

PREVENT A DATA DISASTER

Devise a Backup Strategy Before You Lose It All, page 62

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- Dual 800MHz G4
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Leads the Way to Mac OS X

12 Affordable LCD Monitors

15-Inch Flat-Panel Displays
Liberate Your Desktop

Stone Studio

Mac OS X-Native Graphics
Suite Debuts



Master Final Cut

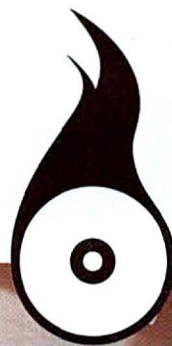
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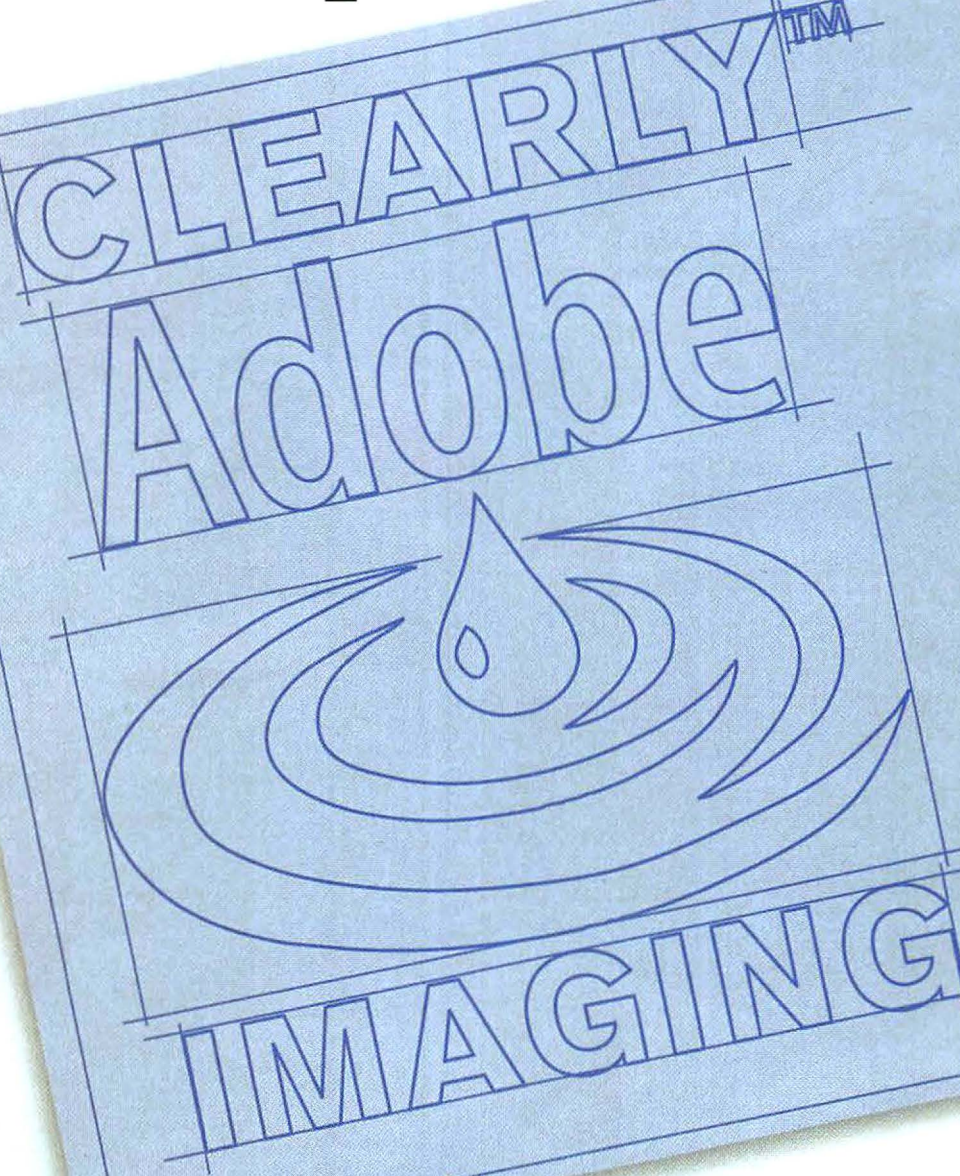


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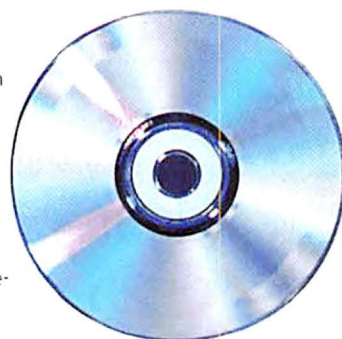
Final Cut Expert Guide

JIM HEID AND TOM WOLSKY The newest release of Apple's powerful video-editing program takes it to even greater heights, but Final Cut Pro is not an easy program to use. Our expert guide will help you get better acquainted with the program's best features and teach you how to use them more efficiently.

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Save Your Data

ADAM C. ENGST Never again lose files to a hard-drive crash, theft, a fire, or other disasters. Learn how to develop a backup strategy, choose the right technology, and configure Retrospect Backup to safeguard your data.



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Photograph courtesy of Apple Computer



Clear the Desks

ANDREW GORE The minuscule footprints; bright, flicker-free screens; and low prices of LCD monitors may tempt you away from your CRT display.

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Mac Beat Special Report: New Apple Products

Get the latest on Apple's Macworld Expo announcements, including the fastest Power Mac G4s yet, a new round of iMacs, and plenty of details about the forthcoming Mac OS X 10.1.

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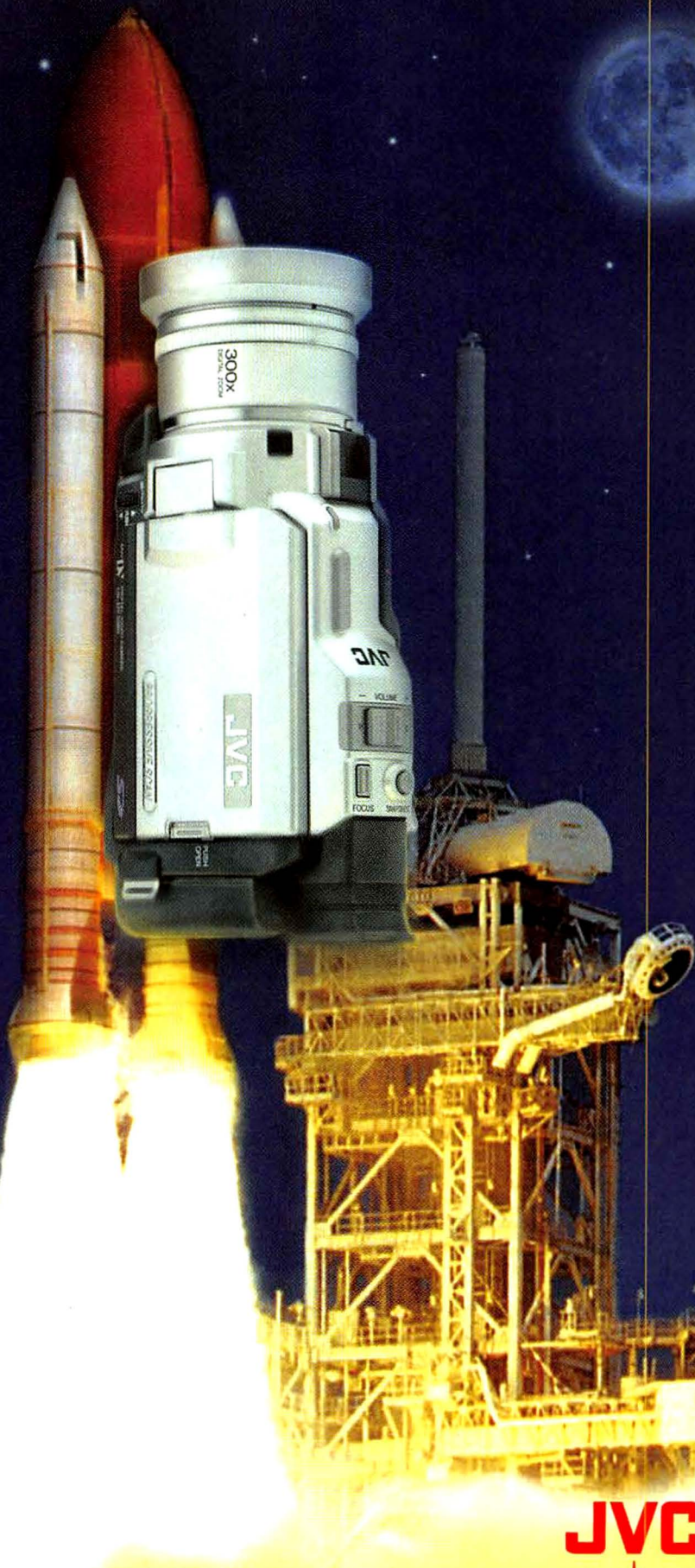
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ANDREW GORE

unique requirements, it must also look at where those markets overlap.

Come Together

We need a dramatically new iMac design. The old design, while brilliant, has grown long in the tooth. Consumers and professionals both want something new. And since Apple has successfully become the Gap of computer makers, it must be aware that when fall comes, it's time to release new fall colors.

Though disappointed by the absence of sexy new hardware at Macworld Expo, I was intrigued by the continuing evolution of iDVD. Apple obviously wants users to be able to do more with their Macs. And iDVD is a tool that will inspire Mac users and allow them to do things they couldn't dream of doing before. Apple is unleashing the creative spirit of Mac users.

What was really missing from Apple's Macworld Expo presentation was this message: Professional or consumer, the Mac is the best tool around for creating great stuff—even the stuff you haven't thought of yet.

Creativity Server

When I first heard Steve Jobs describe the Mac as a digital hub for a multimedia lifestyle, I was impressed. But I'd go a step further: the Mac is a *creativity* hub, too. It's one thing to fill our lives with cool gadgets such as Palm devices and MP3 and DVD players. It's another thing entirely to allow us to fill those devices

with music worth listening to and movies worth watching. In this box is everything you need to mix music, edit movies, paint pictures, craft Web sites, write novels—or publish a magazine like *Macworld*. It's your inspiration toolbox. And who doesn't want to be more inspired?

So don't worry that a true second-generation iMac is not yet available. While we may still want Apple to wrap creativity up in the computer industry's most compelling package, it has always been what's inside the box that really counts. **m**

For four years, ANDREW GORE has been *Macworld's* editor in chief. To comment on this column, visit our Columnists forum (click on the Forums button at Macworld.com).

CREATIVITY: MORE THAN something that can define our place in the world and sometimes even outlive us, it's also how we advance as individuals and how we make things better—even in a small way—for the people around us and for generations yet to come. To bring something new into the world is the single most important human endeavor.

Each of us is creative. Whether we're writing a memo or composing a symphony, taking thoughts and distilling them into something meaningful is a uniquely human process. And the tools we use to transform an idea into action can be as much a source of inspiration as a means to an end.

And the most flexible and powerful tool yet created for translating dreams into reality is, in itself, a monument to human creativity.

The Macintosh.

Double Vision

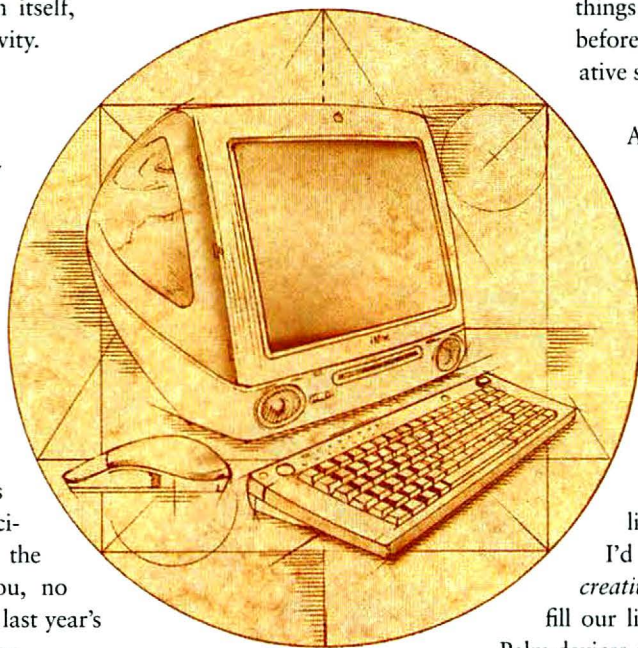
As I sat watching the July 2001 Macworld Conference & Expo keynote speech, I was struck by a thought: Apple is facing a terrible dilemma. The Mac is the creative professional's computer of choice, but under Steve Jobs's guidance, it has also become the first computer for which fashion is perhaps as important a feature as any specification. And as anyone in the fashion industry will tell you, no matter how clever the design, last year's fashion is still last year's fashion.

So as Apple has employed processor-speed boosts and price cuts in its struggle to return the three-year-old iMac to the status of consumer juggernaut—while simultaneously selling the power of its latest Power Mac G4s to the professional crowd—what these products have in common has been largely unnoticed: it's not completely about substance, or even about style. It's also about what you can *do* with a Mac—and how a Mac, by its very nature, is a powerful tool for generating new ideas.

One thing Apple's two core markets—consumers and creative professionals—have in common is creativity. That's why both iMovie and Final Cut Pro have been tremendously successful, even though they serve entirely different audiences. And while Apple must pay heed to each market's

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*The Mac Isn't Just
a Digital Hub.
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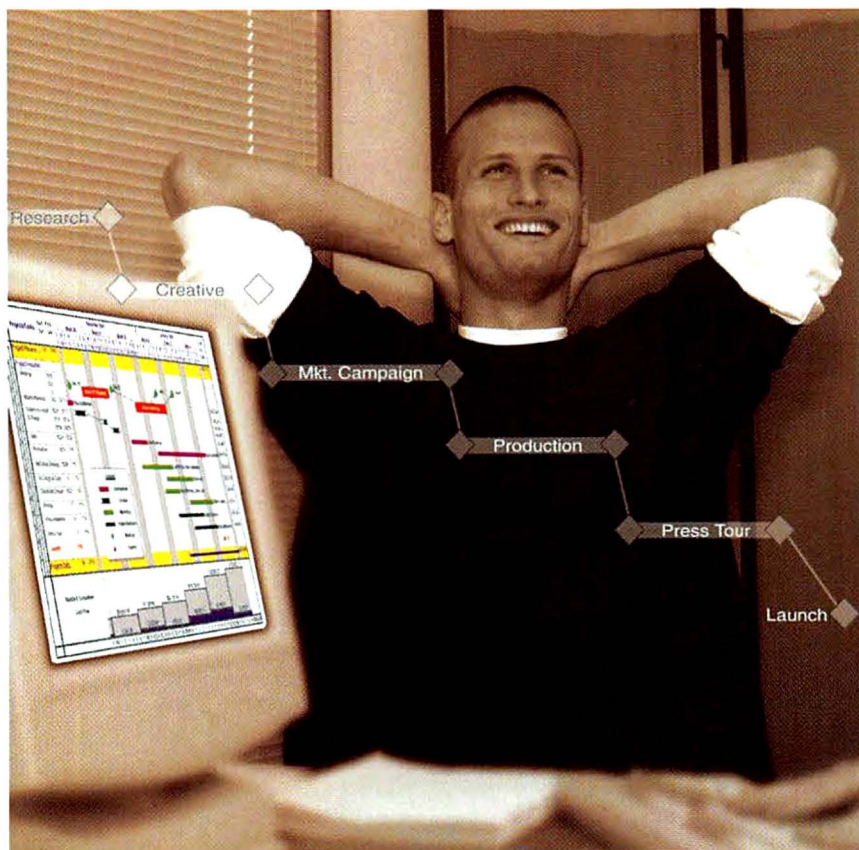
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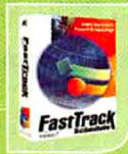
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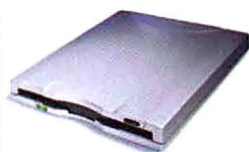
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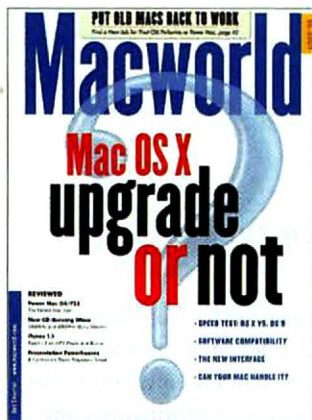
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Forums and Feedback



What's New?

Who knew that there were so many Power Mac 6100s and PowerBook 170s stashed away in the closets and attics of Mac relic hunters? Franklin N. Tessler, apparently. Our contributing editor's feature on breathing new life into an older Mac turned out to be one of our most popular

stories since the days of the Duo Dock II. This came as quite a surprise to us, since the posts on our Macworld.com forums indicate that most—if not all—of our readers have bought new iBooks. Maybe you're stashing *those* in the attic. **m**

This Old Mac

STEVEN MITCHELL The article by Franklin N. Tessler ("Get That Mac Out of the Attic and Back to Work," *How-to*, June 2001) was one of the clearest, most helpful articles I've seen in *Macworld* in a long time. I hope you'll run more of its kind, because a lot of us are looking forward to keeping our older Macs up and running.

About That OS . . .

JOEL M. SCIAMMA The coverage of Mac OS X in the June issue lacked an essential critical view and verged on sycophancy. Mac OS X is not a pristine canvas; rather, it's a melange of legacy technology and ideas that were past their sell-by date ten years ago. The uneasy (and unsteady) relationship between a 20-plus-year-old kernel, a poorly implemented 15-year-old user-interface concept, and elements from Windows is not what I call innovation. Henry Bortman comes to the only possible conclusion ("Are You Ready for

OS X?" June 2001): Mac OS X is not remotely ready for people who need to get their work done.

MICHAEL KRAUS I bought a Mac because it gave me more options for doing things my way. Now Apple is telling me how I should access my files. Install almost any Mac OS 9 Apple software today, and you get a folder named "Applications (Mac OS 9)." Try to use iTunes, and you're forced to have a folder named "iTunes" inside a Documents folder on the root level of your startup drive. Somebody needs to remind Apple that conformity is not compatible with the Mac OS.

iLove iBooks

MARK PARIS Some have wondered whether the new iBook's screen will stress the not-so-young eye. My own 50-plus eyes now demand reading glasses, but the iBook screen looks pretty good to me. I think it'll be fine. I'm willing to accept the smaller screen to get the smaller form factor.

SHANE ST. HILL The experience of unpacking my iBook was great—the best moment in my life. Now I'm typing on the wonderful machine, and it's perfect, the best computer I've ever owned (much better than the Lombard G3 PowerBooks). I'm glad I got the iBook instead of the Titanium PowerBook. I hope you all enjoy your iBooks as much as I do mine!

Toasting iTunes

STEVE COHEN You've reached a new low with your review of iTunes (*Reviews*, June 2001). You barely mention that iTunes can disable Toast. This is a showstopper. Any program that interferes with Toast is one I want to stay away from. So what are the details? Under what circumstances will I lose the use of Toast? What can I do to get around this, if anything? What does Apple say about it? Does the mere presence of iTunes disable Toast, or is it an extension or other conflict? Give me some information I can use.

Post your comments on our forums at www.macworld.com, or send them to Letters, *Macworld*, 301 Howard St., 16th Fl., San Francisco, CA 94105, or to letters@macworld.com. Include a return address and a daytime phone number. Due to the high volume of comments, we can't respond personally to each one. We reserve the right to edit all letters and posts. Published letters and forum comments become the property of *Macworld*.

CORRECTIONS

A metal's density ("Still Faster Than a Speeding Bullet," *Feedback*, June 2001) is expressed in pounds per cubic inch.

A corrected Perl script for converting a Mac text file's line endings so that Unix can interpret them (*Mac OS X Secrets*, July 2001) is available at www.macworld.com/2001/07/howto/osxsecrets.html.

Apple Takes the Silver

NEW POWER MAC G4S SOAR TO 867MHZ—THE FASTEST MAC PROCESSOR EVER

Who says you can't get something for nothing? With Apple's new silver-clad Power Mac G4s, the company's line of high-end desktop computers packs a more powerful punch than ever—but the price tags remain the same.

In early July, the most powerful Power Mac you could buy was the \$3,499 733MHz Power Mac G4. Now a model with the same processor marks the low end of the Power Mac spectrum at just \$1,699—albeit

with a smaller hard drive and without a DVD-writing SuperDrive.

Apple's new midrange Power Mac, at \$2,499, is a remarkable combination of speed and versatility. It has the fastest Mac processor ever—867MHz—and 2MB of L3 cache (see "Does MHz Matter?" July 2001).

At the top of Apple's updated product line is a \$3,499 Power Mac driven by twin 800MHz G4 processors, each with 2MB of L3 cache.

Due to ship in August, this model will be speedy in Mac OS 9, especially when running software that takes advantage of multiple processors (see "Double Vision," November 2000). But the dual-processor G4 will really fly when it's running Mac OS X, since Apple's new operating system offers extensive support for systems with more than one processor.

All three new models have the same 133MHz system bus that the previous generation of Power Mac G4s

had. This means that you won't have to buy faster RAM if you move to one of these new systems, but it also means there's no performance gain beyond what the processor delivers.

Silver Style

To go with the changes it's made on the inside of these Power Macs, Apple also has remodeled the outside.

Dual-processor Power Mac G4s will really fly when running Mac OS X.

You won't save any floor or desk-top space with these G4s—they're the same size as every model dating back to the blue-and-white Power Mac G3. And from the sides and the back, these new models are nearly indistinguishable from their predecessors.

But from the front, it's easy to see that these are new Macs: they have a matte silver-tone face, flat drive-bay doors without any buttons, and a new, recessed speaker.

Spreading SuperDrive

Apple's SuperDrive, which had been available only on the top-of-the-line Power Mac G4 model, will now be included on both the 867MHz and dual-800MHz systems. After announcing the SuperDrive in January, Apple



A Year in the Life

Since July 2000's Macworld Expo, Apple has made some changes to its G4 line.

ANNOUNCEMENT DATE	PROCESSOR SPEED	BASE RAM	HARD DRIVE	OPTICAL DRIVE	PRICE
July 2000	400MHz	64MB	20GB	DVD-ROM	\$1,599
	450MHz (Dual Processor)	128MB	30GB	DVD-ROM	\$2,499
	500MHz (Dual Processor)	256MB	40GB	DVD-ROM	\$3,499
January 2001	466MHz	128MB	30GB	CD-RW	\$1,699
	533MHz	128MB	40GB	CD-RW	\$2,199
	667 MHz	256MB	60GB	CD-RW	\$2,799
	733MHz	256MB	60GB	CD-RW/ SuperDrive	\$3,499
July 2001	733MHz	128MB	40GB	CD-RW	\$1,699
	867MHz	128MB	60GB	SuperDrive	\$2,499
	800MHz (Dual Processor)	256MB	80GB	SuperDrive	\$3,499



Silver and Aqua The Power Mac G4's new look complements that of Mac OS X.

couldn't even obtain enough of the DVD-writing drives to ship one with every 733MHz Power Mac G4 it sold.

But now that SuperDrive manufacturer Pioneer is better able to keep

up with demand, Apple has begun to offer the drive in more models. (The same drive mechanism is now being used in external FireWire DVD-R drives that companies such as LaCie, EZQuest, and CdCyclone are selling for about \$1,000.)

Though the low-end 733MHz Power Mac G4 doesn't have a SuperDrive, it comes with a built-in 12x10x32x CD-RW drive—speedier than the CD-RW drives in the iBook and iMac.

Graphics Power

The new single-processor G4s feature an Nvidia GeForce2 MX video card

with 32MB of SDRAM. But the most notable video support is on the dual-processor model: it has a GeForce2 MX with 64MB of SDRAM, and the single card can support two external monitors simultaneously. That will be particularly helpful if you use programs such as Adobe Photoshop and Apple's Final Cut Pro, which have an array of menus, windows, and floating palettes.

When it comes to drive space, these new G4s are well appointed, with 40GB, 60GB, or 80GB internal hard drives. However, the 733MHz's 40GB drive is a 5,400-rpm model, which might be an issue if you plan to use it for digital-video or other disk-intensive applications. In any case, all three models come with two additional hard-drive bays, so you can add a few hundred gigabytes of fast storage if the need arises.

Although Apple was generous with the processor speeds on these new systems, it wasn't as free with the base RAM allocations. Both single-processor G4s have only 128MB of RAM, the bare minimum for running Mac OS X. Apple was a little more charitable with the dual-processor configuration, giving it a base of 256MB. Each of the new models can support as much as 1.5GB of RAM.—JONATHAN SEFF

MAC OS X UPDATE

Mac OS X's March release was just the beginning of the next-generation operating system's journey. Now it's time for Mac OS X's first major upgrade, which features performance improvements, enhancements to the Aqua interface, and many additions that OS X's early adopters have been crying for—including the ability to play DVD movies and to burn CD-ROMs from the Finder.

The update's only drawback? You won't see it until September. Mac OS

X 10.1, announced by Steve Jobs at Macworld Conference & Expo in July 2001, features major speed boosts, especially when it comes to launching applications. In his New York presentation, Jobs launched several applications, all of which opened dramatically faster in OS X 10.1 than they did in previous versions. Microsoft Internet Explorer launched with one bounce of its icon in Mac OS



Mac OS X 10.1 The update is faster than a bouncing bullet.

X's Dock. Sherlock launched in less than a bounce. Resizing windows in the Finder and scrolling through menus also seemed to be significantly

improved. "You name it, it's faster," said Jobs.

The operating system's Aqua interface has undergone a few tweaks as well. In version 10.1, you can reorient the Dock so that it runs

In his presentation, Jobs launched several applications, all of which opened faster in Mac OS X 10.1.

along the right or left side of your screen instead of the bottom. And the "genie" effect, which warps a window when you minimize it into the Dock, has been replaced by a new, faster scaling effect.

Mac OS X 10.1 also offers some interface improvements in its menu bar: you can add icons to the bar's right side, making it possible to control or monitor part of your system without using up Dock space or opening the System Preferences application. Among the items you can now view or control via the menu bar are modem connections, system volume, display preferences, battery status, and AirPort connections.

Other new features in version 10.1 include support for 200 PostScript printers, the ability to connect to AFP servers over AppleTalk, a built-in SMB client for compatibility with Windows PC-based networks, the ability to hide file-type extensions at the end of file names, and a better-organized System Preferences.—JASON COX

Ten for X

Ten Mac developers joined Apple CEO Steve Jobs on stage during Macworld Expo to show off OS X-native versions of their software.

COMPANY	PRODUCT	SHIPPING
Adobe	GoLive, Illustrator, InDesign	not announced
Alias/Wavefront	Maya	September 2001
Aspyr	Tony Hawk Pro Skater 2	now
Blizzard Entertainment	WarCraft III: Reign of Chaos	not announced
Connectix	Virtual PC	now (beta)
FileMaker	FileMaker Server 5.5	July 2001
IBM	ViaVoice	2001
Microsoft	Office 10	fall 2001
Quark	QuarkXPress 5.0	not announced
World Book	World Book 2002	now

New iMacs, Same Old Shell



Music trends seem to change from one moment to the next—and so do iMac colors. Apple's sixth revision to its three-year-old iMac design ditches its "inspired by music" Flower Power and Blue Dalmatian patterns, introduced in February, for familiar solid colors—indigo, snow, and graphite (see "iMac, Take Six").

The new \$999 iMac model has essentially the same configuration as the previ-

ous \$1,199 iMac, but with a boost to the installed memory. The 500MHz machine now has 128MB of RAM—a necessary addition, since 128MB is the minimum

amount of RAM Apple recommends for a system to run Mac OS X.

Moving into the middle slot for iMacs, with a price of \$1,299, is a system similar to February's \$1,499 iMac Special Edition. Again, RAM is the only difference between the two 600MHz configurations—the iMac announced in July comes with double the RAM at 256MB. At the top of the iMac line is the new \$1,499 iMac Special Edition, which features a 700MHz G3 processor, 256MB of RAM, and 60GB of hard-drive space.—JASON SNELL

iMac, Take Six

MODEL	PROCESSOR	BASE RAM	HARD DRIVE	PRICE	COLORS	OPTICAL DRIVE
iMac	500MHz	128MB	20GB	\$999	indigo, snow	CD-RW drive
iMac	600MHz	256MB	40GB	\$1,299	graphite, snow	CD-RW drive
iMac Special Edition	700MHz	256MB	60GB	\$1,499	graphite, snow	CD-RW drive

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Inside the Apple Store

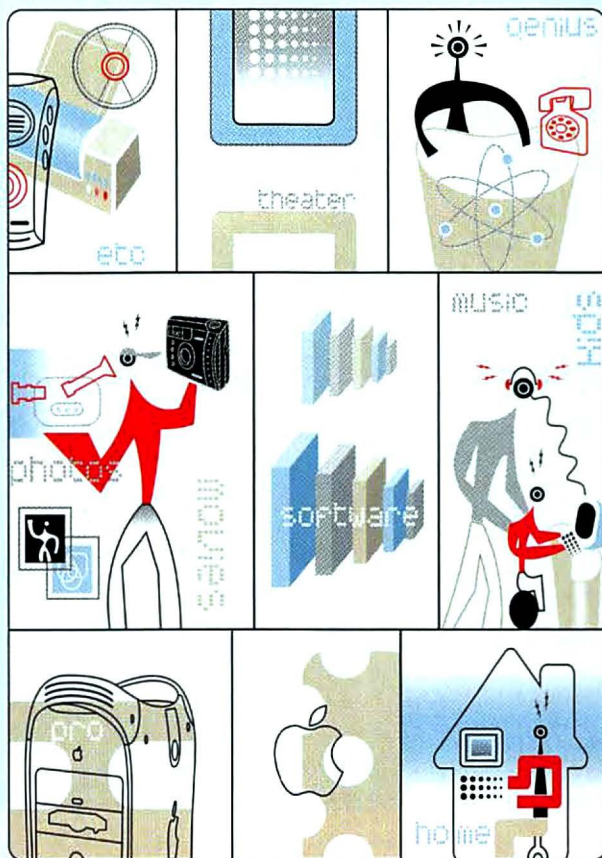
WITH 25 RETAIL OUTLETS TO OPEN THIS YEAR, HERE'S WHAT THE COMPANY HAS IN STORE:

Most of the hundreds of Mac users waiting outside Apple's stores in Glendale, California, and McLean, Virginia, before the stores' May grand opening shared a common sentiment: It's about time. The way they see it, the stores finally give them a place to grab the latest Apple merchandise, load up on software and accessories, and obtain help from experts.

That's great, as far as Apple is concerned. But the company isn't planning to open 25 stores across the United States this year just to preach to the converted.

Not that Apple doesn't want established Mac users to flock to its stores, cash in hand, ready to buy every last iBook and Power Mac in stock. But Apple's new retail strategy includes using the stores as a way to reach other computer buyers—that 95 percent who don't even consider a Mac when it's time for them to buy new hardware. By giving these shoppers a place where they can get their hands on its products, Apple hopes to convince new customers that Macs are much more than just an assortment of brightly colored, translucent boxes.

So what awaits Mac users and new customers when they visit the local Apple store? Based on the first two stores in Glendale and McLean, here is what to expect once you get inside.—PHILIP MICHAELS



THE APPLE STORE—SECTION BY SECTION

■ HOME/PRO

The front section features every hardware product Apple makes. It's split into areas for professional and home users, to make it easy for shoppers to find the right Mac.

■ SOFTWARE

Taking up the middle of the store—or the spine, as its designer calls it—are shelves loaded with tech-support books and more than 300 Mac-compatible applications.

■ MOVIES/PHOTOS

The Solutions areas showcase what you can do with a Mac. Shoppers can play with iMovie or look at digital cameras and camcorders from leading manufacturers.

■ GENIUS BAR

This counter in the rear of the store is staffed by Apple-trained tech people who can answer shoppers' questions and troubleshoot. And each store has a red phone with a direct line to Apple tech support in Cupertino, in case someone stumps the Apple Genius.

■ THEATER

A 10-foot screen hangs on the back wall. Look there for product demos, how-to sessions, and other in-store events.

■ MUSIC/KIDS

Macs with iTunes and CD-RW drives are available so shoppers can try their hands at burning a CD. This section also has an assortment of third-party MP3 players. iMacs on a low table allow young kids to try out the latest in games and educational software.

■ ETC.

The back corner features a selection of Mac peripherals and other accessories, such as printers, cables, scanners, and other tools.

GRADE A

Five years from now, Peter Tuana would like every student at Fremont High School, in Sunnyvale, California, to have a laptop to use. For now, though, the principal is pleased with the 75 iBook SEs already on campus.

Those 400MHz iBooks get wheeled around on six mobile Mac-lab carts; each lab comes with AirPort technology, for wireless access to the Internet anywhere on campus.

"Instead of you going to a computer lab, the lab comes to you," Tuana says.

Almost every teacher at Fremont High uses Web-based services to post assignments, link to homework sites, and prepare lessons. Teachers use projectors linked to an iBook to illustrate lessons with Microsoft PowerPoint presentations. Meanwhile, students use the laptops to complete Web-based worksheets.

Teachers are finding that AirPort-equipped iBooks allow them to be anywhere in the classroom. Say a math teacher wants to see how students are tackling problems. Instead of walking behind their desks, the teacher can use Apple Network Assistant to check their progress onscreen—even zap-

More Info: www.macworld.com/2001/09/buzz/fremont.html

Read more about how Fremont High School uses iBooks.

ping a hint to a student without getting up.

Tuana's only complaint? Not enough iBooks to go around. "We have very little maintenance with them," he says. "They're just great little machines."—ADELIA CELLINI

COOL STUFF

Rumble in the Jungle

Some days, the sight of virtual rivals getting blown away just isn't vivid enough for the serious Mac-gaming enthusiast. Sure, you've got your stunning graphics for maximum blood 'n' guts visuals. But you can't *feel* the action. Rejoice, little shooter: the RumbleFX headphones from Evergreen Technologies (541/757-0934, www.rumblefx.com) let you feel the sweet, basso-profundo rumble of a frag grenade ripping a hole through your opponent's armored vehicle. RumbleFX headphones contain a built-in subwoofer, complete with vibrator, to maximize the bass—whether it's coming from a Quake explosion or the Jungle Brothers' beats. Users can adjust the vibration and volume levels through the built-in power amplifier; you don't *have* to liquefy your eardrums. The \$40 headphones connect via an audio minijack and will work with all of your current games and music. Just plug in and get ready to rumble.—MATHEW HONAN



Commercial Interests

iBook-toting travelers cluttering up airplane seats to edit iMovies, optical mice whizzing around to the strains of Steppenwolf, the awesome presence of Barry White—Apple's TV commercials are certainly memorable.

But do they persuade people to go Mac? We asked three experts—Hoag Levins, editor of AdAge.com; Michael Wilke, executive director of the Commercial Closet Associa-

tion; and Bob Garfield, analyst and columnist for *Advertising Age* and AdReview.com—whether Apple should consider advertising different.—JENNIFER SMODISH

More Info: www.macworld.com/2001/06/15/appleads.html

Read more about Apple's TV ads.

LINK

MIDDLE SEAT

The Ad: A lad annoys and delights airplane passengers as he puts together an iMovie on his iBook.

What the Experts Say:

HL: "An engaging, effective, and memorable ad."

MW: "It's quite a departure from Apple's classic Volkswagen-type ads. The best in the campaign."

BG: "It's unexpected and charming."

Our Take: Memorable, sure. Charming, maybe. But if that kid sits down next to us on a plane, we're taking Amtrak.

RIP MIX BURN

The Ad: A man brings together his favorite musicians to show how easy using iTunes is.

What the Experts Say:

HL: "The message is that you can use a Mac to create a CD of your favorite tracks, but it's not instantly clear."

MW: "Who wouldn't be thrilled at pulling together all our favorite musicians in a concert just for us?"

BG: "It's a linear, logical, and surprising way to dramatize burning your own music mix."

Our Take: People may disagree, but one truth endures—Barry White is one smooth cat.

POWERBOOK G4

The Ad: The disembodied voice of Jeff Goldblum sings the new PowerBook's praises.

What the Experts Say:

HL: "The close and personal view immediately demonstrates its amazing thinness and video-processing power."

MW: "This one takes a plain and practical approach."

BG: "A simple image to demonstrate the simplest point. These features are cool."

Our Take: It's not much of a challenge to make a PowerBook G4 look good.

OPTICAL MOUSE

The Ad: As "Born to Be Wild" throbs in the background, an Apple Pro Mouse makes like a Formula One race car.

What the Experts Say:

HL: "Simple. Brilliant. And easy to dance to."

MW: "This spot feels more like Mac's earlier ads, using a classic rock song with a white background and laser focus on the product's looks. I'm left wondering, though, why we need an optical mouse."

BG: "You see this, and you say, 'Whoa, that mouse is wireless.'"

Our Take: Now if only the mouse actually *were* wireless.

Digital Drummer

Q&A with OMAR HAKIM

Omar Hakim has gone from banging on a toy drum as a child to mastering a Roland V-Drums kit in his adulthood, never missing a beat. How has the jazz and pop percussionist kept on top of things as the music world has gone increasingly digital? By keeping an open mind and being willing to try new things. "The drummers that embrace this are going to discover a whole new palette available to them, sonically and creatively," Hakim says. This approach to change has certainly paid off for Hakim: he's played drums for an eclectic roster of musicians including Sting, Miles Davis, and David Bowie. And whether he's playing drums or producing records, Hakim never strays far from his 500MHz Power Mac G4—a machine that helps him make beautiful music.—DAVID FERRIS

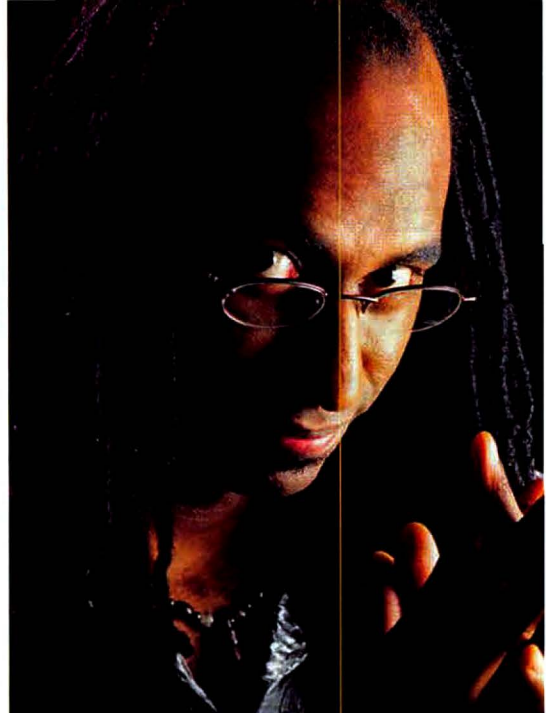
Q: How important has the drum machine been to your musical development?

A: The drum machine came into my personal usage as a survival means. There were a bunch of drummers when drum machines came out in the early eighties who felt very threatened by the whole thing. Once artists got their hands on drum machines, there wasn't such a demand for drummers, particularly in pop music. So I said, "If you can't beat 'em, join 'em." I thought, "Who's better to program a drum machine than a drummer?" Immediately I went out and purchased the most popular drum machine and learned how to use it and marketed myself around New York as a programmer. Then the machines evolved into drum devices that could be played with sticks—the Simmons electronic

drum set and the Roland OctoPad, the Dynacord Add-One. I experimented with all these drums at one time or another while I was drumming for Sting.

Q: What do all these changes mean for drummers?

A: It does a lot for drummers if they're willing to open up their minds and move past the traditional aspects of drumming. There are a lot of drummers very attached to "Well, it doesn't sound like a drum. It doesn't feel like a cymbal." That's something a lot of drummers will have to work past. What we're going to see is a whole generation of electronic drummers, and it's probably not going to be that much different from the generations of electronic guitarists and electronic bass players we've seen over the last 20 or 30 years. There are guys that play electric guitar and electric bass that don't really deal with the acoustic version of the instrument. I guess that's no different from keyboard players in the sixties and seventies. You probably had diehard guys saying, "It doesn't sound like a piano." But then you had a few artists—like Herbie Hancock, Chick Corea, Weather Report—who decided to take these electronic instruments and make them their own.



AT A GLANCE

OMAR HAKIM**AGE:** 42**RESIDENCE:** New York, New York**MAC:** Dual-processor G4/500 with 768MB of RAM**FAVORITE SOFTWARE:** Mark of the Unicorn's Digital Performer, Digidesign's ProTools MixPlus**PERIPHERALS:** MIDI instruments

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Flash Crash Course

If you have a burning desire to be a cartoonist but can't get Disney on the phone, you may want to turn to ToddGallina.com. The home page of animator Todd Gallina offers plenty of sam-

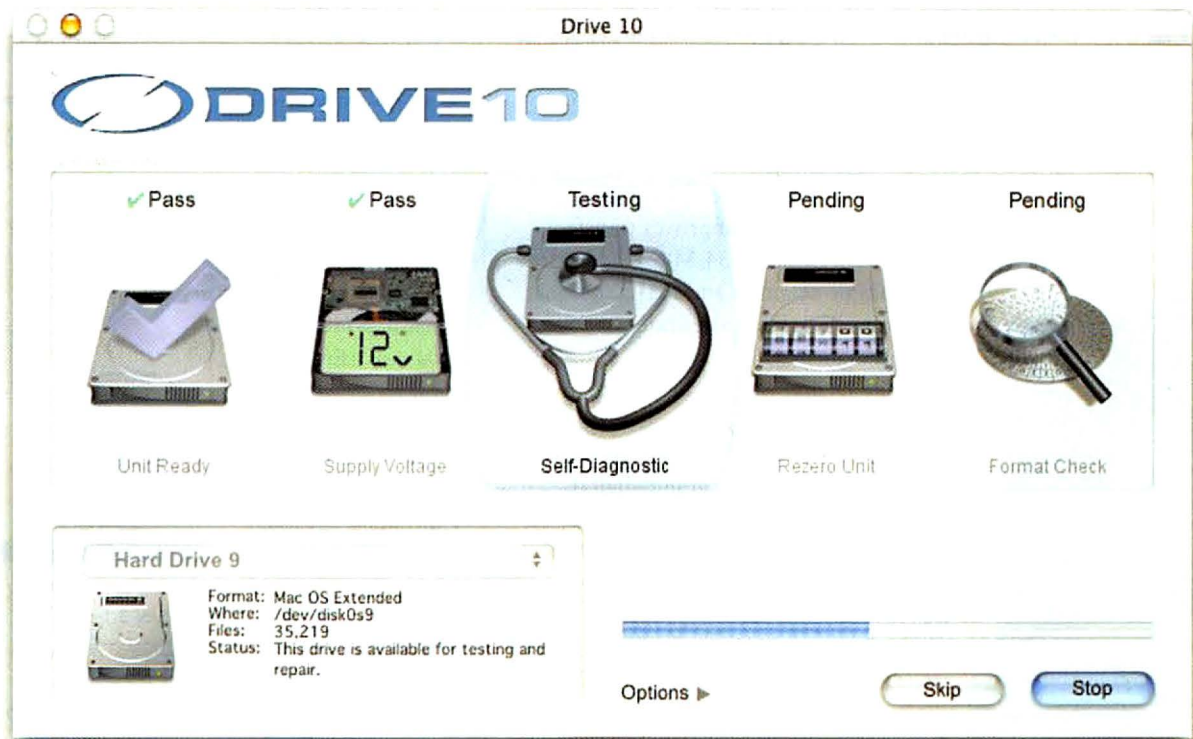
ples of his work, but it also shows how he whips up Macromedia Flash animations. Using his own cartoons as a guide, Gallina leads curious viewers through each step of the job—from hand-drawing the initial storyboards to applying the finishing touches in Flash. Along the way, you'll find helpful tips about tools and strategies for getting the right effect. When you're done with the lesson, check out Gallina's portfolio for a fresh dose of Flash inspiration. Watching Gallina's hapless crocodile hunter get pummeled by loan sharks may not get you that high-paying animation gig, but it's certainly a better way to end a lesson than taking a pop quiz.—KELLY LUNSFORD

More Info: www.macworld.com/2001/09/buzz/hakim.html

How did Omar Hakim's music career start? Find out in Macworld's extended online interview.

LINK

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Firing Up FireWire

Early FireWire drives were anything but fast, and many a Final Cut Pro pioneer ran afoul of slow first-generation devices. *Dropped frames* became an all-too-common Mac digital-video epithet. The problem was so bad that until recently Apple's top brass advised against using FireWire drives for DV editing.

Some of the blame goes to poorly written drivers. Updates such as Apple's FireWire 2.7 helped. Even so, the fastest FireWire drives peaked at 13 MBps—theoretically enough to avoid dropped frames but far shy of FireWire's top speeds. The biggest problem is that pure FireWire hard drives simply don't exist. Instead, you get an ATA hard drive hidden inside a FireWire enclosure. The ATA-FireWire bridge causes the bottleneck.

Enter the Oxford Semiconductor 911. This redesigned ATA-FireWire bridge improves transfer rates to a real-world 29 MBps to 34 MBps, and it lets you use multiple channels and RAID options, which can push data-transfer rates to 75 MBps and higher.

Granite Digital was the first company in North America to adopt the Oxford Chip, for its \$159 FireVue enclosure-case kit (510/471-6442, www.granitedigital.com). FirewireDirect's Slim-Line Ultra drives start at \$299 for 20GB (512/302-0012, www.firewiredirect.com). Its FireWire enclosure kits sell for \$149. Other World Computing's Mercury Elite drives start at \$250, also for 20GB (800/275-4576, www.otherworldcomputing.com). Transintl.com sells its 30GB drive for \$259 (714/634-1583, www.transintl.com).—ANTON LINECKER



FirewireDirect's
Slim-Line Ultra

WEIRD STUFF

When Pets Go Bad

Think of Minor Demons' PortaPets, distributed by Eruptor (310/305-9966, www.eruptor.com), as virtual pets that have developed bad habits and anti-social tendencies. These creatures, which inhabit your Palm OS, are ill-behaved monkeys, homicidal kitties, radioactive fish, and other critters unfit to appear in polite society. If you don't take care of your PortaPets (which cost \$5; PortaMonkey is available for free), watch out. They don't simply wither away—they become prone to Ebola infections and bouts of clinical depression. The faint of heart may want to stick to caring for real pets instead of adopting virtual ones; they induce much less stress.—MATHEW HONAN



HARDWARE

DIGITAL CAMERAS

- A 4.1-megapixel camera from Olympus America (800/622-6372, www.olympusamerica.com): The **C-4040 Zoom** has a 3× optical zoom and a 7.5× digital zoom (\$1,099).
- A 4.2-megapixel camera from Toshiba America (800/288-1354, www.toshiba.com): The **PDR-M81**, which should be shipping by late summer, features resolutions ranging from 720 by 480 pixels to 2,400 by 1,600 pixels. It has a 35mm-equivalent lens with a 2.8× optical zoom and a 2.2× digital zoom. Toshiba priced the new model at \$799.

PRINTERS

- Three printers from Brother International (800/276-7746, www.brother.com): All three have print speeds of 15 pages per minute and resolutions of 1,200 by 600 dots per inch. The **HL-1440** (\$299) comes with 2MB of memory, which can be expanded to 34MB. The **HL-1450** (\$349) has 8MB of memory, which can be expanded to 36MB, as does the **HL-1470N** (\$499), which has a first-page print speed of less than 16 seconds.
- Two multifunction printers from Lexmark (888/539-6275, www.lexmark.com): The **X83** (\$199) prints at 12 pages per minute in black-and-white and 6 pages per minute in color. The **X73** (\$179) prints at 9 pages per minute in black-and-white and 5 pages per minute

in color. Both have a resolution of 2,400 by 1,200 dots per inch.

- A monochrome laser printer from Xerox (877/362-6567, www.xerox.com): The **Phaser 3400** (\$649) has a print speed of 17 pages per minute and a first-page print speed of 12 seconds.

STORAGE DEVICES

- An external FireWire drive from Maxtor (800/262-9867, www.maxtor.com): The **Maxtor Personal Storage 3000DV** (\$380) is a 60GB drive that spins at 7,200 rpm. That's 56 percent faster than the FireWire models Maxtor released in fall 2000.



SOFTWARE

DESIGN SOFTWARE

- **Bryce 5**, from Corel (800/772-6735, www.corel.com): This update to the 3-D-landscaping tool (\$309; upgrade, \$159) runs on Mac OS 8.6 and higher and has native support for OS X. Among other additions are network rendering capabilities, a Tree Lab feature for creating and editing trees, and metaballs support.
- **Carrara Studio**, from Eovia (888/394-2307, www.eovia.com): The update to the 3-D-modeling, -rendering, and -animation software rebrands the one-time MetaCreations product. Carrara Studio adds a fully supported version of Amapi 3D, a set of 25 new plug-ins, and an interactive tutorial (\$399; upgrade, \$99-\$199).

What's HOT

A QUICK LOOK AT THE WORLD OF TECH

1. Steve Jobs takes the stage in New York for another Macworld Conference & Expo keynote. *Apple's CEO is still furious, however, about losing out to Nathan Lane for a Tony Award.*
2. Audiences flock to see Angelina Jolie as Lara Croft in *Tomb Raider*. *Cocky Hollywood executives push ahead with plans to cast Steve Guttenberg, Bo Derek, and Carrot Top in Sim City—The Movie.*
3. Apple sues Church of Satan over "Think Different" parody. *Rumor has it that Satan himself will testify in the trial, right after finishing up development work on Windows XP.*

● A graphics-editing application from MacGIMP (www.macgimp.com): **GIMP**, or Graphic Image Manipulation Program, is an open-source application for Mac OS X. It's used to edit animated GIFs and manipulate RGB-based file formats such as JPG and TIFF (\$25).

MULTIMEDIA SOFTWARE

● **Sorenson Squeeze**, from Sorenson Media (888/767-3676, www.sorenson.com): Squeeze (\$249) is a VBR compression application for QuickTime 5. It runs on both Mac OS 9 and OS X and requires Sorenson Video 3.

PRODUCTIVITY SOFTWARE

● **Mimio 1.6**, from Virtual Ink (877/696-4646, www.mimio.com): The support software for the Mimio electronic whiteboard now runs natively in Mac OS X. It also lets users export whiteboard content as video clips to iMovie. Version 1.6 is a free download to users of the \$599 electronic whiteboard.

● **Outlook 2001**, from Microsoft (800/426-9400, www.microsoft.com): The update to the messaging and collaboration client for **Microsoft Exchange Server** (\$700, not including client

access license) enhances users' ability to share schedules and contact lists among Mac and Windows computers. Microsoft also released **Word + Entourage 2001 SE** (\$149), a bundle combining its word processing application with its integrated e-mail and personal information manager program. Microsoft expects it to be shipping by the time you read this.

● **Suitcase 10**, from Extensis (800/796-9798, www.extensis.com): This update to the font manager (\$100; upgrade, \$50) includes an Auto Activation feature, a free copy of FontBook, and support for Multiple Master fonts. Extensis will release a Mac OS X-native update by the end of 2001; it will be free to Suitcase 10 users. Extensis also released **Suitcase Server 10** (\$1,000) for work-group font management; it includes five copies of Suitcase 10.

UTILITY SOFTWARE

● **Rewind 1.2**, from Power On Software (800/344-9160, www.poweronsoftware.com): This update to the data-recovery utility

adds controls that limit the size of Rewind archives and enhances stability (\$100; upgrade, free).



ANNOUNCED

● The departure of Director of Maya Technologies Richard Kerris from Alias|Wavefront (800/447-2542, www.aliaswavefront.com): The company said it does not expect his leaving to affect the development of **Maya** for Mac OS X. A Macintosh version of the 3-D-animation software is expected to be ready in September.

● Layoffs at Humongous Entertainment (800/499-8386, www.humongous.com): The children's software maker—which produces the Putt Putt, Freddy Fish, Spy Fox, and Pajama Sam adventure-game series—laid off 80 workers, amounting to more than 40 percent of its staff. The company will focus on its line of sports games.

SOFTWARE UPDATES

powered by  **versiontracker.com**

Adobe Stroke and Fill Plug-in 1.5.2

Update to InDesign plug-in

Aladdin iClean 4.0.1

Tool for deleting cookies and cache files

Apple Developer Tools 10.0.1

Programming tools for Mac OS X

Apple DVD Player 2.7

Update for slot-loading iMac DVs, Power Mac G4s (AGP), and FireWire PowerBooks

BBEdit Lite 6.1.1

Slimmed-down version of text editor

BeHierarchic 4.2

Displays submenus for items in Apple menu

Blizzard Diablo II 1.0.8

Update to action and role-playing game

Dantz Retrospect 4.3 Driver Update 2.2

Adds support for new devices

Eudora 5.1b16

E-mail client beta for Mac OS X

Extensis Preflight Pro 2.2

Fixes prepress printing problems

File Buddy 6.1

Desktop, file, and folder editing and task tool

Firewalk X 1.3

Firewall configuration and utility for Mac OS X

GraphicConverter 4.0.8

Tool for viewing, editing, and converting most graphics-file formats

HP DeskJet 1.0

Mac OS X printer drivers

Iomega Quick Floppy Copy 1.0

Tool for copying floppies to Zip disks

Lotus Notes Domino 5.0.8

Client for messaging and collaboration system

Mozilla 6/13

Fizzilla version of Mozilla.org's browser

MP3 Rage 3.4.1

Gnutella and Napster client and MP3 tag editor, player, and organizer

Netscape 6.1p1

Preview release of Web browser update

Nikon Scan 3.1

Drivers for Nikon film scanners

Palm OS Emulator 3.2

Tool for writing Palm software on the Mac

PowerTicker 2.1.1

Improves stability of stock-ticker utility

Quake III Arena for OS X 1.29f

New maps and network code for first-person shooter game

TinkerTool 1.32b

Tool for altering Mac OS X's appearance

➔ For these and other current updates, visit:

www.macworld.com/subject/updates

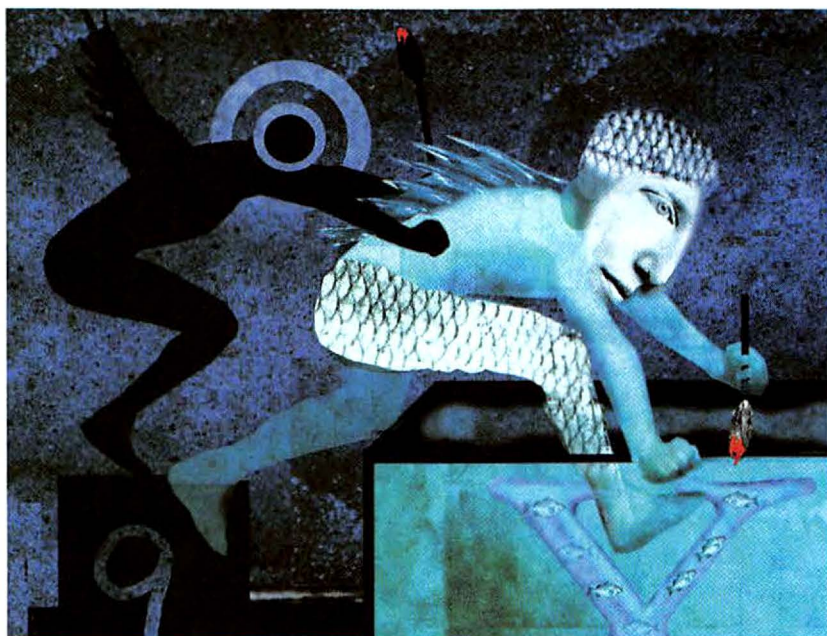
product reviews

Hands-on Evaluation and Authoritative Buying Advice

FreeHand 10

Pioneering Program Beats Illustrator to Mac OS X

BY DEKE MCCLELLAND



FREEHAND 10

Rating: ★★½

Pros: Persistent preview under Mac OS X; adds contour gradients; any page can be a master page; can output any portion of pasteboard.

Cons: No automatic page numbers; print area invisible in antialiased preview mode; lame transparency capabilities; no live effects.

Company's estimated price: \$399; upgrade, \$129; Flash 5 FreeHand 10 Studio, \$599

Company: Macromedia, 800/457-1774, www.macromedia.com

cations. Editable preview becomes persistent preview, which means less time waiting for FreeHand to show you what you've done.

Gradients and Pages

Fortunately for the vast majority of designers, who are using older operating systems, FreeHand 10 also works with OS 8.6 and later. And most of its enhancements work as well in OS 9 as they do in OS X. For example, FreeHand 10 introduces contour gradients, which fill an object with a concentric blend that updates whenever you reshape the path. Shape gradients have been around for a long time, but combined with FreeHand's plentiful color-placement options, they let you easily create star bursts, neon strokes,

Although Adobe Illustrator was the first PostScript drawing program to market, Macromedia FreeHand is the application that comes to mind when I think of firsts. And of its many firsts—color, type on a path, parametric gradients, text and graphic styles, multipage layouts, and a free-hand drawing tool—its *first* first was the biggest. As trivial as it may seem by today's standards, FreeHand 1 was the first program to preview Bézier paths as you drew them. Illustrator didn't catch up for several years, and when it did, the feature appeared on the PC before we saw it on the Mac.

With version 10, FreeHand is first again. The only major publishing application so far to integrate seamlessly with Mac OS X, FreeHand 10 beats not only Illustrator but also Adobe Photoshop, QuarkXPress, and Macromedia's Dreamweaver and Flash. Because the Carbonized FreeHand runs natively in OS X rather than inside OS X's Classic environment, it can take advantage of new system-level features such as protected memory and preemptive multitasking. It also means that FreeHand doesn't need to redraw the screen image when you move a window or switch appli-

and glows. Compared with Illustrator's gradient mesh, they're pretty limited, but they're also considerably easier to use.

FreeHand has long excelled at creating multipage documents; version 10 improves on that ability by adding two page-management features. First, the new master pages let you use one page as a template for other pages. That's a common feature in publishing programs, but in FreeHand any page on the pasteboard can be a master page; there's no need to copy and paste elements onto strictly ordained master pages, as in QuarkXPress and Adobe InDesign. Also, you can share master pages between documents. The downsides are that one master page can't be based on another and that there are no automatic page numbers, eliminating the opportunity for repeating folios.

Second, FreeHand lets you marquee any area of the pasteboard—including as many pages or partial pages as you like—and request that it print on a single page. Better still, the program makes no attempt to constrain you to a specific page size or orientation. Suffice it to say, if you've been wishing for something beyond the standard 2-Up and 4-Up options, your wish has been granted. Mysteriously, however, the print area is invisible in the antialiased preview mode, so you may draw a boundary and see nothing on the screen.

Fuel for Flash

Just as Illustrator has lately been reaching out to Photoshop users (*Reviews*, September 2000), FreeHand extends special courtesies to Macromedia's fastest-growing audience: Flash users. FreeHand 10's Library palette lets you create and manage *symbols*, or reusable graphics (see "The Implication of Symbols"). Edit the master symbol, and all other instances update automatically. You can also apply a symbol to a path to create a brush stroke, a capability previously seen in Illustrator 8 (though Illustrator's brushes are easier to apply and edit). Using symbols as brushes, you can modify a symbol and watch as brushes update through-

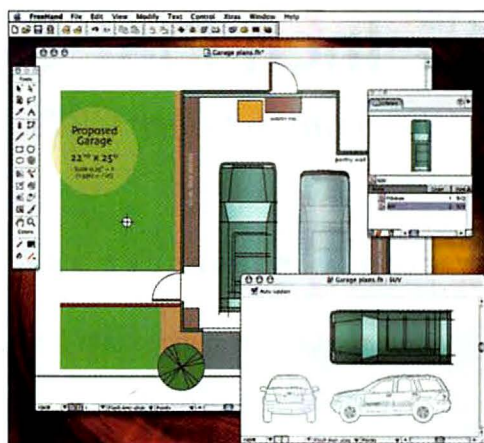
out your illustration. Finally, when you export a drawing to the object-oriented Web format SWF, symbols define repeating elements just once, cutting down on file size.

Speaking of SWF, you can now preview SWF animations in FreeHand—great for checking your work after animating a blend. (In the past, you had to view your FreeHand-created animations in a browser or the stand-alone Flash player.) A new navigation palette lets you more easily assign links and Flash actions to objects. And what upgrade to FreeHand would be complete without modifications to the pen tool? As always, the changes make the pen behave more like the one in Illustrator.

Execution and Interface

While FreeHand is often first, Macromedia has a tendency to leave a feature unmodified after its introduction, giving Adobe and others ample opportunity to leapfrog. Object transparency, arguably the most important advance in vector-based drawing in the past five years, is an example. FreeHand 8 introduced a very basic transparency option, after CorelDraw but more than a year ahead of Illustrator. Sadly, that's the last time the feature got attention. As a result, compared with Illustrator 9's broad support for transparency and color calculations, FreeHand's small assortment of options seems piddling, inaccessible, and downright archaic.

Nevertheless, as someone who regarded the previous version of FreeHand less enthusiastically than any that came before it (*Reviews*, July 2000), I must say that the program appears to be on the mend. Macromedia has obviously attempted to resolve differences between FreeHand on the Mac and its Windows peer. Macromedia loyalists will be glad to know that the new FreeHand bears a stronger resemblance to its siblings Dreamweaver and Flash. And several of the interface problems I've been grumbling about have been remedied:



The Implication of Symbols After turning the top view of the SUV into a symbol (upper right), I introduced it into my architectural plan with a simple drag and drop. I could then replicate the symbol or export it for use in other drawings.

palettes are better organized, icons are more recognizable, and—good news if you don't have five monitors tethered to your computer—precious screen real estate is put to better use. In fact, I'd go so far as to say that FreeHand 10's interface, particularly under Mac OS X, is downright pleasing to look at.

Macworld's Buying Advice

For an artist who switches back and forth between Illustrator and FreeHand, Illustrator remains the better program with the more compelling feature set; its live effects alone make it a higher-order drawing program. But FreeHand gets points for speed and stability—issues that prompted two bug fixes for Illustrator 9. (To evaluate FreeHand 10 in Mac OS X, I ran it for several days straight without a single crash. In the same amount of time, Illustrator 9, running in OS X's Classic environment, went down twice.) FreeHand also offers greater control over screen previews, and it's better at displaying thin black lines, which turn gray in Illustrator 9.

On the other hand, if you're a loyal FreeHand user trying to decide whether to upgrade, the answer is a definite yes. Whether or not you're using OS X, you're sure to appreciate FreeHand 10's improved drawing capabilities and cleaner design. **m**

15-Inch Flat-Panel Displays

LCDs Triumph over CRTs in Battle to Free Up Desk Space

BY TONY A. BOJORQUEZ AND JAMES GALBRAITH

Apple recently announced that it would abandon its line of traditional CRT displays in favor of slender, lightweight LCDs. With such advantages as brightness, flicker-free screens, and small footprints, flat-panel displays are tempting alternatives to bulky CRTs—especially now that prices have dropped significantly.

Macworld Lab compared a dozen 15-inch analog LCD contenders ranging in price from \$399 to \$800. These monitors plug directly into your Mac's VGA connector, making them compatible with a wider range of desktops, laptops, and recent iMacs than digital models are. (The \$599 Apple Studio Display, for example, is an excellent digital option, but its proprietary connector means it works only with recent G4 desktops.) The greater compatibility of VGA comes at the expense of image clarity: the computer's graphics card converts your Mac's signal from digital to ana-

log, and then a card in the monitor converts it back to digital, resulting in increased noise. Digital panels deliver this signal in digital form from start to finish, resulting in less noise and a sharper, clearer image. (See our review of 15-inch digital flat panels at www.macworld.com/2001s/reviews/0717-lcds.html.)

Of the 12 models we tested, Acer Peripherals' FP 563 and Envision Peripherals' EN-5100e stood out with great image quality and reasonable prices, while Samsung's SyncMaster 150MP, despite its high price, won us over with its TV tuner and fine pic-

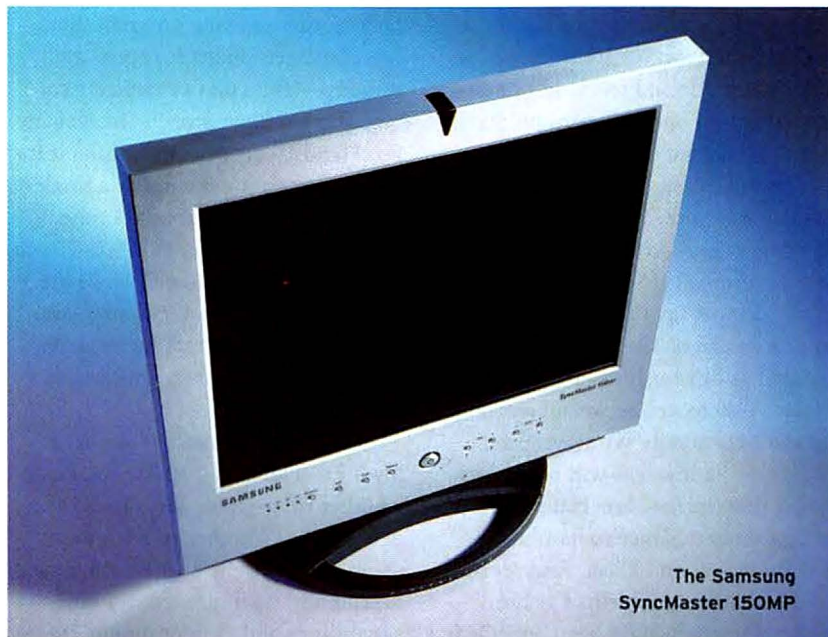
ture quality. At the other end of the spectrum were Princeton Graphic Systems' LCD15, which delivered a washed-out image, and Planar's PT1503N, whose confusing controls and mediocre performance overrode its attractive price tag.

The Setup

Because analog LCDs are designed for general, everyday use in your home or office, we evaluated each monitor's color image quality, its text sharpness, and the effect of viewing angle on its image quality. We also tested the on-screen controls for usability and popped in a DVD to gauge each display's ability to play back motion video.

After connecting these plug-and-play flat panels, we performed the manufacturers' recommended auto-adjustments using the control buttons on the front of each display. The monitor reads the signal from the Mac's graphics card and attempts to adjust the screen image's position and size for the best overall image quality. (The Sony Multiscan N50 adjusts itself when you power on the display and whenever you change resolutions.) Most of the displays looked fine after automatic adjustment, although the Princeton required fine-tuning to eliminate noise and to correct horizontal positioning.

The displays' front-panel controls vary in design and ease of use. We liked the elegant Samsung, with its stylish buttons and touch-sensitive on-screen graphics, and the NEC-Mitsubishi 1530V and ViewSonic VE150m, with their simple, easy-to-use controls. We found the Planar's vertically oriented buttons confusing and hard to navigate, while the Acer's



controls had us scratching our heads until we located a cleverly hidden thumbwheel. In addition, the large size of one button on the Acer misled us to press it whenever we wanted to make adjustments, but instead of bringing up a control menu, it started the automatic adjustment process. On the Eizo Nanao FlexScan L350 display, the control buttons are so well integrated into the front panel that they practically disappear.

Image Is Everything

We looked at the same high-resolution photographic image on all 12 displays (see "The Skinny on Flat Panels"). In our color-quality test, we checked for color saturation and for details in highlights and shadows. The Sharp LL-T1511A and the Envision scored well here, offering up bright, saturated images. Except for one, the rest of the displays fell squarely in the middle, with acceptable image quality, minimal loss of detail, and good color saturation. Only the Princeton did poorly, yielding relatively washed-out results (we couldn't correct the problem using the on-screen controls).

To evaluate text quality, we displayed a Web page that used a variety of font sizes and colors. We looked for crisp, sharp text that would be easy on the eyes over time.

Most of the monitors displayed acceptable text quality. The Acer led the pack, with excellent contrast that made for good legibility. Princeton's offering received low marks for soft-looking text; when we tilted the display upward, the text fared better but our necks did not. And although the iiyama Pro Lite TXA 38i did well in this test, vertical lines marred the lighter regions of the image.

Front and Center

In general, LCD displays suffer from viewing-angle constraints that can make a big difference in the colors you see on the screen. LCD panels are designed for viewing straight on, a little below eye level—a problem when several people look at the monitor simultaneously.

The Skinny on Flat Panels



	●●● Excellent ●● Acceptable ● Poor	Color Quality	Text Sharpness	Viewing Angle
Acer Peripherals FP 563	●●	●●	●●●	●●●
AG Neovo S-15V	●●	●●	●●	●●
Eizo Nanao FlexScan L350	●●	●●	●●	●●
Envision Peripherals EN-5100e	●●●	●●	●●	●●●
iiyama Pro Lite TXA 38i	●●	●●	●●	●●
NEC-Mitsubishi 1530V	●●	●●	●●	●●
Planar PT1503N	●●	●●	●●	●
Princeton Graphic Systems LCD15	●	●	●	●●
Samsung SyncMaster 150MP	●●	●●	●●	●●●
Sharp LL-T1511A	●●●	●●	●●	●●
Sony Multiscan N50	●●	●●	●●	●●
ViewSonic VE150m	●●	●●	●●	●●

Macworld Lab conducted subjective tests and ranked quality as excellent, acceptable, or poor. We rated each monitor according to how well it displayed our Adobe Photoshop and Microsoft Excel test images. We tested each monitor using a Power Macintosh 9500/200 with Mac OS 9.1 installed, 64MB of RAM, and iXMicro graphics-accelerator cards. We set displays to 1,024-by-768-pixel resolution and 24-bit color, at 60Hz.—Macworld Lab testing by James Galbraith and Jeffry K. Miltstead

In our viewing-angle tests, we looked at a color image from several angles to see how much the image changed. The bad news: viewing angle affects all the displays to some degree; they all lose saturation when you move your head too far off center. The good news: for all but the Planar (which exhibited a large shift to green with subtle changes in viewing angle), it took an extreme viewing angle to change the image substantially. The displays that exhibited the least-dramatic shift in this test were the Acer, Envision, and Samsung.

It's Show Time

If you've ever used an LCD display, you know that they have a slower response—the time it takes for a pixel to go from on to off—than CRTs. Move your cursor arrow around the screen quickly, and you're likely to see trails as the display attempts to follow the movement.

We played a DVD to see if this slower response affected motion video on these displays. We didn't see any motion artifacts, but viewing angle was an issue; from extreme vantage points, the video looked different as colors shifted and varied in intensity. Problems that showed up in earlier tests appeared in this test as well: the AG Neovo S-15V, for example, which had heavy text and

generally looked oversaturated in our photo-quality and text tests, looked a bit dark during video playback, and the Princeton still had a washed-out appearance.

A major pitfall with LCD flat panels is their inability to yield the same picture quality across all supported resolutions. Unlike a CRT, a 1,024-by-768-pixel LCD panel is a fixed grid of 1,024 columns of 768 pixels; when you specify a lower resolution, the display attempts to fill the screen with interpolated pixels, distorting images and text in the process.

None of these monitors support resolutions higher than 1,024 by 768. That isn't a problem if you stick with the display's native resolution, but you may run into trouble the first time you hook up your LCD monitor and the computer starts up in an unsupported higher-resolution mode. If you still have your old CRT lying around, hook it up and adjust your Mac's resolution settings. Otherwise, zapping your PRAM should force your computer to start up in a viewable 640-by-480-pixel resolution.

Not Just a Pretty Picture

In addition to being thinner and lighter-weight than CRT displays, LCD monitors consume less power and emit less radiation than their pic-

continues

ture-tube-based counterparts. Many of the displays we tested go a step further, offering features that range from truly useful to merely novel. The AG Neovo and Samsung models have an S-Video port for displaying video from a camcorder or VCR; the Samsung also boasts an integrated TV tuner with remote and picture-in-picture capability. The Sharp and Sony displays have built-in sensors that detect ambient light; they automatically pump up brightness for better viewing in daylight and decrease it in low-light environments.

In addition, the Sony has a nifty sensor that puts the display into power-saving mode when the user isn't in front of the display and wakes it up when the user returns. The iiyama has a powered USB hub, which let us attach a USB keyboard and speakers to the monitor. The Sharp panel also has a USB hub, but because it lacks power, it's useful only as a USB extender or for very low-power USB devices (such as a mouse). The iiyama's pivot feature

allows you to change the screen orientation from landscape to portrait with the help of bundled software, although the software caused our computer to crash.

Style Wars

When it comes to industrial design, these displays cover a lot of territory. Seven models—the Acer, Envision, iiyama, NEC-Mitsubishi, Princeton, Sharp, and ViewSonic—have the more traditional look of a slim bezel (the frame around the screen) and a sturdy base. The Planar also has a traditional design but is available in five translucent colors.

The other models break with tradition. The black Eizo, for example, has a textured bezel with a corrugated appearance. We admired the Samsung's sleek style and integrated handle. We also liked the AG Neovo's scratch-resistant glass panel, which covered the actual LCD display, and the thick black bezel, which gave this model the look of a stylish, high-tech picture frame.

The Sony has minimalist styling, relegating most of the display's electronics and connectors to a box you can tuck away under your desk, and just one slim cable connecting it to the monitor. This makes the monitor itself very thin and lightweight.

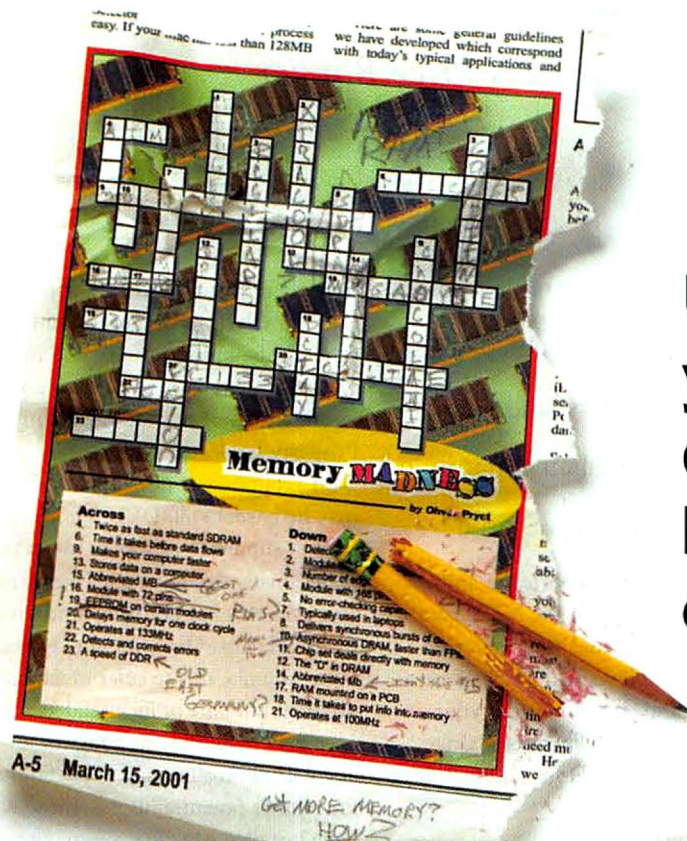
Macworld's Buying Advice

If desk space and design are higher priorities for you than precise color and wide viewing angles, the latest crop of 15-inch flat-panel displays makes a good argument for switching from a CRT. Three models we tested are particular standouts: Envision Peripherals' EN-5100e, with its bright, crisp image quality, just barely beat Acer Peripherals' FP 563 as our choice for the best pairing of low price and great performance. And if you don't mind spending more to get additional features, Samsung's stylish SyncMaster 150MP is a good selection; it includes a built-in TV tuner with picture-in-picture capability, and it performed solidly in all of our tests. **m**

Flat-Panel Displays Compared

★ = Editors' Choice

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	CONTACT	PROS	CONS
Acer Peripherals	FP 563	★★★★	\$549	888/723-2238, www.acer.com	Good value; bright; great text quality; good viewing-angle range.	Confusing controls.
AG Neovo	S-15V	★★★★½	\$599	866/246-3686, www.neovo-usa.com	S-Video port; good highlight detail; attractive design.	Heavy text; slightly oversaturated images.
Eizo Nanao	FlexScan L350	★★★★	\$749	800/800-5202, www.eizo.com	Good overall image quality.	Hard-to-find controls.
Envision Peripherals	EN-5100e ★	★★★★	\$449	510/770-0468, www.epius.com	Offers good performance for its price; bright; great image quality.	No extras; stripped-down feature set.
iiyama	Pro Lite TXA 38i	★★★★	\$785	800/394-4335, www.iiyama.com	Powered USB hub; pivot feature.	Subtle vertical stripes in light regions; expensive.
NEC-Mitsubishi	1530V	★★★★½	\$549	800/632-4662, www.necmitsubishi.com	Good controls, price, and image quality.	Minimal feature set.
Planar	PT1503N	★★★★½	\$399	866/752-6271, www.planar.com	Least expensive in our roundup.	Confusing on-screen display and controls; green color shift related to viewing angle.
Princeton Graphic Systems	LCD15	★★★★½	\$417	800/747-6249, www.pgr.com	Decent controls; inexpensive.	Poor image quality; soft text.
Samsung	SyncMaster 150MP	★★★★	\$799	800/726-7864, www.samsung.com	Integrated TV tuner; multiple video ports; good image quality; attractive design.	Expensive; loses detail in highlights.
Sharp	LL-T1511A	★★★★½	\$649	800/237-4277, www.sharp-business.com	Ambient-light sensor; excellent color quality; bright.	USB hub lacks flexibility.
Sony	Multiscan N50	★★★★½	\$800	800/571-7669, www.sonymstyle.com	Sleek design; ambient-light and user-detection sensors; dual inputs; good video playback.	Expensive; muted colors.
ViewSonic	VE150m	★★★★½	\$479	800/688-6688, www.viewsonic.com	Good price; easy-to-use controls.	Middle-of-the-road performance.



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DVD Studio Pro 1.0

Professional DVD-Authoring Tool Breaks Price Barrier

BY CHRISTOPHER BREEN

Apple has in recent years released a series of respectable multimedia applications meant for amateur and professional users: iMovie and iTunes for video and audio dabbblers, and Final Cut Pro for video professionals. Now it has released an application targeting the professional DVD-authoring crowd—DVD Studio

Pro 1.0. Given the program's power and the fact that it's priced thousands of dollars less than hardware-based, Mac-compatible DVD-authoring products, DVD Studio Pro has every likelihood of becoming another Apple multimedia staple.

Like the Pros

Like its entry-level sibling, iDVD (Reviews, July 2001), DVD Studio Pro creates DVDs compatible with most home DVD players, but these discs have more in common with those you find at Blockbuster than with those created by iDVD—you can create DVDs with as many as 99 separate tracks, and each track can have as many as eight video angles, eight discrete soundtracks, and 32 subtitle streams. DVD Studio Pro supports variable bit-rate encoding, so you can record more than two hours of high-quality video per disc (iDVD limits you to one hour).

The program supports 4:3 and 16:9 aspect ratios and the NTSC and PAL video standards. You can create DVD-5 and -9 discs with compatible recorders, and you can output your material to a digital linear tape drive for delivery to a DVD-mastering house.

How It Works

DVD Studio Pro doesn't require encoding hardware—just a Power Mac G4 with an Apple-supplied AGP graphics card. You encode video source material via the included QuickTime MPEG Encoder codec and convert audio files into DVD-compatible Dolby Digital (AC-3) format using the bundled A.Pack app. You then bring the encoded source material into the main app: the Graphical View window shows how the components of your DVD project are linked, the Project View window lists the components, Property Inspector displays the settings for selected items, and Preview Mode lets you audition project elements. The program does not support previews on an external monitor.

Putting It All Together

Assembling a project requires the creation of tracks—each one including video, audio, and subtitle assets, as well as markers. To add assets, just

drag them from the Assets window into a track. Linking tracks and buttons can be more difficult and time-consuming—you may have to configure scores of pop-up menus in the Property Inspector window.

Creating your project's interface may be harder still. DVD Studio Pro doesn't supply assistants or menu templates; instead, you have to create interface elements in Photoshop and save them as layers. One shouldn't expect a pro app like this to offer much hand-holding, but part of its intended audience may resent having to become adept at Photoshop *and* DVD Studio Pro. Other potential users—those who have installed Mac OS X—may resent the fact that the program requires Mac OS 9.0.4 or 9.1.



Property Management DVD Studio Pro's Property Inspector (right) is the gateway to your DVD's settings.

Macworld's Buying Advice

Despite its sometimes overwhelming interface and failure to support project previews on an external monitor, DVD Studio Pro earns its place among its creditable Apple kin. Priced far more affordably than the competition, it also doesn't require that you buy special MPEG-encoding hardware. If you want to create professional-looking DVDs without breaking the bank, DVD Studio Pro is the tool to use. **m**

DVD STUDIO PRO 1.0

Rating: ★★★★★

Pros: Creates professional-looking DVDs without requiring additional hardware; attractively priced.

Cons: Interface can be daunting; doesn't support previews of DVDs on external monitor; no Mac OS X support.

Company's estimated price: \$999

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

Director 8.5 Shockwave Studio

Multimedia Authoring Tool Takes a Leap into 3-D Worlds

BY PHILLIP KERMAN

Multimedia authoring tools have it rough—they need to support every new media type that comes along. Macromedia's Director lets you import any popular media—including, as of version 8.5, 3-D models—and write scripts that specify how the media will animate or interact with viewers. Although 3-D support is the program's flashiest addition, Director 8.5 Shockwave Studio's support for Real Media and Flash 5 content may be a more practical feature.

A 3-D World Wide Web

Director's theater metaphor involves importing media (such as images and sounds), turning them into *cast members*, placing them on a *stage* (the viewing area), and writing scripts for them to perform. You can export your assembled movie as a stand-alone application (a *projector*) or as a Shockwave movie viewable on the Web via the free Shockwave Player. (To create projectors that run on PCs, you'll need the Windows version of Director.)

Director's new 3-D capabilities allow viewers to inspect 3-D objects from any angle and to play games fea-

turing real-time collisions. But this 3-D technology is different because the graphics stream over the Internet and take advantage of the acceleration provided by modern video cards.

Though Director lets you display and synchronize 3-D media, you'll need a separate 3-D-modeling program to do the creating. Sadly, no modeling programs for the Mac currently let you export models in the Shockwave 3D format. Most popular modeling packages (on all platforms) will support this new format soon; in the meantime, you'll need to create models in Windows, using Discreet's 3ds max or Caligari's trueSpace.

Making Director Behave

To script your movie, you can use Director's Lingo programming language or you can simply drag and drop prebuilt behaviors onto cast members placed on a stage. Version 8.5's 23 new 3-D behaviors, added to the existing library of 100 behaviors, let you program 3-D interactions—fly-throughs, rotating objects, and camera movements—without programming.

Of course, creating sophisticated movies requires programming skill. The good news is, Lingo has been expanded to allow complete control of the 3-D environment, although

DIRECTOR 8.5 SHOCKWAVE STUDIO

Rating: ★★★★★

Pros: Supports 3-D graphics; new behaviors make programming easier; supports Flash 5 and Real Media.

Cons: Doesn't run in Mac OS X; some recently added features still not refined.

Company's estimated price: \$1,199; upgrade from version 8.0, \$199

Company: Macromedia, 800/326-2128, www.macromedia.com

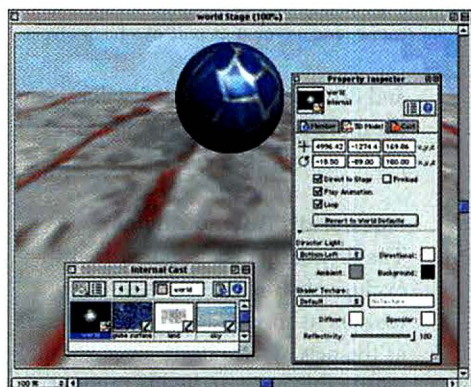
programming in 3-D is much more difficult than using behaviors.

Version 8.5's emphasis on 3-D comes at the expense of other needed improvements. Director 8.0 introduced a new interface, as well as several new features, including imaging Lingo (for pixel-level manipulation of graphics) and sound controls. Macromedia doesn't seem to have given priority to updating or revising those features, though it did squash many related bugs.

To Macromedia's credit, it added support for Flash 5 and Real Media. You also get updated versions of Fireworks and Multiuser Server, which now allows as many as 2,000 simultaneous users and includes new features such as server-side scripting and multithreading for better performance.

Macworld's Buying Advice

Director 8.5 Shockwave Studio's new features are limited to support for new media types, and it's not yet Carbonized (although it's stable in Mac OS X's Classic mode). But if you want to include 3-D models, Flash 5 movies, or Real Media content in your multimedia projects, this upgrade is well worth its minimal cost. **m**



Planet of the 3-D Models Director now supports 3-D media, but its modeling tools limit you to simple shapes such as these.

Stone Studio

A Suite of Strange Tools Meets the Strange World of Mac OS X

BY DEKE MCCLELLAND

Considering that Mac OS X is based in part on OpenStep technologies that Apple acquired from Next, it's not surprising that one of the first software packages created using Apple's Cocoa development environment likewise stems from OpenStep.

The package in question, Stone Studio, is a collection of seven

print and Web production programs (also available separately) that run the gamut from art creation to client invoicing. Although new to the Mac, some of these applications made their debut on the Next platform more than a decade ago. Perhaps as a result, the competent but prosaic Stone Studio feels less like the latest trend in graphics software and more like a run-of-the-mill port from another platform.

New Ways to Create

At Stone Studio's core is Create 10.1, a vector-based drawing program. Though less robust than its version number might imply—both Adobe Illustrator and Macromedia FreeHand offer several times as many features—Create does have a few tricks up its sleeve. Document-level layers serve as master pages, allowing you to add type and graphics to several pages at once. An object can comprise multiple

fills and strokes, which in turn can contain a mix of opaque and translucent colors. And unlike Illustrator and FreeHand, Create lets you animate transformation effects, such as movement and rotation. The program then passes the frames to GIFfun, another program in the suite, which converts the artwork to an animated GIF file. The process is so fluid, you scarcely notice that you're moving between applications.

One gets the feeling that despite Stone Studio's exhaustive support for OS X, its creators have little idea what today's artists expect from a graphics program. Traditional editing and navigation shortcuts go unobserved, the type tool lets you create text but not edit it, and there's no such thing as a context-sensitive pop-up menu. In short, it makes the already unfamiliar environment of OS X feel more alien than ever.

Brave New Tools

If that doesn't bother you, then other programs in the suite may appeal to your frontier spirit. For example, PStill lets you convert EPS and PostScript documents into PDFs, which can be viewed inside OS X as easily as raw text. You can even convert Illustrator and FreeHand documents that use standard Type 1 Mac fonts. PackUp-AndGo compresses files; TimeEquals

Money handles job tracking and invoicing; and SliceAndDice can subdivide an image into an HTML table or image map. My favorite, PhotoToWeb, generates a slide show or HTML photo album from a folder of images (see www.macworld.com/2001s/reviews/0713-phototoweb.html).

Stone Studio's best and worst attribute is its reliance on OS X. If you're already using the new system, Stone Studio gives you not only enough good features to warrant its price, but also a feel for the way native OS X applications behave. Sadly, until a host of OS X-savvy applications, font managers,



Different Strokes Create 10.1's answer to the eyedropper: load an image into the Colors palette, lift a color from it, and assign it as part of a fill or stroke.

and drivers appear, OS 9.1 will remain the more practical environment for professional designers.

Macworld's Buying Advice

The first design program written exclusively for Mac OS X is likely to seem as foreign to Macintosh users as the new system itself. Even so, the reasonable price and wide range of tools make this an attractive suite for designers on the prowl for native OS X applications. **m**

STONE STUDIO

Rating: ★★★

Pros: Wide range of capabilities; excels at converting documents to PDF and generating HTML photo albums.

Cons: Drawing application ignores tried-and-true Mac conventions; lacks context-sensitive pop-up menus.

Company's estimated price: \$299

Company: Stone Design, 505/345-4800, www.stone.com

QuickTime Pro 5.0

Multimedia Architecture Improves Streaming and AppleScript Support

BY JIM HEID

On the cusp of its tenth birthday, Apple's multimedia platform has turned 5: QuickTime 5.0 is now available for Mac OS 9, Mac OS X, and Windows. The new version improves audio and video authoring and playback for everyone from broadcast professionals and Web publishers to Internet and iMovie users. As

a streaming platform for the Internet, QuickTime still has some disadvantages that Microsoft's Windows Media and RealNetworks' RealSystem don't, but this version narrows the gap.

As with previous versions, Apple is distributing two flavors of QuickTime 5: a free version that simply plays media, and the \$30 QuickTime Pro, which allows authoring and lets you save downloaded QuickTime movies to your hard drive. I tested the Pro version, but unless otherwise noted, everything in this review applies to both versions.

Better in Every Way

QuickTime 5's improvements include an enhanced DV codec, which dramatically improves image quality and speeds rendering, and virtual-reality technology that now allows *cubic* panoramas, which let users look up and down as well as left and right—

like Internet Pictures' iPix but without the inferior image quality and expensive licensing requirements. Alas, neither Apple's QuickTime VR Authoring Studio nor VR Toolbox's VR Worx can create cubic panoramas yet.

QuickTime Pro now lets developers wrap movies in custom frames called *media skins*. A media skin can be a simple graphic that replaces the standard QuickTime Player window, or it can contain clickable buttons created in Totally Hip Software's Live-Stage Pro or Macromedia's Flash. (Skinned movies won't play in QuickTime 4 or earlier versions.)

Speaking of Flash, QuickTime movies can now include Flash 4 content. Though Flash is at version 5, Flash 4 support lets developers give QuickTime movies interactive features.

QuickTime 5 also offers greatly enhanced AppleScript support. The QuickTime Web site offers more than 100 scripts that do everything from writing HTML that embeds QuickTime movies to creating a QuickTime slide show from a folder of still images. Most scripts require QuickTime Pro, however, and aren't compatible with the Mac OS X version.

A Better Internet Player

Version 5's QuickTime Player is dramatically improved, with

QUICKTIME PRO 5.0

Rating: ★★★★★

Pros: Greatly improved player; enhanced authoring features; skip protection.

Cons: Inferior streaming-audio and -video quality.

Company's estimated price: \$30

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

a cleaner, more straightforward interface. The Pro version adds controls for video brightness, contrast, and tint.

To improve the playback quality of streaming (versus downloaded) content, QuickTime 5 offers *skip-protection* features—it preloads and caches incoming data to reduce dropouts caused by Internet congestion and transmission vagaries. But these features require that content providers use the new QuickTime Streaming Server 3, and most don't.

Compared with the latest streaming codecs from Microsoft and RealNetworks, QuickTime's deliver inferior audio and video quality. There's hope, though: some third-party companies are working on new streaming codecs for QuickTime, and QuickTime 5's new updating mechanism enables it to receive and install codecs as they become available.

Macworld's Buying Advice

Although QuickTime still falls short of competing streaming-media technologies, it remains the platform of choice for delivering downloadable movies. This is the best QuickTime release to date, and the Pro version—with its video-quality controls, AppleScript support, and enhanced authoring features—is the best reason yet to upgrade from the free package. **m**



More Than One Way to Skin a Movie The two movies at left are wearing a QuickTime 5 media skin; the movie at right is playing in the QuickTime Player window.

CineStream 3.0

EditDV Gets Better Editing Features, Web Support, and a New Name

BY JIM HEID

Back in the last millennium, a company called Radius released EditDV, the first video-editing program designed specifically for the DV format. Radius changed its name to Digital Origin and was subsequently bought by Media 100, which has updated EditDV and renamed it CineStream. Got all that? Don't sweat it.

What matters is that a first-rate program has been updated—and that video producers deciding between Adobe's Premiere and Apple's Final Cut Pro have a third alternative. CineStream doesn't have Premiere's tight Adobe-family ties or Final Cut Pro's sophisticated compositing features, and it has a few rough edges. But it also offers some advantages over its competitors, and—although it's likely to be less popular—it's too good a program to dismiss.

Same Face, New Features

CineStream's interface resembles those of other video editors. The program stores video clips and imported media in folderlike bins, a Monitor window previews clips and edits, and a Sequencer window displays a timeline and editing tools. Although the interface seems less cluttered than those of Premiere and Final Cut Pro

(*Reviews*, May 2001 and July 2001, respectively), it has all the features necessary for efficient editing. And it's fast: in my tests on a 667MHz Power Mac G4, a 5-second cross-dissolve that took 106 seconds to render in Premiere 6 took 41 seconds in CineStream (but just 21 seconds in Final Cut Pro 2).

With CineStream 3.0, Media 100 has brought some major enhancements to EditDV 2.0 (*Reviews*, October 2000). You can now divide a project into multiple sequences, each with its own timeline. And there are other new features, including a History window with multiple levels of undo, a pan-and-scan effect that lets you import and pan across large graphics, and a scene-detection tool that captures each DV-tape shot as a separate video clip. And CineStream supports Media 100's EventStream technology, giving movies Web interactivity.

Doesn't Play Well with Others

CineStream is unique among software-only video editors in that it uses its own DV codec. That isn't a bad thing; the problem is, the codec is incompatible with Apple's FireWire DV Enabler extension, required for capturing video with Final Cut Pro,

Premiere, and Apple's iMovie. CineStream users who also use other DV software will have to make frequent trips to the Extensions Manager to switch between Media 100's DV extensions and Apple's.

CineStream can't use effects plug-in modules designed for Premiere or Adobe's After Effects. Fortunately, it includes all the common transitions and effects as well as some uncommon and very cool ones. And, like Final Cut Pro and Premiere, CineStream isn't compatible with Mac OS X. Media 100 hasn't yet decided whether to deliver an OS X version.



Diving into CineStream A clean, efficient interface makes the program well-suited to long-form video projects.

Macworld's Buying Advice

CineStream's closest competitor is Premiere 6, and the two are engaged in a tug-of-war for market share. Premiere offers tight integration with Adobe's other products, support for third-party plug-ins, and audio filters and a real-time mixer for excellent sound. But CineStream is better suited to long projects, with its support for multiple sequences, and its Web-interactivity features are superior for online publishing. These advantages make CineStream a versatile workhorse for video storytelling. **m**

CINESTREAM 3.0

Rating: ★★½

Pros: Efficient interface; slick Web-interactivity features; cool effects.

Cons: Incompatible with Apple DV extensions; can't use Premiere or After Effects plug-ins.

Company's estimated price: \$499; upgrade, \$149

Company: Media 100, 800/773-1770, www.media100.com



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Color Handhelds

Palm m505, Handspring Visor Prism Battle for Supremacy

BY ANDREW GORE

Once you use a color palmtop, you'll wonder how you ever got by without one. Sure, most Palm OS productivity applications don't require color, and many don't even *use* color. But when you work with an application that does, you'll be dazzled by how much more enjoyable the handheld experience can be.

The state of the art in color handhelds is embodied by two products: Palm's m505 and Handspring's Visor Prism. Both offer 16-bit color on a 160-by-160-pixel display, but they take very different approaches to adding color to the small screen.

Screen Gems

The Prism's true active matrix, backlit color display is by far the most readable of any handheld's, color or grayscale. It is bright and crisp, has great color saturation, and is especially easy to read in dim light (though not in bright light).

In contrast, the m505 sports a reflective LCD color screen illuminated from the side. Its colors are noticeably dimmer than the Prism's screen, and the display is brighter along the edges when backlit—but the overall quality is fairly good. And because the screen

is reflective, it works fine under strong light. In fact, you can extend battery life by turning off the backlight—something you can't do with the Prism.

Trade-offs

The m505 really shines in what it's missing. It weighs only 4.9 ounces, versus the Prism's 6.9 ounces. It's 0.5 inches thick; the Prism is 0.8 inches. And while the m505 can run for as long as three weeks on a single charge, the Prism lasts no more than two.

In addition, the m505 is just nicer-looking than the boxy blue Prism, and it has the very latest features, such as an LED and a vibrating alarm. It also comes with the latest Palm OS version, 4.0; the Prism still comes with version 3.5.2H.

The two products differ in other key areas: expansion, for example.

The m505's tiny slot accepts cards compatible with the Secure Digital/MultiMediaCard specification, limiting the slot to memory expansion and content or application cards. The Prism has a much larger slot that accepts not only memory and application cards but also add-on devices,

HANDSPRING VISOR PRISM

Rating: ★★★★★

Pros: Highly readable active matrix screen; less expensive than the m505; more expansion options.

Cons: Bigger; heavier; shorter battery life; boxy design.

Company's estimated price: \$399

Company: Handspring, 888/565-9393, www.handspring.com

PALM M505

Rating: ★★★★★

Pros: Sleek, light, and thin; longer battery life than the Visor Prism; screen image is visible in bright light.

Cons: Screen is dimmer; backlight can be spotty; relatively expensive.

Company's estimated price: \$449

Company: Palm, 800/881-7256, www.palm.com

such as cell phones and digital cameras. The Prism is also less expensive than the m505.

In terms of logic boards, the two handhelds are nearly identical: each has 8MB of built-in RAM, a 33MHz Motorola Dragonball VZ processor, an infrared transceiver, and a USB-based cradle. And both include Mac synchronization and Palm Desktop software on CD-ROM.

Macworld's Buying Advice

Finally, we have 16-bit color in Palm OS devices. The Handspring Visor Prism offers excellent color and more expansion options at a better price, while the Palm m505 is a smaller, lighter option with better battery life. But no matter which you choose, you'll be surprised by how much you were missing before you colorized your handheld. **m**



Small, Shiny Objects The Visor Prism (left) meets the m505.

KIRK AMYX

CommuniGate Pro 3.4

Mac OS X Mail Server Delivers on Its Promises

BY MEL BECKMAN

The Internet's killer apps have always been e-mail programs, but users' demands for more features, better security, and speed are tough to meet for Mac administrators using traditional mail-server packages. Mac OS X opens up the Mac to powerful mail servers previously available only on other platforms.

One of those mail servers is Stalker Software's CommuniGate Pro 3.4, a power application with such advanced features as encrypted mail transfer, Web-based administration and e-mail access, list management, and spam and virus protection. With its rich feature set and scalability, CommuniGate Pro turns the Mac into a world-class mail-serving platform.

New to the Mac

Don't confuse it with CommuniGate, Stalker's older, Mac-only program; CommuniGate Pro is a completely different product that until now ran only in Windows and Unix. Version 3.4 is the first commercial release to run on the Mac in any capacity, and it runs only in OS X. Because Stalker uses a single code base for all platforms, the Mac version offers the same capabilities as Windows and Unix versions.

COMMUNIGATE PRO 3.4

Rating: **★★★★**

Pros: Secure Web-based administration and e-mail access; advanced protocol support; content-filtering capabilities; spam protection.

Cons: Expensive for small networks.

Company's estimated price: from \$499, for 50 users, to \$5,000, for 30,000 users

Company: Stalker Software, 800/262-4722, www.stalker.com

Installation is a snap, and the package is easy to administer via any Web browser. Unlike other Web-administered programs, however, CommuniGate Pro supports Secure Sockets Layer (SSL) encryption right out of the box; you don't need to acquire a digital certificate. That means you can safely administer CommuniGate Pro from anywhere.

CommuniGate Pro's lineup of services is extensive. The program supports most mail protocols—including SMTP, POP3, and IMAP4—as well as the latest SSL encryption and Simple Authentication and Security Layer (SASL) authentication extensions. It can serve any number of domains, and it gives users their own Web sites. An extensive rule-processing engine allows you to set up mail preprocessing to filter and prioritize mail. Built-in spam protection prevents hackers from abusing your mail server and lets you use DNS-based spam-blocking services. With its support for content-filtering plug-ins, you can use third-party virus scanners on incoming mail.

Advanced Features

One of CommuniGate Pro's most impressive features is its scalability: you can support a few thousand users on a small Mac (such as an iMac)

running OS X, tens of thousands on a large OS X server, or millions on a multiserver cluster. Even the smallest CommuniGate Pro configuration includes access to the entire suite of standard features.

CommuniGate Pro uses SSL encryption to protect mail from interception whenever it enters or leaves the server. SSL encrypts POP3, IMAP4, and Web user sessions, as well as SMTP sessions between CommuniGate and distant mail servers. This latter protection requires the cooperation of



Surf Safely with Sharks CommuniGate Pro 3.4 lets users access their e-mail via a customizable Web interface, making remote mail sessions safe and convenient.

off-site mail-server administrators, so it's most useful for setting up secure enterprise e-mail exchange.

Macworld's Buying Advice

CommuniGate Pro 3.4 is a sophisticated mail server with loads of features, but it's easy to set up and maintain. Its many security options help you keep e-mail private, and extensive spam protection lets you minimize the amount of e-mail noise your users must endure. But these features don't come cheap—small-network administrators may find the entry-level price too high. **m**

VectorWorks 9

Leading Mac CAD Program Finds Ways to Improve

BY CHARLES SEITER

The first thing I have to point out regarding VectorWorks 9 is that there really wasn't anything wrong with VectorWorks 8 (*Reviews*, June 1999). After a decade of fine-tuning this successor to MiniCAD, you'd think there wouldn't be much left to do. Surprisingly, though, VectorWorks still had room for some serious

enhancements, and new owner Nemetschek (which acquired the product from Diehl Graphsoft) has done a fine job of packing them in.

Richer Palettes

One new feature in VectorWorks 9 is a set of drawing tools modeled on those in far costlier CAD software (such as Ashlar's \$5,000 Vellum Solids). Most useful among these are the palettes of parametric and geometric constraints. With a pair of clicks, you can set two line segments at a constrained angle to each other or set two circles at a defined concentricity—in fact, you can define a spatial relationship for almost any objects—and the constraints stay in place when you move or resize the drawing elements. A related new fea-

ture is associative dimensioning: VectorWorks automatically adjusts a dimension (distance or angle) associated with a drawing element when you resize it. Together, these two features eliminate many common drawing mistakes and the laborious reentry of dimensions in a complex drawing.

Other new features more common in expensive CAD packages are NURBS, a free-form 3-D spline-based tool for drawing curves; a much-needed spelling checker; and 64-bit accuracy for drawing elements, so you can scale drawings to any size without incurring accuracy problems.

Quicker on the Draw

VectorWorks 9 includes a score of little conveniences that make drawing easier. A new lasso tool allows free-form selection of 2-D or 3-D objects; a new undo tool lets you undo only the last point in polylines and curves. You can also toggle between two tools using the spacebar.

More-important enhancements include an improved Worksheet, with a proper formula bar and the ability to import data from Microsoft Excel and most other database applications. And the program supports native DWG files, so VectorWorks-based shops can exchange files directly with

VECTORWORKS 9

Rating: ★★★★★ 1/2

Pros: Fast; competent; thoroughly integrated 2-D and 3-D tools.

Cons: High-quality renderer and most object libraries cost extra.

Company's estimated price: \$895; upgrade, \$225

Company: Nemetschek North America, 888/646-4223, www.nemetschek.net

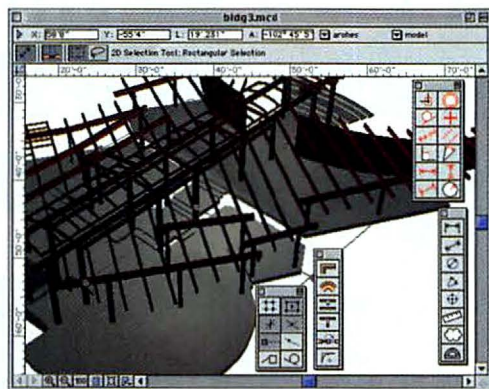
firms using the industry-standard AutoCAD 2000i (though ACIS solids still have import problems).

VectorWorks 9 is Nemetschek's core product, designed to work with add-on libraries for specific applications: VectorWorks Architect, Landmark (for landscaping), and Spotlight (for lighting design). Each is priced at \$1,295. It also accepts the new version of RenderWorks (\$300) as a plug-in, replacing low-resolution OpenGL rendering with photo-realistic, pixel-by-pixel rendering and detailed lighting control.

Carbonized versions of the programs should be available shortly; VectorWorks 9 works fine in Mac OS X's Classic mode.

Macworld's Buying Advice

VectorWorks has evolved from a capable but idiosyncratic program to one that more than holds its own in today's AutoCAD- and Windows-dominated world. For industrial design involving solid modeling, Ashlar's Vellum Solids might be a better choice, and designers doing purely architectural work might be happier with Graphisoft's ArchiCAD. But for a large range of drafting tasks—from electronic schematics to theatrical set design—it's an obvious choice. **m**



Palette Pleasers Two palettes (right) offer easy access to VectorWorks' latest offerings: associative dimensioning, and geometric and parametric constraints.

SuSE Linux 7.1 PowerPC Edition

Package Makes Quick Work of Installing Linux

FANS OF SUSE LINUX, one of the most popular Linux distributions, will be pleased with this new easier-to-install release for PowerPC Macs. Consisting of more than 1,000 packages on six CDs, SuSE Linux 7.1 includes a 500-page manual, a 2.4.2 Linux kernel, K Desktop Environment (KDE2), Advanced Linux Sound Architecture, and better USB support.

Disk-space requirements vary from 150MB for a minimal system

install to 6GB for the full install. Installation is straightforward; the simplified YaST2 setup tool lets you interactively configure printers, sound devices, network cards, IP routing, security, and system services.

KDE2, a popular Linux window manager, is now the default desktop. It includes KOffice, an integrated office suite; KIO, KDE2's network-transparent I/O architecture; ARTS (Analog Realtime Synthesizer); and Konqueror, a full-featured Web browser, file manager, and document viewer. Alas, the XFree86 3.3.6 X Window System is still the default server, even though the distribution includes XFree86 4.0.2. Some other bundled program packages are also slightly outdated, including one that lets you run Mac OS 9 (but not OS X) alongside Linux.



Simple Setup You can configure most hardware and services using the powerful YaST2.

Macworld's Buying Advice

A huge collection of packages and a simple setup tool make SuSE Linux a useful alternative to Mac OS for desktop and server apps. The 7.2 release, which should be available when you read this, should fix the only problem: outdated packages.—ULYSSES BRAVO

Rating: ★★½

Pros: More than 1,000 program packages; easy-to-use configuration tools.

Cons: Some packages are outdated.

Company's estimated price: \$50

Company: SuSE, 888/875-4689, www.suse.com

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Iomega HipZip Digital Audio Player

MP3 Player Doubles As Disk Drive but Lacks Good Software

THE IDEA IS CLEVER: a portable audio player that uses inexpensive magnetic media and doubles as a USB disk drive. That's the thinking behind Iomega's HipZip Digital Audio Player, based on the company's PocketZip drive technology. But although Iomega clearly put some thought into the HipZip itself, the playlist software needs work.

The HipZip uses PocketZip media, 40MB disks that measure just 2 inches across and that cost about \$10 each (compared with about \$50 for a 32MB SmartMedia card). Iomega claims that a disk holds 80 minutes of music, but we got better sound quality by putting only 45 minutes of 128-Kbps MP3 files on each disk. The



player itself is rugged, lightweight, and well designed. Although it is slightly larger than most MP3 players, the HipZip has the edge in usability—its built-in, rechargeable LiIon batteries are worth up to 12 hours of play time, and the backlit display is very readable. Connect it to your Mac via the included USB cable, and it's a PocketZip disk drive.

Unfortunately, the HipZip supports Mac-formatted disks only in disk-drive mode, not in audio-player mode; to play MP3s on the HipZip, you must use DOS-formatted disks. And the bundled MusicMatch Jukebox Plus software, for compiling playlists and transferring them to a disk, is slow, buggy, and difficult to use.

Rating: ★★½

Pros: Doubles as a disk drive; inexpensive media.

Cons: Playlist software is buggy and difficult to use.

Company's estimated price: \$200

Company: Iomega, 888/516-8467, www.iomega.com

Macworld's Buying Advice

The HipZip Digital Audio Player is a cool idea, and it's well executed from a hardware standpoint. But the bundled software is practically unusable. Until Iomega resolves the problem by writing a HipZip driver for iTunes, SonicBlue's Rio MP3 player may be a better choice, particularly if you're not interested in the HipZip's disk-drive capabilities.—ANDREW GORE

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- ★★★★ UGate-3300
- ★★★★½ X-Router Aero

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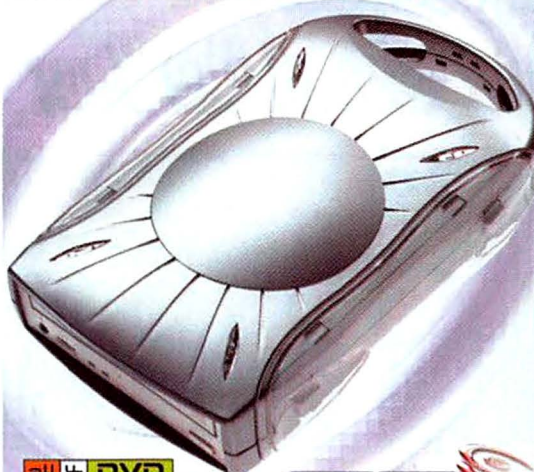
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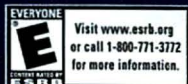
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The Game Room

The game industry moves fast. The shelf life of many computer games is now measured in weeks—heck, some console games get discounted faster than dented cans of tomatoes. But low prices can be deceiving, because they don't necessarily indicate low value. If you look in the right places, you'll find some terrific games out there that cost next to nothing—and some that come absolutely free.

All three of the hard-to-find gaming treasures I'm about to share with you have a few things in common. They're inexpensive or free; they don't demand ridiculous amounts of memory or processor performance to operate effectively; and they're safe for the whole family—you won't find excessive violence, sex, or foul language here.

I Remember MCP When It Was a Chess Program

As a youth, I whiled away many an hour in my local video-game arcade, listening to Duran Duran cassettes on my Walkman. Back in the 1980s, Disney released *Tron*—a movie that gave me (and countless other young nerds) a totally different idea of what one could do with computers. The film mixed computer animation with live action footage to tell the story of a programmer unwittingly placed inside the world of a computer. Although it wasn't the greatest story ever told, the graphics—painstakingly rendered on a Cray supercomputer—were absolutely stunning.

Thanks to the advances in graphics and processing power over the intervening two decades, any PC or Mac can now render graphics of even better quality than the Cray could 20 years ago. That's opened the door for programmers such as Andreas Umbach, who introduced GLtron (an open-source game that uses OpenGL graphics). And thanks to Mac programmer Darrell Walisser, GLtron has come to the Macintosh. Walisser provides regular updates, too.

In GLtron, you and your computer opponents pilot lightcycles across a vast, flat, gridlike arena. As you ride, light barriers stream behind you. Make contact with a



Tron-Inspired In GLtron, you have to outmaneuver your opponents to avoid being boxed in.

barrier—yours or your opponents'—and it will blast you to smithereens. Essentially, the game is a 3-D version of Snake, in which your goal is to trap your opponents and avoid their traps. GLtron gets a bit repetitive after a while, but it's a great deal of fun—perfect for a quick pickup game, and you can't beat it for the price (free).

Even though GLtron has sophisticated animation, it can run at high frame rates, even on slower systems. This should

appeal to users of older iMacs and other systems with only modest 3-D-graphics acceleration. A separate team is working on a Mac OS X version of GLtron, so if you've updated your system software, you're in luck.

Seeing the Forest for the Trees

Another gem I love is Bushfire. It comes from two brothers, Aaron and Adam Fothergill, who have started a game-publishing and -developing firm called Strange Flavour. Bushfire is straight-up, old-school, side-scrolling fun.

You pilot a helicopter, and your goal is to put out fires in the last forest populated by the rare, endangered goose spruce tree. You control the blaze by commanding parachuters to jump out of your helicopter and by dropping water from tanks on its underside. You have the ability to pick up your jumpers and transport them elsewhere, and you can refill your tanks by landing in forest streams.

The challenges become progressively more difficult with each level. Eventually you must dodge airborne haz-

continues

ards such as flying lava rocks and panicked fowl, try to trap mad arsonists, and rescue civilians whose aircraft have crashed in the woods. One cool feature is an Extras folder full of Easter eggs and other goodies. The more you play, the more you're rewarded.

If you're familiar with classics such as *Choplifter* or *Armor Alley*, you'll understand what the brothers Fothergill are attempting here; but the goal in *Bushfire* is the opposite—you aim to preserve, not to destroy. *Bushfire* is an extraordinary bargain at \$3, given the hours you can spend playing it. It's perfect for a PowerBook and your idle commuting time on the train. Best of all, *Bushfire* is Carbonized, so it should run on Mac OS X without a hitch, despite previous compatibility problems in the course of development. The most current version as of this writing—1.10—works solidly in both Mac OS 9.1 and Mac OS X.

C'est Fromage

For a game with a completely cheesy plot that's lots of fun, try out *Captain Bumper*. This comic action title comes from MacRun Games, a new Mac game developer based in France.

Captain Bumper strongly evokes the game style made popular by the 16-bit video-game consoles (such as Super NES and Sega Genesis) ubiquitous in early-nineties households, but the game's design is all modern Mac. You take control of a square-jawed hero piloting a spaceship on a mission to save a damsel in distress (of course). With his bomber jacket, aviator glasses, and jack-o'-lantern smile, *Captain Bumper* makes his way through space, into labyrinthine caverns, and across inhospitable terrain, all the while fending off the attacks of vicious green alien critters bent on destroying him. You can collect power-ups, recharge your fuel and weapons supply, and boost your



Say Cheese In *Captain Bumper*, you get the best of old and new—early-nineties-style arcade action and modern Mac design—and a plot the whole family can enjoy.

shields as you make your way toward the princess.

Captain Bumper is ideal for families in search of addictive fun. The game has cartoonish graphics and rich, colorful backgrounds with great detail. The core engine, developed by Richard Soberka, runs silky-smooth, just like a console title. The music is by Jens Nilsson, who also produced the music for Pangea's *Nanosaur*.

Captain Bumper's licensing works a bit differently from that of the other games mentioned here: MacRun takes advantage

of distribution on the Internet even though it's a commercial game. You can download a two-level demo version from the company's Web site, and if you decide you like it, you pay the \$25 licensing fee. In return, you receive a serial number and access to the complete version.

If I have any complaint about *Captain Bumper*, it's that the game is too short. I'd love to see a level editor, or more add-ons that would continue the fun. Then again, that's what sequels were invented for. In this initial version, Mac OS X compatibility is limited to the Classic environment.

Cheap, Wholesome Entertainment

For me, the three words above pretty much summarize these three games. One is free, another is next to free, and the third is less expensive than many games out there—that means *GLtron*, *Bushfire*, and *Captain Bumper* will eat up less of your money and more of your leisure time. And the best part is, you can download all three and try them right now. **m**

MacCentral Senior Editor PETER COHEN is still livin' in the eighties, with a closet full of parachute pants and skinny leather ties to prove it.

Got a comment? Visit www.macworld.com/columns/gameroom/

Hidden Treasures

COMPANY	PRODUCT	MOUSE RATING	COMPANY'S ESTIMATED PRICE	CONTACT	SYSTEM REQUIREMENTS	PROS	CONS
Andreas Umbach	GLtron	★★★★	free	www.gitron.org	Mac OS 8.1, 200MHz processor, 32MB RAM	Runs great on older machines; fun for 1980s nostalgia buffs. Did we mention it's free?	Gets a bit repetitive after a while.
MacRun Games	Captain Bumper	★★★★½	\$25	www.macrun.com	Any PowerPC-based Mac (G3 or higher recommended), Mac OS 8.6, 42MB available RAM.	Top-notch animation, sound, and graphics.	Too short; in Mac OS X, initial release supported only in the Classic environment.
Strange Flavour	Bushfire	★★★★	\$3 (\$4 online)	www.strange-flavour.com	300MHz G3, 32MB RAM, 4MB VRAM, 640 x 480 resolution with support for thousands of colors.	Simple to learn but gradually more challenging; full of oddball British humor; gives you progressively more access to Easter eggs.	Might not sufficiently challenge hyperactive twitch-game fans.

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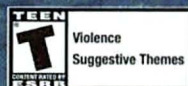
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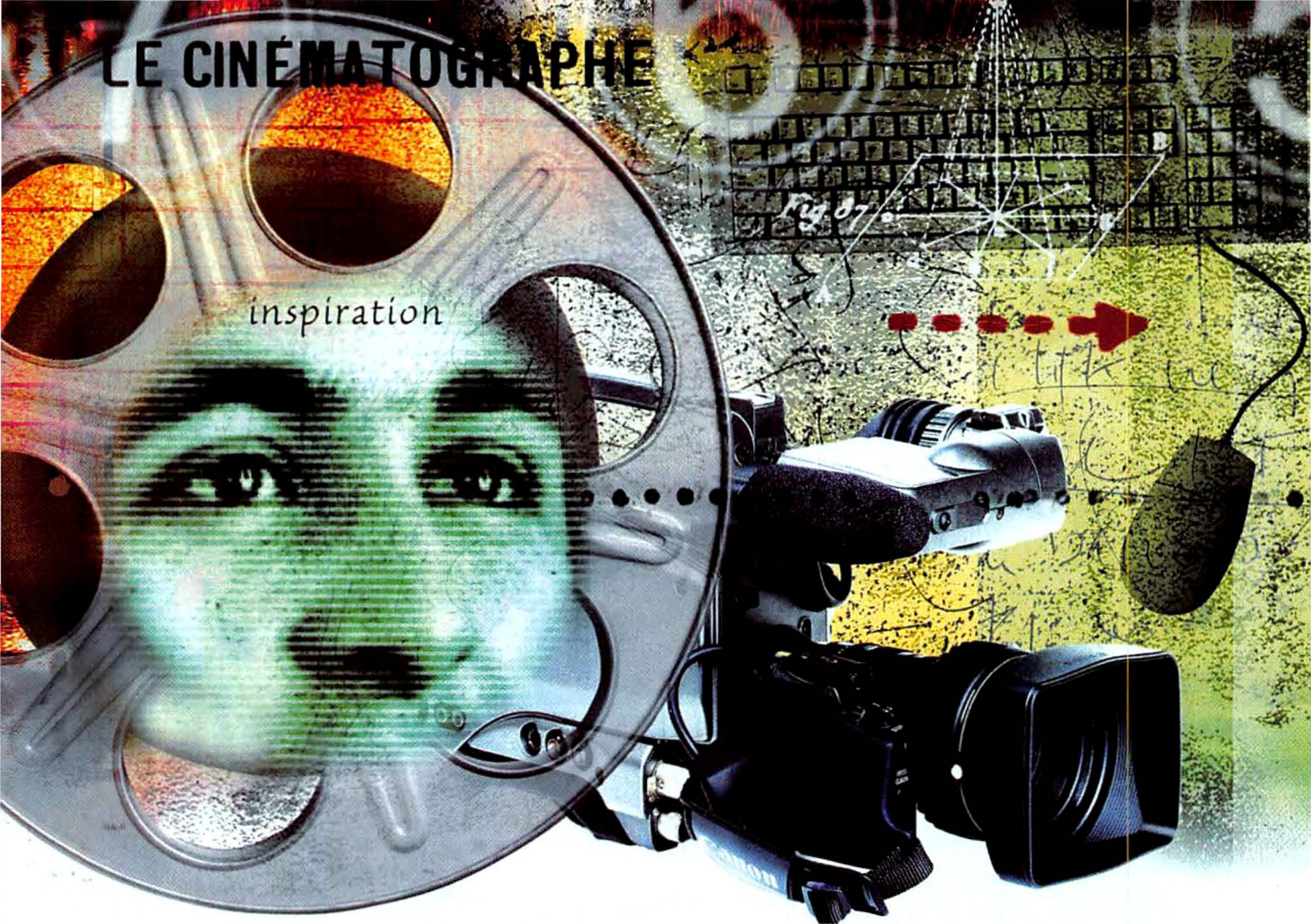


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LE CINÉMATOGRAPHE

inspiration



Final Cut

Expert Guide

Harness the Power of Apple's Newly Updated
Video-Editing Software

BY JIM HEID AND TOM WOLSKY

Director Alfred Hitchcock once said, "Drama is life with the dull bits left out." In his day, creating that drama involved slicing film, hanging individual shots in fabric-lined bins, gluing those shots together, and scrawling on them with a grease pencil to call for effects such as fades.

Today, you can cut out the dull bits—or more accurately, assemble the

interesting ones—using your Mac and affordable video-editing software. And for a growing number of professional and independent video editors and filmmakers, Apple's Final Cut Pro is the editing program of choice.

The \$999 Final Cut Pro 2 (★★★★; *Reviews*, July 2001) has a wealth of features that approach those in editing workstations with five-figure price

tags, such as Avid Technology's Media Composer family. Apple's latest release is as adept at working with low-cost MiniDV-format camcorders as it is at controlling high-end Digi-Beta broadcast gear. It's suitable for creating both movies for Web sites and feature films for the silver screen. And its power is wrapped in an elegant, responsive interface that looks



and works much like that of a high-end Avid system.

To help you take full advantage of Final Cut Pro's power, we've organized tips to use throughout the video-production process: setting up your system, capturing footage, editing, applying effects, and outputting.

Preproduction

The entire editing process will go more smoothly if you keep the demands of video editing in mind as you set up your system.

A Solid Foundation Although Final Cut Pro 2 will run on a 300MHz G3 Mac, it's much snappier on a G4 system because this version is highly optimized for the G4's Velocity Engine circuitry. A multiprocessor system is better still: a 533MHz dual-processor Power Mac G4 renders images faster than a 733MHz single-processor machine. Final Cut Pro demands a

Mac with at least 256MB of RAM—and more memory will boost performance.

Have Enough Room All modern high-capacity hard drives meet the 3.6-MBps data-transfer rate that FireWire-based DV camcorders require. But that doesn't always mean you can get by with your Mac's built-in drive; DV-format video gobbles up 216MB per minute. What's more, a hard drive can have trouble playing back a project containing multiple audio tracks, transitions, and effects. As the drive's heads seek from one preview file to another while reading several tracks of audio, playback may suffer dropped video frames and stuttering sound, especially if the drive has been fragmented by the addition and removal of files.

Consider using a second, dedicated hard drive to store captured video. If

you keep your System Folder and the Final Cut Pro application on one drive and your work on another, you'll reduce the need for seeking, improving your system's overall performance and lowering the risk of playback problems.

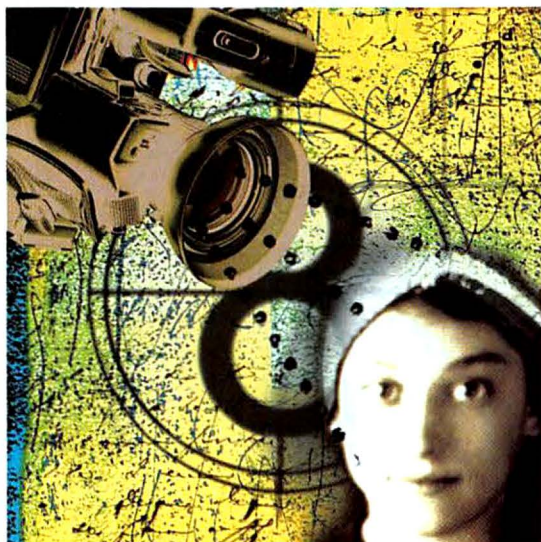
To direct Final Cut Pro to use a drive other than your startup drive for captured and rendered video clips, choose Preferences from the Edit menu and then use the buttons under the Scratch Disks tab to guide Final Cut Pro to your chosen media drive.

Use Another Screen Final Cut Pro can display your work on a FireWire camcorder's LCD screen, but it can do so better on a television monitor connected to the camcorder. Many analog capture products, such as Matrox's \$999 RTMac (www.matrox.com),

Final Cut

Expert Guide

also hook up to an external TV monitor. A TV screen is preferable to Final Cut Pro's relatively tiny Canvas window for previewing your work, and it's essential for accurately assessing and correcting color. (For more on color issues, see "Crafty Color," at www.macworld.com/2001/09/feature/finalcuteg_color.html.)



You can even add a second computer monitor to display some of Final Cut Pro's many windows. To cut down on scrolling and zooming, put your Timeline window on the wider monitor and stash lesser-used windows on the other.

Arrange Your Windows Final Cut Pro provides several preset window arrangements that you can customize. You might use the Standard arrangement when logging and capturing video or working on a PowerBook; it provides large Viewer and Canvas windows. When you're in the editing trenches, switching to the Wide arrangement will give you a bigger Timeline window. The Viewer and Canvas windows are smaller in Wide mode, but if you're using an external TV monitor, this won't be a problem. The Standard arrangement, with its larger Canvas window, is always just a keyboard shortcut away: control-U.

You can also save your own window arrangements—handy if you're

using two monitors, or if you simply prefer a custom window layout to one of Final Cut Pro's. Just press the option key and choose Set Custom Layout 1 or Set Custom Layout 2 from the Window menu's Arrange submenu.

Select and Modify Settings When you embark on a project, you must specify settings for audio and video capture, camcorder control, video playback, and more. Configuring these correctly is critical in avoiding problems such as dropped video frames or distorted or out-of-sync audio.

Final Cut Pro's settings are scattered across numerous dialog boxes, all of which have multiple tabs containing several options. Fortunately, Final Cut Pro 2's new Easy Setup options usually eliminate the need to venture into these dialog boxes at all. An Easy Setup is a collection of settings stored under a single name; when you choose one (via the Edit menu), Final Cut Pro applies a dozen or more settings in one fell swoop.

Final Cut Pro includes Easy Setups for several common production sce-

A TV screen is preferable to Final Cut Pro's tiny Canvas window for previewing your work.

narios, but you may have to modify certain settings. To capture footage shot using 32KHz audio rather than the preferred 48KHz, for example, you'll need to select the DV NTSC 48KHz Capture setup and then click on the Duplicate button. In the dialog box that appears, choose 32KHz audio. Don't forget to edit the new setup's name and description to reflect your changes.

Stop Whining You've captured some DV-format video and disconnected your camera. Now every time you launch Final Cut Pro, it tells you that the "external device is missing."

To eliminate this annoying message, first choose Audio/Video Settings from the Edit menu. From the Device Control Preset pop-up menu that appears, choose Non-Controllable Device. From the External Video menu, choose None. Now click on the Create Easy Setup button, enter a setup name and description, and deselect the Enable Verification Of Device Control In First Start Dialog option. Finally, click on the Create button and type in the new Easy Setup's name.

You can use this setup when you don't want Final Cut Pro to look for your camera. When you reconnect the camera, simply switch back to your previous setting.

Capture Strategies

To edit video, you have to bring it into your Mac; here are some tips on Final Cut Pro's capture features.

Dropped Frames Many users who upgrade to Final Cut Pro 2 find that it aborts when capturing from a DV device. Because of a long-standing glitch with QuickTime captures, the Mac's FireWire interface often misses a few frames and duplicates others as

it starts to capture DV. Final Cut Pro 2 interprets this as dropped frames and therefore aborts the capture.

To prevent this, tell Final Cut Pro to not abort on dropped frames: Choose Preferences from the Edit menu and deselect the Abort On Dropped Frames option.

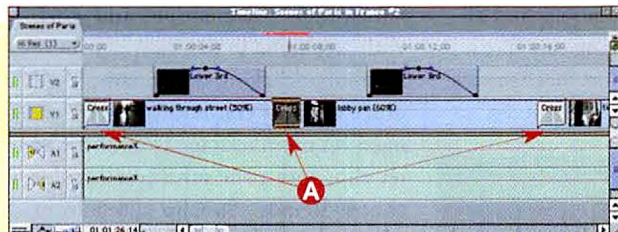
If Final Cut Pro reports dropped frames after you've captured a clip, *continues*

MAKING THE TRANSITION

Creating and tweaking transitions is an important function of a video-editing program, and Final Cut Pro is certainly up to the job. But unless you understand how transitions work—and especially how they work in Final Cut Pro—the program's power won't do you much good. Here's an overview of the process and some ways to make it go smoothly.

Taking Sides In the nonlinear editing world, there are two ways of graphically depicting transitions in the timeline.

In one camp are Media 100 and Adobe Premiere, which use an *A/B* display: one video clip is on track A, another is on track B, and sandwiched between them is a third track that holds the transition. This type of interface is easy to understand and use, but it takes up a lot of screen space.

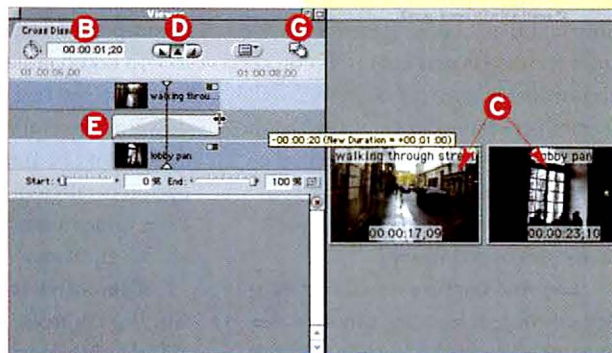


In the other camp are Avid and Final Cut Pro, which use an *inline* display: the two shots appear right next to one another in the same track, and the transition is laid on top **A**.

This is an on-screen representation of how film editors indicate transitions on their work prints: two shots are butt-spliced together, and the editor uses a grease pencil to draw diagonal lines from the edit point to where the transition is to begin and end. (A film editor had better be sure that the original shots contain enough frames for the called-for overlap. Otherwise, an irate phone call from the negative cutter is a distinct possibility.)

There's no grease pencil in Final Cut Pro, but you still have to ensure that enough video frames exist on either side of the edit point to create the transition you want. If the media isn't there, the transition won't happen—Final Cut Pro may display an error message, or it may give you a shorter transition.

New World Order The difference between the two interfaces can be a stumbling block for many users, especially those coming from Premiere to Final Cut Pro. But help is available from Final Cut Pro's Transition editor: if you double click on a transition in the timeline, the Transition editor opens—and displays the transition in the *A/B* mode. You can use the Transition editor to tweak your transition with greater precision than the Timeline window affords.



Type a time-code value in the Cross Dissolve field **B** to specify the transition's duration.

When you're editing a transition, the Canvas window switches to a *two-up* display **C**. The frame on the left is at the transition's start point; the right-hand frame is at its end point.

Transitions are normally centered at the edit point; that is, Final Cut Pro uses the same number of frames from the outgoing clip and the incoming clip. To start or end the transition at the edit point, click on the Start or End alignment button **D**.

To lengthen or shorten the transition using the mouse, click on either edge of the transition and drag it **E**. For transitions centered on the edit point, this will change the in- and out-points of the clips on either side. If you position



the mouse in the middle of the transition, you can perform a rolling edit **F** that moves the entire transition forward or backward in the timeline but doesn't change the transition's duration.

Once you've tweaked your transition, you can easily apply its settings to another edit point elsewhere in your project. All you have to do is drag the Drag Handle **G** in the timeline there with your mouse.

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check the clip's properties (control-click on the clip in the Browser window and then choose Item Properties from the contextual menu). If you see an unusual frame rate, such as 23.483 frames per second (fps), instead of the proper 29.97 fps, chances are that a problem in your system—such as a heavily fragmented hard drive—is causing dropped frames.

Log And Capture Final Cut Pro's device-control features can save you hard drive space by logging and capturing only those portions of a tape you think you'll use. In the Log And Capture window, specify which clips you want and click on the Batch Capture button; then take a break while Final Cut Pro does all the work.

And to save time and spare your tendons, familiarize yourself with

likely, dropped frames occur at the very beginning of a clip, they'll be in the in-point handle.

To add handles, click on the Batch button in the Log And Capture window. In the resulting Batch Capture dialog box, be sure the Add Handles option is selected; then enter a time-code value in the adjacent text box to set the duration.

Alternative to Logging Final Cut Pro controls DV camcorders with aplomb, but most DV camcorders don't lend themselves to the demands of batch capturing. Delays of a couple of seconds each time the camcorder switches from, say, rewind mode to playback mode are common. And all that starting and stopping can take a toll on the tape-transport mechanisms in consumer-grade camcorders.

Media," at www.macworld.com/2001/09/feature/finalcuteg_media.html).

First, use the Log And Capture window's Capture Now button to grab a chunk of video; then drag the footage to the Browser window to save it. With the footage still selected in the Browser window, choose DV Start/Stop Detection from the Tools menu. Final Cut Pro will scan the footage and set markers at each scene break (see "Divide and Conquer").

To create subclips, select these markers and then choose Make Subclip from the Modify menu (or press ⌘-U). Use the Browser window to give each subclip a descriptive name. Now you can open and work with any scene in the Viewer window by double-clicking on its name. And don't worry if you find yourself needing a bit more footage from the master clip; with your subclip selected, choose Remove Subclip Limits from the Modify menu to gain access to the entire clip.

In the Cutting Room

Among software-only solutions, Final Cut Pro alone provides the kind of industrial-strength editing features that serious video producers demand. These let you tweak edits with single-frame accuracy, manage the gigabytes that make up a large project, and more.

Edit Efficiently Video-editing programs don't force you to work in a linear, beginning-to-end fashion—that's why they're called *nonlinear* editors. You can trim clips either before or after adding them to the timeline. You can add transitions and other visual effects as you edit, or apply them at the end of the entire process. And you can tackle individual scenes in any order.

Still, it's more efficient to perform editing tasks in a certain way. For example, we like to tweak the lengths of clips before they're added to the timeline. (Open a clip in the Viewer window, and as it plays, press I to set its in-point and O to set its out-point.)



Divide and Conquer You can use Final Cut Pro 2.0's scene-detection features, such as the DV Start/Stop Detection and Make Subclip commands, to divide DV footage into separate clips.

Final Cut Pro's keyboard shortcuts (see "Essential Keyboard Shortcuts" for a list).

By default, Final Cut Pro prompts you to name individual clips as you log them. If you'd rather name clips after you've batch-captured a group of them, deselect the Prompt option in the Log And Capture window.

Love Handles If you disable the Abort On Dropped Frames option, consider padding your captured clips with *handles* that are a few seconds long. Final Cut Pro can add time to the beginning and end of each clip; if, as is

If you have sufficient hard drive space, it's better to simply capture large chunks of video all at once and then divvy them up into separate *subclips*. A subclip is a kind of virtual clip: it simply points to a section of footage in another clip, yet you can manipulate it as you can any other clip.

Final Cut Pro 2 has some slick new features that make this process easy with a DV camcorder. You can even use Final Cut Pro 2's terrific media-management features to organize assets and reclaim hard drive space (for more on this, see "Managing

Essential Keyboard Shortcuts

PRESS THIS	TO DO THIS
LOGGING AND CAPTURING	
I, O, F2	Set a clip's in-point, set its out-point, and log it.
⌘-H	Batch capture.
shift-C	Capture now.
PLAYING VIDEO	
J	Rewind (press repeatedly to increase speed).
L	Play forward (press repeatedly to increase speed).
K	Stop.
shift-\	Play from the in-point to the out-point.
EDITING	
option-T or control-T	Apply default transition.
' (apostrophe)	Jump to the next edit in the timeline.
;(semicolon)	Jump to the previous edit in the timeline.
A	Select the arrow tool.
B	Select the razor-blade tool.
N	Temporarily toggle snap-to in the timeline.
⌘ while dragging	Slow the mouse for greater precision.
home or end key	Jump to the beginning or end of the timeline (or clip, in the Viewer window).
shift-page up, shift-page down	Scroll the timeline left or right.

Similarly, you might prefer to flesh out the overall structure of scenes by creating a *rough cut* in which the clips are in their final order but their lengths aren't precisely trimmed and no effects or transitions are applied. This lets you concentrate on establishing the rhythm of the project as a whole, and it eliminates the waste of rendering effects that may change later.

For some ventures, your editing will often be determined by the audio: with a documentary, for example, you might cut to show different scenes of a historic site as a narrator describes them. In such cases, lay out a rough audio bed first—for instance, add the final narrative audio to the timeline—and then edit your visuals to fit.

Managing Bins In Final Cut Pro, you can organize your media assets—audio and video clips, still images, and the like—into folder-like *bins*. Using multiple bins is a great way to bring order to the hundreds of assets that make up a lengthy project.

The nature of your undertaking will influence how you use bins. For a

wildlife-documentary project, you might create subject-oriented bins: ocean shots, bird close-ups, and so on. For narrative films, each scene or act might have a separate bin. You could also make a bin to hold the original shots that you captured and later divided into subclips. You can put bins inside other bins, but don't go overboard: locating an item that's buried too deep can be difficult.

Final Cut Pro normally sorts the list of a bin's contents by name. The problem with this is that when you rename an item, it may jump to a different location in the list, becoming hard to find in a bin with many items.

If you want renamed items to stay put, you can sort your bins' contents by a different criterion, such as an unused label column. (To change the sort order, click on the heading of the column by which you want to sort.)

Sequence Strategies One Final Cut Pro advantage that you won't find in Adobe Premiere is the ability to divide your projects into multiple *sequences*, each with its own time-

line. You can even nest sequences, putting one within another.

Nested sequences make it far easier to create certain kinds of special effects. An example: after editing your movie, you decide it would look better in letterboxed format. Instead of applying Final Cut Pro's Widescreen filter to every shot in your movie, you can just select them all and nest them in another sequence (choose Sequence: Nest Items). The new sequence will appear in the Timeline window as if it were a single clip, so you can apply the Widescreen filter to all its contents with just one trip to the Effects menu.

Nesting sequences also makes sophisticated *compositing* (combining video layers) possible. If you nest a series of shots in one sequence, it becomes easy to layer and otherwise modify those shots using Final Cut Pro's compositing and effects features.

Multiple sequences have other organizational benefits. Dividing a lengthy project into several sequences makes it easier to move edited scenes around within the larger structure of a project—especially helpful in documentary work, where you might want to experiment with different structures or versions. It's also valuable when you're editing a project while it's still being shot, since scenes can more easily be rearranged as new ones come in.

Editing Shortcuts Final Cut Pro provides a dizzying array of keyboard shortcuts, but the most efficient technique is often a combination of the mouse and keyboard. Say you've specified the in- and out-points for a clip and you're ready to add it to the timeline. With the timeline's playhead positioned where you want to insert the clip, press F9, the keyboard shortcut for an *insert edit*. Now double-click on the next clip in the browser, set its in- and out-points, and press F9 again.

To use Final Cut Pro's current default transition between the clip *continues*

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you're adding and the one to the playhead's immediate left, press shift-F9. To replace the footage at the playhead (an *overwrite edit*), press F10; to overwrite it with a transition, press shift-F10.

Similarly, you can use the numeric keypad and the mouse to make precise edits. Say you want to perform a two-



second *rolling edit*. (A rolling edit adds footage to one clip and subtracts an equal amount from the next clip, preserving a sequence's overall length.) In Final Cut Pro's tool palette, select the rolling-edit tool (or just press R). Next, select the edit point that separates the two clips. Finally, type -200 and press the return key.

The ability to type time-code values directly into the Timeline window makes possible all manner of tricks. To move a clip four seconds later, select the clip, type +400, and press return. To jump to the timeline's two-minute mark, deselect all clips (press ⌘-D), type 2... (that's 2 followed by three periods), and press return.

Transitions and Effects

Of course, Final Cut Pro has the standard array of video transitions—dissolves, wipes, irises, and so on. But it also provides some productivity-boosting variations. And the strength of its video-effects and compositing features means you can often do without a dedicated motion-graphics package such as Adobe After Effects.

Optimize Your Display If you frequently work with a specific type of transition—dissolves, for instance—create a separate tab in the Browser window that shows only dissolves. In the Browser, click on the Effects tab, and then double-click on the Dissolve folder. Final Cut Pro opens a separate window containing just the dissolve transitions. Drag that window by its tab into the Browser window, and it becomes another tabbed window in the Browser. Now you can access dissolves simply by clicking on the Dissolve tab.

Customize Transitions and Filters Say you're working on a wedding-video project that uses a lot of Page Peel transitions between still images. Build your custom Page Peel with just the right curl, a splashy bit of highlight, and a backing that matches the peach-colored roses in the bride's bouquet. Now drag that transition from the Viewer window into the Favorites bin of the Effects panel. Rename it Peach Peel, and you can use it throughout this wedding project and future ones.

To designate a default transition, control-click on your choice in the

the Canvas window, you can't see the effects of those adjustments on your video clip. The solution: drag the Video tab out of the Viewer window and create a separate window for it. This way, you can see results as you tweak the filter's settings.

Alternatively, you might want to drag the Filter tab out of the Viewer window and down to the Timeline window. This is useful if you plan to modify a filter's settings over time—for example, to have a clip get progressively blurrier. You'll have a wide Filters window in which you can set keyframes to animate the filter.

Falling Short You added a transition but didn't get the results you expected—perhaps you wanted a three-second cross-dissolve, but Final Cut Pro gave you one that's 2 seconds and 4 frames long.

This usually happens because there aren't enough video frames in the outgoing and/or incoming clips to accommodate the transition you wanted—a common source of confusion for Final Cut Pro newcomers. (For all the details and some transition tips, see "Making the Transition.")

Titling Final Cut Pro's titling features are not among its finest attributes. The titling effects, or *text generators*, can't use PostScript fonts,

Multiple bins are a great way to
bring order to the hundreds of
assets in a large project.

Effects browser and then choose Set Default Transition from the contextual menu.

You can also create custom effects filters. Apply the filter to a clip and tweak its settings as desired; with the clip selected, choose Make Favorite Effect from the Modify menu. Then go to the Effects browser and give the filter a descriptive name.

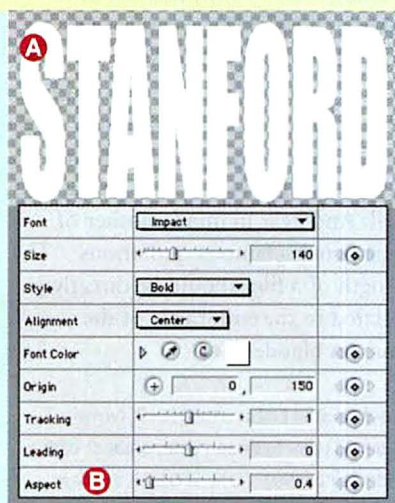
Watch As You Tweak When you're adjusting a filter's settings in

and they limit you to one font, size, and style per title. Nor will they let you manually adjust the spacing between characters—tuck a lowercase *o* beneath a capital *T*, for example.

Some text generators have an automatic-kerning feature that tightens up character spacing overall, but avoid it if your content will be distributed on VHS tape. Automatic kerning tends to space characters tightly, which can make them difficult to read.

CREATING VIDEO IN TEXT

The ability to composite video layers is a feature normally found only in dedicated compositing programs such as Adobe After Effects. But Final Cut Pro supports many standard Photoshop compositing modes (such as Add and Multiply), and it can track the luminance value and alpha channel (the transparency information) of a layer. These capabilities permit effects such as video footage inside text.



Although its text generators are weak, Final Cut Pro's ability to combine, or composite, video layers makes it easy to create special titling effects. (For an example, see "Creating Video in Text.")

After Effects Plug-ins One of the best additions in Final Cut Pro 2 is actually a third-party product. Boris Script Ltd, an After Effects plug-in found in the Extras folder on the Final Cut Pro 2 CD, is a scaled-down version of Boris FX's Graffiti titler. It's a great tool with none of the limitations of Final Cut Pro's text generators: with it, you can mix and match fonts and styles, kern characters, and even set tabs to create small tables.

Titles That Span Clips It's common for a superimposed title to run



Step 1 Place your background on the V1 track. In our example, we've used a solid-color matte created in Final Cut Pro, but a Photoshop texture, a gradient, a still image, or even another video clip will also work.

Step 2 Add your text to the V2 track. Using the Text Generator pop-up menu in the lower right corner of the Viewer window, create a large, bold block of text that takes up most of the screen **A**; this will allow more video to show through. With the Text Generator's Aspect control **B**, you can make the characters taller. Adjust the Y origin point to position the text below the screen's default center point.

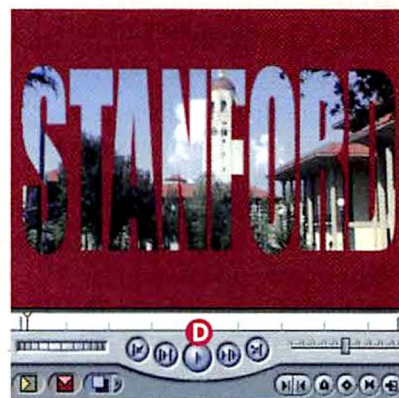
for more than one clip—and a lengthy, scrolling title might span numerous shots. But applying Boris Script to multiple individual shots is a lot of work, and you can't do it for animated titles. What's more, if you change a shot to which you applied Boris Script, the title will disappear and you'll have to reapply it.

Here's a better approach: First, create a slug—a black clip that you can use as a placeholder for other clips or to perform special tricks—and add it to the second video (V2) track, above the clips that it will be superimposed over. (To create a slug, use the Generators area of the Effects browser or choose Slug from the Generators pop-up menu in the Viewer window.) Apply Boris Script to this

Step 3 Put the video—the footage that will show through the text—on the V3 track **C**.

Step 4 With the clip on V3 selected, go to the Modify menu and choose Travel Matte-Alpha from the Composite Mode submenu.

After you've done that, Final Cut Pro's Text Generator creates an alpha channel, and the clip on V3 takes its alpha-channel information from the text block on V2. Just render the effect, and presto—your video is playing inside your text **D**.



slug. Next, with the titled slug visible in the Viewer window, click on the Filters tab and deselect the Composite On Original option.

Now change the slug's duration to match the length of the clip or clips that the title will span. To fade the title in and out, use the opacity controls under the Filters or Motion tabs.

Output Options

The final step in production is to record your edited project back to videotape and compress it for Web or CD-ROM delivery—or perhaps both.

Use the Spacebar Final Cut Pro provides several ways to output to tape, but the easiest and most reliable is simply to put your video deck in *continues*

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Record mode and then press the spacebar to play your sequence.

Before you proceed, be sure all transitions, filters, and effects are rendered at the Hi-Res setting—lower-resolution settings you may have used to preview your work won't look good on a TV. If you have numerous audio tracks or effects, mix your audio down to a stereo pair to prevent stuttering and other problems caused by an overworked hard drive. (Choose Mixdown Audio from the Sequence menu.)

If you have numerous audio tracks, mix them down to a pair to prevent stuttering.

This method of outputting to video won't incorporate any extras, such as color bars, audio test tones, or countdown footage. If you need those—say, for a duplication house or a broadcaster—add them to the beginning of your sequence. This is another occasion when multiple sequences come in handy: you can create a standard “beginning of tape” sequence to insert at the start of a sequence before you record it to tape.

Print To Video A more sophisticated means of outputting a project is the Print To Video command. It will add extras such as color bars for you, and it can also record an identification message, called a *slate*, to run prior to the sequence's content. By default, the slate text is the name of the clip or sequence you're printing to video. To change it, choose Text in the Print To Video dialog box and then type in your desired text.

Another option is to use an image file for the slate: in Photoshop, create a custom slate with your company logo on it, for example; then choose the File option in the Print To Video dialog box, click on the file-chooser button, and select the file. You can even have an audio slate: in the file-

chooser dialog box, select Sound Files from the Show pop-up menu, and then navigate to the sound file.

Although the Print To Video command offers more output options, we recommend using the simpler record-and-play approach—Print To Video isn't always reliable. Some users have reported dropped frames, others have encountered missing audio channels, and still others have described random glitches. Most Final Cut Pro gurus advise simply playing your sequence while you record it.

Edit To Tape Use the Edit To Tape output method for professional-level features, such as the ability to cleanly replace a shot in the middle of a tape without having to re-record the shots around it. Editing to tape requires a video deck capable of frame-accurate insert editing (a Betacam or DigiBeta deck, for example). These connect via an RS-422 serial interface and use different device-control protocols than FireWire-based DV devices do.

Go Beyond TV Final Cut Pro 2 includes Media 100's Cleaner 5 EZ, a scaled-down version of the \$599 Cleaner 5 compression utility (♦♦♦♦½; *Reviews*, February 2001). You can use Cleaner 5 EZ to prepare your video for the Web or for CD-ROM distribution.

Before you compress a sequence in Cleaner 5 EZ, choose Final Cut Pro Movie from the editing program's Export submenu (located under the File menu). In the Export dialog box, be sure that the Make Movie Self-Contained option is not

selected—doing so will dramatically speed up the export process and save hard drive space. Note, however, that this requires the file you're exporting and its original media to be on the same machine. If you plan to do your compression on a different computer, select the Make Movie Self-Contained option. Then after you've exported the movie, open Cleaner 5 EZ and compress it.

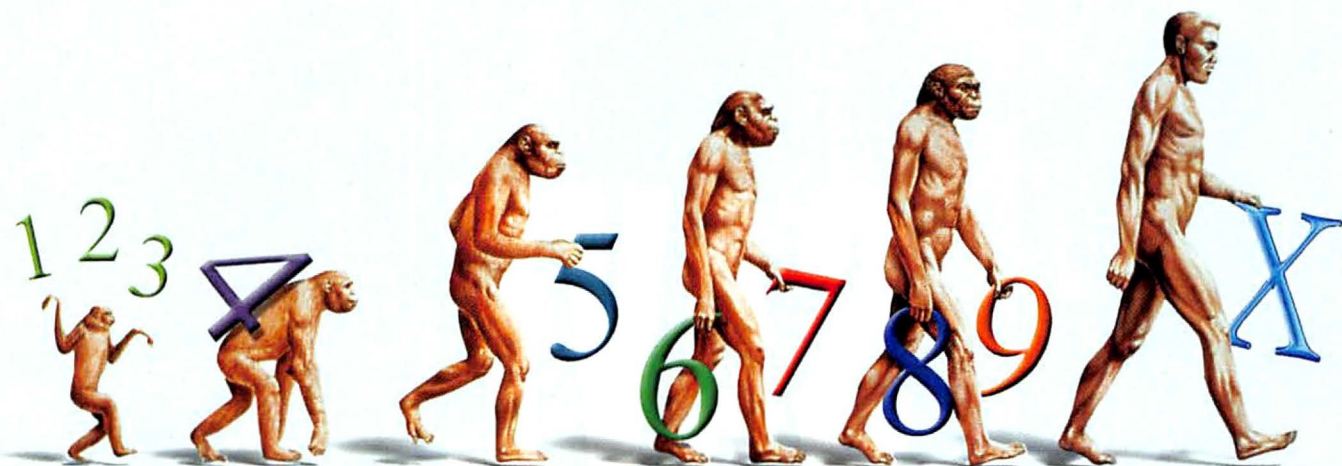
The Last Word

Final Cut Pro has helped bring video-editing tools to the masses, but it hasn't changed the arts of editing and filmmaking at all. As you master this remarkable program, remember that every shot, every cut, every transition, and every effect should contribute to the story you're trying to tell. And bear in mind another of Hitchcock's famous quotations: “The length of a film should be directly related to the endurance of the human bladder.” **m**

Contributing Editor JIM HEID (www.jimheid.com) has been writing about digital video since 1991. TOM WOLSKY (www.southcoasttv.com) is a former producer for ABC News in New York and in London, England, and is the author of *Final Cut Pro 2 Editing Workshop*, coming soon from CMP Books.



One Evolution Deserves Another



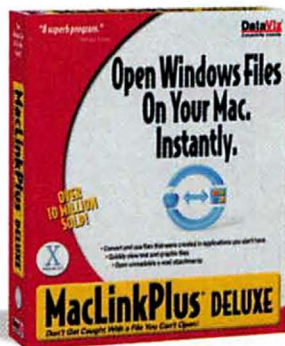
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SAVE YOUR DATA

P H O T O G R A P H Y B Y J A M E S P O R T O

YOU'RE ALMOST DONE WITH AN IMPORTANT PROJECT.

That's when whatever can go wrong *does* go wrong. The panic starts deep in your stomach as your screen freezes. You realize how much work you've just lost—and how much more work you'll have to do to get it back.

Sound familiar? No matter how careful you are, sooner or later you're *guaranteed* to lose data. I once managed to overwrite a client's entire database with a text file. If I had backed that Mac up regularly, I could have enjoyed my weekend. Instead, I had to spend hours and hours recovering the database.

Eventually it will happen to you: an inopportune crash corrupts an important file, your hard disk fails, your PowerBook disappears under suspicious circumstances, a fire sweeps through your office, or you just make a simple mistake. The details are immaterial. Your only defense is to back up early and often.

Fortunately, regularly making copies of your important files is neither as hard nor as expensive as you may think. In this article, you'll learn how to determine your backup needs, develop a strategy, choose a device (a CD-RW drive, for example), and configure the leading backup software for the Mac—Dantz Development's feature-packed Retrospect Desktop Backup and Retrospect Express Backup. Then when you run afoul of Murphy's Law, you'll be ready.

by **ADAM C. ENGST**

STEP 1

Determine Your Needs

When the backup bug bites you—usually after you've lost some crucial data—you'll be tempted to run out, buy some hardware and software, and start copying files. Don't do it! Only a carefully considered backup strategy will guarantee your success when you need to recover important files. The first step is to find out just what kinds of data you've got.

If you're like most people, you don't know exactly what's on your hard drive. Browse through it today, and you're sure to find files you created last year, shareware utilities you downloaded but never used, piles of e-mail, and hundreds of preferences files. Do you really need to back all of that stuff up? Maybe, maybe not—though you never really know how important some things are until they're gone.

To figure out just what you want to protect, you should ask yourself these three questions:

How Much Data Do I Have?

The raw amount of data stored on your Mac comes into play as you develop your strategy and choose an appropriate backup device. If you have only one Mac, you can easily answer this question by clicking on your hard drive icon in the Finder, choosing Get Info, and looking at the Used line in the resulting window. If you have

other Macs to back up, do the same for them and add those results to the total. Don't worry if it seems as though there's too much data to back up. Retrospect helps you out by storing only a single copy of all the duplicate files it finds. (How many copies of SimpleText do you have on your computer?) And some data changes only rarely—for example, your applications—so you'll seldom need to back up all of it. (You may not need to back up some applications at all if you have the installation CD-ROMs.)

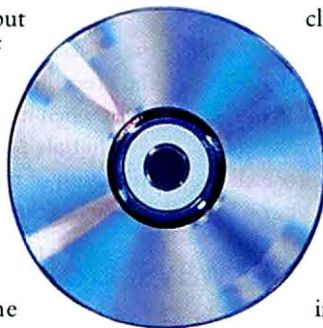
How Often Does My Data Change?

Now you know how much you'll be backing up the first time, but you still need to find out how much of that data requires backing up on a regular basis. The more your data changes, the more often you'll need to copy your files. For example, your applications rarely change, but every e-mail message you receive alters your Microsoft Outlook Express database. If your mail is important to you, additional backups are going to be critical.

Use Sherlock to find out how much of your data changes frequently: choose Modified Today from Sherlock's Custom pop-up menu, click on the magnifying-glass icon, and sort the resulting list by size (see "Find Changed Files"). Add up the sizes of files that are 1MB and larger to get a rough estimate of how much data changes in a day.

How Vital Is My Data?

If you use your Mac mostly for playing games and browsing the Web, you can probably live without most of what's on your computer (except, of course, your Quicken data and Myst III: Exile game files). But if you're an accountant preparing tax returns for clients, your data is very important, especially around April 15. The more valuable your data, the more imperative regular backups are; your files' importance is an essential factor in developing a backup strategy.



Fill In the Blanks After thinking about the answers to all of these questions, you can use the “What’s Your Backup Strategy?” worksheet to gauge your priorities.

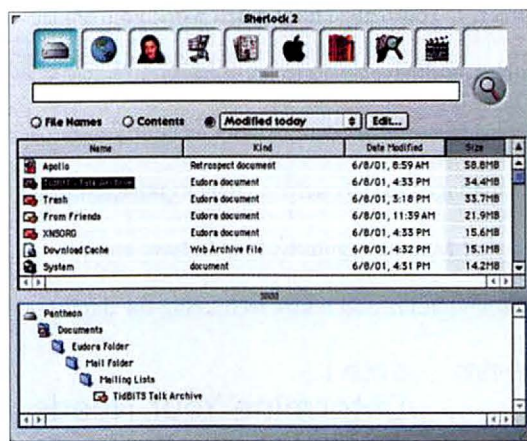
STEP 2

Devise Your Plan

Once you know what to back up, it’s time to figure how and when. If you despair at the thought of sitting next to your computer every Friday, swapping Zip disks for an hour, rest assured that you have plenty of alternatives. Before you spend money on hardware, think about the following issues.

Ideal Frequency An old backup may be better than nothing—but not by much if it doesn’t contain the files you need. If less than 100MB of your data changes in a day, use a custom search in Sherlock to see how much of it changed over a *longer* period of time. (Click on the Edit button, select Date Modified, and choose Is Within 1 Week Of or Is Within 1 Month Of.)

There’s little point in backing up once a month unless little of your data changes and you don’t consider the information very important. But even a monthly backup can prove worthwhile: you can use it to make your Mac functional again if your hard drive is damaged. If you restore all the files from your backup after refor-



Find Changed Files Use a custom Sherlock search to figure out how much of your data changes each day.

tively little data changes (and the data isn’t too crucial). If most of your time at this Mac is spent during weekends, say, backing up your files every Sunday night might make sense.

If you use your Mac for work that would be difficult to re-create, you really should back your files up every day. Ditto if you’re responsible for multiple Macs (and you don’t know what people are doing on each one).

In many ways, daily backups are the *easiest* option. You can automate the procedure fairly easily and do it at night when it won’t interrupt anyone.

Multiple Sets A backup set is a collection of media that contains all of your backed-up files. A single set

not having another backup set could leave you in the lurch.

You should have several backup sets, though most of the time, two or three will be sufficient. (Be prepared for tapes snapping, CDs getting scratched, and hard drives breaking.) Store one set in a different location.

The problem with backing up to multiple sets is that you’ll need to establish a regular schedule for swapping them.

Otherwise, you could end up with a secondary set so out of date that its contents aren’t useful.

If you run a corporate or home office with many computers, two or three backup sets may not be enough. Some businesses have a different backup set for each day of the week, to spread out the risk of media failure. But keep in mind that the more backup sets you have, the more work juggling the media is.

A Permanent Record If you’re backing up to several different sets, it’s easy to store permanent snapshots of your data for use months or even years later. Just designate one of your sets as a permanent archive; after you fill it up, store it instead of erasing it. Then, for instance, if a client wants to reuse materials from an old project, you can find the necessary files in your permanent archive.

If you’re frugal, you won’t want to buy more media than you need. But the truth is, the more often you use your backup media, the likelier it is to fail. It may seem thrifty to back your Mac up to the same tape every night, but when that tape breaks, you’ll wish you’d spent the extra money.

Store Sets Safely Keep your backup sets safe in a place without temperature or moisture extremes (not in your car’s glove compartment), and

In many ways, daily backups are easiest. You can automate the procedure and do it at night.



matting the hard drive, your Mac will return to the state it was in when you saved those files; you won’t have to spend hours re-creating your preferences and custom keyboard shortcuts or downloading your favorite, and possibly elusive, shareware programs.

You may need to back up your home Mac only once a week, if rela-

could include, for example, one CD-R disc or three tapes, depending on how much information you have.

A single backup set is like an old backup—its value is limited. If a serious problem occurs—a burglary, a fire, a power surge that takes out both your hard drive *and* your backup drive (with tape or CD-R inside)—

What's Your Backup Strategy?

away from the magnetic fields generated by motors, power cables, audio speakers, and telephones.

Consider storing your backups in a physically secure place, such as a locked cabinet or closet. For added security, choose a fireproof media safe. Make sure the safe is rated for protecting magnetic media, which melt at temperatures that won't ignite paper (many fireproof safes promise to protect only paper).

Most important, store at least one of your backup sets elsewhere, whether it's your neighbor's house, a safety deposit box, or an Internet backup service. This will protect you if your computer isn't the only thing damaged. For example, after the 1993 World Trade Center bombing, many businesses weren't allowed back into the building for weeks, not even to retrieve backups. Companies with off-site backups were able to buy or lease new computers, restore data from their off-site backup sets, and keep working in temporary offices. Some businesses that didn't have off-site backups went bankrupt.

Make a Plan Take a moment and jot down your thoughts about what you've just read. How often do you want to back up, how many backup sets will you keep, how are you going to handle archiving, and where will you store your backups? There are no universal answers here, but your specific needs will refine your backup-device choices. (See "The Best Backup Device" to figure out which is most appropriate for your situation.)

STEP 3

Set Up the Software

Once you have your strategy, your device, and your media in hand, it's time to set up Dantz Development's \$175 Retrospect Desktop (★★★★; *Reviews*, October 1997) or \$50 Retrospect Express (★★★★; *Reviews*, September 1998). The main difference between the two is that Retrospect

Realistically, there are three basic approaches to backing up your data. You can copy only your most important files, everything you create or change, or just about everything on your hard drive. What's the best strategy for you? To find out, answer these questions and tally your points.

QUESTION	SCORE
How much total data do you want to back up?	<input type="checkbox"/> less than 500MB = 1 point <input type="checkbox"/> 500MB to 10GB = 3 points <input type="checkbox"/> more than 10GB = 5 points
How much of your data changes every day?	<input type="checkbox"/> less than 100MB per day = 1 point <input type="checkbox"/> 100MB to 1GB per day = 3 points <input type="checkbox"/> more than 1GB per day = 5 points
How important to you is your data?	<input type="checkbox"/> don't care about most of it = 1 point <input type="checkbox"/> have a fair amount of important work = 3 points <input type="checkbox"/> can't imagine redoing work = 5 points

3 to 5 Points You should back up only your essential files—they're the most trouble to re-create, and you probably don't have many. Your task is to identify what qualifies as important and to make sure you back up those files every time they change. This strategy is most appropriate for people with just a few easily identifiable files to back up, perhaps a Quicken file or a folder containing a Ph.D. thesis. Unfortunately, you'll have a lot of work to do if your entire hard disk goes south. You'll have to reload and reconfigure everything else.

7 to 9 Points You don't need to back up absolutely everything, but you should back up all the files you create. Once you get beyond a certain amount of data, or your data starts to change too frequently, identifying your most important files becomes difficult. Concentrate on your Documents folder; carefully identify important files stored in unexpected locations, such as macros in your Preferences folder. People who use only a few applications and store documents in specific locations can make good use of this approach. If you suffer a major crash, you'll have to reload and reconfigure your applications, but you won't lose anything you created.

11 to 15 Points You should back up everything. This requires the largest-capacity media, but it's actually the easiest approach, since you don't have to think about what to back up. In the event of a corrupted hard disk, you can be up and running quickly—just as soon as you restore all your data. This is the best strategy if you can't abide downtime, and it's certainly the safest method if you back up other people's Macs.

Express can't back up multiple Macs over a network and lacks some customization options. Both offer powerful scripting capabilities that handle everything related to your backups.

EasyScript The best way to start most basic backups is with Retrospect's EasyScript feature (under the Automate tab), which helps you create a backup script. If necessary, you can modify it later (see "Easy Custom Scripts"). The script tracks the Macs you wish to back up, the backup sets

that store your data, the backup schedule, and any other options you choose. (See "A Walk through EasyScript" for a tour of the setup process.)

Using EasyScript, specify the source, the backup device, and how often to run the backup. If you've completed the worksheet and thought about your strategy, answering EasyScript's questions will be easy.

Next, EasyScript asks how often you want to rotate backup sets. The *continues*

more frequently you swap them, the more you diffuse the risk of media failure. However, too-frequent rotations can make you loathe backing up—and that's more dangerous than a longer rotation schedule. In most cases, weekly rotation is best. Switch from one backup set to another every Friday, for instance, and then take the last-used backup set off-site.

After you enter your information, EasyScript summarizes its proposed

you want—for instance, you might prefer a different destination, selected files, or schedule (including media-rotation schedules)—you can customize the script to fit your needs. Click on the Scripts button in the Automate tab and double-click on EasyScript Backup in the list.

By default, EasyScript creates only two backup sets. I recommend creating another by clicking on the Destinations button, and using this third set as a

months. You can do this either with EasyScript or by duplicating and modifying the script you created (look in the Scripts window's Scripts menu). Then if disaster strikes, you'll be able to restore your applications, system files, and preferences from the older, complete backup and restore recent work from your Documents backup.

Also consider making a script that backs up your most important files to an Internet FTP site (see a review of online storage sites at www.macworld.com/2000/12/11/reviews/onlinestorage.html). It takes a while to transfer files this way, but it's a great means of ensuring you have an additional off-site backup of your essential data.

Look into the Future In the Automate tab, Retrospect provides two tools to help you confirm its intentions: the Check and Preview options. Check looks at a script to make sure it's valid and tells you when the script is scheduled to run next, and Preview shows you the list of all scripts that Retrospect plans to run. Both are useful for troubleshooting.

STEP 4 Do Your Part

Congratulations! You've determined your backup needs, developed a strategy, and set up Retrospect Desktop or Retrospect Express to copy your critical files regularly. The one thing left to consider is the role *you* play.

It's up to you to swap media, clean tape drives, verify that you can restore data from your backup sets, and generally keep an eye on the entire process. These aren't onerous tasks—especially if you've configured Retrospect well—but they are essential.

Swap Media No matter what device you *continues*

Retrospect can handle everything related to your backup, short of swapping media.



strategy and lets you choose a time of day to run backups. If you've decided to use relatively small-capacity media such as CD-Rs, choose a time when you'll be present to insert new discs. If you're backing up to large tapes that won't require any swapping, it may make more sense to choose a late-evening time.

When you click on Create, EasyScript generates your Retrospect script and asks you to name the two backup sets it creates by default. The names go on the catalog files saved to your hard drive; these contain each backup set's directory. More important, Retrospect gives these names (along with sequential numbers) to each tape, CD, or disk in your backup set. When Retrospect asks you to insert a specific tape, say, during a backup or restore, the program will ask for it by name. You should give your backup sets unusual names—it's much easier to confuse boring names than names like Fred and Ginger, for example.

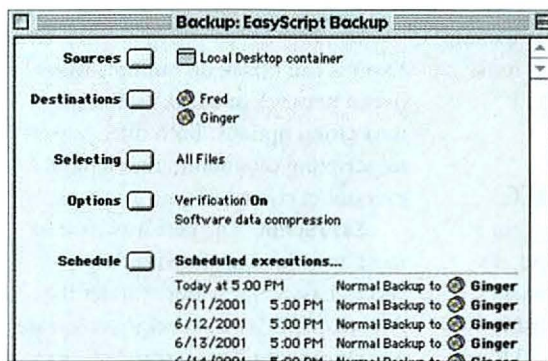
At this point, you're ready to back up. Choose EasyScript Backup from Retrospect's Run menu, and prepare to feed media into the drive.

Customize Your Script If during setup you don't see the the options

permanent archive. To do so, choose to perform a New Media backup every so often; reuse your media with Recycle backups on the other two sets. Having at least three backup sets also is helpful if you store one off-site.

Your default EasyScript script backs up all of your files. But you may want to back up only your Documents folder, for example. You can easily bend EasyScript to your will. Click on the Selecting button and choose Documents (or whatever's appropriate) from the pop-up menu.

You may wish to create a second backup script that backs up all your files but runs only once every few



Easy Custom Scripts You can modify EasyScript's backup script to make it better fit your needs. To see what you can change, click on each of the buttons shown here.

The Best Backup Device

What should you use to store your precious data? You have many choices, including CD-RWs, tape drives, and external hard drives. Keep these five factors in mind: drive cost, media cost, media size, reliability, and speed. (See "Total Cost of 100GB Backup" for a breakdown of expenses.)

Small Removables As a successor to floppy disks, 100MB Zip disks and 120MB SuperDisks work fine. However, the disks can't store very much, and when you factor that in, they cost a lot. Zip disks also aren't very reliable.

IDEAL USER: Person without much important data.

Large Removables You can store a lot more data on the larger disks used by the 2GB Jaz and Orb drives. However, the disks for these drives cost a lot and are often unreliable. Use them to back up relatively small amounts of data, or the cartridge costs could bankrupt you.

IDEAL USER: Person who has a relatively small amount of data and who already owns one of these drives.

CD-R/CD-RW Recordable CDs have a lot going for them. For one, they're quite reliable. CD-RW drives are increasingly inexpensive and commonplace. As of this writing, you can order almost all shipping Macs with CD-R drives. Blank CD-Rs cost less than 50 cents each in bulk, and they store more than six times as much data as Zip disks. Please note that Dantz says you can restore data only from a CD-R drive, not from just any CD-ROM drive.

IDEAL USER: Person who has relatively little data and who can spend time swapping discs.

DVD-RAM Though nowhere near as common as recordable CD drives, DVD-RAM drives offer 4.7GB of storage per disc. But the long-term reliability of DVD-R discs is unknown, and costs are fairly high. I wouldn't buy a DVD-RAM drive just for backups, but if you already have one, it could be useful for small to medium amounts of data.

IDEAL USER: Person who already owns a DVD-RAM drive.

FireWire Hard Drives Until recently, FireWire hard drives were too small, too expensive, and too difficult to connect for regular backups. But today's huge and fast FireWire hard drives are cheap enough to merit serious consideration if you have an average amount of data.

Hard drives are the fastest backup device you'll find, bar none, but they work clumsily with current versions of Retrospect. You must use Macintosh File backup sets when backing up to hard drives, and Retrospect currently limits this type of backup set to about 75,000 files.

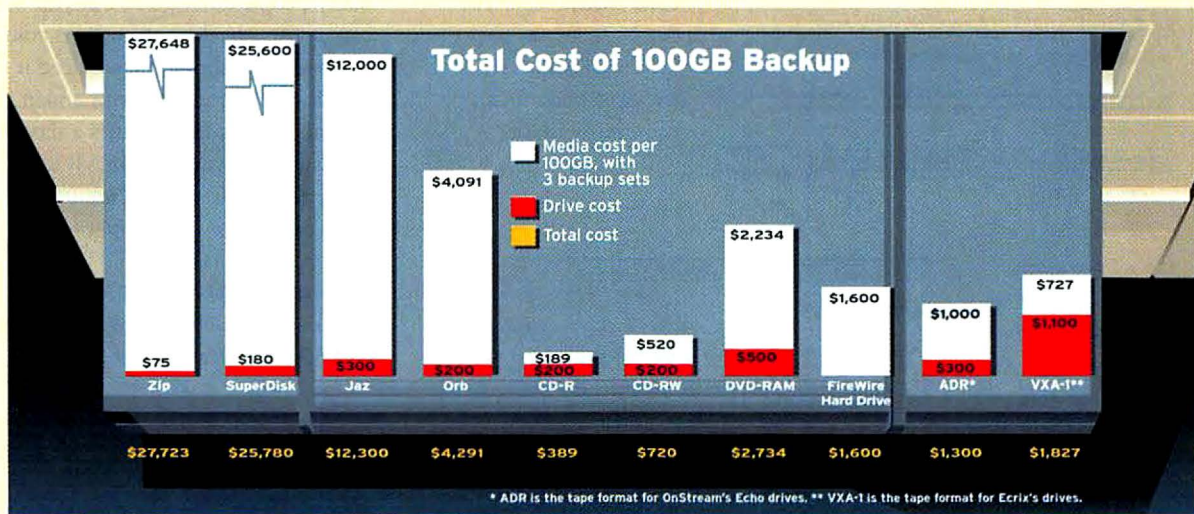
IDEAL USER: Person with one or two Macs willing to put in extra effort to configure Retrospect.

Tape Drives If you have several Macs filled with data that requires frequent backups, a tape drive may be the answer for you. They're ideal if you run a network of up to about 20 computers, because of their low media costs per gigabyte, large media size (to minimize tape swapping), and good reliability.

Each of the numerous tape formats has its own type of drive and media. The ADR format is for OnStream's Echo drives. OnStream (www.onstreamdata.com) filed bankruptcy earlier this year; a newly created company, OnStream Data, purchased OnStream's assets to keep the format alive. You may also want to check out the Ecix VXA-1 format (303/402-9262, www.ecix.com), which supports 33GB tapes and performance up to 180MB per minute.

IDEAL USER: Person with a lot of data, or small networked workgroups.

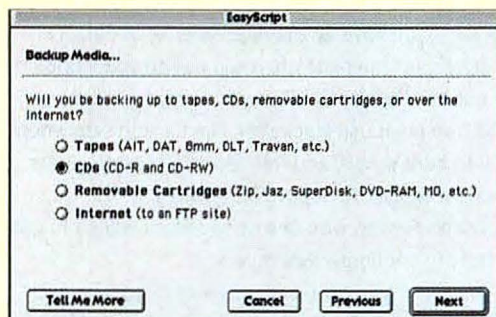
Making the Choice Overall, I'd recommend CD-R for individuals and tape drives for those with several computers. Check Macworld.com (www.macworld.com/subject/storage) for the most recent reviews of these products.



The Real Cost of Backup Don't look just at a drive's price tag—the cost of media can really add up. We've charted the cost of several different backup devices, along with the media necessary to back up 100GB of data.

A Walk through EasyScript

Putting your backup plan into action doesn't have to be difficult. Retrospect's EasyScript feature can do most of the work for you. Look under Retrospect's Automate tab for EasyScript, and then follow the steps outlined below.

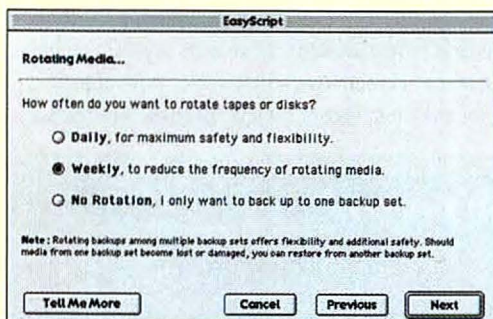
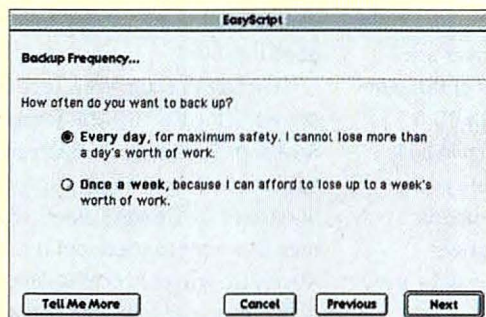


STEP 1: Select Your

Media Select the media you plan to use. Retrospect gives you many choices, but you'll notice that EasyScript doesn't let you choose an external hard drive; to do so, you'll have to modify the script.

STEP 2: Decide How

Often Choose whether you want to back up once a day or once a week. For other frequencies, you'll have to modify the backup script's schedule. (See "Easy Custom Scripts.")

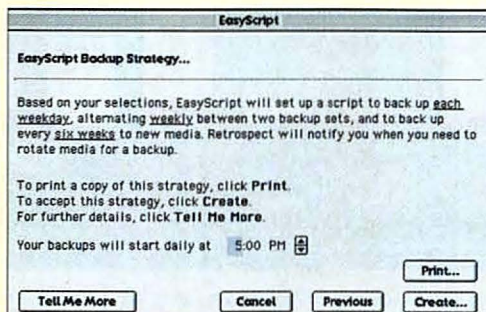


STEP 3: Rotate Your

Media Choose whether you want to rotate backup sets on a daily or weekly basis. Though backing up to a single set may seem like a good way to save money on media costs, I don't recommend it.

STEP 4: Review the

Summary Review EasyScript's proposed strategy, and select a time of day for backups to start. Click on Create, and Retrospect generates your script. Now you're ready to begin a more secure relationship with your data!



use, you'll have to swap media at some point. The more sets you use and the more frequently you back up, the more you'll have to swap. Build a few minutes for media swapping into your routine, preferably at the same time each day or week so you won't forget. Figure out who'll take over when you're sick or on vacation.

With software such as the \$50 PageNow from Mark/Space Softworks (408/293-7299, www.markspace.com) and an AppleScript included with Retrospect, you can even configure your Mac to page you when it needs new media to continue a backup.

Test Your Backups Many people don't learn until the worst possible moment that they've set up their backup system incorrectly or that their tape drive isn't working. The *only* way to verify that backups are working is to restore files from them regularly—and the more important your data, the more often you should verify backups. Consider scheduling tests and attempting to restore a few files every so often.

The Last Word

Creating and maintaining a backup strategy may seem daunting, and that's probably the main reason so many people don't do it. But you can devise a backup strategy as complicated or as simple as you need it to be. Once you come up with a plan, it'll take only a few minutes a day to ensure that you can quickly and easily recover from both minor mistakes and major catastrophes. **m**

Contributing Editor ADAM C. ENGST is the publisher of TidBits and author of numerous books about Macs and the Internet.

More Info:

www.macworld.com/2001/04/13/howto/backup.html

Don't want to tie up your main Mac while doing backups? Learn how to turn an old Mac into a backup server with Retrospect.

LINKS



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Hands-on Tips and Expert Advice for Savvy Mac Users

Ease the Wait with Flash 5

BY RUSSELL CHUN

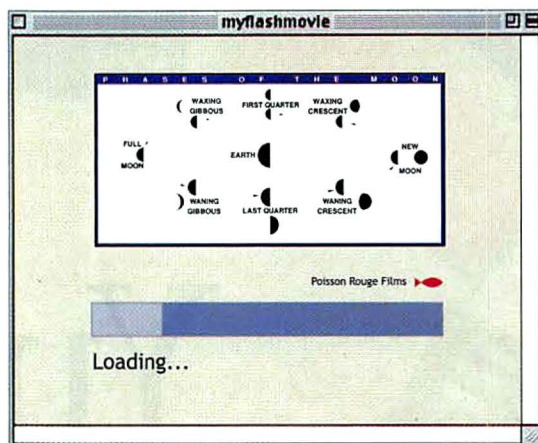
Creating an animation with Macromedia Flash 5 can take days—or even weeks—of hard work. So you'll want to make sure that your audience waits around long enough for it to download from the Web. You can capture their attention while they wait by adding a *progressive preloader*, a small animation that acts as a diversion while the rest of your movie downloads—and tells your viewer how much of the movie has downloaded and how long they still have to wait.

ActionScript, the programming language of Macromedia Flash 5, makes it easy to construct a progressive preloader like the one in our example: a horizontal bar that fills up with color. Vastly expanded and revamped since the previous version of Flash, ActionScript now includes more actions and supports an object-oriented way of scripting similar to JavaScript. But even if you don't consider yourself a programmer, the new menu-driven Actions panel makes using ActionScript simple.

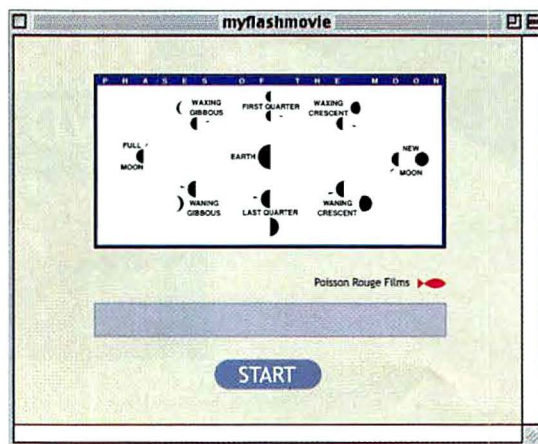
The basic concept behind programming a progressive preloader is fairly straightforward. You tell Flash to compare the number of frames loaded to the total number of frames in your movie. As this ratio changes, Flash stretches a rectangular Movie Clip to reflect the current percentage of frames loaded.

Before you start this project, you should already have a Flash animation to which you want to add your progressive preloader. Once you have the ActionScript basics down, you can use these techniques to integrate more complex and compelling interactivity into your future Flash movies. **m**

RUSSELL CHUN is the author of *Flash 5 Advanced: Visual QuickPro Guide* (Peachpit Press, 2001) and teaches at the Center for Electronic Art in San Francisco. You can see his work at www.russellchun.com.



Downloading File Keep your audience in the know and cut down on frustration by adding a progressive preloader to your Flash animation. As your movie downloads, an on-screen bar fills with color, letting viewers gauge how long they'll wait for the show to start.



Ready to Play When the progressive preloader bar is fully extended, viewers will know that the entire Flash movie has downloaded and is ready to play. A Start button that appears below the bar allows viewers to start the movie when they're ready.

More Info: www.macworld.com/2001/02/howto/flash5.html

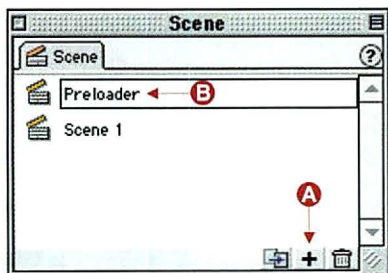
For a complete look at Flash 5's new features and tools, read *Macworld's* "Flash 5 Expert Guide."

LINK

1

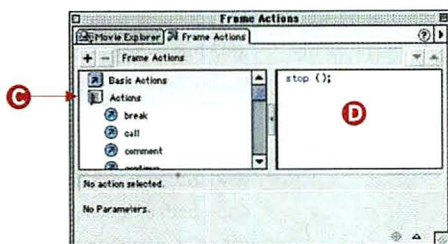
Stop Your Animation You first need to prevent your main animation from playing until all of its frames have downloaded. To do this add a new scene to your movie and assign a Stop action to that scene's first keyframe.

In the Flash file containing your finished animation, open the Panels submenu from the Windows menu and select Scene.



Click on the + (plus sign) button **A** in the Scene panel to add a new scene to your animation. Because Flash plays scenes in the order they appear in the Scene panel, you must drag your new scene to the top of the list. Double-click on the new scene and rename it something appropriate, such as "Preloader" **B**.

Select the first keyframe of the Preloader Scene timeline, and open the Actions panel by choosing Actions from the Windows menu.

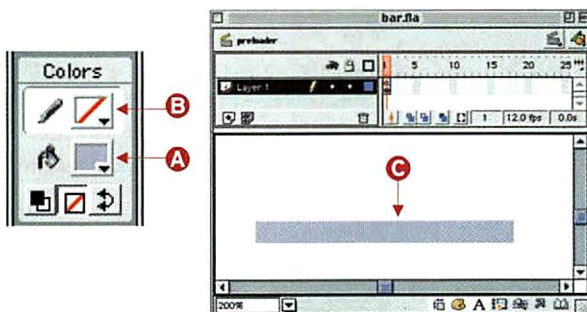


Click on the Actions category **C** in the Toolbox list to reveal a sublist of options. Scroll down and double-click on the Stop action to add it to the Actions List window on the right **D**.

Flash displays an *a* in the first keyframe to signify that it has an action attached to it. Now your Flash movie will stop at Frame 1 until you explicitly tell it to go on.

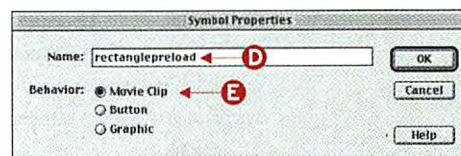
2

Create the Movie Clip Your preloader animation is essentially a Movie Clip symbol in the shape of a rectangle. Once you create a Movie Clip, you can enlist ActionScript to adjust the rectangle's size according to the percentage of downloaded frames.



Select the Rectangle tool. Choose any color for its fill **A**, but make sure that no color is selected for its stroke **B**. On the stage, draw a rectangle **C**; make it as long as you want your final preloader bar to be.

Select the entire rectangle and convert it to a Movie Clip symbol by choosing Convert To Symbol from the Insert menu.



In the Symbol Properties dialog box, enter a name for your Movie Clip symbol **D**. Select Movie Clip as the Behavior **E**, and click on OK. Your new Movie Clip symbol will appear in the Library and an instance of the Movie Clip will remain on the stage.

Using a different color for the fill, draw another rectangle **F** around your Movie Clip instance. Flash places the new rectangle underneath the Movie Clip. This will serve as the container that the Movie Clip will fill as the download progresses.

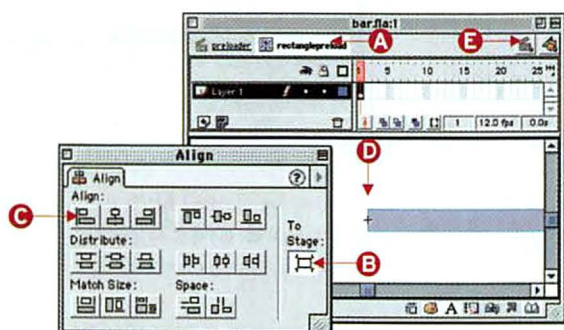


continues

3

Edit the Registration Point To have your rectangular Movie Clip symbol grow from left to right, you'll need to move its registration point (which by default lies at the symbol's center) to the left side of the rectangle.

To edit the rectangle's registration point, double-click on your Movie Clip symbol in the Library (accessed from the Windows menu). You'll know you're in symbol-editing mode when the symbol's name appears at the top left of the timeline **A**.



Open the Align panel from the Windows menu. With your rectangle selected, choose the To Stage option **B** and click on the Align Left Edge button **C**. Your rectangle will move so that the registration point (represented by crosshairs) lines up with the rectangle's left edge **D**.

Return to the main timeline by choosing the Preloader scene from the Edit Scene button at the top right corner of the document window **E**. You will see that your Movie Clip instance has shifted, so move it back to where you want it over the container rectangle.



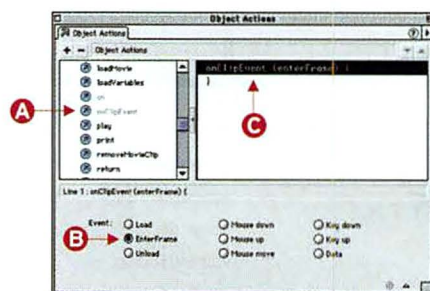
Finally, scale down your Movie Clip's length to a tiny sliver on the left-hand side **F**. This ensures that the first thing your viewers see is not the full-length preloader bar but just a slim bar representing no download progress.

4

Assign the Event Handler To make Flash continually test the download progress, you must assign actions in a place where they will be executed repeatedly. You do this by assigning an onClipEvent (enterFrame) handler to your Movie Clip instance.

Select your Movie Clip instance on the stage and reopen the Actions panel.

Open the Actions category in the Toolbox list and double-click on the onClipEvent action **A**. In the Parameters pane, select the enterFrame event **B**. Flash inserts the script into the Actions List window **C**.



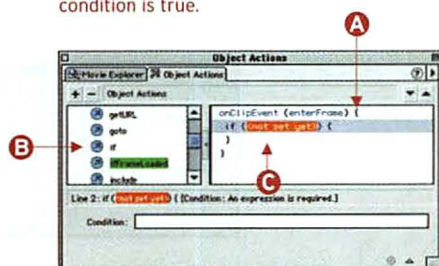
The onClipEvent handler and the enterFrame event are both new to Flash 5. The onClipEvent handler lets you assign actions to Movie Clip instances, and the enterFrame event triggers those actions continually. The enterFrame event occurs at the frame rate of your Flash movie. So if your movie is set at 12 frames per second, any actions within the onClipEvent (enterFrame) handler occur 12 times per second. In the following steps, you'll be assigning actions that check the download progress and scale your Movie Clip—both of which must be performed repeatedly for the preloader to work.

Note: The onClipEvent handler is *scoped* to the particular Movie Clip it is assigned. This means that any action within a Movie Clip's onClipEvent handler pertains only to its own timeline. For example, a play() action inside an onClipEvent handler would start the playhead of its Movie Clip timeline and not the playhead of the main timeline.

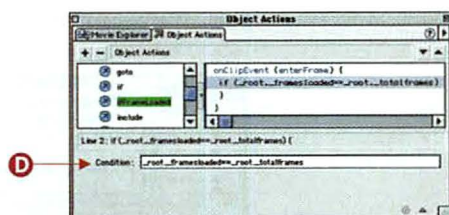
5

Assign the If Statement Assign an If statement telling Flash what to look for while the animation is downloading. Ours will compare the number of frames that have already downloaded to the total number of frames in the Flash movie.

The If statement is the decision-maker in Flash. It compares one property to another in a conditional expression and performs specific actions based on whether that condition is true.



Before you start, make sure the opening curly brace **A** of your onClipEvent handler is selected in the Actions List window. Double-click on the If statement **B** in the Toolbox list's Actions category. The If statement will appear under the onClipEvent handler **C** with an empty Condition field in the Parameters pane.



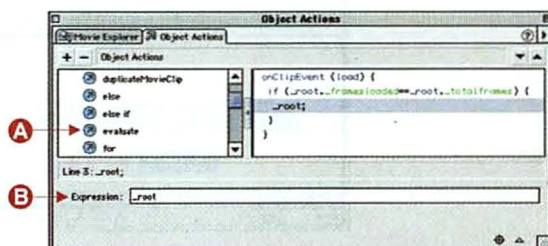
In the Condition field **D**, enter the expression `_root._framesloaded==_root._totalframes`.

This tells Flash to check whether the number of downloaded frames (`_framesloaded`) is equal to the total number of frames (`_totalframes`). Preface both properties with a dot and the target path `_root`, which refers to the main timeline. (After all, you want to check the properties of the main timeline and not the rectangle Movie Clip's timeline.)

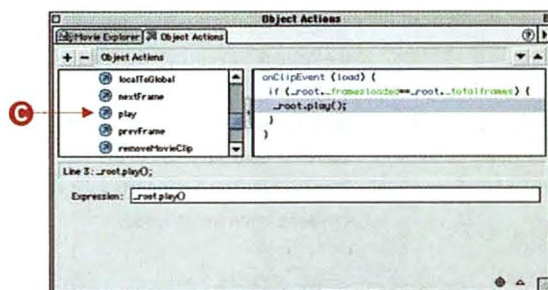
6

Assign the Play Action You must tell Flash what to do once the If statement becomes true. For example, if the number of frames loaded equals the total number of frames, it means your entire movie has downloaded and is ready to play.

In the Actions panel, choose Evaluate **A** from the Actions category. A new line will appear inside the If statement. You must tell Flash which timeline should be affected by the action by entering `_root` in the empty Expression field **B**.



Next, open the Objects category from the Toolbox list, select the Movie Clip submenu, and double-click on Play **C**.



This will make the main timeline begin playing as soon as Flash detects that the number of frames loaded is equal to the total number of frames.

Note: You must choose Play from the Movie Clip category rather than from the Basic Actions or Actions category, neither of which lets you target a different timeline.

continues

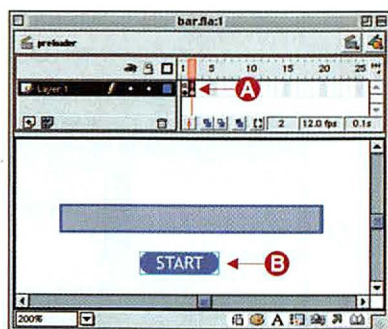
7

Add a Play Button Although this step isn't required, you may want to give your viewers the option of clicking on a button to start the downloaded animation instead of having it play automatically (and missing the beginning if their attention is distracted).

8

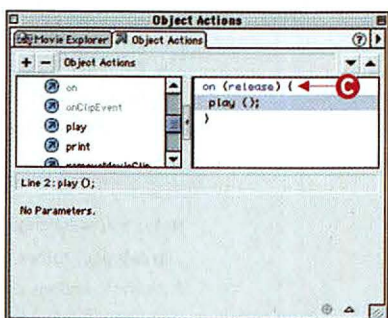
Scale Your Movie Clip To visually represent the ratio of frames loaded to total frames, you want to relate it to the length of your rectangular Movie Clip. This means that when your movie is fully loaded, your Movie Clip will be fully extended.

Add a second keyframe to the Preloader timeline and assign a Stop action to that one as well **A**.

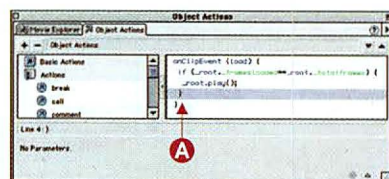


Design a Play button, convert it to a Button symbol, and then place an instance of it on the stage **B**.

With the button instance selected, open the Actions panel and double-click on Play from the Actions category. The on (release) handler is automatically added with your Play action **C**. Now—when all the frames have downloaded—Flash advances to the second keyframe, where this button lets your viewers continue when they're ready.

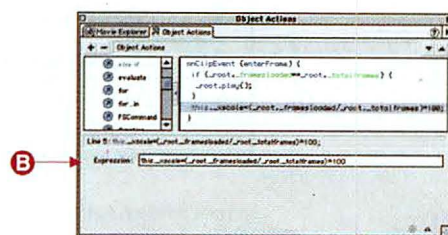


Return to Frame 1 and reselect your rectangular Movie Clip. To ensure that your next action will be added *outside* of the If statement, select the closing curly brace of the If statement **A** in the Actions List window.



This placement is important because you want the Movie Clip to grow throughout the download process and not just when the If statement is true (when the number of frames loaded is equal to the total number of frames).

From the Actions category, double-click on Evaluate. In the empty Expression field **B**, enter `this._xscale=(_root._framesloaded/_root._totalframes)*100`.



This expression tells Flash to scale the horizontal dimension of the current Movie Clip to match the percentage of frames downloaded from the main timeline. So when 50 percent of the frames have loaded, the bar will be extended to half of its full length.

Your progressive preloader is ready. Since viewers may stare at it for awhile as your movie downloads, you may want to add text or additional design elements to the page.

9

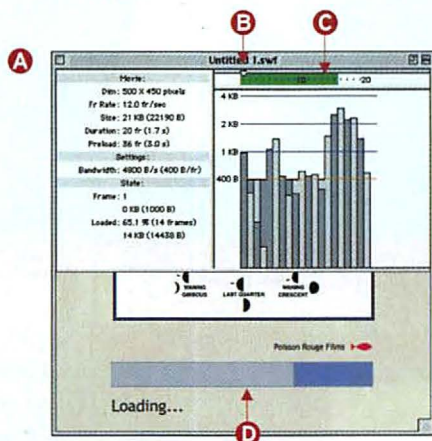
Test Your Movie You can test your preloader without the hassle of having to upload and view it over the Web. Using the Show Streaming option, you can simulate download performance at a variety of bandwidth speeds.

10

Explore Other Graphic Treatments Changing the length of a Movie Clip is just one way to animate the download process. With subtle changes to the ActionScript, you can easily apply a variety of effects to your preloader.

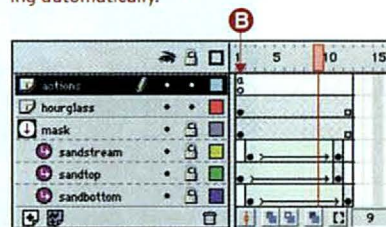
From the Control menu, choose Test Movie. Flash exports your movie as an SWF (Flash Player File) and plays it. By default, your movie will loop continuously. To have your movie play only once each time, choose Loop from the Control menu.

Next, open the Bandwidth Profiler **A** from the View menu. The Bandwidth Profiler contains a bar graph that displays the amount of data in each frame of your movie. Higher bars represent frames with more data. You can use this graph to follow the download process.



To see your preloader in action, choose Show Streaming from the View menu. Flash simulates actual download performance at the currently selected bandwidth setting. This lets you see how your preloader works with different kinds of modems and Internet connections. (You can select a different setting from the Debug menu.) The triangular tab at the top represents the current playhead position **B**, while a moving green bar shows the download progress **C**. In this example, 15 out of 20 frames have downloaded. Notice how the Movie Clip is currently at about 75 percent of its length, reflecting the progression of the download **D**.

To add a unique touch to your preloader, consider showing the download's progress by displaying successive frames of an animation. For example, this Movie Clip has a 12-frame animation that shows an hourglass whose sand falls from the top bulb into the bottom bulb **A**. The first keyframe **B** contains a Stop action to prevent it from playing automatically.



Instead of changing the Movie Clip's length, you can make Flash display a specific frame of its preload animation when a certain percentage of frames has downloaded. For this project, repeat steps 4 through 6. Then, rather than scaling the Movie Clip as you did in step 8, tell Flash to display a specific frame of the Movie Clip that relates to the current download percentage. Enter the expression **this.gotoAndStop(Math.round((_root._framesloaded/_root._totalframes)*12))** for step 8's Evaluate action.

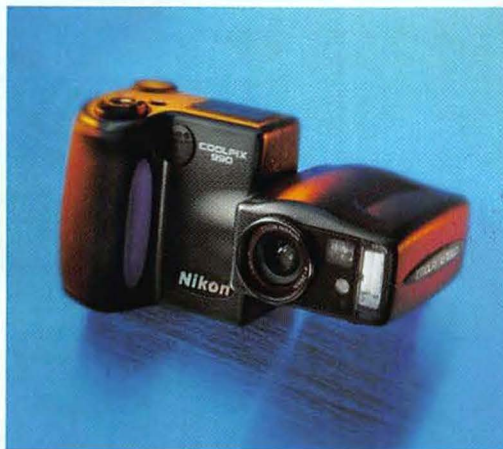
This tells Flash to multiply the ratio of frames loaded to total frames by the number of frames in your preloader animation (in this case, 12). Use the Math.round method to round the resulting number to the nearest whole number. Then, when 50 percent of the main movie's frames have loaded, Flash will go to Frame 6 of the 12-frame Movie Clip.

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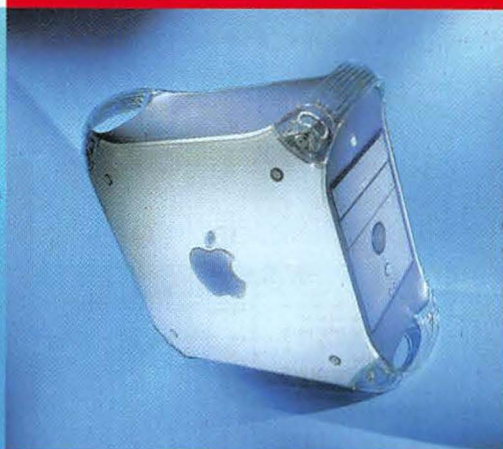


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Print Publishing Secrets

Print professionals rely on ColorSync for accurate color, but that doesn't mean we like its complexity. Color-management menus crammed with head-scratching options like Generic P22 1.8 Gamma Monitor and Euroscale Uncoated are hardly user friendly. Although color management may never be easy, I can help you weed out unnecessary profiles and cut through the clutter.

ColorSync Basics

ColorSync is the part of the Mac's system software that addresses the problem of color mismatches between different monitors, scanners, digital cameras, and printers. For example, when you send the same set of RGB values to several monitors, each one displays somewhat different colors. (If you've ever watched a bank of televisions, you've seen this phenomenon—multiple monitors receiving the same signal but producing different colors in response to it.)

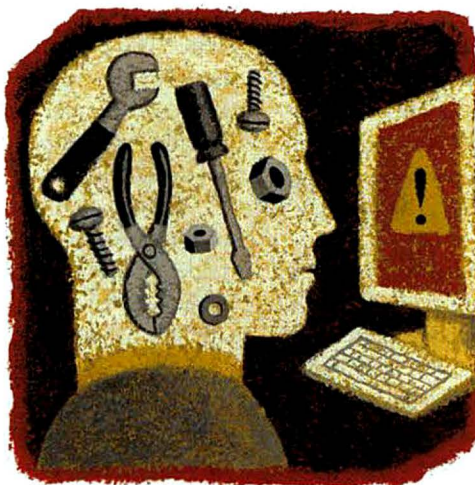
To compensate for differences between devices and make colors match, you have to send the appropriate RGB or CMYK values to each device. That's what ColorSync does—it changes these numbers in a file as it goes from one device to another.

Profiles are data files that tell ColorSync what numbers each device needs to reproduce a given color. One good rule of thumb is that you don't need profiles describing devices you don't own or use.

Profile Tracking

To begin the cleanup, go to your System Folder, open the ColorSync Profiles folder, and set it to List view. If your setup is typical, you could have more than 100 unnecessary profiles in the folder. Start by deleting recognizably named profiles that you don't need.

Don't own an Apple Color StyleWriter? Then you can safely drag to the Trash not only Apple Color SW Pro and Apple Color SW Pro SN, but also files such as Color SW 1500 Pattern, Color SW 1500 Scatter, Color SW 2000



Series Pattern, and so on—all the way up to Color SW 2500 Scatter Best 2. Repeat the process with all other profiles for devices you don't own or use.

Don't forget to look inside the Display Profiles folder nested in the ColorSync Profiles folder. If you don't own a PowerBook 540C, for example, you can get rid of PowerBook 540C Standard. Ditto for all the profiles for monitors you don't use, with a couple of exceptions. Don't delete Default Display Profile or Display Profile 256—ColorSync

needs these. (And don't assume you're missing something crucial if these items aren't in the Display Profiles folder. If you haven't calibrated your monitor using ColorSync, these profiles won't exist.) And if you find an alias in the Display Profiles folder, don't delete it, either—the Monitors control panel uses these aliases.

If you're not sure whether you'll need a certain profile in the future, make a folder called Unused Profiles, which you can put anywhere outside the ColorSync Profiles folder.

What's in a Name?

It's not always easy to tell which profiles you need. One complicating factor is that profiles have two names. The external names, or file names, are the ones you see in the Finder when you open the ColorSync Profiles folder. The internal names, or descriptions, are the ones that appear in the ColorSync control panel and in the menus of applications such as Adobe Photoshop.

continues

Apple-supplied profiles, such as Apple 13" RGB Standard or Apple Multiple Scan 20 - D50, use the same name in both cases, but many profiles from other sources do not, and sometimes the external and internal names are very different indeed. For example, it's not obvious that the profile that appears on menus as Epson Stylus Photo 1270 Premium Glossy Photo Paper is the profile that shows up in the ColorSync Profiles folder as SP1270 RC. Fortunately, ColorSync 3.X provides an easy way to discover which external profile corresponds to which menu entry.

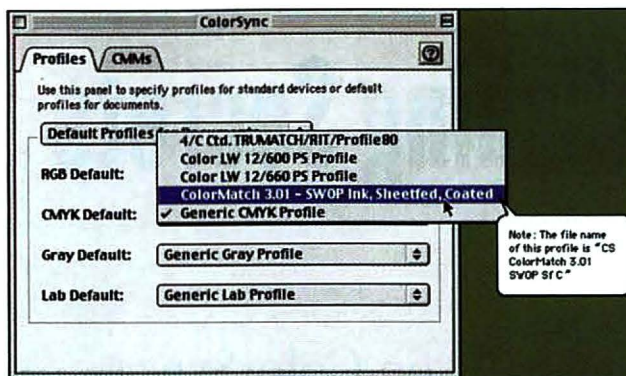
The ColorSync Secret Decoder Ring

One little-known feature of the ColorSync 3.X control panel is its ability to reveal the file name of a profile when it differs from the internal, descriptive name. To see this feature in action, open the ColorSync control panel, click on the Profiles tab, and choose Default Profiles For Documents from the top menu in the dialog box. Four menus appear: Default RGB, CMYK Default, Grayscale Default, and Lab Profile.

RGB Profiles Click on the Default RGB menu to view RGB profiles on your system. When you hold your cursor over a profile whose file name differs from its internal name, a help balloon appears that reads, "Note: The file name of this profile is . . ." This reveals, for example, that the profile that creates the Kodak XLS 8300 Printer menu entry is actually xls830a7.pf, and that the one that creates the Generic EBU 1.8 Gamma Monitor entry is bug18a7.pf. If you don't own or use these devices, you can find xls830a7.pf and ebug18a7.pf, and then discard them.

CMYK Profiles Repeat the help-balloon process for the CMYK menu. Here you may want to be slightly less ruthless: I recommend holding on to profiles for industry-standard proofing systems such as Imation Matchprint or Fuji ColorArt, because even if you don't own them, you may wind up delivering a job to a service provider that does. But unless you have, say, a QMS ColorScript 100 Model 30I, there's no point in keeping qms1030i.pf. Even if your service provider or print shop uses one for comping or proofing, it will almost certainly have tweaked the profile to its own standards. (Don't bother deleting Generic CMYK, Generic RGB, Generic Lab, or Generic XYZ—the ColorSync extension generates these profiles, and if you delete them, they will just reappear when you restart your Mac.)

Gray-Scale and Lab Profiles You probably won't have unmanageable numbers of these profiles, but you may well



Control ColorSync The ColorSync control panel tells you the file name of a profile when it differs from the internal, descriptive name; this helps you identify unnecessary profiles that clutter your system.

have duplicates, so take some time and weed them out. When you've finished, you'll have much shorter and more-relevant profile menus, both in ColorSync itself and in applications that use it.

Adobe Recommendations

Adobe Photoshop 6 and Illustrator 9 offer another handy trick for simplifying color management. You can determine which pro-

files appear in the programs' Color Settings dialog boxes when the Advanced option is not selected.

To limit these profiles, go to System Folder: Application Support: Adobe: Color: Profiles: Recommended. Inside the Recommended folder, you'll see a list of eleven profiles. If you're a typical print publisher in the United States, you probably have little use for Apple RGB (it's based on the Apple 13-inch monitor), or for the Euroscale and JapanStandard CMYK profiles. Put them in an Unused Profiles folder so you'll still have them if you ever need them.

If you want to use custom profiles with Photoshop or Illustrator, you can move those into the Recommended folder so they will always show up in Color Settings. Although these profiles are located in a folder for Adobe applications, other applications can access them as well. (The Photoshop and Illustrator installers automatically put an alias of the Recommended folder inside the ColorSync Profiles folder, making the profiles available to any application that uses ColorSync.)

Making It Manageable

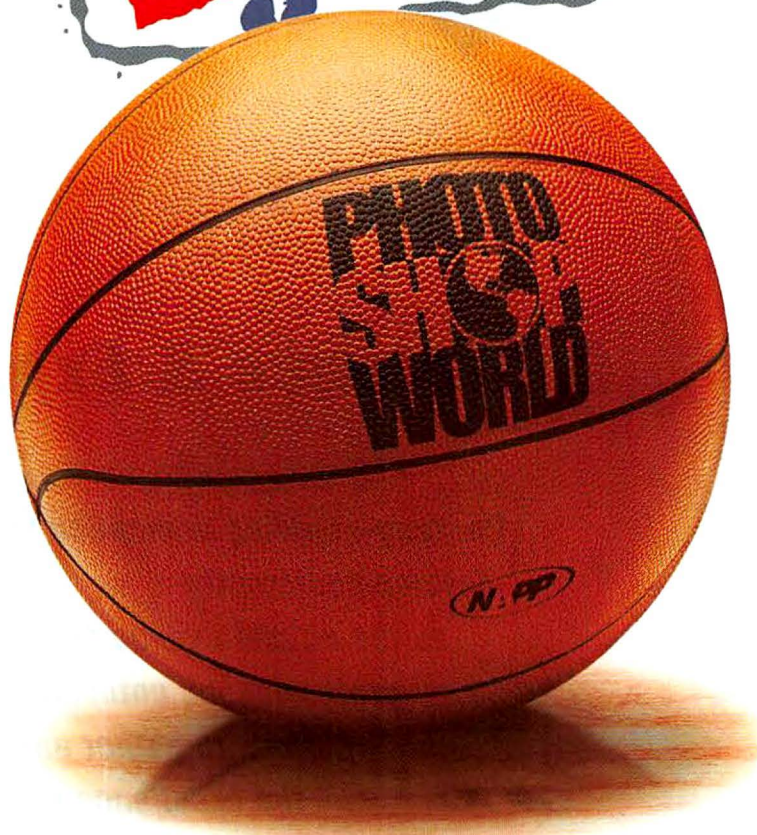
The many user-interface and functionality differences between applications still present plenty of opportunities for color-management confusion. And as print publishing applications migrate to Mac OS X, there will likely be new color-management wrinkles to smooth. But in the meantime, if you rid yourself of the raft of useless profiles that come with application installations and OS upgrades, you'll have taken an important step toward simplifying color management. **m**

Contributing Editor BRUCE FRASER is a self-confessed color geek and a coauthor of *Real World Photoshop 6* (Peachpit Press, 2001). You can reach him at bruce@pixelboyz.com.

More Info: www.apple.com/coloursync/

Apple provides a thorough grounding in color management and profiles, including a historical overview and up-to-date glossary.

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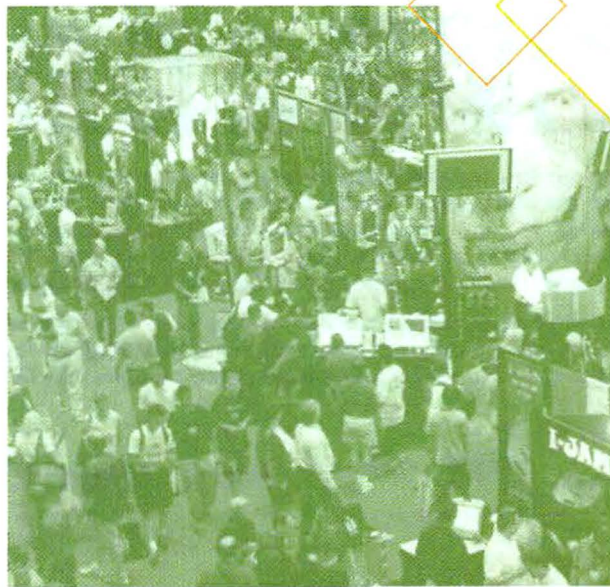
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Web Publishing Secrets

When it comes to creating your site, employing Web standards such as HTML 4, XHTML, and Cascading Style Sheets (CSS) gives you the best of all possible worlds. You can deliver your message to *all* Web users, no matter what browser they're using, and at the same time you can create a more pleasurable visual experience for the fortunate majority who are using modern browsers.

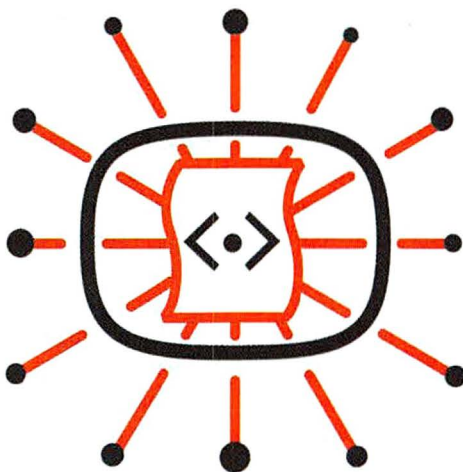
New browsers call for adherence to Web standards, while older browsers—such as Netscape 4, Microsoft Internet Explorer 4, and their predecessors—don't support every nicety of Web standards (see www.webstandards.org for more information). But that doesn't mean you have to give up Web standards altogether if you want to serve appropriate content and design to all.

The Care and Feeding of New Web Browsers

Today's browsers are happiest when you feed them *valid* Web documents—error-free pages that contain only tags approved by the World Wide Web Consortium (W3C), and properly authored CSS.

You can *validate* your HTML and CSS by testing your pages at a free online validation site. It's like receiving the services of a world-class HTML and CSS consultant—at no cost. You may be amazed at how many mistakes your Web pages contain—and at how easy they are to fix when an expert shows you what's wrong with them.

Is There a DOCTYPE in the House? The first step in validating your site is to assign an appropriate document type (DOCTYPE) to each page. A DOCTYPE declaration serves two purposes: First, in newer browsers such as Internet Explorer 5 for Mac and Netscape Navigator 6, the use of a DOCTYPE ensures that standards-compliant Web pages render correctly. (Older browsers ignore DOCTYPE declarations, just as they ignore much of everything else having to do with Web standards.) And second, you can't validate Web pages without declaring a document type.



If you're new to Web standards and validation, and if your pages use outdated elements such as the `bgcolor` attribute in table cells or the `target` attribute in links, then HTML 4.01 Transitional is likely the best document type for your pages. For more help in selecting the appropriate document type, see the Web Design Group's tutorial "Choosing a Doctype" at www.htmlhelp.com/tools/validator/doctype.html.

To declare a document type, enter its name at the very top of each HTML page, as in this example, which uses HTML 4.01 Transitional:

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
```

```
<html>
<head>
<title>My Totally Awesome Web Site</title>
```

Validate Yourself Once you've chosen an appropriate document type and uploaded your page to a Web server, the second step in the validation process is to check the pages with a free online service such as those maintained by the World Wide Web Consortium (<http://validator.w3.org>) and the Web Design Group (www.htmlhelp.com/tools/validator/).

Type your Web page's URL into the forms provided by these services, and within a few seconds you'll receive either a clean bill of health or a list of errors. Fix any
continues

errors, upload the corrected page, and try again. Check your CSS for validity at <http://jigsaw.w3.org/css-validator/>. W3C also offers a free tool called Tidy, which can validate your pages offline and correct most errors automatically (www.geocities.com/SiliconValley/1057/tidy.html).

Be Kind to Old Browsers

HTML and CSS validation is the first step toward ensuring that your sites will work correctly in today's and tomorrow's standards-compliant Web browsers. Alas, validation does nothing for yesterday's browsers, whose support for Web standards is unpredictable.

For the most part, though, older browsers can handle valid HTML even if they don't fully support it. (Netscape 4 safely ignores the `title` attribute of the `img` tag, for example.) Old browsers don't fare as well with CSS. Problems range from shoddy display to outright lunacy.

Before you begin modifying your Web pages for older browsers, make sure that doing so is worth your while. Some compatibility problems aren't serious enough to warrant expending the effort necessary to correct them. For instance, you may want to live with minor rendering differences, such as extra vertical white space on a page. But you'll want to tackle more-serious problems, such as image overlap (when a browser incorrectly places images on top of your text).

Make CSS Play Well with Netscape 4 In CSS, when you style a page component, your style trickles down to the "children" of that component. For instance, if your style sheet assigns black Verdana text to the `body` tag, then children of the `body` tag, such as `p` and `h1`, use that font and color too (unless you specify otherwise). But it doesn't work that way in Netscape 4—styles applied to `body` have no effect on `p` or `h1`.

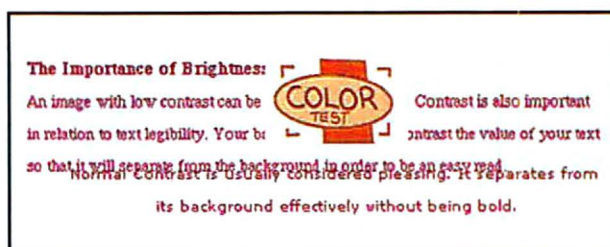
The fix? When in doubt, be redundant. By spelling out what you want, you can make Netscape 4 style `p` the same way it styles `body`:

```
body {
  color: #000;
  background-color: #fff;
  font-family: verdana, arial, sans-serif;
}

p {
  color: #000;
  background-color: #fff;
  font-family: verdana, arial, sans-serif;
}
```

Yes, `p` and `body` are identical. But this repetition is necessary for Netscape 4, even though Opera 5, Internet Explorer 5 and later, and Netscape 6 don't require it. If you use redundancy wisely, every visitor to your site will see the right fonts and colors.

Prevent Overlapping Images If an image pertains to a paragraph, you should normally include the image inside the `p` tag. But in some old browsers, this can cause the



Overlap Dancing This sort of image overlap is caused by poor CSS support in an older browser, but it can be surprisingly easy to fix.

image to float on top of the text rather than beside it (see "Overlap Dancing"), particularly if you've used leading (line height) in your style sheet:

```
<p>The image will
overlap this text in bad browsers.</p>
```

The fix is to place the image outside the `p` tag, even though logically it belongs inside:

```

<p>This markup avoids image overlap even in bad
browsers.</p>
```

Hide Good Styles from Bad Browsers One approach that solves many CSS problems (including images that overlap text) is developing both a basic style sheet for unsophisticated browsers and a more advanced one for better browsers, and then linking to both. For instance, `basic.css` would contain rudimentary styles any 4.0 browser could display, such as colors and font families, whereas `sophist.css` would include advanced styles, for 5.0 and higher browsers. Once you develop the two separate style sheets, you can link each HTML page to both by placing the following links in the `head`, before the `body` tag:

```
<link rel=StyleSheet href="/basic.css" type="text/css"
media=screen>
and
```

```
<style type="text/css" media="all">@import
"/sophist.css";</style>
```

Because old browsers don't understand the `@import` method, they will safely ignore the sophisticated styles that they're incapable of displaying correctly. By taking advantage of this simple fact, you can deliver basic presentations to basic browsers and more-sophisticated presentations to more-capable browsers—without having to create separate versions or resorting to complex JavaScript browser detection.

And that's one of the most important benefits of working with Web standards. Used correctly, they can deliver the appropriate content and design to the widest variety of browsers and devices in the simplest, most straightforward way possible. **m**

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

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Dear Mac Fan:

We are accused all the time at Seybold Seminars of being Mac-centric, and it's one criticism I'm happy to address. We're not Mac-centric—we provide a platform for all technology users to gather and share successes, challenges and concerns. It just happens that the bulk of professional, creative design and publishing takes place on Macs—not just because Apple has done a great job in making products but because there's that "something special" about the Mac community that encourages creativity, productivity and new ways of thinking. And that's what you'll find reflected at Seybold Seminars and in our publications.

In San Francisco this September you'll hear from the best minds in the industry on issues such as content management, OS X in publishing, digital rights management, cross-platform workflows and a host of other hot topics. And with any luck, you'll also be the first to see new products essential to the marketplace—you may recall the launch of the G4 at Seybold Seminars in 1999 and last year's

first look at Photoshop 6 from Adobe (among hundreds of product announcements). There's nothing quite like being there in person.

Our program has something for everyone—even if your budget is slim to none. Our Expo is free, and we have tons of cool stuff going on throughout the week that's open to all. Come and see Apple, Adobe, Epson, Quark, Nikon, Olympus and 350 other companies dedicated to extending your creativity and productivity. You won't be disappointed!

Hope to see you in San Francisco at the largest event in the world dedicated to the design, Web and print publishing communities.

Sincerely,

Gene Gable

Gene Gable
President, Seybold Seminars and Publications
Mac user since 1987



Register online at www.seyboldseminars.com

www.macworld.com September 2001 85

Seybold Seminars Education



At Seybold Seminars events, our goal is to equip cross-media professionals with the tools, technologies and practices for innovation, evolution and long-term success. This year's event in San Francisco features three comprehensive conferences, 12 Hot Technology Days, 49 tutorials and The Seybold Summit, the centerpiece of this year's event. Equip yourself with the knowledge and skills for success.



The Seybold Cross-Media Publishing Conference

September 24-25

Explore current technology issues and gain practical insights relevant to both strategic planning and the creative process across media platforms. This Conference focuses on the day-to-day realities of publishing in a cross-media world and on the complex future of publishing to multiple media. Choose from two tracks, each of which offers highly focused content essential to managers of publishing companies and their service organizations.

Business and Implementation Track



TRACK CHAIRS

Eve Asbury, Senior Vice President and Director of Print and Digital Production, Saatchi & Saatchi



Madi Bjorgvinsson, Vice President of IT, PRINT International, Managing Partner, Iceboxmedia

The Business and Implementation track focuses on core business issues and shows creative professionals and Web and print publishers how to build a solid business while implementing the best available workflows.

Tools and Technologies Track



TRACK CHAIR

Frank Cost, Professor, Rochester Institute of Technology

This track helps you decide which new design products can make a difference and how best to put them to work. You'll also gain insights into technologies still on the horizon, to help you steer your business forward in this era of constant innovation.

The Seybold Best Practices for Web Publishing Conference

September 27-28

Web publishing professionals continue to face new opportunities and challenges in a rapidly changing environment. Learn about best-of-breed tools and practices critical to professionals charged with building and maintaining an effective online presence. Choose from three distinct tracks:

Design Track

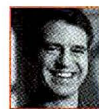


TRACK CHAIR

Maria Giudice, Founder and Chief Creative Officer, Hot Studio

The Design track brings together designers, user interface experts and other Web design professionals to share techniques for building usable, visually appealing Web sites.

Developer Track



TRACK CHAIR

Jim Black, IT Director, Genex

The Developer track brings together producers, project managers, developers and other technical professionals to discuss the Web industry's best practices and to review emerging trends.

Corporate Track



TRACK CHAIR

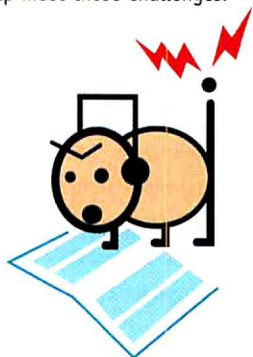
Michael Maziarka, Director, CAP Ventures, Inc.

This track addresses the publishing challenges associated with creating, maintaining and publishing product pre- and post-sales information, as well as the technologies available to help meet those challenges.

The Seybold Summit

September 26

New this year is The Seybold Summit, the heart and soul of Seybold San Francisco 2001. This powerful addition to our program brings the design and cross-media communities together with the most innovative thinkers and technologists to focus on emerging technologies and trends. Learn where content design, production and delivery are going—to help you do your job better. If you have time for just one day at Seybold San Francisco 2001, this should be it.





The Seybold Best Practices for Print Publishing Conference

September 27–28

The Best Practices for Print Publishing Conference brings together the most knowledgeable practitioners in print publishing to share their insights in key areas—the building blocks of successful prepress and print production systems. From PDF workflows, asset management and color reproduction to do-it-yourself workflows and quality-on-a-budget, we target the topics that will make a difference in your business.

Processes Track



TRACK CHAIR

Bruce Fraser, Author/Consultant

The Processes track focuses on seven key areas you need to master to become efficient and effective in cross-platform digital publishing. We deal with solutions that work today rather than pie-in-the-sky tomorrow.

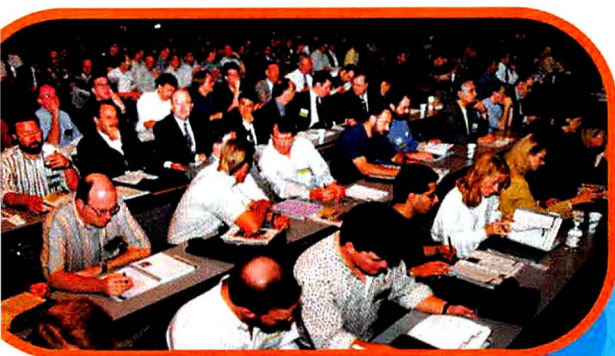
Return on Investment Track



TRACK CHAIR

Kathy Sandler, Assistant Director of Publishing Technology, Hearst Magazines

This new track offers comprehensive analysis and information to help designers, managers and production workers maximize their return on investment (ROI) and the production quality they are able to achieve with the most efficient creative workflows.



Instructive Tutorials

September 24–28

Go home with effective techniques and skills that you can use immediately. Forty-nine beginning, intermediate and advanced tutorials cover eight focused areas:

- Web publishing
- Print publishing
- Cross-media publishing
- PDF
- XML
- Design
- Color
- Digital images

Hot Technology Days

September 24–28

Choose from 12 focused topics and daylong coverage led by industry experts.

- **PDF for Print Publishing:** Get a clear sense of how to use the PDF format successfully in a design and print publishing workflow.

Sponsored by Planet PDF

- **Print on Demand:** Learn about the benefits, technology, equipment and business of digital and on-demand printing.
- **Digital Rights Management:** Gain ideas on how to use DRM to increase the value of your content, and see how publishers are making DRM work in their businesses.
- **Wireless:** Learn how to leverage the opportunities that come with wireless technologies.
- **Design:** Explore current movements in the design and creative worlds.
- **Color Production:** Catch up on the latest tools and techniques in color production, from input through processing, proofing and output. Find out all about color sync workflows.
- **Content Management Systems:** Learn how to tackle your company's content management initiatives.
- **Broadband Media Technology:** Advance your knowledge of streaming media—including the production tools for efficient streaming platforms and more.
- **XML in Publishing:** Explore the newest technology standards in information-packed sessions.
- **E-Books and E-Content:** Get a clear sense of where e-books and e-content are today, and where they're headed tomorrow.

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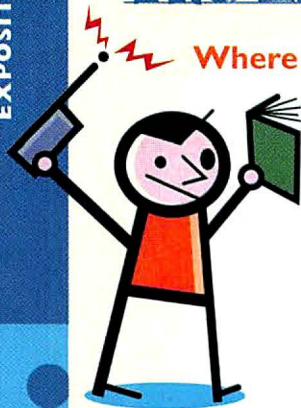
- **PDF for Electronic Documents:** Get real-life solutions to your PDF-related issues.

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- **Digital Asset Management:** Get answers to your most pressing digital asset management questions.

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The Exposition at Seybold Seminars



Where Every Area of Communications Technology Is Covered

Every year more than 35,000 professionals from around the world gather at Seybold San Francisco to take part in the unique community committed to transforming communications technology. Join your peers on the Expo floor and check out 350 exhibitors displaying their latest products and technologies. From the hottest Web development software to the latest digital rights management services and content management systems, you'll find a wealth of products and services to help solve your toughest cross-media challenges. During the week, also take part in special activities, share ideas with colleagues, make industry connections and learn from the experts.

Interact with 350 vendors at Seybold San Francisco 2001, including:

Adobe Systems, Inc.
Apple
Canon USA, Inc.
Canto Software, Inc.

Connectix Corporation
Corel Corporation
CreoScitex America
Eastman Kodak Company

Epson America
Extensis Products Group
Fuji Photo Film USA, Inc.
Pantone, Inc.

RealTimeImage
Quark Inc.
Wacom
And more!

Keynotes Open to all attendees! Hear from industry leaders as they share important insights, forecasts and news:

Monday, September 24

8:30am-10:00am



Martin Brauns
President and CEO
Interwoven



Roger Fidler
Kent State
University

12:15pm-1:15pm

Fred Ebrahimi
President and CEO
Quark, Inc.

Monday, September 24

5:30pm-7:00pm



Mark Anderson
Founder
Technology Alliance
Partners, Strategic
News Service

Tuesday, September 25

12:15pm-1:15pm



Bruce Chizen
President and CEO
Adobe Systems, Inc.

Wednesday, September 26

12:15pm-1:15pm



Dick Brass
VP for Technology
Development
Microsoft
Corporation

Wednesday, September 26

8:30am-10:00am



Dave Winer
Userland

Thursday, September 27

8:30am-9:15am

Donald Van de Mark
Co-Founder and VP of
Programming
Myprimetime, Inc.

Special Keynote
Tuesday, September 25
9:00am-10:00am

APPLE



Phil Schiller
VP, Worldwide
Product Marketing



Steve Jobs
CEO
Live Introduction
via Satellite

Event Hot Spots

Hot Picks

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Seybold Publications editors give their Hot Picks designation to the most exceptional products and services at the Expo.

Digital Art Gallery and Contest

See amazing art on display created by digital artists from around the country. These works are chosen for display by a panel of judges from the digital art community. For more information or to submit your artwork, go to www.seybold.seminars/digitalart

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on products and services.

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The industry's top professional associations will be at Seybold San Francisco 2001!

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Digital Atelier

DIGITAL ATELIER®

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Artists Dorothy Simpson Krause and Bonny Lhotka show a new series of large-format prints and share processes they have pioneered with new printer and scanner technologies.

Planet eBook and DRM Arena



Visit this special arena with live presentations and demonstrations from the leading e-book vendors.

Register online at www.seyboldseminars.com

EXPO HOURS


Tuesday, September 25	10:00am-5:00pm
Wednesday, September 26	10:00am-5:00pm
Thursday, September 27	10:00am-4:00pm


Exposition Showcases

- NEW! Broadband Digital Media Zone
- Content Management Solutions Showcase
- Digital Rights Management/E-Books Showcase
- Sponsored by **PUBLISHERS WEEKLY**
- Adobe Solutions Network 
- Quark Partner Pavilion

Special Events

Online Charity Event

 Seybold Seminars and selected vendors have donated unique items for auction online during the event. Bid big—all proceeds benefit Project Open Hand. Visit www.seyboldseminars.com in August to preview auction items. Copyright © 1998 eBay, Inc. All Rights Reserved.

 Since 1985, Project Open Hand has provided nutritious meals, groceries and outreach to the homebound, critically ill and those living with symptomatic HIV and AIDS. Project Open Hand is a San Francisco-based nonprofit organization that cares for more than 1,600 people.

The Game Show!

Wednesday, September 26
5:00pm-6:30pm

This information-packed game show tests your industry knowledge and wit. Compete for prizes and enjoy free food. Open to all attendees.

Meet the Dream Team

The Future of Design in the Age of Digital Media

Thursday, September 27
6:00pm-7:30pm

Design-world legends David Carson, Clement Mok and Roger Black discuss how design is changing and what the future has in store. Free and open to all attendees.

Seybold Lunches with Annalee

Thursday-Friday, September 27-28

Spend lunchtime with Annalee Newitz, *San Francisco Bay Guardian* journalist and syndicated columnist. Her lively and engaging sessions include "Why the Web Still Sucks: What We Learn from What We Mock" and "Learning from Pornography."

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For more than 30 years, in 80+ countries, Seybold Publications has been the publishing industry's most trusted source of technology news and insider intelligence, guiding purchasing decisions and business strategies for the professionals who create, produce and distribute media.

Invest in Knowledge

In any economic climate, continuing to invest in knowledge is key to maintaining professional strength and success. That goes for companies and individuals across industry lines, and certainly for everyone who has to publish across all media. The education offered at Seybold San Francisco is critical to helping you do your job now, as well as evolving and moving forward. But the education doesn't have to stop at the event. Be a part of our year-round community by upgrading your commitment to continuing education: Make the *The Seybold Report* a regular part of your investment.

The Seybold Report is devoted to the cross-media tools, technologies and trends shaping print and Internet publishing. Each in-depth, twice-monthly issue gets you inside the questions and challenges facing the marketplace every day with:

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- Expert technology evaluations

You'll also enjoy penetrating analysis of the business issues and market conditions that determine the success of new products, technologies and companies.

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Publishing professionals interested in the latest developments in all these mission-critical topic areas:

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- Personalization
- Business news and issues

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- Wireless
- E-Books
- CTP and on-press imaging
- Print workflow
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Your subscription to *The Seybold Report* also includes a subscription to *The Bulletin: Seybold News & Views on Electronic Publishing*. The Bulletin is emailed to you weekly and features brief summaries of news, product previews, technology analyses, trade show highlights and more—critical, timely information that keeps you on top of the print, cross-media and Internet publishing industries.

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Register for the Expo or any conference, tutorial or Hot Technology Day and pick up this **FREE**, cool T-shirt when you arrive at the Expo.*

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Plus, get 15 percent off any educational offering when you use your special code.



* T-shirts will be distributed only at the Alumni Check-In desk at Moscone Center during the week of the event. Recipients of this offer must pre-register for Seybold San Francisco 2001 by September 19 using the special code. One T-shirt per person. Offer good while supplies last.

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Mac OS X Secrets

Macs have always been great networking computers—both the software and the hardware are a breeze to get up and running. But Mac OS X has brought some significant changes to Mac connectivity. In fact, the new operating system is so different that you may be afraid of losing the effortless network access you enjoyed with Mac OS 9. But you needn't fear—the news is good.

Only the Names Have Changed

If you can set up a Mac OS 9 network, you'll feel right at home with OS X. And it gets better: OS X also allows you to connect your Mac in ways you couldn't before, in a Mac-only network or in a cross-platform network. We'll show you how to set up Mac OS X networking software, introduce some new features, and get you up-to-speed on keeping your data safe in an increasingly interconnected world.

Get the Network Going

Before you can share files or print from a Mac OS X machine, you'll need to set up your networking software. Fortunately, you have two factors going for you: TCP/IP is configured already if you used the Setup Assistant when you installed Mac OS X, and OS X's network settings look and behave much like OS 9's.

The basis of networking in Mac OS X is TCP/IP, the network protocol that runs the Internet. TCP/IP lets your system communicate with Macs and other machines. The stalwart AppleTalk is still around, but you use it only to print to an AppleTalk printer or to share files with a Mac running pre-OS 9 system software.

TCP/IP configuration is part of the Mac OS X setup, so you should be almost ready to join a network. To check out your TCP/IP status and complete the remainder of your network setup, open System Preferences and click on Network. First verify that the topmost Configure pull-down menu shows a network connection (AirPort or Built-in Ethernet, for example) that matches the way you connect to your local network. Now click on the TCP/IP tab to ver-



ify that your IP address and other settings are correct for connecting to your local network. If you've used TCP/IP in Mac OS 9, these options will look familiar.

If you need to print to an AppleTalk printer, or if you anticipate that AppleTalk-only Macs will be used to retrieve files from your computer, enable AppleTalk by clicking on the AppleTalk tab and then selecting the Make AppleTalk Active option.

With TCP/IP and AppleTalk running, you're ready to go—assuming, of course, that your Mac is physically connected to a network. Since the same TCP/IP settings you use for your network will get you on the Web, you can verify that your network is up and running by launching a Web browser.

Set Up File Sharing

To allow and control access to your computer via a network, you'll need to set up user accounts. Like accounts created with the Users & Groups feature in older Mac OS versions, a Mac OS X user account provides access to your Mac; the OS X account, however, also creates a folder with a predefined set of access privileges.

Making a Mac's files accessible over a network is a quick, two-step process in OS X: just add users, and activate file sharing. To create a new user account, open the Users item in System Preferences. Click on the New User button and fill in the fields. To make the new user an administrator, with full access to the Mac, select the

continues

Allow User To Administer This Machine option. When you're done, you'll see the user's account and a folder named for that user on your hard drive.

To enable file sharing, open the Sharing item in System Preferences, and then click on the Start button located next to the File Sharing heading.

That's it. You've set up your network for file sharing.

Make the Connection

It's also quite simple to connect to another Mac OS X machine for file sharing. Choose Connect To Server from the Finder's Go menu; then choose the target Mac from the list of Macs in your local network.

Because Mac OS X uses TCP/IP for file sharing, you can't log on to a machine running Mac OS 8 or earlier from an OS X machine. If you need to access such a Mac, install Open Door Networks' ShareWay IP on them (\$79 to \$1,799, depending on the number of licenses; www.opendoor.com). This nifty utility gives these systems the same AppleTalk-over-IP access built into Mac OS 9. You must configure TCP/IP on the older machines to make this arrangement work.

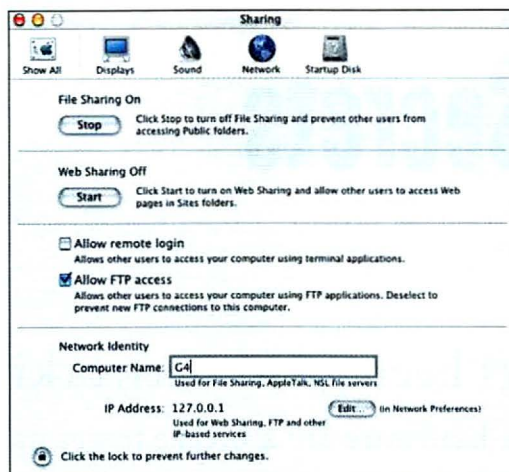
You can, however, log on to a shared Mac OS X machine from a pre-OS 9 Mac via the Chooser or Network Browser. To log on to a Mac OS 9 machine from Mac OS X, enable file sharing via TCP/IP in the File Sharing control panel on the OS 9 machine.

With AppleTalk enabled in Mac OS X, you can print to AppleTalk-connected printers. Go to your Applications folder and then to the Utilities folder, and open the Print Center application. Click on the Add Printer button, choose AppleTalk from the pull-down menu, select the printer you want to use, and click on Add.

Multi-What?

Something else is new in Mac OS X. *Multilink multihoming* is a boon to anyone who needs to connect to multiple networks at the same time. Say your network has a DSL connection for Internet access and a local network for file sharing and printing. Before OS X, you needed third-party software to keep both connections active. Using multilink multihoming, you simply activate multiple network connections and configure their TCP/IP and AppleTalk settings.

To enable this feature, go to the Network pane of the System Preferences control panel and select Advanced from the top Configure pull-down menu. You can then assign priorities to each network connection by dragging its name up or down the list.



It's Always the Same The Sharing panel in the System Preferences application provides many of the same functions as the File Sharing control panel in OS 9 and earlier.

Remote Control

Because Mac OS X is Unix-based, you can also access your Mac remotely via a terminal emulator—using Telnet, remote log-in, rsh, or the OpenSSH (Secure Shell) standard. Remote command-line access allows a remote user to issue Unix commands to control the Mac, run Unix applications, exchange files, and do just about anything else.

Though this is a convenient way for administrators to manage systems remotely or to control a Mac via a PC or Unix machine, providing command-line access is the single biggest security risk of sharing your

Mac, especially if you use the vulnerable rlogin scheme. For one thing, anyone with a Telnet application and access to your Mac's account information can log in and take control of your machine. The rlogin command is a favorite entry route for hackers because rlogin does not encrypt data transferred over a network. SSH is much more secure; it encrypts every bit of information you transfer.

If you need to give your Mac remote command-line access, first make sure you're using the most current version of Mac OS. At press time, Mac OS X 10.0.4 (available as a download from the Apple Web site) was the current version, and it included an update to SSH. Beginning with Mac OS X 10.0.1, Apple changed the default remote log-in application, replacing rlogin with OpenSSH (which encrypts network data, guarding against interception as it traverses the network). Not updating Mac OS could put your Mac at risk.

To access your Mac using SSH, users need a client such as MacSSH or OpenSSH, both of which are available free from many Internet sites, including Macdownload.com.

Cross-Platform Equity

Networking in Mac OS X is a lot like the new operating system itself: things look different, but much of what you're accustomed to is still there. Even better, this Unix-based OS gives you a new level of network connectivity—making it possible for your Mac to function as an equal in cross-platform networks, and providing the same level of access available to Unix and PC users. **m**

SHELLY BRISBIN is a freelance writer based in Austin, Texas. She is a coauthor of *Mac OS X for Dummies* (Hungry Minds, 2001).

More Info: www.macworld.com

For additional resources on networking in Mac OS X, go to Macworld.com and type **OSXSecrets** in the Search box.

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Mac 911

Recalling the stirring challenge of John F. Kennedy, ask not what the Macintosh community can do for you, ask what you can do for the Macintosh community. In this month's *Mac 911*, I lend a hand with mapping PC files to your preferred Mac applications. I also offer bold advice on how—and how *not*—to speed up your dial-up connection, and help you find a better bargain than AOL.

Icon Remember

Q. I'm having some trouble with a client's TIFF files, which she created in the Windows version of Adobe Photoshop. When I load the files, they bear the PictureViewer icon, and they open in that application as well. I'd prefer that they open in Photoshop when I double-click on them. Is this possible?

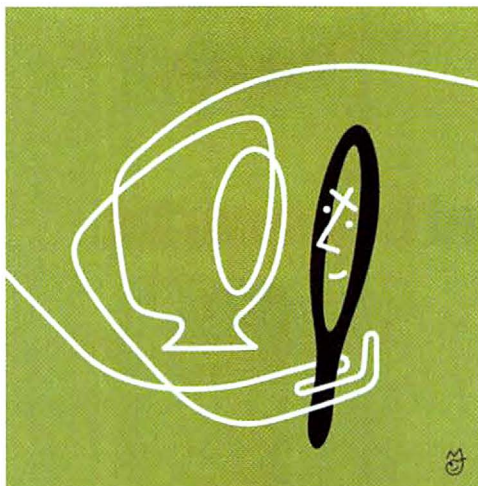
DON MACKENZIE
Fremont, California

A. Why, yes, it is. Apple's oft-overlooked File Exchange control panel is this problem's cause and solution.

Mac OS is fairly accommodating about opening files created on a PC—sometimes too accommodating, as your conundrum illustrates. In this case, Mac OS has determined that PictureViewer, the graphics-viewing application included with QuickTime, shall open all TIFF files created on a PC. And no, it doesn't matter that the user created these files in Photoshop for Windows. PictureViewer is eager to open those Photoshop files and will do so until you make some adjustments.

These include opening the File Exchange control panel and clicking on the PC Exchange tab. In the resulting window you'll see a long list of PC file extensions—.aifc, .bat, .dot, and .tif, for instance—assigned to Mac applications such as QuickTime Player, SimpleText, Microsoft Word, and PictureViewer. Scroll down this list and you'll see that the .tif extension is assigned to PictureViewer.

To change the assignment, simply highlight the file extension you want to alter and click on the Change button. When you do, the Mac will ruminate for a bit



before presenting you with the Change Mapping window, which contains a list of the applications on your Mac. You should scroll down until you find the appropriate application—Don, you'd choose Photoshop at this point—and click on Change to reassign the default application (and icon) for that file type. When next you place a PC Photoshop file on your Mac, it should display the Photoshop icon and launch Photoshop when you double-click on it.

Modem Maximization

Q. Is there a way to speed up my PowerBook modem's dial-up connection?

ZAHID RASHID
Karachi, Pakistan

A. An excellent question, Zahid, and one we've bandied about quite a bit in Macworld.com's Troubleshooting forum. Some forum visitors have suggested there's little one can do to speed up a sluggish modem connection, while others have offered the idea that with the right tool, you can make your modem perform seemingly impossible feats of derring-do. Let's try to separate fact from fiction.

To begin with, your 56-Kbps modem will never, ever reach its maximum speed in North America (and many other delightful spots around the globe), because U.S. government regulations prohibit dial-up modems from exceeding 53 Kbps. In fact, in most cases you'll be lucky to see them top out at 48 Kbps.

So is there anything you can do to speed up your connection? Maybe. Start by making the cleanest connection possible between your PowerBook and the phone jack. Avoid plugging the phone cord into phone-line splitters and devices such as surge protectors and answering machines. Channeling your line through this mish-mash of stuff can add noise, which can cause more data-transfer errors, slowing your connection. Line noise also comes from electrical appliances and AC power cords, so if you can better isolate your PowerBook and accompanying phone cord, do so. Long phone cords can also degrade the phone signal, so use a shorter cord if possible.

Cock a keen ear and evaluate the quality of your phone line. Connect a telephone to that line, dial 1, and listen for noise. If you hear a lot of hissing or crackling, give your phone company a call and report that you have a dirty line that interferes with your voice calls. Don't introduce the phrase *data calls* into the conversation, because phone companies have to maintain line quality only good enough for voice calls.

Finally, try to connect locally. A local number gives you a better chance at achieving a more direct path to the receiving modem. If a connection is routed through lots of different lines and equipment, it's likely to slow down.

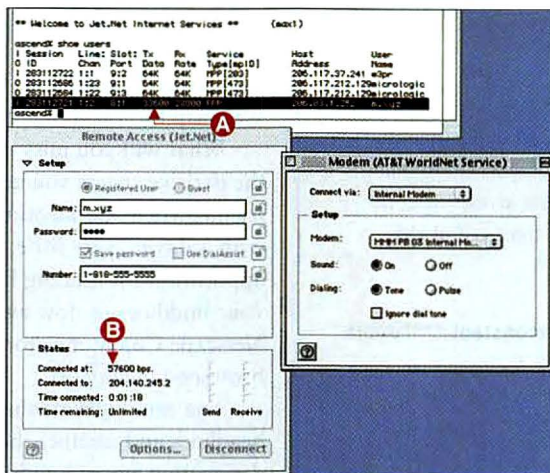
I'll also report what *won't* help you: a product from macintosh.com (www.macintosh.com) called Modem Magic. This \$35 collection of modem scripts is aptly named: like all magic, its power is based more on illusion than on reality.

Unsolicited Advice

Have you found that your **Microsoft Word 98** and **2001** documents are far heftier than those created in earlier versions of Word? Use the Save As command to slim them down.

In my tests, a 284K Word 98 document saved in Word 6.0/95 format trimmed down to a svelte 40K. As a Word 5.1 file, it weighed in at a scant 32K.

Note, however, that Word 98 and Word 2001 files containing graphics don't benefit from this trick—as Word 6.0/95 files they actually get bigger, and they won't save at all as Word 5.1 files. Also, if you've used Track Changes in your original document, those tracked changes remain in Word 6.0/95 files but appear as black, underlined text in Word 5.1.



Black Magic Jet.Net's log shows that our test modem has connected at 33,600 bps **A**, yet Modem Magic falsely reports the connection speed as 57,600 bps **B**.

Many users visiting the Macworld.com Trouble-shooting forum have recommended Modem Magic, so we decided to put *Macworld* Contributing Editor Mel Beckman to the task of testing it. Mel runs his own ISP and was therefore in a position to see Modem Magic's effects from both ends of a dial-up connection. Mr. Beckman reports, "After extensive testing with many different modems under controlled conditions, I can conclusively demonstrate that most, if not all, Modem Magic scripts deliberately

force a high reported connect speed, hiding the actual, usually slower, connect speed from the user."

Beckman goes on to say that Modem Magic can even make throughput worse, "because the speed trick necessarily impedes compression, causing overrun buffers and flow control to kick in." To read his complete report on the dubious benefits of Modem Magic, go to www.macworld.com/2001/07/13/reviews/modem.html.

If you'd like to see for yourself how fast your modem connection is, regardless of your software, you can find detailed instructions at www.macworld.com/2001/09/howto/modem.html.

Limited Multiple Users

Q. After configuring my Mac to use Multiple Users (in Mac OS 9), I've tried to get Microsoft Word to work in a limited account. However, when I launch Word, I receive an error message that reads, "Microsoft Visual Basic cannot start program," and then Word quits. What's going on? "FRED"

Macworld.com forums

A. I'm afraid you've discovered one of a handful of Multiple Users' shortcomings. You see, Multiple Users lacks a certain subtlety. If you set up a Limited or Panel account, Multiple Users blithely bars access to folders that may be necessary for certain applications to function. Such is the case here.

My guess is that you installed Microsoft Office and then—without running Word for the first time—set up this Limited account. When any component of Microsoft Office runs for the first time, Office flings a number of files into various places within the System Folder. Because Limited users don't have access to the System Folder, Office can't install these necessary doodads, and you see this inevitable error message. The workaround is to open *continues*

Tip of the Month

The Appearance control panel has an undocumented feature accessible only through AppleScript. Running the following script will place double arrows at both ends of window scroll bars, rather than just at the bottom and right edges:

```
tell application "Appearance"
    set scroll bar arrow style to «constant ****dubl»
quit
end tell
```

JOHN H. GILLETTE
Bowie, Maryland

Word in the Owner account. Once you've done so, it should launch properly from any user account.

Rather than backtracking this way, you'd do well to think ahead before configuring Multiple Users. For instance, keep in mind that Limited and Panel users can't configure the Startup Items and Shutdown Items folders in Mac OS 9 and earlier. This means Panels users can't use the Launcher at all and Limited users can use it only if the Owner creates an alias of it in the Startup Items folder (inside the user's folder). Likewise, Limited users who want Stickies to appear at startup must have an alias of Stickies in the Startup Items folder within their user's folder.

AOL Alternative

Q. America Online (AOL) recently increased my monthly fee to \$24, and I'm starting to wonder if I couldn't do better elsewhere for less money. I'm still a little unsure of my Mac skills, but is it that difficult to make the transition from AOL to a "real" ISP?

PETER NANCE
Salt Lake City, Utah

A. While I believe America Online offers some real benefits and convenience—particularly to new computer users—I agree that it *is* a bit difficult to swallow this price increase when AOL has traditionally treated Mac users like poor relations. The Mac versions of AOL's software inevitably trail months and months behind the Windows releases, many areas of AOL are useful to Windows users only, AOL's browser is weak and slow, and AOL continues to handle e-mail attachments from other ISPs poorly. I firmly believe that with a little knowledge and pointers to some helpful sites around the Web, you can do as well—or better—with another, less expensive ISP.

Let's start with an alternative ISP—EarthLink (404/815-0770, www.earthlink.com). There are many worthy ones, but EarthLink has some distinct advantages. It's easier to configure than many of its competitors. It's a nationwide service, so you'll have a better chance of finding a local number when you're visiting Aunt Vilma than if you sign

on with Big Joe's ISPs-Is-Us. It also provides 6MB of storage space for a personal Web page, offers round-the-clock tech support, and supplies the software you need to get on the Web—all for \$22 a month.

What will you miss if you abandon AOL? Other than the derisive sneers you get from your computer-savvy friends when you mention that your e-mail address ends with aol.com, very little. AOL's Instant Messenger—an application for sending live messages back and forth to your buddies—is now available outside AOL. The free Netscape Communicator (<http://home.netscape.com/> browsers) includes it.

You can duplicate the experience of seeing the day's headlines and weather the instant you log onto AOL by designating any of hundreds of Web portals as your home page. These pages—such as Apple's My Apple Start Page—act as a gateway for other information sites and provide such niceties as the day's headlines, sports scores, weather, financial news, and entertainment tittle-tattle.

Using a portal, you can also create a personalized stock portfolio and track the progress of your stocks, much as you would on AOL. Excite, via My Apple Start Page, offers stock tracking, as do a host of other portal sites, including Netscape (<http://my.netscape.com>) and Yahoo (<http://my.yahoo.com>). These sites, like AOL's, allow you to create and maintain an online calendar. Many portals offer personalized e-mail accounts as well.

One feature introduced in AOL 5.0 is You've Got Photos—a way to process and view your photos online. Ofoto (www.ofoto.com) and Snapfish (www.snapfish.com) offer this kind of service. As for AOL's bulletin boards, you'll find more lively, knowledgeable, and *uncensored* discussions in the Web's many Usenet newsgroups—accessible via newsreaders such as Newswatcher (many flavors of which you'll find at www.macdownload.com) or the news servers in Microsoft's Outlook Express.

So if you can get the best features of AOL on the Web, what good is AOL? Because AOL screens its content, it's a reasonably safe place for your kids to surf. And it's a good starting point for users new to computers and the Web. But it's *only* a starting point. Once you're comfortable with your Mac and the basic structure of the Web, it's time to take off the training wheels and save a few bucks in the process. **m**

Contributing Editor CHRISTOPHER BREEN asks only that the Macintosh community support the principles of truth, justice, and the American way.

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*.

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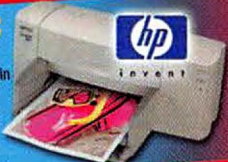
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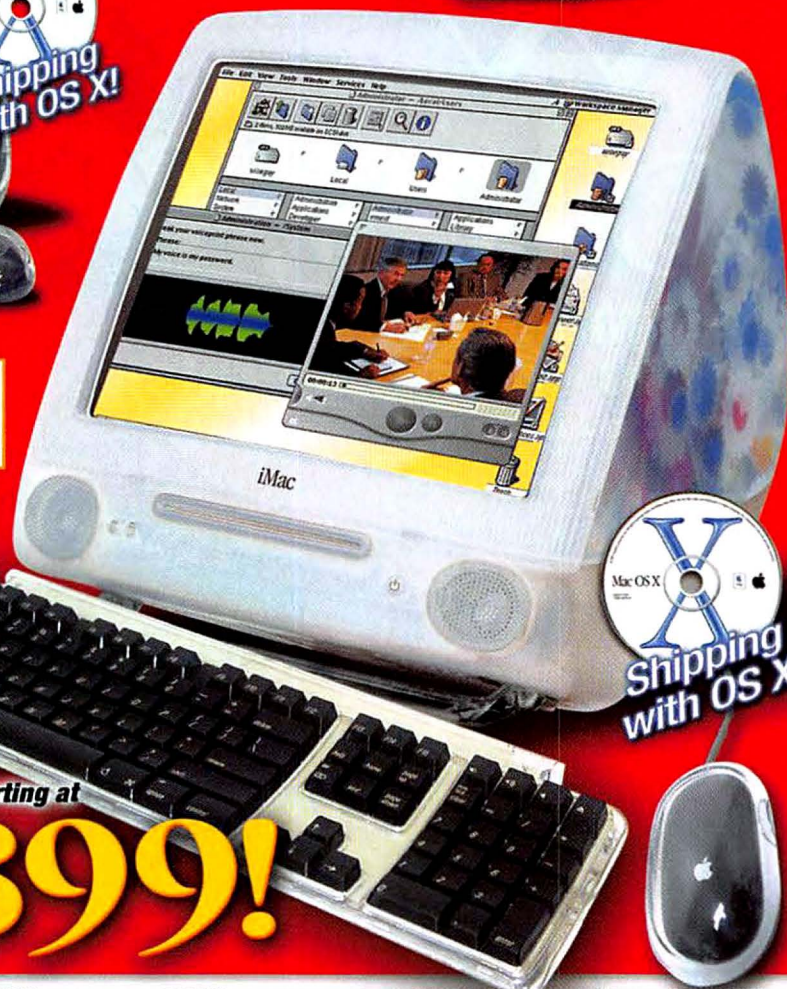
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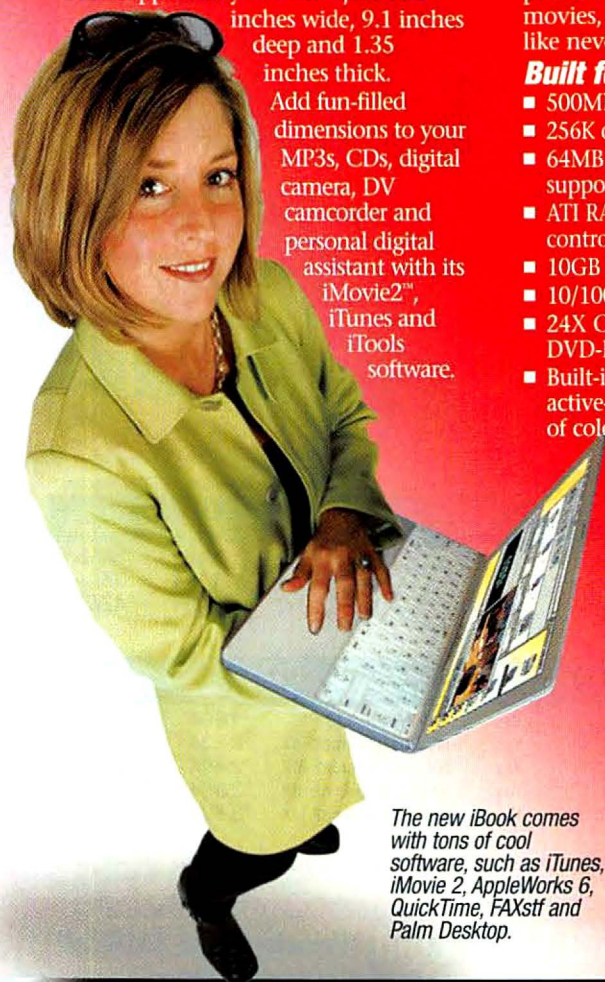
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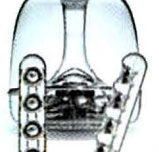
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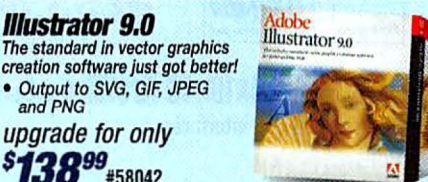
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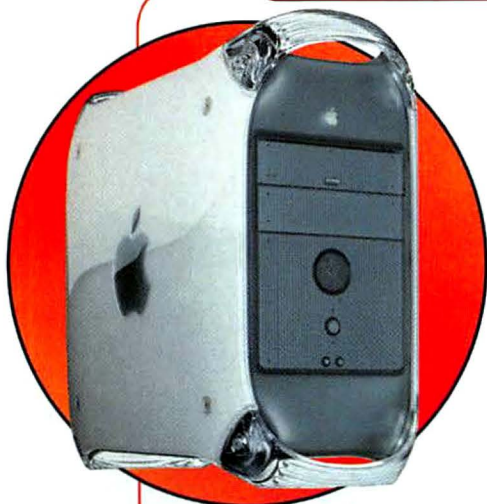
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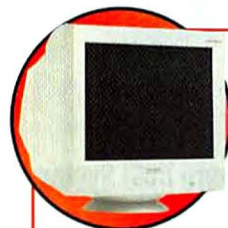
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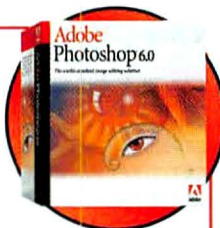
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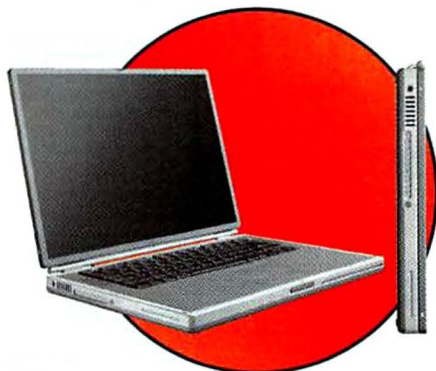
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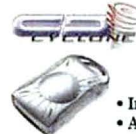
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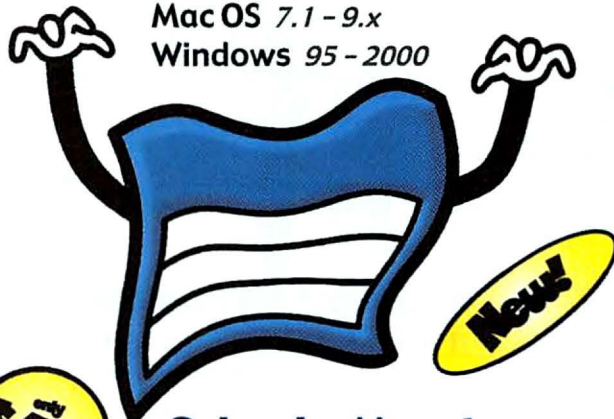
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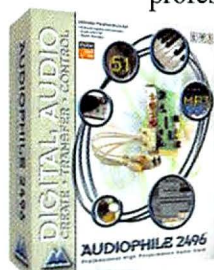


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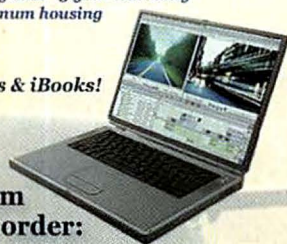
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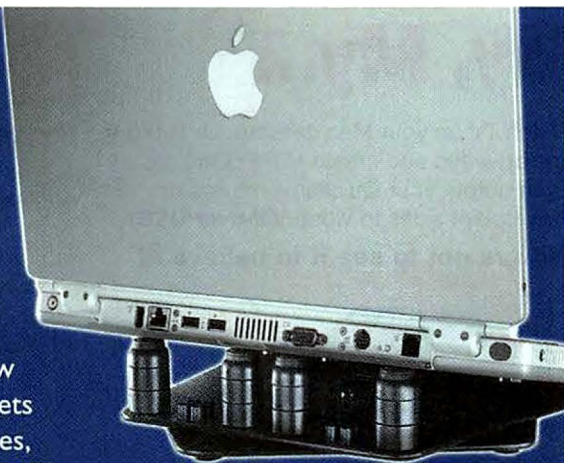
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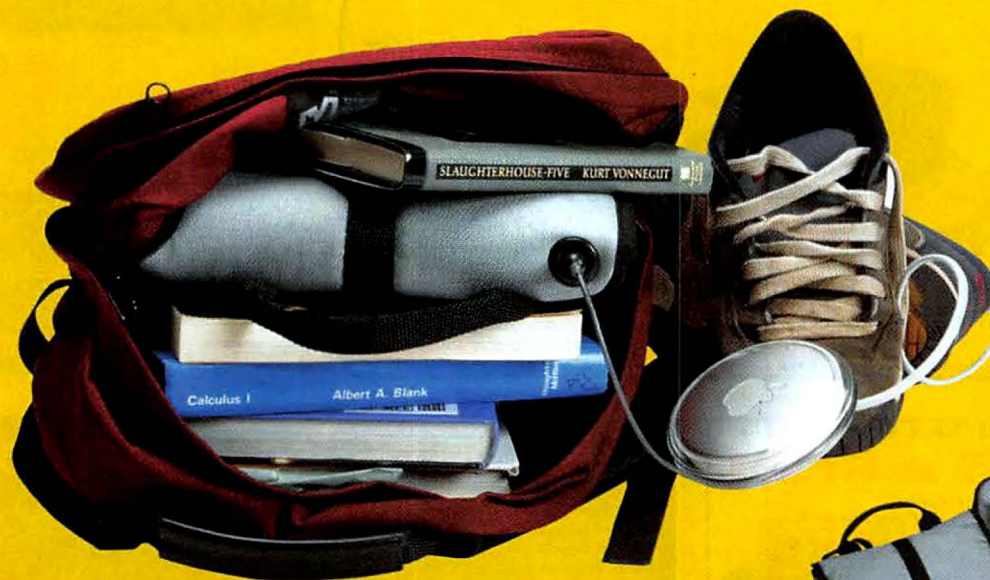


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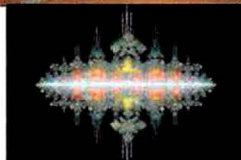
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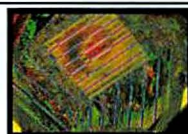
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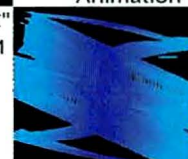


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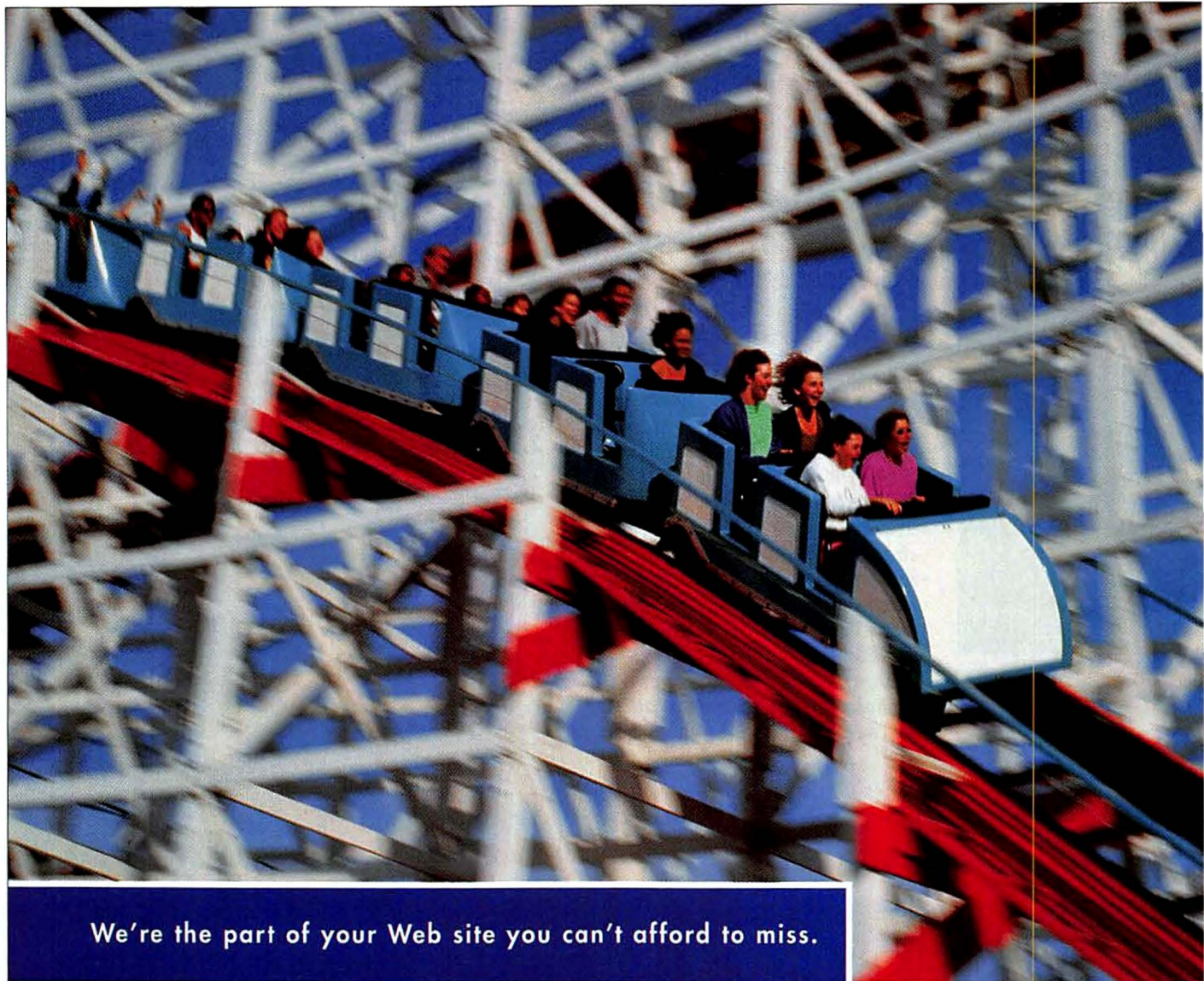


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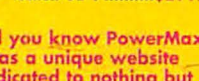


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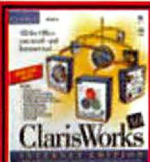
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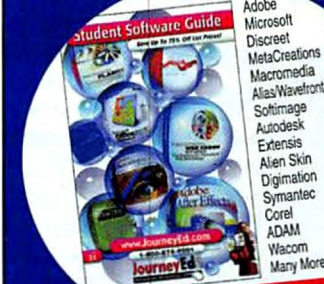
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available technology, and it's *open* technology. Granted, taking advantage of that power often seems about as easy as turning a washing machine into a working bicycle using raw steak as a tool. But that's OK because, for one, once you've learned grep somewhere, you can apply that knowledge anywhere in the computer-using universe; and two, the target users are geeks, people who'd think, "Well, obviously I'd use a crown roast; I could grind those ribs into a whole set of tools!" And so it's only right that BBEdit includes the real grep, not some home-grown replacement.

Rule 4: Act Like a Mac App

A Mac app should look like a Mac app! The concept is readily understood (if only sporadically applied) these days.

And while it's astonishing that BBEdit has never crashed on me and taken an unsaved manuscript with it, people who expect modern apps not to crash also expect Mommy and Daddy never to fight in front of the children. Still, BBEdit gets full points for Mac-ness, and also for doing the mostest with the leastest memory and processor resources.

Rule 5: Know Thyself

Great software stays "on message." If at any moment its developers become unclear about its true character and purpose, its users sure won't stand a chance.

BBEdit serves as a perfect example of a great app. But is it a great word processor? Nope. It's become a *usable* word processor thanks to the fact that in 2001, text files rule. Content isn't a pretty, formatted, ready-for-print document; it's merely a nugget of text other software can purpose for print, or the Web, or an e-book.

Besides, the power of BBEdit lies not in its feature set but in its philosophy. It's my word processor, but it's also a box of potential. With some AppleScripts, it turns a block of text into a new entry on my Web site. It's occasionally my e-mail app: I can search a 40MB file of archived mail far faster with BBEdit than I can with my mail client.

It's How You Use It

A new tradition has been added to the Ancient Geek Meeting Ritual: after the by-rote donnybrooks over computer operating systems, newcomers to the tribe must reveal and then defend their choice of pocket multitool (me: Leatherman Wave when I need pliers; Victorinox SwissChamp when I need torque). Occasionally you'll see someone show off a battered old Craftsman screwdriver and praise the fact that it can be used as a pry bar, a chisel, a handle, a wedge, a hammer, or a digging tool, and serve hundreds of other impulsive uses—and that it's nearly indestructible, to boot.

That's BBEdit.

It's not what an app *does*. It's what you can do *with* it. And that, dear readers, is the most hallowed rule of all. **m**

ANDY IHNATKO (www.andyi.com) has been writing about the Mac for more than a decade. He wrote this column in BBEdit, of course.

Opinion

ihnatko

MY WORD PROCESSOR cannot use graphics. It won't let me create custom headers and footers, format a page in columns, or define style sheets. If at any point during a project I were to see an adorable cartoon Macintosh Classic somersault into view and give me advice on how to write a proper business letter, it could mean only that I should either stop buying the generic-brand gin or, better yet, quit drinking altogether during work hours.

My word processor is Bare Bones Software's BBEdit, and it's not technically a word processor: it's a text editor marketed to software developers and Web designers. But who cares? It's the app I usually hold up when I want to explain the Rules of Great Software, because it underscores the concepts upon which all truly great software is built.

Rule 1: Be Yourself

When it comes to designing an application's feature set, multiple half-assed solutions do not a whole ass make. Too often, you install a piece of software and discover that it's a steaming pile of almos. There are features that are *almost* useful and therefore merely utilitarian, procedures that are *almost* intuitive and therefore merely learnable, and interfaces that are *almost* subtle and therefore—well, at least not nearly as bad as Microsoft Word 6.0's.

Even as BBEdit has broadened its scope and utility, Bare Bones has never allowed it to become anything more complicated than a text editor. Why don't the people at Bare Bones let BBEdit parse basic HTML tags and thus let you see boldface and italic type as you code Web pages? Because that's a word processing feature, not a text-editing one. Why *do* they include FTP functionality? Because in many cases, text files reside on remote servers. So why not enhance those features beyond simple Open and Save com-

ANDY IHNATKO

Making Great Software

*A Few Simple Rules
Separate the Best Mac
Apps from the Rest*

mands? That's the realm of the FTP client, not the text editor. Et cetera, et cetera, et cetera.

Rule 2: Play Nice

And why should Bare Bones squander time and resources by competing (poorly) with the makers of Interarchy or Fetch when it's so much easier to integrate BBEdit *with* those products and refer users to their download sites? Great software always plays nice with the other children.

Perhaps the biggest insult you can inflict upon an app is to hit it with the ⌘-Q. You're telling that poor, emotionally vulnerable app that you can live without it. On my Mac, BBEdit is always running; it's too valuable to close. The program's AppleScript support is top-notch. If BBEdit is open on my Mac, any other AppleScript-savvy application can take advantage of BBEdit's text-manipulation strength. FileMaker doesn't offer powerful search-and-replace scripting, but it doesn't need to.

Rule 3: Support Standards

That's because BBEdit's search-and-replace isn't just powerful, it's The Imperial Star Cruiser That Engulfs the Rebel Blockade Runner in the Opening Scene of *Star Wars* powerful. BBEdit's search uses grep, the time-honored search facility that can, with one properly formatted search-and-replace, translate Valley Girl-speak into the archaic regional patois spoken by a wholesaler of fish sauce to the Holy Roman Empire.

The support of industry standards is a force multiplier for any app. Many potentially great programs are sunk by Not Invented Here syndrome: if the company didn't invent it and can't slap on a zippy name and announce it in an ego-boosting press release, they're not interested.

Grep is the 900-pound gorilla of searching. It's the very best
continues on page 135





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