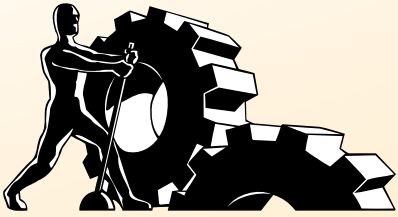


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Read Me First

Welcome to *Take Control of Your Paperless Office*, version 1.0, published in November 2010 by TidBITS Publishing Inc. This book was written by Joe Kissell and edited by Tonya Engst.

This book guides you in the process of eliminating paper clutter, replacing many printed documents with digital versions—with special emphasis on the Mac-compatible hardware, software, and process needed to efficiently scan documents and create searchable PDFs. It also helps you find clever ways to reduce both incoming and outgoing office paper, and capture documents even when no scanner is available.

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Discounted [classroom and Mac user group copies](#) are also available.

Updates and More

You can access extras related to this book on the Web (use the link in [Ebook Extras](#), near the end of the book; it’s available only to purchasers). On the ebook’s Take Control Extras page, you can:

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Basics

Here are a few “rules of the road” that will help you read this book:

- **Menus:** Where I describe choosing a command from a menu in the menu bar, I use an abbreviated description. For example, the abbreviated description for the menu command that creates a new folder in the Finder is “File > New Folder.”
- **Contextual menus:** *Contextual* menus appear when you Control-click various elements on a Macintosh screen, including Dock items and files in Finder windows. To describe opening a contextual menu, I tell you to right-click (Control-click) an item on the screen. Control-clicking always works, but if your mouse offers a right-click option, or if you use a trackpad or other means of opening a contextual menu, you should feel free to use the method you prefer.
- **Finding System Preferences:** I sometimes refer to settings in System Preferences that you may want to adjust. To open System Preferences, click its icon in the Dock or choose Apple () > System Preferences. When the System Preferences window opens, click the icon of the pane whose settings you want to adjust. I refer to these panes using a brief notation such as “the Dock preference pane.”
- **Finding an application’s preferences:** I often refer to preferences in an application that you may want to adjust. Don’t confuse an application’s preferences with the system-wide settings found in System Preferences. To access an application’s preferences, choose *Application Name* > Preferences. For example, in Microsoft Word, you would choose Microsoft Word > Preferences.
- **Path syntax:** This book occasionally uses a *path* to show the location of a file or folder in your file system. For example, Mac OS X stores most utilities, such as Terminal, in the Utilities folder. The path to Terminal is: [/Applications/Utilities/Terminal](#).

The slash at the start of the path tells you to begin at the top level of the disk. Some paths begin with `~` (tilde), which is a shortcut for the current user’s home directory. For example, if the person currently logged in has the user name `joe` and wants to install fonts that only he can access, he would put them in `~/Library/Fonts`, which is just another way of writing `/Users/joe/Library/Fonts`.

- **Desktop vs. mobile:** For the purpose of this book, a *desktop computer* is either a laptop (most of which sit on desks) or a conventional computer running an operating system such as Mac OS X or Windows. A *mobile device* is a handheld computer-like device, such as an iPhone, iPad, Kindle, or BlackBerry.

A mobile device uses a *mobile operating system*, such as iPhone OS 3 or iOS 4. *Mobile software* is designed for mobile devices. For example, the version of Safari that runs on the iPad is the mobile version of Apple's *desktop* Safari Web browser, and it is more technically called *Mobile Safari*. I try to avoid these terms in this book because they can be confusing for beginning readers, but you will find them in other writing and even in other Take Control ebooks.

Introduction

My feelings about paper might best be described as ambivalent. As I write these words, I'm sitting in a library surrounded by books of the old-fashioned paper kind. I've written several such books myself, and I've often formed opinions about people based on how many books (and which ones) are in their homes. Had paper never been invented, I imagine many other aspects of modern life as we know it would never have developed. Paper facilitated the recording of history, the dissemination of knowledge, the spread of literacy, and a great many other virtuous things that I'm grateful for.

On the other hand, I've also written a couple dozen ebooks like the one you're now reading, and have shifted most of my professional and recreational reading to books in digital formats—an activity made considerably more enjoyable by my iPad and iPhone 4 (especially with the latter's Retina display). I like the fact that I can search, annotate, and back up my books now, and that I can accumulate as many as I want without running out of shelf space, as is a regular occurrence in my home.

But I truly lose all tolerance for paper when it comes to office paperwork—letters, forms, invoices, bank statements, receipts, business cards, flyers, note cards, catalogs, handouts from meetings and trade shows, photocopies of library book pages, and anything else that might end up on my desk in printed form. I used to have several filing cabinets full of the stuff, and overflowing—and yet, despite what I thought was an intelligent filing system, it frequently took me a long time to find what I was looking for. And because every day more of it would appear (some of it coming from my own printer), it was difficult to keep on top of it. The clutter became unmanageable, and I found that I spent far too much of my time managing paper rather than accomplishing useful tasks.

Never is the scourge of paper clutter more apparent than when I move, which I tend to do every few years or so. I get tired just looking at all those paper files, and I find myself cursing all those paper books that I love to surround myself with, because they're so heavy and bulky.

But most of my struggle with paper, I'm happy to say, is in the past. For a few years now I've been moving toward a paperless office. I now receive, and generate, only a tiny fraction of the paper I once did. And virtually every paper document that comes into my life is scanned, converted to a searchable format, and digitally archived—so I can find nearly any document I need with a few keystrokes. And, because everything is backed up, I don't worry about my papers being wiped out by a fire or other catastrophe.

In this ebook, I explain how you can do what I do when it comes to paper. By carefully examining where and how you use paper and looking for suitable digital alternatives, you'll find that your productivity and happiness increase, while clutter and stress decrease. You might even save some money and benefit the environment.

What I describe here is a multi-pronged approach to strategically eliminating paper. Of course, even if you avoid generating your own paper clutter and reduce the paper other people send you, some paper will still find its way to you—and you may have many thousands of pages already sitting around. So one of the central features of the plan I discuss is scanning your paper documents and processing them in a way that retains their physical appearance while also letting you index, search, select, and copy their text. I also talk about using devices such as the iPad, iPhone, and Kindle (as well as smartphones and digital cameras) to maximum advantage—and doing clever things you may never have thought of, like paperless postal mail and fax.

Let me be clear, though: I'm not going to tell you to get rid of all your paper, or that resorting to paper for any reason is somehow a moral failure. Paper has many noble uses, and I wouldn't pretend otherwise. You may choose to adopt all my recommendations, or only a few—everyone's different, so by all means, do only what works for you.

The plan I cover in this book is appropriate for a home office or small business. If you aspire to take a large corporation paperless, I applaud you—but that sort of project is beyond the scope of this ebook.

Finally, I assume that you have at least one Mac at your disposal. While everything I discuss can be accomplished in a comparable fashion with other operating systems, in this ebook I focus on Mac-compatible hardware and software.

Paperless Office Quick Start

This book shows you how to reduce the use of paper in your home or office and use digital representations of documents instead (or in addition). You can learn about these topics in any order, but most of the chapters follow a logical progression, so I encourage you to read linearly. In any case, I urge you to start with [Meet Your New Paperless Office](#), which provides useful background information.

Take preliminary steps:

- Learn about the goal and the steps you'll take to reach it; see [Meet Your New Paperless Office](#).
- Give yourself some breathing room: [Head Off Most Paper Before It Reaches You](#).

Digitize and dispose of most incoming paper:

- Decide on the most important tool for creating a paperless office; read [Choose a Document Scanner](#).
- Learn what features you need in Mac software to accompany your scanner in [Choose OCR Software](#).
- Set up your software for optimal efficiency and quality; see [Configure Your Software](#).
- Figure out the most convenient way to process papers you receive in [Create a Workflow for Incoming Paper](#).
- Devise a plan to scan all those paper documents already in your files; read [Work Through a Backlog](#).
- Capture digital copies of documents even when you're away from your scanner; see [OCR on the Go](#).

Reduce the amount of paper you generate yourself:

- Learn how to break the printing habit painlessly (at least sometimes) in [Avoid Common Printing Needs](#).

- Discover when a signature is not a signature; see [Sign Documents without Paper](#).
- Say goodbye to your fax machine and hello to another 300 square inches of desk space; see [Fax without Paper](#).

Meet Your New Paperless Office

The idea of a paperless office may sound enticing, or even inspiring. It may also sound intimidating. If you're going to make the transition to a paperless lifestyle, what will you have to give up—and what will you get in return? In this chapter I look at the advantages of a paperless office (ranging from obvious to novel), and then describe some of its crucial components. I also help you imagine what your paperless office will ultimately look like.

Learn the Benefits of Ditching Paper

If you're reading this ebook, chances are you already have a paper-related problem you're trying to solve. You know the ways in which paper is causing you pain, so it's apparent how a paperless office would be soothing. But, in fact, a paperless office can solve many problems simultaneously—including some you didn't even realize you had!

Let's look at some of the things you can accomplish by moving from paper to digital:

- **Reduce clutter.** Clutter reduction is a recurring theme in this ebook. “Clutter” may refer to the untidy piles of papers that litter your desk and haphazard filing systems, but even a scrupulously organized collection of paper documents counts as clutter if it takes up too much physical space—or too much of your attention—for comfort. Scaling back on paper brings order back into your office, and also frees up space on your desk and in your brain.
- **Save time and effort.** Filing a single document may take just seconds, but the endless process of filing, searching for, retrieving, and replacing papers can add up to hours per week. You'll still file digital documents, but searching will take far less time and be less error-prone—plus there's nothing to put back when you're done.

- **Save money.** In a paperless office, you save a little bit of money on paper (hey, it's not that expensive in the first place), but when you add up the savings in printers, photocopiers, ink or toner cartridges, envelopes, file folders, filing cabinets, extra office space to hold all the filing cabinets, and so on, the amount becomes more interesting. Even better, you're saving time (the previous point), and since time is money, that means you can be more productive.
- **Search everything.** You already know that you can search the files on your Mac easily. Wouldn't it be great if an electronic search could also turn up documents you've received in the mail, your old school records, business cards you received years ago, posters you saw hanging at the supermarket, and any other piece of text you encounter? (How about this: It took me about 2 minutes to determine that my father got an F on his final French exam in 11th grade. I scanned all his old report cards!)
- **Share documents easily.** Printing or photocopying documents—and then handing them or mailing them to other people—is so 20th century. I can share digital documents with nearly anyone in a few clicks, and why shouldn't that ease extend to paper documents?
- **Back up physical documents.** You back up your digital photos and business documents (don't you?), but what if your tax returns, insurance records, contracts, invoices, and other crucial paper files were lost in a fire or other disaster? Create digital versions and you can back them up too. As a bonus, you can give yourself remote access to all your scanned documents—something that's tricky to pull off with paper!
- **Save the planet.** I like to think I'm as concerned about the environment as the next guy, but to be honest, my desire to reduce paper consumption has nothing to do with saving trees, eliminating waste, shrinking my carbon footprint, or any such thing—although it does all that too! I do it because it makes me happier, and it just so happens that it's good for the planet (at least in some small way) as well.

Tip: To keep up with the latest in the world of paperless office news, visit Brooks Duncan's DocumentSnap site or subscribe to his blog (<http://www.documentsnap.com/>).

Understand Searchable PDFs

Although a paperless office has many aspects, one central assumption is that many documents that are currently on paper will end up on your computer—in *a single special format*. That format is officially called “PDF Searchable Image,” but most people refer to it using the less-cumbersome term “searchable PDF.” Because this one unique format is the magical key that makes the whole system work, I want to give you a quick overview of the most common PDF (portable document format) varieties so you can see where searchable PDFs fit.

The PDF files most of us encounter daily were created in a program like Microsoft Word or Adobe Illustrator—nearly any application that can produce printed output. Except instead of printing, the document is saved in PDF format, which is relatively compact and looks more or less the same on any platform. When an application “prints” a PDF file, the PDF automatically contains searchable text. (There are occasional exceptions to this for text treated as objects, such as Word’s Word Art and Excel tables embedded in a Word document.) That means, among other things, that you can select and copy text in the document, and search engines such as Mac OS X’s Spotlight index their contents. This sort of run-of-the-mill PDF is officially called “PDF Normal.”

Normal PDFs can include graphics—either vector artwork or bitmaps that originally came from a scanner or a digital camera. But the PDF format can also be used as a simple wrapper around plain bitmapped images (for example TIFFs and JPEGs) without any other content. This second sort of PDF is officially called “PDF Image Only.”

When you scan documents, your scanning software will probably save PDF Image Only files initially. But then a second process occurs: optical character recognition (OCR), which identifies letters and words in the image. A few years ago, OCR produced a plain text file as output or, if you were lucky, an ugly Word file. But today the most popular way to handle the recognized text is to add it as an invisible layer above¹ the

¹ For reasons I’ve never understood, most descriptions of the searchable PDF format emphasize that the text layer is *below* or *behind* the graphic. But that makes no sense—if it were underneath the graphic, you’d be unable to select it. It’s better to think of it as being *above* or *in front of* the graphic, but invisible.

bitmapped graphic, with the position of the live text corresponding to the position of the characters in the graphic. So, underneath you may have a graphic with dots that look like the word “sandwich,” and on top of that image is the text of the same word, which you can select, copy, or search just like the text in any normal PDF. This is the PDF Searchable Image, or searchable PDF format.

The enormous advantage of searchable PDF over plain-text OCR output is that you can still see exactly what the original document looked like. And, if you were to print it again, it would look almost identical to the source document. Because no OCR tool is perfect, this also lets you verify what the document actually says, even if the text has some errors.

OCR you sure that’s correct? Some OCR software lets you correct recognition errors on the fly or edit the hidden text layer after the fact, either of which can improve searching accuracy. However, I don’t generally recommend such manual intervention, because it makes the scanning process vastly more time-consuming.

Meanwhile, the advantage over plain bitmapped images is that you can index, search, and use the text as text. So, if you’ve just scanned a stack of receipts, your scanning software may have given them all unintelligible names like “2010_10_22_09_35_25.pdf,” which would never help you find anything—at best you’d have to name them all manually, and at worst you’d have to look at each one to find a certain transaction. But with searchable PDF you can simply type a restaurant name into your search field and instantly see the receipt that mentions that name.

Searchable PDFs are a wonderful thing, and because they’re the only way I know of to get this dual-layer effect automatically from an OCR application, every document you create as a result of using the instructions in this ebook will be in that format.

Note: Some kinds of text, such as text in non-Latin languages, or even English text that uses advanced typography (ligatures, small caps, super/subscripts, etc.) may not be searchable when converted to PDF. If you are using such documents, check searchability before moving entirely to this format.

Consider Storage Options

If your paper files are in a filing cabinet, then whatever disadvantages paper may have, you can at least be certain that none of the files will spontaneously evaporate, or lose part of their contents, due to a filing cabinet malfunction. Unfortunately, the same is not true of digital data. Digital files typically live on a hard disk somewhere. And hard disks, by their very nature, are subject to all sorts of problems ranging from random directory corruption to user error to theft, not to mention just plain wearing out over time. So before you begin committing your files to disk—and especially before you get rid of the originals—think about where and how you’ll store the digital files themselves and the physical media they rely on.

I recommend, in particular, taking a moment at the outset to think about three main factors: disk capacity, local versus cloud storage, and media longevity. (Later in the ebook, I talk in more detail about another essential consideration: backups. See [Back Up Scanned Data](#).)

Disk Capacity

If you follow the instructions in [Configure Your Software](#), you’ll end up with nicely compact PDF files, and you may be able to fit hundreds or even thousands of pages worth of scanned data in just a few gigabytes of disk space. However, keep in mind that your data storage needs will inevitably grow over time. And, if you have tens of thousands of sheets to scan—especially if many of them are in color—you’ll need plenty of room for your data to expand.

In these days when bare 2 TB drives can be found for under \$100, it doesn’t make sense to skimp on capacity. If your Mac’s internal disk still has loads of free space, then you may be all set, but if in doubt, you might want to consider upgrading it to a more capacious model, or supplementing it with an external drive.

Because there are so many hard drives to choose from, I can’t begin to give specific recommendations of brands or models. But I can say that for the purpose of storing your digital archives, it’s worth paying a bit extra for a drive with a longer warranty—5 years is the longest I’ve seen. And, all things being equal, if you purchase an external drive, buy one with the fastest interface your Mac supports. For example, eSATA is faster than FireWire 800, which is faster than FireWire 400, which

is faster—in practice if not on paper—than USB 2.0. (Faster even than eSATA is USB 3.0, but as of late 2010, only a handful of USB 3.0 drives have appeared, and no Macs have USB 3.0 ports; rumor has it that future Macs may support the still-faster Light Peak standard, about which you can read at http://en.wikipedia.org/wiki/Light_Peak.) Check to see which ports your Mac has, or which you can add by way of a PCI or ExpressCard adapter.

Tip: If you need even more capacity than the largest available hard drives, an easy way to combine multiple drives is to use one of the many Drobo storage devices (<http://www.drobo.com/>), which can be upgraded easily to hold more data at any time.

Local vs. Cloud Storage

Although hard disks are still, in 2010, the main medium used for storing digital data, those disks need not sit in your office. They might just as easily be attached to a server somewhere in the bowels of an anonymous data center halfway around the world. Large companies that traffic in data storage and transfer (including the likes of Amazon.com, Apple, and Google—and countless thousands of others) offer data storage in the “cloud” at reasonable rates—perhaps less per year than what it would cost you to buy a new hard drive.

The advantages of cloud storage for your formerly paper documents are many—for example:

- **Space savings.** Hard drives take up space in your office, so if they’re not in your office, you have less clutter.
- **Accessibility.** With cloud-based storage, you can access your data from any computer in the world with an Internet connection, which may not be true of disks in your home or office.
- **Redundancy.** Cloud storage providers generally use RAID along with automated backups to protect your data against drive failures and user error. And, when used in conjunction with local storage, cloud storage gives you a second, offsite copy of your data that provides extra insurance against hardware and software gremlins. (Cloud storage as such isn’t necessarily the same as online backup, however; see [Back Up Scanned Data](#) for details on the latter.)

- **Maintenance.** If a hard drive in your office dies or runs out of space, you have to buy a new one and copy your data from a backup—a lengthy and tedious process. Cloud storage providers have systems in place to keep their equipment up to date and in good working order, relieving you of that burden.

The biggest downside to cloud storage is that it's *much* slower to copy data to or from the cloud than to store it locally. Unless you work for a large company with an Internet connection that costs more than the CEO's annual salary, you'll get dramatically better speeds with local hard drives. If the amount of data you want to store in the cloud reaches the tens of gigabytes or more, expect it to take weeks to upload over a moderately fast broadband connection.

There are ways around this—for example, some online storage services let you fill a hard drive and send it to them via courier in order to *seed* your online space; then, you can simply add files to it as you go, which is far quicker. Even so, other potential problems remain. What if your Internet connection goes down and you can't get at your files? What if the storage provider goes out of business? The potential perils of cloud-based storage are such that I wouldn't recommend it as the *sole* place to keep your valuable scanned documents. However, I think the cloud makes an excellent *secondary* location for such files (just as it does for backups).

Cloud storage providers are multiplying quickly, and I wouldn't even attempt to catalog all the options. However, I can call your attention to a few services that let you store a significant volume of files online at a reasonable cost and (in one way or another) sync them with your Mac so that you can simply save files in one location and have them automatically transported to the other as well. Some examples:

- **Dropbox:** Sync files across Macs, Windows PCs, and iOS devices. Dropbox offers excellent performance and compatibility, and I've become a big fan. Anyone can store 2 GB of data for free; 50 GB of storage costs \$9.99 per month, while 100 GB of storage goes for \$19.99 per month (<https://www.dropbox.com/>).
- **Google Docs:** Along with Web-based editing of word processing, spreadsheet, and presentation documents, Google Docs lets you store files of any type. You can upload and download them using a

Web browser or any of numerous clients for Mac OS X and iOS. You get 1 GB of storage free (although individual files must be no larger than 250 MB); additional storage is \$0.25 per gigabyte per year (<http://docs.google.com/>).

- **MobileMe:** Apple's \$99-per-year MobileMe service includes, among many other features, online storage space called iDisk that you can access easily in the Finder, in a Web browser, or via an app on your iOS device. Standard accounts include 20 GB of storage shared between iDisk and email; you can configure the proportion used for each. Additional storage is available for a fee (<http://www.apple.com/mobileme/>).
- **SugarSync:** This service lets you sync files and folders across Macs, Windows PCs, and a variety of mobile gadgets (including iOS devices). It also lets you share and sync files with other people. Plans start at \$4.99 per month or \$49.99 per year for 30 GB of storage; a free 30-day trial is available (<http://www.sugarsync.com/>).
- **Syncplicity:** In much the same vein as SugarSync, Syncplicity lets you sync your data up to the cloud, and down to other Macs and Windows PCs. (At the moment, the only iOS app that accesses Syncplicity accounts is called [MKSync](#). The app itself is free, but in-app purchases are required to download files [\$2.99] or share then [\$1.99].) Syncplicity gives you 2 GB of storage (and access from two computers) free. A Personal Edition plan that costs \$15 per month gives you 50 GB of storage and the capability to sync five computers; higher-capacity business plans are also available (<http://www.syncplicity.com/>).

Media Longevity

As I mentioned earlier, hard drives, like all mechanical devices, eventually wear out. So if you're using them to store documents you need to keep indefinitely, you should make accommodations for the drives' likely life spans. (The same, of course, is true of any media—CDs, DVDs, and even flash storage degrade over time, although at least in those cases you need not worry about mechanical wear.)

Specifically, I suggest incorporating the following into your paperless office plan:

- **Replace your physical media every 3–5 years.** I begin to lose faith in hard drives after about 3 years of continuous use, and after 5 years or so, I don't trust them at all. (Of course, I generally upgrade all my computers every 2–4 years anyway, so new hard drives are just part of the deal.) Conventional recordable CDs and DVDs tend to last longer—especially if they're not used frequently and are kept in a cool, dry, dark place. But for long-term storage, it's still a smart habit to copy all your files onto fresh new media every 3–5 years (and verify that all the files on the new media are intact).

***In the electric mist:** Cloud storage providers automatically upgrade their hard drives, migrating your data in the process, when needed to ensure data continuity.*

- **When feasible, buy higher-quality media.** A name brand hard drive with a 5-year warranty isn't guaranteed to last longer than an off-brand model with a 1-year warranty, but the odds are in your favor. Similarly, it's possible to buy rather pricey archival CDs and DVDs, which the manufacturers claim will last much longer than ordinary optical media.
- **Don't forget to back up!** Backing up your data is always essential, but never more so than when you choose to dispose of original paper copies. A backup can save you from worn-out media among dozens of other problems. See [Back Up Scanned Data](#) for details.

A Word about Screen Dependency

You may notice that in reducing your reliance on paper, you're increasing your reliance on digital displays (computer monitors, iPhones, iPads, or whatever). This fact may have some unexpected consequences, so please consider doing the following:

- **Expand your screen real estate.** You can easily spread out dozens of pages on a table and see them all at once, but if your only means of looking at digital documents is a single 15-inch display, you can only see, at best, one less-than-full-size page at a time. Monitors are getting larger and less expensive all the time, so you may want to think about buying more and/or larger displays.
- **Think small, too.** Although my iPad's display has only a fraction of the pixels of my 17-inch MacBook Pro, it lets me view digital documents in a wider variety of locations—and makes an excellent supplemental screen when I'm at my desk. You, too, may benefit from one or more smaller displays.
- **Have a backup.** The more you depend on digital displays, the more important it is for you to have a Plan B if one of them dies. This might include buying the AppleCare Protection Plan for your Mac, iPhone, iPad, or iPod touch; making sure your homeowner's or renter's insurance covers theft or accidental damage to your displays; setting aside money in your budget for rapid replacements if needed; or keeping an inexpensive spare display on hand for emergencies.

Envision a Paperless Future

All right, you've seen the benefits of a paperless office and you know some of the details about where you're headed—document formats and storage media and so forth—but what does your future day-to-day work look like without all the paper? If you can picture it, you're more likely to make it happen. When you get to the chapter [Create a Workflow for Incoming Paper](#) you can read all the details, but in the meantime, here's the overall vision I'd like you to aim for:

- **You enjoy a clean desktop.** Where once stood stacks of papers (not to mention magazines and books), you now have clear view of

your actual desktop, which you may not have seen in years. You can use that space for a second monitor, or an iPad, or pictures of your kids. And as your filing cabinets begin to empty out, you think about putting a nice decorative ficus in their place.

- **You receive much less incoming paper.** You've taken measures to ensure that most of the documents coming your way do so electronically, so you're not spending hours a day scanning.
- **You use your scanner regularly.** You may still (or for the first time) have In and Out boxes, but they'll take on new meaning. In will contain papers you've *only just* received and will scan by the end of the day. Out will contain papers that have been scanned, and can be shredded, recycled, or filed. In between them sits a shiny scanner, which has become your new best friend. (I elaborate on the setup you might employ later, in [Create a Physical Paper Path](#).)
- **You practice good habits.** Scanning need not be labor-intensive at all; you can set things up (see [Configure Your Software](#)) such that you do nothing more than press a button and move on to the next document. However, you may choose to get in the habit of expending a wee bit more effort as you scan to make it easier to find documents later. In any case, you'll scan all incoming documents as soon as reasonably feasible after you receive them.
- **You can find documents easily.** When you need a document you've scanned, you usually know exactly where to look on your hard disk. Using either the Finder or any of numerous document-management tools, you do a quick search for anything whose location isn't obvious, and it appears on your screen in seconds.
- **You generate little or no outgoing paper.** Your printer may be used so seldom it gets lonely. It's still there for times when paper is obligatory, but you no longer print, photocopy, or mail paper as a matter of course.

Getting Others Onboard

Intelligent and forward-thinking person that you are, you've grasped the value of switching from paper to digital, and you may be ready to tackle the transition with great vigor. However, less-enlightened coworkers or family members might put up resistance, especially if they worry that a paperless office will involve significant expense or force them to change long-held habits.

If you're going paperless purely for your own benefit, it might not matter whether others do likewise, but in a business setting, getting rid of paper could be disruptive and frustrating unless everyone involved buys in to the plan. And even at home, kicking the paper habit will be far easier if everyone shares your vision. Here are some tips to do just that:

- **Review the benefits.** Play up the factors listed in [Learn the Benefits of Ditching Paper](#) according to what's most important to your audience (money, efficiency, environment, etc.).
- **Lead by example.** Convert your own documents to digital and demonstrate your increased productivity and decreased clutter.
- **Display adaptability.** Be prepared to meet others halfway, to consider alternative proposals, and to bend on your top choices for hardware and software. Some change is better than none.
- **Promise them toys.** With certain people, this works wonders: "Cancel your paper magazine subscriptions and I'll buy you an iPad." Or: "I'll approve your request for a larger monitor if you agree to start using electronic invoices."
- **Think about the kids.** Young children tend to feel ignored when their parents are staring at screens. But it's less of a problem if the screens are smaller and handheld, because this lets you change your position and look at the kids more. And remember, Dr. Seuss iPad apps are great (I'm speaking as the parent of a young child here), but actual paper books, which your child can hold, throw around, and gnaw on, are better when a parent isn't supervising.

Head Off Most Paper before It Reaches You

In the chapter after this one, we begin the process of selecting, setting up, and using a scanner to digitize your papers. Once that's done, you'll be able to dispose of (most of) the originals so they no longer clutter your office. That's great—but wouldn't it be better still if the paper never reached you in the first place?

Before we attack the current and future paper flow, it makes sense to find as many ways as possible to prevent paper from arriving at your desk at all (assuming, of course, that you can obtain suitable digital replacements). This chapter provides a few ideas along those lines.

Sign Up for Paperless Billing

Most banks, insurance companies, utilities, phone companies, periodicals, schools and colleges, tax offices, and other entities that expect money from you on a recurring basis offer some form of paperless billing and payment. In fact, this practice is becoming so prevalent that some companies now charge extra for paper bills, while others no longer offer them at all. Details vary, but in a typical case you set things up such that you receive bills or statements by email, and then pay either by credit card or by preauthorized bank withdrawal.

I'm a big fan of paperless billing, and use it as much as possible. Without it, I have to contend with a paper check (and frequent checkbook refills), a payment stub, a stamp (often), and a return envelope. And after all that, I still have an outer envelope (into the recycling bin) and a paper bill I'll probably never look at again (into the filing cabinet).

On the other hand, with paperless billing I generally get a PDF copy of my statement that I file on my disk and the convenience of paying in a few clicks—or, in many cases, none at all. In the case of automatic payments, I also get peace of mind knowing that a faulty memory, illness, or other distraction won't leave me in the dark or the cold.

So your first mission is to think about what sorts of recurring payments you make that require an exchange of paper, and see if the payee offers a paperless option. The easiest way is simply look online every time a paper bill appears in your mailbox.

However, before you go crazy making everything paperless, spend a few moments pondering the following:

- **Is your email under control?** If you have such an overloaded Inbox, or a flaky spam filter, that you're likely to miss emailed payment notices, you might want to think twice. Also, you might want to read my *Macworld* article "Empty Your Inbox," at <http://www.macworld.com/article/139510/>!
- **Do you have a fallback plan?** An emailed payment notice isn't much good if you're away from your email for a long time—if you're on vacation, sick, or otherwise incapacitated. Does your spouse or significant other have a reliable way to check and pay your bills? If not, talk it over and devise a plan before committing yourself.

Tip: If you set up a special email address that you use only and always for bills, and make sure both you and another person check that account regularly, you're less likely to miss billing notices.

- **Do you monitor balances and schedules carefully?** I check my bank balances several times per week, and I have alerts in my calendar reminding me about upcoming payments, so I can be certain there's enough money in the right accounts to pay bills when they come due. If you do too (or if you're willing to change your habits to check your balances regularly), paperless billing is a good fit for you.

As a corollary, keep in mind that sometimes things Just Don't Work. Random server or router outages, or other gremlins in the ether(net), might cause a notice not to arrive, or an alarm not to sound. If you depend utterly on something being "in your face" to remind you about important payments, take the occasional failings of technology into account.

If you use paperless billing, whether by choice or not, please take one piece of advice: always download your statements. That is, if the payee

offers PDF copies of your statements, be sure you keep local copies, and that you download them as soon as they're available. More than once I've needed to refer to a statement urgently for some reason and found that at just that moment, the payee's site was down for maintenance, or only the last three months' statements were available and it was now four months later, or some other problem had arisen. Downloading statements as they come online prevents that sort of thing.

Other Electronic Payment Options

What if a payee doesn't offer a paperless option? This may be true of your landlord, newspaper carrier, day care facility, martial arts teacher, or other people and businesses. Here are some ideas:

- **PayPal:** Ask the payee if you can pay using PayPal. Some people love PayPal and some people hate it, but I've found it useful to make certain kinds of electronic payments that would otherwise require lots of cumbersome paper and inconvenience.
- **Online bill payment:** Many banks (and some personal finance programs) let you electronically request that a payment of an arbitrary amount be made to a given person and address. The bank or payment processor deducts the money from your checking account, prints out a check, and mails it to the payee—but you never have to deal with the paper yourself.
- **Wire transfers:** For recurring payments, especially for larger amounts like rent, your bank may be able to set up a repeating wire transfer direct to the payee's account.

Choose Online Bank Statements

Just as you can usually receive and pay bills electronically, you can usually do the same with monthly bank statements. Most banks and credit unions in the civilized world let you download your statements as PDF files—either instead of, or in addition to, receiving paper statements in the mail. Needless to say, my own preference is to forgo paper entirely, but even if you keep receiving paper statements, I suggest downloading the PDFs, because that's quicker and easier than scanning them yourself—and it gives you a handy, searchable copy of your bank records on your hard disk.

Receive Invoices Electronically

If your work involves paying invoices sent by other people or companies, you can request that they send them electronically rather than on paper. (For the flip side—sending out your own invoices—see [Send Invoices Electronically](#), later in this ebook.) Virtually anyone—and any accounting or billing software—can generate an invoice in the form of a PDF or Word (.doc) file, which can then be sent by email. If you’ve always relied on paper invoices, this will naturally involve some changes to your workflow for making payments, and the details are beyond what I can cover here. But I merely want to point out that you need not continue receiving *unwanted* paper invoices; your suppliers or contractors almost certainly have the capability and willingness to switch to electronic files.

Explore Other Paperless Options

As you begin paying attention to the sources of incoming paper, you’re bound to discover other opportunities for turning off the flow of atoms and replacing them with bits. Let me give you some suggestions to spur your imagination:

- **Catalogs:** I’m always a bit shocked to get a paper catalog in the mail, given that the vast majority of the world’s retailers have most or all of their wares listed on a Web site—and often, have PDF versions of their catalogs available for download too. (My guilty pleasure: the printed IKEA catalog. I also prefer the analog version of their Swedish meatballs.)

If you find it overwhelming to contact each company that sends you catalogs, visit Catalog Choice (<http://www.catalogchoice.org/>), which offers a central location where you can unsubscribe from mailings of catalogs, coupons, phone books, and other advertising from a long list of U.S. companies.

- **Junk mail:** You may not be able to entirely stop junk mail, but you can certainly put a big dent in it by using the following resources:
 - ◊ A free PDF (<http://stopjunkmail.org/sample/kit.pdf>) from the Bay Area Junk Mail Reduction Campaign offers instructions for

anyone in the United States to opt out of credit card offers, sweepstakes, shopping flyers, and other direct mail.

- ◇ Stop pre-approved credit card and insurance offers by filling out a form at <https://www.optoutprescreen.com/>.
- **Business cards:** Rather than take someone's business card, snap a picture of it with your smartphone or digital camera and hand it right back. (I say more about this later, in [OCR on the Go](#).)
- **ATM receipts:** I spent perhaps 25 years dutifully collecting my receipt every single time I withdrew money from an ATM, on the vague theory that they might someday, somehow come in handy between the time of the withdrawal and the time it showed up on my bank's Web site. They never did, so I broke that habit—and you can, too, assuming the ATMs you use give you that option.

Get Paperless Postal Mail

Let's go a bit farther afield. I'm going to bring up something you may regard as unthinkable heresy, or the best thing since upside-down ketchup bottles. You can stop *almost* all of your postal mail entirely by redirecting it to any of several firms that will receive it for you and—at your explicit request—open it, scan it, and deliver PDF copies of your mail online. You can do this not just for yourself but also for your entire business, and this can offer an astonishing degree of flexibility in dealing with your mail.

I can feel some naysayers adopting a skeptical grimace already, but please hear me out. I'm speaking from personal experience here.

Before I moved to Paris, I realized that I'd still want a U.S. mailing address for certain items that would be problematic to send directly to France. One of those things is checks: my French bank is happy to deposit checks in U.S. dollars, but only after charging me a huge fee, applying an unfavorable exchange rate, and making me wait a long time. For example, if my aunt sends me a \$20 check for my birthday, I might as well just toss it—I'll see so little of it that it's not worth the trip to the bank. I could mail a check back to my bank in the States, but then I have to wait for it to make another transatlantic trip, and hope that it doesn't get lost in the famously flaky French postal system.

I discovered a company in Beaverton, Oregon called Earth Class Mail (<http://www.earthclassmail.com/>) that would receive and scan my mail for me, and—this was a big selling point—electronically deposit any checks I happened to receive into my U.S. checking account (see the sidebar [Paperless Check Deposits](#), next page). In addition, I can order stuff online, such as electronics and DVDs from Amazon.com that can only be shipped to U.S. addresses, have it sent to this company, and then request that they forward-ship those items to me anywhere in the world. And that's just the beginning. The company offers a wide range of mail processing services, all available from the comfort of my Web browser or an iPhone app. It's expensive, but it's been a tremendous help to me.

I do still receive paper mail at home, but because most of the companies I do business with have my Earth Class Mail address, the amount of paper I receive is greatly reduced. When I get junk mail, I see it in my account on the Web and click Recycle; for most official mail, I download the PDF and then click Shred. And if anything truly important comes along (like a new credit card), I have the company send it on via FedEx and I get it in a couple of days.

Although my situation is unusual, such a service could be valuable for any person or business wanting to reduce paper and streamline information delivery. For a family, it can give you a quicker, easier way to get digital copies of your mail and a more efficient way of depositing checks—and, of course, you can always have the originals sent if you need them. A business of 50 employees could change its mailing address to that of a mail processing service, set up accounts for all 50 employees, and have the service sort and electronically deliver all the mail rather than staffing a mailroom.

Earth Class Mail charges either \$19.95 or \$39.95 per month to receive mail on your behalf and scan each piece's exterior, depending on which range of services you want and for how many users. Other options, such as opening and scanning the contents of your envelopes and packages, depositing checks, and forwarding mail, require additional fees, as detailed at <http://www.earthclassmail.com/Plans-And-Prices>.

Although Earth Class Mail is the service I personally prefer, and is the most full-featured service of its kind as far as I'm aware, numerous other companies will receive and scan your postal mail for you, some

of them charging considerably less. You can see a helpful (if potentially biased) comparison table in a post on the Earth Class Mail blog at <http://www.earthclassmail.com/blog/post/2010/08/24/The-truth-about-pricing.aspx>.

Paperless Check Deposits

Thanks to a piece of legislation passed in 2004 called the Check Clearing for the 21st Century Act (more commonly known as the Check 21 Act), it's legal for banks and credit unions in the United States to accept digital copies of checks for deposit in lieu of paper checks. This process, which is called Remote Deposit Capture (RDC), is both faster and safer than dealing with paper checks.

Not all banks accept deposits by RDC yet, and of those that do, some offer it only to business customers. In addition, some restrict the amount you can deposit electronically, and the process isn't always perfect. However, more financial institutions are jumping on the bandwagon all the time. The latest twist is using an iPhone app provided by the institution to snap a picture of the front and back of a check and securely send it for deposit.

Examples of RDC-friendly institutions include:

- **Chase QuickDeposit:** Currently available *only* via a free iPhone app (https://www.chase.com/ccp/index.jsp?pg_name=ccpmapp/individuals/online_services/page/iphone-banking)
- **PayPal:** Lets you deposit checks using an app on your iPhone, Android phone, or BlackBerry (https://personal.paypal.com/us/cgi-bin/?&cmd=_render-content&content_ID=marketing_us/mobile_iphone)
- **USAA Deposit@Home:** Supports scans from scanners, iPhones, and Android phones (https://www.usaa.com/inet/ent_utils/McStaticPages?key=bank_deposit)

For a more complete list of financial institutions supporting RDC, visit http://paperless.wikia.com/wiki/Remote_Check_Deposit.

Choose a Document Scanner

Although the steps in the previous chapter should help you to cut down on the volume of paper that comes into your life, it won't stop it altogether—and it won't eliminate all the paper you've already accumulated, either. So we move on to the next phase, which is scanning your documents so you have searchable digital copies, after which you can (at your discretion) recycle, shred, or file the originals. To accomplish this task, you'll need a scanner—and not just any scanner. In this chapter I explain what makes an ideal scanner for this specific application, list a number of good candidates, and help you decide which one to buy.

I want to warn you up front that the type of scanner I recommend is not cheap—a \$50 model probably won't cut it. But if time is money, then you'll recoup your investment many times over.

Learn Why Document Scanners Are Different

Eight or ten years ago, when I first realized I wanted a paperless office, I bought myself a scanner that, according to my research at the time, should have been just the ticket. It was a high-resolution flatbed scanner (the kind typically used for scanning photographs) that came with an automatic document feeder (ADF) attachment, so I could lay a stack of papers in the tray, push the button, and—in theory—end up with scanned copies of all of them a few minutes later. But after trying this a few times, I got so frustrated that I gave up entirely. I want you to avoid making the same mistake, so let me explain the problems with my earlier setup:

- **My scanner was *sloooooow*.** Admittedly, everything was slower in those days, and it wasn't the most powerful scanner money could buy. But even at lower resolutions, scanning a single page could take minutes, and that was far too long. Part of the reason for this

was that the scanner was designed for precision and fidelity—fantastic for photographs, but overkill for text documents.

- **It didn't do duplex scans.** The design of the scanner and ADF was such that it could scan only one side of a page at a time. So, for double-sided documents (as many of mine were), I had to scan one side of all the pages, flip over the stack, scan again, and then laboriously sort the images into the correct order. Yuck!
- **It had no OCR capability.** Because the scanner was designed mainly for photographs, it didn't include OCR software of its own, and I couldn't find an affordable third-party OCR package at the time.
- **It required a lot of fiddling.** I had to put a lot of thought and effort into selecting the right combination of settings for each document—the scanner wasn't smart enough to figure out whether a page was color or black-and-white, what size it was, how to straighten it if it was crooked, and so on. It took a lot of extra manual effort to process the scanned files.

So that experiment was a bust, but I learned a lesson: for document scanning, what you need is a *document scanner*—a device that's designed expressly for that task. And most flatbeds—even newer, faster ones with duplex ADF capabilities—are not the best tool for the job. (I'm not knocking flatbeds, by the way. They're fantastic for scanning photos, books, and large or irregular papers. But if you need to plow through thousands of letter/A4-sized sheets of mostly text, not so much.)

This, that, and the other: *What's true for flatbed scanners also goes for multifunction devices that combine printer, scanner, copier, and (sometimes) fax into one box. Even if they have an ADF, they're most likely unsuitable for the type of scanning I discuss in this book.*

Typical desktop document scanners look somewhat like fax machines: you load the pages to be scanned in the top, and the scanner pulls them through *quickly* (often at a pace of 20 pages per minute or more), scanning *both sides at once*. (Compare this with some duplex flatbed scanners that require two passes to scan both sides of a page—even if the process is automated, it still takes twice as long.)

What's the catch? Well, you trade off resolution, for one thing; document scanners usually max out at 600 dpi, whereas 4800 dpi is more common for flatbeds. But it turns out that for this type of scanning, lower resolution is exactly what you want—and as I explain ahead, in [Set the Resolution](#), there are good reasons to go even lower than 600 dpi.

Another trade-off is that document scanners limit the dimensions of your documents. Letter- and legal-size pages are no problem, and most of them can handle smaller sizes, such as business cards and receipts, too. But larger pages, materials that are especially thick or stiff, and extremely delicate papers often pose problems for document scanners.

Even so, for the vast majority of office-type scanning, the benefits of document scanners far outweigh their limitations.

A subcategory of document scanners includes those designed for portability. In most cases, this means giving up an ADF, settling for slower speeds, or both. A few convertible models attempt to give you the best of both worlds by offering a detachable ADF, leaving you with a small, portable, manual-feed scanner.

Consider Important Scanner Features

I've already mentioned a few features to look for in a document scanner, but let me expand on that list:

- **Single-pass duplex.** All modern desktop document scanners, and about half the portable scanners, offer *duplex* (double-sided) scanning in a single pass, thanks to a pair of facing sensor arrays. The rest of the portable document scanners are *simplex* (single-sided), meaning for double-sided pages you must manually feed the paper in, flip it over, and then feed it in again.
- **An automatic document feeder (ADF).** For desktop scanning, and ADF is a no-brainer; without it you'd have to babysit the scanner whenever you scan multi-page documents. ADF capacities for consumer-level desktop document scanners range from about 20 to 75 pages, so if you have lots of long documents, a higher capacity might be of interest. Some portable scanners have ADFs and some don't; those that do are, naturally, bulkier and heavier.

- **Scanning speed.** Document scanners usually specify two measurements: pages per minute (ppm) and images per minute (ipm). An image is a single side of a page, so for single-pass duplex scanners, the ipm value is double that of the ppm figure. For simplex scanners, ppm and ipm are the same. For the class of scanners I cover here—geared toward consumers and SOHO (small office, home office) customers—a scanning speed of 25 ppm (or 50 ipm) is considered fast, 20 ppm or so is normal, and anything under about 10 ppm is slow—although still much faster than most flatbeds! Be aware, though, that portable scanners are nearly always slower than desktop models, and among portables, those that rely on a single USB cable for bus power tend to be the slowest.
- **Ultrasonic double feed detection.** A small but growing number of document scanners have a special sensor that can detect when two or more pages are stuck together and going through the scanner at the same time. These scanners can alert you to that fact so you can separate the pages and re-feed them—but they won't fix the problem for you automatically.
- **Automatic document type detection.** Most document scanners can automatically determine whether a document is single- or double-sided, what size it is, and whether it's color or black-and-white—and choose the appropriate settings and output format without any manual intervention. Those that don't require extra work on your part.
- **Duty cycle.** Some scanners—typically those with more of a business focus—are rated for a *duty cycle*, which in this context means the number of pages it can handle per day without excessive wear or overheating. Duty cycles in the range of 500–1,000 pages per day are common for the type of scanner I discuss in this book. Of course, a 20 ppm scanner can, in theory, feed through 1,000 pages in less than an hour, but due to practical limitations (such as managing the paper before and after the scan, naming and/or tagging the digital files, and so on), most of us will never approach that limit. Still, if you have a truly massive amount of paper to scan and are highly motivated to do it in a hurry, you should keep an eye on the duty cycle specification.

- **Built-in software features.** Each document scanner includes software of some sort—at minimum, a basic driver or application that enables your Mac to communicate with the scanner and determine what happens with its output. Some of this manufacturer-supplied software includes useful extra features such as automatic cropping, deskewing of images that are slightly crooked, removal of blank pages, and reorientation of images that are upside-down or sideways. Such capabilities are handy, but it doesn't ultimately matter much whether these tasks are performed during the initial scan or during post-processing by a third-party application. If the scanner's own software doesn't do everything you need, one of the bundled programs—or an application you purchase separately—certainly can.

Note: Be sure to read the next chapter, [Choose OCR Software](#), to learn about the capabilities of many third-party OCR programs, including those bundled with a number of popular scanners.

- **Bundled software.** In addition to the manufacturer's software for basic scanner operation, some manufacturers offer much more sophisticated third-party tools that let you choose various types of automatic processing and filing for scanned images. Scanners are often bundled with applications such as Readiris or ABBYY FineReader for OCR, and sometimes include other applications for document management, photo editing, or PDF manipulation. These may either be full, stand-alone packages or feature-limited, customized versions of the software that work only with images coming direct from the scanner. Some scanners include software designed specifically for OCR on business cards or receipts—intelligently turning their data into Address Book records or database entries.

Before you decide which model to buy, you might want to read about some of this extra software in the next chapter ([Choose OCR Software](#)), because you may be able to save money by choosing a scanner that includes software you're interested in. But with the sole exception of the Doxie, every scanner I discuss here comes with software that can create searchable PDFs, and almost any combination can be made to work effectively for most people. But remember that you can always add the third-party software of your choice later, so don't sweat the decision too much one way or the other.

Never the TWAIN

Some manufacturers tout the fact that their scanners include TWAIN drivers, while others (including Fujitsu) take pains to emphasize that they don't. What in the world does that mean? TWAIN, which is commonly though incorrectly thought to stand for "Technology Without an Interesting Name" (it doesn't stand for anything, in fact), is an industry-standard protocol by which an application can talk to a scanner or digital camera. It's great in certain situations—for example, Photoshop and Apple's Image Capture utility work with TWAIN-compatible devices, allowing you to scan images directly into those applications.

For document scanning, however, TWAIN support is neither here nor there. As long as the scanner includes Mac OS X software that can turn its output into a bitmapped file—and they all do—you can get along perfectly well without TWAIN. TWAIN is good for manual interaction with scanners, but the workflow I recommend is almost entirely hands-off—your scanner produces an image file, which is automatically fed through OCR software to produce a searchable PDF. So unless you also plan to use your scanner along with conventional image-processing software that expects TWAIN compliance, you can take or leave TWAIN drivers.

Pick a Mac-Compatible Scanner

In recent years the market for document scanners has blossomed, although a good many models ship with software only for Windows PCs. However, Mac users still have at least a dozen options, which cover a considerable gamut of price, features, and size. This list isn't exhaustive, but rather a representative sampling. Manufacturers add new models and discontinue old models regularly, so I encourage you to do your own research before settling on a scanner to see if a newer or different model may suit you better.

The scanner models that I discuss next are divided into three broad categories: [Desktop Scanners](#) for models meant to remain in one place; [Convertible Scanners](#) for models that work well enough on a desk, but let you separate the scanner itself from the document feeder so you can take it with you; and [Portable Scanners](#) that make more significant trade-offs in favor of mobility over full features.

All the following scanners have an optical resolution of 600 dpi and connect via USB. Prices shown are manufacturers' suggested retail prices, but street prices are frequently much lower.

Desktop Scanners

In an office, where speed and efficiency are primary concerns and you have a bit of spare desk space, a conventional desktop document scanner is the logical choice. Mac-compatible models include these:

- **Canon imageFORMULA DR-2510M:** This speedy scanner zips along at 25 ppm/50 ipm. It has a 50-sheet ADF and ultrasonic double feed detection. Software includes Canon CaptureOnTouch, NewSoft Presto PageManager, NewSoft Presto BizCard Reader (OCR for business cards), and a TWAIN driver.
(http://www.usa.canon.com/cusa/consumer/products/scanners/document_scanners/imageformula_dr_2510m_workgroup_scanner, \$795)
- **Canon imageFORMULA DR-2010M:** Almost a clone of the much pricier DR-2510M, the DR-2010M offers the same software bundle and similar specs—except it's a bit slower (20 ppm/40 ipm) and lacks the ultrasonic double feed detection.
(http://usa.canon.com/cusa/consumer/products/scanners/document_scanners/imageformula_dr_2010m_workgroup_scanner, \$555)
- **Epson WorkForce Pro GT-S50:** The GT-S50 has the highest-capacity ADF of any scanner in this ebook—75 sheets. It also has a high duty cycle of 1,200 pages per day, not that you're likely to hit that limit. It offers brisk 25 ppm/50 ipm duplex scanning, and its bundled software includes Epson Scan, ABBYY FineReader Sprint Plus OCR, NewSoft Presto BizCard 5, and a TWAIN driver.
(<http://www.epson.com/cgi-bin/Store/jsp/Product.do?sku=B11B194011>, \$500)
- **Fujitsu ScanSnap S1500M:** Fujitsu's ScanSnap models have been a favorite of Mac users (including yours truly) for years. The S1500M includes a 50-sheet ADF, scans in duplex at 20 ppm/40 ipm, offers ultrasonic double feed detection, and comes with ScanSnap Manager, Quick Menu, Acrobat 8 Professional, ABBYY FineReader for ScanSnap 4.0 Mac Edition, and Cardiris 3.6 for ScanSnap—but not TWAIN support, for what it's worth.

(<http://www.fujitsu.com/us/services/computing/peripherals/scanners/scansnap/scansnap-s1500m.html>, \$495)

- **NeatDesk for Mac:** NeatDesk offers duplex scanning at “up to” 24 ppm/48 ipm and has a 50-sheet ADF. Well, I should clarify that—it includes a special paper input tray that holds up to 15 business cards, plus 15 receipts, plus 15 letter-sized documents at the same time, in case you’re scanning a lot of mixed-size papers—but you can remove this tray and instead enjoy the higher capacity (assuming all the pages are the same size). Although the scanner software includes TWAIN support, you’ll most likely want to use the included NeatWorks software, which not only does OCR but also offers specialized processing of business cards and receipts. (<http://www.neatco.com/products/neatdesk-for-mac>, \$399.95)

Convertible Scanners

If you expect to do most of your scanning at your desk and want the advantages of a desktop scanner (namely, faster performance and an ADF) but also need to scan on the go occasionally, consider one of these convertible scanners. On your desk it looks and acts much like any other desktop scanner, but when you detach the ADF, you get a stand-alone, manually fed scanner mechanism that can operate on USB bus power. Examples include the following:

- **IRIScan Pro 3:** On your desk, it has a 20-sheet ADF and offers 15 ppm/30 ipm duplex scanning. Separate the scanner mechanism, and you have a USB-powered 7 ppm/14 ipm portable scanner. Comes with Readiris Corporate 12 and Cardiris Pro 5. (<http://www.irislink.com/c2-1647-189/IRIScan-Pro.aspx>, \$399)
- **Visioneer Strobe 500:** This scanner also has a 20-page ADF and scans in duplex at 15 ppm/30 ipm. It’s bundled with ExactScan Capture and NewSoft Presto PageManager. (<http://www.visioneer.com/products/S500/>, \$399.99)
- **Xerox DocuMate 3115:** Like the previous two models, this one has a 20-page ADF and operates at 15 ppm/30 ipm in duplex. You can detach the ADF to get a portable scanner, but there’s a slight catch: you must use two USB cables (or an AC adapter) to power it. Includes Nuance OmniPage Pro and TWAIN drivers. (<http://www.xeroxscanners.com/en/us/products/DM3115/default.asp>, \$399.99)

Portable Scanners

All the scanners in this last group are marketed as “portable,” though that word has a range of meanings.

Four of these scanners (the Doxie, IRIScan 2, IRIScan Anywhere, and NeatReceipts) are genuinely tiny, all weighing well under a pound. The Visioneer Strobe 400 is a step up in size and weight (1.6 pounds), but offers duplex scanning, which the smaller scanners lack. The Canon imageFORMULA P-150 slides farther along the scale, at about twice the size of the Doxie and three times the weight (about 2.1 pounds), while the Fujitsu ScanSnap S1300 is larger and heavier still, at around 3.1 pounds—still portable, but only just. However, only the Canon and Fujitsu models (both also duplex-capable, by the way) include automatic document feeders, which significantly increase their usefulness.

All these scanners can run on USB bus power—no AC adapter required—which certainly does increase portability.

Mac-compatible portable scanners worth considering include:

- **Doxie:** Apparent’s much-ballyhooed, small, inexpensive scanner can send scanned documents directly to any of numerous cloud-based services, if that’s your thing. However, it’s the only scanner of all those I cover in this ebook to ship without OCR software, which means you’ll have to find, buy, and configure an OCR application on your own—and you’re likely to sacrifice some ease of use because it won’t be as closely integrated with the scanner as is usually the case. Depending on your settings, you can expect up to 6 ppm/ipm from this manual-feed simplex scanner.
(<http://www.getdoxie.com/>, \$149)

Tip: Read much more about my impressions of the Doxie, as well as the Fujitsu ScanSnap S1300 (mentioned just ahead in this list) in “ScanSnap S1300 vs. Doxie: Two Portable Document Scanners” (<http://db.tidbits.com/article/11458>).

- **Canon imageFORMULA P-150:** This largish model (as portable scanners go) offers duplex scanning and a 20-sheet ADF; it can also scan at 15 ppm/30 ipm in black-and-white or grayscale, 10 ppm/20 ipm in color, which is the fastest color scanning of any device in this class. But there’s a minor gotcha: you get such fast scanning only

when use an AC adapter or run two separate USB cables between the scanner and your computer so it gets an extra boost of power—otherwise, cut those figures in half. The P-150's comes with Canon CaptureOnTouch and CaptureOnTouch Lite (the latter of which is built into the scanner itself), NewSoft Presto PageManager, NewSoft Presto BizCard, and TWAIN drivers.

(http://www.usa.canon.com/cusa/consumer/products/scanners/document_scanners/imageformula_p_150m_personal_document_scanner, \$295)

- **Fujitsu ScanSnap S1300:** The largest and heaviest of these portable scanners, the ScanSnap S1300 is nevertheless quite capable, sporting a 10-sheet ADF and duplex performance of up to 16 ppm/32 ipm for grayscale documents and 8 ppm/16 ipm for color. But, like the Canon imageFORMULA P-150, it needs extra juice (supplied by an AC adapter) to reach maximum scanning speed. Without an adapter, you must always use two USB cables—but you'll still get only half the top speed. The software includes ScanSnap Manager, Quick Menu, ABBYY FineReader for ScanSnap, and Cardiris for ScanSnap, but *not* Acrobat Professional, as the desktop S1500M does.
(<http://www.fujitsu.com/us/services/computing/peripherals/scanners/scansnap/s1300.html>, \$295)
- **IRIScan 2:** Manufacturer I.R.I.S. publishes very little in the way of specifications for this nicely compact scanner—I can't tell you how fast it is, but I do know that it's a simplex scanner with no ADF, and that it's bundled with Readiris Pro 11 and either an older or newer edition of Cardiris Pro, depending on which version you buy.
(<http://www.irislink.com/c2-1656-189/Overview-IRISCan-2.aspx>, Express version with Cardiris Pro 3, \$129; Executive version with Cardiris Pro 4, \$169)
- **IRIScan Anywhere 2:** Although superficially similar to the IRIScan 2, this scanner is unique in that it can scan without being attached to a computer at all—making it, in that sense, the most portable scanner of all these. Scans can be stored in 512 MB of internal memory, on an SD card (a 1 GB card is included), or on a USB flash drive, or internal memory (512 MB)—and then transferred to your Mac when convenient. The scanner is battery-powered and recharges via USB. On the downside, it saves scans

only in JPEG format, lacks an ADF, and scans only one side of the page at a time. Bundled software is Readiris Pro 12, Cardiris Pro 5, and ACDSee Express 2.0 for Mac (for photo management). (<http://www.irislink.com/c2-1700-189/Overview.aspx>, \$199)

- **NeatReceipts for Mac:** This is currently the tiniest Mac-compatible portable document scanner—it's slightly smaller than Doxie and a few grams lighter. It performs single-sided scans at up to 4 ppm/ipm portable and includes NeatWorks software. (<http://www.neatco.com/products/neatreceipts-for-mac>, \$199.95)
- **Visioneer Strobe 400:** If you want duplex scans on the go, this is the smallest scanner to offer that feature, although at a rather slow 5 ppm/10 ipm and without an ADF. It's bundled with ExactScan Capture and NewSoft Presto PageManager. (<http://www.visioneer.com/products/S500/>, \$299.99)

***Even smaller:** If you're looking for serious portability, consider a pen- or wand-type scanner (see the sidebar [OCR for Students and Researchers](#), later) as a supplemental device.*

Joe's Scanner Recommendations

In my estimation, modern document scanners are more alike than different, and you can probably get acceptable results with just about any of them. I'd urge you to look for three main things:

- An ADF
- Duplex scanning
- OCR software

You can get all that with any of the desktop or convertible models, and about half the portable models. If you spend a lot of time on the road, I'd have no hesitation recommending one of the tiny, ADF-less, simplex, portable scanners as a supplemental tool—but I wouldn't suggest it as one's only, or primary, scanner.

If pressed to recommend just one brand of scanner, I'd give the nod to Fujitsu's ScanSnap line, as I've used four different ScanSnap models myself, and I like both their hardware and their software. And, despite

its slower speed and bulk compared to other compact scanners, I'm quite fond of the S1300 for both desktop and portable use—especially given how much less expensive it is than the desktop S1500M model.

Sharing Scanners

All the scanners I cover in this ebook connect directly to a single Mac using USB—and they require specific software to be running on that Mac. Even though Mac OS X includes a built-in scanner sharing feature, it doesn't work with this sort of document scanner. So if several people in your home or office want to share a scanner, you may run into problems. For example, if Phil wants to use the scanner hooked up to Tammy's Mac, he'll have to interrupt her work, and then transfer his scanned documents back to his own Mac via file sharing—and Tammy will have to take pains to keep her own scans in a separate place.

You can address problems like this in any of several ways:

- **Buy more than one scanner.** Put one on the desk of each person who needs to scan regularly.
- **Have a Mac dedicated to scanning.** Hook up your scanner to a centrally located Mac that isn't needed for other activities. Configure it to save scans to a network-accessible location, and let everyone do their scanning there.
- **Buy a network document scanner.** Several companies, including Canon and Fujitsu, make devices similar to the ones described here, but designed more as stand-alone computers with built-in scanners (or the other way around, depending on how you look at it). You connect them to your Ethernet network (no computer required), and use the either a touchscreen or built-in keyboard to direct scanned documents to an email address, a network volume, an FTP server, or even to a USB flash drive. These devices—which cost upwards of \$2,000—are fast and have generous duty cycles, but they also require any OCR or other post-processing of scans to take place on individual users' computers.

Choose OCR Software

One way or another, you need software to turn your raw scans into searchable PDFs. OCR software of some sort most likely came with your scanner, but if it didn't—or if you're not happy with its features or accuracy—you have oodles of other choices. This chapter provides an overview of the major factors to consider when choosing Mac-compatible OCR software, along with a fairly thorough list of applications from which you can choose.

Determine Your Needs

I haven't personally tried every scanner and every OCR application mentioned in this book, but I'm going to go out on a limb and suggest that almost any combination of scanner and software can be made to yield acceptable results for the vast majority of users. I have my preferences, but based on the testing I've done, my sense is that unless you have unusual needs or are exceptionally picky, the path of least resistance is simply to use whatever software came with your scanner (see [Choose a Document Scanner](#)) and not belabor the decision.

As a result, I don't go into tremendous detail in this chapter about the specifics of each and every OCR application. Rather, I stick with some fairly high-level concepts and suggest that if you're curious about a particular application, you download a demo version (assuming the developer offers one; most do) and try it yourself.

However, you may be the sort of person who should look more deeply into the capabilities of OCR tools before jumping in if any of the following statements apply to you:

- **You have (or plan to get) a Doxie.** As of publication time, Doxie is the sole scanner, of those mentioned in this ebook, that doesn't include any OCR software of its own.
- **You need to scan in multiple languages.** All the OCR programs that I discuss here support English text, and most of them support at least a few other languages too. If you have documents in more than one language (and especially if you have documents

that mix more than one language on a page), you'll need to look for OCR software that supports it, as I discuss in the next topic.

- **You want capabilities your existing OCR software lacks.** Perhaps you've tried the software that came with your scanner and found it to be too slow, too cumbersome to use, or missing features you wish you had. If so, by all means look for a replacement!
- **You need more-advanced PDF processing features.** Some of the OCR programs here do nothing but spit out a searchable PDF file, whereas others let you manipulate PDFs to your heart's content. If you want fine-grained control over your searchable PDFs, look for such a program.

If none of those needs describes you, feel free to skip to the next chapter, [Configure Your Software](#). Otherwise, continue reading to learn about features to consider when evaluating OCR software.

Consider Important OCR Features

Comparing OCR applications for Mac OS X is less of a science than an art—and a messy one at that. The information available on developers' Web sites varies tremendously in scope and detail. Some have elaborate user manuals, while others include only a brief how-to guide. Many offer downloadable demo versions, but some don't. Developers use different terms to describe the same features, and have wildly divergent ideas about what constitutes a nicely usable interface. A feature that one developer considers too obvious to mention may be a main selling point for another. And although most of these applications claim to have outstanding OCR accuracy, objective measurements are notoriously difficult to come by.

In short, it's harder than one might expect to form meaningful judgments about OCR software without trying them out (and even then, results may be ambiguous). However, a few factors are worth looking for:

- **Accuracy:** No OCR software is 100 percent accurate, but, it's been a long time since I used OCR software that didn't come close enough to meet my basic searching and archiving needs. Nevertheless, because so many factors influence OCR accuracy—not

the least of which is the quality of the raw scans that your scanner produces—it's possible for two people to have dramatically different results with the same application and even the same document. So, my advice is to take developers' claims of accuracy with a teaspoon of salt. The best way to determine whether results are good enough for your needs is to try an OCR tool on freshly scanned documents from your scanner of choice.

- **Languages:** If not all the documents you'll scan are entirely in English, you need to pay attention to the software's multilingual support. The first task of OCR software is to recognize individual characters. If a document contains characters that don't appear in English (such as Ω or ø), your OCR software must know about those other character sets in order to interpret them properly—otherwise, they'll be represented by the nearest equivalents in the English alphabet. Beyond that, nearly all modern OCR software uses language-specific dictionaries and algorithms to improve its accuracy dramatically. If a certain group of pixels might be either *torn* or *tcm*, a dictionary can compare those two strings and conclude that, for English, “torn” is the much more likely interpretation. The same goes for other languages—even if they use the same alphabet as English, you'll get much better results if the program knows about the rules of that particular language.

Even with support for multiple languages, though, OCR software may need help to narrow things down. If you specify upfront which language a document is in (something usually done via the software's preferences), you'll get better results than if the software has to guess. Often, you can specify both a primary language and one or more secondary languages, to improve the odds that the software will use the right rules as needed. Even so, some OCR software that does perfectly well with pages that are entirely in a single language has trouble determining when languages change within a page. Once again, this is best judged by selecting some representative documents from your collection, scanning them using the settings I cover in the next chapter, and then checking to see what results the OCR software provides. Be sure to verify that they are, in fact, searchable, too. OCR software sometimes handles non-Latin text in ways that make searching (and even copying text) problematic.

- **Automation support:** Virtually all the applications here support at least a bare minimum level of automation—that is, there’s some way to configure them, perhaps in conjunction with your scanner’s included driver, such that newly scanned images are converted automatically into searchable PDFs without any need for manual intervention. (Sometimes this requires a bit of fiddling to set up initially, but I discuss that in the next chapter, [Configure Your Software](#).) However, in many cases, better still is the capability to automate PDF processing in more elaborate ways using AppleScript or Automator, a topic that I discuss in [Automate OCR](#), later.
- **Handwriting support:** Recognizing text that was produced by a printer is relatively easy for a computer; recognizing handwritten text is considerably more challenging. A minority of OCR programs for the Mac claim to be able to recognize (neat, printed) handwriting to one degree or another, so if you need to scan lots of handwritten notes, be sure to look for that feature.
- **Business card support:** Any OCR program can recognize the raw text on a business card, but some have additional intelligence that enables them to infer (with mixed results) which string of text is a name, which is a title, which is a phone number, and so on—and then to put all those pieces into their appropriate fields in a database record that you can then export to, or sync with, Address Book or another contact manager. If you scan lots of business cards, this capability can save you lots of manual effort.
- **Receipt processing:** In much the same way as some OCR software recognizes the contents of a business card, other programs are designed to make sense of receipts—specifically looking for information such as date, merchant name, sales tax, and total, and storing that information in a database you can use for tracking expenses, preparing tax returns, and similar tasks.
- **PDF editing:** A few of the applications I list ahead are designed mainly for creating, editing, annotating, optimizing, and otherwise transforming PDF files—with OCR merely being one of their many tricks. If you need such advanced features, then choosing one of these multifunctional applications may make your life easier.
- **Layout retention:** Although the focus of this book is on creating searchable PDFs, sometimes you may need to convert a scanned

image into a live document you can alter in, say, Word or Excel. Several of the OCR programs listed ahead can do just that—creating editable documents whose layouts closely resemble those of the originals, including graphics, tables, and even similar fonts. Although the end result won't be as faithful to the look and feel as a searchable PDF, it will be much easier to work with if you need to do anything other than search, read, and copy the text.

- **Document management:** Once you have a searchable PDF, how do you search it? The answer may be Mac OS X's system-wide Spotlight feature, in which case you can put the file in any convenient folder in the Finder. However, you may prefer an application that lets you tag, catalog, cross-reference, and search files with far greater flexibility and precision. If so, look for an application that includes not only OCR but also document management capabilities.

With those thoughts in mind, let's look at the range of OCR programs that you can choose from. (I offer my recommendations after the list of applications, in [Joe's OCR Software Recommendations](#).)

Pick a Mac OCR Package

A few years ago I'd have been hard-pressed to come up with more than three Mac applications that could perform OCR and produce searchable PDFs. Nowadays, there are more than a dozen candidates, and more appearing all the time. I don't guarantee that this list is complete, but it should give you a good idea of what's available:

- **ABBYY FineReader Express for Mac:** Customized versions of this software are often bundled with scanners, but ABBYY recently began selling it as a stand-alone product too. FineReader recognizes 171 languages (and includes dictionaries for 36 of these), and it supports OCR on documents that mix up to three languages. It also offers limited support for recognizing hand-printed text. The software offers a few image-manipulation tools, such as rotation and inversion, but is designed to be as simple and hands-off as possible. However, it doesn't support AppleScript or Automator. (http://www.abbyy.com/finereader_for_mac/, \$99.99)

- **Acrobat Pro:** For thorough control over every aspect of PDF files, the top-of-the-line product in Adobe's Acrobat line is the gold standard. It just so happens that OCR is among its talents. It recognizes text in 42 languages, of which you must pick one as the primary language. It also offers an option called ClearScan: if you choose, Acrobat Pro replaces the bitmapped image with text that closely approximates the fonts, styles, and layout of the original (although not in a form that can be edited in other applications). This can save a tremendous amount of disk space, and for many documents, the fidelity is quite good. Acrobat Pro also lets you perform OCR on documents in batches, and although its AppleScript support is simplistic, with tinkering you can perform a fair amount of automation. (<http://www.adobe.com/products/acrobat.html>, \$449; also included with some Creative Suite 5 bundles)

Note: At publication time, Adobe had announced, and begun taking pre-orders for, Acrobat X Pro. Because I haven't seen it yet, I don't know how (if at all) its OCR features have changed.

- **Cardiris Pro:** From the developer of Readiris (discussed later in this list), Cardiris Pro, a version of which is bundled with several scanners, specializes in identifying information on business cards, in order to create records that can be easily added to Address Book. (<http://irislinktest.iriscorporate.com/c2-1109-189/Cardiris-pro-4.aspx>, \$99)
- **DEVONthink Pro Office:** Primarily designed as a document manager—and a fantastic one, at that, if I may say so—DEVONthink Pro Office lets you categorize, tag, sort, link, and search documents of all kinds with ease. And, not only does it come with an integrated version of ABBYY FineReader (see the description earlier in this list), it also has special hooks that let it receive scans directly and seamlessly from any Fujitsu ScanSnap scanner, with no special configuration required. (<http://www.devon-technologies.com/products/devonthink/>, \$149.95)

I think I can: To learn all about DEVONthink, including how to use it for OCR and general-purpose document management, read my book [Take Control of Getting Started with DEVONthink 2](#).

- **Evernote Premium:** Evernote is the name of both an application (available for Mac OS X, Windows, and iOS, among other platforms) and an accompanying cloud-based service that lets you save, search, and share documents of many kinds—from notes to photos to PDF files—on nearly any device. The applications, and the basic service, are free, but a paid service called Evernote Premium adds several options, including support for creating searchable PDFs from scanned images or digital photographs. The OCR conversion itself happens in the cloud. Currently, only English, Japanese, and Russian are supported, however.
(<http://www.evernote.com/about/premium/>, \$5 per month or \$45 per year)
- **ExactScan 2 Pro:** This software recognizes text in 24 languages, although you can choose only one at a time. It offers a variety of ways to process scanned images, including automatic cropping and deskewing, deleting blank pages, and adjusting sharpness and contrast. It also supports AppleScript for automation.
(<http://www.exactscan.com/>, \$129)
- **NeatWorks for Mac:** This software, which is bundled with the developer's scanners (NeatDesk and NeatReceipts), is also available separately for those with other scanners. Its main claim to fame is that it can recognize the contents of business cards and receipts and store them in a searchable database, from which they can also be exported or synced in various ways. The software also provides document management for run-of-the-mill searchable PDFs. One downside, however: NeatWorks currently supports only English.
(<http://www.neatco.com/products/neatworks-for-mac>, \$79.95)
- **NewSoft Presto PageManager SE:** PageManager is an oddly designed and rather un-Mac-like application, but it does get the job done, and includes a document manager that handles all kinds of scanned documents, including photos. It recognizes 13 languages, of which you can choose only one at a time. PageManager has no AppleScript support, and even basic usage requires you to switch between two or more applications.
(<http://www.newsoftinc.com/products/product-main.asp?productid=NAIo053>, \$69.95)

- **OmniPage Pro X for Mac:** OmniPage Pro has a wealth of features commensurate with its price. It can recognize text in any of 59 languages, although it supplies dictionaries and detailed analysis for only 13; you can specify one or more secondary languages in addition to a primary language. The software can run interactively (with tremendously fine-grained control over the results, and the capability to improve its accuracy based on your corrections) or automatically, and it supports AppleScript. You can optionally retain the original layout and save documents in editable formats. (<http://www.nuance.com/for-business/by-product/omnipage/mac/>, \$499.99)
- **OCRKit:** This no-frills OCR software from the developer of ExactScan Pro 2 offers drag-and-drop conversion to searchable PDF from any common bitmap file format. It recognizes 12 languages, supports AppleScript, and is also available as an iPhone app. (<http://ocrkit.com/>, \$49)
- **Paperless:** Somewhat along the lines of NeatWorks, Mariner Software's Paperless is a document management application that performs OCR on scanned documents, with special treatment for receipts and other financial records, which can be decoded and entered into a database—and exported for use with Quicken or spreadsheet applications, if you wish. Like DEVONthink Pro Office, it integrates directly with Fujitsu's ScanSnap scanners. And, it includes an application called ScanHelper, which lets you easily route scanned documents to specific applications. Unfortunately, Paperless currently supports OCR only in English. (<http://marinersoftware.com/paperless>, \$49.95)
- **PDF OCR X:** This program offers easy, drag-and-drop conversion of scanned documents to searchable PDF. To recognize text in a language other than English (of which 32 are available), you need only download and install a free language pack. A free version supports only single-page documents, while the paid version places no limits on document length. No AppleScript support is included, however. (<http://solutions.weblite.ca/pdfocrx/>, Community Version, free; Enterprise Version, \$29.99)
- **PDFpen:** When I need to make a quick edit to a PDF (such as superimposing a copy of my handwritten signature—see [Sign](#)

[Documents without Paper](#)), I immediately turn to PDFpen, which makes this sort of activity simple. Among many other features, it also offers OCR in 12 languages and solid AppleScript support. (<http://smilessoftware.com/PDFpen/>, \$59.95)

- **PDFpenPro:** The Pro version of PDFpen has extra features—it can convert Web pages into multi-page PDFs, create PDF forms, and add a table of contents for easier navigation—but its OCR capabilities are the same as the less-expensive PDFpen. (<http://www.smileonmymac.com/PDFpenPro/>, \$99.95)

PDFpen made easy: For a thorough tour of PDFpen and PDFpen Pro, read [Take Control of PDFpen 5](#).

- **Prizmo:** What sets this OCR software apart from the rest is that it delivers good results from scanned documents and it offers unique features for processing photos of documents taken with digital cameras. Prizmo can correct problems like skewed perspective, lens distortion, and page curvature—and then perform OCR on the cleaned-up image. The result is more-accurate OCR plus a vastly improved underlying bitmap. Prizmo can recognize text in ten languages, too. Unfortunately, it has no AppleScript support and can't be configured to process images automatically when they're opened; manual interaction is required. At present, it doesn't work with multi-page documents—each page must be processed separately. (<http://www.creaceed.com/prizmo/mac/>, \$49.95)
- **Readiris Pro for Mac:** Readiris is one of the more advanced OCR programs. It recognizes text in 125 languages, and it even supports mixed character sets in a single sentence; an Asian edition adds support for Hebrew (I know, not really an “Asian” language), traditional and simplified Chinese, Japanese, and Korean. The documentation emphasizes that although Readiris recognizes *handprinting*, it doesn't recognize *handwriting*. Like OmniPage Pro, Readiris normally runs interactively and learns as you correct its errors, but you can convert documents to searchable PDF using drag-and-drop or—with a little help—with an AppleScript folder action (see [Automate OCR](#)). And, it can optionally save documents in an editable form that preserves the original layout. (<http://www.irislink.com/c2-1685-189/Readiris-12-for-Mac.aspx>, \$129)

- **VelOCRaptor:** Barely edging out PDF OCR X as the least expensive of these packages, VelOCRaptor offers “no-click” drag-and-drop conversion, and includes an Automator action to facilitate creating your own automated workflows. However, the developer notes that because it relies on the open-source OCRopus OCR engine, which is still incomplete, accuracy is lower than with competing applications. And, at present, it supports only English. (<http://www.velocraptor.com/>, \$29)
- **VueScan:** Although primarily designed to work with one-page-at-a-time flatbed scanners, VueScan supports a huge number of scanner models; has versions available for Mac OS X, Windows, and Linux; and lets you create searchable PDFs. The program contains built-in support for English, and you can download free files that add support for 32 additional languages. Unfortunately, VueScan offers no AppleScript support. (<http://www.hamrick.com/>, Standard edition, \$39.95; Professional edition, \$79.95)

Joe’s OCR Software Recommendations

Of the applications discussed in this chapter, I have experience with about half. All the Mac OCR tools I’ve tried have had acceptable accuracy, but some are easier to use than others.

My personal preference is for a tool that works more or less invisibly behind the scenes. I like to configure things so that images from my scanner get the OCR treatment without interrupting my work or taking over my screen. A few of these applications—Presto PageManager, OmniPage, and Readiris—are what I think of as “old school,” in that their design assumes you’ll open the application, initiate a single-page scan from within it (typically, on a flatbed scanner), watch the OCR as it progresses, edit the final document, and then save it. There’s nothing wrong with any of that—and all three of those applications *can* be used in a much more automated, hands-off way—but I tend to gravitate toward applications with a more modern, minimalist aesthetic.

I’ve been pleased with the results, interface, and flexibility of ABBYY FineReader—or at least the versions of it included with Fujitsu’s ScanSnap scanners and DEVONthink Pro Office. It’s reasonably fast,

recognizes text in multiple languages without any fuss (I scan about equal amounts of English and French text), and requires no interaction under normal circumstances. I previously used Acrobat Pro along with an AppleScript folder action (see [Automate OCR](#)), which worked fine, except that limitations in Acrobat's design prevented me from doing anything else with my Mac while scanning and processing documents.

If you need an uncommon feature, you should go for one of the tools that offers it. Otherwise, if you're looking for strictly OCR, I'd lean toward ABBYY FineReader. For PDF editing, I'd choose PDFpen over the much-more-expensive Acrobat Pro; if document management is your focus, I'd go with DEVONthink Pro Office; and if you particularly need to deal with receipts, I'd give a slight nod to Paperless.

OCR for Sheet Music

When I think about "business documents," what normally comes to mind are pages full of text, tables, and graphics. But if your business happens to involve music, you may be interested to know that you can perform advanced OCR on sheet music, too! Specialized software can recognize notes and other musical symbols, transforming a scanned sheet into a file readable by various popular notation and scoring applications—and even into a MIDI file that you can play back immediately. I'm currently aware of two Mac applications that can do this:

- **PhotoScore Ultimate:** Besides performing OCR on printed music, this program can also read handwritten scores. (<http://www.neuratron.com/photoscore.htm>, \$249)
- **SmartScore X:** This OCR program also includes a full-featured musical notation editor. (<http://www.musitek.com/X/>, editions range in price from \$49–\$399 depending on the combination of features you need)

Configure Your Software

The best OCR software in the world can still produce lousy results if you don't set it up just so and give it the best possible input material to work with. You're looking for a combination of settings that gives you the best balance of OCR accuracy, processing speed, image quality, and file size. I help you figure out what those are in this chapter. I also show you several ways to automate scanning so that it takes as little manual effort as possible, and provide guidance about how to file your scanned documents so you can find and use them quickly in the future.

Understand the Scanning Process

The fact that your scanner includes OCR software, or that you've purchased such software separately, doesn't necessarily mean that the process of creating a searchable PDF from a scanned document will be straightforward. It *might* be, but more often than not, it's necessary to think through a multi-stage process, which may involve configuring the settings in two or more pieces of software.

Every scanner comes with customized software that handles the low-level communication between the scanner and your computer. For example, if you have a Fujitsu ScanSnap, the scanner-specific software is called ScanSnap Manager; with a Canon imageFORMULA scanner you'd use Canon CaptureOnTouch; with an Epson scanner it would be Epson Scan; and so on. This software is responsible for taking the raw data your scanner produces and turning it into a bitmap image stored on your hard disk. As a result, this software always provides some means of setting preferences such as resolution, destination, and file format. The scanner's software may include many other capabilities, too, but for the moment, assume that its only purpose is to spit out a bitmap image, as shown in the top row of **Figure 1**.

If you were scanning photos, then the bitmap image would be all you'd need. But for scanned documents, an additional step is generally necessary (the bottom row in **Figure 1**)—another piece of software opens

the bitmap image, performs OCR on it, and generates a searchable PDF file.

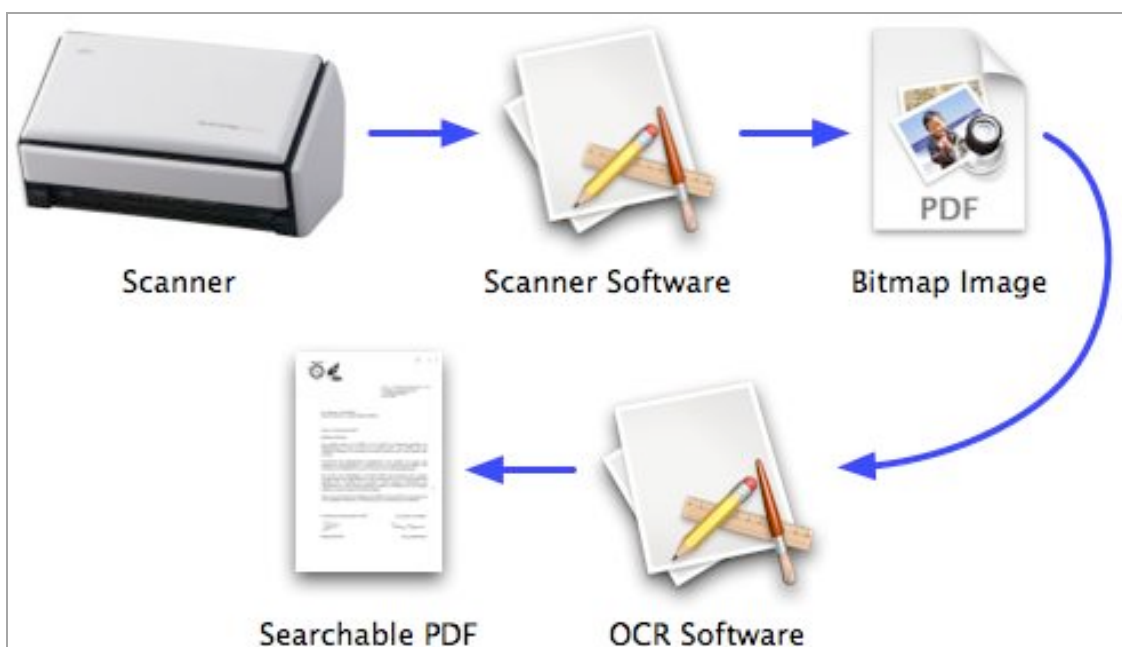


Figure 1: The typical path a document takes from scanner to searchable PDF.

In short, it's often necessary to work with two separate applications to end up with a searchable PDF. (And, if you want to use a document management program to catalog your scanned documents, you might end up working with *three* applications.) I emphasize this not only to avoid any confusion about what happens where but because I want to be crystal clear about your goal in scanning documents:

What we're trying to do: Produce searchable PDFs from paper documents with as little manual effort as possible—ideally, no more than a single button press.

Since you want to avoid manual effort whenever you scan, you may feel some concern about the fact that two or more applications may be involved. Fortunately, the process has several potential shortcuts:

- Some scanner software has built-in OCR capabilities, so you can skip the second application and go straight from scanner to searchable PDF without saving an intermediate bitmap file. Similarly, some document management software can do OCR, so you can pass it a bitmap image and let it do the rest.

- Most scanner software gives you the option to send bitmaps directly to an OCR (or other) application, so even though the file is saved somewhere on disk in the process, you need not do anything with it yourself.
- Most OCR and document management software can be configured such that as soon as it opens a document, it automatically performs OCR and saves your document as a searchable PDF. In other words, if your scanner's software is set up to send a bitmap straight to your OCR software (as in the last point) and your OCR software is set up to recognize text and save the resulting document automatically, you get essentially the same end result as if OCR were built right into the scanner's software—everything happens invisibly, in the background, without any intervention.
- If your scanner's software, OCR software, and/or document management software isn't designed to facilitate this sort of automation, there may still be a way to coax it into behaving as though it did; I discuss this ahead, in [Automate OCR](#).

Now that you know where we're going, your first step is to consult the documentation that came with your scanner and open whatever application is responsible for managing those low-level settings such as resolution and destination. In the next couple of topics, I give you some guidance as to how you should configure that software to end up with a bitmap image suitable for OCR, and to send that image (if possible) directly to the software that'll handle the OCR process.

Because space doesn't permit me to give detailed instructions for every application, I illustrate most of the settings that follow with examples from Fujitsu's ScanSnap Manager software. If you're using software from another manufacturer, the options and wording will vary, but you should be able to find roughly comparable settings.

Set the Resolution

The first decision to make is the resolution at which your scanner will save images of your scanned documents. Every scanner mentioned in this book has an optical resolution of 600 dpi, so that's the maximum—but they can all be set to scan at lower resolutions, too.

The choice of this single number has significant implications:

- **OCR accuracy:** Up to a point, higher-resolution scans produce more-accurate OCR results. At very low resolutions, such as 75 dpi, there's too little data to ensure good quality OCR, especially if the text is small. Surprisingly, though, it turns out that the relationship between resolution and accuracy isn't linear—it starts to drop off after 300 dpi. That is, a 300-dpi scan could be twice as accurate as a 200-dpi scan, whereas a 600-dpi scan may offer only a tiny additional improvement. A very high resolution may even lead to lower accuracy, as dust, streaks, and other random marks are more likely to be misinterpreted as text. In my experience, the difference in accuracy over 300 dpi (assuming a black-and-white document) is usually miniscule—and indeed, most OCR software specifies 300 dpi as the optimal input resolution.
- **File size:** Higher resolution equals larger files. Depending on compression settings, a 600-dpi scan can produce files up to four times the size of a 300-dpi scan. For a single file, this difference may not be significant, but once you've scanned hundreds or thousands of files, it can add up—and remember, all that data must be backed up, too. So, it's logical to use the lowest resolution consistent with the desired results.
- **Processing speed:** It takes longer for a document to travel through the scanner when being scanned at a higher resolution than at a lower resolution. In addition, when it comes time for your OCR software to work with the document, it'll require more time, and more CPU power and RAM, to process a higher-resolution scan than a lower-resolution one.
- **Reprint fidelity:** Higher-resolution scans are more accurate than lower-resolution scans, which means that if you should ever need to print a document that you've scanned, you'll get clearer, crisper results with a higher resolution. The difference between printouts of a 300 dpi image and a 600 dpi image may not be readily apparent to the naked eye except at very small font sizes, but documents scanned at, say, 150 dpi will look distinctly fuzzier and more pixelated (think of faxes) than those at 300 dpi or higher.

In short, in the vast majority of situations, 300 is the magic number—at least for black-and-white documents. (For color or grayscale

documents, which have more data to work with per pixel, you can get away with somewhat lower numbers.) Go higher than that and you'll get a big increase in file size and processing time but only a tiny increase in OCR accuracy and reprint fidelity. If you're scanning documents with very fine lines or tiny text sizes, it's worth bumping the resolution up a bit, but otherwise, stick with 300 dpi.

Remember that this is the resolution at which the initial scanned image will be saved—before any OCR takes place. That means you must configure it in the scanner's own software package. To illustrate with ScanSnap Manager, the Scanning tab (**Figure 2**) offers the following choices, with better-quality options resulting in slower scans:

- **Auto:** Uses the “Better” setting except when scanning business cards, for which it switches to “Best”
- **Normal (Color/Gray: 150 dpi; B&W: 300 dpi)**
- **Better (Color/Gray: 200 dpi; B&W: 400 dpi)**
- **Best (Color/Gray: 300 dpi; B&W: 600 dpi)**
- **Excellent (Color/Gray: 600 dpi; B&W: 1200 dpi²)**

Assuming that most of the documents you'll scan are black-and-white, Normal or Auto settings are perfectly fine, but if you'll be scanning lots of detailed color documents too or want a bit of a boost in quality without increasing file size and processing time much, Better would be a good compromise.

² The ScanSnap's optical resolution is only 600 dpi, but it can use a software trick called *interpolation* to simulate a higher resolution—in this case, 1200 dpi.

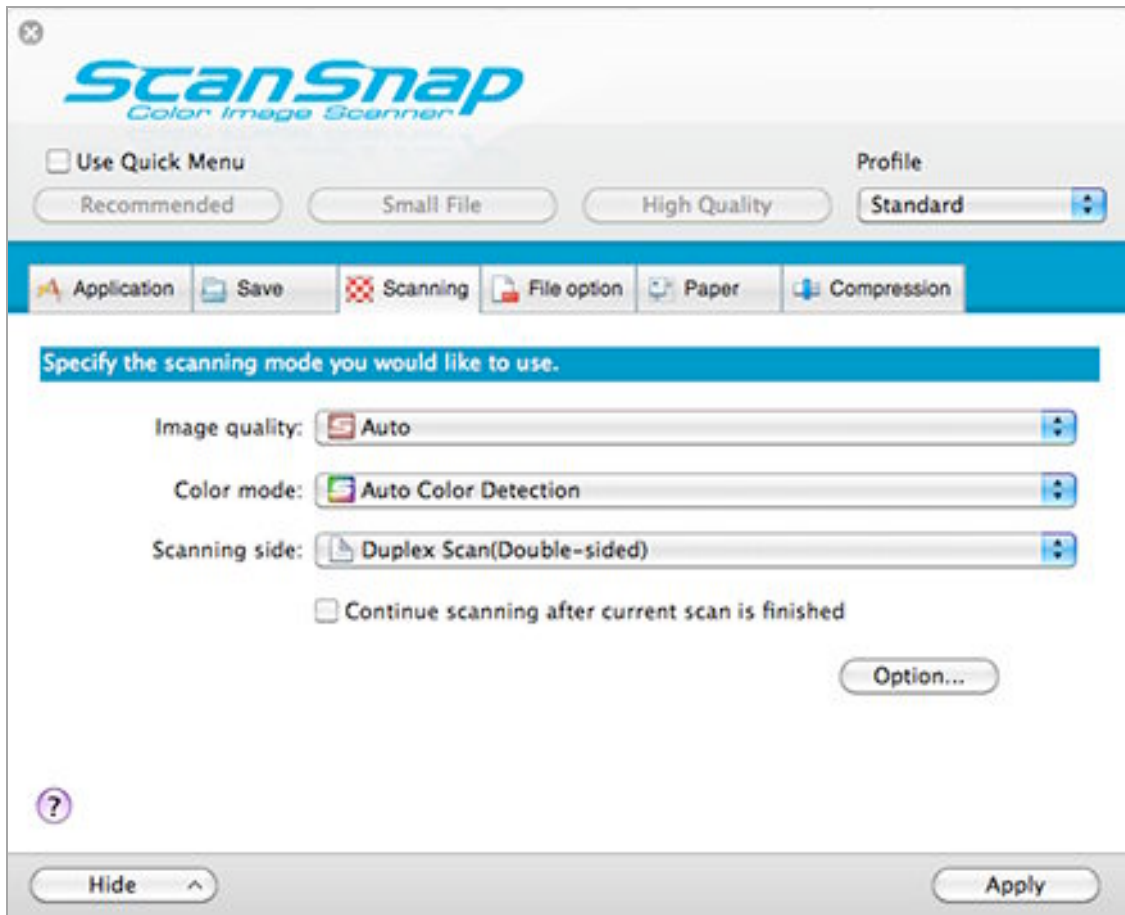


Figure 2: In ScanSnap Manager, choose a resolution from the Image Quality pop-up menu.

Set the Destination

The next choice you must make is the destination for the bitmap file. In general, you can choose either of the following:

- **Send it to an application.** Not all scanner software lets you do this, but if it does, it's a good choice, because it lets you hand the bitmap directly to your OCR software (or to a document manager that can do OCR) without any fuss or extra steps. **Figure 3** shows the Application pop-up menu on ScanSnap Manager's Application tab, configured to send scanned documents direct to DEVONthink Pro Office, which is in turn set up to do OCR automatically. (But, if you prefer, you could choose any OCR application here—or even Scan to Searchable PDF, which I discuss just ahead, in the sidebar [ScanSnap Manager and OCR](#).)

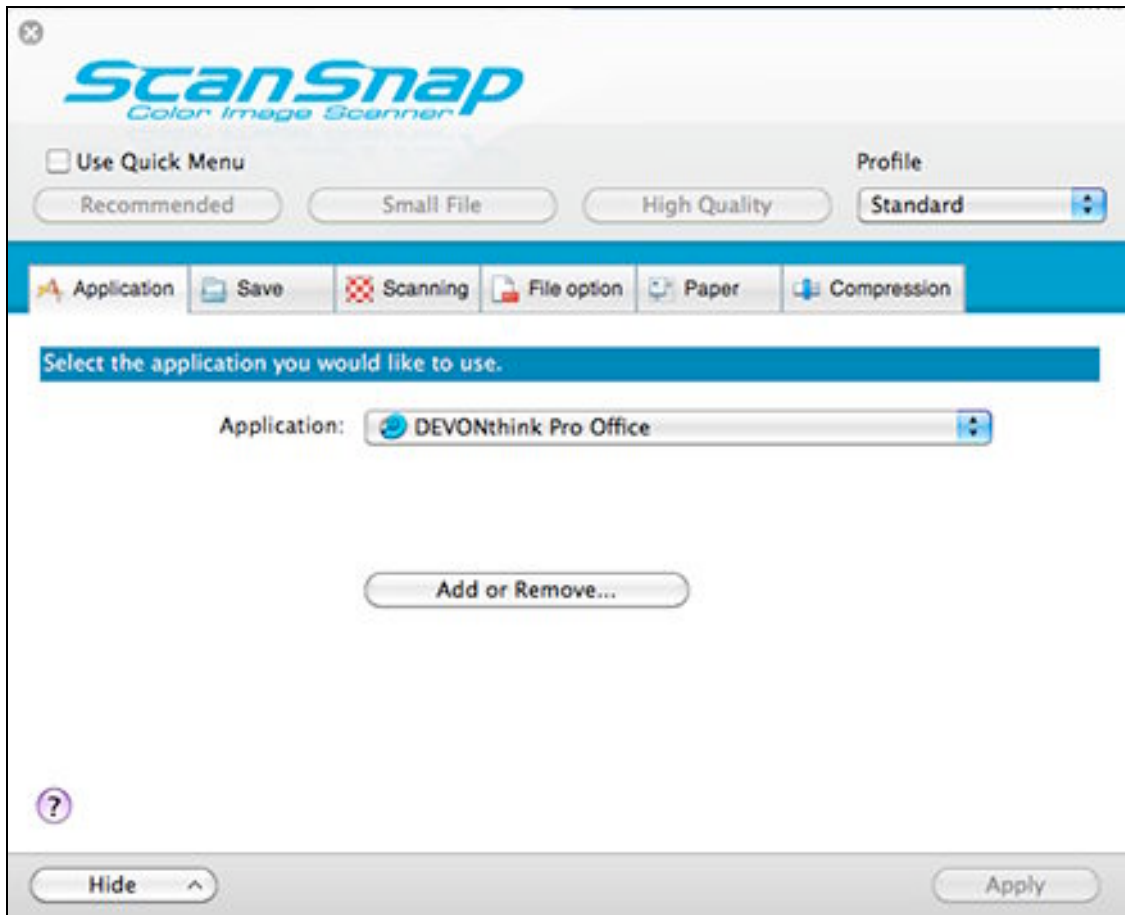


Figure 3: In ScanSnap Manager, choose an application on the Application tab to send scanned documents directly to it.

- **Save it to a folder.** Choose a folder on your disk—I suggest either [~/Pictures](#) or a subfolder you create there, such as [~/Pictures/Scans](#)—where all the raw bitmap files will be stored as your scanner generates them. Usually, even if you choose to send scans directly to an application, your scanner saves a copy of the bitmap file somewhere for future reference, so you'll still need to set a location on your disk. In ScanSnap Manager, you do this on the Save tab.

Along with selecting a destination folder, you usually have the option to specify a pattern used for naming files as they're scanned. For example, in ScanSnap Manager, click the Options button on the Save tab to display the dialog shown in **Figure 4**, where you can choose a predefined format (based on the date and time) or create a pattern of your own. Once the document has gone through the OCR step, you'll have an opportunity to name the searchable PDF, so I don't place much importance on the names of the bitmap files.

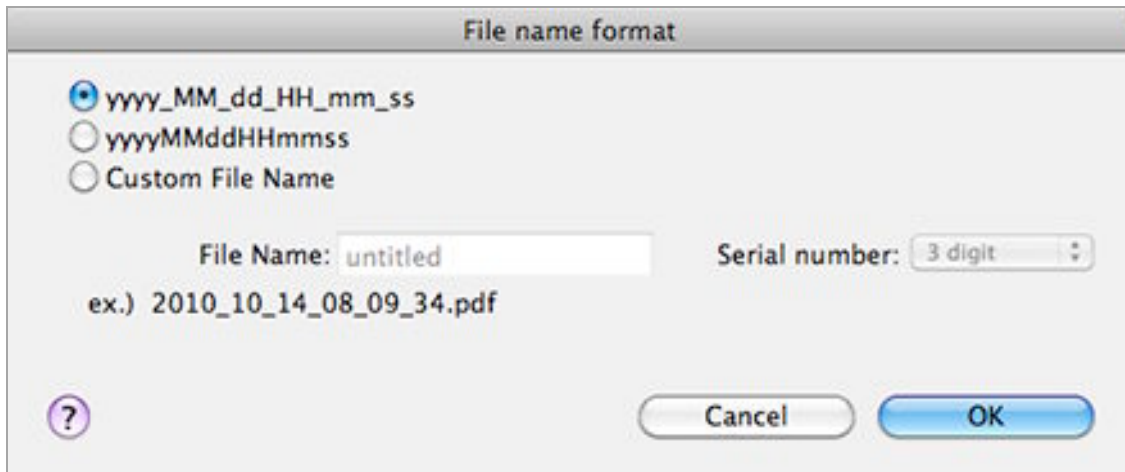


Figure 4: Most scanner software lets you choose what format file-names have when documents are first scanned.

ScanSnap Manager and OCR

If you have a Fujitsu ScanSnap scanner, you may notice that its software offers no fewer than three ways of performing OCR:

- **Scan to Searchable PDF:** When you choose this command from the Application pop-up menu on the Application tab, ScanSnap Manager opens scanned documents in a separate application—a customized version of ABBYY FineReader—which then performs the OCR and is highly customizable. (Or, you can opt for Cardiris, which is better for processing business cards.)
- **Use another application:** Choose another OCR-capable application from the Application pop-up menu—such as DEVONthink Pro Office or Acrobat Pro (which is bundled with some ScanSnap models)—and the file opens in that application.
- **Convert to Searchable PDF:** On ScanSnap Manager's File Option tab is a Convert to Searchable PDF checkbox. When it's selected, OCR happens as you scan, *without* an external application launching. This option lets you do interesting things like scanning only sections you've marked with a highlighter, but on the whole it's less flexible than the Scan to Searchable PDF option. Oddly, the software lets you select both methods—which results in OCR happening *twice* on any given file!

I discuss this further in "ScanSnap S1300 vs. Doxie: Two Portable Document Scanners" (<http://db.tidbits.com/article/11458>).

Your scanner software may offer more than just these two options (send scans to an application or save them to a file). For example, ScanSnap Manager lets you choose a feature called Quick Menu by selecting the Use Quick Menu checkbox at the top of the window. When you do this, every time you scan a document, a special window (the eponymous Quick Menu) pops up to let you choose what to do with that particular scan. This approach is useful if you do a variety of activities with scanned documents (for example, you print some, you email some, and you send still others to iPhoto). But since I almost always want to save my own scans as searchable PDFs, I leave this feature turned off most of the time.

Set the File Format

Your document will eventually end up as a PDF, but the bitmap image that your scanner produces initially could in theory be in any of several common formats, such as TIFF, JPEG, PNG, and (naturally) PDF. Most scanning software lets you choose the bitmap file format, although some offer more choices than others.

Here are my recommendations, in order from most to least preferable:

- **PDF:** Since you're going to end up with a PDF anyway, this is the simplest choice. PDF documents can contain more than one page, unlike PNG and JPEG, so the PDF format is ideal for multipage scanned documents. It's also wise because any application that can create searchable PDFs can also read PDF files, but some other formats can't always be used as input.
- **TIFF:** TIFF files can also contain multiple pages, and the format is widely supported. However, if your scanning software happens to save TIFF files in an uncompressed format, they can take up quite a bit of disk space.
- **PNG:** This format is often used for graphics on the Web because it produces reasonably small files with *lossless* compression, which doesn't degrade the quality or throw away any data. However, PNGs are limited to one page.
- **JPEG:** The most common format for files created by digital cameras, JPEG is universally supported. Unfortunately, although JPEG

files tend to be smaller than PNGs, they're compressed in a way that decreases their intrinsic quality (and the effect is magnified each time they're saved). Plus JPEGs, like PNGs, can have only one page.

Set Other Scanning Options

The list of other scanning options you may be able to set is long and highly variable. And, in general, whether or how to change any of these things is up to you—you might want to experiment and see what works best with your combination of scanner, software, and documents.

Here and there: *Many of these settings are also available in certain OCR applications; it's up to you to decide where it makes the most sense to use them.*

Examples of other commonly seen settings:

- **Color mode:** Black-and-white bitmaps take up very little disk space, while grayscale images take up more space, and color images still more. However, if colors or gray shades are essential for the documents you're scanning (for example, ones that include photographs or artwork), you'll want to set the appropriate color mode. If your scanner has an Auto setting that enables it to figure out the proper color mode as it scans, that's even better!
- **Scanning sides:** Most of the scanners I listed earlier in this ebook support duplex scanning (both sides of the page at once), and if you're scanning double-sided documents, you'll obviously want duplex scanning enabled in your software. However, in some cases—for example, when scanning documents that have graphical patterns, but no text, on the reverse—you may want to turn off duplex scanning so you don't waste disk space with lots of useless, effectively blank pages.
- **Automatic blank page removal:** If your software is set for duplex scans but some of the pages you feed into your scanner are completely blank on one side, you may want to have those empty pages removed from the resulting PDFs automatically—if so, turn on this feature.

- **Brightness and/or contrast:** In most cases, you can leave brightness and contrast controls at their default settings. However, if you're scanning documents on colored papers or with very light text and find that the image quality, OCR accuracy, or both are substandard, you might be able to improve your results by playing with brightness and contrast settings.
- **Deskewing:** If you feed a page into your scanner at a slight angle—or if the paper is straight but the text on the page is at an angle—some scanner software can straighten it for you, within reason.
- **Automatic image rotation:** With this feature, it doesn't matter whether you feed documents into the scanner upside-down or sideways; the software automatically rotates the resulting images to be right-side-up.
- **Paper size:** Most scanners can automatically figure out the size of the paper you feed into them, and produce bitmap images of the same size. However, you can often choose an arbitrary paper size, too—for example, if you want all your PDFs to be letter-sized, even if you're scanning smaller pieces of paper.
- **Compression:** Even if you chose PDF as the file format, the bitmaps inside the PDFs can often be compressed to reduce the file size, especially if the scan was done in color or grayscale. Higher compression equals smaller files, but depending on your scanner's software, it might also reduce the image quality, which can in turn reduce OCR accuracy.
- **Multipage documents:** Let's say you put a stack of 15 pages in your scanner's ADF and push the button. Do you expect to get a single 15-page PDF, or 15 single-page PDFs, or something else? You may be able to specify how your scanner's software treats multipage documents—for example, always combining continuous scans into a single file, or automatically splitting the file every five pages.

Set OCR Options

That should do it for your scanner's software. But if you're using a separate application for OCR, as is true more often than not, you should next open that application and take a quick spin through its

preferences. They're likely to be less involved (and may include some of the same options described just previously), but at minimum, be sure you configure the following:

- **Language:** Since you're reading this ebook in English, I'm guessing you'll choose English as the primary language for your scans. But, if the documents you scan sometimes contain other languages, you may need to adjust the language setting. Most OCR software lets you select one or more secondary languages (and then it automatically uses the correct dictionary and rules as it encounters each one), but remember that the more languages you add, the longer it will take to process each file—and the greater the probability that the software will guess wrong from time to time and produce unintelligible results.
- **Output format:** As you know by now, the right choice here is nearly always searchable PDF. However, if your software offers the choice, you may occasionally find that saving in formats such as Microsoft Word or Excel produces more-usable documents.
- **Output destination:** If the application performing OCR is a document manager, then the destination for the searchable PDFs is that application itself. Otherwise, choose a folder on your hard disk (presumably inside `~/Documents`) or on a network volume. (If you need help deciding where to store the documents, read [Choose a Naming and Filing Strategy](#), next.)
- **Output file name:** Depending on the OCR software you use and how, if at all, you automate it (as I discuss later, in [Automate OCR](#)), it may resave the document under the same name the bitmap image had originally, or it may give you the option to respond to a prompt to rename it on the spot. I say more about this choice next.

The settings for those last two items—destination and file name—may be obvious to you, or they may require more thought. And, if you'll be sharing scanned files with others, some additional questions may arise. So before you finalize your settings, read the next section for advice on naming and filing your scans.

Choose a Naming and Filing Strategy

Naming your searchable PDFs and filing them (that is, storing them in some particular location) may be entirely separate activities, but it usually makes sense to do them together. And, your OCR software may expect you to make decisions up front about how these tasks will be handled. So it's a good idea to think through your options carefully.

Fundamentally, you have four questions to answer:

- **When do you want to name and file the documents?** That is, do you want to name them as you scan them, or at some later time? I cover this below, in “Decide When to Name and File Documents.”
- **What do you want to name the documents?** You can choose any name you like, but for ease of finding documents later (especially if others will use them too), you should think about what conventions you'll use. Read [Choose a Naming Convention](#).
- **How do you want to retrieve the documents?** By “how” I mean: store them as regular, stand-alone documents that you'll find and retrieve using the Finder—or store them in the database of a document management program? See [Choose a Retrieval Method](#).
- **Where do you want to store the documents?** Will you keep them on your local hard disk, on a network server, in the cloud, or in some combination of these places? Read [Choose a Destination](#).

Decide When to Name and File Documents

As you perform OCR on your scanned documents, you have three basic choices as to what happens next:

- You can be completely “hands off” and let your software name and file the documents automatically.
- You can intervene immediately by giving your documents names (and sometimes tags or categories) and putting them in specific locations.
- You can name and file your scanned documents later, at your leisure.

I can think of good reasons for choosing any of these approaches, but the important thing is to weigh the pros and cons, decide how you want to handle the process, and stick with it.

Use the Hands-Off Approach

The appeal of the entirely hands-off approach is obvious: it requires no effort other than pressing a button. So, if you're concerned that you'll never get around to scanning otherwise, that's a significant positive.

On the negative side, if you let your software name scanned documents, the names (usually a string of numbers based on the date and time) won't be meaningful to you, and when it comes time to find a file, you won't be able to distinguish one from another by name; you'll have to examine their contents too.

And, if you let your software file the documents too, they'll almost certainly end up in a single big folder somewhere, which again makes it harder to find what you're looking for later on.

Tip: DEVONthink Pro Office's Auto Classify feature can sort scanned documents into folder-like groups automatically based on their contents, mitigating this problem somewhat.

For me, since I'm scanning documents in order to make my life easier, the negatives of the hands-off approach outweigh the positives.

Name and File as You Go

You can choose to name every document as soon as your OCR software turns it into a searchable PDF. At the same time, you can optionally file it in an appropriate folder and, if you're using a document manager that supports tags, apply tags that will help you identify the document later.

The big advantage to doing this is that you'll make it much quicker to find the document later—and by doing this work right away, the subject matter of the document will be fresh in your mind, making naming easier.

The disadvantage is that it's not merely more work, it turns scanning into a task that demands your ongoing attention, because you have to stop after every document goes through the scanner, think about it, and perform one or more extra steps.

Name and File after the Fact

As a compromise between the first two options, you can let your computer process everything automatically at first, but then later on—say, once a week—go back and review recently scanned documents, name them, file them in the proper locations, tag them, and so on.

Although this approach gives you the benefits of both the other alternatives, it has a downside, too: it's more time-consuming to identify and name documents after the fact than right away. And, if you let it go too long, the task might become so overwhelming that you never do it.

Nevertheless, this is what I do myself most of the time. I'm disciplined enough to avoid letting my unnamed scans pile up for months, and sometimes I'm even inspired enough to name files as I go.

Choose a Retrieval Method

After OCR is complete (whether or not you've taken the time to choose a name) and you have a searchable PDF, you can leave it in the folder where it started—the one where the bitmap images straight from the scanner live—or you could move it somewhere else. I'm a proponent of the "somewhere else" approach myself, but before you can decide where, exactly, to store your files, you need to know what technique you'll use to find and view your PDFs later. In particular, you need to decide whether you are going to store the PDF as an ordinary file in the Finder—and if so, where? Or, are you going to use a document manager to store everything?

Use the Finder

The default way to retrieve documents is to find and open them in the Finder, possibly with the help of Spotlight. Storing PDFs in regular Finder-accessible folders is easy—and it's what happens automatically if you don't take any other action, and Spotlight automatically indexes the documents. Because the PDFs are now ordinary, searchable files, you can organize them just like all your other documents—for example, if you scanned documents relating to a specific project, they might go in that project's folder in the Finder; or if your scans are of utility bills, they might go in a folder with other financial documents. Or, you may choose to keep all your searchable PDFs, regardless of contents, together in one place.

Before you choose Spotlight and the Finder as your retrieval tools, spend a moment pondering these questions:

- **Do you like Spotlight?** Some people love Spotlight; some hate it. But if the point of creating searchable PDFs is to make them, you know, *searchable*, then you should keep in mind what you'll be using to search them.

If Spotlight works well for you, then the Finder is a great destination. If it doesn't, consider a Spotlight enhancement such as HoudahSpot (<http://www.houdah.com/houdahSpot/>, \$30), an alternative search engine such as Google Quick Search Box (<http://www.google.com/quicksearchbox/>, free) or FoxTrot (<http://www.ctmdev.com/foxtrot/>; Professional, \$132; Personal, \$39), or a document manager (covered next).

- **Do you need to share these files?** If you're scanning strictly personal documents, then you can store them wherever you want. But if a colleague or family member will need to use them too, then you must do two things:
 - ◊ **Agree on conventions for naming and organizing them.** This can sometimes be a source of contention—but I return to this issue shortly ahead, in [Choose a Naming Convention](#).
 - ◊ **Store them in a network-accessible location.** This could be a shared folder on your Mac, a network volume, or shared cloud-based storage. I say more about this in [Choose a Destination](#).
- **Would you like other categorization tools?** The Finder offers only strictly hierarchical filing (although you can create aliases to give yourself pointers to files in other locations). If you're wired to work more efficiently with a different categorizing scheme, such as tags—or if a lot of the documents you scan require accompanying database entries (for things like receipts and business cards), keep reading to learn about document managers.

Tip: If you're undecided, you can always use the Finder initially and move to a document manager later if you need more power.

Use a Document Manager

I mentioned several document managers in the discussion of OCR software ([Pick a Mac OCR Package](#)). Essentially, they're applications that provide their own storage space, categorization, display, and search methods for files and other snippets of data. You might prefer one of these over storing files in the Finder for any number of reasons, such as a more pleasant user interface, more-flexible (or faster) searching, support for tags, or other database features.

The document managers I covered earlier all have built-in OCR capabilities, and two of them (NeatWorks and Paperless) are specially designed to work with structured data such as receipts. And, I've mentioned that I'm personally a fan of DEVONthink Pro Office. However, a few other options are also worth considering, as long as you have some independent way to perform OCR:

- DEVONthink Personal (<http://www.devontechnologies.com/products/devonthink/>, \$49.95)
- DEVONthink Professional (<http://www.devontechnologies.com/products/devonthink/>, \$79.95)
- EagleFiler (<http://c-command.com/eaglefiler/>, \$40)
- Yojimbo (<http://www.barebones.com/products/yojimbo/>, \$39)

If you're considering one of these applications, I suggest downloading a demo version and making sure you can find a way (such as using an AppleScript folder action) to store your searchable PDFs directly in the document manager of your choice.

Tip: If you use an iOS device, you might look for a document manager that has a companion iOS app—DEVONthink Pro Office and Yojimbo do, for example.

Document managers normally use your local hard disk as the storage destination for their databases. It may be possible to choose a network volume instead, but that in itself doesn't guarantee that other people can access the data there. For other people to access the contents of your document manager's database, it must offer some sort of sharing mechanism—for example, a built-in Web server, as DEVONthink Pro

Office does. Be sure to consider sharing capabilities as you're evaluating demonstration versions of document managers.

Choose a Naming Convention

I don't want to belabor this point, nor can I provide any universal solutions, but it's worth giving some thought to what you'll name your searchable PDFs so you can more easily find them later—and so anyone else who needs to use the files can clue into their contents. (If you're content with file names like "2010_10_22_09_35_25.pdf," then feel free to skip ahead to the next section!)

Suppose you're scanning a stack of invoices. Naming them all "invoice.pdf" may be a bit better than nothing, but then, when you search for one of these and the result is a list of 100 files named "invoice.pdf," you won't know which is which without examining each one individually. On the other hand, although nothing prevents you from naming a file "Invoice #416, dated November 1, 2010, from ABC Supply Corp for \$432.19.pdf," that's cumbersome to type and equally awkward to read. So, let me offer a few suggestions:

- **Think about how you'll search.** The entire contents of your OCR-processed PDFs will be searchable, but results will invariably appear in a list of file names—so if those names don't make it obvious what's unique about each document, you'll have to look at each one in turn. In other words, do yourself a favor and put uniquely identifying words in the file names.
- **Don't rely on folder names.** Along the same lines, some people rely on a series of embedded folders to help them identify files. For example: [Banks/Citibank/statements/2010/August.pdf](#). As long as you're looking at a file in a hierarchical view in the Finder, that's fine, but if you do a search that lists 20 files all named "August.pdf," it'll require extra work to figure out which one you want. It's better to include extra detail in the file name, even if it seems redundant.
- **Combine generic with specific.** Giving a file a generic name such as "bill.pdf" or "electricity.pdf" will only lead to frustration when you try to find it. But, "Electricity bill December 2010.pdf" adds a specific piece of information that uniquely identifies the file, and will come in handy later.

Consider the recipient: *When you're naming files that other people will be using—for example, invoices you're sending to another company—think about what sort of name would be most useful on the other end. For example, if I send TidBITS an invoice named “TidBITS invoice—2010-10.pdf,” that's meaningful to me but not to them. They already know who they are, but they won't be able to tell, just by looking at the file name, that it came from me. Something that includes both names, like “Kissell invoice—TidBITS—2010-10.pdf” meets both of our needs.*

- **Write dates in a Finder-sortable way.** The Finder automatically identifies the date on which each document was created, but that's the date the *digital* version was created—not necessarily the date of the paper original (which is almost certainly what you want to know). So it's a good idea to include documents' dates in their names, and I suggest using this format: YYYY-MM-DD (as in 2010-09-30). That's because files beginning with strings like that (or including them in a consistent place—for instance, “TidBITS invoice YYYY-MM-DD.pdf”) will always sort in chronological order in the Finder's Column view, as well as in List and Icon view when sorted by name. (Using this format can come in handy even if you use a document manager, depending on its native sorting capabilities.)
- **Talk to your associates.** It's rare that two people would, on their own, come up with exactly the same scheme for naming files, but if you plan to share files with others, you should at least reach a consensus on what sorts of names everyone can live with. Or, simply designate one person as the Boss and let him or her decree a convention that everyone else consents to follow, even if it's not their favorite.

Choose a Destination

If you're storing searchable PDFs as ordinary, Finder-accessible files rather than using a document manager, make sure you put those files in a location that makes sense for your needs. Here are your options:

- **On your own Mac.** If the files will be for your personal use only, then a location on your own hard disk (likely somewhere in [~/Documents](#)) is logical. If you want to use Mac OS X's built-in file sharing feature to make the documents available to someone else, put them in a folder whose entire contents you're willing to share.

Sharing details: For complete information about the ins and outs of file sharing, consult Glenn Fleishman's [Take Control of Sharing Files in Snow Leopard](#).

- **On a network server.** For sharing scanned documents with a larger number of people in a business, a network server may be a more logical location, since it doesn't depend on your own Mac being on, awake, and available on the network all the time.
- **In the cloud.** You may choose a destination in the cloud, as discussed in [Local vs. Cloud Storage](#), to be able to access your documents from any computer, and share them easily with people not on your local network. When considering one of these services, be sure to choose one that lets you mount your cloud storage space as a volume in the Finder (most do) so that you don't have to go through a special procedure, or open another application, to upload the files.
- **Some combination of the above.** As I said earlier, I recommend using cloud storage as a *secondary* location; it's essential to have a copy of your data on a local (or local network) volume too. Luckily, it's possible to do this automatically. For example, if you're using Dropbox as your cloud storage provider, it automatically syncs files stored in a local folder (the eponymous Dropbox). If you're using your MobileMe iDisk and have it synced to your Mac (you can set this up in the MobileMe pane of System Preferences, in the iDisk view), much the same thing happens. Other cloud storage services also let you sync local and cloud-based copies in various ways.

What about the Originals?

Your scanner software puts a bitmap file in a folder somewhere, and your OCR software converts it to a searchable PDF—possibly storing it in a document manager as well. So, what happens to that original, non-searchable bitmap image? Depending on your software and settings, it could be any of the following:

- **Replace with searchable PDF.** If your bitmap image is saved in PDF format (as I recommend), your OCR software might simply overwrite the bitmap-only version of the file with a searchable version having the same name.
- **Delete the original.** Your OCR software may delete the original bitmap file after creating the searchable PDF—or you may do so manually, or using a script you devise.
- **Archive the original.** Your OCR software (or a script you create) could move the original bitmap image somewhere else, just in case you later need it for some reason, but leaving your incoming scans folder uncluttered.

All these are valid choices, depending on your needs, but I want you to be aware of the possibilities and determine, or decide, what happens on your own system to avoid surprises in the future (such as looking for an original you assumed you had, but finding it was deleted). My personal preference is to set my OCR software's preferences to delete the original, which seems tidiest—or perhaps I just like living dangerously.

Automate OCR

Earlier in this chapter, one of the options I described was routing incoming scans directly to an OCR program or feature, which (if you're lucky) then creates searchable PDFs automatically. If that's what happens on your Mac, congratulations—you can skip this section.

But if your scanner's software doesn't support that configuration, or if you want to use OCR software that doesn't automatically generate a searchable PDF when it opens a document, read on for instructions on automating the process.

Any scanner can save bitmap files into a folder somewhere on your disk, so that's our starting point. Fundamentally, you need to make both of the following tasks happen automatically:

- Your OCR software opens bitmap files as they appear in the folder where your scanner software saves them.
- Your OCR software recognizes the text in the open bitmap file, and then saves the result as a searchable PDF.

Luckily, you can often use the same tool to accomplish both tasks: an AppleScript folder action. For those who are unfamiliar with the concept, a *folder action* is an AppleScript that runs automatically when something happens to a specified folder—for example, you open or close it, or add files to it. So, the basic idea is this: Create a folder action script and attach it to the folder where incoming scans are stored so that it watches for new files being added; have the script open those files in your OCR program and then instruct your OCR program to go ahead and process the files.

What's particularly cool about this method is that often (not always) it can even automate OCR in applications that don't inherently support AppleScript—or don't support it in a robust way. This is possible due to a feature called GUI Scripting, which means that instead of AppleScript issuing a direct command to an application to perform some action, it instead simulates the user actions of choosing menu commands, clicking buttons, filling in fields, and suchlike. Unfortunately, this means the application must be left alone to operate in the foreground—for example, if you were to switch to another window while this was going on, the AppleScript would no longer be able to “see” and operate the necessary controls. Still, it's way better than having to go through the entire process manually every time.

I'd like to offer you prewritten AppleScripts for every OCR program and with every possible combination of settings and behaviors, but life is too short. So, instead, I'm providing four scripts that can drive some of the most popular OCR tools, and at the same time serve as examples on which you can base your own scripts for other applications. You can also, of course, modify any of my scripts to make it work differently according to your needs.

Download the scripts from http://www.takecontrolbooks.com/resources/O111/paperless_office_scripts.zip. After unzipping them, move the script files into `/Library/Scripts/Folder Action Scripts`; if that folder doesn't exist, create it. (Be sure *not* to put the scripts in the similarly named `Folder Actions` folder, which may appear in the same location.) Then proceed with the instructions that follow to configure the scripts on your Mac.

Help me help you: *In order for GUI scripting to work with my scripts for Acrobat Pro and Readiris, you must enable access for assistive devices. To do so, open the Universal Access pane of System Preferences and make sure Enable Access for Assistive Devices is selected at the bottom of the window. But if you forget, it's no problem—the scripts are smart enough to check for this setting and alert you if it's incorrect.*

Enable and Attach Folder Actions

Before you can use folder action scripts, you must enable the system-wide Folder Actions capability if you haven't previously done so, and attach a particular script to the folder where your incoming scans are stored. Follow the steps appropriate for the version of Mac OS X you're running:

Snow Leopard (10.6):

1. Right-click (Control-click) on the folder where your scanner stores new scans (see [Set the Destination](#), earlier in this chapter), and from the contextual menu that appears, choose Services > Folder Actions Setup. Folder Actions Setup opens.
2. In the dialog that appears automatically, select the script you want to use (for example, "OCR This (PDFpen & PDFpenPro)") and click Attach.

One at a time: *Although you can attach multiple AppleScripts to a single folder, I don't recommend it. Pick a single script, and if need be, you can return here and change it later.*

3. Make sure Enable Folder Actions is checked at the top of the Folder Actions Setup window. Your window should look something like **Figure 5**.

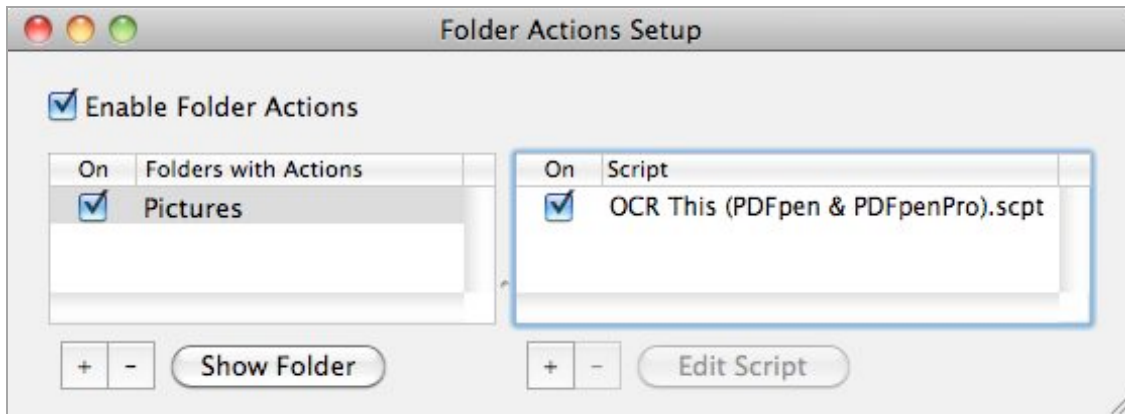


Figure 5: You're looking for approximately this end result (folder and script names may differ) after configuring Folder Actions.

4. Quit Folder Actions Setup.

Leopard (10.5):

1. Right-click (Control-click) on the folder where your scanner stores new scans (see [Set the Destination](#), earlier in this chapter), and from the contextual menu that appears, choose More > Enable Folder Actions.
2. Right-click (Control-click) the same folder again and choose More > Attach A Folder Action.
3. In the window that appears, navigate to the script you want to attach (remember, it's in [/Library/Scripts/Folder Action Scripts](#)), select it, and click Choose.
4. Close the window.

Use a Folder Action Script

You're almost ready to go, but it's best to tweak a setting or two for optimal behavior in your OCR application of choice, and to understand exactly what to expect of the scripts.

Acrobat Scripts

Acrobat Pro requires a slightly odd procedure to prepare it for OCR:

1. Open a PDF file (any file at all).
2. Choose Document > OCR Text Recognition > Recognize Text Using OCR. (In older versions of Acrobat Pro, and in Acrobat Standard, this command may appear as Document > Recognize Text Using OCR > Start.)

3. Click Edit. In the dialog that appears, make sure English (US) is chosen in the Primary OCR Language pop-up menu. Choose Searchable Image (Exact) from the PDF Output Style pop-up menu (although read [Pick a Mac OCR Package](#) for information on the ClearScan option).
4. Click OK to close the Settings dialog, and then click Cancel (yes, Cancel) to dismiss the Recognize Text dialog.
5. Close the PDF file you opened in Step 1.

Now you're ready to try out your script—either by scanning a document or by dragging an existing scanned image into the folder to which the AppleScript is attached. I provide two different Acrobat scripts. Both work with Acrobat Standard version 7 and Acrobat Pro versions 7, 8, and 9, but they have slightly different behaviors:

- **OCR This (Acrobat):** This script causes Acrobat to recognize the text in PDF documents and then save the file (with the existing name, in the existing location) and close it with no need for interaction at all.
- **OCR This (Acrobat) with Save As:** This script causes Acrobat to recognize the text and then prompt you to enter a name and select a location; after saving the file, the script then instructs Acrobat to close the window. (There may be a very brief delay before the window closes.) With this script, the original file remains in the folder to which you've attached the folder action; you can later delete it manually if you wish.

PDFpen Script

The OCR This (PDFpen & PDFpenPro) script works with either version of the PDFpen software (version 5 or later), without requiring any modification. However, for best results I suggest making one small change in PDFpen's settings before using the script:

1. Choose either PDFpen > Preferences or PDFpenPro > Preferences.
2. Click OCR.
3. Uncheck the Prompt for OCR When Opening a Scanned Document checkbox.

This may seem counterintuitive, but if you leave that checked, then whenever the script runs automatically on a newly scanned document, PDFpen will display a dialog asking if you want to perform OCR on it. That isn't actually a problem—the script still works—but there'll be a delay of a few seconds, and that dialog (and the beep that sounds when it appears) may be confusing and distracting.

Once PDFpen is configured, scan a document (or drop an already-scanned document into your designated scans folder) to try the script.

Readiris Pro Script

Before using the OCR This (Readiris) script, open Readiris Pro and set it up as follows:

1. Look in the Settings > Document Type menu and make sure Text is checked; if it isn't, select it.
2. Choose Settings > Text Format.
3. From the Format pop-up menu at the top of the window, choose PDF. From the pop-up menu next to it, choose Image-Text.
4. Uncheck the Embed Fonts and Create Bookmarks checkboxes if they're checked.
5. Make sure the Ask File Name and Location checkbox is checked.
6. Leave the other settings in this dialog as they are, and click OK.
7. Choose Settings > Save as Default. (That way, these settings should stick when you use Readiris Pro again.)

When a new PDF file appears in the folder to which you've attached the script, Readiris opens the file, recognizes the text in it, and saves it as a PDF; it prompts you to enter a name and select a location. (Unfortunately, because of Readiris Pro's poor AppleScript support, I was unable to find a good way to avoid this need for interaction.) After you save the file, Readiris creates a new document (which clears all the existing scanned pages from its list).

Start with a clean slate: *If you happened to have any pages open in Readiris Pro before running a script, the script will close them (so as to avoid adding extra pages to your PDFs). Therefore, before doing any scanning, make sure you've saved anything you were previously working on.*

Extend Folder Action Scripts

The scripts I've provided are all fairly simple, but depending on your needs, preferences, and willingness to tinker with AppleScript, you could enhance them to do other things. Here are a few ideas:

- Prompt you to name each PDF (if the script doesn't already do so).
- Save the searchable PDF to a different folder—for example, a network volume—and delete the original bitmap.
- Send the PDF to a colleague by email.
- Use one of Mac OS X's built-in Services to summarize the text.
- Use an online translation tool to translate the text into another language.
- Speak the recognized text out loud using text-to-speech.

Create a Workflow for Incoming Paper

Your scanner and software is now set up to process whatever you throw at it. And, you've already thought about at least some elements of your workflow, such as what you'll name your searchable PDFs and where you'll store them. But to make your life even easier, you should take a moment to think through the physical path papers will take from the time they enter your office to the time they leave it (or get filed)—and how you'll find and use their contents once the originals are gone. This is the crux of the paperless office: the new workflow you'll follow, which will require you to adopt or modify some habits.

In this chapter I make sure you have a grip on the strategy for what you'll actually do when paper appears, and that you understand when and why to keep certain papers—and what you can dispose of.

Create a Physical Paper Path

If you're an extremely organized, "everything-in-its-place" kind of person, what I'm about to say may seem obvious. But I've known few people who keep every piece of paper strictly under control, and many (including myself) who always seem to have papers piled everywhere and, as a result, at least occasionally lose track of what's where, and what needs to happen to which papers. Since you're about to embark on a new system for dealing with papers, this is an excellent opportunity to figure out, definitively, what happens to all papers as soon as they come into your possession.

Thus, I want to propose the following Life Principle:

Have a well-defined location for every stage of a paper's journey.

Let me explain what I mean and how you can make this happen.

Buy Some Boxes

I'm going to ask you to acquire at least two boxes, and maybe as many as six or eight (I'll explain why in a moment). When I say "box," I don't care if it's an actual box, a plastic or metal tray, a wall-mounted paper holder, a file folder, or a taped-off corner of your desk. However you want to think of a box, make sure you can clearly designate multiple geographical areas of at least 8.5 x 11 x 2 inches each to special uses, which I'm about to describe.

Think about the traditional idea of an In box and an Out box—that is, two trays sitting on your desk, one for incoming correspondence and one for outgoing correspondence. This arrangement (which I confess I've never seen anyone use in real life) presumes that your In box is, in some sense, your to do list, and that someone else—perhaps a mailroom employee—is responsible for putting things there. You'll work your way through each item in that tray—reading it and then doing whatever is required, whether that's writing a reply, filing it, making a phone call, or something else. Replies to incoming mail, along with new mail you generate from scratch, go into the Out box, where they're picked up periodically by the same person who puts things in your In box.

Now suppose you have an In box that you've designated solely for papers that will need to be scanned, and an Out box that's solely for papers that have already been scanned. Your setup looks like this:

In → Scanner → Out

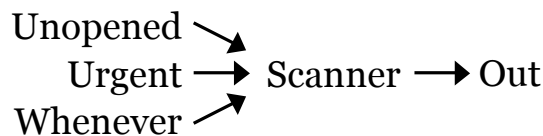
In other words, you take something out of the In box, scan it, and as soon as it comes out of the scanner, it goes into the Out box. The path the paper follows is simple, obvious, and unambiguous. All you have to do is get in the habit of working through the contents of the In box regularly—we'll return to that in a moment—and then periodically emptying the Out box by filing, recycling, mailing, or otherwise disposing of its contents.

Such a setup may be adequate for people who receive relatively few pieces of paper and who are disciplined enough to move things from In, through the scanner, to Out, quite often. However, more complex needs may require some refinement.

In Boxes

Imagine you receive ten pieces of paper on a certain day, all of which have to be scanned. Great—they all go in your In box. However, suppose those papers include a bill that absolutely must be paid by the end of the week, a newsletter that needs no particular attention any time soon, and some envelopes whose contents may or may not be important, but which you haven't gotten around to opening yet. You can see how this might be a problem: put them all in the same pile, and you might lose track of whatever's on the bottom—especially if the pile grows more quickly than you can process it.

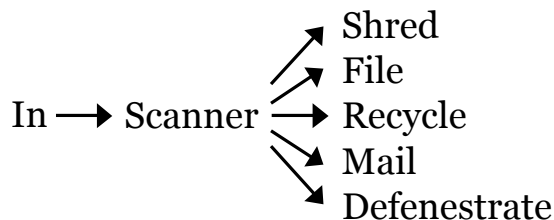
So, instead of a single In box, you might refine your paper path to include two or even three In boxes. For example, one only for unopened mail, one for opened items that require urgent attention (invoices, contracts, jury summons), and another for things that you can scan at your leisure. Your setup may then look more like this:



And that way, your stress level is reduced because you know you need to pay strict attention to Urgent but don't need to sweat Whenever, no matter how high the pile gets.

Out Boxes

The same is true on the other side. Maybe a simple Out box won't cut it for you, because some of the things that go there have to be mailed right away, while others can be filed, shredded, recycled, or thrown out the window. (Later in this chapter, I discuss the important matter of which documents you should save; see [Keep Legally Important Documents](#).) No problem; you can expand on the basic idea like so:



I think that five Out boxes is overkill, but perhaps your paper shredder, recycling bin, and window happen to sit beside your scanner, so those don't need to be boxes as such, and all you need are two: File and Mail.

However many boxes you decide on, and whatever you name them, the point remains that you should be just as clear about what happens to papers after they've been scanned as you are about the disposition of incoming papers before they've been scanned.

Now go get yourself some boxes!

Choose a Procedure

Astute readers may have noticed an ambiguity in the In/Out box system I just described. Suppose you receive a bill, which goes in an In box. You scan it, and then the original goes into Out (or into the shredder or the recycling bin, or whatever). That's all fine, but at what point in the process do you actually *pay* the bill? The same question could be asked about any incoming document that requires you to *do something*—make a phone call, sign a form, respond to an invitation. When do you do that something? Is it before you scan, or after?

This question is not as trivial as it may sound. Consider:

- If you scan a document *before* dealing with it, then the document will be digitized, perhaps giving you access to useful text that can, in fact, help you deal with it. On the other hand, once the original paper goes into an Out box, you may forget that you're not finished working with it. It would be terrible to shred a bill you assumed you'd paid, but didn't.
- If you scan a document *after* dealing with it, you don't have to worry about accidentally discarding it prematurely. On the other hand, dealing with a document might mean writing on it, tearing off a reply form, or altering it in other ways that shouldn't happen until you've scanned the original. And, if papers accumulate in your In box for long periods of time, you could have exactly the same end result—an unpaid bill—as if you put it in an Out box and forget it.

My own procedure is to scan first, then process by hand (tear off the form, sign the page, send the reply, etc.) *immediately*—before putting the scanned paper into the Out tray. You may or may not feel that's the best procedure for you, but either way, be sure you think through the process you'll follow, make a decision, and stick with it consistently.

Scan All Incoming Paper Immediately

Once you have a physical paper path in place and have figured out what procedure you want to follow with incoming papers, just one thing remains: doing the actual scanning. Your software is already configured, so it should require no more than plopping the pages in the scanner's sheet feeder and pressing a button. (For additional steps you might want to take after scanning documents, see the next topic.)

However, I know from experience that as easy as that may seem, it's easier still to let papers accumulate in an In box for a long period of time. And, the larger the stack of to-be-scanned papers becomes, the more daunting the task seems—meaning you're that much more likely to keep putting it off. So, my advice is to make a new rule for yourself:

Always process the contents of the In box before the end of the day.

Obviously, I realize this isn't always possible. As someone who works from home and has a young child in the house, I know all too well how easily distractions can arise. So interpret (or rework) this rule to suit your situation, but do remember that all things being equal, it's easier to deal with this task immediately—or close to it—than later on.

What If You Can't Scan Something?

Scanning is usually easy for letter- and legal-sized pages, as well as smaller items such as receipts and business cards. But what about things that won't fit in your scanner? Some items are too large, too thick, too delicate, or for some other reason inappropriate for scanning. Here are two possibilities:

- **Use a carrier sheet.** Some scanner manufacturers offer something called a *carrier sheet*, which is basically a pair of transparent plastic sheets joined at the top. You can put small or fragile documents in the carrier, or even a larger (folio-sized) sheet, folded in half—then scan the whole thing, and if necessary, refold a larger sheet in the other direction and scan it again, combining the pages in software later.
- **Use a digital camera.** Some OCR software works equally well on photographs as on scanned images, so if you can snap a picture with a digital camera, you're all set. (See [OCR on the Go](#) for more information.)

Back Up Scanned Data

If you'll excuse me for preaching my usual sermon yet again, *be sure to back up your data*. Of course, backups are crucial for all your files, but if you're scanning documents and getting rid of the originals (as will likely be the case more often than not), it's all the more important.

I said earlier, and want to repeat, that cloud storage is not the same thing as a backup—even if you also have a local copy of your files, and even if the cloud provider keeps multiple versions of your files (as, for example, Dropbox does). That's all good and useful, but I still recommend having at least one separate, isolated backup from which there's no possibility of accidentally deleting your files.

To learn everything a Mac user needs to know about backups, read my book [*Take Control of Mac OS X Backups*](#); or, for a quicker and simpler approach that covers only the basics, see [*Take Control of Easy Mac Backups*](#).

Keep Legally Important Documents

Your utopian vision of a paperless office may include the idea of putting all scanned documents straight into the shredder or recycling bin, so that you truly have no paper in your office, except during the brief moments when it's passing through your scanner. Or, at the very worst, you may picture yourself printing a scanned copy of any document that someone urgently needs to see on paper.

But not so fast! Until the rest of the world catches up with this hopeful notion, it's still going to be mandatory to preserve—and be prepared to produce—the *originals* of certain kinds of documents. I'm thinking especially of government documents and anything that might have to stand up in a courtroom some day. Because digitized files are merely pictures, they can be forged or altered, and for that reason they can't be accepted as legally valid in certain situations.

To give you some examples—*not* by any means a comprehensive list—consider the following types of documents for which you should always keep the originals, even though you've scanned them:

- Birth, death, and marriage certificates

- Deeds
- Diplomas
- Licenses
- Notarized contracts
- Passports, visas, and related documents
- Stock certificates
- Titles
- Wills
- Anything with an embossed seal
- Anything printed on security paper

In all such cases, it can be useful to have scanned copies (for reference, and as a backup in case of loss or theft), but because it's likely that the originals will carry much more weight than digital facsimiles, it's best to preserve those originals in a secure place.

Recycle or Shred Leftovers

At this point, the disposition of any originals left in an Out box may be a trivial concern, but I'll mention it anyway. After you've scanned your papers and filed those you need to keep (as in the previous section), all that's left is to direct the rest into a shredder or a recycling bin.

To preserve your privacy and reduce the risk of identity theft, I suggest shredding anything with personally identifying information (such as address, telephone number, or social security number) on it, as well as any financial records.

Apart from that, recycle if at all possible and save a tree or two.

Work Through a Backlog

Your scanner, OCR software, and paperless workflow may do a marvelous job of helping you deal with new paper as it comes in. But if you already have tens of thousands of pages in filing cabinets, you need to deal with all those existing documents too. It can feel overwhelming, but with the right approach you can work your way through even a substantial backlog in a reasonable period of time.

Prune Unnecessary Documents

I grew up in a family of packrats, so to some extent I always feel a compulsion to save everything—not for any specific reason, but just in case it might turn out to be useful some day in the distant future. I try valiantly to fight it, but it always feels a bit painful to get rid of anything. That includes papers, of course, so for many years I accumulated box after box and drawer after drawer of papers, most of which I’ll clearly never need to see again.

When I began contemplating my paperless office project, it was obvious that many of those papers could and would disappear, but the significant question was whether they should be scanned first. If I scanned everything, it could take months, and much of that time would be wasted, because the digital copies would do me as little good as the paper copies.

So I readied a recycling bin, steeled myself, and adopted the most ruthless attitude I could muster—and then went through all my paper files, tossing as many as possible. Quite a few struck me as borderline, so I left them, but then repeated the process every six months or so, and each time found more papers I felt I could live without having in either physical or digital form.

If you’ve got such a huge collection of papers that scanning them all would be inconceivable, consider doing the same thing. Everyone’s different, but I can offer some general words of advice about pruning:

- **Start with the low-hanging fruit.** You *know* you can get rid of old junk mail, printouts of documents you already have in digital

form, duplicate copies, unused reply envelopes, and numerous other items, so take an initial pass through your documents and toss the easy stuff first.

- **Take your time.** You don't have to prune all the unnecessary stuff in one session. Do a quick pass now, then another one in a few weeks or months. Over time it gets easier!
- **Use logic.** For those of you who pay taxes in the United States, the IRS strongly recommends that you keep tax-related records for the last 3–7 years, depending on the type of document. Fine, but if (like me) you've saved every receipt and cancelled check back to the mid-1980s, your actions defy logic and serve no useful purpose. If you can't come up with a *plausible* scenario in which a document might someday be needed, out it goes.

Tax tip: *To learn exactly what the IRS suggests in terms of preserving documentation, read the informative PDF document “Recordkeeping for Individuals” (<http://www.irs.gov/pub/irs-pdf/p552.pdf>). Of special note: the IRS accepts electronic copies of documents and even permits you to destroy paper originals, as long as certain criteria are met. Obviously, this applies only to U.S. taxes—for other countries, check with your tax authorities.*

- **Respect history and emotion.** In the interest of balance, I must admit that some papers have sentimental or historical value, even if they have no *practical* value. If those old love letters, high school papers, or other artifacts produce tears of nostalgia; if they might come in handy when writing your memoirs; or if you want to be able to show them to your grandchildren in physical form, then by all means keep them!

Prioritize What's Left

If you're left with more papers than you can comfortably scan in a week or so, it's crucial to prioritize them. You could get interrupted, distracted, or delayed, and the project of scanning everything might drag on for longer than you imagined. So scan things in order of importance.

I suggest, at minimum, having three categories—urgent, normal, and low priority. (This might translate into three physical piles, or it might simply be the way you think about documents as you go through them.) Scan all the urgent documents first; then all the normal documents; then the low-priority ones.

If some category contains vast numbers of papers, I suggest scanning them in roughly reverse chronological order. In my experience, I'm much more likely to need the text of recent documents than older ones.

Try Scanning 50 Sheets Per Day

Still overwhelmed by all the pages to be scanned? Break it down into manageable chunks. For example, commit yourself to scanning just 50 sheets of paper per day (while, of course, also keeping up with new, incoming paper). Even the slowest scanner I mention in this ebook can churn through that many pages in less than 15 minutes, and the fastest can do it in under 2 minutes. That shouldn't be a burden on anyone's schedule.

But look at the results: In two work weeks, you'll have polished off an entire ream of paper. And in a year, you'll have gone through up to 13,000 pieces of paper—not too shabby!

Hire a Minion

If you simply can't devote the necessary time to scanning everything, why not hire someone to do it for you? It's easy work, and it could be a nice gig for a student wanting part-time work. Or contact a local temp agency—they can undoubtedly hook you up with someone who's qualified, inexpensive, and grateful for a few extra bucks.

Outsource Scanning

For truly gargantuan backlogs, you can call in the pros. There are companies that will pick up (or let you ship them) boxes of papers, have trained professionals scan and digitize them, and then hand you back your originals and the digital copies. Some services even offer on-site

scanning. Examples of document scanning companies that I found in a quick Google search:

- Innodata Isogen: http://www.innodata-isogen.com/services/digitization_and_imaging
- P2E: <http://www.p2escan.com/>
- Scan 2 Disc: <http://www.scan2disc.com/scanning.htm>
- Scantronix: <http://www.scantronix.net/>

OCR on the Go

Perhaps you bought a portable scanner (see [Portable Scanners](#)) to take with you on business trips. That's great—but you can't *always* have your scanner with you. And even if you did, it wouldn't help with documents that won't fit in it—menus, posters, billboards, street signs, and so on. But all these and more are still fair game for capture and OCR. You just need a digital camera (which could be the one built into your iPhone or other smartphone) and an app to do the necessary processing. With the right mobile tools, you may find yourself scanning receipts and business cards on the spot.

Learn about Pocket-sized OCR Tools

Very likely you have a device in your pocket that includes a camera, a wireless network connection, and the capability of running third-party software. If so, you can do many of the same things you can do with a desktop or portable scanner and OCR software, and in fact you can do a few cool things more easily. For example:

- You can store photos of business cards, receipts, signs, posters, billboards, and the like in the cloud, and be able to search their text along with all your other notes and documents.
- You can photograph large or awkwardly shaped documents and perform OCR on them almost instantly.
- You can snap a picture of a menu at a French restaurant and, a few seconds later, get an English translation.
- You can capture an image of something containing text and have that text read to you by a synthesized voice. (Sometimes, you can even combine this with translation!)

These sorts of tools are great for travelers, especially those who spend time in places where they don't read the local language well. But they're also useful for anyone who, from time to time, wants to create a searchable record of something they can't physically put through a scanner for one reason or another.

I should mention that in many cases, apps that run on mobile devices don't produce searchable PDFs as such. The data may be stored in some other format, or you may need to use a proprietary system for searching it. Even so, the advantages to such apps are enormous.

Pick an iOS OCR App

In my household, all the mobile data gadgets are made by Apple, so I'm most familiar with apps that run under iOS. When I first looked into mobile OCR apps, I was astonished to find more than 100 apps in the iTunes Store that have OCR capabilities of one sort or another (search for "OCR" and you'll see what I mean). So you have no shortage of choices.

Most of these apps focus on capturing business cards, receipts, or both—a nice way for business users to avoid accumulating papers. However, some have features optimized for travelers, while others are general-purpose data collection tools. Some OCR apps for iOS upload images to a server, which performs OCR in the cloud and then returns the resulting text, but others can perform OCR on the device itself.

I should point out, however, that for capturing documents, especially at close range, you'll get the best results with an iPhone 3GS or iPhone 4 (both of which have cameras that can focus), and of the two, an iPhone 4 will produce better results because its sensor has a higher resolution and better low-light performance (not to mention the fact that it has an LED "flash"). In fact, some of these apps don't work at all on first-generation iPhones, the iPhone 3G, or fourth-generation iPod touch models (even though they have cameras).

Clarified: *If you have an iPhone 3G, you may be able to use Griffin's Clarifi case, which includes a built-in close-up lens, to get photos sharp enough to work with OCR apps.*

(<http://www.griffintechnology.com/products/clarifi>, \$34.99)

Although I can't begin to do justice to the huge range of iOS apps in this category, here are a few representative examples:

- **Babelshot:** Take a picture of text in any of 32 different languages, and Babelshot not only performs OCR but also translates that text into English. (\$4.99)

- **Business Card Reader**: Recognizes business cards in seven languages, and connects to LinkedIn. (\$5.99)
- **CamCard**: Supports OCR of business cards in 12 languages, and has a very high customer rating. (\$6.99)
- **CardMunch**: This software offers “100% guaranteed accuracy” when scanning business cards because each scan is verified by a human being. But you pay an extra per-scan fee (cost varies based on volume) for that accuracy. (\$2.99)
- **DEVONthink To Go**: This app lets you sync the contents of your DEVONthink (Personal, Professional, or Pro Office) or DEVONnote database with your iOS device. If you take a picture and then sync it with your Mac, the desktop application can automatically perform OCR—although the recognized text is stored as a comment within a JPEG file. (\$14.99)
- **DocScanner**: A general-purpose OCR tool for creating searchable PDFs, DocScanner performs the OCR on your iOS device itself—no network connection required. (\$5.99)
- **Page Scanner**: Another general-purpose OCR app; can create either searchable PDFs or plain text files. (\$5.99)
- **Prizmo**: Prizmo offers OCR for all types of documents and performs the OCR directly on your iOS device; it also lets you do many of the same image-enhancement tasks (such as fixing skewed perspective) that the desktop version can do. (\$9.99)
- **WorldCard Mobile**: This highly rated business card scanner recognizes text in seven languages. (\$5.99)
- **XpenseTracker**: This full-featured business expense tracking app also offers OCR for receipts. (\$2.99)

Use Other Smartphones

If you have a smartphone that runs another OS, you still have numerous options. I was able to find quite a few OCR apps for the other two leading smartphone platforms, Android and Blackberry.

Android

Next to iOS, the greatest range of choices for mobile OCR exists on the Android platform. Just a smattering of the many options:

- BabelSnap (<http://www.babelsnap.com/>, \$2.99)
- CamCard (<http://www.intsig.com/home/us/2010-09-15-02-46-24>, \$14.99)
- DocScanner (<http://www.docscannerapp.com/>, \$4.99)
- Document Scanner
(<http://www.pwnwithyourphone.com/document-scanner>, \$3.98)
- Droid Scan 2 (<http://droidscan.com/>, \$4.98)
- Evernote for Android
(<http://www.evernote.com/about/download/android.php>, free)
- Portable Scanner (<http://www.silkenmermaid.com/>, \$1.99)
- Scan2PDF Mobile (<http://www.burrotech.com/>, £9.99)

BlackBerry

The BlackBerry OCR apps I was able to find focus almost entirely on business cards and receipts:

- Abukai Expenses
(<http://appworld.blackberry.com/webstore/content/14590>, free)
- Business Card Reader
(<http://appworld.blackberry.com/webstore/content/5987>, \$9.99)
- CamCard
(<http://appworld.blackberry.com/webstore/content/13707>, \$11.99)
- CardSnap
(<http://appworld.blackberry.com/webstore/content/2089>, \$4.99)
- Cognicard
(<http://appworld.blackberry.com/webstore/content/10660>, free)

Use Your Digital Camera

If you don't have a smartphone, or if its camera isn't of sufficient quality for the results you want, you can snap a picture with any digital camera, upload it to your Mac, and run it through your favorite OCR software to produce a searchable PDF.

However, let me offer a few tips:

- **Make sure you have *stand-alone* OCR software.** When scanner manufacturers bundle third-party OCR software, often it's intentionally crippled in such a way that it works *only* with scans made by that scanner, and won't process other files you throw at it. If you buy OCR software on its own, it won't have this limitation.
- **Watch image quality.** Make sure your subject is well-lit, in focus, and photographed from as straight an angle as you can manage.
- **Zoom.** Compose your image so that the text you want to recognize fills as much of the frame as possible; this provides more pixels for your OCR software to work with.

OCR for Students and Researchers

In college and graduate school I spent countless hours in libraries collecting books and journals, and then photocopying just the pages I needed and taking those with me for further study. Nowadays, I might snap a digital photo of the relevant pages instead, but there's yet another option: the handheld scanner.

Several companies make wand- or pen-shaped scanners that you can connect to your Mac laptop and swipe over the portion of a page you want to capture. They're much more compact than even the smallest portable document scanner, and you can use them with books and other bound items. For example:

- DocuPen X Series (<http://www.planon.com/products/docupen/xseries>, prices range from \$299.99 to \$399.99)
- IRISPen 6 (<http://www.irislink.com/c2-1692-225/IRISPen-6.aspx>, prices range from \$129 to \$299)
- VuPoint Magic Wand (<http://www.vupointsolutions.com/PDS-ST410-VP.asp>, \$99.99)

Avoid Common Printing Needs

Now that you've taken numerous steps to avoid receiving paper from others, and to get rid of the paper you still do receive, there remains another piece of the puzzle: how to stop generating more paper of your own. Kicking the printing habit can be hard, but in this chapter I help you to identify alternative ways in which you can achieve roughly the same end result.

Think (and Track) When You Print

You may hit Command-P dozens of times each day, out of habit or necessity. Sometimes printing truly is necessary—until all your business associates and family members join the paperless revolution, you'll be obligated to print certain things for their consumption. But countless pages are printed every day just because the documents' creators wanted to have copies “for their records” or “just in case.” Those printed pages are the ones you can most easily eliminate.

So, as an exercise, try this for a week. Put a piece of paper—yes, paper!—next to your printer, with three columns: Document, Pages, and Purpose. Every single time you pick up something from the printer, jot down the following information:

- **Document:** Could be the document's name, or just a word or two that reminds you what it was.
- **Pages:** The number of pages in that document.
- **Purpose:** Let's keep it simple, and make it one of F (for file), R (for review), or O (for other people). Things you print out simply to put in a folder or filing cabinet get an F; things you print out because you need to read them on the plane, or mark them up with comments, or otherwise review them, get an R; and things you print because you have to give or send them to someone else get an O. (Feel free to expand or customize this list according to your needs.)

At the end of the week, review your list. You may be surprised at how many pages you've printed, and of those, how many are less than essential. Merely paying attention to what you print may help you to be more conscious of how (un)necessary certain printouts are, and to cut back accordingly. But you may be able to go further still.

You're looking to eliminate as many of the "F" and "R" items as you can. I hope I've persuaded you in the course of this book that digital copies of files (which you already have, since you printed them) are just as useful as printed copies, and often more so—as long as they're diligently preserved and backed up. So unless you're complying with rules set down by your employer, the government, or some other entity, the only thing forcing you to keep printing "F" items is habit. Try going without printing those items for a week or two (keeping in mind the other suggestions later in this chapter) and see how you feel.

And as for the "R" items...

Review and Annotate Documents

If you've spent years editing documents by hand, on paper, in red ink, it can feel unsettling to think about switching to a paperless method. I can't change how you feel, but I can tell you that paperless reviewing and annotation tools exist, are both powerful and easy to use, and offer numerous advantages over paper. I think they're well worth a try.

Many Mac applications that can open PDFs—including Preview (included with Mac OS X), DEVONthink, and Acrobat Pro, among others—can also *annotate* them. Annotations are markings and notes that appear on a transparent "layer" above the document itself. Annotations don't alter the contents of the document, but they do add lines, shapes, sticky notes, comments, and in some cases traditional copy-editing marks. You can even use annotations to highlight text, in much the same way you could with a pen and highlighter. But, on a PDF, you're not limited in the length or number of comments (you'll never run out of virtual space); you can use multiple colors; and many people can annotate a document without making it unusable.

Yes, but how? Consult the *Help* menu in Preview or your favorite PDF application for instructions on using its annotation features.

An increasing number of iOS apps can do the same thing. I find the iPad, especially, to be an excellent substitute for paper when annotating PDFs, because the screen is so large and the virtual keyboard more comfortable to type notes with. (To learn more about iPad apps for annotating PDFs, see [Take Control of Working with Your iPad](#).)

Take Notes without Paper

For those of us who spend hours every day sitting in meetings or making phone calls, note-taking is one of the most common reasons to generate lots of paper. You already know you can take notes on a computer, but that's not always practical—especially if you're not a touch typist or if the use of a laptop in a meeting would be distracting. And although it's possible to type notes on an iPhone or iPod touch, it's tedious to do so except when the notes are quite short.

However, once again, the iPad makes a fantastic tool for taking notes. You can either type on its almost-full-size virtual keyboard or write on the screen with a fingertip or a stylus (available from several third parties) using a suitable note-taking app. And I know of at least one ([WritePad for iPad](#), \$9.99) that offers handwriting recognition, rather than simply saving your scrawled notes as a graphic. I include an entire chapter on note-taking in [Take Control of Working with Your iPad](#).

Send Invoices Electronically

Earlier in this book I suggested that you [Receive Invoices Electronically](#), if your work requires processing invoices from others. If, on the other hand, you bill someone else for your products or services, you can return the favor by sending your invoices electronically. Besides saving paper, envelopes, and stamps, electronic invoicing is faster and more efficient.

Before you switch to electronic invoicing with any of your clients, check with them to make sure they agree, and ask where invoices should be sent. (They may, for example, ask that you email them to a particular address in the billing department.) If a client can't accept emailed invoices, see if fax is acceptable—and then read [Fax without Paper](#) to find out how to send your faxes by email.

Although most businesses can read email attachments in common formats like .doc, I recommend always sending invoices as PDF files. Not only is PDF the most universal format, but a PDF is much less likely to be accidentally altered by the recipient.

To email an invoice from whatever application you normally use to create invoices, do this:

1. Choose File > Print.
2. From the PDF pop-up menu in the bottom-left corner of the Print dialog, choose Mail PDF.

Or add a step: *This creates a PDF and attaches it to an outgoing email message automatically, but doesn't give you the opportunity to rename the attachment (see [Choose a Naming Convention](#)) or save a copy for your records. If you want to do either of these things, instead choose Save as PDF, name and save the file, and manually attach it to a new email message.*

3. In a few moments, your email client should display a new message window, with the PDF already attached. Fill in the recipient, subject, and body of the message, and click Send.

Fax (Paperlessly) When Email Isn't an Option

There's an entire chapter on this topic ([Fax without Paper](#)) later in the book, but I wanted to bring it up here because a common reason to print something is so you can fax it using a conventional fax machine. Although some documents can be sent only by fax and not, say, as email attachments, that doesn't mean you have to print anything. So if you're still using a stand-alone fax machine, take this opportunity to read up on other approaches, and then free up even more desk space!

Always Print to PDF When Possible

If you pay bills, make purchases, or plan travel online, you're bound to see quite a few Web pages that summarize your transaction and urge you to print the receipt for your records—maybe even with an

ostensibly helpful “printer-friendly format” button. Yes, you should keep records of your purchases and payments. But *no*, you don’t have to print these pages to do so—at least not on paper.

Instead, when you see one of these pages, do one of the following:

- **See if an email receipt arrives too.** More often than not, when I make purchases online I get a receipt by email within minutes, and that receipt contains exactly the same information that’s on the “print me” page. Since I save my incoming email, I already have a record of the transaction and don’t need another one.
- **Print to PDF.** While viewing a Web page (or a document in almost any Mac OS X application), you can save it as a PDF in a special folder—[~/Documents/Web Receipts](#)—with just two clicks:

1. Choose File > Print.
2. From the PDF pop-up menu in the bottom-left corner of the Print dialog, choose Save PDF to Web Receipts Folder.

I do suggest visiting the [~/Documents/Web Receipts](#) folder from time to time and moving the files to more specific locations (as well as, if necessary, renaming them) so that you can find them easily.

- **Print a PDF to a document manager.** Some document managers, including DEVONthink, add their own commands to the PDF pop-up menu described in the previous item. So instead of choosing Save PDF to Web Receipts Folder, you could instead choose (for example) Save PDF to DEVONthink Professional, which can then categorize it manually or automatically.

Never Print “Just in case”

I have to admit I do this myself on occasion, even today. There are certain kinds of documents that I’m so accustomed to printing, or so paranoid about having when I need them, that I instinctively hit Command-P when they appear on my screen.

I’m thinking of things like travel itineraries, for example—since I have an e-ticket, won’t I need to show *something* to the agent at the check-in desk? (In fact, I know I don’t; I just need to show them ID, and they can look up my reservation in their computer.) The same goes for

certain receipts, such as when I pay my taxes online, and other documents for which the stakes are fairly high—I absolutely *must* be able to prove that I made that reservation, paid that fee, or whatever.

But what I know deep down inside is that nearly always, I’m no better off having a piece of paper than having a digital copy of the same document on my iPhone or iPad. Sure, I may need a confirmation number or evidence that I bought something, but almost without exception, the information itself—not the physical copy of it—suffices.

In other words: print only when you *know* you’ll need a document on paper, not out of habit or when you only *worry* that you might need it!

Carry a Mobile Device Instead of Paper

I always carry an iPhone with me, and when that’s not adequate for my needs, I take my iPad too. These devices, along with the iPod touch, let you store and display PDF files (including ones you’ve scanned)—not to mention books, newspapers, and other documents that would otherwise require a lot of paper. Android devices can also display PDFs using, for example, Adobe Reader (http://blogs.adobe.com/adobereader/2010/05/introducing_adobe_reader_for_a.html, free); BlackBerry users can install an app such as BeamReader (<https://appworld.blackberry.com/webstore/content/1306>, \$9.99).

So instead of printing out a receipt, travel itinerary, or other document you received online, copy it to your mobile device. It’s almost always a suitable substitute for paper, and in some cases (I hasten to point out that it’s not universal), electronic tickets for things like movies and concerts, which feature a barcode, can be scanned directly from your mobile device at the door rather than from a piece of paper. And, of course, you can use your mobile device for taking notes, managing shopping lists, and other tasks that would ordinarily require paper.

The options for transferring PDFs to a mobile device vary by platform. On an iOS device, for example, you could copy them to your Dropbox or iDisk, and then use the free Dropbox or MobileMe iDisk app to view them on the go. Another favorite of many Take Control folks is [GoodReader for iPhone](#), which also works on the iPod touch, and [GoodReader for iPad](#) (\$1.99 each). I explore many other such apps in *Take Control of Working with Your iPad*.

Read Paperlessly

Business documents aren't the only form of paper clutter. If you really want to go paperless, you can also find digital versions of many newspapers, magazines, and books—which can be consumed on your computer, an iOS device, or an ebook reader such as the Kindle or Nook.

I'd be the first to admit that the experience of reading books and periodicals on a screen rather than on paper is not uniformly great. I've read a few full-length books on my iPhone 4, and some magazines and newspapers on my iPad, that I've enjoyed thoroughly. But I've also seen many electronic publications whose style and usability were distinctly inferior to their paper versions.

Although the world of e-publications is rapidly evolving, I can offer at least a few words of advice for those considering moving from paper to silicon for most of their reading:

- **Handheld devices are better.** There are ways to read many books and periodicals on computer screens, but the size, shape, and weight of handheld devices makes the overall experience of reading books on them way better in most cases.
- **Resolution matters.** Although my iPad's display is physically larger than that of the iPhone, I prefer reading books on my iPhone 4—even with all the extra page-turns. For me, the added crispness of the iPhone 4's Retina display makes a world of difference. (Someday, no doubt, the iPad will get a Retina display too, and then I'll happily switch.) E-readers such as the Kindle and Nook also have higher-resolution displays than the (first-generation) iPad, though not as high as the iPhone 4.
- **Think about lighting.** Proponents of E Ink displays like the one on the Kindle boast that you can read them in bright sunlight at the beach. That's great, but 99.999 percent of the time, I read books indoors—or at least in the shade—anyway. Think about where you do your reading when choosing a display type.
- **Think about multimedia.** Even though I like my iPhone's display for text, I prefer the iPad when it comes to publications with lots of graphics or video. If you expect to read periodicals with more than just text, look for a large, color display.

Sign Documents without Paper

When a document requires a signature, it's natural to assume that requires ink on paper. And sometimes it does, but in a great many situations, you can “sign” and electronically deliver a document, whether you originally received it in digital or physical form.

In this chapter I begin by talking about situations in which the recipient needs to see your *handwritten* signature. For many contracts, legal agreements, and other day-to-day business documents, you can substitute a scanned copy of your signature.

There's also another concept you should be aware of—a *digital signature*, which is a way of certifying that you, and you alone, are the sender of a message or the signatory of a document. I cover this sort of signature briefly toward the end of the chapter.

Determine When a Pseudo-Signature Is Acceptable

When someone asks you to sign a document, simply ask this question:

Can I return this by fax or email, or is an original signature required?

You'd be surprised how often electronic transmission of a signature is considered perfectly valid. I've done this dozens of times myself—for example, when returning contracts for writing magazine articles and doing technical reviews for new books. If the other party is content with fax or email, I'm only happy to oblige. (And, as I explain shortly, you can send a fax by email, so it amounts to the same thing.) In cases where only an original signature is accepted, I send a piece of paper, but in my recent experience that happens mainly in cases where the thing to be signed is of tremendous gravity (or a lot of money is involved). You'll probably need ink on paper for a lease, bank loan, or affidavit, but for run-of-the-mill contracts and agreements, an electronic signature should suffice.

Scan Your Signature

To be able to fax or email signed documents without generating more paper, the first thing you need is a good digital copy of your signature. To make one, follow these steps:

1. On a clean, white, unlined sheet of paper, sign your name in dark ink at a normal size.

The one or the many: *If your signature takes on multiple forms, put them all on the paper. For example, sometimes I sign my name “Joe Kissell,” sometimes “Joseph Kissell,” and sometimes “Joseph W. Kissell,” depending on the context.*

2. Scan the page with your signature. If your scanner is normally set to reduce the resolutions of scans, bump it back up for this one—600 dpi is a good choice. And, even if you sign your name in black ink, do the scan in color. These extra tweaks will improve the quality of your scanned signature, which will in turn increase its perceived authenticity and the flexibility you have in using it later.
3. In your favorite image editing program (such as Preview, Photoshop Elements, or GraphicConverter), open the scanned image, crop it so that only a few pixels of white appear around the outside, and confirm that the white truly is white. (If it’s gray, or speckled, or otherwise “noisy,” adjust the contrast or brightness, or use whatever other tools your image editor provides to eliminate the noise.)
4. *Optional:* If you have the image editing kung fu to make the background of your signature transparent, do so (sorry, it’s too involved to explain here); this lets elements of the original PDF, such as a signature line, show through the background.

The PDFpen is mightier: *If you have PDFpen (or PDFpenPro), you need not bother with creating a transparent background, because PDFpen has a built-in command to make your signature’s background transparent when you add it to a PDF. Competing tools don’t have this capability, so transparency comes in handy in those tools.*

5. Save the file in either TIFF or PNG format (your choice, but PNG files tend to be smaller).

You now have a graphic file (or perhaps more than one) consisting only of your signature, with either a white or transparent background. Make sure you keep this in a convenient location.

Superimpose Your Signature on a PDF

Now comes the fun part: you open the PDF of the document to be signed, overlay the image of your signature, and save the composite image as a new file, which *looks* like you physically signed it.

I know of at least four tools offhand that can pull off this trick on a Mac, and one of them is even free. But let me be candid here: one of them—PDFpen—does a much better job than the rest, and that’s the one I recommend. (PDFpenPro has the same capability.) So, I’m going to provide complete directions for doing this with PDFpen, but only cursory instructions for doing it with a few other tools.

Add a Signature with PDFpen




To add your scanned signature to a document using PDFpen, follow these steps:

1. Open the PDF needing a signature in PDFpen.
2. Choose File > Insert (or click the Insert button on toolbar), navigate to the scanned image of your signature you created earlier, and click Open. PDFpen places your signature on the page.
3. Drag your signature to the desired location on the page and, if necessary, resize it by dragging one of its corners.
4. If your signature doesn’t already have a transparent background, select it and choose Edit > Make Transparent Image. In the dialog that appears, click once in the white space surrounding your signature, and then click Make Transparent.
5. Save and close the document (or, if you prefer, use File > Save As to save a copy with your signature, keeping the original intact).

You can now attach the signed PDF document to an email message. If only fax is acceptable, no problem—you can use any of the email-to-fax

gateways described in the next chapter ([Fax without Paper](#)) to send a fax without a fax machine.

Store Your Signature in PDFpen for Easy Access

If you'll be adding your signature to PDFs frequently in PDFpen, you may wish to add your signature to the PDFpen library. To do so, place your signature in a PDF as in Steps 1–4 just previously, and make sure the signature image is selected. Then, click the Library button on the toolbar. In the Library window, from the Add  pop-up menu at the lower left, choose Add Selected Imprint. PDFpen adds your graphic, including transparency, to the Graphics  portion of the library. Next time you want to insert your signature in a PDF, simply click the Library button on the PDFpen toolbar, click the Graphics  button, and then click your signature.

Add a Signature with Acrobat Pro

Acrobat Pro has two different methods of affixing the image of a signature to a PDF. One of them is as part of a digital signature, which I describe in a moment (see [Learn About Digital Signatures](#), later in this chapter). The other, simpler method uses something Acrobat calls a *stamp*, which can be any graphic that's overlaid on a PDF.

The basic method is to create one or more signature stamps by choosing Tools > Comment & Markup > Stamps > Create Custom Stamp and adding an image of your signatures. These stamps can then be reused whenever you need them. Having configured a stamp, choose Tools > Comment & Markup > Stamps > *Category Name* > *Stamp Name*, and click to place the image at the desired spot.

Add a Signature with PDF Studio

PDF Studio, like Acrobat Pro, uses stamps to superimpose images on a PDF. Set up a stamp by choosing Comments > Add Stamp > Create Custom Image Stamp and directing it to the scan of your signature. Once you've done that, you can sign a document by choosing Comments > Add Stamp > *Category Name* > *Stamp Name* and clicking to place the image at the right location.

(<http://www.qoppa.com/pdfstudio/>, Standard version, \$60; Pro version, \$95)

Add a Signature with FormulatePro

FormulatePro, unlike the other tools mentioned in this section, is completely free. It also offers the easiest way to add an image of your signature to a PDF. Just choose File > Place Image, navigate to your image, click Open, and then move the graphic to the desired location. (<http://code.google.com/p/formulatepro/>, free)

Digital Forgeries

When you superimpose an image of your signature on a PDF, this only gives the *appearance* of a genuine signature. It wouldn't be accepted for documents of great importance because it's easy to fake. All anyone has to do is scan your signature (from, say, a credit card receipt or a hotel register) and they could "sign" something as you. So, let's be clear: this is not a high-security option.

But there's another way of signing electronic documents that is quite secure—that's a digital signature, which I discuss next.

Learn about Digital Signatures

If your work requires you to send or receive signed legal documents of significant gravity, the sort of pseudo-signatures I've talked about so far in this chapter won't cut it, because they're too easy to fake. However, it is possible to prevent forgeries and "sign" digital documents in a way that is, in fact, much more secure even than using a pen. A *digital signature* does just that.

When you digitally sign a document, you embed in it information about yourself (such as your name and email address)—and possibly a graphic representing your handwritten signature. But this isn't mere ornamentation; you're adding a specially encrypted *certificate* (sometimes called a digital ID) that the recipient can validate to confirm that the signature truly is yours. The software you use to sign a document does something else, too: it calculates a unique value based on the contents of the document and includes an encrypted copy of that value in the signature. The result is that if the document were altered in even the tiniest way, this value would no longer be accurate, and the recipient would know that the document had been tampered with.

So, tamper-proof digital documents that can be reliably connected with a signatory sound great—there’s got to be a catch, right? Yep. In fact, there are several:

- Multiple mutually incompatible standards exist for digitally signing documents. Unless all parties involved use the same system, the process won’t work.
- Very few Mac OS X applications can digitally sign PDF documents, which are of primary concern in this ebook. Acrobat Pro can, and so can PDF Studio Pro, but if you open a signed PDF in an application, such as Preview, that doesn’t know about digital signatures, you’ll simply see an ordinary PDF.
- A certificate that can be used to verify your identity is expensive and awkward to obtain (unless you work for a large corporation or government entity that can supply its own). You can easily create your own “self-signed” certificate for free, but since no trusted third party has validated its authenticity, this is essentially no more secure than using a simple image of your signature. The recipient can verify only that the document hasn’t been tampered with, but not that you are who you say you are. (You can also obtain a free certificate that can at least confirm that your email address is the one used to request the certificate, but if you want anything fancier than that, you have to pay.)

Certifiable: *If you have a digital certificate suitable for signing email messages, as I discuss in [Take Control of Apple Mail in Snow Leopard](#), you can use that same certificate to sign PDFs, too. Acrobat Pro can access these certificates in your keychain directly; to use them in PDF Studio Pro, you must first use Keychain Access to export the certificate as a .p12 file.*

For all these reasons, and because the details of dealing with certificates, validating signatures, and managing all the associated software infrastructure gets rather messy, I don’t include complete instructions here. (If there’s sufficient public interest, I’ll consider adding it to a future edition of this ebook.)

I can, however, direct you to two *Macworld* articles by Pariah S. Burke that cover portions of the process and will at least get you started:

- “Create a digital ID with Adobe Acrobat” explains how to create a (self-signed) digital ID in Acrobat Pro that you can use to sign documents, although it doesn’t cover the process of obtaining an *externally validated* certificate (<http://www.macworld.com/article/142184/>).
- “Sign electronic documents with your own handwritten signature” shows you how to add a scanned image of your signature to a digital ID and use that to digitally sign a PDF (<http://www.macworld.com/article/142183/>).

Fax without Paper

You may think of fax as an outmoded technology that was long ago supplanted by email, but countless people still send and receive faxes every day. In certain environments—notably medical and legal practices—it’s widely considered more reliable and more secure than email. If you can’t remember the last time you had to deal with faxing documents, feel free to skip this chapter. But if you do find a need to send or receive documents by fax, even if only occasionally, this final chapter explains how to do so without owning a fax machine or generating any paper.

Receive Incoming Faxes

I’m not shocked that people still send and receive faxes, but I am a bit baffled as to why anyone would want a *fax machine*, as such, in this day and age. They’re bulky and require special consumables (beyond what you already buy for your printer). Although a fax machine can sometimes share a landline with a telephone, doing so makes it more awkward for both the fax sender and the receiver—and if you give it a separate line, then that’s an extra monthly expense. Who needs all that bother?

Since you’re a Mac user, you have (at least) two excellent ways to receive faxes without having an extra box on your desk, and without generating extra paper. I’ll tell you about my favorite method first—the fax-to-email gateway—and then say a few words about using a modem.

Note: I’m deliberately omitting multi-function devices (combination printer, scanner, and fax machine) from this discussion, because most of the arguments against using a stand-alone machine for receiving faxes apply equally to them, too.

Use a Fax-to-Email Gateway

A fax-to-email gateway works like this. You sign up with a provider and receive a private fax number. (Usually, you get to choose the area code—and sometimes the exchange too.) When a fax machine dials

that number, a computer answers, receives the incoming fax, and saves the image as a digital file (perhaps a PDF or a multi-page TIFF). Then it sends you the file as an email attachment—or, in some cases, merely sends you an email notification and lets you download the image itself using a Web browser or desktop application.

One little gotcha: *The only fax-to-email gateway I'm aware of that lets you keep your existing fax number is eFax (though it's possible that some others have a similar capability). If lots of people already have your current number, using a service that requires you to switch to a different number may involve some inconvenience.*

As far as the sender is concerned, the experience is identical to sending a fax to an ordinary fax machine—they'll never know that's not what they did. But from your point of view, receiving a fax is just like getting an email message. But there's a bonus: you can perform OCR on the incoming fax, just as you can on any scanned document (if the fax service provider doesn't already do this for you)—and then archive it along with all your other searchable PDFs.

Oodles of companies offer services like this, and pricing plans vary—you may pay a monthly fee, a per-fax or per-page fee, or a combination of these. But the prices are invariably less than what you'd pay for an extra phone line plus paper, toner, maintenance, and electricity for a stand-alone fax machine. Here are but a few examples:

- eFax (<http://home.efax.com/>)
- jConnect (<http://www.j2.com/>)
- MaxEmail (<http://www.maxemail.com/>)
- MyFax (<http://www.myfax.com/>)
- Nextiva (<http://www.nextivafax.com/>)

I have no particular recommendations—my sense is that these services are more alike than different—but I'll just mention that I've been a satisfied jConnect customer myself for years.

All these companies also let you send outgoing faxes without any extra equipment—I discuss that topic in just a moment.


Use a Modem for Incoming Faxes

A fax machine essentially consists of a modem, a simple computer, and a printer. So anyone with a modem attached to their computer and the right software can replicate the functionality of a fax machine without a separate box sitting on their desk.

I remember the time—not so long ago—when all Macs had built-in modems. As broadband Internet connections became more common than dial-up access, most of those modems went unused, and in 2005 Apple phased them out and began selling an external USB modem for those people who still needed them. But even the Apple USB Modem was discontinued in 2009. So Mac users who want modems have to look for models made by other manufacturers—or hope to chance on a used Apple USB modem on eBay.

If you have, or can locate, a compatible modem, then you can receive faxes on your Mac. Like a physical fax machine, your Mac-based fax will require a phone line. On the plus side, it will give you the capability of receiving faxes without having to print them out—and, as with fax-to-email gateways, you can perform OCR on the resulting files.

To be blunt, I'd like to discourage you from doing this—I think it's a cumbersome solution, and one without much of a future. But if you *must* use your Mac to receive incoming faxes, connect your modem and then do the following:

1. Open the Print & Fax pane of System Preferences.
2. Click the plus  button.
3. In the Add Printer window, click Fax in the toolbar, select your modem, and click Add. The window closes.
4. Back in the Print & Fax pane, select your virtual fax machine. Enter the phone number for the line to which the modem is connected.
5. Click Receive Options. Then select Receive Faxes on This Computer and set the other options—such as how many times the phone should ring before answering and where to save incoming faxes—as you prefer. Click OK, and then close System Preferences.

That's it—your Mac is now a fax machine. (But read on for information about using it to *send* faxes.)

Send Outgoing Faxes

Just as you can use either a gateway or a modem to receive faxes, you can use the same two techniques to send outgoing faxes. The process isn't exactly analogous, in that you're generally starting with a computer-generated document, but it's still simple.

Use an Email-to-Fax Gateway

As I mentioned earlier, every fax-to-email gateway also works in the other direction—it lets you send faxes from your computer, although the exact procedure may or may not involve email. For example:

- **Email:** Send email to a special address, and the text of your message (and/or an attached document) is converted to a fax. In some cases, you include the fax number itself in the email address. (For example, send a message to 15035551212@j2send.com and, because jConnect recognizes the From address associated with your account, it knows you're allowed to send faxes; the part of the address before the @ sign is translated into the fax number.) In other cases, you're expected to put the fax number in the subject or the first line of the message.

Gotcha covered: *For faxes that need a cover sheet, there's usually some mechanism to create one—for instance, the text of the email message may be turned into a cover sheet, while the attachment is used for the remaining pages.*

- **Web:** Log in to your account in a Web browser, compose or upload a document, enter the recipient's fax number, and click Send.
- **Desktop applications:** Some services offer Mac applications that let you drag in (or compose) documents that serve as the fax's content, design cover sheets, and connect to Address Book for fax numbers.
- **Print-to-fax:** Desktop software such as jConnect's j2 Messenger, can add features to standard Print dialogs, so that you can compose a document in nearly any application, choose File > Print, and then select the fax gateway and an associated fax number, instead of a printer, as the destination for your document.


<https://www.j2.com/jconnect/twa/page/downloadMac>

And, many services offer some combination of these approaches.

In general, you can use any common document type for outbound faxes—for example, Word (.doc) or PDF. And, if you need to fax a document that you have only in paper form, no problem: scan it and then send the resulting file. I say more about occasions for doing this sort of thing in [Sign Documents without Paper](#), earlier in this ebook.

Send Outgoing Faxes Using Mac OS X

A couple of pages back, in [Use a Modem for Incoming Faxes](#), I explained how to set up Mac OS X to use an external modem to receive faxes. Once you’ve followed those steps, you’re also set up to send outgoing faxes. Again, I advise against doing this if you can possibly use an email-to-fax gateway instead. But if you want to send a fax through your modem, follow these steps:

1. Compose your fax in any application that can print—Word, TextEdit, Mail, or whatever.
2. Choose File > Print. But instead of clicking Print immediately, choose your virtual fax machine from the Printer pop-up menu in the Print dialog.
3. In the To field, enter the recipient’s fax number; or, if that number is already in Address Book, click the plus  button, select the number, and click To. Repeat as necessary to add more recipients; close the Addresses window when you’re done adding recipients.
4. If you need to enter a number or code before the number—say, to disable call waiting temporarily—enter that in the Dialing Prefix field.
5. To add a cover page, check the Use Cover Page checkbox and enter the text you want to appear in the Subject and Message fields.
6. Click Fax.

Mac OS X “prints” your document to the recipient’s fax machine.

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Joe Kissell is Senior Editor of *TidBITS* and the author of numerous print and electronic books about Macintosh software, including *Take Control of Mac OS X Backups* and *Take Control of Running Windows on a Mac*. He is also a Senior Contributor to *Macworld*, was the winner of a 2009 Neal award for Best How-to Article, and has appeared on the MacTech 25 list since 2007. Joe has worked in the Mac software industry since the early 1990s, including positions managing software development for Nisus Software and Kensington Technology Group.



In his increasingly imaginary spare time, Joe likes to travel, cook, walk, and practice t'ai chi. He lives in Paris with his wife, Morgen Jahnke,

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Shameless Plug

Although I write about computers as my day job, I have a great many other interests, which I write about on several Web sites, including [Interesting Thing of the Day](#) and my personal blog. You can find links to all my sites, a complete list of my publications, and more personal details about me at JoeKissell.com.

About the Publisher

Publishers Adam and Tonya Engst have been creating Apple-related content since they started the online newsletter *TidBITS*, in 1990. In *TidBITS*, you can find the Apple news, plus read reviews, opinions, and more (<http://www.tidbits.com/>).

Adam and Tonya are known in the Apple world as writers, editors, and speakers. They are also parents to Tristan, who thinks ebooks about clipper ships and castles would be cool.



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