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# Windows® SharePoint® Services



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**Microsoft®**

**Microsoft® Windows®  
SharePoint® Services  
Inside Out**

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*This book is dedicated to the homeless mentally-ill persons of America. Why do we lavish health care dollars on victims of other, less debilitating illnesses while condemning these unfortunates to the streets and gutters?*

# Acknowledgments

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Most of all, thanks to you, the readers, who make an effort such as this both possible and worthwhile. I hope the book meets your expectations and that we meet again.



# About the CD

The companion CD that ships with this book contains many tools and resources to help you get the most out of your Inside Out book.

## What's On the CD

Your Inside Out CD includes the following:

- **Complete eBook** In this section you'll find the an electronic version of *Microsoft Windows SharePoint Services Inside Out*. The eBook is in pdf format.
- **Insider Extras** Including all the author's sample files and code. To use the Insider Extras refer to "Using the Insider Extras," below.
- **Microsoft Resources** A catalog of Windows SharePoint Services resources.
- **Reference Books** Here you'll find the full electronic versions of the *Microsoft Computer Dictionary, Fifth Edition*; *Microsoft Encyclopedia of Networking, Second Edition*; and *Microsoft Encyclopedia of Security*

The companion CD provides detailed information about the files on this CD, and links to Microsoft and third-party sites on the Internet. All the files on this CD are designed to be accessed through Microsoft Internet Explorer (version 5.01 or later).

**Note** Please note that the links to third-party sites are not under the control of Microsoft Corporation and Microsoft is therefore not responsible for their content, nor should their inclusion on this CD be construed as an endorsement of the product or the site.

Software provided on this CD is in English language only and may be incompatible with non-English language operating systems and software.

## Using the Insider Extras

To use the following items, simply copy them from the InsiderExtras folder to your hard disk and remove the Read-Only attribute:

- **\utils\ShowStyles** A Web page that displays sample of each SharePoint style name. This is useful when searching for a standard SharePoint style that has the appearance you want. For more information, refer to Chapter 9.



- **\utils\TagWalker** An HTML fragment that displays all the CSS styles in effect for the pixel under the mouse pointer. This is useful when you need to figure out why a SharePoint element looks as it does, and how you can reproduce that appearance in other Web Pages. Again, refer to Chapter 9 for more information.
- **\utils\WssBackup** This is a WSH (Windows Scripting Host) script that retrieves a list of the top-level sites on a virtual server, and then runs the stsadm.exe -o backup command for each one. For more information refer to Chapter 14.
- **\utils\SPBackup** This program from the Microsoft SharePoint Products and Technologies Resource Kit backs up each top-level site that's changed during the previous day or week. Chapter 14 has more information.
- **\utils\Web Part Toolkit** This folder contains four more utilities from the SharePoint Products and Technologies Resource Kit: InstallAssemblies (an installer for Web Parts), SharePoint Configuration Analyzer (a diagnostic tool that verifies critical settings on SharePoint servers), SharePoint Explorer (a tool that displays Web Part and Web Part Page properties), and Web Part Assembly (two powerful administrative-level Web Parts: GhostHunter and Inspector). Chapter 15 briefly introduces the SharePoint Configuration Analyzer. Chapters 19 and 20 briefly introduce the InstallAssemblies tool. For more information, refer to the help file that comes with the Web Part Toolkit.

The following folders in the InsiderExtras folder contain the Visual Studio .NET projects (including source code) for some simple but illustrative Web Parts. To use them, you would typically copy each folder to your Visual Studio .NET projects folder, clear the read-only attributes, and then open the .sln file in Visual Studio .NET.

- **\WebParts\proseware** Contains the source code for a Web Part named MsgPara that displays a fixed, one-paragraph message. (Think, "Hello World.") For more information about this Web Part, refer to Chapter 19.
- **\WebParts\tailspintoys** Is a simple Web Part named TypicalEvents that demonstrates event handling. Chapter 19 has more information about this Web Part.
- **\WebParts\WssIso** Contains a project that includes three Web Parts. The first, named Welcome, displays information about the current team member. The SiteLinks Web Part displays links to parent and child sites of the current SharePoint site. Finally, a ListBrowser Web Part displays a quick listing (OK, a dump) of any list or library in the current site. For more information about these Web Parts, refer to Chapter 20.
- **\WebParts\WssIsoAdmin** Contains a Web Part named TopSites that displays a list of top-level sites on the current server, and provides a simple form for creating additional top-level sites. An organization might develop such a Web Part for use by Help Desk or other employees responsible for routine upkeep of a SharePoint site. For more information, refer to chapter 21.



## System Requirements

Following are the minimum system requirements necessary to run the CD:

- Microsoft Windows XP or later or Windows 2000 Professional with Service Pack 3 or later.
- 266-MHz or higher Pentium-compatible CPU
- 64 megabytes (MB) RAM
- 8X CD-ROM drive or faster
- Microsoft Windows-compatible sound card and speakers
- Microsoft Internet Explorer 5.01 or higher
- Microsoft Mouse or compatible pointing device

## Support Information

Every effort has been made to ensure the accuracy of the book and the contents of this companion CD. To correct a missing or damaged CD, call 1-800-MSPRESS in the United States, or your Microsoft Press distributor in other countries.

To connect directly to the Microsoft Press Knowledge Base and enter a query regarding a question or issue that you may have, go to <http://www.microsoft.com/learning/support/>

For support information regarding Windows XP, you can connect to Microsoft Technical Support on the Web at <http://support.microsoft.com/>.



# Conventions and Features Used in This Book

This book uses special text and design conventions to make it easier for you to find the information you need.

## Text Conventions

Convention	Meaning
Abbreviated menu commands	For your convenience, this book uses abbreviated menu commands. For example, “Choose Tools, Track Changes, Highlight Changes” means that you should click the Tools menu, point to Track Changes, and select the Highlight Changes command.
Boldface type	Boldface type is used to indicate text that you enter or type.
Initial Capital Letters	The first letters of the names of menus, dialog boxes, dialog box elements, and commands are capitalized. Example: the Save As dialog box.
Italicized type	Italicized type is used to indicate new terms.
Plus sign (+) in text	Keyboard shortcuts are indicated by a plus sign (+) separating two key names. For example, Ctrl+Alt+Delete means that you press the Ctrl, Alt, and Delete keys at the same time.

## Design Conventions



### InsideOut tips

These are the book’s signature tips. In these tips, you’ll find get the straight scoop on what’s going on with the software—inside information on why a feature works the way it does. You’ll also find handy workarounds to deal with some of these software problems.

**Tip**

Tips provide helpful hints, timesaving tricks, or alternative procedures related to the task being discussed.

**Troubleshooting sidebars**

Look for these sidebars to find solutions to common problems you might encounter. Troubleshooting sidebars appear next to related information in the chapters. You can also use the Troubleshooting Topics index at the back of the book to look up problems by topic.

**Cross-References** Cross-references point you to other locations in the book that offer additional information on the topic being discussed.

**On the CD**

This icon indicates sample files or text found on the companion CD.

**Caution** Cautions identify potential problems that you should look out for when you're completing a task or problems that you must address before you can complete a task.

**Note** Notes offer additional information related to the task being discussed.

**Sidebars**

The sidebars sprinkled throughout these chapters provide ancillary information on the topic being discussed. Go to sidebars to learn more about the technology or a feature.

# Introduction

People working together is a key element in the success of any organization. Only through the cooperation, interaction, and collaboration of its members can an organization multiply its efforts and become stronger and more productive.

Much of this collaboration is, of course, face-to-face—we work together in pairs, in informal groups, in targeted meetings, and even in large assemblies. And when we can't be face-to-face, we speak by telephone, teleconferencing, instant messaging, or by video hookup. Although these methods are personal, immediate, convenient, and efficient, we sometimes need a more permanent record of our thoughts, our preparations, and our statements. For that, we've historically resorted to paper trails and mountains of pages, file folders, and cabinets. More recently, we've used electronic media such as e-mail messages, word processed memos, Excel spreadsheets, PowerPoint presentations, databases, and Web pages.

To be useful, of course, documents of any kind must find their way to the people who need them. Traditionally, they've followed one of four routes:

- **Mail** Gets the immediate attention of its recipient, but it creates duplicate copies of each document for each recipient; it requires the sender to anticipate who might need a document; and it's awkward for long-term storage.
- **File Systems** Provide medium-term storage for documents and (usually) a hierarchical scheme for organizing them. Unfortunately, most computer file systems maintain very little data about the documents they store; often just a cryptic filename and the date the file was last updated. Searching for documents by content or by property (such as author, title, keyword, or version) is slow and resource-intensive.
- **Databases** Provide excellent long-term storage and search capabilities, but only by splitting documents into discrete data elements. As such, they usually store the data content of highly-structured documents, and not the documents themselves.
- **Libraries** Combine, in many respects, the file system and database approaches. A library stores whole documents, not just their structured data content, and it provides a database of information about the documents it stores. This is a powerful approach but it often suffers from a lack of scalability. Either the library can't accommodate the massive number of documents a large organization can generate, or its indexing, search, and retrieval mechanisms aren't granular enough—for example, they start generating search results in the thousands or tens of thousands.

Taken individually, none of these approaches meets all the requirements for quick, easy, accurate, and efficient collaboration throughout an organization. Vendors, systems integrators, and organizations have therefore tried combining these approaches in various ways, hoping to multiply their benefits and cancel out their deficiencies.

## Presenting Windows SharePoint Services

Microsoft's approach to collaboration and document management answers the shortcomings of all past and present approaches. It centers on two products named, collectively, SharePoint Products and Technologies:

- **Windows SharePoint Services** Is a collection of add-on services bundled with Microsoft Windows Server 2003. Using these services, you or any authorized team member can create specialized *team Web sites* for sharing information, developing group documents, organizing meetings, and generally fostering collaboration among team members. The key components of these Web sites are lists and libraries.
  - A SharePoint *list* contains rows and columns of data, much like a standard database table. SharePoint lists, however, are much easier to create and maintain. They're great for collecting and sharing fielded information such as contact lists, calendars of events, or custom information of any kind.
  - A SharePoint *library* is similar to a list, except that it exists solely to store a collection of documents. Each list item describes one document, providing information such as the filename, the file title, the date last modified, and the person who last modified the document. SharePoint libraries can retain multiple versions of each document, and they support change control through document check-in and check-out. Windows SharePoint Services supports special library types for pictures and for InfoPath forms.

Organizing these lists and libraries into team Web sites places most administration and content management in the hands of team members who are close to the work and familiar with the subject matter. This avoids the bureaucracy and the waiting times that are typical of strictly centralized administration. But at the same time, Microsoft provides all the tools that centralized administrators need to keep the installation under control and running smoothly.

Team members can access SharePoint Web sites using either a browser or an Office 2003 application. Individuals in teams can configure lists and libraries to record whatever information they want, and they can easily create shared work areas for documents, projects, and other work in progress. Members can sign up to receive change notifications by e-mail. These features go way beyond anything traditional file-sharing can provide.

You can also use Windows SharePoint Services as a development platform for creating custom collaboration and information-sharing applications. For example, third-party or in-house programmers can access SharePoint sites using Web services or readily-accessible application programming interfaces. In addition, you can develop custom Web pages using FrontPage 2003, and custom objects using Visual Studio .NET.

- **SharePoint Portal Server 2003** SharePoint Portal Server 2003 is an application that runs on the Windows SharePoint Services platform. For most organizations, its most important feature is the ability to categorize Windows SharePoint Services Web sites—or even individual documents—into a hierarchy of *areas*. Portal users can drill into this hierarchy to find the information they need.

The portal server can also provide a special, personal Web site for each user. It can search and catalog conventional Web servers and file shares like an Internet search engine, and manage sign-in to additional business applications. It can also match areas to audiences so that, for example, employees with a particular interest can receive notifications of new or changed documents pertaining to that interest.

When you install SharePoint Portal Server, it occupies the root site of a virtual Web server running Windows SharePoint Services. The rest of the server continues to support Windows SharePoint Services, just as it would if the portal site weren't present.

Both of these products integrate smoothly, almost effortlessly, with your existing Microsoft software. The platform is Windows Server 2003; the Web server is Internet Information Server (IIS); security integrates with Windows domains or Active Directory; the run-time environment and development platform are both .NET. All Office 2003 programs function as SharePoint clients. You can send mail to an Exchange public folder and have any attachments appear automatically in a SharePoint library. Microsoft Project Server runs on Windows SharePoint Services, and SharePoint Portal Server integrates with BizTalk. The list goes on and on.

Both Windows SharePoint Services and SharePoint Portal Server make extensive use of Microsoft SQL Server. Small installations running only Windows SharePoint Services can use a special, restricted version called Microsoft SQL Server 2000 Desktop Engine (Windows)—WMSDE. Larger installations, or those using the portal server, require Microsoft SQL Server 2000 SP3 or later.

Scalability is no longer an issue. If usage demands, you can create as large a farm of Web servers as you like, and spread the database load across as many SQL servers as you like. And if you want fault tolerance, SharePoint Products and Technologies can do that too.

## Who This Book Is For

This book addresses the needs of anyone who uses, designs, installs, administers, or programs Windows SharePoint Services. It begins with an overview of the product, and ends with an explanation of programming techniques. In between, the material is organized in order of increasing detail and complexity. This means you can read until you learn what you need at the moment, and then continue as the need arises.

Alternatively, you can approach the book randomly, on a sort of “need to know” basis. The index and table of contents will guide you to the specific information you need.

Even in its initial release, Windows SharePoint Services integrates tightly with an extremely wide range of Microsoft software. This includes not only Windows Server 2003 and Microsoft SQL Server, but also Internet Explorer, Microsoft Office System 2003, and Visual Studio .NET.

This book, however, is a complete guide only for Windows SharePoint Services. It presumes that if you're interested in the interface between Windows SharePoint Services and, say, Outlook, then you already know how to use Outlook. The same is true for the other Office programs, for Windows Server 2003, for Microsoft SQL Server, and for Visual Studio .NET



## How the Book Is Organized

This book consists of seven parts, organized in order of increasing complexity and specialization. The early chapters, for example meet the needs of the widest and least technically curious audience: team members who use Windows SharePoint Services via Internet Explorer or Microsoft Office System 2003 on a daily basis. Later chapters address the needs of more specialized workers, such as Web designers, administrators, and software developers.

Here are the titles and specific coverages of each part:

- **Part I - Overview and Concepts** In this part, Chapter 1 introduces the basic features and mindset of Windows SharePoint Services. For comparison, Chapter 2 briefly describes SharePoint Portal Server.
- **Part II - End-User Features and Experience** This part explains the features that team members are likely to use the most. Chapter 3 explains how to work with SharePoint sites using a browser, and Chapter 4 explains how to access SharePoint sites from Microsoft Office System 2003.
- **Part III - Designing Sites and Pages with a Browser** This is another part that consists of two chapters. Chapter 5 explains how to create new SharePoint sites and SharePoint Web pages using only a browser. Chapter 6 explains how to create, modify, and manage SharePoint lists and libraries, again using the browser interface.
- **Part IV - Creating and Designing Sites Using FrontPage 2003** FrontPage 2003 has more SharePoint features than any other Office program: so many, in fact, that it takes six chapters to explain them all.

Chapter 7 explains how FrontPage 2003 can create, open, add pages to, export, import, backup, and restore SharePoint sites. Chapter 8 then explains how to create and modify Web Part Pages. These are special Web pages that display the output of SharePoint software components called, logically enough, Web Parts. It also explains how FrontPage can create and modify themes that control the appearance of SharePoint sites.

Chapter 9 explains how various FrontPage features interact with SharePoint sites. This includes site navigation, dynamic Web templates, styles and themes, interactive buttons, and DHTML behaviors.

Chapters 10 through 12 explain how FrontPage can create pages that leverage the database capabilities of Windows SharePoint Services. Chapter 10 explains how to design, create, and modify SharePoint lists and libraries, and how to establish connectivity with these and external data sources. Chapter 11 explains how to create and configure List View Web Parts, which display the contents of SharePoint lists and libraries, and Data View Web Parts, which can also display data from external databases, XML files, and XML Web Services. Chapter 12 explains how to configure List Views, Data Views, and other Web Parts to interact with each other, and how to display deeply-nested XML data.

- **Part V - Installing SharePoint at the Server** In this part, Chapter 13 explains how to plan for and then install Windows SharePoint Services in the most common scenarios. Chapter 14 then explains how to backup and restore SharePoint sites.

- **Part VI - Administering SharePoint Services** An organization running Windows SharePoint Services can delegate administration at the physical server, virtual server, site collection or site level. If your duties fall into any of these categories, this part has something for you.

Chapter 15 explains the administrative functions available through the SharePoint Central Administration server. This is a virtual server that the Windows SharePoint Services setup program creates. To access it, you must be a server or SharePoint administrator. As you might expect, the functions on the Central Administration server are the broadest and most global of all.

Chapters 16 and 17 explain how to administer an individual SharePoint site or site collection. For the most part, these are functions that administrators of individual sites or site collections will use. Such administrators are usually designated team members, and not part of the centralized IT function.

Chapter 18 explains a variety of Web Parts and other design features that require administrative access to install or incorporate. These include some special built-in Web Parts, some .NET Server controls, some Office 2003 Web Parts, and XML site definitions.

- **Part VII - Developing Web Parts in Visual Studio.NET** This part provides three chapters of interest to software developers who want to develop new components that behave like (and interact with) the Web Parts that come with Windows SharePoint Services. Chapter 19 provides some general guidance, and then Chapter 20 explains how to code three simple but useful Web Parts. Chapter 21 concludes with instructions for creating Web Parts that perform administrative functions, including sample code.

If this strikes you as quite a range of topics, you're right, and it indicates the central position that Windows SharePoint Services occupies among Microsoft products and technologies. All evidence suggests that this central position will grow not only for helping individuals collaborate, but also for integrating software functions and technologies of every kind. With this kind of promise, it's no wonder you're interested in Windows SharePoint Services.