Errin O'Connor, Penelope Coventry,
Troy Lanphier, Johnathan Lightfoot,
Thomas Resing, and Michael Doyle

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Microsoft® SharePoint® Foundation 2010 Inside Out

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Michael Doyle

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I dedicate this book to the men of the Navy Seals, Delta, and those Special Operators lost in the defense of our great nation, along with all who support them, as they are mostly overlooked but support the noble cause of these operators on a daily basis.

Errin O'Connor

To Mum, who died during the production of this book; I will miss you Mum, but I am happy that you are now at peace, with Dad.

"Never happier than when you were together."

Penelope Coventry

To Mom for not grounding me when I plugged in the bare AC cord just to see it arc, and to Dad for encouraging me to put back together the things I took apart. I love you both—Dad, I miss you terribly.

Troy Lanphier

To my daughter, Giavrielle

Always know that all that I do, I do for you.

Johnathan Lightfoot

To my wife, Kerri, and my daughter, Elise—my biggest supporters.

Tom Resing

I would like to dedicate my part in this book to my children, Stephanie, Maxson, and Carianna, as well as my partner, Dr. Lissa Joy Geiken, for providing balance, love, and caring during the writing process. I would also like to thank Ken Brown and the people at O'Reilly Media and Microsoft Press for giving me the opportunity to contribute to this book as well as to work with the other great authors. Finally, I would like to thank the SharePoint Community for providing inspiration, friendship, and for making my work more than just a job.

Michael Doyle

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Introduction

Welcome to *Microsoft SharePoint Foundation 2010 Inside Out*. Microsoft SharePoint Foundation 2010 is provided as a free download and provides a robust collection of services that can be used to build powerful web solutions. It forms the basis for a number of other SharePoint products such as SharePoint Server 2010 and Office 365, which incorporates Microsoft's SharePoint 2010 cloud-based solution, called SharePoint Online.

SharePoint Foundation helps teams stay connected and productive by utilizing an infrastructure with which they can easily access the people, documents, and information that they need. With SharePoint Foundation, teams can create websites to share information and foster collaboration with other users. You can access content stored within a SharePoint site from a web browser and through desktop applications, such as Microsoft Office.

Who Should Read This Book

This book offers a comprehensive look at the features most people will use in SharePoint Foundation 2010 and serves as an excellent reference for users who need to understand how to accomplish what they need to do. In addition, this book provides useful information to advanced users and IT professionals who need to understand the bigger picture.

Assumptions

This *Inside Out* book is designed for readers who have some experience with SharePoint Foundation 2010 and are fairly comfortable finding their way around the product. You will need access to an installation of SharePoint Foundation 2010 or have the ability to install it on a server or in a virtual environment.

This book touches only briefly on some of the basic topics that you'll find covered in more detail elsewhere (such as in *Microsoft SharePoint 2010 Plain & Simple*, *Microsoft SharePoint Foundation 2010 Step by Step*, and *Microsoft SharePoint Designer 2010 Step by Step*). We focus on techniques and topics that are likely to appeal to readers who have already mastered the many basics of this SharePoint 2010. Whether you are a business analyst, site owner, a server administrator, or a developer, there is something in this book for you.

Organization of This Book

This book gives you a comprehensive look at the various features you will use. It is structured in a logical approach to all aspects of using and managing SharePoint Foundation 2010, starting with an introduction of the features that are included. The early chapters concentrate on what you can achieve by using the browser; later chapters detail features from the perspective of the power-end user, administrator, and developer.

Chapter 1, "Introduction to Microsoft SharePoint Foundation 2010," introduce SharePoint Foundation 2010 as the entry-level component of the SharePoint family of technologies; this is the software that will get organizations started using SharePoint. The chapter examines the capabilities, features, and functions of SharePoint Foundation 2010.

Chapter 2, "Administration for Business Users," breaks down the administration of SharePoint into two categories: Business User Administration and Information Technology Professional Administration. The chapter provides you with the tools to set up your SharePoint sites that are serviced on the back-end, either by your organization's IT group or an external hosting company, or both.

Chapter 3, "End-User Features and Experience," explains how organizations can take advantage of the powerful, built-in features of Microsoft SharePoint Foundation 2010. The items discussed in this chapter are those that end-users will utilize on a daily basis. These items will increase collaboration with other SharePoint users and also increase productivity on day-to-day tasks and activities.

Chapter 4, "Creating Sites and Workspaces by Using the Browser," helps you to set up a site or workspace. There are several methods with which a user can accomplish this, but the most straightforward and intuitive method is via the browser. The browser is a tool with which all computer users are acquainted. With the familiarity of the browser and intentional ease-of-use design, the user can begin creating sites in no time at all.

Chapter 5, "Designing Lists and Libraries," shows you how to use a browser to create, modify, and display lists and libraries. Lists and libraries can be used as repositories for almost anything you want to store within the SharePoint environment. With the help of new form dialogs and the introduction of the ribbon, the experience of reading, editing, and creating content has been greatly enhanced in SharePoint Foundation 2010. Lists and libraries are a powerful solution for organizations that currently create content in many different types of applications, which is subsequently saved in many, varied locations.

Chapter 6, "Creating and Formatting Webpages," introduces you to the Team Site wiki page library, named Site Pages, where the web pages are stored and where new pages are stored when created. These pages have been enhanced and are easy to change. Web Part pages are still used in SharePoint Foundation and are the default page type on sites such as Group

Work Sites, Meeting Workspaces, and Blog Sites. Web Part pages can also be used on Team Sites, but on such sites, they are usually used for list views, list item edit forms and list item display forms.

Chapter 7, "Adding, Editing, Connecting, and Managing Web Parts on the Page," shows you how to add a Web Part to a SharePoint site. A Web Part is a key component of any SharePoint installation and is present in all versions, from SharePoint Foundation to SharePoint Server (Standard or Enterprise). Its core function is to represent customizable content on a webpage. It is only intended to receive input and display content.

Chapter 8, "Managing Site Content," provides tools and strategies for designing a great site. Using the strategies, you discover ways to present information that is up to date and relevant in your sites.

Chapter 9, "Working with External Content," shows you how to use the Data Source gallery and the Business Connectivity Services (BCS). It also presents the differences between the two methods. You examine the architecture of the BCS including the security options. You also look at managing the data connections and how to expose the data from the external systems on webpages and in lists and libraries. The chapter ends showing you how to use Microsoft Visual Studio 2010 with BCS.

Chapter 10, "Using and Creating Workflows," details how to use the out-of-the-box workflows in the browser. It explores how to extend them by using SharePoint Designer 2010, and how Visual Studio can help your organization to integrate SharePoint Foundation 2010 into its business processes.

Chapter 11, "Integrating SharePoint with Microsoft Office 2010," examines the differences in Office 2010 versions as they relate to SharePoint Foundation 2010. The SharePoint 2010 platform has many strengths; one of the greatest is its integration with the Microsoft Office desktop client. Office applications installed on the client desktop interface directly with not only SharePoint sites and workspaces, but also the entities within these sites, such as document libraries, content, and workflows. The chapter also makes reference to other, non-Windows Office versions that provide a measure of interaction with the SharePoint 2010 platform.

Chapter 12, "Taking Lists and Libraries Offline," shows you several ways to take content offline in SharePoint 2010. The need for this is simple: some people only have to take a document or two offline, whereas others must interact with an entire list, folder, or library.

Chapter 13, "Managing Site Settings," explains how you can be both site owner and Site Collection administrator. You learn about site settings within a Microsoft SharePoint Foundation 2010 site/Site Collection.

Chapter 14, "Creating, Managing, and Designing Sites by Using SharePoint Designer 2010," details a number of techniques that are useful when working with Microsoft SharePoint Designer 2010 and SharePoint Foundation 2010 sites. You can now develop solutions in non-production environments and transfer them to the production environment. The focus of SharePoint Designer is not on adding static images and text to webpages, but instead on using it as an alternative tool for site administration. Site owners who administer and manage sites are able to go beyond what the browser provides.

Chapter 15, "Customizing the User Interface," shows you that building a SharePoint 2010 solution is more than a collection of lists, libraries, pages, and workflows. Each of these components should be combined to provide users with a holistic solution, where the components work together, not as discrete entities. SharePoint 2010 provides components that you can use to improve the users experience. In your solutions, you can extend many of these improvements, specifically by displaying links, relevant text, and commands.

Chapter 16, "Developing SharePoint Solutions by Using Visual Studio 2010," introduces you to the development of SharePoint artifacts and solution-development programming. The chapter assumes you already have some experience with .NET programming and with web-based programming, in general. Developing solutions for SharePoint helps you to become a valuable asset to your organization.

Conventions and Features 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 commands for navigating the ribbon and command menus	For your convenience, this book uses abbreviated commands. For example, "Click Home | Insert | Insert Cells" means that you should click the Home tab on the ribbon, click the Insert button, and then finally click the Insert Cells command.
Boldface type	**Boldface** indicates text that you type.
Initial Capital Letters	The first letters of the names of tabs, dialog boxes, dialog box elements, and commands are capitalized. Example: the Save As dialog box.
Italicized type	*Italicized* type indicates new terms.
Plus sign (+) in text	Keyboard shortcuts are indicated by a plus sign (+) separating key names. For example, Ctrl+Alt+Delete means that you press the Ctrl, Alt, and Delete keys at the same time.

Design Conventions

INSIDE OUT

This statement illustrates an example of an "Inside Out" heading

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

Sidebar

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

TROUBLESHOOTING

This statement illustrates an example of a "Troubleshooting" problem statement.

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 "Index to Troubleshooting Topics" at the back of the book to look up problems by topic.

Cross-references point you to locations in the book that offer additional information about the topic being discussed.

CAUTION!

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

Note

Notes offer additional information related to the task being discussed.

Acknowledgments

We'd like to include a special thanks to Kenyon Brown (O'Reilly Media Senior Editor), who nurtured us and kept us on track during the many months that it took to produce this book. Without his patience and excellent suggestions, this book would never have been produced.

It is never easy to write a book, especially one that covers such a vast subject area and in such detail. A number of us have authored and contributed to many books. For others, writing chapters for this book was a new experience, but we can all agree that it placed a considerable amount of strain on our personal and professional lives. However, now that it is finished, there is such a sense of accomplishment that is due to the phenomenal dedication to the project shown by everyone and the amount we have learned along the way. We are happy that we have been able to share this knowledge with you, our reader.

A huge thanks goes out to the following people for contributing to the production of this project: Teresa Elsey (Senior Production Editor at O'Reilly), Dianne Russell (Project Manager at Octal Publishing, Inc.), Troy Lanphier and Marlene Lanphier (Technical Reviewers), and all other people at O'Reilly who helped with the production of this book.

Last but not least, our greatest appreciation and admiration to our families for their continued support while writing this book. We thank them all for their love, support, and understanding.

The Authors
September, 2011

Errata & Book Support

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CHAPTER 1

Introduction to Microsoft SharePoint Foundation 2010

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In today's world, organizations are looking for an advantage over their competition. These organizations have increasingly turned to technology to gain that edge. About 10 years ago, Microsoft introduced a suite of tools that have evolved to become known as Microsoft SharePoint. Using these tools, organizations can share, exchange, and distribute information to their employees, partners, shareholders, and customers. Microsoft's SharePoint technology has also given organizations throughout the world the means to implement information systems that increase productivity and enhance organizational collaboration, while giving users the tools they need to accomplish their jobs more quickly and efficiently.

SharePoint Foundation 2010 is the entry-level component of the SharePoint family of technologies; it's the starting point for organizations that want to begin using SharePoint. As time goes on, an organization might require additional tools and features. At that point, it might decide to go forward with a complete SharePoint Server 2010 configuration. Even though this book will look at the abilities, features, and functions of SharePoint Foundation 2010 specifically, Foundation is the baseline for SharePoint Server 2010; as such, the content of this book is still relevant to you, even if you are currently running (or foresee going to) SharePoint 2010 Server.

With SharePoint Foundation 2010, you will be able to store and access content while simultaneously linking your organization's departments and teams together in a way that offers users a familiar, web-based experience. The beauty of SharePoint Foundation is that it can be utilized as a hybrid solution to meet a number of needs within your organization. Whether you are new to Microsoft SharePoint or are a seasoned veteran to this technology, Microsoft has worked hard to introduce a solution that ensures your organization will benefit from its implementation.

When your organization deploys SharePoint Foundation 2010, it can take advantage of a set of robust tools to create solutions that will help people stay connected, regardless of size, geographic location, and (most important) the available IT budget. And whether the organization is a Fortune 500 company, a startup, or a home-based business, it can utilize the features and functions immediately and effectively.

SharePoint is designed around an easy-to-use web-based interface that is fully integrated with Microsoft Office. As such, users do not need to learn a new piece of software—they can use their existing knowledge and apply it to the SharePoint environment. Always remember, *SharePoint is designed to adapt to your organization, not the other way around*.

SharePoint Foundation 2010 is built on the Windows Server 2008 platform, meaning if you have a Windows Server 2008 server, you can run SharePoint. Also, as an added benefit, Microsoft offers SharePoint Foundation 2010 as a free product, which you can easily download from the Microsoft website. By doing so, Microsoft has truly engineered a software platform that is accessible to any organization.

If your organization requires functionality, such as enterprise-wide records management, Excel Services, InfoPath Form Services, Business Intelligence capabilities, and My Sites, then SharePoint Server 2010 is a platform that you should definitely consider. If your goals are less complex, then SharePoint Foundation 2010 is a robust and cost-effective platform that should be strongly considered; We encourage organizations that are new to SharePoint or that have an existing SharePoint 2007 (WSS 3.0 or MOSS) implementation to "get your feet wet" by implementing SharePoint Foundation 2010.

SharePoint Foundation 2010 is amazingly powerful, flexible, and easy to use. The remainder of this chapter provides a brief overview of SharePoint Foundation 2010, what is new in comparison to previous SharePoint versions, how to customize and enhance it, how it works with the Microsoft Office system, and how to develop entirely new SharePoint applications. Subsequent chapters will explain these topics in much greater detail.

Note

You can download SharePoint Foundation 2010 at *www.microsoft.com/downloads/en/details.aspx?FamilyID=49c79a8a-4612-4e7d-a0b4-3bb429b46595&displaylang=en*.

Presenting SharePoint Foundation 2010

At a high level, SharePoint Foundation 2010 aims to assist organizations in the following six areas:

- **Sites** These provide an infrastructure that your organization can use for all of your business websites. Through these sites, you can share documents with colleagues, shareholders, partners, and customers. You can also use these sites to manage projects and publish information to external entities.

- **Communities** These are places within SharePoint that are used by teams and individuals for collaborating on ideas and work in ways that are familiar and useful to them. Communities also assist your colleagues to accomplish their task assignments more quickly than they could in the past.

- **Content** Organizations produce a lot of content in the course of conducting business. In the past, this content was mostly utilized and then forgotten. Through content management practices, your organization has powerful tools in place for the production of content; more important, you can set up retention policies, automated records management tools, and compliance measures. All of these tasks can be done through the familiar interface of the Office platform.

- **Search** No matter how well your content is produced or stored, it is meaningless if your organization cannot locate the correct content when it needs it. With SharePoint's uniquely powerful search tools, you can "cut through the clutter" and find content based on relevance, refinement, and social cues, thus providing the results that you want and need.

- **Insights** Organizations have data and Business Intelligence (BI) stored away in numerous databases, reports, spreadsheets, and business applications. SharePoint 2010 provides a way for an organization to finally tap into these rich information resources to locate the information it needs to make better business decisions.

- **Composites** Business solutions are always needed and are retooled based on business needs at the time. With SharePoint Composites, your organization can custom build both coded and no-code solutions to rapidly respond to business needs.

Together, each of these areas combine to be known as the SharePoint Circle, which is depicted in Figure 1-1.

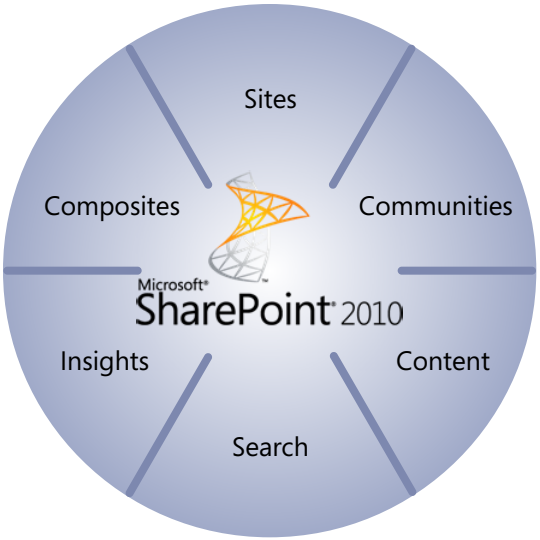

Figure 1-1 The SharePoint Circle.

In the sections that follow, we'll take a look at each area individually.

Sites

SharePoint Foundation 2010 is designed to provide organizations with an infrastructure with which they can build either internal or external websites. Through the use of Internet Information Services (IIS), SharePoint Foundation comes out of the box with a very stable web platform, thereby offering a web environment that is easy to use and secure.

With sites you are able to design websites in a matter of minutes, which could be ideal for:

- Project team members who have many recurring meetings throughout the year, for which agendas, meeting minutes, and related project-specific documentation differ from meeting to meeting.
- When a specific document exists that requires feedback from a large audience but requires granular security so that only document owners can perform updates.
- When an ad hoc meeting is called to discuss a specific topic, and this information must be retained and allow for collaboration throughout a period of time.
- When a series of websites need to be created for different departments so that specific content can be disseminated throughout an organization but still remain secure, based on each member's role.

You might or might not initially know what types of sites that you need or what types of tools and functionality that might be required for each site that you create. Never fear: SharePoint Foundation 2010 comes with several built-in site templates that you can use to get started. Each of these templates come set up with lists, libraries, Web Parts, layouts, and (in some cases) workflows already activated for use. Also, each of these templates are fully functioning sites when you set them up by using the easy setup interface in SharePoint 2010. In a matter of minutes, you can have a new SharePoint site up and running, thus cutting down on the setup time that you would typically need if you had to design and build sites from scratch. At the same time, these sites are fully customizable, as well. If there are a few libraries that you do not need, you can easily delete these libraries. You can also add in any desired functionality.

Table 1-1 lists the templates that come with every copy of SharePoint Foundation 2010. With the new and improved functionality in SharePoint Foundation 2010, these collaboration and meeting templates continue to be ideal for information workers in corporate environments. People use these same templates more than ever to create sites for professional and charitable organizations, schools, social clubs, sports teams, churches, youth groups, and almost any other kind of group that you can think of. This same platform can also be utilized to develop custom applications of any kind.

Table 1-1 **Collaboration and Meeting Templates Supplied with SharePoint Foundation 2010**

Template	Purpose
<Select template later>	An empty site for which you can select a template later.
Basic Meeting Workspace	A site on which you can plan, organize, and capture the results of a meeting. This template provides lists for managing the agenda, meeting attendees, and documents.
Blank Meeting Workspace	A blank meeting site that you can customize, based on your requirements.
Blank Site	A blank site that you can customize, based on your requirements.
Blog	A site on which a person or team can post ideas, observations, and expertise about which site visitors can comment.
Decision Meeting Workspace	A site on which you can track status or make decisions at meetings. Decision Meeting Workspace provides lists to create tasks, store documents, and record decisions.
Document Workspace	A site on which colleagues can work together on a document. This template provides a document library for storing the primary document and supporting files, a tasks list for assigning to-do items, and a links list to point to resources that are related to the document.

Template	Purpose
Group Work Site	This template provides a groupware solution that teams can use to create, organize, and share information. It includes the Group Calendar, Circulation, Phone-Call Memo, the document library, and the other basic lists.
Multipage Meeting Workspace	A site on which you can plan a meeting and capture the meeting's decisions and other results. This template provides lists for managing the agenda and meeting attendees. It also provides two blank pages that you can customize based on your requirements.
Social Meeting Workspace	A site on which you can plan social occasions. It provides lists for tracking attendees, providing directions, and storing pictures of the event.
Team Site	A site on which a team can organize, author, and share information. It provides a document library and lists for managing announcements, calendar items, tasks, and discussions.

Table 1-1 demonstrates that SharePoint Foundation 2010 comes with several templates that can be used to fit practically every business scenario you might come across. Keep in mind that these are the templates that come with SharePoint Foundation 2010 out-of-the-box. And if you are using SharePoint Server 2010, there are even more templates available for you to use.

These collaboration and meeting templates give you the flexibility to accomplish fast-paced and effective collaboration on documents, meetings, events, projects, discussions, and ideas; they are ideal for maintaining version control on documents, conducting discussions, and tracking tasks, issues, and agendas.

In today's business environment, using file share drives is quickly becoming a thing of the past. While these were useful for storing files, today's organizations are finding that they need to have strong content management in place; as such, SharePoint sites are increasingly becoming the tool of choice to meet this demand. With site quotas, file exclusion lists, improved governance, and advanced administration features, SharePoint Foundation 2010 can easily accommodate tens of thousands of users, and thousands of sites within an organization.

With sites, you are able to share and publish content easily. Setting up SharePoint sites is easy (see Chapter 4, "Creating Sites and Workspaces by Using the Browser"), and by using the new features found within SharePoint Foundation 2010, anyone can build a site from start to finish in a matter of minutes. Several out-of-the-box features provide instant value to your organization by assisting the site owner with content changes, adding interaction, or applying different design themes.

SharePoint sites are as easy to use as they are to build. This is due in part to the integration of SharePoint 2010 with other technologies (such as Office) that you probably already use in the course of performing your job.

Connecting SharePoint to Office makes saving documents directly to a SharePoint site a breeze. The SharePoint site shows up as a directory location within the Save As dialog; you can select and save documents to the appropriate library, thus avoiding the need to go into a SharePoint site to upload a document once it is finished. You can also access sites and content offline via Microsoft SharePoint Workspace and then synchronize changes by simply reconnecting to the network. Also, with cross-browser support and mobile webpages, anyone can access and share content, in the office or on the go.

With features such as audience targeting, multilingual interface support, and user tagging, a highly customized and personal experience can be created for each person using SharePoint Foundation 2010.

Communities

Each organization works differently; the same can be said of the individuals that work within these organizations. There is no right or wrong way to work, as long as the tasks and goals are accomplished; Microsoft recognized this fact. It then incorporated this philosophy into the Communities portion of SharePoint Foundation by providing collaboration tools that anyone can use to share ideas, find people and expertise, and locate business information.

With SharePoint Foundation 2010, you can manage all of these tools from a single platform; thus, you can mix and match the tools in ways that work for you. With SharePoint 2010 Communities, you can be more creative and productive while at the same time knowing that you are working in a secure and well-managed environment.

With SharePoint 2010 Communities, you can work with your team in the manner that you want by using a full set of collaboration tools, from blogs to workflows, and team sites to tagging. SharePoint is a single, flexible platform that makes it easy to manage these tools and design the right collaborative experiences for different business needs.

SharePoint Foundation 2010 is secure, easy to manage, and can be scaled to the size that you need. With granular security and privacy features, your team will be able to work knowing that their content is safe.

Your team already uses several other technologies; SharePoint Foundation 2010 is not necessarily designed to supplant these. In fact, SharePoint is designed for you to be able to use your other technologies seamlessly through the SharePoint interface.

Nowhere is this more apparent than with Office 2010, which is the *de facto* productivity platform for much of the business world. SharePoint works seamlessly with the rest of the Microsoft Business Productivity infrastructure, including Office applications, Microsoft Exchange Server, Microsoft Office Communications Server, Microsoft SQL Server, and Microsoft Dynamics. Because SharePoint does adhere to open standards, you can also use third-party applications and systems.

Using Business Connectivity Services, you can easily reveal information located in other business applications through the SharePoint interface.

My Profile

Your colleagues can set up their own individual profile page in SharePoint Foundation 2010 called My Profile. These pages contain information about employees including biographies, job titles, location, contact information, interests and skills, and previous projects.

This information might sound unneeded at first glance, but think back to a time when you needed people to assist you with a project that required certain skills or experiences; you might have been hard pressed to locate the correct skills in a timely manner. With the My Profiles pages, you can now search for the expertise and skill set that you need within your organization's workforce.

Tags

By using tags, you can collect and manage content for your projects from the vast amount of information that your organization currently contains. Not only can you search for content, but through the use of tags and ratings, you can see rather quickly how useful the content will be for your requirement, based on the experiences of others.

Colleague Suggestions

Perhaps your organization is large and dispersed across many regions. With SharePoint Foundation 2010, in addition to the colleagues with whom you interact every day, you can also receive suggestions from SharePoint about colleagues whom you did not even know exist. Based on your reporting structure, communities memberships, email distribution lists, Office Communicator contact lists, and analysis of most common Office Outlook email recipients, you will be presented with colleague suggestions regarding individuals who might be of interest to you or vice versa. With this new functionality, you can finally locate talented people that are doing the same types of things that you're doing.

Organization Browser

Most organizations have large, confusing organization charts. With SharePoint, you can establish the colleagues, managers, and direct reports that your contacts have, thus saving you time when searching for resource connections within your organization.

Ratings

Content within your organization is growing exponentially by the day, but in some areas, it's not the amount of content that is produced but rather the quality of that content that assists users with accomplishing their tasks and goals. In the past, if you searched for information about a subject, you would receive results but you couldn't determine if the content was relevant to what you were working on. With ratings, your organization can rate SharePoint pages, lists, libraries, and individual documents by using a five-star rating system.

Wikis

You can create pages that provide information from multiple sources. In doing so, you can receive a more complete view of a topic or subject. With SharePoint 2010, you can combine the powerful ease of wikis with the functionality of Web Parts.

Blogs

Your organization has a lot of talented people working within it. Unfortunately, even with the vast amount of communications tools available today, a lot of their ideas, suggestions, and opinions remain unknown. This could be due to them not having a convenient place to express this information. SharePoint 2010 solves this issue with blogs, which give your organization a place where this valuable content can be captured and acted upon. Through the new SharePoint ribbon, formatting blog text and uploading images are easy.

My Content

SharePoint 2010 gives you a personal, private SharePoint site called My Site, on which you can store and manage documents, favorite links, a personal blog, and wiki pages. You can customize your pages and set access and permission levels for any content in the section.

Photos and Presence

A lot of people think visually; as such, SharePoint comes with the ability to help people recognize each other via profile photos. Users can also use presence information to email, instant message, or call someone with the click of a button. Imagine being able to read a white paper, and then clicking a button to talk with the author via telephone, instantly.

Recent Activities

You can post your status to let others know what projects you are working on. You can also locate people who worked on a similar project or task from whom you might need expertise.

Content

Organizations need the ability to manage the content that they currently have along with the new content being produced constantly. Enterprise Content Management (ECM) can help you to do just that. ECM controls the flow of information within an organization—this might be through how content is produced, approved, stored, or discarded.

In the past, other technologies have been too complex for the everyday business user to understand, much less utilize. SharePoint Foundation 2010 employs a suite of tools that make ECM available for everyone to use. Also, with its automated features, your ECM practices can be set to run on their own with minimal human intervention.

Although SharePoint 2010 does have traditional management tools, it combines those with social capabilities and a powerful search, and it is very natural to use. With simple administrative tools, you can set up compliance policies, and the familiar interface allows your staff to work just as they would in Office. The result is information management that is easy to find, share, and use.

Since SharePoint 2010 is closely aligned with the Office 2010 suite of tools, you are presented with a familiar user experience. Studies have revealed that when people are comfortable using a system, they tend to use it more. And in doing so, they can find the information they need easier, and their work is managed from start to finish.

Through SharePoint 2010 ECM, you are able to tag content, enforce retention schedules, declare records, and apply legal holds easily. With these measures in place, you can address the need for compliance and reduce the risk of mistakes when information is archived or discarded.

On a single platform, SharePoint Foundation 2010 manages documents, records, web content, and rich media, helping you to reduce your IT costs. SharePoint can also connect to legacy (older) ECM systems through its use of interoperability standards, such as Content Management Interoperability Services (CMIS), eXtensible Markup Language (XML), and REpresentational State Transfer (REST). SharePoint Foundation helps your organization gain more value from its current investments.

Compliance Becomes Natural

With SharePoint Foundation 2010, you can manage versions, apply retention policies and schedules, declare records, and place legal holds on content. It does not matter whether you're dealing with traditional, web-based, or social content.

Document Sets

You can create document sets, with which you can manage related content as a single entity, thus saving you time and resources for common processes, such as RFP responses, procurement requests, and others.

Search

Even if your organization has produced millions of quality documents, this fact is useless if you are not able to accurately locate the information when it's needed. With SharePoint Foundation 2010, you can find just the right information to get your job done, quickly and conveniently.

Besides offering the traditional search capability for documents or other types of content, SharePoint also provides intranet search, people search, and a platform to build search-driven applications, all on a single, cost-effective infrastructure.

The biggest driver that sets SharePoint 2010 Search apart from other search technologies is its combination of relevance, refinement, and people. You can drill down through clutter to locate the specific content, individuals, or information that you need.

Chances are that your organization has a lot of information in several different formats located within several different systems and databases. If you were to look for a specific piece of information, you might become inundated with all of the possible choices. SharePoint Foundation 2010 brings order to this chaos via its interactive and visual search experience. You can use visual cues to find information quickly, while the refiners (a tool with which you can select the actual information that you want to view, be it by format, author, size, or date) let you drill down into the results to find even greater insights.

It is a well-known fact that an organization's greatest assets are its people. Each person is on staff to fill specific duties, but an individual does more than just fill a position. Each person brings with them education, expertise, and experiences that can be useful in other areas beyond the job description alone. By using SharePoint Foundation 2010, your organization can unlock these skills and talents. In turn, you can locate the human resources that you need so that you can share ideas and expertise to solve problems, improve processes, and foster innovation.

Not everyone searches for information using the same techniques; as such, previous search systems were not always useful to everyone. With SharePoint Foundation 2010, you can customize and personalize the search experience to meet the needs of those using it. On a single platform, you can add your own vocabulary, tune relevance, and use each person's specific information to deliver a great search experience.

Metadata-Driven Refinement

By using the new refinement panel in SharePoint 2010, you can narrow the results of your search and find the content that you are looking for even faster than before.

People and Expertise Search

Unlock the vast store of the human knowledge, expertise, and experiences by searching for people, either by name or by associated terms.

Contextual Search

Based on a individual's particular details, he can search for different items, even though he uses the same search terms. Perhaps someone in the sales department is looking for information related to product offerings in Fiscal Year 2010. Someone in the finance department might be looking for budget information for that same period. Using traditional search technologies, each user could enter a search term of "FY 2010" and receive results from both sets of information. For both individuals, that's probably more information than either one wanted.

Through the use of keywords and audience targeting, you can provide a search experience that delivers the relevant information each person needs, based on the profile of the user or audience. In this example, the sales person could see at the top of his results the product catalogs from 2010, whereas the finance person could see the budgets for Fiscal Year 2010 presented at the top of her search results.

Insights

You can use SharePoint 2010 Insights to allow everyone access to the business information needed to make sound business decisions. By employing interactive dashboards and scorecards, you can access and use information stored away in databases, reports, spreadsheets, and other business applications.

Additionally, accessing and using information is easy and natural due to Insights' utilization of well-known applications and interfaces such as Oracle databases. For example, a colleague can use Excel Services to publish Microsoft Excel workbooks. After these workbooks are available, your team can access the data, comfortable in the knowledge that they have the most current and up-to-date information with which to work.

Users can access the information they need to do their jobs because the reporting and analysis features are both powerful and easy to use. Due to the familiar interfaces, anyone can feel comfortable looking at the data in a three-dimensional form by slicing and dicing the available information to gain greater insight.

The ability to set up scorecards and dashboards can assist your team in defining and measuring success goals. These metrics can be matched to specific strategies and then shared, tracked, and discussed. By giving each user access to needed BI, you are empowering your team to be more efficient and effective.

You can deploy the powerful tools and features of SharePoint 2010 Insights under centralized system control. You can determine what information is available along with who can access the information. You can be even more efficient as you use the rich programming capabilities and development tools to deploy the solutions that you need when you need them.

Decomposition Tree

With the Decomposition Tree you are able to slice your data and drill down to the factors that affect your data. This powerful analytics tool can be used to examine the core data. You are finally able to answer the question "How did we get here?"

Dashboards

Combined with PerformancePoint Services, you can create dashboards that are accurate and reliable. You can combine data from either structured or unstructured sources to put forth correct data upon which your team can act to make the best decisions. Using the interactivity, you can analyze up-to-the-minute information and work with the data quickly and easily to identify key opportunities and trends.

Composites

SharePoint 2010 Composites gives you the capability to assemble, connect, and configure collaborative business solutions. From sites to more complex business applications, you can respond quickly to specific business needs with a custom solution.

You don't need to be a programmer (although it is helpful) to use the building blocks in SharePoint 2010. Even without using code, you can create highly customized business solutions in a matter of minutes. For example, you can share Microsoft Visio diagrams and Microsoft Access databases easily and quickly. You can also use Microsoft SharePoint Designer and Microsoft InfoPath to design solutions based on workflows and forms that you currently have in use at your organization.

Despite what you might think of developing coded solutions, you will be surprised by how many no-code solutions you can develop to solve your business challenges.

Many organizations have data stored away in sources and systems that are difficult to access. This data has value, but you might need to log on to each system individually to get at the information. This is not only time consuming but also inefficient. With SharePoint 2010 Composites, you are finally able to connect to these resources and work with the data as if the information resided within the SharePoint environment. You can enable full Create, Read, Update, and Delete (CRUD) capabilities on the data along with integrating it into SharePoint's powerful search engine. No matter where the data is located you can work with it to develop business solutions or to assist you in making the best decisions for your problems.

You also have the option to work with the data online or offline through Microsoft SharePoint Workspaces. Once you have a chance to reconnect to your network, your changes can be uploaded automatically.

In many organizations, there are several hundreds of Access databases and Excel spreadsheets that are in use for various reasons. Typically, there are several instances of databases and spreadsheets that are duplicates of others. Due to the nature of the software, these databases and worksheets tend to be decentralized, with each department or division maintaining the information in "silos." With SharePoint 2010 you are able to centralize these data sources and deploy them as a shared solution so that not only is the originating department able to use the information, but the rest of your organization is able to, as well.

Security is always an issue when it comes to an organization's information resources. Thanks to SharePoint's powerful security measures, you can secure your information down to the item level. This means that you can determine not only what information is available but also who can access the information.

With SharePoint 2010 Composites, just about anyone within your organization will be able to develop business solutions. But although this is a great benefit, it can also become a liability really fast. Suppose that someone decides to create a solution that will access hundreds of spreadsheets and databases and display them by using Visio Services. This solution, while helpful, can be a serious drain on resources. Also, while this solution is running the rest of your organization could suffer from slow response times from the SharePoint platform.

Sandboxed solutions give you the ability to create a controlled environment within SharePoint in which you can use to test out new solutions. You can control various factors such as resource throttling, time to execute, and code checking (to name a few). Through a sandboxed solution, you can avoid over burdening your resources. You are also able to encourage innovation without risking the health of the overall SharePoint environment.

With End-User solutions your IT department can now dedicate more of its time to higher priorities, while at the same time giving you the opportunity to come up with the solutions that you need for your specific scenario.

What's New?

With the release of SharePoint Foundation 2010, Microsoft introduced several new features and capabilities along with upgrading items from previous versions of SharePoint. In this section, you will read a brief description of each of these new and upgraded features, along with an example that demonstrates why you should care about them.

The Ribbon

One of the most obvious changes in SharePoint Foundation 2010 is that the ribbon from Microsoft Office 2007 has been incorporated in the platform. This change in the user interface is fundamental when it comes to interacting with Office products. As such, anyone who is familiar with Office 2007 will see this familiar feature in your sites now, as well.

For those of you who are not entirely comfortable with the ribbon, you can relax; it's easy to use; you just need to understand the layout. The ribbon is context driven, meaning that you see the options that you need when you need to use them.

For example, if you are using a library within SharePoint, the ribbon will display options for tasks that are typically done in a library, such as creating a new document, uploading a document, checking-in a document, and so on.

The ribbon is divided into tabs, which are further divided into groups. Typically, a library has a Documents tab, which is divided into groups, such as New, Open & Check Out, Manage,

Share & Track, Copies, Workflows, and Tags and Notes. Each of these groups contains specific actions that you can choose. For example, if you want to set up an Alert, on the Document tab, select the Share & Track group, and then click the button labeled Alert Me.

What's more, as you perform different functions within the platform, you will notice additional tabs appear on the ribbon that are related to the task you're currently performing. For example, you see the Edit tab when you are editing content properties, but you won't see it if you are simply browsing a list of items.

Alerts Enhancements

Alerts were available within Microsoft Office SharePoint Server (MOSS) 2007; they were great as long as you had access to your email account. At the same time, they were a bit annoying because they were email messages that were sent to your email account. As many business users discovered, some of the alerts they set up generated a lot of excess email traffic that they had to manage.

SharePoint Foundation 2010 has expanded the alerts framework so that you can have alerts sent as Short Message Services (SMS) to your mobile devices. You can now tailor a business solution that sends out an SMS Alert to mobile devices. You can even create a totally customized alert system if you want, such as in the following examples:

- You might want the initial assignment of a task to send an email message to the person to whom it was assigned.
- Next, you might want the project manager to be notified by an email message when the task is three days from its due date.
- You might want it to send an SMS Alert hourly to your team members when the task is in the last 12 hours before its due date and it does not show a completed status.
- And finally, you might want to know if someone is able to take up the task and work on it to completion.

Business Connectivity Services

The Business Data Catalog (BDC) from MOSS 2007 has undergone a facelift and a name change; its new name is the Business Connectivity Services (BCS). It is now included in SharePoint Foundation and is no longer exclusive to the SharePoint Server product.

The BCS is able to provide full CRUD capabilities to external data from Line-of-Business (LoB) systems, web services, databases, and other external systems. This information is then presented within SharePoint Foundation 2010. The features within the SharePoint platform are able to access external data sources directly, both online and offline. By using familiar tools such as SharePoint Designer 2010 and Microsoft Visual Studio 2010, you can build solutions that can exploit these external sources within the SharePoint platform.

With the BDC in previous releases of SharePoint, you could only view the data in external sources. With BCS, you can not only view the data, but you can fully interact with it, all through familiar interfaces such as Microsoft Outlook. You can, for example, begin the onboard process for a new employee by simply adding them as a contact to Outlook, which can be tied to a business solution that copies the information to an External list (an external legacy data source such as Oracle), which in turn starts a workflow to make this person an employee.

You can connect to a wide variety of data sources, such as:

- Databases
- Web and Windows Communication Foundation (WCF) services
- Microsoft .NET connectivity assemblies
- Custom data sources

In addition to connectors for existing data sources, BCS provides a pluggable framework for developers to use to create connectors for new external system types, thus enabling these new data source types to be accessed via BCS.

The BCS is more efficient than the older BDC model. In the past, the BDC could only perform single item operations such as search, and if you needed other operations to be performed, they had to be done in a separate call. You are now able to provide batch and bulk operation support, with which you can read multiple items in a single call; in doing so, the number of round trips to the data source is greatly reduced, resulting in better overall performance.

BCS now supports the reading of Binary Large Objects (BLOB) data, which is really useful when it comes to streaming BLOBs of data from external systems. You can also use dot notation in field names, which you can use to read and write complex types.

Client Object Model

SharePoint Foundation 2010 introduces three new client application programming interfaces (APIs) that you can use to interact with SharePoint sites from a .NET managed application (must be no earlier than Microsoft .NET Framework 3.5), a Microsoft Silverlight application (no earlier than Silverlight 2.0), or from ECMAScript (JavaScript, Jscript) that executes in the browser.

You are now able to design solutions that are fully interactive from within the browser. For example, you can use Silverlight to see different "what if" scenarios graphically, using real-time data.

Custom Field Rendering Enhancements

In Windows SharePoint Services 3.0, fields were rendered on list views by a *RenderPattern* element in a field definition file, fldtypes*.xml. In SharePoint Foundation 2010, fields are rendered on list view pages by XSLT stylesheets. This means that you now must define the rendering of your custom field types by creating a custom XSLT stylesheet rather than by adding a custom *RenderPattern* element to a field type definition.

Events Enhancements

SharePoint Foundation 2010 supports multiple new events, including *onCreate* events for lists and websites and support for synchronous after events. It also offers a more approachable events infrastructure that is easier to program against than earlier versions.

SharePoint Foundation 2010 new events include:

- Add and delete events on lists
- Add events on websites
- Synchronous or asynchronous after events.

Additionally, new event model capabilities include the following:

- Event registration at the Site Collection level
- XML event registration at the site receiver
- Improved semantics for retrieving event data
- Improved user interface for form-level events

Health Analyzer

The Health Analyzer is an extensible, rules-based infrastructure that not only monitors but also maintains the health of the entire SharePoint Foundation environment throughout a server farm. It is designed to automatically check for potential configuration, performance, and security issues and to identify these items to farm administrators.

SharePoint Health Analyzer monitors the farm by applying a set of health rules. A health rule is nothing more than executable code that is deployed at the farm level and is registered with the SharePoint Health Analyzer by a farm administrator. SharePoint Foundation 2010 ships with a number of health rules. You can create and deploy custom health rules by writing code that utilizes the SharePoint Foundation object model.

List Enhancements

SharePoint Foundation 2010 comes with several enhancements and features to the list infrastructure, which improve the user experience along with data integrity.

Large Lists

Microsoft Office SharePoint Server 2007 demonstrated that when deployed on an enterprise level, the contents of lists can grow to become so large that performance can be diminished substantially. SharePoint Foundation 2010 addresses this issue by incorporating a new List View Threshold feature that allows you to specify the maximum number of items that a database operation can retrieve. If a search query exceeds the threshold, the query is blocked to avoid adversely affecting site performance. The user is notified that the limit has been achieved and is given the opportunity to refine the search query to retrieve a more manageable set of results.

Alternatively, you can also schedule "happy hour" controls to avoid times when you expect heavier loads. By scheduling during these less active time periods, users can run queries or reports that will return a large number of items without affecting other users on the platform.

Referential Integrity for List Items with Lookup Columns

Previously, you could create a loosely defined relationship between lists though a lookup field, whereby a child list would look to a parent list. With SharePoint Foundation 2010, items in a parent list are "aware" of related items in the child list, and you can set referential integrity constraints on the child items by specifying delete behavior. These list relationships and delete behaviors can be set either through the user interface or through the object model.

Enforcing Unique Column Constraints

With SharePoint Foundation, you can set a primary key on column fields. This is done by using (or "enforcing") a new feature called Unique Column Constraints, which you can use to enforce unique values in a list or document library column.

For example, you might want to ensure that the same Customer ID number is not applied to multiple customers. By enforcing the uniqueness of the column, you prevent the same Customer ID number from being used more than one time.

Not all column types support this feature. Table 1-2 lists which column types are supported and which are not.

Table 1-2 **Column Type Support for Unique Column Constraints**

Column type	Supports unique column constraints
Boolean (yes/no)	No
Calculated field types	No
Checked out to	No
Choice field (but not multi-choice)	Yes
Content type ID	No
Created time	No
Currency	Yes
Custom field types	No
Date/Time	Yes
Hyperlink/Picture	No
Lookup (but not multi-value)	Yes
Modified by	No
Modified time	No
Multiple lines of text	No
Number	Yes
Person or Group (but not multi-value)	Yes
Single line of text	Yes
Title (but not in a document library)	Yes
UI version	No

External Lists

BCS has introduced a new kind of list called the *External list*, with which you can access external data residing in different systems, databases, and spreadsheets in the same way that you access SharePoint Foundation list data. You can interact with the External list in the same way that you interact with other SharePoint lists; moreover, you can write to these lists (if the external data source allows it) and synchronize these changes with the click of a button.

Microsoft Sync Framework

Within SharePoint Foundation, the Microsoft Sync Framework provides a comprehensive and unified synchronization architecture that provides data-agnostic and bi-directional capabilities to developers. Due to its design, other Microsoft and third-party applications can synchronize more easily with SharePoint 2010 deployments.

The Sync Framework provides three core building blocks:

- Sync Metadata Services
- Sync Provider
- Sync Runtime

Mobile Device Development Enhancements

The ability to use mobile devices to access SharePoint Foundation functionality, lists, and pages has been greatly expanded.

Mobile Web Part Adapters

You can now have a mobile page that corresponds in purpose, data, and functionality to a nonmobile Web Parts page. Any Web Part on a nonmobile page can be adapted to be duplicated on a mobile page by adding a control. Some of the major Web Parts that are built in to SharePoint already have these adapters. You can develop your own adapters for Web Parts that you want to make available on mobile pages, so when a mobile device accesses a Web Parts page, it is redirected to the corresponding mobile page.

Mobile Messaging

Your SharePoint Foundation solutions can now have SMS messages sent to mobile phones. If your solution uses the Outlook Messaging Service (OMS) protocol, most of your development work has been done for you.

SharePoint Foundation 2010 expands this mobile support, enhancing its Alerts feature. You can now choose to have Alerts sent via SMS messages to mobile devices. This is done by giving the SharePoint Foundation web application its own account (which can be changed programmatically) with a messaging service provider.

New Mobile Pages and Controls

You can do more within the SharePoint environment by using your mobile phone. SharePoint Foundation 2010 adds many new types of mobile pages and over 60 new public mobile controls. These improvements provide new or enhanced support in mobile devices; which include view filtering, contact selection, file uploading, images, wiki pages, Web Part pages, and other functionality. The visual appearance of mobile pages is more colorful, as well. You can now duplicate the mobile experience through the full range of appearance, functionality, and data access that your SharePoint Foundation solutions provide to nonmobile users.

Mobile Document Viewers

You can create mobile pages that host document viewers, with which mobile users can open documents located in SharePoint Foundation Document Libraries on their mobile device. This happens even if they have been formatted for a particular desktop application such as a spreadsheet or word processor.

Performance Monitoring and Request Throttling

Through the use of a programmable system of throttling HTTP requests, SharePoint Foundation 2010 can control the number of requests when the front-end web server handling the requests becomes too busy to accommodate them all.

Using your existing system, the server code can perform the following:

- Determine which Windows Server 2008 performance counters are used to establish whether a front-end web server is busy.
- Define what values of a counter are poor enough to cause the worker thread to begin throttling.
- Define which kinds of HTTP requests are throttled and whether they are throttled as soon as the server is busy or only when it has been busy continuously for at least 60 seconds.
- Exempt certain kinds of HTTP requests from throttling.

The system can also report the current health score of the front-end web server in the HTTP response object so that your client-side code can do its own request throttling.

Query Enhancements

SharePoint Foundation 2010 includes several new ways to query and filter data.

New Query Support for Server-Side Code

It is now significantly easier to query data by using server code in SharePoint Foundation 2010.

LINQ to SharePoint Provider

It is no longer necessary to compose a Collaborative Application Markup Language (CAML) query when your code needs to query a list. Instead, SharePoint Foundation 2010 comes with a Language-Integrated Query (LINQ) to SharePoint provider, with which you can query

SharePoint lists from server code by using LINQ syntax. The provider can translate your LINQ queries to CAML queries for submission to the content database. Furthermore, since SharePoint Foundation 2010 also adds a new *Join* element to its Query Schema, you can have both implicit and explicit joins in your LINQ queries by using the *join* keyword. You can also write to lists by using the LINQ to SharePoint provider.

Note

To use this functionality, remember that you must have classes that provide an object-oriented interface over the relational content databases. These classes are generated for you by the SPMetal tool that comes with SharePoint Foundation 2010.

You can use LINQ syntax in your code even if you are not using the LINQ to SharePoint provider. Any SharePoint Foundation object that implements *IEnumerable(Of T)* can be queried by using LINQ syntax.

List Joins Supported in CAML Queries

You can now join multiple lists in a single query utilizing the new *Join* element. Use the new *ProjectedFields* element to specify what list fields to include in the results; there are some details that will need to be considered when using these elements, such as the following:

- You cannot join just any two lists, regardless of type.
- If two lists are able to be joined, you cannot use just any primary or foreign field as the "join on" pair of fields

INSIDE OUT **Lookup type fields**

The field in the primary list must be a Lookup type field and it must lookup to the field in the foreign list. It is due to this that all joins mirror existing lookup relations between lists.

Querying in Client-Side Code

Client applications can now access SharePoint Foundation data in entirely different ways.

Queries in the Client Object Model

You can query within the client model in two ways:

- Write CAML queries for use with the *SPQuery* class
- Query any SharePoint Foundation object that implements the *IEnumerable(Of T)* with *LINQ to Objects*

Support for ADO.NET Data Services Framework

You can query by using the ADO.NET Data Services Framework if the client application does not utilize the new SharePoint Foundation client object model and you only need to query list data.

Avoid Using SharePoint Data Providing Web Services

Unlike previous SharePoint releases, it is encouraged to use either the client object model or the ADO.NET Data Services Framework for the best performance and usability. You can use previous web services such as the List Data Retrieval web service (which is still supported) but they are in place primarily for providing backward compatibility and interoperability with web service clients.

Avoid Making Direct Calls to owssvr.dll

To maximize the new client application's compatibility with future versions of SharePoint Foundation, it is highly recommended that you make direct calls to the owssvr.dll file as a method of client access.

The SharePoint Foundation 2010 Software Development Kit (SDK) does include documentation about client-side access to the SharePoint Foundation deployments by using RPC calls, but this information is only included to provide troubleshooting assistance to client applications that already make such calls.

The Ribbon

The ribbon serves as the primary user interface that you use to interact with SharePoint Foundation 2010 sites. Earlier versions of SharePoint had commands that were accessed through multiple surfaces and located in various menus.

By contrast, the introduction of the ribbon presents an interface that is grouped in a logical manner through the use of tabs and groups, making them easier to find. Furthermore, the ribbon's functionality can be extended to include your own custom commands.

Sandboxed Solutions

Microsoft has introduced a new concept called *sandboxed solutions* with the SharePoint Foundation 2010 platform. A sandboxed solution gives Site Collection users a safe place where they can develop, deploy, and test custom code solutions. This is accomplished by using a subset of the *Microsoft.SharePoint* namespace. These solutions are stored within a solution gallery. Additionally, farm administrators can monitor and validate these solutions prior to deploying them into the production environment. Performance can be monitored by measuring CPU execution time, memory consumption, and database query time. You can also monitor other aspects of operation, including abnormal termination, critical exceptions, unhandled exceptions, and data marshalling size.

Security Enhancements

SharePoint Foundation 2010 continues Microsoft's tradition of building on and enhancing security.

Claims-Based Identity and Authentication

Claims-based identity is an identity model in SharePoint Foundation 2010 that includes features such as authentication across users of both Windows-based and non–Windows-based systems, multiple authentication types, stronger real-time authentication, a wider set of principal types, and delegation of user identity between applications.

When you sign in to SharePoint Foundation 2010, your token (issued by a Windows Server 2008 claims provider during your initial logon to a network) is validated and then used to sign in to SharePoint. SharePoint Foundation 2010 and SharePoint Server 2010 support five sign-in or access modes:

- Windows Classic-Mode Sign-In
- Windows Claims-Mode Sign-In
- SAML (Security Assertion Markup Language) Passive Sign-in Mode
- ASP.NET Membership and Role Passive Sign-In
- Anonymous Access

Note

SAML Passive is when a web application is configured to accept tokens from a trusted logon provider. A trusted logon provider is an external (resides outside of SharePoint) Security Token Service (STS) that SharePoint trusts.

When claims-aware applications are built and deployed, the user needs only to present an identity to the application as a set of claims. One claim might be a user name and another might be an email address. The idea here is that an external identity system can be configured to give the client application all the information that it needs to about the user with each request, along with cryptographic assurance that the identity data received by your application comes from a trusted source.

Under this model, single sign-on can be achieved much easier than before, and the client application is no longer burdened with:

- Authenticating users
- Storing user accounts and passwords
- Calling to enterprise-wide directories to lookup user identity details
- Integrating with identity systems from other platforms or companies.

Under this model, the client application makes identity-related decisions based on claims supplied the user.

ASP.NET Membership User Token Converted to Claims Security Token

The SharePoint Foundation STS creates the claims security token from the user name validated by the membership provider, and from the set of group memberships associated with the user name that are provided by the membership provider.

Automatic Password Change and Managed Accounts

A new feature within SharePoint Foundation 2010 is the automatic password change feature. With it, you can update and deploy passwords without the need to perform manual password update tasks across multiple accounts, services, and web applications. You can use the automatic password change feature to determine whether a password is about to expire and to reset the password utilizing a long, cryptographically-strong random string.

You use managed accounts to implement the automatic password change feature. Managed accounts in SharePoint Foundation improve on security and ensure application isolation.

Effective Permission API

With Windows SharePoint Service (WSS) 3.0, it was difficult to get a user's effective permissions on securable objects. There was simply no built-in way to see accurately all of the sites, lists, libraries and content to which a user had access. Over time, it became even more

difficult if a site had complex permission settings, especially if inheritance was broken and unique permissions were applied to items. Not only was it difficult to see what permissions a user had, but you could not determine how a particular user gained permission to a particular object. SharePoint Foundation 2010 introduces a new command on the ribbon called Check Permissions. With this new command you now have a quick way to enumerate all of the role assignments for a specific user within a specific scope.

The *SPSecurableObject* class exposes a new *GetUserEffectivePermissionInfo* method. This method retrieves an object with detailed information about the effective permissions that a specified user has in the current scope and the role assignments related to this user at this scope. This method does not include web application security policy information in the permission mask if the provided user belongs to a policy that is marked "Account Operate as System." This method is available for users who have the *EnumeratePermissions* permission granted.

Secure Store Service

The Secure Store Service replaces the SharePoint Server 2007 single sign-on feature. Secure Store Service is a service that provides storage and mapping of credentials such as account names and passwords. With it, you can securely store data that contains credentials that are required for connecting to external systems and for associating those credentials to a specific identity or group of identities.

It is common for solutions to try to authenticate to an external system in which the current user is known differently or has a different account for authentication. In such cases, Secure Store Service can be used to store and map user credentials that are required by the external system. You can configure Secure Store Service so that multiple users can access an external system by using a single set of credentials on that external system.

Service Application Framework

The Service Application Framework replaces the Shared Services Provider in SharePoint Server 2007. The Service Application Framework model is much more flexible than the Shared Services Provider model. Service applications can be consumed by a single server farm or shared across farms, allowing for centralized sharing of your IT investments. Service Application Framework applications are easily scaled out for load balancing high-demand service applications.

Improved Development Experience

Service developers are now able to focus on the business logic of their applications through the use of the Service Application Framework. The Framework also makes it easy to

implement details such as writing code to configure a server that is running IIS, installing a Secure Sockets Layer (SSL) certificate, creating a virtual directory, managing credentials for a pool of application users, managing and caching distributed settings, tracking and load balancing endpoints, and also performing many back-up and restore tasks.

Improved Integration with SharePoint

Services can now plug their management user interface (UI) in to the SharePoint Service Management page to provide a common experience for administrators. All services can now benefit from common SharePoint administration tools, such as Upgrade, Backup/Restore, and Account management. Administrators can also use this common UI to manage, start, stop, group, associate, federate, and back up services.

In addition, not only can service developers create their own administrative pages to manage their service, but they can also host these pages by using SharePoint Central Administration. Services can also be configured to have their own additional specialized administrative roles.

Management of Service Application Framework applications can be performed through either the Central Administration UI or Windows PowerShell.

WCF Integration

The WCF service model deals with communication between client and service. The SharePoint service model deals with deployment, management, and discovery of services in a server farm. The Service Application Framework is ideal for deploying, managing, and discovering WCF service clients and applications.

Round-Robin Load Balancing

SharePoint Service Applications are typically hosted on multiple servers and are invoked from a service client application that is running on a front-end web server. Service Application proxy method invocations must be routed from the front end web server to the appropriate application server by using a load balancing tool.

Normally, SharePoint Foundation administrators tend to configure load balancing solutions for the front-end web servers; it is not normally expected that there will be calls between the front-end web servers and application server to require an additional external load balancer. SharePoint provides a simple round-robin load balancer implementation that is handled in the *SPRoundRobinServiceLoadBalancer* class, which can be either replaced or enhanced by third-party developers as needed. Service application proxies can use the built-in round-robin load balancer to route requests to the appropriate back-end service application.

Claims-Based Identity

The claims-based identity model for SharePoint Foundation is built upon the Windows Identity Foundation (WIF). This new identity model includes features, such as authentication of users across both Windows-based and non–Windows-based systems, multiple authentication types, stronger real-time authentication, a wider set of principal types, and delegation of user identity between applications.

When claims-aware applications are built, the user presents an identity to the application as a set of claims. One claim could be a user's name and another claim could be the user's email address; the idea being that an external identity system is set up to give the application all of the information it needs to know about the user.

Backup and Restore

The Service Application Framework allows for easy integration with SharePoint's built-in backup and restore tool.

Silverlight Integration and Cross-Domain Data Access

Within the WSS 3.0 platform, you can host a Microsoft Silverlight application in a Web Part (which required some modifications to the Web.Config). SharePoint Foundation 2010 has gone beyond this capability by providing a built-in, extensible Silverlight Web Part designed specifically to host Silverlight applications. Also, a closely related object to this new Web Part is Cross-Domain Data Access (Silverlight CDA) which enables secure cross-domain integration between Silverlight applications and SharePoint Foundation deployments. Silverlight CDA can be also used by non-Silverlight external applications, as well.

Silverlight Web Part

SharePoint Foundation development efforts are not necessarily needed to add a Silverlight application to your SharePoint Foundation solution. In the simplest of scenarios, users would install your Silverlight application within the same domain as their SharePoint Foundation web application and add the hosting Silverlight Web Part through the UI; they would only need to supply the URL of the application. In the case where the Silverlight application would access SharePoint Foundation data and the application is also hosted on a server located outside of the domain of the web application, you need to create an External Application XML that the user would use to register the hosting Silverlight Web Part. An added benefit is that the Silverlight Tool Part comes built in to SharePoint Foundation 2010.

Silverlight Cross-Domain Data Access

You could have a scenario in which you need to have host applications located in a different domain from the SharePoint Foundation Web application. This might be due to a need to host many applications on an application server so that the applications can be made available to all web applications in the farm. SharePoint Foundation 2010 ushers in the Silverlight CDA, which makes this scenario available in a secure manner. Silverlight CDA gives administrators the ability to control the permissions on external applications without the need to implement overly restrictive security processes that could hinder users.

In the Silverlight CDA scenario, the application would log on to the SharePoint Foundation web application as a distinct type of user known as an *application principal*. The application's permissions would be an intersection of the permissions that the administrator has granted this special user and the permissions of the actual user who opened the webpage (that contains the hosted applications Web Part).

UI Enhancements

One of the more significant upgrades to come with SharePoint Foundation 2010 is the UI. Included with this upgrade is the Server ribbon, master page, and cascading style sheets (CSS). With these changes, SharePoint Foundation has a more consistent user experience across pages and makes working with objects inside of SharePoint Foundation a lot easier.

UI Improvements

These elements have been specifically upgraded in SharePoint Foundation 2010:

- **The Server ribbon** The Server ribbon was introduced to better display commonly used commands for ease of use; this follows Microsoft's inclusion of the ribbon in all of the Office 2010 applications. The ribbon works on the basis of combining commands logically, grouped into tabs and groups that make finding commands easier than was the case with the old Item Menu User Interface. The ribbon can also be customized with your own tabs, groups, and commands.

  For more information on how to customize the ribbon, see Chapter 3, "End-User Features and Experience."

- **Cascading Style Sheets** Cascading Style Sheets with SharePoint have been divided into multiple files to make more targeted customization scenarios possible as well as providing a means to improve page loading performance.

Unified Logging Systems

There are some new logging features available within SharePoint Foundation 2010 for developers, along with improvements to existing logging mechanisms.

SPMonitoredScope

The *SPMonitoredScope* is a code attribute that, when applied to a class or method, allows a developer to write logging information to the SharePoint Foundation usage database with complete application information and custom strings.

Request Usage Database

Every SharePoint Foundation resource request can be captured utilizing the request usage database; this capture is done in real time when a page is rendered.

Developer Dashboard

The Developer Dashboard utility can be enabled to assist with debugging a SharePoint Foundation webpage. This is similar to ASP.NET tracing in which this dashboard displays all of the details of the user request, which are then relayed to the developer.

API Improvements

In Windows SharePoint Services 3.0, to write to the SharePoint Trace and Unified Logging Systems (ULS) Logs, you had to implement the *IDiagnosticsManager* interface (requiring additional code). In SharePoint Foundation, the preferred method is to use the *SPDiagnostics ServiceBase* class, which contains a much simpler and more efficient way to interact with ULS Logs; specifically, the *WriteEvent* and *WriteTrace* methods are simpler to implement.

Windows PowerShell for SharePoint

In previous versions of the SharePoint platform, you would use the STSADM.exe administration tool to perform command line scripting. While STSADM.exe is still available for use within the SharePoint Foundation tool, the preferred tool for command-line scripting is Windows PowerShell, which is a new tool from Microsoft that complements Cmd.exe in Windows administration context. Going forward, you should use PowerShell scripting when developing any new command-line scripts in SharePoint Foundation 2010.

INSIDE OUT **Phasing out STSADM**

Although STSADM is still available within SharePoint Foundation, it is deprecated and will not be available in the next version of SharePoint.

Workflow Enhancements

SharePoint Foundation 2010 continues to build upon functionality available in WSS 3.0 through the Windows Workflow Foundation; it also improves and widens your options so that you can build even richer workflows that can support even more business scenarios.

New Workflow Activities

SharePoint Foundation's core installation now comes with new workflow actions. Workflow activities (also known as *actions*) are the basic building blocks for all workflows. With the addition of these new actions, you have even greater flexibility with your workflow designs.

Pluggable Workflow Services

You can now create workflows that are able to interact and receive data from external sources through pluggable workflow services.

Workflow Events

The workflows in WSS 3.0 could only respond to a limited number of events. You can now create workflows that are able to respond to even more events. You can even create your own custom events and event receivers with SharePoint Foundation 2010.

Site Workflows

The new site workflows break away from the previous dependency of being tied to list items. With site workflows, you can create workflows that can be associated with specified events and other workflow activities.

Reusable Declarative Workflows

In the past, workflows had to be associated with either a list or library. You could not package and deploy these workflows to other lists or libraries. In SharePoint Foundation, you now have the ability to develop declarative workflows that can be reused. This means that you can now apply workflows that you developed for one list or library to multiple lists or libraries.

Summary

SharePoint Foundation 2010 comes with a considerable number of additions and improvements over past incarnations of the platform. This chapter discussed the SharePoint Foundation 2010 platform and briefly described the capabilities of the platform. In the following chapters, we will go over these improvements in greater detail and show you how you can activate and use the features described in this book.

CHAPTER 13

Managing Site Settings

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So you've spent some time becoming familiar with Microsoft SharePoint, and before you know it, your team considers you the go-to SharePoint person. You've learned how to add items to a library, build new documents and list items, change existing items, and even administer the document and item libraries on your Team Site. What's next?

Perhaps it's time to take your SharePoint skills to the next level. You've been asked by your management team to build a team collaboration site. You send in a Help Desk ticket to build the site, and IT responds by making *you* the site owner—perhaps even the Site Collection administrator.

But wait... is this going to be a problem? Not for you—you're going to learn about being both site owner and Site Collection administrator in this section. Specifically, you are going to learn about site settings within a SharePoint Foundation 2010 site/Site Collection.

Sites vs. Site Collections

Chapter 3, "End-User Features and Experience," presents a fairly detailed discussion of sites versus Site Collections. If you came directly to this chapter, don't worry, we'll briefly discuss this again before diving into the site settings menus.

Simply put, a Site Collection is a grouping of sites. These sites are grouped hierarchically, with the first site in the Site Collection being called a top-level site. The top-level site is identical to all other sites, with the exception of additional menu items to control Site Collection–specific settings. Sites other than the top-level site are referred to as Subsites.

Site Settings (Subsite)

Let's begin with the site settings menu items of a Subsite. Why? Because this is probably the first set of items that you'll be administering for your team.

Site settings define all of the different behaviors within a SharePoint site. The effects of most site settings changes are scoped to the site itself. Items such as theme changes, permissions, creation/deletion of content, and more are all controlled from a single menu.

Let's begin by opening the site in your browser. Notice the Site Actions menu in the upper-left corner of the screen (Figure 13-1); this menu exists for any authenticated user of the site, regardless of that user's permissions on the site.

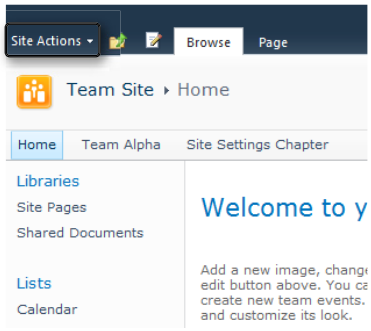

Figure 13-1 The Site Actions menu.

The content of the Site Actions menu itself changes based on the user's permissions. For instance, if you only have Viewer permissions on the site (you'd be a member of the Visitors group), your Site Actions menu will show only the Sync To SharePoint Workspace and View All Site Content links, as shown in Figure 13-2.

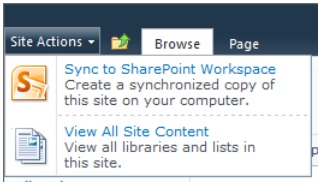

Figure 13-2 The Site Actions menu at Viewer permission level.

The next permissions level on a site is Full Control; members of the owners site group have this permissions level. Owners can control every aspect of a SharePoint site; thus, they see the following additional items on the Site Actions menu:

- New Document Library
- New Site
- More Options

- Edit In SharePoint Designer
- Site Permissions
- Site Settings

This chapter concentrates heavily on the last menu item, Site Settings (see Figure 13-3).

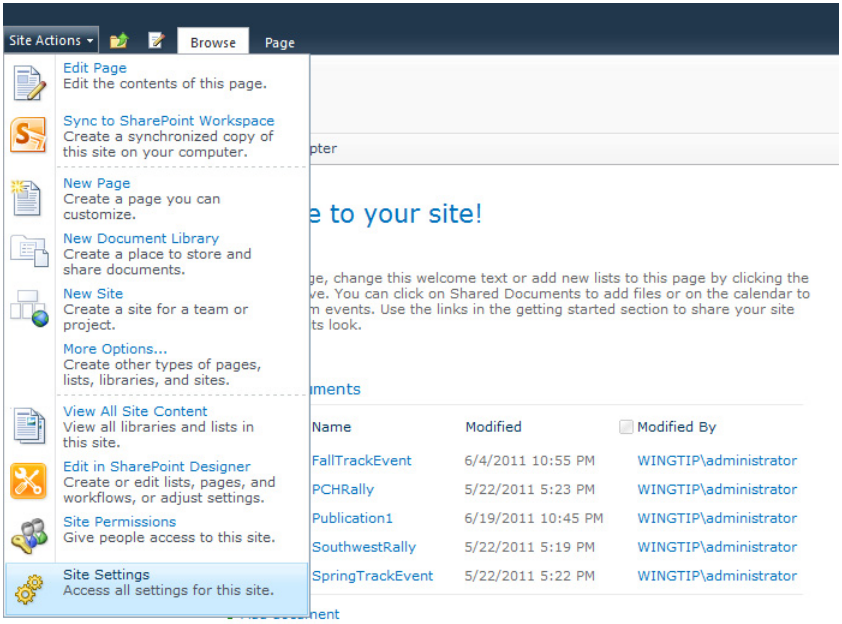

Figure 13-3 The Site Settings menu item in Site Actions.

Assuming that you have been assigned Site Owner permissions, clicking the Site Settings link shows that there are six menus on the Site Settings administrative page (see Figure 13-4) of a SharePoint Foundation 2010 site:

- Users And Permissions
- Galleries
- Site Administration
- Look And Feel
- Site Actions
- Site Collection Administration

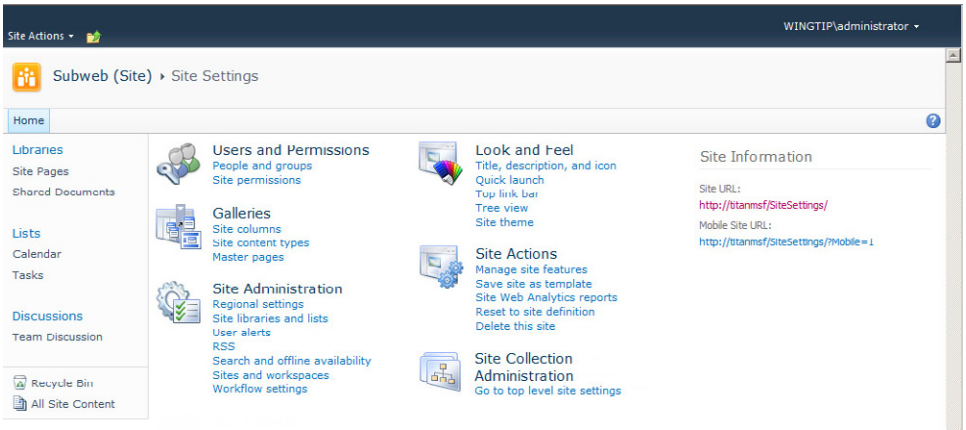

Figure 13-4 The Site Settings administrative page.

You will learn about each of these menus later in the chapter, with a special emphasis on the items each of these menus control within your SharePoint site. Note that Figure 13-4 depicts the Site Settings page for a Subsite; compare this with the Site Settings page for a top-level site illustrated in Figure 13-13, later in the chapter.

INSIDE OUT

Additional Site Settings menu items

Do you see more than six sections on your Site Settings page? If so, this is because the Site Settings menu is extensible; items, functionality, and whole sections can be added to the existing menu system. A good example of this behavior is when installing Microsoft SQL Reporting Services, which adds the aptly-titled section, Reporting Services.

Users and Permissions

This section provides two major components of security administration within your SharePoint site: People And Groups and Site Permissions, which you can see in Figure 13-5.

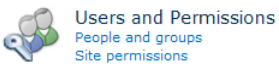

Figure 13-5 The Users And Permissions menu.

People And Groups

From this menu, you can:

- Add and remove users from a group
- Communicate with selected users via email or phone (Voice over IP [VoIP])
- Control group settings (such as the group name or membership permissions)
- View group permissions (provides a summary of items this group can access and at what level)
- Define a default group (chooses the default group to which users are added)

When a new Team Site is created, there are three default groups created: Visitors, Members, and Owners. Each group is assigned a permission level within the site.

Users in the Visitors group have the lowest possible privilege level within the site (Read), and are usually only able to view content within the site. Members (Contribute) have a higher privilege level than Visitors and are able to read, write, create, and delete content within the existing lists and libraries. The Owners group is just that—these users can fully administer all content and users within the site, and they have the ability to administer all content and the site itself (including deleting it).

This can be a bit confusing at first, but here's the easy way to remember how security is applied within a SharePoint Site:

Users → Groups → Permissions

Permissions levels are created first; groups are then assigned permissions; and users are assigned to groups.

Can you assign a user a permission level without assigning that person to a group? Yes, you can. Is it a good idea? No, not really. You see, if you assign permissions on a per-user basis, you might have a difficult time determining which users have which permission; worse yet, there is no easy way to change permissions levels for the user, once assigned.

But what if none of these existing permission levels are suitable for your particular site? Perhaps you have a requirement to assign users the ability to read, write, create, but *not* delete files—what then? That's where the Site Permissions Level menu can help you.

Site Permissions

SharePoint provides the ability to create new permissions levels via the Site Permissions menu. This menu makes use of the ribbon. When you use it, the Permissions Tools tab appears.

INSIDE OUT

Don't alter the built-in groups, create new ones

It is recommended that you *not* alter the permissions granted to the default groups (Visitor: Read, Contributor: Change, Owner: Full Control). Instead, create a new group and assign your users and new security level to that group. This is covered in great detail in the TechNet Article "Determine permission levels and groups (SharePoint Foundation 2010)," which is available at *http://technet.microsoft.com/en-us/library/cc287625.aspx*.

A site can inherit its permission levels and groups from its parent site (see Figure 13-6); this makes administration of a series of Team Sites easier because they all retain the same permissions structure. If a site is inheriting its permissions structure, the Permission Tools tab will have five main actions, controlling Inheritance, Grant, and Check functions:

- Manage Parent (Inheritance)
- Stop Inheriting Permissions (Inheritance)
- Grant Permissions (Grant)
- Create Group (Grant)
- Check Permissions (Check)

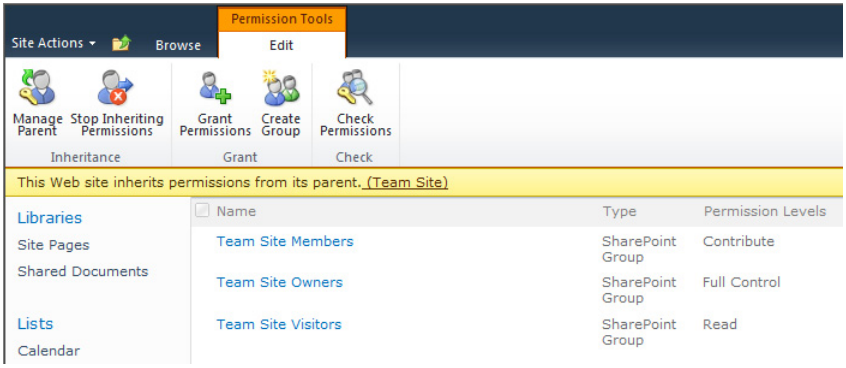

Figure 13-6 The Permission Tools tab (shown here with the site inheriting permissions from its parent site).

INSIDE OUT

Verifying user permissions in a site

One of the last items in the Site Permissions menu is Check Permissions. With this functionality, which is new to SharePoint 2010, you can select users and instantly see what items they can access on your site. This is a very powerful tool, especially in larger sites with multiple document libraries and lists.

A site can also be configured to *not* inherit its permission levels and groups from its parent site (see Figure 13-7). When set up this way, a site can maintain its own security and can even prevent access to some users from a higher level (more general audience) site. If a site is not inheriting its permissions structure, the Permissions Tools tab will have the following seven main actions that control inheritance, grant, modify, check, and manage functions:

- Inheriting Permissions (Inheritance)
- Grant Permissions (Grant)
- Create Group (Grant)
- Edit User Permissions (Modify)
- Remove User Permissions (Modify)
- Check Permissions (Check)
- Permissions Level (Manage)

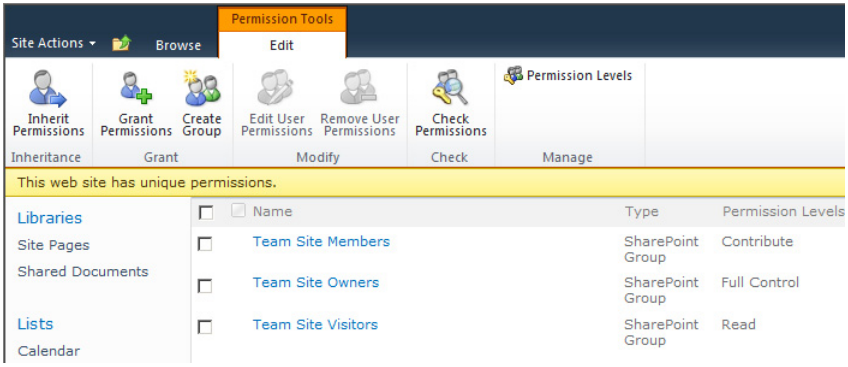

Figure 13-7 The Permission Tools tab when the site does not inherit permissions from its parent site.

INSIDE OUT

Caveats associated with altering permissions inheritance

Choosing to stop permissions inheritance does not remove these permissions from your site. It's likely that you will create new groups and users if you choose to break permissions inheritance from a parent site, increasing the amount of administration that you must do. Be sure that you consider if you really are looking for different permissions before choosing to break inheritance.

Galleries

With galleries, you can reuse different content and functionality throughout a Site Collection. There are three main galleries offered in SharePoint Foundation 2010 (also shown in Figure 13-8):

- Site Columns
- Site Content Types
- Master Pages

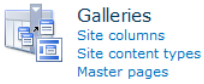

Figure 13-8 The Galleries menu.

Site Columns

In any document library or list, you will find the underlying principle of metadata at work. We use metadata constantly in our day-to-day lives:

- How cold/warm is the weather (Number)?
- What should I have for lunch today (Choice)?
- Should I buy an item or not (*Boolean*)?

Basically, any item stored in a library can have metadata stored that describes it—by default, this is the type of document, its name, when it was modified, and who modified it. These are referred to as site columns.

SharePoint Foundation ships with literally hundreds of out-of-the-box site columns. You can choose to use these columns in your library to allow you to classify your documents or perhaps store them in a view (for example, Red Jelly Beans, Blue Jelly Beans, or All Jelly Beans). Site column design is covered in Chapter 5, "Designing Lists and Libraries."

Content Types

Suppose now that you want to choose multiple site columns at once to create a document describing an item, such as a car:

- How many doors does it have (Choice)?
- What color is it? (Choice)?
- How expensive is it (Currency)?
- When did you buy it (Date)?

With SharePoint, you can wrap all of this metadata up at once, assigning it a content type (such as a brochure or purchase contract). This content type can be used over and over again (as can the site columns) in different sites.

Additionally, document management functionality, such as what type of document template is used for the content type, can be specified, adding more and more features to your document libraries.

As time goes on, and your use of SharePoint becomes more advanced, you will find that you can "roll up" information from child sites to the parent, accumulating information by content type. Content type design is covered in Chapter 5.

Master Pages

A master page is a type of web document that specifies the look and feel of a webpage and how it behaves. Often associated with "branding" a site, this functionality (the master page library) is stored in a SharePoint Foundation 2010 site for use by advanced web designers.

This functionality can be made more accessible by site owners; when you purchase and install SharePoint Server 2010, you can select the master page from the web interface, which is something that is not possible (without programming code) in SharePoint Foundation 2010. Master page design is covered in Chapter 14, "Creating, Managing, and Designing Sites by using SharePoint Designer 2010."

Site Administration

The Site Administration menu (shown in Figure 13-9) brings configuration settings (such as regional settings) and informational settings (such as site libraries and lists) together into one easy-to-use group. This menu includes the following items:

- Regional Settings
- Site Libraries And Lists
- User Alerts
- RSS
- Search And Offline Availability
- Sites And Workspaces
- Workflow Settings

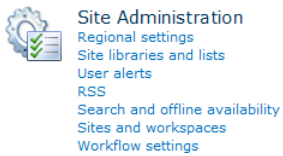

Figure 13-9 The Site Administration menu.

Regional Settings

Because SharePoint sites can be deployed in many different locations and languages, it becomes important to have Team Sites that can represent information in a format specific to a country, culture, or locale:

- **Locale** Specifies the way numeric and date-related items are displayed within a site. For instance, some countries display dates by using a DD/MM/YYYY format, whereas others might display it by using MM/DD/YYYY.
- **Sort Order** Controls the order in which items are sorted in lists and document libraries.
- **Time Zone** Specifies the default time zone used by the particular site. Default time zones for a SharePoint web application can be specified by SharePoint administrators, but the time zone setting for a site overrides the default.

- **Set Your Calendar** With this setting, a site owner can specify the default type of calendar used in the SharePoint site. This also offers the option to show week numbers in the Date Navigator.
- **Enable An Alternate Calendar** This is useful to display alternate calendar information, such as displaying Hebrew calendar information alongside that of a Gregorian calendar.
- **Define Your Work Week** This setting is similar to that found in Microsoft Outlook—you can choose what days are displayed as active in the calendar, along with specifying the first day of the week, first week of the year, and start/end times for the workday.
- **Time Format** You use this to specify whether times are displayed by default in 12 or 24-hour format.

Site Libraries And Lists

This menu provides three functions:

- Display all lists and libraries in the site
- Provide links to the list settings menu for each list or library
- Provide a link to create new content in a site (lists, libraries, or child sites/workspaces)

User Alerts

User Alerts can be administered in two distinct places: first, within the Files | Manage Rules And Alerts menu of Outlook, and second, within the site itself. You can display a user and delete Alerts that have been subscribed to by the user as well as those that have been assigned by others.

RSS

Really Simple Syndication (RSS) is a technology that allows a user to subscribe to information and have the information show in an RSS reader. SharePoint offers the ability to securely syndicate information from a list or library, allowing users to see these changes as they appear; the "securely" portion of this statement is important—as a rule, an RSS reader must be able to authenticate to SharePoint as a user in order to view syndicated material.

Using this setting, the site owner can specify whether this functionality is available in the SharePoint site; it also allows the site owner to specify the copyright, managing editor, and webmaster for a site. A Time-To-Live setting can be specified to determine how long information is current (in minutes).

Search And Offline Availability

A SharePoint site owner can choose whether the content of a site can appear in search results. For more detailed control, site pages and webpages can also be excluded from search (if desired).

A SharePoint user can use SharePoint and Outlook to take a copy of information from document libraries and lists offline. This is useful for people who travel or who might not be able to consistently connect to the corporate network; document and list information can be stored on a user's laptop and then synchronized to the network when a network connection is made.

By simply changing the status of the Offline Client Availability setting, a site owner can choose whether or not information found in the site can be taken offline.

For more information about working with document and list information offline and synchronization, see Chapter 12, "Taking Lists and Libraries Offline."

INSIDE OUT

Excluding a site from being indexed

Removing a site from SharePoint indexing is a very deliberate decision; a site that has been removed has no chance of being searched. There is often a business requirement to secure sensitive information from search. You should work with your IT department to find other means of securing your information—segregation of search information in SharePoint is quite possible and can provide great benefit to your legal staff, particularly to speed along legal inquiries.

Sites And Workspaces

Site owners can use this menu to view all child sites, document workspaces, and meeting workspaces to which you have access. You can also see when the site was last modified (useful to find unused sites) or delete a site. Additionally, a Create menu item is provided, with which you can quickly create any one of these site types.

INSIDE OUT

Deleting sites is a permanent action

Because there is a site Recycle Bin (for users) and a site Collection Recycle Bin (for Site Collection administrators), new SharePoint users often are under the impression that a deleted site can be retrieved from the Recycle Bin. This is distinctly *not true*. A site that is deleted is truly gone for good (unless IT can restore the site from backups). Be sure that you want to remove a site permanently before deleting it. SharePoint Foundation 2010 Service Pack 1 adds recycling for sites and site collections. For more details, read the TechNet article "Restore a deleted site collection" at *http://technet.microsoft.com/en-us/library/hh272537.aspx*.

Workflow Settings

A site owner can use this menu to create and administer workflows for use on a site; this menu also displays the workflows currently in progress. Changes that are applied to a workflow are not applied to workflows that are already in progress.

The Look And Feel Menu

The Look And Feel menu (shown in Figure 13-10) manages how a site appears in the browser; items such as navigation and branding fall under the control of this menu. This menu includes the following items:

- Title, Description, And Icon
- Quick Launch
- Top Link Bar
- Tree View
- Site Theme

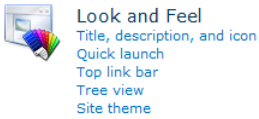

Figure 13-10 The Look And Feel menu.

Title, Description, And Icon

Using Title, you can specify a friendly name for the site—perhaps Project Management Central would be easier for users to understand than PrjMgmtCtrl (found in the URL).

The description of the site is nearly as important, for two primary reasons: the first is Search; the more information that exists about a site, the better its ranking in search. The second reason is to accommodate vision impaired users who need assistance to navigate a website.

By default, a SharePoint site has a small orange icon that is displayed on each site. This icon can be replaced with an icon of your choosing. Simply upload the icon and provide the link.

Quick Launch

There are two navigation zones used on a SharePoint Site: the Top Link bar (across the top of the page), and the Quick Launch (most often located down the leftmost side of the page).

Use the Quick Launch menu to specify navigation links, group these links under headings, and change the order in which the items appear in Quick Launch.

Top Link Bar

The second of the two navigational zones, the Top Link bar, appears across the top of a SharePoint Site. You use the Top Link bar menu to create new navigational links and change the order of links across the bar.

INSIDE OUT

Navigation changes in SharePoint Server 2010

If you've upgraded from SharePoint Foundation 2010 to SharePoint Server 2010, you might be wondering where the Quick Launch and Top Link Bar went. These two navigational zones are replaced in SharePoint Server 2010 by Current Navigation (replaces Quick Launch) and Global Navigation (replaces Top Link Bar).

Site Actions

The Site Actions menu (see Figure 13-11) controls activities that have to do with altering the functionality available in the site, viewing metrics regarding its use, the templating of sites, and other functions. This menu includes the following items:

- Manage Site Features
- Save Site As Template

- Site Collection Web Analytics Reports
- Site Web Analytics Reports
- Reset To Site Definition
- Delete This Site

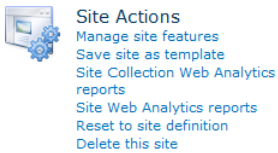

Figure 13-11 The Site Actions menu.

Manage Site Features

A SharePoint site is modular in design. You can think of this concept along the lines of a car being manufactured. The car itself provides a basic function, but packages can be added for climate control, entertainment, interior trim, and others options; in a SharePoint site, these are referred to as *Features*.

Features are a grouping of one or more sets of functionality that can be added to a SharePoint site. An example of this functionality is the Team Collaboration Lists Feature, which creates the document libraries and issues lists on your Team Site. These Features can be activated or deactivated from the Manage Site Features menu.

TROUBLESHOOTING

I deactivated my Team Collaboration Lists Feature, but one of these lists still exists. Why?

If you look inside the list itself, it's likely that you'll find a document or list item has been inserted into the library; SharePoint Features being deactivated purposely will not remove a list that is in use.

Save Site as Template

So you spent 5 hours configuring a new Team Site, getting it exactly the way you want it. You show the site to your boss, and she loves it—so much, in fact, that she asks you to build 30 more just like it.

Fortunately for you, a configured site can be saved as a template. In fact, a list or document library can be saved as a template, too, but that's not in this chapter. This template is stored at the top of the Site Collection in a gallery of templates. We will examine this functionality further in the next section.

TROUBLESHOOTING

I recently upgraded to SharePoint Server 2010 and activated the Publishing Features for my site. Now I cannot save a template of my site, is this normal?
Actually, this is a normal behavior for Publishing-enabled sites. Here's why: publishing pages track changes between versions, have workflow and approvals, along with other functionality. Disabling the feature will break or remove these items, so the Save Site As Template menu item is removed when Publishing is enabled.

Site Web Analytics Reports

SharePoint Foundation 2010 provides built-in web analytics about sites. Analyzing web analytics reports helps tune the searchability, browsability, performance, and overall impression that the site offers to your user base.

Although this is not critical to Team Sites, these metrics provide insight into how users arrive at the site, what pages they visit, what browser(s) they use to visit the site, and other metrics. The official list is:

- Number Of Page Views
- Number Of Unique Visitors
- Number Of Referrers
- Top Pages
- Top Visitors
- Top Referrers
- Top Browsers

The Reset To Site Definition Menu

It is possible to make customizations to the page or pages in a SharePoint site that render the site unusable; what is odd is that the actual document and list information contained in the site is unharmed, and the pages themselves can be restored back to a precustomization state.

Using the Reset To Site Definition menu, you can reset a single page or all pages in a site to the version of the page included in the original site definition. This is particularly useful if modifications you have performed damage a page in a SharePoint site and you need a quick way to get it operational again.

INSIDE OUT

Resetting to the site definition is a dramatic change

Resetting a page to its site definition removes customizations to a page by reverting it to its out-of-the-box state; this can have undesired effects, particularly if you have a heavily customized page. Be sure that you want to take this action and that you have communicated its effects to your team before executing this change.

The Delete This Site Menu

The last menu item is perhaps the most powerful—after all, what can affect a site more than deleting it? This menu is quite straightforward: select it and you get one (and only one) chance to change your mind.

Once you select the Delete button, the site is gone forever—it is not retained in the either site or Site Collection recycle bins.

One More Thing—Site Information

OK, so it's not a technically a site setting menu like the others, but site information provides two URLs:

- **Site URL** The URL for the site itself
- **Mobile Site URL** The URL for the site as it is represented on mobile devices

Site Collection Administration

So now you've got the hang of administering a site. It's time to up the ante and make you a Site Collection administrator.

There is only one item in this menu: click the Go To Top Level Site Settings item, and then move on to the next set of menu items: Site Settings (Top Level Site, Figure 13-12).

Figure 13-12 The Site Collection Administration menu.

Site Settings (Top-Level Site)

Clicking the Go To Top Level Site Settings automatically takes you to the top-level site of the Site Collection you are in. It is important to note that you might have several Site Collections in the farm, so yours might not be the first in the web address. A good example of this would be a Portal Site Collection with departmental Site Collections beneath it, such as the following:

http://portal/department

There could be one set of Site Collection administrators for *http://portal* and another for *http://portal/department*, provided that each of these addresses is created specifically as a Site Collection.

Assuming that you have been assigned Site Collection administrator permissions, there will be six sections on the site settings administrative page of a SharePoint Foundation 2010 top-level site (Figure 13-13); these will appear familiar to site owners:

- Users And Permissions
- Galleries
- Site Administration
- Look And Feel
- Site Actions
- Site Collection Administration

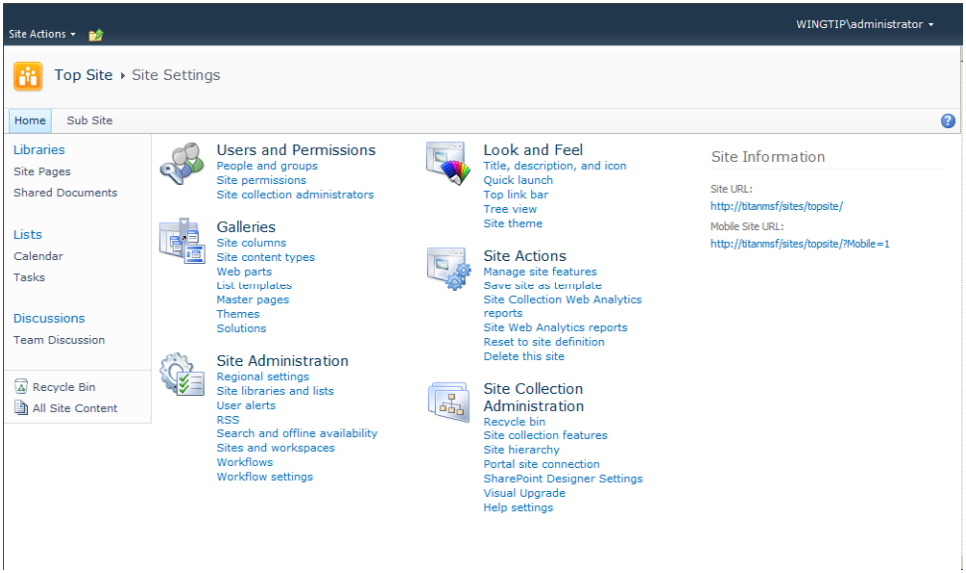

Figure 13-13 The Site Settings menu for the top-level site.

It looks the same, doesn't it? In fact, the site settings menu for the top-level site is nothing more than a superset of the items present in a normal site settings menu. This is the *only* site in the Site Collection that has these extra menu items.

We will cover the settings menus again, but this time, only focusing on the specialized items.

The Users And Permissions Menu

There is only one new item in the Users And Permissions menu: Site Collection Administrators (see Figure 13-14). You use this menu to select people who will ultimately have the ability to control each and every site in this Site Collection.

Figure 13-14 The Users And Permissions menu (top-level site).

Galleries

There are four new items in Galleries (Figure 13-15):

- Web Parts
- List Templates
- Themes
- Solutions

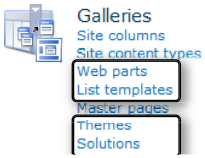

Figure 13-15 The Galleries (top-level site).

Web Parts

This menu item lists all of the Web Parts available to sites within this Site Collection. You can add Web Parts to this library to make them available to users in the Site Collection.

INSIDE OUT

Not all Web Parts are created equal

Some Web Parts are simply ones that have been created by users from existing Web Parts, but others have code and other components on which they are dependent. If you need such an item available in your Site Collection, you will need to work with your SharePoint farm administrator to have these added to the farm.

List Templates

Earlier, we discussed the notion of making an entire site into a template. Perhaps this is overkill for your needs. A list in any site (in this Site Collection) can be saved as a template. When the list is "templatized," it is automatically uploaded into the List Template gallery for use within this Site Collection.

It is also possible to download a List Template and then upload that to a different Site Collection, should you prefer.

Themes

You can apply a Theme to any SharePoint site. A theme is a set of colors and other styling elements that are used to lightly brand a site. Themes can be created and uploaded to this library for use by sites in this Site Collection.

Solutions

Earlier in this chapter, we discussed the concept of features. A Solution takes this concept one step further by wrapping one or more features into a larger package (called a Solution) which can be used in a Site Collection. Once the Solution has been deployed and activated within the Site Collection, it can be used by any site.

The Solutions menu specifically shows Solutions that are applied to the Site Collection. A site or a workflow can be saved as a template; these templates are stored as a Solution in this menu.

Other Solution packages can be obtained, uploaded, and activated to add functionality to your Site Collection; these Solutions consume resources on your SharePoint farm. To indicate how many resources are consumed and what your available resource quota is, the Solutions menu also shows a resource quota bar. When you reach the available resource quota limit (it resets daily), the Solution ceases to function for the rest of the day—or, the SharePoint farm administrator raises your quota.

Site Administration

There is only one change in the Site Administration menu, and that is Workflows. While the Workflow Settings menu is available in any site within the Site Collection, workflows themselves are controlled and stored in the top-level site of the Site Collection, as shown in Figure 13-16.

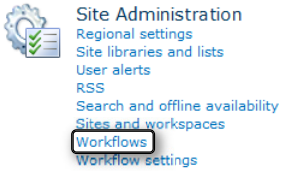

Figure 13-16 The Site Administration menus for a top-level site.

From this menu, you can see what workflows are in use as well as their status and associations. Although you can see the associations and progress of all workflows in the Site Collection, this page does not show you which workflows are associated with what sites or lists and does not show you the specific status of those workflows.

The Look And Feel Menu

No additional functionality was introduced to the Look And Feel menu in a top-level site (Figure 13-17).

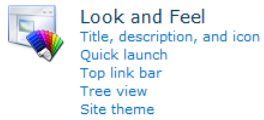

Figure 13-17 The Look And Feel menu for a top-level site.

Site Actions

Site Collection Web Analytics Reports are added to the Site Settings menu of a top-level site (see Figure 13-18). Unlike the standard site web analytics reports, the Site Collection reports are specifically used to report high-level usage in your Site Collection. The information captured in this report is as follows:

- **Storage** The Current Storage in megabytes, how much is used by Web Discussions, and the maximum storage allocated to your Site Collection Quota.
- **Users** The number of users that have been added to the Site Collection.
- **Activity** The total number of hits and bandwidth use on a per-day basis for the Site Collection.

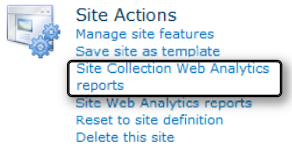

Figure 13-18 The Site Actions menu for a top-level site.

The Site Collection Administration Menu

All of the items in Site Collection Administration affect the Site Collection as a whole (see Figure 13-19). These settings include the following items:

- Recycle Bin
- Site Collection Features
- Site Hierarchy

- Portal Site Connection
- SharePoint Designer Settings
- Visual Upgrade
- Help Settings

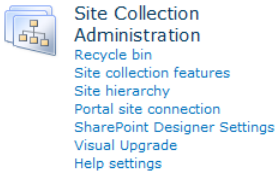

Figure 13-19 The Site Collection Administration menu.

Recycle Bin

Users often delete list and library items from a Site; in an effort to clean up a site, a site owner might choose to empty a Site Recycle Bin before a user realizes that he did not mean to delete an item. Fortunately, there is a Site Collection Recycle Bin also provided. This bin contains items that are deleted from a site and retains items (by default) up to 30 days after they were originally deleted. This value for the length of time a site is retained is configurable in Central Administration.

Items can be restored from this Recycle Bin directly to the affected site. Additionally, you can choose to see End User Recycle Bin items or items that were deleted from an end user (Site) Recycle Bin.

Items can also be deleted from this Recycle Bin—the Site Collection Recycle Bin is the last stop before an item is gone for good. Items deleted from here will require the help of a SharePoint farm or system administrator's to restore.

The Site Collection Features Menu

Features can be scoped (applied) to a Site Collection, just as they can to sites. Scoping a Feature to a site simply means that the Feature is only available for that site. Similarly, scoping a Feature to a Site Collection means that the Feature is available for all of the sites in a Site Collection (whether top-level or Subsites).

From this menu, you can activate or deactivate a Feature within the Site Collection.

The Site Hierarchy Menu

This menu has two functions: the first shows you the parent-child relationship structure between sites in the Site Collection, and the second provides you with links to directly manage the sites in the Site Collection.

Portal Site Connection

Site collections are truly independent structures within a SharePoint farm. Relationships between sites can be implied by the URL (web address) of a site. Once you are in the Site Collection, you might want to manually build a connection back to a portal (perhaps the first site in the URL).

To create a connection back to a portal site, you can select Connect To Portal Site and enter the Portal Web Address and Portal Name (which is the friendly name that will show up on the upper-left of your Site Collection.

SharePoint Designer Settings

These settings specifically deal with how SharePoint Designer can affect sites in your Site Collection. Allowing your site owners or designers to have access to SharePoint Designer can be very beneficial; however, great care should be taken to avoid allowing this functionality to be available to inexperienced or untrained personnel.

Site collection administrators can use SharePoint Designer unless prohibited by the SharePoint farm administrators. There are four selections available in this menu, none of which apply to Site Collection administrators:

- Allow Site Owners And Designers To Use SharePoint Designer In This Site Collection
- Allow Site Owners And Designers To Detach Pages From The Site Definition
- Allow Site Owners And Designers To Customize Master Pages And Page Layouts
- Allow Site Owners And Designers To See The Hidden URL Structure Of Their Web Site

INSIDE OUT

Improvements in restricting SharePoint Designer access

In the last version of SharePoint, removing the ability to use SharePoint Designer was something that applied to everyone in a SharePoint web application. In SharePoint 2010, this choice is more granular—both SharePoint farm administrators and Site Collection administrators have the ability to allow/disallow SharePoint functionality. SharePoint farm administrators can change these settings for Site Collection administrators by using Central Administration. Additionally, the four previously described selections can be allowed or disallowed to enable/disable different SharePoint Designer functionality.

Enabling/Disabling SharePoint Designer

SharePoint Designer is enabled by default. This means that site owners and designers can use SharePoint Designer 2010 to customize any site in this Site Collection. Clearing the Allow Site Owners And Designers To Use SharePoint Designer In This Site Collection check box prevents these two groups of users from making modifications by using this tool.

Detaching Pages from the Site Definition

SharePoint pages can exist in one of two states; either they are attached to the site definition (meaning that they are stored on the local file system of the web servers) or they are detached from the site definition (meaning that they are stored in the content database).

Pages stored in the content database have a mildly negative impact on performance; moreover, they also do not inherit modifications made to the site definition.

Some organizations choose to prohibit pages from being detached from the site definition, instead opting to produce new page layouts for users to choose from.

Customizing Master Pages and Page Layouts

A master page is used to make visual and functional changes that can apply to multiple pages in a site. A page layout is used to provide the template for pages created in a site. If either of these items is incorrectly configured, the site will not render correctly.

Hidden URL Structures

SharePoint Designer can display the underlying URL structure of a SharePoint site. Items in this structure are shown in a series of folders, such as _cts, _catalogs, _private, and so on. Altering items in these structures can be a key component of customization; however, incorrectly altering items in these structures can render an entire site or Site Collection unusable. You can use this menu selection to hide/show these structures to site owners and designers running SharePoint Designer 2010.

Visual Upgrade

If your company upgraded your SharePoint to 2010 from SharePoint 2007, it's likely that you did not initially notice any changes on your site. The SharePoint site structure literally looks unchanged from its 2007 counterpart; this is intentional, and intended to provide continuity of service and functionality to users, without the need to immediately retrain them.

Choosing to visually upgrade SharePoint is pretty much a one-way street; although it is possible to revert a SharePoint site back to its 2007 look and feel, it is not possible to do so unless you involve a SharePoint farm administrator. As Site Collection administrator, therefore, you might choose to hold off on allowing a visual upgrade until your user base has been trained to use the new interface.

If you want to hide the Visual Upgrade options, you can choose to do so by going into this section and selecting the Hide Visual Upgrade option. If on the other hand, you have already prepared your users for the change in appearance, you can click the Update All Sites button, and the interface will change to adopt the SharePoint 2010 look and feel.

Help Settings

Help subjects available for SharePoint can be available or not available for users in your SharePoint environment. Going into this menu item and selecting the check box for a SharePoint subject allows help information to be made available to your users. In a SharePoint Foundation 2010 environment, the subjects available are:

- SharePoint Foundation 2010
- SharePoint Foundation 2010 Central Administration

Summary

You began reading this chapter as a SharePoint user; you finished the chapter with an understanding of what it is to be a site owner, designer, or Site Collection administrator. You now have an idea of the items and functionality available to your SharePoint staff as well as an understanding of the functionality available to each of these roles in your organization.

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