



# MAC FACTS

from

## Mac Help Desk

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Volume 8, Number 1

January 1999

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### *A Message from Dru*

Happy New Year to all. May the upcoming year see you healthy, happy, safe, and prosperous.



Happy Birthday to Us!!! January marks our 8th year in operation. Who'd of thunk it! Pundits continue to say "Mac is dead" but we know they're wrong, Wrong, WRONG! The Macintosh platform is alive and doing very well, thank you very much. It is due to folks just like you that continue to assure that Mac Help Desk, Apple Computer, and the entire Macintosh line of computers, will survive well into the future.

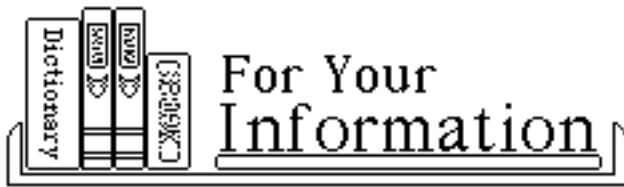


A few 1999 reminders -

- Our office hours are 8:30 am to 5:30 pm Monday through Friday and 8:30 am to 1:30 pm on Saturdays. We're closed on Sunday. We DO offer service outside those hours (i.e. after 5:30 pm weekdays, after 1:30 pm Saturdays, and all day Sunday - but be prepared to pay at least time-and-a-half (\$105.00/hour).
- Sometimes when you call in to the office you'll find the answering machine not picking up after 4 rings. That's because someone else is in the process of leaving a message on the other line. Please be patient. Either let the phone continue to ring or call back in a few minutes. Your messages ARE important to us.
- Mama always taught me the proper etiquette is to identify yourself on the phone BEFORE launching into your story.
- You may have noticed that I don't have a secretary. What that means (besides not getting my filing done) is that the calls I receive today won't be returned until tomorrow morning. If you need to speak to me quicker, page me! (The number is listed in the masthead)



The Apple Corps of Dallas (ACD) has moved. The monthly meeting will no longer be held at the InfoMart. We're still looking for a permanent home, but for the month of January, we'll be meeting at Big Towne Mall in Mesquite. You can check out what's happening at their web site at <http://www.acd.org>.



## **Optimize Your Mac: Buying, Installing, and Using a Processor Upgrade**

by Don Crabb

Most of us can't afford to eighty-six our Macs when they start to feel slow. As much as we might like to buy the latest and greatest, unless we have a direct line to the Lotto, that upgrade plan is just not in the cards for most of us.

That's one reason why processor upgrade cards, from manufacturers like SonnetTech, Newer Technologies, Mactell, PowerTools, Trinity, Vimage, XLR8, and others, have become so popular. For a fraction of the price of even an iMac, you can add PowerPC G3 performance to your existing PowerPC 601, 603, or 604-based machine.

### **Or can you?**

It depends on what you mean as PowerPC G3 performance, of course.

As Ben Wilson noted in his MacCentral article, "After you've installed your Crescendo card and restarted your Mac [7100], you'll be blown away by the speed. Although the difference between a 233 MHz and 300 MHz G3 may not be extremely noticeable, the difference between an 80 MHz 601 processor and a 266 MHz G3 with 1 MB of backside cache is absolutely astounding."

As Ben wrote, everything speeds-up with a G3 processor upgrade, since the CPU is the traffic cop of any computer. Launching applications, closing applications, and working inside applications will be faster once you have plopped-in a processor upgrade card. Even though your old PowerMac may have a slow system bus, creaking hard disk, and other performance limitations, the speed boost that an upgrade CPU offers is quite impressive, especially when you consider that your cost for something in the 266MHz range (with 1MB of backside cache) is under \$600.

But no matter how fast your upgrade CPU is, it won't substantially improve the speed of any action on your Mac that is NOT CPU-bound. I/O (in/out operations), like reading and writing to the disk or downloading from the Net, intensive graphics operations, and other tasks that owe most of their perceived speed to components other than the CPU will not be as impressively sped-up as those whose nature demands fast CPU processing.

Different card manufacturers use different "tricks" to help speed-up non CPU-bound operations, however. Some, like Newer Technology, will goose-up the clock rate of your system bus. Since the system bus on an older PowerMac based on the Apple Alchemy motherboard design may be as slow as 40MHz, any system bus speed improvement will also improve the apparent performance of I/O operations, because data moves faster from the CPU to the memory and the disk as a result. But you have to be careful when you accelerate the system bus, because Apple never certified older motherboard designs to work at those faster speeds -- so reliability can become an issue.

Other manufacturers speed-up the G3 CPU itself beyond what you would expect given its clock rating to produce, by using a bigger backside cache. Any card that includes 1MB of backside cache (or more) will run considerably faster than the same CPU with a smaller cache. Again, this improvement can translate into real improvements in speed outside of CPU-bound operations, because data is moving faster inside the machine.

If you decide to go with a processor upgrade, you will also have to ask yourself how important is it that your machine work with the latest Mac OS. The current Mac OS 8.5.1 is not supported by Apple on MANY G3 upgrade configurations, while Mac OS X, due the middle of next year, may also not run on ANY of these upgrade configurations. You can choose to ignore Apple's recommendations here and still find your upgraded system runs just fine. As someone with a 300MHz/1MB backside cache G3 Newer card living in a Power Computing Power Tower Pro running Mac OS 8.5.1, I obviously don't follow Apple's processor upgrade guidelines.

Keep in mind, however, that no matter what processor upgrade you decide to buy, BEFORE you do that, you need to take basic steps to optimize the way your Mac works, overall. Although I have covered them before, they should be repeated:

- Update your Mac OS and your software. Go to Version Tracker (<http://www.versiontracker.com>) and make sure you are running the latest and greatest of everything that your machine will run. In addition, consider adding a system accelerator package like Connectix's SpeedDoubler, which will improve trash emptying, file copying, and other operations.
- Add more RAM and use Connectix's RAMDoubler. RAM is still cheap and still the best way to speed-up any Mac.
- Add an L2 cache card if your pre-G3 PowerMac does not have one. The bigger, the better.
- Improve your Net connection. If you don't have a 56Kbps V. Everything modem, get one. If you can get ISDN, DSL [digital subscriber line] or a cable modem, get it.

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## NEWSLINE

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### MacWorld Expo San Francisco 1999: Apple Keynote Report

In his MacWorld Expo keynote presentation, Steve Jobs officially announced the new Power Mac G3 computers, described an updated iMac shipping in a choice of five colors, and demonstrated Mac OS X Server software, which is due to ship next month. He made no mention of streaming QuickTime.

Noting the latest profitable quarter in his string of recent Apple successes, Jobs said that Apple sold 1.6 million Power Mac G3's from their introduction in November 1997 through December 1998, representing \$3 billion in revenue. Apple sold 800,000 iMacs by the end of 1998, he said. Apple's most recent iMac buyer-survey data showed 32 percent were new computer buyers (the "most coveted customers in the industry"), while 13 percent were converts from the Windows platform. Current Mac owners made up the other 55 percent, with a little more than half of those adding an iMac to their other Macs, rather than replacing an old one. According to Apple's data, 82 percent of iMac owners had connected to the Internet (72 percent taking less than an hour), and 42 percent had made Internet purchases.

The new, highly-styled Power Mac G3 models start at \$1599 but lack floppy, SCSI and serial ports. (Apple will offer a \$50 SCSI PCI card as an option.) An ADB (Apple Desktop Bus) port is provided, for compatibility with Apple's ADB displays, graphics tablets, copy-prevention dongles and other traditional peripherals.

Graphics hardware, powered by an ATI RAGE 128 chip on a special PCI card equipped with 16 MB of video RAM, is the highlight of the new computers. This card fits into the single 32-bit, 66-MHz PCI slot, leaving three 64-bit, 33-MHz PCI slots for other cards. Jobs claimed that this

combination is faster than the fastest Voodoo 2 add-on card in Windows computers. The new Macs also offer dual, 400-Mbps FireWire ports, along with dual USB ports (12 Mbps). Built-in Ethernet supports 100baseT speeds.

Processor speeds range from 300 to 400 MHz, with a 100-MHz memory bus, and the entry-level model includes 64 MB of memory, with a 512K Level 2 backside cache and a 6GB Ultra ATA hard drive (plus 24x CD-ROM). For \$2999, you get a 400-MHz CPU, 128 MB of RAM, a 1-MB Level 2 cache and a 9-GB Ultra 2 SCSI drive spinning at 7200 RPM.

The translucent minitowers feature an innovative and friendly enclosure design, in which a door easily opens to offer access to the motherboard and three drive bays. Memory can range up to 1 GB in the four DRAM slots, and future build-to-order options will include gigabit Ethernet, DVD-RAM and a 100-GB storage option, apparently based on three 36-GB IBM drives. Jobs demonstrated VST's FireWire drives, due later this year at \$300 for a compact 6-GB unit, hot-pluggable and powered by the FireWire bus.

Along with the new G3 systems, games were high on the priority list. "We are totally committed to making the Mac the best game platform in the world," said Jobs. Apple, under pressure from developers, announced that it has licensed OpenGL from Silicon Graphics and will integrate this software into a future Mac OS release to provide 3D programming support. Several MacFactsreaders say that the implications of putting this kind of leading-edge 3D support on the Mac are huge.

Along with Connectix' new \$49 emulator for PlayStation games, Jobs brought ID Software co-founder John Carmack on stage to show the upcoming Quake Arena and talk about game development. "I'm here today because Apple has finally gotten their act together about 3D graphics, both hardware and software." He called the quality of RAGE 128 graphics "flawless" and noted that only 15K of Mac-specific code had been needed so far in developing the prototype of the new game. ID will license Mac game-software libraries to other companies.

Jobs briefly showed off Mac OS X Server, due sometime this quarter at \$999 or bundled for \$4999 with a 400-MHz Power Mac G3, dual 10,000-RPM, 9-GB hard drives and 256 MB of RAM. (Another bundle is apparently planned for a price in the "low three thousands.") Mac OS X Server, based on Rhapsody/NextStep, uses the Mach kernel and Berkeley Unix 4.4 utilities. It will serve as an AppleShare file server and will include the Apache web server, plus WebObjects and Java. Its NetBoot capability will permit iMacs (and other Macs) to power up and run software without a hard drive.

Microsoft's Internet Explorer 4.5 was another highlight of the presentation. Jobs compared Apple's Microsoft relationship to a "marriage" that is great 99 percent of the time and problematic the other 1 percent of the time (generally over multimedia). MSIE 4.5 brings Office 98's "self-healing", drag-and-drop install technology, plus the first Web-printing capabilities that aren't embarrassingly bad, according to Microsoft's Ben Waldman. Several of MSIE 4.5's features are Mac-only.

The 15-inch Apple Studio Display flat-panel got a new styling treatment and a price cut to \$1099, while the company introduced two new CRT displays in the iMac style. A 21-inch Trinitron model features color calibration for \$1499, while a \$499, non-calibrating, 17-inch model is based on a Mitsubishi variation of the Trinitron technology.

Apple's iMac color update took everyone by surprise, and the new "flavors" are shipping now: blueberry, grape, tangerine, lime and strawberry. (The keyboards and mice match.) Jobs cut the price of the new iMacs to \$1199, while updating the CPU to 266-MHz and the hard drive to 6 GB. The old iMac model dropped to \$1049.

Last, but not least, Apple introduced its online Apple Store for Europe today, accessible in the various native languages of the countries, with build-to-order options available. Apple is embracing the new Euro currency, and Euro bills apparently were designed on a Power Mac.