


Build the perfect PC
for gaming, multimedia, the office, or the family

Building a PC

FOR

DUMMIES®

5th Edition

A close-up photograph showing a person's hand holding a green RAM module with multiple black chips. The module is being positioned over a motherboard's RAM slots. A barcode sticker is visible on the top of the RAM module. The motherboard is orange and has various components like capacitors and other slots visible.

Mark L. Chambers

Author of *PCs All-in-One Desk*
Reference For Dummies

A Reference for the Rest of Us!®

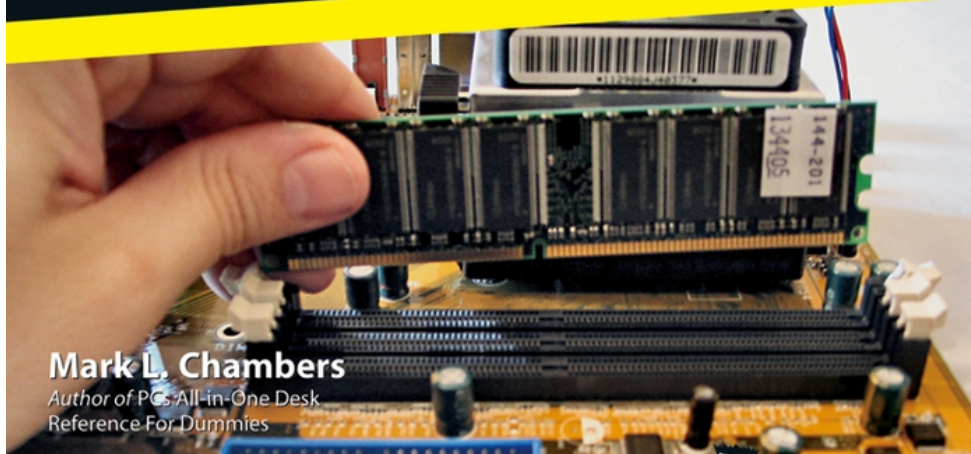


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by Mark L. Chambers



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About the Author

Mark L. Chambers has been an author, a computer consultant, a BBS sysop, a programmer, and a hardware technician for more than twenty years — pushing computers and their uses far beyond normal performance limits for decades now. His first love affair with a computer peripheral blossomed in 1984 when he bought his lightning-fast 300bps modem for his Atari 400. Now he spends entirely too much time on the Internet and drinks far too much caffeine-laden soda.

With a degree in journalism and creative writing from Louisiana State University, Mark took the logical career choice: programming computers. However, after five years as a COBOL programmer for a hospital system, he decided there must be a better way to earn a living, and he became the Documentation Manager for Datastorm Technologies, a well-known communications software developer. Somewhere in between writing software manuals, Mark began writing computer how-to books. His first book, *Running a Perfect BBS*, was published in 1994 — and after a short decade or so of fun (disguised as hard work), Mark is one of the most productive and best-selling technology authors on the planet.

Along with writing several books a year and editing whatever his publishers throw at him, Mark has also branched out into Web-based education, designing and teaching a number of online classes — called *WebClinics* — for Hewlett-Packard.

His favorite pastimes include collecting gargoyles, watching St. Louis Cardinals baseball, playing his three pinball machines and the latest computer games, supercharging computers, and rendering 3-D flights of fancy with TrueSpace — and during all that, he listens to just about every type of music imaginable. Mark's worldwide Internet radio station, *MLC Radio* (at www.mlcbooks.com), plays only CD-quality classics from 1970 to 1979, including everything from Rush to Billy Joel to *The Rocky Horror Picture Show*.

Mark's rapidly expanding list of books includes *iMac For Dummies*, 4th Edition; *Mac OS X Tiger All-in-One Desk Reference For Dummies*; *Scanners For Dummies*, 2nd Edition; *CD & DVD Recording For Dummies*, 2nd Edition; *PCs All-in-One Desk Reference For Dummies*, 2nd Edition; *Mac OS X Tiger: Top 100 Simplified Tips & Tricks*; *Microsoft Office v. X Power User's Guide*; *BURN IT! Creating Your Own Great DVDs and CDs*; *The Hewlett-Packard Official Printer Handbook*; *The Hewlett-Packard Official Recordable CD Handbook*; *The Hewlett-Packard Official Digital Photography Handbook*; *Computer Gamer's Bible*; *Recordable CD Bible*; *Teach Yourself the iMac Visually*; *Running a Perfect BBS*; *Official Netscape Guide to Web Animation*; and the *Windows 98 Troubleshooting and Optimizing Little Black Book*.

His books have been translated into fourteen languages so far — his favorites are German, Polish, Dutch, and French. Although he can't read them, he enjoys the pictures a great deal.

Mark welcomes all comments and questions about his books. You can reach him at mark@mlcbooks.com, or

visit MLC Books Online, his Web site, at
www.mlcbooks.com.

Dedication

This book is posthumously dedicated to my friend and teacher, LSU journalism professor Jim Featherston. Jim taught me everything I need to know — now I can put ideas to paper.

Author's Acknowledgments

I find that writing the acknowledgments is always the easiest part of any book because there's never a shortage of material. I always have a big group to praise.

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Introduction

You've decided to build your own computer.

Congratulations! That statement might seem a little like "You've decided to fly a 747" or "You've decided to teach yourself accounting" — but I'm here to tell you that this book was especially written to make it both easyfun

To sum up, I explain the mysterious parts in the box in honest-to-goodness English, with a little humor and without the jargon — and then help you build the PC that's perfect for you!

About This Book

You'll find that each chapter in this book acts as a reference for each type of computer hardware that you can add to your computer; some are required components, and others are optional devices that add extra functionality to your PC. You can start at any point — each chapter is self-contained — although the chapters are arranged in a somewhat linear order that I recommend that you follow. The book also includes a glossary of computer terms and an appendix with information about the various operating systems available for the PC, which comes in handy if you haven't decided on an operating system to run.

Each chapter also provides the general information you need to make a buying decision between different flavors of the same component. For example, in Chapter 9, I discuss both bare-bones and advanced sound cards (without resorting to engineer-speak).

Conventions Used in This Book

From time to time, I might ask you to type a command within Windows (or whatever operating system you're using). That text often appears in bold like this: **Type me**. Press the Enter key to process the command.

I list menu commands with this format: File⇒Open. For example, this shorthand indicates that you should click the File menu and then choose the Open menu item.

From time to time, I mention messages you should see displayed onscreen by an application or the operating system. Those messages look like this: This is a message displayed by an application.

Although you don't really need to know a great deal of technical information to build a computer, you might be curious about the technical details that surround computers and the components that you're using. This technical information is usually formatted as a sidebar

(in a separate box) to separate it from the stuff that you really *have* to know.

What You're Not to Read

If you're interested in buying and installing a particular component, such as a DVD drive or a video adapter card, you can jump directly to the chapter that describes the device and start reading. Most chapters end with general installation instructions that familiarize you with the installation process. (They don't replace the specific documentation that accompanies each component, although the generic steps that I provide give you an idea of what's involved.)

On the other hand, if you're interested in building a computer from scratch, start with Chapter 1 and follow the chapters in order; you can also skip to other chapters whenever necessary for information that you might need.

Foolish Assumptions

Here's a friendly warning: You might run across one or two doubting Thomases when you announce that you're building your own PC. Those folks probably make lots of foolish assumptions about what's involved in building a PC, and you just might want to burst their bubble by telling them the following truths:

✓ You *don't* have to be a computer technician with years of training, and you don't need a workshop full of expensive tools. In this book, no assumptions are made about your previous knowledge of computers, the Internet, programming your DVD player, or long division.

✓ No experience? Don't let that stop you! I introduce you to each of the systems in your computer, what they do, and how you install them, including advanced technology that would make a technoid green with envy. (I can't fix spaghetti by myself, so you know that building a PC must be easier than it first appears!)

✓ Some people still think that you don't save a dime by building your own PC. If that's the case, why is it still such a booming business? By assembling your own computer, you can save hundreds of dollars (and take advantage of used parts from an older computer).

✓ Finally, some people might ask you what you plan to learn by building your own PC — and that's an easy one! By the time that you're finished, you'll be ready to add and upgrade parts yourself so that you'll save money in the future — and computer-repair techs will growl when you meet them.

Now that I've put those myths to rest, it's time for the good stuff!

How This Book Is Organized

I've divided this book into six major parts. The first five are made up of a number of chapters, and each chapter is further divided into sections. You'll find all the nasty acronyms and abbreviations, part names, and relevant items in the index; important topics and information that appear elsewhere in the book are cross referenced to make them easier to find. The book also has a spiffy full-color photo shoot of a PC assembly that would please even the pickiest supermodel.

Part I: Can I Really Do This?

In Part I, I introduce you to the tool (yes, only one tool) of the PC assembly trade (a screwdriver, which tells you how complex the hardware *really* is), what components make up a PC, and how they work together within your computer. You also determine what type of computer you should build by examining your current and future needs.

Part II: Building Your PC

In Part II, you assemble the required components to build a bare-bones PC — it won't play the latest 3-D shoot-'em-up game with all the visual bells and whistles, but it will have all the basic features that you need. You'll be able to load your choice of operating system after you've finished this part.