

California Computer Care

News,
Views,
Tips and
Cool Techniques
for CCC Members

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We
speak
Geek,
so you
don't
have to.

MegaHertz...

Everyone seems to want to know how fast their computer is. And, why not? Nothing we do these days seems to go fast enough, especially computers since the Internet!

Computer speed is commonly referred to as so many MegaHertz (Mega is Latin for million and Hertz is a fellow's name. It was once called *cycles per second*, so five MegaHertz equals 5,000,000 cycles per second and is usually written: 5 MHz). Advertisers love this because it allows them to advertise a computer with an absolute value for its speed. Nice, but very misleading! Its only possible to compare speeds within the same *model* of computer (think of EPA mileage).

When you open your Mac, you see lots of electronic parts. Each part operates at its own speed, which mixes up the speed rating idea until it is almost meaningless. To avoid this, the computer industry has agreed to only talk about one part when rating computer speed: the processor chip.

The processor chip is the main brain of your computer. Here is where your numbers are *crunched*, pictures are created and letters are moved around into words. All of the work that you do, passes through the processor chip. So, when computer folks talk about speed, they mean how fast the processor chip, processes.

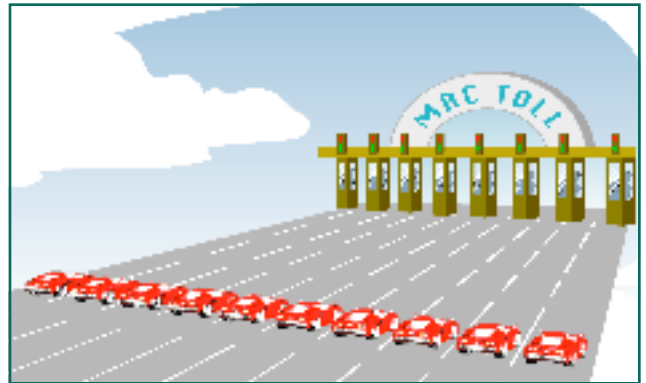
However, not all processor chips are created equal. One processor design can differ so much from the next that the speed rating has to be adjusted to compensate for the differences.

But it isn't. This is where the real confusion begins (as though there weren't already plenty of confusion). Advertisers and manufacturers *do not* adjust speed ratings to account for the different ways that their processors, process.

As an example, our pre-PowerPC processor Macs (*Quadra, Centris, LC, Mac II* and older

models that are collectively called 68000 Macs, after the processor chips that they used) are much slower MHz for MHz than PowerPC processor Macs (99% of all Macs made since 1994). So, the processor in your new *iMac* or *G3* running at 266 MHz is not just 16.6 times faster than your old 16 MHz LC ($16 \times 16.6 = 266$), its really about *30 times faster*.

If this isn't bad enough, comparing Macs to PCs gets even stranger. All Mac processors chips are made by Motorola. PC processors chips are ei-



Why are ten Lamborghinis going to ten tollbooths?
To prove how fast they are.

ther made by Intel or made to be compatible with Intel's designs. So, since Motorola and Intel use very different technologies in making their processors, it is impossible to accurately compare Macs to PCs.

Mac processors are faster than PC processors MHz for MHz. With the advent of the *G3s* and *iMac* (which is really an all-in-one-box *G3*), the difference has increased. Now it takes a 500 MHz Pentium III (the top PC processor) to equal

What happened to the February and March newsletters?

Oops! Our apologies. February and March were so darn busy (*Thank you! Thank you, all!*) that the newsletter lost out in the priority race. We intend to get back on track and stay there. Look for the May issue mid-month.

a 350 MHz G3 (G3s now go all the way to 450 MHz, soon to be 750 and 1000 MHz).

So how can this be? What makes a big number smaller than a small number?

Analogy time. Think of two highways approaching two toll bridges. Let's measure the speed of the cars passing through the toll booths. On the Mac highway cars go through the toll booths at 10 MPH. On the PC highway cars go through at 15 MPH. However, there are ten Mac highway toll booths and only five PC highway toll booths. So, even though the PC highway cars are passing through the toll booth 50% faster, the Mac toll booths are processing 50% more cars. The result is that the same number of cars are getting through. Up the speed to 15 MPH in both cases and now more cars get through the Mac toll booths. So, you can see that the Mac toll booths are faster because they do more work in the same amount of time and getting your work done faster is the point, isn't it?

So, how fast is your Mac? Here's a partial listing of speeds and year of introduction for many popular models—

Pre-PowerPC Macs:

Mac Plus, 1986, 8 MHz.

Mac II, 1987, 16 MHz.

Mac SE30, 1989, 16 MHz.

Mac IIfx, 1989, 25 MHz.

Mac LC, 1990, 16 MHz.

Mac IIsi, 1990, 20 MHz.

Mac LC III, 1993, 25 MHz.

MacTV, 1993, 32 MHz.

Performa 550, 1993, 33 MHz.

Centris 610, 1993, 40 MHz.

Mac LC 475, 1993, 50 MHz.

Quadra 650, 1993, 66 MHz.

Quadra 840AV, 1993, 80 MHz.

Performa 630, 1994, 66 MHz.

Performa 636, 1994, 66 MHz.

PowerBook 100, 1991, 16 MHz.

PowerBook 180, 1992, 33 MHz.

PowerBook 190, 1995, 66 MHz.

PowerPC Macs (approximately two times faster MHz for MHz than Pre-PowerPC Macs):

PowerMac 6100, 1994, 60 MHz.

PowerMac 7100, 1994, 66–80 MHz.

PowerMac 8100, 1994, 80–110 MHz.

Performa 6116CD, 1995, 66 MHz.

Performa 6200CD, 1995, 75 MHz.

Performa 6400, 1996, 180–200 MHz.

PowerMac 7200, 1995, 75–120 MHz.

PowerMac 7500, 1995, 100 MHz.

PowerMac 8500, 1995, 120–180 MHz.

PowerMac 9500, 1995, 120–200 MHz.

PowerMac 8600, 1997, 200–300 MHz.

PowerMac 9600, 1997, 200–350 MHz.

PowerBook 5300, 1995, 100 MHz.

PowerBook 1400, 1996, 117–166 MHz.

PowerBook 3400, 1997, 180–240 MHz.

G3 Macs (these 3rd generation PowerMacs are about 1.5 times faster MHz for MHz than earlier PowerMacs):

Power Mac G3 DT, 1998, 233–266 MHz.

Power Macintosh G3 MT, 1998, 233–350.

iMac, 1998, 233–266 MHz.

Power Macintosh G3 MT (blue & white), 1999, 300–400 MHz.

PowerBook G3, 1998, 233–350 MHz.

April Tip —

Tired of the *Empty Trash Warning* dialog box that jumps up to slow you down every time you want to empty the trash? Do you need more excitement in your life (like trying to recover accidentally trashed files)?

Then, do this:

- 1) Click once on the Trash Can to select it.
- 2) Go to the File Menu and choose Get Info.
- 3) In the Trash Info window, uncheck the checkbox next to "Warn before emptying."
- 4) Close the Trash Info window.

Now, be very sure that you really want to before you dump the trash!

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