

TAKE CONTROL OF

UPGRADING TO HIGH SIERRA

EARLY ACCESS

A free update to this book
will be available shortly after
High Sierra is released.

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\$10

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Read Me First

Welcome to *Take Control of Upgrading to High Sierra*, version 1.0, published in August 2017 by alt concepts inc. This book was written by Joe Kissell and edited by Tonya Engst.

Upgrading your Mac to a new operating system can be a daunting prospect, but with some expert advice, you'll be running macOS 10.13 High Sierra in no time. This book eliminates the uncertainty and the confusion, guiding you through every step of the process.

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.

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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, read Tonya Engst's free ebook [*Read Me First: A Take Control Crash Course*](#), available on the web or as a standalone ebook in PDF, EPUB, and the Kindle's Mobipocket format.

Introduction

In the summer of 2017, my family and I took a road trip to some scenic California locations—mostly in and around the Sierra Nevada mountain range, or as it’s known colloquially, the High Sierra. Our travels included a visit to Yosemite National Park, where of course we saw the massive El Capitan rock formation. We went to these places because they’re beautiful and relatively nearby, but the fact that they were also the namesakes of the last four versions of macOS was not lost on us. I’d like to think we found a bit of inspiration for working on our books about High Sierra, including this one.

Several times over the years, Apple has released new versions of the Mac operating system that focused mainly on performance improvements, bug fixes, and usability—with only modest changes in user-facing features. (Think: Leopard to Snow Leopard, Lion to Mountain Lion, and Yosemite to El Capitan.) macOS 10.13 High Sierra is such an upgrade—it looks and acts almost like its predecessor 10.12 Sierra, but has a more robust infrastructure (plus a few interesting new features).

Upgrading to High Sierra involves steps nearly identical to installing any of the past several versions of macOS. Apple has gone to great lengths to make it both easy and safe to keep your Mac up to date, and the installer is about as user-friendly as you can get. Most people will upgrade painlessly.

And yet, here I am again—for the eleventh time!—with a book about how to upgrade your Mac. I keep writing these books because, despite Apple’s excellent efforts to make their installers bulletproof, things can and do go wrong. If anything surprises me during my many test installations of High Sierra (and indeed, a few things did!), I know that other people will encounter similar things and will want to know what to expect.

Even when nothing goes wrong, you may face questions or decisions you don’t know how to handle. This book, like its predecessors, is intended to walk you through every step of the process, anticipate the

issues that may confuse or frustrate you, and make upgrading as smooth as possible.

For example, one of the most important changes to High Sierra is the long-awaited switch to a new file system (Apple File System, or APFS—see [Learn about APFS](#)). In most cases, this change will be entirely invisible. You'll notice that certain things happen more quickly in the Finder, but your Mac won't *look* any different. And yet, there are situations in which this otherwise wonderful new feature can cause maddening problems, so I show you what you're getting yourself into before you make the leap. The advice in this book, which includes making thorough backups before you upgrade, will enable you to avoid or solve most of the problems you may encounter.

I also explain why Apple's minimum system requirements don't tell the whole story about what you need to run High Sierra successfully, offer advice on avoiding software incompatibilities, show you how to recover disk space if you don't have enough to upgrade your system, and explore several other issues that can complicate the process.

If you've upgraded your Mac numerous times, keep excellent backups, have up-to-date hardware and software, and consider yourself technically proficient, then really...you don't need this book. But if you count yourself among those feeling anxiety, confusion, or uncertainty about upgrading to High Sierra, you've come to the right place.

You can follow the steps in this book to prepare for and install the public beta version of High Sierra, if you're so inclined. But even if you plan to wait until the general official release of High Sierra later this year, this book will help you clean up, back up, and prepare your Mac in advance so you're ready to jump in when the time comes.

I wrote this book while High Sierra was still in beta testing, so it's likely that the instructions here will need a few tweaks once I see how 10.13.0 High Sierra actually works. Therefore, my plan is to revise this book as necessary and release a free update as soon as possible after High Sierra becomes available. To check for an updated copy of this ebook (or any other important information), click the link in [Ebook Extras](#).

High Sierra Upgrade Quick Start

I've arranged this book in logical order, and I recommend performing these steps in the order I present them. You need not learn every last detail, but I hope you'll at least skim the whole thing.

Start on the right foot:

- Discover what you have to look forward to when you upgrade to High Sierra, as well as what features were added (and removed) in the last several upgrades. Read [Catch Up with macOS Changes](#).
- If you're upgrading to the High Sierra *beta*, or if you've already installed it, read the sidebar [Upgrading to \(or from\) the High Sierra Beta](#).

Prepare to upgrade:

- Make sure your computer can run High Sierra. See [Check Your Mac for Compatibility](#).
- Back up before you go forward! See [Back Up Your Disk](#).
- Make sure key software is up to date, and remove clutter that could interfere with the upgrade. See [Clean Up Your Mac](#).
- Decide which overall upgrade strategy is best for you. See [Decide on an Installation Method](#).

Perform the upgrade:

Follow the strategy you selected earlier to run the High Sierra installer, choosing all the optimal settings and options, and making sure all your personal data is still in place afterward. You'll do one of the following:

- [Upgrade Using Plan A: In-place Upgrade](#)
- [Upgrade Using Plan B: Clean Install](#)

After the upgrade:

- [Perform Post-installation Tasks](#), such as responding to login requests, installing updates to macOS, and tweaking preferences. You'll also deal with any surprises that may occur along the way.
- Problems? If your computer isn't working properly after the upgrade, don't panic. See [Troubleshoot Upgrade Problems](#).

Take In the Scenic View

Since you've bought this book, I assume you've already decided to upgrade to High Sierra and don't need convincing that it's worth your time and effort. However, I would like to call attention to some of the biggest changes in High Sierra that you can look forward to.

In addition, if you're upgrading from an operating system older than macOS 10.12 Sierra, you may be interested to know what other features were added along the way—as well as some that were removed.

Find Out What's New in High Sierra

Apple has a list of new High Sierra features on [this webpage](#). I won't catalog them all here, but I'd like to list some of the most notable changes and improvements since Sierra:

- **Apple File System:** Replacing the decades-old Mac OS Extended (or HFS Plus) file system, Apple File System improves security, performance, and reliability. See [Learn about APFS](#).
- **Better video encoding:** High Sierra supports a new video encoding standard—HEVC, or High Efficiency Video Coding—which greatly reduces the storage space required for videos.
- **Metal 2:** This significantly improved version of Apple's graphics API (application programming interface) enables developers to squeeze more power out of your Mac's graphics processor, or GPU.
- **Safari:** Safari has new tools to block advertisers from tracking you, stop videos from autoplaying when you load a page, show articles in Safari Reader by default, and customize your browsing experience in other ways.
- **Siri:** Siri now has a more human-sounding voice. It also gives you the option to type (rather than speak) your questions, and has more extensive integration with Apple Music.

- **Photos:** The Photos app has improved organizational features, an expanded sidebar, new filters and editing tools, a looping effect for Live Photos, better integration with third-party apps, and more.
- **iCloud sync for Messages:** At long last, all your conversations in Messages are stored in iCloud and can therefore sync across all your devices. (Previously, syncing was somewhat haphazard and limited.)

If you're already running 10.12 Sierra, that's all you need to know for now—skip ahead to [Learn about APFS](#). But if your Mac is still using an older operating system, read on to learn about some changes in the past few releases that you may not be fully prepared for.

Catch Up with macOS Changes

The older the operating system you're upgrading from, the more changes you'll notice in High Sierra—and the greater the likelihood that you'll encounter compatibility problems with old hardware and software. You'll find great new features, but you may also have to abandon software you've used for many years, adopt new habits, or reorient your thinking about how a Mac works. Before you jump in, you should understand what awaits you.

Read the topics below covering any operating systems you've never installed on your Mac.

Changes in Sierra

If you're running OS X 10.11 El Capitan or earlier, here's what you need to know about the changes in macOS 10.12 Sierra (apart from the fact that Apple rebranded the operating system from “OS X” to “macOS”).

Sierra finally brought Siri to the Mac. It also added Apple Pay (in Safari); Auto Unlock with Apple Watch; Universal Clipboard (so you can copy something on one of your Apple devices and paste it on another); iCloud Drive sync for your Desktop and Documents folders; optimized storage (the option to delete local copies of files stored in

Check Your Mac for Compatibility

All currently shipping Macs, as well as models introduced within the past 7 years or so, can run High Sierra. In fact, the system requirements are unchanged from 10.12 Sierra, so if your Mac can run Sierra, you know it can run High Sierra too. If your Mac is older or not already running Sierra, however, you'll want to make sure it is compatible.

In addition, even if your Mac can run High Sierra, you may not be able to use every part of it. Certain features, such as Handoff and AirDrop between a Mac and an iOS device, require a recent version of Bluetooth—see [Recent Bluetooth Hardware](#) for an explanation.

The next several pages will help you verify that your hardware is fully compatible with High Sierra. And, if you're running a version of 10.7 Lion earlier than 10.7.5 or any version of 10.6 Snow Leopard, follow the advice in [OS X 10.7.5 Lion or Later](#) in order to use the High Sierra installer.

Model Support

High Sierra does not support Mac models introduced before late 2009. Macs that can run High Sierra include the following:

- iMac (Late 2009 or newer)
- MacBook (Late 2009 or newer)
- MacBook Air (Late 2010 or newer)
- MacBook Pro (Mid 2010 or newer)
- Mac mini (Mid 2010 or newer)
- Mac Pro (Mid 2010 or newer)


Of course, that list is helpful only if you know which model of Mac you have! If your Mac is running Lion or later, this is easy to check: choose Apple  > About This Mac and (if needed) then click More Info. You'll see something like **Figure 1**; the Overview pane spells out your Mac's model using Apple's current terminology.



Figure 1: This window on Macs running Lion or later gives you the exact marketing name of your Mac model.

However, if your Mac is running Snow Leopard, nowhere on your Mac can you *see* these designations (like “Late 2009”). Instead, you'll have to go by your Mac's Model Identifier. To find it, open System Profiler (in [/Applications/Utilities](#)). In the list on the left, make sure Hardware is selected, and look for the line that says Model Identifier. It consists of your Mac model name followed by a pair of numbers, without spaces—as in [MacBook6,1](#).

Once you know your Mac's Model Identifier, you can look it up in my *enhanced* version of Apple's list, below. (Keep in mind that the comma should be interpreted as a decimal point, so 6,2 is newer than 6,1, and 6,1 is newer than 5,6.)

Here are the Macs that can run High Sierra:

- iMac10,1 or newer

Back Up Your Disk

If you've read pretty much any book I've written about the Mac, you know I consider a solid backup plan to be essential for every Mac user. I hope you already perform backups regularly, and if you don't, this is a perfect time to start.

Regardless of what you do normally (such as using Time Machine or Backblaze), I want to state emphatically that before upgrading to High Sierra, you should create a specific type of backup called a *bootable duplicate*. That's an exact copy of everything on your startup volume, stored on another disk in such a way that you could start up your Mac from that other disk and it would behave precisely as it does when you boot from your regular startup volume.

Even though the High Sierra installer doesn't force you to make this type of backup, it's not something you can safely skip if it's inconvenient or if you're fairly sure you won't have problems. In my professional opinion, creating a duplicate is a mandatory, integral part of the upgrade process. In this chapter I tell you both why and how to do this.

Note: I say "volume" here rather than "disk" because your startup volume could be an SSD (solid-state drive). Some Mac models use what Apple calls "solid-state storage," which is different from an SSD only in its physical configuration. I'll use the term "SSD" to refer to any type of solid-state storage.

After you duplicate your startup volume, I'm going to tell you to do some spring cleaning (see [Clean Up Your Mac](#)), and then I'm going to tell you to update your duplicate. I wanted to warn you about this up front so you know it isn't a mistake or capricious advice—it's for your own good. You need a great backup before you delete any files (in case you accidentally delete something you need), but you also need a freshly updated backup right before installing High Sierra.

Let me also point out that whatever the virtues of Time Machine, it's no substitute for a bootable duplicate, as I explain in the sidebar [But I Really Don't Want to Make a Duplicate!](#).

Tip: Upgrading or not, every Mac user should have a thorough backup strategy; you can learn how to minimize downtime and thoroughly protect your important information by reading my comprehensive book [Backing Up Your Mac: A Joe On Tech Guide](#).

Why You Need a Duplicate

As I said, the particular type of backup you want at this moment—regardless of any other backups you may have—is a bootable duplicate, which is a clone or mirror image of everything on your startup volume. You can't make a bootable duplicate in the Finder by dragging and dropping files onto another disk, and backup programs like Time Machine and Backblaze (though they're both fantastic for what they do) can't make them either. You must use a backup program that's designed specifically for making a bootable duplicate.

Everyone should create a bootable duplicate and update it regularly (at least once a week) as part of a solid backup regimen. In day-to-day use, duplicates are important because they let you get back to work almost instantly in the event of a major disk error or even a complete failure of your hard drive or SSD. You simply plug in the backup drive, reboot while holding the Option key, and select the external drive, and you're back up and running. You can then use the backup disk to repair your internal startup volume and restore your files—or if the drive is too far gone, replace it at your leisure.

However, aside from that “nice-to-have” reason for making a duplicate, you truly need one when it comes time to upgrade your operating system. Despite Apple's valiant efforts at idiot-proofing the installer, something could go wrong—either during the upgrade or afterward—that deletes important files, leaves your disk unusable, or results in your needing to revert to your previous version of macOS. Bootable duplicates let you recover from these situations handily.

Clean Up Your Mac

Over time, most computers accumulate clutter, including outdated software, forgotten downloads, and obsolete files. Not only can this clutter make files harder to find, it can also cause problems when you upgrade to High Sierra—incompatibilities may show up, or you may run out of disk space, for example.

In this chapter, I suggest that you install some software updates and delete files you don't need anymore. I also show you how to check both your RAM and your disk for errors that could cause problems when installing or running High Sierra.

Because you'll be making so many changes, you should first make a complete backup—so if you skipped [Back Up Your Disk](#), go back and follow those steps now. After you've cleaned up your Mac, restarted, and verified that everything is working properly, you should [Update Your Duplicate](#) so that it'll be closer to the state of your disk when you upgrade to High Sierra.



Update Your Third-party Software

Every major upgrade to the Mac operating system results in software compatibility problems, where some apps work poorly or won't launch. Most of us will have to update at least a few apps to make them work correctly under High Sierra. If history is any indication, some incompatible apps won't be updated right away, and a few might never be. But many developers work hard to ensure that their software is ready for each new version of macOS, and “High Sierra-compatible” software updates have already been appearing for months.

Tip: [RoaringApps](#) maintains a wiki listing hundreds of Mac and iOS apps and the current status of their compatibility with various operating system versions, as reported by users. Although this list is neither exhaustive nor definitive, it provides a quick way to check on the apps most important to you.

The High Sierra installer looks for, and disables, certain types of incompatible software—but there’s no guarantee it will find everything. Given the choice, you’re usually better off upgrading third-party software *before* you install a new version of your operating system. In cases where low-level incompatibilities exist, especially with things like drivers, preference panes, and kernel extensions, you can save yourself grief by preventing, rather than fixing, the problem.

Apple built an update mechanism into the App Store, so any apps you downloaded from the App Store can also be updated there—and App Store updates are free. To check for and apply App Store updates:

1. Open the App Store app by choosing Apple  > App Store. (In Mavericks or earlier, choose Apple  > Software Update.)
2. Click Updates in the toolbar to display a list of available updates.
3. To update a single app, click the Update button next to it. Or, to update all the listed apps at once, click Update All.
4. If prompted to do so, enter your Apple ID and password, and click Sign In.

The App Store downloads and installs the updates automatically.

Note: Even though updates from the App Store are free, some developers release entirely new apps (which require an additional purchase) to replace older apps. Which app version you use may depend on the version of macOS you’re running.

Software that doesn’t come from the App Store must use a separate update mechanism. Happily, most modern apps contain some sort of update feature. Unhappily, they don’t all work the same way. Some check for updates every time they’re launched, or on a fixed schedule, while others check only on demand; of those that do check automatically, not all have this feature turned on initially. Some programs can download *and* install new versions of themselves automatically, while others download a disk image and expect you to open it and run the installer yourself; still others do nothing but open a webpage with links to updates you can download manually.

Decide on an Installation Method

The High Sierra installer doesn't give you many options, but you can still approach the process in either of two ways:

- **Plan A: In-place Upgrade:** This easy, default method is appropriate for most people (including anyone [Upgrading to \(or from\) the High Sierra Beta](#)), with some qualifications.
- **Plan B: Clean Install:** Although the installer offers no built-in option to start fresh by erasing your disk, you can accomplish the same thing in a slightly roundabout way.

Most users should start with Plan A and then if (and only if) they encounter problems, move on to Plan B. A few people may want to skip Plan A and go directly to Plan B. In almost every case, the end result will be virtually identical, regardless of which path you take.

In the pages that follow, I describe the differences between these two plans and help you choose which way to go. Then, in later chapters, I give you step-by-step instructions for each plan.

Upgrading a New Mac

If your "upgrade" involves not only upgrading a new (or new to you) Mac to High Sierra but also moving your files to the new Mac from an old computer, you should generally choose [Plan B: Clean Install](#) so that you can get a fresh start on the new Mac. At the end of the Plan B installation, Setup Assistant will run, letting you transfer the files from your old Mac or PC to your new Mac.

However, if the new Mac contains software that you can't replace after erasing the disk in Plan B, you can do [Plan A: In-place Upgrade](#) and then run Migration Assistant immediately after rebooting in High Sierra. See my TidBITS article [How to Migrate to a New Mac](#).

Upgrading to (or from) the High Sierra Beta

If you're planning to install the [High Sierra public beta](#) before the final High Sierra release, everything in this book still applies, except that the wording will be different in spots. However, what if you've *already* installed the public beta and are using this book to upgrade from the beta to the final release?

You can still choose from Plans A and B—nothing changes there, because it's possible to do either an in-place upgrade from the beta to the final version or a clean install of the final version that migrates data from the beta.

However, if you installed the High Sierra beta on a separate volume—not your ordinary startup volume—and didn't save any files on that separate volume, my advice is to restart from your main Sierra volume, create a bootable duplicate of your startup volume, and then choose Plan A or Plan B as though you'd never used the beta at all. Once you're sure everything is present and functional, you can erase your High Sierra beta volume.

Note that if you used SuperDuper's sandbox feature to install the High Sierra beta on an external drive while keeping your user data (and perhaps your apps) on your Sierra volume, you can still upgrade your Sierra volume to High Sierra (again, using Plan A or Plan B). Doing so will break the sandbox—not that it's likely to matter much. To learn how to handle this situation, see [Upgrading from a SuperDuper Sandbox](#).

Plan A: In-place Upgrade

As has been true since Snow Leopard, the High Sierra installer offers a single upgrade method that attempts to make the transition simple by leaving almost all your files, apps, and settings in place. You run the installer as you would any other app, and it replaces all the components of your old macOS installation with their High Sierra equivalents, while deleting those that are obsolete—just as the App Store app does when it installs minor updates.

The High Sierra installer even helps you avoid many common incompatibilities. It contains a list of software known to conflict with the new

Make Final Preparations

Now that you know which basic installation technique you're going to use, you're nearly ready to proceed. Your next major step (which could take hours, or even longer) is to obtain the High Sierra installer; then I'll recommend a few other quick, last-minute tasks before you dive in.

Note: If you're installing the public beta now, come back to this chapter once the final release is out and follow its steps again.

Turn Off Anti-malware Software

In general, anti-malware software doesn't interfere with purchases and upgrades from the App Store. However, when Apple released Mountain Lion, users reported that the Ad Banner Filter in Intego's VirusBarrier software sometimes interfered with the process of downloading the installer. Something similar could happen again, and other anti-malware apps could also conceivably prevent High Sierra from downloading properly. So, the easiest course of action is to turn off any anti-malware software you may have until you have downloaded High Sierra successfully, and then turn it back on.

Obtain the Installer

Depending on your situation, obtaining the High Sierra installer may be a trivial matter of a few clicks, or it may be an involved ordeal.

Download on the Destination Mac

If you have an Internet connection that can handle a 5 GB download, obtaining High Sierra is just like downloading any other app:

1. Click the App Store icon in your Dock, click Featured, and locate macOS 10.13 High Sierra (which should be displayed prominently).

2. Click Download (or Install, if there's no Download button).
3. If prompted, enter your Apple ID and password, and click Sign In.

The High Sierra installer downloads to your [/Applications](#) folder—a process that could take anywhere from minutes to days, depending on the bandwidth of your broadband connection.

Estimating Your Download Time

For an estimate of your download time, use a speed test website, such as Speedtest.net, to see the effective download bandwidth of your Internet connection. Then visit a site like [Download Time](#) and enter 5 GB (the approximate size of the High Sierra download) and your bandwidth to find out how long your download should take.

After it downloads, the installer launches automatically.

But we're not ready to install High Sierra quite yet, so choose Install macOS High Sierra > Quit Install macOS High Sierra to quit the installer for the time being; we'll return shortly!

The App Store and Multiple Macs

If you have more than one Mac—each signed in to the App Store with the same Apple ID—then once you download High Sierra on one, it will show up in the Purchased view on the others too.

If you have bandwidth (and time) to spare, you can click Install on each Mac to download the High Sierra installer. (If your Macs use *different* Apple IDs in the App Store, you can choose Store > Sign Out, choose Store > Sign In, enter the other Apple ID, re-download High Sierra, and then repeat the procedure to sign in under the original account.)

But why go to that bother? It's faster and easier to copy the installer from [/Applications](#) on the first Mac to the others using the Mac's built-in File Sharing feature (hint: look in System Preferences > Sharing) or another method of your choice. Or, you may want to [Make a Bootable High Sierra Installer Volume](#).

Upgrade Using Plan A: In-place Upgrade

Now that you've gone through all the preliminary steps, it's time to begin the upgrade. For most people, Plan A—essentially letting the installer do what it wants to do—is the logical choice. And remember, if it doesn't work out for any reason, you can always move on later to [Upgrade Using Plan B: Clean Install](#). Nevertheless, because you may encounter some questions or confusion during the process, I detail exactly what steps to take from start to finish.

Start the Installer

Unlike installers of old, the High Sierra installer requires no separate startup disc; you simply run an app and it does its thing. However, if you haven't already done so:

- If you are installing onto a laptop, connect its AC adapter to a power source. (If you forget to do this, the installer will prompt you.)
- Quit all open apps. (The installer attempts to do this for you—and prompts you if it can't—but you might as well take care of this beforehand.)

Note: Not to belabor the point, but now that we're two clicks away from installing High Sierra, be sure you have an up-to-date bootable duplicate of your startup disk. If not, go no further until you've read and followed the instructions in [Back Up Your Disk](#).

To begin the process, double-click the Install macOS High Sierra icon in your `/Applications` folder or wherever else you put it. A window appears with just one button: Continue. Click it!

If you happen to be installing the High Sierra public beta, you may see an alert here urging you to have a current backup of your data. But you already do—right?—so just click Continue. (If you don't, go back and

read [Back Up Your Disk](#). And by the way, despite the wording you may see in this alert, you do *not* have to use Time Machine for your backup.)

The Software License Agreement appears next; click Agree, and then click Agree again in the confirmation dialog to proceed.

Select a Destination

The next screen asks you confirm which volume you want to install High Sierra onto. In most cases, it displays its best guess—typically your startup volume (**Figure 6**)—but in some situations you may see multiple disks here, in which case you should select the one you want. To install High Sierra onto a volume that’s not shown, click Show All Disks to display all available options and then make your selection.

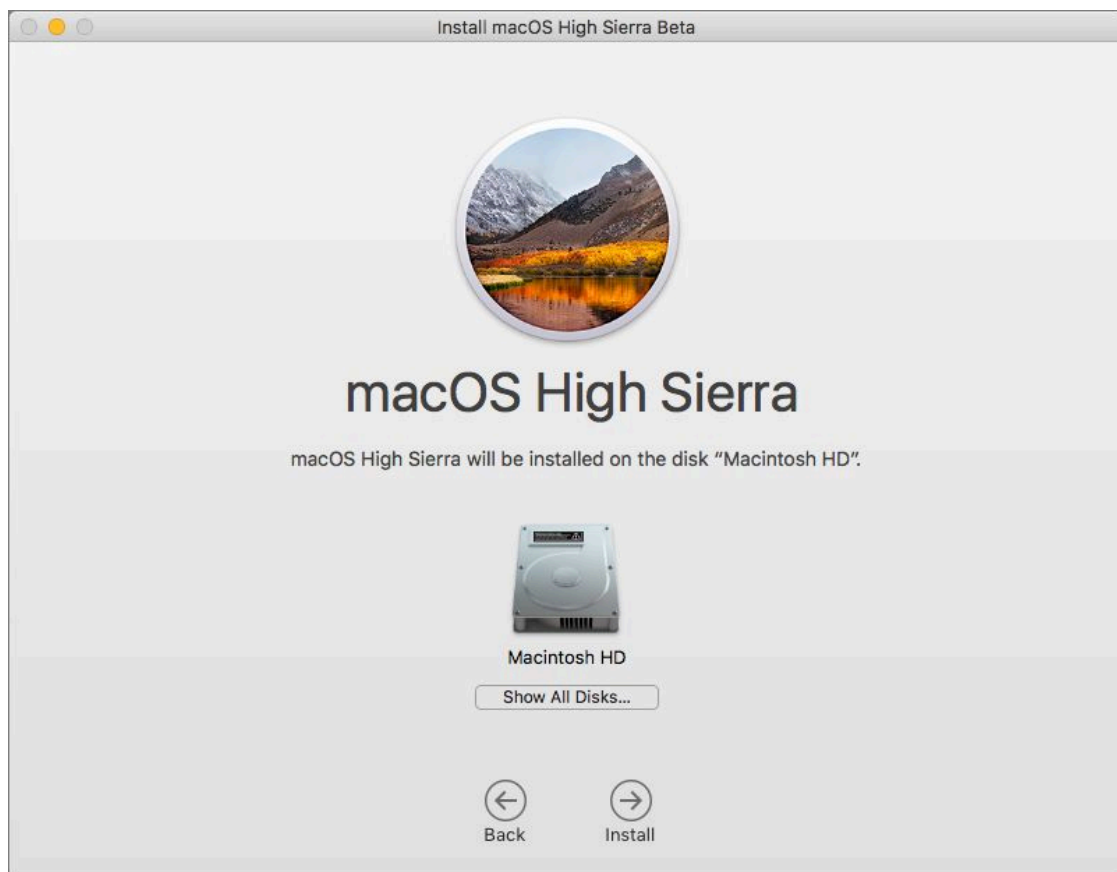


Figure 6: If the installer’s best guess as to your desired destination isn’t right and the one you want isn’t visible, click Show All Disks.

Upgrade Using Plan B: Clean Install

If you prefer a cleaner installation of High Sierra than what an in-place upgrade provides—specifically, one that gets rid of any disk errors and gives you a chance to weed out some types of user-created data—Plan B is what you should follow instead of Plan A. It’s also the right choice if you tried Plan A and encountered problems.

Much of Plan B is just like Plan A, so I refer to earlier discussions for some details. The differences come at the beginning (erasing your disk manually) and the end (using Setup Assistant to configure numerous settings and, optionally, transfer data from your bootable duplicate).


Start Up from Your Bootable Duplicate

Unlike Plan A’s in-place upgrade, Plan B requires a bootable duplicate of a Snow Leopard, Lion, Mountain Lion, Mavericks, Yosemite, El Capitan, or Sierra volume, which accomplishes three things:

- You must erase the destination volume first. But you can’t erase the volume your Mac is currently running from, so you must start up from another volume.
- You’ll need access to the High Sierra installer too, of course, so it’ll be easiest if the volume you start up from contains the installer.
- Once High Sierra is installed, you’ll need your bootable duplicate (the one you created in [Back Up Your Disk](#), remember?) connected in order to transfer your old data.

To start up from your duplicate:

1. Make sure the disk containing your duplicate is physically connected to your Mac (via Thunderbolt, USB, FireWire, or eSATA).

2. Choose Apple  > Restart.
3. Press and hold the Option key until a list of available startup volumes appears on screen.
4. Use the arrow keys to select your duplicate, and then press Return to boot from it.

Now that you've booted from what is about to be your *old* copy of macOS, you can erase your main disk and install High Sierra onto it.

Erase Your Disk

Having started up from your duplicate, to erase your destination volume in preparation for High Sierra, follow these steps:

1. Open Disk Utility (on your duplicate, in [/Applications/Utilities](#)).
2. In the list on the left, select the volume you want to erase. Volume names (there may be one or more per disk) are shown indented under the disk name, so be sure to select one of the indented icons.

Choose carefully! Triple-check to be sure that the volume you're erasing is the one where you want to install High Sierra, and that it's the one you've backed up on your bootable duplicate!

3. On the toolbar, click the Erase button.
4. Make sure Format is set to Mac OS Extended (Journaled), and click Erase.

Note: You may recall that High Sierra reformats volumes to use APFS (see [Learn about APFS](#)), but since older versions of Disk Utility don't offer that format, it's fine to use Mac OS Extended and let the installer do the conversion afterward.

5. If you see a confirmation dialog, click Erase again. Disk Utility erases the disk, which normally takes just a few seconds. Click Done if prompted to do so when the Erase process is complete.

Perform Post-installation Tasks

If everything has gone as expected, your Mac is now successfully running High Sierra. (If things haven't gone as expected, flip forward to [Troubleshoot Upgrade Problems](#).) But there are still a few tasks left to do before you get to work—or play—with your new operating system. In this chapter I cover some important initial setup and configuration activities you should get out of the way right now.

Respond to Immediate Questions

My test installations of High Sierra have used various combinations of starting points, configurations, and upgrade paths. In some cases, after installing, I saw a normal Desktop and nothing more. In other situations—especially when I upgraded older versions of macOS, had a lot of third-party software, or wasn't previously logged in to iCloud—I was immediately confronted with a large stack of overlapping dialogs and notifications.

Among the most common questions are requests for your user account password or Apple ID password. For example, certain apps may once again need an administrator's authorization to make changes to your data, and various apps that use your Apple ID (including iTunes and iBooks) may need you to sign in again.

Tip: Even if you're not prompted, it's a good idea to check System Preferences > iCloud to make sure you're signed in to iCloud (and with the correct Apple ID). Do the same in iTunes (Account > View My Account) and the App Store (Store > View My Account).

In some situations, you may also see a notification like the one in **Figure 9**. This appears to mean that, in the process of syncing your accounts via iCloud with your other Macs, High Sierra found one or

more email accounts that were either missing from this Mac or had different settings. To add (or update) the accounts, click Continue; High Sierra then opens System Preferences > Internet Accounts, where you can verify all the settings. Or, click Not Now to leave your accounts as is for the time being.

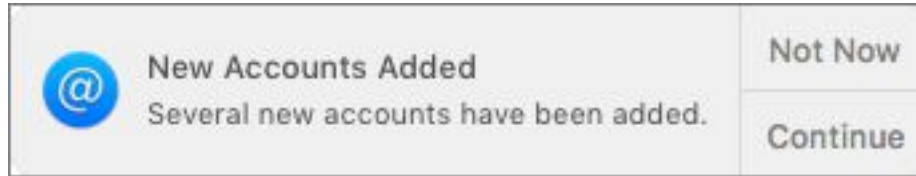



Figure 9: Sometimes email accounts are correctly configured but not turned on until you agree.

Work your way through any such dialogs you see, even if they seem redundant. After that one-time process, most of them will not reappear.

Handle Software Updates

The next thing you should do is to update macOS itself (and any other crucial Apple software) to the latest version. Sometimes Apple releases bug fixes and security updates almost immediately after a major upgrade, and if any such urgent updates are available, it's in your best interest to install them right away.

In High Sierra, as in every version of the Mac operating system since Mountain Lion, all updates to Apple software—including macOS itself, built-in software such as Safari and QuickTime, and optional purchases such as Final Cut Pro and Pages—are delivered through the App Store app. And, of course, you can update all the third-party apps you've purchased from the App Store at the same time.

In some cases, the App Store notifies you automatically of updates, but I recommend checking manually, shortly after your Mac starts up under High Sierra for the first time. You can open the App Store by clicking its Dock icon, double-clicking its icon in `/Applications` or in Launchpad, or choosing Apple  > App Store. Then click the Updates button on the toolbar.

Troubleshoot Upgrade Problems

Even if you diligently followed all the instructions in this book, you might encounter problems while upgrading. I can't anticipate every difficulty you may have (or provide solutions in every case), but here are some of the most likely issues and how to deal with them.

Can't Run the High Sierra Installer...

If the High Sierra installer icon has a slash through it, or if you try to run it and it quits immediately, the likely causes are:

- You're trying to run it on a Mac whose CPU is incompatible with High Sierra (see [Model Support](#) for full details). Solution: Buy a new Mac. (Sorry.)
- The installer didn't fully download, or the file was damaged. Solution: First delete the installer. Then open the App Store app, click Purchased, and download High Sierra again.

Can't Select Installation Volume...

If you run the High Sierra installer, click Show All Disks when asked to choose a destination, and find that the volume on which you want to install High Sierra isn't available, chances are excellent that if you click the volume in question, the installer will tell you *why* it can't be used—for example, not enough disk space, wrong partition map scheme, or wrong format—and, at the same time, tell you how to fix that problem.

You may also see a message about an “unsupported partition structure,” which means the installer thinks the disk containing the volume where you want to put High Sierra isn't partitioned in one of

the officially sanctioned ways. Repartitioning your disk as described in [Prepare Your External Drive](#) is the only reliable solution.

Come to mention it, repartitioning is, in fact, the best (if brute-force) way to eliminate almost every possible cause of an unselectable volume. If all else fails, try that.

Mac Won't Start Up under High Sierra...

Following installation—either on the first restart or a subsequent restart—if your machine will not start up under High Sierra (or if you experience a kernel panic upon the first restart), try these steps in order until you are able to start up normally:

1. **Disconnect non-essential USB devices:** USB devices have been known to interfere with the Mac startup sequence, so if your Mac gets stuck on a gray screen and won't finish booting, try this:
 - a. Press and hold the power button for about 10 seconds until your Mac shuts down.
 - b. Disconnect all USB cables from your Mac *except* any that go to a keyboard, mouse, or other pointing device.
 - c. Press the power button again and wait for your Mac to start. If it starts normally, you can then reconnect your USB devices. If it's still stuck after 10 minutes or so—or if it starts but then you experience a kernel panic—move on to the next step.
2. **Try a Safe Boot:** Restart your Mac. (If the Mac is frozen or you see a kernel panic message, press and hold the power button for about 10 seconds until the Mac shuts down. Then press the power button to turn it back on.) As soon as you hear the startup chime, press Shift. Release the key when the Apple logo appears on the screen. The Mac will complete the startup process, which may take considerably longer than usual. You'll eventually see the words “Safe Boot” on the screen—likely in red at the top of the login screen.

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Joe Kissell is the author of more than 60 books about technology, including [Take Control of Your Online Privacy](#) and [Take Control of Dropbox](#). He is a contributing editor to TidBITS, a senior contributor to Macworld, and a popular speaker at conferences and other events.

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