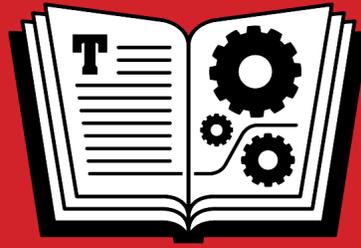


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TAKE CONTROL OF
TROUBLESHOOTING
YOUR MAC

by **JOE KISSELL**

\$14.99

3rd
EDITION

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Read Me First

Welcome to *Take Control of Troubleshooting Your Mac, Third Edition*, version 3.1, published in January 2019 by alt concepts inc. This book was written by Joe Kissell and edited by Caroline Rose.

Macs are easy to use, but they can experience problems like any other machine. When something goes wrong with your Mac, use this book to figure out how to get back up and running. It teaches you basic troubleshooting steps, how to solve numerous common problems, and what to do if you encounter a novel problem with no apparent solution.

If you want to share this ebook with a friend, we ask that you do so as you would with a physical book: “lend” it for a quick look, but ask your friend to buy a copy for careful reading or reference. Discounted [classroom and Mac user group copies](#) are available.

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Basics

To review background information that might help you understand this book better, such as finding System Preferences and working with files in the Finder, I recommend reading Tonya Engst’s ebook [Take Control of Mac Basics](#).

In this book, when I use the term *disk* by itself, I generally mean your Mac’s primary internal storage device—whether that’s a mechanical hard drive, an SSD, or other solid-state storage. (Apple, after all, still uses the term “Macintosh HD” as the default name for your Mac’s startup volume, even when it’s not stored on a hard disk.) A *drive* is a physical device for storing data; a single drive can comprise one or more *volumes*, or logical storage devices. The volume that contains the copy of macOS currently used to boot your Mac is your *startup volume*. I’ll specify *hard drive* when I need to talk specifically about the little boxes with spinning platters.

What’s New in Version 3.1

Version 3.1 is a minor revision that brings this book up to date with macOS 10.14 Mojave and various changes in third-party software. Along with numerous small edits, this version contains the following significant changes:

- Updated the discussion in [Get a Disk Repair Utility](#) to reflect the current state of support (or lack thereof) for APFS and Mojave in third-party disk utilities
- Clarified the instructions in [Use Disk Utility in El Capitan or Later](#) to cover repairing an APFS volume
- Added the topic [You Can’t Boot from an External Volume](#), which includes issues affecting Macs with T2 chips

- Revised and expanded the instructions in [Apple Mail Fails to Connect](#) to reflect recent versions of Apple Mail

What Was New in the Third Edition

The third edition of this book (version 3.0) represented not only a change in its version number but also in its title. This book's most recent ancestor in the Take Control series was *Take Control of Troubleshooting Your Mac, Second Edition*, which was published in June 2007 and last updated in September 2012. I subsequently acquired publication rights to the book, updated it significantly, and rereleased it with a new title (*Troubleshooting Your Mac: A Joe On Tech Guide*) in October 2015, followed by a version 1.1 update in September 2016.

After I purchased Take Control Books from TidBITS Publishing Inc. in May 2017, I decided to bring this book back under the Take Control umbrella. That meant reverting to its previous title and incrementing the edition number by 1 (even though there was, in effect, another edition of the book between the second and third).

Along with a large number of minor changes, here are the major changes between *Troubleshooting Your Mac: A Joe On Tech Guide* version 1.1 and *Take Control of Troubleshooting Your Mac, Third Edition*:

- Updated the book for compatibility with macOS 10.13 High Sierra, including instructions for the latest versions of Console, Disk Utility, System Preferences, and other apps
- Updated the text throughout to cover Macs with USB-C connectors, including mention of the fact that Macs thus equipped can use USB target disk mode (see, for example, [Acquire a Secondary Startup Volume](#) and [Erase and Restore from a Backup](#))
- Updated my advice in [Think About an Insurance Policy](#), since Safe-ware no longer offers individual policies

- Revised my recommendations as to how much available disk space you should have; see [Check Available Disk Space](#)
- Removed obsolete advice about fonts and Time Machine
- Significantly updated the instructions in [Fix Incoming Mail Problems](#) and [Fix Outgoing Mail \(SMTP\) Problems](#) to cover Mail in Sierra and High Sierra

Introduction: Don't Panic!

You've always heard that Macs are easy to use and less prone to misadventures than Windows PCs—and that's true. But they're still only machines. Sure enough, one day it happens: you encounter a serious problem with your Mac and have no idea what to do. Perhaps, since you're reading this book, that day is today.

Repeat after me: Everything is going to be all right. Now take a deep breath and try again, this time with feeling! *Everything is going to be all right.* I want you to believe that. Even if you're feeling panicked right now because your Mac is doing something wonky and you're facing a deadline, I want you to set aside your anxiety for a moment.

Almost every Mac problem you may encounter has a solution. True, some solutions are more elusive, time-consuming, or expensive than others, but still: don't worry. I've been solving problems with Macs for more than 25 years, and I'm here to tell you that solutions come more easily when you have a clear head and approach a problem systematically. That's what this book helps you to do.

Make yourself a nice cup of tea. (Keep the tea away from your Mac, by the way—let's not add to your problems, eh?) Close your eyes and think happy thoughts. Then page through this book to learn the most efficient way to deal with whatever difficulties you may be having.

I've seen more than one Mac troubleshooting book that was upward of 600 pages long, and troubleshooting websites with thousands of pages of suggestions. By contrast, this book makes no attempt to be comprehensive, because merely listing vast numbers of problems and their accompanying solutions doesn't help if you have a different problem or don't realize how your problem is like some other one. What I hope to do, instead, is show you some handy troubleshooting techniques, provide instructions for solving numerous common problems, and then help you figure out what to do when a problem's cause or solution isn't immediately apparent. In other words, I want to teach you how to

be your own tech support person—to do what I do when something goes wrong with one of my Macs.

Because my focus is on getting your Mac back into working order, I intentionally skip over lots of background information and technical details. So don't worry if you're unsure exactly *why* some technique solves your problem. If you're really interested in the background, some exploration on the web will probably turn up oodles of detail.

As confident as I am that most Mac problems have straightforward solutions, I must point out that some problems can't be solved with a few mouse clicks or other clever fiddling. If flames are shooting out of your Mac or the screen is in a thousand pieces, you'll need more help than I can provide here. Even simpler hardware problems, such as a faulty component on your logic board or a busted power cable, may require a trip to the repair shop. And a few—very few—hardware problems are either entirely beyond repair or more costly to repair than is worthwhile. Nevertheless, don't panic. By the time you finish this book, you'll not only know how to solve most problems, you'll have the tools and techniques you need to prevent many problems in the first place, or at least to nip them in the bud. And even if you have a problem that requires professional help, following the steps in this book will help you talk to a repairperson more effectively.

If you don't have any problems right now and are merely reading this to prepare yourself for future mishaps, good for you! You'll especially appreciate the information in the first couple of chapters about preventing problems and preparing for an emergency.

This book is designed to help troubleshoot problems with any version of macOS from 10.9 Mavericks through 10.14 Mojave, though many of the techniques also work with older versions and most should continue to work under future versions of macOS. Use the link in [About This Book](#) to check for any new information or updated versions of this ebook.

Quick Start

If you need an immediate solution to an urgent problem, free to skip right to [Solve Common Problems](#) and see if your symptom is listed there. You may also try the steps in [Troubleshoot Novel Problems](#), following the cross-references to earlier parts of the book where certain procedures are described in detail. Otherwise, time permitting, I recommend reading this ebook in order, because earlier sections provide useful background information for later sections.

Prepare for trouble:

- Even if your Mac is healthy now, take steps to keep it that way. Read [Prevent Problems](#).
- When your Mac starts acting up, you'll be glad to already have a toolkit with which you can diagnose and fix it. Learn what you need to have on hand in [Prepare for an Emergency](#).
- Most of the steps you'll go through when a problem occurs rely on several common procedures. Learn how to do these tasks before problems arise so that fixing them will be easier. See [Learn Troubleshooting Basics](#).

Solve problems:

- If your Mac misbehaves, the problem may be something that many other people have experienced (and that's easily repaired). Start with [Solve Common Problems](#). Or jump directly to one of these problems—just a few examples from among the 21 issues covered in that chapter:
 - ▶ [Your Mac Won't Turn On](#)
 - ▶ [Your Mac Keeps Turning Itself Off](#)
 - ▶ [Your Fan Runs Excessively](#)
 - ▶ [An App Grinds to a Halt](#)

- ▶ [An App Crashes](#)
- ▶ [You Lose Your Internet Connection](#)
- ▶ [iCloud Data Doesn't Sync Properly](#)
- Not all problems are common. If you encounter something not covered in the previous section, learn how to solve it—or find someone who can—in [Troubleshoot Novel Problems](#).

Prevent Problems

Although this book is mainly about solving problems, not preventing them, I'm sure you don't want any issues you've fixed to recur. And a few preventive steps can make solving problems much, much easier if and when they do occur.

At the risk of sounding overly promotional, I would like to note that some of my other books—chiefly [*Take Control of Backing Up Your Mac*](#) and [*Take Control of Maintaining Your Mac*](#)—offer a great deal of advice that will help with preventing problems, and I certainly recommend those titles if you need additional help. In this chapter, though, I cover three particularly important preventive maintenance tasks from [*Take Control of Maintaining Your Mac*](#).

Use a Surge Protector or UPS

Surge protectors are to a computer what airbags are to a passenger in a car. No matter how carefully you drive, another driver could cause a collision—and that airbag could save your life. Likewise, no matter how clean or reliable the power in your building normally is, a lightning strike or power surge could damage components or even wipe out your Mac. It's unlikely, but it can and does happen.

Considering how inexpensively you can buy a surge protector, using one is common sense. If you haven't already done so, spend a few dollars to prevent hundreds or thousands of dollars worth of damage. Still, don't buy the cheapest surge protector you can find, which may not offer enough protection. Get one that includes a UL label with the words "Transient Voltage Surge Suppressor" (or the designation "UL 1449"), a joule rating of at least 1,000, and a warranty covering damage to your Mac in the event of a power surge. For example, the [APC Network SurgeArrest](#) meets those criteria and sells for less than \$30.

Warning! Remember that lightning can travel through any cable attached to your Mac—Ethernet, USB, FireWire, phone line, or whatever. Make sure everything physically connected to your Mac is also plugged into a surge protector. Some surge protectors, UPS units, and other voltage management products include ports for Ethernet, coaxial, and telephone cables.

Better yet is an uninterruptible power supply (UPS), which includes not only protection from power surges but also a battery that can keep your Mac running for minutes or hours during a power interruption and protect it against brownouts. Some models also include USB ports and, when connected to your Mac, work with the macOS Energy Saver preference pane to shut the Mac down automatically in case of power failure. Reputable manufacturers include [APC](#), [CyberPower](#), [Panamax](#), and [Tripp Lite](#).

Back Up Your Mac Regularly

Statistically speaking, your odds of having some sort of problem with your Mac that results in a loss of data are high. It may not happen for years, but if and when it does, the consequences can be devastating. Crucially for our purposes in this book, some of the troubleshooting and repair techniques I cover here assume that you have a backup from which you can restore your data in the event of a serious problem. So, if you've never set up a backup plan, don't delay. Start today!

Backups come in all shapes and sizes. I advocate an approach that includes using a couple of different backup types and keeping at least one copy of your data stored offsite. But if I had to choose just one sort of backup for troubleshooting purposes, it would be a bootable duplicate—an exact copy of your startup volume, stored on an external hard drive, and configured in such a way that you can boot from that backup drive in the event of an emergency. Ideally, you should update this bootable duplicate at least once a week so that it reflects the files that have been added or changed since the last run.

Prepare for an Emergency

You probably carry a spare tire and a jack in your car (perhaps along with the phone number for roadside service). These sorts of basic problem-solving tools are just common sense. If you don't have comparable tools for your Mac, you'll be in a pickle if a problem occurs. Don't get stranded without the means to get back up and running again.

All the items mentioned in this chapter can come in handy when a problem occurs. You might not use them all, but I've used each of them at one time or another, and I've found them all to be sound investments.

Acquire a Secondary Startup Volume

You can't replace your car's oil filter while the engine is running; it not only would be messy but could potentially ruin the engine. Similarly, some repairs can't be done when your Mac is running from a disk that's experiencing problems. In these cases, you must start your Mac from another volume. You may also need to start from another volume if your internal hard drive or SSD dies completely.

Every version of macOS since 10.7 Lion has included a feature called *macOS Recovery* (or *OS X Recovery*)—an extra, hidden Recovery HD startup volume you can use in an emergency to perform repairs or restore a Time Machine backup. Macs introduced in 2011 or later, as well as some 2010 Macs, also support *Internet Recovery* (see [Start in Recovery](#)), which does basically the same thing but works even if your startup drive is missing or damaged. In addition, starting with the 10.11 El Capitan version, Disk Utility can repair most disk errors even when you run it on the volume you booted from—a neat trick! With those three options, the majority of Mac users already have a suitable secondary startup volume, perhaps without realizing it.

Note: If your Mac was released between mid-2010 and mid-2011, it might need a firmware update to support Internet Recovery. For details, see Apple’s support page [Computers that can be upgraded to use OS X Internet Recovery](#).

Tip: You can also install a Recovery HD volume on an external drive using Apple’s free [OS X Recovery Disk Assistant](#).

Despite these alternatives for starting your Mac, however, I suggest having *another* startup volume available. I say this for several reasons:

- Although the in-place Disk Repair feature in El Capitan and later is handy, it can’t fix every type of disk error—and, of course, it won’t help you at all if you’re running 10.10 Yosemite or 10.9 Mavericks.
- Some Macs that can run recent versions of macOS don’t support macOS (or OS X) Recovery, and even on a supported Mac these features might not always be available (for example, if the part of your startup volume that contains the hidden Recovery HD volume is damaged, or if you’re without internet access).
- If you manually changed your Mac’s partition structure or restored the entire startup volume from a backup, Recovery might not work.
- Even in the best cases, the solutions built into macOS don’t let you run third-party disk repair or backup software (which is sometimes essential to solving problems)—and in the case of Internet Recovery, booting can be *extremely* slow.

A secondary startup volume can take numerous forms. I prefer an external hard drive with a Thunderbolt or USB 3 interface, because it’s fast and flexible and can be used for things other than starting up in an emergency (backups, for example). But that’s just one of several options. Be sure you have at least one of these handy:

- The USB Software Reinstall Drive included with certain Macs.
- A USB flash drive, or even an SD card (for Macs with built-in SD card readers), on which you’ve installed a bootable copy of macOS

Learn Troubleshooting Basics

If I were teaching you how to cook, I'd start by making sure you knew the basic techniques you'd be repeating many times: how to julienne vegetables, deglaze a pan, cream butter, roast poultry, and so on. That way, when we got to specific recipes later, I could simply say, "sweat the aromatics in butter and purée the tomatoes" without having to explain the meanings of words like "sweat," "aromatics," and "purée."

I want to do the same thing in this chapter: make sure you have a grasp of certain procedures that come up in many different Mac troubleshooting tasks. Then, when I describe the specific steps you'll follow to solve various problems, I can say, "start up in safe mode" without having to spell out that process every time. And of course, you can always follow links back here if you need a reminder of what I'm talking about.

Note: To be crystal clear, I'm *not* saying you should try every procedure in this chapter right now if your Mac is misbehaving! This is a reference chapter to teach you various procedures you may use as part of the troubleshooting steps I cover later.

If you've been using Macs for a while, you may raise your eyebrows at some of the procedures just ahead. "Restart Your Mac? Is he kidding? Who doesn't know how to restart a Mac?" But please read those sections anyway, because they include details that may not be obvious (such as what to do if the usual means of restarting doesn't work).

Force-Quit an App

When an app gets stuck and its regular Quit command won't work, you can usually quit it using the macOS Force Quit feature. To do this, choose Apple  > Force Quit (or press -Option-Escape), select the

app you want to quit, and click Force Quit. You can then close the Force Quit Applications window.

Tip: You can often force-quit a stuck app without the Force Quit Applications window. One way is to Option-right-click (or Control-Option-click) the offending app’s Dock icon and choose Force Quit from the pop-up menu. Or, to force-quit the foreground app immediately, press ⌘-Option-Shift-Escape.

Sometimes, an app keeps running even after you use the Force Quit command. When this happens, a second attempt at force-quitting nearly always does the trick. Close the Force Quit Applications window if it’s still open, and repeat the force-quit procedure.

If even the second attempt doesn’t work, or if you can’t bring up the Force Quit Applications window, your best bet is to [Restart Your Mac](#).

Note: Finder appears in the Force Quit Applications window along with your other apps, but when you select it the button changes from Force Quit to Relaunch. That’s because macOS is designed so that the Finder is always running. If you quit it—which you may need to do if it gets stuck—it automatically attempts to open again.

Restart Your Mac

Restarting is the most powerful Mac troubleshooting technique I know. This simple procedure can resolve a huge variety of crashes, hangs, and other problems. It may not be the first thing you should try (because it sometimes takes a few minutes), but it should certainly be high on your list.

When the need to restart arises, try each of these methods in turn until you succeed:

1. **The menu command:** Choose Apple  > Restart. When the confirmation alert appears, click the Restart button.

Solve Common Problems

Now that you have a collection of basic problem-solving techniques under your belt, it's time to move on to specific problems. I realize that many problems you may encounter aren't mentioned here (in which case, move on to [Troubleshoot Novel Problems](#)), but these are 21 of the most common Mac problems for which there's a straightforward path to a solution.

Your Mac Won't Turn On

One day you sit down at your Mac and press the power button, but nothing happens. No power light, no sounds, a blank screen—no sign of life. This is an especially good time to remember not to panic. Take a deep breath and try these steps in order until the problem goes away:

1. Check the entire electrical path. (If you're using a laptop Mac, connect it to AC power first; the battery could be dead.) Start with the power cord where it connects to your Mac and make sure it's firmly seated. Then make sure the other end is plugged in tightly. If you have anything else between the plug and the wall outlet—such as an outlet strip, surge protector, or UPS—check each of the plugs along the chain. Also, check for crimps or sharp angles in the cords, which could mean broken wires inside. If you find or suspect a broken wire, replace the cord. (If you were using a surge protector and there was a lightning strike or power surge, it may have sacrificed itself to protect your Mac. Be sure to check its failure indicator.)

If all the connections look good, try plugging a lamp or other device into the same outlet as your Mac to verify that the juice is flowing. If not, check your building's circuit breakers.

2. If your Mac uses an external display (I'm thinking of the Mac mini and the Mac Pro), confirm that it's not just the display that isn't working. As in step 1, check the connections (both to AC power and

to your Mac), and make sure the display is turned on. (Apple's Cinema displays have no power switch.) If possible, connect the display to another computer to confirm that it works.

3. Unplug everything from the Mac except the keyboard, mouse, and display (on a Mac laptop, disconnect everything but the power adapter), and press the power button again. If it turns on, suspect a faulty peripheral; you can figure out which one by reconnecting your peripherals one at a time, restarting after each.
4. Reset the SMC. (See [Reset NVRAM or SMC](#).) This reset can be done without power.

If none of these procedures brings your Mac back to life, it's time to call a repairperson. See [Go to the Source](#).

Your Mac Stalls During Startup

You press your Mac's power button or restart it, you hear the startup chime (if your Mac has one), your display powers on, and you see a gray screen. But then...nothing. Maybe the Apple logo appears, maybe not, but no matter how long you wait, the startup process remains stuck.

This problem may have any number of causes, so the best thing to do is address the possible difficulties systematically.

Plain Gray Screen

If the gray screen is completely blank, try each of these steps in order until your Mac starts normally:

1. Detach all wired peripherals from your Mac except for your keyboard and mouse (or other pointing device); on a Mac laptop, disconnect everything but the power adapter. Although I'm thinking primarily of USB devices here, you should also detach any Thunderbolt or FireWire devices.

Troubleshoot Novel Problems

Sooner or later, you're bound to encounter a problem that you haven't experienced before—and that the previous chapter doesn't cover.

Although I've seen hundreds of different things go wrong with Macs over the years, I still run across novel problems all the time. If the solution to some problem isn't immediately obvious, I go through a series of steps to narrow down the possible causes and test remedies until I find one that works. That's what I want to teach you to do here.

First I ask you to try some easy all-purpose solutions. But at a certain point you may need to look further for help, so I also describe how to get more information and troubleshooting advice from a number of different sources.

Try the Standard Quick Fixes

If I get a headache, I generally take a couple of over-the-counter pain relievers. If the headache goes away, I don't worry about the cause; I just get on with my day. Only if it doesn't go away, or recurs, or accompanies other symptoms, do I call my doctor. Similarly, for lots of Mac problems you can try any or all of several all-purpose procedures that tend to zap lots of common irritations. If the problem goes away, there's no need to waste time tracking down its exact cause, but if the quick fixes don't work or the problem comes back, you can move on to more detailed troubleshooting (see [Ask the Right Questions](#)).

Quick Fixes for App Misbehavior

One of the most frequent Mac problems is an app that fails to launch, refuses to open a certain document, has display problems, or otherwise starts behaving erratically.

If this happens to you, try each of these procedures in turn until the problem disappears:

1. **Quit and try again.** If an app isn't cooperating in any way, quit it, reopen it, and then test to see if the problem is still there.
2. **Force-quit the app.** If the app won't quit normally, force-quit it and open it again (see [Force-Quit an App](#)). If this procedure doesn't work the first time, try it a few times in a row.
3. **Restart.** As always, restarting is a good way to zap numerous odd problems. Flip back to [Restart Your Mac](#).
4. **Remove the preference file.** If the app still misbehaves after restarting, follow the procedure for disabling its preference file (read [Check Preference Files](#)) and launch it again.
5. **Clear your caches.** Focus on the cache for the app that's misbehaving. See [Clear Caches](#).

If none of these ideas lead to a solution, skip ahead to [Ask the Right Questions](#).

Quick Fixes for System-Wide Problems

Sometimes it's not just a single app that's misbehaving. If your whole system appears to be slow or unresponsive or otherwise behaves in an unexpected way, try these fixes:

1. **Close extra windows, tabs, or apps.** Sometimes apps can chew up RAM and CPU cycles even if they're running in the background and seemingly doing nothing. Having many open tabs or windows (even in the Finder) can also increase your RAM usage. Try quitting apps or closing tabs or windows you're not actively using.
2. **Restart.** You know the drill; if not, read [Restart Your Mac](#).
3. **Check your disk space.** Be sure your disk isn't close to being full. Free up at least a few gigabytes. See [Check Available Disk Space](#).
4. **Unplug peripherals.** Hardware devices can sometimes cause odd problems, as can the driver software that communicates with them.

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About the Author and Publisher



Joe Kissell is the author of more than 60 books about technology. As of May 2017, he also became the publisher of Take Control Books, when alt concepts inc.—the company he runs along with his wife, [Morgen Jahnke](#)—acquired the Take Control series from TidBITS Publishing Inc.’s owners, Adam and Tonya Engst.

Joe is also a contributing editor to TidBITS and a senior contributor to Macworld. Before he began writing full-time in 2003, Joe spent nearly eight years managing software development. He holds a bachelor’s degree in Philosophy and a master’s degree in Linguistics.

In his rare non-work hours, Joe likes to travel, walk, cook, eat, and practice t’ai chi. He and Morgen live in San Diego with their sons, Soren and Devin; and their cat, Zora. To contact Joe about this book, [send him email](#) and *please* include [Take Control of Troubleshooting Your Mac](#) in the subject. You can also follow him on Twitter ([@joekissell](#)) or visit his personal website [JoeKissell.com](#).

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