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Introduction to SharePoint 2003

In this chapter you learn about the two versions of SharePoint 2003 — Windows SharePoint Services (WSS) and SharePoint Portal Server (SPS) — their history, and what differs between them. You will see several examples of how the built-in features of SharePoint work and how easy it is to use them. You also get an introduction to how SharePoint integrates with other products, such as MS Word and MS Outlook. The objective in this chapter is to show you why SharePoint is such an interesting product and to give you some ideas of what you can do after installing SharePoint.

What Is SharePoint?

The PC-based software industry today is about 30 years old. But if you look carefully at all the products that have been released, you will soon find that most of them are just different variations of a basic theme. For example, consider the most popular word processor today, MS Word. It still basically does the same thing WordStar did in 1978 — that is, it allows you to write text documents. Yes, MS Word is much more advanced than WordStar, but most of the documents you write today could have been created with WordStar as well. Or think about MS Excel, which is just a fancy (some would even say "sexy") version of VisiCalc, released in 1978. I could go on, but I think you get the idea. Not much is really new in the software industry.

Nevertheless, you will now and then see truly groundbreaking and innovative software products released, such as the web browser and personal search engines. The focus today is more on making all this sophisticated software interact with each other. For example, you can create a table in MS Excel and link it into an MS Word document, or you can create MS PowerPoint presentations that you send by e-mail (which is, itself, simply a fancier version of the File Transfer Protocol, or FTP). So you have all these nice software applications that you use to create and manage all kinds of files and information — the problem is that they all are stored in different places and in different formats, and that can make them hard to use.

What SharePoint does is help you gather this information together, regardless of what type of file or information it is. SharePoint also helps you find information, even when you don't know where it is

stored; and SharePoint helps you keep track of updated information. In other words, SharePoint does not invent any new information type; instead, it helps you get the right information when you need it without spending lots of time. Even more importantly, all this information is easily shared between users, such as project teams, departments, or even large organizations. This truly is a new software concept!

Microsoft has performed a thorough analysis of how people work in a computer environment. It has a very good picture of what the problems are and what things need to be changed or removed. One of its findings indicates that people tend to become frustrated when they need help from the administrator or Help Desk to do simple things. Users want to have more power to do what they want, when they want, and exactly how they want. This concept is sometimes referred to as *self-service* and is a new trend in the computer business. For example, you can find applications that allow the user to reset her password, change her properties in the Active Directory (AD), and so on.

SharePoint is built around this concept, and the main idea is to allow the ordinary user to create web sites for projects and other activities without any support from the server administrator or Help Desk. This requires some training for the SharePoint user, but SharePoint is straightforward and easy to learn. Your role, as the SharePoint Server administrator, is to install, maintain, and configure SharePoint. You are also the person people contact when they need help understanding how do things in SharePoint, such as creating sites and managing lists of information. That's why this book tells you how to do these things and gives you tips and hints to make things easier for you and your users. I am sure you will like it for your own personal use, too—SharePoint is simply a fantastic application with enormous potential, if you know how to use it correctly!

Following is a short list of things you can do in SharePoint 2003:

- ❑ Create an intranet that targets news and information to specific groups.
- ❑ Build local intranets for departments.
- ❑ Search for documents, files, e-mail, and news regardless of where they are stored.
- ❑ Create a personal web site for each user that displays targeted information.
- ❑ Create web sites for managing projects, customers, and activities.
- ❑ Extend the functionality in MS Office with document management.
- ❑ Create web sites with MS Outlook to keep track of your meetings.
- ❑ Create alerts that will notify you by e-mail when something is changed.

The History of SharePoint

Around 2000, Microsoft unveiled an application called a Digital Dashboard. This web-based application used web parts, which are rectangular areas on a web page that display some type of information, such as a list of contacts, links, or documents. This was innovative because the user could now arrange the web parts on the web page herself, without any help from an HTML programmer.

In 2001, Microsoft released its first two SharePoint products. One was SharePoint Team Services (STS), and the other was SharePoint Portal Server (SPS). Most organizations did not use them, nor had they even heard about them, which was a pity. STS was a web-based product used for collaboration. You could use it to share contacts, calendar events, and documents within teams and small departments. The information was

stored in an MS SQL database. It was a nice application, but it did not have any document-management features, and it was not built for creating intranet solutions for larger organizations.

SPS was a separate product, initially made as an MS Exchange 2000 public folder application (under the beta name Tahoe). However, during the beta phase of Tahoe, Microsoft got a loud and clear message from the customers: "Do not mess with our Exchange system!" So Microsoft finally released the SPS using a built-in MS Exchange 2000 server database (which made more than one SharePoint administrator wonder why on earth the SharePoint server event log contained messages from the Exchange Information Store). This new SPS had built-in document-management features, such as document versioning, checkout/check-in, and document workflow. One serious problem with SPS 2001 was the quality of its performance and the limited number of documents it could manage. And it did not have some of the nice collaboration features that STS had. In fact, the two products were competing with each other, to some extent, which is not a good way of convincing the customer to invest in SharePoint technology.

In October 2003, Microsoft released its new SharePoint solution. The old STS, now renamed Windows SharePoint Services, was basically a fancier version of STS (internally, Microsoft referred to it as STS version 2). SPS kept its name, SharePoint Portal Server, but that was about all that was kept from the previous SPS version. No longer did SPS have its own MS Exchange database, and no longer was SPS a separate product! Now it was an add-on to the WSS application. Finally, Microsoft had one integrated SharePoint solution, completely based on the MS SQL Server database.

This book describes the features and functionality of SharePoint 2003 with Service Pack 2, released in October 2005.

The Future of SharePoint

Microsoft's version of WSS and SPS released in 2006 (called SharePoint 2007) is an easy upgrade from the previous version, as long as you have avoided modifying SharePoint's basic structure, such as the file structure that describes the default SharePoint configuration and the stored procedures in the SQL database. This book gives you instructions and tips on what to do — and what to avoid — in order to make the upgrade process easy for you.

Because this is just the beginning of the book, you will probably not understand a detailed description of the coming features. So here is just a general overview of the most important ones. As you read the chapters, you will see more detailed descriptions of these, when relevant. But for now, I just want to give you an idea of what to expect in the new version:

- Better navigation features and tree views.
- Easier to modify many existing sites by changing the template.
- Built-in workflow for documents and other types of lists.
- A recycle bin so you can undelete files.
- Item-level security on more types of objects.
- More advanced search functionality.
- Support for reading information on mobile devices.

- Gantt charts for project tasks.
- Better support for non-Microsoft web browsers.
- Support for Document lifecycle policies and Records Management.
- Configurable limited number of version history.
- Integration of Microsoft Content Management Server features.
- Better support for multilingual user interfaces.
- Two-way synchronization between SharePoint and Outlook.
- Support for creating Wiki and blog sites.
- Many enhancements for the developer.

Differences between WSS and SPS

When thinking of WSS and SPS, the important thing to understand is that WSS is the foundation and SPS is an optional add-on. In fact, you cannot install SPS by itself. If you try to do this, your computer will request that you install WSS first. So the question is: What else differs between WSS and SPS? Although some of these answers are hard to understand if you have never seen SharePoint before, give it a try anyhow. The following chapters further flesh out the following points.

Windows SharePoint Services 2003

Windows SharePoint Services 2003 has the following characteristics:

- Is a web-based application.
- Stores all information in an MS SQL database.
- Displays information using web parts.
- Has basic document-management features.
- Has a number of list types that you can use for storing all kinds of information.
- Is perfect for simple, but effective, intranet solutions.
- Is ideal for collaboration on project data, meetings, social events, and such.
- Is a free add-on to MS Windows 2003 Server (any edition).

In other words, WSS is the perfect place to collect information for your projects, your customers, and your meetings. You can copy all documents from your file system into WSS and by doing so get access to the simple but powerful document-management features. It is also a very good solution when you need local intranets for teams or departments. And all this is free when you run Windows 2003 Server!

But there are things that WSS does not offer. For example:

- Search functionality across sites and for external documents. Search is only available within a site.
- Advanced intranet features, such as targeted information and organizing information based on topics.
- Easy navigation features.

This is where SPS comes in.

SharePoint Portal Server 2003

This optional add-on to WSS includes the following characteristics:

- Must be installed on top of WSS.
- Makes it possible to target information to one or more user groups.
- Makes it possible to search for information, regardless of where it is stored.
- Makes it possible to collect information on one page, regardless of where it may be stored.
- Gives each SharePoint user a personal web site, for both private and public use.
- Is licensed both per server and per user.

These characteristics make SPS a very good solution for building global intranets that are smart enough to show the right information to the right people. SPS is also a good solution when you want to collect links to information (such as documents, contacts, and people) under a common topic when this information is stored in different places, including in SharePoint, on the file system, or on public Internet web sites.

To help you determine whether you should use WSS with or without SPS, consult Chapter 7, "Comparing WSS and SPS."

What You Need to Run SharePoint

This section provides general information about what you need to install and run SharePoint, both WSS and SPS. It also has general guidelines on the hardware configuration and some tips for building a test environment. Chapters 2 and 4 provide the exact steps on how to do the actual installation.

Software Requirements

Because SharePoint is a web application, you need to have a web server. The only version supporting SharePoint is Internet Information Server version 6 (IIS 6), which runs on Windows 2003 Server. You can use any edition of Windows 2003 Server, including the cheaper Web Edition.

You also need to install the Microsoft ASP.NET web development platform, as described in Chapter 2. If you can write programs using ASP.NET, you can write your own SharePoint components. Installing ASP.NET also automatically installs some other web components, as you will see in Chapter 2.

The last, but not least, component you need is an MS SQL–based database. You have two choices: the free Microsoft SQL 2000 Server Desktop Engine (MSDE) or the MS SQL 2000/2005 Server. These two choices give you different features, as listed in the following table:

Feature	MSDE	MS SQL 2000/2005
Full text indexing of data	No	Yes
Limited database size	Yes (2 GB maximum)	No
Can run on a separate server	No	Yes
Includes management tools	No	Yes
License type	Free	Per CPU or per user

However, the story is a bit more complicated than this! If you use WSS alone, you have a special version of MSDE referred to as Windows MSDE (WMSDE). This version does not have any size limitations, which means that you can run WSS using a WMSDE database in a production environment — and all the software is free when running on Windows 2003 Server! But if you install SPS, you get the size-limited version of MSDE. This means that you cannot use SPS with MSDE in a production environment; rather, you must use the MS SQL 2000/2005 Server.

Please also note the difference regarding on what server the database can run. If you choose the MSDE or WMSDE database, it must run on the same server as SharePoint. Only MS SQL 2000/2005 gives you an option of choosing what server to use for storing all the data. Only by using SQL Server can you keep SharePoint and the database on separate servers, which will provide improved performance and scalability. This is known as a *small server farm* configuration.

Hardware Requirements

In addition to all the software requirements, the server hardware must also be configured properly. For a test environment, you can get by with 512 MB of memory and at least 2 GB of free disk space. This type of requirement is easily met by using virtual server software, such as MS Virtual PC. The CPU type is not important in a test environment; in a production environment you will want a high-speed single or multiple-CPU configuration. You learn more about this in Chapters 2 and 4.

Building a Test Environment

Using a virtual server, such as MS Virtual PC, makes it possible to build and test SharePoint on your ordinary MS Windows XP client. It also makes it possible to test and play with different configurations and scenarios. And if (or, more likely, when) things go wrong, you can simply use the undo feature of MS Virtual PC. Another option with virtual servers is to make a copy of the virtual server environment and, if necessary, restore that copy in case your test environment is messed up beyond repair!

I recommend that you use a virtual server for testing everything detailed in this book. It will make it much easier for you in case something goes wrong, and you won't have to worry about testing and playing around. Once you know how SharePoint works, you can then go on to use your own production environment.

Integrating with MS Office 2003

Given that you are reading this book, the chance that you use MS Office for creating documents, spreadsheets, and presentations is rather high. Therefore, this section is important for you. SharePoint will not change the way you are working with Office documents, but it will enhance the functionality, making many things a lot easier than they are without using SharePoint. What features you can expect depends on what version of MS Office you are using.

The story is this: MS Office was released together with SharePoint 2003 in October 2003. They were built to be integrated. Any previous versions of MS Office do not know about SharePoint, so they lack this integration capability. Do not expect Microsoft to release an update for previous versions of MS Office, though. It would most likely be too much to modify, and frankly Microsoft wants you to upgrade to Office 2003.

So what do you get if you have a previous version of MS Office, such as Office 2000 or Office XP?

- **File Save Integration:** Microsoft Office 2000 integrates with Windows SharePoint Services. Users can open and save files stored on SharePoint sites. They can also receive alerts in Outlook 2000.
- **Basic Data Integration:** Microsoft Office XP provides for data integration with SharePoint sites. Users can view properties and metadata for files stored on SharePoint sites. They can also export list data to Microsoft Excel 2002.
- **Contextual Integration:** SharePoint integrates fully into the business tasks that users perform every day with Microsoft Office 2003 Editions.

Microsoft produced a white paper describing Office integration called "Good, Better, Best." *Good* means the functionality achieved by MS Office 2000, *Better* is what you get with MS Office XP, and *Best* requires you to run Office 2003. Note that there is no technical problem in using SharePoint in a mixed MS Office environment, but it will place an extra burden on the Help Desk and the support team. A more detailed comparison among the three MS Office versions from the white paper has been modified and presented in the following table:

Feature	Office 2000	Office XP	Office 2003
Save and open files from SharePoint sites	Yes	Yes	Enhanced (Office plus FrontPage, InfoPath, OneNote, Microsoft Project, Publisher, Visio)
Create new documents in web browser	No	Yes (Excel, FrontPage, PowerPoint, Word)	Yes (Excel, FrontPage, InfoPath, PowerPoint, Microsoft Project, Publisher, Word)
Collect document columns automatically	No	No	Yes

Table continued on following page

Feature	Office 2000	Office XP	Office 2003
Change document columns in both Office and the web browser	Data stored, but not displayed	Yes	Enhanced (Excel, FrontPage, InfoPath, PowerPoint, Visio, Word)
Track document versions	No. Use web browser to view and manage document versions.	No. Use web browser to view and manage document versions.	Enhanced (Excel, PowerPoint, Visio, Word)
Check out and check in documents	No. Use web browser to manually check out and check in documents.	No. Use web browser to manually check out and check in documents.	Enhanced (Excel, PowerPoint, Visio, Word). Use web browser to manually check out and check in other types of documents.
Upload multiple documents	No	No	Yes
Use Inline discussions	Yes	Yes	Yes
Use Microsoft Office Components for SharePoint	No	No	Yes
Person Names Smart Tag	No	No	Yes
Create Document Workspace	No	No	Yes
Create Meeting Workspace	No	No	Yes (Outlook 2003)
Synchronize calendar and contact list sites	No	No	Yes (Outlook)
Alert integration with Outlook	No	No	Yes (Outlook)

Built-In Features of SharePoint

So what features can you expect in SharePoint? The answer depends on what version you implement: SPS or WSS. Following is a list of everyday scenarios showing you how SharePoint can make things easier for you and your users. Chapters 9 and 10 provide more detailed steps on how to create a SharePoint environment that solves these problems.

Alerts (WSS and SPS)

One feature that both WSS and SPS offer is something Microsoft refers to as alerts. An alert is a request you create in SharePoint to be notified by e-mail when SharePoint content changes (for example, when a document is updated, a contact is deleted, or a News item is added). Using alerts, you can be sure to keep yourself updated about changes to information that is important to you! SharePoint will send you an e-mail to notify you what has happened. The following information types are examples of what can be watched by alerts:

- Single documents and files in a document library.
- Document libraries.
- Picture libraries or single pictures.
- Contact lists or single contacts.
- Link lists or single links.
- News lists or single news items.
- Event lists or single events.

Alerts can watch a lot more places and types of information, as you will see in Chapters 9 and 10. This is extremely useful — you will no longer miss any important updates!

File and Document Management (WSS and SPS)

Today you organize your files by using a folder structure and giving your files descriptive names so that they are easy to find. But you also know that after some time, it gets harder and harder to find the file when you need it. And even worse, you may have several copies of different versions of the same file. How can you be sure you're looking at the right version? If you are looking for a file that somebody else created, it gets even harder because the folder structure may not be as intuitive as you would like it to be and the filenames may not be as descriptive as they should be.

This is where SharePoint comes in. All files and documents in SharePoint are stored in document libraries. This is very similar to a folder in the file system, but on steroids! The document library has lots of new features that will help you organize and find the files you are looking for. The key features are as follows:

- **Document Columns:** Add your own columns to describe the files and documents, such as Document Type, Customer Name, Project Name, or Status.
- **Document Views:** Create your own view on how the files should be presented. For example, you could create a view that shows only documents of the type Contract for the customer Volvo, sorted by status.

These features make it easier for you to name your documents. You no longer need files with names like `Contract_Volvo_version05.doc`. And more importantly, you can force the writers of documents to enter information in these columns when they save their files.

There are many other interesting features in SharePoint regarding document management. In this book, you will see and try most of the important features.

Project Management (WSS)

This section's title indicates that this functionality only works in WSS, but this is not actually true. However, in a real production environment you should avoid using SPS for project management. The reason for this is related to security. WSS allows you to set individual access settings per document library and other lists of information, whereas SPS allows you to set access settings only per web page, regardless of what types of document libraries and lists are displayed.

Think about projects. What type of information is related to a standard project? Although it depends on the project, you will still find that most projects share the following types of information among the project members:

- **Documents:** Examples include MS Word files, Excel spreadsheets, text files, and PowerPoint presentations.
- **Members:** A list of all the members in the project.
- **Calendar:** A list of events, such as meetings, conferences, and project milestones.
- **Contacts:** A list of external contacts, such as vendors, partners, consultants, and other resources.
- **Tasks:** A list of things to do, assigned to project members.
- **E-mail:** Questions, status, and comments regarding the project.

The problem today is that this information is stored in several places. Documents and files are stored in a file share; members exist in an e-mail distribution list; calendar events, contacts, and tasks are stored in an Outlook public folder; and e-mail is, of course, stored in each member's personal inbox. Another way to describe this is organized chaos. Each project member needs to know and remember exactly where each type of information is stored. If he does not do so, valuable time is wasted searching for the information. To make things worse, if a new member joins the project you must explain to her where everything is stored and how it works. To make sure the new member understands what has been going on, you must forward a copy of all mail related to this project — if you can find it. The new member then faces the challenging task of reading all this e-mail and understanding what it contains.

Do you recognize the situation? Everyone does! To solve this problem, you need something that can store all this information in a single place — or at least make all the information available through a single place. This is exactly what SharePoint does! Here is how you do it:

1. Create a SharePoint web site for the project.
2. Add the members to the site. SharePoint sends the members an e-mail with an invitation to the site.
3. Create a document library to store all files and documents, and copy all existing files to this document library.
4. Create another document library to store all e-mail, and copy all project-related e-mail to this document library.
5. Create a calendar, a task list, and a contact list, and then use these lists for the project data.

Chapter 2 gives detailed steps on how to create this type of web site and all its lists and fill it with data. You will also learn how easy it is to design the page to make it easy to use.

Managing Meetings (WSS)

If there is one thing that practically all employees agree on, it is that meetings are most of the time a huge pain! Why? The usual complaints are that they are a waste of time, boring, and too long; that meeting participants are unprepared; and that it's hard to follow up on tasks and activities after the meeting. That indicates that even a small step forward to make meetings more effective is important. With SharePoint, you will be able to change many things into something more positive.

In a typical meeting, the planners use Outlook to invite participants, as well as to reserve resources such as the conference room (you *have* left the Stone Age, right?). A meeting is an event where the following steps occur:

1. A number of people are invited.
2. The invitees come together.
3. While together, they discuss a number of topics.
4. The discussion results in a number of actions and decisions.

The Typical Meeting Process

The meeting organizer creates an agenda and describes the meeting objective. (Have you noticed how many meetings don't have a clear objective?) The meeting organizer then estimates the length of the meeting and sends an invitation to all participants. Some documents, with information needed for the meeting, may be attached to the invitation.

Later, the actual meeting takes place. Each participant has his own copy of the agenda and the attached documents. Well, actually, some participants forgot the agenda and need to print a copy; somebody else did not see the attached document, so he also needs to print a copy. About 15 minutes after the meeting should have started, everyone is ready to proceed. Because there is no clear indication as to how long each agenda point should take to discuss, the meeting takes 20 minutes longer than expected. This makes some people stressed because they have other appointments after this meeting.

During the meeting, someone takes notes about all the activities agreed upon, the tasks assigned, and the decisions made. This information is later listed in the meeting minutes. One more person also takes notes because, after this meeting, she will be the person appointed to check the minutes.

One week later, the meeting minutes are created and checked and sent to all participants by e-mail. A few of these participants actually read the minutes, some just take a quick glance at them, and some do not have time to even open the document. The next time this team has a meeting, only a few participants have read the previous minutes, and many have missed that they were assigned tasks. And the story goes on.

Using SharePoint for Effective Meetings

The preceding story might not be true for every organization, of course, but I am sure you are familiar with the ways meetings can go wrong. So what can SharePoint do to make this process both more effective and more interesting? Thanks to the integration of Outlook 2003 and SharePoint 2003, you can now simultaneously send a meeting invitation and create a *meeting workspace*, a web site where you can host all information regarding the meeting, including the following:

- **Agenda:** A list of all the items you will discuss during the meeting, including who is responsible for each one, how long it will take, and any comments regarding the items.
- **Participants:** SharePoint automatically creates a list of all invited participants. This list is automatically updated with the status of each participant so that everyone can see who will come or why someone declined the invitation.
- **Tasks:** A list of all the tasks agreed upon during the meeting.
- **Decisions:** A list of all the decisions agreed upon during the meeting.
- **Document Library:** Contains any document with information that will prepare the participants for the meeting, as well as documents created as a result of the meeting.

All this information is available to the participant directly when she receives the invitation. This means that she can see the agenda, maybe add some extra items to it, and get access to any document with information related to the meeting. If needed, the participant can add her own documents.

When the actual meeting takes place, you use a video projector that displays the meeting workspace. No one needs a printed copy of the meeting agenda because it is listed on the meeting workspace. All documents are listed in the document workspace — if there is a discussion about what a document contains, the organizer can quickly open the document for everyone to see.

Any activities, tasks, or decisions that are agreed upon during the meeting are directly entered into the list. Everyone can see this, so there is no need for anyone to check the meeting minutes afterwards. The effect is that everyone will be involved in whatever decision is made. This makes the meeting more interesting and engaging. Because the agenda clearly states the amount of time it should take to discuss each item, the participants can focus on that subject and try to stay within the estimated time.

Because everything is recorded directly during the meeting, you don't need any meeting minutes at all! If a participant afterwards needs to see what was decided in the meeting, she can simply go back to the meeting in the Outlook calendar and click the link to open the meeting workspace again.

In Chapter 10, you will see how to create a meeting workspace, configure what lists it contains, and fill it with data. You will also see that repeated meetings can be linked to the same meeting workspace, giving you one page for each meeting instance and making it very simple to go back and see what you discussed in a previous meeting.

Keeping Your Organization Updated (SPS)

For many years now, organizations have used an intranet to make sure that everyone has access to general information, such as company news, information from the Human Resources department, or a list of all employees and their contact information. SharePoint is a great tool to help you create an intranet. With SharePoint, you often refer to the intranet as "the portal site," or simply "the portal."

Using SharePoint for your intranet has many advantages. It is fast, it can support organizations with millions of users, and it has several interesting features, such as the following:

- **Targeting:** Helps you make sure that your news, links, and other information are visible to only a certain group of people, which is also referred to as an "audience."

- **Active Directory synchronization:** Makes it possible to present relevant information about your users, such as e-mail addresses, departments, phone numbers, pictures, descriptions, and so on. SharePoint stores this information in its profile database.
- **Topics:** Allows you to group links and actual documents under a given topic, regardless of what type of information it is or where it is stored. This makes it very easy to find frequently requested information.
- **Areas:** Allows you to create new pages on the intranet that may be used for a local department, such as Human Resources or IT. Each page may have its own news listing and other relevant information.
- **Site Directory:** Displays a list of existing web sites, including their names, descriptions, owners, and other properties. This makes it easy for a user to quickly find a specific web site.
- **My Site:** A personal site for each user that typically is used for displaying personal information, such as news, links, e-mail, and calendars, as well as document and picture libraries. There is also a public view of this site that displays information about the user, such as e-mail address, phone numbers, department, and a general description.

In addition, you will find that the News list allows you to define when to display and remove the news from the list. News is never automatically deleted; instead, items are archived and will still be possible to find using the search feature in SharePoint. You can link pictures to your news, and you can make the news item show up in several places, such as on the organization-wide intranet and on a local intranet for a given department.

An intranet based on SharePoint Portal Server will also have automatic links to the web sites you create for your projects, meetings, and other shared team sites. The intranet also allows you to create any type of list, including document libraries, contacts, and events. If you decide to go with both SPS and WSS, it is hard to find a good reason why you should use an additional product only for the intranet. Doing this will not only make things harder for you to support and manage (backup and restore!), but it will also force your organization to pay two server licenses rather than one.

Now take a look at an intranet scenario. Say your organization has three departments: sales, IT, and Human Resources. You also have some special groups: the executive team, a project team, and an external sales force. Your task is to make sure each of them gets the right information, in an easy and intuitive way. Your CEO requires a common intranet where all important information regarding the company, its customers, and its employees are presented. Each department requires its own intranet. The IT folks tell you they are sick and tired of all the sales info, and the sales guys asks you politely if there is a way to filter out everything except the sales-related information. And all of them say they want a fast and easy way to find the right web site where all the information is stored for the projects, meetings, customers, and so on. And by the way, the executive group wants an easy way of finding all contracts, regardless of where they are stored. How do you solve this?

One solution would be to do this:

1. Install SPS and WSS.
2. Create a common intranet portal for the organization.

3. Create a separate area page on the intranet for each department, with its own news listing, document workspace, and contact lists. The area pages are:
   - ❑ Sales
   - ❑ IT
   - ❑ HR
4. Create these audiences:
   - ❑ Sales Team
   - ❑ IT Team
   - ❑ HR Team
   - ❑ Executive Team
   - ❑ Project Team
   - ❑ External Sales Team
5. Instruct your general news authors how to target their news items to a specific audience so that each audience only sees information targeting their group.
6. Instruct local news authors in the departments on how to create news items only for their own areas.
7. Use the Site Directory in SPS to create new web sites for each project, team site, and so on. This ensures that all web sites are listed in the site directory and are therefore easy to find.
8. Create a Topic in SharePoint named Contract. Tell the salespeople that whenever they create a new contract document to make sure it also is submitted to this topic.
9. Make sure every user has updated information in the Active Directory (AD), such as phone numbers, department, company name, and e-mail address. Then synchronize the AD with SharePoint. Make sure each user profile in SharePoint links to a photo. Instruct everyone that whenever they see a name listed, they can simply click it to get more information about that user.

Finding Your Information Faster (SPS)

How often do you search for information? I would guess at least once every day. Assume the average user spends 10 minutes every day searching for information. If you have 200 users, this would be about 2000 minutes, or 33 hours per day. You could also put it this way: Your organization pays for 200 employees, but it only gets the efficiency of 196 (4 people times 8 working hours = 32 hours in total per day). What this means is that even small improvements in efficiency may lead to big results. And not just for the owners of the company — the employees will be happy too because they can concentrate on doing their jobs instead of searching for information.

SharePoint Portal Server has its own built-in search and indexing engine, but Windows SharePoint Services does not have any built-in search feature. The only way of activating any type of searching in WSS is by using the Full Text Indexing feature that comes with MS SQL Server. And that type of searching is limited to the web site you are in when searching. Thus, this section discusses the search and indexing features of only SPS.

A number of client-based search tools are available, such as MSN Search and Google Search. At the time of this writing, these tools are not made for searching SharePoint information, so you need to implement

SPS in order to get a real search engine. But this is not just any search engine; it is a very sophisticated tool that enables you to search for any type of data in SharePoint, regardless of where it is stored. You can also instruct the index engine to make information outside the SharePoint database searchable, including these information sources:

- Every web site in the SharePoint environment (including all SPS and WSS sites).
- Any file server in your IT environment (including older NT 4 and Windows 2000 servers).
- Your MS Exchange database (such as all public folders or role-based mailboxes such as Help Desk).
- Any Lotus Notes database you may have.
- Other internal web sites (such as your old intranet, your public web site, or similar sites).
- External web sites (such as your partner's web site; and why not your competitor's?).

What File Types Can You Search?

The type of information you can search is almost anything! Of course you can search in any MS Office file format, such as MS Word and MS Excel, but you can also search in text files, standard file formats (such as HTML and RTF), and TIFF files.

Isn't that an image file type, you might ask yourself? You are absolutely right! The TIFF file type is often used for pictures and other images. But TIFF is also used to store scanned documents and incoming fax documents. And this is what SharePoint's index engine can help you with: to make scanned documents and faxes searchable. Everything you need comes with the SPS package. However, this feature is not activated by default. You can find more information about this feature using this link: `http://support.microsoft.com/?kbid=837847&FR=1`.

What about other common file types, such as PDF, ZIP, and CAD files? In order to explain this, I have to tell you a little more about the indexing process:

1. When the scheduled task for indexing starts, the search engine looks into every place you have instructed it to look in.
2. When it finds a file, it looks at the file type (for example, DOC).
3. It checks a list in SharePoint where you have specified what file types you want indexed. In this example, DOC is a file type that should be indexed.
4. The index process now needs a program that understands how to read DOC files. Such programs are referred to as Index Filters (IFilters, for short). Every file type needs its own IFilter, including DOC files.
5. The IFilter opens the file and starts scanning it. Whenever it finds some text, it stores this text in a separate file, called the Index File. The IFilter is smart enough to skip binary data and white noise (words like yes, no, one, and two and numerals like 1, 2, or 3).
6. When all the text in the file is read, the IFilter closes the file, and the process starts again with step 2.

So if you want to make file types like PDF searchable, you need to do two things: Configure SharePoint to look for PDF files and install an IFilterIFilter for the PDF file type. The search engine does not include

this by default. You may wonder why Microsoft has not added common file types such as PDF or ZIP. The answer is simple: At the time SPS 2003 was released, Adobe owned the PDF format, so Microsoft did not want to include an IFilterIFilter for it. So Adobe is making the IFilterIFilter for the PDF — and the good news is that Adobe is giving it away for free to encourage people to use the PDF format for storing all kinds of content. In Chapter 6, you learn how to find and install common IFilters, including the PDF version.

What Type of Searching Can You Do?

The default configuration of the SharePoint search engine allows you to search for whole words and their stemmers only. For example, you can search for "write" and you will also find files with "writing" and "wrote." However, if you search for the word "Admin" you will not find "Administrator" because it is not a stemmer. This default behavior can be changed, as the following article at the `www.msd2d.com` site describes: `http://msd2d.com/Content/Tip_viewitem_03.aspx?section=SharePoint&category=Development&id=e1982261-c9e0-4668-984a-69c94dc61a7c`.

You can also search for document properties, also referred to as metadata, such as author, title, and file size. The list of properties is different for different types of documents. For example, if you want to see what properties a standard MS Word document has available, you can do this:

1. Open any Word file with the file extension .DOC.
2. Choose File➪Properties.
3. Switch to the Summary tab. Here you will find all the standard properties for Word documents.
4. Switch to the Custom tab. Here you will find other, less common properties, including any properties automatically imported from columns in SharePoint's document libraries.

All the standard properties on the Summary tab are searchable. You can also make combinations, such as searching for all documents containing the word "Viking" with the attribute "Author" equal to "Göran Husman." This is satisfactory for most search scenarios. But sometimes you want to search for a document that matches your own column value. You may recall that you can add any number of columns to a document library, for example "Doc Type" or "Status." As you learn in Chapter 6, even these column properties can be searchable if you configure SharePoint properly.

If your SharePoint search engine has indexed many documents, you may want to limit the search to a given area. This is made possible by configuring search scopes. For example, you can create one search scope for MS Exchange, another for files on the file system, and so on. This reduces the number of search results, but it requires that you know in what search scope your document belongs.

Finally, you can define keyword best bets. This feature helps your users to find frequently requested information. For example, suppose that when you talk with the sales manager, she tells you that members in her team often need access to the product specifications. The problem is that these products have several names. The best-selling product is article X2025A, but most customers refer to this as the "Super Gadget"; to add to the problem, the internal name used by the sales team is the "Money Maker." She wants her team to be able to search for any of these terms and still find the product specification for the X2025A. With the keyword best bet feature in SharePoint, this is an easy fix. You simply need to create a list of each alias for the keyword X2025A and then link this keyword to the proper document. When someone later searches for any of these words, that person will find the product specification for X2025A at the top of the search results. Below it, he will find all other documents that match this search criterion.

Accessing SharePoint over the Internet

Very soon after you start working with SharePoint, you find that it contains more and more of your business-critical data. You also become aware of the fact that you need online access to the SharePoint server in order to work with the documents, projects, and everything else stored in the SharePoint database. So you start thinking, "How do I access this information when I am not at the office?" The answer is clear: You can make your SharePoint information accessible over the Internet, in a secure way, while still getting good performance. You have to plan this carefully and configure SharePoint and the other modules involved, such as the firewall.

How You Do It

Because SharePoint is a web application running on top of IIS 6, it is very easy to make SharePoint accessible from outside your organization. You simply open up your firewall so that it allows connections to the SharePoint server from the outside. But this is not a good solution from a security perspective. This leaves your SharePoint server wide open to the world, and there are lots of threats for this server that could destroy it or even the other servers on your network. Another big problem with this simple solution is that your password and user account could be transferred over the Internet unencrypted, depending on what type of authentication method you use. Someone listening in on your communication could learn your password and be able to log on as you!

A better solution is to install a Secure Socket Layer (SSL) certificate on your IIS 6 and demand that every access to the SharePoint server use SSL-encrypted connections. That is, the user must enter the Uniform Resource Locator (URL) address to the SharePoint server starting with `https://`. The effect of this is that your log-on credentials are protected. There is no longer any risk that someone will see your password.

The best solution is to prohibit the external users from accessing the SharePoint server directly from the outside, combined with the SSL-encrypted connection. Instead, your users would access something that looks like the SharePoint server but in reality is an image. This type of image is known as an application proxy server. Microsoft's solution is its product called Internet Security and Acceleration Server, also known as the MS ISA server. With this solution, things works like this:

1. The external user connects to the SharePoint web address over the Internet, using an SSL connection such as `https://intranet.contoso.com`. This is the exact same address for users on the inside, except for the `https://` part (internally, you would use `http://` instead).
2. The user is passing through the firewall but is directed to the MS ISA server instead.
3. The MS ISA server looks at the requested URL address, checks its rules, and if everything is okay, connects to that URL and retrieves the page. This page is then sent back to the user.
4. The user sees the requested URL. He clicks a link, and, once again, the MS ISA server gets a request for a new URL, repeating step 3.

The nice thing with this solution is that the user never gets access to anything more than the MS ISA server, which normally is installed on the Demilitarized Zone (DMZ) segment of the network. This segment is where you put all your publicly available servers, such as your public web site. You can use the rules in the MS ISA server to control exactly what the user can see and do. For example, in some organizations, users have different levels of access, depending on where they are situated at the moment. Inside the network, they have full access; on the Internet, they have access to only some part of SharePoint. This

is something that only the MS ISA server can help you deploy because SharePoint itself cannot distinguish access to its information in this way. Another bonus effect is that frequently requested pages are cached on the MS ISA server, meaning that these pages will be displayed more quickly for the users.

Allowing External Partners Access

Now you know the general steps in configuring the SharePoint environment for access over the Internet. But what about partners and other users living outside your organization? If there is a need to give them limited access to your SharePoint server, it can be done! Before you do this, you must understand how SharePoint controls what the user can do with its access control feature.

Every user who is granted access to SharePoint must belong to a site group. The site group defines exactly what type of access you have. By default, WSS has these site groups configured and ready for use:

- **Reader:** Allows the user to open and read information, including documents, pictures, and list content. The user will not be able to create, modify, or delete information in SharePoint.
- **Contributor:** Allows the user to do everything a Reader can do, plus create, modify, and delete information, including news, documents, contacts, and so on.
- **Web Designer:** Allows the user to do everything a Contributor can do, plus create new document libraries, lists, document columns, and document views, as well as change the layout of the web site by adding or moving web parts.
- **Administrator:** Has full access to the site. Can do everything, including adding and deleting members and changing their access.

These site groups are not specifically used for intranet scenarios; site groups are used for controlling access to any part of SharePoint, regardless of user access.

First, look at how you can allow access internally. Assume that you hire a person named Anna. She needs access to your intranet, and she will only read information. You add Anna's user account to the site group Reader on the intranet portal site. Later, Anna comes back to you and says that she needs both read and write access to a given project site; now you add Anna's user account to the site group Contributor for this particular project site. Anna now belongs to different site groups in different sites of the SharePoint environment. Whenever she is accessing SharePoint, it will validate her user account and check what site group she belongs to.

If you want to allow access to a user outside your organization, he needs to be authenticated. In other words, he needs to log on so that SharePoint can see what access he is granted. This will be a problem with external users because they don't have a user account in your network. The only practical way to solve this is to create a user account for them. Now you can assign the user membership in any site group you like. The external user must remember to log on with the account you created. So everyone is happy now.

Problems with This Solution

But this solution is far from perfect. It works, this is true, but what happens if this external person goes to another company? For example, suppose that John works for the company ABC. John is involved in a project in your organization, Contoso, and needs access to the SharePoint site where all the project information is stored. You create a user account for John, grant him the proper access, and tell him the URL for the project site and that his logon is `Contoso\John`. He starts working with the project, and everything

works as expected. One month later, John leaves ABC, and starts working for its competitor, XYZ. You don't have an agreement with XYZ, so its employees are not allowed access to your project site. You need to disable the account `Contoso\John`. But how will you know that John has left his old company, ABC? There is no automatic process that will inform you about this. Hopefully, someone at ABC tells you this, or somebody in the project team gets this information and tells you. Clearly, this situation will be very hard to handle if you have 10 or more external partners. But at the moment, this is how things work.

ADFS

However, there is some light at the end of the tunnel. Starting with Release 2 of Windows 2003 Server, Microsoft released a new feature called Active Directory Federation Service (ADFS). The objective of ADFS is to resolve precisely this type situation (that is, letting two completely separate organizations share access to web applications like SharePoint without the need to create local accounts for the remote organization). The idea is rather simple and easy to understand, but the technique beneath is advanced and worth its own book.

The basic idea of ADFS is to make it possible for an organization to use its own user accounts to get access on a remote web application. For example, assume that you have two companies, A and B. User Bob works for B, and he needs access to a SharePoint site in A. Bob talks to the administrator for the site in A, which then grants the `B\Bob` account access to the requested site.

The magic in this scenario is managed by adding extra servers to your Active Directory domain, one in each organization. The primary ADFS server is referred to as the *federation server* and hosts the federation service component. Its primary task is to route incoming requests from the Internet to the web site a user is trying to access. It is also responsible for creating a security token that will be passed on to the web application. The process that validates the external user is the ADFS Web Agent, which runs on the web server (in this case, the SharePoint server).

Most organizations do not want their federation server exposed to the Internet. You can protect it by installing an optional federation proxy server. This proxy relays federation requests from the outside world to your internal federation server, meaning that your federation server is no longer exposed directly to the outside world.

> *ADFS is based on the standard Security Assertion Markup Language (SAML), which means that that the external company need not be running MS Windows.*

Summary

In this chapter you learned the following:

- SharePoint is a web-based application that helps users share and collaborate with any type of data and information.
- The user of today requires more control and power to create and modify whatever she needs.
- SharePoint lets the ordinary user create sites and document libraries in a secure and controlled manner.
- The previous versions of SharePoint were STS (SharePoint Team Services) and SPS 2001 (SharePoint Portal Server). STS was replaced by WSS (Windows SharePoint Services) and SPS 2001 was replaced by SPS 2003.

- It is very easy to upgrade to SharePoint 2007 if you avoid modifying SharePoint's own system files and stored procedures in SQL Server.
- WSS is the SharePoint base module. It is used to create sites for managing and sharing information, such as projects, customer data, meetings, and local intranets.
- SPS is the optional add-on package. It enhances WSS with several new features in a special web site called "the portal site." Features include advanced global searching, advanced intranet features, including targeting of information, personal web sites, and topics for collecting references to information stored anywhere in SharePoint or any other computer.
- To install SharePoint, the server needs Windows 2003 Server with IIS and ASP.NET activated.
- SharePoint can use two types of SQL databases: MS SQL 2000/2005 Server and MSDE.
- MSDE must be installed on the same computer as SharePoint.
- MS SQL 2000/2005 Server can be installed on a separate computer if required.
- WSS has a special version of MSDE, named WMSDE.
- SharePoint 2003 (WSS and SPS) is best integrated with MS Office 2003.
- You can use Office 2000 or Office XP, but you will not be able to access everything that SharePoint offers.
- You can use SharePoint to build intranets for the complete organization, for the department, or for any local groups of teams, if requested.
- The index and search functionality in SPS 2003 are very good! It makes it possible to search anywhere and in practically any file type.
- WSS has no search functionality at all. But you can use the MS SQL 2000/2005 Server's Full Text Indexing feature in WSS. If you use the WMSDE, you will not have any way of searching for data.
- You can use SPS to index new file types by installing an IFilter (Index Filter).
- You can search for content in both files and properties, such as Author, Title, and Size.
- You can configure SharePoint to make your own library columns searchable.
- You can define keyword best bets for frequently requested information.
- SharePoint requires every user to have an account in order to authenticate. You can use local sever accounts or domain accounts, but no other types, such as MS Passports.
- If external users such as partners or customers need access, you must create an account for them in your environment.
- A new way of allowing users in remote organizations access to your SharePoint server is to install the Active Directory Foundation Service (ADFS).
- The access granted to a user is controlled by the site group she belongs to (for example, Reader, Contributor, or Administrator).

By now, you have a general idea of what SharePoint is and how you can use it. In the next chapter, you learn how to install and configure Windows SharePoint Services.