

***Windows Server***<sup>®</sup>  
**2008**  
FOR  
**DUMMIES**<sup>®</sup>

**by Ed Tittel and Justin Korelc**



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—ET

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—JPK

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# Introduction

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**W**elcome to *Windows Server 2008 For Dummies*, the book that helps anyone who's unfamiliar with Windows Server 2008 (or Windows-based networks) find his or her way around a Windows Server 2008-based network. In a wired world, networks provide the links that tie all users together. This book tells you what's going on, in basic, straightforward terms.

Although a few fortunate individuals may already be acquainted with Windows Server 2008 and the networks it supports, many more people are not only unfamiliar with server-based networking but downright scared of it. To those who may be concerned about facing new and difficult technologies, we say, "Don't worry. Be happy." Using a server-based network isn't beyond anyone's wits or abilities — it's mostly a matter of using a language that ordinary people can understand.

Ordinary folks are why this book talks about using Windows Server 2008 and networks in simple — and deliberately irreverent — terms. Nothing is too highfalutin to be mocked, nor too arcane to state in plain English. And when we do have to get technical, we warn you and make sure to define our terms to boot.

This book aims to help you meet your needs. You'll find everything you need to know about Windows Server 2008 in here, so you'll be able to find your way around — without having to learn lots of jargon or obtain an advanced degree in computer science along the way. We want you to *enjoy* yourself. Because server-based networking really is a big deal, it's important that you be able to get the most out of it. We really want to help!

## *About This Book*

This book is designed so you can pick it up and start reading at any point — like you might read a reference book. In Parts I and II, we cover server basics: concepts and terminology in Part I, and the installation and deployment of Windows Server 2008 in Part II. In Parts III through V, you'll find tons of information on how to run or build a Windows Server 2008-based network. Part III covers running a Windows Server 2008-based network, whereas Part IV describes how you might design, build, and use a do-it-yourself network server PC. Part V includes tips and tricks to help smooth out installing, configuring, and using Windows Server 2008.

Each chapter is divided into freestanding sections, each one relating to the chapter's major theme. For example, the chapter on installing Windows Server 2008, contains the following collection of information:

- ✓ The differences between an upgrade install and a clean install
- ✓ How to make sure your hardware is suitable for use as a server
- ✓ A step-by-step walkthrough of the installation process
- ✓ What to do when installation completes
- ✓ Troubleshooting installation problems
- ✓ Automating the Windows Server 2008 installation process

You don't have to memorize the contents of this book. Each section supplies just the facts you need to make networking with Windows Server 2008 easy to use. On some occasions, however, you may want to work directly from the book to make sure you keep things straight.

## *How to Use This Book*

This book works like a reference, so start with a topic that interests you. You can use the table of contents to identify general areas of interest or broad topics. The index, however, is your best tool for identifying detailed concepts, related topics, or particular Windows Server 2008 capabilities, tools, or controls.

After you find what you need, you can close the book and tackle whatever task you've set for yourself — without having to grapple with unrelated details.

If you've never worked with a Windows Server operating system before, it's a good idea to read Parts I and II in their entirety. Likewise, if you're new to administering a Windows Server 2008–based network, you might want to read all of Part III. If the idea of building your own server PC from scratch sounds interesting, you'll definitely dig Part IV. Otherwise, dig in wherever your fancy moves you!

When you need to type something at the keyboard, you'll see text that looks like this: **Type this**. You're expected to enter this text at the keyboard and then press the Enter key. Because typing stuff can sometimes be confusing, we always try to describe what it is you're typing and why you need to type it.

This book occasionally suggests that you consult the Windows Server 2008 online help, printed manuals, Resource Kit, and even Microsoft's Web site for additional information. In most cases, though, you find everything you need to know about a particular topic right here — except for some of the bizarre details that abound in Windows Server 2008.

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If there's a topic we don't cover in this book that you need to know more about, we suggest you look for a book on that subject in the *For Dummies* series, published by Wiley Publishing. In addition, a whole world of Web information about Windows Server 2008 is available on the Internet, and the Microsoft Web site (at [www.microsoft.com/windowsserver2008/default.aspx](http://www.microsoft.com/windowsserver2008/default.aspx)) isn't a bad place to start looking for such information.

## ***Foolish Assumptions***

We're going to climb out on a limb and make some potentially foolish assumptions about you, our gentle reader. You have or are thinking about getting a computer, a network, and at least one copy of Windows Server 2008. You know what you want to do with these things. You might even be able to handle all these things yourself, if somebody would only show you how. Our goal with this book is to decrease your need for such a somebody, but we don't recommend telling him or her that out loud — at least, not until you've finished this book!

## ***How This Book Is Organized***

The book is divided into five major parts, each of which consists of two to six chapters. Each chapter covers a major topic and is divided into sections, which discuss particular issues or concerns related to that topic. That's how things in this book are organized, but how you read it is up to you. Choose a topic, a section, a chapter, or a part — whatever strikes your fancy or suits your needs — and start reading.

## ***Part I: Servers at Your Service***

Part I provides an introduction to Windows Server 2008. You'll find a detailed description of Windows Server 2008 in Chapter 1 that includes its important features, functions, capabilities, and requirements. Chapter 2 takes a more general look at server-based networking and explains what makes servers special, hardware-wise; what kinds of things servers do; and what services they provide. Chapters 3 and 4 provide a speedy primer on network design and construction to help you decide where to put the pieces and parts that go into a network, including your server, and what to do with them when they're all interconnected. If you're already a seasoned networker or have worked with another Windows Server operating system, you can skip this part if you'd like, although you may still want to check out Chapter 1 to see what's new and interesting in this latest and presumably greatest of Windows Server operating systems.

## *Part II: Servers, Start Your Engines*

Part II tackles Windows Server 2008 head on, starting with its installation and configuration. It covers the issues involved in installing and configuring network hardware specifically for Windows Server 2008. It also covers how to install and manage print servers and services on a Windows Server 2008–based network, how to handle Transmission Control Protocol/Internet Protocol (TCP/IP) addresses, and how to set up and manage directory services in a Windows Server 2008–based environment. Part II is where you figure out how to put the basic pieces of a network together using Windows Server 2008.

## *Part III: Running Your Network*

Part III picks up where Part II leaves off — that is, it talks about living with and managing a Windows Server 2008–based network after the initial installation and configuration phase is complete. It begins with a discussion of how to manage users and groups on a Windows Server 2008–based network, including details on profiles, policies, and local and global groups. Next, it covers how Windows Server 2008 controls access to NTFS files and directories and how to manage network-accessible file system resources called *shares*.

After a network's users, groups, and data assets are in place, rebuilding such a setup from scratch can be a real pain. That's where a backup comes in handy, so Part III covers the ins and outs of backing up and restoring a Windows Server 2008 machine, plus other aspects of fault tolerance. After that, a review of network security principles and practices should help to prepare you to protect your data from accidental loss and from would-be hackers and crackers.

## *Part IV: Serve It Yourself*

Part IV takes a detour away from the software side of servers to dig deeply into the hardware on which such software must run. You'll find out what kinds of pieces and parts go into a PC and what kinds of selections make the most sense when that PC is going to act as a network server. You'll also dig into the specifics involved in building a basic Intel-based PC for use with Windows Server 2008, where we guide you through options and selection rationales for choosing specific processors, motherboards, memory, disk drives, and so forth. Then we repeat that process for AMD-based PCs for those who might choose to opt for an Opteron processor instead.



## Part V: The Part of Tens

Part V follows the grand tradition of *For Dummies* books, all of which include “The Part of Tens.” Here, you’ll find lists of information, tips, tricks, and suggestions, all organized into short and convenient chapters. This supplemental information is designed to be both helpful and informative and is supplied at no extra charge.

## Part VI: Appendixes

If you’ll recall, we said earlier that this book is divided into five major parts. By definition, that means the appendixes must be a minor part of the book, although there’s nothing minor about the content you’ll find covered here. In fact, we decided to include this material to provide our readers with additional information and resources on server hardware and developing good troubleshooting skills to help provide users with the best networking experiences possible.

## Bonus Chapter

You’ll find a bonus chapter titled “What Makes Servers Special” at this book’s companion Web site at [www.dummies.com/go/winserver2008](http://www.dummies.com/go/winserver2008). This chapter will quickly get you up to speed on server capabilities.

## Icons Used in This Book

The icons used in this book point you to important (and not so important) topics in the text.



This icon lets you know that you’re about to encounter information that’s important to understand if you really want to *get* what’s going on with Windows Server 2008. It may be painful at times, but you have to slog through it.



Oh gee, we’re getting so old that we can’t recall what this one means. Maybe you should check one out and see whether it’s worth watching for!



This icon lets you know that you're about to be swamped in technical details. We include this information because we love it, not because we think you have to master it to use Windows Server 2008. If you aspire to nerdhood, you probably want to read it; if you're already a nerd, you'll want to write us about stuff we left out or other information we should put in!



This icon signals that helpful advice is at hand. We also use it when we offer insights that we hope make using Windows Server 2008 more interesting or easier. For example, whenever we include a shortcut that improves your productivity, it's usually marked with the Tip icon.



This icon means what it says — you'd better be careful with the information it conveys. Nine times out of ten, it's warning you not to do something that can have nasty or painful consequences, as in accidentally wiping out the contents of an entire hard drive. Whoops!

## *Where to Go from Here*

With this book at your side, you should be ready to wrestle with Windows Server 2008 and the networks it connects to. Find a subject, turn to its page, and you're ready to jam. Feel free to mark up this book, fill in the blanks, dog-ear the pages, and do anything else that might make a librarian queasy. The important things are to make good use of it and enjoy yourself while you're at it.



Please check out the Web page at [www.dummies.com](http://www.dummies.com). Be sure to take the opportunity to register your purchase online or send us e-mail with feedback about your reading experience.

# Part I

# Servers at Your Service

The 5<sup>th</sup> Wave

By Rich Tennant



"I'm not saying I believe in anything. All I know is since it's been there our server is running 50% faster."

## *In this part . . .*

**I**n this part of the book, you get an introduction to the big star in this production — namely, Windows Server 2008 — as you dig into its features, functions, and requirements. But we also introduce you to the whole server circus as we explain what makes servers so special and why taking care of clients is both a joy and a chore. You even get a chance to meet and make sense of the network pieces and parts necessary to bring clients and servers together to help bring home the bacon.

Each chapter presents its information in small, easy-to-read sections. If information is really technical (mostly worth skipping, unless you're a glutton for punishment), it's clearly marked as such. Even so, we hope you find this information useful — and maybe even worth a giggle or two.

## Chapter 1

# Making Windows Server 2008 Serve You

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### *In This Chapter*

- ▶ Understanding the client-server network model
  - ▶ Meeting the Windows Server 2008 product family
  - ▶ Finding out about added and enhanced security features
- 

**W**indows Server 2008 is the latest and greatest version of Microsoft's flagship server platform and the successor to the hugely popular Windows Server 2003. Prior to its debut, Windows Server 2008 was code-named Longhorn, a platform that shared common client features also found in Windows Vista, much like the relationship between Windows Server 2003 and Windows XP. In fact, Windows Server 2008 even shares a common code base with Windows Vista and therefore carries much of the same architecture and core functionality.

Both Windows Server 2008 and Windows Vista share common technical, security, management, and administrative features; an improved IPv6-capable networking stack; native wireless utilities; and a revamped image-based installation format (among many other exciting new features). However, Windows Server 2008 is a total departure from the desktop/workstation realm and offers enterprise and server-specific features and functionality above and beyond anything Windows Vista offers. In this chapter, we explore some of these features from a 10,000-foot view and then focus on specific topics in the chapters that follow.

Large-scale deployment options, improved self-diagnostic tools, advanced reliability and performance monitoring, and enhanced security features are just some of the benefits that inhere to the new Windows Server 2008 platform. First, we take a look at server hardware and make some important distinctions between workstation and server roles and responsibilities.

## Any Server Must Do This

The term *server* speaks to a broad classification of computers that combine hardware components and software services to handle a variety of tasks maintained through network relationships. A server takes many shapes and sizes, covers a wide range of form-factors, and includes numerous components and services. Embedded server platforms are used in network attached storage (NAS) devices, included in network print servers, and scale all the way up to giant mainframes capable of handling millions of simultaneous transactions and resource-intensive processing.



The terms *form-factor* refers to a specific design, layout, size, and shape of component or device. A form-factor can refer to several mutually independent devices, from the power supply and its interface types to motherboards and their various dimensions, pinouts, and connection types.

In fact, if you take a good look around your office environment, or just about any other office IT infrastructure, you can probably identify several otherwise-overlooked servers and server applications that you use on a regular basis. Modern technology puts the power of servers and server applications in the hands of mere mortals, and nowhere is this more evident than in the consumer market, where multimedia home theater PCs (HTPCs) are part of daily life for many. But back to the business world. . . .

Essentially, any server must serve a network — either clients or other servers, or some combination of the two. The term *server* also includes the actual server operating system that makes the computer do its job. Commercial server software products such as Windows Server 2008 are designed to handle a greater frequency and variety of tasks than are typical in either the desktop or workstation realms. Server platforms are an entirely different breed of PC, as compared to their desktop and workstation brethren, which is why they perch atop the hierarchy and the marketplace when it comes to buying an operating system.

Specifically, a server is designed and intended to provide services and run server applications under heavy workloads, left unattended and self-managing most of the time. For the most part, servers are self-contained, self-regulated core network entities in an enterprise or business IT environment. Larger amounts of memory (upwards of 8GB or more), larger storage capacity (terabytes, petabytes, and beyond), special storage methods (mirroring, striping, and multiple disk aggregation), redundant power supplies, and server-specific form-factors all typically distinguish specialized server hardware components from other, more ordinary computer components. That said, plenty of servers use desktop and workstation hardware such as optical drives, disk drives, and peripheral or display devices.