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APPLE'S VISIONARY NEW iCHAT AV AND iSIGHT SHOW YOU WHAT YOU'VE BEEN MISSING, P. 18

Macworld

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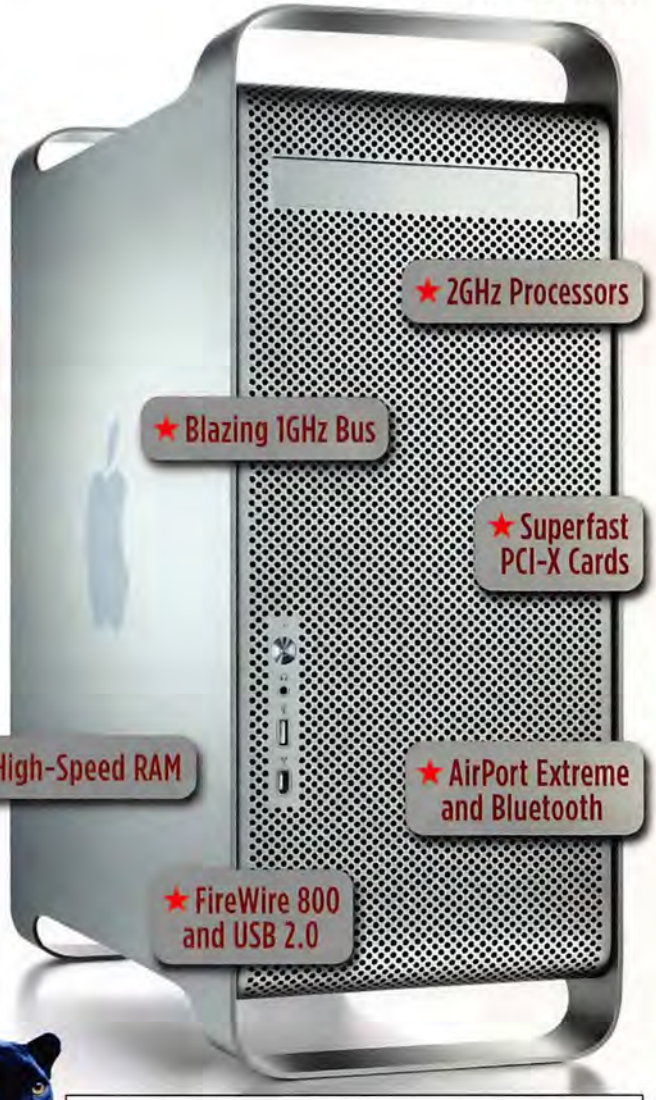
The Mac Product Experts

FIRST LOOK

G5



YOUR NEXT POWER MAC

Apple and IBM Give Mac Users the First Desktop 64-Bit Processor

EXCLUSIVE SNEAK PEEK

Take an Insider's Tour with the People Who Built the G5

THE RACE IS ON

3GHz or Bust: Apple Is Playing to Win the Gigahertz Game

PLUS **PANTHER UNLEASHED** OS X 10.3 IS READY TO POUNCE, P. 68

REVIEWED QUARKXPRESS 6.0 | AIRPORT ANTENNAS

The dawn of a new PC era

For the last decade, every processor chip in every personal computer in the world has been based on 32-bit architecture. It was the best technology we had. Until today. Introducing the revolutionary PowerPC G5 processor, the world's first 64-bit processor for personal computers.

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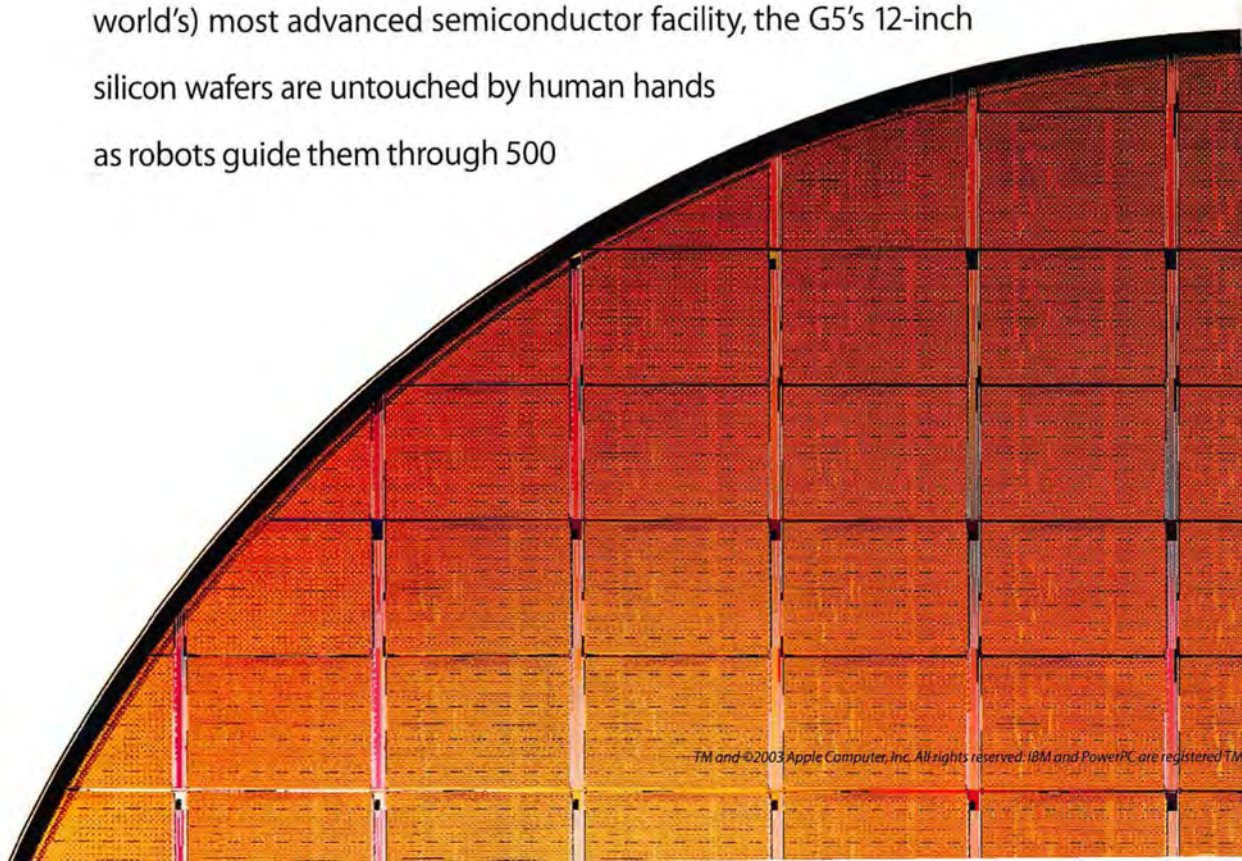

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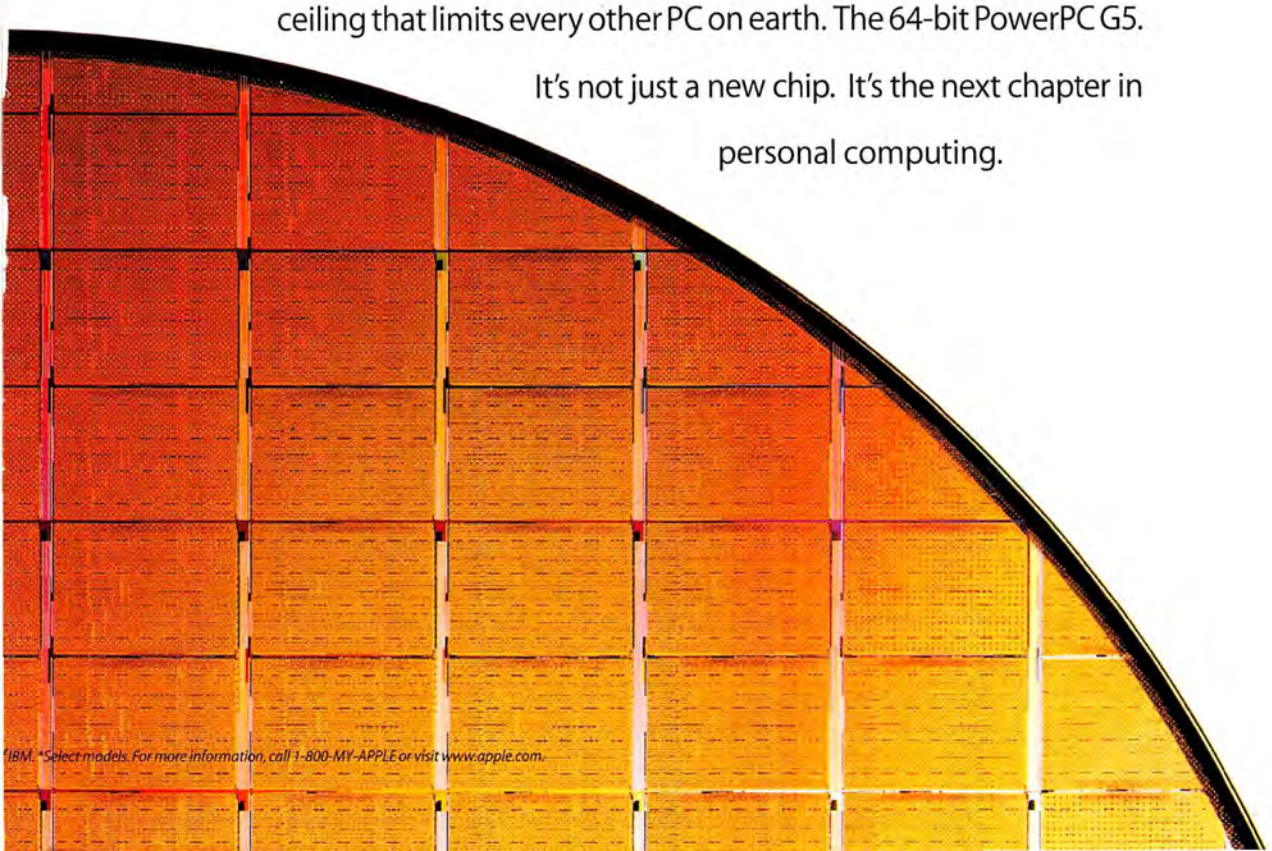
The 64-bit processor.

processing steps, creating 58 million transistors and connecting them with over 1000' of copper wire that's less than 1/800th the width of a human hair.

The new PowerPC G5 has a 1-gigahertz frontside bus* that moves data in and out of the processor almost twice as fast as the competition, removing a key bottleneck that limits performance. And it can support more than 200 in-flight instructions at a time –71% more than the 32-bit Pentium 4. Perhaps most importantly, the G5's 64-bit architecture can address dramatically more memory – over 4 billion times more than 32-bit chips – so that systems built around the G5 can shatter the 4-gigabyte memory ceiling that limits every other PC on earth. The 64-bit PowerPC G5. It's not just a new chip. It's the next chapter in personal computing.

The world's first 64-bit desktop processor can only be found in one place: Inside the new Power Mac G5, the world's fastest personal computer.*



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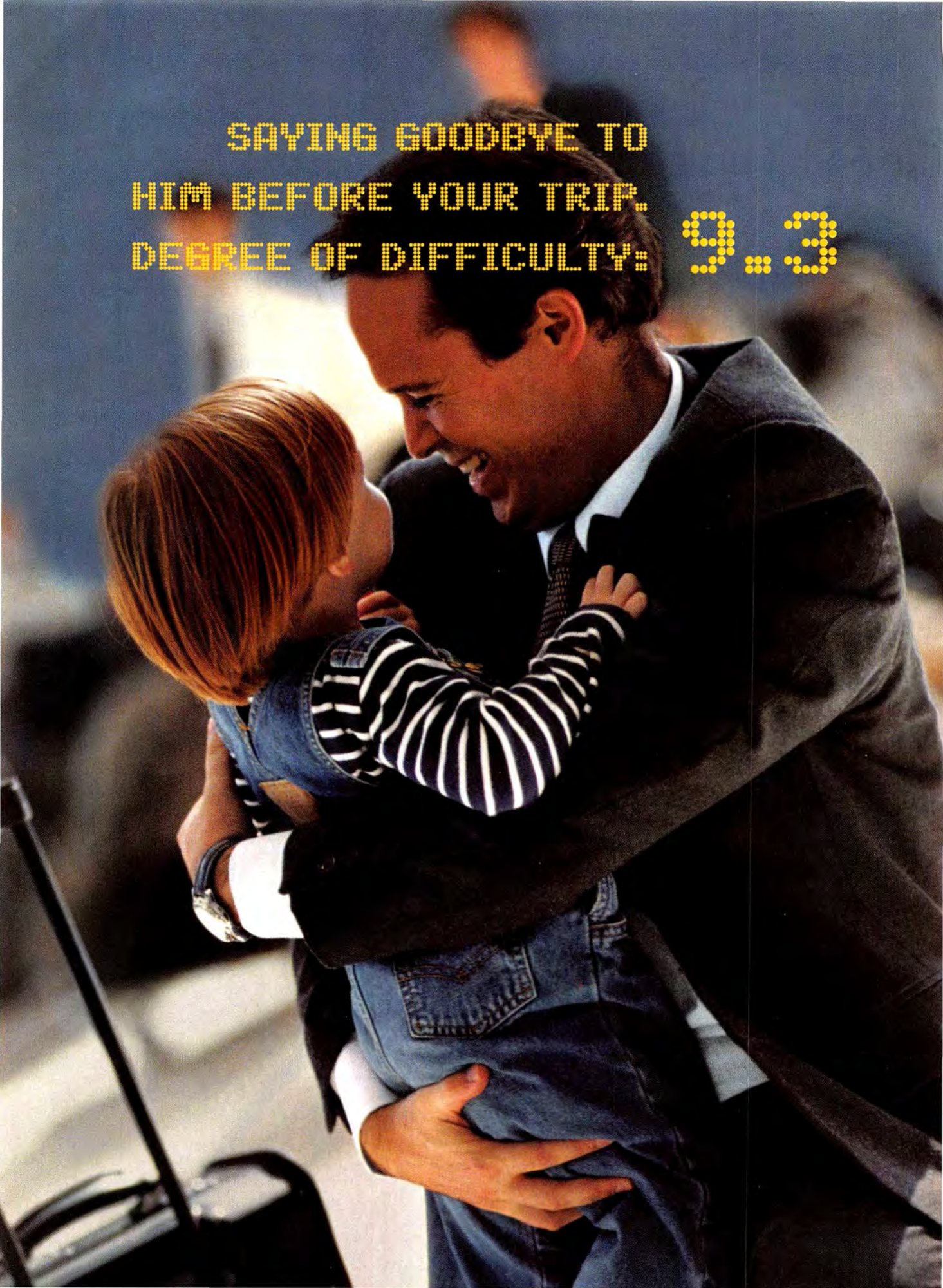
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Incorporating MacUser

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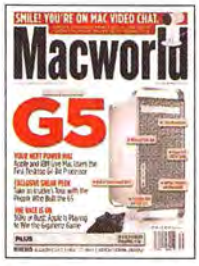

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Photograph courtesy of Apple Computer, digital retouching by Stephen Sugg

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Powerful Developments

WHENEVER STEVE JOBS TAKES THE STAGE, EXPECTATIONS run high. Apple's rock-star CEO commands the attention of not only the Mac faithful but also the world's technology and business press. And with few exceptions, Jobs has delivered the goods with his public presentations. But at Apple's annual Worldwide Developers Conference (WWDC) this June, he delivered on a scale the likes of which we haven't seen for years.

Before the WWDC, everyone was buzzing about the details of Panther, the next edition of Mac OS X. And indeed, Apple delivered a preview of Panther (which is due by the end of the year). The Finder's new brushed-metal, iTunes-style interface will take a little getting used to, but I think it will go a long way toward making the Mac easier for novices to use.

Will the Finder's new look—as well as Panther's loads of additions and enhancements—convince people to spend $129 to upgrade? Until we know the full scope of what's new in OS X 10.3, that's hard to say. You can start making your own judgments about Panther after taking in our first look at the new operating system (page 68). And of course, as Panther's arrival approaches (and after it's unleashed on the world), you can expect much more from us—from previews of all the new features to tips and troubleshooting advice.

Now, the Main Event

But unveiling Panther didn't take up even half of Jobs's WWDC address. The OS X update was only the opening act of this particular show; the main event was the Power Mac G5.

Apple doesn't take changes in Power Mac generations lightly. The G5 is completely different from previous Power Macs—from the IBM microprocessor at its heart to its new aluminum chassis. Everything inside has been engineered for speed.

Because the G5 was such a major engineering challenge for Apple, we wanted to get the details straight from the people who built it. So I spent some time at Apple with the company's senior vice president of hardware engineering, Jon Rubinstein, and vice president of hardware product marketing, Greg Joswiak. At our side were a prototype Power Mac G5 and a bare G5 logic board. Rubinstein and Joswiak took me through the process of building the G5, and now you can see the results of that guided tour (page 58).

What struck me most in my time with the two Apple VPs was their regard for IBM, which is making the G5 processor at plants in East Fishkill, New York, and Burlington, Vermont. The two companies are working closer than ever before, and both Rubinstein and Joswiak had high praise for IBM's engineers and their work in converting the core of IBM's high-test Power4 processor into the shiny new G5.

Most Mac users understand that pure clock speed (measured these days in gigahertz) isn't the only indicator of a chip's performance. But the general public is not particularly familiar with how processors work, and a gigahertz number is easy to understand. After several years of falling well behind Intel and AMD in that one raw statistic, Apple has shown that it's still in the race. And for those in the know, it's clear that the G5 is a far faster and more efficient processor than Intel's offerings at the same clock speeds.

Encore! Encore!

Of course, Jobs's WWDC address featured other interesting announcements, chief among them the release of the new iSight camera and a beta version of iChat AV (see *Mac Beat*, page 18), two products that truly make me feel as though I'm living in the 21st century at last.

> Everyone was buzzing about Panther, but the WWDC's main event was the Power Mac G5.

But for one group of Mac users, Steve Jobs's WWDC appearance wasn't as big a deal as I've made it out to be. Designers were more interested in his late-May appearance at Apple with Fred Ebrahimi, president and CEO of Quark. At that event, the two CEOs announced the impending release of QuarkXPress 6, which runs natively on OS X. The good news, as former *Macworld* editor Galen Gruman reports in this issue (see *Reviews*, page 32), is that XPress 6 is more than just an OS X–native version of XPress 5. We'll have to wait and see whether designers transitioning to OS X will stay with XPress or make the switch to Adobe InDesign, which is coming on strong. But with QuarkXPress now on OS X, that debate can begin in earnest. □

Got opinions about the Mac, *Macworld*, or anything else? Drop me a line, at jason_snell@macworld.com, or stop by our online forums, at www.macworld.com.

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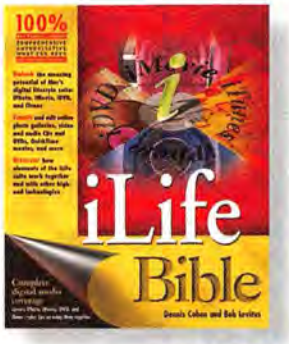

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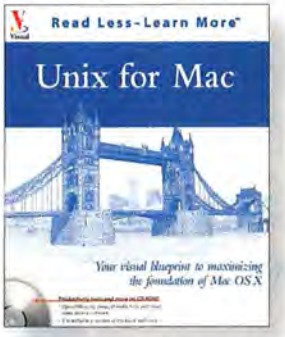

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FEEDBACK

It Takes Two

For every action in our June 2003 issue, there was an equal and opposite reaction from our readers. David Blatner may have focused on QuarkXPress 6.0, but some readers couldn't help but turn their attention to Adobe InDesign. Our coverage of the OS X transition elicited the usual reader comparisons to OS 9—both favorable and otherwise. And the new iTunes Music Store may be one of a kind, but that didn't stop readers from chiming in with their thoughts. Which is fine by us, since *Macworld* readers and their opinions are the real dynamic duo. □

XPress Yourself

ERIKA HEGGIE

I realize that David Blatner's intention in "Quark Enters the Land of OS X" (June 2003) was not to compare QuarkXPress 6.0 with Adobe InDesign 2.0. But I couldn't help but note a few inimitable InDesign-only features that Blatner far too quickly excuses Quark's blatant negligence of. He writes that XPress 6.0 doesn't take advantage of OS X's graphics-rendering technologies, "which could allow transparency and other special effects." InDesign users have quickly realized that the direct .psd and .ai importing feature is pure brilliance. Also, XPress's type engine is 15 years old. Nothing in the article indicates that Quark has made any effort to improve it. Lastly, Blatner highlights Quark's licensing of Jaws technology to allow you to produce high-quality PDFs as a menu option—basically the same process as in previous versions (where it required an XTension and a few more steps).

AMY NOORIAN

I'm no big fan of QuarkXPress, but it's absolutely essential in the print publishing world. Until Adobe gets publishers to change their workflow to InDesign, it won't have a big user base.

MAUREEN PACINO

Congratulations to Pamela Pfiffner for delivering the most amazing scoop I've ever seen in *Macworld*: Quark is committed to its customers and giving them what they want ("The World According to Quark," June 2003). Perhaps the reason Quark hasn't perceived any bitterness among its users in the last 18 months is because answering the phone has never been part of its business model.

CHRISTOPHER HERRING

In "Quark of Fate" (*From the Editor's Desk*, June 2003), Rick LePage states that the loudest cries [about OS X–only systems] came from the professional publishing community, who were waiting for their "tool of choice, QuarkXPress." This misses the point by a mile. We're not waiting for QuarkXPress; we're waiting for the entire suite of products that make up the Quark Publishing System, including QuarkCopyDesk and QuarkDispatch. The reason we're still waiting for OS X versions of these applications has a lot to do with the fact that press coverage on this issue is hard to find and usually inaccurate. Simply stated, publishers use QPS—not just XPress—and until there are OS X–native versions of all the QPS applications, they will continue to use OS 9.

X Factors

DAVID ENNS

I read "Evolution Endgame" (*Mac Beat*, June 2003) with great interest. We have a real estate–appraisal business and have used all kinds of Macs since the platform's inception back in 1984. We're still using OS 9.2 and haven't made the transition to OS X, partly because of the difficulty in replacing two programs—Simply Accounting, from Accpac, and Silicon Beach's SuperPaint—that will not run in OS X. When we replace the office computers, we'll have to migrate to OS X, but not before.

DANIEL GONNEAU

As a full-time OS X user, I am very happy with the new operating system. But I know many people who still use OS 9. For them, Apple should develop an OS 9 simulator for OS X, available as a user preference in System Preferences. It would simulate the basic look and feel of OS 9's desktop and Finder while keeping the guts of OS X exactly the same. That way, OS 9 users could transition to the new Aqua interface at their own pace while still enjoying the stability and multitasking joys of OS X.

RICHARD WARBURTON

While no longer state of the art, my 500MHz PowerBook G3 has proved itself to be a praiseworthy workhorse, especially since I converted to Jaguar. No matter what I put it through, my G3 is more responsive and stabler running Jaguar than it ever was under OS 9—which is why I'm sick of all the kvetching about OS X. I don't bemoan the loss of OS 9's pop-up Finder window or the old Apple menu or the other features that went away, because OS X still allows me to launch applications and organize and open my files, with no more effort than I expended under OS 9.

Music for a Song?

KEN ALAN

Apple's online Music Store ("Apple Carries a Tune," *Mac Beat*, June 2003) is a great idea spoiled by the continued notion that consumers will accept crippled, copy-protected content. For the same per-track price as at Apple's store, I can buy a CD at Amazon.com that hasn't been compressed—full 44.1K fidelity—and hasn't been copy protected. It's also worth noting that 80 percent of users still have dial-up modems. It took me 20 minutes to download one 3-minute compressed music track.

WARD CURRY

iTunes 4 has a great new feature—CD splitting. I can finally split my songs into multiple CDs with iTunes (a feature I had

to use QuickTime to do manually before). This is great for the long DJ sets I often download from the Internet—many of which run more than two hours—and split up into multiple CDs. iTunes 4 does it all automatically—just select a playlist and click on Burn, and it does the rest.

Going to Extremes

TOM MAZE

Congrats to Glenn Fleishman on the informative "Extreme Revolution" (June 2003). One question: The article states that an 802.11b client joining an Extreme network "can slow down the traffic for everyone." Does everything slow down to 802.11b transfer rates to the server?

An 802.11b client takes longer to say the same thing as an 802.11g client, so it effectively reduces the overall speed. Updated versions of the AirPort Extreme firmware seem to improve the performance of networks that mix the two speeds.—Glenn Fleishman

GREGORY RAMSPERGER

I have noticed a trend at *Macworld*: leaving out wireless access points when discussing wireless networking options. If you have a working router, an access point can mean that you spend less time setting up your wireless network, as well as less money.

At this writing, Linksys's access point costs $124 from Amazon.com. The full gateway costs $119. Replacing a router with a wireless gateway is often easier than adding a wireless access point; you can always auction off the old router to recoup some costs.—Glenn Fleishman

A Discreet Mention

JOSHUA HATCH

Christopher Breen failed to mention that Discreet Cleaner 6.0 cannot compress files into Real format in OS X (*Reviews*, June 2003). This isn't Discreet's fault; Real Networks has failed to deliver OS X tools for encoding Real content. Nonetheless, it's a significant issue and should have been mentioned in the review.

Pocketful of Trouble

JOHN LEONARDINI

I guess any software that doesn't actually kill the user gets two mice. In the case of PocketMac Pro 2.0 (June 2003), the 🖱🖱 rating is at least two mice too high. PocketMac not only managed to mess up the synchronization function of my PocketPC to the point where it would no longer sync with a PC, but also made so many changes to the device itself that I had to do a hard system reset to get it working properly again.

Credit Where It's Due

GEORGE FERENCZ

You attributed to film director Ken Burns the technique of panning and zooming across a still photo (*Mac 911*, June 2003). This technique was pioneered by Donald B. Hyatt, who, beginning in the 1950s, produced dozens of NBC television documentaries on important historical figures and themes. It was termed "stills in motion" then and has become a very useful cliché—but please think "Hyatt" rather than "Burns" every time you see or use it.

We're happy to recognize Donald B. Hyatt as the person who pioneered the technique. Nevertheless, Apple named the pan-and-zoom feature in iMovie 3 after filmmaker Ken Burns.—Ed.

Raw Disclosure

JOEL SILVERMAN

I have the highest regard for Bruce Fraser, his expertise, and his knowledge. His review of the Adobe Photoshop Camera Raw plug-in (June 2003) seems objective and fair. But it is improper to present him as an independent reviewer of the product when in fact he is a Photoshop alpha tester and is listed in the Photoshop credits as a creative consultant to Adobe. Disclosure of this fact would have been a service to your readers.

An alpha tester is a creative consultant—all the people on the alpha team get a credit like that. For the record, the only money I have ever received from Adobe was payment for articles I wrote for the long-defunct Adobe *magazine, and payment for a how-to article, published on Adobe's Web site, that I wrote in early 2000. While I have some influence over what gets into Photoshop and how it gets implemented, I don't get paid for my services.—Bruce Fraser*

Rotate Debate

KEN BECK

While it's true that one can rotate an image by hundredths of a degree in Photoshop, as you told reader Peter Samuel (*Feedback*, June 2003), this function is not available for line-art bitmap images, only for gray-scale or color images, so the files are larger and the rotation takes longer. I often use Photoshop to scan bank statements for archiving, and while I can scan them as gray-scale images, rotate them by degrees, and then convert them to bitmaps before saving, it would save time if Arbitrary Rotation were available for bitmap images.

JOAN M. HOUSTON

To align a scanned image quickly and easily, first select the Measure tool. Click and drag along any line in the image that is offset *x* number of degrees from horizontal or vertical. Then, while the Measure tool is still selected, go to Image, Rotate Canvas, Arbitrary. The precise offset angle will appear in the dialog box. Click on OK, and the image will automatically rotate that exact number of degrees.

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CORRECTIONS

David Weiss's response to a question from reader Joel Snyder (*Feedback*, June 2003) recommended the wrong small scanner as a replacement for the Windows-only Strobe Pro. The response should have recommended the Canon LiDE 30.

We used the wrong photograph in "Ethernet's Fast-Falling Prices" (*Mac Beat*, July 2003). It was a picture of the Linksys EtherFast 8-Port Gigabit Ethernet Switch, not of the Linksys Gigabit 8-Port Workgroup Switch, as the caption claimed.

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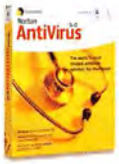

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WITH iCHAT AV, VIDEOCONFERENCING IS JUST A MOUSE CLICK AWAY

Lights, Camera, Chat

WHAT'S NEXT

It's hard to top autumn in Paris—particularly for Apple Expo 2003. Europe's biggest Mac trade show runs September 16 through 20.

The forthcoming Panther update to OS X (see "Take a Peek at Panther," page 68) may boast 100 new features, but if you want to experience almost all of them firsthand, you'll have to wait until OS X 10.3 ships later this year. However, one promised improvement—an updated messaging client—is already available as a beta. And it will change the way you look at instant messaging.

iChat AV is more than just a spruced-up version of the integrated chat client Apple introduced in 2002. It adds audio and video capabilities to iChat's instant-messaging features. Now, with a FireWire video camera and a microphone, you can videoconference with other iChat AV users over a broadband connection.

The free beta runs in OS X 10.2.5 and later. A full version of iChat AV should arrive with Panther later this year. Mac users who stick with Jaguar can purchase a stand-alone version of the updated chat client for $29 once it's final.

"iChat AV is a major breakthrough in communications," said Steve Jobs as he introduced the revised application. And even the most-jaded observers should have a hard time dismissing the statement as marketing hyperbole.

Talk to Me

iChat AV will feel familiar to iChat 1.0 users. It features the same stylized interface with comic strip–like balloons for messaging text; you're still able to connect with logged-in friends and coworkers who have AOL Instant Messenger or .Mac accounts. Only now, your Buddy List—in addition to showing user names and pictures—also sports green video and audio buttons, which indicate the chatting capabilities of the folks on your list. A camera icon indicates video-chatting capabilities. (The icons also let you know the availability of people on your list; if that camera icon is grayed-out, your buddy is videoconferencing with someone else.)

Clicking on the green camera button next to a buddy-list name invites that user to a video chat. While the chat connects, a preview window appears, giving you the chance to check your appearance and adjust your camera. While chatting, the main iChat window shows who you're talking to; an inset in the lower right-hand corner of the window displays an image of you, so you can see what the person on the other end of the chat sees. A dual-arrow icon on the bottom of the iChat window lets you blow it up to fill the entire screen.

iChat AV supports full-duplex audio, a technology you'll find in high-end speaker phones. Because of that support, iChat AV users can talk at the same time and hear one another, without any drops in audio.

In addition to OS X 10.2.5 or later, iChat AV requires at least a G3 processor. If you want to use iChat AV's videoconferencing features, a G3 processor needs to run at 600MHz or faster. Those specifications aren't a suggestion—if someone invites you to a video chat and you don't have the necessary processing power, a dialog box will appear, telling you that you're unable to accept the invitation. Video chatting also requires a broadband connection; a 56-Kbps dial-up modem connection is sufficient for audio chatting.

While iChat lets you include multiple users in a text chat ses-

PHOTOS BY RICK RIZNER

sion, audio and video remain a one-on-one affair. However, the only thing that could stop you from text messaging with one person while video-chatting with another would be an inability to talk and type at the same time.

Candid Camera

Any FireWire-enabled Webcam will work with iChat, including digital-video camcorders that hook up to your Mac via FireWire. But Apple would prefer that you choose a camera the company designed specifically for use with iChat AV—the $149 iSight.

The iSight is housed in the same aluminum-alloy exterior as Apple's 12- and 17-inch PowerBooks. The camera is made up of a three-part lens, which consists of two aspherical elements and one flat element, and a ¼-inch color CCD sensor with 640-by-480-pixel resolution. The lens aperture is a wide f2.8, so the camera lens can collect more light for a brighter, sharper picture, no matter what the lighting.

The iSight's most impressive technical specification is its onboard processor, which optimizes the color saturation, contrast, and white balance, so the iSight can transmit a better picture in both high and low light—something we noticed immediately when putting the iChat AV beta through its paces. (As a matter of fact, the hardware design coupled with iChat's H.263 codec allows for full-motion video at up to 30 frames per second in true 24-bit color—so, in essence, your video chats won't look as if they're beaming down from the International Space Station.)

The iSight offers more than just a clean picture—it also sports a built-in microphone, providing you with audio and video in a single device. The dual-element microphone enables noise suppression, by using an algorithm that determines where the sound comes from—the user in front of the camera or ambient noise from elsewhere in the room, for example. Your voice hits the two in-line elements within iSight at different times, while ambient noise reaches the microphone all at once, allowing the microphone to filter out background noise.

At 2.3 ounces, the iSight is easy to carry—Apple even provides a plastic travel case. Also included with the iSight are three stands that let you mount the camera on top of a flat-panel display, a laptop, or a CRT monitor. That's another key edge the iSight enjoys over other Webcams. Many of those devices sit on a desk and point up at the user, giving viewers on the other side of a videoconference a good look at the bottom of your chin or the side of your face. Apple designed the iSight to perch near eye level, and tilt and swivel so that you can look directly into the camera as you chat.

First Look

At this point, iChat AV remains a work in progress. During video chats between *Macworld* staffers scattered around the country, we experienced noticeable and distracting audio feedback—our own voices booming out from the iSight on the other end of the chat. Earphones cut down on the feedback but don't necessarily ease your self-consciousness.

Still, it's hard to find much fault with an application that dramatically expands your ability to easily communicate with others. iChat AV will undoubtedly go through more changes before Apple rolls out the final version by year's end, but the basic concept—high-quality audio- and videoconferencing without any complicated setup—is sure to keep tongues wagging.—PHILIP MICHAELS

Editors Face Off

Philip Michaels, Jason Snell on iChat AV

For all of Apple's recent announcements—the G5, Panther—this is the one that's going to have the most immediate impact on how I use my Mac.

It really goes beyond e-mail and the phone, because the feedback is instantaneous and visual.

Now when I use emphatic hand gestures, people can see them. That really doesn't come across in e-mail.

So now you can scare people outside the office with your hand gestures? ;-) I *would* like it if iChat AV could do a three-way videoconference, although I wonder if that might require more bandwidth and processor power than my little PowerBook could take.

I wish there were a way to capture video chats as QuickTime movies—say I want to reference or double-check what one of us said.

I guess that's something to look forward to in the iChat update for OS X 10.5—Tiger or Ocelot or whatever Apple winds up calling it.

Something I don't like: When iChat fills up the entire screen with a chat window.

Really? It's a pretty sharp image, particularly for a Webcam. And it's cool how you can resize and move around windows on-the-fly in iChat.

True, but the fact of the matter is, we are two not-very-attractive men...

Speak for yourself.

... and continually seeing my ugly mug splashed across a large portion of my PowerBook screen really drives that point home.

So it's like Apple's personally taunting you? "Take that, Homely Guy!"

I'm not sure I can forgive that.

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WITH PANTHER IN THE WINGS, MACHACK CONFERENCE LOOKS TO THE FUTURE

Event Still Hacking Away

The annual MacHack conference in Dearborn, Michigan, has always been the perfect In Between event. Its structure falls somewhere between a big, formal tech conference and a casual get-together for Mac developers. It also takes place in June, after Apple's World Wide Developers Conference (WWDC) and before the summer's big Macworld Expo.

CARLOS CASTELLANOS

But not this year. Needing a little extra time to bash Panther into presentable shape, Apple postponed the WWDC until June: less than 24 hours after bleary-eyed MacHack attendees were hailing cabs for the airport, Steve Jobs was pulling the sheet off of Mac OS X 10.3. The timing took a lot of heat out of MacHack—there was really no point in discussing the Future of the OS because the Future was going to completely change in a few hours. So the focus of the seminars and late-night conversation was on basic, core technologies. And as always, the fulcrum of MacHack remains the Hacks Contest, in which attendees demonstrate various hacks, tweaks, and acts of superheroic, megacool stupidity that they wrote during the show.

This year, one team tried to hack OS X so that a kernel panic would result in the classic Windows NT Blue Screen of Death. "They worked together all week," an attendee explained to me. "But they'd never tried to tweak the kernel before. So they hooked up with someone who *had*. It's like this every year; you can always find someone with the information you need, and you can't wait to get home and try new stuff out, even if your hack fails."

The winning hack was Jon and Ben Gotow's "Unstoppable Progress." The father-and-son team—dad Jon runs St. Clair Software, which develops Default Folder X—came up with a hack to patch OS X's Aqua standard progress bars, causing its window to drown in overflow. It was a classic Mac-Hack—slick, unexpected, and utterly unmarketable.

MacHack's organizers chose "Unstoppable" as the theme of this year's conference, which is ironic because this was the last MacHack conference. The company that controls the MacHack trademark is pulling out, which is fine by the conference's organizers. Now it's ADHOC: The Advanced Developers Hands-On Conference (www.adhocconf.com), slated for July 21 to 24 in 2004. By eliminating the word *Mac*, organizers hope to expand the conference's appeal to open-source developers. By dropping the word *hack*, they hope to make the conference easier for prospective attendees to sell to their bosses, most of whom associate the word with remotely seizing control of hydroelectric plants, not with the enthusiastic acquisition and application of hard-core geek knowledge.—ANDY IHNATKO

More Info:

www.machack.com
You can find a complete CD of hacks and papers from this year's MacHack conference at the event's Web site.

INTERNET BEAT

Software

Browser

Safari 1.0, from Apple Computer (800/692-7753, www.apple.com): The OS X–only browser was released just in time to become the default Web browser on all forthcoming Apple computers. The browser can synchronize bookmarks via the user's .Mac account and iSync. Safari also has a forms-autofill feature for Apple's Address Book and a library of AppleScripts that let users tweak the browser's functionality (free).

Watcher'84, from Bruno Blondeau (www.brunoblondeau.com/watcher84/): This Web-watching utility lets users select a Web page to monitor, and it keeps tabs on the page content, not the ad rotation. Users are apprised of site updates via visual cues in the page-watching list ($15).

E-mail

CommuniGate Pro 4.1 with Groupware, from Stalker Software (800/262-4722, www.stalker.com): The messaging and collaboration program features an enhanced Web-based e-mail interface with advanced calendaring, scheduling, and contact-management capabilities. It supports e-mail protocols SMTP, POP, and IMA, and it lets users set up and run mailing lists. There is also built-in Wireless Markup Language (WML) support, which allows CommuniGate Pro users to set up and send messages to people who use wireless technology. (Contact Stalker Software for pricing.)

Mailsmith 2.0, from Bare Bones Software (781/687-0700, www.barebones.com): This update to the e-mail client supports the spam-detection software SpamSieve and PGP 8.0 for secure messaging. It also supports Apple's Address Book ($99; upgrade from version 1.5, free; upgrade from earlier versions, $49).

Security

IPNetSentryX 1.0, from Sustainable Softworks (www.sustworks.com): This security application uses hierarchical filter rules to set levels of user security within a computer network; thus, users can set up groups of rules to eliminate entire classes of security threats, or set up fine-tuned rules for highly specific undesirables ($40).

Web Conferencing

PictureTalk Enterprise Conference Server for OS X Server, from Pixion (888/874-9466, www.pixion.com): This Web-conferencing software, which installs on OS X Server, is designed to run on different client platforms—including Mac, Windows, and Solaris—and to take different client connection speeds into account. The server software can be set up behind a firewall to comply with company security policies. (Contact Pixion for pricing.)—COMPILED BY LISA SCHMEISER

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CREATIVE BEAT

Software

Animation

Animo 5.0, from Cambridge Animation systems (www.cambridgeanimation.com): The 2-D–animation software adds support for different languages, the ability to include meta information in files, better scanner support, and additional output options. (Contact company for pricing.)

iStopMotion 1.0, from GeBE Computer & Peripherie (www.inter.gebe.net): The stop-motion–animation software for OS X is based on QuickTime. It captures frames and stores them uncompressed so that the raw material maintains as high a resolution as possible. Besides OS X 10.2 and QuickTime 6 or later, requirements include a QuickTime-compatible video source ($40).

Pixels 3D v5.0, from Pixels Digital (858/672-2634, www.pixelsdigital.com): The Mac-only 3-D–modeling and –animation software offers an improved Tempest rendering engine, automated bone creations and rigging, new water and atmospheric effects, and auto-banking for animations ($399; upgrade, $199).

Poser 5, from Curious Labs (831/462-8901, www.curiouslabs.com): The 3-D–modeling and –animation tool now runs on OS X and features a new rendering engine. It includes a library of posable models and facial expressions; users can sculpt faces or map them to photos ($349).

Wild FX 3.0, from Wildform (310/396-2025, www.wildform.com): Formerly known as SWfX, this tool for building custom text animations in Flash includes hundreds of animation effects, automatic text justification, and advanced export options ($39; upgrade, $25).

Illustration

Canvas 9, from ACD Systems (305/596-5644, www.deneba.com): The drawing, image-editing, and document-design application is now available in three different forms: Canvas 9 Professional Edition ($400; upgrades, $130 from version 8; $170 from version 7); **Canvas 9 Scientific Imaging Edition** ($600); and **Canvas 9 GIS Mapping Edition** ($600). Canvas 9 offers CAD-level precision features, a one-step Image Crop and Scale command, and a new Image measurement filter. ACD Systems takes control of Canvas after an April 2003 merger with former developer Deneba.

Workflow

DigiPage 4.0 for Mac OS X, from Fusion Systems International (503/255-5800, www.fusionsystems.com): The universal Render Once, Output Many workflow is aimed at detecting hidden problems sometimes not found in PDF and PDF/X-1A files until a press proof is made. Version 4.0 offers new RIP technologies. The release features support for PDF 1.4, including transparency layers; PDF/X-1A; PDF/X-3; and JBIG2. (Contact company for pricing.)—COMPILED BY KELLY LUNSFORD AND PHILIP MICHAELS

INDIE RECORD LABELS COULD COME TO ITUNES MUSIC STORE

Apple's Independent Streak

Look for a Sleater-Kinney single or an Ani DiFranco album at the iTunes Music Store, and suddenly 200,000 songs seems a little skimpy. While Apple's online music service features offerings from the five major music companies, independent record labels are nowhere to be found. Their absence is often cited as the online store's most glaring omission.

Apple seems to agree. A month after the store debuted, the company summoned about 150 representatives of top indie record labels to a meeting at its Cupertino headquarters, where the company discussed plans to broaden its musical selections.

But indie record labels still have some reservations. "It was nice that [Apple] did this, but it was pretty much a cattle call," says Kevin Arnold, founder of the Independent Online Distribution Alliance, who attended the meeting. "It was not a very personal, end-to-end, individualized way of doing things."

Nonetheless, these labels see a definite benefit to appearing in the iTunes Music Store, which sold 5 million songs during its first eight weeks. "It would be a great way to make our music available via a legal, affordable, and easy-to-use way," says Gerard Cosloy, vice president of Matador Records, "and more to the point, a way that ensures that the artists and label are compensated fairly."

Bill Gould, a musician with his own record label, complains that the store's search features are too mainstream, but he believes that Apple's service will give his Kool Arrow Records label a new audience. "Someone who's just listening around for cool music can stumble across our stuff," he adds.

So when can you expect to see indie musicians alongside Jewel and Nelly in the iTunes Music Store? At press time, major record labels still dominated the service's offerings, but Apple's Peter Lowe insists that next to bringing the service to Windows, increasing the store's music selection is Apple's biggest priority. And the indie music labels are already imagining a day when their singles are available for 99 cents per download.

"We're going to be sharing equal billing with more- and less-successful artists," Gould says. "Listening to songs becomes the criteria for buying or not buying. That makes us feel competitive."—ADELIA CELLINI

WITH 802.11G FINALIZED, APPLE RELEASES AIRPORT UPDATE

Extreme Compatibility

Apple's AirPort Extreme already offers high speeds and backward compatibility with older AirPort networks. Now the wireless-networking technology boasts another important feature—standards compliance.

Introduced in January 2003, AirPort Extreme had to rely on a draft version of the 802.11g wireless-networking standard. But after the 802.11g specification was finalized in June, Apple quickly released an update—AirPort 3.1—to make AirPort Extreme fully compliant with the new standard.

Other additions in AirPort 3.1 include support for "packet bursting," which can make AirPort Extreme networks as much as 25 percent faster by taking many small bundles of data and repackaging them into a longer chunk that's more efficient to send. Because 2.4GHz cordless phones and Bluetooth devices can interfere with AirPort, the new software lets you turn on an "interference robustness" option to better sort out competing signals. AirPort 3.1 also lets you extend your wireless network by connecting as many as four remote Base Stations to a "relay" unit, which, in turn, passes network data back to the main Base Station. And according to noted AirPort hacker Nick Sayer, the new software also lets 802.11g PC and PCI cards to work with Mac OS X.—GLENN FLEISHMAN

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IMAGING BEAT

Hardware

Cameras

A 3.2-megapixel camera from Canon (800/652-2666, www.usa.canon.com): The **PowerShot SD100** ($499)—the latest addition to Canon's Digital Elph line—has a 2× optical zoom and stores images on a 16MB Secure Digital (SD) Memory card. The lens is equivalent to 35mm–70mm in 35mm format.

Software

Image Management

EasyShare 3.0, from Kodak (www.kodak.com): The digital picture-organization and -sharing program has been rebuilt for OS X. The software, which ships with Kodak's digital cameras, is also available for download. In addition to supporting Kodak models, the software will work with any digital camera that supports OS X 10.2's Image Capture Architecture (free).

Plug-ins

AutoCorrect 1.5, from Human Software (408/399-0057, www.humansoftware.com): The color-correction utility, which runs in OS 9 and OS X, now gives users finer control when correcting light or shadows ($60; upgrade, $19). **PhotoSpray 1.5** is a Photoshop plug-in that works with brush tools to let users apply multiple repetitions of one or more images on top of another image ($90; upgrade, $49).—COMPILED BY TERRI STONE

EDUCATION BEAT

Software

Data Management

Aabel 1.5, from Gigawiz (www.gigawiz.com): The update to the data-analysis and graphing application for OS X adds 35 new chart types in 19 categories (commercial, $349; academic, $249; upgrade, free).

Science & Engineering

CrystalMaker 6.2, from CrystalMaker Software (www.crystalmaker.com): The OS X–native crystal and molecular structure visualization software adds annotation using Quartz graphics (commercial, $535; academic, $369; upgrade from version 6.0, free).

Mathematica 5, from Wolfram Research (800/965-3726, www.wolfram.com): The mathematical and scientific calculation app adds more than 100 algorithms for symbolic and numerical computation (commercial, $1,880; academic, $895; student, $140; upgrades, check with Wolfram).—COMPILED BY PHILIP MICHAELS

UPDATE OFFERS FIXES FOR BUGS BEDEVILING VIDEO-EDITING APP

iMovie—Scene 3, Take 3

If maintenance upgrades were sequels, iMovie 3 would be a trilogy by now. Before most users could even get their hands on the version that shipped with the iLife suite, Apple rolled out iMovie 3.0.1. While that version received high marks for its new interface and integration with other iLife apps, it also took hits for sluggish performance and noticeable quirks in some of its effects (see "Get an iLife," April 2003). The more that people worked with iMovie 3.0.1, the more troubles they found—sound-sync issues, long wait times, and image-import problems. And iMovie 3.0.2 did little to resolve these issues.

Now there's iMovie 3.0.3, which, along with QuickTime 6.3, promises to solve the problems bedeviling iMovie 3 users. But will this latest sequel surpass the original?

"The general speed of the application seems much, much better," says Daniel Slagle, a database administrator for the Federal Reserve by day and the keeper of the Unofficial iMovie FAQ (www.danslagle.com/mac/iMovie/iMovieFAQ.html) by night. "Audio and video syncing seems to have been fixed for most users if they reimport and do all their editing in version 3.0.3 along with QuickTime 6.3." Other improvements in 3.0.3 include changes to the Ken Burns Effect; the pan-and-zoom effect for digital stills is now optional rather than automatic. Not every problem has been fixed—audio pops and clicks are still introduced with titles and certain transitions, Slagle says. The update also creates a problem of its own: a bug that prohibits users from importing iMovie 3.0.3 project files into Final Cut Express or the newly released Final Cut Pro 4 (see *Reviews*, page 36).

Nevertheless, iMovie users are ready to embrace version 3.03. "In general, I think people will find iMovie 3.0.3 meets their needs for putting movies and photos to tape or DVD's with ease," Slagle says.—ANTON LINECKER

ADOBE LOOKS TO BOLSTER PERFORMANCE IN AFTER EFFECTS UPDATE

More Effects with Fewer Steps

Stunning visual effects may have quite an impact on viewers, but they have a greater impact on their creators in terms of workload. Adobe (800/833-6687, www.adobe.com) hopes to address this dilemma with After Effects 6.0, by speeding up the performance of the visual-effects program without paring down any of its capabilities. Take text creation, which has been a multistep process. Version 6.0 incorporates Adobe's core text engine to let users type and edit text directly in the Composition window. Animating text also requires fewer keyframes.

Animate with Ease In After Effects 6.0, text animation remains sophisticated but requires fewer keyframes.

After Effects 6.0 (standard, $699; upgrade, $199) adds OpenGL support, for faster on-screen rendering of 2-D and 3-D composites. The $999 Professional version includes new JavaScript support for automating production tasks and a redesigned Motion Tracker that doesn't sacrifice accuracy for speed.

Other additions to After Effects include built-in vector painting with Photoshop-style brushes, new Warp and Liquify distortion tools, and other effects integrated from the After Effects 5.5 Plug-in Power Pack.—PHILIP MICHAELS

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Apple Xserve

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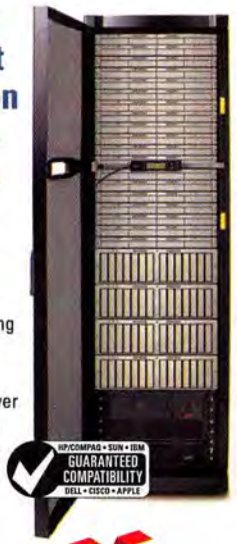

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AFTER DARK IS BACK—AND IT HAS PLENTY OF COMPANY

Toasters Take Wing

During the 1990s, when toasters flew across desktops from California to Calcutta, the sun never set on the screen-saver empire of After Dark. But after a decade of dominance on Mac displays, Berkeley Systems' parent company, Sierra On-Line, announced in 1999 that it wouldn't update After Dark to work with OS 9, effectively grounding the flying-toaster fleet.

These days, toasters are on the wing again—along with Mowing Man, a virtual aquarium, and other classic After Dark modules, thanks to After Dark X + Fish, from Japanese developer Infinisys. "Everything was totally redone from the ground up," says Infinisys CEO Dennis Heazle. The OS X remake takes advantage of some modern OS features, such as OpenGL graphics and the built-in screen-saver engine.

And After Dark's animated toasters aren't flying solo. In OS X, screen savers—which Apple now calls screen effects—are enjoying a renaissance. "I think we are seeing more screen-saver modules available on Mac OS X precisely because the developers can concentrate on the graphics code and don't have to reimplement the basic screen-saver functionality," says Michael Babin, vice president of Order N Development, which ported the popular Marine Aquarium screen saver to OS X.—MATHEW HONAN

Now You Sea It With Marine Aquarium, your Mac sleeps with the fishes.

The Screening Room

Here's a handful of OS X screen savers that caught our eye.

- **After Dark X + Fish 1.0**, from Infinisys (http://en.infinisys.co.jp): Toasters return to the skies, men go back to mowing, stars resume zooming by, and more in this updated classic ($10).
- **Laundry 1.5**, from Loops (http://loops.pardeike.net): You can air your dirty laundry publicly with this screen saver's never-ending spin cycle ($1.50).
- **Plasma Tunnel Screensaver 1.2.3**, from Fruitz of Dojo (www.fruitz-of-dojo.de): It's a plasma tunnel descending endlessly into the depths of your soul—or, more accurately, a really cool-looking OpenGL effect (free).
- **SereneScreen Marine Aquarium 2.0**, from Prolific Publishing (www.prolific.com): 26 species of 3-D fish swim in a pool of Aqua ($20; see our review of Marine Aquarium, on page 48).
- **SETI@home 3.08**, from SETI@home (http://setiathome.ssl.berkeley.edu): Use your Mac to aid in the search for E.T. (free).—MATHEW HONAN

PRO FILE | Q&A WITH JERZY LEWAK

WRITE STUFF

Microsoft Word may be the 800-pound gorilla of the Mac word processing market, but Nisus Software's Nisus Writer—which debuted in 1989—has long offered an alternative, particularly for users who want more text-processing power or better WorldScript capabilities. Lately, though, those features have been available only in OS 9 or in OS X's Classic mode, as Nisus worked on an OS X–native version of the word processing program. With Nisus Writer Express 1.0 now available, *Macworld* caught up with Nisus CEO Jerzy Lewak to find out what to expect from the new program.—ADAM C. ENGST

AT A GLANCE

JERZY LEWAK CEO, Nisus Software
MAC: 15-inch PowerBook G4
SOFTWARE: Microsoft Internet Explorer

What improvements can Nisus Writer's core audience of text-processing mavens and multilingual writers expect to see in the final release?

Nisus Writer Express is a relatively basic release. It certainly cannot be—and is not meant to represent—a replica of the feature set of Nisus Writer Classic. It is a new foundation for a new word processor, written in Cocoa, with some flavors of Nisus Writer Classic. Improvements over the beta release will largely consist of the polishing of the details, which will have a substantial influence on user perception. After release, we intend to have quite frequent new feature releases, with the feature priorities guided by our users' requests.

Do you think you stand a chance of attracting a significant number of users away from Microsoft Word?

I don't think we do stand much of a chance head-to-head with Microsoft, but I do think that we have a select market now and see a much bigger additional market for Nisus Writer Express—a market that Microsoft does not care about on the Mac. [It's] a minority market by far, but one that cannot be satisfied by Microsoft, which caters to the great masses.

So what sort of user is in that minority market?

The current Nisus Writer Classic market includes higher education, professional writers, and those who, for numerous reasons, find Microsoft Word limiting. Necessarily, this market comprises a large number of advanced users. Nisus Writer Express is targeted at the average user. From the responses to our public beta release, we conclude that this market will add a substantial number of average users who find the Nisus Writer Express experience superior to that of Microsoft Word.

More Info:

www.macworld.com/2003/09/macbeat/lewak
Jerzy Lewak covers the new features in Nisus Writer Express, at Macworld.com.

Font Management for Mac OS X. Purrr.

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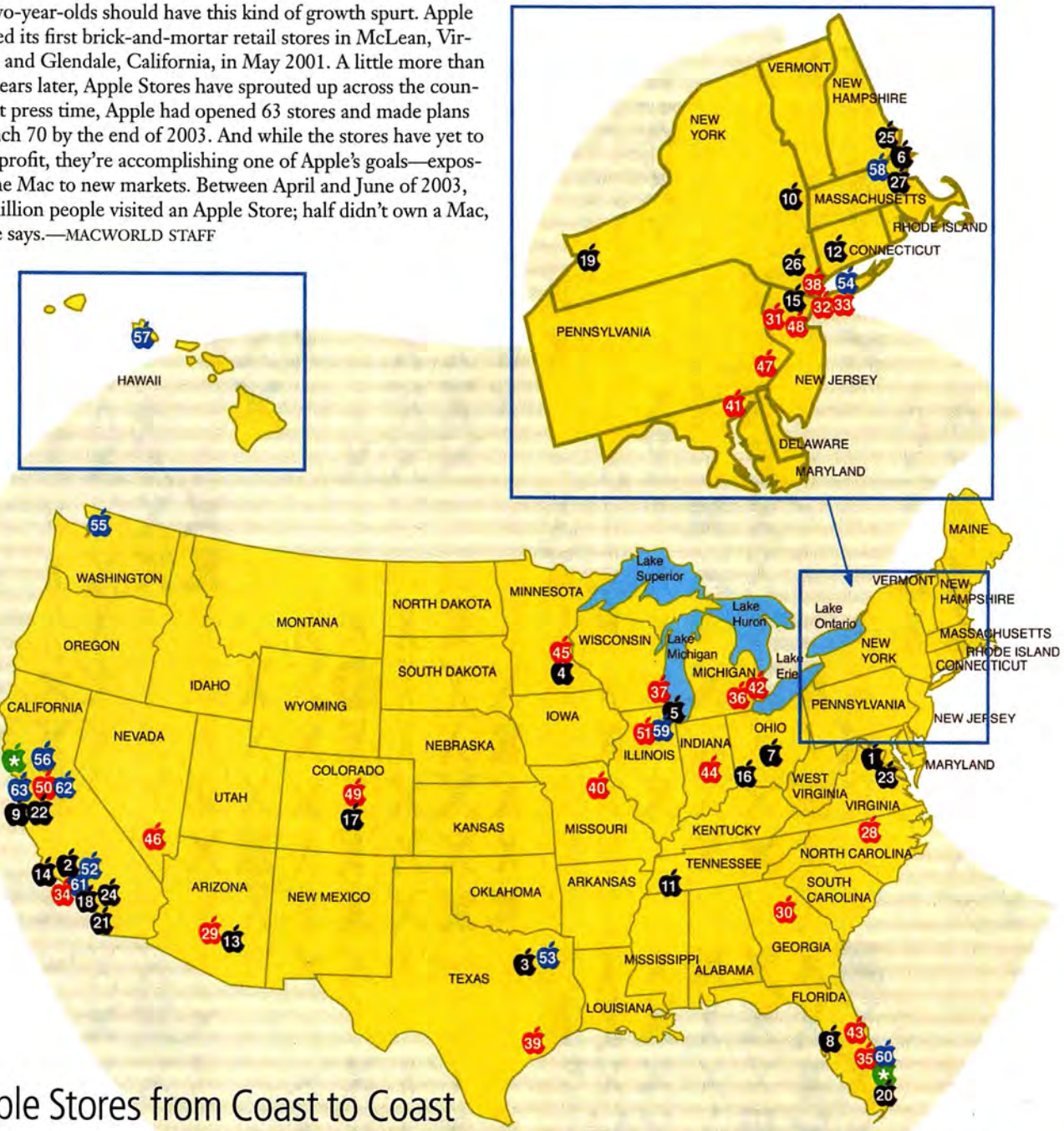
APPLE'S RETAIL INITIATIVE IS MORE THAN TWO YEARS OLD—AND MORE THAN 60 STORES STRONG

Seeds of Growth: Apple Stores on the Rise

All two-year-olds should have this kind of growth spurt. Apple opened its first brick-and-mortar retail stores in McLean, Virginia, and Glendale, California, in May 2001. A little more than two years later, Apple Stores have sprouted up across the country. At press time, Apple had opened 63 stores and made plans to reach 70 by the end of 2003. And while the stores have yet to see a profit, they're accomplishing one of Apple's goals—exposing the Mac to new markets. Between April and June of 2003, 3.1 million people visited an Apple Store; half didn't own a Mac, Apple says.—MACWORLD STAFF



Apple Stores from Coast to Coast

2001 Openings
1. McLean, VA
2. Glendale, CA
3. Plano, TX
4. Bloomington, MN
5. Schaumburg, IL
6. Peabody, MA
7. Columbus, OH
8. Tampa, FL
9. Palo Alto, CA
10. Albany, NY
11. Germantown, TN
12. Farmington, CT
13. Chandler, AZ
14. Northridge, CA
15. Woodcliff Lake, NJ
16. Cincinnati, OH
17. Littleton, CO
18. Newport Beach, CA
19. Buffalo, NY
20. Miami, FL
21. San Diego, CA
22. Santa Clara, CA
23. Arlington, VA
24. Costa Mesa, CA
25. Salem, NH
26. West Nyack, NY
27. Cambridge, MA

2002 Openings
28. Durham, NC
29. Phoenix, AZ
30. Atlanta, GA
31. Short Hills, NJ
32. New York, NY
33. Garden City, NY
34. Los Angeles, CA
35. Wellington, FL
36. Novi, MI
37. Wauwatosa, WI
38. White Plains, NY
39. Houston, TX
40. Des Peres, MO
41. Towson, MD
42. Troy, MI
43. Orlando, FL
44. Indianapolis, IN
45. Edina, MN
46. Las Vegas, NV
47. King of Prussia, PA
48. Edison, NJ
49. Denver, CO
50. Emeryville, CA
51. Oak Brook, IL

2003 Openings
52. Pasadena, CA
53. Highland Park, TX
54. Huntington Station, NY
55. Bellevue, WA
56. Sacramento, CA
57. Honolulu, HI
58. Chestnut Hill, MA
59. Chicago, IL
60. Boca Raton, FL
61. Santa Monica, CA
62. Walnut Creek, CA
63. Burlingame, CA

Planned Openings
* San Francisco, CA
* Aventura, FL

INFOGRAPHIC BY TADEUSZ MAJEWSKI

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CONTRIBUTE BRINGS EASY WEB CONTENT UPDATING TO THE MAC

No HTML Experience? No Problem.

With the release, last December, of Macromedia Contribute (800/470-7211, www.macromedia.com), even people who speak no HTML whatsoever have been able to change Web-page content—unless they happened to be working on Macs. Initially a Windows-only release, Contribute is now Mac OS X–compatible.

With Contribute 2.0 ($99; five licenses, $399; academic, $79), a Web designer sets user privileges, specifies what content can be changed (preventing other users from accidentally altering scripts, forms, or other complicated elements), and creates templates and style sheets for page consistency. Designers can even limit file sizes for bandwidth-sensitive elements such as photos and movies. Once the site is set up, Contribute users can access existing Web pages—or create new ones—through an interface that makes editing and adding content as easy as word processing. Importing content from Microsoft Office X applications is a drag-and-drop affair; Contribute converts Word documents and Excel charts into Web-friendly HTML while preserving the formatting. A built-in versioning system lets users revert to previous versions of a page if they make a mistake. And while Macromedia would prefer that you use Contribute to update pages created with its Dreamweaver MX Web-design app, the program works with pages built with any tool.—KELLY LUNSFORD

WHAT'S HOT

A Quick Look at the World of Macs

1. **iChat AV adds video-conferencing capabilities to instant messaging.** *Look for workplaces around the country to adapt strict "No more pants-less iChats" policies for work-at-home employees.*

2. **Microsoft plans to end work on Internet Explorer on the Mac because of increased competition from Safari.** *"Where does an operating-system maker like Apple get off crushing the competition like this?" a Microsoft spokesman complained. "Lousy copycats."*

3. **OS X's Panther update promises plenty of improvements to the Finder.** *The new left-side pane will provide contextual help for new users while making derisive remarks about longtime Mac users.*

4. **Specs for the new Power Mac G5 accidentally appeared on Apple's Web site before Steve Jobs announced the new systems.** *Hey, mistakes happen—that's what we told the guy responsible for the error when he delivered those pizzas we ordered.*

PRODUCTIVITY BEAT

Software

Database

iList Studio 1.2, from Lakewood Studios (905/892-9973, www.lakewoodstudios.com): This single-user relational database software manages text, number, URL, file path, and image data. The application runs on OS 9 and OS X ($40).

Utility

Ten for X Utilities Volume 2, from Aladdin Systems (800/732-8881, www.aladdinsys.com): The second version of the OS X utilities collection includes 11 fully registered applications ($50).

Announced

The end of operations for Casady & Greene (www.casadyg.com): The company closed in July after 19 years of publishing software. Its products revert back to their original owners; Casady & Greene's Web site includes e-mail and URLs for these software developers.—COMPILED BY PHILIP MICHAELS

RF-BASED CONTROLS KEEP YOU IN COMMAND OF YOUR PRESENTATION

Remote Possibilities

The Keyspan Presentation Remote

With Apple's Keynote now competing against Microsoft PowerPoint, Mac users looking for software to create and organize presentations have another option. But that software selection is nothing compared with the choices they have in terms of *hardware* for running those presentations. Developers have produced a spate of remote controls that make it easier than ever to manage a presentation from across the room.

These latest devices use radio waves to transmit between the remote and a receiver that plugs into your Mac. Unlike infrared controllers that require a direct line of sight, these devices can control your presentations from a room away—as far as 50 feet in the case of the RemotePoint Navigator, from Interlink Electronics. With most of the remotes—all of which work with both major Mac-friendly presentation apps—you won't need drivers (although some, such as the Keyspan Presentation Remote, include software in case you want to customize your controls).

Some remotes offer additional features to appeal to on-the-go Mac users. Take SmartDisk's PowerPlay Pro, a remote that also packs 32MB of flash memory on the receiver unit for storing PowerPoint and Keynote presentations on the road. The Powr Pointer 2, from Powr Marketing, doubles as a fully functional mouse. Instead of yelling yourself hoarse calling for the next slide, use any of these remotes to put control over your presentations back in your hands.—ADELIA CELLINI

What's the Frequency?

Mac users can choose one of many RF-based remote controls for managing presentations.

COMPANY	PRODUCT	PRICE	CONTACT	RANGE
Atek	Tote-Remote	$80	888/889-9990, www.atek.com	30 feet
Interlink Electronics	RemotePoint Navigator	$149	800/340-1331, www.rpnav.com	50 feet
Keyspan	Presentation Remote	$79	510/222-0131, www.keyspan.com	40 feet
Powr Marketing	Powr Pointer 2	$90	866/800-7697, www.powrmarketing.com	40 feet
SmartDisk	PowerPlay	$50	239/425-4000, www.smartdisk.com	33 feet
SmartDisk	PowerPlay Pro	$80	239/425-4000, www.smartdisk.com	33 feet

PHOTO BY RICK RIZNER

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QuarkXPress 6.0

More Than OS X–Native, Industry-Standard Publishing Software Gives Designers More Flexibility

BY GALEN GRUMAN

Yes, while we've been waiting (and waiting), Quark has actually been doing something. The fruit of this labor is QuarkXPress 6.0—finally a Mac OS X–native XPress. In fact, it runs only on OS X 10.2 and higher. This move should let designers at last switch to OS X–only environments, leaving behind the unsavory alternatives: the inconsistent screen redraws of XPress 4 and 5 in OS X's Classic mode, constantly booting between OS 9 and OS X, and forgoing OS X completely to use XPress 4 or 5 without bother.

But does XPress 6 offer anything more than OS X support? And does it provide a reason to stick with XPress (and not jump on the momentum-gaining Adobe InDesign bandwagon)? The answer to both questions is yes.

What's New

QuarkXPress 6 has several significant enhancements: multiple undos and redos (it's about time!), the ability to synchronize text across a layout, built-in PDF creation, the ability to convert print layouts to Web format and vice versa, and the ability to have multiple layouts with different specifications in one file. Each of these welcome additions makes XPress more capable and more flexible.

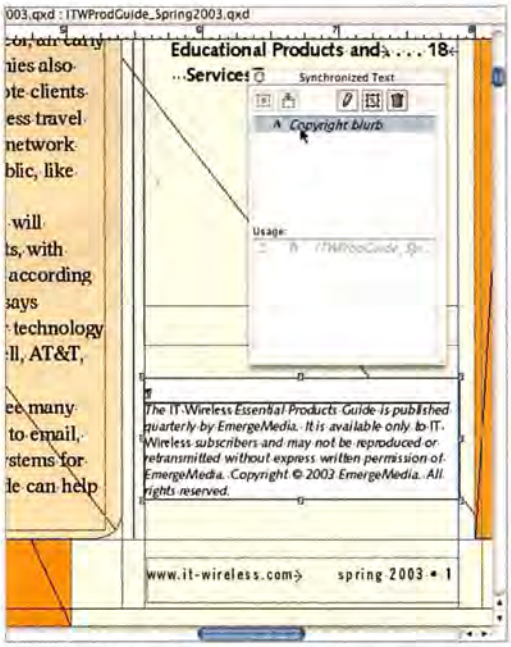
XPress 6 also brings improvements to some of the many features introduced in version 5—for example, rollover and menu capabilities for layouts destined for the Web and several refinements to table and cell formatting. Many, if not most, XPress users skipped version 5 for various reasons and are still using version 4; for them, the switch to version 6 will be an even larger upgrade, adding cell-based table creation, Web-page creation, support for transparent backgrounds in exported PDF files, and layers.

Of course, since so many designers didn't upgrade to version 5, a file-format issue will likely arise. XPress 6 can't save files in version 4 format, though it can save version 5 files. (It can open files created with version 3 and later.) If you upgrade, all your colleagues and contractors will have to switch to version 6 on OS X or at least move to version 5 on OS 9.

And you'll need to replace *all* your XTensions with version 6–compatible ones. This includes updaters for DiamondSoft's FontReserve and Extensis's Suitcase font managers. Until they're available, you can't automatically activate fonts in XPress 6. Any time a document uses fonts not already active, you'll have to quit XPress, activate the fonts in your font manager, and then relaunch XPress. (FontReserve users may also have to deactivate and then reactivate fonts so XPress 6 will see them. On my system, XPress didn't recognize previously activated fonts until I did so.) Expect smaller plug-in developers to wait until adoption trends are clearly positive before they invest in software revisions—many never bothered with version 5 XTensions. A Lowly Apprentice Production, Badia Software, Em Software, and Gluon plan to release version 6–compatible XTensions by this fall (some should be available by the time you read this). Extensis says it's considering updating its once popular utility kit QX-Tools, which it hasn't updated since XPress 4.

What's Not New

Quark has made very few enhancements to the core typographic, item-creation, graphics, and basic layout tools—it seemed to avoid even obvious, overdue changes. XPress still doesn't convert two hyphens into an em dash as you type, let you create print styles from within the Print dialog box, import Microsoft Word and Excel tables as tables, offer automated fraction building, allow drop-cap text-formatting settings as part of a paragraph style, or integrate the Starburst tool's preferences with the standard Preferences dialog box. (InDesign doesn't do some of these things, either.) This version would also have been a good opportunity to bring in item transparency for the creation of sophisticated drop shadows and overlapping objects, keeping XPress's artistic layout capabilities level with InDesign's.



Automated Boilerplates When you designate a text box or path as synchronized text, its contents can be applied to other boxes and paths, and textual changes to one instance automatically affect all others. But each can have different text formatting.

Version 6 often feels and works like the same old QuarkXPress—this is good for longtime users, whose workflow will be largely unaffected. Though XPress 6 conforms to OS X's interface standards and therefore introduces a few menu changes, the functional interface is the same, with only the "skin" updated to the cleaner, lighter Aqua look.

That the interface retains its essential Quarkness is not an issue. But XPress 6 lacks complete support for a key modern Mac OS technology: the OpenType standard and its wider selection of characters and glyphs. Sure, you can use OpenType fonts in XPress 6, but you can access only the basic Western European characters. This was a foolish move. XPress was the first layout program to offer professional typography; now that the OpenType standard is in place, extending a font's uses and capabilities, Quark should have embraced it. Adobe included it in InDesign 2, which makes its omission from XPress 6 seem even more unwise.

Like version 5, XPress 6 doesn't ship with a printed manual (which costs $50 extra and was unavailable for review). A 676-page PDF version is included on the installation CD, for those people inclined to print it out or page through it in Acrobat or OS X's Preview app.

32 Desktop publishing program
QuarkXPress 6.0

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Acrobat 6.0 Standard
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36 Video-editing application
Final Cut Pro 4

38 250GB FireWire 800 drives
EZQuest Cobra FireWire 800/USBII, LaCie D2 U&I, OWC Mercury Elite Pro FireWire 800, WiebeTech 250GB Fire800

40 FTP clients
CaptainFTP 2.6, Fetch 4.0.3, FTP Client 4.0.1, Interarchy 6.2, RBrowser 3.1.2, SimpleFTP 2.01, Transmit 2.5

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For me, reading a manual on screen is difficult, especially because it obscures the application I want to use. The less-intrusive help integrated with Apple's Help Viewer is adequate for refreshers and quick explanations.

All in all, XPress 6 is a very familiar program with several new features that will appeal to specific groups of users. But if you don't use those features, XPress will feel very much unchanged.

No More Documents

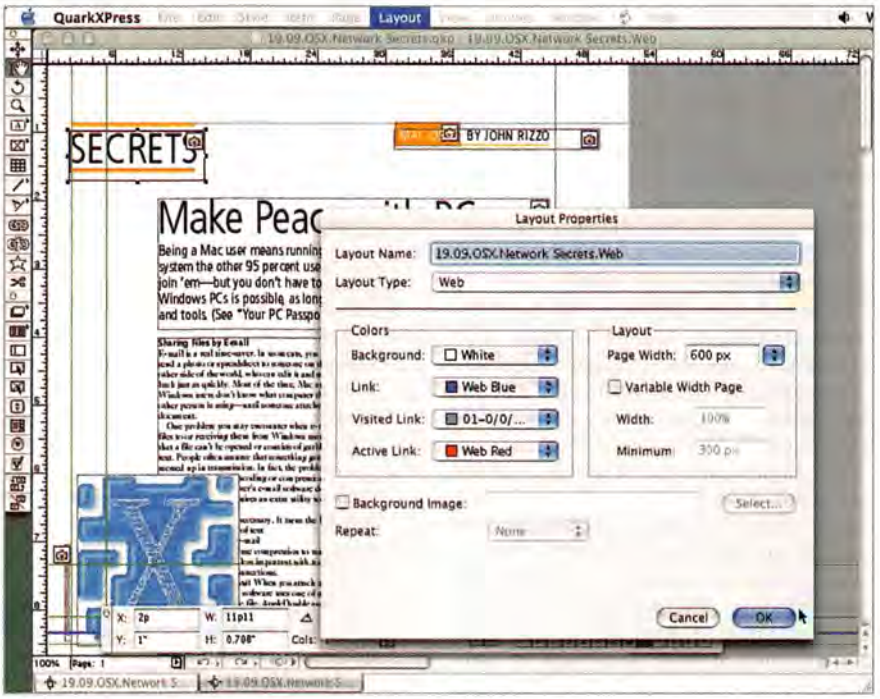
The most significant, and most easily ignored, change in XPress 6 is the use of the project metaphor. Documents as we knew them no longer exist: projects take their place. A project can hold as many as 25 layouts; in turn, each layout can have separate page settings (its size, whether it's a spread or single-sided layout, its orientation, its margins, and so on). A layout can be for print or the Web, and a project can contain both types. At the bottom of your project window are now a series of tabs that let you switch between layouts.

Unfortunately, you can't view multiple layouts from the same project at the same time. To move elements between them, you have to do the old copy-paste or cut-paste routine rather than the simpler drag and drop. Also, spell-checking and auxiliary spelling and hyphenation dictionaries work only within a layout. You can't spell-check or find and replace across an entire project or easily use the same auxiliary dictionary across a project's layouts. And many tools work only in the current layout, so you can't update fonts and images across all layouts in a project, or copy or apply master pages across layouts. (But colors and styles defined in one layout are available in others—go figure.) These divisions among layouts are much too stringent.

If you don't use the full capabilities of projects, you'll be none the wiser—you could have just one layout in each project and treat it as a separate document, just as in previous versions.

Boilerplates without Pain

The other major new feature—synchronized text—is also mostly a win. It lets you designate one text box as a master story and then apply that story to other text boxes, placing the same text in them. (You can have several master stories, for multiple boilerplates.) If you change the text in any of them—even those in other layouts in your project—they're all automatically updated. Anyone who's had to edit legal mumbo jumbo across a set of marketing materials will jump for joy. But text is the only aspect that's synchronized, not the text's formatting, so you can format the boilerplate as needed in each location.



Flexible Documents You can now convert print layouts to Web format and keep both versions in the same project file (see the layout tabs at the bottom of the screen).

The ability to synchronize text eliminates a lot of tedious work, but Quark should have taken synchronization further. You can synchronize only complete text boxes and paths, not snippets of text within a box or story. So you can't use this feature to synchronize product names across marketing materials, a hyperlink address across a PDF file, or other variable text. And you can neither synchronize across project files nor synchronize text that includes embedded graphics (since you can't synchronize graphics, XPress 6 can't handle text that includes them).

Better Web Capabilities

Version 5 introduced Web-page–creation capabilities, but you couldn't convert a print document into a Web one, or vice versa, so there was no reason to create Web pages in XPress 5. But with XPress 6, you can convert your print documents into decent Web versions; add elements such as rollovers, using graphics from your print layout; and then refine those pages in Dreamweaver or another HTML editor designed for Web pages and Web-production workflows.

Sure, XPress lets you create Web standbys such as menus, specify basic cascading style sheets (actually preferred font lists), set up single- and two-point rollovers, selectively convert text boxes' contents into graphics, convert all graphics into a Web-supported format, add hyperlinks, and preview pages in a browser. But you're still limited by a finite page size. And you can't create templates,

continues

RATING: ♦♦♦♦

PROS: Allows project files that contain both print and Web layouts, with multiple page sizes; text synchronization for boilerplate text; multiple undos and redos; PDF export without additional software; familiar interface.

CONS: Printed manual costs $50; OpenType support limited to Western European characters; text synchronization works only on whole text boxes and paths; product-validation protections can be tripped by minor hardware upgrades.

PRICE: $1,045; upgrade from version 5, $199; from version 4, $299; from version 3, $499

OS COMPATIBILITY: Mac OS X

COMPANY: Quark, 800/676-4575, www.quark.com

real cascading style sheets that specify complete formatting, or frames; work with JavaScript; switch to an HTML code view; and so on. (You *can* now link to other pages in your layout.)

The XML creation, editing, and tagging capability, little-changed since version 5, remains awkward and mysterious. It's not worth the trouble of figuring it out.

More Refinements

Quark has added print-level PDF export to XPress 6 by way of Global Graphics' widely used Jaws PDF-creation technology, which can remove the need for rival Adobe's Acrobat Distiller software. You can set output attributes similar to Distiller's, but you can't save those settings for future documents (as Distiller can), and you can't take advantage of the new PDF/X print-production format.

Designers who need native Adobe PDF-export capabilities can use Distiller with XPress 6. If you use Distiller's watched-folder capability for automatic PDF conversion, XPress 6 lets you specify a destination folder for PDF files.

The implementation of multiple undos and redos is an important, long-awaited enhancement. You can undo as many as 30 actions, and you can even pick an action from a menu at the bottom of the document window, skipping past intervening steps and undoing them all. But the undo descriptions are brief, so several actions may have the same labels. A nice touch is the ability to set the redo keyboard command to the Adobe standard (⌘-shift-Z), the Microsoft standard (⌘-Y), or the single-undo standard (⌘-Z). And if you lock or unlock a layer, XPress 6 forgets all its undo and redo actions.

The final significant enhancement is the new high-resolution preview. Now you can import images at full resolution, to get a realistic look at them even when you zoom in; high-res previews are also helpful with meticulous mask generation. You can turn this feature on for specific images, and you can disable it for entire projects and then re-enable it. But there's a catch: it works only if you register the software with Quark (Quark sends you the required XTension after you register). And by registration, Quark means "full name and address" registration, not the new activation feature that simply ties your copy of QuarkXPress to your Mac so someone else can't use the same software on another machine. (While I have no objection to software activation to prevent piracy, I do object to Quark's approach. It forces you to call customer support to reactivate if you upgrade your Mac—even if you just install memory, a graphics card, processor upgrades, or a new hard drive—more than five times. XPress should be smart enough to know that you haven't installed it on a wholly different Mac.)

The InDesign Question: Is It Time to Jump Ship?

It means something that the hubbub online and at conferences preceding this QuarkXPress release usually came down to the question "Is it time to abandon XPress and move to InDesign?" Many users seriously doubt Quark's commitment to them, and InDesign 2 offers a functionally equivalent alternative for bread-and-butter publishing.

Although there's a lot to admire in InDesign, many designers will remain more comfortable in XPress and see no reason to switch. And why learn a new approach and interface at this point? After all, QuarkXPress isn't an abandoned product (as PageMaker became in the early 1990s, giving professional users no real choice but to move to XPress). At the very least, XPress 6 lets you defer the decision to switch for another few years.

Though these two powerhouses are equivalent, they're not yet equal. Each offers functions that the other doesn't.

QuarkXPress Exclusives

- Projects can contain print and Web layouts, as well as multiple layouts with different page settings
- Support for Hexachrome colors
- Automatic backup and file-versioning
- User-defined stripes and dashes
- User-defined underlines
- Boilerplate text can be synchronized across text boxes and paths
- Text-box background goes opaque when you edit to aid display of text superimposed on graphics
- Text can flow between tables, text boxes, and cells
- Web-specific production tools, such as forms, lists, radio buttons, rollovers, and cascading style sheets
- Lets you designate which text boxes are converted to graphics during Web export
- Fraction-building tool that works for any font or combination of numerators and denominators
- Halftone adjustments for individual images and image contrast controls

InDesign Exclusives

- Multiline text composition
- Optical margin alignment
- Optical kerning
- Menu for inserting special characters easily
- Support for OpenType font attributes
- Custom text strokes
- Imports native Illustrator and Photoshop files, with transparency
- Multiple views of the same document
- Drop-shadow and feathering effects for objects
- Eyedropper tool for color and text-format sampling
- Transparency settings for objects
- Excel and Word table import
- Tables that flow across pages
- Ability to base one master page on another

The rest of XPress 6's changes are largely refinements to existing features. For example, there's finally a Paste In Place command, which puts a copy of an item in the same location on the destination page as on the original—perfect for copying across pages or layouts. The Quark CMS color-management and Fraction/Price preferences now reside with the rest of the preferences (the Starburst settings still don't). You can now use the controls in the Print dialog box's new Layers pane to completely lock entire layers, prevent a layer from printing, or allow a locked layer to print. And exception dictionaries now work across platforms, so you can share them with Windows users. The table feature introduced in version 5 has the most refinements. For example, you can now link text cells, group table items, remove gridlines between cells, and more finely control the formatting of cells and their contents. But InDesign's table feature is much more powerful—XPress is still clearly behind here.

Quark Interactions

You can't get around the fact that adopting XPress 6 means adopting OS X. Many publishers would also have to upgrade to G4 or G5 Macs and to newer software, such as font managers. Perhaps the costliest component in a publishing operation, the font library, is no barrier to switching, as OS X supports the same font formats as OS 9.

If you can live with some problems in screen updating, XPress 4 and 5 run at decent speeds in OS X's Classic mode. When you switch to XPress 6 on OS X, you'll find that some operations are faster and some are slower. File-oriented activities, such as opening project files and running Collect For Output to copy all files related to a project into one directory, take a few seconds longer. But switching views and some find-and-replace operations are a bit faster. The performance feels comparable to XPress 5 on OS 9 and OS X.

Macworld's Buying Advice

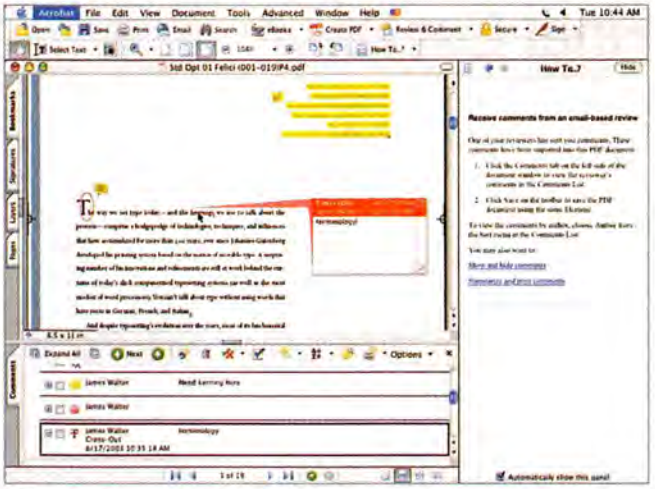
Once you get past the "it's about time" reaction to QuarkXPress 6.0, you'll start appreciating its enhancements. They're worthwhile for any XPress-based production shop, and Quark's upgrade pricing is easy to stomach. Version 6 does a good job of extending XPress's capabilities without complicating its core strengths. For example, XPress has not succumbed to the palette-itis that infects Adobe's products. Could XPress 6 have offered more? Yes. Does it offer too little? Not at all. □

Acrobat 6.0 Standard

PDF App Becomes the Workgroup's New Best Friend

BY JIM FELICI

When Adobe Acrobat debuted 10 years ago, it seemed unlikely that Adobe would reach one of the company's goals: creating paperless offices and PDF-only publishing workflows everywhere. Acrobat needed more and better-designed tools for group collaboration, as well as extensive graphics features, if professionals were to look twice. But after all those years, we have Acrobat 6.0—in Standard and Professional versions (see "Acrobat 6.0 Professional" for a review of the pro version). Running only on OS X 10.2.2 and later, Acrobat 6.0 is a must-have upgrade if ever there was one.



Editing by Committee Made Easy Acrobat's flexible comments summary window (shown here at the bottom of the page) makes organizing and reviewing a workgroup's annotations to a PDF file fluid and intuitive.

Faster, Easier PDF Files

With either edition of Acrobat 6.0, PDF files are much easier to make than with previous versions. Unless you use Distiller to make PDF files from PostScript disk files, the program stays in the background. Acrobat adds what looks like a printer driver to your Print dialog box's printers list. You make a PDF file by "printing" the original. In Microsoft Office applications, Acrobat adds two toolbar buttons that let you convert a document to PDF and send it via e-mail. Acrobat can also create PDF files from screen captures.

You choose one of four default settings for Distiller to use when creating PDF files: Standard, High Quality, Press Quality, or Smallest File Size. These settings work very well, and you can edit them to create new ones.

Acrobat's new Create PDF toolbar menu lets you combine multiple PDF files to form one large PDF file. Watch for a bug—if you select several files at once, Acrobat may scramble their order. You may need to alter their sequence manually.

Organization Is (Almost) Everything

Adobe has streamlined Acrobat's interface. Select View: Task Buttons to show or hide toolbar buttons that represent the program's many features. Some buttons have pull-down menus that reveal more features, and you'll find improved, easy-to-use tools for adding digital signatures and other security features to PDF files. You can also rearrange the buttons in the toolbar.

Workgroup Tools That Work

Acrobat 6.0's redesigned interface is more efficient, but its collaborative tools can actually

continues on page 45

Acrobat 6.0 Professional

The Rainbow's End for Prepress Pros Lets Technical Pros Down

With all the features of the Standard version and then some, Acrobat 6.0 Professional is a dream come true for graphic artists and prepress pros. But it may leave its secondary market, engineers and architects, stranded by the side of the road.

Most significant for prepress folks is Acrobat 6.0 Professional's ability to output in PDF/X-1a and PDF/X-3 formats, ISO-standard versions that are more restrictive—and hence more predictable and dependable—than other PDF flavors. Moreover, you can preflight your PDF files within Acrobat. Many customizable preflighting scripts are built in, including several for PDF/X.

RATING: 4½

PROS: Much more (and faster) control over PDF output; precision measuring tools; PDF/X support; built-in preflighting.

CONS: PDF 1.5 may create compatibility problems with older versions of Acrobat; can't retain layers in PDF files created by Mac engineering and architecture applications.

PRICE: $449

OS COMPATIBILITY: Mac OS X

COMPANY: Adobe Systems, 800/272-3623, www.adobe.com

Another crucial output feature is the PDF Optimizer tool, which can resample graphics, adjust font-subsetting specs, and remove possibly unwanted content, such as JavaScripts, external links, and thumbnails. It can also optimize files for faster Web display. But it would be more useful if you could save PDF Optimizer settings for future use.

Acrobat 6.0 uses PDF 1.5, so for the short term you should save PDF files in Acrobat 5.0 format to ensure compatibility with older systems.

Acrobat 6.0 Professional can output color separations. It can also take direct control of PostScript output devices to add features, including registration and bleed marks and color bars. Version 6.0's new measuring tools, grids, and guidelines give you precision control over page geometry. You can zoom in to 6,400 percent to examine minute attributes, such as precise alignments.

Acrobat continues to be a good choice for engineers and architects who want to share CAD files and other technical drawings. But the Professional version doesn't offer many additional features for these technical pros.

A Zoom with a View Acrobat 6.0 Professional's Loupe tool can magnify a target by as much as 6,400 percent.

Only users of the Windows-only Microsoft Visio and Autodesk's AutoCAD get one-button PDF creation with layer preservation (Mac users can view and comment on these files, layers intact, with Standard). Of course, we'd like to see PDF file-creation with layers for Mac-based design tools, such as Nemetschek's VectorWorks and Graphisoft's ArchiCAD.

Macworld's Buying Advice

For architects and engineers, the Standard version is enough: Acrobat 6.0 Professional's additional features aren't worth $150 more. But prepress professionals should upgrade to the Pro version. It offers the control they've been waiting for.—JIM FELICI AND GREG MILLER

Final Cut Pro 4

Massive Upgrade Brings a New Wave of Impressive Features

BY ANTON LINECKER

Why simply upgrade a program when you can supersize it? That was clearly Apple's thinking when the company upgraded its flagship video-editing application, adding features collected during a two-year technological shopping spree. Final Cut Pro 4 weighs a hefty 15GB spread over four installation DVDs, and the program *almost* lives up to the hype. It's hugely improved and infinitely more customizable than its predecessor, and it even includes four supplementary applications from Apple—Cinema Tools 2, Compressor, LiveType, and Soundtrack. But like the Final Cut Pro 3 (★★★★; May 2002) release, this version has its share of problems, which we hope are temporary growing pains.

Color Check The Frame Viewer tool splits a frame and shows the color-corrected and original colors side-by-side, helping you evaluate the correction you've made to a scene. It can also compare color between scenes.

Strict Requirements, Strange Installation

Final Cut 4 raises the hardware-requirements bar. G3-based machines, even the current iBooks, are out. CPU-speed requirements for the new RT Extreme feature and Soundtrack application start at 500MHz for Power Macs and 667MHz for PowerBooks. For our tests, we used an 867MHz Power Mac G4 and a dual-1.42GHz Power Mac G4, both running OS X 10.2.6 and QuickTime 6.3.

The first time we tried, we couldn't completely install Final Cut 4. As it turns out, you must install Final Cut Pro and the supplementary applications on a drive with OS X 10.2.5 or later on it. This requirement is to be expected. But strangely, if you want to put LiveType's and Soundtrack's additional 14GB of media files on a separate drive or partition, that volume must also include OS X 10.2.5 or later, whether you boot from that system or not. PowerBook users, or anyone strapped for hard-drive space, may want to set up a FireWire drive with OS X 10.2.6 to hold LiveType's and SoundTrack's additional media files.

On the Move from Version 3

We opened most of our Final Cut 3 projects in Final Cut 4 without a hitch, but some things don't make the transition very well. Reference movies generated in Final Cut 3 that aren't self-contained cause immediate crashes when loaded into version 4.

Also, there's no backward compatibility—Final Cut 4 projects won't open in Final Cut 3. This is important to remember if you have a secondary edit system on a G3 machine, for example. If you start your project in Final Cut 4, you'll need to keep it there.

Working with Final Cut Pro 4

Video pros will no doubt applaud the many improvements to the editing experience. In fact, there are so many that we can't mention them all here. But Final Cut 3 users will still feel at home with the interface.

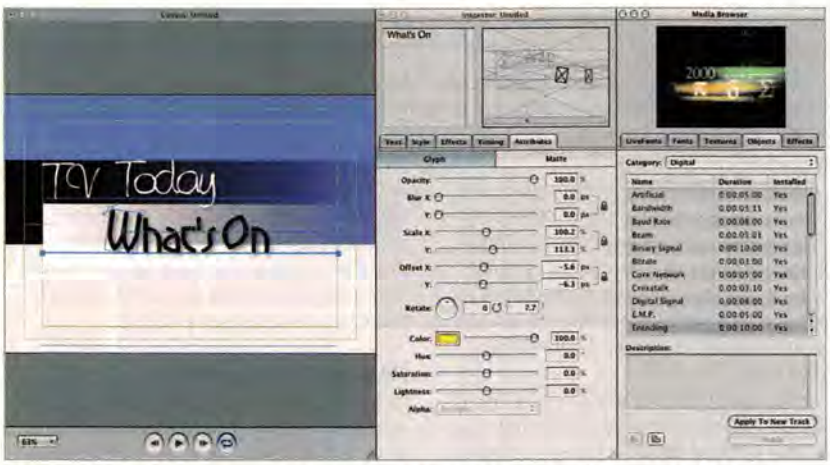
Video editors who use Avid systems have often criticized Final Cut 3 for its unchangeable keyboard shortcuts and lack of other personalization features. But Final Cut 4 changes all that. It allows for full customization of keyboard shortcuts, so Avid editors who switch can now quickly set up Final Cut 4 shortcuts that match Avid's. You can add button shortcuts to any section of Final Cut 4's interface. These improvements make version 4 much easier to adjust.

The flashiest new tool, RT Extreme, lets you view real-time effects that exceed your computer's normal capabilities, by dropping frames and decreasing image quality. RT Extreme is very useful for previewing complex effects and titles in your composition before rendering them. Final Cut 4 also offers an RT Safe mode that limits the number of real-time effects you can view to those that your machine can play at full quality. New to version 4 is the ability to output unrendered real-time effects via FireWire so you can use a professional monitor to keep tabs on your work.

Final Cut 3's inability to capture across time-code breaks is skillfully resolved in ver-

LiveType: Let the Animated Titles Fly

LiveType evolved directly from Apple's smart purchase of Prismo Graphics' India Titler Pro (★★★½; February 2002). LiveType lets you build simple static titles and slick, customizable animated titles effortlessly. The amazing quality of these animated titles is almost shocking, and the amount of customization available with the program's LiveFonts is equally astounding. While you can achieve similar title effects in Boris Red or Adobe After Effects, LiveType lets you create complex, flashy titles in minutes rather than hours.



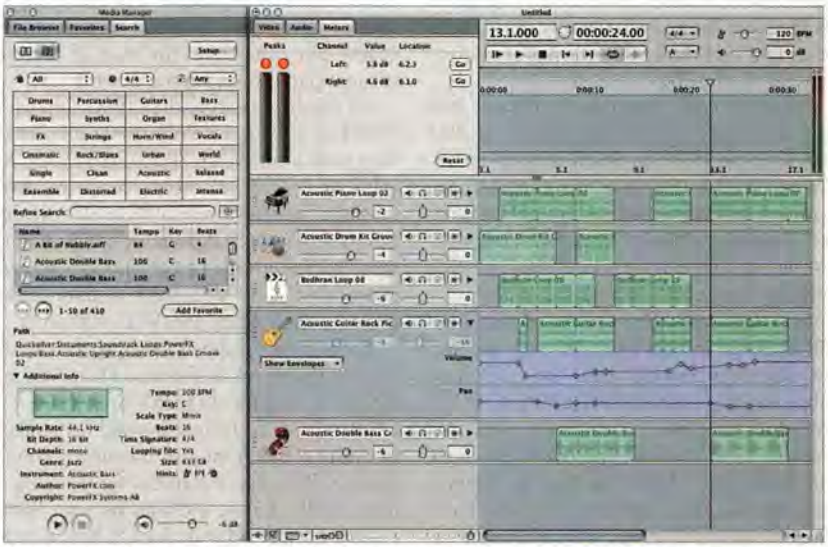
Letters with Style You can use LiveType's templates as a foundation for producing fantastic and unique type in very little time.

Cinema Tools 2: Keykode Tracking Stands Alone

Apple now includes the previously $999 Cinema Tools (♦♦♦♦; October 2002)—Final Cut Pro's film Keykode tracking database—with Final Cut Pro 4. Cinema Tools got a minor revision, gaining ink-number and change-list export capabilities. Our only gripe is that Cinema Tools 2 remains a stand-alone application that communicates only tangentially with Final Cut Pro. Cinema Tools is superior to the Filmscribe utility that ships with Final Cut Pro's closest rival Avid Xpress DV, a pure list-match-back utility. But some things are still missing, such as support for 3-perf 35mm editing, which is becoming more prevalent in professional television environments.

Soundtrack: Make the Music You Want to Hear

Soundtrack is an application made possible by an acquisition from Emagic. Simply put, Soundtrack makes you feel as if you're a musical genius. With 5GB of high-quality sound loops, anyone can build a musical composition quickly. Soundtrack even has a real-time matching feature that adjusts loops of different instrument sounds to the tempo and key of your composition, thus allowing some very unorthodox music and sound combinations that somehow sound good. If Soundtrack has a flaw, it's that the program is so fun that it's incredibly addictive. You can spend days happily futzing with this program; it's no wonder that Apple recently made Soundtrack available separately for $299.



Musical You Soundtrack lets you choose instruments and preview loops (left), as well as customize your composition (right). You can also keyframe each audio track and add effects.

sion 4. If the program encounters a timecode break during capture, it creates a new clip by default. This fix alone will gratify video editors.

Final Cut 4 can natively remove the Advanced 3:2 Pulldown from Panasonic's DVX100 and DVX900 24p cameras. Unfortunately, the program doesn't natively remove traditional 3:2 pulldown; instead, Cinema Tools 2 does this separately.

Apple completely rebuilt Final Cut 4's audio features. With the appropriate hardware, it can now output as many as eight audio channels during an edit to tape—a very welcome addition. There's also a multichannel mixer that can track your level changes in real time. With these additions, Final Cut Pro finally has some serious tools that will make soundpeople happy.

Final Cut Pro's 3-Way Color Corrector hasn't changed much since version 3, but the new Frame Viewer tool lets you preview your color corrections in a split screen with your previous shot, future shot, and even the current shot (to clearly see changes you've made). This side-by-side comparison makes color matching between scenes much easier (see "Color Check").

While they're not high-profile changes, clip ganging, dupe detection, clip merging, autorendering, 10-bit video rendering, and support for DV50 are great additions to the program that raise Final Cut 4 to the next level of professional video software.

Not So Final After All

Final Cut 4's major problem is that it isn't completely stable. During our testing, the program quit spontaneously several times, often when it was capturing and importing footage.

Final Cut 4 is also somewhat unpredictable. For example, the Range Check option (which ensures that video is within broadcast limits) wreaked havoc on our systems. With the option selected, the Viewer and Canvas windows wouldn't update properly, even if we loaded a new clip into the viewer. The title-safe and time-code overlays also didn't work when Range Check was engaged. Even the Title tool, a staple since Final Cut Pro 1, has a new bug: some fonts, such as Times and Arial, are italicized for no reason.

Then there's the issue of XML support. Despite what Apple's Web site says, this feature isn't included in Final Cut 4. When we asked about this, Apple said that XML support with AAF import and export would arrive in an update later this summer.

Macworld's Buying Advice

Final Cut Pro 4 is a marvelous but flawed upgrade. There are hundreds of improvements throughout the program, and even taken on their own, the new bundled applications are amazing. Overall, Final Cut Pro 4 gets high marks, but Apple will need to release a few updates to put on the final polish and work out some kinks. □

RATING: ♦♦♦♦

PROS: Hundreds of small improvements; fantastic supplementary applications; very customizable interface; great real-time–effects abilities; multichannel audio-out support.

CONS: Significant bugs; no XML support; inconvenient installation requirements.

PRICE: $999; upgrade from previous versions, $399

OS COMPATIBILITY: Mac OS X

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

Compressor: Encoder with Surprising Problems

Many video professionals think DVD Studio Pro's MPEG-2 encoder is the program's weakest aspect. Thankfully, Final Cut Pro's new Compressor application offers much more control over the encoding quality of video, including two-pass variable-bit-rate (VBR) encoding.

In our tests, Compressor's results were exceptional, especially when we enabled two-pass VBR, noise reduction, and advanced motion detection. Sadly, the program didn't always work. It feels as though the programmers rushed to finish Compressor (two typos in the program are telling). On numerous occasions, we simply weren't able to encode video. The problem seems to be related to the computer's network-connection status. If our Mac was connected, the Submit button was grayed out. If we disconnected or turned off AirPort, Compressor was suddenly enabled.

250GB FireWire 800 Drives

External FireWire 800 Devices Useful for Moving Large Files Fast

The OWC Mercury Elite Pro FireWire 800

BY JAMES GALBRAITH

When we tested the first Macs with FireWire 800 ports (*Reviews*, May 2003), we were hard put to find any peripherals to plug in to them. That's not the case now: the number of available FireWire 800–equipped products has increased steadily, and there are several FireWire 800 external drives out there for the testing.

The difference between FireWire 800 (also known as 1394b) and FireWire 400 (1394a) comes down to the theoretical transfer rate: FireWire 800 has a theoretical transfer rate of 800 Mbps (twice as fast as FireWire 400). In reality, anyone moving files between a G4 and an external FireWire 800 drive will probably never reach that transfer rate.

Macworld Lab tested four of the new 250GB FireWire 800 hard drives to see just how fast they moved data: the EZQuest Cobra FireWire 800/USBII, the LaCie D2 U&I, the Other World Computing Mercury Elite Pro FireWire 800, and the WiebeTech 250GB Fire800. Although they performed similarly, the OWC Mercury Elite Pro FireWire 800 was our favorite. It has the best price and a full complement of USB and FireWire ports for connecting to different hard drives.

Bundled Up

Speed isn't the only difference between FireWire 400 and FireWire 800: FireWire 800 also allows longer cables, which can dramatically increase the distance between FireWire devices. Cables aren't cheap, so their inclusion in a FireWire 800 commercial package is one reason FireWire 800 drives are more expensive than FireWire 400 drives. (Another reason is component costs—but over time, the cost of the constituent parts should come down).

All the drives except the OWC ship with a FireWire 400–to–FireWire 800 cable, and all ship with a FireWire 800–to–FireWire 800 cable and USB 2.0 cables. Since relatively few Mac models have FireWire 800 capabilities (the 17-inch PowerBook G4 and the most recent group of G4 and G5 towers), more Mac users will want to connect the drives to their Macs' FireWire 400 ports.

Each drive shipped with software that extends the drive's usefulness. The OWC and EZQuest include InTech's SpeedTools, an OS 9–only drive-formatting and benchmarking utility. EZQuest also includes a copy of Dantz's Retrospect Express for backing up data locally. LaCie includes its own SilverKeeper backup software for OS X and its SilverLining Pro disk-formatting software for OS 9. WiebeTech includes a copy of MacDrive 5 for Windows, a utility that lets Windows users mount and use Mac-formatted drives. The WiebeTech drive was the only unit to show up formatted as a DOS volume; it would not mount in OS X 10.2.6. We used Apple's Disk Utility software to reformat the drive as a Mac volume, and we were off.

Silver Foxes

The four drives all have silver or gray cases. The EZQuest has an internal power supply and uses a standard power cable, which is handy for folks who plan on shuttling their drives from location to location. Of course, putting the power supply inside the case increases the case's size, and with the EZQuest's slightly bulky appearance, this drive could easily be mistaken for a CD-RW drive. If we had to pick a drive on looks alone, we'd choose the LaCie, for its sturdy and sleek appearance.

The OWC, WiebeTech, and LaCie drives are thin, and each ships with a stand that lets you position it vertically. But they also require that you cart around an external power supply and power cable.

All the drives have at least two FireWire 800 ports and one USB 2.0 port. The LaCie and EZQuest have a third FireWire 800 port, while the OWC and WiebeTech include a FireWire 400 port instead.

Real-World Performance

To see what you might experience when you actually use one of these drives, we hooked up each to the FireWire 800 port on the back of a dual-1GHz G4 tower with OS X 10.2.5 installed and 512MB of RAM. Then we moved some files and folders around the way we figured you would—by reading and writing between the internal and external drives, and performing some file-duplication operations that never hit the internal drive. We also tested the WiebeTech as a FireWire 400 drive and an internal drive so we could compare the results against the FireWire 800 drives and see how well one drive worked in three scenarios.

We found that, as anticipated, the FireWire 800 drives performed almost identically to one another when operating in the same mode. We also found that the drives were faster across the board when connected via FireWire 800 ports than when connected via FireWire 400 ports, but the difference in connection speed depended heavily on the type of operation we performed.

The test that showed the greatest difference between FireWire 800 and FireWire 400 involved simultaneously reading and writing a large file to the same drive, which is what happens during file duplication. When duplicating a 1GB file, the FireWire 800 drives completed the task 38 percent faster than the FireWire 400 drive. When duplicating a folder filled with 1GB of files

PHOTOS BY RICK RIZNER

A FireWire 800 PCI Card for Every Occasion

You may not own one of the FireWire 800–ready Macs. But if you own a Mac running OS X 10.2.4 or later with an available 64-bit PCI slot, several companies can help you—with a FireWire 800 PCI card, which effectively adds external FireWire ports to your Mac. We looked at nine FireWire 800 PCI cards: EZQuest's FireWire 800 PCI Card, FireWireDepot's 1394b FireWire 800 PCI Host Adapter, Granite Digital's FireVue 1394 FireWire PCI Host Adapter, Iogear's FireWire 800 PCI Card, LaCie's FireWire 800 PCI Card, Orange Micro's OrangeLink FireWire 800/1394b PCI Card, Sonnet's Allegro FW800 Adapter, Unibrain's FireBoard 800, and WiebeTech's Fire800 PCI Host.

They were very similar; in fact, FireWire Depot and Sonnet shipped identical-looking cards—the only apparent difference was the logo stickers the drives bore. Orange Micro and EZQuest provide two FireWire 800 ports and one FireWire 400 port; the other cards offer three FireWire 800 ports. All the FireWire PCI cards work with OS X 10.2.4 or later, in any 64-bit PCI slot.

FireWire 800 PCI Cards

COMPANY	PRODUCT	PRICE	CONTACT
EZQuest	FireWire 800 PCI Card	$79	714/694-0031, www.ezq.com
FireWireDepot	1394b FireWire 800 PCI Host Adapter	$85	707/251-9228, www.fwdepot.com
Granite Digital	FireVue 1394 FireWire to PCI Host Adapter	$99	510/471-6442, www.granitedigital.com
Iogear	FireWire 800 PCI Card	$100	866/946-4327, www.iogear.com
LaCie	FireWire 800 PCI Card	$89	503/844-4500, www.lacie.com
Orange Micro	OrangeLink FireWire 800/1394b PCI Card	$89	714/779-2772, www.orangemicro.com
Sonnet	Allegro FW800 Adapter	$90	949/472-2772, www.sonnettech.com
Unibrain	FireBoard 800	$99	925/866-3000, www.unibrain.com
WiebeTech	Fire800 PCI Host	$80	316/744-8726, www.wiebetech.com

FireWire 800 Drives Compared

COMPANY	PRODUCT	MOUSE RATING	PRICE	CONTACT	PROS	CONS
EZQuest	Cobra FireWire 800/USBII	♦♦♦♦	$599	714/694-0031, www.ezq.com	Includes helpful backup utilities Dantz Retrospect Express and InTech SpeedTools.	A little bulky.
LaCie	D2 U&I	♦♦♦♦	$599	503/844 4500, www.lacie.com	Nice case; vertical stand; comes with helpful backup utilities SilverLining Pro and SilverKeeper.	None significant.
Other World Computing	Mercury Elite Pro FireWire 800	♦♦♦♦½	$519	www.macsales.com	Vertical stand; comes with helpful drive-management utility InTech SpeedTools; FireWire 400 port.	None significant.
WiebeTech	250GB Fire800	♦♦♦♦	$550	316/744-8726, www.wiebetech.com	Vertical stand; comes with compatibility program MacDrive 5 for Windows.	Comes with DOS-formatted drive only.

and subfolders, the FireWire 800 drives were 23 percent faster. When copying a file from the internal boot drive to the external FireWire drive, the FireWire 800 drives were 30 percent faster than the FireWire 400 drive. Other tests didn't show as much of a difference. The FireWire 800 drives copied a 1GB folder of files to the internal boot drive 17 percent faster than the FireWire 400 drive. Backing up the same 1GB folder from the internal drive to the FireWire 800 drives with Retrospect was a bit more than 9 percent faster than with a FireWire 400 drive.

Although the beauty of FireWire is its plug-and-play connectivity and its easy portability, you might wonder (as we did) how an external FireWire 800 drive's performance compares with that of the same drive installed internally. Interestingly, the tests where the FireWire 800 external drives showed the least benefit were where the internal drives excelled. When duplicating the test file and test folder, the internal drive's speed fell right between the FireWire 800 and FireWire 400 results. The internal drive was nearly 11 percent faster in performing the 1GB Retrospect backup than FireWire 800 and more than 30 percent faster than FireWire 800 when copying the same 1GB folder to the boot drive.

Macworld's Buying Advice

These FireWire 800 drives were faster in every test, but they're definitely not twice as fast as FireWire 400 drives. Time will tell whether Apple's G5 machines, which feature faster buses, will translate into better performance from external FireWire 800 drives.

If you're moving large files between your systems and external drives, a FireWire 800 drive may be a smart choice. We recommend the $519 OWC Mercury Elite Pro FireWire 800. It has the lowest price of the bunch and includes a variety of ports that make it compatible with a wide range of machines. □

Ports on the OWC Mercury Elite Pro FireWire 800

Is FireWire 800 RAID Fast?

We wanted to know whether FireWire 800 was faster even on multiple drives configured into a RAID array. OS X's Disk Utility software lets you take multiple drives and create a larger virtual drive with data being written across all of the disks; this is called a striped array or RAID Level 0. We striped two of our FireWire 800 drives (one attached to a FireWire 800 PCI card and one on our test Mac's built-in FireWire 800 port) into one large partition, and then we ran the same tests that we performed on the individual 250GB FireWire 800 drives.

The results of some tests (copy from, copy to, and backup tests) showed no real difference between the striped drives and the single drives. However, the RAID array finished the 1GB-folder–duplication test in less than half the time our single FireWire 800 drives took. And the RAID array duplicated the 1GB file in 28 seconds, while the single drives took 47 seconds.

What if we striped all the drives in the roundup into one giant 931.54GB FireWire 800 RAID array? We installed three of the PCI FireWire 800 cards into our Mac, attached one drive to each card and one to the built-in FireWire 800 port on our test Mac. Then we ran the same tests. The tests that didn't show any appreciable difference with two drives didn't show any with four. The file-duplication tests continued to improve, with the four-drive array taking just 30 seconds to duplicate the 1GB folder and just 19 seconds to duplicate the 1GB file, compared with 60 seconds, 31 seconds, and 47 seconds (respectively) for the single drives.

RAID arrays can get a boost from FireWire 800 drives, but only if the data steers clear of the internal drive and there's enough RAM to hold the file in memory. We saved changes to a large Adobe Photoshop document that resided on the RAID. Saving a 300MB file as a copy with 1GB of RAM installed took 11 seconds on the four-drive RAID and 13 seconds on the two-drive RAID, compared with 16 seconds on the single drive. Five seconds may not seem like much, but it adds up.

Macworld LAB TEST	Copy 1GB File from Internal to Test Drive	Duplicate 1GB Folder on Test Drive	Duplicate 1GB File on Test Drive	Copy 1GB Folder from Test Drive to Internal Drive	Backup 1GB Folder from Test Drive to External Drive
EZQuest on built-in FireWire 800	0:27	1:29	0:47	0:51	3:02
OWC on built in FireWire 800	0:27	1:31	0:47	0:55	3:01
LaCie on built-in FireWire 800	0:25	1:31	0:47	0:53	3:06
WiebeTech on built-in FireWire 800	0:25	1:31	0:47	0:53	3:04
WiebeTech on built-in FireWire 400	*0:34*	*1:52*	*1:05*	*1:02*	*3:20*
Western Digital on internal ATA66	*0:26*	*1:42*	*0:57*	***0:37***	***2:43***
	<Better	<Better	<Better	<Better	<Better

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

We connected each drive to the built-in FireWire 800 port on the back of a dual-1GHz Power Mac G4. We recorded the amount of time it took to copy a 1GB file from the system's internal drive to the external test drive. We then duplicated a 1GB folder on the external test drive, duplicated a 1GB file on the test drive, and copied the 1GB folder to the system's internal hard drive. We also backed up the 1GB folder from the system's internal drive to the test drive, using Dantz Retrospect Express 5. We removed the drive from the WiebeTech enclosure and installed it on the ATA66 bus inside the dual-1GHz test system and ran the same tests.—MACWORLD LAB TESTING BY JAMES GALBRAITH

FTP Clients

Seven OS X Programs Help You Push Your Files around the Internet

BY JASON CRANFORD TEAGUE

If you've ever watched an e-mail application choke on a 4MB attachment, you know that sometimes you need an alternative to directly sending or receiving files. And if you've ever e-mailed a crucial file that never arrived at its destination, you'll want a way to transfer files and make sure your recipient received them.

File Transfer Protocol (FTP) is tailor-made for quickly moving large digital files between a remote computer acting as an FTP server and an FTP client that lets you access and upload those files. And there are now several excellent FTP clients for Mac OS X.

We evaluated seven FTP clients available for OS X: Fetch Softworks' Fetch 4.0.3, On-Core's SimpleFTP 2.01, Panic's Transmit 2.5, RBrowser's self-titled RBrowser 3.1.2, Stairways Software's Interarchy 6.2, Vicomsoft's FTP Client 4.0.1, and Xnet Communications' CaptainFTP 2.6. We also considered how these programs stack up against OS X's Finder, which you can also use to connect to FTP servers. If you want to download files from an OS X–based server, the Finder may be all you need, but it won't let you upload files (see "FTP from the Desktop: Connecting with the Finder"). All seven programs performed solidly, but two programs with advanced features and intuitive use came out on top: Transmit and FTP Client.

The Basics

FTP clients should be able to connect to common FTP server types, such as AppleShare IP, Data General, Quantel Hal, Serv-U, Windows 2000, and WU-FTPD. All the FTP programs we reviewed can upload and download files from these FTP server types, in standard FTP mode and Secure FTP (SFTP) mode.

See What You'll Get With Transmit, you can preview an image on the FTP server before you download it.

Beyond that, even a rudimentary FTP client should have some file-management capabilities, be able to move and delete files from the server, and keep a list of bookmarks for quick access to different servers. In addition, an FTP client should let you set permissions for each file, so you can determine who can view it (read), make changes to it (write), run it (if it's a program), or search it (if it's a text file). All the clients we evaluated included these basics, but some outperformed others.

Ease of Use: The Interface

We looked for programs that closely integrated themselves into Mac OS—that mimicked the Finder, supported long file names, and allowed drag-and-drop file transfers. Although Fetch was once the standard FTP program for the classic Mac OS, its interface has barely improved since its conversion to OS X. Fetch's interface is easy enough to use: clicking on the Get button in the browser window downloads the selected files, and clicking on the Put Files button uploads files to the current directory. However, many people may find this language confusing ("put" what *where*?).

Interarchy has been around almost as long as Fetch, but it has embraced OS X's navigation style. Like FTP Client, Interarchy lets you view files in list and column views. Interarchy shares a lot of interface conventions with Web browsers, including an editable location field, which displays the current file path at the top of each window.

SimpleFTP's interface is similar to Fetch's—it has a browser area for getting around on the server and two buttons for uploading and downloading files. But while Fetch and SimpleFTP have clean interfaces, they lack other file-management features such as the ability to intuitively move files between different directories (folders) on the FTP server. Their drop-down navigation for moving up a directory structure is cumbersome, especially since moving down a directory structure requires clicking on folder icons instead.

In many ways, RBrowser is the most OS X–like of the FTP clients we reviewed. It lets you switch between three view modes (Icon, List, and Columns) so you can view multiple levels simultaneously. And its navigation is like the Finder's, so it's easy to use. But you can't resize columns in Columns view, which is frustrating because you can't fully view long file names.

OS X FTP Clients Compared

COMPANY	PRODUCT	MOUSE RATING	OS COMPATIBILITY	PRICE	CONTACT	PROS	CONS
Fetch Softworks	Fetch 4.0.3	●●●	Mac OS 9, Mac OS X	$25	866/422-0023, www.fetchsoftworks.com	Free upgrade from version 3.0.3; long history on Mac platform.	Limited interface; few advanced features.
On-Core	SimpleFTP 2.01	●●½	Mac OS X	$15	732/842-1973, www.on-core.com	Least expensive.	Limited interface; no advanced features.
Panic	Transmit 2.5	●●●●½	Mac OS X	$25	503/296-2185, www.panic.com	Supports Rendezvous; file-preview drawer; advanced synchronization features; batch downloads from multiple directories.	Single-level viewing only; online text-file editing only.
RBrowser	RBrowser 3.1.2	●●●●	Mac OS X	$49	www.rbrowser.com	Standard OS X view modes (Icons, List, Columns); powerful information dialog box; ability to open and edit files online using any installed application.	Complex interface.
Stairways Software	Interarchy 6.2	●●●	Mac OS 9, Mac OS X	$45	www.interarchy.com	Standard OS X view modes (List, Columns); well tested.	Limited preview capabilities.
Vicomsoft	FTP Client 4.0.1	●●●●½	Mac OS 9, Mac OS X	$35	888/842-2608, www.vicomsoft.com	Standard OS X view modes (List, Columns); droplet feature for fast file upload; advanced file-sync feature.	Difficult to drag and drop in Column mode.
Xnet Communications	CaptainFTP 2.6	●●●½	Mac OS X	$25	http://captainftp.xdsnet.de	Accelerated download for slower Internet connections; supports Rendezvous.	Limited synchronization capabilities; confusing icons.

FTP from the Desktop: Connecting with the Finder

Another option for transferring files via FTP might be OS X's Finder. OS X Macs can network with virtually any other computer on a local network or the Internet as easily as they can communicate with connected hard drives. In fact, OS X users can mount distant drives on their desktop and then use the Finder to move files around.

The beauty of using OS X to transfer files is that you don't have to run a separate application; the entire process of moving files around is contained in the Finder. In theory, this also includes any hard drives making files available via FTP. To use the Finder's FTP capabilities, choose Go: Connect To Server (⌘-K), enter the name of the FTP server in the address field (ftp://ftp.*myserver.com*, for example), and click on Connect. You'll be prompted for your login credentials—unless you've encountered an anonymous FTP server—and presto: the FTP server appears as a volume on your computer.

Like any FTP client, OS X's Finder lets you add servers to a favorites list, preview remote files, and even set permissions via the Info window (⌘-I). In fact, you can drag a remote folder to your desktop to create an alias. Then, in Column mode, you just click on the folder icon to open the directory (as long as you have Internet access) or use the remote folder (like FTPClient's droplets) to quickly download files.

Using OS X for this task can be problematic. Logging on to FTP servers will allow you only to download, not upload, files. Your ability to move files to computers that aren't Macs is limited.

There are still many things that an FTP program can do better than the Finder. For example, FTPClient lets you synchronize folders with a single click, Transmit lets you preview the entire contents of a text file rather than just the first few lines, and all these FTP clients let you edit bookmark settings. The Finder, on the other hand, requires that you delete and re-create a bookmark.

FTP Client gives you two OS X view modes (List and Column), but in Column mode, you can't drag and drop directly from the desktop to upload files—a major drawback. Vicomsoft reports that this is a known bug in OS X and that Apple will correct it in future releases, but there's no such problem in RBrowser's Columns mode.

At first, the interfaces of Transmit and CaptainFTP seem very similar. Both let you browse your Mac's files and the remote FTP server at the same time in side-by-side browsers; FTP Client does this, too. This layout makes it easier to manually synchronize files and make sure that the application's automatic sync feature is working properly. However, Transmit's interface is intuitive, while CaptainFTP's interface is quirky—many of its buttons have inscrutable icons. If an easy-to-use interface is your highest priority, Transmit is the way to go.

Workflow and Synchronization Features

Key to any FTP client is a well-implemented bookmark feature. If you can bookmark servers and directories within a server for quick access, you can significantly speed up your workflow and store not only complex server addresses but also user IDs, passwords, and other important settings.

Transmit outshone the other applications, with its integrated and understandable login dialog box, which included both a drop-down menu for bookmarks and a drop-down menu for accessing other computers on the network via Rendezvous. This lets you easily connect to any Mac on your local network for quick file transfers. Although CaptainFTP has a similar feature, Transmit puts it up front.

All of the clients except SimpleFTP let you make the contents of your local and remote directories match. Most let you do this in just a few clicks.

File synchronization is FTP Client's strong point. Only FTP Client has the ability to create FTP *droplets*, which let you use drag and drop to quickly perform an action. Select a folder on the FTP server, choose Bookmark: Save As Droplet (⌘-D), give the droplet a name, and then save it somewhere handy. Whenever you need to upload a file to that folder, drop it on the droplet icon. The droplet automatically runs FTP Client, logs on, and uploads the file.

Previewing and Editing Features

Transmit can show you the content of any file. You still have to temporarily download the file (which starts automatically when you click on it), but seeing the content before committing to downloading files is nice. For example, if you're searching for a particular HTML file, you can scan through several files, viewing the code in the preview pane, to find the one you're looking for—without having to download and open each one independently.

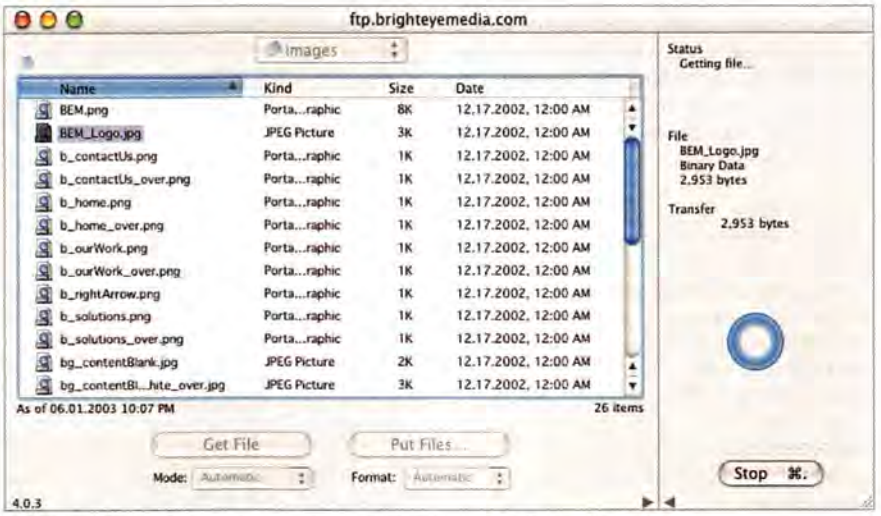
Unlike the Finder, which will preview images in the final pane of column view, Interarchy will display only the file icon and file information. It lets you preview, but not edit, text files in TextEdit. However, as with Transmit, you can edit files in BBEdit (if it's installed).

Fetch, too, has some great features for previewing and editing graphics and text files before download, but they're hidden in menus, not an integral part of the interface. For example, to preview a graphics file, you need to click on the file in the browser and then select Remote: View Media File. A separate window will open and display the image—producing more screen clutter.

RBrowser shows the most promise with editing remote files. Although the other FTP clients let you edit remote files, only RBrowser lets you use any available application on your computer. However, this feature is accessible only through the Info palette or with the menu command File: Open In Application (and then you have to choose the application). Both methods require several clicks.

Macworld's Buying Advice

You have several excellent options. Transmit is the easiest to use and most powerful FTP client available. We appreciated its intuitive interface, excellent features, and solid performance. FTP Client, too, has a well-designed user interface and provides exceptional performance. It also gives you the ability to create fast access droplets, which, if you regularly upload files to the same place, can be invaluable. □



Downloading with Due Haste You can monitor progress as Fetch downloads a file.

Xserve

Newest Version of the Xserve Features Less Noise, More Power for Demanding Workloads

BY P. J. CONNOLLY

It's no wonder that people were impressed when Apple's first decent attempt at server-class hardware appeared last year. After all, the company's engineers had done a good job of packing a flexible and powerful dual-CPU workhorse into a 1U configuration. Of course, the original Xserve wasn't perfect. It ran hot and loud—especially when compared with similar x86-based 1U servers—and Mac loyalists even complained about the CD reader, which featured a "coffee-cup" tray.

The good news is that the second pass at the Xserve addresses many of the design complaints customers had. The obvious difference is that the CD reader now has a sleeker, slot-loading design. Less obvious are the improvements in the Xserve's airflow and cooling systems. Some of these changes are readily apparent from the outside: a few extra perforations in front draw in a little more air, and the holes in the rear of the case are now hexagonal instead of round. This may not seem like a big deal, but the more efficient hexagon offers additional room for air to flow through. It's subtle indeed, but it demonstrates that Apple's designers are trying to wring everything they can out of the sheet metal.

Other enhancements are inside: the blowers in the new Xserve are less noisy than those in the original model, and power-saving functions native to the CPU are enabled when possible in an attempt to reduce the server's internal temperature. The new model also features a faster, 1.33GHz processor, so users have a little more horsepower to throw at demanding applications such as video renderers. In terms of raw clock speed, this falls far behind what's available for x86 servers, which are now running at 3GHz and more. But it's difficult to get a handle on just what the difference between the two may be, since both the OS and the processor are going to be variables in any speed or performance tests.

RATING: ♦♦♦♦

PROS: Faster than previous model; quieter when idling; minor tweaks to front-panel controls signal access to alternative booting methods.

CONS: Still awkward in rack-mount configurations; slower CPU clock speed than the x86-based hardware.

PRICE: Single 1.33GHz CPU with 256MB of RAM, $2,799; dual-1.33GHz CPU with 512MB of RAM, $3,799

OS COMPATIBILITY: Mac OS X

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

Like the old Xserve, the new Xserve has its awkward moments. You still have to install a shell to mount the server on the rack (my pet peeve), and the cable-support arm obstructs two accessory slots when installed. But these are minor flaws in an otherwise near-perfect design.

The Xserve's strongest point remains its tight hardware and operating-system integration. This makes the server more manageable than Intel-based machines, which rely on vendor-supplied utilities that may not work well with the server's OS. Even the new Xserve model's LEDs play a management role, by signaling your choice of boot method when troubleshooting. Remote monitoring, restart, and shutdown functions are at your fingertips via an included software application, and you'll find it much easier to manage a rack of Xserves with the built-in tools than to manage anything that exists in the x86 universe. Perhaps the most fundamental of these tools is the SSH secure shell—something you won't find in any version of Windows. SSH lets you perform command-line–based management tasks easily on hardware ranging from servers to desktops.

Macworld's Buying Advice

The Xserve isn't yet perfect, but with the latest tweaks, including a faster CPU and improvements to the cooling and ventilation systems, it just got closer. It's still the easiest server to manage. □

2.52TB Xserve RAID

Server Storage Option Scores on Price, Performance

Apple enters the server storage scene with an impressive 2GB Fibre Channel solution that's ideal for data-intensive work, from video-editing and -render farms to 24-hour on-call data storage. Our 2.52-terabyte Xserve RAID delivered data rates high enough to let us capture and edit uncompressed 10-bit 1080i high-definition video, all at a price roughly one-fifth to one-half of what Apple's competitors are charging.

When you first open the box, you'll be stunned by how beautiful the Xserve RAID looks. When you lift it, you'll be stunned by how much it weighs, thanks to the 2.52TB configuration that loads 14 removable 180GB ATA-100 drive modules into the chassis.

The Xserve RAID's design allows easy access to all the important elements of the unit. We criticized the original Xserve for a lack of redundant components (♦♦♦½; November 2002). Now, the Xserve RAID has added redundancy on all levels but one: the RAID controller cards. The two RAID controller cards are essential elements of the Xserve RAID, and if one card fails, the other doesn't compensate for it while you replace the dud part.

The Xserve RAID delivers on data throughput. With our 14-drive configuration, the Xserve RAID's rates peaked at 206 MBps for reading and 212 MBps for writing when transferring 4MB files in a RAID 50 setup, sufficient for even high-definition editing. Surprisingly, the Xserve RAID maintained steady data rates even when filled to 90 percent capacity. Be aware that the overall data-rate performance depends on the number of drives you stripe together and the type of RAID you use.

The Java-based RAID Admin application, which runs on any platform that can run Java, controls the Xserve RAID. The RAID Admin application lets you set up the RAID configurations and extensively monitor the status of your Xserve RAID box. Unfortunately, the monitoring is buggy and updates slowly—occasionally the RAID Admin utility sent inaccurate messages that hampered, rather than helped, troubleshooting.

Macworld's Buying Advice

The Xserve RAID truly delivers on performance, at a previously unheard-of price. What keeps it from getting a perfect score is its less-than-reliable RAID Admin utility and lack of redundancy in the RAID controller cards.—ANTON LINECKER

RATING: ♦♦♦♦

PROS: Awesome data-transfer rates; compact design; redundancy in most elements; great performance for the price; multiplatform support.

CONS: Raid Admin utility is slow to report problems; no redundancy for RAID controller card.

PRICE: $10,999

OS COMPATIBILITY: Mac OS X

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

PHOTOS BY RICK RIZNER

AirPort Extreme Antennas

Dr. Bott's ExtendAir Omni and ExtendAir Direct Help Your Wireless Network Go the Distance

BY BECKY WARING

Apple's AirPort Base Stations can liberate you from the shackles of Ethernet cable, but sadly, their range often doesn't extend as far as most people can throw a stone. In my average wood-frame house, my AirPort Extreme reception drops to almost nil the second I go upstairs and turn the corner—no more than 25 feet from where the snazzy white Base Station sits blinking cheerfully in my office. This puts my bedroom out of its reach, and isn't surfing the Web from the comfort of one's bed the whole point of having AirPort?

Meet the Dr. Bott ExtendAir antennas, which plug right in to the AirPort Extreme's antenna port (on the $249 model only). Dr. Bott claims that the ExtendAir Omni instantly triples the AirPort Extreme's coverage area (in all directions), and that the ExtendAir Direct extends the range from 50 to 500 feet in one direction. While the reality is not quite that rosy, I found that both ExtendAirs do indeed greatly improve AirPort range and speed. And they couldn't be better looking, with sleek white cases and curvy bodies that match Apple's design in every way.

How Much Range Is Enough?

The ExtendAir Omni ($100) is a vertically oriented antenna that provides coverage 360 degrees around the antenna. In technical terms, it provides a 3.5 dBi gain in antenna power to the AirPort Extreme's 15.0 dBm of power. To serious networking techies, that might not sound like much, but combined with the omnidirectional coverage, that gain yields a substantial increase in range and throughput.

By contrast, the ExtendAir Direct ($150) adds even more antenna power (6.5 dBi worth), but it focuses its coverage in a 70-degree beam. It's designed for long corridors and large open rooms such as warehouses and auditoriums. It, too, betters AirPort coverage.

As any AirPort user knows, performance claims are always optimistic, and real-world results are much lower. With no added antenna, the AirPort Extreme promises a 50-foot range at 54 Mbps, and a 150-foot range at 11 Mbps. The Omni purports to extend the 150-foot range to 250 feet, for an overall threefold increase in coverage area, or 67 percent in any given direction. The Direct promises to extend the range to 500 feet, but only in one direction.

So just how much do these antennas actually improve your range? In my house, the Direct gave me more than double the range of the AirPort Extreme in one direction, and the Omni increased range by about 50 percent in all directions. That was only 20 to 50 additional feet of coverage, but the antennas made the difference between two-room coverage and coverage of my entire 1,450-square-foot house, which was all I needed. Of course, your results may vary.

Speed Matters

Wireless throughput drops drastically as signal strength decreases, so the improved reception provided by antennas can increase throughput. (The number of little black curves in the AirPort menu-bar icon roughly indicates signal strength.) The shareware utility MacStumbler more accurately measures reception quality by sniffing out available wireless networks and telling you their signal strength. In my tests, I used MacStumbler as a gauge of relative signal strength, which nearly doubled at all ranges with the Direct antenna and increased by a little less with the Omni. (On MacStumbler's scale, a weak signal is below 40 and a strong signal is 70 or higher. The highest MacStumbler rating I've seen—for a signal measured right next to a Base Station—was in the low 90s.) For example, without one of the antennas, signal strength 25 feet from the Base Station dropped to the 20s in my house. With an antenna, that number rose to around 40, an acceptable connection. I also noticed a greater effect on throughput when I used the 15-inch PowerBook G4, which has notoriously worse built-in AirPort reception than the 12- and 17-inch PowerBooks and the iBooks.

RICK RIZNER

Dr. Bott's ExtendAir Direct (left) and ExtendAir Omni

Macworld's Buying Advice

If you need better AirPort Extreme range in a limited area, one of the Dr. Bott ExtendAir external antennas may be the perfect solution. Each is a lot less expensive than a second AirPort Extreme Base Station but more expensive than many third-party base stations that let you extend a network's range by using additional base stations. The Omni is the best choice for most homes. The Direct is a better choice if you live in a narrow home or flat with a long central hallway. I'm hooked on the Omni, which finally fulfills AirPort's promise, extending my Base Station's range to cover my entire house—even my bedroom. □

Location, Location, Location

Your home or office layout, and the location of your Base Station within that layout, will help you determine which antenna is right for you. Both the ExtendAir Omni and the ExtendAir Direct come with six-foot cables, so you'll need to mount them near your Base Station (on either a desk or a wall—wall-mount hardware is included). Consider running a long Ethernet cable from your DSL or cable modem to the Base Station if the modem is in an awkward place.

I would've liked to see some antenna-placement guidelines in the box, but trial and error is probably the best way to go. Often, moving the antenna just a few feet to avoid obstructions can make a big difference. Another trick is to orient the antenna so its signal goes straight through a wall or floor if you want better coverage on the other side. When you place the antenna at an angle, the walls will seem much thicker to the emanating signal.

EXTENDAIR DIRECT

RATING: ●●●●½

PROS: Easy to install; doubles AirPort Extreme range and throughput in one direction; longer range than the Omni.

CONS: More expensive than a third-party base station with repeater capabilities.

PRICE: $150

OS COMPATIBILITY: Mac OS 9, Mac OS X

COMPANY: Dr. Bott, 877/611-2688, www.drbott.com

EXTENDAIR OMNI

RATING: ●●●●

PROS: Easy to install; improves AirPort Extreme range and throughput by almost 50 percent in all directions.

CONS: More expensive than a third-party base station with repeater capabilities.

PRICE: $100

OS COMPATIBILITY: Mac OS 9, Mac OS X

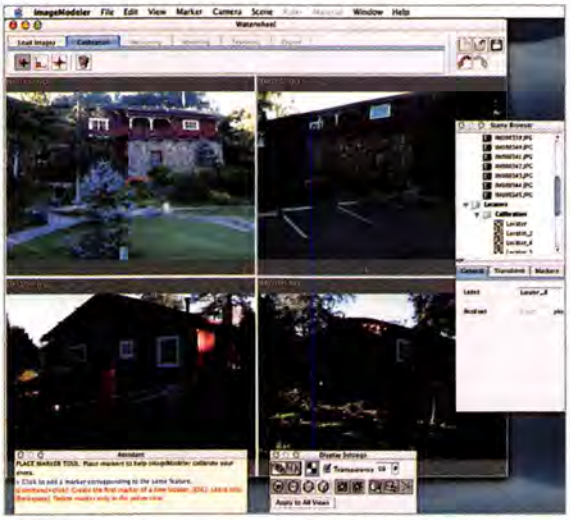
COMPANY: Dr. Bott, 877/611-2688, www.drbott.com

ImageModeler 3.5

Innovative Tool Makes 3-D Models from Photographs

BY GREG MILLER

Three-dimensional modeling lets design professionals bring their creations to life. But what if your creation already exists in real space? Then you can use Realviz's ImageModeler 3.5—a photo-realistic 3-D modeling program now available on the Mac for the first time—to generate a 3-D model from photos. Anyone who makes models for a living should consider this easy-to-use tool.



Point and Click To create a model, ImageModeler 3.5 uses reference points from several different photographs of the same object.

Orderly Modeling Process

ImageModeler's wizardlike interface guides you through importing photos, finding common reference points in the photos, entering key measurements, and watching your model come to life.

The first step is simple: clicking on selected points in your photographs. ImageModeler needs multiple pictures taken from all around the building; the documentation provides helpful tips on taking the photos you'll need.

The trickiest—and most important—part of using ImageModeler is telling the software how your photographs relate to one another. Once you've identified several consistent and clearly visible points in multiple images, ImageModeler calibrates the image and places your points in 3-D space. To perform this important calibration step, ImageModeler typically needs at least seven points (each of which must appear in more than one photograph) identified in each photo. ImageModeler is somewhat unforgiving in this respect, and pinning down these points can be a bit frustrating.

Once ImageModeler has successfully calibrated the image based on its points, you have to identify only one known measurement between two points in your pictures. Then you extract any other dimension you need from the photographs. So to get the dimensions of a building, you simply photograph it and take one accurate measurement of it at its location. For some users, this amazing ability alone will be worth the price of admission. Others may feel that $750 is a bit steep.

To finish creating a 3-D model from your photographs in ImageModeler, you use fairly simple 3-D tools to place basic shapes such as planes, cubes, cylinders, and spheres on top of the photographs of your subject.

Adding Polish to the Models

In addition to generating a model, ImageModeler can enhance it by applying textures or images from the underlying photographs onto its surfaces. This creates a photo-realistic 3-D model that you can view from multiple angles and zoom levels. ImageModeler considers all available views of each surface in your photos and intelligently creates the best texture for the surface.

ImageModeler lets you export your completed models in a number of formats familiar to design professionals, including Alias | Wavefront's Maya, Discreet's 3D StudioMax, Abvent's Artlantis Render, Autodesk's DXF, and VRML. We'd like to be able to export models in common graphics formats such as JPEG and TIFF, too.

Macworld's Buying Advice

ImageModeler 3.5's price may be a bit too high for the casual user or hobbyist. But for architects, product designers, and animators who need to extract measurements from photographic information and/or quickly create 3-D models of existing buildings and objects, ImageModeler 3.5 is a good buy—and a great deal of fun. □

RATING: ♦♦♦♦

PROS: Provides accurate models with only one physical measurement; works quickly.

CONS: Sometimes frustrating to use; lacks common export options.

PRICE: $750; converting from Windows version, $250

OS COMPATIBILITY: Mac OS X

COMPANY: Realviz, www.realviz.com

OmniGraffle 3.0 Professional

Spiffy Design Tools Help You Create Gorgeous Diagrams

BY CHARLES PURDY

Each update to The Omni Group's OmniGraffle improves the chart-drawing application by leaps and bounds. And the recently released OmniGraffle 3.0.1 Professional is the picture of a specialty program hitting its stride. (OmniGraffle has also released a standard version 3.0.1, which has many of the same features.)

When we last took OmniGraffle (★★★★; August 2002) out for a stroll, we stumbled once or twice in our attempts to make efficient use of the program. We were happy to see this version's improved Help menu—because we did need a bit of guidance. OmniGraffle still has a few quirks: for example, clicking on a palette doesn't necessarily activate the tool associated with it, as you might expect. And once again, the Auto Layout tool (which organizes your chart in a way that "makes sense" to the program) made hash of some test charts. This tool needs some controls.

But, wow, does version 3.0.1 have some nice design features: adjustable guides, drag-and-drop image import, complete control over colors and shapes, support for full transparency, automatic antialiasing, and just about anything else you could possibly need to create a very pretty chart or diagram. There is something of an ease-of-use trade-off here: one look at the long list of OmniGraffle's mouseless-editing key commands reminded us how much we loved Inspiration's superfast RapidFire feature for quick brainstorming (★★★★½; March 2003).

The Professional version has some features that, for many people, will justify its price: a rudimentary presentation mode lets you link multiple OmniGraffle canvases together and run them as a slide show. And OmniGraffle Professional files are compatible with Visio 2002 files. (They're also exportable in a wide variety of formats.)

Fit for a Queen OmniGraffle 3.0.1 Professional's Image panel may make you think you're working in an illustration program.

Macworld's Buying Advice

OmniGraffle 3.0.1 Professional will occasionally frustrate users who need to, say, whip out a quick organizational chart for a last-minute meeting. But with design tools that rival those of many illustration programs—and some one-of-a-kind chart-making tools—this app is marching boldly into the future of diagramming in OS X. □

RATING: ★★★★½
PROS: Excellent design tools; one-of-a-kind chart-drawing capabilities.
CONS: Somewhat complex interface; slow workflow.
PRICE: $120; upgrade from version 2.X, $75; upgrade from version 3.X, $50.
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: The Omni Group, 800/315-6664, www.omnigroup.com

Acrobat 6.0 Standard

continued from page 35

revolutionize the way you work. Document reviewing and sharing is not only practical but also welcoming—for everyone from lawyers to marketing professionals.

Let's say you have a PDF file that needs to be reviewed by many people. You select the Send By Email For Review command, which prepares your PDF for the collaboration process, launches your Mac's default mail program, and attaches the PDF to a new e-mail that has an Acrobat-generated, editable message telling recipients how to use the file. Then you send this e-mail to the reviewers.

Reviewers must have Acrobat 6.0 Standard or Professional to read and annotate these files. (Adobe Reader can't even open them; its modest annotation tools can be used only by plain-vanilla PDFs.) When the reviewers have finished commenting, they export their annotations, which Acrobat sends back to you.

You then import the reviewers' comments into the original PDF file. You can list and sort the comments, and you can make additional notes on how you resolved them. Acrobat also facilitates further follow-up with a reviewer, via the program's e-mail integration.

Office for Mac is not as thoroughly integrated into Mac OS as its Windows counterpart. Although Acrobat can export all the comments and suggested changes back into Microsoft Word format (where you can use Word's Track Changes tools to edit the original manuscript), you must have a Windows PC, and the PDF file must have originated in Word 2002.

The new reviewing tools in Acrobat are truly brilliant, and they make the reviewing process a no-brainer for everyone involved. Your fellow collaborators may still get on your (and one another's) nerves, but now you can hardly blame the tools.

Acrobat now has more commenting tools, and you can display them in floating toolbars. The multiple toolbars clutter an otherwise tidy and compact screen display. I'd like to see a single toolbar that could hold the tools of my choice.

More, Better Tools

Acrobat 6.0 also has new and improved online tools, such as Web Capture, which converts individual Web pages, ranges of pages, or whole Web sites to PDF. But when I tried it, Web Capture occasionally couldn't find certain image files, leaving holes in the page. Adobe plans to address this problem in an upcoming release.

For transforming paper documents into editable, searchable PDF files, Acrobat 6.0 offers Paper Capture, a trimmed down version of the old Acrobat Capture program. Paper Capture can control your scanner directly (through a TWAIN driver), and you can use the included optical character recognition technology, among other options, to create an electronic file that's true to the original.

Content searching in PDF files has vastly improved. Acrobat dives right into any PDF file, looking into annotations, bookmarks, and even metadata—a potentially powerful document-management tool.

Macworld's Buying Advice

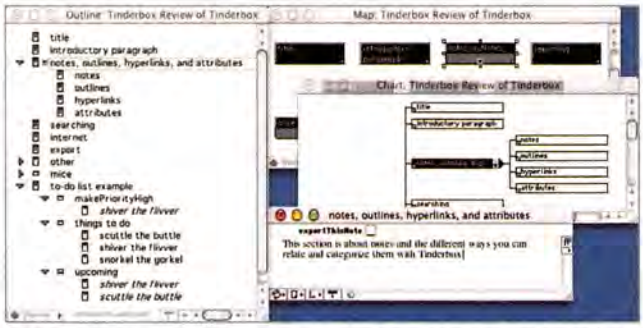
Acrobat 6.0 may finally make the paperless office and PDF workflow a reality. It's the most comprehensive and wide-ranging upgrade I've seen in my 20 years of experience with publishing software. Adobe may market it as an office and enterprise product because of its excellent new collaboration tools—but Acrobat 6.0 Standard has more than enough high-end features that will let designers and in-house publishers send files confidently to service bureaus for high-quality output. If you're even slightly inclined to upgrade, do it. You won't be sorry. □

RATING: ★★★★½
PROS: Great new collaboration tools; thoughtful, efficient, intuitive interface; improved search tools; improved online tools.
CONS: Lacks some features that Windows version has, due to limited OS X support for Microsoft Office; Web Capture skips over some image files.
PRICE: $299; upgrade from Acrobat 4.0 or 5.0, $99
OS COMPATIBILITY: Mac OS X
COMPANY: Adobe Systems, 800/272-3623, www.adobe.com

Tinderbox 1.2

Multipurpose App Sparks, Stores, and Shares Ideas

BY MATT NEUBURG



Mental Map You can view a Tinderbox document as an outline (left), map (top right), or chart (middle right). Notes (bottom right) display editable attributes.

Decades before the Web, visionary thinkers imagined information organized with hyperlinks, pathways, hierarchies, and keywords so people could easily share and organize their ideas. Now Eastgate Systems brings this vision to life, with Tinderbox 1.2.3, a remarkable tool for storing, arranging, exploring, and publishing data—you could use it to brainstorm ideas, maintain a Weblog, or store recipes, for example.

Tinderbox's core is the *note*, which is like a styled text document where you enter text and pictures. A Tinderbox document can contain many notes, subnotes, and note aliases, which you can organize sequentially and hierarchically. Notes can also have *attributes*, which are like database fields. For example, a Tinderbox to-do-list document could have a Due Date attribute, a Priority attribute, and a Done attribute.

Tinderbox keeps track of your notes with *agents*, notes containing search criteria. An agent finds all notes meeting these criteria and then duplicates them as subnote aliases. Agents can sort these subnotes, so a to-do list's agent might display its gathered aliases according to priority, for example.

URLs and e-mail addresses in notes are hyperlinks, of course. What's more, Tinderbox is itself a Web client. You can have a note download a Web page or RSS channel each time you open it; the note can either display raw HTML or export it to your browser for rendering.

You can export notes as Web pages, using note attributes and HTML templates to define a page's appearance, preserve hyperlinks, and generate navigational links. Once you set these templates, you needn't wrestle with any HTML.

Tinderbox is undeniably versatile, but we have some nits to pick: for instance, text changes mysteriously from antialiased to aliased (and vice versa). The program supports plain-text export but not styled-text export—so you couldn't use Tinderbox to, say, write term papers (a big disappointment). And the program is expensive compared with similar programs; it costs twice as much as Aqua-Minds' NoteTaker and more than three times as much as UserLand's Radio UserLand.

Macworld's Buying Advice

Quibbles aside, Tinderbox 1.2.3 is easy to use and very intriguing. If you work with a lot of facts and ideas, it can provide vital clarity—and it might just spark your creativity. □

RATING: ★★★½

PROS: Easy to use; versatile; powerful HTML export.
CONS: Quirky interface; no styled-text export; pricier than similar programs.
PRICE: $145; optional updates, $70 per year
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Eastgate Systems, 800/562-1638, www.eastgate.com

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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Canon EOS 10D

New Digital SLR Offers Pro-Quality Features at a Consumer Price

BY BEN LONG

For photographers who demand the flexibility of interchangeable lenses and the comfort and features of a traditional SLR camera body, switching to a digital camera is a very expensive proposition. But with the new EOS 10D, Canon finally brings the digital SLR down to an affordable level ($1,999 may seem like a high price, but the camera generally sells for $1,499 through resellers).

The 10D replaces Canon's previous 6-megapixel SLR, the EOS D60 (★★★★; August 2002). The 10D retains the D60's CMOS sensor, but just about everything else on the 10D is different: its body is curvier and much more solid—quite an accomplishment, given the sturdiness of the D60. Canon has also tweaked the functions of some controls and adjusted the control layout. If you're used to the D60, some of the changes will take time to get accustomed to, but the 10D continues Canon's legacy of excellent, intuitive control layouts.

Changes Within

Along with these improvements, Canon has added its DIGIC image-processing chip to the 10D. The DIGIC chip delivers improved color quality and lower noise, and it uses less power than Canon's previous processors. Other new features include white-balance bracketing (although the 10D lacks the white-balance fine-tuning features found on Nikon's competing D100), a maximum ISO of 3,200, and a choice of color spaces. And the 10D promises to automatically rotate your images to the correct orientation (depending on whether you shot the photograph in portrait or landscape mode); however, this feature doesn't work on the Mac.

The most significant change is Canon's entirely new autofocus system, which vastly outperforms the one used with the D60. Offering excellent speed and the ability to focus in almost total darkness, the 10D's autofocus system is a strength while the D60's was its biggest weakness.

When it comes to image quality, the 6.3-megapixel 10D delivers exceptional results with beautiful color fidelity and astonishingly low noise, even with pictures taken at an ISO as high as 800.

Macworld's Buying Advice

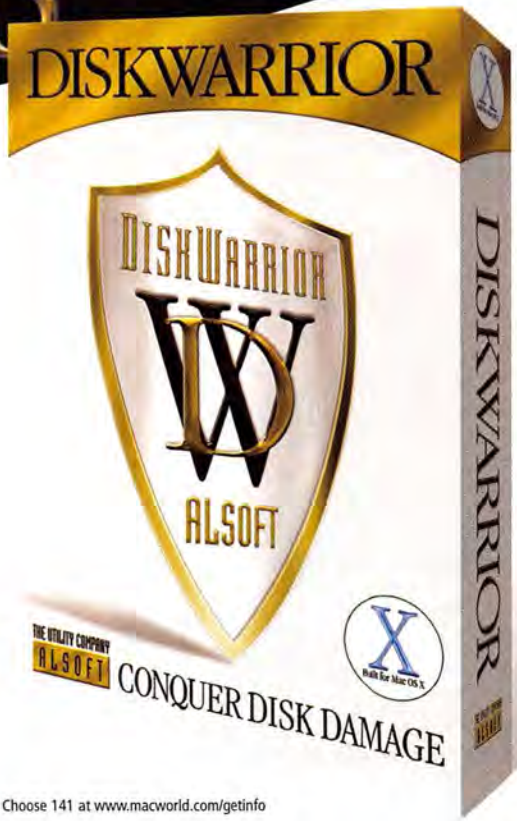
Canon's EOS 10D is simply a great digital SLR. Its well-balanced mix of features, comfort, image quality, and reasonable price should appease even the most finicky film stalwart. □

RATING: ★★★★½
PROS: Autofocus system is much improved; sturdy body; remarkable image quality; affordable.
CONS: Interface changes may take some getting used to; automatic image rotation doesn't work on the Mac; no white-balance fine-tuning.
PRICE: $1,999
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Canon, 800/652-2666, www.canon.com

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."



MacUser Awards 2000 WINNER
Macworld ★★★★½
mactoday ★★★★★
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Standard Outside: $949
Better Outside: $999
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Taxes are $176 per person
The conference fee is $695
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EDUCATION THAT TAKES YOU PLACES

REVIEWS IN BRIEF

iLife Voice Solution X

●●●½; MacSpeech, 816/373-4506, www.macspeech.com; $25

Why fool with menus and buttons when you could just *tell* your Mac what to do? That's the idea behind MacSpeech's iLife Voice Solution ScriptPaks, premade scripts that enhance the command-and-control abilities of iListen 1.5.2 (●●; January 2003). This set of OS X ScriptPaks is compatible with Apple's iLife applications, including iDVD 3, iMovie 3, iPhoto 2, and iTunes 4.

iListen ships with almost no application-specific tricks; this ScriptPak bundle (you can also buy individual ScriptPaks for $10 each) adds 63 new commands to iTunes, 51 to iPhoto, 39 to iMovie, and 37 to iDVD. The iTunes scripts work particularly well. Say "Play this song" or "Fast-forward this song" to control the music. (If you have a lot of trouble with unresponsive commands, make sure System Preferences: Universal Access: Enable Access For Assistive Devices is turned on.)

Not all the commands for other applications are useful (how many times will you use the "Register this application" command?), though most will save you trips to menus. But the ScriptPaks don't include commands for launching programs, with the exception of iTunes.

On the whole, these ScriptPaks are a handy, inexpensive enhancement to iListen for anyone who uses Apple's iLife apps regularly.—SCHOLLE SAWYER MCFARLAND

Accordance 5.5c 9X

●●●●½; OakTree Software, 877/339-5855, www.oaksoft.com; introductory level, $59; standard level, $139

OakTree Software's Accordance 5.5c lets you perform a wide variety of information-rich searches of biblical materials.

Although Accordance offers tools for serious scholars of Judeo-Christian texts, it's simple and flexible enough for a novice Bible student to use. The interface has a search window that lets you select a specific edition of the Bible, search by keyword or verse, add accompanying phrases around search results, and customize searching with complex Boolean queries. A toolbar at the top gives you access to auxiliary research tools, such as Greek texts, Hebrew texts, scholarly references, and Bible study guides. It's amazing how many different resources are accessible from a relatively small toolbar.

In addition to simple searches for keyword or verse, Accordance lets you set up parallel searches, save searches and search results, make notes, and add hypertext links to specific citations.

Anyone who's interested in studying the Bible would do well to invest in Accordance.—LISA SCHMEISER

FontDoctor 5.5 9X

●●●●½; Morrison SoftDesign, 800/538-2917, www.morrisonsoftdesign.com; $70

If you have a large collection of fonts that sometimes causes trouble, a house call from Morrison SoftDesign's FontDoctor 5.5.1 can cure what ails you. This utility searches local and networked drives for damaged or incomplete fonts. Once FontDoctor finishes its search (which can take a while, depending on your search parameters), it repairs the fonts and generates reports that pinpoint problems and offer solutions.

FontDoctor organizes your fonts, too. Say you have different styles of one typeface scattered throughout several job folders. FontDoctor can move all those styles into one folder, so it's easier for you to track your assets. New to version 5.5 is the Move Fonts window, which lets you move and copy fonts between font suitcases.

Furthermore, FontDoctor's Inspect Fonts feature displays all the glyphs in one font at a glance. You can also print a sample page that shows that font's alphabetical characters in several type sizes.

FontDoctor is an industry standard for good reason: it knows how to diagnose and treat problems, and it helps maintain a healthy font collection.—TERRI STONE

Marine Aquarium 2.0 9X

●●●●; Prolific Publishing (distributed by Encore), 310/768-1800, www.encoresoftware.com; $20; upgrade, $6

After I loaded Prolific Publishing's Marine Aquarium 2.0 on my computer, my LCD looked almost as if someone had transformed it into a sleek and stylish MacQuarium. The fish, coral formations, algae, and other aquarium elements were smoothly rendered and realistic: the mobile inhabitants turned in a 3-D motion, and everything cast subtle shadows and reflected light. Should your conscience keep you from running a bootlegged copy of *Finding Nemo* on your Mac, this is a decent substitute for cinematic computer-generated clownfish.

If you're running Marine Aquarium on OS X, it appears as an option in the Screen Effects panel of System Preferences and offers almost complete customization: you can choose the fish that inhabit your monitor, and a Fish Info window gives helpful tidbits about each. You can also determine how often "night" falls, during which the virtual aquarium light goes out and the fish move in silhouette on an eerie blue background. We tested Marine Aquarium 2.0 on a 1GHz 15-inch PowerBook G4 running OS X 10.2.6 (it also runs on OS 9). Performance may vary based on your system configuration; however, you can choose to economize on video memory or run the program at a specified number of frames per second.—JENNIFER BERGER

HOT PRODUCTS

Macworld's TOP 5

1

Third-generation iPods ($299 to $499) and **iTunes 4** (free), from Apple Computer (www.apple.com): The combination of these two products makes us want to sing. Buy music with iTunes 4 and play it on the go on a new iPod? Sounds good to us (July 2003).

2

PowerShot A70 ($399), from Canon (www.canon.com): A full suite of manual controls, a nice movie mode, and support for both conversion lenses and an underwater case put this 3.2-megapixel digital camera way ahead of the competition (July 2003).

3

1GHz eMac ($1,299), from Apple Computer (www.apple.com): The eMac retains its position as the best Mac desktop for education environments, and its squat, heavy, kid-resistant exterior and low, low price make it a great choice (August 2003).

4

Stylus Photo 900 ($199), from Epson (www.epson.com/northamerica.html): The first ink-jet that prints directly onto CDs and DVDs for easy labeling, the Stylus Photo 900 is also an excellent photo printer. For the price, you won't find a better printer with these capabilities (August 2003).

5

Painter 8 ($299), from Corel (www.procreate.com): This version of the venerable natural-media painting software, with many new brushes and tools, is well worth purchasing. The sweeping interface improvements make Painter so intuitive, you'll be glad you switched (August 2003).

MINIFINDERS More Hot Products Recently Reviewed

1GHz iMac G4, 17-inch ($1,799), from Apple Computer (www.apple.com): The speed and power of this new iMac are remarkable, especially given its big LCD monitor and reasonable price. It provides support for AirPort Extreme and Bluetooth, too (May 2003).

1GHz PowerBook G4, 17-inch ($3,299), from Apple Computer (www.apple.com): It pushes the limits of portability, but the 17-inch model has the best combination of features and performance of any PowerBook. It's an excellent workstation for video pros and designers (June 2003).

900MHz iBook ($1,299), from Apple Computer (www.apple.com): Weighing just less than 5 pounds, this laptop is great if you want to use the Web, an e-mail program, a word processor, or even some of Apple's iLife apps, but be aware that the keyboard may cramp your style and the G3 processor might slow you down (August 2003).

Apple Cinema Display ($1,299), from Apple Computer (www.apple.com): This 20-inch flat-panel monitor manages to maintain consistent color no matter what your vantage point. If your Mac has an Apple Display Connector, you'll be happy with this display (August 2003).

Cleaner 6.0.1 ($599), from Discreet (www.discreet.com): Improvements in performance and codec compatibility, as well as OS X compatibility, make this video-encoding utility essential for anyone who needs flexibility and power (June 2003).

Dungeon Siege ($50), from MacSoft (www.macsoftgames.com): This almost perfect, action-packed dungeon crawl will appeal to fans of Diablo and to real-time strategy gamers. It offers tons of action, and a unique skill-development system for characters (August 2003).

DV Bank ($1,100), from Datavideo (www.datavideotek.com): This nifty device isn't for every videographer, but for those who need an additional capturing facility or time-lapse capability, the DV Bank is a great tool (July 2003).

Final Cut Express 1.0 ($300), from Apple Computer (www.apple.com): At a third of Final Cut Pro's price, this DV-only video-editing package brings professional features to users looking to move up from iMovie (May 2003).

FontLab 4.5 ($549), from FontLab (www.fontlab.com): Fontographer (or something like it) is back. Font-designer pros who take the time to tackle FontLab's somewhat confusing maze of toolbars will be rewarded with the power to create full-featured OpenType fonts (July 2003).

formZ 4.0 ($1,495), from autodessys (www.formz.com): This completely reengineered version of the venerable solids and surface modeler and renderer was worth the wait. Architects will appreciate the new network-based renderer and the NURBS tools, though the latter still need work (August 2003).

Kung-Log 1.44 (free), from Adriaan Tijsseling (www.kung-foo.tv): A rich feature set helps Kung-Log manage Weblogs on multiple servers. As a plus, the developer is very responsive (July 2003).

Lift NN/g ($549), from UsableNet (www.usablenet.com): If you have a complex Web site but want to avoid the hassle of designing and testing it for maximum accessibility, look no further. This tool offers valuable references and great features for finding and fixing errors (August 2003).

Live 2.0 ($399), from Ableton (www.ableton.com): DJs and other live musicians will love Live 2.0's ease of use, implementation of OS X music technologies, and cool new Tap Tempo feature (July 2003).

Location X 1.2 ($10), from Alex Keresztes and Greg Novick (http://homepage.mac.com/locationmanager): This utility does most of what the old Location Manager did, and a little more. Location X is not a big deal, but it can make your life easier as you travel (July 2003).

Mask Pro 3 ($200), from Extensis (www.extensis.com): This latest upgrade to Extensis's excellent masking plug-in for Photoshop offers a number of new selection tools and masking utilities, as well as OS X support, making it essential for the avid Photoshop user. We recommend it to anyone who needs to make quick, accurate masks (August 2003).

NEC MultiSync LCD2080UX ($1,699), from NEC (www.nec.com): This highly flexible flat-panel LCD is tops when it comes to retaining consistent color from any angle. It offers great quality in a sleek, attractive package (August 2003).

Orbz 2.0 ($20), from GarageGames (www.garagegames.com): Version 2.0 is Orbz's debut on the Mac, and it was definitely worth the wait. Its simple mechanics, nonviolent play, and cartoonish graphics make it a hit for families who want a game everyone can play (August 2003).

Portfolio 6.1 ($200), from Extensis (www.extensis.com): Taking advantage of OS X's interface and structure, this version gives you the power to quickly decide whether a file is a digital asset or digital detritus (July 2003).

PowerShot S50 ($699), from Canon (www.canon.com): Almost identical to the PowerShot S45, the 5-megapixel S50 has a full suite of manual controls, an AF illuminator, a good movie mode, and excellent photo quality (July 2003).

PowerShot S400 Digital Elph ($599), from Canon (www.canon.com): This great 4-megapixel digital camera features a stunning all-metal body with a special scratch-resistant coating; quite good photo quality; and no red-eye problems (July 2003).

Pro Tools LE 6 ($75), from Digidesign (www.digidesign.com): Pro Tools LE 6 doesn't hold any surprises, but it does provide a comfortable transition to OS X. Its new file-management tools and MIDI capabilities are excellent additions (June 2003).

RealBasic 5.0 ($100), from Real Software (www.realsoftware.com): With a rebuilt compiler and debugger, and the incorporation of OS X's interface features, RealBasic remains the most fun way to develop modern and muscular Mac applications (July 2003).

ShuttleXpress ($60), from Contour Design (www.contourdesign.com): This compact, useful controller follows neatly in the footsteps of the ShuttlePro. It offers solid construction, stylish design, and customizable features. The only downside is that its programmable buttons can't be labeled (August 2003).

Salling Clicker 1.5 ($10), from Salling Software (www.salling.com): This preference pane lets you use your Sony Ericsson Bluetooth phone to control your Mac remotely, making it one of those wondrous little utilities that demonstrate the power of interconnected technologies (June 2003).

Sorenson Squeeze 3.1 Compression Suite ($449), from Sorenson Media (www.sorenson.com): This all-in-one compression suite is easy to use and offers professional-quality compression and helpful Flash-stitching capabilities. But depending on the format you need, you may want to look into Discreet's Cleaner (August 2003).

SPSS 11 ($1,145), from SPSS (www.spss.com): If you have mountains of social-sciences or business data to analyze, SPSS 11 is uniquely designed to help you. For large-scale statistical problems, it's the best choice available on the Mac (June 2003).

TextWrangler 1.0 ($49), from Bare Bones Software (www.barebones.com): This is a moderately powerful tool for sorting, processing, and editing text files. If you spend a lot of time looking at config files or database exports, TextWrangler is a good option (July 2003).

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> Unreal Tournament 2003
> Harry Potter and the Chamber of Secrets
> Bloodrayne
> Barrage
> ThinkTanks

Bring Out the Big Guns

FOR MAC GAMERS, THE REALITY OF WAITING MONTHS—OR even years—for popular Windows titles to appear on their machines is nothing new. But when the game in question is Unreal Tournament 2003, the biggest, baddest first-person shooter to emerge on the Mac in years, the wait can be excruciating.

Six months after MacSoft unveiled a version of this popular sequel running on a Mac, Unreal Tournament 2003 (often shortened to UT 2K3) has finally shipped. And it's a doozy. I'll tell you how this much-anticipated release stacks up, and I'll offer advice on squeezing as much speed out of it as possible. Oh, and as if that weren't enough, I've also got Harry Potter, tanks galore, and one real stinker.

In the Crosshairs Blast opponents from a safe distance with your Lightning Gun, in Unreal Tournament 2003.

Unreal Fun

UT 2K3 is the sequel to a game that first appeared in 1999. If you're new to the series, Unreal Tournament is a futuristic gladiatorial combat game that sports both single-player combat and extensive cross-platform online support.

In the single-player campaign, you must win battles to progress to semifinal and final rounds. It's a perfunctory but satisfying process. But the series' real strength has always been its online multiplayer game play. And in that respect, UT 2K3 doesn't disappoint.

There are five online game modes: Deathmatch—kill anything that moves; Team Deathmatch—kill anything wearing a vest of a color different from yours; Capture the Flag—get the flag and kill anything that gets in your way; Double Domination—secure multiple points on a map for several seconds; and Bombing Run—best described as the unholy union of UT 2K3 and rugby. Adrenaline capsules are an interesting addition to the game. Collect enough of them from around the map, and you activate several special modes, including faster movement, quicker weapons discharge, and more.

UT 2K3 is much more attractive than its predecessor. Level design is amazingly detailed and beautiful, whether it's the harshly lit innards of a dystopian industrial building or a sun-dappled grove of trees, rocks, and grass. And the game runs like a dream, even at the highest levels of detail—assuming you have the necessary horsepower. I cranked up every detail setting I could find and ran the game at 1,280-by-1,024-pixel resolution on my dual-1GHz G4 with a GeForce4 Ti graphics chip, and I had no trouble. You can even run the game in Windowed mode, which lets you quickly hide the game when your boss walks by. But I wouldn't recommend running a lot of background applications while you're playing.

Some Mac gamers balk at UT 2K3's relatively steep system requirements: a 700MHz G4 or better and an Nvidia GeForce2 MX or ATI Radeon graphics chip with at least 32MB of VRAM. But these requirements are in line with the base-model flat-panel iMac—a system that's been out for more than a year and a half. All the Macs in Apple's current lineup (except iBooks and the 12-inch PowerBook) should get along well with the game. What's more, the core specs are similar to what's required on the PC. Given the performance penalty that Mac users sometimes pay to play ported PC games, this is remarkable.

> It's the biggest, baddest first-person shooter to hit the Mac in years.

I was disappointed to discover, though, that you must load the CD-ROM to play the game. This may annoy PowerBook-toting road warriors who don't want to carry around extra software discs. The game also lacks direct support for the native resolutions of wide-panel displays.

UT 2K3 has a dizzying array of customization options. From within the game, you can adjust video

continues

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Getting the Most Out of Unreal Tournament

Unreal Tournament 2003 already offers an impressive array of features and functions that you can change and customize to suit your whims—whether it's lowering the level of graphics detail or customizing the key sequences you use to activate certain weapons. But you can do a lot more. To really boost performance, you can open and manipulate the game's UT2003.ini file (go to your user folder, and open Library: Application Support: Unreal Tournament 2003: System to find it). This file contains a bevy of settings not available from the game's user interface.

Why hide these settings in a separate file? Well, according to the developer, incorporating these added features into the game's user interface would have broken network compatibility with the Windows and Linux versions. And you want to be able to kick those people's butts online, right?

Tweaking the game's INI file isn't difficult—if you know what to do. All you need is a text editor (Apple's own TextEdit will do) and a brief stint in OS X's Terminal. (Before you make *any* changes, save a backup of the INI file so you can easily return to a working copy if you mess anything up.)

Timing Is Everything

When optimizing UT 2K3, you should first determine your current performance speed. The best way to get an idea of how well your various in-game and UT2003.ini changes affect your Mac's performance is to run a time demo.

Open OS X's Terminal app. In the Terminal window, type CD, but *don't* press the return key.

Next, go to the Finder and locate your copy of UT 2K3. Control-click on the UT 2K3 icon and select Show Package Contents from the pop-up menu. Then click and drag the Benchmark folder to the Terminal window.

Back in Terminal, press the return key. You should now see a list of scripts, which you can use to evaluate the game's performance. Commonly used benchmark scripts are listed as *flyby*. To execute one of these, type ./ (a period followed by a slash) and the script name in the Terminal window—for example, ./flyby-antalus.sh.

The game will launch, execute the flyby script, and then quit. When this is completed, go to your user folder's Library: Application Support: Unreal Tournament 2003: Benchmark: Results folder. Inside, you'll find a text file with your benchmark information, including a final score showing your average frames per second.

You can repeat the benchmark after you've made changes and compare the results with your initial score to judge the effect different settings have on your system's performance.

and audio modes, player characteristics, networking specs, controls and input, and more. And the INI file stored in the game's Application Support folder will let you tweak settings for variables you can't access from within the game (see "Getting the Most Out of Unreal Tournament").

UT 2K3 also supports *mods*, third-party modifications that provide new maps, weapons, game-play modes, mutators that affect the game play itself, and more. The developer even includes a special UModUnpack application that makes it easy for Mac users to install mods in just the right place.

Likewise, UT 2K3 features a broad range of customization settings for online play. The game's integrated server browser lets you find servers that meet myriad criteria, such as empty, full, or password-protected. You can also host your own UT 2K3 server if you wish. And since Mac users aren't limited to Mac-only servers, you can spend your time serving up some ownage on your PC counterparts.

There's an undeniable instant gratification in visceral online games such as UT 2K3. Rated M for Mature, this game is definitely for older gamers, but some of the gore and language settings can be tweaked to a level that's more appropriate for younger players.

The Bottom Line Evolutionary, rather than revolutionary, improvements make Unreal Tournament 2003 a solid game that definitely belongs in the arsenal of any Mac first-person–shooter enthusiast.

UNREAL TOURNAMENT 2003
RATING: ★★★★½
PROS: Beautiful graphics; careful attention to detail; varied game modes; extensive customizability.
CONS: Requires CD-ROM insertion; no native widescreen support.
PRICE: $50
OS COMPATIBILITY: Mac OS X
COMPANY: MacSoft, 763/231-8100, www.macsoftgames.com

Spellbound

If the blood and guts of Unreal Tournament aren't your thing, you may feel more at home with flying cars, chatty paintings, and a nearly headless ghost. I'm referring, of course, to Harry Potter and the Chamber of Secrets, a 3-D–action game now on

Smooth Your Graphics

Almost every Mac that can support UT 2K3 can also support a technique called full scene antialiasing (FSAA). Like the antialiasing some image-editing software uses, FSAA smoothes the sharp edges of polygons to produce a more natural-looking image, eliminating the staircasing effect you occasionally see on hard corners.

To activate FSAA, open the UT2003.ini file. Then search for this text:

[OpenGLDrv.OpenGLRenderDevice]

Below this, type:

MultisampleBuffers=1

MultisampleSamples=4

Once you've activated FSAA in the INI file, you can turn FSAA on and off from within the game by pressing the tilde (~) key. When the console appears, type fsaa disable or fsaa enable, depending on which you want.

FSAA works best with faster video cards, but you should see some benefit regardless of whether you're using an ATI Radeon or Nvidia GeForce graphics chip set.

Boost Your Speed

Sound is a big performance drain on UT 2K3. You can adjust some audio settings during game play—by activating the Low Sound Detail option or turning off Taunts, for example. But you'll get a much bigger boost in speed by limiting the number of audio channels the game uses. To do this, open the UT2003.ini file, and then search for the text [ALAudio.ALAudioSubsystem]. Below this heading, change the Channels setting from 32 (the default) to 16 or 8. The game will now keep track of fewer simultaneous audio channels. Of course, this means you may not hear everything going on around you. If hearing it all is important to you, experiment to find the best compromise between performance and sound.

Another easy way to improve your Mac's performance is to limit the number of *bots*—computer-controlled players—you use when playing in UT 2K3's Instant Action mode. Keeping track of what each bot is doing slows your Mac down to the tune of about two frames per second for each bot. So if you add 15 bots to a level, your frame rate could conceivably drop by as much as 30 fps, which can mean the difference between a fast game and a completely unplayable game, depending on your Mac's horsepower. You can adjust the number of bots from within the game by opening the Instant Action map you want to play. Online play doesn't suffer from this problem, because the server, not your machine, keeps track of what the bots are doing.

the Mac, courtesy of Aspyr Media. This is the second Harry Potter game to come our way, and it's based on the similarly titled book and movie in the enormously popular series penned by J. K. Rowling.

The game lets you control Harry as he and his friends Ron and Hermione explore the grounds of Hogwarts School of Witchcraft and Wizardry, attend classes to learn new spells, and ultimately try to unravel the mystery of the Chamber of Secrets. Along the way, you'll get a chance to participate in Wizard Duels, Quidditch (the arena sport preferred by magic users in Harry's world), and other Hogwarts activities. You'll also collect Bernie Bott's Every Flavor Beans, which you can trade with other students for items necessary to complete various tasks.

Learning new spells is much less frustrating in Chamber of Secrets than in Sorcerer's Stone, which forced you to trace the outline of a spell with your mouse. Instead, you now repeat a keystroke pattern in time with what's happening on screen. (It's like playing Dance Dance Revolution with your fingers rather than your feet.)

One place where the game stumbles is in its Save feature. Revealing its roots as a console game, Chamber of Secrets forces you to find save-game books, distributed hither and yon throughout the grounds.

continues

Bewitched Harry Potter learns new spells in his second year at Hogwarts, in Harry Potter and the Chamber of Secrets.

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HARRY POTTER AND THE CHAMBER OF SECRETS
RATING: ♦♦♦
PROS: Better graphics than Harry Potter and the Sorcerer's Stone; improved game play.
CONS: Inconvenient Save feature.
PRICE: $40
OS COMPATIBILITY: Mac OS 9, Mac OS X
COMPANY: Aspyr Media, 888/212-7797, www.aspyr.com

This is damnably inconvenient if you suddenly need to use your Mac for something else.

Rated E for Everyone, this game is safe for the whole family, and the average user can probably play through the game in a few sessions. It's definitely light game fare, but it's also thoroughly fun.

The Bottom Line Noticeably better than Sorcerer's Stone, Harry Potter and the Chamber of Secrets offers casual gamers a fun tie-in with the popular book and movie, and it gives them a chance to experience the world of Harry Potter for themselves.

Rayne of Terror Shoddy graphics, boring game play, adolescent content, and other flaws make Bloodrayne a game to skip.

Bloody Mess

Meet Rayne. She's slender, curvy, and clad in skin-tight leather. She's also dangerous: a *dhampir*, the product of a union between a human woman and a vampire man. And she's got supernatural powers.

In Bloodrayne, a third-person shooter brought to the Mac by Aspyr Media, Rayne is an agent of the Brimstone Society, a covert fraternity that hunts down supernatural threats. The game follows Rayne on two missions—one through the swamps of Louisiana, and one in Germany—that take place between the First and Second World Wars. Zombies, Nazis, and various other menaces abound. So do performance problems, clichés, and an overwhelming lack of originality.

Aspyr's version of Bloodrayne managed to beat its Windows counterpart to market by a few weeks when it was released earlier this year. That said, the game's developer, Terminal Reality, clearly needed more time to work through optimization issues and other problems. Some sequences were excruciatingly slow and choppy—hardly reasonable since the game sports a fixed resolution of 640 by 480 and fairly low levels of detail compared with other recent releases. The audio wasn't much better—Rayne's dialogue sounded distorted and excessively loud in some sequences, while background noises and sound effects were barely audible.

Bloodrayne's installer is also subpar: I had to force-quit and restart it. I've never had a problem like that before.

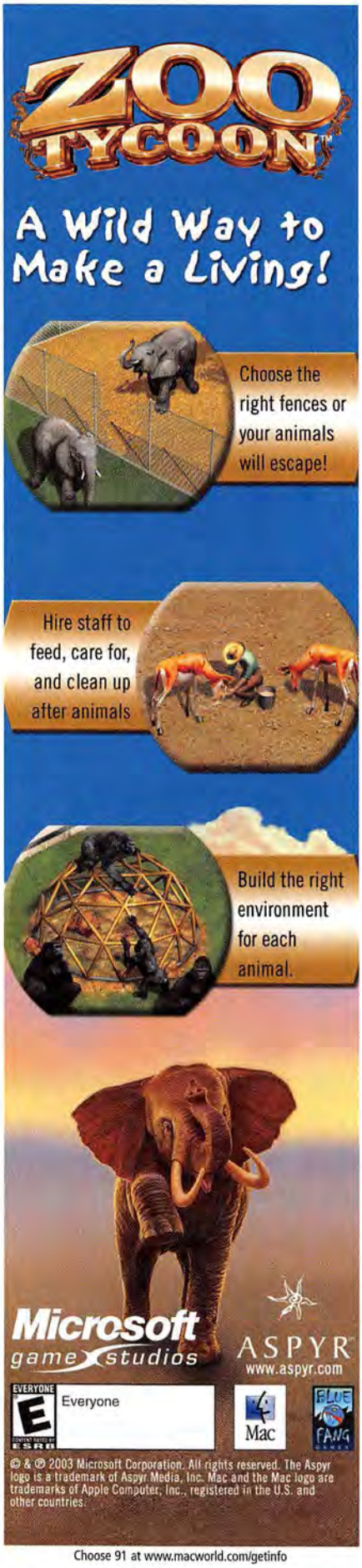
But Bloodrayne's problems go deeper than its fit and finish. The game play is thoroughly derivative of every third-person shooter that's come along in recent years. If you've played Tomb Raider, or any of a hundred other similar games, you've pretty much done everything you can do in Bloodrayne—straight down to a slow-motion mode (called Blood Rage) similar to that of Max Payne and Jedi Knight II.

The game designers' careful attention to jiggling breasts and the moaning sounds of Rayne feeding on her victims is lascivious, gratuitous, and insulting. This game has an ESRB rating of M, for Mature. Unfortunately, the board hasn't yet come up with an I rating, for Immature. This game deserves it.

With lousy graphics, poor sound, a lame story, and tepid game play, you may wonder if there's *anything* good about Bloodrayne. Sure there is. It works with game pads.

continues

BLOODRAYNE
RATING: ½
PROS: Better than contracting a computer virus; supports game pads.
CONS: Lousy optimization; derivative game play; lame installer; insultingly adolescent content.
PRICE: $30
OS COMPATIBILITY: Mac OS X
COMPANY: Aspyr Media, 888/212-7797, www.aspyr.com



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The Bottom Line Everyone's entitled to trip up once in a while, and Bloodrayne is Aspyr's pratfall. Let's hope that this is the exception that proves the rule for a company that's otherwise known for its high-quality work.

Shooting Gallery

If you're in the mood to shoot something—and if you don't mind completely brainless entertainment—you should check out Barrage, an open-source game that has come to OS X by way of Linux. It's oddly reminiscent of the old-school Mac classic, Airborne, from Silicon Beach Software.

Barrage is as simple as it gets: you lob grenades and shoot at passing columns of tanks, jeeps, and soldiers. If you don't get them before they escape your field of view, you lose points.

The trick to Barrage is knowing how long it'll take your shells to arrive at their targets, and which shells to use. Small grenades are useful against troops and jeeps; bigger shells are needed to put tanks out of commission.

Incoming! Blast passing tanks, jeeps, and soldiers before they escape. Barrage is a simple treat for a weary brain.

There's nothing more to the game than that. Aiming, reloading, and switching weapons takes some practice; using a multibutton mouse will help.

The Bottom Line Simple, repetitive fun can be a great stress reliever every once in a while. If that's what you're looking for, then Barrage is great. And what's more, it's free.

BARRAGE
RATING: ♦♦♦
PROS: Simplistic fun; small download; free.
CONS: Simplicity leads to repetition after a while.
PRICE: free
OS COMPATIBILITY: Mac OS X
COMPANY: Derek Arndt, www.derekarndt.com

Tanks for the Memories

Back in my youth, I spent many a rainy afternoon playing Combat on my next-door neighbor's Atari 2600 console. It was a simple affair: we each grabbed joysticks and squared off on opposite sides of an arena, dodging around geometric objects and blasting each other on an overhead 2-D map.

Brainy Action Simple tank combat gets a new lease on life in ThinkTanks.

With the release of ThinkTanks, GarageGames has recaptured the essence of what made this game so enjoyable. ThinkTanks is just as easy to play and as challenging as Combat. But it's a lot more fun, thanks to great 3-D graphics and other modern embellishments that make it more palatable for today's sophisticated gamer.

The action in ThinkTanks is rendered from a third-person perspective—your camera is positioned above and just slightly behind your tank, so you can get a good view of what's around you. The screen displays the status of your foes while a small radar window shows the position of any nearby enemies. Maneuvering through the game is easy; the keyboard controls your tank's direction, while your mouse controls your tank's turret and cannon. There's even a 3-D crosshair system, which shows you approximately where your shells will land, simplifying the aiming process.

ThinkTanks has two basic play modes: Solo and Multiplayer. In Solo mode, you're cast as a brain-slave—a disembodied brain in a jar—serving at the will of Alien Mind Control. Somehow, you've slipped free of the effects of their brain waves and are now pursued by legions of bot-tanks, computer-controlled tanks whose sole purpose is to destroy you. The game progresses through multiple levels of difficulty as the bots get stronger, more numerous, and more reckless. Fortunately, you'll find plenty of power-ups that give you healing abilities and access to special weapons. (If you don't want to bother with the story line behind the Solo game, though, you can switch to Quick Play mode, which puts you right into the bot-blasting action.)

But where the game really succeeds is in Multiplayer mode. There are several options here: you can play in Battlemode or Team Battlemode (two Deathmatch-style games), as well as Scrum or Team Scrum (think rugby with tanks, either as a free-for-all or as a team effort). You can join a variety of online servers—at press time these were mainly populated by bots, but other registered and demo-playing ThinkTanks gamers are becoming increasingly common. In fact, a game finder and ranking system is built right into the game. You can also create your own server if you prefer.

ThinkTanks has excellent graphics and simple but lushly colored environments. You can choose from several levels with three different themes—hills and valleys are best for sniping and dog fighting, while darker, gloomier themes are better for ambushes. Lava fields add challenge and will require more strategy.

The Bottom Line ThinkTanks retains what's best about Combat and has new elements that bring the game up-to-date. It's a steal at its price. □

THINKTANKS
RATING: ♦♦♦♦
PROS: Excellent graphics; simple controls; integrated game finder and ranking system.
CONS: Other online gamers can be hard to come by.
PRICE: $20
OS COMPATIBILITY: Mac OS X
COMPANY: GarageGames, 541/345-3040, www.garagegames.com

MacCentral.com Senior Editor PETER COHEN's experience with tank combat is purely virtual in nature. His experience with vampires, on the other hand. . . .

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THE NEXT GENERATION

APPLE'S POWER MAC G5 GOES WHERE NO MAC HAS GONE BEFORE

BY JASON SNELL

FOUR YEARS. That's how long Mac users have been staring at the fold-down door and the set of easy-to-grip plastic handles that enclose Apple's Power Mac G4. The outside of the machine hasn't changed much since its debut, in September 1999. And with the exception of incremental clock-speed boosts and occasional architectural tweaks, neither has the inside.

Now all that—the Power Mac design and the computer inside it—is history. We're entering a new Mac era, ushered in by a shiny metallic computer that houses a radically different system architecture. Here comes a new Power Mac to shake up the Mac world—the G5. And given the forcefulness of Apple's claims about the G5's current and future speeds, this new aluminum desktop could set the entire computer industry on its ear.

PHOTOGRAPHS COURTESY OF APPLE COMPUTER

JUST THE FACTS: **THE G5 AT A GLANCE**

Apple typically offers three Power Mac models with every update to the product line, and the Power Mac G5 is no exception. Here's how each model varies. Notice that the low-end model lacks several key features of its more-expensive siblings.

SYSTEM	PRICE	FRONTSIDE BUS	HARD DRIVE	RAM	RAM TYPE	MAXIMUM RAM	GRAPHICS CARD	PCI SLOTS
Power Mac G5/1.66GHz	$1,999	800MHz	80GB	256MB	PC2700 (333MHz)	4GB	GeForce FX 5200 Ultra	three 33MHz PCI
Power Mac G5/1.8GHz	$2,399	900MHz	160GB	512MB	PC3200 (400MHz)	8GB	GeForce FX 5200 Ultra	two 100MHz PCI-X, one 133MHz PCI-X
Power Mac G5/Dual 2GHz	$2,999	1GHz per processor	160GB	512MB	PC3200 (400MHz)	8GB	Radeon 9600 Pro	two 100MHz PCI-X, one 133MHz PCI-X

The Systems

On the inside, the new Power Mac is different—*really* different—from the G4. But we realize that not everyone who needs the power of the G5 wants to know all the geeky details of microprocessors and memory buses. We'll dive into that stuff in short order, but first let's take a look at the tower that houses the Power Mac G5.

Like the current PowerBook G4s, the Power Mac G5 is sheathed in silvery metal. (As the iBook, iMac, and eMac are made of white plastic, we get the sense that Apple is making some pretty clear fashion statements about its professional and consumer products.) But this sheath isn't like any we've ever seen on a Mac: the aluminum on the front and back has more holes than a slice of Swiss cheese—it's 35 percent air. The hundreds of tiny holes let air pass through, cooling the components within.

Keep Cool Most computers have one thermal zone for cooling. Not the G5—it's split into four thermal zones, which are independently cooled by a combination of nine fans, numerous temperature sensors, a fan-control processor, and Mac OS X itself. "The OS looks at the temperature, but also at how the systems are being used," explains Jon Rubinstein, Apple's senior vice president of hardware engineering. That way, the operating system can anticipate a processor-intensive task and increase fan speed in that zone, providing added ventilation even before the chip starts to heat up.

Cool Customer Cooling is vital in the G5—there are nine fans inside the box, which is split into four independent *thermal zones.* The reason? Apple knows that cooling components only while they're in use is more efficient than cooling every component at once. With a single thermal zone in a traditional machine, "everyone pays the price for cooling," says Jon Rubinstein, Apple's senior vice president of hardware engineering.

You might think that nine fans would make this Mac sound like a power blower (like the Xserve or the "Wind Tunnel" Power Mac G4s), but it's much quieter. The G5's intelligent fan management varies the fans' speed and cranks up the airflow in the appropriate zone only when things are heating up. The system is even smart enough to anticipate heat-generating work—it can increase cooling before components get a chance to warm up.

If you're doing a lot of processing work, or if you're in a warm room, the inside of the G5 tower will definitely heat up faster, so the fans will crank up. But in normal operation, this system should be acceptably quiet. Apple claims that the Power Mac G5 runs at 35 decibels, compared with the mirrored-drive-door G4's 65 decibels, which created quite a ruckus. (To put those noise levels in context, a 70-square-foot office with lights, air conditioning, and a computer turned on registers at about 40 decibels.)

Everything and More Just about any port or plug we could think of has been included in the Power Mac G5. FireWire 800? Check. FireWire 400? Double-check: one on the back, plus a welcome one on the front, just below the power button. Our USB wish list included copious ports and the speed of USB 2.0, which is about 40 times faster than USB 1.1 (most Macs support USB 1.1). Again, the G5 delivers: two USB 2.0 ports live on the machine's back side, and a third resides on the front.

In terms of audio, the G5 covers both ends of the spectrum. For people who think small, there's a headphone jack on the front panel. If you think big, turn your attention to the optical digital audio-out port on the back. You can now connect a stock Power Mac to a home theater system and hear 5.1-channel digital surround sound. (Apple updated the DVD Player application on these systems to support 5.1 playback.) There's also an optical digital audio-in port for audio pros, as well as the old standby analog audio-in and -out ports.

The G5's metallic case creates one noticeable quirk: it effectively blocks radio signals, so the G5's optional $99 AirPort Extreme and $50 Bluetooth features are useless until you attach the included external antennas. Both of them—the AirPort antenna is T-shaped, and the Bluetooth antenna is a cylinder—plug into the back of the Mac. As with previous Power Macs, you can install an AirPort card later by sliding it in. The Bluetooth module's features are built in to the system's motherboard, so you've got to either opt for Bluetooth when you buy your system or use an external adapter later.

A Chip's Story

At the heart of the three Power Mac G5 models is IBM's new PowerPC 970 chip, which Apple has dubbed the G5. Several different chip models found their way into the Power Mac G4 line over the last four years, but none was enough of a leap forward to merit a new moniker or case design. However, this fifth-generation PowerPC chip is unlike any of the Motorola processors found inside the Power Mac G4 (see "How the Chips Stack Up").

The most noticeable difference between the G5 and the many G4 chips is clock speed: at 1.6GHz, 1.8GHz, and 2GHz, the three G5 chips are the fastest and most technically advanced that Apple has ever used.

What's more, when Steve Jobs unveiled the G5, he made a guarantee the likes of which Apple has never before offered: In the next 12 months, the fastest G5 chip powering a Mac will run at a mind-bending 3GHz—50 percent faster than today's top model. Mac fans who have wondered whether Apple would ever again compete with Windows PCs can take heart. This is a changed Apple: the race to claim computer-speed supremacy is on.

Dreams of 2004's dual-3GHz Power Mac G5s aside, this G5 crop will undoubtedly answer the prayers of professional Mac users who need to process massive amounts of data as fast as possible. Adobe Photoshop pros, video editors, 3-D artists, and scientists will surely be first in line at their local Apple stores when these new Macs arrive in August.

New Chip Maker Back in the day, the PowerPC chip was a joint venture of Apple, IBM, and Motorola. But IBM and Motorola parted ways over the PowerPC. Motorola's G4 processor had a high-speed vector processing unit that sped certain tasks. IBM continued to supply Apple with G3 chips, but if you wanted that extra processing boost (which came to be known as Velocity Engine), you needed a G4 chip.

But anyone who's paid attention to the competitive world of desktop computers has noticed that as PC chip makers Intel and AMD have accelerated their chips to incredibly high clock speeds, the G4 has lagged behind. Lately, even Apple seemed to stop protesting that the gap was purely mathematical and not real.

Apple's search for a faster chip for its Power Mac line turned the company toward its other PowerPC partner. IBM specializes in incredibly fast processors designed for high-end computer workstations. The result is the G5, a chip that combines the processor core of IBM's high-powered Power4 chip with the familiar features that the PowerPC has brought to Power Macs—including the Velocity Engine.

The Good Bits Apple trumpets the G5 chip as the world's first 64-bit microprocessor for a desktop computer. The differences between 64-bit chips and their 32-bit counterparts are stark but pretty geeky (see "The 64-Bit Question" for the gory details). The short version of the story is this: The G5 chip doesn't just have a high clock speed, measured in gigahertz—it's also remarkably efficient, capable of performing numerous calculations simultaneously. This is why Apple claims that the chip is at least the equivalent of Intel's 3GHz and faster chips. Apple attaches this 64-bit chip to its new system architecture, which is faster than anything the company has ever created before. The Wintel side has had trouble moving to 64-bit chips, but Apple's new 64-bit computer doesn't require any updates to 32-bit applications before those programs can run on the new chip.

continues on page 65

HOW **THE CHIPS** STACK UP

Sure, IBM's PowerPC 970—the processor powering the Power Mac G5—features a faster clock speed than its predecessor, Motorola's G4. But clock speed doesn't tell the whole story. Plenty of other differences between the two chips prove the G5 is a faster processor in terms of both clock cycles and efficiency. Here's a closer look at the changes to the brains behind Apple's professional desktop.—DAVID READ

	G4	G5	
	MOTOROLA MPC7457	IBM POWER-PC 970	
Clock Speed	1GHz to 1.42GHz	1.6GHz to 2GHz	Apple's advertised speeds are actually higher than what IBM promised when it announced the PowerPC 970—typical of IBM's track record for following conservative announcements with aggressive results.
Pipeline Depth	7 stages	16 stages	The PowerPC 970's longer instruction pipeline means a higher performance hit for missed instruction predictions (though such branch predictions are usually right). But the chip's clock speed more than makes up for any potential losses.
Maximum Execution	3 instructions plus one branch	4 instructions plus one branch	The PowerPC 970 has a more efficient organization of execution units (integer, floating point, and SIMD units). If everything is working ideally, the PowerPC 970 can execute one more instruction per clock than the G4.
Integer Units	4	2	Integer units perform simple integer mathematics—adding, subtracting, and so forth—used in many basic computer functions. The G5's two units take advantage of the chip's 64-bit registers and data paths to complete 6-bit integer calculations in a single pass.
Floating-Point Units	1	2	Floating-point units handle complex computations. IBM opted for two double-precision floating point units because of the performance demands from today's software.
SIMD Units	4	4	IBM's Single Instruction Multiple Data implementation is architecturally identical to Motorola's AltiVec. Since the G5 uses the same set of 162 instructions implemented in the G4, it can run and accelerate existing software that's already optimized for Velocity Engine.
Frontside-Bus Speed	167MHz	as much as 1GHz	In the G5, the frontside bus runs at half the speed of its processor. The speed of this connection between the processor and the system controller ultimately determines memory bandwidth.
Memory Bandwidth	1.3GB per second	8GB per second (16GB per second in dual-2GHz model)	The G5's new memory architecture eliminates a significant performance bottleneck that existed in G4 systems. The G4 overcame that problem by using L3 cache, which isn't necessary in the G5.
Maximum System Memory	4GB	8GB	As DIMM capacities increase, you can expect the G5's maximum system memory to rise as well.

THE **POWER MAC G5:** AN INSIDE LOOK

The Power Mac G5 is more than just an exciting new Mac—it's also a major engineering accomplishment. Apple redesigned almost every piece of the computer, positioning the G5 system a quantum leap ahead of the previous Power Mac generation. To get some perspective on the hows and whys of the G5's new features, we asked Apple's senior vice president of hardware engineering, Jon Rubinstein, and its vice president of hardware product marketing, Greg "Joz" Joswiak, to give *Macworld* a guided tour of the G5, inside and out.

A HIGH 5 "The Power Mac G4 has just been steadily, incrementally improving," Joz recalls. "We had to ask ourselves, how are we going to get a leap?" The answer was hooking up with IBM three years ago and working with that company to create a PowerPC chip—**the G5 processor**—based on IBM's award-winning high-end Power4 processor. As anyone familiar with chip design might guess, that was easier said than done. "It was an astounding feat of engineering," says Rubinstein.

When Steve Jobs announced that the G5 would reach 3GHz by June 2004, he let us know just how confident Apple is in its partnership with IBM. "IBM has some unbelievably smart people working on this project with us," says Rubinstein. "And this project has raised our relationship to a new level. Instead of acting separately, we're really working seamlessly together as one team."

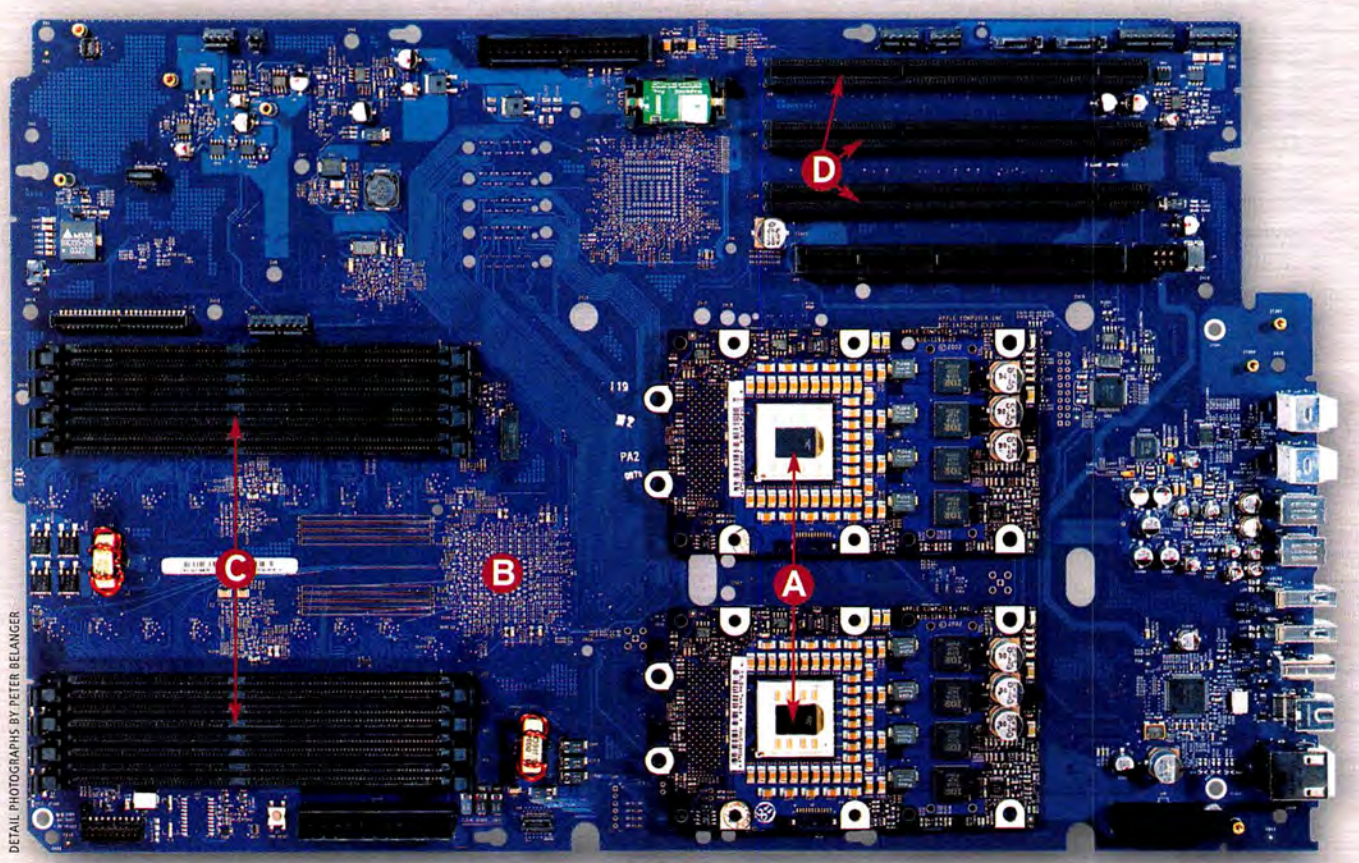
B IN CONTROL "The G5 processor and our system controller are matched," says Rubinstein of the G5's traffic cop, a chip built at the same IBM fabrication plant in East Fishkill, New York, where the G5 chips are made. The **system controller**

(left) which lives on the opposite side of the motherboard (below), runs at half the processor's speed, providing a conduit to the rest of the system that's dramatically faster than any other Mac processor's—12 times faster than the top-of-the-line G4's. "The G5 chip is a hot rod, and you don't want to put a hot-rod engine in a family sedan," Joz adds.

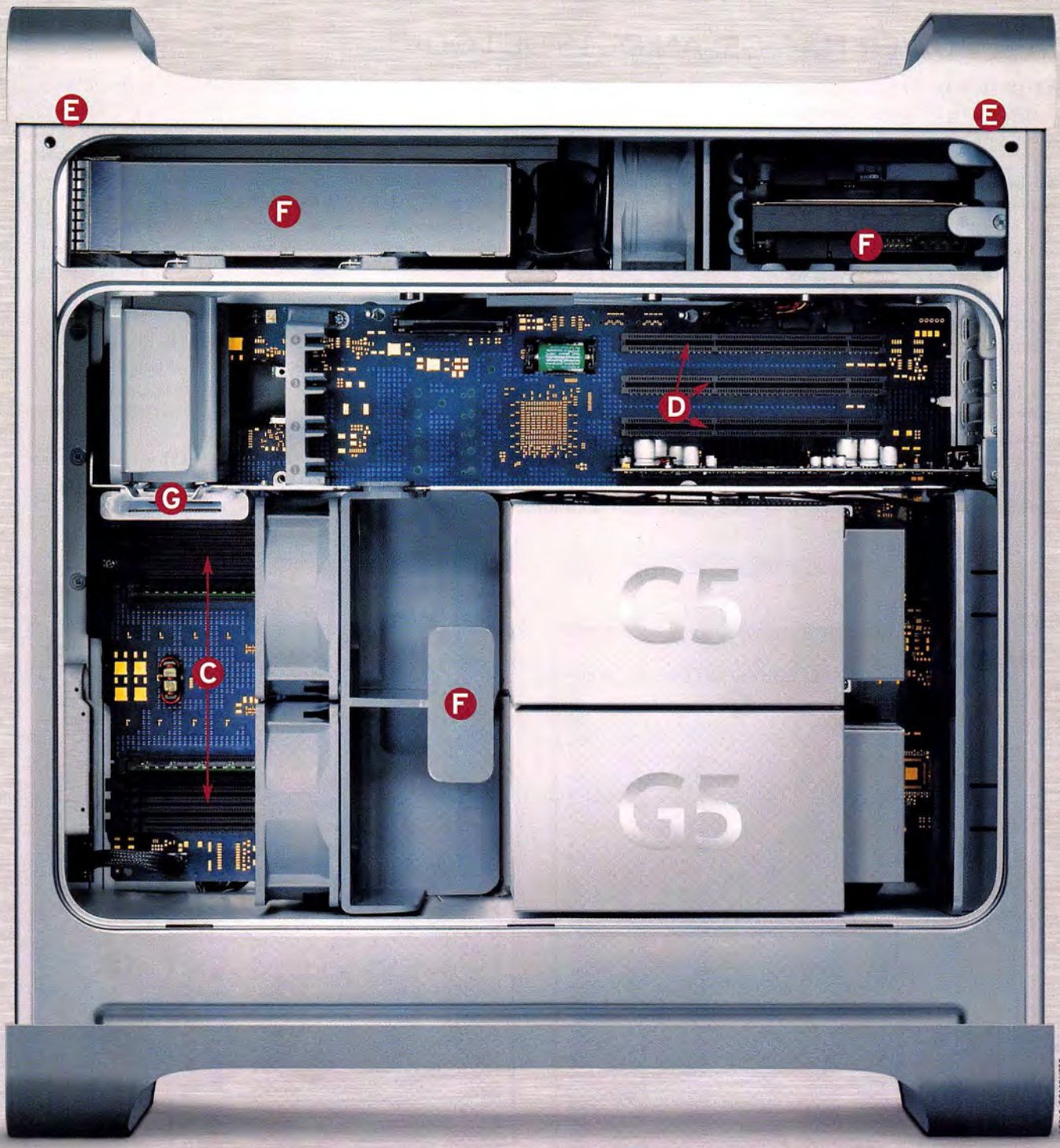
C SWEET MEMORY "Performance is king in this machine—even in memory," Joz says. The two sets of **memory banks** must be fed in pairs, from the inside out, because the system sees each 64-bit RAM pair as one superfast, massive 128-bit chunk of memory. The result is a memory bandwidth of 6.4GB per second, a gigantic speed boost over previous Mac models. And the new 8GB RAM ceiling will also please certain Mac users: "We have customers with data sets larger than 4GB that now can be loaded entirely into RAM rather than being paged to disk," says Rubinstein. And in terms of speed, that's a *very* good thing.

D CARD SHARKS In addition to its fast **AGP 8× slot** for graphics, the G5 introduces **PCI-X slots** to the Mac. "We've always had an advantage with our PCI slots," says Joz, pointing out that previous Power Macs' 64-bit slots ran circles around the 32-bit PCI slots found on many PCs. "But now this is an astounding improvement, and in certain markets [such as digital video] this is going to be a huge thing."

E DOOR TO DOOR The G4's fold-down door is gone. The Power Mac G5 has a **removable aluminum door** (left) and a **removable plastic door**. The inner door works



DETAIL PHOTOGRAPHS BY PETER BELANGER



APPLE COMPUTER

as an air deflector, so if you remove it, the system automatically goes to sleep. "In the old design, the motherboard was on the door, which won't work with thermal zones," Rubinstein says. In addition, Apple found it very hard to add front-panel USB and FireWire ports to the Power Mac when the motherboard was mounted on the side door.

F ACCESS GRANTED You shouldn't need tools to upgrade your Mac, according to Joz. The **fans** next to the G5 processors pull out, offering access to RAM slots. Flip two latches, and the **SuperDrive** slides right out. And the G5's serial **ATA hard drives** come with two simple cables and slide-in drive slots, complete with screws you can turn by hand. There's room for only two drives, but Joz doesn't think that this will be a problem. "Drives have gotten significantly bigger—we can put 500GB of storage in these machines right now." And of course there's FireWire 400 and 800, USB 2.0, and even PCI-X cards for more high-speed storage.

G AIRPORT'S HANGAR The G5's optional $99 **AirPort Extreme** card goes in this slot. If you don't want to buy one right away, you can install it yourself later—unlike the G5's Bluetooth module, which is attached to the motherboard and can't be added after purchase. For both AirPort and Bluetooth to function, you'll also need to attach the included external antennas to the back of the tower.

THE **POWER MAC G5:** AN OUTSIDE LOOK

A SUPER, MAN The G5 has space for a single optical drive; the DVD-burning **SuperDrive** is the default configuration.

B ON THE BUTTON In addition to the **power button**, the front panel now sports a **headphone jack** and **USB 2.0** and **FireWire** ports. Putting ports on the front of the Power Mac G5 came about as a result of "huge customer demand," Joz says. The Power Mac G4's design made it difficult to put ports up front, but Apple made front-panel USB and FireWire ports a must when developing the G5.

C THE HOLE TRUTH The front and rear panels of the G5's alloy aluminum **casing** are perforated—Apple estimates that the two panels are 35 percent air. The reason: optimal airflow that allows cooler air to enter the front of the enclosure, flow over the heat-producing parts, and exit the rear.

D LOCK DOWN This pop-open **panel** allows you to lock your G5, protecting its valuable RAM.

E SLOT MACHINE The **top three slots** support **PCI-X cards** (except on the 1.6GHz G5); the bottom slot is the **AGP 8× slot**, which houses the G5's video card. That card can drive two separate monitors, one via an ADC port, the other via a DVI port.

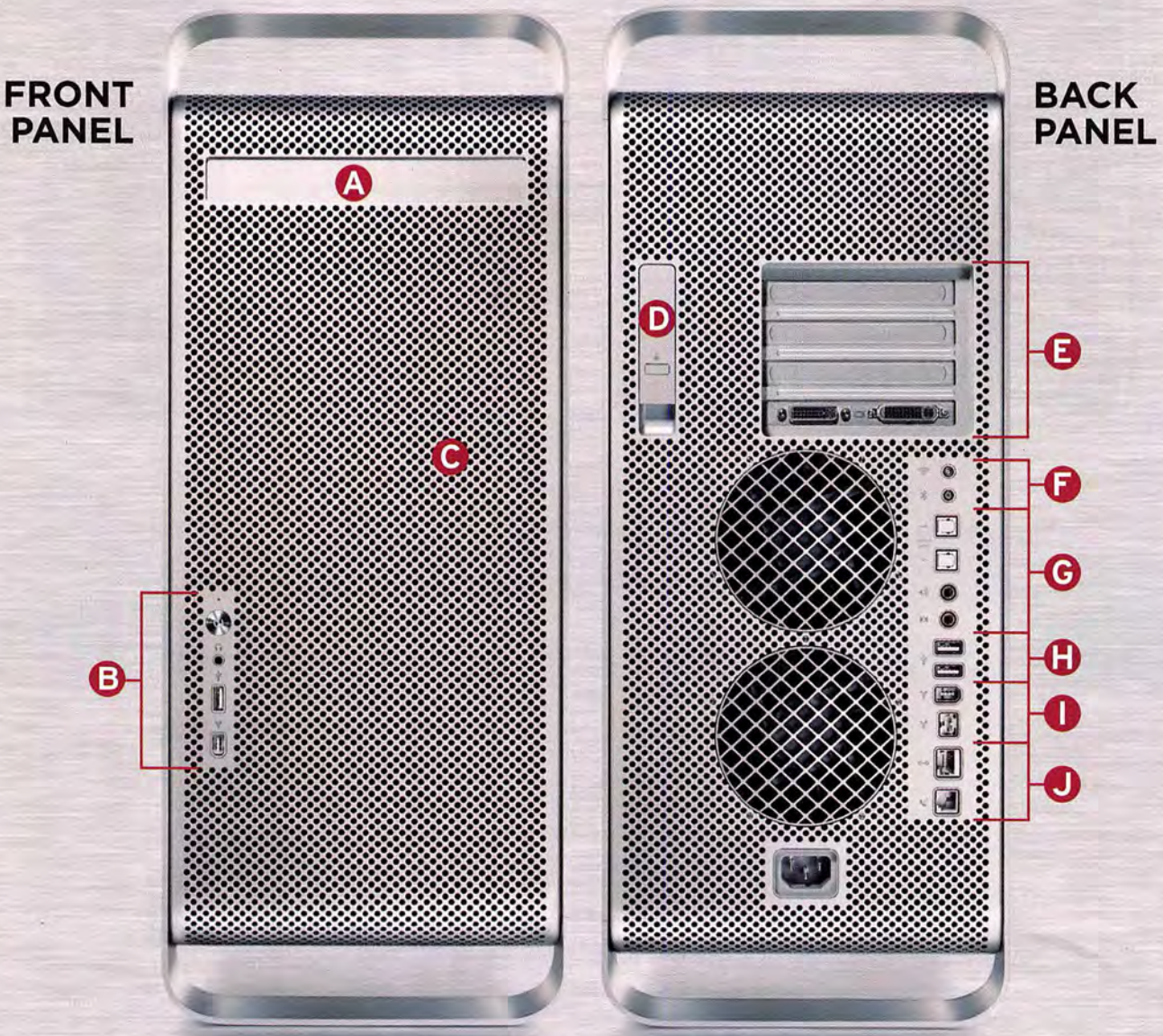
F THE WIRELESS WAY The G5's optional $99 AirPort Extreme and $50 Bluetooth features are useless until you attach the included external antennas to their respective **adapters**. The AirPort antenna is T-shaped; the Bluetooth is a cylinder.

G SOUND OFF "We're not the first to have **optical audio out**," says Joz. "But built-in **optical audio in** is huge." It lets audio pros get full-quality digital audio into a Mac without add-on hardware.

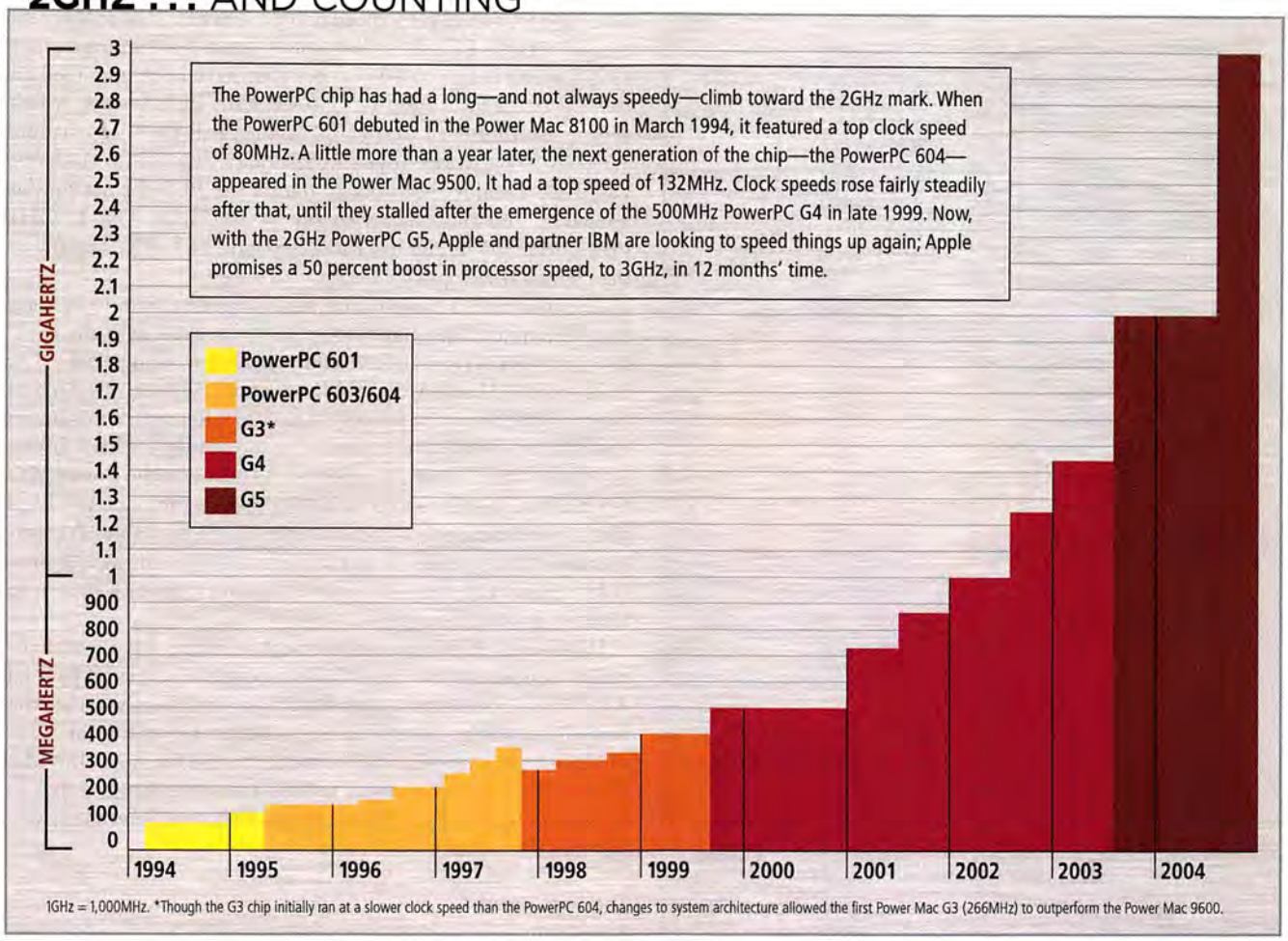
H PORTSIDE: USB With the Power Mac G5, Apple for the first time offers **USB 2.0 ports** on a Mac system. "We never denied that we would do USB 2.0," Joz says. "But we wanted to wait until it was time. It was obvious we'd do it—we were the first ones out there with USB 1.0 that worked." But the company waited until the USB 2.0 world had settled down before coming out with ports that supported the new, higher-speed connection standard.

I PORTSIDE: FIREWIRE The **FireWire 400 and 800** ports provide even more connection options for fast external storage, mitigating the internal limitation of only two Serial ATA hard drives.

J PORTSIDE: THE REST The two remaining ports offer **Gigabit Ethernet** and a built-in **56K modem**.



2GHZ . . . AND COUNTING



1GHz = 1,000MHz. *Though the G3 chip initially ran at a slower clock speed than the PowerPC 604, changes to system architecture allowed the first Power Mac G3 (266MHz) to outperform the Power Mac 9600.

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Mother of all Motherboards

If Apple had slapped a G5 chip into a Power Mac G4 chassis, the result wouldn't have been too exciting. The G5's heat output requires some extensive cooling work, and the Power Mac G4's innards aren't built to take advantage of the new chip's speed.

Feed It RAM The most important thing you can do to make a modern computer fast is to make sure the processor is continually fed data. From a processor's perspective, a hard drive is very slow—for real speed, a processor must be fed by fast RAM.

The Power Mac G4 had three layers of *cache RAM*, speedy RAM designed to keep the processor fed with raw data so it could operate at peak efficiency. The G5 has two, but the third layer—called *Level 3 cache*—is gone. Believe it or not, that's not bad news. The Power Mac G5 can use regular system RAM, because that RAM connects to the processor at speeds far faster than any previous Mac model.

Speedy Connections At the heart of the Power Mac G5 is a *frontside bus*, the connection that links the processor with the *system controller*—a special chip Apple designed to act as the computer's traffic cop, sending data to the processor, RAM, and other computer systems. The Power Mac G4's bus ran at 167MHz, so even with Double Data Rate (DDR) RAM, that system could feed the processor at only 1.3GB per second. The Power Mac G5's frontside bus runs at half the clock speed of its G5 processor, topping out at 1GHz for the top-of-the-line dual-2GHz model. In the dual-2GHz model, each G5 chip gets its own 1GHz connection, so the data flowing between one G5 chip and the system controller can't slow down the other chip.

The top two Power Mac G5 models use 400MHz DDR RAM—that's speedy. But it gets better: the system uses two banks of that RAM simultaneously, combining two speedy RAM chips into one superspeedy RAM combo. (So you need to add RAM to the G5 in pairs, one module in the upper four-slot RAM bank, the other in the lower. If you use 1GB DIMMS, you can fill up all eight slots, for a staggering 8GB of RAM. The 1.6GHz G5, whose DDR RAM runs at only 333MHz, is limited to 4GB.)

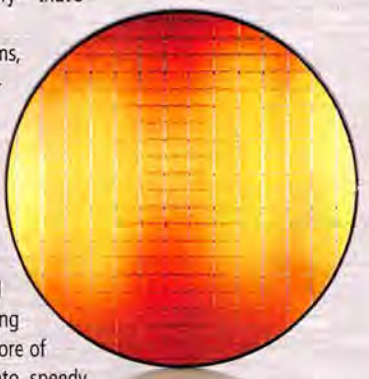
The result: the G5 processor's connection to RAM can handle as much as 6.4GB per second. That translates to a massive speed boost for any data-intensive task.

If you do the math—and we'll forgive you if you don't jump at the chance to multiply megahertz and gigabytes—you'll find that the frontside bus can carry far more data than the G5 processor–RAM connection can at its top speed. That's OK, because the system controller also talks to the rest of the Power Mac's infrastructure—the hard drive, video card, expansion cards, and other hardware that's carrying out high-impact tasks—simultaneously inside the Power Mac's case. The upshot is that a large amount of data can move around the Power Mac G5 at once—and that leads to speed.

THE **64-BIT** QUESTION

Lost amid the hype surrounding the new G5 chip is the answer to a perfectly reasonable question about the first desktop 64-bit microprocessor: What exactly does 64-bit processing mean? And more important, how will it affect what you can do with your Mac?

First things first—a 64-bit microprocessor can handle a lot more data at once than a 32-bit chip can. Desktop processors were moved from 16-bit to 32-bit so they could access more system memory and work with larger files more efficiently, without swapping data between chunks of addressable memory—that's also the idea here.



To put it in numerical terms, a 64-bit processor can theoretically access 18 billion gigabytes—18 exabytes—of memory, compared with 4GB on a 32-bit system. (The Power Mac G5 can hold as much as 8GB of RAM.) There's a big speed boost that comes from having all that RAM, because the more of your data you can load into speedy memory, the fewer times you have to hit the speed bump of reading and writing data to the comparatively slow hard disk.

At the same time, the G5—pictured above on an IBM-made wafer, which contains hundreds of chips—can run 32-bit applications natively at processor speed without sacrificing performance; there's no need to emulate a 32-bit operating system. And some tasks will be accelerated by the G5 without any modification. For example, Apple has rewritten many of OS X's math and vector routines to take advantage of the G5's 64-bit processing power; programs written to take advantage of those routines will automatically benefit from 64-bit processing without requiring even a single software update. Recompiling software within Apple's Xcode environment can add another speed boost, and writing G5-specific code can wring even more speed out of the new chip.

Thanks to the G5's 64-bit processing, applications that routinely use a ton of data can now run on a Mac. Think scientific programs involving modeling events and collecting mammoth amounts of data over long periods of time, or server apps that need access to immense amounts of memory for titanic databases. What the G5 gives Mac users is the opportunity to add 64-bit–savvy apps without relegating existing 32-bit software to obsolescence. And with Intel and AMD struggling to add 64-bit processing to their desktop chips, Mac developers have a window of opportunity to find a 64-bit killer app able to do something that no 32-bit processor could handle, regardless of its clock speed—at least until Windows catches up.—DAVID READ

Time for New Tech Other familiar technologies that populate Macs and PCs alike get a speed boost in the new Power Mac G5. The venerable PCI slots that Power Macs have sported since 1995 haven't been phased out, but they have been upgraded on the top two Power Mac G5 models with PCI-X slots, which accept most modern PCI cards (older cards that can't handle 3.3 volts won't work). If you install PCI-X cards into the slots, you'll see a major speed boost: one of the PCI-X slots runs at 133MHz, and the other two run at 100MHz. The 1.6GHz Power Mac G5 model has three old-style PCI slots running at the comparatively poky 33MHz.

The internal ATA hard drive has also been common in Macs since the mid-1990s, but the G5 has done away with the common parallel ATA standard and replaced it with serial ATA. Each Power Mac G5 can hold two serial ATA drives, each of which connects to the main system controller with a maximum data rate of 150MB per second—not too shabby for hard drives, especially since the single superfast ATA bus on the Power Mac G4 had a maximum speed of 100MB per second. Serial ATA is also a much cleaner connection technology; the cables are simpler than the ribbons on parallel ATA drives, and Apple provides screws and snap-on cable connectors, so it's a breeze to install a drive without tools.

With serial ATA, you can connect only one drive per channel, as opposed to the two drives you could connect on parallel ATA buses. So you no longer have to worry about whether the new drive you're installing is jumpered to master or slave mode—a *very* un-Mac-like experience to be sure. But the Power Mac G5 can connect to only two internal hard drives; the Power Mac G4 came with support for four internal drives, albeit at slower speeds.

The Last Word

After four years of minor improvements to Apple's flagship line, it was definitely time for a Power Mac revolution. With the G5, we've got one. Apple has upgraded almost every subsystem of the computer and engineered it for speed, starting with the fast processor at the heart of the box. The Power Mac G5 gives professional Mac users a good reason to upgrade—and it shows that the Mac is still a strong competitor in the speed race with Intel-based PCs. Even Mac users who don't need the speed of these highly tuned professional machines can agree that having fast Macs that can compete—both in real speed tests and in terms of raw gigahertz numbers—with powerful PCs is a revolution whose time has come. □

Editor JASON SNELL has been covering Mac hardware since 40MHz processors were considered "wicked fast."

WHILE **SUPPLIES** LAST

The Power Mac G4 (right) isn't a goner quite yet—Apple says it will continue to sell the older model as long as there's customer demand. But shoppers won't get to order the most recent top-of-the-line G4 model. Instead, the company will offer an older version that doesn't have the FireWire 800 or Bluetooth support, which were both introduced last spring. And this G4 model supports only the original AirPort wireless-networking technology, not AirPort Extreme. But there's good news for OS 9 holdouts: the newly available G4 will boot into Mac OS 9. The $1,299 Power Mac G4 comes with a single processor and a CD-RW/DVD-ROM Combo drive; you can add a DVD-burning SuperDrive for $650 more. A dual-processor model costs $3,274. Since that's more than the price of the most expensive Power Mac G5, Mac users in the market for a dual-processor machine should shy away from the G4.

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Take a Peek at Panther

SEE WHAT APPLE'S LATEST OS CAN DO FOR YOU

In Apple's animal kingdom, Mac OS X has evolved from Cheetah (10.0) to Puma (10.1) to Jaguar (10.2). The next sharp-toothed release (10.3), dubbed Panther, is due by the end of this year.

Panther's many additions and enhancements include a brand-new Finder, which has improved save dialog boxes and search features, and new contextual menus. Apple has given more power to its Mail application, integrated faxing into the OS, and added font management. And that's just the start.

Although Panther still isn't ready to be released into the wild, here's a bit of what you can expect when this big cat matures.

COURTESY OF APPLE COMPUTER

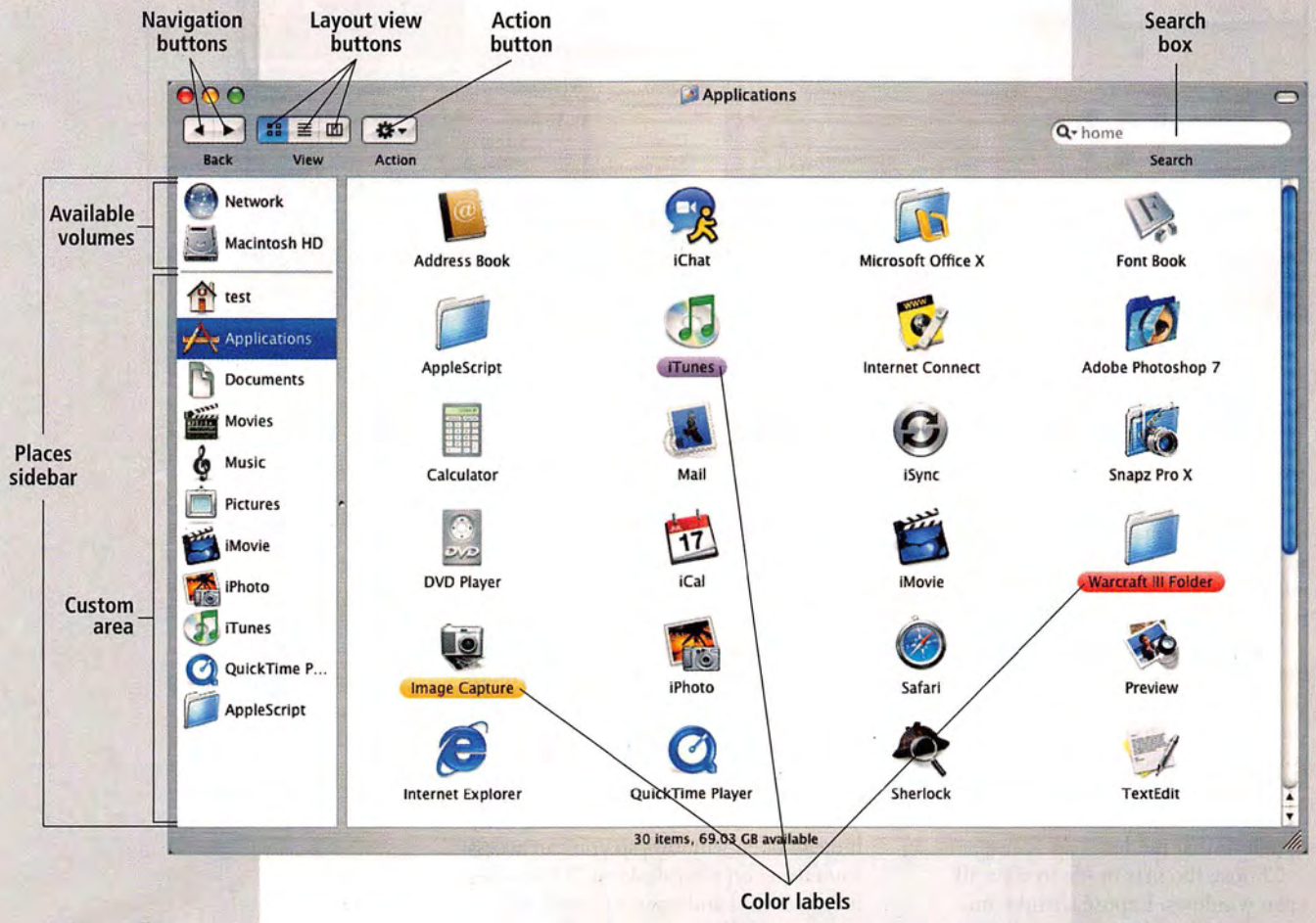
Finder

The most widely used part of Mac OS is the Finder. In Panther, Apple has updated the Finder and added some OS 9–like functionality.

The new Finder has the brushed-metal look of iTunes and iPhoto. All available volumes (including iDisks) are visible in the Places sidebar on the left of the Finder window, and you can move custom files and folders to the lower part of the window—a nice addition for those who miss OS 9's Apple menu. Redesigned save dialog boxes also take advantage of Panther's improved Finder interface.

The new Action button brings up a contextual menu based on the current selection. It lets you perform tasks such as aliasing, printing, sending files to the Trash, and labeling files and folders by color—an old favorite from OS 9.

And the Finder has a greatly improved search function, similar to the one in iTunes and Mail, that shows results as you type.—JONATHAN SEFF



Exposé

Panther's new Exposé feature can help you quickly sort through the chaos of several applications running at once. It lets you use keyboard shortcuts and hot corners to manage your clutter, so you don't have to hide, move, and minimize open windows to find the one that you need.

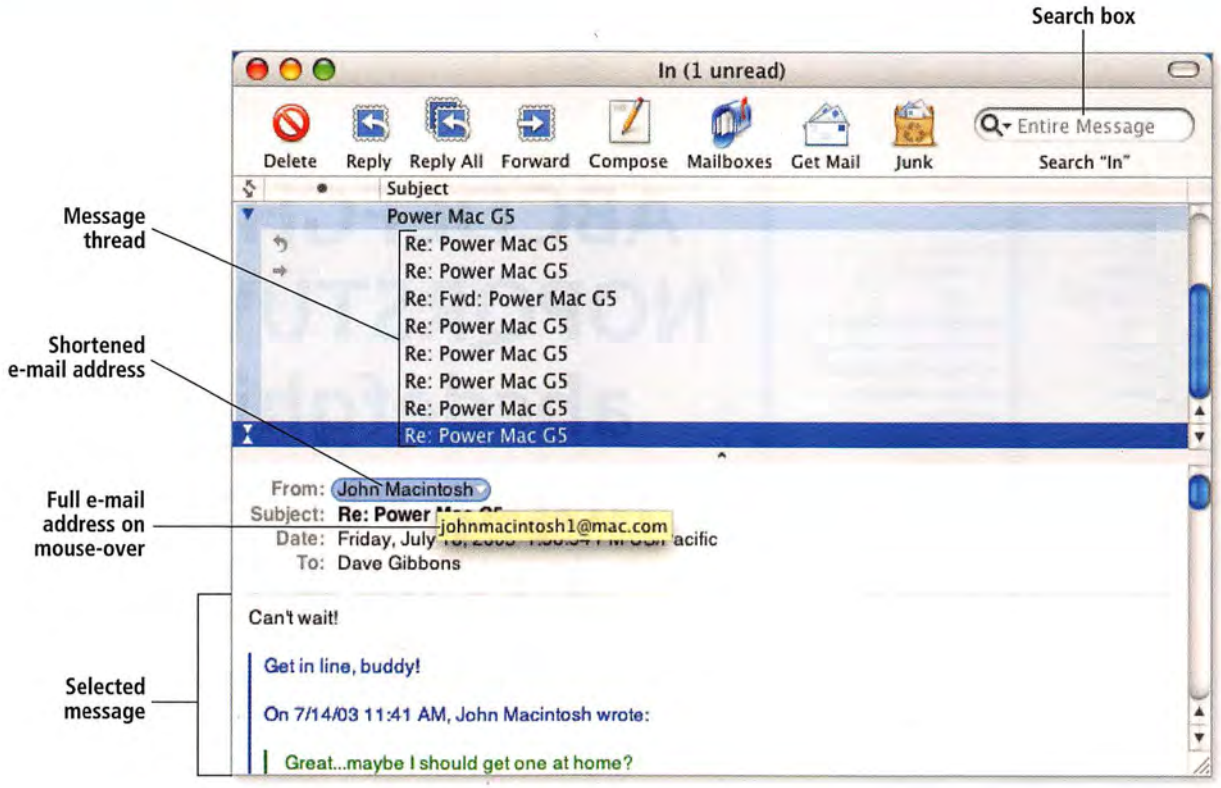
You can activate Exposé by its default function keys, set your own keyboard shortcuts, or assign each of its three viewing modes to a different corner of your screen. Once you've assigned a viewing mode to a screen corner, you move your cursor to that corner to switch to that mode.

Choose the first mode to view all open windows. Exposé shrinks and places each window so they all fit on screen without overlapping. The more items you have open, the smaller each window becomes (this may make it hard to identify windows, especially if you have a small monitor). But as you mouse over each minimized window, the name of the application, folder, or document appears. When you click on a window, it pops to the front and the others go back to their original positions.

The second mode brings every window in the current application to the front while graying out the rest of the windows. This can be handy if you have several Photoshop documents open, for example.

Select the third mode to momentarily hide *all* open windows so you can access something on your desktop. This makes it easy to find and open a document, unmount an iPod, or send a file to the Trash.—KELLY LUNSFORD

Mail



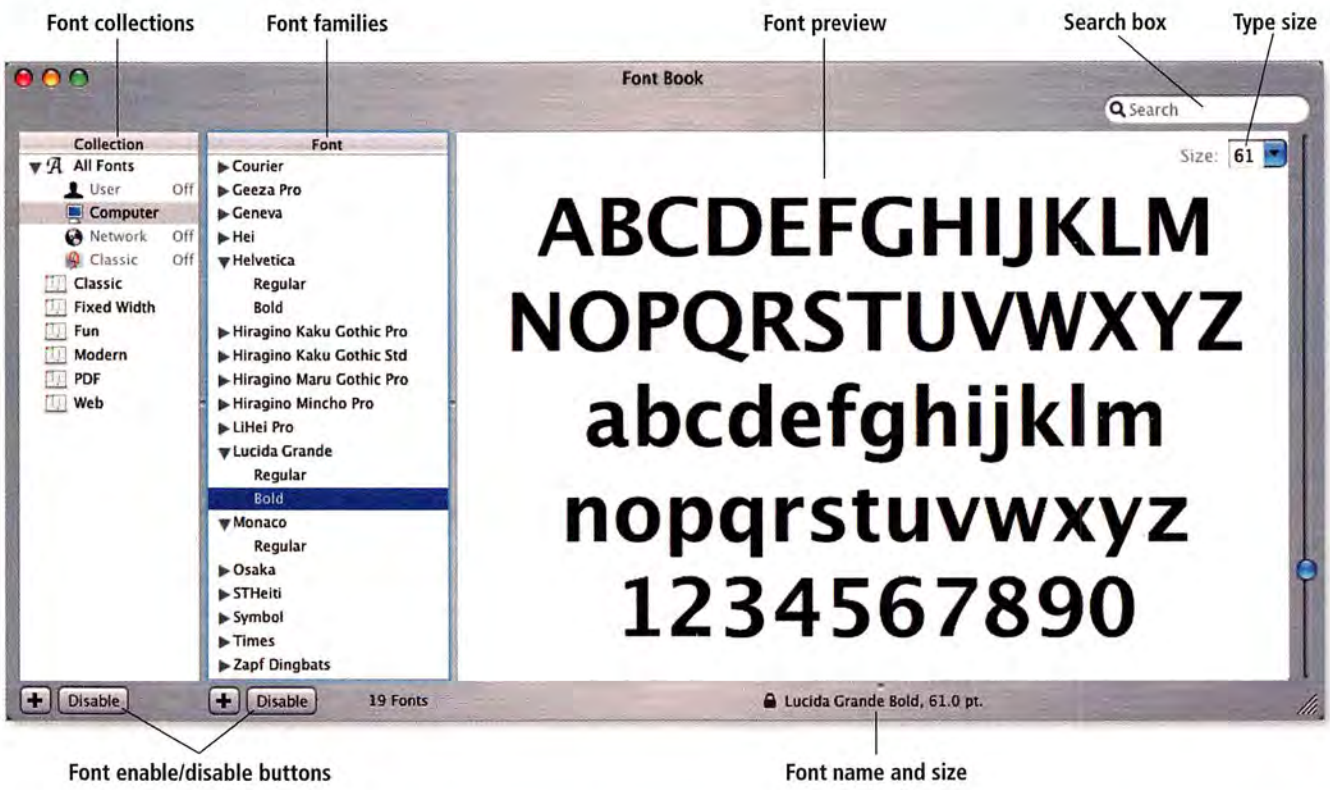
Apple's free e-mail program, Mail, gains more power in Panther. One big addition is the ability to track e-mail threads—multiple messages with similar subject lines. Threads make it much easier to keep track of back-and-forth e-mail conversations. This feature is currently part of other e-mail applications such as Microsoft Entourage and Qualcomm's Eudora.

Apple says that Mail performs faster. And now the program uses the same HTML rendering engine as Safari, so HTML messages should display more quickly and accurately.

Mail also strengthens address management and Address Book ties. E-mail addresses are now objects that you can drag between fields, and you can display your Address Book contacts as names.

Other improvements are better spam filtering and a Safe Addressing feature, which highlights unfamiliar domains so you don't accidentally send sensitive information out of your office network, for example.—JONATHAN SEFF

Font Book



OS X's Font Panel let you change font sizes and group fonts into collections, but it was far from a full-fledged font manager. Font Panel couldn't activate or deactivate collections (handy when you have many fonts), and it worked only with some programs—so it was more a curiosity than a useful tool. Mac users who wanted help organizing and managing large font collections turned to standbys such as Extensis's Suitcase and DiamondSoft's Font Reserve.

Font Panel remains in Panther, but it's joined by a new application, Font Book. Though designers may still benefit from Suitcase and Font Reserve, the rest of us may have all we need in Font Book.

When you have a lot of fonts, finding a specific one can be hard. You can use Font Book to classify fonts in many ways, including by project, kind (Classic, Fixed Width, and so on), or end destination (such as a Web site). You can also control which fonts are available in a particular application. In QuarkXPress, for example, you might want to see only PostScript fonts.

You can preview a typeface in Font Book and install or disable it (or an entire type family) by clicking on a button at the bottom of the Font Book window.

Font Panel has also been updated. Its Character palette lets you preview a character, such as the letter *N*, in every active font. You can also create styles, such as shadow and underline, by combining effects and fonts.

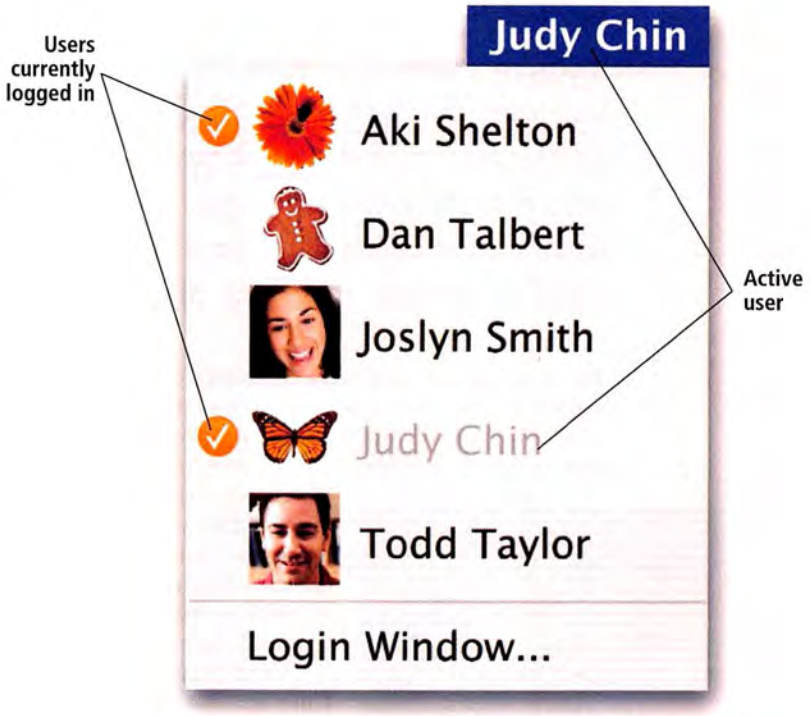
Both Font Book and Font Panel include a search function that allows you to find any font on your Mac or network.—TERRI STONE

Fast User Switching

OS X has always been a multiuser environment. Each user has a set of applications, settings, desktop pictures, and more. Switching between users, however, has always been a tedious, disruptive process. Panther's Fast User Switching changes that.

Switching to another user no longer requires that you log out—which closes and quits all open documents and applications—and then log in to another account. When you choose a new user from a list at the far right of the menu bar, that user's desktop immediately rotates into view, in the same state it was left in.

This new feature seems ideal for home or small-office environments, where multiple people may use a single Mac. You can add or remove user accounts from Fast User Switching via the updated Accounts preference pane.—JONATHAN SEFF



More Panther Enhancements

Preview A new version of OS X's built-in PDF viewer is faster and has indexed text searching, PDF text copy, URL support, fax viewing, and PostScript-to-PDF and EPS-to-PDF conversion.

FileVault A new feature uses the 128-bit Advanced Encryption Standard to encrypt and decrypt your Home directory's contents on-the-fly. And the Secure Delete Trash function can completely erase files from your hard drive.

Faxing Apple has bundled fax software with many Macs in the past, but Panther supports sending and receiving faxes via modem. You can now fax directly from any application that has a Print command; you can pull fax numbers from your Address Book. There's also a new preference pane for fax management, called Print & Fax.

iChat AV This update to Apple's instant-messaging application enables audio and video chat with Apple's $149 iSight camera or another FireWire Webcam or camcorders. (For a detailed look at iChat AV, see "Lights, Camera, Chat," *Mac Beat*, page 18.)

AppleScript Improvements to AppleScript include a redesigned Script Editor and new ImageEvents commands. Combined with the Folder Actions feature—which lets you attach scripts to folders—AppleScript can now perform a series of commands: for example, resizing images, putting the original images in another folder, and making a copy for print and a JPEG for the Web.

Printing Panther's printing software supports drag-and-drop desktop printers (as in OS 9), Windows printer sharing, and a virtual PostScript printer that will let you print PostScript files to any non-PostScript printer.—JONATHAN SEFF

BBEdit Version Control

If you're a Web developer, even minor errors—a simple typo in your code, for example—can create *major* problems. But you can easily track down and reverse such mistakes by setting up version-control software. This powerful tool records all changes to a document and lets you quickly step back to an earlier version—even if you've changed and saved the file many times since then. Just think of it as your personal time machine.

ILLUSTRATION BY OTTO STEINENGER

The most popular version-control software is CVS (Concurrent Versions System). Although this open-source program was developed to help programmers manage source-code files, CVS is useful for managing any type of document. In fact, a Web site is a perfect example of the sort of multifile project that can benefit from version control.

CVS originated on Unix, and like most Unix software, it runs perfectly on OS X. There's just one downside: until recently, the only way to access CVS was through OS X's Terminal application—not an enticing prospect for most Mac users. But now Bare Bones Software has simplified the process by building support for CVS into the latest version of its text editor, BBEdit 7.0 ($179; www.barebones.com). With BBEdit 7.0, you can open old versions of files, save new versions, and collaborate on team projects, all from the comfort of a polished Mac interface.

The CVS Advantage

There are many ways to track and archive document revisions. However, CVS offers some distinct advantages. Imagine that you're in charge of your company's Web site, and you discover that the search form on the home page no longer works. You remember making changes to the home page two days ago. To see what went wrong, you'd like to compare the current home page with the version from three days ago.

You *could* prepare for this sort of problem by taking snapshots of your Web site at regular intervals, placing a current version of every file into a dated StuffIt archive and saving the archives in a safe place. Although this technique works, it involves a lot of manual record-keeping. You must decide not only how often you'll take a new snapshot, but also whether changing only one or two files warrants creating an entire archive.

CVS, on the other hand, does the record-keeping for you. Once you've configured the system, you simply download a copy of your project, make any necessary changes, and submit the altered files to the system. CVS automatically creates a snapshot of the revised files and updates the main project.

CVS also simplifies the collaboration process by letting multiple contributors download working copies of the same CVS project. Each team member can then use CVS to submit updated files to the main project, while also updating their local copies to reflect changes made by others. (In this article, we'll concentrate on working with CVS as a single user, but the basic concepts are applicable to collaborative projects.)

Setting Up CVS

To set up CVS on your computer, you'll need OS X 10.1.5 or later and BBEdit 7.0.2 or later. CVS is included with Apple's free Developer Tools. If you haven't yet installed the Developer Tools software, look for it on the CD that accompanies OS X or download it from Apple's Web site (http://developer.apple.com).

Although BBEdit 7.0's CVS integration is handy, it's not comprehensive. BBEdit can't set up your CVS repository or check out your project files for you. To do this, you'll need to use OS X's Terminal utility. The good news is that you should need to do this only once for any project.

Create a Repository CVS stores all of a current project's files and revision histories in a centralized location called a *repository* (see "Basic CVS Terms"). You can create a repository anywhere on your disk;

however, on Unix systems, the standard location is the /usr/local/ directory. This directory is hidden from the Finder, but that's OK—CVS manages the repository for you, so you don't need to see it.

Open Terminal and type the following commands:

```
cd /usr/local/
sudo mkdir cvsrep
sudo chgrp staff cvsrep
sudo chmod g+w cvsrep
```

The first two lines move you to the /usr/local/ directory and create a new directory named cvsrep within it. (You don't have to use this name, but it's the convention.) The last two lines change the owner and permissions of the new directory so you can use it without administrator authentication.

Next, you must tell CVS to use this new directory as the location of your repository. Open the .tcshrc configuration file in BBEdit by typing `bbedit -c ~/.tcshrc` in the Terminal window. When the .tcshrc file opens, type `setenv CVSROOT "/usr/local/cvsrep"` into the document; then save and close the file.

Return to Terminal and type `source ~/.tcshrc` to apply the changes you just made.

You're now ready to initialize the CVS repository. Type `cvs init`. If all goes well, you won't see any output from that command.

Add a CVS Project You've created a CVS repository, but there's currently nothing in it. Your next step, then, is to add a project—in this case, a Web site. Create a folder named TestProjectImport on your desktop and copy a few HTML files to this folder. These files will be the basis for your new CVS project.

In Terminal, type the following commands:

```
cd ~/Desktop/TestProjectImport
cvs import -m "Initial project import" testproj me start
```

This tells CVS to import every file and folder from the current TestProjectImport folder into a new project named testproj. The `Initial project import` item is a log message that will be applied to the initial revision of every file in the project. (The `me` and `start` items are *vendor* and *release* tags. For more information on them, consult the CVS documentation. For now, you can ignore them.)

When the import process is finished, you'll have two copies of your Web site: the original on your desktop, and the copy you just imported into your CVS repository. CVS does *not* manage the desktop copy. After the import is completed, there's no connection between it and the copy in your repository. You'll want to ignore it.

To get a copy that CVS *does* manage, you need to do one more thing in Terminal—you must check out your project files. The first step is deciding where you want to put the working copy of your site. For a Web-site project, a good location is the Sites folder in your Home folder.

BASIC CVS TERMS

CVS Repository: This is the central location where CVS stores the master copies and revision histories for every file in the project. If you maintain several Web sites, you can store each site as a different project in one repository.

Checking Out: This is how you obtain a working copy of your project files from the repository. You'll make your changes to this version. If a team is collaborating on the files, each member can check out his or her own working copy of the project.

Committing (or Checking In): This is the process of sending modified files back to the repository. You don't need to commit every file in the project—only those you've modified.

Revision: This snapshot of your modified file is created during the check-in process. CVS stores every revision of every file so you can return to it later if needed.

Updating: If you're working as part of a collaborative team, updating lets you synchronize your checked-out files with the most-recent versions in the repository. This ensures that your files will reflect each teammate's changes.

In Terminal, type:

```
cd ~/Sites
cvs checkout testproj
```

CVS will create a new folder named testproj (matching the name of the project in your repository) inside Sites. It'll place copies of all your project's files and folders in this new folder. CVS also places a subfolder named CVS inside each folder in the project. This is where CVS stores the version-control information. For the most part, you can ignore these CVS folders. There's just one limitation: you can't use this name for any other files or folders in your project.

Managing CVS Projects in BBEdit

Now that you've created a repository and checked out a copy of your project, BBEdit can handle the remaining CVS interaction. To start, open BBEdit's Preferences, click on the Tools panel, and make sure that the CVS Integration option is selected. If it's not, click on it; then quit and relaunch BBEdit.

You can access all of BBEdit's CVS commands from the CVS menu, represented in the menu bar by a yellow icon resembling a yield sign.

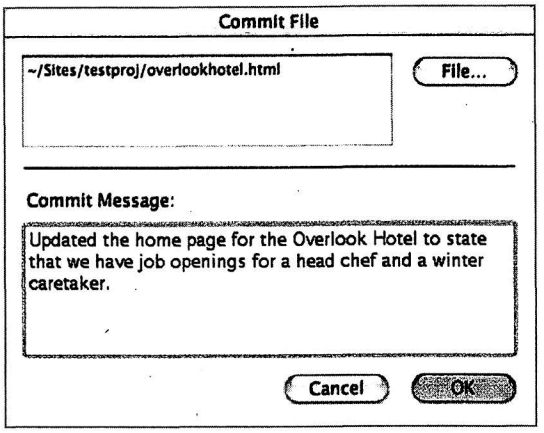
Commit a File You don't need to do anything special to edit a file in your CVS project. Simply open it in BBEdit—you should make sure that you're working with the checked-out version of your file from the Sites folder—and then you can begin entering your changes.

continues

More Info:

http://developer.apple.com/internet/macosx/cvsoverview.html
Get in-depth information about setting up CVS on OS X and enabling advanced features.

http://cvsbook.red-bean.com/
Extend your skills with this free guide to open-source development with CVS.



Get Committed From the Commit File dialog box, you can choose a modified file to commit to the repository. You can also include a brief description of the changes.

When you're done making changes, save the file. You now need to commit the modified file to your CVS repository so CVS can make a record of your revisions. From the CVS menu, choose Commit File. In the Commit File dialog box, specify the file you want to commit (see "Get Committed"). BBEdit will automatically select the file for the frontmost document window. If you want to commit a different file, click on the File button and navigate to the correct file. Alternatively, you can drag a file from the Finder into the path field. At the bottom of the Commit File dialog box, you can type a log message that summarizes the changes made in this revision. Log messages can be very useful when you're searching for a particular revision. When you're done, click on OK. CVS then creates a revision for the modified file and updates the project files.

You commit CVS files as frequently as you like. Generally, committing a file when you're finished making changes to it is a good idea. Committing changes every few minutes or each time you save the file would likely be overkill.

If you're making similar changes to multiple files, you can commit the changes to all of them in one action. For example, say you use BBEdit's Find And Replace command to update the copyright date in every HTML document in your project. When you're done, choose Commit Folder from the CVS menu. At the top of the Commit Folder dialog box, choose the folder you want to commit. If you choose the main folder for your project (testproj in our example), CVS will commit every modified file in the project—including those in subfolders. When you enter a log message (for example, "Updated copyright date"), CVS applies it to every modified file.

Add New Files to a Project Adding new files to a CVS project is a three-step process. First, create the new file and save it in your working copy of the project—here, that's the testproj folder in your Sites folder. Make sure the file you want to add is the frontmost document window in BBEdit. Then choose Add from the CVS menu. This adds the file to the CVS project but doesn't actually store the *contents* of the file in the CVS repository. To do that, you have to select Commit File from the CVS menu. This third step is easy to forget, but it's essential.

Revert to a Previous Revision Once you've committed a modified file, you can return to any previous revision by selecting Get Revision from the CVS menu. This brings up a dialog box listing each revision of the file since its initial import, including the date and time it was committed and a unique version number (1.1, 1.2, 1.3, and so forth). CVS automatically assigns these version numbers. BBEdit places a dot next to the revision currently included in your working copy of the project.

What makes revisions so useful is that they let you move backward and forward through your file versions. For example, if the most recent revision to your home page is version 1.3, you can choose Get Revision to go back to version 1.1. However, if you change your mind about reverting, you can also use the Get Revision command to return to version 1.3. It's sort of like time travel for documents.

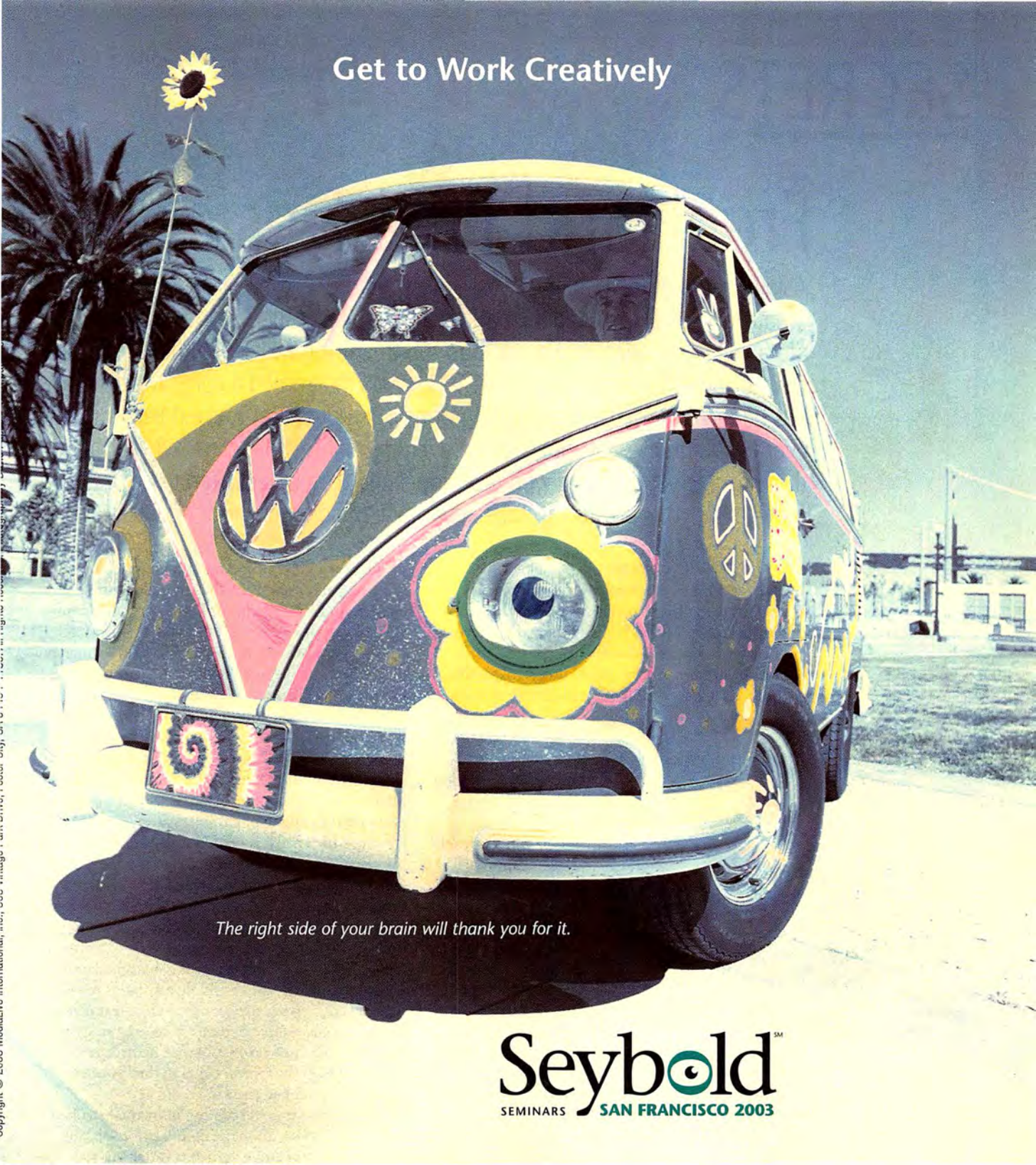
Often, you don't want to revert completely to an older version but simply want to see what has changed between it and the current version. To do this, open the current version of the file. Then choose Compare Revision from the CVS menu. BBEdit displays a dialog box listing every revision to the file. Choose the one you want. BBEdit creates a temporary file, in which it displays a line-by-line list of the differences between the two versions. (The results are exactly like what you'd get using the powerful Find Differences command in BBEdit's Search menu.) When you close the Differences Results window, BBEdit automatically deletes the temporary file it created for the old revision.

If you aren't sure which version of a file you're using, choose Get CVS Status from the CVS menu. A dialog box that summarizes the file's current revision status will appear. To get a detailed history of any file—including the log messages describing each revision—choose Get Revision History from the CVS menu.

So Much More

We've really only scratched the surface of CVS's capabilities—particularly when it comes to managing multiuser collaborative projects. But even if you're using CVS by yourself, its version-control tools can ensure that you'll never again have to wish, "If only I had an old version of this file." □

JOHN GRUBER is a freelance writer, Web developer, and Mac nerd. He combines those interests on his Web site, www.daringfireball.net.



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FreeHand Type Design

Aside from professional illustrators, most people use vector graphics programs such as Macromedia FreeHand for small projects—for example, to create a styled headline or a quick logo treatment for a client. With the release of FreeHand MX ($399; 800/470-7211, www.macromedia.com), Macromedia has added an impressive collection of new features that make it easier than ever to design eye-catching text on even the tightest deadline. We'll show you three simple yet effective type techniques that can be adapted to a variety of projects, so you can start to take advantage of some of these new tools.

New Options for Objects

The key to FreeHand's new styling abilities lies in its revamped Object panel. Similar to the Property Inspector in Macromedia's other MX offerings, the new Object panel consolidates controls for a vector object's properties—including strokes, fills, and effects—in one window. This makes it easy to access and edit several different attributes without having to click through multiple panels.

ILLUSTRATION BY PAUL HOWALT

The Object panel's compact approach is particularly useful since you can now apply multiple attributes to a single vector object—another big improvement in FreeHand MX. The Object panel keeps an inventory of every attribute and lets you rearrange and layer them to get just the right effect.

Together, FreeHand's Object panel and multiple-attributes feature let you use strokes and fills in ways never before possible. And they're especially helpful in creating special effects for text.

Different Strokes

One easy way to give your text greater impact is to outline it with a stroke. In previous versions of FreeHand, applying strokes to text was problematic. Because strokes could appear only on top of the text's fill, strokes thicker than 1 point often ended up distorting the original shape of the letterforms (see "Stroke Savvy"). To get around this problem, you had to create multiple versions of the same text and then place the stroked text in the background—which meant keeping track of multiple objects if you needed to make changes later.

FreeHand MX solves this problem by letting you move the stroke *behind* the object's fill, thus preserving the letter shapes.

To do this, style your text and then choose Convert To Paths from the Text menu. This changes the letter shapes to vector paths and displays them as a group. In the Object panel, click on the Add Stroke icon and choose a size that's twice as wide as you want your stroke to ultimately appear. (Because the stroke is centered on the shape's vector path, your fill will end up covering the inside half.) Finally, click on the Stroke item in the Object panel and drag it below the Contents item. Your stroke should now outline the text without intruding on its shape.

For more-complex text effects, you can take advantage of FreeHand MX's multiple-attributes feature to apply contrasting strokes to the same text object. You can create double outlines or colored rings or even add patterned brushstrokes. The trick is to layer your strokes in the Object panel so thicker ones are listed below thinner ones.

You can also try overlapping individual stroked letters for a more dramatic composition. When you apply a stroke to grouped text (or any grouped object, for that matter), the stroke appears only on the outside edge of the combined letters—not where they cross.

Live Effects

For something more eye-catching than a simple stroke, you can use FreeHand's object effects to alter the basic shape of your text's vector path—making it look hand-drawn or distorted, for example.

Object effects aren't new to FreeHand. However, in previous versions, these commands permanently altered the object's shape, making it difficult to undo the effect later. FreeHand MX changes that. Taking a cue from Macromedia Fireworks, the new version offers nondestructive, live effects, for greater flexibility. Once you apply these effects to a vector object, you can change or even delete them at any point in the design process.

To apply an object effect to your text, click on the Add Effect button at the top of the Object panel. The pull-down menu divides effects into two categories. The top six effects—Bend, Duet, Ragged, Sketch, Transform, and Expand Path—modify objects while preserving their vector characteristics. This makes them good choices for objects that contain spot colors or that may need to be resized later for output. Ragged and Sketch simulate the look of hand-drawn text and work especially well when combined with multiple strokes or fills. For example, you can create one stroke that contains the Sketch effect and then create another with the Ragged effect. The result is similar to what you'd get by layering multiple doodles on top of one another.

The live effects in the bottom group—Bevel And Emboss, Blur, Shadow And Glow, Sharpen, and Transparency—convert vector shapes into raster images. Therefore, they'll also convert spot colors into process colors. Because these effects require that you set a final output resolution, which could change if the artwork is scaled later in a page-layout program, avoid them if you won't have control over the placement or size of your final artwork.

3-D Perspective

Another new feature in FreeHand MX is the Extrude tool, which lets you add 3-D effects to 2-D shapes. While it's not a full-fledged 3-D environment, the Extrude tool does offer an excellent way to add depth to simple objects such as text. To add a 3-D effect, select your formatted text and then click and drag the Extrude tool in the direction you want the object's depth to extend. The longer you drag, the deeper your text will look (see "Text That Pops").

Once you've created a basic 3-D object, you can use the Extrude, Surface, and Profile icons (located along the left edge of the Object panel) to fine-tune its appearance. Just click on each icon to set its controls.

Extrusion Controls Click on the Extrude icon to access numerical controls for the length of the extrusion and the position of its *vanishing point*, the spot where all your extruded lines converge. The farther the vanishing point is from your text, the more distorted the extrusion will appear. You can also use the numerical controls to rotate the object within its 3-D space.

Surface Controls The Object panel's Surface tool allows you to manipulate the appearance of your text's surface and set lighting controls. Of the five choices listed for surface appearance, only the Shaded setting creates a realistic 3-D effect with blended light and dark shades. You can set the number of blending steps your 3-D text uses: the more steps you apply, the smoother your blends will appear. But if you're working with small graphics, try to limit yourself to 25 or 30 steps, as any more than that will slow the screen redraw without adding significant value.

There are three lighting controls for extruded objects. The first is Ambient, which sets the general light that reflects off all sides of the object. It's important to find the right balance here. Higher Ambient settings will wash out more of the object's colors. But if the Ambient light is too low, you may miss much of the detail in the extruded areas. You can also create two additional light sources, each of which offers a choice of seven directions. These lights create the most-dramatic lighting effect. To create stark contrasts between the light and dark areas of your object, set the Ambient light low and add intense direct lights.

Setting Color By default, the extruded areas of a 3-D object always correspond to the object's fill color. But you can work around this limitation by creating a two-tone extrusion. Start by applying the fill color that you want for the extruded sides. Once you've set all your extrusion controls and you're happy with the effect, choose Modify: Extrude: Release Extrude. This command converts the extruded areas into ordinary shapes. You can then select the front of your text and change the fill or stroke colors at will.

Adding Perspective If you feel that the results of the Extrude tool are too bland, you can spice things up by combining them with FreeHand's 3-D Rotation tool or Perspective Grid feature. Both let you add greater dimension by setting a different vanishing point for your 2-D text, so letters appear to shrink into the distance.

Stroke Savvy Strokes used to cut into the letterforms, creating an ugly mess (top). But FreeHand MX lets you send the stroke behind the fill (bottom).

Text That Pops You can use FreeHand's new Extrude tool to give your text a 3-D look.

Great Results with Little Effort

While FreeHand MX isn't an instant art machine, you can create many of these effects quickly without much training. They let you create a wide array of interesting graphics that can liven up almost any layout. □

SANDEE COHEN is the author of *Macromedia FreeHand MX: Visual Quickstart Guide* (Peachpit Press, 2003) and has been teaching and speaking about computer graphics for the past 12 years.

Excel Chart Art

Microsoft Excel X may be a champ with numbers, but when it comes to displaying numerical information graphically, Excel's standard chart formats don't pack a lot of punch. But this doesn't have to be the case. In just a few minutes, you can make your data look great, without help from another application. Here are some easy techniques for creatively using Excel X's built-in tools to give your charts more visual impact.

If you haven't created a chart in Excel before, type a few numbers into a worksheet and select them. Click on the toolbar's Chart Wizard button (the one with the magic wand). (Choose View: Toolbars: Standard to display the button if it isn't visible.) Now pick a chart type in the dialog box and click on Finish. Voilà—this wizard makes creating charts quick and easy, and it's where you'll start for these projects.

Picture Perfect

One way to make a bar (or column) chart more appealing—especially to viewers who dislike numbers—is to fill the bars with pictures.

Start with any bar chart, and click on one of the bars to select its data series. Choose Format: Selected Data Series, and click on the Patterns tab. Click on the Fill Effects button, select the Picture tab, and click on the Select Picture button.

ILLUSTRATION BY NEIL LESLIE

Now you're ready to choose an image. Look for something straightforward and easy to recognize—simple clip art works very well. Avoid photos unless the file is very small (a maximum of 200 pixels wide). Once you've found an appropriate image, select Insert, choose the Stack option, and then click on OK twice. A series of stacked images will fill the bars. Use the Stack option instead of Stretch—stretching tends to distort the image. Repeat for the other data series in your chart.

There's no option for using Microsoft's built-in clip art in a chart. You'll have to use a workaround. Click on a cell in the worksheet (not the chart) and choose Insert: Picture: Clip Art. Control-click on the image and choose Cut. Now click on a bar to select all the bars in that data series, and choose Edit: Paste. (If the picture stretches, choose Format: Selected Data Series and then click on the Patterns tab. Click on Fill Effects, select the Picture tab, choose Stack, and click on OK twice.)

With your picture in place, widen the bars to make the images larger. Click on one of the bars, choose Format: Selected Data Series, and then click on the Options tab. Lower the Gap Width setting (which controls the space between bars) by moving the arrows, and check the results in the preview window. Click on OK when you're satisfied with what you see.

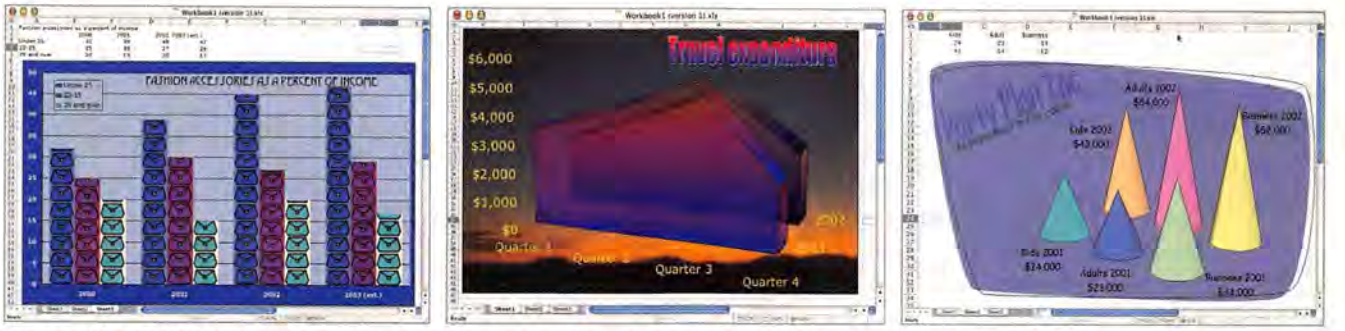
See-Through Charts

Area charts—line charts with shading beneath the lines—work well when you want to show how data changes over a period of time. For example, you can use them to show changes in sales or expenses over the course of a year. Unfortunately, it's all too easy for one area to block out the area behind it. You can avoid this by making the areas transparent.

First, use the Chart wizard to format your data as an area chart. Once Excel has generated the chart, click on the front area to select it. Choose Format: Selected Data Series, and click on the Patterns tab. Click on the Fill Effects button and then on the Gradient tab.

Excel gives you a few choices. Under the Colors heading, choose a single color or two colors—the first gives you a monochromatic gradient, and the second lets you blend colors. You can also select Preset to use a premade gradient. If you prefer a solid color, select the One Color option in the Gradient tab and choose your color. Move the Dark/Light slider to the middle to make a solid color.

Finally, adjust the Transparency settings, which control the opacity of the color in the gradient fill. The first value applies to the top chart area; the second, to the bottom. In our example (see the middle



Numbers They'll Notice You work hard to get your data; now make your data hard to ignore. Replace bland color bars with pictures (left). Make your area charts transparent so all your chart's data is visible (middle). Or combine techniques to create a chart that looks as if it had been custom drawn (right).

chart in "Numbers They'll Notice"), we used the Early Sunset preset gradient for the front area and Late Sunset gradient for the back. If you use high levels of transparency, your charts will be readable even with the most-psychedelic color combinations (for each gradient, we chose Transparency settings of 85 and 15 percent).

Remove the Excess Removing extras will streamline your chart so it's less cluttered and easier to read. For example, you can simplify a 3-D area chart by removing its floor, walls, and axes.

Click on the colored background (the chart's wall) and press the delete key to remove it. Repeat this for the floor. Next, remove the lines from the axes (leaving the values)—click on each in turn, choose Format: Selected Axis, select the Patterns tab, and choose None as the Lines setting. Click on OK.

As with any other chart type, you can add a background photo. Choose an image that complements the data you're presenting and that won't make the chart hard to read. If your chart is wider than it is high, choose an image that's the same shape. To add the photo, click on the chart's outer border and choose Format: Selected Chart Area, and then click on the Patterns tab. Click on the Fill Effects button, choose the Picture tab, and click on Select Picture. Click on your photo file, choose Insert, and then click on OK twice.

All the Tricks in the Book

You can do more to your charts than add a picture or tweak a gradient. In this example (see the chart on the right in "Numbers They'll Notice"), you'll use some of the techniques I've looked at, as well as some new ones. My idea was to create a chart that looked custom drawn. I still had the benefit of using data from an Excel worksheet, but the chart better fits the whimsical style of my fictitious company.

To get the same effect with your data, select it and click on the Chart Wizard button. From the Standard Types tab, click on the Cone chart and choose the last of the subtypes shown (the 3-D Column With A Conical Shape chart). Click on Finish.

To remove elements you don't want, click on each in turn and press the delete key. Next, to select a cone, click on it (this selects everything in that data series) and then pause before clicking on it once more. Choose Format: Selected Data Point and click on the Patterns tab. Choose a color from the Area part of the dialog box.

To adjust the cones' size and placement, click on the Options tab and fine-tune the settings for Gap Depth (the space between the front and back cones), Gap Width (the distance between each cone in a row of cones), and Chart Depth (the size of the bottom of the cones) until you get a result you like. My settings were 90, 40, and 130, respectively. Click on OK to finish. Now click on the other cones in your chart to choose their colors.

Spin a Chart When you create 3-D charts in Excel, you've got one more trick up your sleeve. You can rotate the chart on multiple axes to get interesting effects. Use this feature to rotate a chart with overlapping series, and you can see each series more clearly.

To try it, control-click on your chart and choose 3-D View. The dialog box that appears shows the chart as a wire-frame drawing. Click on the arrows to rotate it around the axes. Click on Apply to see the effect on your chart. When you have a result you like, click on OK.

When you're done, add labels. Click on the Text Box tool in the Drawing toolbar, and draw a text box beside a cone. Type a description in the box, control-click on the line's outside border, and then choose Format Text Box. If you don't want the box to have a border, click on the Colors And Lines tab, set the Line color to No Line, and click on OK. Copy this text box by dragging it with the option key pressed. Create one for each cone, and edit them as required.

For a final touch, I made the chart area transparent (by clicking on the chart area, choosing Format: Selected Chart Area, clicking on the Patterns tab, and setting Area to None). I then placed a filled free-form shape—drawn using the free-form tool in the Drawing toolbar's Lines collection, and grouped with a similar line shape—behind it. To do this, control-click on a shape you've made and then select Arrange: Send Backward from the contextual menu.

Your Turn Now You don't have to break out Adobe Photoshop when you want to create visually powerful charts. Combine your own design ideas with the techniques I've shown you here to create knockout Excel charts every time. □

HELEN BRADLEY specializes in writing hands-on tutorials. Visit her Web site at www.helenbradley.com.

Defining Moment

Catalog the component parts of the human body, and you'll find items whose occupation is unclear—the spleen, baby toe, and uvula come to mind. So, too, does Mac OS X contain elements with functions that aren't easily defined. With that in mind, let's explore some underilluminated aspects of OS X, such as services, invisible database files, and shuffled iMovie export options. To round things out, I correct lopsided sound, push the envelopes, and counsel a family in need.

Terms of Services

How do I get the items in the Services menu to work? For example, I want to grab a screen shot, but in every application I've tried, the Grab command's options are grayed out.

Sean T. O'Brien, *Charlottesville, Virginia*

For those readers who've just pulled up the Finder menu's Services command and remarked, "Hey, those services look pretty darned active to me!" I suggest opening an application such as AppleWorks or Microsoft Word and giving it another whirl.

ILLUSTRATION BY LEO ESPINOSA

You'll discover that services are serviceable only in applications written in OS X's Cocoa environment, such as TextEdit and Safari. Carbon applications (such as AppleWorks, Word, and Adobe Photoshop) and OS 9 applications, including QuarkXPress and Coda Finale, can't take advantage of services.

The Grab service is even more limited. Services can't create documents, so the Grab service can't act like the similarly named Grab application (or even the ⌘-shift-3 keyboard shortcut). The service can't take a screen shot and save it as a separate document. Instead, the Grab service can only add a capture to an open document in a supported Cocoa application. For example, if you have an RTF (Rich Text Format) TextEdit document open and active, the Grab service can capture the screen and place the resulting capture into the RTF document.

Desktop Database Files

What is in the Desktop DB file that appears when you create a disc image with OS X's Disk Copy? Is it possible to remove that file permanently before burning a CD-ROM or DVD-ROM?

Derek Coller, *Seattle, Washington*

The Desktop DB file is an invisible database file found at the root level of every volume on your Mac. This file contains information about the applications and documents within that volume; it's also the repository for the comments in the Finder's Get Info windows. When you burn a CD, this file—and its sibling, Desktop DF—appear on the disc and cannot be removed.

Although you can't delete the file, you may have some control over what it contains. By default, when you burn a disc in either the Data or MP3 formats with Roxio's $100 Toast 5 Titanium (866/279-7694, www.roxio.com), Toast grabs the Desktop DB file that it deems most appropriate from your Mac and places it on the disc. Were you to view that Desktop DB file with a text editor, you'd discover that it contained—along with strings of nonsensical characters—the names of the applications you use, as well as any URLs stored in the Finder's comments field. As you can imagine, some people would prefer not to spread this information around.

If this concerns you, you can instruct Toast to create an empty database file. Just double-click on the CD icon in Toast's Data window and select the Use Empty Desktop Database option. Even if you're unconcerned about security, you'll discover that invoking this option saves space. I found that leaving this option off resulted in a 612K Desktop DB file on a test disc. With the option on, Desktop DB was a slim 4K.

Apple's Disc Burner automatically creates an empty database file, so you needn't worry that a

Desktop DB file will give away your applications' names or your browsing habits.

Toast Pointer

I have iMovie 3 and would like to use it with Roxio's Toast to create Video CDs of my movies. When I updated from iMovie 2 to iMovie 3, I no longer saw an option for exporting to Toast. How can I get it back?

Bret Waters, *Oak Hill, Vermont*

As you suggest, in iMovie 2 you prepared your movies for Toast by selecting the Export command from iMovie's File menu, choosing To QuickTime from the Export pop-up menu that appeared in the resulting Export Movie window, and then selecting Toast Video CD from the Formats pop-up menu. Apple, for better or worse, has changed the way the Export command works in iMovie 3.

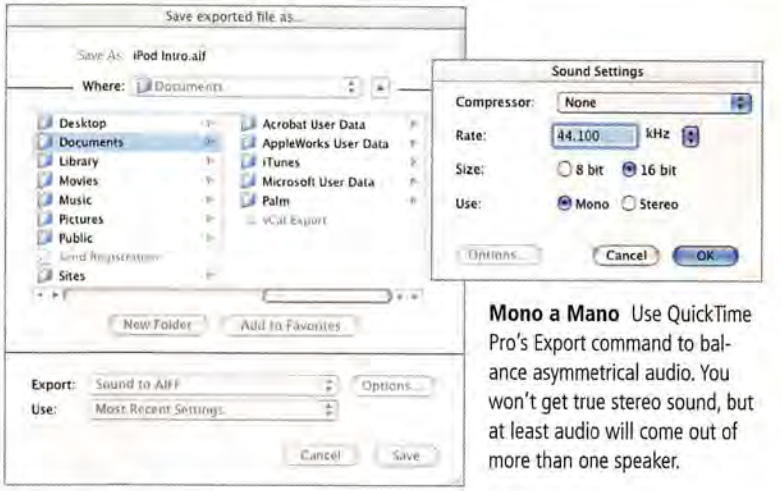
In the latest iteration of iMovie, selecting the Export command produces the iMovie: Export window. To access the Toast Video CD option, you must select To QuickTime from this window's Export pop-up menu and then Expert Settings from the Formats pop-up menu. Click on the Export button in this window to produce the Save Exported File As dialog box, where you choose Movie To Toast Video CD from the Export pop-up menu. Click on the Option button in the same window to choose the format for your movie (NTSC or PAL). Finally, click on Save in the Save Exported File As dialog box, and you've saved your movie as an MPEG-1 file ready for Toasting.

Unbalanced Sound

While shooting a movie, I used a mono microphone with my camcorder. As I edited my footage in iMovie 3, I discovered that the sound came only from the left speaker. How do I change the audio track so it comes from both speakers?

Robert Rouveroy, *The Hague, Netherlands*

How you approach this problem depends on how much of the movie exhibits this monomaniacal behavior. If the iMovie's entire soundtrack is broadcast from only one speaker, you can easily fix the problem when you export the movie. Just select Export from iMovie's File menu, select To QuickTime from the Export pop-up menu and Expert Settings from the Formats pop-up menu, and click on the Export button. In the resulting Save Exported File As window, select Movie To QuickTime in the Export pop-up menu and click on the Options button. In the Movie Settings window that appears, click on the Settings button in the Sound portion of the window. In the resulting Sound Settings window, enable the Mono option and click on OK in both the Sound Settings and Movie Settings windows. Click on Save in the Save Exported File As window. Your movie will be saved with a mono soundtrack that places all sounds in the middle of the stereo field.



Mono a Mano Use QuickTime Pro's Export command to balance asymmetrical audio. You won't get true stereo sound, but at least audio will come out of more than one speaker.

If this problem occurs only with some individual clips—the rest of your movie is in stereo except for selected interviews, for example—the best way to tackle the problem is to quit iMovie, edit those individual clips in QuickTime Pro, and then import them into iMovie again.

To do so, open the project folder for your iMovie. Inside you'll find files labeled Clip 1, Clip 2, and so on. These clips correspond to the video clips you've imported with iMovie. Open the clips that have the wonky audio in QuickTime Player Pro. Select Extract Tracks from the Edit menu, choose Sound Track in the Extract Tracks window, and click on the Extract button. This produces a new untitled QuickTime movie containing the clip's soundtrack. Let's call that file Mono Audio.

With this file active, select Export from the File menu and choose Sound To AIFF from the Export pop-up menu in the Save Exported File As window. Click on the Options button, and in the resulting Sound Settings window, enable the Mono option (see "Mono *a Mano*"). Click on OK to dismiss this window, and click on Save in the Save Exported File As window to save your sound. You've just created a mono audio file with the sound in the middle of the stereo field.

continues

TIP OF THE MONTH

Many AirPort users have found that their wireless connection fails when they use a 2.4GHz wireless phone near their networks. This failure happens because the phone and AirPort share the same frequency. Worse yet, these phones prefer channel 6 of the 11 channels available to these devices, and some AirPort networks are set to channel 6 by default. Fortunately, there's a workaround.

Launch the AirPort Admin Utility, click on the Configure button in the Select Base Station window, select the AirPort tab in the resulting window, and choose a number such as 1 or 11 from the Channel pop-up menu. Click on the Update button to update your Base Station, and your interference problems should cease.

Andrew Shalat, *Los Angeles, California*

UNSOLICITED ADVICE

Because I lack the organization gene, over the course of a computing year I often give multiple files the same name—*Mac 911*, for example—and fling these files into every conceivable corner of my Mac's hard drive. If you're similarly impaired, you may depend as much as I do on OS X's ability to find files by content.

But properly doing this requires more than pressing ⌘-F in the Finder, selecting Content from the Add Criteria pop-up menu in the resulting Find window, and entering a couple of words in the Content Includes field. You'll have far better luck unearthing the files you desire if you index any volumes or folders you intend to search.

To do so, select a folder (your user folder is a good place to start) or volume, and press ⌘-I to produce the Get Info window. In that window, click on the triangle next to the Content Index entry. Then click on the Index button. In a few (quite a few, depending on how many files you have) minutes, your Mac will index the contents of all text, HTML, PDF, and clippings files.

To speed the indexing process (and keep the hidden index files this process produces as slim as possible), select Preferences from the Finder menu and click on the Select button that appears below the Languages For Searching File Contents entry at the bottom of the Finder Preferences window. In the resulting Languages window, deselect those languages you don't want to use when searching the contents of your files—Slovene and Afrikaans, for instance—and click on OK.

Now return to the clip file from which you extracted the sound and select Delete Tracks from the Edit menu. In the Delete Tracks window, select Sound Track and click on the Delete button. This deletes the faulty audio file. To replace it with the mono file you created, activate the Mono Audio file by clicking on it, press ⌘-A to select all of its contents, and press ⌘-C to copy them. Click on the clip file, select Add Scaled from the Edit menu, and save the file. This adds the contents of the Mono Audio file to the video clip file and produces a clip whose soundtrack comes out of both speakers. Repeat this procedure for each wonky clip. When you're finished, import the repaired clips into iMovie and vow to never use a mono microphone again.

Belly Up to the Bar Code

I'm looking for software that can print labels and envelopes with a bar code. In the past I used MacEnvelope, but the program hasn't been updated for OS X. Do you have any suggestions?

Mark M. Arias

I can recommend two applications. The first is Scruffy Software's $15 Address Book Reports (www.scruffyware.com/products/digilifereports/AddressBookReports.html). This utility can generate envelopes and labels with bar codes from contacts stored in OS X's Address Book. In addition, it can neatly organize and print your Address Book contacts into reports styled like phone books and business cards.

Ampersandbox's $20 Imprint (www.ampersandbox.com) is another option that integrates with OS X's Address Book. It supports a wider variety of label and envelope types.

Monitoring the Family

Members of my family refuse to use their own user accounts on our Mac running OS X 10.2.6. Since our Mac automatically logs in with my account, they change my settings and proceed with their work. Fortunately, they typically limit their fiddling to the sound level, monitor resolution, and Dock size.

I can quickly change the sound and Dock back to my preferred settings, but adjusting the monitor resolution is a nuisance because the resolution and refresh rate that I want are not listed in the Displays pull-down menu. Is there an easier way than opening the Displays system preference to access monitor settings?

Tim Collins, *Marshfield, Wisconsin*

Tim, I'd like to take the liberty of providing the solution you seek while also butting into your family's business. Let's start with the solution.

Venture to www.madrau.com and download a copy of Stéphane Madrau's $15 SwitchRes X. SwitchRes places a small icon in the Mac's menu bar that includes *all* the resolutions your monitor is capable of displaying. If you're the tinkering type, you can also ask SwitchRes to display unsupported resolutions. You should be careful with the latter feature, as you could create a setting that your monitor can't display, which can cause some monitors to display a dark screen until you reset the Mac's parameter RAM (by holding down ⌘-option-P-R at startup).

At the risk of causing discord around the dining-room table, I suggest that you avoid this problem altogether by configuring the Mac to require each user to log in with his or her own password. That way Mom's, Dad's, and Sister Bernice's computing environments will be configured exactly the way they like from the minute they log on—no need to mess about with another family member's settings.

To do so, open the Accounts system preference with an account that has Administrator privileges. In the Users section of the Accounts window, deselect the Log In Automatically As option. Now select the Login Options tab and enable the List Of Users option. When you log out, each member of the family will be required to enter his or her own password to log in to the Mac. □

Contributing Editor CHRISTOPHER BREEN is the author of the brand-spanking-new third edition of *Secrets of the iPod* (Peachpit Press, 2003).

Share tips and discuss Mac problems with other Mac users in the Mac 911 forum (www.macworld.com/subject/mac911). Also 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.

High Fidelity

THE iTUNES MUSIC STORE MAY INDEED BE CHANGING THE way we think about music. After all, I saw an Apple press release boasting about the store's 20,000th sale of Duran Duran's "Hungry like the Wolf," and it seemed to have a factual-ish sort of ring to it. But I *know* it's changing the way I think about white rats.

I confess to having a lifelong holier-than-thou attitude toward the creatures. I've never met one socially, and even though MTV for White Rats is part of my basic cable package, I've never had the slightest interest in learning about their tastes and culture. However, there I was, smugly making blanket statements about them. "What a bunch of dopes they all are," I'd say to anyone who'd listen, "falling for that whole 'push the button, receive a food pellet, enjoy instant gratification' business. You'd never catch *me* doing that."

Well, here's a peek into my life, post–iTunes Store: I was watching *Sanford and Son*. Fred Sanford was singing at Aunt Esther's Christmas party. Now, Redd Foxx's voice sounded like a blender churning out frozen drinks, but the old guy accompanying him on guitar was good. *Suspiciously* good. Was he Les Paul or somebody? No, according to the credits he was a guy named Herb Ellis. A Google search quickly revealed him to be a guitarist of considerable renown.

In about four minutes I went from never having heard of the guy to owning two of his albums.

Instant Gratification

Suffice it to say that I'm now open to the possibility that the rats have been trying to show us the right way all along. Instant gratification kicks ass, and I'm starting to get my head around the concept of casino gambling, too. If it only costs you a dollar, then you can keep clicking on that button all night long without any messy budgetary repercussions. Right?

Apple has hit on the right idea. Kazaa and other music-swapping networks haven't done the music industry any favors, true. But the recording industry needs to acknowledge that people hate hate hate *hate* spending $18 for a CD containing two decent tracks and three marginal ones, with the remainder comparable to the stuff contestants have to eat on *Fear Factor*. The record companies have made some tentative steps with warning labels (for instance, last week I saw a CD with a big "As Heard on *American Idol*" sticker), but the best way to get our money is to give us a way to buy just the tracks we want . . . and to get 'em on our idlest whim with just one press of the feeder button.

It's a great move for consumers. Of course, I worry about how this new style of music sales will affect the basic concept of the Rock Album. What happens when *all* albums are produced for à la carte sale? When record labels are tracking sales song by song and not just album by album? I mean, good Lord! When the Beatles of the 21st century are discovered, their Ringo Starr won't be begrudged even *one* track for his own compositions! OK, if "Don't Pass Me By" is fresh on your mind, I can understand your immediate reaction. But just imagine what happens when there's absolutely no refuge from corporate micromarketing. When I buy "The Road to Morocco" for 99 cents, am I bankrolling a future in which songs won't be recorded and released unless there's a guaranteed profit . . . or a movie, sneaker, or fast-food tie-in?

> In four minutes I went from never having heard of the guy to owning two of his albums.

Championship Vinyl

One thing will save the album concept, though: pretentious supertwits. So long as there are Beatles fans, there will also be Beatles fans who insist that their favorite Fab Four song isn't "Yesterday" but "Take Out Some Insurance On Me Baby." (The full title is "You know, the B-side to 'Sweet Georgia Brown,' released as Atco 6302 on June 1, 1964? Gee, I'm surprised you didn't *know* that one.") And every band has them. There'll always be an incentive to release experimental tracks, B-sides, warm-up takes, and sessions in which the artists were too stoned to realize they were playing items from the deli tray instead of musical instruments.

These tracks will be added to the iTunes Store specifically for the twit market, in effect subsidizing the low, low prices of the tracks any sensible person would actually want to listen to. So come to think of it, maybe we *are* more advanced than the rats. Generally, the powers that be don't let white rats live long enough to be exploited financially. □

Contributing Editor ANDY IHNATKO is too busy buying music to pay attention to his biographical blurb.

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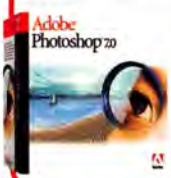

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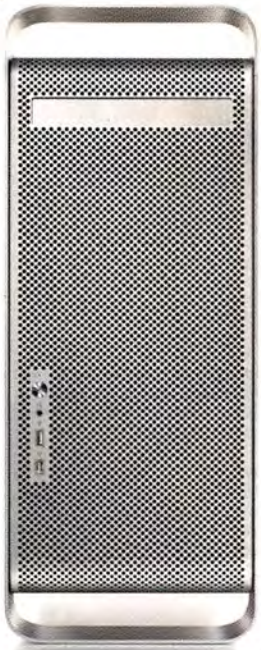

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Canon

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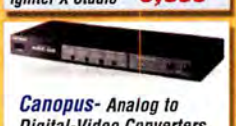

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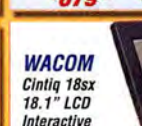

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MyMac.com review 5 out of 5

MacAddict 'Great' Review 7/03
"...when opening a 2GB Photoshop file, The Mercury Elite Pro[FW800] opened it over 13 Percent faster than both the LaCie D2[FW800] _and_ the 120GB Seagate Barracuda ATA V inside our....Dual 1.42GHz PowerMac.."

James Coates of the Chicago Tribune:
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Charles Carr from Computor Edge about buying an OWC Mercury drive: "You'll probably be happy you did." 4 out of 5. "The Elite is ideal for professionals and consumers who need convenient, portable storage for large amounts of data."

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EDITORS' MacAddict CHOICE

MacAddict RATED GREAT

Photoshop User

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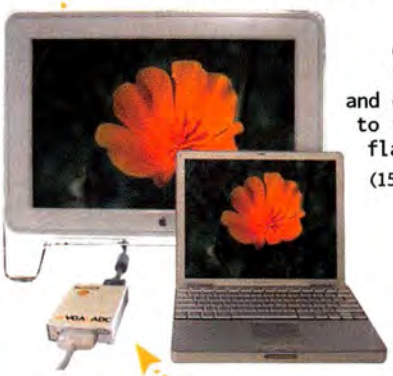

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columns: Sections, Categories, and Channels, which holds the Web sites. This organization scheme keeps hundreds of Web sites in order. For instance, to see what's happening in Mac software, select the Mac Web section to reveal its seven categories. Then select the Software category and take your pick of applications.

NewsMac also makes it easy to move channels between categories and sections, but it won't let you create your own sections or categories. And the program includes a tool for sending headlines to your iPod or Palm—but since you can't read the article without visiting the site, this feature may not be of much use to you. Still, using NewsMac to keep up with the fast-changing news of the world is much easier than visiting every Web site in your favorite browser.

Power News NewsMac allows you to keep up with headlines from hundreds of Web sites in minutes.

Shelf Life

One of the things I find somewhat annoying about Mac OS is its inability to interrupt a drag-and-drop operation. If the phone rings while you're dragging a file from your desktop to a folder buried deep below the surface, you're left with two unpleasant options—give up on your operation or ignore the phone. Interruptions aside, it's often a pain to get to deeply nested folders without your finger slipping off the mouse button, dropping your file in the wrong location.

The solution to both these problems is the free **XShelf** (♦♦♦♦½), from Karl Hsu. XShelf is exactly what its name implies—a temporary shelf on which to store objects you're in the process of filing away.

Using XShelf is about as straightforward as possible. After launching the program, begin dragging an object as you normally would. But instead of hunting for the destination while dragging, just drop the object into the XShelf drawer, which appears when the cursor enters its location. In the Finder, find and open the destination folder; then drag the object from XShelf to its new home. If you change your mind about moving the object, just drag it from the XShelf drawer to the Trash—your original file or folder stays safe and sound.

When you drag multiple objects onto XShelf, you'll see the name of the topmost item and a small red numeral indicating the total number of items.

XShelf is very configurable. You can choose an on-screen location for the drawer or tell XShelf to behave as a vertical or horizontal window. XShelf will also automatically expand as necessary to hold items you drag in, and it even includes a command-line tool so you can add items to the drawer from Terminal.

Hold 'em XShelf provides a temporary storage area that lets you split drag-and-drop filing operations into two steps.

Take Note

A couple of OS 9 features that didn't find their way to OS X are the venerable Notepad and Scrapbook. In OS 9, these apps let you jot a quick note or keep collections of text, images, and sounds. Some people might argue that Stickies and Text Edit replace this pair, but they're just not the same. The $10 **Alepin** (♦♦♦♦½), from MacChampion, *truly* replaces them both.

Using Alepin, you can create an infinite number of files, which contain pages that hold text and images. You can also group pages into categories, giving Alepin sorting capabilities that Scrapbook and Notepad would envy. Alepin lets you mark up text with a highlighter, search for text strings, and browse through your notes, much as Scrapbook and Notepad do. □

Scratch Pad Alepin combines the features of two OS 9 favorites, Scrapbook and Notepad.

The Treasure Chest

COMPANY	PRODUCT	MOUSE RATING	PRICE	OS COMPATIBILITY	CONTACT
Evological	EvoCam 3.1	♦♦♦♦	$20	9X	info@evological.com, www.evological.com
Karl Hsu	XShelf 1.1.1	♦♦♦♦½	free	X	khsu@mac.com, http://homepage.mac.com/khsu/XShelf/XShelf.html
MacChampion	Alepin 2.53	♦♦♦♦½	$10	X	info@macchampion.com, www.macchampion.com
Ranchero Software	Huevos 1.1	♦♦♦♦	free	X	brent@ranchero.com, www.ranchero.com
ThinkMac Software	NewsMac 2.2	♦♦♦½	free	X	http://users.aber.ac.uk/rlp9/newsmac/

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

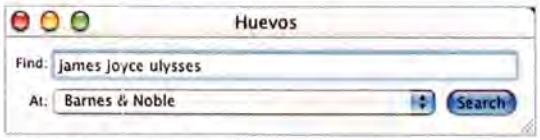
> Huevos
> EvoCam
> NewsMac
> XShelf
> Alepin

A Dose of Variety

ONE OF THE THINGS I LOVE ABOUT USING MAC OS X IS THE amazingly wide variety of software. This relatively young operating system can run programs written for OS 9, OS 9 programs updated for OS X, OS X–only programs, Unix applications (either in Terminal or with a GUI on top), and Java applications. OS X's depth is truly astounding.

I typically run 20 to 30 applications on my Mac. Sure, a number of them are the big-name applications you'd find on anyone's machine (Microsoft Word, Adobe Photoshop, Safari), but many are smaller, helper applications that make time spent with my computer more productive, more interesting, or just more fun.

Take **Huevos** (♦♦♦♦), from Ranchero Software. This free search engine makes it very easy to search any of 15 preset Web sites directly from your desktop. When I'm online, Huevos is running. A configurable hot-key combination brings the program's small but functional GUI to the foreground. I can type a phrase in the search box, use the up- and down-arrow keys to select a Web site, and then press enter to execute the search. Huevos sends the search term to the specified site and then opens your default browser to display the results.



Search Party With Huevos's small GUI and 15 Web sites at your disposal, the Web's vast store of knowledge is never more than a few taps away.

You can even add your own search sites if you can figure out the search string's basic format. Another nice touch is that you can assign keyboard shortcuts to search engines. If you often search Google Images, for instance, click on the Edit button (under Preferences) and assign it ⌘-I for easy access.

A keyboard-based desktop search tool can be a huge time-saver, and Huevos is my current favorite.

Smile!

Is your family far-flung? Mine certainly is, spread from Canada to Arizona and from Oregon to Connecticut. But thanks to OS X, a fast Internet connection, a FireWire video camera, and Evological's $20 **EvoCam** (♦♦♦♦) Webcam software, I can make much of that distance vanish with a few mouse clicks.

EvoCam is a powerful but easy-to-use program that turns any QuickTime-compatible FireWire video camera into a Webcam. Connect the camera, power it up, and launch EvoCam. You'll see the camera's image in a small window; a series of tabs below the image control the Webcam options. The most powerful is the Server tab, which lets you activate a bundled Web server that streams your images to the Web in real time. With my 256K cable modem, my relatives see about a frame per second. But even if you're on a dial-up account, you can have EvoCam upload images to a server at a specified time, save them into a folder, or even send them as e-mail attachments. And EvoCam has some basic motion-detection options you can use to create a simple security system.

Picture Show EvoCam presents customization and configuration controls in one tabbed-window interface.

You can also easily add text captions, clocks, graphic overlays, and (if you have another video-input source) even a picture-in-picture effect to your Webcam image. And you have access to the standard suite of QuickTime effects, so you can show an embossed or black-and-white version of yourself to the world.

If you're really creative, you can combine EvoCam, your video camera, and a wireless PowerBook to create a roving wireless Webcam. And unlike iChat AV, EvoCam can stream images to multiple people.

Just the Facts

A great improvement to the Web over the last couple of years has been the emergence of local headline browsers that scan a large number of Web sites and present headlines in an easy-to-read manner. If you see a headline that catches your eye, just click on it, and your preferred browser will jump to the foreground and display the selected article. The free **NewsMac** (♦♦♦½), from ThinkMac Software, is just one of many such news browsers. It offers features that make it pleasant to use. The MacNews interface has three

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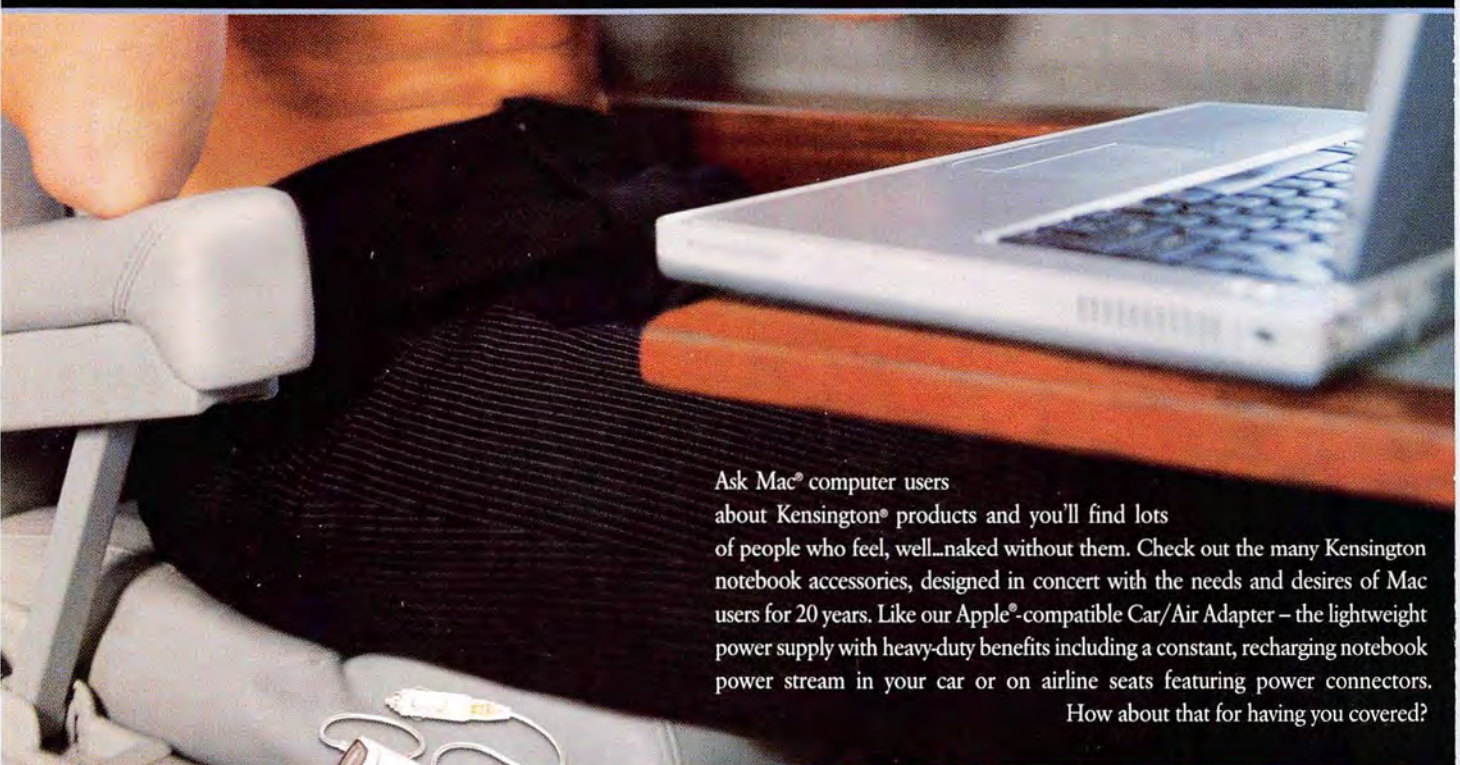

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