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Welcome

by Robert Paul Leitao, rleitao@atpm.com

Welcome to the October issue of *About This Particular Macintosh!* We begin our latest issue with a brief look at the state of the Mac and a quick tour of today's iPod Nation. The autumnal equinox has passed, and its aftermath brings cooler days and longer nights. In this issue we'll highlight a few bright spots on the fall journey to the holidays.

iTunes 7

Sporting a major version number identical to that of its QuickTime component, iTunes 7 has arrived. This latest release of the popular Windows and Macintosh application has one non-identical feature. The Windows version of iTunes 7 has a curious optional installation. It's an Apple software updater. Increasingly, the Windows version of iTunes is less of an application that works with Windows and more of a solution that makes Windows irrelevant. iTunes 7 introduces the new movie store and offers several dozen feature flicks from Disney and Pixar.

iMac Migration

The waning weeks of summer witnessed the release of the new 24-inch iMac and the migration of the line to the 64-bit Intel Core 2 Duo. Leopard, Apple's pending OS X upgrade, will match the new 64-bit hardware with a 64-bit OS. In the meantime, the new iMac gives pro users a great deal to think about. Do they need a Mac Pro for commercial work, or will the new iMac more than meet their needs?

Windows Emigration

The new iMac line gives millions of Windows users something to think about as well. In less than a year, Apple has completed its Intel transition and will soon bring to market a real 64-bit OS for its Intel hardware. The delays in the introduction of Windows Vista and a quirky and awkward 64-bit implementation leave Microsoft years behind Apple in delivering true 64-bit application performance. Watch for a steady rise in Macintosh market share over the next six months as a steady stream of Windows users embrace the Mac. The new iMac is priced aggressively against its competition and makes for a superb solution for homes, schools, and businesses. The ability to run Windows makes the iMac a very cost-effective solution for any enterprise with a volume license for Microsoft's OS.

iPod Nation Immigration

Day by day the iPod Nation is gaining new citizens. The redesigned iPod nano and iPod shuffle add a new dimension and new depth to the line. There's much talk about the release of the Zune as an iPod competitor come mid-November. But the Zune is more apt to take share from other iPod competitors than from the world's top digital music device. Watch for an expanded iPod selection at retail stores as Apple prepares for another stellar selling season. Foot traffic to the Apple retail stores will set records this quarter, and the iPod's

momentum will benefit Macintosh sales. The iPod Nation is not only adding new citizens each day, but the Made for iPod accessory program also makes the iPod's success the vested interest of dozens of iPod-related product manufacturers.

Share Price Appreciation

Apple Computer ended September with the company's share price at \$76.98 and the company's market capitalization (the sum value of all outstanding shares) at well over \$65 billion dollars and within \$10 per share of an all-time high. Investors and analysts see growth ahead for the Mac and iPod maker, and at mid-month the company should report another quarter of significant year-over year gains in revenue and earnings. Revenue and earnings don't rise when the company's products stand still or sit on store shelves. Look beyond the popular news to see how fast things might be moving. Expect increases in Macintosh market share to be reported at mid-month, and guidance from management that suggests another strong quarter for iPod sales. The Intel transition is complete, and November and December should be big months for the Mac.

ATPM Cover Art Incarnation

Each month the editors of ATPM endeavor to bring you the best and most informative Macintosh lifestyle magazine in an easy to read monthly format. Frequently we reach out to our readers for contributions of stories, articles, and digital art. This month we are seeking artists to contribute to contribute cover art for our publication. Please [contact](#) our managing editor for more information.

Our October issue includes:

Bloggable: Fire in the (AirPort) Hole

Did Apple patch the WiFi vulnerabilities that brought so much angst last month? It's hard to say. Wes Meltzer finds the argument on both sides and tries to get out of the way this month, with varying degrees of success. Plus, a little extra on historical Mac benchmarks, the cutting edge of Mac development, and the finer points of hat-eating etiquette.

Mac of All Trades: Dream Machine

Waiting for a new MacBook Pro reawakens memories of Apple's past and thoughts of Macs to come.

MacMuser: 17" Is Just Not Big Enough for Some Men

How does one decide between a wide screen LCD monitor and a diesel Toyota Hiace?

Web Accessibility: Nvu: Impressive and Powerful

Nvu is an impressive and powerful piece of software suitable for both those with and those without HTML skills.

Segments: Infinitely Improbable

“Have we chosen a brighter future compared to the alternative universe ruled by Microsoft/Intel? Only the Time Machine will tell.”

How To: Crash Logs: What Are They and What Do They Mean?

Your Mac logs just about everything that happens—including crashes. Here’s a brief description of what the crash logs can tell you.

Desktop Pictures: Germany

This month’s photos of Dachau, Gunzenhausen, and Nuremberg were taken by ATPM reader Robert Reis.

Cartoon: Cortland

Back from his short hiatus, Cortland returns with the story of his college graduation and subsequent hunt for a job.

Review: A Better Finder Rename 7.4

A Better Finder Rename has been a staple utility for so long, some people may not even remember ever *not* having it in their arsenal. Meanwhile, its developers have continued to add increasingly useful actions, raising the application to the level of a professional powerhouse tool.

Review: iWoof

Volkswagen’s “Fast” meets the iPod.

Review: Making Music on the Apple Mac

If you’re new to the art of music-making on the Mac, this might be the book for you.

Review: Parallels Desktop 2.2.1848

Parallels Desktop is a useful choice for gaining the ability to run Mac OS X and Windows at the same time on an Intel-based Macintosh. David Thompson feels improvements are needed with memory requirements and file sharing between guest and host operating systems.



FileMaker 8.5

You mention that FileMaker 8.5 is a universal binary release for Macs early in your review, but neglect this important fact in your conclusions about whether or not the upgrade is worthwhile.

Also, attendees at this year's developer conference saw that the Web viewer is much more than a portal to Web sites (such as Google Maps) but can be used to extend FileMaker in very interesting ways when combined with Java, Flash, or other Web technologies. Check out iSolutions' ICE product, for example.

—*Scott Newton*

Honestly, I don't consider it that important a feature. It's nice, but the extra speed is only of interest to those with Intel Macs. It still seems to me that the reasons for upgrading will depend on the other new features available, most notably the Web viewer.

I'll check the product you mention regarding the increased usefulness of the Web viewer when combined with other technologies.

—*Charles Ross*



No doubt the big thing with 8.5 is that it is now Universal, which means a very significant speed increase on Intel Macs.

However, on PowerPC Macs, there is also an observable performance boost. I am seeing 50% faster sorts and recalcs in our solutions. Not that this would make me run out and upgrade an office full of FileMakers, however it is noteworthy.

—*Rob Russell*

iMac Core Duo

Having purchased a 20" iMac Core Duo with 1 GB of memory and 500 GB storage, plus a better 3D video card upgrade. I felt pretty smug in moving away from my three G3s and PC notebooks. Alas! Such was not to be as I found myself running all five computers with various tasks. I just could not let go of my favorite hobby of running all computers while listening to the iPod and the TV. I guess one could say it has never been an either-or proposition with me but an all-or-nothing mind set.

In any event, the new iMac is by far the best home computer on the market, and nobody who has any understanding of all the others should ever consider anything else. This is my

very experienced opinion having worked with various computers and makes and systems since 1968. Of course, I have no intention of down playing the new Mac Pros here, but they appear to be far more machine than I require for my operations.

—*Ron Cowden*

Running Classic Software on an Intel Mac

This is amazing. And excellent to be able to do. Thanks for sharing it!

—*Catherine Wiles*



I have been holding off on getting an Intel Mac because HyperCard is still a must-have application for me. Of the three emulators you installed, is there a clear performance leader in terms of speed and stability? Thanks.

—*Tim Selander*

Interesting question. I didn't really test for speed, but the truth is that each of them was very responsive. I would say that any of them would work well. I have been using SheepShaver most of all because it's running the most recent OS (8.5) of those emulated.

Perhaps it's because these OSES are less complex than Windows XP, but none of these emulations were lagging in speed. Whenever I used to run XP under Virtual PC on my PowerBook G4, it was always too slow to do anything but a quick check of software I wrote. With these, the responsiveness was always good.

I did have a few crashes, but I honestly don't remember which they occurred in. It was either SheepShaver or Basillisk II, but Mini vMac may not run the software you need.

My recommendation would be to try SheepShaver first. These don't take too long to set up, so it's cheap to try them out and test to see if the performance and stability are satisfactory for you.

—*Charles Ross*



Absolutely! HyperCard is why I'm a Mac user. I'm not a programmer, but HyperCard lets me build pretty much any little utility application I need. Why be a slave to software that does what someone else thinks I need? Using HyperCard, I've automated sub-titling on our TV program, automated a radio station, made a system to track our viewers and listeners, kick out invoices, manage our stock, and more. The computer does what *I* want it to. What a shame Apple let it die—absolutely the most forward-thinking, useful piece of software Apple ever made.

—*Tim Selander*

WriteRoom Review

I've been using [Ulysses](#), which has a full-screen mode as well, for quite a while. I definitely prefer it to any other text editor when focus is an absolute must.

—*Daniel Matarazzp*



The freeware application [Journler](#) has full-screen mode too, plus many other journaling and formatting features.

—*Welfl*



I've been using WriteRoom for about three months now and love it. Since the majority of my text is for the Web, the lack of formatting options are not a problem. For that I rely on [Markdown](#).

I'm of two minds about adding features. It might be nice to be able to use TextEdit's formatting, but the pure simplicity of plain text is freeing. I've tried demos of Ulysses, CopyWrite, and Jer's Novel Writer, which all offer full screen composing too, but I found that the bells and whistles distracted me. Yes, I'm easily distracted. That's why WriteRoom is so helpful.

—*Michael McKee*



Why not just use NANO, or VI if you insist on basic operation? They're already installed and free. There is a multitude of options to run them full screen such as, Single User Mode, > Console, [full screening the terminal](#), or an adjustment to X11. Heck, you could even full-screen BBEdit with the application available at the previously referenced URL.

—*Scott Park*

The great thing about WriteRoom is that it's sort of like having a fenced-in backyard. That backyard is always right outside your door, and whenever you need it, it's there. But if you have to go back inside, the effort required is minimal.

In WriteRoom, pressing Esc gets you that backyard, separated from all the distractions of home. But as soon as something calls, or just to go back in and check your e-mail, all you have to do is press Esc again.

It strikes me as the best combination of isolation and ease of leaving that isolation.

When I first switched to the Mac, I kept my Linux desktop sitting on my desk at home, ready for me to use whenever I needed to find a way to get some work done. (I had always dropped to console mode to work.) That way, all I had to do was rotate my chair between the two workstations.

Anyway, WriteRoom has that kind of combination, while allowing you to stay in the OS. It has an ease of use that quitting distracting applications and maximizing a window, say, or rebooting into Linux just can't give you. That's what I like about WriteRoom.

—*Wes Meltzer*



I write almost every day for my site, StorageMojo.com, and WriteRoom has rapidly become my writing tool of choice. I use Textpander to insert my commonly used tags so I can just do a Select All, Copy, and Paste into WordPress. I also use BBEdit, Textwrangler, Word, and some others, but WriteRoom is the best thing for me since MacWrite.

Prettying things up is just a distraction. My need is to capture keystrokes into a text file as easily and simply as possible. Now, if there were a battery powered keyboard à la the Radio Shack 100 of 20 years ago, I'd be set.

—*Robin Harris*

Welcome

I stumbled on ATPM as I was surfing around in preparation for upgrading to a new MacBook Pro and thinking about what bag I would get with it. I appreciated reading opinion from *real* Mac users and, with them, found my way to the right rig. Thanks for the effort.

—*Michael Chamberlain*



I just came across your publication through a mention at Hog Bay Software that you were discussing some of their products. All I can say is, where have you guys been all my life? I know that is more my problem and not yours, but I find the Web site very readable, full of good content (if you're a Mac fan as I am), and very well organized. I wish I knew about this place earlier. Thanks for the good read.

—*R.K. Foster*

We're happy you found us and enjoy what you see. Remember, you can go back and read any past issue all the way back to the first in the [Archives](#) link at the top of our pages.
—Ed.

New Business Models

Excellent article, and I'd second all the points made. Sorry I wasn't able to respond in time as I'd hoped but I'm buried in WriteRoom development (actually documentation now for the new 1.1 release due soon).

I came to Hog Bay Software for the products (WriteRoom was exactly what I was looking for at the time), but it was Jesse, his own insight and creativity, and what I see as the fundamentally progressive nature of his business model and method (especially as I've seen it from the inside out now) that kept me around, and has led to my direct and significant participation in my favorite product.

Not only is user-directed software development good for the users, but it's great for the software, as I hope will be shown when our latest releases show forth later this quarter.

—*Jeff Alexander*



Thanks for this article, I hope we get some good feedback and ideas on how to make Hog Bay Software work better.

I want to mention one last aspect of “user powered” software. I started working on these ideas soon after reading [The E-Myth Revisted](#), a buisness book that focuses on building your buisness as if you were building a franchise. (Make processes repeatable.)

One of my goals with “user powered” software is to make it easy for other Mac developers to develop software this way. At some point down the road I would like to have a “template Mac shareware company” downlaod. That would include a template application built on Blocks; code for a Web site to handle forums, feature voting, and software store; and a set of documented processes for how to run the company.

That goal is still a long ways from completion. But if there are any developers out there who think they would like to develop software this way, please contact me. I'd be happy to share Web site code and give tips on how best to make use of the Blocks framework.

Long term I think it would be really cool to have a bunch of small Mac companies working this way. All sharing the same underlying Blocks framework and Web site code. That way we could focus most of our energy into developing cool apps instead of all the extra stuff that gets in the way.

—*Jesse Grosjean*

RapidWeaver and Web Accessibility

I think you are misisng the point of RapidWeaver. It is not written primarily for people who already know HTML and XHTML. It is written primarily for people like me who know nothing about Web programming. RapidWeaver allows me, the complete novice, to build Web sites. That is its value. And without the Edit View I would be totally lost! So while your comments may be valid to someone who already knows how to code Web pages, your comments are totally off base for someone like myself who is a happy and very satisfied user of RapidWeaver. I think the powerful aspect of RapidWeaver is that it works for someone like me, but also has enough flexibility to make it attractive to real HTML and XHTML coders. If you spend anytime at all reading through the user forums, you will find that coders have found all sorts of creative ways to modify/access features within the various RapidWeaver templates. Just something for you to consider.

—*Jeff Boice*

Since RapidWeaver and similar applications are not written primarily for people who already know HTML, that's exactly why they should create accessible HTML automatically. The fact that you were happy and satisfied before you knew about the accessibility issues just underscores the point that RapidWeaver should "do the right thing" so that novices needn't be concerned with this stuff.

—*Michael Tsai*

We'd love to hear your thoughts about our publication. We always welcome your comments, criticisms, suggestions, and praise. Or, if you have an opinion or announcement about the Macintosh platform in general, that's OK too. Send your e-mail to editor@atpm.com. All mail becomes the property of ATPM.



Fire in the (AirPort) Hole

Rejoice, rejoice! You can turn your WiFi on again! The danger is past.

At least, for the moment.

On September 21, Apple released two security [patches](#) that protect essentially every Mac that uses AirPort against malformed frames passed over 802.11b networks. That's the vulnerability I wrote about [last month](#), which may or may not have been a real threat to Mac users.

“So,” you say. “The problem’s been fixed, Wes. You usually put stuff like that in those inane little bullet-point links at the end of your column.”

I’m guilty as charged, readers. But this one was no ordinary security patch. Just as Apple was launching a brand-new ad campaign lauding the comparative security of its computers relative to its competitor product—Microsoft Windows—two security researchers claimed that a massive vulnerability in the AirPort drivers for OS X could lead to a root exploit—without the user even registering on a network. Rather than recap extensively here, I will point you again to my [previous column](#), because I tried hard to be comprehensive. Better still is [John Gruber’s summary](#).

What’s interesting is the fallout from all of this: did Apple patch this vulnerability—which sounds a lot like the one Jon Elleh and David Maynor described in August—in response to the demonstration, and did the demonstration show a vulnerability or was it staged?

First things first, I should note that Apple is claiming, unequivocally, that they found this [vulnerability](#) in-house. That jibes with what Glenn Fleishman and Jim Thompson, et al., said about the *potential* route of attack that this could have taken—in other words, as I read it, it’s possible that this demonstration was staged but happened to correspond closely enough with a possible exploit that Apple discovered and patched. Apple spokesman Anuj Nayar told Brian Krebs, the (rightly or wrongly) maligned *Washington Post* security columnist, just that:

[T]he company is not aware of any exploit code available to attack these flaws, and. . . SecureWorks to this day has not shared a working demonstration of how to exploit them.

“Basically, what happened is SecureWorks approached Apple with a potential flaw that they felt would affect the (*sic*) wireless drivers on Macs, but they didn’t supply us with any information to allow us to identify a specific problem.

So we [initiated our own internal product audit](#), and in the course of doing so found these flaws.”

But Elch is on the attack, denying this. Just as this magazine was set to go to press, he gave Cory Doctorow the right to publish a [transcript](#) of his talk at ToorCon 2006 on Doctorow’s personal Web site. (But he linked to it on *Boing Boing*, so it will get a fair number of eyeballs.) In this talk, he claims that Apple and SecureWorks kept his research partner from giving the *original* scheduled lecture detailing the previously demonstrated AirPort vulnerability. Doctorow states, unequivocally, that [pressure from SecureWorks](#) got the talk canceled, and implies that Apple was involved. On the other hand he notes in passing that “one colleague at the show. . .spoke to an Apple employee in the audience who denied that Apple had leaned on SecureWorks.” (So far, no word from Maynor.)

Elch also released, on a security-oriented listserv, some details of a [similar exploit](#) using Intel’s Centrino on-board drivers. I understand *very* little of it, to be completely honest, but it sounds like it relies on a variant of a packet DDoS attack. If you flood the victim machine with UDP packets at one per 4,000 microseconds and then send dissociation requests at one per 5,000 microseconds, you may be able to get your malformed UDP packet in the driver stack.

That sounds an awful lot like the vulnerability that Apple patched. Whether Elch and Maynor demonstrated such a vulnerability is what’s up for grabs.

In the interim, Gruber had previously offered a [bounty](#) to Maynor and Elch if they could hijack a stock, just-out-of-the-box MacBook. The prize was that very MacBook. Rich Mogull at Securosis disputes that the [bounty would be helpful](#), and even tells us to trust him that the demonstrated exploit is real. (Sorry, but your assurance of a *video* demonstration just ups the ante, amigo.)

Neither of the security researchers ever took him up on the offer, but I think, in light of this patch, it would be a valid experiment for someone to take up. Come now, someone must be able to show us whether unpatched MacBooks are vulnerable, in an uncontrolled environment.

Gruber is unconvinced by all of this. He’s been at the center of this hurricane since it first was spotted in the southeast Atlantic in August, and he lays all of his evidence out on the table. He believes, in light of this patch, that [one of three possibilities](#) is true:

1. Maynor and Elch did not find an actual exploit against Apple’s built-in AirPort drivers, but bamboozled and lied to Brian Krebs (and let’s not forget George Ou) that they had.
2. Maynor and Elch did find such an exploit, but never showed or proved it to Apple.
3. Maynor and Elch both found such an exploit and showed it to Apple, and Apple continues to lie about what Maynor and Elch showed them.

Things don't look good for Maynor and Elch, in spite of the assurances of Krebs and Mogull. In a note to the readers of *MDJ* and *MWJ*, publisher Matt Deatherage suggests strongly that the release of Apple's patch combined with its public insistence that *they* found this vulnerability on their own does in what credibility Maynor and Elch had. I'll let Deatherage have the final word:

If Maynor and Elch had demonstrated it or shown code to just one Mac expert who could have verified their claims, they'd rightly be lionized for their work. Instead, they took credit for "hacking a MacBook" at security shows and in the international press while refusing to provide even the barest proof that they'd actually accomplished what they said they had, or at least what they wanted you to believe they'd said. Now that bugs and fixes are in the real world, there's no way of ever knowing if what they say they found matches those bugs or not—when they had the chance to prove it, [they refused](#). It's like saying after the fact that you knew the answer to Final Jeopardy—you have to say it before it's revealed to get credit for knowing it.

(N.B.: Scroll down to find the relevant passage. On the other hand, I strongly suggest you read Deatherage's update; apparently he just survived congestive heart failure. Welcome back, Matt.)

And Nothing Left to Burn

- Geek Patrol published a set of CPU benchmark graphs over [the last six years of Apples](#). Of interest is the "Pro Laptop" graph, showing the original PowerBook G4 (500MHz) up through the MacBook Pro. I actually gasped out loud and used certain unprintable phrases when I pulled up the full-size graphic: from the last PowerBook G4 to the MacBook Pro, the benchmark scores roughly doubled. Expect further improvements if Apple ever gets Core 2 Duos—that's right, four CPU cores—in the MacBook Pro. (Plus, you can plug in an off-the-shelf chip into your Mac Pro and it will work pretty well; *AnandTech* was able to get dual-core Xeons working in one, [impressive results](#).) I think it's time to replace this Titanium PowerBook.
- Will I *finally*, at long last, have to eat my hat? I can't find this in our archives, but maybe you can. I seem to remember promising you all that if Apple released an actual, legitimate iPhone, I would eat my hat. *AppleInsider* is now saying that there is evidence Apple will release [just such a device](#). I'm still highly skeptical, for [all the reasons](#) I've laid out before, but...Eww. Does one use a fork and knife to eat a baseball cap? (Also: would it have killed Apple to release the iPhone *before* I just bought a new one?)
- Khoi Vinh is [really impressed by OmniWeb 5.5](#), which now uses a stock WebKit rather than the branched version it'd been using since the original OmniWeb 5 release. I have a lot of respect for Khoi, so perhaps when my computer is not on the verge of

collapse, I will try it. In a similar vein, Brent Simmons predicts applications are going to rely more and more on a [hybrid desktop-Web model](#), since Apple's underlying HTML glue takes care of so much of the hard work. This is very exciting.

- *TidBITS'* Matt Neuberg rails this month on what he believes is [the decline of WWDC](#). Scott Stevenson [thinks he's crazy](#)—or has too-high expectations. I report, you decide.

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Mac of All Trades

by Mike Chamberlain, mchamberlain@atpm.com

Dream Machine

I had a dream about Apple computers the other night. It was the first one in a very long time. Before I tell you about it, you should know that I am waiting for the delivery of a new MacBook Pro and 23" Cinema Display (amateur psychologists, start your engines). The delivery has been delayed, and I've fallen victim to that itchy "check e-mail and order status every hour" syndrome. You know, the one that all of us who have waited for the arrival of Cupertino's latest have experienced.

The last time I had a dream about an Apple it was rather hazy. It was also while I was waiting for the delivery of an Apple computer. It was hazy because I didn't really know what to expect. Nobody knew. Nobody I knew *had* a computer. It was the beginning of something new.

In the fall of 1977, *Games* magazine made its debut. The inaugural issue contained a short one-page article about a personal computer called Apple that would, in the writer's opinion, mark a significant change in electronic gaming. With a personal computer, he wrote, it would be possible to expand the number and the sophistication of the titles that were beginning to hit the gaming-console market in ever-greater numbers. I had been a frustrated gamer for some time. I kept the magazine on my nightstand for three months, periodically rereading the article. Finally my wife said, "For Pete's sake, buy that thing before you drive me crazy! And get rid of that magazine while you're at it!"

I was in the Army in Europe at the time, and since this was long before FedEx, getting a computer from the US was a huge drill. I won't bore you with the gory details, but it was in the *five months* it took to receive it that I had the dream about this fantastic machine and what I would be able to do with it. That was how it all started. Finally, Apple II serial #21250 arrived, and I have never looked back.

It wasn't long before I splurged for another 16K of memory. Wow! And then expanded to a disk drive when they became available. As I experimented with the capabilities and potential of this early edition of our favorite computer, I began to get a glimpse of what it might be capable of. But it wasn't until my Apple was employed in the Cold War that I began to understand what a truly revolutionary machine it was and got a taste for the power of desktop computing.

As an Army officer assigned to a Corps Headquarters, I was given the responsibility of watching over a rather large sum of money that was used for training and maneuvers. When a new software program called VisiCalc came out, I bought it and began to develop spreadsheets that made my job a lot easier. "You say you've changed your mind about how

many _____ you need? You need to know the cost when? No problem, Colonel. Right away!” It didn’t take many quick turnarounds to get attention.

One afternoon, I was summoned to a secure office in the basement of the Headquarters and briefed on a secret operation. Polish labor unions were in open defiance of their government and of the wishes of the Soviet Union, and it appeared that a dramatic shift in the alignment of Europe was possible. The Soviets had troops stationed along the Polish border and might be preparing to invade, à la Hungary and Czechoslovakia. Our president had decided that if the Russians crossed the Polish border, he would deploy US units to Europe on a “training” exercise. Our Headquarters had been asked by Washington to receive them and to figure out how much it was going to cost. Since I had a computer that could answer the question, I was made a part of “Operation Nematode.” (It’s an Army thing. Don’t try to understand.) Not long after the briefing, I found myself in a signal-secure booth (no electromagnetic emanations possible) where for the next day and a half I worked my spreadsheet magic to arrive at an answer. The numbers went back to Washington and, at some point I am certain, made their way into a White House briefing. The invasion never happened and the troops never deployed, but for a moment, at least, Apple was on the front lines of the Cold War.

I’ve carried Apples in and out of offices ever since and even managed to convert a couple of organizations from the dark side. Since that first Apple II, I’ve owned a Iie, Iic, Mac SE, LC III, G3, G4, PowerBook G3, iMacs (15” and 17”), and iBooks for my college-bound kids. Lately, I’ve been using a PowerBook G4 for my personal and professional life, which allows my wife unrestricted access to the iMac. But as great as it is, the Apple experience, at least for me, is about more than the machines. There is something personal about the Mac that isn’t true of the relationship that those “other folks” have with their computers. They don’t fawn over them or turn into evangelists for their processors or their OS. For non-Apple users, computers are just the latest boxes they are using to get things done. Often it is a collection of individual parts assembled in an otherwise standard case. I won’t trash that as one way to do it, but with Apple what I need just seems to be there—and many times it’s there before I know I need it. Swivel screens, iPods, AirPort, real plug and play, iPhoto, iTunes, iWeb, and on and on. It just keeps getting better.

This is the first of what I hope will be a fairly regular series of columns for ATPM. I appreciate the free exchange of information that ATPM offers, and I believe that writing a bit about the Apple experience gives me an opportunity to give something back to the Mac community. As the name of the column suggests, we will be jumping around to a number of different topics in the Mac world. I’m not an engineer or a programmer. I’m a user, one of the majority of satisfied Mac users who appreciate this great machine and enjoy talking to other people about the things that can be done with it. In the coming months, we will be reviewing Apple-related Web sites and which ones you should have in your menu bar, discussing new software and how to do a good evaluation before you spend your money, looking at the many peripherals that enhance the Mac experience, and thinking about the future, which is what Mac is really all about. I’m looking forward to sharing with and hearing from you. Feel free to contact me at mchamberlain@atpm.com.

Oh yes, I almost forgot my recent dream. I dreamt I was at a Mac expo of some kind, standing at the counter waiting patiently for my MacBook Pro to be brought out. Suddenly, Steve Jobs walked up. I introduced myself, because every Mac user feels as if he knows His Steveness personally. Don't we? We had a short conversation about something or other. Then he began to walk away as I was telling him about my Army Apple experience. I noticed that he was moving smartly so I said, "I can tell you about it as we walk...or I could just drop it and you could get going."

"I'll take you up on that," he said. And he was gone.

I just want to say: Steve, if you're out there, man, no hard feelings. Just keep on doing what you do. Don't let me slow you down. By the way...can you move the processing along on my MacBook Pro? Thanks.

See you other Mac fans next month. Peace.

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17" Is Just Not Big Enough for Some Men

Like an old car, it seems that as we age, bits of us pack up, slow down, or need a de-coke. More likely and legally, a de-wine (or insert favourite over-indulgence here). Get to 30 and your looks start fading. By 40, teeth need regular attention. Reach 50, and eyesight decreases so 7-point text might as well be on the moon—something younger graphic designers could take notice of, especially yellow condensed text on purple backgrounds and other such nonsense.

In some respects, reading onscreen helps. Not only are things a comfortable distance away, but screen contrast and brilliance can be adjusted and pages resized to make things more comfortable. Only one problem remains—using a monitor that is just not big enough. It doesn't help having to design A3-landscape (420×297mm) pages on a 17" monitor, either.

When I started computing for real, in the days of “Home Computers” powered by Zilog 8-bit chips and the like, [my first machine](#) had a black-and-green monitor displaying at 256 lines of 720 pixels. This was acceptable for text, even a few games, and good enough to get me into “design” via desktop publishing.

This first computer was rapidly followed by two Atari Mega ST's, paid for from the DTP done on the Amstrad computer. The Atari screens were actually smaller than the previous ones but at least had color. Again, the financial results of the Ataris bought the first Mac, and I joined the big boys. Even then, the standard Apple 13-inch monitor was only just acceptable for DTP, its crisp resolution making up for the small viewing area. Eventually I worked with two Macs on my desk to share the load computationally and to get more applications available at one time.

Nowadays, our Macs are capable of so much more. Multi-tasking is taken for granted, RAM runs to gigabytes, and we can have almost every application we own running at the same time. It all makes for a messy screen, something Apple tried to address by sliding things in and out of the Dock and giving us Exposé. Some users swear by two or more monitors; just about all recent Macs have a video card that supports this. Personally, I prefer one screen on my desk, but the price tag on the really big ones is enough to buy a hundred square miles of prime Romanian real estate.

Which is why I looked at using virtual desktops as a solution. The forthcoming Leopard version of Mac OS X will have such a facility built in, called [Spaces](#). Virtual desktops are nothing new since their introduction as Amiga OS scrolling desktops in 1985. Unix and

Linux have had virtual desktops for years. Windows XP has them, but Microsoft's own Power Tools only works with US regional settings and is unsupported.

The Mac world saw the world's first commercial desktop manager, *Stepping Out*, in 1986, and currently there are at least three contenders, two of which are free: CodeTek's \$40 [VirtualDesktop Pro](#), Rich Wareham's venerable and free [DesktopManager](#), and Tony Arnold's free [VirtueDesktops](#) which is based on Wareham's work but offering a fuller graphical experience. These are most likely doomed to the dustbin when Leopard arrives.

I chose VirtueDesktops to test the theory. It started with a simple matter of double-clicking to run the program. As a free piece of software, VirtueDesktops does exactly what it says it should. The program is a universal binary giving an unlimited number of virtual screens, a choice of transitions and window fading, and it is AppleScriptable and extensible to add additional features. I found it works well with Exposé, showing just the windows for the current desktop. I was able to turn VirtueDesktops off and on with no ill effects. The applications running in virtual desktops switched to the one, single desktop when VirtueDesktops was quit. Just about everything can be set to personal preferences, each desktop can have its own pattern, and applications can be "stuck" to a certain desktop. The transition effects are neat too, [as shown](#) using the standard Apple "Cube" transition effect.

After two days of complete confusion, losing track of what application was open in which desktop, virtual desktops gave me brain strain and didn't really help anyway. Virtual desktops are more for people who like to have "environments." Where, for example: one desktop can be set aside for programming and coding, with all the paraphernalia it involves; another can be used for different browsers and Web creation tools; a third desktop for music editing, and so on. As a designer, I find most Mac design software is well integrated so that clicking on a graphic in a page layout program results in Photoshop or Illustrator automatically coming to the fore to edit it. The other built-in tools of the Mac's operating system cope with screen clutter created by multiple applications being open at the same time.

For me, the only solution is to buy a new monitor, not a second one to run side by side but a big big-boys' toy. It's just too hard to fit A3 landscape spreads onto two monitors side-by-side and still be able to read the text to edit it. The screen needs to be a 23" or larger and will come complete with a cost that increases exponentially with size and quality. On the other hand, just a couple of years ago the price would have bought a pretty decent family car. Even now, for the same money I bought a reliable Toyota pick-up last year, when renovating my house. After I sold the pick-up I regretted the decision and miss its load-lugging abilities and go-anywhere ability. It was thirsty, though, averaging 25mpg, which in Europe is about half the mileage we expect from our vehicles.

What a dilemma! How does one decide among an Apple, Dell, HP, or LaCie—or a diesel Toyota Hiace?

The answer is staring me in the face. Not the cheapest monitor and a long way from the most expensive. Mid-range in features and quality but it looks great next to my aluminium

G5. Between thinking of it and buying, Apple also reduced its price and increased the quality so I can give a five thumbs up the my new 23" Cinema Display. Compared with my perfectly good 17" LCD, it has 50% more screen, and it's brighter and easier to read, which is something to bear in mind if your eyes are feeling the strain of on-screen working.

As for virtual desktops and the forthcoming Spaces...no thanks.

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Nvu: Impressive and Powerful

Unlike serious Web designers who probably hand-code Web pages or use professional software such as [Dreamweaver](#), most folks are likely to look at software such as Apple's [iWeb](#), [Sandvox](#), [RapidWeaver](#)—or, the subject of this article, Nvu.

Web pages are all about communication, but it's easy to forget that some visitors may be using screen readers, Braille devices, head switches, or other less common hardware and software to interact with the pages we produce. It's important that software we use creates good-quality coding that makes our pages accessible for all visitors. The articles in this series look at how some common programs perform in that respect.

This month I look at Nvu (1.0). I set out, as usual, to create a perfectly ordinary one-page document with a little text, some headings, a list, a couple of links, and a photo. This represents a “typical” page that anyone might create.

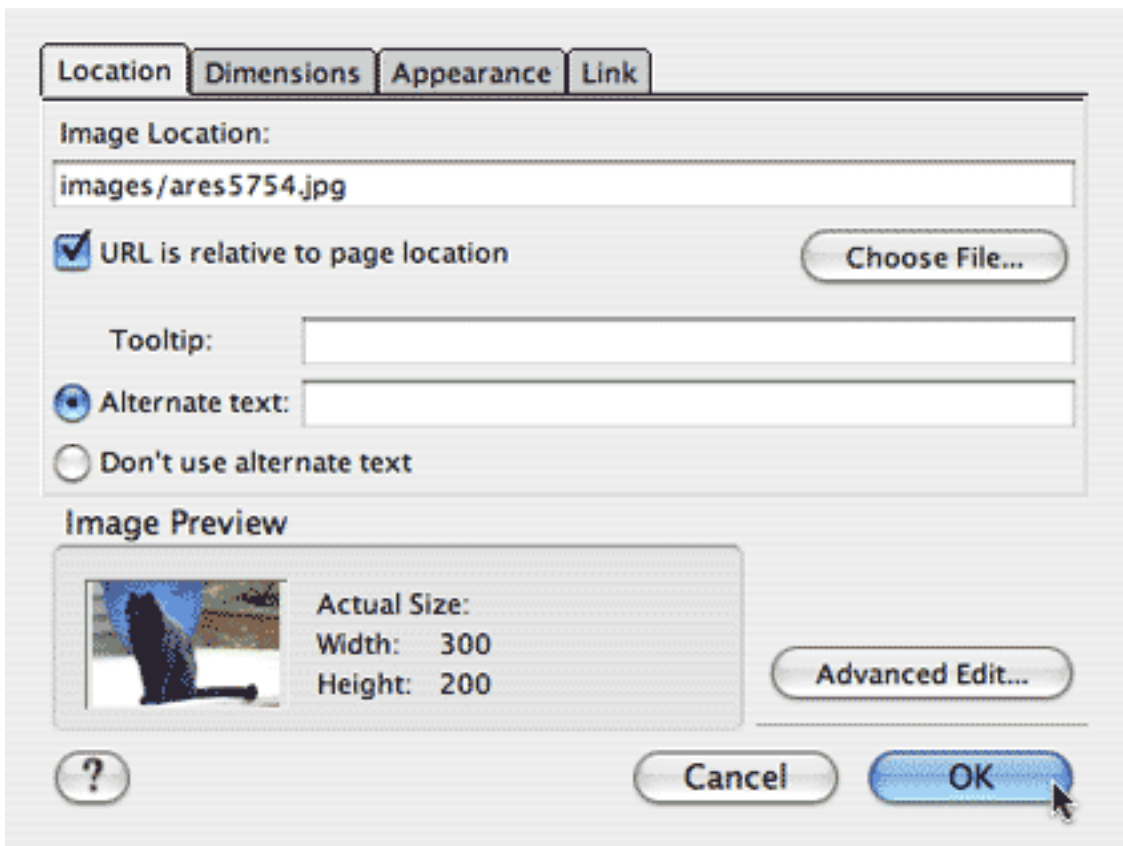
Nvu

[Nvu](#) is open source and covered under the MPL/LGPL/GPL tri-license. On the Mac, OS X 10.1.5 or later is required, but Nvu is available for many platforms, including Linux and Windows.

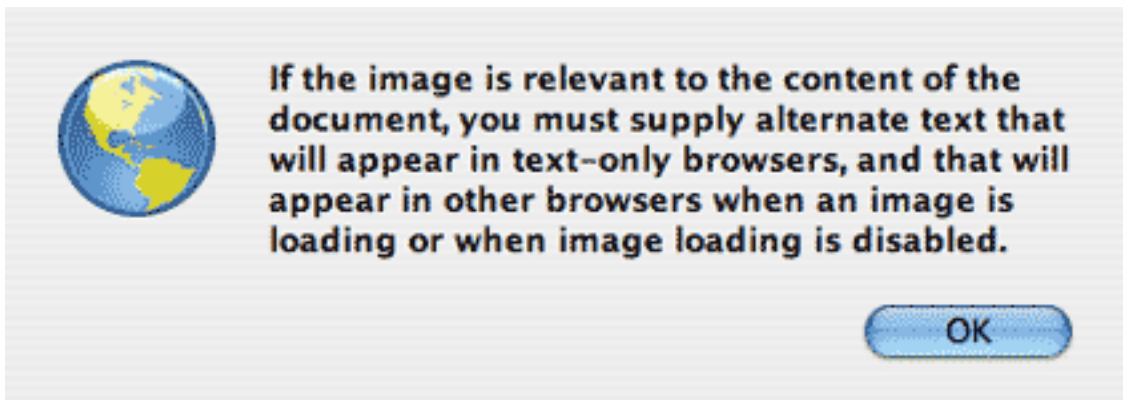
The Process

I started up Nvu and pasted some prepared text into the Normal tab. Buttons and pop-ups on the default toolbar resembled what you might see in a word processor, including tooltips to help you choose what you needed. It was very easy to apply headings, a list, links, and some emphasis.

To add a photo I clicked the Image icon on the toolbar and chose the photo from my hard drive. By default the Alternate Text radio button was selected, and when I tried to click OK without supplying alternate text, a helpful alert appeared.



I try to exit without entering alternate text.



Nvu's alert explains the what and why of alternate text.

After dismissing the alert, I was returned to the image selection window where I either had to enter alternate text or deliberately choose “Don’t use alternate text” before I could proceed.

When I saved the page, Nvu asked me for a page title. I also found Page Title and Properties under the Format menu and was later able to edit the title there.

The Results

The results were impressive. When I looked at the Source view to check the coding that had been created, I could see that headings, lists, ``, and `` tags had all been correctly applied. The coding was clean, without any excess.

I attempted to apply a specific font to a few words and Nvu sensibly applied a `` with an inline style. When I chose the Bold and Italics buttons on the toolbar for formatting text, it applied an inline style, rather than the old-fashioned `` or `<i>` tags.

My page was created using an HTML 4 Transitional doctype, and with an ISO-8859-1 character set. Personally, I prefer XHTML and UTF-8, but a visit to the Format ▸ Page Title and the Properties menu allowed me to choose UTF-8 from a list of character sets.

If I had visited the Preferences before starting work I could have specified XHTML and UTF-8 as defaults.

Paragraphs or Breaks?

As with [RapidWeaver](#), I was disappointed to find that my pasted text had been automatically marked up, not as paragraphs with `<p>` tags, but with line breaks. It would be a sensible default for Nvu to assume that pasted text is paragraphs and to mark it up with `<p>` tags. See last month's article on RapidWeaver for an explanation of the difference between a break and a paragraph.

I found that if I pasted text into a new window, selected all, and applied a paragraph style, then Nvu wrapped paragraphs fairly sensibly in `<p>` tags, although it also included break tags where I'd pressed Return twice between paragraphs. It was fairly easy to use the Find and Replace All commands to get rid of them.

If typing text in from scratch, it seems to work to select a style such as Heading or Paragraph from the pop-up *before* typing. Set the behavior of the Return key to create a new paragraph when the Return key is pressed and Nvu then uses paragraph tags correctly, instead of break tags.

The Interface

Nvu is quite impressive. It offers four “views” of your page: Normal, HTML Tags, Source, and Preview.

Normal is a plain view, where you see only your text and images. Preview shows how your page will look in a browser. These two views seemed to show me the same thing, perhaps because my page was so simple.

HTML Tags displays small yellow boxes beside every element, showing what HTML tags have been applied to it, such as `<h2>`, ``, or ``, while Source gives you access to the full HTML source code.

Whichever view I was in, I was able to edit my page, although some menu items, such as Format ▸ Page Title and Properties, were not available from the source view.

Validator Tool

Using correct, valid HTML code and CSS stylesheets goes a long way towards creating accessible pages. It's always a good idea to validate your pages and fix any errors to help ensure your Web site will render correctly in the browser.

Nvu includes a Validate HTML item in the Tools menu. Save your page and choose Validate HTML from the Tools menu. Nvu contacts the W3C validation service, provides your page for checking, and reports the results in an Nvu window. All the break tags created by default caused failures in my test page.

You can then fix the problems and validate again, until you see the “Valid HTML” response.

My Conclusions

Nvu doesn't give you all the “themes”—the fancy visual layouts—that some other products do, so you'll have to obtain templates or design your own look and feel for your Web pages. Most sites deliver information through text; the visual design can be added in later using stylesheets such as those available free with the [Style Master](#) CSS editor software.

In spite of the `
` versus `<p>` [issue](#), Nvu is a clear winner. It gives the user real control over using appropriate markup, such as lists and headings. It defaults to requiring alternate text for images. It makes it easy for the user to validate her page and gives full and easy access within all views: Normal, Source, Preview, and the useful HTML Tags view.

It uses familiar toolbar buttons and pop-ups similar to those you find in Microsoft Word or other word processors, and applies appropriate coding when you use them. Most controls are simple, but it's common to see an Advanced... button giving easy access to Nvu's more sophisticated features.

After trying out several other applications whose focus was all on appearance and damn the coding, I was ready for a disaster when I opened Nvu. Instead, I'm impressed.

What's more, Nvu is useful for both ordinary folks wanting to make simple Web pages, and, I'd venture to say, for HTML professionals. I haven't given it a full workout with a complex site—in fact, my testing was limited to a single page with one image and a few headings, but it is worth a serious look for the Web professional.

Useful Links

- [Stylemaster](#) software for creating cascading style sheets.
- [WebXACT](#) automated accessibility checker.

Related Articles

- [Web Accessibility: RapidWeaver: A Useful Tool in Need of Sharpening](#), ATPM 12.09, September 2006.
- [Web Accessibility: Sandvox: Sand in the Eyes](#), ATPM 12.08, August 2006.
- [Web Accessibility: The Clayton's Web](#), ATPM 12.07, July 2006.
- [Web Accessibility](#), ATPM 10.01, January 2004.

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Infinitely Improbable

It's [showtime](#).

Apple's "blockbuster" announcement was more like a "bunker buster" attack on crazed wannabes, including Microsoft (and its Zune also-to-run) and other delusional entrants in the digital media wars. With the [iTV](#) product now confirmed on the Q1 '07 horizon, I just can't see anyone in the entire IT landscape able to put more than a cosmetic scratch on the all-terrain armored battle platform that is Apple's iTunes/iPod ecosystem. Seemingly coming out of nowhere, this mega-machine has been crushing opposition quarter after quarter, causing tremendous turmoil in all the companies we love to loathe. Even a yesteryear titan like Intel has been bent to the will of Jobs, embroiled in petty price wars that ultimately benefit only Apple and its consumers.

It is becoming infinitely improbable that Apple isn't on track to completely dominate the new digital playground. In this new age of the Web 2.0, Google, Skype, and YouTube, the real game changer is that disruptive "little" company in Cupertino. What Apple's done in recent years is basically run circles around the 800-pound gorillas (who are looking more like chimps these days).

Speaking of monkey business, did any of you catch those photos of the [Zune](#)? You gotta hand it to the Redmond boys to make something look super sexy. Against Microsoft's "killa" product, the new 8 GB black iPod nano is [mighty hot](#). My level of amazement at Microsoft's appalling execution is at record levels. It almost feels like the company is deliberately fencing cheap looking products (at expensive prices) just to humor the market. ("Lookit! Hahahaha!") Either its marketing geniuses have come up with some outta-da-world brilliant marketing strategy, or they just are as clueless as ever (or perhaps I should say, just as clueless as Sony).

"What's changed?" Barring legalities, I think that Microsoft was "successful" for some 15 years because the market was (mostly) just as clueless. But stars collide, empires crumble, markets evolve, and people who have tasted the superior usability of the iPod are starting to realize that maybe there are better products out there if only they just tried them out. While the decision to go with Intel paved the way, it is really Boot Camp and [Parallels](#) that are enabling a new paradigm of computing experience. The chasm is being crossed by the masses.

And what of the larger Apple ecosystem? iTV will be mind-bogglingly huge. iTV is not so much about an entertainment console that many of us are going to put in our living rooms as it is about the whole concept of Apple in almost every aspect of our lives, and I'm not even counting the potential ramifications of the rumored iPhone.

Apple will, essentially, be what Microsoft tried to be. Like Steve Jobs said, Apple is now in our dens, living rooms, cars, and pockets. But Apple is also online (.Mac), on our streets (retail stores), in our offices (Xserve), and on our desks (Macs). It is with Apple that we spend our work time and our free time. Our collective digital identities are going to be enmeshed into the fabric of the upcoming duopoly that is Apple/Google. Have we chosen a brighter future compared to the alternative universe ruled by Microsoft/Intel? Only the Time Machine will tell.

I do know one thing, though. While I can no longer joke about “Lornhorn” being a cow, someone recently told me [“Vista” means “chicken” in Latvia](#).

I think Leopards eat chickens too.

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How To

by Sylvester Roque, sroque@atpm.com

Crash Logs: What Are They and What Do They Mean?

Most Mac users have noticed a wealth of benefits since making the shift from OS 9 to OS X. Arguably, the most important of these is the overall [increased stability of the OS](#). I hate to admit it, but I have had more experiences with crashes on my dual 2 GHz G5 than I would like. I can almost hear some of my Windows-using friends laughing maniacally even as I type this.

The first few weeks were fine. Then I began experiencing [kernel panics](#) that turned out to be [memory-related](#). Once I resolved that problem, months went by with no issues at all. Things performed as flawlessly as we have come to expect from Macs. Then I began experiencing kernel panics on boot up. After a bit of frustration, I discovered that my Mac would boot in safe mode and I could then reboot the system normally without any crashing. Before I could resolve the issue, a software update must have fixed the problem because it has gone away and not recurred. While I was experiencing that problem I got into the habit of leaving my Mac on and simply putting it to sleep when it wasn't in use.

Most recently, I have experienced a crash that seems to be application-specific. My wife has been playing [Second Life](#) and sometimes uses my Mac to run characters. Most of the time things are fine, but once in a while the game crashes. The crashes are usually confined to that game, but sometimes the entire system grinds to a halt, forcing me to power down and reboot. Even with all these problems, I am not a troubleshooting genius, but there may be some things you can learn from my experiences.

Know Your System at Its Best

Right now, while the system is stable, take notice of what's installed. I don't mean you have to spend a great deal of time jotting down everything that's installed on your Mac, but it does help to have some idea what's on your system. It can be particularly difficult to remember this information if you are responsible for maintaining multiple Macs. In the past, I have suggested using the System Profiler report as the basis of [a good troubleshooting log](#). As new things are added to the system, jot them down. You won't need this information often, but if you do you'll be glad to have it handy.

Since things are working properly, this would be a great time to clone your system to a second hard drive. I addressed this issue in a [previous article about cloning](#). Since that time, new tools have become available. No matter which application you use to clone the system, be sure to use the most current version for your operating system. Also, remember to make regular backups of your data. These are perhaps the two most important

troubleshooting steps you will ever perform. With these steps completed, you can get up and running again in no time by booting from the cloned system.

If you have a well-behaved system at the moment, create a new user account that will only be used in your troubleshooting efforts. Do not add hacks, add-ons, or other “enhancements” to this account. When a problem occurs in your normal account, log in to the troubleshooting account and attempt to recreate the problem. If it doesn’t occur in this account, the problem may well be file corruption or other problems in your main user account.

When a problem occurs and your system is not performing flawlessly, do not panic. Although OS X is quite complex, solving its problems can sometimes be remarkably simple. In addition to causing a great deal of stress, panic tends to inhibit your best troubleshooting tools—clear, logical thought and careful observation.

Detecting the pattern underlying a single application crash might not be too difficult for an experienced computer user, but things are often not that simple. [Multi-tasking](#) makes it possible to have several applications open simultaneously. Things are also complicated by the inherent stability of OS X that allows many Macs to be left on constantly and are therefore unattended for hours at a time. Given this set of circumstances, how is a Mac user supposed to determine the probable cause of a crash? Enter Console and the crash log.

Crash Logs—What Are They and Where Are They?

Crash logs are yet another indication of the Unix heritage underlying OS X. Sometimes it seems that Unix logs almost everything, good or bad, that happens on a system. You might not have been watching when your system crashed, but chances are there is a text file somewhere that has logged enough information for someone to reconstruct exactly what was happening at the time of the crash. Think of it as flight data recording for your computer. These logs can give developers much more detailed insight about a crash than most users could hope to provide. Do you know what block of memory your Mac was accessing the last time it crashed? Neither do I, but the crash logs know. Now that we know what a crash log is, where is it?

Most crash logs are stored in an individual user’s home directory. Follow the path to `username/Library/Logs/CrashReporter`. The crash logs will be inside that folder. How many there are will depend on how often your Mac crashes and how often you clear out these files. Until we began having difficulty with Second Life, I had not logged a crash of any sort in months. According to Apple, there are some [special circumstances](#) in which crash logs are written in:

```
/Library/Logs/CrashReporter/<ProgramName>.crash.log
```

Crash logs are written here if any of the following circumstances are true: ownership of the crashed process cannot be determined, the crashed process was owned by the root user at the time of the crash, or the user’s home directory is not writable.

You can access crash logs using Console, which is in the `/Applications/Utilities` folder on your hard drive. Once you have launched the program, you should see a list of logs on the left side of the screen. Clicking a program's triangle will show a list of logs for that program. Clicking one of the log files will display the contents of that log in the right pane of the window. If you do not see the list of logs on the left side of the screen, click the Logs icon and the list should appear.

What Do They Mean?

Crash logs may be the most daunting and least user-friendly aspects of OS X. That's a bit more understandable when you consider that these files were intended to be used by developers as a means of improving their software. You and I might not understand these things very well, but developers do understand and make use of them. Even if they don't give end users the kind of information needed to fix a problem, we can glean a modicum of information, so let's take a brief look at the contents. If you subscribe to the *MacFixIt* site you can find a [somewhat more detailed explanation](#) here. If you are not a MacFixIt subscriber, or would simply like a more detailed overview, consult [this technical article](#).

The first few lines of a crash log will contain the date and time of the crash as well as OS version information. This will include the version of an operating system as well as the build number. Build numbers are a bit more specific than OS version numbers. If two users purchased different models of Macs with the same OS version, the build numbers might be different due to differences in the hardware. That section of the report will look something like this.

```
Date/Time:    2006-08-26 21:58:27.846 -0500
OS Version:   10.4.7 (Build 8J135)
Report Version: 4
```

The next segment of the crash report identifies the process that crashed, the parent processes, and the version number. This information may be useful if you are not sure what application led to the crash. This can be misleading at times since the process that crashed can, in fact, have been called by another process. It is not uncommon, for example, for developers to call upon processes written by Apple as part of the OS. Here is an example of that segment of the report. In this case, the my ATI graphics card seems to be one component of the problem.

```
Command: ATI Monitor
Path: /Applications/Utilities/ATI Utilities/ATI Displays.app/
      Contents/Resources/ATI Monitor.app/Contents/MacOS/ATI Monitor
Parent: WindowServer [225]
Version:??? (???)
PID: 244
Thread: 0
```

The next piece of information is the type of crash that occurred. These types are usually referred to as exceptions. I doubt this information is of much use to end users troubleshooting a crash. There is even some question about just how useful it is for developers. Apple has identified the four most common types of exceptions (crashes), each of which is summarized briefly below:

KERN_INVALID_ADDRESS The thread in question is making an attempt to use unmapped memory. This error can be caused either by data or by an instruction.

KERN_PROTECTION_FAILURE This is always a data-related issue. The questionable process is attempting to write data to an area of memory that has been reserved as read-only.

BAD_INSTRUCTION There is something wrong with the instruction that a thread is attempting to execute.

ARITHMETIC/EXC_I386_DIV This is the error that occurs on Intel-based Macs, which occurs when the thread in question attempts to divide an integer by zero.

In my case, the error in question turned out to be **KERN_INVALID_ADDRESS (0x0001)** at **0xbf7fffe0**. The game *Second Life* was running at the time, and it was checking the log that pointed me to the ATI crash log. The *Second Life* log indicated a very low frames per second rate immediately before the crash. Since *Second Life* can be both memory- and graphics-intensive, my initial suspicion was that the game was pushing the memory and graphics limitations of the computer. ATPM publisher Michael Tsai, who has much more application development experience than I do, tells me this error usually means there has been some corruption of an application's memory. If that's the case, the culprit is likely an application bug or operating system bug.

The last portion of the crash log is often referred to as a backtrace. It identifies which thread crashed and the steps occurring immediately before the crash. The first column of this section indicates the order of the tasks being performed. Items are listed in reverse chronological order. The first column indicates the order, with item 0 being the most recent. The second column indicates the library containing the code for that line. The third column is a program counter address, and the fourth column lists the name of the function that was running at the time of the crash. One line of the report will look something like this.

Thread 0 Crashed:

```
0 com.apple.CoreFoundation 0x907ba1c0 _CFRuntimeCreateInstance + 36
```

This segment of the report can run for many lines. Although these lines are, for the most part, unintelligible to the average user, careful examination may provide clues to what the application was doing at the time of the crash. If you are lucky, this segment will contain

information with names that are somewhat descriptive, providing clues about the exact tasks the application was performing.

What Do You Do Now?

Now it's time to put your observation and detection skills to work. No matter how simple or complex the problem you are trying to solve, troubleshooting is essentially a matter of answering four basic questions. What type of problem are you having? When does the problem occur? What seem to be the contributing factors? How do I solve the problem?

The first question to answer is does this appear to be a kernel panic, which affects the entire system, or an application crash, which usually affects only one program. [Kernel panics](#) are often the result of hardware issues or problems with kernel extensions. Although hardware is often an issue in these types of crashes, do not assume any hardware has failed. In my own experience, kernel panics are sometimes hardware-related as they were with my memory chips, but they can also be due to things such as memory and graphics cards not being properly seated in their respective slots. Have you opened the case and installed any new components recently? If so, carefully check these connections using appropriate safety procedures.

Application-specific crashes usually affect a specific program, leaving the rest of the system intact. For these types of problems you'll want to know what applications were running at the time. If you were at the computer at the time of the crash, what were you doing? Recreate those steps to see if the crash continues to occur. (You are actually *trying* to crash the program. More accurately, you are trying to reproduce the circumstances that led up to the crash.)

Solve the Problem

If you have gotten this far, you may have an idea of potential problem areas to examine. Here are some general tips to follow, then I will point you in the direction of some more specific information.

Simplify the System

When a problem occurs, try to simplify the number of issues that must be investigated. If you suspect the problem may be hardware-related, start with the simplest things first. Check all power and data cables to make sure they are properly attached. If that doesn't solve the problem, disconnect as much extraneous hardware as possible and reconnect things one at a time until you have everything reattached.

If you are trying to simplify a software issue, try logging in to the troubleshooting account you created earlier. If the same problem does not occur in that account, you can now start looking at files within your user account as the possible culprit. If the problem is occurring in both accounts, restart your system with the Shift key held down. This forces the system to load only those kernel extensions absolutely necessary for the system to operate. If the problem goes away, then the issue may well be caused by something common to both accounts.

There are several other keyboard shortcuts that can be invaluable in troubleshooting application or system crashes. [This list](#) not only contains useful troubleshooting keyboard shortcuts, but also other shortcuts commonly used in daily operation. Print this list, keep it handy, and before you know it you will be using the keyboard for activities you thought required the mouse.

Learn From Your Fellow Mac Users

I have mentioned before that I have found several Mac-related sites invaluable for solving problems and getting new ideas. If you haven't already done, so check out [Mac Owners Support Group](#), [MacMentor](#), or [OSXFAQ](#). These sites contain a wealth of information, and joining them is free. While you are at the OSXFAQ site, head to the forums and grab this [general troubleshooting guide for OS X](#). Chain this guide somewhere near your Mac for future reference. It's a much more concise reference than most things I've seen elsewhere. I also use [MacFixIt](#) to keep up with late-breaking troubleshooting news. The late-breaking updates are free, but for advanced searching and extended-troubleshooting guides you'll want to spend the \$25 per year to become a subscriber.

Final Thoughts

By now you have probably at least glanced at the information referenced in this article. Here are three tips you may not find written anywhere else. The first one is to start with the simplest possible explanation for the problem and work from there. I spent 20 minutes one day trying to decide why my G5 refused to power up at all. Since this was in the middle of the kernel panic phase, I was ready for a major hardware failure. It turns out that the power cord had pulled out of the machine just enough to break contact and prevent power up. On visual inspection everything looked fine. I found the problem when out of sheer desperation I started retracing my steps.

Once you have checked the obvious, my second tip is to check the simplest things first. During the time I was having memory-related problems, I opened the case several times to make sure the questionable chips were installed properly. On one of these sequences, I did not hear the usual system chime as things powered up. That chime occurs after your Mac has passed the Power On Self Test (POST). If your Mac fails the POST, there is likely a hardware issue that needs to be resolved. Generally it means that some internal piece of hardware is not connected properly or has failed. I immediately assumed the worst. It turns out I had reconnected my external speakers, which disables the internal speaker. Since my external speakers weren't connected to an electrical outlet at the time, there was no sound. Boy, was I relieved. That's a much cheaper fix than I was expecting.

I picked up the last tip in the pre-OS X days. It came from a program that listed OS 9 error codes, their meanings, and some possible solutions. If an application crashes when you perform a certain step in a program, try a different means of triggering the same step to see if the program still crashes. Suppose your favorite program quits when you use Command-C to copy information to the clipboard, try initiating the copy operation from the Edit menu using the mouse. If the program still crashes that's one more piece of information about the

problem. If the program doesn't crash, you have a viable workaround until a fix is released for the problem.

That's it for now. We'll see what happens next month.

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Germany

[This Month's Desktop Pictures](#)

This month's photos of Dachau, Gunzenhausen, and Nuremberg were taken by ATPM reader [Robert Reis](#).

Previous Months' Desktop Pictures

Pictures from previous months are listed in the [desktop pictures archives](#).

Downloading All the Pictures at Once

iCab and Interarchy can download an entire set of desktop pictures at once. Use the “Web ▸ Download Entire Site” command in the File menu, giving it the URL to the pictures page above. In iCab, use the Download command to download “Get all files in same path.”

Contributing Your Own Desktop Pictures

If you have a picture, whether a small series or just one fabulous or funny shot, feel free to send it to editor@atpm.com and we'll consider publishing it in next month's issue. Have a regular print but no scanner? Don't worry. E-mail us, and we tell you where to send it so we can scan it for you. Note that we cannot return the original print, so send us a copy.

Placing Desktop Pictures

Mac OS X 10.3.x and 10.4.x

Choose “System Preferences...” from the Apple menu, click the “Desktop & Screen Saver” button, then choose the Desktop tab. In the left-side menu, select the desktop pictures folder you want to use.

You can also use the pictures with Mac OS X's built-in screen saver. Select the Screen Saver tab which is also in the “Desktop & Screen Saver” System Preferences pane. If you put the ATPM pictures in your Pictures folder, click on the Pictures Folder in the list of screen savers. Otherwise, click Choose Folder to tell the screen saver which pictures to use.

Mac OS X 10.1.x and 10.2.x

Choose “System Preferences...” from the Apple menu and click the Desktop button. With the pop-up menu, select the desktop pictures folder you want to use.

You can also use the pictures with Mac OS X's built-in screen saver. Choose “System Preferences...” from the Apple menu. Click the Screen Saver (10.1.x) or Screen Effects (10.2.x) button. Then click on Custom Slide Show in the list of screen savers. If you put

the ATPM pictures in your Pictures folder, you're all set. Otherwise, click Configure to tell the screen saver which pictures to use.

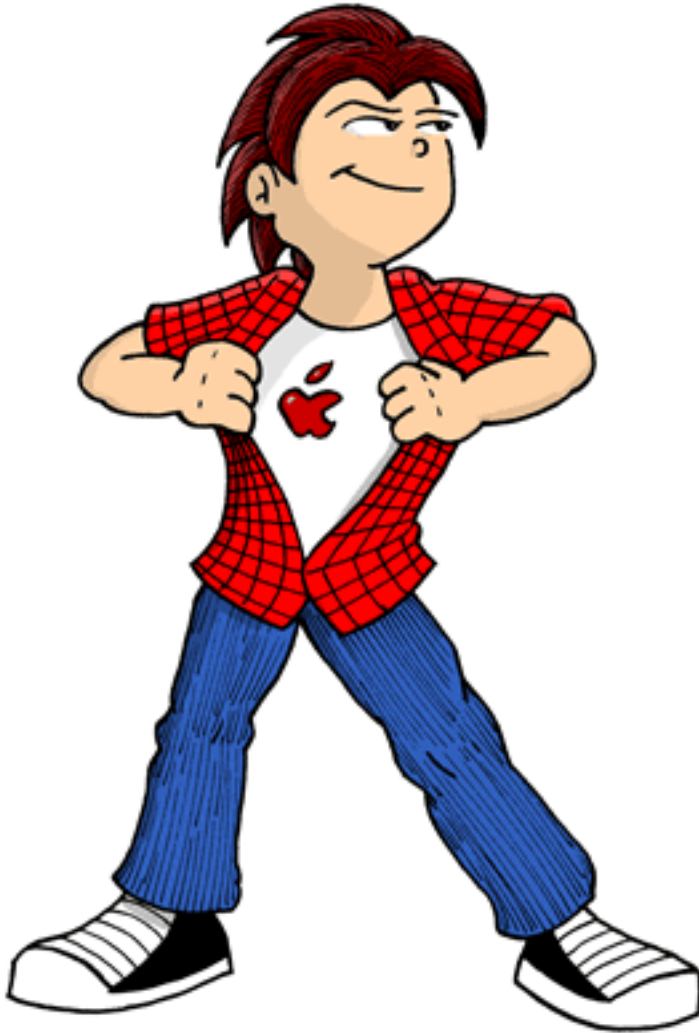
Mac OS X 10.0.x

Switch to the Finder. Choose "Preferences..." from the "Finder" menu. Click on the "Select Picture..." button on the right. In the Open Panel, select the desktop picture you want to use. The panel defaults to your ~/Library/Desktop Pictures folder. Close the "Finder Preferences" window when you are done.



Cortland

by Matt Johnson, mjohnson@atpm.com



C O R T L A N D
R E T U R N S

Grand Rapids, Michigan.
January, 1984.

Honey, I'm telling
you, this machine is
revolutionary!

I don't know,
Jonathan, it's kind of
expensive.

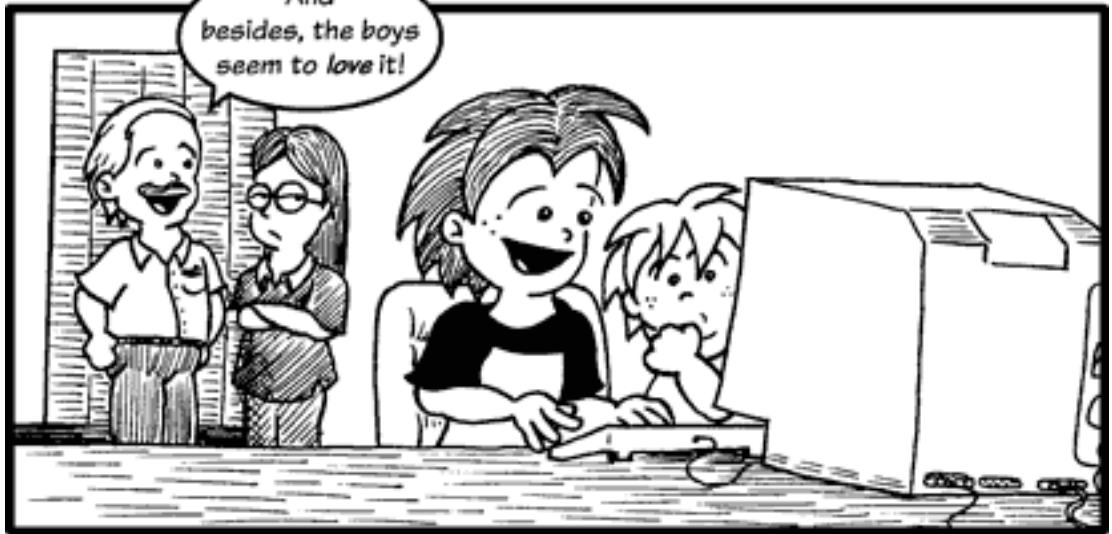
Are
you sure this
won't end up like the
Intellivision?

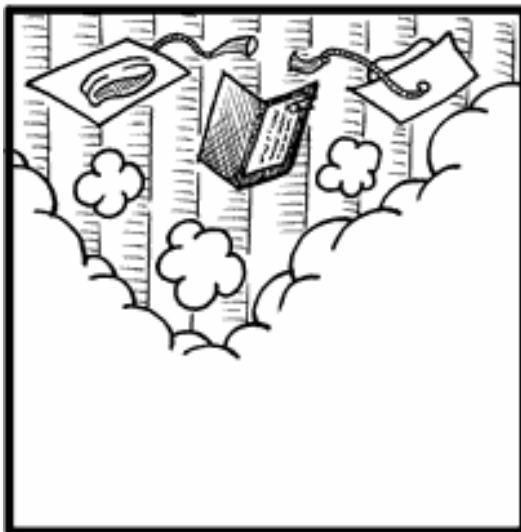
Of
course!

It
redefines
the personal
computer!

Soon, *all*
computers will
work like this!
We're ahead of
our time!

And
besides, the boys
seem to *love* it!

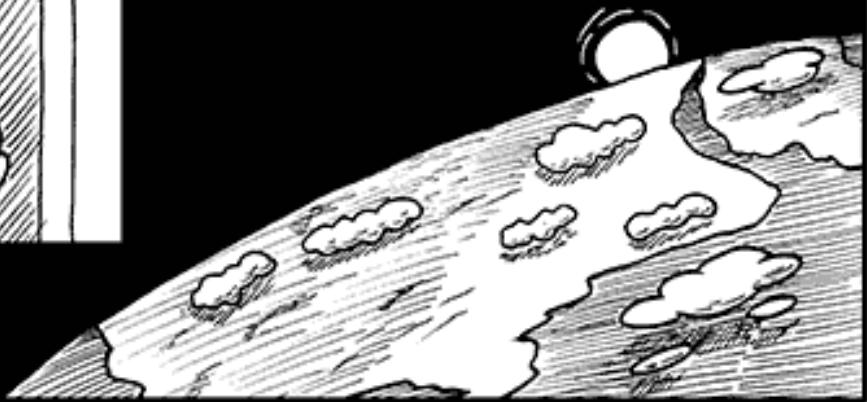




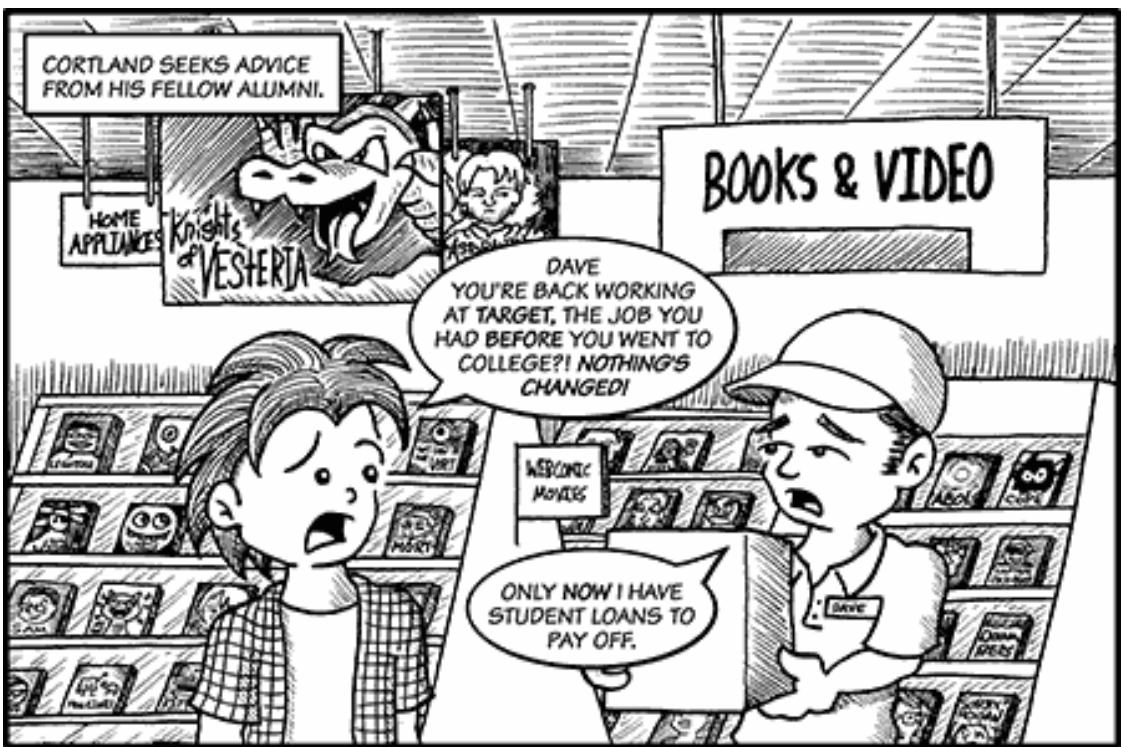


BUT I'M SURE YOU'LL DO FINE. NOW GET OUT THERE AND FACE THE WORLD!

CORTLAND







IN TIME, HOWEVER, CORTLAND DISCOVERS THE SECRET OF A SUCCESSFUL JOB HUNT.



YOU SEE, IT'S NOT WHAT YOU KNOW, BUT WHO YOU KNOW, AND EVERYBODY KNOWS SOMEBODY...

...AND SINCE EVERYBODY KNOWS SOMEBODY ELSE, EVENTUALLY...

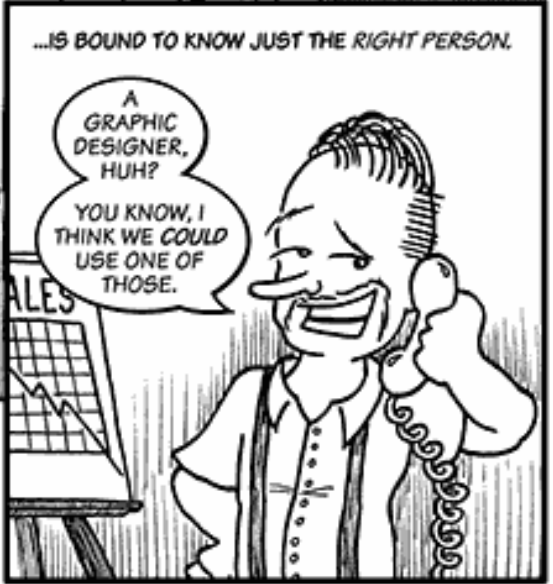
...SOMEONE IN CORTLAND'S GRAPVINE...



...IS BOUND TO KNOW JUST THE RIGHT PERSON.

A GRAPHIC DESIGNER, HUH?

YOU KNOW, I THINK WE COULD USE ONE OF THOSE.

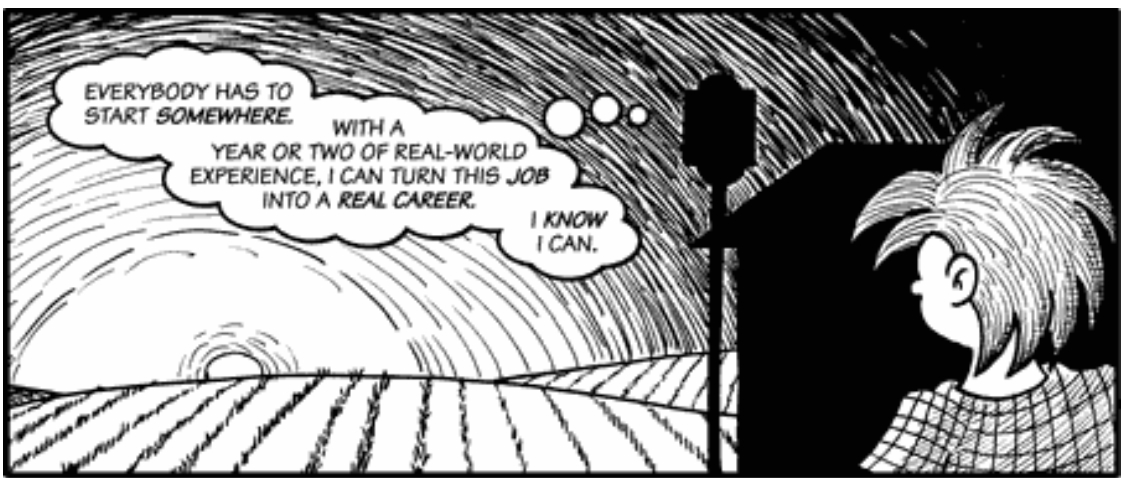




I'D HAVE TO LIVE IN **NEBRASKA.**









AND SO, WITH RENT TO PAY
AND NO INCOME IN SIGHT,
CORTLAND'S DESPERATE
SEARCH FOR A JOB
CONTINUED.



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Software Review

by Lee Bennett, lbennett@atpm.com

A Better Finder Rename 7.4

Developer: [Frank Reiff/Publicspace](#)

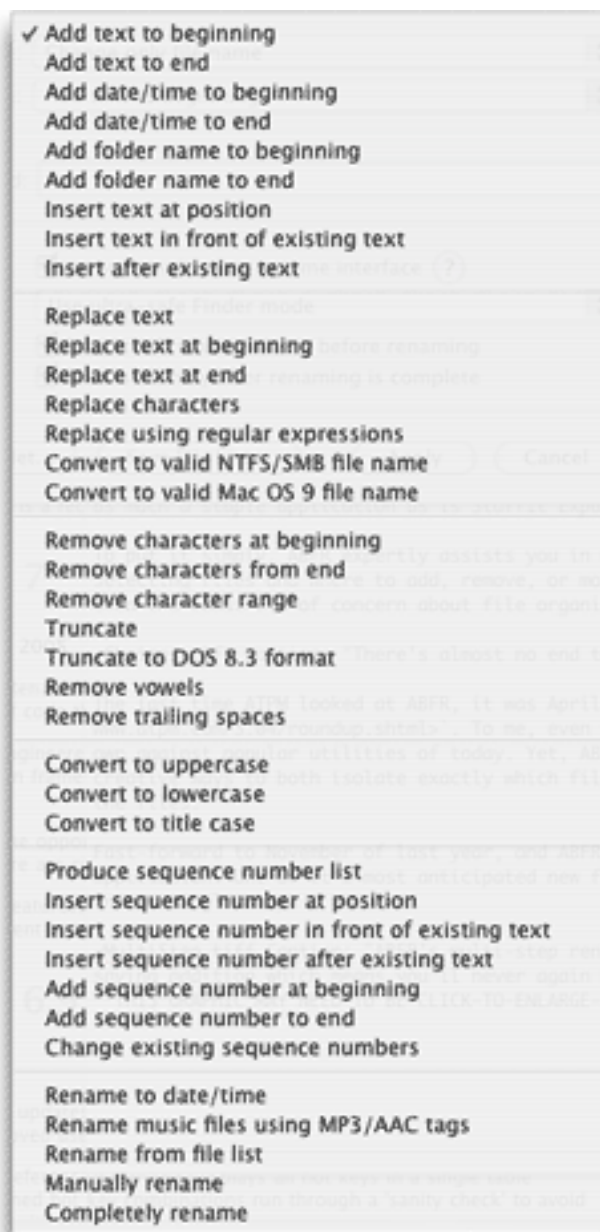
Price: \$20

Requirements: Mac OS X 10.3. [Universal](#).

Trial: Fully-featured (only permits 10 files to be renamed at once).



A Better Finder Rename (ABFR) is one of the staple utilities known by most every long-time Macintosh user. A perfect tool for expertly managing filenames, its large selection of conditions for choosing and modifying portions of filenames (or the entire name) makes it a must-have for anyone who is the least bit concerned about file organization on their computer.



There's almost no end to the possibilities of renaming actions.

The last time ATPM looked at A Better Finder Rename, it was April 1999 and [version 1.7](#) had just been released. To me, even those early versions seem powerful enough to hold their own against popular utilities of today. Yet, ABFR just keeps getting better, offering increasingly creative ways to both isolate exactly which files you wish to rename and to specify exactly how to rename them.

Fast-forward to November 2005, and A Better Finder Rename 7.0 has undergone a complete rewrite as a Cocoa application. One of its most anticipated new features is the ability to combine several rename actions into a single step.



ABFR's multi-step rename feature, shown in the left drawer, is a time-saving addition that means you'll never again have to invoke multiple renaming sessions. [Click](#) to enlarge.

Version 7.3 came with an alternative to the multi-step feature, which should be of benefit for paranoid types who would rather do just one step at a time. There's now an Apply button to perform a rename action and remain in the ABFR application, permitting you to immediately set up a new action.

The instant preview window has also seen big improvement. It can now be detached and resized from the default drawer configuration, and you can drag and drop additional files from the Finder, adding them to the renaming session. Curiously, even though there is a button to remove items from the preview window, you cannot drag them away in the same manner that you can drag them in. Poof, anyone?

A prior version of ABFR added the ability to work with MP3 and AAC audio files. If your audio files are properly tagged with ID3 information, ABFR can extract that information for renaming functions. For example, when iTunes is managing your library automatically, the filenames are usually just the song titles, which are inside a folder that is named for the album. Those album folders live inside yet another folder which is named for the artist. Suppose you want to copy a handful of songs from various albums to your Desktop, then burn them to a CD with no folder structure. ABFR can read the ID3 tags to give all the song files a name such as `Artist_Album_Song.mp3`. You can choose one of the filename presets or [build your own](#).

ABFR can also look at date and time information from the EXIF data in digital photos and add it to filenames, or create numbered filename lists based on this data. Support for Adobe's Digital Negative (DNG) format and experimental support of two new RAW formats when used under OS X 10.4 was added early this year.

Geeks. . .uh, I mean, power users. . .will appreciate the support of regular expressions. Let's be honest here—you either know how to use regular expressions or you don't. Since I don't, the best I can do is suggest you take a look at what ABFR's Web page [says about it](#).

Another boon to advanced users is the ability to choose one of four ways in which the technical act of [renaming](#) is performed. The default “Ultra-safe Finder mode” is the setting to leave for most circumstances. Other modes include Cocoa mode, which is much faster for huge renaming actions, and Unicode mode, which uses the Carbon APIs.

Finally, ABFR features tools for creating time-saving workflows. The simplest workflow function is to create a droplet upon which you can repeatedly drag files to perform common rename actions. Advanced users can set up standardized names in another application such as BBEdit or Microsoft Excel, export them to a text file (plain or tab-delimited), and use these lists to manage batch file renaming.

ABFR is solid and reliable. Even the safe rename mode is very quick. It's had a long time to mature into the indispensable tool it has proven itself to be. If you had asked me ten years ago if the first versions of ABFR could be any better, I'd probably have answered, “I don't see how. It's already amazing.” Yet, Publicspace has continually proven there's always something that can be better. There's probably already a good list of rename action improvements and additions of which I wouldn't have dreamed. That said, I do have two thoughts on usability.

If you're using both the multi-step drawer and the instant preview drawer at the same time, the interface is awfully wide. Sure, you can drag these drawers closer, but they then become a bit too narrow to be useful, especially the preview drawer. As stated earlier, you can detach the preview drawer and move it elsewhere, though I happen to like drawers and the ability to keep an application's interface tied together. Perhaps an optional setting to have the preview drawer come out the bottom instead of the right side is worth consideration.

My other thought concerns the menu of rename actions, seen in the first screen shot above. While I am definitely not accusing ABFR of feature bloat, it can sometimes take a moment to scan through the list to find what I'm looking for. As you can see in the screen shot, the action menu list is nearly as tall as the entire vertical resolution of my Titanium PowerBook.

The solution may be something I've not even considered, but ideas that come to mind include the introduction of some hierarchy in the action menu and/or pruning preferences so that the list isn't populated with actions for which some users may never need.

While these two issues are a hit against usability, neither affects functionality in any way. The multi-step drawer usually isn't needed and doesn't have to be out, and there is at least a small bit of grouping in the action list. A Better Finder Rename is definitely a tool that can benefit anyone.

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Accessory Review

by Chris Lawson, clawson@atpm.com

iWoofier

Developer: Rain Design

Price: \$129 (\$100 street)

Requirements: iPods 3G, 4G, 5G, mini, or shuffle. Separate iPod nano/shuffle version available (same price).

Trial: None



Rain Design, better known for their ergonomic accessories like the [iLap](#), has branched out into the burgeoning iPod accessories market with the iWoofier. This \$129 speaker system also functions as a USB dock for third-generation or newer iPod models, including the iPod mini and iPod shuffle models. A second iWoofier model supports the iPod nano (as well as the iPod shuffle). Both iWoofiers include an FM tuner for radio playback if you ever get bored with your iTunes library.



Features-wise, the iWoofers are fairly complete. You can't quibble with its broad iPod support, and an FM tuner is a nice touch. The radio could use a better implementation, though. The reception is nothing to write home about; it's not as atrocious as the radio Shark (thank the iWoofers' external antenna for that), but it's not great either. Any \$20 department-store clock radio will rival the quality of its reception, which is perhaps not what you wanted to hear about the device you just dropped a hundred and thirty smackers on. Worse, there's no visual indication of station frequency, and the tuner is digital, so you have absolutely no clue what station you're listening to until the DJ takes a break from overplaying "My Humps," interspersed with commercials for the local used-car lot, to do his FCC-mandated duty and announces what station he's working for. Finally, it would have been nice if Rain Design had thought to include a feature where switching to the FM tuner would automatically pause the iPod.

But you didn't buy it for its FM tuner capabilities, so you don't care about all that. You bought it because you want to be able to unleash Rammstein on your unsuspecting cubicle neighbors. For having only two tiny, 30-mm drivers and a 2.5-inch subwoofer, the sound is surprisingly good. While the drivers can distort at high volume settings when playing music with a heavy midrange, and the bass is only average for a speaker of this size, the high notes are clean and crisp. If you keep the volume under control, you'll be pleasantly surprised by the sound. You don't even have to be chained to the AC adapter to enjoy it, either; the iWoofers can be powered by four AA batteries for portable, uhm, "woofing."

The iPod dock implementation is excellent. Unlike many third-party docks, the iWoofers allow the iPod to both charge and update while docked via the included USB cable. Kudos to Rain Design for getting it right here. Kudos are also given to the engineer who insisted that a means for turning off the blue LED ring underneath the unit be included, as the light is extremely bright in a dark room and quickly wears out its welcome. (Note to other manufacturers: not everyone wants you to prove that you can create a blue LED with a brightness of 1,588 lumens per milliwatt.)

That leaves two complaints. The AC adapter is quite possibly the worst wall-wart I've ever had the displeasure of dealing with. There is simply no way, in any reasonable power strip, to avoid taking up three plugs with it. While this might be excusable were the adapter attractively designed, it's not even good-looking, and it doesn't match the design of the iWoofers to boot. Plan to pony up \$10 more for a tolerable third-party AC adapter. And speaking of the design, either you love the look or you hate it. The iWoofers—especially the black model—looks like the mutant bastard child of [Volkswagen's Fast](#) and an iPod, but I mean that as a compliment. It's rather endearingly cute, in an alien sort of way.

I like Rain Design, I really do. And I want to like the iWoofers. But the AC adapter is lousy enough to knock it down one full rating, and its half-thought-out FM tuner and high price don't help. Send this one back to the kitchen to bake a little longer.

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Book Review

by Sylvester Roque, sroque@atpm.com

Making Music on the Apple Mac

Publisher: [PC-Publishing/O'Reilly](#)

Author: [Keith Gemmell](#)

Price: \$15

Trial: None



For reasons I can't quite explain, I have always had a passing interest in making music on a Mac. The one thing that has stopped me from trying it is an incredible lack of talent or sense of rhythm. As a first step in that direction, I reviewed [Keep It Simple With GarageBand](#) by [Keith Gemmell](#) for the August issue.

While working on the review of that book, I learned that Mr. Gemmell has also written *Making Music on the Apple Mac*. A quick perusal of the book's description suggested that it was geared toward anyone considering setting up a home studio. I wasn't planning on going that far, but it sounded like interesting reading so I volunteered to review this book as well.

General Impressions

Making Music on the Apple Mac was first published in 2005 and therefore pre-dates the GarageBand book. It has the same concise writing style and copious use of screenshots and photographs. I suppose you could argue that no one really needs to see a photograph of a [MIDI](#) keyboard, but it's there if you would like to see it. Most of the figures in this book are much more useful than that. After all, there are some things that you just need to see to completely understand

If you are a fan of tips, tidbits, and occasional bits of trivia in the margins of your books, this book won't disappoint. Look carefully and you will discover mixing tips, definitions of basic terms, and the occasional Web site, all in the margins. There's even a brief history of the MIDI interface.

First Steps—Choosing the Right Hardware

This book encompasses 103 pages divided into seven chapters. The first two chapters are devoted to hardware issues. Chapter 1 begins with the obvious question: which Mac has sufficient speed for your home studio application? Mac models from eMacs to Power Mac G5s are considered as possible centerpieces of a recording studio without getting bogged down in technical jargon. You won't find a discussion of Intel-based Macs here, though. If you just don't have time to read 15 pages of information, it is summarized in the Appendix and condensed to just over two pages.

Some of the tips in this chapter may be obvious to long-time Mac users. The admonition to buy as much RAM as you can reasonably afford is not only appropriate for music editing, but also for other intensive tasks as well. While I expected to see a tip regarding the need for increased RAM, I did not expect to have to think about screen size. As you graduate from GarageBand to professional programs such as Logic, Cubase, or Digital Performer, the number of tool palettes and windows can increase significantly. If you tend to keep several windows and palettes open simultaneously, a small screen can be problematic.

Chapter 2 is devoted to additional hardware that one needs to get good recordings. Once you decide to go beyond the Mac's built-in recording capabilities, there are several pieces of hardware that might prove useful. Microphones, speakers, audio interfaces, and MIDI gear are all discussed briefly in this chapter. The advice is generally practical, and the author does not assume that everyone needs professional quality gear. If you are new to making music on the Mac, there's some good information here. Do you know the difference between a condenser mic and a dynamic mic? You will after reading this chapter. What about the microphone's pickup pattern? If you don't know the difference between cardioid, omni, or figure 8 patterns, you will after reading page 22.

Second Steps—Adding the Right Software

Chapters 3–5 examine the software side of a Mac-based recording studio. In such a discussion, GarageBand has to be among the first pieces of software to come to mind. Many Mac users have this program either because they purchased a computer with it preinstalled or purchased it as part of the iLife suite.

Chapter 3, which is devoted to GarageBand tips and tricks, is the longest chapter in the book. There are more than 30 pages of GarageBand goodness here including tips, tricks, suggestions, and a description of many of the included special effects. If you want to know what features were added in version 2 of GarageBand, check out chapter 4. Curiously enough, this is the shortest chapter in the book.

Even though GarageBand has a remarkable set of features, your creative urges may eventually require a little more flexibility. If that's the case, you need to consider a software upgrade. Fortunately, as a Mac user you've got some viable options including Logic, Cubase, and Digital Performer. How do you know which one is best for you?

Given the cost of professional-level recording software, you don't want to guess wrong when deciding which program to purchase. You could scour Web sites, haunt user groups, and consult friends, or you can consult chapter 5. In 18 pages, Mr. Grinnell gives a nice overview of each program and its relative strengths and weaknesses. As usual, screenshots, tips, and tricks abound. As you read this chapter, keep in mind that there won't be information about which programs are available as universal binaries or their performance under Rosetta. Remember, from a hardware standpoint this book stops at the G4-based Mac mini and the Power Mac G5.

That's a Wrap

Now that you have recorded your sonic masterpiece, what's next? Well, musicians generally want their music played as often as possible for as many people as possible. This process is discussed in the book as well. Chapter 6 is devoted to the pros and cons of scoring and distributing your own music. If you have any background in this area at all, you'll have no trouble understanding the author's comments. This is a difficult area for me to judge since I have no experience in music composition, but the author's discussion of these issues seems reasonable and is as concise as the rest of the book.

Chapter 7 takes a very basic look at a music distribution option that is becoming increasingly more popular. You've created a musical masterpiece—why not put it on the Internet for the world to hear? If you have never done this before, don't worry about needing additional software. This chapter explains how to use iTunes and GarageBand to do the heavy lifting.

If you think the finished track is pretty good, why not get a little [feedback](#) from fans and fellow musicians. After you have reviewed 30 songs by other artists on this site, you can post your own music for review by other members.

Final Thoughts

If you are new to recording on Macs, this book is an excellent introduction. The information is well presented without a lot of jargon. If you have been recording for some time already, this is probably not the book for you. *Making Music on the Apple Mac* is an excellent beginner's resource as long as you realize that it does not contain information about the performance of the Intel Macs.

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Software Review

by David B. Thompson, dthompson@atpm.com

Parallels Desktop 2.2.1848

Developer: [Parallels, Inc.](#)

Price: \$80 (download)

Requirements: Intel-based Macintosh, Mac OS-X 10.4.6.

Trial: Fully-featured (15 days)



The purpose of Parallels Desktop for Macintosh (PDM) is to provide access to an Intel virtual machine on Intel-based Macs. That interface, and the virtual machine that underlies it, allows installation of alternate operating systems that will run in an OS X window. That technical talk means I can run Microsoft Windows in an OS X window. Windows, under Parallels Desktop, runs natively on my Intel-based Mac.

This ability is important to me, and others like me, who want to use Macintosh computers but need access to Windows (or other operating systems) for certain activities. For example, my profession, hydrology, requires me to use a pair of standard numerical models that run only under Windows. Until Apple decided to use Intel processors for Macintosh computers, I was forced to either use emulation, via [Virtual PC](#), or use a second, Windows-based computer.

Using and maintaining more than one computer is something I no longer want to do. I want to keep my computational life as simple as possible. The fewer computers I have to maintain, the better I like it.

I have experience with emulators. I used DOSEMU under Linux way back in the early days of Linux when system administration was fairly challenging. DOSEMU worked fine for DOS-based software. It was even fairly speedy, given the hardware it was running on (80486 Intel processors). Of course, DOS was a relatively simple system, and its hardware requirements were modest.

After I switched to Macintosh, I used Microsoft's Virtual PC (VPC) to give me access to Windows XP Pro under OS X. On my PowerBook G4, Virtual PC ran, and I was able to install Windows, but the system was not usable because performance was relatively poor. That is, while the 1.25 GHz G4 was able to run Windows under Virtual PC, the processor wasn't quite powerful enough to make using Windows practical. The response of Windows was just too slow. On my dual-G5 desktop Mac, however, performance of the VPC/XP combination was acceptable—not great, but usable.

Given that background, I anticipated better performance with the Parallels/Windows combination than with Virtual PC. After I acquired my MacBook Pro and set it up, I downloaded a copy of Parallels and installed it.

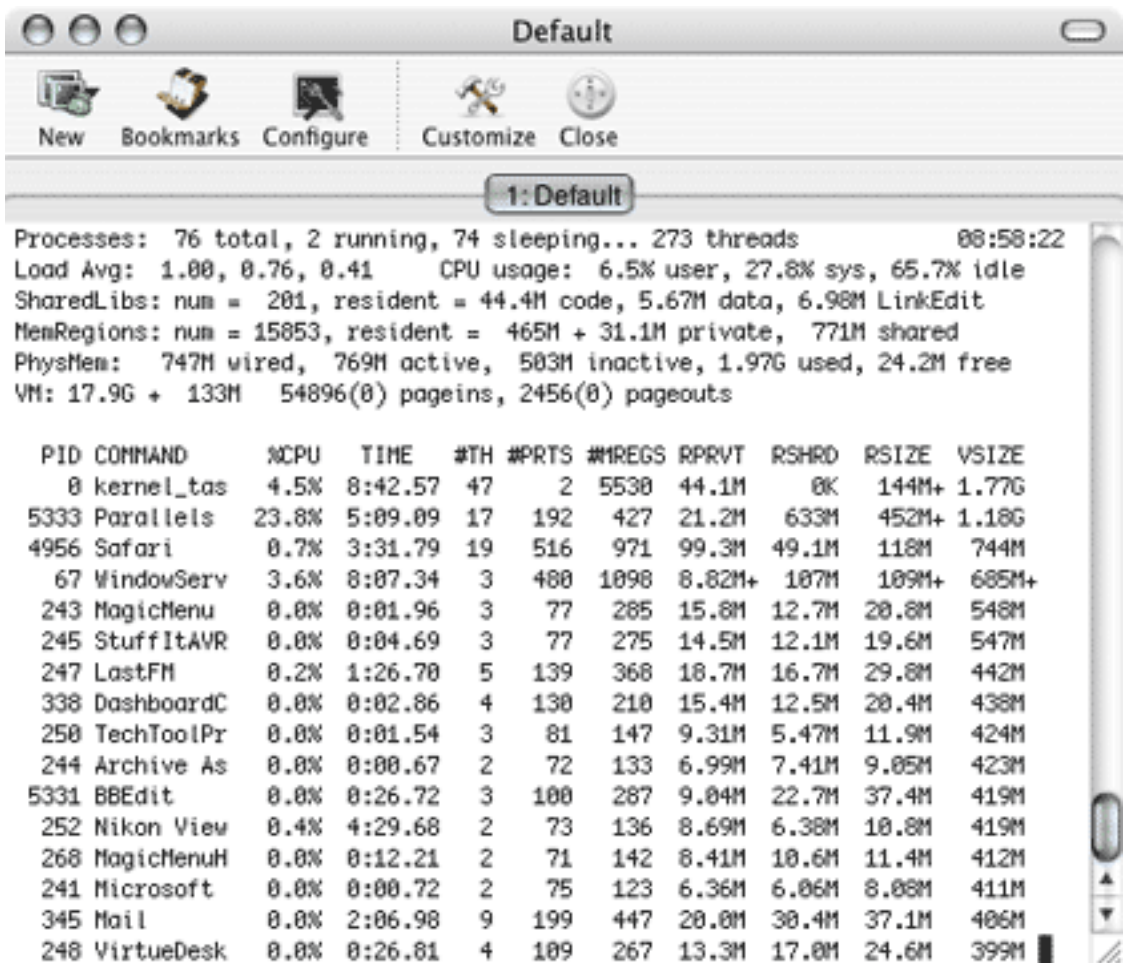
Installation was easy. I downloaded the software, mounted the disk image, and ran the installer. Parallels, Inc. uses an automated e-mail system to send a temporary activation code for trial use.

Once Parallels was installed, I fired it up, adjusted the memory allocation from the default value of 256 MB to 512 MB, and started the virtual machine. I was then able to install XP. The Windows installer executed fairly quickly, and I was presented with the desktop. I ran Windows Update, then downloaded and installed my tools and had the system operational within an hour. No hitches were encountered when running the Windows installer.

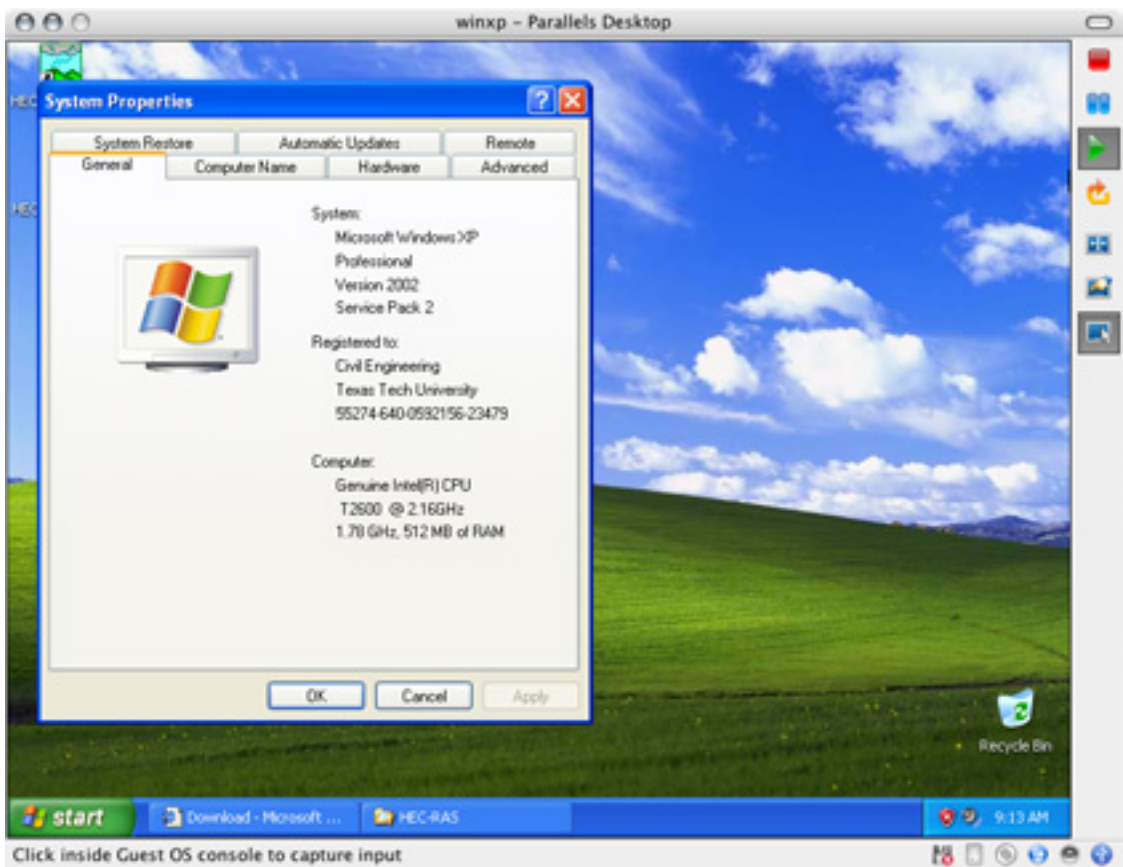
Memory Issues and Performance

Windows XP Pro runs best with lots of memory. While it will install and run with 256 MB, the system runs better with at least 512 MB. That's why I bumped up the allocation under Parallels.

With a 512 MB memory allocation for Windows, Parallels uses quite a bit of memory. To illustrate, I captured the screen shot below. Parallels used about 452 MB of memory (resident size, or RSIZE) and its total memory footprint (VSIZE) was something over 1 GB. When I first installed Parallels on my MacBook Pro, I had only 1 GB of RAM installed in the system. System performance was significantly impacted when running PDM with 1 GB of RAM and a 512 MB allocation for the virtual machine. The system spent a lot of time swapping, motivating me to purchase an additional 1 GB of RAM to max-out my system. This isn't a big deal for me because I typically install the maximum RAM on my systems anyway, but it is an issue. You will want to have at least 2 GB of RAM to run PDM/XP under OS X.



I also examined “My Computer” under Windows to see what hardware Windows thought it was running on. The result is shown below. Windows correctly identified the hardware as an Intel T2600 at 2.16GHz with 512 MB, just like it should. Parallels is doing its job.



Use of Windows under Parallels is, well, like using it on any other computer. To develop an objective view of system performance, I ran the SiSoft Sandra processor benchmark on the virtual machine. Sandra reported that my virtual computer was running at about two-thirds the speed (in terms of MIPS and MegaFLOPS) of a T2600 Intel Core Duo clocked at 2.16GHz. That's technical talk to indicate Parallels on my MacBook Pro was running with about a 33 percent performance penalty over what Windows would do running natively on similar hardware.

Even with the performance hit associated with running a guest operating system under OS X, the Parallels/Windows combinations felt substantially faster than Virtual PC on my old PowerBook G4 and moderately faster than Windows running natively on my Toshiba Portege Centrino-based system. These rough tests and impression do not comprise an engineering study comparing performance of the various hardware/software platforms; they are my impressions based on using the different systems.

That noted, I would say the Parallels/Windows combination on my MacBook Pro is quite usable; the Virtual PC/Windows combination was not usable on the PowerBook G4. I should also note the Virtual PC/Windows combination was quite usable on my desktop dual G5 too, but I noticed a clear performance hit associated with software emulation of Intel hardware on the dual G5. Using Parallels on my MacBook Pro or Virtual PC on my

dual-G5 desktop, my numerical models run well enough to work for modest-sized problems. I can use them to test and debug student assignments and use the tools for my own projects.

Using Parallels

One potential issue with Virtual PC is capture and release of the mouse and keyboard by the guest OS. This is handled elegantly by Parallels. Simultaneously pressing the Control and Option keys releases the mouse and keyboard from the guest operating system. It's a good key combination because I rarely use both of those keys together. An even better solution is to install the Parallels tools under Windows. More on those tools below.

As a system administrator, one of the tasks I face is management of disk resources. On my Linux systems, changing a partition size used to be a challenge. (It's less troublesome now with virtual disk management.) The task might require copying data on an existing partition, removing the partition, creating a new partition, migrating the data to the new partition, and assigning the mount point for the expanded partition. Parallels assigns a default disk allocation of 8,000 MB. With Windows and my two numerical models installed, I used about 5,500 MB of that allocation. I ran the Parallels Image Tool to find out how difficult it is to reallocate disk resources.

The Parallels Image Tool is implemented as a “wizard” that takes information you provide and runs a simple task. I was able to resize the virtual disk from 8 GB to 12 GB in about five minutes. I was pleased.

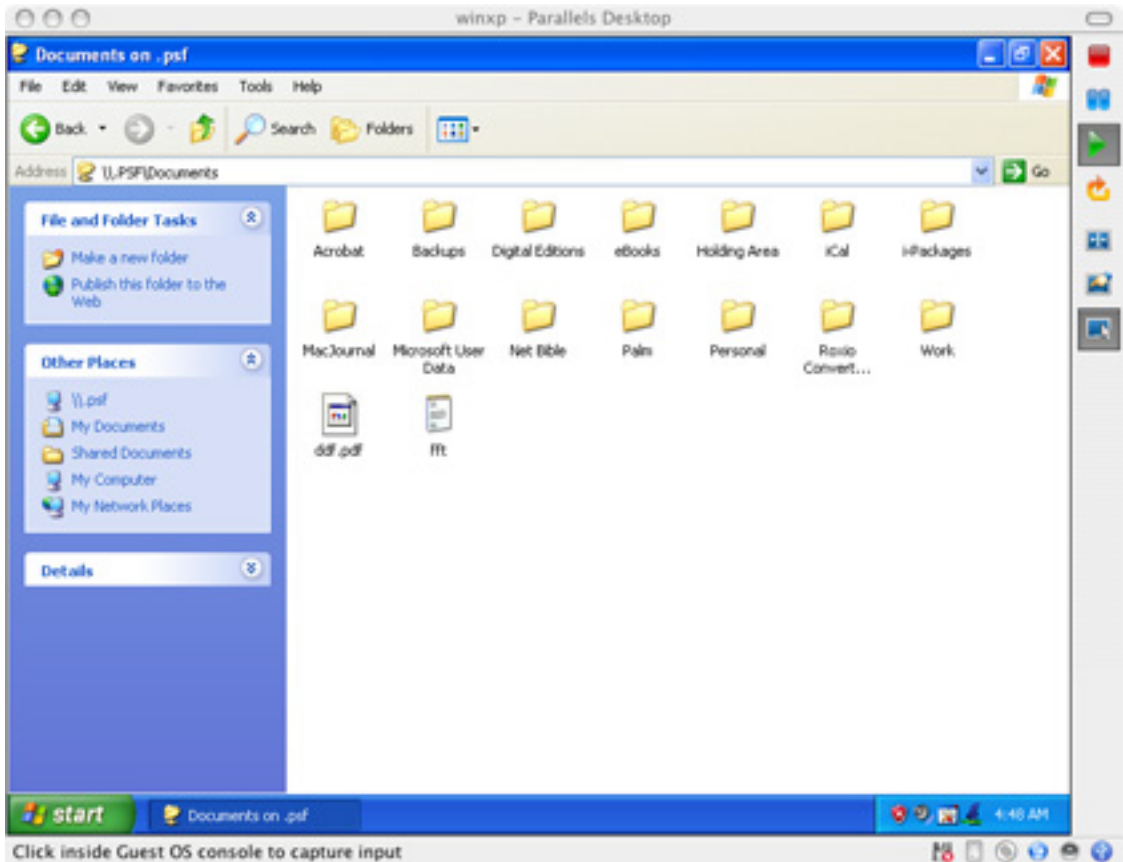
Access to printers is important, so I tested the printing capability of Parallels. This required enabling the printer on the Parallels interface, which was as simple as clicking on the USB button at the bottom of the Parallels window and selecting my Brother HL-2070N from the dialog. When I turned on the printer, Windows found it and asked for permission to install the software. Then the printer just worked.

One last thing I wanted to do was to share files between the host operating system (OS X) and the guest operating system (Windows). I read the User's Guide, but the only mention of file access I could find was to use a Samba server on the OS X side and mount the drives as a Samba share on the Windows side. I have experience working with the Samba server under Linux and decided I didn't have time to go that route. However, when searching for clipboard sharing between OS X and Parallels, I found a reference to “shared folders.” My curiosity thus piqued, I installed the Parallels tools under Windows.

The Parallels tools are straightforward to install. With the virtual machine running, choose “Install Parallels Tools” from the VM menu. Follow the Windows wizard and reboot the virtual machine. This turns on mouse pointer synchronization, clipboard sharing, and folder sharing. (Notice the absence of any mention of files!)

Clipboard sharing works as expected: Command-C, Command-X, and Command-V on the OS X side and Control-C, Control-X, and Control-V on the Windows side. Cool—I liked that.

File sharing, however, is cumbersome. Each directory (folder) you want to access under Parallels/Windows must be explicitly enabled in the virtual-machine configuration. If you specify your uppermost document level folder (/Users/Thompson/Documents, for example), any files present in that directory will be accessible, but you cannot traverse the tree to files in lower directories in the tree. (An example of what it looks like is shown below.) Although I can't verify my guess, this "feels" like a network file interface—in other words, I think a Samba service is running underneath the hood.



Conclusion

For my application (running a couple of Windows-only numerical models) Parallels is quite useful. I don't have to choose which operating system at boot time; I can have both available to me simultaneously. This comes with a cost in terms of physical memory required and a performance hit for Windows, but that's an acceptable limitation to me. I always install the maximum memory in my notebook computers, and 2 GB is sufficient to run both systems. Printing works with USB-based printers. Clipboard sharing is useful as is the smooth mouse integration. File sharing between guest and host operating systems is less smooth and requires the user to configure folders to be shared. I'm hopeful this can be improved. If it does, then I'll change my rating from "good" to "very nice."

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