

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.

Why does my Mac crash?

It's not your fault---*mostly*.

There's very little that you can do to *make* your computer crash (lock-up, freeze, spontaneously re-boot, etc.). Avoid these few mistakes and you'll be able to duck responsibility for nasty crashes and lock-ups:

- 1) Don't turn off the power while your Mac is running. If the electricity fails, turn off your computer (printer, scanner, modem, etc.) until power is restored.
- 2) Don't stop a function in progress by force quitting an application. Use the Force Quit option (see *February Tip* on page 2) only when an application has *already* crashed.
- 3) Don't quit your web browser (*Netscape*, *Internet Explorer*, *AOL*) or email program or disconnect from the internet while you are receiving or sending information.
- 4) Use a good quality surge protector (rule-of-thumb: \$30.00 and up. Cheaper ones are almost always glorified extension cords) or, if you have lots of power fluctuations, an uninterruptible power supply (about \$100.00 and up). Check to be sure that the electrical outlets you are using are wired correctly and GROUNDED!
- 5) Double-check that the software you want to use is compatible with the type of Mac and Mac OS version that you are running.

You do all of this and you still crash. Why?

Face it. Computers crash. All computers crash. Every kind and type. Frustrating as it is, we have to learn to live with it. One or two crashes a week is fairly average. More than that indicates a problem. You didn't cause it; who did?

Blame the software.

Not much software reaches the market that isn't riddled with bugs. It's sad, but software developers don't spend as much time as they need in finding errors. *Microsoft*, *Extensis* and *Netscape* are famous for buggy new releases, but almost everybody is guilty these days. Try to avoid new software versions until the software reaches its first (or preferably, second) revision. Also, don't load up your Mac with novelty items ("screen savers" and cute gee-gaws) as these are very likely to cause problems.

Blame the hardware.

Just as software is often released with inadequate testing, so is hardware. Try not to add more than one new piece of hardware at a time. This makes it clear what changed just before problems began. Hardware items are seldom inherently flawed, just remember that every new hardware item brings with it new software. This software lets your Mac know what the new hardware item is and what it does.

Blame the Gestalt.

Each of us has a hardware and software set-up that is unique. Each piece of hardware and software interacts with every other piece in ways

that are unpredictable. The average user has 100 to 300 files open on their Mac at any moment (as I write this, I have 210). Most of these files are unseen by the user, but they are all interacting and creating new relationships that change moment to moment. As these combinations change, a stable and well functioning arrangement might metamorphose into an unstable arrangement that can cause a crash. It is valuable to keep track of what you were doing so as to provide clues about the interactions going on just before the crash.

Blame the Universe.

If everything were perfect. The software bug-free and compatible. The hardware running smoothly. PG&E doing it's job properly. If all of this were as good as it gets, you'd still crash. Bummer. Why? It's the laws of physics.

Watch out! Quantum mechanics ahead!

We store our information (applications, documents, utilities, fonts) on disks (hard disk drives, floppy disks, ZIP disks) that work like tape recorders. All of our precious files are reduced to tiny magnets (billions of them) on these disks. The magnets are either aligned to "North" or not aligned to anything. A "North" alignment represents the number one, a non-alignment, the number zero. By combining ones and zeros to form numeric "sentences", your Mac stores all that it needs to know.



Now, the atoms and molecules that make up the tiny magnets are very reliable, but not perfectly reliable. Every so often, a “North” aligned magnet spontaneously becomes non-aligned or a non-aligned magnet finds itself pointing “North.” * This one change can cause an entire application program to become nonsense, your Mac reads the nonsense, becomes confused and metaphorically throws up its hands and gives up (freeze).

It is possible to actually calculate how often this will happen. A good hard disk drive will hit one of these errors about one time out of 100 trillion attempts to read information (a CDRom, about one time in a trillion attempts). So, back when computers were slow, say 1994, you could expect one of these errors about once a month. Today our Macs are so fast that 100 trillion attempts will happen in three or four days. Fortunately, error correcting routines written into most software help to trim down the number of failures. Even so, you can expect two or three of these crashes each month. And, let’s not even talk about the horrors of *Cosmic Rays!*

We’ll never escape crashes, but I find it nice to know that mostly, it’s not our fault.

* This doesn’t happen to compasses and refrigerator magnets because they are made up of billions of molecules. If a few of these randomize it goes unnoticed. The tiny magnets on your disk, however, are only a few atoms in size and so a slight change can change everything.

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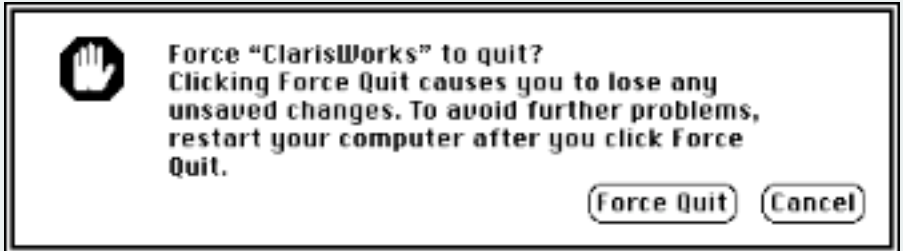
*Like an
auto club
for your
computer.*

February Tip—

When Murphy’s Law strikes (you know: “Everything that can go wrong; will go wrong.”) and your Mac freezes rock solid, there is a way out. You may not have noticed, but your keyboard is still partially functional, so try a *Force Quit*. Do this:


- 1) Use your left hand to hold down the Apple , Option and Control keys.
- 2) With your right hand, type the esc key (usually found near the numeral 1 key).

This window will appear:



- 3) Click the Force Quit button and, if all goes well, you will be returned to the Finder where you can gently Restart your Mac.

If the Force Quit doesn’t send you back to the Finder, a *Force Restart* is your next step. You can do a Force Restart on a G3 or G4 by pushing the little blister shaped button with the triangle icon on the computer’s front panel. iMac DV users will need to click the tiny button with the triangle icon that you’ll find in the cable bay. Older iMacs need the magic paper clip to access this switch (just look for a tiny hole marked by a triangle icon behind the door that covers the cable bay). The rest of us use the keyboard like this:

- 1) Use your left hand to hold down the Apple , and Control keys.
- 2) With your right hand, push the power button on your keyboard.

Your Mac should immediately shut down and immediately begin to start up again. Let it run through the diagnostic tests, then click Done and get back to work.

Should Force Restart not work (sometimes it won’t), then you have no option but to turn off the power to your machine. Either turn off the switch on your surge protector or pull the plug from the wall. Count to ten and turn on or plug in again.