DO-IT-YOURSELF

Upgrading & Fixing Computers

FOR

DUMMIES®

Learn to:

- Upgrade and repair your PC, laptop, or netbook
- Find the right parts at the best price
- Add memory, replace a hard drive, beef up your video, and do it all yourself!

Andy Rathbone
Bestselling author of
Windows 7 For Dummies

Upgrading and Fixing Computers Do-It-Yourself For Dummies®

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About the Author

Andy Rathbone started geeking around with computers in 1985 when he bought a boxy CP/M Kaypro 2X with lime-green letters. Like other budding nerds, he soon began playing with null-modem adapters, dialing up computer bulletin boards, and working part-time at RadioShack.

In 1992, Andy and DOS For Dummies author/legend Dan Gookin teamed up to write PCs For Dummies. Andy subsequently wrote the award-winning Windows For Dummies series, TiVo For Dummies, and many other For Dummies books.

Today, he has more than 15 million copies of his books in print, which have been translated into more than 30 languages. Andy lives with his wife, Tina, and their two cats in Southern California. Feel free to drop by his Web site at www.andyrathbone.com, or follow him on Twitter at www.twitter.com/andyrathbone.

Dedication

To that sense of satisfaction felt when you fix it yourself.

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Introduction

You’re no dummy; we both know that. But something about computers often makes you feel like a dummy. And that’s perfectly understandable. Unlike today’s kids, you probably didn’t grow up with a computer in your kindergarten class, car, or in your back pocket. With this book, you’ll no longer feel uncomfortable when you’re faced with a computer that refuses to work the way it should.

This book doesn’t help you replace your computer’s motherboard or build a PC from scratch using custom-selected parts. Plenty of more advanced titles out there can help you with those chores.

No, this book helps you with the types of upgrade and repair tasks that you’re most likely to encounter today: Upgrading an older PC to run Windows 7, for instance, and making sure that everything works correctly. Adding a larger hard drive. Upgrading that video card to satisfy the needs of Windows 7 or a new computer game. Making sure your PC’s firewall is turned on and working correctly. Turning on the security option for your wireless network. And saving money by replacing your PC’s broken parts rather than replacing the entire computer.

Simply put, this book discusses the most common upgrading and repair problems facing computer users today. It explains how to choose the right part to purchase, where to buy it, how to install it, and how to make sure that your computer knows how to put it to work.

About This Book

Welcome to *Upgrading and Fixing Computers Do-It-Yourself For Dummies*. Aimed at people who want to upgrade to Windows 7 or prepare their computers for the latest technology, this book walks you through several tasks:

Step-by-step tasks walk you through installation and repair chores, with a photo or illustration at almost every step.

A new emphasis on how to find and choose the right part for your computer.

An updated visual appendix that explains how to recognize *all* the ports on your computer and add any ports you may need.

A network installation guide in Chapter 15 helps you configure a network with both wired and wireless devices.

Chapter 18 provides details on installing or upgrading to Windows 7 — even onto a newly upgraded hard drive.

Computer parts need *drivers* — special software that helps Windows understand how to talk with them. Without a proper driver, Windows 7 can’t talk to some parts of your computer. Chapter 17 explains when you need new drivers, where to find them, and how to install them successfully.

Windows 7’s Home Premium, Business, and Ultimate editions let you record TV shows onto your PC for later viewing or burning to DVD. The catch?

Your PC needs a *TV tuner,* a device I explain how to buy and install in Chapter 11.

Now that Windows can record TV shows, a DVD burner comes in particularly handy for saving your movies. I explain how to buy and install both DVD and Blu-ray drives in Chapter 7. (As a bonus, you can back up your files onto blank DVDs for safekeeping.)

Plus, this edition continues to include the information that hundreds of thousands of people have relied on for 17 years: information about upgrading and fixing video cards, hard drives, CD/DVD drives, memory chips, monitors, modems, printers, scanners, hard drives, and other popular computer parts.

Where to Start

Jump in anywhere. Each chapter is a self-contained nugget of information, keeping you from flipping back and forth between different sections.

Chapters start by introducing each new upgrade and offering tips on buying the right computer parts. A step-by-step installation guide follows, complete with screen shots, illustrations, and/or photographs to keep you on track.

Read These Parts

If you’re lucky (and your computer is fairly healthy), you don’t need to read very much of this book; just skim the

step-by-step instructions. But when something weird happens, this book helps you figure out what went wrong, whether it’s repairable, or whether you must replace it.

Along the way, you find helpful comments and warnings to help you out.

You find tips like this scattered throughout the book. Take a look at them first. In fact, some of these tips may spare you from having to read more than a paragraph of a computer book — a worthy feat indeed!

Don’t Read These Parts

Unfortunately, I did stick a wee bit o’ technobabble in this book. After all, you sometimes need to decipher the language on a computer part’s box. Luckily for you, however, I have neatly cordoned off all the technical drivel.

Any particularly odious technical details are isolated and posted with this icon so that you can avoid them easily. If a computer nerd drops by to help with your particular problem, just hand him or her this book. With these icons, the computer nerd knows exactly which sections to examine.

How This Book Is Organized

This book has six major parts. Each part is divided into several chapters. And each chapter covers a major topic, which is divided into specific sections.

The point? Well, this book's indexer sorted all the information with an extra-fine-tooth flea comb, making it easy for you to find the exact section you want when you need it. Plus, everything's cross-referenced. If you need more information about a subject, you can figure out exactly which chapter to read.

Here are the parts and what they contain.

Part I: Getting Ready to Upgrade

Start with these two chapters, as they explain the simple tools you need to complete most upgrades and repairs. The chapters explain common mistakes to avoid, as well as techniques to make repairs quickly and safely.

Plus, the chapters make sure you've cast Windows 7's built-in safety nets: special programs that can make your computer *repair itself*.

Part II: Making Your Computer Work Better

Microsoft’s latest version of Windows, 7, now lives on millions of the world’s PCs. This part of the book explains how to make sure your PC’s ready when you choose to upgrade. It explains how to find out whether your current PC can run Windows 7, what parts need to be replaced, and how to add Windows 7 essentials, like better graphics, more memory, a larger power supply, and a DVD drive: Windows 7 requires one.

By the way, upgrading your PC for the graphics-intensive Windows 7 also makes it a prime PC for playing the latest computer games.

Part III: Teaching an Old Computer New Tricks

Flip here quickly for the fun stuff. Rather than focusing on the boring, necessary repairs and upgrades, this part of the book explains the luxuries. You can transform your PC into a home theater, for example, by upgrading its sound and speakers and adding a TV tuner. Another chapter explains how to transform your camcorder footage into an edited movie, stored on an easily viewed DVD.

Bought a new computer? Then I explain how to put your old computer to work as a backup machine, dutifully copying all of your files each night. Or, combined with a scanner, it turns into a fax machine. Or you can recycle some of its parts, placing them in your new computer. Or, if it’s *really* ready to pass on for an income tax deduction, I explain how to wipe it clean of your data, but still keep it useable for the charity.

Part IV: Communications

Computers don’t like to be alone, and the Internet brings everybody and their computers closer than ever before. This part of the book shows how to connect to the Internet with a dialup or broadband modem. You also find out how to create a small home or small office network, enabling all your computers to share the same Internet connection and files.

If you’re worried about hackers breaking into your computer, head to this part to make sure Windows 7’s security measures work as they should.

Part V: Introducing Parts to Windows

If anybody’s a dummy here, it’s your computer. Even after you’ve stuck a new part in its craw, your computer often doesn’t realize that the part is there. If Windows refuses to deal politely with the newly installed device, check out the chapter on finding and installing the right *driver* to make Windows behave. Turn to this section also when you’re ready to upgrade to Windows 7 or install it onto a brand-new hard drive.

Part VI: The Part of Tens

Some information just drifts away when it’s buried deep within a chapter or even within a long paragraph. That’s why these tidbits are stacked up in lists of ten (give or take a few items). Here, you find the cheap fixes you

should try first, and ways to put the Web to work when your computer leaves you stumped.

Icons Used in This Book

This book's most exceptional paragraphs are marked by icons — little eye-catching pictures in the margins:

This icon warns of some ugly technical information lying by the side of the road. Feel free to drive right by. The information is probably just a more complex discussion of something already explained in the chapter.

Pounce on this icon whenever you see it. Chances are that it marks a helpful paragraph worthy of a stick-on note or highlighter.

If you've forgotten what you were supposed to remember, keep an eye toward the margins for this icon.

Better be careful when you're about to do stuff marked by this icon. In fact, it warns you about dangerous activities you *shouldn't* be doing, like squirting WD-40 into your floppy drive.

This icon flags areas of special importance to laptop or netbook owners.

Auto mechanics can find the most helpful sections in their manuals by just looking for the greasiest pages. So by all means, draw your own icons next to the stuff you find particularly helpful. Scrawl in some of your own observations as well.

Where to Go from Here

If you’re clamoring for more basic information on Windows, check out one of my *Windows For Dummies* books, published by Wiley Publishing. They come in several flavors, including Windows 7, Vista, XP, and earlier.

Also, be sure to check my Web site at www.andyrathbone.com. It contains a complete and updated list of all the Internet sites mentioned in this book, collected for your point ’n’ click convenience. Any corrections, heaven forbid, appear there, as well. Feel free to drop me a line if any part of this book leaves you scratching your head.

Ready to go? Then grab this book and a screwdriver. Your computer is ready whenever you are. Good luck.

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Part I

Getting Ready to Upgrade

"We should cast a circle, invoke the elements, and direct the energy. If that doesn't work, we'll read the manual."

In this part . . .

This part of the book lays out all the tools you need to upgrade or repair your computer. Spoiler: It's a screwdriver.

But more than that, this part of the book helps you become familiar with your computer, identifying its parts both inside and out. You discover how to reveal

manufacturer names and model numbers — essential information when tracking down replacements.

You figure out how to find out exactly what’s inside your PC — how much memory it has, for example, and which weak links need to be replaced first.

Finally, I walk you through making sure your computer’s System Restore and Windows Update features work correctly. That helps keep Windows running smoothly on its own, keeping that screwdriver out of your hands for as long as possible.

Chapter 1

Start Here First

Topics in this chapter

- Determining when to upgrade
- Determining when not to upgrade
- Upgrading do’s and don’ts
- Turning on Windows Update
- Making sure System Restore works
- Identifying your Windows version and your computer’s parts

You picked up this book for any of several reasons. You may be eyeing Windows 7, Microsoft’s newest version of Windows, and want to upgrade your computer to meet Windows 7’s needs. Perhaps one of your computer’s parts died, and you’re looking for a replacement. Or maybe your computer simply needs some fine-tuning. Either way, start with this chapter.

This chapter starts with the easy stuff by letting you know when it’s time to upgrade, and when it’s time to simply throw in the towel and buy a new computer.

You discover how to find out what version of Windows lives on your computer, as well as how to identify the CPU and amount of memory hiding inside your computer’s case.

This chapter also explains how to identify every part inside your computer’s case, so you can see if your

computer meets those fine-print system requirements listed on the side of many software boxes.

To keep your work as light as possible, this chapter explains where Windows 7 has the power to repair itself — *if* those powers are turned on and running correctly, that is. You find complete instructions on making sure the self-healing abilities of Windows Update and System Restore are up and running.

Remember, anytime you're not sure what plugs in where, check out this book's Appendix. It's a visual directory of all your computer's connectors and the gadgets that will fit into them.

Determining When to Upgrade

Your computer usually tells you when it wants an upgrade. Some warning signals are subtle, others more obvious. At worst, they can be downright annoying.

In any case, keep track of the following when you're deciding whether it's time to open the wallet and grab the toolbox:

> **When your operating system demands it:** The latest version of Windows, Windows 7, is easily Microsoft's best operating system in years. If you've caught the "latest and the greatest" fever, it's easy to find out if your computer is up to snuff; Microsoft lists Windows 7's system requirements at

http://windows.microsoft.com/systemrequirements, and I dissect them in Chapter 18.

When you keep waiting for your computer to catch up: You press a button and wait. And wait. When you're constantly working faster than your computer, give your computer a boost with some extra memory and a faster video card.

When you can't afford a new computer: When a new computer's out of your price range, upgrade your computer one part at a time. Add that memory now, for example, then add a new hard drive with that holiday bonus. Time each purchase to match the lowest prices. When you finally buy your new computer, save costs by salvaging your monitor, as well as new parts you've added to your old computer.

When you want a new part in a hurry: Computer repair shops aren't nearly as slow as most repair shops. Still, do you *really* want to wait four days for some kid to install that new video card — especially when you have a nagging suspicion that you could do it yourself in less than 15 minutes?

When there's no room for new software: When your hard drive constantly spits up Disk Full messages, you have three options:

- Uninstall programs you no longer use and copy unneeded files to CDs or DVDs. (This takes a lot of time.)
- Better yet, replace your computer's hard drive with a larger and faster one, a task covered in Chapter 6. (Windows 7 makes this easier than ever.)

- Buy a removable drive to serve as a parking garage for files and programs, also covered in Chapter 6. Most external drives plug into your computer's USB port, a chore as simple as plugging in a thumb drive.

When you're afraid to open the case: Fear of opening your computer's case is no longer an excuse to put off upgrades. Many new computer parts now live on the *outside* of the computer. You find external DVD drives and burners, hard drives, memory card readers, sound boxes, and much more. None of these devices require popping open the case to install them.

Determining When You Shouldn't Upgrade

Sometimes, you shouldn't upgrade your own computer. Keep your hands off during any of the following circumstances:

When a computer part breaks while under warranty: If your new computer is under warranty, let the manufacturer fix it. In fact, trying to fix or replace a part sometimes voids the warranty on the rest of your computer. Some manufacturers void the warranty if you simply open your computer's case. Read the warranty's fine print before grabbing a screwdriver.

Keep track of your warranty expiration date; it's usually listed on your sales receipt. Lost it? Some manufacturers (Gateway, Dell, and a few others) provide access to your warranty information through their Web sites, as described in Chapter 21.

On a Friday: Don't try to install a new computer part on a Friday afternoon. When you discover that the widget needs a *left* bracket, too, many shops will be closed, leaving you with a table full of detached parts until Monday morning.

When you're working on a deadline: Just like kitchen remodeling, computer upgrading sometimes takes twice as long as you'd originally planned. Most parts install in a few minutes, but always allow yourself a little leeway.

If your computer is *old:* Not all computers can be upgraded. If you bought your computer before 2004, you're probably pouring money into a sinking ship. Check out your Windows Experience Index in Windows 7, described in Chapter 18, and see how well your computer's CPU rates. (Old CPUs are expensive to upgrade, making a new computer a better deal.) Or, if you're running Windows XP, download Windows Upgrade Advisor, also in Chapter 18, to see if your computer's still powerful enough for Windows 7.

Before upgrading a computer, check these numbers: Add the cost of needed parts (more memory, a bigger hard drive, a faster video card and/or monitor, a DVD burner, and updated