustment If you're running several memory-hungry applications in Classic and don't seem to have enough memory to keep them all open at once, there's a way to adjust memory. Launch System Preferences and select Classic. Hold down the option key while you click on the Memory/Versions button. An Adjust Memory button will appear at the bottom of the window. Click on it, and a sheet drops down from which you can adjust the relative amounts of Application memory and Temporary memory used in Classic. Moving the slider toward the Temporary end should end your memory woes.

Contributing Editor TED LANDAU is the author of *Mac OS X Help Desk* (Peachpit, 2004).

connected to an AirPort Network or that your modem configuration hasn't been set up yet.

20. By All Accounts Rather than dividing user information among Jaguar's Users, Accounts, and Login Items preference panes, Panther puts it all in the Accounts preference pane. From Accounts, you can set your startup items and user picture, as well as edit other accounts on your system (as long as you have administration privileges).

21. Help for the Help Viewer Ever accidentally pressed the help key and then groaned as Apple's slothful Help Viewer application took an eternity to launch and display help pages? Well, those days are over. Panther offers a new Help Viewer that uses the same HTML-display technology in Safari. The result is a fast, good-looking help system—and one that won't make you cry when you inadvertently ask for help.

22. Internet Connect's Virtual Features OS X's Internet Connect utility lets you connect to the Internet by dialing a modem or logging on to a Virtual Private Network (VPN) securely over a network. Panther improves greatly on Internet Connect's VPN technology, adding support for IPsec VPN servers and adding a VPN menu bar item so users of corporate networks can get online and offline without having to open up Internet Connect each time. □

Editor in Chief JASON SNELL has followed the changes to Mac OS X since before it had a roman numeral.

PANTHER MIGRATION: ARCHIVE AND INSTALL

BY DAN FRAKES

Before you can enjoy the benefits of Panther, you need to install it. To avoid potential problems with the Upgrade function, we suggest using the installer's Archive And Install option—which provides a brand-new, full installation of OS X 10.3 while saving everything from your previous OS X system.

After you've chosen your destination volume in the Installer, click on the Options button, select Archive And Install, and make sure the Preserve Users And Network Settings option is enabled. This moves your user folder (retaining your accounts and settings), any non-Apple items in your Applications folder, and many other customized files to the new system. However, you may still have to do some work to get your Mac back to the way it was.

After installation, you'll find a folder called Previous Systems at the root level of your hard drive. It contains files and folders left over from your old system (some are invisible). You'll eventually throw many of these files away, but you may want to transfer some to their corresponding locations in OS X 10.3. Luckily, Panther's Archive And Install appears to be smarter about what to move and what not to move than the same feature in Jaguar, so the process is easier than it used to be.

Most people—with the exception of power users—can safely ignore all but the Library folder. Many applications install support files in this folder, and other system add-ons, such as contextual-menu plug-ins, browser plug-ins, and services, are installed here for systemwide use. If you don't want to manually reinstall applications, support files, and third-party add-ons from scratch, going through this folder is your only option.

The other area to look out for is Kernel Extensions (located in System: Library: Extensions). If you're not confident about which kernel extensions to move over, a much safer approach is to simply reinstall them using the original installer.

When you're done, log out and then log back in. You'll need to set up your printer again, but apart from that, only minimal additional setup should be necessary. Once your Mac has been running smoothly for a few days, you can delete the Previous Systems folder and its contents.

MacFixIt.com's DAN FRAKES is the author of *Mac OS X Power Tools* (Sybex, 2003).

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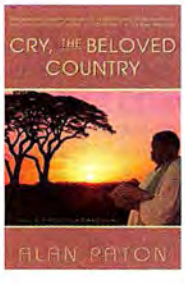
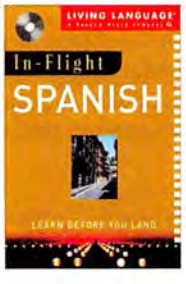
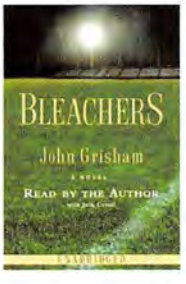
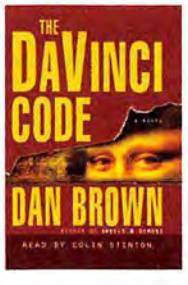
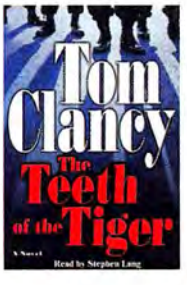










Easy Mac Maintenance

JUST LIKE YOUR CAR, YOUR MAC NEEDS ROUTINE MAINTENANCE in order to run smoothly. Unlike your car, your Mac can perform some of this maintenance on its own. Two important tasks to perform regularly are Disk Utility's Repair Permissions and OS X's Unix maintenance scripts.

Repair Permissions ensures that system-level files have the correct privileges set; this is important because incorrect permissions can prevent applications from launching, cause problems with printing, and even affect startup. OS X's Unix maintenance scripts perform tasks that free up disk space and keep the OS tidy by updating and backing up databases, cleaning out temporary files, and cleaning up system logs.

You should run Repair Permissions and the maintenance scripts when you boot your Mac into OS X. However, instead of having to remember to do these tasks yourself, you can tell your Mac to do them for you, using the built-in Unix utility cron and the CronniX utility (donations accepted; www.koch-schmidt.de/cronnix/). □

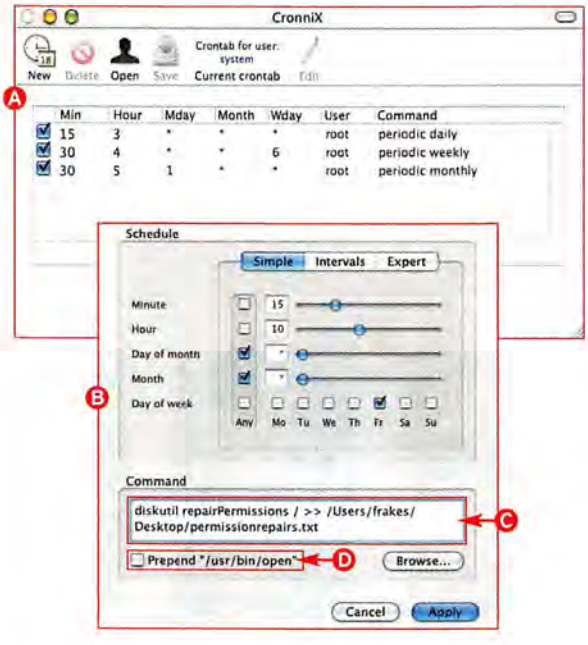
DAN FRAKES is *Macworld's Mac Gems* columnist. He is also an editor at MacFixIt.com and the author of *Mac OS X Power Tools* (Sybex, 2003); he can be tracked down at www.danfrakes.com.

SCHEDULE REPAIR PERMISSIONS

1 Meet Cron

To automate an action with cron, you need to open a *crontab* (a *cron table*, or schedule) and then create a new entry—much as you'd create a repeating calendar appointment—that tells cron what to do and when.

CronniX gives you an easy-to-use interface for working with crontabs. Launch CronniX and then choose File: Open System Crontab. (Because these are system-level tasks, you're going to edit the system-level crontab; however, users also have individual crontabs.)



You'll notice that the default crontab Ⓐ already has three entries; I'll talk about them later. Right now, you want to create a new entry, so click on the New button. The resulting schedule window Ⓑ lets you create a schedule for the desired action and then designate that action.

I run Repair Permissions once a week, Friday mornings at 10:15 a.m. (Whatever day and time you choose, make sure it's a time when your Mac will be on and awake.) Using my setup as an example, enter 15 in the Minute field and 10 in the Hour field (cron uses 24-hour time, so 3 p.m. would be 15). These two fields tell cron to execute this action at 10:15 a.m. The Month and Day Of Month options are unimportant, so put a checkmark in those options' boxes, or type an asterisk (*) in the value field—this tells cron to execute the event for any value of these fields. Finally, select the Fr (for Friday) option.

2 Tell Cron What to Do

Next you need to tell cron what you want it to *do* at the specified time. Although you can run Repair Permissions from Disk Utility, you can also run it from Terminal via a Unix command; this is the command we'll tell cron to run.

In the Schedule window's Command field Ⓒ, first erase the example contents, and then type the following line:

```
diskutil repairPermissions /
```

The slash (/) indicates that you want to run Repair Permissions on the startup volume. This command doesn't give you any feedback; when you run Repair Permissions from Disk Utility, you get a report of the repairs it makes. I like to see this report, so I've used the following command instead (it should all be on one line, and case is important):

diskutil repairPermissions / >> /Users/*user name*/Desktop/permissionrepairs.txt

(Replace *user name* with your user name.) Now your Mac will save a text report of repairs on the Desktop.

Make sure the Prepend "/usr/bin/open" option D is *not* selected, and then click on the New button to create the new event. Your new scheduled event will appear in the crontab. To test it, select it and then choose Task: Run Now. If all goes well (and if you've elected to save a report), the report should show up on your desktop after the utility has repaired permissions (this takes a few minutes).

Before exiting CronniX, click on the Save button to save the changes you made to the crontab. CronniX will ask for your administrator user name and password to verify that you have permission to make system-level changes. Your new crontab entry takes effect immediately. Repair Permissions will run in the background at the specified time, without your having to lift a finger.

SCHEDULE THE SCRIPTS

1 Edit Daily Schedules

OS X comes with three Unix maintenance scripts—daily, weekly, and monthly—which you see in the default system crontab. These scripts are already scheduled to run on a daily, weekly, and monthly schedule, respectively. However, because of a long Unix history we won't get into, the default times (the daily script runs at 3:15 a.m.; the weekly, at 4:15 a.m. on Saturday; and the monthly, on the first day of each month at 5:30 a.m.) mean that the scripts will never run for Mac users who shut down their Macs or put them to sleep at night.

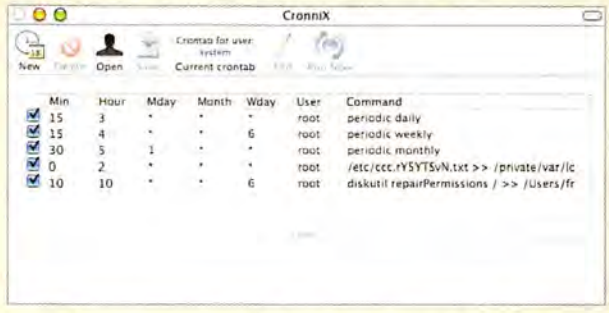
E

Utilities such as Brian Hill's free MacJanitor (http://personalpages.tds.net/~brian_hill/macjanitor.html) and Atomic Bird's $8 Macaroni (www.atomicbird.com) let you manually run these scripts or periodically check to see whether they've run, but it's more convenient to adjust the schedules so the scripts run when your Mac is likely to be awake. You'll use CronniX again, but this time, you'll edit the existing entries for the daily, weekly, and monthly scripts.

continues

EVER-VIGILANT CRON

If you don't have a Unix background, the cron utility is most likely foreign to you. However, it's one of the simplest and most useful Unix utilities you'll find in OS X. Cron runs in the background whenever your Mac is on. Every minute, it checks schedules called crontabs to see whether any command or script is supposed to run. If so, it runs them. If not, it takes a nap for 60 seconds, then checks again, and so on.



Anything you can do via a Terminal command, Unix shell script, or Mac OS AppleScript, you can run via cron at a specific day, date, and time. (The step-by-step section of this column provides you with a couple of good examples; for others, see "Put AppleScripts on a Schedule".) You can even perform simple actions such as launching an application or opening a document (using the Terminal command open).

Crontabs—the schedules that tell cron what should run and when—are located in the invisible /etc/crontab directory, for the system crontab, and /var/cron/tabs, for user-specific crontabs. (Although we're editing the system-level crontab in this article because we're performing system-level tasks, you should generally edit only your own user-level crontab.) The crontab format is a bit messy. Each event consists of a single line with values for the minute, hour, day of month, month, day of week, user name, and command. For example, the default crontab entry that runs OS X's weekly maintenance script is

15 4 * * 6 root periodic weekly

This entry tells cron that at 4:15 a.m. every Saturday (the sixth day of the week—the week starts on Monday), regardless of the month or the day of the month, the root user should run the periodic weekly command. At 4:15 a.m. Saturday morning, cron finds a match for that entry and then runs the command. User-specific crontabs omit the *user name* variable, since all events in a user's crontab are executed as that user.

You can view the system-level crontab by typing cat /etc/crontab in Terminal; likewise, you can edit crontabs in Terminal with the crontab command. However, viewing and working with crontabs in Terminal gets pretty messy, and a utility such as CronniX makes the process easier. CronniX lets you access your own user-level crontab or, assuming your account has administrative access, the system-level (root) crontab. Entries for the chosen crontab are displayed in a format similar to Terminal's, but with labeled columns that you can rearrange if you find them easier to read in a different order. You can also create a new entry (via the New button), delete an entry (by selecting it and clicking on Delete), enable or disable any entry, or click on the Edit button to edit the selected entry. When you're done, click on the Save button to save your changes, which take effect immediately. CronniX also lets you run a particular entry on cue (via the Run Now button). To view a different crontab in CronniX, choose Open For User or Open System Crontab from the File menu.

To learn more about cron, read the cron manual (type man cron in Terminal) or visit the CronniX Web site at www.koch-schmidt.de/cronnix/docs/index.html.

In CronniX, open the system-level crontab. In the Command column, you'll see the three cron events that run these scripts.

Select the daily (here, periodic daily) entry and click on the Edit button. In the schedule window that appears E, change the Minute and Hour fields from 15 and 3, respectively, to a time when your Mac is generally on and awake. I changed mine to 12 p.m., when I'm often at lunch, by entering 00 in the Minute field and 12 in the Hour field. (Leave the other fields alone, since you still want the script to run every day.) Click on Apply to save your changes.

2 Edit Weekly Schedules

Now you'll alter the weekly day and time.

Select the entry for the weekly script and click on Edit. If you don't typically use your Mac on weekends, deselect the Sa (for Saturday) option and select one of the weekday options. Then edit the Hour and Minute fields to reflect a time when your Mac will be on and awake. (Avoid choosing the same time you used for the daily script.) Click on Apply.

3 Edit Monthly Schedules

Making your final change to the monthly schedule is a bit trickier.

Since the monthly script is set to run on the same date each month, if the chosen date happens to fall on a weekend and your computer isn't running on weekends, the script won't run. For this reason, you should create *two* crontab entries for the monthly script.

Select the entry for the monthly script and click on Edit. I recommend keeping the Day Of Month field set to 1 (which means the script will run on the first day of every month). Enter appropriate Hour and Minute values, just as you did for the daily and weekly scripts. (I use 12:45 p.m.) Click on Apply to save changes.

Next, select the entry you just edited in CronniX and choose Edit: Duplicate Task. Select the duplicate entry, click on Edit, and then change the Day Of Month field to a different day. I recommend 5—since it's impossible for *both* the first and fifth days of any month to fall on a weekend, this ensures that your monthly maintenance script will run the first week of every month. (In some months, both of these dates will fall on weekdays, meaning the script will run twice. Don't worry—this does no harm.) Click on Apply.

4 Don't Forget to Save

You're almost ready to sit back and let the scripts do your maintenance work.

Click on the Save button and then provide your admin user name and password. Your edits will take effect immediately and your maintenance scripts will run during normal working hours. If you've been using Mac OS X for a while and you've never run these scripts, you could gain a significant amount of hard-drive space the first time they run because of their cleaning actions.

5 More Maintenance

Running Repair Permissions and the maintenance scripts regularly will go a long way toward maintaining smooth operations on your Mac, but they don't fix everything.

You should also run Disk Utility's Repair Disk once a month or so, on both your startup drive and any additional volumes. Repair Disk checks your hard drive for damage and directory problems; such damage, if it's serious enough, can prevent your Mac from even booting. It's also a good idea to occasionally run a more advanced disk-repair utility such as Alsoft's $80 DiskWarrior (800/257-6381, www.alsoft.com) to ensure that your disk's directory is in tip-top shape.

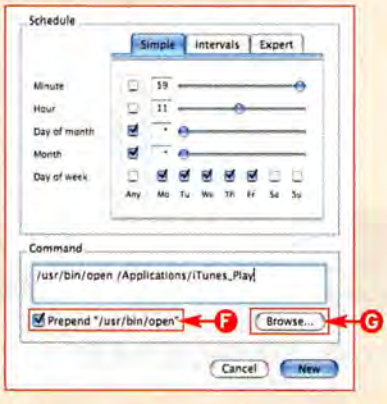
Keeping your Mac running smoothly requires some work, but automating some of the tasks as described here, and maintaining a regular schedule of disk care, should grant you a stabler and more trouble-free experience in the long run.

PUT APPLESCRIPTS ON A SCHEDULE

After reading the main article, you should know how to use cron to run Unix scripts and commands. It's just as easy to launch OS X applications and AppleScripts.

Launch CronniX and open your user-level crontab by choosing File: Open For User and then typing your user name.

Create a new event by clicking on the New button. Schedule the event as you did in the main article—choose the days, dates, and time you want the application or AppleScript to launch. However, in the Command area of the schedule window, delete the example text and select the Prepend "/usr/bin/open" option F. Click on the Browse button G. Using the file dialog box, navigate to the application or AppleScript you want to run at the designated time(s). In the example shown here, I've chosen an AppleScript I wrote that launches iTunes and then tells it to begin playing music. I've scheduled this AppleScript to run just before noon on weekdays—perfect for reminding me that it's time to go to lunch. Click on the New button to create your new crontab entry. Then click on Save to save your edited crontab.



Because this is your user-level crontab, it will execute some events, particularly those that work with applications, only when you're logged in to your account. This is convenient for me, as I don't want my iTunes alarm event to run when someone else is using my Mac!

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OS X's Overlooked Shortcut

IF YOU'RE LIKE MOST MAC USERS, YOU'VE PROBABLY NEVER taken advantage of OS X's *services*—systemwide shortcuts that let you use one application's abilities from within another. If this is the case, you're missing out on a great productivity tool. Services, which are available from the *application name:* Services submenu, let you work quickly with text, graphics, files, folders—almost any kind of content. More specifically, they allow you to draw on the powers of another application if the one you're working in doesn't provide the tools you need.

Services in Action You have to see services in action to really appreciate them. To take advantage of them, you select the desired content and then choose a service from the submenu.

Say someone e-mails you directions to a party, and you want to create a Stickies note with that information. You could highlight the text in Mail, copy it, launch Stickies, open a new note, and paste the text into the note. But with services, you can simply highlight the text and select Mail: Services: Make New Sticky Note. (Or in this case, you could press ⌘-shift-Y; many services have their own keyboard shortcuts, which are listed next to the service name in the menu.)

Or perhaps you're browsing a Web site in Safari and you want to copy some text to a new TextEdit document. Just highlight the text, and then select Safari: Services: TextEdit: Open Selection. What if you want to add a screenshot to a TextEdit document? Instead of taking the shot, finding it on your desktop, and dragging it to TextEdit, place the cursor where you want the screenshot to appear in the document, and select TextEdit: Services: Grab: Screen (or Selection, if you want only part of the screen). Grab will take the screenshot and insert it into your document.

Another interesting example is the Summarize service, which will reduce a large block of text—an online news article, for example—to a brief summary. Select a large text passage in a program that supports services, such as TextEdit, Safari, or Mail, and then select *application name:* Services: Summarize. A summary of the selected text will appear in a new window. You can even decide how compact the summary should be. Once you're satisfied, you can copy the summary for use in another app. I've found that the summaries this service generates are often surprisingly accurate.

TIP: If you find the Services submenu cumbersome, Nicholas Riley's free utility ICeCoffEE (★★★★; "More Mac Software Bargains," May 2003), lets you add a Services menu to the menu bar and/or to your systemwide contextual menus. Download it from http://web.sabi.net/nriley/software/.

Expanding Your Services

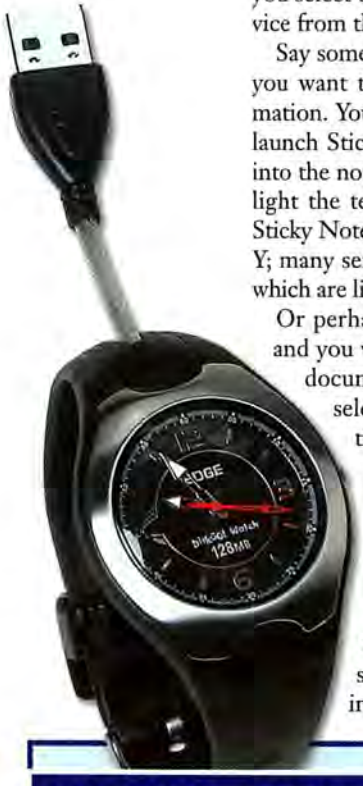
The previous examples demonstrate OS X's *built-in* services, but the real power of the services system lies in its expandability. Applications can add their own services, and you can install third-party services packages yourself.

Application Additions Placing an application in your Applications folder will make its services available the next time you log in. Select Go To Folder from the Finder's Go menu, enter /Applications, and click on Go to open the Applications folder. (If you delete an application, its services will disappear when you next log in.)

For example, if you often gather text for research, a number of information databases, such as Devon Technologies' $35 Devonthink (www.devon-technologies.com), provide services that let you select text in any application and then quickly add it to your database as a plain-text or rich-text note. (It can even summarize long passages of text.) Using these services, you can reduce a five- or six-step process to one or two steps.

Likewise, applications such as Bare Bones Software's BBEdit, Apple's Safari, and The Omni Group's OmniDictionary have their own services for working with text, opening URLs, and looking up word definitions, respectively.

Stand-Alone Services To install a services package that isn't associated with any application *and* make it



RICK RIZNER

IN TIME FOR THE HOLIDAYS

Looking for something special to give to the hard-working Mac users in your life? The Edge DiskGo USB Watch Flash Drive will be welcome in any stocking. Way cooler than a plain old hard drive on a key chain, the DiskGo is a tiny drive and a working watch. Tell time while downloading your favorite MP3s, holiday-party photos, or office papers. The USB plug tucks into the band. Created by Edge Digital Media (580/332-6581, www.peripheral.com), the DiskGo is available with a 128MB ($90) or a 256MB ($140) capacity.—SCHOLLE SAWYER MCFARLAND

available to all users of your Mac, put it in the Services folder inside your general Library folder. Select Go To Folder from the Finder's Go menu, enter /Library/Services, and click on Go to open the Services folder inside this Library folder. To restrict its use to just your own account, select Go To Folder from the Finder's Go menu and enter ~/Library/Services (the tilde [~] represents your Home folder). Click on Go to open the Services folder inside your user folder's Library folder. After you log out and then back in, the new services will be available.

You can find many third-party services packages at VersionTracker.com or MacUpdate.com (search for *service*). One of the best is Devon Technologies' free Word Service 2.5 (www.devon-technologies.com/freeware.php). This package provides 34 functions for working with text. For example, it can automate text formatting, such as altering line endings and sorting lines, as well as text conversion, such as changing capital letters to lowercase ones or changing straight quotation marks to smart ones.

Other add-on services provide shortcuts for all kinds of tasks. KavaSoft's $5 Translation Service (www.kavasoft.com/TranslationService/index.html) lets you translate selected text to and from a number of languages, including major European and Asian languages and even Russian.

Stas Pietrucha's free Terminal Services 1.0 (http://homepage.mac.com/stas/terminalservices.html) lets you select a bit of code (for example, Unix commands from a Web tutorial or from another Terminal window) and execute it as a command in Terminal. Nick Matsakis's free Browser Service 1.0 (http://mit.edu/matsakis/software/BrowserService/) lets you choose which browser will open a highlighted URL, regardless of the browser you've chosen in Internet preferences. In fact, you can even highlight a URL in one browser and then use Browser Service to open that URL immediately in a different browser (helpful for Web sites that still aren't compatible with Safari).

Finally, Selznick Scientific Software's unique $15 AtYourService 1.0 (www.selznick.com) not only adds a number of services related to translation, Terminal, and Web activities, but also lets you create custom Services and add them to the submenu. For example, if you find yourself frequently performing the same actions on text, you can create your own set of text manipulations and make it available as a service.

Avoiding Bad Service

Services are great, but they do have a few limitations. Sometimes you'll find that the submenu is either dimmed or empty. The most common reason for this is that you haven't yet selected content (text, graphics, or a file or folder) that a service can use.

But that's not the only possibility. Some programs don't make use of services. Most apps written in Apple's Cocoa environment support them; however, developers not using Cocoa face some extra work. Currently, some popular applications such as Microsoft Word don't take advantage of services, although other non-Cocoa apps, such as BBEdit and OS X's Finder, do.

Another hitch: As of OS X 10.2, having *too many* (more than 70) services installed prevents the Services menu from functioning in non-Cocoa applications that support services, including the Finder. If this happens to you, remove a few of your custom-installed services and then log out and back in.

Services with a Smile

Services can streamline the way you work. In addition, as more and more companies update their applications to take advantage of services, and as others release third-party service packages, the system will only get better. Start taking advantage of it now. □

.MAC GOODIES

Many Mac users subscribe to Apple's .Mac service, but few take advantage of the three excellent and free utilities Apple provides to members. (You can download them all after logging into the www.mac.com Web site.)

1. **Mac Slides Publisher** allows you to create a slide show from a group of photos, and then upload it to your iDisk so other OS X users can subscribe to it. Make sure you're connected to the Internet, and then drag a group of JPEG photos onto the .Mac Slides Publisher icon. Publisher automatically creates the slide show and uploads it to your iDisk. To view your show, other Mac users simply select System Preferences: Screen Effects, click on .Mac, and then click on Configure. In the dialog box that appears, they enter your .Mac membership name.

2. **Apple's iDisk Utility** provides a number of tools for working with iDisks. Like the iDisk tab of OS X's Internet preferences, iDisk Utility lets you quickly check the capacity and current usage of your iDisk, as well as configure your iDisk's Public folder. However, iDisk Utility also provides a few unique options.

The Open Public Folder screen allows you to quickly open any member's iDisk Public folder simply by typing the user's member name. (If the folder is password-protected, you'll be prompted for the password.) The Open iDisk screen lets you access any iDisk by entering the .Mac member name and password. These features are much quicker than using OS X's Connect To Server dialog box. In addition, if you have more than one iDisk, iDisk Utility lets you access any of them quickly. (The Finder's Go: iDisk command works only for the single account listed in the iDisk tab of the Internet preferences pane.)

3. **Apple's iDisk Utility** for Windows XP provides the same tools as the OS X version and is actually the *only* way to work with an iDisk from a computer running Windows. Apple encourages .Mac members to distribute the utility to their Windows-using friends.

DAN FRAKES is *Macworld*'s *Mac Gems* columnist, an editor at MacFixIt.com, and the author of *Mac OS X Power Tools* (Sybex, 2003). He is currently hiding out at www.danfrakes.com.

Working Mac is a monthly collection of tips that will help you be more efficient—and help you get home in time for dinner. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Working Mac*—e-mail us at workingmac@macworld.com.

Sweeten Your Sound

SOUND IS AN ESSENTIAL PART OF ANY MOVIE, AND NOTHing more clearly identifies the work of fledgling filmmakers than bad sound. It can turn indoor shots into a cacophony of unintelligible voices, unwanted noise, and room echoes. And it can make outdoor shots sound as though they'd been shot in the middle of a hurricane.

Don't make your viewers reach for the mute button. With the right equipment and a few tricks of the trade, you can dramatically improve your audio and give your movies a professional touch.

Blame the Built-In

When it comes to bad audio, the most common culprit is the camcorder's built-in microphone. Consumer-grade camcorders tend to have low-quality mikes. Often positioned far back on the camera or next to the drive mechanism, these mikes have an uncanny knack for muffling the sounds you want to capture while amplifying the ones you don't—the whine of the camera's motors, for example.

To make matters worse, filmmakers often hold the built-in mike too far away from the audio's source. If you're shooting a school play from halfway across an auditorium, you may be getting great close-ups with your zoom lens—but the mike is still 50 feet from the stage, and it hears every room echo, excited parental whisper, and muffled cough.

So what can you do about your built-in mike? That's easy. Just avoid using it. Instead, invest in a high-quality external mike and place it close to the action.

Choosing an External Mike

Before you buy an external microphone, you should make sure your camcorder can accept one. Most midrange and all high-end camcorders have external mike jacks. (In most cases, it's a ⅛-inch stereo minijack.)

Microphones come in many sizes and designs. Which one you should choose depends largely on the type of films you create. For example, a *lavalier* mike, which clips to lapels or shirts, is great for recording training videos or anything else with a single voice. However, it's *not* suitable for recording live music.

Unless you can afford to buy a mike for every occasion, you'll want to choose one that can adapt to many different shooting scenarios. Here are a few options to consider:

A General-Purpose Mike The most versatile type you can buy is a *single-point stereo mike*. A stereo mike bundles two microphone capsules in one package. This arrangement helps it get accurate balance and separation between the left and right audio channels.

I tested Audio-Technica's $399 AT822 stereo mike (pictured on page 79; www.audio-technica.com), which you can find online for around $250, with my Canon Elura. I was astounded at the difference in sound quality. The AT822's recorded audio sounded much richer, free from the tinny qualities common with camcorder mikes. Its removable foam windscreen not only reduced outdoor wind noise but also helped prevent *plosives*—breathy, percussive consonants—when I recorded narration inside. For a more economical option, check out Sony's $120 ECM-MS908C Stereo Video microphone (www.sonystyle.com).

If you'll be moving around while filming and need to keep the mike with you, consider attaching the external mike to your camera. Many mikes come with an adapter that mounts on your camcorder's accessory shoe—a small bracket often located on the top of the zoom lens. If your camera lacks this feature, get Sony's $14 VCTS30L Cold Shoe Arm, an accessory-shoe that screws into your camera's tripod mount.

Keep in mind, though, that you'll get the best sound when your mike is up close to the source—especially if you're recording a lecturer or another stationary subject. In these cases, you'll want to place the mike on a stand; this gives you the freedom to stand farther back with your camera. With high-quality extension cables, you can position a stereo mike and camera roughly 25 feet apart. (The AT822 includes a 10-foot cable.) At greater distances, however, you risk losing some high frequencies while picking up hum and other electrical noise.

MOVE OVER, ANSEL

There's a certain classic beauty to black-and-white photos. But printing gray-scale photos with a color ink-jet has traditionally proved troublesome, often resulting in unwanted tints or shallow tones. Hewlett-Packard is hoping to fix this problem with its new Photosmart 7960, an *eight-color* ink-jet that includes a separate cartridge for gray ink ($300; www.hp.com). According to HP, the gray ink helps create smoother gradations, richer shadows, and more-accurate tones.—KELLY LUNSFORD

Long-Distance Mike If you need greater distance between your camera and the mike, consider purchasing a *balanced* mike, which is wired in a way that reduces electrical noise and allows cable runs as long as 100 feet or even longer. A balanced mike costs more than an unbalanced one, but it may be worth the extra money if you often film events such as theatrical performances and need long cable runs.

Balanced mikes typically require an XLR jack, something only high-end camcorders tend to offer. However, you can connect a balanced mike to your camcorder's unbalanced miniplug jack with the help of the DXA-2 adapter, from BeachTek ($129; www.beachtek.com). This compact metal box attaches to your camera's tripod mount. The DXA-2 requires no external power supply and has knobs for adjusting volume levels.

Placement Is Everything

While the addition of an external microphone should help you record better audio, it's still only half of the equation. To do justice to any mike, you need to know how to position it properly.

How close should the mike be? That depends on what you're recording (see "A Field Guide to Mike Placement"). The closer the mike is to a sound's source, the less room noise and reverberation it picks up. But if it's too close, the stereo separation will become exaggerated—some sounds will come only from the left or the right speaker, while sounds in the center will end up too loud.

If you're planning to record a live performance, try to show up for rehearsals so you can experiment with different mike distances. If your camera has a headphone jack, connect a good pair of headphones—the cups should surround your ears to block out external sounds. Record a test and play it back, listening for proper separation and minimal room noise.

For additional help, Shure, a microphone manufacturer, offers excellent mike-placement tutorials. You can download them from www.shure.com/booklets.

A Field Guide to Mike Placement

SCENARIO	IDEAL MIKE POSITION
Solo piano	A foot from the center of the piano's harp, pointed at the strings. (The piano's recital lid should be open.)
Wedding ceremony	As close to the couple as possible. Many wedding videographers attach a wireless lavalier mike to the groom or the officiator. (Bridal gowns tend to rustle too much.) A mike hidden in a nearby flower arrangement may also work.
School play	Position the mike high, pointing down toward the stage at about a 45 degree angle. If you can't set up your own mike stand onstage, try to place the mike at most a few feet away and as close to center stage as possible.
Narrator	The mike should be 6 to 9 inches from the speaker's mouth and pointed downward. To avoid plosive problems, use a windscreen and position the mike just off to the side, pointing at the mouth. Alternatively, use a lavalier mike attached to the speaker's shirt.
Choral group	Place the mike 1 to 3 feet above and 2 to 4 feet in front of the first row of singers.

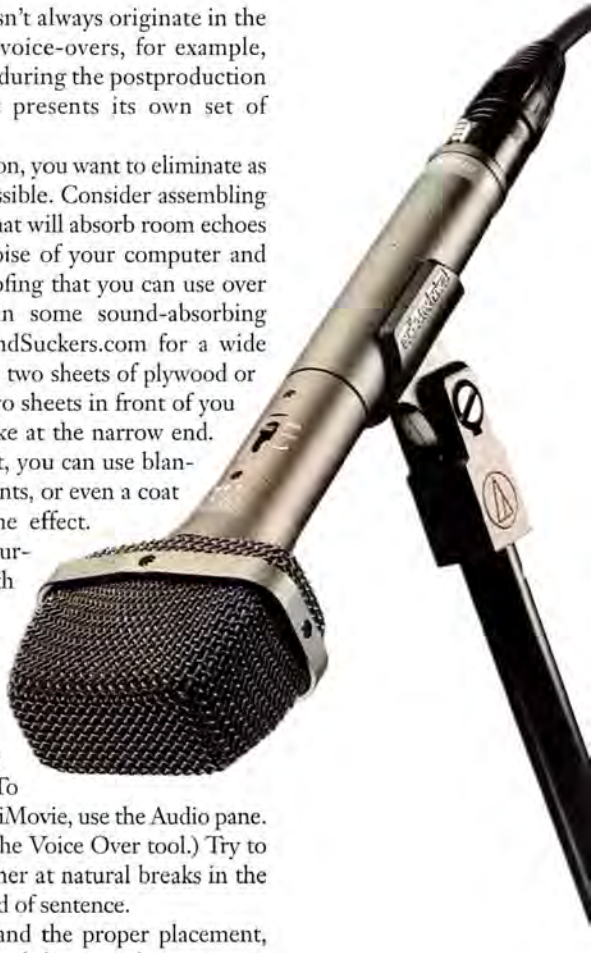
CAPTURE AMBIENT NOISE

If you're shooting scenes where the audio is mostly ambient sound—the waves at a beach or the din of a party, for example—take the time to shoot several minutes of uninterrupted video while keeping the camera stationary. After importing the video into your editor, delete the video track and keep the audio. (In iMovie, drag the video clip to the timeline and choose Extract Audio from the Advanced menu.) You now have a seamless audio bed upon which you can put a series of muted video shots. This technique eliminates jarring changes in sound between each shot.

Recording Narration

A movie's soundtrack doesn't always originate in the field. With narration or voice-overs, for example, sound recording happens during the postproduction process—a scenario that presents its own set of audio requirements.

When recording narration, you want to eliminate as much ambient noise as possible. Consider assembling a makeshift sound booth that will absorb room echoes while blocking out the noise of your computer and hard drive. For soundproofing that you can use over and over again, invest in some sound-absorbing acoustical foam (see SoundSuckers.com for a wide selection), and glue it onto two sheets of plywood or foam core. Position the two sheets in front of you in a V shape, with the mike at the narrow end. If you're on a tight budget, you can use blankets, pillows, carpet remnants, or even a coat closet to achieve the same effect. The idea is to surround yourself and the mike with sound-absorbing material.



Record your narration at the beginning of the editing process so you can then edit the accompanying footage to match the speaker's pacing. (To record narration in Apple's iMovie, use the Audio pane. In Final Cut Express, use the Voice Over tool.) Try to cut from one shot to another at natural breaks in the narration, such as at the end of sentence.

By using a good mike and the proper placement, you'll record sparkling sound that complements your video instead of detracting from it. Your movie will have less hiss, clearer voices, a richer texture, and an impressed audience. □

Contributing Editor JIM HEID is the author of *The Macintosh iLife* (Peachpit Press/Avondale Media, 2003) and publishes iLife tips at www.macilife.com.

Digital Hub is a monthly collection of tips and strategies for anyone who creates movies, music, or photographs for personal use. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Digital Hub*—e-mail us at digitalhub@macworld.com.

Tighter, Firmer Web Pages

TRIM UNWANTED FAT FROM YOUR WEB SITE! THAT MAY sound like an infomercial, but it really is easy to write logical, compact markup. You can lower your site's bandwidth demands by 50 percent or more, restoring pep and vigor to loading times while reducing server aches and stress. You'll also make your site more accessible to PDAs and cell phones.

You can achieve this by banishing presentational HTML and learning to avoid many common practices that are frankly no good at all.

Common Errors in Hybrid Markup

A typical, table-based site design has a menu bar that changes its state to indicate your location as you move from page to page. The menu labels (Events, About, Contact, and so on) can be images or simple hypertext links. Old-school Web designers might litter hypertext-link markup with font tags to control textual appearance (size, face, and color), and outdated attributes to control the alignment, border properties, and background color of the table cells containing these menu labels. Modern designers use CSS instead, but the results might be no better if approached the wrong way.

By the Book This article is excerpted from Jeffrey Zeldman's book *Designing with Web Standards* (New Riders, 2003).

Even if a designer chooses GIF images instead of hypertext, he or she will seek a way to differentiate the appearance of the menu table from other table structures on the site. For instance, the menu table may seem to require thin black borders, whereas other table structures on the page are border-free. In a worst-case scenario, the designer will wrap the menu table inside another table whose only purpose is to create black outline effect. That's how we built 'em back in 1997. Today's designers might combine junk markup with overwrought CSS to differentiate the menu table from other tables on the page. This is no better than the old stuff.

Classitis: The Measles of Markup

How *do* we instruct navigational table cells to display differently from all other table cells on the page? Or command the links inside these navigation-bar table cells to display differently from other links on the page? Not with deprecated presentational tags and attributes like bgcolor and font. But we also don't want to apply a class to every element that requires special handling, as in the following example:

```
<td class="whitewithblackborder"><span
class="menuclass"><b> <a href="/events/">
Events</a></b></span></td>
```

We call this style of markup *classitis*. In a site afflicted by classitis, every blessed tag breaks out in its own swollen, blotchy class. Classitis is the measles of markup, obscuring meaning as it adds needless weight to every page.

The Heartbreak of Divitis

Classitis can be exacerbated by a still more serious condition, *divitis*. *Div* is short for *division*. When you group a bunch of links together, that's one division of a document. Content would be another, the legal disclaimer at the bottom of a Web page another, and so on. Divitis can look like this:

```
<div class="primarycontent"><div class=
"yellowbox"><div class="heading"><span class=
"biggertext">Welcome</span> to the Member
page!</div><div class="bodytext">Welcome
returning members.</div><div class="warning1">
If you are not a member, <a href="/gohere/"
class="warning2">go here</a>!</div></div></div>
```

Here we have no structure whatsoever—only many bytes of nonstructural, and hence nonsensical, junk markup. Visit such a Web site with a Palm or text browser, and you'll have no idea how the various elements relate to one another. The fact is, they don't relate to each other.

Prune classitis ruthlessly from your markup, and you'll see bloated Web pages shrink to half their size. Avoid divitis, and you'll find yourself writing clean, compact, primarily structural markup that works as well in a text browser as it does in your favorite desktop browser.

Loving the id

So if presentational HTML is out, and classitis and divitis are out, how do we apply separate design rules to our navigational area in a hybrid layout combining tables with CSS? Through the wizardry of id.

Think of the id attribute as a sticky note. You slap a sticky note on the fridge to remind yourself to buy milk. A sticky note on the phone reminds you to call a late-paying client. The id attribute is similar in

that it labels a particular area of your markup, reminding you that that area requires special treatment. To perform that special treatment, you will later write one or more rules in a style sheet or some lines of code in a JavaScript file that refers to that particular id.

In the case of our typical Web site, assign a unique, metastructural label to the table that contains the menu: <table id="menu">

Later, when you write your style sheet, you'll create a menu selector and an associated set of CSS rules that tell table cells, text labels, and all else exactly how to display. If you choose to use hypertext links to construct your menu, you can do so with a minimum of fuss: <td>Events</td>

"Where's the rest of it?" you might ask. There isn't any "rest of it," aside from the other table cells required. By labeling the table with an id of "menu" (or another appropriate name of your choice) and by using "menu" as a CSS selector in the style sheet you write later in the design process, you banish all this article's boogeymen.

GET AN EYEFUL

GretagMacbeth's $249 Eye-One Display (800/622-2384, www.gretagmacbeth.com) is for creative professionals who want accurate on-screen color. You use the Eye-One Match 2.0 software and color-measuring device to calibrate and profile CRT and LCD displays.

The Eye-One Display (pictured) runs on OS 9 and OS X and comes with a $200 voucher you can apply to more-advanced color-management tools, including Eye-One Photo, Eye-One Publish, and Eye-One Beamer.—TERRI STONE

CSS will control every aspect of these particular table cells' appearance, including background color (and background image, if any), border treatments (if any), white space (padding), horizontal and vertical alignment, and rollover effects. CSS table-cell rollover effects often include changes to the background color, the border color, or both. These rollover effects are well supported in most modern browsers and do no harm in browsers that don't understand them. Likewise, CSS will control the look of the link, including font, size, color, and numerous other variables.

But What about Images?

Does this combination of a unique id, compact XHTML, and a style sheet work as well for table-based menus that use images as it does for those that use hypertext links? Glad you asked! It works every bit as well. Author your table using only those elements it absolutely requires, do the same thing with your image elements, and make sure every image element includes a usable alt attribute. In fact, you can combine transparent GIF images with CSS rules that create subtle or stupendous rollover effects without JavaScript.

With Great Power Comes Great Responsibility

The elements and attributes in this article are often misused and abused, quadrupling the weight of pages instead of reducing and strengthening them, and removing all traces of structure instead of adding metastructure to the generic structural elements of XHTML. But now you can recognize these forms of abuse and know how to avoid them. □

TOOL AROUND

Stock-photography vendor Veer (877/297-7900, www.veer.com) specializes in unusual imagery. The new royalty-free collections from PhotoAlto are excellent examples. This image is from the Tool Concepts CD, which sells for $499.—TERRI STONE

For more Web wisdom from JEFFREY ZELDMAN, browse his site, www.zeldman.com, or look for him at Happy Cog (www.happycog.com) and A List Apart (www.alistapart.com).

Create is a monthly column for professional print and Web designers and audio and video pros. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Create*—e-mail us at create@macworld.com.

It's in the Bag

YOU'VE SEEN THOSE BLACK PLEATHER LAPTOP BRIEFCASES, the ones that seem to spring up like weeds at big computer stores. It's a crime to put your beautiful Mac in one of those cheaply made things. You didn't settle for the *computer* everyone else has, so why should you settle for the *bag* everyone else has?

We were on a mission to find something different. So we looked in the less-traveled corners of the Web, on Macworld Expo show floors, and even on the backs and shoulders of *Macworld* editors, and we found great bags from 13 companies. We now know from experience that there's a laptop bag to fit just about every taste, budget, and lifestyle: whether you're a hard-core geek or a fashionista, a student or a CEO, you needn't get stuck with that mundane black briefcase. Of course, the choices can be daunting; see "Find Your Perfect Bag" for tips. □

FRITH GOWAN is a freelance writer and editor. She believes that a *pretty* bag is a *good* bag.

<< Crumpler

CONTACT 734/677-6989, www.crumplerusa.com

THE SELECTION These seriously heavy-duty messenger bags, made specifically for laptops, come in bright colors and with thick padding. Most, such as the Wack-O-Phone ($120; shown), include extra pockets and a loop that holds an external pouch. A slimmer messenger bag, called McBain's Lovechild ($45 to $60), is available for smaller computers or smaller loads. All Crumpler bags come in a variety of cool color combinations, from demure gray to bright yellow.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod

WHERE TO BUY various stores and online retailers (see company's Web site for listings)

Acme Made >>

CONTACT info@acmemade.com, www.acmemade.com

THE SELECTION The Slim ($80 to $100; shown) and Designer Slim ($140 to $160) are tough but classy slipcases with elegant proportions, ballistic nylon exteriors, and slick black quilted lining that makes it easy to slide a laptop in and out. They're padded enough to work on their own and small enough to sit inside another bag. The Designer Slim comes in hip designer textiles with geometric and abstract patterns.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4

WHERE TO BUY company Web site, Apple's online store, various stores (see company Web site for listings)

Dr. Bott >>

CONTACT 877/611-2688, www.drbott.com

THE SELECTION The shiny aluminum TiCase ($399 to $549; shown), for PowerBooks, and the black ABS plastic iCase ($299 to $419), for iBooks, are perfect laptop cases for the likes of 007. The high prices are appropriate for the agent with money to burn. Beyond that, the case offers a padded interior molded to the size of your computer, a separate compartment for accessories, and a combination lock.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod

WHERE TO BUY company Web site, various stores and online retailers (see company Web site for listings)

<< WaterField

CONTACT 877/546-1040, www.sfbags.com

THE SELECTION These durable bags and sleeves come in a variety of colors and styles. The main focus of the Medium Cargo ($189; shown) is its airplane-seat-belt front buckle, and it includes many thoughtful touches, such as a brightly colored interior that makes it easy to see accessories. WaterField also offers the Cozmo ($139 to $149), a briefcase-style bag; the cool Racer-X ($129 to $139), which has a mountain-bike–handle grip; and the top-zipped VertiGo ($79).

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod

WHERE TO BUY company Web site

Casauri >>

CONTACT 877/778-4698, www.casauri.com

THE SELECTION Casauri offers three stylish, sophisticated, and fun product lines in various sizes and colors. The Octopus ($72 to $80; shown in grape) has a smooth PVC exterior and an open pocket on its side. Inside, Velcro straps secure your computer, and there are smaller inside pockets. The Odyssey ($84 to $88) has a different texture: a quilted PVC fabric. The Omni ($80; shown in red), a simple case for the 17-inch PowerBook G4, is made of refined nylon and even comes in pink.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4

WHERE TO BUY company Web site, various stores (see company Web site for listings)

continues

PHOTOGRAPHS BY RICK RIZNER

FIND YOUR PERFECT BAG

BRIEFCASE
The briefcase typically offers a professional appearance and a good amount of storage and organization. Briefcases from Kensington and Brenthaven are designed for travelers who must tote a computer and its accessories, along with documents and other carry-on essentials. Most aren't designed for easy walking or bicycling, as they put all the weight of the bag on one side of your body.

BACKPACK
Although backpacks lack the professional look of briefcases, they're hard to beat for carrying heavy loads across long distances. A good backpack will offer strong padding, lots of pockets, and a comfortable design that distributes weight evenly over your shoulders. Remember that a backpack can be awkward to access should you need to produce a document or find an item quickly.

SLEEVE OR SLIPCASE
The beauty of the sleeve is that it functions either on its own as a minimalist carrying case or in tandem with another bag. Slip a sleeve into an ordinary bag, and you've got an instant laptop bag.

MESSENGER BAG
The identifying features of this type of bag are a wide adjustable strap and a large front flap that protects the contents from the elements. (Some people find the flap awkward.) Roomy messenger bags, such as those from Crumpler and Timbuk2 Designs, might be a good choice if you pack bulky items such as gym clothes.

HYBRID BAGS
A backpack may convert into a briefcase (for example, the Shaun Jackson BackOffice) or a briefcase may come in a profile nearly as slim as a slipcase's (for example, the Incase Sleeves).

<< Incase

CONTACT 650/692-8200, www.goincase.com
THE SELECTION With clean, classic designs that are easy on the eyes and the body, Incase Sleeves ($40 to $99) have the slim look of a slipcase but give you more pockets. Two outside pockets carry small accessories or allow you to tuck away the handles. Sleeves come in soft black leather ($99) and in synthetic fabrics ($40 to $50; shown).
MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod
WHERE TO BUY company Web site, Apple's online store

Case Closed >>

CONTACT 866/366-0913, www.caseclosedbags.com
THE SELECTION Case Closed offers a wide range of laptop bags to satisfy style-conscious commuters, from the sleek and sexy Steve in red leather ($199; shown) to sassy messenger bags with bold graphics, such as the Mike Barcode ($79). Many of the cases are designed for women and proportioned accordingly. There's also a variety of fabrics and patterns—even a "ropin' cowgirl" print. The bags are made of durable, weather-resistant fabrics and foam padding, to protect your precious cargo.
MACS THAT FIT 12- and 14-inch iBook; 12- and 15-inch PowerBook G4; iPod
WHERE TO BUY company Web site, various stores (see company Web site for listings)

<< Kensington

CONTACT 650/572-2700, www.kensington.com
THE SELECTION The Sky Runner Contour ($79; shown) is designed to carry just about everything a road warrior might need. Kensington sells other, similar bags—as well as a Casual line ($68 to $90) in colors other than black.
MACS THAT FIT 12- and 14-inch iBook; 12- and 15-inch PowerBook G4
WHERE TO BUY company Web site, Apple's online store, various stores and online retailers (see company Web site for listings)

Willow Design >>

CONTACT 800/668-1109, www.willow-design.com
THE SELECTION These bags are designed for many years of rough use. For the 15-inch PowerBook G4 alone, Willow offers seven different styles, including the protective Sylph Slipcase ($66) and the Jacques Ti-Book Backpack ($162; shown), a convertible backpack. The iBook 12 Sylph Slipcase ($90; shown) is a compact but rugged case, and there's a new line of bags designed for women ($140 to $145). The bags are thoughtfully designed and not at all flashy.
MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4
WHERE TO BUY company Web site or by phone, fax, or mail

Timbuk2 Designs >>

CONTACT 888/846-2852, www.timbuk2.com

THE SELECTION These messenger-style bags are designed for durability, coolness, and easy travel. The Commute ($100; shown) has a built-in sleeve and lots of handy compartments. The company also sells the Detour ($100), a roomy convertible backpack.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod

WHERE TO BUY company Web site, Apple's online store, various stores (see company Web site for listings)

<< Brenthaven

CONTACT 888/212-5301, www.brenthaven.com

THE SELECTION These seriously professional briefcases ($79 to $149) are available in black ballistic nylon. Sportier, more-colorful backpacks, such as the Mobility Backpack ($99; shown), have a useful iPod pocket and headphone-cord canal. (These bags are made specifically for PowerBooks and iBooks.) Some Brenthaven bags come with removable, heavy-duty sleeves.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4

WHERE TO BUY Apple's online store

Shaun Jackson Design >>

CONTACT 888/662-4300, www.sjdesign.com

THE SELECTION A clever bag that screams geek cred, the Higher Ground Laptrap ($60 to $80; shown) is for use in another bag or on its own. This surprisingly slim bag unfolds so you can use your Mac without taking it out of the case, and two pouches hang over the outside of your legs to keep your accessories within easy reach. The company also offers the BackOffice ($150 or $160), a convertible backpack, and the Higher Ground DataKeeper ($60).

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4

WHERE TO BUY company Web site

<< Tom Bihn

CONTACT 800/729-9607, www.tombihn.com

THE SELECTION Tom Bihn offers many utilitarian—and attractive—bags in styles ranging from the soft Mitre ($30), designed to fit inside other bags, to the full-featured Courier Laptop ($150). Some of the bags, such as the Smart Alec backpack ($95; shown) and ID messenger bag ($85), don't seem particularly computer friendly on their own, but with the addition of the company's foam-padded Monolith ($40) or Brain Cell ($50) sleeves, any of the larger bags should offer sufficient protection.

MACS THAT FIT 12- and 14-inch iBook; 12-, 15-, and 17-inch PowerBook G4; iPod

WHERE TO BUY company Web site, via phone or fax, or at Tom Bihn stores in Seattle and Port Angeles, Washington

Mobile Mac is the place for tips on making the most of your PowerBook, your iBook, or their sidekicks. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Mobile Mac*—e-mail us, at mobilemac@macworld.com.

X11 Marks the Spot

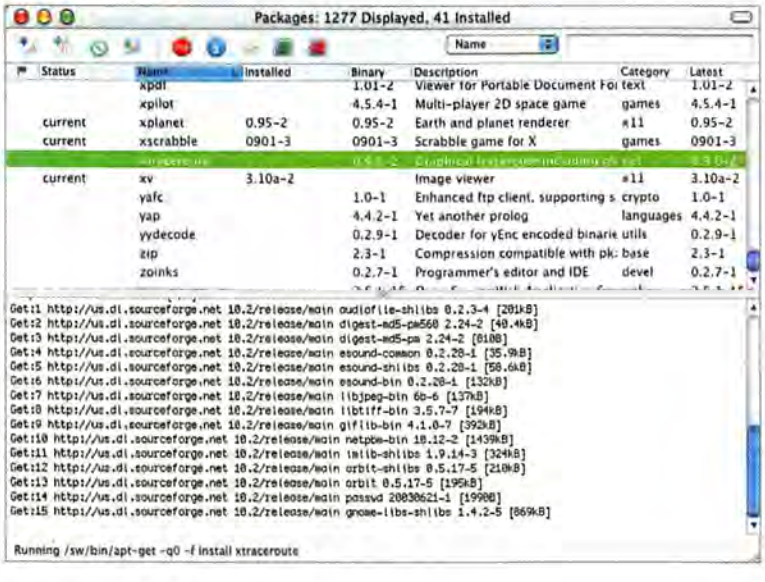
IF THE IDEA OF RUNNING UNIX APPLICATIONS ON YOUR Mac excites you but using Terminal drives you crazy, you may be wishing for some sort of middle ground between OS X's polished Aqua interface and its raw command line. Your wish has already been granted, in the form of X11, a longtime Unix system for running applications that have graphical interfaces you control with your mouse. With X11, you can run a host of powerful, useful, fun, and free applications.

Apple has integrated X11 into Mac OS X 10.3 (Panther), but even if you're not using Panther, you can get a jump-start by installing the public beta version of X11 from Apple and then using another program, FinkCommander, to find, install, and use cool X11 applications.

A Bit of Xposition

Before installation begins, here's a little background: The terms *X11*, *X Window System*, and just plain *X* are interchangeable and refer to a collection of software modules and libraries that replicate the interface experience of Mac OS or Windows for the Unix crowd.

Variants of X11 have been developed to run on virtually every computer platform, and serious X11 fans have been running one of them, the open-source XFree86 (originally built for Intel-based PCs), on Macs since the earliest days of OS X. Last year Apple released its own version of XFree86 with a few enhancements, including default support for OS X Quartz technology, which produces familiar transparent windows, buttons, scroll bars, and so on.



Aye, Commander
FinkCommander lets you download, compile, and install Unix apps with ease—all from a nice Aqua interface.

Getting Started

Before you install X11, remember that it's beta software, so the usual caveats apply: back up your system before installation, and test all X11 applications thoroughly to make sure they're stable before using them for critical work. Having said that, X11 beta 3 proved very stable in our testing. And because X11 runs on a peer level with the Aqua interface—both run on top of your Mac's Unix core—neither it nor the applications that run under it are likely to interfere with your Aqua or Classic applications or settings.

Before you download X11, you'll need an up-to-date version of the December 2002 release of Apple's Developer Tools for OS X. If you didn't get it with your copy of Jaguar, go to https://connect.apple.com, fill out a registration form, click first on Download Software and then on Developer Tools, and download the latest version of the package and any updaters. The Developer Tools installer, which requires an administrator-level password, will create a new /Developer folder. Resist the temptation to move the folder to /Applications or anywhere else.

Now it's finally time to grab X11. Head to www.apple.com/macosx/x11/download/, click on the Download X11 button, and then go back and click on the Download SDK link in the lower right corner of the page. Run the X11 installer and then the SDK installer. When it's all done, click on the X11 icon in your Applications folder and fire up X11. You'll know you've succeeded when your cursor briefly turns into a cool *X* and a window, titled xterm, that looks suspiciously like Terminal opens on your screen.

Welcome to X11

Before you get started with X11, it's a good idea to make it a bit more Mac-like.

Choose X11: Preferences and select Emulate Three Button Mouse. Once you do this, a single-button Mac mouse will act like a three-button Unix mouse: option-click will emulate a right-click (which appears in X11-application shortcut lists as Ctrl-Click or C-Click) and ⌘-click will emulate the middle button (M-Click or Meta-Click in shortcut lists).

In standard Linux applications, switching between open windows requires clicking on each new window *twice*. The first click "focuses" the window, or makes it active; the second interacts with the contents of

the window, moving a cursor or activating a button. A hidden option in Apple's X11 application eliminates this excruciating click-to-focus behavior. To turn the option on, quit X11, open Terminal, and type defaults write com.apple.x11 wm_ffm true. When you restart X11, all windows will respond on the first click.

Think Fink

The powerful FinkCommander utility works with the Unix command fink to let you browse a continually updated directory of Unix applications and download, install, or update any program you choose.

As with X11, you'll need to install a couple of components to get FinkCommander up and running. First, download and run the Fink binary (http://fink.sourceforge.net/download). As you're installing Fink, you'll be prompted to create a file named .cshrc in your Home directory—agree by typing Y and pressing return. If you don't do this (or if you aren't prompted to for some reason), you can do it yourself by entering the following Terminal command: echo -n "source /sw/bin/init.csh" > ~/.cshrc.

Once all that ugliness is out of the way, just download FinkCommander from http://finkcommander.sourceforge.net and then install it in your Applications folder.

From FinkCommander, you can browse for cool programs to try. Note that not all the programs you see in FinkCommander are compatible with X11, and that X11-compatible programs aren't confined to FinkCommander's X11 category. Highlight a program's name and press ⌘-I for an expanded description; in the likely event you want even more information, follow the link to the developer's Web site—just remember to return to FinkCommander when you want to download and install the program, rather than using links on the developer's site.

When you're ready to install the software, click on the leftmost toolbar item (or choose Binary: Install) to begin the process.

Once you've installed an application with FinkCommander, you can add it to X11's Applications menu by choosing Applications: Customize. Click on Add Item, double-click in the Name field, and enter your program's name. In the corresponding Command field, enter your program's path, which for programs installed via FinkCommander will always be /sw/bin/*filename*.

To determine the right file name to use, you may need to look in the bin folder inside the sw folder that Fink has created at the root level of your hard drive. The proper file will probably contain the name of the application, but installations sometimes create multiple similarly named files, so you may need to try a few of them before you get the right path.

Time to Explore

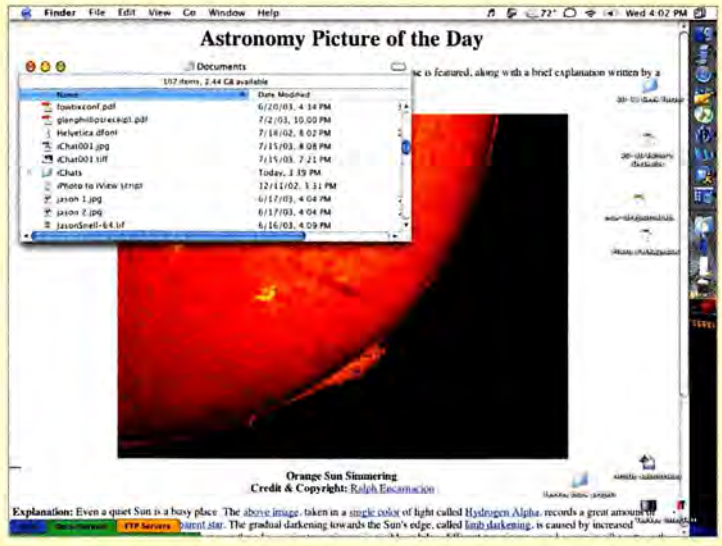
Once you've got FinkCommander up and running, you're best off browsing and exploring the Unix wonders it has to offer. You may get frustrated at times, but you'll also find a wealth of software—much of which has been in development for many years—that you can finally run on your Mac. □

More Info:

Apple's X11 Help menu links to an all-but-useless Web page, so try these sites for more information:
Apple's X11-Users Mailing List Archives
www.lists.apple.com/mailman/listinfo/x11-users
Mac OS X Hints: Unix
www.macosxhints.com/index.php?topic=unix
OSXFAQ Unix Tips
www.osxfaq.com/tips/unix-tricks/

DESK JOB

I never really understood why Windows' ability to display Web pages on the desktop was worthy of envy by Mac users. But Steven Frank, the cofounder of Mac software maker Panic (www.panic.com), has managed to create a clever hack that does almost the same thing. WebDesktop (http://stevenf.com/index.php?node=WebDesktop) uses Apple's WebKit HTML rendering engine—the same one used by Safari—to display a Web page on your desktop. Click in the Dock to activate WebDesktop, and you can even load hyperlinked pages in the same transparent floating window. Does it work? You betcha. Do I really get why I need it? Well, no, but when it's a cool hack, necessity isn't always necessary.—JASON SNELL



JIM AKIN is a Minneapolis-based technology writer and a former *MacUser* senior editor. He has learned to stop worrying and love Terminal.

Geek Factor is a monthly guide to pushing your Mac to its limits—for fun, for increased productivity, or for both. We want to hear from you! If you've got secrets to share or suggestions for column topics—or if you just want to tell us what you think of *Geek Factor*—e-mail us at geekfactor@macworld.com.

Mac OS X Hints

TAKE A LOOK AT SOME WAYS TO SEE MORE IN FINDER windows, tweak your iChat messages so they contain multiple lines, print pages to PDF, assign multiple genres to iTunes tracks, know how much is in your Trash, take advantage of Unix's redirection command, train Mail only once, and more.

Enhance Your Column View

If you'd like to see more data in Finder windows, open a window in Column view and then type ⌘-J, or select View: Show View Options. At the top of the window, select the Windows option, and pick an 11- or 10-point size instead of the default 12-point. Unlike List and Icon views, Column view reduces the size of icons when you choose a smaller font. A simple one-point reduction in font size lets you see many more items at once, with almost no loss in readability—ideal for monitors with lower resolutions.

Create an iChat Message That Spans Multiple Lines

If you ever want to send a multiline message to someone in iChat AV, just hold down the option key before you press return. You can now type multiple unique lines, pressing option and return simultaneously each time. The message won't be sent until you press just the return key.

View Album Art for the Current iTunes Track

For some reason, the default iTunes setting for displaying album covers is to show the artwork for the selected song, not the currently playing song. But you can eliminate this frustration. If you just click on the Selected Song title bar at the top of the cover-artwork box, it will change to read Now Playing. Now, iTunes will display the artwork associated with the current song for good—unless you click on the Now Playing title bar to change it (see "Play Time").

Play Time By default, iTunes shows cover art for your selected song (left). Click on the Selected Song title bar, though, and you'll get the much more relevant Now Playing artwork window.

Print Pages to PDF

One of OS X's oft-overlooked features is its ability to turn any on-screen element into a PDF file, through the Print dialog box. Select File: Print from any application, and click on the Save As PDF button to create the file. This maneuver is perfect for sending a FileMaker Pro report to a colleague, saving online Web-store receipts, or creating a document that you can send to people on multiple platforms with the knowledge that they'll all be able to open, view, and print it. This feature is even great for browsing Web sites—when you find a tidbit of knowledge you'd like to retain, just save it as a PDF file on your hard drive, and it will be instantly available when you need it.

Prevent Safari from Autocompleting

Safari, like many other browsers, tries to help by autocompleting URLs as you type them, basing its

UNIX TIP OF THE MONTH

When you're in OS X's command line, you may find the Unix redirection feature useful. Redirection is nothing more than taking the output of a program and sending it to somewhere other than its default location. For instance, if you'd like to save a full directory listing (created with `ls -al`) into a text file, you have two choices. The typical Mac solution is to select the on-screen output, copy it, switch to a word processor, paste the contents, and save the file. The Unix redirection solution is much simpler. Just type `ls -al > dirlist.txt`, where *dirlist.txt* is any file name you want to use. The > symbol redirects the output of `ls` from its usual destination (the screen) to the specified file. This will create a new file or overwrite an existing file with the same name. If you have an existing file to which you'd like to add more data, replace the > with >>.

In addition to directory-list files, you can use redirection to create a list of all the MP3s in a certain directory (`find ~/Music/ -iname "*.mp3" -print > mytunes.txt`) or a running log of your machine's uptime and CPU load (`uptime >> myuptime.txt`), or to capture the output of any other Unix command.

choices on your prior viewing habits. While this is useful most of the time, it's frustrating when you want to load a site's home page and Safari takes you to the subpage you last viewed. If you'd like to limit these autocompletions, start by choosing History: Clear History, and then quitting Safari. In your user folder, go to Library: Safari and locate the history.plist file. Select the file, choose File: Get Info, and then click on the Locked option. Now close the window.

When you relaunch Safari, autocompletion will still work as expected on bookmarks, and it will also work for URLs you visit in the current session. But the next time you quit and restart Safari, the autocompletion data will vanish—it can't be written to the locked .plist file. To return to normal autocompletion, deselect the Locked option in the history.plist file's Get Info dialog box.

Display All Your Preference Panels

In System Preferences, certain preference panels, such as Bluetooth and Ink, display only when the applicable hardware is available. To access these panels at any time, just drag them into the System Preferences toolbar (see "Choose Your Own Prefs"). Once they are on the toolbar, you click on their respective icons to load the panels, even if you don't have the proper hardware attached.

Choose Your Own Prefs You can have access to the Bluetooth and Ink icons in the toolbar even though they aren't listed in the Hardware section, as they would be if the devices were attached.

SHARE MAIL'S JUNK RULES

Apple's Mail application has a great junk-mail filter. To get the most out of it, though, you'll have to spend a few months training it to distinguish your good e-mail from your junk e-mail. If you have multiple machines, or multiple users on the same Mac, you don't have to let all that work go to waste. In your user folder, open the Library: Mail folder and copy LSMMAP to the same location in the other users' folders (or onto another machine entirely). Now when you run Mail as the other user, you'll have the benefit of all those months of training.

Zip Through iTunes Songs via the Keyboard

Want to use your keyboard to fast-forward or rewind a song in iTunes? With iTunes as the active application, press and hold down both the ⌘ key and the option key; then press and hold the left- or right-arrow keys to rewind or fast-forward, respectively. This little trick saves you time and mouse movements.

Pick Multiple Genres for iTunes Songs

iTunes 4 lets you place a song into any genre for easy sorting and searching. But did you know that you can assign multiple genres to a single song? Highlight a song in your iTunes library, and then select File: Get Info. In the dialog box that appears, click on the Info tab and type your genres, separated by commas (Rock, Pop, for example), in the Genre box, and then click on OK. A future search or Smart Playlist for a particular genre will now show all songs with that genre in the Genre box. (Note that this will not work when using iTunes to browse by genre.)

How Big Is the Trash?

One OS 9 feature missing from OS X is the ability to easily see how many files are in the Trash, as well as the total amount of disk space they use. But this information is useful when you want to perform a quick safety check. If your Trash contains 38.6GB of data, you probably want to verify that you didn't accidentally drag your iTunes Library into the Trash.

An easy way to get this information in OS X is to open the Trash by clicking on its Dock icon, type ⌘-A to select everything in it, and then type ⌘-I to open the Get Info window. The Get Info window will reveal the number, type, and size of the items in your Trash (see "Garbage Bag"). If the file count and size match what you expect, then go ahead and empty the Trash. If they don't, maybe you should dig in the Trash for some buried treasure. □

Garbage Bag In OS X, you can reveal the number and size of items in your Trash by opening the Trash, selecting all, and getting information on the files.

ROB GRIFFITHS is the author of *Mac OS X Hints, Jaguar Edition* (O'Reilly, 2003) and runs the Mac OS X Hints Web site (www.macosxhints.com).

Mac OS X Hints offers tips and tricks for using hidden features in OS X. We want to hear from you! If you've got suggestions for column topics or want to tell us what you think of *Mac OS X Hints,* e-mail us at macosxhints@macworld.com. For more hints, go to www.macosxhints.com.

Mac 911

DO YOU RUE THE RANGE OF YOUR GRAPHITE BASE STATION, seek softer cell-phone ring tones, find PC viruses vexing, or loathe the limitations of your iTunes music library? There's no need to feel hemmed in by transitory travails when help is at hand. This month's *Mac 911* gives you a beneficial boost over each of these barriers.

A More Expansive AirPort

I got everything ready to attach an antenna to my AirPort Base Station as described in "The Do-It-Yourself Mac" (August 2003). When I removed the Base Station's cover, the interior was not as shown in the article. How can I add an antenna to my Base Station?

Jo Hauser, *Ottawa, Ontario, Canada*

Those instructions are for the second-generation (snow) AirPort Base Station. The original (graphite) AirPort Base Station is a different beast, as you discovered when you pulled yours apart. But don't be discouraged—you can extend the range of these Base Stations, too.

The procedure is a bit more complicated with these older models, but it's well within the abilities of people who are even modestly handy with a screwdriver. I don't have the space to provide step-by-step instructions on how to perform this operation, but Constantin von Wentzel gives directions for upgrading all three Base Station models (graphite, snow, and Extreme) at www.vonwentzel.net/abs/extendedgraphite/index.html.

A Mite Less MIDI

I just bought a cell phone that uses MIDI files for its ring tones. I know I can move MIDI files to the phone to create new ring tones, but many of the files I've found are really loud when played through the phone's speaker. Is there an inexpensive application that can lower the volume?

Navarro Parker, *San Diego, California*

Although I couldn't find an OS X–native MIDI editor that would do the job for less than $70, I discovered that Masao Maeda's $20 multitrack MIDI sequencer, MIDIGraphy (http://member.nifty.ne.jp/mmaeda/e/macos.html), worked perfectly well in the Classic environment.

The trick to making these MIDI files quieter (or louder) is to adjust the tune's *velocity data*. The what? MIDI devices track how hard you hit a key on your MIDI controller. The harder you hit, the higher the velocity number, and the louder your sound. To change that velocity, just select the Pencil tool from the first pop-up menu at the bottom left corner of the MIDIGraphy window, and then select the Scale command from the second pop-up menu. Locate the Velocity track, and draw a straight line across its entire length. A line higher than the track's current velocity makes the track louder. A line lower than the current velocity decreases the volume.

Choose Export from the File menu, and select the SMF Format 0 option. Name the file so that it ends with the *.mid* extension, copy it to your phone via Bluetooth or a data cable, select that song as your ring tone, and rock out—at a reasonable volume—the next time you get a call.

What's Mine Is Mine

I have a large CD library and have ripped it to MP3 format in iTunes. My wife has a similarly expansive CD library that I want to rip, but I don't want to save them in my iTunes library. Is there a way in iTunes to make a separate library, not just another playlist for her songs?

Jon Medley, *Tokyo, Japan*

UNSOLICITED ADVICE

Speaking of iTunes libraries, you're likely aware that Apple's Rendezvous technology allows you to share your iTunes tunes with other Macs on the same network. But how do you access the iTunes library of another user—your housemate, for example—who also maintains an account on your Mac? Through the clever manipulation of permissions. Here's how:

Log on as an administrator, open the other person's user folder, and click once on his or her Music folder. Press ⌘-I to produce the Music Info window. Click on the triangle next to the Ownership & Permissions entry and click on the Lock icon. From the Owner pop-up menu, select your current identity—chris (Me), for example. In the Group area of the window, select Staff (Me) from the first pop-up menu, and change the Access pop-up menu to Read Only. Change the entry in the Owner pop-up menu back to its original owner, and then close the Music Info window.

Launch iTunes 4 and select Preferences from the iTunes menu. Click on the Advanced button and deselect the Copy Files To iTunes Music Folder When Adding To Library option; then click on OK. Select Add To Library from iTunes' File menu, navigate to the other user's folder (Music: iTunes: iTunes Music) in the Add To Library window, and click on Choose. This will add the songs from the other user's library to your iTunes library without creating additional copies of the songs in your iTunes Music folder.

TIP OF THE MONTH

Sometimes when I send complex PDF files to my LaserWriter Pro 630, it either sits there processing endlessly or crashes. Earlier today, I was trying to print a PDF spec sheet from a Web site I visited and realized 30 minutes later that the printer was still trying to process the page.

In an attempt to speed things up, I switched on my Epson ink-jet, launched Print Center, and opened both printers' windows from the Printer List. I put the LaserWriter job on hold, dragged it from the Status window, and dropped it on the Epson's open Status window. The job moved successfully from one printer to the other and immediately started printing on the Epson. A trick like this should work in a group office where your one-page e-mail is stuck in a queue behind someone printing out the equivalent of *War and Peace*.

Ric Getter, *Portland, Oregon*

Yes, with the help of Doug Adams's $5 iTunes Library Manager (www.malcolmadams.com/itunes/itinfo/ituneslibrarymanager.shtml). This AppleScript applet allows you to create multiple iTunes libraries.

Just copy iTunes Library Manager in the Scripts folder found your user folder's Library: iTunes: Scripts folder, and launch iTunes 4; you can create a Scripts folder if one doesn't exist. Select iTunes Library Manager from the AppleScript menu. In the resulting window, click on Save to save a copy of your library and then name that library (Bubba's Tunes, for instance). Now create a new library by selecting iTunes Library Manager once again, clicking on Save, and saving your library under a different name (Libby's Library, for example)—when you do, the songs in the current library remain. Delete any songs and playlists you don't want to appear in your wife's library. iTunes will ask if you'd like to throw these files into the Trash. Do *not* allow this. You want to remove the title entries in iTunes, not the songs themselves.

Now start ripping CDs into your wife's library. When you're done and want to return to your library, choose iTunes Library Manager yet again, click on the Load button, and select your original library. iTunes will quit and relaunch, revealing all the tunes in your library but not those in your wife's library. Follow the same procedure to switch to her library.

Secondary Infection

I've been slammed with returned messages generated by PCs reacting to a Windows virus. Is there anything I can do to protect myself?

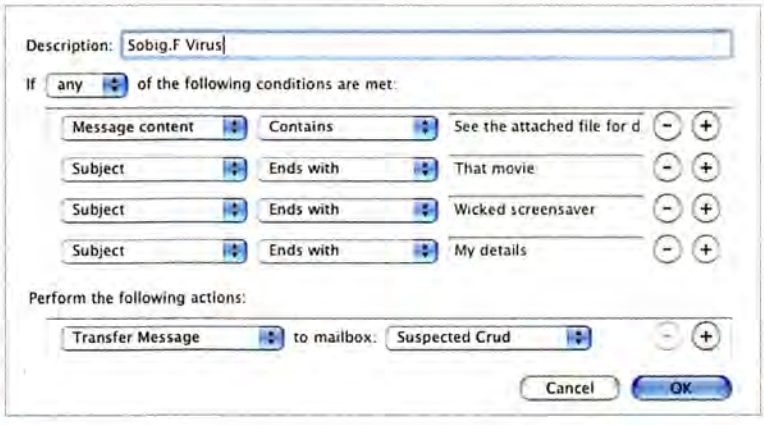
Duane Harris, *Camden, Ohio*

Although Macs aren't directly affected (or infected) by Windows-specific computer cooties such as the Sobig.F worm, they nonetheless suffer two kinds of collateral damage.

The first is a flood of spam messages from infected PCs. The second is the deluge of bounced messages you receive because the worm pulls an address at random from an infected PC's address book and places it in the message's From field (this technique is called spoofing). That address may be yours, and you suffer the consequences when a message bounces back because the recipient doesn't exist or an ISP "helpfully" alerts you to the presence of a virus.

Antivirus utilities can't help because your Mac isn't infected. What will help is your e-mail client's filtering capabilities. You can filter a worm such as Sobig.F in a couple of ways. You can ask your e-mail client to move any messages whose subject heading ends with a particular phrase—"That movie," "Wicked screensaver," or "My details," for example—to a Suspected Crud folder you've created. Choosing the end-with option is also useful for filtering out messages that an ISP has bounced back—"Re: That movie," for instance. If the infected message carries a particular line of text—Sobig.F messages included "See the attached file for details"—add a condition to the filter that moves any messages containing that text into your Suspected Crud folder (see "Rerouting Rubbish").

To filter spoofed messages, create another filter that looks for messages whose subject headings include the phrase "Returned mail" or messages sent by MAILER-DAEMON (the address of an automated system that many ISPs use). Note that such messages are sometimes legitimate—notifying you that a message you've sent can't be delivered—so unless you're experiencing an onslaught of bounces, scan these messages before deleting them. □



Rerouting Rubbish
An e-mail filter such as this can unclutter your in-box.

Contributing Editor CHRISTOPHER BREEN appears each Tuesday on TechTV's *Call for Help* program. He is the author of *Secrets of the iPod*, third edition (Peachpit Press, 2003).

Visit the Mac 911 forum (www.macworld.com/subject/mac911), or send tips by e-mail to mac911@macworld.com. We pay $50 for tips selected for publication in *Macworld*. All published submissions become the sole property of *Macworld*. Shareware and freeware mentioned in *Mac 911* are available at www.versiontracker.com.

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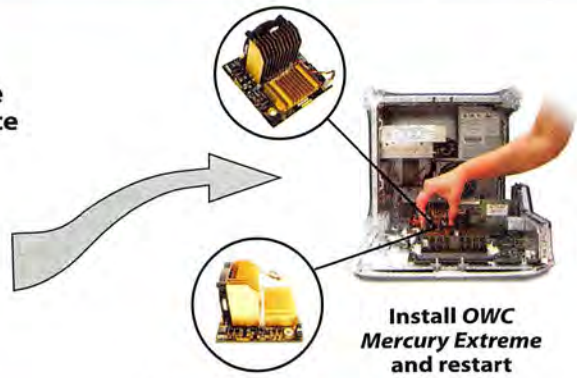

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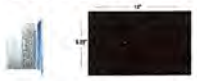

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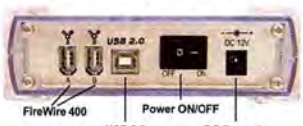

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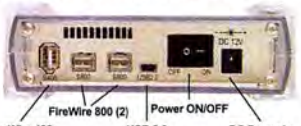

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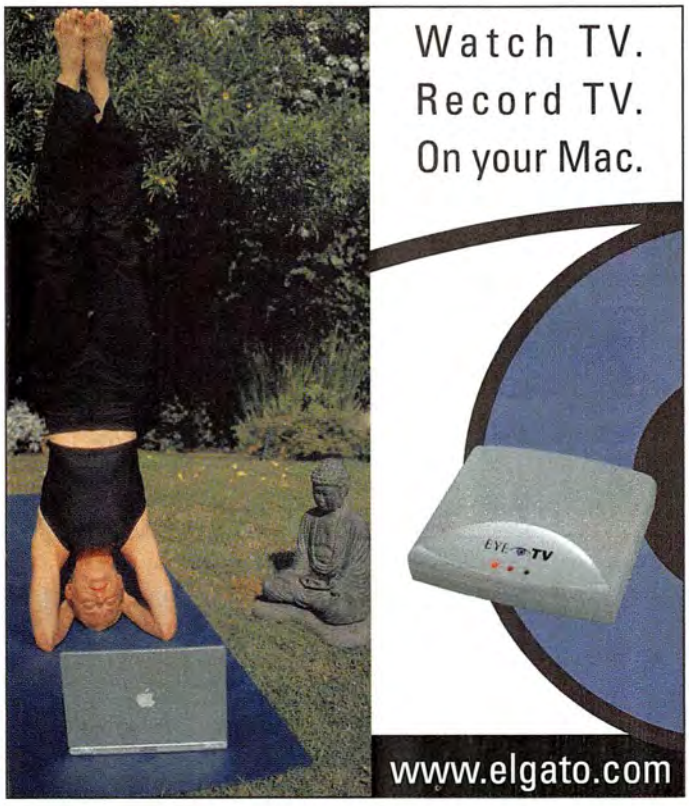

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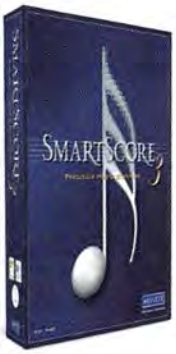

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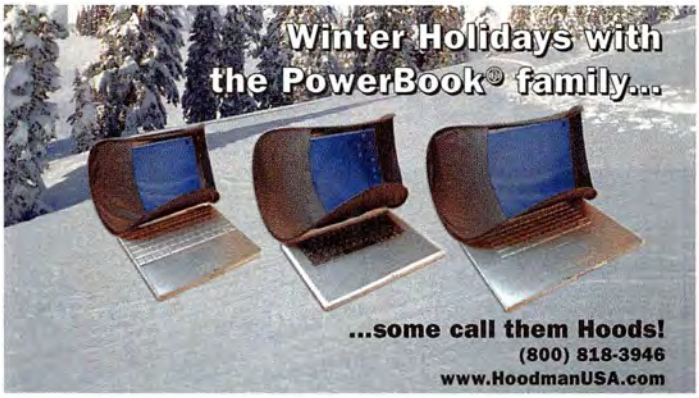

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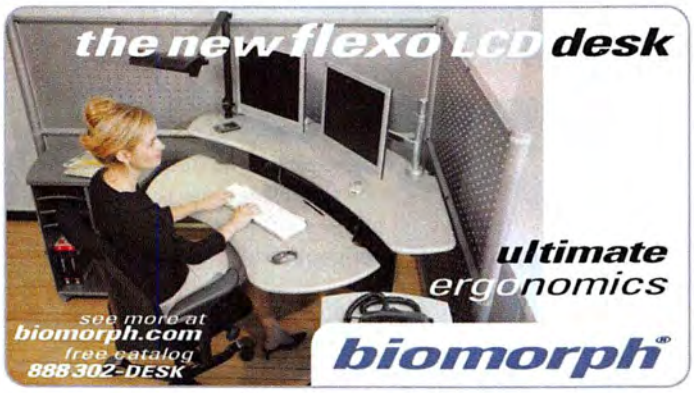

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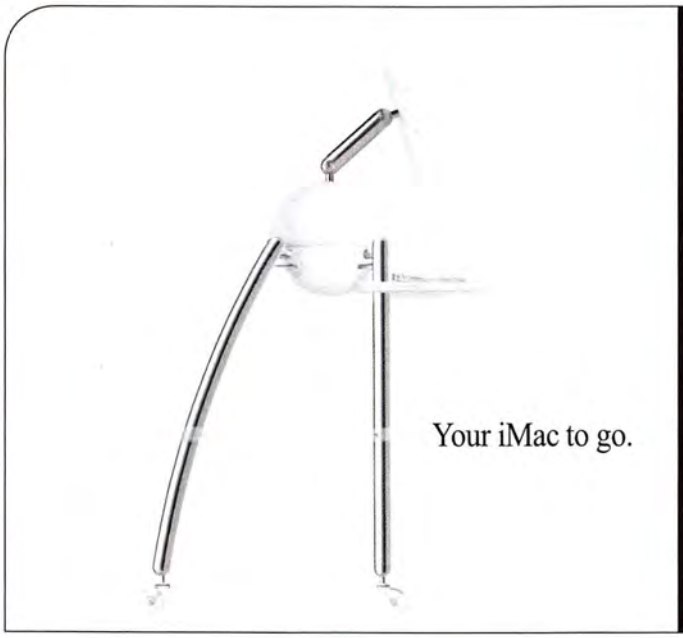

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The Month's Coolest Developments

FROM THE EDITORS OF MACWORLD

WEDDING CD AND SONY CLIÉ PHOTOS BY RICK RIZNER

Epson Stylus Photo 900

Music mixes, iMovies, backups—we're printing tons of great-looking CDs and DVDs, using the Stylus Photo 900 (★★★★; August 2003).

Alphabet Soup

Oz Music Code's new gem turns your Mac into a musical instrument by mapping audio loops and samples to your keyboard. The live-performance tool supports a wide variety of audio file formats, too (www.ozmusiccode.com).

iView MediaPro 2

iView Multimedia kicked up the speed of its digital-asset manager in a huge way for version 2. Other additions we really like are the image-editing tools, integrated PDF export, and the Fast Find feature (www.iview-multimedia.com).

Illustrator's 3-D features

We've seen Adobe Illustrator CS's ability to wrap artwork around a 3-D shape, and boy, are we impressed (www.adobe.com).

Canon EOS Digital Rebel

Photography hobbyists who want full manual controls will be thrilled with this digital SLR camera that costs—get this—less than $1,000 (http://usa.canon.com).

Apple CEO Steve Jobs has moved up 44 places to be ranked 78th on the Forbes 400 list of the United States' wealthiest citizens. His net worth is now $2.3 billion.

Best 20-Inch LCDs

NEC MultiSync LCD2080UX
★★★★½; August 2003; $1,699

Formac Gallery 2010 Oxygen
★★★★; August 2003; $1,099

Apple Cinema Display
★★★★½; August 2003; $1,299

Sharp LL-T2020B
★★★★; August 2003; $1,799

Sony SDM-X202
★★★½; August 2003; $1,499

Best Games

Tiger Woods PGA Tour 2003 (Aspyr Media)
★★★★½; October 2003; $50 (sports game)

Enigmo (Pangea Software)
★★★★½; October 2003; $25 (puzzle)

Unreal Tournament 2003 (MacSoft)
★★★★½; September 2003; $50 (first-person shooter)

Tom Clancy's Ghost Recon (Aspyr Media)
★★★★½; March 2003; $50 (action-strategy game)

Jedi Knight II: Jedi Outcast (Aspyr Media)
★★★★½; February 2003; $50 (3-D–action game)

Sony's Clié PEG-UX50 gives us hope that Microsoft's PocketPC might not crush Palm after all. This $700 handheld has a usable miniature keyboard and a pivoting color screen, as well as built-in Bluetooth and AirPort, making it a perfect mini-laptop. Its Mac support is weak, even with Mark/Space's $30 Missing Sync for Clié (www.markspace.com). But this device is undeniably cool (877/865-7669, www.sonystyle.com).

"I lo-o-ove my Apple G4 laptop. I always travel with an extra-extra-long power cord and a 40-foot Ethernet cable. I'm really elitist about it."

—Comedian Margaret Cho, in *The Out Traveler* (premiere issue 2003)

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