



Planning guide for sites and solutions for Microsoft SharePoint Server 2010, Part 1

Microsoft Corporation

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Author: Microsoft Office System and Servers Team (itspdocs@microsoft.com)

Abstract

This book provides information about planning for deploying Microsoft SharePoint Server 2010. Subjects include site security, governance, and enterprise content management. The audiences for this book are business application specialists, line-of-business specialists, information architects, IT generalists, program managers, and infrastructure specialists who are planning a solution based on SharePoint Server 2010. This book is part of a set of four planning guides that provide comprehensive IT planning information for SharePoint Server.

For further information about planning for site and solutions created by using SharePoint Server, see [Planning guide for sites and solutions for Microsoft SharePoint Server 2010, part 2](http://go.microsoft.com/fwlink/?LinkId=208024) (<http://go.microsoft.com/fwlink/?LinkId=208024>). Subjects in Part 2 include web content management, site creation, business intelligence, business data, and enterprise search.

For information about planning the architecture of a SharePoint Server 2010 deployment, see [Planning guide for server farms and environments for Microsoft SharePoint Server 2010](http://go.microsoft.com/fwlink/?LinkId=189513) (<http://go.microsoft.com/fwlink/?LinkId=189513>).

For information about planning for capacity and performance in SharePoint Server 2010, see [Capacity planning for Microsoft SharePoint Server 2010](http://go.microsoft.com/fwlink/?LinkId=208221) (<http://go.microsoft.com/fwlink/?LinkId=208221>).

The content in this book is a copy of selected content in the [SharePoint Server 2010 technical library](http://go.microsoft.com/fwlink/?LinkId=181463) (<http://go.microsoft.com/fwlink/?LinkId=181463>) as of the publication date. For the most current content, see the technical library on the Web.

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Getting help

Every effort has been made to ensure the accuracy of this book. This content is also available online in the Office System TechNet Library, so if you run into problems you can check for updates at:

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Technical diagrams (SharePoint Server 2010)

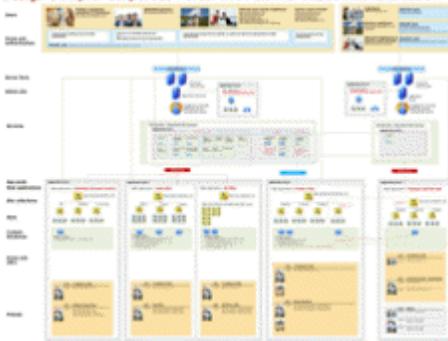
Many of these resources are visual representations of recommended solutions. They include poster-sized documents available in formats including Microsoft Office Visio 2007 or Microsoft Visio 2010 files (.vsd), PDF files, and XPS files. You might need extra software to view these files. See the following table for information about opening these files.

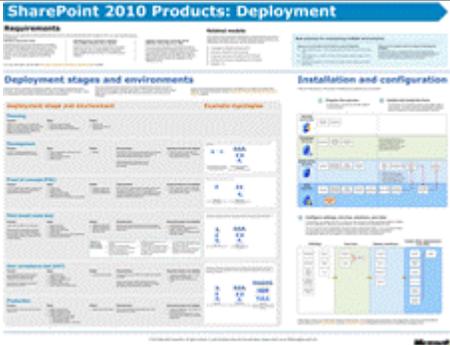
File type	Software
.vsd	Office Visio 2007, Microsoft Visio 2010, or the free Visio viewer (http://go.microsoft.com/fwlink/?LinkId=118761) If you use the Visio viewer, right-click the VSD link, click Save Target As , save the file to your computer, and then open the file from your computer.
.pdf	Any PDF viewer, such as Adobe Reader (http://go.microsoft.com/fwlink/?LinkId=134751)
.xps	Windows 7, Windows Vista, Windows XP with .NET Framework 3.0, or XPS Essentials Pack (http://go.microsoft.com/fwlink/?LinkId=134750)

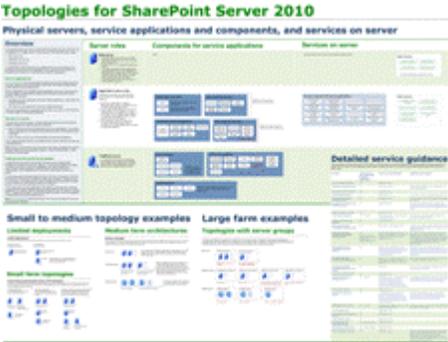
Models

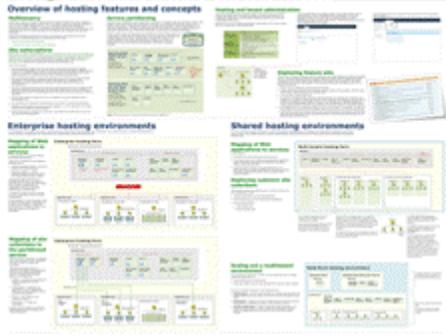
Models are 34-by-44-inch posters that detail a specific technical area. These models are intended to be used with corresponding articles on TechNet. These models are created by using Office Visio 2007. You can modify the Visio files to illustrate how you plan to incorporate Microsoft SharePoint 2010 Products in your own environment.

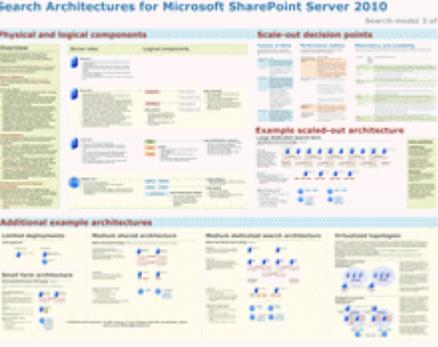
Title	Description
Design Sample: Corporate Portal with Classic Authentication	Illustrate a typical corporate deployment, with the most common types of sites represented. The two samples differ only in the mode of authentication that is implemented. Use these design samples with the

Title	Description
<p>Design Sample: Corporate Portal with Classic Authentication</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=196969) PDF (http://go.microsoft.com/fwlink/?LinkId=196970) XPS (http://go.microsoft.com/fwlink/?LinkId=196971)</p> <p>Design Sample: Corporate Portal with Claims-based Authentication</p> <p>Design Sample: Corporate Portal with Claims-based Authentication</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=196972) PDF (http://go.microsoft.com/fwlink/?LinkId=196973) XPS (http://go.microsoft.com/fwlink/?LinkId=196974)</p>	<p>following article: Design sample: Corporate deployment (SharePoint Server 2010)</p>
<p>SharePoint 2010 Products Deployment</p>	<p>Presents such deployment-related information as the different deployment stages and environments, plus a flowchart that illustrates the steps for installing and configuring SharePoint 2010 Products.</p>

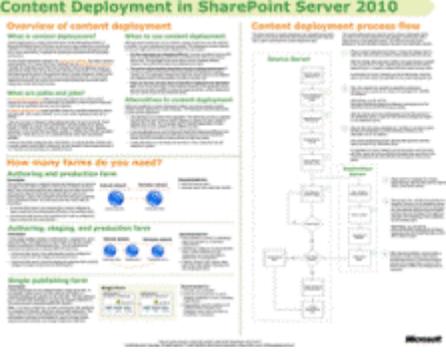
Title	Description
<p>SharePoint 2010 Products: Deployment</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=183024) PDF (http://go.microsoft.com/fwlink/?LinkId=183025) XPS (http://go.microsoft.com/fwlink/?LinkId=183026)</p>	
<p>Services in SharePoint 2010 Products</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkID=167090) PDF (http://go.microsoft.com/fwlink/?LinkID=167092) XPS (http://go.microsoft.com/fwlink/?LinkID=167091)</p>	<p>Describes and illustrates the services architecture, including common ways to deploy services in your overall solution design.</p> <p>Use this diagram with the following articles:</p> <ul style="list-style-type: none"> • Services architecture planning (SharePoint Foundation 2010) • Services architecture planning (SharePoint Server 2010)
<p>Cross-farm Services in SharePoint 2010 Products</p> 	<p>Illustrates how to deploy services across farms to provide centralized administration of services.</p> <p>Use this diagram with the following articles:</p> <ul style="list-style-type: none"> • Services architecture planning (SharePoint Foundation 2010) • Services architecture planning (SharePoint Server 2010)

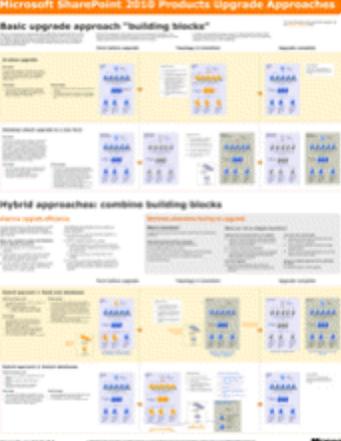
Title	Description
<p>Visio (http://go.microsoft.com/fwlink/?LinkID=167093) PDF (http://go.microsoft.com/fwlink/?LinkID=167095) XPS (http://go.microsoft.com/fwlink/?LinkID=167094)</p>	
<p>Topologies for SharePoint Server 2010</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkID=167087) PDF (http://go.microsoft.com/fwlink/?LinkID=167089) XPS (http://go.microsoft.com/fwlink/?LinkID=167088)</p>	<p>Describes common ways to build and scale farm topologies, including planning which servers to start services on.</p>
<p>Extranet Topologies for SharePoint 2010 Products</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=187987) PDF (http://go.microsoft.com/fwlink/?LinkId=187988) XPS (http://go.microsoft.com/fwlink/?LinkId=187986)</p>	<p>Illustrates the specific extranet topologies that have been tested with SharePoint 2010 Products. Provides a comparison of ISA Server, Forefront TMG, Forefront UAG when used as a firewall or gateway product with SharePoint 2010 Products.</p>
<p>Hosting Environments in SharePoint 2010 Products</p>	<p>Summarizes the support for hosting environments and illustrates common hosting architectures.</p> <p>For more information on designing and</p>

Title	Description
<p data-bbox="211 220 544 231">Hosting Environments in SharePoint 2010 Products</p>  <p data-bbox="211 619 836 651">Visio (http://go.microsoft.com/fwlink/?LinkID=167084)</p> <p data-bbox="211 661 836 693">PDF (http://go.microsoft.com/fwlink/?LinkID=167086)</p> <p data-bbox="211 703 836 735">XPS (http://go.microsoft.com/fwlink/?LinkID=167085)</p>	<p data-bbox="950 220 1421 367">deploying hosting environments, see the following: White paper: SharePoint 2010 for hosters (SharePoint Server 2010).</p>
<p data-bbox="211 766 860 798">Search Technologies for SharePoint 2010 Products</p>  <p data-bbox="211 1207 836 1239">Visio (http://go.microsoft.com/fwlink/?LinkID=167731)</p> <p data-bbox="211 1249 836 1281">PDF (http://go.microsoft.com/fwlink/?LinkID=167733)</p> <p data-bbox="211 1291 836 1323">XPS (http://go.microsoft.com/fwlink/?LinkID=167732)</p>	<p data-bbox="950 766 1421 871">Compares and contrasts the search technologies that work with SharePoint Products 2010:</p> <ul data-bbox="950 882 1356 1134" style="list-style-type: none"> • SharePoint Foundation 2010 • Search Server 2010 Express • Search Server 2010 • SharePoint Server 2010 • FAST Search Server 2010 for SharePoint
<p data-bbox="211 1354 909 1417">Search Environment Planning for Microsoft SharePoint Server 2010</p>	<p data-bbox="950 1354 1372 1459">Walks through primary architecture design decisions for search environments.</p>

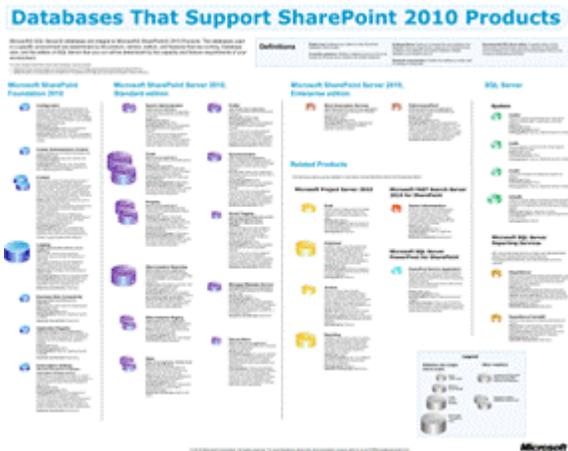
Title	Description
<p>Search Environment Planning for Microsoft SharePoint Server 2010</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkID=167734) PDF (http://go.microsoft.com/fwlink/?LinkID=167736) XPS (http://go.microsoft.com/fwlink/?LinkID=167735)</p>	
<p>Search Architectures for Microsoft SharePoint Server 2010</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkID=167737) PDF (http://go.microsoft.com/fwlink/?LinkID=167739) XPS (http://go.microsoft.com/fwlink/?LinkID=167738)</p>	<p>Details the physical and logical architecture components that make up a search system and illustrates common search architectures.</p>
<p>Design Search Architectures for Microsoft SharePoint Server 2010</p>	<p>Walks through the initial design steps to determine a basic design for a SharePoint Server 2010 search architecture.</p>

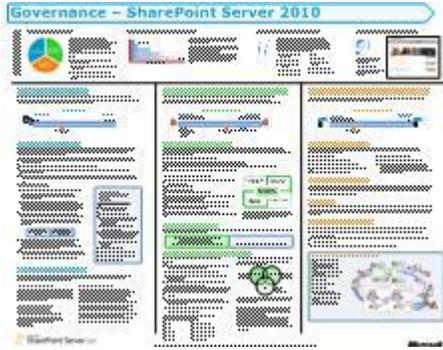
Title	Description
<p>Design Search Architectures for Microsoft SharePoint Server 2010</p>  <p>inkID=167740) inkID=167742) inkID=167741)</p>	
<p>Model</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=165565) PDF (http://go.microsoft.com/fwlink/?LinkId=165566) XPS (http://go.microsoft.com/fwlink/?LinkId=165571)</p>	<p>Microsoft Business Connectivity Services are a set of services and features in Microsoft SharePoint Server 2010 and Microsoft SharePoint Foundation 2010 that support integrating data from external systems into solutions based on Microsoft SharePoint Server and Microsoft SharePoint Foundation. This model poster describes the architecture of Microsoft Business Connectivity Services in SharePoint Server 2010 and provides information about how to create solutions that are based on the service.</p> <p>Use this model with the following article: Business Connectivity Services overview (SharePoint Server 2010)</p>
<p>Content Deployment in SharePoint Server 2010</p>	<p>Describes the content deployment feature in SharePoint Server 2010. It includes information about the following:</p> <ul style="list-style-type: none"> • Overview of content deployment • Description of content deployment paths and jobs

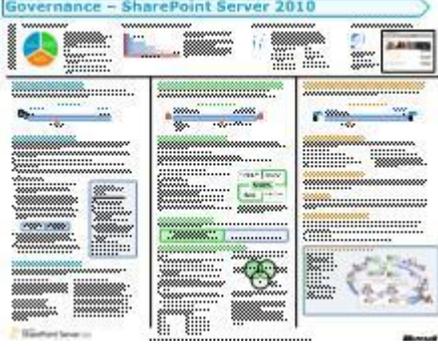
Title	Description
<p>Content Deployment in SharePoint Server 2010</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkID=179391&clcid=0x409)</p> <p>PDF (http://go.microsoft.com/fwlink/?LinkID=179523&clcid=0x409)</p> <p>XPS (http://go.microsoft.com/fwlink/?LinkID=179524&clcid=0x409)</p>	<ul style="list-style-type: none"> • When to use content deployment • Alternatives to content deployment • Illustrates common content deployment farm topologies • Illustrates and explains the overall content deployment process
<p>Microsoft SharePoint Server 2010 Upgrade Planning</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=167098)</p> <p>PDF (http://go.microsoft.com/fwlink/?LinkId=167099)</p> <p>XPS (http://go.microsoft.com/fwlink/?LinkId=167100)</p>	<p>Covers planning for an upgrade from Microsoft Office SharePoint Server 2007 to SharePoint Server 2010. It includes information about the following:</p> <ul style="list-style-type: none"> • Upgrade requirements: Hardware, operating system, and database • Upgrade process: specific steps to follow before, during, and after the upgrade <p>Use this model with the following article: Upgrading to SharePoint Server 2010</p>
<p>Microsoft SharePoint Server 2010 Upgrade Approaches</p>	<p>Helps you understand the in-place, database attach, and hybrid approaches to upgrading from Office SharePoint Server 2007 to SharePoint Server 2010.</p> <ul style="list-style-type: none"> • See the farm topologies before, during, and after upgrade

Title	Description
<p>Microsoft SharePoint 2010 Products Upgrade Approaches</p>  <p>Basic upgrade approach "building blocks"</p> <p>Hybrid approaches: combine building blocks</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=167101) PDF (http://go.microsoft.com/fwlink/?LinkId=167102) XPS (http://go.microsoft.com/fwlink/?LinkId=167103)</p>	<ul style="list-style-type: none"> • Compare the advantages of each type of upgrade approach <p>Use this model with the following articles:</p> <ul style="list-style-type: none"> • Determine upgrade approach (SharePoint Server 2010) • Upgrade process overview (SharePoint Server 2010)
<p>Microsoft SharePoint Server 2010 — Test Your Upgrade Process</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=167104) PDF (http://go.microsoft.com/fwlink/?LinkId=167105) XPS (http://go.microsoft.com/fwlink/?LinkId=167106)</p>	<p>Explains the methodology for testing the upgrade process before upgrading from Office SharePoint Server 2007 to SharePoint Server 2010.</p> <ul style="list-style-type: none"> • Understand the goals for testing your upgrade process: customizations, hardware, timing, planning • See specific steps to follow for testing your upgrade process <p>Use this model with the following article: Use a trial upgrade to find potential issues (SharePoint Server 2010)</p>
<p>Microsoft SharePoint Server 2010 — Services Upgrade</p>	<p>Covers upgrading services from Office SharePoint Server 2007 to SharePoint Server 2010.</p> <ul style="list-style-type: none"> • Considerations for specific services: Personalization, Search, InfoPath Forms, Excel, Business Data

Title	Description
<p>Microsoft SharePoint Server 2010 Services Upgrade</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=167107)</p> <p>PDF (http://go.microsoft.com/fwlink/?LinkId=167108)</p> <p>XPS (http://go.microsoft.com/fwlink/?LinkId=167109)</p>	<p>Catalog, Single Sign-on</p> <ul style="list-style-type: none"> • In-place upgrade with services • Database attach upgrade with services
<p>Microsoft SharePoint Server 2010 — Upgrading Parent and Child Farms</p>  <p>Visio (http://go.microsoft.com/fwlink/?LinkId=190984)</p> <p>PDF (http://go.microsoft.com/fwlink/?LinkId=190985)</p> <p>XPS (http://go.microsoft.com/fwlink/?LinkId=190986)</p>	<p>Covers the process for and considerations to keep in mind when you upgrade farms that share services (parent and child farms).</p>
<p>Getting started with business intelligence in SharePoint Server 2010</p>	<p>Covers an overview of business intelligence in SharePoint Server and provides you with the following</p>

Title	Description
 <p>Business Intelligence in SharePoint Server 2010</p> <p>Overview of Microsoft Business Intelligence</p> <p>SharePoint Server 2010 Insights</p> <p>Architecture of SharePoint Server Service Applications for Business Intelligence</p> <p>Microsoft</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=167409) PDF (http://go.microsoft.com/fwlink/?LinkId=167170) XPS (http://go.microsoft.com/fwlink/?LinkId=167171)</p>	<p>information.</p> <ul style="list-style-type: none"> • An overview of each business intelligence service and when you might use the service. • Architecture for application of the business intelligence services and how they work together in a topology. • A list of possible data sources for each business intelligence service.
 <p>Databases That Support SharePoint 2010 Products</p> <p>Microsoft SharePoint Foundation 2010</p> <p>Microsoft SharePoint Server 2010 Standard edition</p> <p>Microsoft SharePoint Server 2010 Enterprise edition</p> <p>SQL Server</p> <p>Microsoft SQL Server 2008</p> <p>Microsoft SQL Server 2008 R2</p> <p>Microsoft SQL Server 2012</p> <p>Microsoft SQL Server 2012 R2</p> <p>Microsoft</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=187970) PDF (http://go.microsoft.com/fwlink/?LinkId=187969) XPS (http://go.microsoft.com/fwlink/?LinkId=187971)</p>	<p>Describes the Microsoft SQL Server databases on which SharePoint Server 2010 runs.</p>
<p>SharePoint 2010 Products: Virtualization Process</p>	<p>Provides guidance related to virtualization and the various stages of deployment, as well as requirements and examples.</p> <p>Use this diagram with the articles in the following chapters:</p> <ul style="list-style-type: none"> • Virtualization planning (SharePoint

Title	Description
<p>SharePoint 2010 Products: Virtualization Process</p>  <p>The diagram illustrates the virtualization process for SharePoint 2010 products. It shows a multi-tier architecture starting from physical hardware at the bottom, moving through a hypervisor layer to virtual machines. These virtual machines host various SharePoint components like Search, Security, and Services. The diagram is divided into sections for different product areas and includes detailed flowcharts and text boxes explaining the integration and data flow.</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=195021) PDF (http://go.microsoft.com/fwlink/?LinkId=195022) XPS (http://go.microsoft.com/fwlink/?LinkId=195023)</p>	<p>Foundation 2010)</p> <ul style="list-style-type: none"> • Virtualization planning (SharePoint Server 2010)
<p>Governance for SharePoint Server 2010</p>  <p>This diagram provides a comprehensive overview of governance for SharePoint Server 2010. It is structured into several key areas: IT Governance, Information Management Governance, and Application Management Governance. Each area contains detailed sub-diagrams and text boxes that describe the various tools, policies, and processes involved in managing the SharePoint environment. The diagram uses a mix of icons, charts, and flowcharts to represent the complex relationships between different governance components.</p> <p>Visio (http://go.microsoft.com/fwlink/?LinkId=200532) PDF (http://go.microsoft.com/fwlink/?LinkId=200533) XPS (http://go.microsoft.com/fwlink/?LinkId=200534)</p>	<p>Illustrates how to develop a governance plan that includes IT governance, information management governance, and application management governance.</p> <p>Use this diagram with the following articles:</p> <ul style="list-style-type: none"> • Governance overview (SharePoint Server 2010) • Governance features (SharePoint Server 2010)
<p>Duet Enterprise for Microsoft SharePoint and SAP Poster</p>	<p>Illustrates Duet Enterprise architecture for both the SAP and Microsoft environments, with detailed explanations of each area.</p>

Title	Description
 <p>Visio (http://go.microsoft.com/fwlink/?LinkID=208107&clcid=0x409)</p> <p>PDF (http://go.microsoft.com/fwlink/?LinkID=208108&clcid=0x409)</p> <p>XPS (http://go.microsoft.com/fwlink/?LinkID=208109&clcid=0x409)</p>	

Tips for printing posters

If you have a plotter, you can print these posters in their full size. If you don't have plotter, use the following steps to print on smaller paper.

► Print posters on smaller paper

1. Open the poster in Visio.
2. On the **File** menu, click **Page Setup**.
3. On the **Print Setup** tab, in the **Printer paper** section, select the size of paper you want to print on.
4. On the **Print Setup** tab, in the **Print zoom** section, click **Fit to**, and then enter **1 sheet across by 1 sheet down**.
5. On the **Page Size** tab, click **Size to fit drawing contents**, and then click **OK**.
6. On the **File** menu, click **Print**.

If you want to create posters that use the same symbols as these posters, you can download [Visio stencils for posters](#) (<http://www.microsoft.com/downloads/en/details.aspx?FamilyID=88e03d22-8f42-4c9d-94ef-d8e48322d677>).

Plan for sites and solutions (SharePoint Server 2010)

This section contains articles that will help you plan your Microsoft SharePoint Server 2010 site and solution components.

- [Fundamental site planning \(SharePoint Server 2010\)](#)

The articles in this section will guide you in planning sites that use SharePoint Server 2010 features.
- [Security planning for sites and content \(SharePoint Server 2010\)](#)

The articles in this section will help you plan permissions that control access to your sites and content.
- [Site and solution governance \(SharePoint Server 2010\)](#)

The articles in this section will help you plan how to set up your environment to host IT services and sandboxed solutions, and how to define the most appropriate information architecture for your business needs.

 - [Plan for sandboxed solutions \(SharePoint Server 2010\)](#)

The articles in this section will help you plan sandboxed solutions that run in restricted execution environments within your enterprise.
 - [Governance overview \(SharePoint Server 2010\)](#)

Introduces governance as an essential part of a successful Microsoft SharePoint Server 2010 deployment and explains why both information architecture and IT services are key components of a governance plan.
- [Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

The articles in this section will guide you in planning solutions that implement social computing and collaboration capabilities in your enterprise.
- [Enterprise content management planning \(SharePoint Server 2010\)](#)

The articles in this section cover conceptual information about document management, records management, and managing digital assets.

 - [Document management planning \(SharePoint Server 2010\)](#)

The articles in this section will help you plan document management solutions for your organization.
 - [Records management planning \(SharePoint Server 2010\)](#)

The articles in this section describe records management in SharePoint Server 2010 and provide guidelines for planning your records management solution.
 - [Plan digital asset libraries \(SharePoint Server 2010\)](#)

The articles in this section will guide you in planning solutions for sites that include digital assets such as video, audio, and images.

- [Plan Web content management \(SharePoint Server 2010\)](#)

The articles in this section will guide you in planning Web content management sites by using SharePoint Server 2010 features.

- [Plan managed metadata \(SharePoint Server 2010\)](#)

The articles in this section explain key concepts about managed metadata and provide guidance about how to use managed metadata in your SharePoint solution.

- [Business intelligence planning](#)

The articles in this section will guide you in planning Business Intelligence solutions on your enterprise data.

- [Business intelligence basics](#)

The articles in this section provide basic overview information about business intelligence capabilities in SharePoint Server 2010.

- [Plan for PerformancePoint Services \(SharePoint Server 2010\)](#)

The articles in this section help you plan your implementation of PerformancePoint Services and BI Dashboards.

- [Excel Services overview \(SharePoint Server 2010\)](#)

The articles in this section help you plan your implementation of Excel Services in your enterprise environment.

- [Plan for Visio Services \(SharePoint Server 2010\)](#)

The articles in this section help you plan your implementation of Visio Services.

- [Business data and processes planning \(SharePoint Server 2010\)](#)

The articles in this section will guide you in planning solutions that implement business processes on your enterprise's data.

- [Plan for Business Connectivity Services \(SharePoint Server 2010\)](#)

The articles in this section will help you plan solutions that connect your enterprise's external data to information workers who use SharePoint Web sites and Office 2010 applications.

- [Plan InfoPath Forms Services \(SharePoint Server 2010\)](#)

The articles in this section will help you plan solutions that use InfoPath forms to collect, customize, and validate business data used by workers to improve key business processes.

- [Plan workflows \(SharePoint Server 2010\)](#)

The articles in this section will help you plan and implement business processes in your SharePoint solutions.

- [Access Services planning](#)

The articles in this section help you plan your implementation of Access Services.

- [Plan site creation and maintenance \(SharePoint Server 2010\)](#)

The articles in this section contain guidance about how to create, maintain, and delete sites, as well as how to determine settings for quota templates and recycle bins.

- [Plan e-mail integration \(SharePoint Server 2010\)](#)

The articles in this section explain how to implement incoming e-mail and features that rely on outgoing e-mail.

See Also

[Plan for server farms and environments \(SharePoint Server 2010\)](#)

Fundamental site planning (SharePoint Server 2010)

This section provides information that helps IT pros plan sites that use Microsoft SharePoint Server 2010 features.

The effectiveness of a site or a group of sites depends on many factors, but one of the most important factors is the ability to predictably locate the site and the content that you need within the site. The structure of a site or a group of sites and the navigation inside and among sites are important for helping users find and share information and work together.

In this section:

- [Sites and site collections overview \(SharePoint Server 2010\)](#) describes site collections and sites, and it contains information about the site templates that are used to create sites in SharePoint Server 2010.
- [Plan sites and site collections \(SharePoint Server 2010\)](#) describes the process and important considerations for planning SharePoint Server 2010 sites and site collections.
- [Site navigation overview \(SharePoint Server 2010\)](#) provides an overview of the types of navigation that are available in a site.
- [Plan site navigation \(SharePoint Server 2010\)](#) helps you design the navigation for your site.
- [Themes overview \(SharePoint Server 2010\)](#) provides an overview of themes and how they work.
- [Plan for using themes \(SharePoint Server 2010\)](#) discusses how to plan for using themes across your sites, and it includes important steps to plan how to use themes for your sites.
- [Plan for multilingual sites \(SharePoint Server 2010\)](#) discusses how to plan for multilingual SharePoint Server 2010 sites.
- [Multilingual user interface overview \(SharePoint Server 2010\)](#) describes the multilingual user interface in SharePoint Server 2010.
- [Plan for the multilingual user interface \(SharePoint Server 2010\)](#) describes how to plan for using the multilingual user interface in your SharePoint Server 2010 site solution.

Sites and site collections overview (SharePoint Server 2010)

A Microsoft SharePoint Server 2010 site collection is a hierarchical site structure that is made up of one top-level site and any sites below it. This article describes site collections and sites and contains information about the site templates that are used to create sites in SharePoint Server 2010.

In this article:

- [Site collections overview](#)
- [Sites overview](#)
- [Site templates included in SharePoint Server 2010](#)

Site collections overview

The sites in a site collection have shared administration settings, common navigation, and other common features and elements. Each site collection contains a top-level site and (usually) one or more sites below it in a hierarchical structure.

You must group your site's content and features into a site collection. This provides the following benefits:

- For site designers, a site collection's galleries and libraries (such as the master page gallery or the site collection images library) provide a means for creating a unified, branded user experience across all sites in the site collection.
- For site collection administrators, a site collection provides a unified mechanism and scope for administration. For example, security, policies, and features can be managed for a whole site collection; Site Collection Web Analytics Reports, audit log reports, and other data can help administrators track site collection security and performance.
- For farm administrators, site collections provide scalability for growth based on how much content is stored. Because each site collection can use a unique content database, administrators can easily move them to separate servers.
- For site authors, a site collection's shared site columns, content types, Web Parts, authoring resources, workflows, and other features provide a consistent authoring environment.
- For site users, a site collection's unified navigation, branding, and search tools provide a unified Web site experience.

The following list includes some examples of solutions that benefit from being implemented as site collections:

- **Team site** A site collection to support authoring and collaboration tasks for people in your organization who are working together to produce content useful for your organizational goals.

Often, this kind of site includes collaborative content that is not published but only used internally, and content intended for publication to an outside audience.

- **Publishing site** A site collection configured to let site members view, author, and interact with the site's content. Publishing sites are often implemented as two site collections — a production site collection and an authoring site collection. The production site collection is the published site that the content audience uses. The authoring site collection is a mirror of the production site, and it is used by the authoring team to create and view site content and test site features. SharePoint Server 2010 includes a content deployment feature that copies content from an authoring site collection to a production site collection. For information about content deployment, see [Content deployment overview \(SharePoint Server 2010\)](#).

Sites overview

A site collection consists of a top-level site and one or more sites below it. Each top-level site and any sites below it in the site structure are based on a site template and can have other unique settings and unique content. Partition your site collection content into separate sites to obtain finer control of the appearance, content, and features of the various pages in your site collection. The following list includes site features that you can configure uniquely:

- **Templates** You can make each site have a unique template. For more information, see [Site templates included in SharePoint Server 2010](#).
- **Language** If language packs have been installed on the Web server, you can select a language-specific site template when you create a new site. Text that appears on the site is displayed in the site template's language. For more information, see [Deploy language packs \(SharePoint Server 2010\)](#).
- **Security** You can define unique user groups and permissions for each site.
- **Navigation** You can fine-tune your site's navigation experience by configuring unique navigation links in each part of your site's hierarchy. Site navigation reflects the relationships among the sites in a site collection. Therefore, planning navigation and planning sites structures are closely related activities. For more information, see [Site navigation overview \(SharePoint Server 2010\)](#).
- **Web pages** You can make each site have a unique welcome page and other pages. For more information, see [Plan Web pages](#).
- **Site layouts** You can make unique layouts or master pages available in a site. For more information, see [Plan Web pages](#).
- **Themes** You can change colors and fonts on a site. For more information, see [Plan for using themes \(SharePoint Server 2010\)](#).
- **Regional settings** You can change the regional settings, such as locale, time zone, sort order, time format and calendar type.
- **Search** You can make each site have unique search settings. For example, you can specify that a particular site never appears in search results.

- **Content types** You can make each site have unique content types and site columns. For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).
- **Workflows** You can make each site have unique workflows. For more information, see [Plan workflows \(SharePoint Server 2010\)](#).

Site templates included in SharePoint Server 2010

The following section contains information about the site templates that are included in SharePoint Server 2010. Although you can use a site template with its default configuration, you can also change the site's default settings by using the site administration pages, and then saving the site as a new template. In addition, you can modify a template's design and features by using Microsoft SharePoint Designer 2010 or Microsoft Visual Studio 2010.

The following table lists every site template, describes the purpose of each, and indicates whether the template is available at the site collection level, site level, or both. The category that is used to group the templates might be different, depending on the level at which a site is created.

Template	Purpose	Category in Site Collection	Category in Site
< Select template later >	An empty site for which you can select a template later.	Custom	N/A
Assets Web Database	An assets database to keep track of assets, including asset details and owners.	N/A	Web Databases
Basic Meeting Workspace	A site on which you can plan, organize, and capture the results of a meeting. It provides lists for managing the agenda, meeting attendees, and documents.	Meetings	Meetings
Basic Search Center	A site that provides the search functionality. The site includes pages for search results and advanced searches.	Enterprise	Search
Blank Meeting	A blank meeting site that	Meetings	Meetings

Template	Purpose	Category in Site Collection	Category in Site
Workspace	you can customize based on your requirements.		
Blank Site	A blank site that you can customize based on your requirements.	Collaboration	Blank & Custom
Blog	A site on which a person or team can post ideas, observations, and expertise that site visitors can comment on.	Collaboration	Content
Business Intelligence Center	A site for presenting business intelligence data. It provides document libraries for storing documents, images, data connections, and dashboard Web Parts. It also provides lists for linking content from PerformancePoint Services in Microsoft SharePoint Server 2010.	Enterprise	Data
Charitable Contributions Web Database	A database to track information about fundraising campaigns including donations made by contributors, campaign-related events, and pending tasks.	N/A	Web Databases
Contacts Web Database	A contacts database to manage information about people that your team works with, such as customers and partners.	N/A	Web Databases
Decision Meeting Workspace	A site on which you can track status or make decisions at meetings. It	Meetings	Meetings

Template	Purpose	Category in Site Collection	Category in Site
	provides lists to create tasks, store documents, and record decisions.		
Document Center	A site on which you can centrally manage documents in your enterprise.	Enterprise	Content
Document Workspace	A site on which colleagues can work together on a document. It 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.	Collaboration	Collaboration, Content
Enterprise Search Center	A site that provides the search functionality. The welcome page includes a search box that has two tabs: one for general searches and another for searches for information about people. You can add and customize tabs to focus on other search scopes or result types.	Enterprise	Search
Enterprise Wiki	A site on which you can publish knowledge that you capture and want to share across the enterprise. It provides an easy content editing experience in a single location for co-authoring content, for discussions,	Publishing	Collaboration, Content

Template	Purpose	Category in Site Collection	Category in Site
	and for managing projects.		
FAST Search Center	A site for delivering the FAST search experience. The welcome page includes a search box with two tabs: one for general searches and another for searches for information about people. You can add and customize tabs to focus on other search scopes or result types.		Search
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.	Collaboration	Collaboration
Issues Web Database	An issues database to manage a set of issues or problems. You can assign, prioritize, and follow the progress of issues from start to finish.	N/A	Web Databases
Microsoft Project Site	A site that supports team collaboration on projects. This site includes Project Documents, Project Issues, Project Risks, and Project Deliverables lists that might be linked to tasks in Microsoft Project	Collaboration	Tracking

Template	Purpose	Category in Site Collection	Category in Site
	Server 2010.		
Multipage Meeting Workspace	A site on which you can plan a meeting and capture the meeting's decisions and other results. It provides lists for managing the agenda and meeting attendees. It also provides two blank pages that you can customize based on your requirements.	Meetings	Meetings
My Site Host	A site that hosts personal sites (My Sites) and the public People Profile page. This template has to be provisioned only once per User Profile Service Application. This template is available only at the site collection level.	Enterprise	N/A
Personalization Site	A site for delivering personalized views, data, and navigation from this site collection to My Site. It includes Web Parts that are specific to personalization and navigation that is optimized for My Site sites. This template is available only at the site level.	N/A	Blank & Custom
PowerPoint Broadcast Center	A site for hosting Microsoft PowerPoint 2010 broadcasts.	Enterprise	N/A

Template	Purpose	Category in Site Collection	Category in Site
	<p>Presenters can connect to the site and create a link for remote viewers to watch a slide show in a Web browser.</p>		
Projects Web Database	<p>A project tracking database to track multiple projects, and assign tasks to different people.</p>	N/A	Web Databases
Publishing Portal	<p>A starter site hierarchy that you can use for an Internet site or a large intranet portal. You can use distinctive branding to customize this site. It includes a home page, a sample press releases site, a Search Center, and a logon page. Typically, this site has many more readers than contributors, and it is used to publish the Web pages by using approval workflows.</p> <p>This site enables content approval workflows, by default, for a more formal and controlled publishing process. It also restricts the rights of anonymous users so that they can see only content pages, and they cannot see SharePoint Server 2010 application pages.</p> <p>This template is available only at the site collection level.</p>	Enterprise	N/A

Template	Purpose	Category in Site Collection	Category in Site
Publishing Site	<p>A blank site for expanding your Web site and quickly publishing Web pages. Contributors can work on draft versions of pages and publish them to make them visible to readers. This site includes document and image libraries for storing Web publishing assets.</p>	N/A	Content
Publishing Site with Workflow	<p>A site for publishing Web pages on a schedule by using approval workflows. It includes document and image libraries for storing Web publishing assets. By default, only sites that have this template can be created under this site. This template is available only at the site level when the Publishing Portal template is used to create the top-level site.</p>	N/A	Content
Records Center	<p>A site that is designed for records management. Records managers can configure the routing table to direct incoming files to specific locations. The site also enables you to manage whether records can be deleted or modified after they are added to the repository.</p>	Enterprise	Data
Social Meeting	<p>A site on which you can plan social occasions. It</p>	Meetings	Meetings

Template	Purpose	Category in Site Collection	Category in Site
Workspace	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.	Collaboration	Collaboration
Visio Process Repository	A site on which teams can view, share, and store Visio process diagrams. It provides a versioned document library for storing process diagrams, and lists for managing announcements, tasks, and review discussions.	Collaboration	Content

Some Microsoft Office SharePoint Server 2007 site templates, such as the site directory, news, and collaboration portal templates, are not available as an option in SharePoint Server 2010. These templates can still be accessed and used programmatically by developers. These templates are also still available as options in the UI if the SharePoint Server 2010 farm is upgraded from SharePoint Server 2007. Otherwise use the social tagging features in SharePoint Server 2010 to get much of the functionality provided in these templates.

See Also

[Plan sites and site collections \(SharePoint Server 2010\)](#)

[Site navigation overview \(SharePoint Server 2010\)](#)

[Plan site navigation \(SharePoint Server 2010\)](#)

Plan sites and site collections (SharePoint Server 2010)

Microsoft SharePoint Server 2010 sites are made up of a site collection, which is a hierarchical structure that includes one top-level site and any sites below it. This article describes the process and important considerations for planning SharePoint Server 2010 sites and site collections, and it recommends a method for recording your site structure decisions. For information about sites and site collections, and the site templates that are used to create sites in SharePoint Server 2010, see [Sites and site collections overview \(SharePoint Server 2010\)](#).

In this article:

- [About planning sites and site collections](#)
- [Determine types of sites](#)
 - [Plan sites by organizational hierarchy](#)
 - [Plan application sites](#)
 - [Plan Internet presence sites](#)
 - [Plan publishing sites](#)
 - [Plan other sites](#)
- [Determine site collections](#)
- [Site planning data worksheet](#)

About planning sites and site collections

In general, you plan your sites and site collections in the following order:

- Determine the number and types of top-level sites and any sites below them in the hierarchy that are needed.
- Determine the number and types of site collections into which the sites will be organized.

Determine types of sites

The first step in planning a solution that is based on SharePoint Server 2010 is to determine the types of sites your organization and its customers need. Determining the types of sites affects later planning decisions, such as where the sites will be implemented in your server topology, what features to plan for each site, how processes that span multiple sites are implemented, and how information is made available across one or more sites. This section contains information about how to plan different kinds of sites.

Plan sites by organizational hierarchy

Plan the basic sites that you need based on the scale and structure of your organization. Each of these sites can contain information that is needed for a project or division within your larger organization, and each will link to collaboration sites that are relevant to that project or division. Some sites for larger divisions or projects will also aggregate information that is found on all the smaller sites that are devoted to smaller divisions or projects.

Use the following guidelines when you plan sites that are based on your organizational structure:

Divisional or team sites Plan to create one site for a small organization or one site for every division or project of 50–100 people in a medium to large organization. In large organizations, there might be several levels of sites, with each site focusing on the content that is created and managed at its level of the organization.

You can design a site for members of your organization to collaborate on content related to your business or organizational goals. These can be self-contained or they can work with other sites as part of a publishing process. Often, these sites will have a mixture of collaborative content that is used internally and content that is intended for publication to an audience.

Rollup sites A rollup site contains general cross-organization content. It makes it possible for users across divisions to find information, experts, and access to organization-wide processes. It often contains sites that are related to the overall organizational information architecture and that are usually mapped to the structure of the divisional or project sites. For each organization, plan to create a centralized rollup site that uses an aggregated view of all related sites.

Plan application sites

An application site organizes team processes and provides mechanisms for running them. Application sites often include digital dashboards and other features to view and manipulate data that is related to the site's purpose. The information that is presented in an application site usually comes from diverse sources, such as databases or other SharePoint sites.

For example, the human resources organization in an organization could design an application site to provide employees with:

- Access to general information, such as employee handbooks and career opportunities.
- Ways to do common tasks, such as submitting timecards and expense reports.
- Dashboards to view personalized information, such as an employee's salary and benefits history.

As another example, the internal technical support group in an organization could design a Help Desk application site to provide technical support to members of the organization. Features of the application site could include the following:

- Access to a knowledge base of past support incidents and best-practices documentation.
- Ways to do common tasks, such as starting a support incident or reviewing the status of an ongoing incident.
- Integration with communications features that support online meetings and discussions.

- Personalized views of data. For example, support managers could view dashboards that provide views of their team members' productivity and customer satisfaction ratings. Support engineers could view their current unresolved incidents.

Plan Internet presence sites

Internet presence sites are customer-facing sites. They are usually branded and are characterized by consistent stylistic elements, such as colors, fonts, and logos in addition to structural elements such as navigation features and the structure of site pages. Although the appearance of an Internet presence site is tightly controlled, the content of the site can be dynamic and can frequently change.

For example, a corporate Internet presence site communicates important company information to customers, partners, investors, and potential employees. This includes descriptions of products and services, company news, annual reports, public filings, and job openings. As another example, an online news Internet site provides frequently updated information, together with interactive features such as stock tickers and blogs.

Because an Internet presence site represents your organization to an external audience, you might stage and test the site and then publish it — either based on a schedule or as needed — to its public "production" location. A staging site is a mirror of the authoring site that you use to test content before it is published to the production site. By using a staging site, you help ensure that published content meets strict standards. Staging sites also make it possible for content authors to work on servers that are located on your company's intranet while Internet users are using production servers in your perimeter network. A built-in content deployment feature makes it easy to move content from the authoring server to the staging server and then to the production server. For more information about content deployment, see [Content deployment overview \(SharePoint Server 2010\)](#).

Plan publishing sites

By using a publishing site, authors can create and modify content in the form of Web pages and documents, and they can use an approval process to make the content available to users who have the appropriate levels of viewing permissions. The publishing process involves creating content and then submitting it for approval. After content is approved, it is made available, or published, to the Web site for readers. This publishing occurs according to either a default schedule or a customized schedule, based on the needs of the project. Publishing sites can be used as intranet, extranet, or Internet sites, depending on the audience.

For example, you might use a publishing site for an Internet-facing site that publishes press releases. The public relations team creates press releases, uses the publishing workflow to approve new content, and specifies when it should be made available to consumers. As another example, you might use a publishing site for a corporate intranet site, where company news is made available to employees. Page authors can specify the target audience for their content, which makes the content viewable by only the members of the designated groups.

Like Internet presence sites, you can also use the built-in content deployment feature to move content from a staging site to a production site. The production site might be an Internet-facing site, or it might

be another intranet site within your organization, depending on the size of your organization and the complexity of your publishing needs.

Plan other sites

You can plan to make it possible for site users to create additional sites. For example, you can plan to give a My Site to each team member who uses a site. A My Site is a team site that is based on Microsoft SharePoint Foundation 2010 and has public and private views. You can also make it possible for team members to create other sites, such as Document Workspace sites, when they collaborate on documents and other projects. Similarly, you can give users of an Internet site access to collaboration sites as part of a Web-based service. For example, you can give them permissions to create Meeting Workspace sites and participate in online meetings as part of their experience of using your site.

For information about the kinds of sites you can create, see [Sites and site collections overview \(SharePoint Server 2010\)](#).

Determine site collections

After you determine what types of sites your solution requires, the next step is to plan how these sites are implemented across site collections. A site collection is a hierarchical set of sites that can be managed together. Sites in a site collection have common features, such as shared permissions, galleries for templates, content types, and Web Parts, and they often share a common navigation. A site is often implemented as a site collection with the top-level site as the home page of the site collection.

In general, when you plan a solution that is based on SharePoint Server 2010, put the following kinds of sites in separate site collections:

- Internet sites (staging)
- Internet sites (production)
- All team sites related to a divisional site or Internet site
- Document Center sites
- Records Center sites

All sites in a site collection are stored together in the same SQL database. This can potentially affect site and server performance, depending on how your site collections and sites are structured, and depending on the purpose of the sites. Be aware of the following limits when you plan how to allocate your content across one or more site collections:

- Keep extremely active sites in separate site collections. For example, a knowledge base site on the Internet that allows anonymous browsing could generate lots of database activity. If other sites use the same database, their performance could be affected. By putting the knowledge base site in a separate site collection with its own database, you can make resources available for other sites that no longer have to compete with it for database resources.

- Because all content in a site collection is stored in the same content database, the performance of database operations — such as backing up and restoring content — will depend on the amount of content across the site collection; the size of the database; the speed of the servers hosting the database; and other factors. Depending on the amount of content and the configuration of the database, you might have to divide a site collection into multiple site collections to meet service-level agreements for backing up and restoring, throughput, or other requirements. It is beyond the scope of this article to provide prescriptive guidance about how to manage the size and performance of databases.
- Creating too many sites below a top-level site in a site collection might affect performance and usability. Limit the number of sites of any top-level site to a maximum of 2,000.
- If you plan to use content deployment to move content between an authoring site collection and a production site collection, the site collections must be either in separate Web applications, or they must use separate content databases within the same Web application. For information about content deployment, see [Content deployment overview \(SharePoint Server 2010\)](#).

Site planning data worksheet

Download an Excel version of the [Site planning data worksheet](#)(<http://go.microsoft.com/fwlink/?LinkID=167837&clid=0x409>). Use this worksheet to record your site structure.

See Also

[Sites and site collections overview \(SharePoint Server 2010\)](#)

[Site navigation overview \(SharePoint Server 2010\)](#)

[Plan site navigation \(SharePoint Server 2010\)](#)

Site navigation overview (SharePoint Server 2010)

Site navigation provides the primary interface for site users to move around on the sites and pages on your site. Microsoft SharePoint Server 2010 includes a set of customizable and extensible navigation features that help orient users of your site so they can move around on its sites and pages. This article describes the navigation controls that are available in SharePoint Server 2010. It does not explain how to add navigation controls to Web pages, how to configure navigation controls, or how to create custom navigation controls.

In this article:

- [Navigation controls overview](#)
- [Navigation controls on master pages](#)
 - [Top link bar navigation](#)
 - [Quick Launch navigation](#)
 - [Breadcrumb navigation](#)
 - [Tree view navigation](#)
 - [Metadata navigation](#)
- [Navigation controls on page layouts](#)
 - [Summary Links](#)
 - [Table of Contents](#)
 - [Content Query](#)
- [Navigation Web Parts](#)

Navigation controls overview

Navigation controls can be displayed on master pages, page layouts, and—by using Web Part zones—directly in a page's content.

SharePoint Server 2010 bases its navigation model on the hierarchical structure of the site collection. By using the navigation features, you can link to the following:

- Sites below the current site
- A site's peer sites
- Sites higher in the site structure
- Web pages in a site

Additionally, you can create links to arbitrary locations, such as to an external Web site.

Navigation links in SharePoint Server 2010 are security-sensitive. If a site user does not have permissions to a SharePoint Server 2010 site or page that is linked from the site navigation, the user cannot see the link. Other content which has had links manually added to the navigation are still visible to users. Also, pages, sites, and links that are manually added to navigation can be configured to be available only to members of a particular audience. Users who are not members of that audience cannot see links to sites and pages that are targeted to that audience.

SharePoint Server 2010 navigation is based on the ASP.NET features in the .NET Framework version 3.5, which you can use to customize the following:

- The site map provider.
- The data source, which anchors and filters the structure that is provided by the site map provider.
- The menus, which control the visual appearance of the navigation elements and how deep a hierarchy to display.

Navigation controls on master pages

A master page defines the outer frame of the Web pages in a site. Master pages contain the elements that you want all pages in your site to share, such as branding information; common commands, such as Search; and navigation elements that you want to be available throughout the site. This includes top link bar navigation, and Quick Launch navigation.

Master pages also provide the menu style of the navigation controls. You can configure master-page menu style by using Microsoft SharePoint Designer 2010 or Microsoft Visual Studio 2010.

Top link bar navigation

The top link bar is a navigation menu which typically links to the sites that are one level below the current site in a site hierarchy. It is common for the top link bar to appear at the top of each page in a site. By default, all sites that are one level below the current site are added to the top link bar, and each site has its own unique top link bar for navigation. Site administrators can customize the navigation for a specific site by removing a site from the top link bar. They can also configure the top link bar so that only the home page link is shown and no other sites in the site hierarchy are displayed.

Site administrators can choose to inherit the top link bar from the parent site. This approach allows users to switch from one site to another from anywhere within the site collection, by allowing the top link bar to stay the same in all the sites in the site collection. For example, an Internet site that is used to market an organization's products could have a site for each line of its products. By displaying each product's site in the top link bar of each site, site designers can make it possible for users to easily switch from one site to another without having to return to the site home page.

Other top link bar configuration features include the following:

- Linking to the Web pages of all the top-level sites.
- Linking to specified external sites.
- Linking to specified sites or pages that are anywhere in the site.

- Organizing links under headings.
- Manually sorting the items on the top link bar.
- Restricting the maximum number of items to show at the global navigation level.

All top link bar features, such as linking to external, can be defined uniquely for each site.

By using SharePoint Designer 2010 or Visual Studio 2010, you can additionally customize the appearance and functionality of the top link bar. For example, you can do the following:

- Customize the cascading style sheets to change the appearance of the top link bar.
- Modify the data source, for example to decrease the number of sites that are displayed in the top link bar.
- Modify the menu style of the navigation. For example, you can select submenus or specify how many levels of the site hierarchy to display in the navigation.

Quick Launch navigation

The Quick Launch navigation typically highlights the important content in the current site, such as lists and libraries. It is common for Quick Launch navigation to appear on the left of each page in a site.

Quick Launch navigation configuration features include the following:

- Linking to sites that are on the same level of the site hierarchy as the current site.
- Linking to specific external sites or to pages in the current site.
- Organizing links under headings.
- Manually sorting the items in the Quick Launch navigation.
- Restricting the maximum number of items to show at the Quick Launch navigation level.

Just as you customize the top link bar, you can also customize the appearance and functionality of Quick Launch navigation by using SharePoint Designer 2010 or Visual Studio 2010.

Breadcrumb navigation

Breadcrumb navigation displays a dynamically generated set of links at the top of Web pages, to show users their current position in the site hierarchy. By using SharePoint Designer 2010 or Visual Studio 2010, you can configure the breadcrumb navigation control. For example, you can specify a custom navigation provider, and you can remove breadcrumb navigation from a page layout.

Tree view navigation

Tree view navigation displays site content, such as lists, libraries, and sites that are below the current site, in a hierarchical structure. It is common for tree view navigation to appear on the left of each page in a site.

By default, tree view navigation is turned off. Site administrators can add tree view navigation to a site by using the Tree View page.

Metadata navigation

Metadata navigation displays metadata about library and list content in tree view navigation, and makes it possible for users to filter library or list content based on specified fields. Site administrators can configure metadata navigation by using the Metadata Navigation Settings page for a list or library to configure the navigation hierarchies and key filters that are available to users. Metadata navigation is displayed only when a user views the list or library for which metadata navigation has been configured.

Navigation controls on page layouts

A page layout defines a layout for a Web page by providing Microsoft ASP.NET controls in which the contents of pages are displayed. You can add navigation controls to a page layout to support navigation links in Web pages by using SharePoint Designer 2010 or Visual Studio 2010.

When a navigation control is inserted on a page layout, Web pages that use that page layout display the control together with the content of the page. For example, you can define a page layout that includes a Summary Links navigation control so that a set of links to relevant pages and sites always appears when a page is displayed. For more information, see [Summary Links](#).

SharePoint Server 2010 includes the following navigation controls that can be added to page layouts:

- Summary Links
- Table of Contents
- Content Query

Summary Links

You can use the Summary Links control to add a set of links to a page. You can control the appearance, organization, and presentation of the links that you add to a Summary Link control.

You can add a Summary Link control to a page layout in three ways:

- You can add the control directly to the page layout and configure the links. When you do this, any page that uses the page layout displays the links.
- You can add the control as a field control on the page layout. When you do this, you can choose to configure the links, and you can also choose to allow authors to modify the links and add new ones.
- You can add the control as a Web Part to a Web Part zone. When you do this, authors can modify the links, add new ones, and delete the Summary Link control.

For example, in a site in which you publish topics from a technical support knowledge base, you can add a Summary Link control to the page layouts that are used for articles, to provide links to related sites that contain relevant information, and you can give authors the ability to add links to content that is related to a particular page's content.

Table of Contents

You can use the Table of Contents control to add a table of contents of all or part of your site to a page layout so that top link bar and Quick Launch navigation is included in the master pages of the site.

When you add a Table of Contents control to a page layout, you specify which part of your site collection the control should display, how the links are presented, and how they are organized.

You can add a Table of Contents control to a page layout in two ways:

- You can add the control directly to the page layout and configure it. When you do this, any page that uses the page layout displays the table of contents.
- You can add the control as a Web Part to a Web Part zone. When you do this, authors can modify the scope of the Table of Contents control.

For example, if you are presenting a set of articles in an online news site, you can add a Table of Contents control directly to the layout of the article pages so that users can switch from one article to another from any article page.

Content Query

You can use a Content Query control to link to pages or other items that are displayed based on a query that you design. For example, if you are presenting articles in an online news site, you could add a Content Query control to the Welcome Page layout of your site so that new articles are highlighted on that page. You can build complex queries by using the Content Query control. For example, you can specify which sites in your site collection to query, which lists to use, and what audience to target. You can also filter queries that are based on items in a library or list.

You can add a Content Query control to a page layout in two ways:

- You can add the control directly to the page layout and configure it. When you do this, any page that uses the page layout displays the results of the query.
- You can add the control as a Web Part to a Web Part zone. When you do this, authors can modify the query or delete the Content Query control.

Navigation Web Parts

A Web Part is a control that authors can insert into a Web Part zone on a page and configure. The Summary Links, Table of Contents, and Content Query controls each have Web Part counterparts that page authors can insert into Web Part zones on pages. The Web Parts have the same configuration features and the same functionality as their related controls, but they can be configured when the writer inserts them on the page instead of when the site designer inserts them on the layout of the page. To make navigation Web Parts available for page authors to insert on a page, you can include one or more Web Part zones on a page layout, or you can include a Rich Text Editor control on a page, which will allow users to add Web Parts directly to the Rich Text Editor Web part.

The following navigation Web parts are available only for non-Publishing sites:

- **Categories** Displays categories from the Site Directory.

- **Site Aggregator** Displays sites of your choice.
- **Site in Category** Displays sites from the Site Directory within a specific category.
- **Tag Cloud** Displays the most popular subjects being tagged inside your organization.

The following navigation Web parts are available only on Publishing sites:

- **Summary Links** Allows authors to create links that can be grouped and styled.
- **Table of Contents** Displays the navigation hierarchy of your site.

If you make it possible for authors to insert navigation Web Parts on pages, you reduce the control that you have over your site's navigation because authors can then control part of the navigation experience of site users. This might be appropriate in a loosely controlled environment, such as a collaboration site in an organization, where individual authors have to be able to point users to content that is related to the author's work. It is less appropriate in a more tightly controlled environment, such as an Internet presence site, in which the navigation experience is planned and implemented in a consistent, controlled way by the designers and planners of the site.



Note:

If you want to include Web Part zones on page layouts but prevent authors from inserting navigation Web Parts into these zones, you can change the permissions that are required to use navigation Web Parts in the Web Parts gallery of your site to make those Web Parts unavailable to authors based on their permission level.

See Also

[Plan site navigation \(SharePoint Server 2010\)](#)

[Sites and site collections overview \(SharePoint Server 2010\)](#)

[Plan sites and site collections \(SharePoint Server 2010\)](#)

Plan site navigation (SharePoint Server 2010)

Site navigation provides the primary interface for site users to move around the sites and pages in your site. Microsoft SharePoint Server 2010 includes a set of navigation features that can be customized and extended to help orient the users of your site so they can move around its sites and pages. This article contains general guidance about how to plan site navigation for your SharePoint Server 2010 sites. This article does not describe the types of navigation controls that are available in SharePoint Server 2010, nor does it explain how to add navigation controls to Web pages, how to configure navigation controls, or how to create custom navigation controls. For information about site navigation controls, see [Site navigation overview \(SharePoint Server 2010\)](#).

In this article:

- [About planning navigation](#)
- [Plan the user experience](#)
- [Plan navigation on pages](#)
- [Site planning data worksheet](#)

About planning navigation

Navigation planning includes planning the user experience that you want to create in your site and deciding whether authors will be able to insert navigation elements directly onto their pages.

Pages in sites that are based on SharePoint Server 2010 are composed of three elements: master pages, page layouts, and page content. When you plan your site's navigation, you can make decisions about all these elements:

- You configure global (top link bar) navigation elements and site-level (Quick Launch) navigation elements on master pages.
- You can add navigation elements that provide tables of contents, dynamic access to content based on a query, or authored links to page layouts.
- You can allow page content to contain tables of contents, dynamic access to content based on a query, or authored links. Be aware that if you allow authors to add navigation elements to page content, site designers will have less control of a site's navigation experience.
- You can use breadcrumbs to display a set of links that show the site hierarchy, starting from the current page up to the top-level site.

Plan the user experience

Your navigation decisions are closely related to your decisions about the structure of sites in your site hierarchy. For each site in your site hierarchy, you can choose to have it inherit the top link bar or the Quick Launch navigation from its parent site, or you can plan unique settings.

The decisions that you make about your site's navigation reflect its unique purpose and structure. When you plan navigation, consider the tradeoff between having too many navigation links, which could make your site confusing, and having too few, which could make it difficult for site users to locate important information. Also remember the following:

- Inheriting the parent site's navigation can place the current site in a larger context. In an intranet site, this inheritance can help information workers use the other sites in the site collection to complete their tasks. If site users do not have to use other sites to complete their tasks, consider defining a unique top link bar at the site so that site users are not distracted by irrelevant navigation links. For example, records managers who are using a Records Center site might not have to go outside the Records Center to accomplish their tasks and so would not benefit from a set of inherited top link bar navigation links.
- Displaying peer sites on the Quick Launch navigation can imply that the peer sites have a purpose that is similar to that of the current site. For example, in an Internet site that markets a set of products, peer sites on the Quick Launch navigation can help site users find descriptions of related products and services. However, if site users are unlikely to want to visit peer sites, consider not displaying them in the current navigation. For example, a university's Internet site that has sites for each graduate school could omit peer links from the current navigation of each parent site because students who are interested in a particular graduate school, such as Business Administration, are unlikely to want to visit sites related to other graduate schools, such as Nursing.

Plan navigation on pages

If you are using the publishing feature, you can add navigation controls to page layouts. You can also add Web Part zones to page layouts and give authors the ability to add navigation Web Parts to these zones. As with other page element planning decisions, you should plan navigation on pages based on how much control you want to have over the page-viewing experience:

- To tightly control site navigation, you can put navigation controls directly on page layouts and eliminate Web Part zones from page layouts, or restrict the use of navigation Web Parts in those zones. For example, in a corporate Internet presence site that has millions of site users, you might decide to restrict authors from inserting navigation controls.
- You can provide a more varied site navigation by putting Web Part zones on page layouts, and by giving authors the ability to insert navigation Web Parts onto their pages. For example, in an intranet site in which authors and site users are part of the same workgroup, you might decide to give authors the ability to control the navigation experience of their content by adding navigation Web Parts to their pages. For more information, see [Plan Web pages](#).

Site planning data worksheet

Download an Excel version of the [Site planning data worksheet](#) (<http://go.microsoft.com/fwlink/?LinkID=167837&clcid=0x409>). Use this worksheet to help record your decisions about site navigation.

See Also

[Site navigation overview \(SharePoint Server 2010\)](#)

[Sites and site collections overview \(SharePoint Server 2010\)](#)

[Plan sites and site collections \(SharePoint Server 2010\)](#)

Themes overview (SharePoint Server 2010)

Themes provide a quick and easy way to apply colors and fonts to sites in Microsoft SharePoint Server 2010. When a theme is applied to a site, the color of most page elements — such as background images, text, and hyperlinks — changes. The fonts used for some page elements, such as titles, also change. Themes can be used with the standard SharePoint Server 2010 site templates, or with custom master pages, and then themes can be created that site owners can apply to their sites. This article includes an overview of themes and how they work. This article does not describe how to create custom themes by using Microsoft Office 2010 applications, or how to upload and manage themes in a theme library. It also does not discuss how to plan for the overall branding of sites by using master pages or cascading style sheets. For more information, see [Web Content Management and Branding](#).

In this article:

- [About using themes](#)
- [Ways to use themes](#)

About using themes

Themes enable lightweight branding of a SharePoint Server 2010 site by allowing a site owner or a user with designer rights to make changes to the colors and fonts of user interface elements of a site. Themes are applied and customized directly in the user interface, and do not require knowledge of cascading style sheets or master pages.

An advantage of using themes is that developer resources are not needed for site owners and users with designer rights to make basic changes to a site. Themes are a simple method of branding a site; they do not affect the layout of a site.

By default, a theme is only applied to the site for which a specific theme is selected. If the site is a publishing site — or if the publishing feature was enabled for a site — when configuring the theme for a site, you can choose to either inherit the theme from the parent site, or specify a theme that will be used by the site and all sites that inherit from it. When an alternate theme is selected and applied to a site, you can choose to apply the theme only to that site, or to that site and all sites below it in the site hierarchy. This will override any unique themes that those sites may have applied.



Note:

Themes in SharePoint Server 2010 have been redesigned to simplify the process of generating themes. Themes created in Microsoft Office SharePoint Server 2007 are not compatible with SharePoint Server 2010. If you are upgrading from SharePoint Server 2007 to SharePoint Server 2010, you can use Visual Upgrade to continue to use sites in the old user interface. However, we recommend that you use the new user interface in SharePoint Server 2010 to create themes and apply them to your sites.

Ways to use themes

There are three ways to use themes on a site:

- Use a preinstalled theme.
- Modify a preinstalled theme.
- Upload a custom theme to the theme library.

Using a preinstalled theme

SharePoint Server 2010 comes with preinstalled themes, including the default SharePoint theme. When a new site is created, it will use the default SharePoint theme. If you want the site to use the theme of the parent site, configure the theme to inherit from the parent site.

Modifying a preinstalled theme

When a preinstalled theme is modified, a new theme called Custom is created automatically after the theme changes have been applied. There can only be one Custom theme for a site. SharePoint Server 2010 does not provide a way to save themes within the user interface. If you modify a preinstalled theme, apply the changes (thereby creating a new theme called Custom), and then modify a second preinstalled theme, the second preinstalled theme becomes the Custom theme when the settings are applied. To have multiple custom themes, you must create and upload your own custom themes to the theme gallery for the site collection.

Uploading your own custom themes to the theme gallery

You can create custom themes by modifying styles in an Office 2010 application, such as Microsoft PowerPoint 2010, and saving the theme. This creates a .thmx file that you can upload to the theme gallery for a site collection. Customized themes in the theme gallery are available to all sites in that site collection.

See Also

[Plan for using themes \(SharePoint Server 2010\)](#)

Plan for using themes (SharePoint Server 2010)

Themes provide a quick and easy way to apply colors and fonts to sites in Microsoft SharePoint Server 2010. When a theme is applied to a site, the color of most page elements — such as background images, text, and hyperlinks — changes. The fonts used for some page elements, such as titles, also change. Themes can be used with the standard SharePoint Server 2010 site templates, or with custom master pages, and then themes can be created that site owners can apply to their sites. For more information, see [Themes overview \(SharePoint Server 2010\)](#).

This article discusses how to plan for using themes across your SharePoint Server 2010 sites, and includes key steps in planning to use themes for your sites. This article does not describe how to create custom themes by using Microsoft Office 2010 applications, or how to upload and manage themes in a theme library. It also does not discuss how to plan for the overall branding of sites by using master pages or cascading style sheets. For more information, see [Web Content Management and Branding](#).

Before reading this article, be sure to read the article [Plan sites and site collections \(SharePoint Server 2010\)](#).

In this article:

- [About planning for using themes](#)
- [Decide whether to use themes](#)
- [Determine how many themes are needed](#)
- [Decide who makes the themes](#)
- [Site planning data worksheet](#)

About planning for using themes

There are three primary decisions to make as you plan to use themes:

- Decide whether or not to use themes.
- If you are going to use themes, determine how many themes are needed.
- Decide who will make the custom themes.

The remainder of this article will explain these decisions and describe additional planning considerations.

Decide whether to use themes

The first step to planning for using themes is to decide whether or not themes are the appropriate option for your scenario. Other options for customizing a site include using an alternate CSS file and creating custom master pages. These options require the skills of either a designer or a developer to implement, and so they may not be appropriate for your scenario.

To decide whether or not to use themes, determine how much change to the existing look and feel is needed for your sites, and then choose the option that most closely fits what you want to do. You can use a combination of one or more of these options, depending on the customization that you want to do for your sites. The following table describes different levels of customization and recommends the option best suited for each level.

If you want to	Then use
Allow site owners to change colors and fonts	Themes
Make changes to other design elements such as font size and spacing	Cascading style sheets
Completely change the page structure and design	Master Pages

If you decide to use themes, continue reading the rest of this article.

Determine how many themes are needed

After deciding to use themes, you must determine how many themes are needed for your sites. Consider whether the themes that are installed with SharePoint Server 2010 are sufficient for your purposes, or if you will need to create custom themes to be used across sites. If you will be creating custom themes, you must also determine how many themes will be needed and decide which sites will use which themes.

Use the site planning data worksheet to record which sites should use a theme, and to determine how many unique themes are needed.

Decide who makes the themes

If you will be using custom themes, you must determine who will be responsible for creating the *.thmx files. Because custom themes are created in an Office 2010 application such as PowerPoint, you do not need a graphic designer to make a theme; however, you may want to include a graphic designer during the planning phase to provide guidance on color values and font styles that will be used in the themes.

You must also decide who will be responsible for uploading the themes to the theme gallery. Will the person who creates the themes also be responsible for uploading the *.thmx files to the theme gallery, or will they save the theme files to a directory for a site collection administrator to upload? A user must have either administrator or designer privileges for the site collection that contains the theme gallery in order to upload *.thmx files to the gallery.

Site planning data worksheet

Download an Excel version of the [Site planning data worksheet](http://go.microsoft.com/fwlink/?LinkID=167837&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkID=167837&clcid=0x409). Use this worksheet to help record your decisions about themes.

See Also

[Themes overview \(SharePoint Server 2010\)](#)

[Sites and site collections overview \(SharePoint Server 2010\)](#)

[Plan sites and site collections \(SharePoint Server 2010\)](#)

Plan for multilingual sites (SharePoint Server 2010)

Microsoft SharePoint Server 2010 has several features that enable you to support users in different regions or users who speak different languages. You can use these features to create Web sites in different languages and configure site variation settings that make it easy to track site updates and changes across several duplicate sites.

This article discusses how to plan for multilingual SharePoint Server 2010 sites. This article does not describe how to create multilingual sites or how to install language packs. For information about creating multilingual sites, see [Create sites in different languages from the default language](#). For information about language packs, see [Deploy language packs \(SharePoint Server 2010\)](#).

In this article:

- [About planning multilingual sites](#)
- [Determine language and locale requirements](#)
- [Determine whether to use site variations](#)
- [Determine language pack requirements](#)
- [Determine requirements for word breakers and stemmers](#)

About planning multilingual sites

If your organization has to support users in different regions or users who speak different languages, you must determine what your multilingual requirements are and plan for multilingual site deployment when you plan your overall site structure and navigation.

To determine your multilingual requirements, you must:

- Determine the languages and locales that you have to support.
- Determine whether you want to use the site variations feature.

To plan for multilingual site deployment, you must determine which language features and components to install or configure on your servers. These can include:

- Language packs.
- Word breaker support.



Note:

Although Microsoft Office SharePoint Server 2007 supported internationalized domain names (IDNs), SharePoint Server 2010 does not. If you currently use IDNs with SharePoint Server 2007 and you plan to upgrade or migrate to SharePoint Server 2010, you must stop using IDNs, delete any IDN settings, and set up a non-IDN environment before you upgrade or migrate to SharePoint Server 2010.

Determine language and locale requirements

You might have to create sites in multiple languages for any of the following reasons:

- You want to provide Web site content to users in different regions.
- You are required by government regulation or organizational policy to provide Web site content in more than one language.

Be sure to consult all potential site owners when you determine your language requirements, and be sure to list all languages that you might have to support in the future. It is easier to install language support during initial deployment instead of waiting to install language support when your servers are running in a full production environment. After a site has been created for a specific language, the default language of the site cannot be changed. However, a user who is logged on to the site can use the multilingual user interface to select an alternative language in which to display the site. This changes the way the site user interface is displayed to the user, but it does not change the site content. For example, if the site was provisioned in French, and the Spanish language pack has also been installed on the server, a site user can change the language to Spanish so that when they view the site, the user interface will be in Spanish. This changes the user interface for that user only and does not affect how the site is displayed to other users. Also, any content that was created in French will still be displayed in French. For more information about the multilingual user interface, see [Multilingual user interface overview \(SharePoint Server 2010\)](#).



Note:

If a user changes their personal site settings to display the site in an alternative language, some site elements, such as column names, might still be displayed in the default site language.

Do not assume that you have to create a Web site or a site collection in multiple languages only because a document library contains documents in multiple languages. A document library can contain documents in multiple languages without requiring you to create Web sites or site collections in multiple languages. For example, the document library for an English site collection can contain documents that are written in French and documents that are written in Japanese. For publishing sites, content can be created in any language. You do not have to create a Web site in specific language in order to display pages that contain content in other languages.

When you are planning multilingual sites, you should also consider what locales are necessary to support your sites. Locale is a regional setting that specifies the way numbers, dates and times are displayed on a site. However, locale does not change the language in which the site is displayed. For example, selecting the **Thai** locale changes the default sort order of list items and uses the Buddhist calendar instead of the default calendar. The locale is a setting that is configured independently of the language specified when a site is created, but unlike the language, the locale can be changed at any time. For more information about translation of the user interface, see [Determine language pack requirements](#).

Determine whether to use site variations

The SharePoint Server 2010 variations feature enables site administrators to make the same information available to specific audiences across different sites by maintaining customizable copies of the content from the source variation in each target variation. A variation consists of a set of labels that is used to create a set of sites in a site collection. For example, if you want four language variations of your site, you must create four labels, one for each language. The variations feature will create four sites, one for each label. The site administrator selects one label to be the source label. The corresponding source site is where most of the new content enters the system. The remaining labels are the target labels, which the variations feature creates as target sites. For a multilingual site, you might want to use the primary language of your organization as the source label. There can be only one source label, and after the source label has been specified, it cannot be changed. For more information about variations, see [Variations overview](#).

To ensure seamless synchronization, when a change is made to a page within the source site, you can configure the variations feature so that the updated page is copied either manually or automatically to the target sites. The change can be as minor as correcting a spelling error or as major as a complete rewrite of the content. The copy appears as a new draft item on the target site; it does not replace the existing content. The content owner on the target site makes the decision to accept the change as is, translate the change, or ignore the change. The same applies if a user on the source site creates a new site below the source site or publishes a new page. Site administrators can decide to create a variation's corresponding site and pages either automatically or manually.

When you plan for multilingual sites, consider whether you have to create content that will be shared across sites, but must be modified to meet regional requirements or translated to meet language requirements. For more information, see [Plan variations](#).

Determine language pack requirements

Based on the language requirements of your Web site, determine the language packs that have to be installed on your front-end Web servers. Language packs enable you to create sites and site collections in multiple languages without requiring separate installations of SharePoint Server 2010. Language packs are installed on the front-end Web servers in your server farm and contain language-specific site templates. When you create a site or a site collection that is based on a language-specific site template, the user interface text that appears on the site or the site collection is displayed in the language of the specified site template. For example, when you decide to create a site in French, the toolbars, navigation bars, lists, and column headings for that site will appear in French. Likewise, if you decide to create a site in Arabic, the toolbars, navigation bars, lists, and column headings for that site will appear in Arabic, and the default left-to-right orientation of the site changes to a right-to-left orientation to properly display Arabic text.

If your site will have users who cannot work in the default language that you plan to use for the site, you should also install language packs that will enable users to work in their chosen language by using the multilingual user interface. If you do not provide support for additional languages, users might find it

difficult to use site features in their non-native language. Language packs provide language-specific translation of user interface elements such as the following:

- Ribbon elements
- List and site column headers
- Site settings interface
- Templates for new lists, document libraries, and sites
- Managed metadata tagging.
- Relevant search indexing of content that is not in the default language of the site.



Note:

Language packs provide translation only of the user interface. They do not translate content that is created and displayed in content pages or Web Parts.

The list of available languages that you can use to create a site or site collection, and which users can select in the multilingual user interface, is generated by the language packs that are installed on the front-end Web servers of your server farm. By default, sites and site collections are created in the language in which SharePoint Server 2010 was installed. For example, if you install the Spanish version of SharePoint Server 2010, the default language for sites, site collections, and Web pages is Spanish. If you have to create sites, site collections, or Web pages in a language other than the default SharePoint Server 2010 language, you must first install the language pack for that other language on the front-end Web servers before you can select another language in which to create a site. For example, if you are running the French version of SharePoint Server 2010 and you want to create sites in French, English, and Spanish, then you must install the English and Spanish language packs on the front-end Web servers before you can create the English and Spanish sites.

Language packs for SharePoint Server 2010 are not bundled or grouped into multilingual installation packages: you must install a specific language pack for each language that you want to support. Also, language packs must be installed on every front-end Web server in the server farm to ensure that each Web server can render content in the specified language. For information about what language packs are available, see [Language packs \(SharePoint Server 2010\)](#). For information about how to deploy language packs, see [Deploy language packs \(SharePoint Server 2010\)](#).

Even though you specify a language for a site, some user interface elements such as error messages, notifications, or dialog boxes might not appear in the language that you choose. This is because SharePoint Server 2010 relies on several supporting technologies — such as the .NET Framework, Microsoft Windows Workflow Foundation, ASP.NET, and Microsoft SQL Server — and some of these supporting technologies are localized into only a limited number of languages. If a user interface element is generated by one of the supporting technologies, and if the supporting technology is not localized into the language that the site administrator specified for the site, the user interface element appears in English.

In addition, some text might originate from the original installation language, which can create a mixed-language experience. This type of mixed-language experience is typically seen only by content creators or site administrators and is not seen by site users.

**Note:**

Error logs that SharePoint Server 2010 stores on the server are always in English.

For more information about installing language packs, see [Deploy language packs \(SharePoint Server 2010\)](#).

Determine requirements for word breakers and stemmers

Word breakers and stemmers are components that are part of the indexing and querying processes. A word breaker is a component that is used to break strings of text into individual words during the indexing and querying processes. A stemmer is a component that finds the root word of a term and can also generate variations of that term. The rules for word breaking and stemming differ for different languages, and you can specify different rules for different languages. Word breakers for each language enable the resulting terms to be more accurate for that language. Where there is a word breaker for a language family, but not for a specific sub-language, the major language is used. For example, the French word breaker is used to handle text that is French Canadian. If no word breaker is available for a particular language, the neutral word breaker is used. With the neutral word breaker, words are broken at neutral characters such as spaces and punctuation marks.

If you install any language packs or supplemental language support, we recommend that you install the appropriate word breaker and stemmer for each of the languages that you have to support. Word breakers and stemmers must be installed on all servers that are running the Search service. For a list of the languages for which SharePoint Server 2010 provides word breakers and stemmers, see [Languages for word breakers and stemmers \(SharePoint Server 2010\)](#).

See Also

[Multilingual term sets \(SharePoint Server 2010\)](#)

[Multilingual user interface overview \(SharePoint Server 2010\)](#)

[Plan for the multilingual user interface \(SharePoint Server 2010\)](#)

Multilingual user interface overview (SharePoint Server 2010)

This article discusses the new multilingual user interface feature in Microsoft SharePoint Server 2010. Previously, in Microsoft Office SharePoint Server 2007, when you created a site collection or site, if language packs were installed on the server, you could also choose the language in which to display the site user interface. However, after the language for a site had been set, it could not be changed. The multilingual user interface feature introduces the concept of secondary languages that users can select. This feature is used to display the site user interface in a secondary language that the user selects and that is different from the primary language that was chosen when the site was created.

This article describes the multilingual user interface in SharePoint Server 2010. This article does not describe how to deploy the language packs that are required to use the multilingual user interface or how to configure site settings to enable users to set their preferred language. It also does not discuss how to plan for using the multilingual user interface in your site solution. For information about how to let individual users change the language that is used to display their site's user interface, see [Make multiple languages available for your site's user interface](#). For more information about planning to use the multilingual user interface, see [Plan for the multilingual user interface \(SharePoint Server 2010\)](#).

In this article:

- [Use and benefits of the multilingual user interface](#)
- [How the multilingual user interface works](#)
- [What is supported by the multilingual user interface](#)
- [Adding and modifying application content](#)
- [Exporting and importing translated content](#)
- [Using the multilingual user interface with managed metadata](#)
- [Limitations of the multilingual user interface](#)

Use and benefits of the multilingual user interface

The multilingual user interface enables users to collaborate in a single site by using their selected secondary language, regardless of which language was selected when the site was created. When you create a new site, if language packs have been installed on the server, you can specify the primary language for the site. The site will use that primary language to display the site user interface, such as site navigation and administrative pages. If you want site users to be able to view the site user interface in a secondary language, you can specify which languages are available to users by using the Language Settings page. A user who is logged on to the site can use the **Select Display Language** option on the user menu to select a secondary language in which to display the site user interface. After the user selects a language, all sites within that domain name are displayed in their preferred language. However, this does not change the default, primary language of the site. Other users who view the site

still see the site user interface displayed in the primary language. The site user interface is changed only for those users who have selected a different, secondary language in which to display the site. By using the multilingual user interface, team members can work on documents and projects in a shared, common language, while they are viewing the site and performing tasks in their preferred language. In addition to team collaboration, the multilingual user interface enables farm and site administrators to perform administrative tasks in their preferred language. For example, farm administrators can change the primary language of the Central Administration Web site so that the administrative links and instructions are displayed in their preferred language.



Note:

The multilingual user interface displays only site user interface elements in another language. It does not translate or display content such as documents or list items in another language.

In addition to letting users change the primary language for a site, the multilingual user interface also enables users to make changes to new and existing application content, such as list or library titles and descriptions, and it enables users to have those changes be reflected in the user interface for other users of other languages. For example, a team member who uses English as the preferred language creates a new document library named "Team Reports." Another team member who has the preferred language set to German, logs on to the site and changes the library title to "Mannschaftsberichte." The next time that a user, who has the preferred language set to German, logs on to the site, the name of the document library is displayed as "Mannschaftsberichte." However, a user who has the preferred language set to English still sees the document library name displayed as "Team Reports."

SharePoint Server 2010 provides three methods that you can use to translate certain application content, such as list or library titles and descriptions: by using the user interface, by exporting and importing translations for a site, and by using the object model.

How the multilingual user interface works

By default, when a new site is created, it is created in the default language of the SharePoint Server 2010 installation on the server. A farm administrator must install language packs on the server before sites can be created in languages other than the default language. For more information, see [Deploy language packs \(SharePoint Server 2010\)](#).

After language packs have been installed on the server, the **Language Settings** link is added to the Site Settings page. Site administrators use the Language Settings page to specify which secondary languages the site will support. After the site administrator has enabled secondary languages for a site, users can log on to the site and use the **Select Display Language** option on the user menu to change the display language when they browse to any page in the site collection. When a user changes the display language of a page, the new display language becomes the user's preferred language for the whole site collection.

SharePoint Server 2010 selects the language in which to display pages of a site collection by using the first of the following rules that applies:

1. Does the user have a preferred language for this site collection on this computer? If so, use the user's preferred language.
2. Is the language preference that is specified in the Web browser one of the supported languages for the page? If so, use the preferred language of the browser.
3. Otherwise, use the default language for the site collection.

SharePoint Server 2010 provides three methods that you can use to modify certain application content, such as list or library titles and descriptions: by using the user interface, by exporting and importing translations for a site, and by using the `SPUserResource` class in the `Microsoft.SharePoint` namespace. Not all user interface elements can be changed directly in the user interface. For example, user actions and commands can be changed only by using the `SPUserResource` class. For more information, see [SPUserResource class](#).

What is supported by the multilingual user interface

When a user views a site in a secondary language, certain elements of the user interface are provided in the preferred language. The following list includes examples of items that are supported by the multilingual user interface:

- Settings pages, such as those in the `_layouts` and the `_admin` virtual directories.
- Help.
- Application content, such as menus, controls, site actions, site title and description, list or library titles and descriptions, top link bar links, Quick Launch links, local breadcrumbs, site and list content types, and site and list columns.
- Developer content, such as features, and solutions.

However, not all user interface elements are translated. The following list includes examples of items that are not supported by the multilingual user interface:

- Web Parts (except those that are linked to lists or libraries).
- Global breadcrumbs.
- User created content, such as list item data, documents and Web pages in libraries, permissions levels, groups, views, and Web Parts.

Although most site templates are supported by the multilingual user interface, the following site templates are not supported:

- The Blog template.
- Any of the meeting workspace templates.
- Any of the Web database templates.

Adding and modifying application content

A user can add or modify application content, such as list titles or column names and descriptions, in one of two ways: by adding or modifying content in the primary language or by adding or modifying content in one or more secondary languages.

When a user views a site by using the primary language of the site, any new application content that is created is displayed in the primary language, even when the site is viewed in a secondary language. For example, if the primary language for a site is English, when a user views the site in the primary language and creates a new document library called "Team Documents", the library title is still displayed as "Team Documents" when a user views the site in any secondary language. To translate new user interface strings into a secondary language, a user must change the user preferences to display the site in a secondary language and then make the change to the user interface element.

When a user views a site by using a secondary language, any new application content that is created is displayed in that language even when the site is viewed in the primary language or in any other secondary language. For example, if the primary language for a site is English, and a user views the site in German and adds a document library called "Mannschaftsdokumente", the library title is displayed as "Mannschaftsdokumente" even when the site is viewed in English. To translate new user interface strings into the primary language or to other secondary languages, the user must change the user preferences to display the site in the required language and then make the change to the user interface. The Language Settings page contains an **Overwrite Translations** option that affects how changes to existing application content are made to other languages for the site. If the **Overwrite Translations** option is enabled, any changes that are made to the user interface in the primary language overwrite any changes that have been made to user interface elements in secondary languages.

By default, when a user views a site by using the primary language of the site, any changes that are made to existing application content are changed for that language only. The strings that are associated with that user interface element in the secondary languages remain unchanged. However, if the **Overwrite Translations** option is enabled, the strings that are associated with that user interface element for every language are replaced with the new primary language string. For example, if the primary language for a site is English, and a user changes the title of the "Shared Documents" library to "Team Documents", by default, the title is changed only for the primary language of the site. However, if the **Overwrite Translations** option is enabled, the title is changed to "Team Documents" for every secondary language, and it must be retranslated.

When a user views a site by using a secondary language, any changes that are made to existing application content are changed for that language only. The strings that are associated with that user interface element in the primary language and other secondary languages remain unchanged. To translate user interface strings into the primary language, or to other secondary languages, the user must change the user preferences to display the site in the required language and then make the change to the user interface.

Exporting and importing translated content

The multilingual user interface feature lets you export and import application content for bulk translation. Instead of translating application content one item at a time, you can export the strings for any new or modified application content in the primary language or in one of the secondary languages. To export content, you use the **Export Translations** link on the Site Settings page. When you export application content for a secondary language, you can decide to export all content or only content that has not been translated.

When the application content is exported, it is saved as a .resx file, which can be opened by using a text editor or any third-party tool that can open resource files. For more information, see [Resources in .Resx File Format](#). After the resource strings have been translated, you use the Import Translations link on the Site Settings page to import the .resx file.

Using the multilingual user interface with managed metadata

You can create multilingual managed metadata for use with a SharePoint Server 2010 solution. By using the Term Store Management Tool, you can create a term set, and associate multiple labels, one for each language that you want to support, with each term in the set. When a user changes the preferred language for a site, the terms are displayed using the labels that correspond to the selected language. For more information about how to use multilingual managed metadata with a site, see [Multilingual term sets \(SharePoint Server 2010\)](#).

Limitations of the multilingual user interface

As mentioned previously, not all user interface elements are supported by the multilingual user interface. The following list describes additional limitations that apply when you use the multilingual user interface:

- **Search** Search indexes content in the default language of the SharePoint installation. Even if content is provided in secondary languages, that content is only searchable by using the default language of the site. For example, if your preferred language is German, but the primary language for the site is English, a search for "Freigegebene Dokumente" does not return any search results. However, a search for "Shared Documents" does return search results.
- **Web Parts** Web Part titles and descriptions do not change in the user interface, unless a Web Part is a list-based Web Part. For example, the title and description for Web Parts that display list and library data, such as Announcements and Shared Documents, are displayed in a user's preferred language, whereas the title and description for other Web Parts, such as the Content Editor and the Content Query Web Parts, are displayed only in the primary site language.

See Also

[Plan for the multilingual user interface \(SharePoint Server 2010\)](#)

[Plan for multilingual sites \(SharePoint Server 2010\)](#)

Plan for the multilingual user interface (SharePoint Server 2010)

The new multilingual user interface feature in Microsoft SharePoint Server 2010 introduces the concept of a secondary language that the user can select. This feature displays the site user interface in a secondary language that the user selects and that is different from the primary language that was chosen when the site was created.

This article describes how to plan for using the multilingual user interface in your SharePoint Server 2010 site solution. This article does not describe how to deploy the language packs that are required to use the multilingual user interface or how to configure site settings to enable users to set their preferred language. For information about how to let individual users change the language that is used to display their site's user interface, see [Make multiple languages available for your site's user interface](#). For more information about the multilingual user interface, see [Multilingual user interface overview \(SharePoint Server 2010\)](#).

In this article:

- [Determine language requirements for your sites](#)
- [Plan for translating content](#)
- [Plan for installing service packs](#)

Determine language requirements for your sites

Before you can use the multilingual user interface in your SharePoint sites, the farm administrator must deploy language packs to the server so that they are available for use on sites. Decide which language packs are needed and when they will be deployed to the server. Site administrators must configure the language settings for individual sites to make specific languages available to site users. You should decide which languages are needed for each site and plan to have the site administrators enable specific languages for the sites they manage. For information about planning multilingual sites, see [Plan for multilingual sites \(SharePoint Server 2010\)](#). For information about deploying language packs, see [Deploy language packs \(SharePoint Server 2010\)](#).

Plan for translating content

If you will enable the multilingual user interface on your site to provide users a way to collaborate while they are using their preferred language, you must decide whether using the default multilingual user interface will be sufficient or whether application content will have to be translated. If you have application content that has to be translated, you should consider the following questions:

- **How will new and existing application content be translated?** Will individual team members translate application content directly in the user interface as it becomes necessary, or will you

export resource files in the languages that are needed for the site and have them all translated at once? If users create new application content in a secondary language, you must plan for who will translate that content into the primary language of the site and for the other secondary languages. If you plan to create complex pages, such as new menu pages, or develop custom solutions, such as features that create lists, you must plan to use the object model to provide translations in secondary languages.

- **Who will translate the application content?** Will the translation of resource files be done by someone within your organization, or will you need to have a third-party translate them for you?
- **How will updates to the application content be handled?** Will changes to the user interface be translated as changes are made, or will changes be made on a periodic schedule? This might depend on the size and scale of the sites and the content that is included.
- **How should translation overwrites be handled?** Do you want changes in the primary language to overwrite string values in secondary languages? If so, then you must enable the **Overwrite Translations** option on the Language Settings page.
- **What column names must be changed?** What column names must be translated, and for which languages? Will the column names be at the list level or at the site level?

Plan for installing service packs

If language packs are updated as part of a service pack release for SharePoint, you must update the language packs on the server when the service pack is installed. You should plan to coordinate with the farm administrator to monitor the release of service packs and any associated language packs so that you are aware of updated language packs that need to be installed for your users.

See Also

[Multilingual user interface overview \(SharePoint Server 2010\)](#)

[Plan for multilingual sites \(SharePoint Server 2010\)](#)

Security planning for sites and content (SharePoint Server 2010)

Some of the sites in your enterprise probably contain content that should not be available to all users. For example, proprietary technical information should be accessible only on a need-to-know basis. An intranet portal for employee benefits should be available only to full-time employees, whereas the home page of an Internet Web site is accessible by anonymous clients.

Permissions control access to your sites and site content. You can manage permissions by using Microsoft SharePoint Server 2010 groups, which control membership, and fine-grained permissions, which help to secure content at the item and document level. This section describes permissions for sites and site content and provides considerations for choosing permissions.

In this section:

- [Plan site permissions \(SharePoint Server 2010\)](#)
Helps you understand how permissions are assigned and helps you choose the appropriate permissions to use in your site collection or subsite.
- [Determine permission levels and groups \(SharePoint Server 2010\)](#)
Reviews the available permission levels and groups, and helps you determine whether you need additional permission levels or groups.
- [Choose security groups \(SharePoint Server 2010\)](#)
Helps you determine which Microsoft Windows security groups and user accounts to use to grant access to sites, decide whether to use the Authenticated Users group, and decide whether to allow anonymous access.
- [Choose administrators and owners for the administration hierarchy \(SharePoint Server 2010\)](#)
Defines the levels of administration from the server level to the subsite level and helps you choose administrators for each level.
- [Best practices for using fine-grained permissions \(white paper\) \(SharePoint Server 2010\)](#) provides guidance for using fine-grained permissions in SharePoint 2010 Products.

Plan site permissions (SharePoint Server 2010)

This article helps you plan access control at the site collection, site, subsite, and site content (list or library, folder, item or document) levels. This article also describes the concepts about permission inheritance and fine-grained permissions.

This article does not address planning the security of your entire server or server farm. For more information about planning other aspects of security, such as authentication methods and authentication modes, see [Plan authentication methods \(SharePoint Server 2010\)](#).

In this article:

- [About site permissions](#)
- [About permission inheritance](#)
- [Plan for site permissions](#)
- [Plan for permission inheritance](#)

Introduction

You can control access to site and site content by assigning permissions to users or groups for a specific site or site content at the following levels within a site collection:

- Site
- Library or list
- Folder
- Document or item

Before developing your plan for site and content access, you should consider the following questions:

- To what granularity do you want to control permissions for the site or site content? For example, you might want to control access at the site level, or you might need more restrictive security settings for a specific list, folder, or item.
- How do you want to categorize and manage your users by using SharePoint groups? Groups do not have any permission until they are assigned a permission level for a specific site or for specific site content. When you assign permission levels to SharePoint groups at the site collection level, by default, all sites and site content inherit those permission levels.

For more information about using groups to help manage permissions, see [Choose security groups \(SharePoint Server 2010\)](#).

About site permissions

You should understand the following concepts before designing your permissions plan.

- **Permissions** Permissions grant a user the ability to perform specific actions. For example, the View Items permission allows a user to view items in a list or folder, but not to add or remove items. Permissions can be granted to individual users at site or site content levels.

For information about available permissions, see [User permissions and permission levels \(SharePoint Server 2010\)](#).

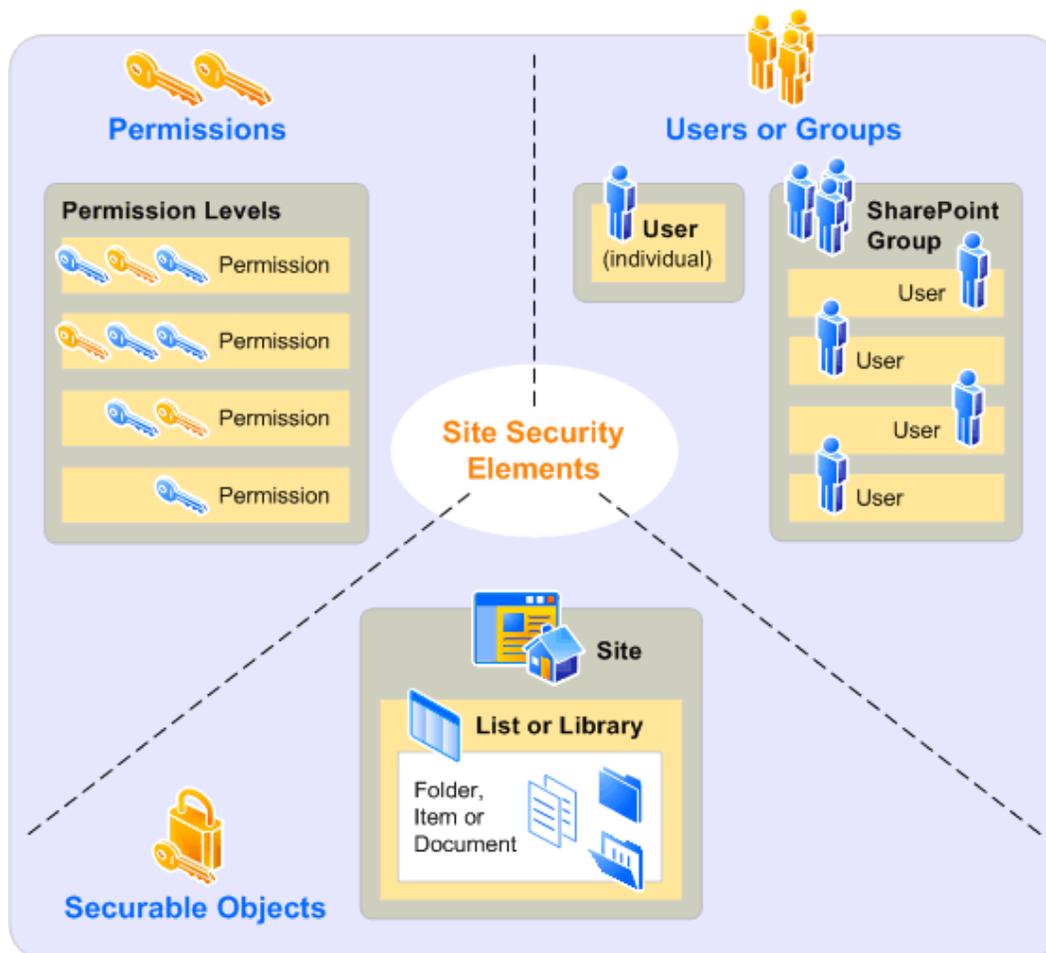
- **Fine-grained permissions** Fine-grained permissions are unique permissions on securable objects that are at a lower level in a site hierarchy, such as permissions on a list or library, folder, or item or document. Fine-grained permissions allow for greater granularity and customization of user permissions in a site collection.
- **Permission level** Permission levels are collections of permissions that allow users to perform a set of related tasks. For example, the Read permission level includes the View Items, Open Items, View Pages, and View Versions permissions (among others), all of which are needed to view pages, documents, and items in a SharePoint site. Permissions can be included in more than one permission level.

Permission levels are defined at the site collection level and can be customized by any user or group whose permission level includes the Manage Permissions permission. For more information about customizing permission levels, see [Configure custom permissions \(SharePoint Server 2010\)](#).

The default permission levels are Limited Access, Read, Contribute, Design, and Full Control. For information about default permission levels and the permissions included in each level, see [User permissions and permission levels \(SharePoint Server 2010\)](#).

- **SharePoint group** A SharePoint group is a group of users that are defined at site collection level for easy management of permissions. Each SharePoint group is assigned a default permission level. For example, the default SharePoint groups are Owners, Visitors, and Members, with Full Control, Read, and Contribute as their default permission levels respectively. Anyone with Full Control permission can create custom groups.
- **User** A user can be a person with a user account from any authentication provider supported by the Web application. We recommend that you assign permissions to groups rather than users, although you can directly grant individual users permissions to a site or specific content. Because it is inefficient to maintain individual user accounts, you should assign permissions on a per-user basis only as an exception.
- **Securable object** A securable object is a site, list, library, folder, document, or item for which permissions levels can be assigned to users or groups. By default, all lists and libraries within a site inherit permissions from the site. You can use list-level, folder-level, and item-level permissions to further control which users can view or interact with site content. You must first break the permission inheritance before you change or assign permissions for that securable object. You can resume inheriting permissions from the parent list or site at any time.

You can assign a user or group permissions for a specific securable object. Individual users or groups can have different permissions for different securable objects. The following diagram illustrates the relationships among permissions, users and groups, and securable objects.



About permission inheritance

Permissions on securable objects within a site are inherited from the parent object by default. You can break inheritance and use fine-grained permissions — unique permissions on the list or library, folder, or item or document level — to gain more control of the actions users can take on your site. For more information about the best practices for using fine-grained permissions, see [Best practices for using fine-grained permissions](#)

Stopping inheriting permissions copies the groups, users, and permission levels from the parent object to the child object, and then breaks the inheritance. When permission inheritance is broken, all permissions are explicit and any changes to parent object do not affect the child object. If you restore inherited permissions, the child object will inherit its users, groups, and permission levels from the parent again, and you will lose any users, groups, or permission levels that were unique to the child object.

For ease of management, use permission inheritance wherever possible.

**Tip:**

If you choose to break inheritance and use fine-grained permissions, you should use groups to avoid having to track individual users. Because people move in and out of teams and change responsibilities frequently, tracking those changes and updating the permissions for uniquely secured objects would be time-consuming and error-prone.

Plan for site permissions

When you create permissions, you must balance the ease of administration and performance against the need to control access to individual items. If you use fine-grained permissions extensively, you will spend more time managing the permissions, and users may experience slower performance when they try to access site content.

Use the following guidelines to plan site permissions:

1. Follow the principle of least privilege: Users should have only the permission levels or individual permissions they need to perform their assigned tasks.
2. Use standard groups (such as Members, Visitors, and Owners) and control permissions at the site level.
 - Make most users members of the Members or Visitors groups. By default, users in the Members group can contribute to the site by adding or removing items or documents, but cannot change the structure, site settings, or appearance of the site. The Visitors group has read-only access to the site, which means that they can see pages and items, and open items and documents, but cannot add or remove pages, items, or documents.
 - Limit the number of people in the Owners group. Only those users you trust to change the structure, settings, or appearance of the site should be in the Owners group.
3. Use permission levels rather than assign individual permissions.

**Note**

1. You can create additional SharePoint groups and permission levels if you need more control over the actions that your users can take. For example, if you do not want the Read permission level on a specific subsite to include the Create Alerts permission, break the inheritance and customize the Read permission level for that subsite.
2. Microsoft SharePoint Foundation 2010 and SharePoint Server 2010 use **Check Permissions** to determine a user or group's permissions on all resources within a site collection. You can now find both the user's directly assigned permissions and the permissions assigned to any groups of which the user is a member by checking permissions for a specific site or site content.

Plan for permission inheritance

It is much easier to manage permissions when there is a clear hierarchy of permissions and inherited permissions. It becomes more difficult when some lists within a site have fine-grained permissions

applied, and when some sites have subsites with unique permissions and others with inherited permissions. As much as possible, arrange sites and subsites, and lists and libraries so they can share most permissions. Separate sensitive data into their own lists, libraries, or subsites.

For example, it's much easier to manage a site that has permission inheritance as described in the following table.

Securable object	Description	Unique or inherited permissions
SiteA	Group home page	Unique
SiteA/SubsiteA	Sensitive group	Unique
SiteA/SubsiteA/ListA	Sensitive data	Unique
SiteA/SubsiteA/LibraryA	Sensitive documents	Unique
SiteA/SubsiteB	Group shared project information	Inherited
SiteA/SubsiteB/ListB	Non-sensitive data	Inherited
SiteA/SubsiteB/LibraryB	Non-sensitive documents	Inherited

However, it is not as easy to manage a site that has permission inheritance as shown in the following table.

Securable object	Description	Unique or inherited permissions
SiteA	Group home page	Unique
SiteA/SubsiteA	Sensitive group	Unique
SiteA/SubsiteA/ListA	Non-sensitive data	Unique, but same permissions as SiteA
SiteA/SubsiteA/LibraryA	Non-sensitive documents, but with one or two sensitive documents	Inherited, with unique permissions at the document level
SiteA/SubsiteB	Group shared project information	Inherited
SiteA/SubsiteB/ListB	Non-sensitive data, but with one or two sensitive items	Inherited, with unique permissions at the item level
SiteA/SubsiteB/LibraryB	Non-sensitive documents, but with a special folder containing	Inherited, with unique permissions at the folder and

Securable object	Description	Unique or inherited permissions
	sensitive documents	document level

Determine permission levels and groups (SharePoint Server 2010)

A SharePoint group is a set of users that can be managed together. A permission level is a set of permissions that can be assigned to a specific group for a specific securable object. SharePoint groups and permission levels are defined at the site collection level and are inherited from the parent object by default. This article describes default groups and permission levels and helps you decide whether to use them as they are, customize them, or create different groups and permission levels.

In this article:

- [Review available default groups](#)
- [Review available permission levels](#)
- [Determine whether you need custom permission levels or groups](#)

The most important decision about your site and content security in Microsoft SharePoint Server 2010 is how to group your users and which permission levels to assign.

Review available default groups

SharePoint groups enable you to manage sets of users instead of individual users. These groups can contain many individual users, or they can include the contents of any corporate identity system, including Active Directory Domain Services (AD DS), LDAPv3-based directories, application-specific databases and new user-centric identity models, such as Windows Live ID. SharePoint groups do not confer specific rights to the site; they are a way to designate a set of users. You can organize your users into any number of groups, depending on the size and complexity of your organization or Web site. SharePoint groups cannot be nested.

The following table displays default groups that are created for team sites in SharePoint Server 2010. Each default group is assigned a default permission level.

Group name	Default permission level	Description
Visitors	Read	Use this group to grant people Read permissions to the SharePoint site.
Members	Contribute	Use this group to grant people Contribute permissions to the SharePoint site.
Owners	Full Control	Use this group to grant people Full Control permissions to the

Group name	Default permission level	Description
		SharePoint site.

If you use a site template other than the team site template, you will see a different list of default SharePoint groups. For example, the following table shows the additional groups provided by a publishing site template.

Group name	Default permission level	Description
Restricted Readers	Restricted Read to the site, plus Limited Access to specific lists	Members of this group can view pages and documents, but cannot view historical versions or review user rights information.
Style Resource Readers	Read to the Master Page Gallery and Restricted Read to the Style Library.	<p>Members of this group are given Read permission to the Master Page Gallery and Restricted Read permission to the Style Library. By default, all authenticated users are a member of this group.</p> <p> Note: Do not remove all authenticated users from this group. Because Master Page Gallery and Style Library are shared across all sites in the site collection and must be accessible to all users of all sites. If you remove all authenticated users from the group, anyone with this permission level on a subsite will not be able to render the site. SharePoint will not automatically add or remove users of subsites to or from this group as needed.</p>
Quick Deploy Users	Contribute to the Quick Deploy	Members of this group can schedule

Group name	Default permission level	Description
	Items library, plus Limited Access to the rest of the site	Quick Deploy jobs.
Approvers	Approve, plus Limited Access	Members of this group can edit and approve pages, list items, and documents.
Hierarchy Managers	Manage Hierarchy, plus Limited Access	Members of this group can create sites, lists, list items, and documents.



Note:

The Limited Access permission level is used to give groups access to a specific list, library, folder, document, or item, without giving them access to the entire site. Do not remove this permission level from the groups listed above. If this permission level is removed, the groups might not be able to navigate through the site to get the specific items with which they need to interact.

Make most users members of the Visitors or Members groups. By default, users in the Members group can contribute to the site by adding or removing items or documents, but cannot change the structure, site settings, or appearance of the site. The Visitors group has read-only access to the site, which means that they can see pages and items, and open items and documents, but cannot add or remove pages, items, or documents.

If the default groups do not map to the exact user groups in your organization, you can create custom groups. For more information about how to determine whether you need additional groups, see [Determine whether you need custom permission levels or groups](#).

Besides the above SharePoint groups, there are also administrator groups for higher-level administration tasks. They are Windows administrators, SharePoint farm administrators, and site collection administrators.

For more information, see [Choose administrators and owners for the administration hierarchy \(SharePoint Server 2010\)](#).

Review available permission levels

The ability to view, change, or manage a site is determined by the permission level that you assign to a user or group. This permission level controls all permissions for the site and the child objects that inherit the site's permissions. Without the appropriate permission levels, your users might be unable to perform their tasks, or they might be able to perform tasks that you did not want them to perform.

By default, the following permission levels are available:

- **Limited Access** Includes permissions that enable users to view specific lists, document libraries, list items, folders, or documents, without giving access to all the elements of a site. You cannot edit this permission level directly.



Note:

If this permission level is removed, group members might be unable to navigate the site to access items, even if they have the correct permissions for an item within the site.

- **Read** Includes permissions that enable users to view items on the site pages.
- **Contribute** Includes permissions that enable users to add or change items on the site pages or in lists and document libraries.
- **Design** Includes permissions that enable users to change the layout of site pages by using the browser or Microsoft SharePoint Designer 2010.
- **Full Control** Includes all permissions.

For more information about permissions that are included in the default permission levels, see [User permissions and permission levels \(SharePoint Server 2010\)](#).

The following additional permission levels are provided with the publishing template by default:

- **View Only** Includes permissions that enable users to view pages, list items, and documents.
- **Approve** Includes permissions to edit and approve pages, list items, and documents.
- **Manage Hierarchy** Includes permissions to sites and edit pages, list items, and documents.
- **Restricted Read** Includes permissions to view pages and documents, but not historical versions or user rights information.

Determine whether you need custom permission levels or groups

The default groups and permission levels provide a general framework for permissions, covering many different organization types and roles within those organizations. However, they might not map exactly to how your users are organized or to the variety of tasks that your users perform on your sites. If the default groups and permission levels do not suit your organization, you can create custom groups, change the permissions included in specific permission levels, or create custom permission levels.

Do you need custom groups?

The decision to create custom groups is fairly straightforward and has little effect on your site's security. You should create custom groups instead of using the default groups if either of the following situations applies:

- You have more (or fewer) user roles within your organization than are apparent in the default groups. For example, if in addition to Approvers, Designers, and Hierarchy Managers, you have a set of people who are tasked with publishing content to the site, you might want to create a Publishers group.

- There are well-known names for unique roles within your organization that perform very different tasks in the sites. For example, if you are creating a public site to sell your organization's products, you might want to create a Customers group that replaces Visitors or Viewers.
- You want to preserve a one-to-one relationship between Windows security groups and the SharePoint groups. For example, if your organization has a security group called Web Site Managers, you might want to use that name as a group name for easy identification when managing the site.
- You prefer other group names.

Do you need custom permission levels?

The decision to customize permission levels is less straightforward than the decision to customize SharePoint groups. If you customize the permissions assigned to a permission level, you must keep track of that change, verify that it works for all groups and sites affected by the change, and ensure that the change does not negatively affect your security or your server capacity or performance.

For example, if you customize the Contribute permission level to include the Create Subsites permission that is typically part of the Full Control permission level, members of the Contributors group can create and own subsites, and can potentially invite malicious users to their subsites or post unapproved content. If you customize the Read permission level to include the View Usage Data permission that is typically part of the Full Control permission level, all members of the Visitors group can see usage data, which might cause performance issues.

You should customize the default permission levels if either of the following situations applies:

- A default permission level includes all permissions except one that your users need to do their jobs, and you want to add that permission.
- A default permission level includes a permission that your users do not need.



Note:

Do not customize the default permission levels if your organization has security or other concerns about a specific permission that is part of the permission level. If you want to make that permission unavailable for all users assigned to the permission level or levels that include that permission, turn off the permission for all Web applications in your server farm, rather than change all of the permission levels. To manage permissions for a Web application, see [Manage permissions for a Web application \(SharePoint Server 2010\)](#).

If you need to make several changes to a permission level, create a custom permission level that includes all of the permissions you need.

You might want to create additional permission levels if either of the following conditions applies:

- You want to exclude several permissions from a specific permission level.
- You want to define a unique set of permissions for a new permission level.

To create a permission level, you can create a permission level and then select the permissions that you want to include.

For more information about how to configure custom permissions, see [Configure custom permissions \(SharePoint Server 2010\)](#).



Note:

Some permissions depend on other permissions. If you clear a permission that another permission depends on, the other permission is also cleared.

Choose security groups (SharePoint Server 2010)

This article describes the security and distribution groups that comprise the Active Directory® Domain Services (ADDS). This article also provides recommendations for using those groups to organize the users of your SharePoint sites.

In this article:

- [Decide whether to add security groups](#)
- [Determine which security groups to use for granting access to sites](#)
- [Decide whether to allow access for all authenticated users](#)
- [Decide whether to allow access for anonymous users](#)

Introduction

Managing users of SharePoint sites is easier if you assign permission levels to groups rather than to individual users. SharePoint group is a set of individual users and can also include Active Directory groups. In Active Directory Domain Services (ADDS), the following groups are commonly used to organize users:

- **Distribution group** A group that is used only for e-mail distribution and that is not security-enabled. Distribution groups cannot be listed in discretionary access control lists (DACLS), which are used to define permissions on resources and objects.
- **Security group** A group that can be listed in DACLS. A security group can also be used as an e-mail entity.

You can use security groups to control permissions for your site by adding security groups to SharePoint groups and granting permissions to the SharePoint groups. You cannot add distribution groups to SharePoint groups, but you can expand a distribution group and add the individual members to a SharePoint group. If you use this method, you must manually keep the SharePoint group synchronized with the distribution group. If you use security groups, you do not need to manage the individual users in the SharePoint application. Because you included the security group instead of the individual members of the group, ADDS manages the users for you.



Note

For ease of security management, the following items are not recommended in managing Active Directory groups.

- Assign permission levels directly to Active Directory groups.
- Adding security groups that contain nested security groups, contacts, or distribution lists.

Decide whether to add security groups

Adding security groups to SharePoint groups provides centralized management of groups and security. The security group is the only place where you manage individual users. Once you add the security group to a SharePoint group, you do not have to manage security group members in that SharePoint group. If a user is removed from the security group, the user will be automatically removed from the SharePoint group.

However, using security groups in SharePoint sites does not provide full visibility of what is happening. For example, when a security group is added to a SharePoint group for a specific site, the site will not appear in the users' My Sites. The User Information List will not show individual users until they have contributed to the site. In addition, security groups with deep nested structure might break SharePoint sites.

Considering the previous advantages and disadvantages, here are the recommendations:

- For intranet sites that are broadly accessed by your users, use security groups because you do not care about the individual users who accessed the intranet site home page.
- For collaboration sites that are accessed by a small group of users, add users directly to SharePoint groups. In this case, there is more of a need to know who is a member so the group members know each other's e-mail addresses and how to contact each other.

Determine which security groups to use for granting access to sites

Each organization sets up its security groups differently. For easier permission management, security groups should be:

- Large and stable enough that you are not continually adding additional security groups to your SharePoint sites.
- Small enough that you can assign appropriate permissions.

For example, a security group called "all users in building 2" is probably not small enough to assign permissions, unless all users in building 2 have the same job function, such as accounts receivable clerks. This is rarely the case, so you should look for a smaller, more specific set of users, such as "Accounts Receivable".

Decide whether to allow access for all authenticated users

If you want all users within your domain to be able to view content on your site, consider granting access to all authenticated users (the Domain Users Windows security group). This special group allows all members of your domain to access a Web site (at the permission level you choose), without your having to enable anonymous access.

Decide whether to allow access for anonymous users

You can enable anonymous access to allow users to view pages anonymously. Most Internet Web sites allow anonymous viewing of a site, but might ask for authentication when someone wants to edit the site or buy an item on a shopping site. Anonymous access is disabled by default and must be granted at the Web application level at the time that the Web application is created.

If anonymous access is allowed for the Web application, site administrators can decide whether to grant anonymous access to a site or any of the content on that site.

Anonymous access relies on the anonymous user account on the Web server. This account is created and maintained by Microsoft Internet Information Services (IIS), not by your SharePoint site. By default in IIS, the anonymous user account is IUSR. When you enable anonymous access, you are in effect granting that account access to the SharePoint site. Allowing access to a site, or to lists and libraries, grants the View Items permission to the anonymous user account. Even with the View Items permission, however, there are restrictions to what anonymous users can do. Anonymous users cannot:

- Open sites for editing in Microsoft Office SharePoint Designer.
- View sites in My Network Places.
- Upload or edit documents in document libraries, including wiki libraries.



Important:

To improve security for sites, lists, or libraries, do not enable anonymous access. Enabling anonymous access allows users to contribute to lists, discussions, and surveys, which will possibly use up server disk space and other resources. Anonymous access also allows anonymous users to discover site information, including user e-mail addresses and any content posted to lists, and libraries, and discussions.

Permission policies provide a centralized way to configure and manage a set of permissions that applies to only a subset of users or groups in a Web application. You can manage permission policy for anonymous users by enabling or disabling anonymous access for a Web application. If you enable anonymous access for a Web application, site administrators can then grant or deny anonymous access at the site collection, site, or item level. If anonymous access is disabled for a Web application, no sites within that Web application can be accessed by anonymous users.

- **None** No policy. This is the default option. No additional permission restrictions or additions are applied to site anonymous users.
- **Deny Write** Anonymous users cannot write content, even if the site administrator specifically attempts to grant the anonymous user account that permission.
- **Deny All** Anonymous users cannot have any access, even if site administrators specifically attempt to grant the anonymous user account access to their sites.

For more information about permission policies, see [Manage permission policies for a Web application \(SharePoint Server 2010\)](#).

Choose administrators and owners for the administration hierarchy (SharePoint Server 2010)

This article describes the administrator roles that correspond to the Microsoft SharePoint Server 2010 server and site hierarchy. Many people can be involved in managing SharePoint Server 2010. Administration of Microsoft SharePoint Server occurs at the following levels:

- Windows server or SharePoint server farm
- Shared services
- Web application
- Sites
- Document library or list
- Individual items

In this article:

- [Levels of administration](#)

Levels of administration

Most levels of the server and site hierarchy have a corresponding administration group. The administration groups who have administrative permissions at different levels are described in the following list:

- Windows server or server farm level
 - **Farm Administrators group** Members of the Farm Administrators group have Full Control permissions to and responsibility for all servers in the server farm. Members can perform all administrative tasks in Central Administration for the server or server farm. They can assign administrators to manage service applications, which are instances of shared services. This group does not have access to individual sites or their content.
 - **Windows Administrators group** Members of the Windows Administrators group on the local server can perform all farm administrator actions. Administrators on the local server can perform additional tasks, such as installing new products or applications, deploying Web Parts and new features to the global assembly cache, creating new Web applications and new Internet Information Services (IIS) Web sites, and starting services. Like farm administrators, members of this group on the local server have no access to site content, by default.



Note:

Farm administrators and members of the local Administrators group can take ownership of specific site collections if necessary. For example, if a site administrator

leaves the organization and a new administrator must be added, the farm administrator or a member of the local Administrators group can take ownership of the site collection to make the change. To take ownership, they can add themselves as the site collection administrator on the **Application Management** page.

- Shared services level
 - **Service application administrators** These administrators are designated by the farm administrator. They can configure settings for a specific service application within a farm. However, these administrators cannot create service applications, access any other service applications in the farm, or perform any farm-level operations, including topology changes. For example, the service application administrator for a Search service application in a farm can configure settings for that Search service application only.
 - **Feature administrators** A feature administrator is associated with a specific feature or features of a service application. These administrators can manage a subset of service application settings, but not the entire service application. For example, a Feature administrator might manage the Audiences feature of the User Profile service application.
- Web application level
 - The Web application level does not have a unique administrator group, but farm administrators have control over the Web applications within their scope. Members of the Farm Administrators group and members of the Administrators group on the local server can define a policy to grant individual users permissions at the Web application level. For more information about policy, see "Policy for Web applications" in the [Logical architecture components \(SharePoint Server 2010\)](#) article.
- Site level
 - **Site collection administrators** These administrators have the Full Control permission level on all Web sites within a site collection. They have Full Control access to all site content in that site collection, even if they do not have explicit permissions on that site. They can audit all site content and receive any administrative alert. A primary and a secondary site collection administrator can be specified during the creation of a site collection.
 - **Site owners** By default, members of the Owners group for a site have the Full Control permission level on that site. They can perform administrative tasks on the site, and on any list or library within that site. They receive e-mail notifications for events, such as the pending automatic deletion of inactive sites and requests for site access.

Best practices for using fine-grained permissions (white paper) (SharePoint Server 2010)

This white paper describes best practices for fine-grained permissions (FGP) and how to use them within your organization when implementing Microsoft SharePoint Server 2010.

Download the white paper from the following link: <http://go.microsoft.com/fwlink/?LinkId=201596>

Site and solution governance (SharePoint Server 2010)

This section provides information about governing sites and solutions for both production and sandboxed Microsoft SharePoint Server 2010 environments.

Governance is the set of policies, roles, responsibilities, and processes that guide, direct, and control how an organization's business divisions and IT teams cooperate to achieve business goals.

Sandboxed solutions restrict access to network and local resources to provide greater security and stability. You can use sandboxed solutions for load balancing solutions, for solutions that have not been fully tested, and for deploying user solutions in a hosted environment. Sandboxed solutions run in a separate worker thread so that they cannot access resources that belong to other solutions, and they have limited access to local and network resources.

In this section:

- [Governance overview \(SharePoint Server 2010\)](#)
This article introduces governance as an essential part of a successful SharePoint Server 2010 deployment and explains the various components of an enterprise governance plan.
- [Governance features \(SharePoint Server 2010\)](#)
This article reviews a set of SharePoint Server 2010 features that an organization can use to help govern an IT service, information management, and information architecture.
- [Establishing and governing a SharePoint service \(SharePoint Server 2010\)](#)
Learn about key factors in governing a SharePoint service and what to include in a service-level agreement.
- [Implementing and governing information architecture \(SharePoint Server 2010\)](#)
Learn how to plan an effective information architecture to ensure that your solution meets your business needs.
- [Plan for sandboxed solutions \(SharePoint Server 2010\)](#)
This article explains how to plan to use sandboxed solutions in a SharePoint environment.
- [Book excerpt: SharePoint Development and Governance Using COBIT 4.1: A Practical Approach](#)
These book excerpts are from "SharePoint Deployment and Governance Using COBIT® 4.1: A Practical Approach."
- [SharePoint 2010 Governance Planning \(white paper\)](#)
This white paper focuses on the "front end" of the SharePoint environment – the business aspect of governance - the areas that effect business users. It uses a fictitious company to provide guidance for the necessary governance planning and implementation of SharePoint Server 2010.
- [Implementing Governance in SharePoint 2010 \(white paper\)](#)

This white paper focuses on the “back end” of SharePoint governance – the technical implementation. It provides high-level guidance on the many configuration options that SharePoint Server 2010 provides to enable you to manage the environment for the benefit of all.

Governance overview (SharePoint Server 2010)

This article introduces governance as an essential part of a successful Microsoft SharePoint Server 2010 deployment and explains why both information architecture and IT services are key components of a governance plan.

The articles in this section emphasize the need for governance of SharePoint Server 2010 deployments. These articles also provide general guidance and examples of the SharePoint Server activities and processes your organization should consider governing.

In this article:

- [About governance](#)
- [What should be governed?](#)
- [Who should determine governance policies?](#)
- [How should governance be implemented?](#)

About governance

Governance is the set of policies, roles, responsibilities, and processes that guide, direct, and control how an organization's business divisions and IT teams cooperate to achieve business goals. A comprehensive governance plan can benefit your organization by:

- Streamlining the deployment of products and technologies, such as SharePoint Server 2010.
- Helping protect your enterprise from security threats or noncompliance liability.
- Helping ensure the best return on your investment in technologies, for example, by enforcing best practices in content management or information architecture.

What should be governed?

Every organization has unique needs and goals that influence its approach to governance. For example, larger organizations will probably require more — and more detailed — governance than smaller organizations.

A successful SharePoint Server 2010 deployment requires the following elements:

- **Information architecture**

The goal of information architecture is to create a system that helps users collect, store, retrieve, and use the information that is needed to achieve business objectives. A Web site's information architecture determines how the information in that site — its Web pages, documents, lists, and data — is organized and presented to the site's users.

A comprehensive assessment of your organization's information architecture can help you identify potential inefficiencies, such as the following:

- Inconsistent use of metadata that can make it difficult to search for and compare related data or content.
- Poorly designed and managed storage of content that can result in multiple versions of documents with no way to identify the authoritative version.
- Poorly catalogued and managed storage of data that can cause decision-makers to find and rely on the wrong data.
- Poorly designed navigation or poorly presented information that can make it difficult to find important sites and information.
- **IT Service hosting SharePoint Server**

SharePoint Server 2010 includes many new features that should be addressed by a comprehensive governance plan. Some of these features are as follows:

- A new service application architecture, built into Microsoft SharePoint Foundation 2010, that replaces the SSP model.
- Backup and restore improvements.
- Multitenancy, which creates a true hosting environment and makes it possible to share service resources across customers (tenants) while partitioning data based on site subscriptions.
- Managed accounts that automate password changes.
- Windows PowerShell, the new command-line interface and scripting language that was designed specifically for system administrators.

Unless you have a governance plan, the rapid and uncontrolled growth of individually managed Web servers running SharePoint Server 2010 can have unanticipated results. These include the following:

- Isolated servers hosting a loosely organized group of sites that do not have a common search index, navigation, or security scheme. If you want to support self-service site creation, you should have a plan that covers content disposition and site archival.
- Servers hosting applications that are not secure, which may compromise the integrity of your content.
- Requests for technical support for local servers that are running SharePoint Server 2010 without the support team's knowledge.
- Critical activities, such as regulatory compliance, that may be administered inconsistently across servers.
- Regular maintenance activities, such as backing up and restoring data or installing product updates, that may not be performed correctly because of poor training or inconsistent server configuration.
- Changes in site ownership that raise questions about content ownership or cause sites to be locked.

As the use of SharePoint Server 2010 increases in your enterprise, your IT department should implement a set of well-governed hosting services that makes SharePoint Server 2010 available and establishes control over its use and configuration.

For effective and manageable SharePoint Server 2010 solutions, your organization should consider governing one or more of the following additional areas:

- **Customization policy**

SharePoint Server 2010 includes customizable features and capabilities that span multiple product areas, such as business intelligence, forms, workflow, and content management. Customization introduces risks to the stability, maintenance, and security of the SharePoint Server 2010 environment. To support customization while controlling its scope, you should develop a customization policy that addresses the following considerations:

- Approved customization tools. For example, you should decide whether to allow the use of Microsoft SharePoint Designer 2010 and specify which site elements can be customized, and by whom.
- Ways to manage source code, such as a source control system, and standards for documenting the code.
- Development standards, such as coding best practices.
- Testing and verification standards.
- Required packaging and installation methods. You should control the use of sandboxing, which enables site owners to host custom solutions in a partially trusted context so they do not affect the rest of your SharePoint implementation.
- The kinds of customizations supported. For example, you might want to allow the use of Web parts to integrate Microsoft Silverlight 3 applications together with SharePoint sites.

For more information about processes for managing customizations, see the white paper [SharePoint Products and Technologies customization policy](http://go.microsoft.com/fwlink/?linkid=92311) (<http://go.microsoft.com/fwlink/?linkid=92311>).

- **Branding**

If you are designing an information architecture and a set of sites for use across an enterprise, consider including branding in your governance plan. A formal set of branding policies helps ensure that sites consistently use enterprise imagery, fonts, themes, and other design elements. For example, in SharePoint Server 2010, you can import a Microsoft PowerPoint 2010 theme directly into a SharePoint site, which automatically applies the theme to all subsites.

- **Training**

Although SharePoint Server 2010 has an intuitive, Web-based interface and includes online help, using and especially administering sites based on SharePoint Server 2010 can be a challenge for some users. Additionally, the set of governance policies your IT and business divisions implement may require explanation. By training your user community appropriately, you can increase satisfaction with your implementation of SharePoint Server 2010 and reduce support costs.

Who should determine governance policies?

A successful deployment of SharePoint Server 2010 requires ongoing communication and partnership among business managers, IT professionals, and information workers. When you create a governance committee, you should include representatives from as many of the following groups and roles as possible:



Note:

Your organization might not have an equivalent role, or might use a different title.

- **Executive stakeholders:** Key executives should define the overall goals of the governance committee, provide it with authority, and periodically evaluate the success of the implemented practices and policies.
- **Financial stakeholders:** Financial officers should ensure that governance rules and processes help increase the return on the enterprise's investment in SharePoint products and technologies.
- **IT leaders:** IT leaders must help develop their service offerings and determine how to achieve their IT responsibilities (for example, improving security and maintaining reliability) while they support the features required by the business teams.
- **Business division leaders:** Business leaders represent the teams that do the primary work of the enterprise and drive the architectural and functional requirements of the SharePoint Server 2010 deployment. They must work with information architects to determine the enterprise's information architecture and organizational taxonomy standards. Business leaders must also work with IT leaders to create service-level agreements and other support policies.
- **Information architects or taxonomists:** Members of these groups have extensive experience in planning and designing information systems and taxonomies. Based on their analysis of the information needs of the audience, they develop plans that support organizational objectives and define site architecture and navigation.
- **Compliance officers:** Governance includes making sure that an enterprise meets its regulatory and legal requirements and manages its corporate knowledge. If your enterprise has roles that are responsible for compliance or legal oversight, include representatives from those disciplines in your governance committee.
- **Development leaders:** Leaders in your software development organization should help determine which customization tools are approved, how to verify code security, and other code-related best practices.
- **Information workers:** The members of your organization who do the day-to-day work should help ensure that the SharePoint Server 2010 services and information architecture meet their needs.
- **Trainers:** Instructional experts should be responsible for developing a training plan and conducting all appropriate training and education.

How should governance be implemented?

An effective governance plan anticipates the needs and goals of your organization's business divisions and IT teams. Because every enterprise is unique, you must determine the best way to implement a governance plan that is tailored to your environment.

Consider the following suggested stages of a governance implementation for your organization:

1. **Determine initial principles and goals.**

The governance committee should develop a governance vision, policies, and standards that can be measured to track compliance and to quantify the benefit to the enterprise. For example, the plan should identify service delivery requirements for both technical and business aspects of the SharePoint Server 2010 deployment.

2. **Classify the business information/content.**

Organize your information according to an existing taxonomy, or create a custom taxonomy that includes all content required to support your business solution. After your information is organized, design an information architecture to manage your enterprise content. Then, determine the most appropriate IT services to support the information architecture.

3. **Develop an education strategy.**

The human element is, after the governance plan itself, the most important ingredient in the success or failure of a SharePoint Server 2010 deployment. A comprehensive training plan should show how to use SharePoint Server 2010 according to the standards and practices that you are implementing and explain why those standards and practices are important. The plan should cover the kinds of training required for specific user groups and describe appropriate training tools. For example, your IT department might maintain a frequently asked questions (FAQ) page about its SharePoint Server 2010 service offerings, or your business division might provide online training that shows how to set up and use a new document management process.

4. **Develop an ongoing plan.**

Successful governance is an iterative process. The governance committee should meet regularly to consider incorporating new requirements in the governance plan, reevaluate and adjust governance principles, or resolve conflicts among business divisions for IT resources. The committee should provide regular reports to its executive sponsors to promote accountability and to help enforce compliance across the enterprise. Consider that, although this process seems complicated, its goals are to increase the return on your investment in SharePoint Server 2010, take full advantage of the usefulness of your SharePoint Server 2010 solution, and improve the productivity of your enterprise.

See Also

[Governance Resource Center \(http://go.microsoft.com/fwlink/?LinkId=133502\)](http://go.microsoft.com/fwlink/?LinkId=133502)

Governance features (SharePoint Server 2010)

Microsoft SharePoint Server 2010 includes features that an organization can use to help govern a SharePoint Server 2010 IT service, an enterprise's information management, or an enterprise's information architecture. Links to related articles can help you plan and use each feature.



Note:

Governance is the set of policies, roles, responsibilities, and processes that guide, direct, and control how an organization's business divisions and IT teams cooperate to achieve business goals. For information, see [Governance overview \(SharePoint Server 2010\)](#).

In this article:

- [Managing SharePoint installation in an enterprise](#)
- [IT service features](#)
- [Information management](#)
- [Information architecture features](#)

Managing SharePoint installation in an enterprise

Because SharePoint deployments are managed at the farm level, a single SharePoint deployment has no information about other SharePoint deployments that might exist in the same enterprise. Administrators need this information to manage and control all deployments in the enterprise. For example, administrators need to know whether a deployment was configured according to organizational requirements, or how many unauthorized deployments exist in the enterprise. Microsoft SharePoint 2010 Products provides the following ways to lock down, track, and even block random installations of SharePoint Server 2010

- The following Group Policy object disables the installation of SharePoint Server 2010 and related products:

HKLM\Software\Policies\Microsoft\Shared Tools\Web Server Extensions\14.0\SharePoint\DWORD DisableInstall

To block installation, set DWORD DisableInstall=00000001.

When this registry key is set, users who try to install SharePoint Server 2010 receive the following error message: **SharePoint installation is blocked in your organization. Please contact your network administrator for more details.**

- An Active Directory Domain Services (AD DS) Marker identifies the SharePoint servers in an organization. By default, the marker contains the URL for the topology service application.

For more information about setting the group policy object and the AD DS marker, see [Track or block SharePoint Server 2010 installations](#).

IT service features

A SharePoint service is an IT service that offers hosted sites and portals based on SharePoint Server 2010. An IT service can include the following components:

- Sites and portals at a scope, such as site collection, Web application, or server farm
- Backup and restoration
- Content storage
- Support for customizations
- Security
- Services levels that are based on speed or availability

This section describes features in SharePoint Server 2010 that are useful in maintaining and governing a SharePoint Server 2010 service.

Site templates

Site templates are a set of customizations that are applied to a site definition. By using a site template, a SharePoint Server 2010 service can promote consistent branding, site structure, and layout in the sites that users create. You can create customized site templates for provisioning sites and use them instead of the templates that are included in SharePoint Server 2010 as part of a SharePoint Server 2010 service.

For more information, see [Working with site templates and definitions](http://go.microsoft.com/fwlink/?LinkID=184756) (http://go.microsoft.com/fwlink/?LinkID=184756).

Quotas

A quota specifies limits to the amount of storage that a site collection can use. This process prevents users from adding content when the limit is reached. For more information, see [Plan quota management \(SharePoint Server 2010\)](#).

Locks

Locks prevent users from either adding content to a site collection or using the site collection. For example, you can lock a site that violates a usage policy or exceeds a quota. For more information, see [Lock or unlock site collections \(SharePoint Server 2010\)](#).

Workflows

Workflows are programs that implement business processes for users of a SharePoint Server 2010 site. They are associated with items in the site, such as documents, forms, or list items. Workflows have many applications as part of an IT service. For example, you can use a workflow to provision a new site, track a support issue, or take action when a site collection's quota is exceeded. For more information, see [Plan workflows \(SharePoint Server 2010\)](#).

Features

A feature, which is a container for various defined extensions for SharePoint Server 2010 and SharePoint Foundation 2010, is composed of a set of XML files that are deployed to Web servers. You can deploy a feature as a part of a site definition or a solution package, and you can individually activate a feature.

A site administrator can transform a SharePoint site's functionality by toggling a feature on or off in the user interface. Features make it easier to activate or deactivate functionality in the course of a deployment, and help administrators to easily transform the template or definition of a site. Features can be hidden, which prevents site users from manually deactivating them.

When you implement new site functionality as features, you make it easier for administrators to control sites and enforce a governance plan. A technique named *feature stapling* enables you to attach a feature to all new instances of sites that use a given site definition without modifying the site definition. This lets you control the features that users of your service can access. For more information, see [Using Features](http://go.microsoft.com/fwlink/?LinkID=183450) (<http://go.microsoft.com/fwlink/?LinkID=183450>).

Self-service site creation

You can enable users to create their own site collections by using the Self-Service Site Creation feature. A key decision in governing self-service site creation is to determine the level of service that supports self-service site creation. By default, this permission is enabled in SharePoint Server 2010 for all authenticated users.

For more information, see [Turn on or turn off self-service site creation \(SharePoint Server 2010\)](#).

Web application permissions and policies

Permissions for a Web application are comprehensive settings that apply to all users and groups for all site collections within a Web application. You can control user actions by enabling or disabling the associated permission on the Web application. For example, if you do not want users to be able to add pages to a Web site, you can disable the Add and Customize Pages permission that is one of the site-related permissions. After you disable a specific permission for a Web application, the permission cannot be granted to any user of a site on the Web application. You can control access to a specific URL or zone. You can also specify the level of access that you want for anonymous users. For more information, see [Manage permissions for a Web application \(SharePoint Server 2010\)](#).

Permission policies provide a centralized way to configure and manage a set of permissions that applies to only a subset of users or groups in a Web application. For example, you might want to create a permission policy level for users of a site collection who will be allowed to add items to a list, edit items in a list, delete items from a list, open a list, view items, view lists, or view pages. However, you might want to prevent the same users from creating or deleting lists, which would require the Manage Lists permission. For more information, see [Manage permission policies for a Web application \(SharePoint Server 2010\)](#).

SharePoint Designer

You can manage how Microsoft SharePoint Designer 2010 is used in an organization at either the Web application level or the site collection level. You can control the following types of access to SharePoint Designer 2010:

- Enable or disable SharePoint Designer 2010 use for an entire application or site collection.
If you want to ensure that all designers and owners within a specific site collection can use SharePoint Designer 2010, enable this setting at the site collection level.
- Enable or disable the ability to detach pages from the site definition.
If you want to preserve the branding for all sites in a site collection, you should not allow users to make changes that would result in detaching the page from the site definition.
- Enable or disable master pages and page layouts in SharePoint Designer 2010.
If you do not want users to see the master pages and page layouts for a site, you should disable this setting.
- Enable or disable the site URL structure and its contents.
If you do not want users to view and edit any file on the site, you should disable this setting.

Sandboxing

A *sandbox* is a restricted execution environment that enables programs to access only certain resources, and that keeps problems that occur in the sandbox from affecting the rest of the server environment. Solutions that you deploy in a sandbox are called *sandboxed solutions*. Code Access Security (CAS) limits the operations that these solutions can perform.

A member of the Farm Administrators group must implement the sandboxed environment before any sandboxed solutions can be uploaded. Site collection administrators can upload and activate sandboxed solutions. If the solution does not contain an assembly, a user who has full control at the root of the site collection can also activate the solution.

You can increase isolation by using remote load balancing and by running the sandboxing service on only specific servers. In a production environment, we recommend that you use remote load balancing and dedicate a separate server to running sandboxed solutions. Only members of the Farm Administrators group can block sandboxed solutions, configure load balancing, and reset exceeded quotas.

For more information, see [Plan sandboxed solutions \(SharePoint Server 2010\)](#).

Site collection auto-deletion

Automatic deletion helps to control the number of unused Web sites on a server without requiring any administrative intervention and without any backup mechanism. By default, site confirmation is automatically enabled. Automatic site deletion can be set at the server and server farm level or at the Web application level.

Policies for user profiles and My Site Web sites

Policies are sets of rules that administrators of the User Profile service assign to users or groups. These rules enable administrators to specify user profile properties that control both the site content that users can see and how users can interact with that content.

By default, most user profile properties are visible to everyone, but sensitive information can be configured to have limited visibility. Policies that are less restrictive allow more users to view public profiles more frequently, which affects how often you must update user profiles and compile audiences. In organizations that have many users, frequent updating could affect performance and capacity planning. For more information, see [Plan policies for user profiles \(SharePoint Server 2010\)](#).

By default, all authenticated users can create a My Site Web site. We recommend that you use security groups to manage permissions for My Site Web sites. My Site features store or use personally identifiable information. Before you deploy My Site Web sites, make sure that you have planned how to control the behavior of these features — or turn off the features — to help protect the security of this information.

By default, all authenticated users can add ratings and social tags to documents, to other SharePoint Server items, and to other items, such as external Web pages and blog posts. Users can also leave impromptu notes on profile pages of a My Site Web site or any SharePoint Server page. You can use one or more security groups to grant the Use Social Features permission to a subset of users in an organization.

By default, all authenticated users can edit their profiles, add or edit colleagues, and add or edit memberships. You can use one or more security groups to grant the User Personal Features permission to a subset of users in an organization.

Although e-mail analysis can be enabled for all users in Outlook or just for specific groups by using group policy, users can opt out of this feature. If e-mail analysis is disabled for all users, individual users can still opt in.

Information management

Information management in SharePoint Server 2010 comprises organizing, retrieving, acquiring, and maintaining information.

This section describes SharePoint Server 2010 features that are useful for managing documents, records, and digital assets, and for planning eDiscovery.

Document management

Document management controls the lifecycle of documents in an organization — how they are created, reviewed, and published, and how they are ultimately disposed of or retained. It includes policies that implement auditing, document retention, labeling, and barcodes (to ensure that printed content can be correlated with corresponding electronic versions). Policies can be implemented to help an organization comply with legally mandated requirements, such as the need to retain records. For more information, see [Information management policy planning \(SharePoint Server 2010\)](#).

An organization that uses the Microsoft Office system client applications and SharePoint Server 2010 can enforce policies both on the server and in the client applications.

Content approval

The content approval process gives site members who have approver permissions control of the publication of content. An owner of a document library can enable content approval for a document library or Web pages library and can optionally associate a workflow with the library to run the approval process.

Use content approval to formalize and control the process of making content available to an audience. For example, an enterprise that publishes content might require a legal review and approval before publishing the content.

For more information, see [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#).

Versioning

Versioning is the method by which successive iterations of a document are numbered and saved in SharePoint Server 2010. As a governance tool, versioning prevents users with read permissions from viewing drafts of documents.

For more information, see [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#).

Records management

Records management is the process by which an organization determines the types of information that should be considered records, how records should be managed while they are active, and for how long each type of record should be retained. Records management includes the performance of records-related tasks such as disposing of expired records, or locating and protecting records that are related to external events such as lawsuits.

Records management enables you to do the following:

- Use a records archive to manage records or manage records in-place.
- Create workflows to move documents to a records archive.
- Determine whether you will manage e-mail within SharePoint Server 2010 or within an e-mail application.
- Determine how to translate social content such as blogs, wikis, or My Site Web sites into records.

For more information, see [Records management planning \(SharePoint Server 2010\)](#).

Digital asset library

The digital asset library feature in SharePoint Server 2010 provides a specialized repository for storing and managing digital assets, for example, images, audio files, or video files. A centralized repository for

managing digital assets enables an organization to exert tighter control over brand-sensitive content, and helps to ensure that only approved assets for products are made available to the appropriate users. For more information, see [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#).

eDiscovery

Electronic discovery, or *eDiscovery*, is the process of locating and producing electronic information to support events such as litigation, audits, or investigations. If you use Microsoft SharePoint Server 2010 to manage any electronic information, you should consider eDiscovery when you plan your SharePoint Server solution. Auditing, expiration policies, and search considerations should be part of your planning process, which should be completed before the need to use eDiscovery arises.

We recommend that you enable the auditing policy in all site collections that contain active document libraries. You should also consider implementing an expiration policy to delete documents automatically when they are no longer needed. For more information, see [Planning for eDiscovery \(SharePoint Server 2010\)](#).

Information management policies

An information management policy is a set of rules for a type of content, or for a location where content is stored. Each rule in a policy is a policy feature. For example, an information management policy feature could specify how long a type of content should be retained, or it could provide document auditing. Information management policies enable you to control who can access organizational information, what they can do with it, and how long the information should be retained. You can associate a policy with a list, document library, or content type.

When you configure an information management policy, you can optionally write a policy statement that is displayed in Microsoft Office 2010 client programs to inform document authors about the policies that are enforced on a document. This is a recommended best practice.

SharePoint Server 2010 includes the following information management policy features:

- The Auditing policy feature logs events and operations that are performed on documents and list items. You can configure Auditing to log events such as editing documents, viewing them, or changing a document's permissions level.
- The Expiration policy feature helps dispose of content in a consistent way that can be tracked and managed. For example, the policy can delete a document, or define a workflow task to have SharePoint Server 2010 route the document for permission to destroy it.
- The Labeling policy feature specifies a label to associate with a type of document or list item. Labels are searchable text areas that SharePoint Server 2010 generates based on metadata properties and formatting that you specify.
- The Barcode policy feature enables you to track a physical copy of a document. You create a unique identifier value for a document and then insert a barcode image of that value in the document. By default, barcodes are compliant with the common Code 39 standard (ANSI/AIM BC1-

1995, Code 39), and you can use the object model of the policies to plug in other barcode providers.

Information management policy reports help you monitor how consistently your organization uses policies. Because information management policies are often implemented to help an organization comply with regulations, frequent monitoring of policy usage can help you ensure that an organization is compliant. For more general information about information management policies, see [Information management policy planning \(SharePoint Server 2010\)](#).

Information architecture features

Information architecture in SharePoint Server 2010 is the organization of information in an enterprise — its documents, lists, Web sites, and Web pages — to maximize the information's usability and manageability.

A portal Web site's information architecture determines how the information in that site — its subsites, Web pages, documents, lists, and data — is organized and presented. An enterprise can increase the return on its portal investment by creating a governance body that develops and enforces information architecture standards and policies. A well-governed architecture makes information in the enterprise easy to find, share, and use.

This section describes SharePoint Server 2010 features that govern the usage of an enterprise's information architecture.

Content types

Content types enable enterprises to organize, manage, and handle content in a consistent way. They define the attributes of a type of list item, document, or folder. Each content type can specify metadata properties to associate with items of its type, available workflows, templates, and information management policies. Use content types to encourage consistent information management policies, metadata requirements, and other policies. To govern content types, consider associating event receivers and workflows with the forms that are used to modify the content types.

For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).

Site Content and Structure page

The Site Content and Structure page in the top-level site of a site collection manages the content and structure of a SharePoint site collection. Because site navigation in SharePoint Server 2010 is based by default on the hierarchy of sites and subsites, this feature can also be used to configure site navigation. When porting a Web site to SharePoint Server 2010, you can use the Site Content and Structure page to restructure the site to match your enterprise's needs.

Information rights management

Information Rights Management (IRM) enables content creators to control and protect their documents. The contents of documents that use IRM are encrypted and supplied with an issuance license that imposes restrictions on users.

SharePoint Server 2010 supports IRM for documents that are stored in document libraries. File formats of documents that can use IRM in SharePoint Server 2010 include the following:

Microsoft InfoPath

Microsoft Word

Microsoft Excel

Microsoft PowerPoint

Word Open XML

Excel Open XML

PowerPoint Open XML

To add other file types, an administrator must install protectors — programs that control the encryption and decryption of documents that use rights management — for each new type of file.

Blocked file types

You can restrict files from being uploaded or downloaded to a server by basing the restriction on their file name extension. For example, you can block files that have the .exe extension, because such files can be run on a client computer and may contain malicious software.

By default, many file types are blocked, including file types treated as executable by Windows Explorer. For a complete list of the default blocked file types, see [Manage blocked file types \(SharePoint Server 2010\)](#).

Web content management (publishing sites)

In most content deployment scenarios, the source site collection, from which content is being deployed, is in a server farm that is separate from the destination site collection. Typically, the destination server farm (the "production" farm) has stricter security to minimize the actions that can be performed in the production environment. It is not expected that authoring will be done on the production server, because changes to content on the production server might be overwritten by a content deployment job. In most content deployment scenarios, the source server farm and the production server farm are in independent AD DS domains. For information about content deployment topologies, see [Design content deployment topology](#).

Content deployment is a one-way process: content is deployed from a source site collection to a destination site collection. The content deployment feature does not support synchronization from source to destination and back again. Creating new content or changing existing content on the destination site collection can cause content deployment jobs to fail. Because of this, you should

consider restricting permissions on the destination site collection so that users cannot make changes directly to content that is stored within that site collection.

Permissions to content on the destination server farm will usually differ from permissions to content on the source server farm. In many publishing solutions, the destination server farm authenticates users by using a different AD DS domain than the one used in an authoring or staging environment, and there might not be a trust relationship between the two domains. For more information, see [Content deployment overview \(SharePoint Server 2010\)](#).

Taxonomy and managed metadata

Managed metadata is a hierarchical collection of centrally managed terms that you can define and then use as attributes for items in Microsoft SharePoint Server 2010. A user's role determines how the user can work with managed metadata.

Users can see only global term sets and term sets that are local to the user's site collection. *Local* term sets are created within the context of a site collection. *Global* term sets are created outside the context of a site collection. If there are term sets that some users should be unable to view, assign these term sets to separate groups. For more information, see [Plan to share terminology and content types \(SharePoint Server 2010\)](#).

An organization's governance policies can affect how you design managed metadata services and connections. For example, a formal process for managing terms and term sets will affect how you set connection parameters. If every document that is created must have a certain set of attributes, you will probably want to have a content type hub in at least one service. Familiarize yourself with an organization's governance plan before you determine the managed metadata services and connections. For more information, see [Managed metadata service application overview \(SharePoint Server 2010\)](#).

See Also

[Governance overview \(SharePoint Server 2010\)](#)

Establishing and governing a SharePoint service (SharePoint Server 2010)

A successful Microsoft SharePoint Server 2010 deployment relies on an enterprise's ability to govern the service and ensure that the service meets the business needs of the customers in a secure, manageable, and cost-effective way. This article describes typical elements of an IT service that hosts SharePoint Server 2010, suggests key success factors in governing an SharePoint Server service, and provides an example of a three-tiered SharePoint service.

- [What is a SharePoint service?](#)
- [Elements of a successful service](#)
- [What to govern in a SharePoint service](#)
- [Creating multiple services](#)
- [Service-level agreements](#)

What is a SharePoint service?

A SharePoint service is an IT service that offers hosted sites based on Microsoft SharePoint 2010 Products. Among the things that a service provides are the following:

- Sites at a scope, such as site collection, Web application, or server farm
- Backup and recovery
- Content storage
- Support for customizations
- Security
- Service levels that are based on speed and availability

Elements of a successful service

As you envision and implement your SharePoint Server service, consider the following elements that can contribute to the success of the governing effort:

- **Form and use a governing group**

Your IT service that supports SharePoint Server should be governed by a group that includes executive stakeholders, business division leaders, influential information workers, IT managers, and IT technical specialists, among others. The goal of the governing group should be to oversee the service. In this capacity, the governing group defines the initial offerings of the service, defines the service's ongoing policies, and meets regularly to evaluate success.

- **Communicate about the services**

The governance policies that you develop must be publicized to your enterprise. Maintain a Web site that describes the set of services.

- **Encourage use of the service**

Discourage or block users from deploying their own servers. Instead, encourage them to use the service. Isolated servers may not be configured in accordance with IT security policy and the enterprise's regulatory requirements. Furthermore, users who deploy their own servers may fail to properly back up their servers or fail to keep servers up-to date with software patches and updates. Finally, content on servers that are not governed by the service may not be crawled by the enterprise's indexing service, which may create isolated pockets of content.

- **Create multiple services**

You should offer a set of services that support SharePoint Server. For example, one service could provide thousands of sites for collaboration and another could support very large, mission-critical sites, such as enterprise intranet sites. A set of SharePoint Server services enables you to apply unique governance rules and policies at various levels of service so that you can vary the cost that you assess to organizations based on their level of service. Lastly, a tiered service enables you to phase in services in a manageable way.

What to govern in a SharePoint service

As you design IT services that support SharePoint Server, a governing group should determine the limits and policies to control the services. If you choose to use the multi-tenancy features in SharePoint Server for hosting services, you can enable an IT group to delegate common administrative tasks for a set of sites to the business unit owners. This allows an IT group to focus its attention on the service itself. For more information about multi-tenancy, see [Hosted environments \(SharePoint Server 2010\)](#).

Determine limits and policies for the following elements of services:

- **Quota templates**

A quota template consists of values that specify how much data can be stored in a site collection. The value also indicates the limit that triggers an e-mail alert to the site collection administrator. You can associate quotas with sites that are offered at various service levels to govern the growth of SharePoint Server in an enterprise. Note that you can set separate quotas for sandboxed solutions.

- **Maximum upload size**

At the Web application level, you can set limits on the maximum size of uploaded files. All sites within the host Web application use the same limit.

- **Site lifecycle management**

You can govern how sites are created, the size of sites, and their longevity by using self-service site management and site-use confirmation and deletion. You can also set expiration and access policies to control the lifecycle of content in sites.

Self-service site provisioning enables users to create their own top-level Web sites by visiting an IT-hosted page and supplying data about the site's intended use. The site can then be provisioned

based on a custom workflow. For various levels of service, you can govern the size of such sites and control their longevity.

- **Customization policy**

A primary benefit of using sites that are based on SharePoint Server is the ability of site owners to customize them. For example, site owners might change a site's appearance or provide new functionality, such as a custom Web Part or workflow. Carefully consider the type and amount of customization that is allowed and supported at each level of service because some types of customizations are global to the server farm.

Consider using sandboxed solutions to limit the impact of customizations in a farm. For example, services that allow self-service site creation may include thousands of sites that share a single Web application. In this instance, you could limit customizations to only those sites that are supported by the user interface, such as adding Web Parts to pages. If you use sandboxed solutions, the customizations apply only to that site collection. In a service that provides virtual or physical isolation of the server farm, such as for an enterprise intranet site, you might allow a large range of customizations, such as custom event handlers and workflows.

At the Web application level, there is also the ability to control whether SharePoint Designer can be used to modify sites in that Web application. For more information, see [Configure settings for a Web application \(SharePoint Server 2010\)](#).

For a full discussion of the range of customizations that SharePoint Server 2010 supports and the risks and benefits of supporting each type of customization at various levels of service, see the white paper [SharePoint Products and Technologies customization policy](#) (<http://go.microsoft.com/fwlink/?linkid=92311>). Although this content is specifically written about Microsoft Office SharePoint Server 2007, much of the information applies to SharePoint Server 2010. For more information about sandboxed solutions, see [Plan for sandboxed solutions \(SharePoint Server 2010\)](#).

- **Asset classification**

You can develop and implement a classification system for sites and content supported by a service that identifies the impact and value of the information to an organization. For example, metadata can classify content as having high, moderate, or low business impact or value.

- Impact is related to exposure and content: if the content were distributed externally, would it hurt your business? Or would it expose personally-identifiable information about users or customers? If so, that's high business impact content.
- Value is related to availability: if the content were unavailable, could it impact the enterprise's day-to-day business? If so, that's high value content.

Each classification would then cause other behaviors – for example you could require that high business impact content be transferred only in encrypted form, or you could require that an approval process be run on medium impact content before it can be published on a public-facing Web site. Perhaps high business impact content should be hosted on a service that provides more restrictive policy and aggressive disaster recovery processes.

- **Lifecycle management**

A service should provide lifecycle guidelines or tools for active sites and unused sites. For lower service levels, you could, for example, implement a mechanism that lets only site owners create sites that last six months before the user would have to extend the request for the site. Also, you can implement a tool that looks for sites that have not been used for a specified period of time and deletes them. Lifecycle management also means integrating a service with the records management tools and processes in place in an organization. For more information, see [Records management planning \(SharePoint Server 2010\)](#).

- **Branding and navigation**

Consistent branding with a corporate style guide makes for more cohesive-looking sites and easier development. Master pages and templates help create the visual brand of a site. Store approved master pages in site galleries so that site designers use them consistently. A consistent design helps users confirm that they are in the right place when they look at the site. Define the parts of the template that can and cannot be changed by site owners. Allow room for sub-branding of individual team or project brands.

Consistent navigation is also key to ensure that users do not become lost as they navigate the services looking for content.

- **Data protection**

Features that provide data protection include backup and recovery. You can vary the level of data protection based on the service levels that you provide. Higher levels may require charges to the site owner. For each level of service, plan the frequency at which you will back up sites and the response time you will guarantee for restoring sites. For more information, see [Plan for backup and recovery \(SharePoint Server 2010\)](#) and the [Business Continuity Management Resource Center](#) (<http://go.microsoft.com/fwlink/?LinkID=199235>).

- **Security, infrastructure, and Web application policies**

Maintain the infrastructure and monitor access to the infrastructure and content to make sure that you have a stable and secure environment. Use Web application policies to allow or deny access to the content in accordance with compliance rules or business needs. Keep the infrastructure current with software updates to make sure that you have the latest improvements and fixes.

- **Training**

A well-trained user community provides benefits to IT. It reduces support calls, encourages adoption, helps ensure proper use of SharePoint Server, and helps users understand their responsibilities when using the SharePoint Server service. For each level of service, consider an appropriate level of training requiring as a requirement. Even for a basic service, users with site administration permission will have access to many features that affect the functionality of the site. Online training, such as tutorials, for these users can help them take the best advantage of their site.

Training for a user community is available at [SharePoint 2010 Resources for End Users](#) (<http://go.microsoft.com/fwlink/?LinkID=199542>)

Creating multiple services

Users of an enterprise's SharePoint Server service require sites that meet a range of purposes:

- Short-lived, single-purpose workspaces for planning events and managing meetings and projects
- Team sites for general collaboration
- Divisional portals for large workgroups to manage their business processes
- Enterprise intranet sites to broadcast information and supply services to the entire organization

Consider dividing a SharePoint Server service into a set of services that meets the range of needs in an enterprise. Each user of a particular service would get the same level of support and would be charged a similar cost. As more complex or costly solutions are needed, you could add new services to support them. One benefit of this approach is that you can introduce one service at a time, which eases the burden on your IT staff. Work with executive stakeholders, business division leaders, and IT managers to determine the requirements of each level of service and the order in which services are introduced.

The following table illustrates a sample approach to creating a tiered set of services. In this example, three service levels are offered. Note that provided values are not recommendations but are supplied as samples:

Sample approach to a set of services

	Basic Service	Advanced Service	Premium Service
Description	A server farm that is used to host tens of thousands of customer site collections. It is intended to support short-lived sites along with small team sites.	A server farm that is designed to host a small number of portal sites. It is applicable to customers with some requirements for server-side customizations that will not interfere with other sites that are hosted on the same servers.	A server farm dedicated to hosting a large, highly customized or highly critical site. The topology is scalable depending on the agreed upon hosting requirements between the customer and the hosting team.
Example	Collaboration site to plan an event	Division portal including integration with line-of-business data and custom workflows	Enterprise intranet site that includes large-scale integration with multiple back-end systems
Scope	Site collection	Web application	Server farm with multiple Web applications

	Basic Service	Advanced Service	Premium Service
Customizations	Only customizations available in the user interface are supported.	Some server-side customizations, such as custom site templates, are supported. All customizations are tested and reviewed before being accepted for deployment. Alternatively, customizations are allowed only as sandboxed solutions.	Extensive customizations are permitted. All customizations are tested and reviewed before being accepted for deployment. Alternatively, customizations are allowed only as sandboxed solutions.
Cost to user	None to minimal	Moderate	High
Self-service provisioning?	Yes	No	No
Content storage limits	500 MB	2 GB	Unlimited
Backup frequency	Twice weekly	Daily	Daily
Backups maintained for	14 days	30 days	60 days

Service-level agreements

Establish service-level agreements for each service level. A service-level agreement should include the following items at a minimum:

- The length of time and approvals that are necessary to create a site.
What's the process to create a site? Who's involved?
- Information about the costs for the service to users or departments.
Who gets charged, and for what?
- Operational-level agreements that specify the teams that perform operations and the frequency.
Which team applies updates? Which team performs backups? How frequently do these occur?
- Policies about problem resolution through a help desk.
When a user gets stuck, who do they call? What's the escalation path?
- Negotiated performance targets for the first load of a site, subsequent loads, and performance at remote locations.

- Recovery, load balancing, and failover strategies.
- Customization policies for the service.
- Storage limits for content and sites.
- Multi-language support.

Which languages will be installed and supported?

See Also

[Track or block SharePoint Server 2010 installations](#)

[Governance in SharePoint Server 2010 \(http://go.microsoft.com/fwlink/?LinkID=200590\)](http://go.microsoft.com/fwlink/?LinkID=200590)

[SharePoint - Sample Service Level Agreement \(SLA\) - "From the Field" blog \(http://go.microsoft.com/fwlink/?LinkId=203973\)](http://go.microsoft.com/fwlink/?LinkId=203973)

[Sample template: SharePoint Products and Technologies governance plan \(http://go.microsoft.com/fwlink/?LinkID=162169\)](http://go.microsoft.com/fwlink/?LinkID=162169)

Implementing and governing information architecture (SharePoint Server 2010)

By planning and governing an enterprise's information architecture, you help ensure that solutions that are based on Microsoft SharePoint Server 2010 will meet organizational needs. An effective information architecture makes it easy for users of solutions to find and store information and improves the quality of that information and its ease of access. This article includes the following guidance:

- Introduces the concept of information architecture
- Recommends how to govern a SharePoint Server information architecture
- Points to available resources to help an organization's information architects plan and implement an information architecture in SharePoint Server 2010
- Presents a case study that illustrates the benefit of effective information architecture to promote collaboration across an enterprise

In this article:

- [What is information architecture?](#)
- [Governing information architecture](#)
- [Resources for planning information architecture](#)
- [Case study: Governing information architecture to eliminate content chaos](#)

What is information architecture?

Information architecture in SharePoint Server is the organization of information in an enterprise — its documents, lists, Web sites, and Web pages — to maximize the information's usability and manageability. The following factors contribute to the successful implementation of information architecture:

- How easy it is to find information
- How information is stored and retrieved
- How users navigate to information
- How redundant or overlapping information is
- What metadata is available for each type of information
- What templates are used for creating information
- How well the information architecture is governed
- How My Site Web sites fit into the information architecture

The goals and implementation of information architecture will vary depending on the type of solution you are creating. For example:

- If you are designing the information architecture of an enterprise's intranet portal site, you might focus on the following considerations:
 - How metadata will be used to characterize the site's content
 - The organization of content in sites and document libraries
 - The availability of that content in portal sites
 - The templates to use for creating content

Note that search is a critical feature for users of intranet sites.

- When you design the information architecture of an Internet presence Web site, you might focus on the following considerations:
 - How the site is organized into a hierarchy of sub-sites and Web pages
 - How the hierarchy is exposed in the site's navigation features
 - How easy it is to search for content on the site

Information architecture decisions may also affect the flow of information. For example, in an intranet portal site, information may initially be drafted in sites that are not available to most members of an organization. To make that information discoverable, useful, and actionable across the organization, the information architecture design could include methods and guidelines for exposing information in locations that are available to all users.

Depending on the size of an organization, you should consider including an information architect who is responsible for designing and implementing solutions based on SharePoint Server on your team. Information architects have expertise in structuring information in large Web environments such as intranet portal sites.

Governing information architecture

Information architecture in an enterprise should be governed in order to ensure the following conditions:

- Information in an organization is manageable by an organization's information technology (IT) team by specifying how that information architecture is implemented and maintained.
- Information architecture meets the regulatory requirements, privacy needs, and security goals of the enterprise.
- Information architecture meets an organization's business goals. Remember that a poorly designed and governed information architecture can subtract from an organization's effectiveness. Well designed and governed information architecture can multiply that organization's effectiveness.

Governing content

When you create a plan that governs content in an environment, consider the following best practices:

- Use workflows and approval for document centers and site pages – wherever official documentation is stored.
- Use version history and version control to maintain a history and master document.

- Use content types with auditing and expiration for document libraries to manage document lifecycle.
- Use site-use confirmation and deletion to manage site collection lifecycles.
- Identify important corporate assets and sites that contain personally identifiable information – be sure that they are properly secured and audited.
- Integrate the information architecture with the environment's search strategy. Take advantage of enterprise search features like:
 - Best Bets
 - People search
 - Content sources
 - Connectors for external content
 - Authoritative pages
 - Keywords
 - Scopes
 - Thesauruses
 - Taxonomy and ratings



Important:

Governance doesn't work without user adoption and compliance. End-user training and education, in addition to good content and search, is the key to user adoption.

As you create a governance plan, determine the rules or policies that you need to have in place for the following types of items:

- Pages
- Lists
- Documents
- Records
- Rich media
- Wikis
- Blogs
- Anonymous comments
- Anonymous access
- Terms and term sets
- External data

When you think about content, consider the balance between the following factors and determine which of these factors is the highest priority for each type of content:

- **Availability** Content needs to be available when users need it, and users need to know where and how they can get to it.

- **Redundancy** Exposing a single copy of content in multiple places rather than duplicating the content reduces redundancy and provides one version of the truth.
- **Access** Consider who has access to the content. If it should be secure, is it?

Map the preferred content lifecycle. What steps need to happen when a list item, document, or page is created, updated, or deleted? For best results, start with what you want to use long term rather than a temporary solution.

As part of a governance plan, determine who does what. For example, who creates sites, who controls keywords in Search, or who manages the metadata and ensures that the metadata is applied correctly?

Much of this should be explained by the document and records management plans but also consider the storage costs for the content. Understand the capacity planning limits for documents and items, and keep performance and scale in mind.



Important:

A governance team should identify a process for periodically reviewing the site to ensure that it complies with a governance plan.

Governing information access

Another aspect of information management is who has access to content – how are you making the content available internally and externally and to whom? Be sure to consider access to content when you design a solution and sites. This overlaps with IT Governance as you consider the entire environment. Ask the following questions:

- Permissions and Audiences
 - How do I structure permissions in a site?
 - How do I target content to specific audiences?
- Access
 - How do I make this content accessible to internal users?
 - How do I make this content accessible to external users?

The governance team

Governance of the information architecture requires the participation of all groups that have a stake in its success. A governance team should include the following primary members:

- Information architects or taxonomists
 - If possible, include a professional information architect in the planning team and have that person participate in the governance team.
- Compliance officers
 - You also need to include compliance officers or others who are responsible for ensuring that legal or compliance requirements are met.
- Influential information workers

Include influential information workers to ensure that the processes and structure the team sets up will be usable.

- IT technical specialists and IT managers

Representatives of the IT organization should be included.

- Business division leaders

Because the ultimate purpose of information architecture is to meet the needs of the business, it is essential that representatives of the enterprise's business units have a primary role in this governance team.

- Executive stakeholders

The executive stakeholder is a key participant in the governance team. Although this person may not attend all sessions of the governance team, inclusion of this role is essential so that the governance team is kept accountable to its mission. Furthermore, the executive sponsor helps to ensure that benchmarks are used that help mark the progress of the ongoing effort of governing information architecture.

Along with these primary stakeholders, depending on the type of enterprise, you may decide to include other participants, such as the following:

- Development leaders
- Trainers
- IT managers
- Financial stakeholders

The best way to run the information architecture governance team will be based on the culture and methodologies of an enterprise. However, here are some general guidelines:

- Meet regularly and allow enough time, especially in early sessions, to consider every issue.
- Exemplify good information architecture practices in deliberations. For example, you might use a well-designed collaboration site to record deliberations and maintain artifacts.
- Report to the wider organization (and gather requirements across the organization) by using a Web site and online surveys.
- Maintain a set of milestones and a shared calendar.
- Consider piloting information architecture practices in some divisions of the organization and using that experience to incrementally improve the information architecture practices across the wider organization.

Resources for planning information architecture

The following table presents resources that are available to help information architects plan the information architecture of your SharePoint Server solution:

Information architecture resources

To plan ...	See ...
The structure of sites and subsites	<ul style="list-style-type: none"> • Plan sites and site collections (SharePoint Server 2010)
Document libraries	<ul style="list-style-type: none"> • Identify users and analyze document usage (SharePoint Server 2010) • Document library planning (SharePoint Server 2010) • Enterprise content storage planning (SharePoint Server 2010)
Navigation	<ul style="list-style-type: none"> • Plan site navigation (SharePoint Server 2010)
Metadata	<ul style="list-style-type: none"> • Plan managed metadata (SharePoint Server 2010) • Content type and workflow planning (SharePoint Server 2010)
Content expiration	<ul style="list-style-type: none"> • Information management policy planning (SharePoint Server 2010)
Records management	<ul style="list-style-type: none"> • Records management planning (SharePoint Server 2010)
Moving content	<ul style="list-style-type: none"> • Plan content deployment (SharePoint Server 2010) • Plan workflows (SharePoint Server 2010)
Templates	<ul style="list-style-type: none"> • Working with site templates and definitions (http://go.microsoft.com/fwlink/?LinkID=119099)
Content approval	<ul style="list-style-type: none"> • Versioning, content approval, and check-out planning (SharePoint Server 2010) • Plan content approval and scheduling
Information management policies	<ul style="list-style-type: none"> • Information management policy planning (SharePoint Server 2010)
Social computing	<ul style="list-style-type: none"> • Plan for social computing and collaboration (SharePoint Server 2010) • Privacy and security implications of social tagging (SharePoint Server 2010)

Case study: Governing information architecture to eliminate content chaos

Fabrikam, Inc. is a world-wide manufacturer and exporter of automobile parts such as fuel and water pumps, shock absorbers, brake pads, and various engine parts. The company has 13,000 employees world-wide and more than fifty manufacturing plants across multiple geographical divisions. Fabrikam's IT organization owns deployment, operations, and support of information technologies such as e-mail, file management, and Internet technology, along with development of information technology solutions, such as the corporate Web site.

Content at Fabrikam had historically been stored in shared file directories which were distributed across local file servers at the various locations of the company. This contributed to a chaotic content situation. Mass duplication of key content made it difficult to determine the "official" version of a file. Content metadata taxonomy was very limited, based on what the file system could support. Because divisions of the corporation created unique, custom templates for common documents such as work orders, sales proposals, or human resource documents, it was difficult to compare documents side by side across divisions.

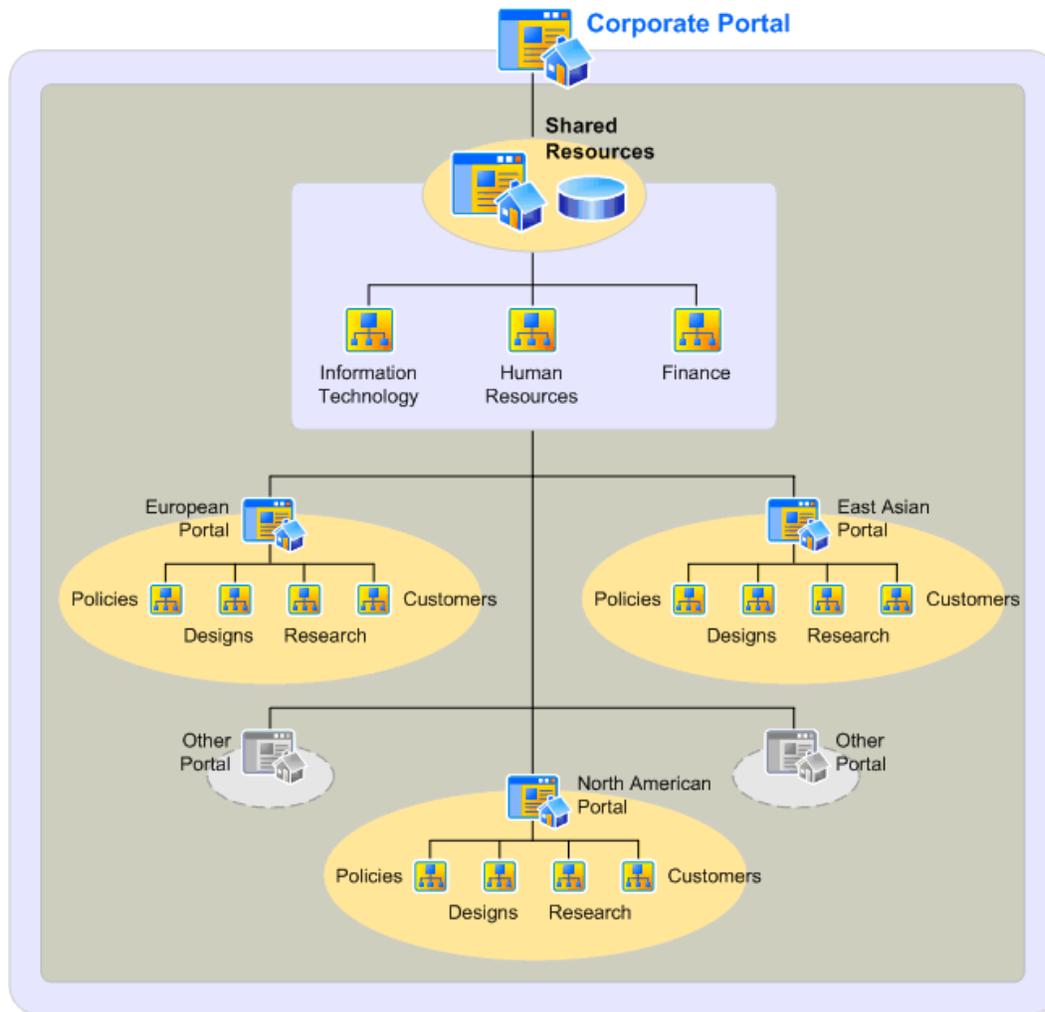
As the inadequacies of their information architecture based on file shares became more evident, managers at Fabrikam mandated adoption of new, portal-based technologies. They did this to accomplish several goals:

- Modernize their information architecture
- Move content from file shares to libraries in portal sites
- Provide central access to content and applications such as expense report submissions
- Provide a home page for central communications to Fabrikam employees

The next step in the evolution of Fabrikam's information architecture had begun.

The following diagram illustrates the initial architecture of the Fabrikam portal. A corporate portal at the top of the architecture provided a central location from which to broadcast general corporate information. At the next level, a few sites provided shared resources to the organization, such as human resources, legal services, and financial services.

Below the shared resources level in the Fabrikam architecture were divisional portals for the various regional offices of Fabrikam. Initially, North America, Europe, and East Asia were piloted. Gradually other divisional portals were added: Australia, Africa, and South America. Each divisional portal contained repositories for its policies, product designs, research and development, and customer data.



The result of the change from collaboration that is based on file shares to collaboration that is based on portals was disappointing to the sponsors of the portal effort and to the Fabrikam work force. “Content chaos” had not been alleviated. It had just moved from file shares to portal sites.

Because key functions at Fabrikam, such as materials purchasing, customer relationships, parts design and specification, and even some human resources processes occurred at the divisional level, each division had developed local content to support these functions. Policy statements, parts blueprints and specifications, personnel documents, documents related to customer relationships, and similar content was created and managed locally. Templates and metadata for these documents diverged across divisional portals. As metadata became more specific to each division it became more difficult to search for content from one division to another. When a document was found across divisions, it was often copied to another division’s portal to make it more accessible. This process made it increasingly difficult to find the “official” version of a document as duplicates proliferated. Also, some documents in divisional portals were secured in such a way that employees of other divisions could not view them. Although

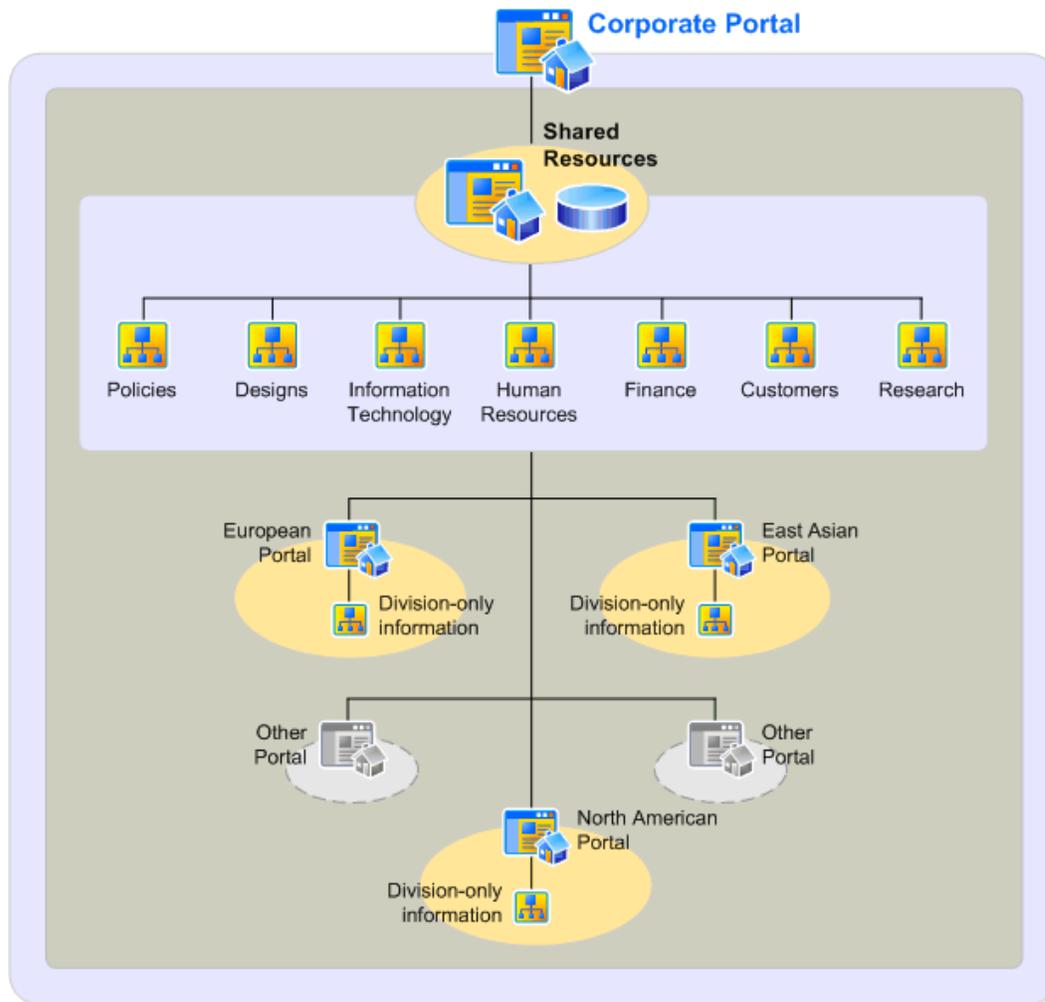
this was appropriate when a document was being drafted, there was no guideline for when and how a document should be made viewable across the enterprise.

To address the growing discontent with the portal, the company formed a strategy team which was comprised of managers from across the various Fabrikam divisions, core IT team members, and portal architects. The team had the following tasks:

- Evaluate the current state of the SharePoint Server portal deployment.
- Recommend necessary changes to the portal.
- Determine how to measure improvement over time.

The team that developed the portal strategy concluded that the current portal taxonomy's "divisional" organization was the root to the problem. Each division was duplicating processes and hoarding content without taking advantage of the expertise and best practices developed in peer divisions. This contributed to poor collaboration, wasted resources, and content chaos. Their insight was to move towards a more "operational" organization for the enterprise portal. Shared resources such as information technology and finance were currently exposed in the portal taxonomy above (and visible to) all divisions. The team that developed the portal strategy concluded that other operational disciplines, such as customer relationships, vendor relationships, plant configuration, and research and design should be moved from divisional silos to the same level as the shared resources in the site's hierarchy. Instead of the content's location, metadata would associate information with the various divisions.

The following illustration is the revised architecture of the Fabrikam portal:



Reorganizing the Fabrikam portal in this way had the additional benefit of forcing collaboration across parts of the enterprise that had similar responsibilities but were not accustomed to working together on standards and processes. For example, storing design files in a central repository forced the various divisions to standardize on a tool for designing automobile parts. This change saved money and reduced training time. Also, best practices in design were made available for engineers to view across the enterprise and to use as a basis for new design projects.

Here is a summary of the benefits of the redesigned portal architecture:

- Provides central access to information.
- Reduces duplication of content.
- Makes the official version of each item of content evident.
- Standardizes metadata.
- Standardizes templates.

- Fosters collaboration and sharing of best practices.

The redesign and reimplementation of the portal was just the start. The team that developed the portal strategy received executive sponsorship to become a governance team for the portal. As a result, the group represented the needs of portal users by developing policies and standards. This helped ensure accountability across the organization and provided a forum for evaluating and evolving the portal — both to improve portal features but also to help maximize the return on the enterprise's investment in the SharePoint Server technology. The governance body oversaw the following elements:

- Metadata standards
- Template standards
- Guidelines for when information needed to be made available across the enterprise
- Compliance with corporate and governmental regulations
- Training standards
- Branding standards for content

Fabrikam started seeing a large return on its portal investment. A year into the project, the strategy team did an inventory of content and found that out of 500,000 documents, only 230 were duplicates. The company identified millions of dollars in savings due to the centralization of efforts. And a survey of employees showed a large increase in satisfaction with the portal. Collaboration was healthy at Fabrikam.

See Also

[Governance Resource Center \(http://go.microsoft.com/fwlink/?LinkID=200590\)](http://go.microsoft.com/fwlink/?LinkID=200590)

[Site and solution governance \(SharePoint Server 2010\)](#)

[Governance overview \(SharePoint Server 2010\)](#)

[Plan information architecture for Web content management](#)

Plan for sandboxed solutions (SharePoint Server 2010)

Sandboxed solutions restrict access to network and local resources to provide greater security and stability. You can use sandboxed solutions for load balancing solutions, for solutions that have not been fully tested, and for deploying user solutions in a hosted environment. Sandboxed solutions run in a separate worker thread so that they cannot access resources that belong to other solutions, and they have limited access to local and network resources.

In this section

- [Sandboxed solutions overview \(SharePoint Server 2010\)](#)
- [Plan sandboxed solutions \(SharePoint Server 2010\)](#)

Sandboxed solutions overview (SharePoint Server 2010)

You can deploy a Microsoft SharePoint Server 2010 solution directly onto your SharePoint Server 2010 farm, or you can deploy the solution into a *sandbox*. A sandbox is a restricted execution environment that enables programs to access only certain resources, and that keeps problems that occur in the sandbox from affecting the rest of the server environment.

Solutions that you deploy into a sandbox, which are known as *sandboxed solutions*, cannot use certain computer and network resources, and cannot access content outside the site collection they are deployed in. For more information about the restrictions on sandboxed solutions, see [What a sandboxed solution cannot contain](#).

Because sandboxed solutions cannot affect the whole server farm, they do not have to be deployed by a farm administrator. Sandboxed solutions can be deployed by a site collection administrator or, in certain situations, by a user who has full control at the root of the site collection. Only a farm administrator can promote a sandboxed solution to run directly on the farm, outside its sandbox.

It is especially appropriate to use sandboxed solutions in two scenarios:

- When an organization want to run code for employees on a production SharePoint Server 2010 site, and that code has not been stringently code reviewed and tested.
- When a hoster wants to let the owners of hosted SharePoint Server 2010 sites upload and run custom code.

This article introduces the concepts that are related to sandboxed solutions, explains the differences between sandboxed solutions and solutions that are deployed on the farm, and summarizes how sandboxed solutions are deployed and run. This article does not contain detailed procedures for configuring sandboxing or for deploying sandboxed solutions.

In this article:

- [Deploying and running a sandboxed solution](#)
- [Isolating sandboxed solutions](#)
- [What a sandboxed solution cannot contain](#)
- [Comparison of sandboxed and farm solutions](#)
- [Benefits of using sandboxed solutions](#)

Deploying and running a sandboxed solution

Any page of a SharePoint Server 2010 application can contain components that run in a sandbox in addition to components that run directly on the farm. The components that are deployed to the farm run in the Internet Information Services (IIS) worker process. The components that are deployed to the sandbox run in a sandboxed process.

The following list identifies several of the components that you might deploy in a sandbox:

- Web Parts
- Event receivers
- Feature receivers
- Custom Microsoft SharePoint Designer workflow activities
- Microsoft InfoPath business logic

The following steps describe how to deploy a sandboxed solution:

1. A farm administrator performs the following tasks. These have to be done only one time.
 - A farm administrator enables sandboxing and starts the sandboxing service on each server that will run sandboxed solutions.
 - A farm administrator determines which load balancing scheme to use. The load balancing scheme applies to all sandboxed solutions in all site collections on the farm.
 - A farm administrator sets resource quotas that the combination of all sandboxed solutions in a site collection cannot exceed.
2. A site collection administrator or a user who has full control at the root of the site collection uploads a solution to the site collection's solution gallery.
3. A site collection administrator activates the solution. If the solution does not contain an assembly, a user who has full control at the root of the site collection can also activate the solution. Validation tools run against the solution. If the solution fails validation, it is not activated.

When a request to run a sandboxed solution is processed, the following activities occur:

1. Based on load balancing scheme, SharePoint Server 2010 determines which server to run the solution on. If load balancing is local, the solution runs on the same server that is servicing the request. If load balancing is remote, the server that the solution runs on is selected based on solution affinity. In both cases, the server must be running the sandboxing service.
2. SharePoint Server 2010 selects a sandbox worker process to run the solution in; loads a "shim" dynamic-link library (dll) into the process; and then loads the solution assembly into the process.
3. As the solution runs, its code passes through the shim before it is executed by SharePoint Server 2010. If the solution code attempts to use APIs that sandboxed solutions are restricted from using, the shim signals an exception instead of letting the code pass through and run.
4. SharePoint Server 2010 monitors the resources that sandboxed solutions use. If the sandboxed solution exceeds a hard limit (for example, if it uses more than a predefined amount of CPU time,) SharePoint Server 2010 terminates the sandbox worker process. If the combination of all sandboxed solutions in the site collection exceeds the site collection's resource quota, SharePoint Server 2010 turns off all sandboxed solutions in the site collection for the rest of the day.
5. A site collection administrator can monitor the resources that sandboxed solutions use, and can deactivate solutions in the site collection.

If necessary, a farm administrator can block a solution from running on the farm. Optionally, a farm administrator can also remove the requirement that a solution be run in a sandbox. If the requirement to

run in a sandbox is removed, when the solution runs in any site collection in the farm, it will no longer run in a sandbox.

Isolating sandboxed solutions

You can isolate sandboxed solutions to various degrees. Each additional level of isolation increases your ability to protect the main part of your SharePoint Server 2010 site from code that might consume too many resources. At the first level, sandboxed code runs in a rights-restricted, isolated process. Code Access Security (CAS) limits the operations that the code can perform. You can increase isolation by using remote load balancing and by running the sandboxing service on only specific servers. In a production environment, we recommend that you use remote load balancing and dedicate a separate server to running sandboxed solutions.

What a sandboxed solution cannot contain

A SharePoint Server 2010 solution must contain the configuration file that is named manifest.xml, and may also contain additional configuration files and assemblies. If the solution will run in a sandbox, the assembly and configuration files are limited in what they can contain.

The following list identifies the most common things that an assembly that will run in a sandbox cannot do.

- Connect to resources that are not located on the local server.
- Access a database.
- Change the threading model.
- Call unmanaged code.
- Write to disk.
- Access resources in a different site collection.

The manifest.xml file refers to feature files; feature files refer to element files; and element files contain **feature** elements. The only **feature** elements that are permitted in a sandboxed solution are:

- **ContentType**
- **Field**
- **CustomAction**
- **Module**
- **ListInstance**
- **ListTemplate**
- **Receivers**
- **WebTemplate**
- **WorkflowAssociation**
- **PropertyBag**

- **WorkflowActions**

Comparison of sandboxed and farm solutions

The following table compares aspects of solutions that run in a farm to solutions that run in a sandbox.

Aspect	Farm	Sandbox
Deployment process	Add the solution, and then deploy it to the farm.	Upload the solution to a site collection, and then activate it in the site collection.
Who can deploy	Farm administrator.	If the solution contains an assembly, only a site collection administrator can deploy it. If the solution does not contain an assembly, a user who has full control at the root of the site collection can deploy it.
Data access	Unrestricted.	The solution can only access content from the site collection in which it was deployed.
Process the solution runs in	Unrestricted IIS worker process, or whichever process the solution is deployed into.	Separate worker process that has restricted rights.
Code access security	The solution developer can set the code access security policy when packaging the solution.	Restricted. For more information, see Deploying a sandboxed solution (http://go.microsoft.com/fwlink/?LinkId=177369).
Monitoring	Not monitored.	Monitored, and limited by quotas set by the farm administrator.
Load balancing	Varies, based on the kind of solution.	Configurable separately from non-sandboxed solutions.
Solution functionality	Unrestricted.	Restricted, as described in What a sandboxed solution cannot contain .

Benefits of using sandboxed solutions

The main benefits of using sandboxed solutions are as follows:

- Solutions can be added to a production SharePoint Server 2010 environment without the risk of affecting processes outside the sandbox.

- Site collection administrators can deploy sandboxed solutions, freeing farm administrators from this task.
- Scalability and flexibility are increased because sandboxes run in separate process that can be restricted by quotas, and their effect on the farm can be monitored.
- A solution does not have to be modified or recompiled if it is moved from a sandbox to running directly on the farm.

See Also

[Sandboxed solutions administration \(SharePoint Server 2010\)](#)

[Plan for sandboxed solutions \(SharePoint Server 2010\)](#)

[Sandboxed solutions architecture \(http://go.microsoft.com/fwlink/?LinkId=177368\)](http://go.microsoft.com/fwlink/?LinkId=177368)

[Deploying a sandboxed solution \(http://go.microsoft.com/fwlink/?LinkId=177369\)](http://go.microsoft.com/fwlink/?LinkId=177369)

Plan sandboxed solutions (SharePoint Server 2010)

Sandboxed solutions restrict access to network and local resources to provide greater security and stability. You can use sandboxed solutions for load balancing solutions, for solutions that have not been fully tested, and for deploying user solutions in a hosted environment. Sandboxed solutions run in a separate worker thread so that they cannot access resources that belong to other solutions, and they have limited access to local and network resources.

When you plan sandboxed solutions, decide first whether to use sandboxed solutions at all. You should determine whether your primary consideration is performance or security. A farm that uses sandboxed solutions generates more worker and proxy processes than a farm that does not use sandboxed solutions. Using sandboxed solutions provides more process isolation, which enhances the security of your farm.

For more information about sandboxed solutions, see [Sandboxed solutions overview \(SharePoint Server 2010\)](#).

In this article:

- [Determine when to use sandboxed solutions](#)
- [Plan to load balance sandboxed solution code](#)
- [Determine where to deploy sandboxed solutions](#)
- [Determine who can deploy sandboxed solutions](#)
- [Determine which site collections will run sandboxed solutions](#)
- [Plan resource usage quotas for sandboxed solutions](#)
- [Plan sandboxed solutions governance](#)

Determine when to use sandboxed solutions

Using sandboxed solutions is appropriate in scenarios where you want to load balance solutions across multiple servers, or where you want to provide the ability to run code that has not been fully tested or that your organization does not support. Sandboxed solutions can play a valuable part of a scaled deployment path for developers in your organization, from their test environment to a sandboxed solution in the production environment. Sandboxed solutions can later be changed to full trust status by a farm administrator when the solution is shown to be safe for full deployment.

It is especially appropriate to use sandboxed solutions in the following scenarios:

- When you want to load balance solutions between multiple SharePoint Server 2010 servers.
- When an organization wants to run code for employees on a production SharePoint Server 2010 site, and that code has not been stringently code reviewed and tested.

- When an Internet hosting provider wants to let the owners of hosted SharePoint Server 2010 sites upload and run custom code.

When you use sandboxed solutions, you must activate the SharePoint 2010 User Code Host service on each server on which you want to run the sandboxed solutions.

Plan to load balance sandboxed solution code

You can select one of two load balancing schemes for sandboxed solutions. Based on the load balancing scheme, Microsoft SharePoint Server 2010 determines which server to run the solution on. In local load balancing, the solution runs on the same server that received the request. If you choose remote load balancing, the server that the solution runs on is selected based on solution affinity, and the sandboxed solution is run on a server where it is already loaded and has already been run. This saves time in servicing the request for the solution. In both cases, each server must be running the SharePoint Foundation Sandboxed Code Service.

Your load balancing choice determines the model that is used by the entire SharePoint Server 2010 farm. You cannot use a mixture of local and remote load balancing, but instead you must choose to implement one or the other. When you are deciding which mode to implement consider the following:

- Local mode requires less administration, but its scalability is limited by the resources of the local server.
- Remote mode is more scalable than local mode, but it requires administrative tasks to be performed on more servers.

You obtain better performance by using the remote load balancing model in a SharePoint Server 2010 farm where there are multiple servers on which to run sandboxed solutions. If you are using sandboxed solutions as part of a development process, and you want to keep them restricted to the server from which they are called, use the local mode load balancing.

For more information, see [Sandboxed solutions overview \(SharePoint Server 2010\)](#).

Determine where to deploy sandboxed solutions

Sandboxed solutions are deployed at the root of a site collection. Anyone who is a site collection administrator can deploy a sandboxed solution. When it is deployed in a site collection, the sandboxed solution can be used anywhere within that site collection.

You can choose to run sandboxed solutions only on certain servers within your SharePoint Server 2010 farm or to all servers. To enable sandboxed solutions on a server, you must enable the SharePoint Foundation Sandboxed Code Service. This service must be enabled on every server on which you want to run sandboxed solutions.

Determine who can deploy sandboxed solutions

When you plan for the user roles that are involved in deploying sandboxed solutions, you must determine who will be authorized to deploy the solutions and who will be authorized to administer the solutions. Members of the site collection administrators group can deploy sandboxed solutions.

You must be a member of the farm administrators group to perform administrative tasks such as enabling or disabling the SharePoint Foundation Sandboxed Code Service, blocking or unblocking a solution, and adjusting or resetting quotas.



Note:

It is not enough to be a site collection owner, to deploy and activate a sandboxed solution you must be a site collection administrator for the site collection where you are deploying the sandboxed solution.

Because farm administrators can change sandboxed solutions to fully trusted solutions that can be deployed anywhere on the farm, you should be careful to limit the membership of the farm administrators group to appropriate users. The same consideration applies to adding users to the site collection administrators group if there is any concern over the security of the sandboxed solutions being deployed.

Determine which site collections will run sandboxed solutions using quotas

Sandboxed solutions can be enabled or disabled on specific site collections by adjusting their quotas. If you set the quota for sandboxed solutions to 0 on a specific site collection, sandboxed solutions will not run on that site collection. In this way you can fine tune the use of sandboxed solutions in your farm.

To plan where to deploy sandboxed solutions you should consider both which servers will run the SharePoint Foundation Sandboxed Code Service, and which site collections will be able to run sandboxed solutions. If you enable sandboxed solutions on some site collections you should disable them on the remaining site collections by setting the quotas on those site collections to 0.

Plan resource usage quotas for sandboxed solutions

Sandboxed solutions are monitored for resource usage based on default resource quotas. If a sandboxed solution exceeds any of the resource quotas, the solution is disabled for the remainder of the day or until a farm administrator manually resets the solution. This helps administrators to know when a particular sandboxed solution is making excessive demands on shared resources or in some cases where a resource-intensive sandboxed solution requires an increased quota.

The default quotas are satisfactory for most scenarios; however, you can adjust individual quota limits to permit higher limits where appropriate.

If you determine that a sandboxed solution is consistently misusing server resources, you can block that solution until the developer can correct the situation. For more information about blocking and unblocking sandboxed solutions, see [Block or unblock a sandboxed solution \(SharePoint Server 2010\)](#).

The default values that are assigned to sandboxed solution quotas are listed in the following table.

Resource	Description	Units	Resources per Point	Absolute Limit
AbnormalProcessTerminationCount	Abnormally terminated process	occurrence	1	1
CPUExecutionTime	CPU Execution Time for site	seconds	3,600	60
CriticalExceptionCount	Critical Exception Events	events	10	3
InvocationCount	Solution Invocation Events	events	<TBD>	<TBD>
PercentProcessorTime	Percent CPU usage by solution	percentage	85	100
ProcessCPUCycles	Solution CPU cycles	cycles	1 x10 ¹¹	1 x10 ¹¹
ProcessHandleCount	Windows handles count	items	10,000	1,000
ProcessIOBytes	Windows handles count	items	0	1 x10 ⁸
ProcessThreadCount	Thread count in overall process	instances	10,000	200
ProcessVirtualBytes	Memory consumed	bytes	0	1.0x10 ⁹
SharePointDatabaseQueryCount	Number of SharePoint database queries	instances	20	100

SharePointDatabaseQueryTime	Elapsed time to execute query	seconds	120	60
UnhandledExceptionCount	Number of unhandled exceptions	instances	50	3
UnresponsiveProcessCount	Number of unresponsive processes	instances	2	1

Plan sandboxed solutions governance

While you are still planning for sandboxed solutions, you should consider your processes for governance issues, including the following:

- At what point will the farm administrator block or unblock a sandboxed solution? Identifying the administrative policy for blocking and unblocking sandboxed solutions will eliminate confusion if there is any doubt about the need to block a solution.
- At what point will you transfer a sandboxed solution to the global catalog as a full trust solution? This decision applies to solution code that is developed by your organization’s developers. You should establish a policy for determining what level of testing is required for a sandboxed solution to be considered ready for production use in your organization.
- When you are planning for who can deploy sandboxed solutions, will you choose to add people to the site collection administrators group or establish a procedure for a limited number of site collection administrators to deploy sandboxed solutions on behalf of their users? Depending on the security concerns in your organization, you can decide to add people directly to the site collection administrators group rather than requiring them to ask permission to deploy the sandboxed solution.

SharePoint 2010 Governance Planning (white paper)

Microsoft SharePoint Server 2010 provides a large number of capabilities that empower business users. For example, SharePoint Server 2010 enables users to collaborate with one another, tag and rate content, self-publish, and even develop their own solutions. With this amount of power in hand, users (and the organizations they work for) can benefit greatly from having clear guidance. In short, they can benefit from having a Governance Plan.

This white paper focuses on what we call the “front end” of the SharePoint environment – the business aspect of governance - the areas that effect business users. This white paper uses a fictitious company named Contoso to provide guidance for the necessary governance planning and implementation of SharePoint Server 2010.

Download the white paper:

- [SharePoint 2010 Governance Planning \(Microsoft Word version\)](http://go.microsoft.com/fwlink/?LinkId=197150)
(<http://go.microsoft.com/fwlink/?LinkId=197150>).
- [SharePoint 2010 Governance Planning \(PDF version\)](http://go.microsoft.com/fwlink/?LinkId=197174)
(<http://go.microsoft.com/fwlink/?LinkId=197174>).

Implementing Governance in SharePoint 2010 (white paper)

Microsoft SharePoint Server 2010 provides a rich set of capabilities that empower business users. These new capabilities require clear guidance to both underscore their benefits and realize their potential while maintaining a level of consistency and control within an organization.

This document focuses on the “back end” of SharePoint Governance – the technical implementation. It provides high-level guidance about the many configuration options that SharePoint Server 2010 provides to enable you to manage the environment for the benefit of all. For more information about the “front end” of SharePoint Governance - the business aspect, refer to the following whitepaper:

[SharePoint 2010 Governance Planning \(white paper\)](#).

Download the white paper:

- [Implementing Governance in SharePoint 2010](#) (Microsoft Word version)
- [Implementing Governance in SharePoint 2010](#) (PDF version)
- [Implementing Governance in SharePoint 2010](#) (XPS version)

Plan for social computing and collaboration (SharePoint Server 2010)

Microsoft SharePoint Server 2010 implements features that make enterprise social computing and collaboration easier. Social networking tools such as My Site Web sites and social content technologies such as blogs, wikis, and really simple syndication (RSS), are examples of social computing features. These features enable users to easily capture and share the knowledge and expertise that is needed to do their work. This sharing of information encourages collaboration, improves innovation, and targets relevant content to the people who have to see it. You can adapt content to each user while enabling administrators to set policies to protect privacy.

The social computing and collaboration features in SharePoint Server 2010 are built upon a database of properties that integrates information about people from many kinds of business applications and directory services.

Good understanding and planning of social computing and collaboration features is very important for creating effective Microsoft SharePoint Server solutions.

In this section:

- [User Profile service overview](#)
- [Plan user profiles](#)
- [Plan policies for user profiles](#)
- [Plan for profile synchronization](#)
- [Plan My Site Web sites overview](#)
- [Plan for My Site Web sites](#)
- [Plan for audiences and content targeting](#)
- [Social tagging overview](#)
- [Privacy and security implications of social tagging](#)
- [Enterprise Wikis overview](#)
- [Enterprise Wiki planning](#)
- [Collaboration site planning](#)

User Profile service overview

The User Profile service is a service application in SharePoint Server that can be consumed across multiple sites and farms. The User Profile service provides a central location for configuring and managing the following personalization settings:

- User profile properties
- Audiences

- Profile synchronization settings
- Organization browsing and management settings
- My Site settings

For more information, see [User Profile service overview \(SharePoint Server 2010\)](#).

Plan user profiles

The User Profile service integrates user information from various sources into user profiles that are the basis for powerful personalization features. In addition to planning connections to the User Profile service, planning for people and user profiles includes profile synchronization and planning group policies. You can also use profiles to turn off a feature. For example, profiles can help you prevent information about colleagues from appearing automatically in the colleagues section of profile pages.

For more information, see [Plan user profiles \(SharePoint Server 2010\)](#).

Plan policies for user profiles

When planning for personalization of your portal sites, you must consider the availability of information about users in the organization. Some information is not appropriate for everyone to see. Some information should only be available to users and administrators to preserve privacy. Other information can and should be shared freely with other users to encourage collaboration. The decision about what information to share is an important one that depends on the particular needs of each organization.

For more information, see [Plan policies for user profiles \(SharePoint Server 2010\)](#).

Plan for profile synchronization

If you plan to use social computing features, such as My Site Web sites or People Search, in Microsoft SharePoint Server 2010, you will likely want to integrate profile information that you have stored in a directory service such as Active Directory Domain Service (AD DS) or a business system, such as SAP or Siebel, with SharePoint Server 2010. By using Profile Synchronization in SharePoint Server 2010, you can do exactly that.

For more information, see [Plan for profile synchronization \(SharePoint Server 2010\)](#).

Plan for audiences and content targeting

Use audiences to group the users in an organization so that you can target information to relevant users. From the Manage Audiences page for the User Profile service in SharePoint Server, you can create and manage audiences and use them to target content in all of the site collections that use that shared service. You can also use SharePoint groups to target content to specific Web parts.

For more information, see [Audience and content targeting planning \(SharePoint Server 2010\)](#).

Plan My Site Web sites overview

My Site Web sites are special SharePoint sites that contain profile information about a user, links to content created by a user and stored in SharePoint databases, and information about the people, interests, and activities a user is tracking. My Site Web sites have three distinct views:

- A My Networks page that shows the people, interests, and activities that a user is tracking.
- A My Content page that lists shared and personal documents, shared pictures, and libraries, lists, discussion boards, and surveys that a user owns.
- A My Profile page that shows personal profile information.

Information on the My Profile page can be targeted to the user only or to a user's manager, team, colleagues, or everyone. Planning for My Site Web sites includes preparing to set up My Site Web sites, planning social tags and notes, planning My Site Web site policies and permissions, and planning personalization sites.

For more information, see [My Site Web sites overview \(SharePoint Server 2010\)](#).

Plan for My Site Web sites

To effectively plan for My Site Web sites, you must determine the following:

- A logical architecture design to deploy My Site Web sites in a server farm
- Users who you want to have a My Site Web site and the appropriate permissions for those users
- The user profile information that you want to synchronize with directory services or business systems
- The My Site features that you want to enable
- The policies that will be applied for viewing user profile information in the public profile

For more information, see [Plan for My Site Web sites \(SharePoint Server 2010\)](#).

Social tagging overview

Social tagging helps users categorize information in ways that are meaningful to them. Social tagging can improve the quality of search results by filtering against specific tags, and it can also connect individuals who want to share information with other users who have like interests.

For more information, see [Social tagging overview \(SharePoint Server 2010\)](#).

Privacy and security implications of social tagging

Social tagging is a subset of a more comprehensive social media strategy that an enterprise can develop. Microsoft SharePoint Server 2010 includes the following social tagging features:

- Social tags, which allow users to save items of interest, organize all information for a project, and connect to others who share their interests.
- The Note Board, which allows comments to be tracked in a central location.

- Ratings, which allow users to assess the value of content against a scale, for example, one through five stars.
- Bookmarklets, which enable users to add tags and notes to pages that are outside of the SharePoint environment, for example, Web sites that are external to an enterprise, and then have those tags and notes appear on the Tags and Notes tab of their My Site.

This article contains information to help you plan for using the social tagging features of SharePoint Server 2010 in your enterprise, and includes key steps to follow in the planning process.

For more information, see [Privacy and security implications of social tagging \(SharePoint Server 2010\)](#).

Enterprise Wikis overview

An Enterprise Wiki is a publishing site for sharing and updating large volumes of information across an enterprise. If an organization needs a large, centralized knowledge repository that is designed to both store and share information on an enterprise-wide scale, consider using an Enterprise Wiki.

For more information, see [Enterprise Wikis overview \(SharePoint Server 2010\)](#).

Enterprise Wiki planning

An Enterprise Wiki is a large-scale knowledge repository designed to both store and share information in an enterprise. You can use an Enterprise Wiki to share and update information on a larger scale than a wiki, library, or team site. Planning for an Enterprise Wiki includes the things to consider when you are determining if an Enterprise Wiki is the best solution for your organization, the preparation steps for setting up an Enterprise Wiki, and planning access to the Enterprise Wiki.

For more information, see [Enterprise wiki planning \(SharePoint Server 2010\)](#).

Collaboration site planning

Collaboration sites are SharePoint sites that teams or groups of users can use to share information or collaborate on projects. You can associate these sites with a particular portal site collection or make them part of a publishing site collection. Collaboration sites can also be stand-alone sites. Planning for collaboration sites explains how to define specific and additional paths, and how to determine the number of collaboration sites that are needed in your organization.

For more information, see [Collaboration site planning \(SharePoint Server 2010\)](#).

See Also

[Plan managed metadata \(SharePoint Server 2010\)](#)

[Security and permissions \(SharePoint Server 2010\)](#)

[User Profile Service administration \(SharePoint Server 2010\)](#)

User Profile service overview (SharePoint Server 2010)

The User Profile service stores information about users in a central location. Social computing features use this information to facilitate productive interactions which enable users to collaborate efficiently. In order to provision My Site Web sites, enable social computing features such as social tagging and newsfeeds, and create and distribute profiles across multiple sites and farms, you must enable the User Profile service.

In this article:

- [Uses and benefits of the User Profile service](#)
- [Architecture](#)
- [Related services](#)

Uses and benefits of the User Profile service

The User Profile service is a shared service in Microsoft SharePoint Server 2010 that provides a central location where service administrators configure and manage the following features:

- **User profiles** – contain detailed information about individuals in an organization. A user profile organizes and displays all of the properties related to each user together with social tags, documents and other items related to that user.
- **Organization profiles** – contain detailed information about an organization such as teams, divisions, and so on.
- **Profile synchronization** – provides a reliable way to synchronize user, group, and organization profile information that is stored in the SharePoint Server 2010 profile store with profile information that is stored in directory services across the enterprise.
- **Audiences** – enables organizations to target content to users based on their job or task, as defined by their membership in a SharePoint Server group or distribution list, by the organizational reporting structure, or by the public properties in their user profiles.
- **My Site Host** – a dedicated site for hosting My Site Web sites. A My Site Host is needed in order to deploy the social features of SharePoint Server.
- **My Site Web site** – a personal site that gives users in your organization a central location to manage and store documents, links, and colleagues.
- **Social tags and notes** – enables users to add social tags to documents, to other SharePoint Server items, and to other items, such as external Web pages and blog posts. Users can also leave impromptu notes on profile pages of a My Site Web site or any SharePoint Server page. Administrators can delete all tags for employees when they leave the company or remove a tag they do not want.

These features make it possible for users in an organization to share information and to stay informed about what is happening within the organization. Social tags, for example, enable users to tag and track the information they are most interested in. Users can be alerted when people they work with author new blog posts or when there is a change in organizational metadata. They can also see how people relate to organizations and how organizations relate to sites.

Like other shared services in SharePoint Server 2010, the User Profile service is easy to deploy and set up. Farm administrators can delegate the management of all or part of the features of the User Profile service to one or more service application administrators. For more information, see [Assign or remove administrators to a service application \(SharePoint Server 2010\)](#).

Architecture

When you create an instance of the User Profile service, SharePoint Server creates three databases for storing user profile information and associated data:

- **a profile database** - used to store user profile information.
- **a synchronization database** - used to store configuration and staging information for synchronizing profile data from external sources such as the Active Directory Directory Service (AD DS).
- **a social tagging database** - used to store social tags and notes created by users. Each social tag and note is associated with a profile ID.

Each of these databases can be accessed by SharePoint sites, My Site Web sites, and Team Sites by using the User Profile service. This provides a dynamic, personalized experience for the users in an organization. For more information about these databases, see [Databases used by SharePoint 2010 Products](#).

The User Profile service can be managed by the appropriate business group and advertised in the corporate resource center. One administrator can manage all areas of the User Profile service. As an alternative, areas can be isolated and managed by different administrators who need not know about the existence of other areas of the service. For example, one administrator can manage My Site Web sites while a different administrator manages social tags and notes. The User Profile service can be restricted and available only to certain departments or sets of sites based on business need, security restrictions, and budgets. For more information about the shared services architecture in SharePoint Server, see [Logical architecture components \(SharePoint Server 2010\)](#).

Related services

The User Profile service relies on other shared services to implement the full range of social computing features in SharePoint Server. These related shared services include the following:

- **Managed Metadata Service** - makes it possible to use managed metadata and share content types across site collections and Web applications. For more information, see [Managed metadata service application overview \(SharePoint Server 2010\)](#)

- **Search Service** – needed to enable the People Search feature

See Also

[Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

[User Profile Service administration \(SharePoint Server 2010\)](#)

Plan user profiles (SharePoint Server 2010)

Information about users in an organization is stored in user profiles within the User Profile Service. Farm Administrators who create instances of the User Profile Service can administer user profiles, or they can delegate user profile administration to an administrator of a shared service. Administrators of the User Profile Service manage information about users and manage connections that are used to synchronize that information between the profile store, directory services, such as Active Directory Domain Services (AD DS) and Lightweight Directory Access Protocol (LDAP), and line-of-business applications such as SAP.

When planning an initial deployment of Microsoft SharePoint Server 2010, you must plan the following:

- connections between User Profile Services, directory services, and line-of-business applications
- the user profile properties and organization profile properties that are needed
- the policies for displaying and changing user profiles
- how user profiles are used by other personalization features, such as personalization sites

In this article:

- [About user profiles](#)
- [User profile properties](#)
- [User profile policies](#)
- [Memberships and colleagues](#)
- [Locating people and expertise](#)
- [Synchronizing profile properties](#)

Before reading this article, you should understand the concepts described in [User Profile service overview \(SharePoint Server 2010\)](#).

About user profiles

Before you can personalize the sites and content within an organization, you have to plan user profiles.

Information about users can come from directory services such as AD DS. It can also come from line-of-business applications, such as SAP. The User Profile Service enables you to bring all of the properties from these diverse content sources together to create unified and consistent user profiles across an organization. The properties and content from these sources are stored in user profiles that are managed by the User Profile Service.

User profiles identify connections among users such as common managers, workgroups, group membership, and sites. User profiles also contain information about areas that a user is interested in and help users locate subject matter experts for a particular area. This information enables users to find one another by using the People Search feature. In this manner, the relationships among users in an organization can be used to encourage more efficient collaboration with colleagues and across teams.

User profiles are more than merely groupings of imported and custom properties about users in an organization. The properties are also used to display information about the relationships of each user to other users in an organization. Profile subtypes can be used to create a different set of properties for a different set of users. For example, you can create a subtype that categorizes a user as either an intern or a full-time employee.

Every site that uses the same User Profile service application receives the same set of properties from the user profile store and displays them in the site's user information list. This also includes a list of documents that are shared by each user. For more information about creating a User Profile service application, see [Create, edit, or delete a User Profile service application \(SharePoint Server 2010\)](#).

User profile properties

When planning user profiles, you have to determine the information about users that is needed. This information will be stored in user profile properties and profile property subtypes. Everyone can view information about a user from the profile page of the My Site Host Web application. The privacy and policy settings in an organization govern the type of profile information that a user can view. The owner of the information sets the privacy settings while the organization sets policy settings. For more information about policy settings, see [Plan policies for user profiles \(SharePoint Server 2010\)](#).

When you plan for user profiles, you should consider several factors:

- What are the existing and planned directory services? These services will form the foundation for user profiles. Determine the properties that you will use for your core user profiles based on those that are relevant across the organization (or across the User Profile Service in an organization that has multiple sets of User Profile Service applications). Properties that can be used when finding users, creating audiences to use when targeting content, and establishing relationships between colleagues and workgroups are important. Start by reviewing the list of properties in directory services, followed by the default properties provided by SharePoint Server 2010 and modify that list according to these considerations.
- What areas of your organization require different user profile subtypes? For example, do you can create user profile subtypes for full-time employees, part-time employees, and interns?
- Which line-of-business applications that you use have information about users? Which properties can be mapped to the properties of directory services?
- Based on the business intelligence planning, what other properties of business applications that are not related to users might be useful for users in the organization? You can use these properties in personalized Web Parts to target business data based on audiences.
- How many user records are you planning to import from all sources, and how often do you want to synchronize these records between the SharePoint profile store and these sources? The frequency of scheduled synchronization will depend on the number of records, how heavily you are using personalization features, and when you can schedule synchronizations to have the least effect on performance and availability. Let the IT administrators know this information so they can include it in their deployment planning.

- Which user profile properties at the site level do you expect? In some organizations, this might be dictated centrally. At other organizations, this decision might be left to the discretion of each site collection administrator.

Default user profile properties

SharePoint Server 2010 provides a set of default user profile properties. You will want to review these properties and the policies that apply to them before you decide which changes to make, which properties to keep or remove, and which additional properties to create. Some of these user profile properties can be indexed by People Search and some can use the User Profile to SharePoint Full Synchronization timer job or the User Profile to SharePoint Quick Synchronization timer job replicate properties to all site collections.

The following table lists the default user profile properties in SharePoint Server 2010:

User Profile property	Indexed	Replicated
AboutMe	yes	yes
AccountName	yes	no
ADGuid	no	no
Assistant	no	no
CellPhone	yes	yes
Department	yes	yes
Fax	yes	no
FirstName	yes	yes
HomePhone	yes	no
LastName	yes	yes
Manager	no	no
Office	yes	yes
PersonalSpace	no	no
PictureURL	yes	yes
PreferredName	yes	yes
PublicSiteRedirect	no	no
QuickLinks	yes	no
SID	no	no

SPS-AboutUs	yes	no
SPS-Birthday	yes	no
SPS-ClaimID	no	no
SPS-ClaimProviderID	no	no
SPS-ClaimProviderType	no	no
SPS-DataSource	yes	no
SPS-DisplayOrder	no	no
SPS-DistinguishedName	no	no
SPS-DontSuggestList	no	no
SPS-Dotted-line	no	no
SPS-EmailOptin	no	no
SPS-FormerNames	yes	no
SPS-HireDate	yes	no
SPS-Interests	yes	no
SPS-JobTitle	yes	no
SPS-LastColleagueAdded	no	no
SPS-LastKeywordAdded	yes	no
SPS-Location	yes	no
SPS-LogoURL	yes	no
SPS-MasterAccountName	no	no
SPS-MemberOf	yes	no
SPS-MySiteUpgrade	no	no
SPS-ObjectExists	no	no
SPS-OWAUrl	no	no
SPS-Parent	yes	no
SPS-ParentType	yes	no
SPS-PastProjects	yes	no
SPS-Peers	no	no

SPS-PhoneticDisplayName	yes	no
SPS-PhoneticFirstName	yes	no
SPS-PhoneticLastName	yes	no
SPS-ProxyAddresses	no	no
SPS-ResourceAccountName	no	no
SPS-ResourceSID	no	no
SPS-Responsibility	yes	yes
SPS-SavedAccountName	no	no
SPS-SavedSID	no	no
SPS-School	yes	no
SPS-Section-BasicInfo	yes	no
SPS-Section-ContactInfo	yes	no
SPS-Section-CustomProperties	yes	no
SPS-Section-Delegation	yes	no
SPS-Section-Details	yes	no
SPS-Section-OrganizationMembers	yes	no
SPS-Section-Preferences	yes	no
SPS-SipAddress	no	yes
SPS-Skills	yes	no
SPS-SourceObjectDN	no	no
SPS-StatusNotes	no	no
SPS-Team-Site	no	no
SPS-TimeZone	no	no
Title	yes	yes
UserName	yes	yes
UserProfile_GUID	yes	no
WebSite	no	yes
WorkEmail	yes	yes

WorkPhone	yes	yes
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Additional profile properties

The default user profile properties and the properties that are imported from connections to directory services and business applications can be supplemented with additional properties that track key information that is not available from these sources. These properties can, for example, be integers, strings, term sets, and so on. For example, you can create a profile property that is named “favorite hobby” and associate it with a term set named “hobbies” from the Managed Metadata Service. Users who update their profiles can then select one of the terms in the “hobbies” term set as the value for their favorite hobby. For more information about term sets and the Managed Metadata Service, see [Managed metadata overview \(SharePoint Server 2010\)](#).

You should plan to add properties at the level of the User Profile Service or site collection depending on the business needs that you identified in earlier planning. Key business needs can often be addressed by creating new properties that associate users with important business processes. Search can then use these properties to find users, or personalization features can use the properties to target content to users. Properties do not have to be visible in public profiles or My Site Web sites, and properties can be useful for search or personalization without being displayed in public profiles or My Site Web sites. To limit the scope of planning, focus on adding properties that enable key business needs or scenarios for each site collection. If a relevant property does not address specific scenarios, wait until a specific need is identified during regular operations instead of planning to add the property during initial deployment. It is possible that you might not have to add many new properties at all. However, it is worth considering in case there are obvious needs.

User profile policies

Policies are sets of rules that administrators assign to users. These rules enable administrators to specify the privacy settings that are associated with a particular profile property. They also enable administrators to set whether a user can override those settings. Planning user profiles should include planning the policies that govern them. For more information, see [Plan policies for user profiles \(SharePoint Server 2010\)](#).

Memberships and colleagues

Relationships among different users in an organization are displayed in the public profile page for each user. Administrators of the User Profile Service can also see information about these relationships from the user profiles that are stored in the profile store. This relationship information includes the following information:

- site memberships (a global view of all memberships for each user)
- distribution list memberships
- colleagues

Memberships

In SharePoint Server 2010, a user's profile contains a list of all memberships and distribution lists to which a user belongs. Information in a distribution list is synchronized with the directory service, LDAP service, or line-of-business applications during profile synchronization. The **User Profile to SharePoint Full Sync** synchronizes the timer job Membership information. By default this timer job will add site memberships to a user profile. User profiles contain information about users' site memberships only if they belong to the default membership group for a site.

Colleagues

Colleagues can include each user's immediate associates — which includes one's manager, peers, and direct reports. Organizations that have key relationships that cross groups of users, managers or other users might want to add people to the Colleagues lists for certain groups. You can also configure Outlook to export colleague suggestions to users in SharePoint Server. For more information, see [Enable SharePoint Server 2010 Colleague in Outlook 2010](#).

Locating people and expertise

SharePoint Server 2010 enables users to find other users based on their expertise and role in an organization. Farm administrators can enable the following methods of finding people:

- **People search** results contain links to the public profiles of each user and links to contact them by e-mail or messaging programs.
- **Expertise finding** used with people search and expertise tagging to help users locate people within an organization who have identified themselves as having significant experience with a particular subject. If e-mail analysis is enabled, colleague suggestions are imported from Outlook if using Microsoft Office Outlook 2007 e-mail. If Microsoft Outlook 2010 is used, colleagues, and keywords are analyzed and suggestions are made to the user based on this analysis. Although e-mail analysis can be enabled in Outlook, users can opt out of this feature if they want. For more information about e-mail analysis, see [Enable SharePoint Server 2010 Colleague in Outlook 2010](#).

When planning for users, you might want to consider supplementing the default people search scope and Search Center tab with customized search scopes and tabs for more specific groups of users.

User Profile Service administrators will want to consult the information architecture and site hierarchy to identify key business concepts that might relate to specific groups of users who might be sought out by users across sites. Then, User Profile Service administrators can work with the Search Service administrator to develop search scopes and people search tabs for those specific groups. They can also use their knowledge of the user profiles they manage to identify other useful groups of users and create additional specific search scopes and search tabs for those groups.

Site collection administrators can create site-level search scopes for users who are members of their site collection.

People search planning also feeds back into user profile planning. Initial planning might reveal individuals or groups of users whom you want to make it easier to find, but the right properties might not exist to allow for those users to be found easily.

Synchronizing profile properties

The process of planning user profiles includes the following:

- identifying the directory services and line-of-business applications with which you want to synchronize profile information
- planning connections to those applications
- mapping the properties that you want to synchronize
- determining a schedule for regular synchronization

A key planning principle is consistency across content sources for all users in an organization.

The User Profile Service enables you to collect information about users in an organization across directory services and business applications so that consistent and timely information is always available. Information about users is synchronized across the deployment to all site collections that use the same User Profile Service application. This information can also be used by personalization features to increase the value of collaboration and relationships in an organization.

When planning synchronization of user profiles, you should include the following tasks:

- Start with the default properties of user profiles in SharePoint Server 2010.
- Identify connections to directory services that will provide supplemental information for properties of user profiles.
- Consider additional business data that enables you to connect users to line-of-business applications.

SharePoint Server 2010 includes the ability to do a two-way sync of user profile properties between SharePoint Server 2010 and directory services. The User Profile Service maintains the connections with the relevant business applications and updates the properties of user profiles during regularly scheduled synchronizations of all relevant content sources.

For more information about Profile Synchronization, see [Plan for profile synchronization \(SharePoint Server 2010\)](#).

See Also

[Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

[Understanding Forefront Identity Manager 2010 \(http://go.microsoft.com/fwlink/?LinkID=165841\)](http://go.microsoft.com/fwlink/?LinkID=165841)

Plan policies for user profiles (SharePoint Server 2010)

Policies are sets of rules that administrators of the User Profile service assign to users or groups of users. These rules enable administrators to specify both the site content that users can see and how users can interact with that content. To start planning, assess the current visibility of the information about users in the organization. Some information about individual users should remain private. Other information can and should be shared freely with other users to encourage collaboration.

Microsoft SharePoint Server 2010 provides a set of configurable policies to help administrators make the appropriate information available to meet the needs of the organization. Organizations can also create and deploy custom policy features to meet specific needs. You should review collaboration needs across the organization before you develop a plan for implementing the best mix of policies.

Information architecture and site hierarchy play an important role in decisions about which policies to use. You should also consider who is using sites. For example, a large organization that has a central portal site with a large number of viewers but very few contributors might have less need to share information than a departmental site where many people can contribute content. Many of these issues are handled as part of security planning, but privacy policies and security considerations are sufficiently related that it is a good idea to consider them together.

Policies that are less restrictive allow more users to view public profiles more frequently, which affects how often you must update user profiles and compile audiences. In organizations that have many users, frequent updating could affect performance and capacity planning.

User Profile Service administrators should share policy decisions with IT professionals in the organization. Some policy-related issues that could affect IT planning include the following:

- the source of the user profile information
- the expected frequency of updating user profile information
- the expected frequency of compiling audiences
- the effect on performance and capacity of servers that are running Profile Services.

In this article:

- [Default policies](#)
- [Policies for user profile properties](#)

Before reading this article, you should understand the concepts described in [Plan user profiles \(SharePoint Server 2010\)](#).

Default policies

Every personalization feature and property exposed in user profiles and personal sites has a recommended default policy that can be customized based on the needs of the organization. Each policy has two parts: the policy setting and the default visibility setting.

- **Policy setting** Some personalization features provide important information for key business processes in an organization, whereas other information might be inappropriate for sharing across an organization. Between these extremes is the information that should be shared among some users but not made available to everyone. In the latter case, you must create policies to address these specific situations. You should work with representatives from the business side of your organization to determine the appropriate features or properties. The policy settings are:
 - **Enabled** The feature is visible to the administrator of the User Profile service and to users other than the User Profile Service administrator, depending on the default visibility setting.
 - **Required** This property must contain information and the information is shared based on default access. Forms that contain these features or properties cannot be submitted until the required information is provided. For example, the Manager property is often mandatory so that it can be used to provide information for the Organization feature and audiences based on an organization's reporting hierarchy.
 - **Optional** The property is created but its values might not be provided automatically. Each user decides whether to provide values for the property or leave the property empty. For example, the My Colleagues feature is optional. Instead of being blank, the full list of colleagues, which includes everyone in a user's My Team list, is visible by default to users who have access. Users can decide to opt out by removing colleagues from the list, or expand the list by adding colleagues.
 - **Disabled** The property or feature is visible only to the User Profile Service administrator. It does not appear in personalized sites or Web Parts, and it cannot be shared.
 - **User Override** Properties that have the User Override option selected enable users to change the default visibility settings for those properties. With this option selected, each user can decide who can see the values they entered for the property. If this option is not selected, only administrators of the User Profile Service can change default access settings.



Note:

Properties and features can be replicated to other SharePoint sites if the default access policy is set to Everyone and the User Override option is not selected.

- **Default visibility setting** The visibility setting determines who can see information for a specific personalization feature. Available settings include the following:
 - **Everyone** Every user who has viewer permissions to the site can see the relevant information.
 - **My Colleagues** Every user in this user's My Colleagues list can see the information for this user.

- **My Team** Every colleague in the user's immediate team, a subset of the My Colleagues list, can see the information.
- **My Manager** Only the user and the user's immediate manager can see the information.
- **Only Me** Only the user and the administrator of the User Profile service can see the information.

Policies for user profile properties

The following questions can help you determine which policies are appropriate for your organization:

- **Which properties should be mandatory?** Some properties — such as account name, preferred name, work telephone number, department, title, and work e-mail address — are mandatory by default and cannot be overridden or changed by users. In most organizations, these properties are key ways to enable collaboration and develop relationships across the organization. SharePoint Server 2010 also uses many of them to enable other features, such as colleagues and audiences. For more information, see Plan audiences.
- **Which properties should be visible to everyone?** By default, most properties are visible to everyone, but sensitive information can be configured to have limited visibility. For example, a company that has many employees in the field might decide that mobile phone information is important for everyone to see. Other organizations might choose to keep all non-work telephone numbers private.
- **Which properties can be changed by users?** Some properties can be made available without requiring that users provide information or allow a certain action to be performed. For example, some users might not want automatic population of colleague lists. Other users might want to change the default visibility setting for a property.

When planning the policy setting for a property, consider the following factors:

Condition	Disable the property	Make the property optional	Make the property required
The property is used by key user features.			X
The property is associated with key business data for applications in the Microsoft Business Connectivity Services.			X
The property is used when you create audiences.			X
User Profile Service			X

Condition	Disable the property	Make the property optional	Make the property required
administrators expect consistent and meaningful values for the property.			
The property will rarely be used.	X		
The property will distract from more important properties.  Note: You can change the display settings for properties to hide them from users viewing public profiles, the Edit Details page, or the My Colleagues Web Part.	X		
You decide to provide default values for properties, but still want users to be able to remove the information, or if you want to enable each user to provide the relevant value for the property.		X	

When you plan the default visibility settings for an organization's policies, consider the following factors:

Condition	Action
You want to use the property in search so that users can be found by searches for the property.	Set the default access policy to Everyone .  Note: Properties that have more restrictive access will not be used by search.
The property is useful across workgroups and other divisions in your organization and does not	Make the property visible to everyone.

Condition	Action
contain sensitive information.	
The property is mostly useful for collaboration inside an immediate workgroup or with a specific group of individually selected colleagues.	Make the property visible only to colleagues.
The property is of a private or sensitive nature.	Make the property visible only to the immediate manager, or in some cases, only the individual user.  Important: What is considered private information can vary from organization to organization.

See Also

[Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

[Managing privacy \(SharePoint Server 2010\)](#)

Plan for profile synchronization (SharePoint Server 2010)

If you plan to use social computing features, such as My Site Web sites or People Search, in Microsoft SharePoint Server 2010, you will likely want to integrate profile information that you have stored in a directory service such as Active Directory Domain Services (AD DS) or a business system, such as SAP or Siebel, with SharePoint Server 2010. By using Profile Synchronization in SharePoint Server 2010, you can do exactly that.

In this article:

- [About Profile Synchronization](#)
- [Identify directory services and business systems](#)
- [Plan permissions](#)
- [Determine which containers to synchronize](#)
- [Define Profile Synchronization connection filters](#)
- [Map profile properties](#)
- [Define synchronization schedule](#)

About Profile Synchronization

Profile Synchronization in SharePoint Server 2010 enables an administrator of an instance of the User Profile service to synchronize user and group profile information that is stored in the SharePoint Server 2010 profile store with profile information that is stored in directory services and business systems across the enterprise. Profile synchronization can occur when profile information has changed in the SharePoint Server 2010 profile store or when profile information has changed in the directory service or business system. After you configure Profile Synchronization, changes to either store are detected. Import or export occurs depending on the import/export settings for a particular user profile property.



Note:

By default, no user profile property is set to **Export**. You must explicitly define the user profile properties that you want to export back to the directory service from the user profile store. Exporting profile properties back to a business system is not supported in SharePoint Server 2010.



Important:

When you create an instance of the User Profile service, you must make sure you create it on the same server as the User Profile Synchronization service. For more information about how to create an instance of the User Profile service, see [Create, edit, or delete a User Profile service application \(SharePoint Server 2010\)](#).

Below is a list of things that you have to do before you enable Profile Synchronization. These planning steps should be performed in the order given.

Identify directory services and business systems

When planning for profile synchronization in SharePoint Server 2010, you first have to determine the directory services and business systems with which you want to synchronize profile information. You can perform a full synchronization of user or group profile information or an incremental synchronization of only those profile properties that have changed since the last profile synchronization, depending on the service or system.

Directory services

The directory services supported in SharePoint Server 2010 and their synchronization capabilities include the following:

Service	Users	Groups	Incremental
Active Directory Domain Services (AD DS) 2003 SP2, 2008	Yes	Yes	Yes
SunOne (LDAP) 5.2	Yes	No	Yes
Novell eDirectory (LDAP) 8.7.3	Yes	No	No
IBM Tivoli (LDAP) 5.2	Yes	No	Yes

You must know the full path of the forest name and the full path of the domain controller name to create a connection between SharePoint Server 2010 and a domain service.

Although you can connect to more than one directory service from a single User Profile service application, we recommend that you create only one Profile Synchronization connection per directory service forest. If, however, you have logon information in one directory service forest and resource information in another forest, you should create one connection to the logon forest and one connection to the resource forest. For more information about cross-forest deployments, see [Resolve accounts across multiple forests \(SharePoint Server 2010\)](#).

Business systems

Profile information that is stored in business systems, such as SAP or Siebel, can be added to profile information contained in the SharePoint Server 2010 profile store by using the Business Data Connectivity service. For example, if a profile that contains the name and employee number for a user has been imported to the SharePoint Server profile store from AD DS, you can augment that information with the hire date for that employee from a business system such as Siebel or SAP. To do

this, you must know the name of the Business Data Connectivity service that you will use to connect to the business systems that you have identified.

Exporting profile properties from SharePoint Server 2010 to business systems, importing new profiles from business systems to the SharePoint Server profile store, and synchronizing incrementally between business systems and SharePoint Server 2010 are not supported. For more information about the Business Data Connectivity service, see [Business Data Connectivity service administration overview \(SharePoint Server 2010\)](#).



Important:

If you are connecting to a Business Data Connectivity service, the Business Data Connectivity model must include Finders and Specific Finders methods in SharePoint Server 2010. For more information about Finders and Specific Finders methods, see [Designing a Business Data Connectivity Model](#) (<http://go.microsoft.com/fwlink/?LinkId=179316>).



Tip:

You should first test Profile Synchronization with a Business Data Connectivity service by using external lists. For more information about external lists, see [Business Connectivity Services security overview \(SharePoint Server 2010\)](#).

Plan permissions

After you have identified the directory services and business systems with which you want to synchronize profiles, you must identify the credentials that you will use to connect to them. You will need to contact the appropriate administrator to get these credentials. Depending on which directory service or business system you are connecting to and the type of profile synchronization you wish to perform, the account, whose credentials the connection will use, must have specific permissions in order to perform profile synchronization.



Note:

We recommend that you determine the required permissions for the environment before setting up Profile Synchronization. For more specific information about setting up Profile Synchronization, see [Configure profile synchronization \(SharePoint Server 2010\)](#).

The following tables identify the account types and the permissions that the directory service or business system must grant, depending on the functions that the connection will perform.

Active Directory Domain Services (AD DS)

Function	Account type	Permissions
Connect	Domain account used to provision profile synchronization	Must have Replicate Directory Changes permission to connect to the AD DS domains from which you want to import data. If the NetBIOS name is different

Function	Account type	Permissions
		<p>from the domain name, Replicate Directory Changes permission is also needed on the cn=configuration container in AD DS. In scenarios where the NetBIOS name is different from the domain name, the cn=configuration container provides the specific NetBIOS name to successfully import profile information from AD DS.</p>
Full synchronization	Domain account used to provision profile synchronization	<p>To export properties, such as profile pictures, from SharePoint Server 2010 to AD DS, at least Replicate Directory Changes permission is needed on the AD DS object (group) and all child objects (users or sub-groups) for the AD DS domains to which you want to export data from SharePoint Server 2010.</p> <p>Read/Write permission is also needed on the container that stores the user picture attribute, for example, the ThumbnailPhoto attribute.</p> <p>Authenticated users who have Replicate Directory Changes permission will only be granted read-access to AD DS objects by AD DS. Additional permissions, such as Write permission, can be granted using access control lists (ACLs) in AD DS. SharePoint Server 2010 will not write profile data back to AD DS unless Write permission is explicitly set on the account that has Replicate Directory Changes permission.</p>

Function	Account type	Permissions
Incremental synchronization	Domain account used to provision profile synchronization	Same as full synchronization

SunOne (LDAP)

Function	Account type	Permissions
Connect	SunOne user	Any enabled SunOne user can create a profile synchronization connection.
Full synchronization	SunOne user	Anonymous access to RootDSE for Read, Write, Compare, and Search rights is required.
Incremental synchronization	SunOne user	Read, Compare, and Search permissions for the cn=changelog object are needed in addition to those permissions required for full synchronization.

Novell eDirectory (LDAP)

Function	Account type	Permissions
Connect	Novell eDirectory user	Any enabled Novell eDirectory user can create a profile synchronization connection.
Full synchronization	Novell eDirectory user	Browse rights in the Entry rights property for the specified tree are required. Read, Write, and Compare rights in the All attributes rights property for the specified tree are also required.
Incremental synchronization	None	Not supported.

IBM Tivoli (LDAP)

Function	Account type	Permissions
Connect	IBM Tivoli user	Must be a member of an administrative group.
Full synchronization	IBM Tivoli user	Same as connect.
Incremental synchronization	IBM Tivoli user	Same as connect.

Business Data Connectivity service

Function	Account type	Permissions
Augmentation of profile information in the SharePoint profile store from a business system	No additional account is required other than the service account that is used to connect to the Business Data Connectivity service application from the User Profile service application.	None.

Determine which containers to synchronize

Before you can do an initial import of profile information from a directory service or business system to SharePoint Server, you must determine the directory service or business system containers that you want to import and synchronize. For example, you must determine which directory service containers have the user profiles that you want to synchronize and which directory service containers have the group profiles that you want to synchronize. This information is used when you first create the Profile Synchronization connection.

Define Profile Synchronization connection filters

There may be instances when you want to exclude some profile information from being synchronized. In SharePoint Server 2010, you can set filters on a Profile Synchronization connection to prevent certain user or group profile properties from being synchronized. It is a good idea to make a list of the profile properties that you want to exclude before setting up Profile Synchronization.



Note:

Setting inclusion filters is not supported in SharePoint Server 2010.

Map profile properties

After you have determined the containers that you want to import and synchronize with SharePoint Server, you must list which profile properties in the directory service or business system map to the profile properties in SharePoint Server. You must also consider any properties that must be mapped across multiple directory services or business systems as these are not automatically mapped in SharePoint Server 2010.

When mapping profile properties, you must use consistent data types. For example, if a user profile property in the directory service or business system uses an integer data type, map the user profile property to a user profile property in SharePoint Server 2010 that uses the integer data type. Do not map the user profile property to a user profile property that uses a different data type. For example, do not map the user profile property to a user profile property that uses the string data type.

The following table shows the supported Business Data Connectivity service data types and their corresponding User Profile service data types:

Business Data Connectivity service data types	User Profile service data types
System.Boolean	Boolean
System.String	String (Only multi-value string is supported)
System.DateTime	Date/DateTime
System.Int64	BigInteger
System.Int32	BigInteger/Integer
System.Int16	BigInteger/Integer
System.SByte	BigInteger/Integer
System.UInt64	BigInteger
System.UInt32	BigInteger/Integer
System.UInt16	BigInteger/Integer
System.Byte	BigInteger/Integer
System.Single	Float
System.Double	Float

Default profile properties

SharePoint Server 2010 has several default profile properties for both users and groups that can be mapped to corresponding properties in a directory service or business system. You can view these default properties by browsing to the [Manage User Properties](#) page or [Manage Organization Properties](#)

page in Central Administration. You can also create custom properties in SharePoint Server 2010 and map those properties to the corresponding properties in a directory service or business system. We recommend that you identify property mappings before you set up Profile Synchronization.

By default, some user profile properties, such as first name, last name, and so on are automatically mapped to their corresponding properties in the external directory service or business system. For example, the following properties are automatically mapped when using AD DS:

Users:

AD DS attribute	User Profile store property
<dn>	SPS-DistinguishedName
objectSid	SID
manager	Manager
displayName	PreferredName
givenName	FirstName
Sn	LastName
PhoneticDisplayName	PhoneticDisplayName
PhoneticFirstName	PhoneticFirstName
PhoneticLastName	PhoneticLastName
telephoneNumber	WorkPhone
mail	WorkEmail
physicalDeliveryOfficeName	Office
title	Title
department	Department
sAMAccountName	UserName
wWWHomePage	PublicSiteRedirect
SIP Address	proxyAddresses

Groups:

AD DS attribute	User Profile store property
------------------------	------------------------------------

<dn>	SourceReference
objectSid	SID
displayName	PreferredName
description	Description
url	Url
member	Member
groupType	GroupType
mail	MailNickName



Important:

In order to synchronize user profile pictures between Microsoft SharePoint Server, AD DS, and Outlook 2010 by using the Microsoft Outlook Social Connector, you must set the **Data Source Connection** for the **Picture** property mapping to **Export**. For more information about synchronizing user profile pictures, see [Enable SharePoint Server 2010 Colleague in Outlook 2010](#).

Define synchronization schedule

In SharePoint Server 2010, you can synchronize profiles on a recurring schedule or a nonrecurring schedule. Recurring Profile Synchronization is incremental; that is, only changed profile information will be synchronized. Nonrecurring Profile Synchronization can be configured to do either a full sync or an incremental sync.

You should plan to first perform a nonrecurring full synchronization of user profiles only before you deploy to the production environment. Then perform a recurring (incremental) synchronization of both users and group profiles.

After you have finished importing user and group profiles, you can schedule Profile Synchronization to occur on a regular basis. As part of planning, you must determine which kind of Profile Synchronization, recurring or nonrecurring, is best suited to the business model of the enterprise. Account for the time that is required to perform the synchronization and determine the schedule at which you want it to run.

The time that is required to synchronize profile information depends on several factors such as the number of user or group profiles being synchronized. A full sync can take days or even weeks to be completed. The time that is required to complete a recurring (incremental) sync depends on the number of profile changes that have to be synchronized.

Profile Synchronization Status

On the User Profile Service Application page, you can view the status of a profile synchronization job. This status shows information for user profiles, organization profiles, and audiences. The status also

displays the Profile Synchronization settings for that instance of the User Profile service. These numbers display progress for each individual container and the numbers reset each time synchronization starts on a container. After all containers have been synchronized, you will see the total number of user and organization profiles imported into the SharePoint Server 2010 profile store. You can also click on the link in this section to see detailed data for a completed profile synchronization job.

See Also

[User Profile service overview \(SharePoint Server 2010\)](#)

[Plan policies for user profiles \(SharePoint Server 2010\)](#)

[Plan user profiles \(SharePoint Server 2010\)](#)

My Site Web sites overview (SharePoint Server 2010)

My Site Web sites are personal sites in Microsoft SharePoint Server 2010 that provide users in an organization with a rich set of social networking and collaboration features. These features give users a way to discover areas of expertise, projects, and business relationship from one central location. Each user can view his or her My Site Web site by clicking the corresponding user name in the top, right corner of any page and then clicking **My Site**.

In this article:

- [Uses and benefits of My Site Web sites](#)
- [My Site Web sites architecture](#)
- [Related features](#)

Uses and benefits of My Site Web sites

In SharePoint Server 2010, My Site Web sites enable users to easily share information about themselves and their work. This sharing of information encourages collaboration, builds and promotes expertise, and targets relevant content to the people who want to see it. You can customize content to each user in any organization, and enable administrators to set policies to protect privacy.

My Site Web sites in SharePoint Server 2010 include the following:

- A profile for each user where users can share their expertise, profile pictures, and so on
- A newsfeed for tracking activities such as social tags, status updates, and comments by colleague
- A tag and note tool that helps you conveniently tag or post notes on sites directly from a Web browser
- A shared picture library, shared document library, and personal document library
- The ability to add custom Web Parts such as a Really Simple Syndication (RSS) viewer for viewing RSS feeds from blogs, news sources, and so on
- An organizational browser that uses Microsoft Silverlight 3 to provide a dynamic organizational browsing experience
- The ability to manage colleagues and memberships from one location

My Site Web sites architecture

User Profile service

The User Profile service stores information about users in a central location. Information in a user's profile includes a profile picture, the organization to which a user belongs, colleagues, properties such as skills, and pointers to tags and notes created by the user. SharePoint Server uses this information

to personalize the data presented on a user's My Site Web site. In order to provision My Site Web sites and enable social computing features such as social tagging and newsfeeds, you must enable the User Profile service. For more information about the User Profile service, see [User Profile service overview \(SharePoint Server 2010\)](#).

My Site Host

The My Site Host is a kind of site collection that is used for hosting the profile and newsfeed parts of My Site Web sites. The content part of My Site Web sites is hosted in its own site collection. My Site Host site collections are not created automatically in SharePoint Server 2010. An administrator of the User Profile service application must first create a My Site Host site collection before provisioning My Site Web sites.

Trusted My Site Host locations

In organizations where multiple server farms are deployed or where multiple User Profile Service applications are configured, users can create multiple My Site Web sites. For example, in a geographic deployment with a central farm in Europe and a regional farm in Africa, a user can click the My Site link when browsing content hosted by either farm. Consequently, the user can create a My Site Web site on the Europe farm and a My Site Web site on the Africa farm.

If your organization includes multiple farms or multiple User Profile service applications that host My Site Web sites, you can prevent users from creating multiple My Site Web sites by using the Trusted My Site Host Locations feature. This feature enables you to specify trusted My Site locations. When trusted My Site locations are specified, users are redirected to the My Site that is intended for their user accounts, regardless of where they are browsing when they click the link to create a My Site Web site. This feature ensures that each user creates only one My Site Web site in the organization.

Pages

My Site Web sites have three distinct views:

- a **My Newsfeed** page that shows colleague activities
- a **My Content** page that lists shared documents, personal documents, pictures, libraries, lists, discussion boards, and surveys that a user owns
- a **My Profile** page that displays personal profile information

Users can navigate between these pages by clicking the links on the My Site link bar at the top of the page.

Related features

My Site Web sites rely on the following related features:

- **Profile Synchronization**

Enables you to integrate profile information that you have stored in a directory service such as Active Directory Domain Services (AD DS) or a business system, such as SAP or Siebel, with SharePoint Server 2010. For more information about Profile Synchronization, see [Plan for profile synchronization \(SharePoint Server 2010\)](#).

- **Expertise tagging**

Lets users list the areas in which they have experience as part of their profile. This information can be used by other users in the organization to locate subject matter experts for a particular area.

- **People Search**

Lets users find people by department, job title, knowledge, expertise, and common interests.

See Also

[Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

[Service application and service management \(SharePoint Server 2010\)](#)

Plan for My Site Web sites (SharePoint Server 2010)

My Site Web sites are personal sites in Microsoft SharePoint Server 2010 that provide users in an organization with a rich set of social networking and collaboration features. This article describes the key planning steps that help you prepare to deploy My Site Web sites in an enterprise.

In this article:

- [About planning My Site Web sites](#)
- [Design My Site Web site architecture](#)
- [Determine users and user permissions](#)
- [Synchronize user profile information](#)
- [Plan to locate people and expertise](#)
- [Plan My Site features](#)
- [Plan policies and privacy](#)

Before reading this article, you should understand the concepts described in [My Site Web sites overview \(SharePoint Server 2010\)](#).

About planning My Site Web sites

To effectively plan for My Site Web sites, you must determine the following:

- A logical architecture design to deploy My Site Web sites in a server farm
- Users who you want to have a My Site Web site and the appropriate permissions for those users
- The user profile information that you want to synchronize with directory services or business systems
- The My Site features that you want to enable
- The policies that will be applied for viewing user profile information in the public profile

The following sections discuss the steps that help you to prepare for a successful deployment of My Site Web sites in an enterprise.

Design My Site Web site architecture

If you plan to offer My Site Web sites as part of a SharePoint Server 2010 deployment, you should include My Site Web sites in the initial architecture design, regardless of when you plan to implement My Site Web sites. This architecture should include a My Site host. If you plan to deploy My Site Web sites across multiple geographical locations and want to prevent users from creating multiple My Site Web sites, you should plan to specify trusted My Site locations.

My Site host

The My Site host is a special site collection that is used for hosting the profile and newsfeed parts of My Site Web sites. The content part of My Site Web sites is hosted in its own site collection. My Site Host site collections are not created automatically in SharePoint Server 2010. However, a site collection that contains the content portion of a My Site Web site is created automatically for each user. An administrator of a User Profile service application must first create a My Site Host site collection before provisioning My Site Web sites. This template must be provisioned only once per User Profile Service application.

For optimal performance, we recommend that you create the My Site host in a dedicated Web application.

Geographically distributed deployments

Administrators of User Profile Service applications can add links to trusted My Site host locations to give users access to My Site Web sites on multiple farms or multiple User Profile Service applications. In most cases, links to trusted My Site host locations will be targeted to individual users or groups of users based on an identified business need. The links can be maintained and changed over time as business and user needs change. When you specify trusted My Site host locations, users are redirected to the My Site Web site that is intended for their user accounts, regardless of where they are browsing, when they click the link to create a My Site Web site. This feature ensures that each user creates only one My Site Web site in the organization.

When planning for My Site Web sites, you must consider the location of the users in the organization and the number of farms or User Profile service applications that will host My Site Web sites.

Self-service site creation

You must plan for self-service site creation to enable users to create their own My Site Web sites. Self-service site creation can be enabled for the Web application that hosts My Site Web sites. Users must have **Create Personal Site** permissions to create their own My Site Web site. By default, this permission is enabled in SharePoint Server 2010 for all authenticated users. For more information about **Create Personal Site** permissions, see the user permissions section later in this article.

Determine users and user permissions

Users

When planning My Site Web sites, you must determine the users in an organization who you want to allow to use the My Sites feature. You must then plan the deployment of the User Profile service. The User Profile service stores information about users in a central location. My Site Web sites use this information to enable users to collaborate efficiently. In order to provision My Site Web sites, enable social computing features such as social tagging and newsfeeds, and create and distribute profiles across multiple sites and farms, you must enable the User Profile service.

For more information, see [User Profile service overview \(SharePoint Server 2010\)](#).

For more information about how to plan user profiles, see [Plan user profiles \(SharePoint Server 2010\)](#).

User Permissions

In addition to planning which users in an organization will have a My Site Web site, you must also plan which My Site Web site features will be available to each user. These features include the following:

- Who can create personal sites?
- Who can create social tags and notes?
- Who can add colleagues?

We recommend that you use security groups to manage permissions. The following table provides guidance for configuring permissions:

Permission	Guidance
Create Personal Site	By default, all authenticated users can create a My Site Web site. Ensure that you want the default setting to apply to the organization. Alternatively, you can use one or more security groups to grant the Create Personal Site permission to a subset of users in an organization.
Use Social Features	By default, all authenticated users can add ratings and social tags to documents, to other SharePoint Server items, and to other items, such as external Web pages and blog posts. Users can also leave impromptu notes on profile pages of a My Site Web site or any SharePoint Server page. Alternatively, you can use one or more security groups to grant the Use Social Features permission to a subset of users in an organization.
Use Personal Features	By default, all authenticated users can edit their profiles, add or edit colleagues, and add or edit memberships. Alternatively, you can use one or more security groups to grant the User Personal Features permission to a subset of users in an organization.

Synchronize user profile information

The User Profile service enables SharePoint Server to collect information about users in an organization across directory services and business applications. As a result, consistent and timely information is always available on a user's My Site Web site. Information about users can be synchronized across the deployment to all site collections that use the same User Profile Service

application. This information can also be used by personalization features to increase the value of collaboration and relationships in an organization.

If you plan to synchronize user profiles, you should include the following tasks:

- Start with the default properties of user profiles in SharePoint Server 2010.
- Identify connections to directory services that will provide supplemental information for properties of user profiles.
- Consider additional business data that enables you to connect users to line-of-business applications.

For more information about steps that help you to plan for profile synchronization, see [Plan for profile synchronization \(SharePoint Server 2010\)](#).

Plan to locate people and expertise

SharePoint Server 2010 enables My Site Web site users to find other users based on their expertise and role in an organization. Farm administrators can enable the following methods of finding people:

People Search

People Search results contain links to the public profiles of users and links to contact them by e-mail or messaging programs. When planning My Site Web sites, you might want to consider supplementing the default people search scope and Search Center tab with customized search scopes and tabs for more specific groups of users.

Administrators of User Profile Service applications will want to view the information architecture and site hierarchy to determine key business concepts that might relate to specific groups of users who users might seek across sites. Then, administrators of User Profile Service applications can work with the administrators of Search Service applications to develop search scopes and people search tabs for those specific groups. Administrators of User Profile Service applications can also use their knowledge of the user profiles that they manage to determine other useful groups of users and create additional specific search scopes and search tabs for those groups.

Site collection administrators can create site-level search scopes for users who are members of their site collections.

People search planning also feeds back into user profile planning. Initial planning might reveal people or groups of users whom you want to make it easier to find. However, the right properties might not exist to allow for those users to be found easily. For more information about planning user profiles, see [Plan user profiles \(SharePoint Server 2010\)](#).

Expertise finding

When planning My Site Web sites, you should determine whether or not you want users to have the ability to locate colleagues within the organization. People Search and expertise tagging help users locate people inside an organization who have identified themselves as having significant experience with a particular subject. Users in your organization can add tags to their profile that describe areas in which they have experience. These tags are used by People Search when a user searches for someone in the organization who has knowledge about a particular area.

Users can also find people through the use of e-mail analysis in Outlook 2010. If e-mail analysis is enabled, colleague suggestions are imported from Outlook if you are using Microsoft Office Outlook 2007 e-mail. If you are using Microsoft Outlook 2010, SharePoint Server analyzes sent e-mail messages and makes colleague and keyword suggestions based on this analysis. Users can then add these colleagues and keywords to their profile.

Although e-mail analysis can be enabled for all users in Outlook or just for specific groups by using group policy, users can opt out of this feature. If e-mail analysis is disabled for all users, individual users can still opt in. For more information about e-mail analysis, see [Enable SharePoint Server 2010 Colleague in Outlook 2010](#).

Plan My Site features

My Site features include the following:

- A newsfeed that is used for tracking activities such as social tags, status updates, and comments by colleague.

By default, the newsfeed feature is disabled. To enable the newsfeed feature, you must start the Activity Feed timer job. Newsfeed events are kept for 14 days and can be deleted sooner by running the Activity Feed Clean up timer job. After the Activity feed timer job is started, users can follow colleague activities on the newsfeed page of their My Site Web sites. Users can only view activities in the newsfeed for which they have permission. However, activity creators cannot otherwise configure activities that other users can see. When planning My Site Web sites, you should consider privacy implications before enabling this feature and provide mitigations based on your requirements.

- A tag and note tool that helps you conveniently use a Web browser to tag or post notes on sites.

The tag and note tool can be turned on or off in Central Administration by using the **Use Social Features** permission. This setting applies to all users who have the **Use Social Features** permission. Users can also add tags or notes to content outside of SharePoint Server 2010 by using the bookmarklet tool.

- An organization browser for viewing the reporting hierarchy for a user.

The organization browser is enabled by default. Organization information can either be manually created or it can be imported from a directory service such as Active Directory Domain Services (AD DS) or LDAP. End users need to have Microsoft Silverlight 3 installed on their workstations to view the organization browser. You cannot disable the organization browser, but you can prevent users from seeing it by deleting the organization node from the Quick Launch. For more information about importing organization profile information from a directory service, see [Plan for profile synchronization \(SharePoint Server 2010\)](#).

When planning My Site Web sites, you must consider both the benefits and the impacts of enabling these features.

Plan policies and privacy

Policies

SharePoint Server 2010 provides a set of configurable policies to help administrators make the appropriate information available to meet the needs of an organization. Organizations can also create and deploy custom policy features to meet specific needs. When planning for My Site Web sites, you should define information that is needed for key business processes in an organization and information that might be unsuitable for sharing across an organization. Between these extremes is the information that should be shared only among some users. In the latter case of information that might be unsuitable for sharing across an organization, you must create policies to address these specific situations.

For more information about policy planning, see [Plan policies for user profiles \(SharePoint Server 2010\)](#).

Privacy

My Site features store or use personally identifiable information. When planning to deploy My Site Web sites, make sure that you carefully plan how to control the behavior of these features — or turn off the features — to help protect the privacy of this information.

For more information, see [Managing privacy \(SharePoint Server 2010\)](#).

See Also

[Set up My Site Web sites \(SharePoint Server 2010\)](#)

Audience and content targeting planning (SharePoint Server 2010)

Audiences are part of a User Profile service application that enable organizations to target content to users based on their job or task. Audiences can be defined by one or a combination of the following items: membership in a distribution list or Windows security group, location in organizational reporting structure, or by public properties in user profiles. Content can also be targeted by using SharePoint groups to target content in Web Parts.

This article describes the architecture of audiences and content targeting, and key decisions to make when planning the use of audiences for an organization. This article does not explain how to plan user profiles or how to plan security for sites and content. For more information, see [Plan user profiles \(SharePoint Server 2010\)](#) and [Security planning for sites and content \(SharePoint Server 2010\)](#).



Security Note

Do not use audiences as a substitute for configuring permissions for SharePoint users and groups. For more information, see [Security planning for sites and content \(SharePoint Server 2010\)](#).

In this article:

- [What are audiences?](#)
- [Planning for audiences and content targeting](#)

What are audiences?

Microsoft SharePoint Server 2010 supports two kinds of audiences:

- **Global audiences** Global audiences are defined by properties in a User Profile service application. Global audiences include audiences that are defined by relationships (reporting structures), as well as other properties.
- **Windows security groups and distribution lists** The Windows security groups that are available when you are creating audiences are those that are imported when user profiles synchronized with the User Profile service application.

The distribution lists that are available when you are creating audiences are those that are imported when user profiles are imported into the User Profile service application.

For more information about including security groups and distribution lists in the User Profile Service application, see [Plan user profiles \(SharePoint Server 2010\)](#).



Note:

Although SharePoint groups can be used with Web Parts to target content, they cannot be used to define audiences.

An audience is defined by a collection of one or more audience rules and by whether all or only one of the audience rules must be met when evaluating membership. An audience rule can be based on membership in a Windows security group, membership in a distribution list, position in an organizational hierarchy, or by a user profile property. To define each audience rule, you must select an *operand*, *operator*, and *value*. An example of an audience rule based on membership in a Windows security group is as follows:

Element	Value
Operand	User
Operator	Member of
Value	Sales

Once an audience has been defined, it must be compiled on a regular basis because the underlying user profile properties and membership in directory services and groups can frequently change. An administrator schedules the timer job that controls when audiences are compiled.

Planning for audiences and content targeting

Administrators should plan audiences as part of the user profile management system. Before you plan audiences, you should already have completed the following plans:

- Plan for Windows security.
For more information, see [Choose security groups \(SharePoint Server 2010\)](#).
- Plan for user profiles and distribution lists.
For more information, see [Plan user profiles \(SharePoint Server 2010\)](#).
- Plan for sites and site collections.
For more information, see [Plan sites and site collections \(SharePoint Server 2010\)](#).
- Plan SharePoint groups.
For more information, see [Determine permission levels and groups \(SharePoint Server 2010\)](#).

Planning for audiences and content targeting is usually approached in the following stages:

1. Plan key audiences.
2. Plan content targeting to audiences.

Plan key audiences

When planning audiences during initial deployment, the goal should be to find the smallest possible set of key audiences based on the following criteria:

- An evaluation of the organization's content needs
- The information architecture of the site and site collections
- The users who are associated with each site collection

We recommend that you following this process for planning audiences in an initial deployment:

1. Record the central purpose for each site collection and site.

In general, each site collection has a focused set of business processes that are associated with specific groups of users.

2. Determine the smallest number of audiences that can enable you to target content as needed.

You may want to start by identifying requirements in the existing environment. For example, existing working teams, cross-group projects, key business processes, and site structure may include groups of users that can be translated to audiences.

3. Record all existing distribution lists and existing SharePoint groups, and map them to your audience needs.

4. Identify additional audiences that must be defined.

You may be able to create the audiences that you want from distribution lists, and Windows security groups. However, it is common to require additional audiences that are defined by user profile properties.

Planning audiences may also help you find gaps in plans for user profiles and distribution groups.

To support a specific audience, you may find that you need to add more profile properties or distribution groups.

5. Identify additional SharePoint groups that must be defined.

As you determine which Web Parts will target audiences or SharePoint groups, you may find gaps in plans for SharePoint groups. To support a specific target, you may find that you need more SharePoint groups.

By the end of the audience planning process, you should have a list of audiences that meet the needs of the groups of users who are using each site collection.

Plan how to target content to audiences

In order to use audiences to target content, the User Profile service administrators and site administrators must decide which site elements will be used in each site. User Profile service administrators and site administrators should work closely together to ensure that they are providing a consistent experience for audiences across sites and site collections.

Once defined, audiences can be used to target content in the following ways:

- For Microsoft Office 2010 client applications, a User Profile service administrator can define the links that display in the SharePoint locations, and set the audiences that each link is visible to.
- On My Site Web sites, a User Profile service administrator can set audiences for the My Site navigation links that appear on the top bar.

- For My Site scenarios in which users must have access to one or more additional My Site host locations, a User Profile service administrator can manage a list of Trusted My Site host locations, and then target each trusted location to the audiences that need to view it.

In an environment with multiple My Site host locations, audiences also determine in which trusted My Site host location a My Site Web site is created.

- In an environment in which a User Profile service application and audiences are configured, site administrators can use Web Parts to target content by audience.
- Site administrators can use SharePoint groups to target content to Web Parts both in environments that are running a User Profile service application, and in environments that are not running a User Profile service application.

Targeting Office client application links

User Profile service administrators control the links that display in the SharePoint list in Office client applications when you are opening or saving files, and set the audiences that each link is visible to. By default, the same links to Office 2010 client applications appear for all users of the User Profile service application. Links become much more useful when they are targeted to audiences.

Examples of links that can be published to client applications include the following:

- Sites, including team sites, portal sites, and project workspaces.
- Data connection libraries.
- Document libraries or document repositories.

Targeting personalization site links (My Site navigation links)

The links that are displayed on My Site pages in the top navigation bar (personalization site links) can be targeted to specific audiences. User Profile service administrators control the links displayed on the My Site navigation bar, and set the audiences that each link is visible to. In many cases, a link might be relevant for one group in an organization but not for everyone.

Targeting Trusted My Site host locations

In some scenarios, such as a global deployment with geographically distributed shared services, some users can have access to one or more My Site host locations. User Profile service administrators for each service application manage a list of Trusted My Site host locations, and then target each location to the audiences of users who have to view those locations. In an environment with multiple My Site host locations, audiences also determine in which trusted My Site host location a My Site Web site is created for a specific user.

Because trusted My Site host locations are processed in priority order within the list, users see the personalized information that is most relevant for the My Site Web site that they are viewing.

Additionally, personalization information is available even if individual service applications are unavailable. Deployments that have only one User Profile service application do not need this feature.

For more information, see [Plan for My Site Web sites \(SharePoint Server 2010\)](#).

Target Web Parts

Any Web Part can be targeted to a specific set of audiences by adding those audiences to the **Target Audiences** box in the **Advanced** section of the Web Parts tool pane.



Note:

Although SharePoint groups cannot be used to define audiences, they can be selected as audiences in the **Target Audiences** box.

Web Parts that are frequently used with audiences to target content include the Content By Query Web Part. The Content By Query Web Part can target content in the following ways:

- Group results by audience.
- Display list items from multiple hierarchical levels.
- Display list items to specific audiences.

Another group of Web Parts that are frequently used with audiences are filters. Filters can be connected to other Web Parts so that they only display results based on certain properties, such as audience. Filters are often connected to business data Web Parts to enable users to target business data based on audience.

Example: Configuring audiences for a personalization site

Several users who report to the same manager use a site that provides a personalized view of key business data. To make site more available, a User Profile service administrator first defined an audience based on the **User** operand and the **Reports Under** operator. The administrator then created a personalization site link for the group that uses the site. As the site becomes more widely used, the User Profile service administrator makes the following changes, first verifying that membership in the audience is set to satisfy any (not all) of the rules:

- When another group starts to use the site, a second audience rule is added based on the **User** operand and a different **Reports Under** value.
- Users from a distribution list also begin to use the personalization site. To accommodate them, another new audience rule that is based on the **User** operand, the **Member of** operator, and the value for a distribution list that contains these additional users is added.
- Later, the manager of a branch office requests that his staff be granted access to the personalization site. The administrator creates a new audience rule with the **Property** operand, by using the **Office** property.
- Finally, the administrator is asked to grant access to the personalization site to all financial analysts. The administrator creates another audience rule, based on the **Title** property.

Social tagging overview (SharePoint Server 2010)

A *tag* is a word or phrase that identifies an individual piece of information according to a set of attributes or criteria. Tags make it easy to find and share information about a specific subject or task.

Social tagging helps users categorize information in ways that are meaningful to them. Social tagging can improve the quality of search results by filtering against specific tags, and it can also connect individuals who want to share information with other users who have like interests.

This article describes the social tagging features in Microsoft SharePoint Server 2010. This article does not describe how to configure social tagging features. It also does not discuss how to implement social tagging features as part of an overall social media strategy for an enterprise. For more information, see [Privacy and security implications of social tagging \(SharePoint Server 2010\)](#).

In this article:

- [About using social tagging features](#)
- [Social tagging features](#)
- [Use and benefits of social tagging](#)
- [Impacts of social tagging](#)

About using social tagging features

Social tagging features help users to share information and to retrieve relevant, high-quality content more efficiently. Such sharing encourages collaboration and brings users into contact with subject matter experts who can provide information and assistance. Enterprises can also use the social tagging features of SharePoint Server 2010 to ensure compliance with industry or government regulations or to prepare for an audit or e-Discovery. For more information, see [Planning for eDiscovery \(SharePoint Server 2010\)](#).

Social tagging features

SharePoint Server 2010 contains the following social tagging features:

- Social tags, which enable users to save items of interest, organize all information for a project, and connect to others who share their interests.
- The Note Board, which enables users to add comments about Web pages, documents, and library items to be tracked in a central location.
- Ratings, which are social tags that allow users to assess the value of content against a scale, for example, one through five stars.

- Bookmarklets, which enable users to add tags and notes to pages that are outside a SharePoint environment. For example, if users add tags to a page on an Internet Web site, those tags and notes can appear on the Tags and Notes tab of their My Site Web site.

Social tags, the Note Board, and ratings are controlled by the Use Social Features permission of the User Profile service.

Social tags

Social tags are user-generated words or phrases that describe pieces of information. They are not part of a formal taxonomy, such as the enterprise keywords in the term store associated with a Managed Metadata service application in SharePoint Server, or the International Statistical Classification of Diseases and Related Health Problems (ICD) codes used in medicine to represent specific diagnoses. Users create social tags based on their subjective experience with a specific piece of information.

Social tags consist of a user identity, an item URL, and the tag itself. Social tags are stored in the social tagging database that is part of the User Profile service. By default, all authenticated users can add social tags to documents and other SharePoint items. Anyone with the Manage Social Data permission can delete a tag.

Tag clouds provide an aggregate view of the tags that a group of users have applied to a single piece of information. SharePoint Server 2010 includes a tag cloud Web Part that appears by default on a My Site Web site. Administrators and users can filter the tag cloud to display tags that are used by the owner of the My Site Web site, specific groups, or everyone who can view the My Site Web site. The display can also be filtered based on date and language. Frequently used tags are displayed in large, bold text, whereas tags that are less often used appear in smaller text. Each tag can display an associated number that indicates how many times the tag was applied.

Note Board

The Note Board is a Web Part that enables users to make impromptu comments on any SharePoint Server 2010 site. Users can also make Note Board comments on the My Profile pages of others or on their own page. Anonymous users cannot add notes.

The Note Board helps users express thoughts in their immediate context rather than having to move to e-mail, instant messaging, or phone. For example, users can make comments about a Web page while they are viewing the page. Other users can then see the comment and a link to the Web page, which they can visit if they are interested in the subject. This immediacy helps My Site Web sites and My Profile pages become centralized places to manage public conversations.

Ratings

A rating in SharePoint Server 2010 is an assessment or classification of content on a scale according to how well the content meets specific criteria. Ratings show an average score that can range from 1 to 100, and a popup window that displays additional information about the score. Users can rate items in a

SharePoint list, document library, and individual Web pages. Users do not require write permission on an item in order to rate it.

Each rating consists of a user identity, an item URL, and the rating itself. A rating also contains the date and time when the rating was applied. Ratings are stored in a table in the same database that stores social tags.

By default, ratings support is enabled across a farm. However, to use ratings in a specific site collection, ratings must first be enabled for that site collection. Ratings can be enabled on any site template if support for ratings is enabled on the farm. By default, the Ratings feature is on for the Publishing Portal site template.

Bookmarklets

A *bookmarklet* is a JavaScript control that users can save as a bookmark in their browsers.

Bookmarklets enable users in a SharePoint environment to tag, write notes about, and rate items on Web sites outside the SharePoint environment—for example, Internet Web sites—and then share those tags, notes, and ratings with their team and colleagues.



Note:

Although tags themselves are always public, you can choose to prevent others from seeing that you have tagged a specific item. Notes are always public.

When a user tags an external Web site, the `http://my/_layouts` page within the user profile of the user opens. All tags and notes entered on that page will then appear on both the Tags and Notes tab of the user's My Site Web site and the user's profile page, where the user's team and colleagues can see them.

A bookmarklet consists of a user identity, a word or phrase, and a URL for the content being tagged. Users can make bookmarklets on the Tags and Notes tab of their own Profile page private; they can also delete a bookmarklet.

Use and benefits of social tagging

Social tagging has benefits for both business and IT organizations in an enterprise.

Business benefits

The social tagging features of SharePoint Server 2010 help businesses to improve collaboration and to improve the discoverability of business information.

Improve collaboration to encourage innovation

User profiles enable users to identify themselves and find experts. Note Board comments can identify a group of users who are interested in a specific topic. Suggestions for a user's My Colleagues list can be derived from these social connections.

Improve the discoverability of business information

Social tagging features can help increase the visibility of high-quality content and identify the latest version of content. For example, a My Site Web site feed can notify a user when a Web page is tagged with a tag that the user has included in his or her user profile. These features can also integrate with business intelligence applications to connect users with enterprise data that they need to do their jobs without having to leave their SharePoint environments.

IT benefits

The social tagging features of SharePoint Server 2010 give IT organizations the following capabilities:

1. Set policies that control group activities while allowing users to manage some settings themselves, which can reduce the need for IT to be involved in the day-to-day management of some social tagging activities.
2. Grant a limited set of read-only permissions to anonymous users, to restrict their access to selected site collections.
3. Plan ahead of time to use the scalable architecture of SharePoint Server 2010 to enable gradual rollouts and add capacity when the number of users increases.
4. Manage social tagging features at the level of Central Administration, a site collection, or a site. IT administrators can assign a user to be the administrator for a site collection or a site and give the designated administrator the Manage Social Data permission for that scope. This distribution of administrative responsibilities helps IT use resources more efficiently.
5. Use social computing functionality to relieve IT staff of some support activities. For example, a hosted Enterprise wiki can encourage users to share tips and tricks, or an RSS feed can send support updates.
6. Integrate new tools with existing applications to maintain a consistent user experience, which can encourage adoption and minimize training costs.

Impacts of social tagging

Although social tagging offers many benefits, there are accompanying risks. The security of content and the privacy of users are primary concerns in any implementation of social tagging. Performance and capacity issues are also critical to the long-term success of the implementation.

Security and privacy

Unless appropriate safeguards are in place, it is possible to violate a user's privacy or to expose content that should be kept secure. SharePoint Server 2010 enables administrators to set policies that help to protect privacy while allowing users some discretion in their use of social features. For more information, see [Plan policies for user profiles \(SharePoint Server 2010\)](#). SharePoint Server 2010 also enables administrators to safeguard sensitive content. For example, an administrator can add a site URL to a list of excluded sites to prevent the site and any sub-sites from being tagged.

Users must understand the security and privacy implications of social tagging features. For example, they must understand that when someone tags a site or document, the title and URL of that site or document is broadcast to anyone who lists that user as a colleague on their My Site Web site and to anyone who has that tag as an interest in their user profile. For more information, see [Privacy and security implications of social tagging \(SharePoint Server 2010\)](#).

Performance and capacity

Performance and capacity issues can discourage users from participating in social tagging activities. Although individual tags, ratings, bookmarklets, and comments require very little storage space, in the aggregate they will affect the size of the profile database, the term store, and the social tag database. Given the rapid increase in adoption of social tagging, any implementation must be able to scale out to accommodate large numbers of new users.

See Also

[Plan for social computing and collaboration \(SharePoint Server 2010\)](#)

[Plan for My Site Web sites \(SharePoint Server 2010\)](#)

Privacy and security implications of social tagging (SharePoint Server 2010)

Social tagging helps people communicate and share information. By definition, communicating and sharing information can affect privacy (if personal information is shared) and security (if confidential information is shared). Social tagging in Microsoft SharePoint Server 2010 provides features that you can use to manage the effects on privacy and security.

In this article:

- [How social tagging information is hidden](#)
- [How social tagging information is displayed](#)
- [What information is still exposed](#)
- [Recommendations](#)

How social tagging information is hidden

Three features of SharePoint Server 2010 help protect privacy and security:

- Private tags
- The ratings control
- Security trimming

Private tags

A user who adds a tag to a Web page can indicate that the tag is private. Other people cannot see the fact that the tag was added to the Web page. Other people do not see the tag in the user's tag cloud, unless the user who added the tag also applied the same tag to another Web page without making the tag private.

Ratings control

The ratings control only displays the aggregate rating that an item has received. It does not display which users rated the item or what individual ratings were provided.

Security trimming

Adding a tag, a note, or a rating to a Web page creates an *activity*. Before SharePoint Server displays an activity, it uses a component called the *security trimmer* to determine whether the current user has permission to view the Web page that the activity applies to. If the user is not permitted to view the Web page, SharePoint Server does not display the activity.

As the search service crawls Web pages, it records the permissions that are required to view each Web page. The security trimmer uses this information to determine whether a given user has permission to view a specific Web page. If the security trimmer has insufficient information to determine whether a user has permission to view a Web page, it errs on the side of caution and reports that the user does *not* have permission to view the Web page. As a result, if the search service has not crawled a Web page, activities that relate to that Web page will not be displayed.



Note:

There is one exception: when you view your own My Profile page, all of your activities are displayed. See [How social tagging information is displayed](#) is displayed for an explanation of why this happens.

How social tagging information is displayed

There are three ways in which a user can see social tagging information:

- On a user's My Profile page
- As the result of *following* a tag or a colleague
- On Web pages in the SharePoint Server farm

Each of these ways is described in the following sections.

My Profile pages

Every user who is known to the User Profile Service has a My Profile page, which shows information about the user. When you view someone else's My Profile page, the content that you see is security trimmed. The content that you see on your own My Profile page is not security trimmed.

The **Tags and Notes** tab of a user's My Profile page contains a tag cloud that consists of the tags that the user has added to Web pages. Everyone can view the tag cloud. The tag cloud that you see on your own My Profile page contains both public and private tags. The tag cloud that you see on someone else's My Profile page contains only public tags.

When you select a tag in the tag cloud, activities that are associated with the tag are displayed in the **Activities** section. If you are viewing someone else's My Profile page, the activities are security trimmed. Therefore, you could see a tag that did not appear to have any activities associated with it.

The **Overview** tab of a user's My Profile page contains a section titled **Recent Activities**. As its name implies, this section contains a list of the user's recent social tagging activities. The list is security trimmed, unless you are viewing your own My Profile page.

The **Overview** tab of a user's My Profile page also contains a Note Board. Notes that people have added to the user's My Profile page are displayed here. All notes are public.

Following

You can express your interest in knowing when a specific tag is used by *following* the tag. When you follow a tag, you are notified every time someone adds the tag to a Web page. These notifications are security trimmed so that if someone adds the tag to a page that you do not have permission to view, you are not notified of that activity. The fact that you are following a tag is public; people can view a list of everyone who is following a tag from the tag's Tag Profile page.

You can express interest in knowing about the social tagging activity of someone else by adding the person as a colleague. When you make someone your colleague, you are notified every time the person adds a tag, a note, or a rating to a Web page. The information is security trimmed so that you only see activities that are related to Web pages that you have permission to view.



Note:

The security trimmer removes ratings that are applied to list items. It does not remove ratings that are applied to other items, such as documents and Web pages.

Web pages

When you add a tag or a note to a Web page within the SharePoint Server farm, you can see the tags and notes that other users have added to the Web page. You can see all notes, but you can only see public tags.

What information is still exposed

Tags themselves – the words or phrases that have been applied to Web pages – are stored in a *term store*. (For more information about term stores, see [Managed metadata overview \(SharePoint Server 2010\)](#).) Both public and private tags are stored in the term store. The term store does not identify the person who created the tag or the Web page that the tag was applied to.

Recommendations

Although SharePoint Server 2010 provides features that help protect privacy and security when social tagging is used, you should take additional actions to benefit the most.

- Educate users about which aspects of their social tagging activity are public and which are private. Train users to mark tags as private when they do not want other users to see that they have applied a tag to a Web page.
- Carefully evaluate all custom code before you deploy it. A custom application can access social tagging data by using the SharePoint Server 2010 social tagging object model, or directly from the database. An application can access the same social tagging data that would be available to the account it runs under. If the application runs under an account that has database administrator permissions or under an account that is a User Profile Service administrator and has Manage Social Metadata permission, the application can access all social tagging information, such as

private tags, without security trimming. Ensure that custom applications only present information that meets your organization's privacy and security standards.

- Consider a custom security trimmer. If SharePoint Server's security trimmer has insufficient information to determine whether a user has permission to view a Web page, it errs on the side of caution and reports that the user does not have permission. One result of this behavior is that tags, notes, and ratings that are added to external Web sites are always trimmed. If this behavior is not appropriate for your situation, consider implementing a custom security trimmer. For a sample custom security trimmer, see [ISocialSecurityTrimmer Interface](http://go.microsoft.com/fwlink/?LinkId=188524&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=188524&clcid=0x409).
- When the permissions that are required to access a Web site change, have the search service crawl the Web site again. The security trimmer will not recognize the new permission requirements until the site is crawled again.

See Also

[Social tagging overview \(SharePoint Server 2010\)](#)

[Managing privacy \(SharePoint Server 2010\)](#)

[Plan user profiles \(SharePoint Server 2010\)](#)

[Tagging \(http://go.microsoft.com/fwlink/?LinkId=188521\)](http://go.microsoft.com/fwlink/?LinkId=188521)

Enterprise Wikis overview (SharePoint Server 2010)

An Enterprise Wiki is a publishing site for sharing and updating large volumes of information across an enterprise. If an organization needs a large, centralized knowledge repository that is designed to both store and share information on an enterprise-wide scale, consider using an Enterprise Wiki.

This article compares Enterprise Wiki sites to Team Sites. This article does not provide information about how to plan or how to set up an Enterprise Wiki. For more information, see [Enterprise wiki planning \(SharePoint Server 2010\)](#) and [Create an Enterprise wiki \(SharePoint Server 2010\)](#).

In this article:

[Comparison of Enterprise Wikis with Team Sites](#)

[Uses and benefits of Enterprise Wikis](#)

[Limitations of Enterprise Wikis](#)

[Example: Fabrikam Enterprise Wiki](#)

Comparison of Enterprise Wikis with Team Sites

The Team Site template provides a flexible way to create content. This template includes a cross-browser Rich Text editor and in-line auto-completion. The Team Site template enables collaboration across teams within an organization or across organizations. Team Sites address two key concerns for anyone responsible for ensuring the integrity of an organization's content.

- **Editorial control** Administrators of a Team Site, or anyone with Full Control permissions on a Team Site, can allow a subset of users to edit entries and allow all users to read the entries.
- **Version control** Users can view previous versions of an entry and see when and by whom changes were made. If the changes were incorrect or inappropriate, the entry could be rolled back to an earlier version.

In SharePoint Server 2010, the Team Site template home page is a wiki page. The Enterprise Wiki template uses the publishing features of SharePoint Server 2010 to add page ratings, managed metadata, and customization capabilities. Integration with Microsoft SharePoint Designer 2010 makes it easy to modify the display of content by changing page layouts and implement consistent branding by changing master pages. For more information, see [Sites and site collections overview \(SharePoint Server 2010\)](#).

The following table suggests several criteria to consider when choosing between a Team Site template and an Enterprise Wiki template. For more information, see [Enterprise wiki planning \(SharePoint Server 2010\)](#).

If you want to:	Use this site template:
Encourage one-to-many communication	Team Site
Encourage many-to-many communication	Enterprise Wiki
Offer a structured exchange of information	Team Site
Enable a collaborative exchange of information	Enterprise Wiki
Insert images or files in a page	Team Site or Enterprise Wiki
Mark pages for easier reference by tagging them with enterprise keywords	Enterprise Wiki

Uses and benefits of Enterprise Wikis

Enterprise wikis help organizations collect, organize, and distribute information. Enterprise wikis often become repositories for an organization's unstated knowledge, which otherwise might not be stored anywhere. Enterprise wikis can encourage informal learning and sharing tips with other users, which can reduce the need for formal training or continuous IT support.

Limitations of Enterprise Wikis

Because an Enterprise wiki can generate a high level of network traffic, you might find it necessary to configure a single site collection and a single, dedicated Microsoft SQL Server database. If the Microsoft SQL Server database is shared, users might experience slower performance. For more information, see [Enterprise wiki planning \(SharePoint Server 2010\)](#).

Enterprise Wiki pages cannot be converted or migrated to pages on a Team Site without using custom code. Because Enterprise Wikis are used with the publishing feature in SharePoint Server 2010, there are significant differences between an Enterprise Wiki site and a Team Site.

Example: Fabrikam Enterprise Wiki

Fabrikam Corporation maintains a company-wide Enterprise Wiki where employees can find and contribute the latest, most comprehensive information about corporate activities, benefits, and services. The Enterprise Wiki enables employees to use social tags and notes to help other employees find content. For example, an employee in the Human Resources organization posts a page about tax-law changes that may affect some employees who have minor dependents. The employee tags the page with several keywords, including "tax", "dependents", "minors", and "deductions". At tax time, an employee in the Sales organization searches on the keywords "dependents" and "deductions" and retrieves the page that was posted by the employee in the Human Resources organization.

Enterprise wiki planning (SharePoint Server 2010)

An Enterprise Wiki is a publishing site for sharing and updating large volumes of information across an enterprise. If an organization needs a large, centralized knowledge repository that is designed to both store and share information on an enterprise scale, consider using an Enterprise Wiki. For more information, see [Enterprise Wikis overview \(SharePoint Server 2010\)](#).

Enterprise Wikis use the Enterprise Wiki site template, which is built on the Microsoft SharePoint Server 2010 publishing infrastructure. This infrastructure provides various ways to control content. For example, you can assign permissions or use a workflow to establish an approval process.

This article contains information to help you plan an Enterprise Wiki solution for your organization.

In this article:

- [About planning an Enterprise Wiki](#)
- [Decide whether to use an Enterprise Wiki](#)
- [Evaluate prerequisites](#)
- [Choose a location for hosting an Enterprise Wiki](#)

About planning an Enterprise Wiki

Before you implement an Enterprise Wiki, you must determine whether it is the most appropriate solution for the organization. An Enterprise Wiki is a good solution when a business need requires multiple users to contribute to a knowledge repository. However, if you need a way to set up one-to-many communication about a project or area of interest, you should use a Team Site.

Warning:

Enterprise Wiki pages cannot be converted or migrated to pages on a Team Site without using custom code. Enterprise Wikis are used with the publishing feature in SharePoint Server 2010, so there are significant differences between an Enterprise Wiki site and a Team Site.

This article does not discuss how to plan a Team Site. To learn more about how to plan a Team Site, see [Collaboration site planning \(SharePoint Server 2010\)](#).

Follow this sequence of steps to plan an Enterprise Wiki.

Decide whether to use an Enterprise Wiki

Representatives from several groups in an organization should be involved in the decision to implement an Enterprise Wiki. Ideally, you should have participants from IT, information architecture, the business unit requesting the Enterprise Wiki, and Human Resources. (Your organization might have different

names for these roles, or one person might assume more than one role.) The group should consider the following questions during its decision-making process:

- What purpose will the Enterprise Wiki serve?** An Enterprise Wiki should have a clear purpose. For example, it might address a specific business goal or it might be a centralized body of knowledge about a specific topic, process, or business problem. The goal is to provide a space where members of a virtual community can create, change, or remove content, which might include content that previous authors created. For example, you might want to use an Enterprise Wiki to enable employees to contribute content to Tips and Tricks pages about the business applications that an organization uses. However, if you determine that that you must have a more structured way to exchange knowledge, and that most communication will be one-to-many instead of the more free-form wiki behavior, you should consider using either a team site with Web Edit or a blog.
- How many users should be allowed to contribute?** Several factors will influence this decision. Will you be able to support increasing growth and a need for increased network and server capacity? Should you determine key contributors from each business area who will become the primary contributors? Are there legal considerations about who can contribute?
- How can we control who has access to the Enterprise Wiki?** In theory, all members of an organization can be granted access to contribute, edit, and update content in an Enterprise Wiki for the organization. If you have to separate information by group, consider using either a team site with Web Edit or a blog.
- How much control should be implemented over the content?** Unlike blogs, which are designed for a more structured knowledge exchange, a wiki encourages informal contributions. However, an organization might have guidelines or requirements for handling specific kinds of content or content about a specific subject. You should also consider how to address inappropriate or inaccurate entries.

The following table compares the features of an Enterprise Wiki with those of a Team Site.

If you want to:	Use this site template:
Encourage one-to-many communication	Team Site
Encourage many-to-many communication	Enterprise Wiki
Offer a structured way to exchange information	Team Site
Enable a collaborative exchange of information	Enterprise Wiki
Allow the use of social tags and notes	Enterprise Wiki
Control versions of documents	Team Site or Enterprise Wiki
Retain editorial control	Team Site or Enterprise Wiki
Allow pages to be rated	Enterprise wiki
Include site content in search results	Team Site or Enterprise Wiki

Mark pages for easier reference by tagging them with enterprise keywords	Enterprise Wiki
Use page layouts to provide structured page types	Enterprise Wiki

If you decide to implement an Enterprise Wiki in an organization, continue with [Evaluate prerequisites](#).

Evaluate prerequisites

You must complete the following tasks before you can create an Enterprise Wiki.

- Create a Managed Metadata service application to provide storage for social tags and notes. For more information, see [Managed metadata service application overview \(SharePoint Server 2010\)](#).
- Create a User Profile service application if you plan to use the Enterprise Wiki with My Site Web sites. For more information, see [User Profile service overview \(SharePoint Server 2010\)](#).
- To manage the site collection where the Enterprise Wiki is located, you must have at least site collection administrator permissions.

Choose a location for hosting an Enterprise Wiki

Because Enterprise Wikis can grow quickly, the location that you select for hosting must be able to handle increased performance and capacity requirements. For example, although an Enterprise Wiki generally contains pages with low storage requirements, it is typically edited by a greater percentage of users than is common for Team Sites.

Multiple Enterprise Wikis that are built on multiple site collections cannot communicate with one another. They cannot share features such as in-line auto-completion, lists, and custom searching because these features cannot span multiple Enterprise Wiki instances. You should use multiple site collections only if you determine that multiple Team Sites are a more suitable solution for an organization, given size, location, and access considerations. However, you can create an Enterprise Wiki as a subsite of another site.

This step completes the planning process. The next task is setting up the Enterprise Wiki. For more information, see [Create an Enterprise wiki \(SharePoint Server 2010\)](#).

See Also

[User Profile service overview \(SharePoint Server 2010\)](#)

[Managed metadata service application overview \(SharePoint Server 2010\)](#)

Collaboration site planning (SharePoint Server 2010)

With Microsoft SharePoint Server 2010, you can support collaboration sites in your environment. Collaboration sites store information that individuals and groups can collectively author, share, and revise. These sites do not need to be associated with a particular portal site collection or part of a publishing site collection. They can be stand-alone sites that are available for teams or groups of users who need to collaborate on projects or share information. For example, a team at an engineering firm might want a collaboration site to discuss current project status, assign tasks, or arrange group lunches, without publishing this internal information to the corporate intranet.

Collaboration sites can be made available for searching from your portal or publishing site so that information from these sites is not lost to your organization. However, for easier data recovery and maintenance, collaboration sites should be hosted either on a separate Web application or in separate content databases in the same Web application as your portal or publishing site.

You can create these collaboration sites for your users, or you can allow the users to create these sites on their own.

For more information about collaboration sites and architectural planning, see Logical architecture sample design: collaboration sites.

For more information on enterprise-wide wikis, see [Enterprise wiki planning \(SharePoint Server 2010\)](#).

In this article:

- [Determine number of collaboration sites](#)
- [Specific paths](#)
- [Additional paths](#)

Determine number of collaboration sites

Estimate approximately how many collaboration sites to expect in your environment, and how many such sites that you are willing to support. If you require users to request a collaboration site, you can control how many are created. If you let users create their own collaboration sites, you will have many of these sites in your environment.

Specific paths

You can use specific paths in Microsoft SharePoint Server 2010 to contain the SharePoint site collections, similar to the way that folders contain files or documents in the file system. By default, when you create a Web application, two paths are made available for you:

- **Root path (/)** This is an explicit inclusion that can contain one site collection. For example, if you want a URL to appear as `http://company_name/default.aspx`, you would create the site collection at this root path.
- **Sites path (/sites)** This is a general path that can contain many site collections. For example, when you use the `/sites` path, the URL for a site named `Site_A` would be similar to `http://server_name/sites/Site_A/default.aspx`.



Note:

The name of the `/sites` path varies depending on the specific language that was used during installation.

Additional paths

You can also create additional paths. This enables you to group site collections. Then, when you create a site collection, you can choose from the following alternatives:

- Create the site collection at the root of the Web application (if no site collection has already been created there).
- Create the site collection under the `/sites` path.
- Create the site collection under any additional paths that have been made available for that Web application.

In general, the `/sites` path should be sufficient for most installations. However, consider using other paths for the following situations:

- You have a complex installation and expect to have many site collections, and you want to group similar sites together.

For example, you could use `/personal` for individual user sites and `/team` for group collaboration sites, instead of using `/sites` for all.

- You want to be able to add a filter to your firewall or router to constrain a specific namespace to internal access only.

For example, you could expose the `/team` path for external collaboration, but not `/personal`.

Integration with Microsoft SharePoint Workspace 2010

Microsoft SharePoint Workspace 2010 provides a rich client for Microsoft SharePoint Server 2010, which enables real-time synchronization of desktop content with SharePoint documents and lists. Microsoft SharePoint Workspace 2010 also provides options for creating ad hoc Groove collaboration workspaces and shared folder workspaces. Information can be easily synchronized both online and offline with a designated SharePoint site or with external partners and offsite team members via shared workspaces. Microsoft SharePoint Workspace 2010 is installed automatically with enterprise versions of

Microsoft Office 2010 or it can be installed separately from [Microsoft Download Center](http://go.microsoft.com/fwlink/?LinkID=48516) (http://go.microsoft.com/fwlink/?LinkID=48516).

For more information, see [Plan for SharePoint Workspace 2010](#).

Enterprise content management planning (SharePoint Server 2010)

Enterprise Content Management (ECM) in Microsoft SharePoint Server 2010 includes the management of documents, records, and digital assets.

In this section:

- [Document management planning \(SharePoint Server 2010\)](#)

SharePoint Server 2010 includes document management features that you can use to control the life cycle of documents in your organization — how they are created, reviewed, and published, and how they are ultimately disposed of or retained. The articles in this section will guide you in planning the document management features of your solution.

- [Records management planning \(SharePoint Server 2010\)](#)

The articles in this section describe records management in SharePoint Server 2010 and provide guidelines for planning your records management solution.

- [Digital asset library planning \(SharePoint Server 2010\)](#)

SharePoint Server 2010 provides content types that are designed specifically for audio and video assets and that support the storage and playback of these assets in Web Parts and Web Parts pages. Use the articles in this section to guide you in planning a digital asset library based on SharePoint Server 2010.

Document management planning (SharePoint Server 2010)

These articles will guide you in planning the document management features of your solution based on Microsoft SharePoint Server 2010.

SharePoint Server 2010 includes document management features that you can use to control the life cycle of documents in your organization — how they are created, reviewed, and published, and how they are ultimately disposed of or retained. The articles in this chapter will guide you in planning the document management features of your solution.

The articles in this chapter include the following:

- [Document management overview \(SharePoint Server 2010\)](#) includes an introduction to document management in the enterprise and a description of the document management planning process that is recommended in this planning guide.
- [Identify users and analyze document usage \(SharePoint Server 2010\)](#) describes the creation of a document management planning team and provides guidance on how to determine the types of documents used in your enterprise and how to analyze the stages in the documents' life cycles.
- [Metadata-based routing and storage overview \(SharePoint Server 2010\)](#) provides information to help solution planners and designers understand how metadata-based routing and storage using the Content Organizer Feature can be used as part of a comprehensive document management solution.
- [Metadata-based routing and storage planning \(SharePoint Server 2010\)](#) provides information to help solution planners and designers plan a metadata-based routing and storage solution by using the Content Organizer Feature.
- [Metadata navigation overview \(SharePoint Server 2010\)](#) provides information to help solution planners and designers understand how the Metadata Navigation and Filtering Feature can be used to locate content in a document library based on metadata.
- [Document library planning \(SharePoint Server 2010\)](#) describes how to use document libraries to organize documents in your enterprise.
- [Enterprise content storage planning \(SharePoint Server 2010\)](#) contains information to help solution planners and designers properly plan enterprise content management solutions from small to large scale.
- [Document Sets planning \(SharePoint Server 2010\)](#) describes how to use document sets to organize a collection of documents as a single project or work product.
- [Content type and workflow planning \(SharePoint Server 2010\)](#) describes how to plan content types, which are the SharePoint Server mechanism to define and share the attributes of documents, list items, and folders. This article also describes how to use the SharePoint Server workflow feature to design document-related processes.

- [Information management policy planning \(SharePoint Server 2010\)](#) describes how to plan enterprise-wide policies that will help your organization comply with regulatory and legal obligations, in addition to best practices such as document audits and proper document retention.
- [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#) describes how to plan content control by using versioning, check-in and check-out, and approval for publishing content.
- [Co-authoring overview \(SharePoint Server 2010\)](#) describes the feature and provides administrators an understanding of the settings that can be used to manage co-authoring.

Document management overview (SharePoint Server 2010)

This article provides a high-level description of the various elements of a document management solution based on Microsoft SharePoint Server 2010.

In this article:

- [The elements of a document management system](#)
- [The planning process](#)

Document management controls the life cycle of documents in your organization — how they are created, reviewed, and published, and how they are ultimately disposed of or retained. Although the term "management" implies control of information from the top of the organization, an effective document management system should reflect the culture of the organization that is using it. The tools you use for document management should be flexible enough to allow you to tightly control a document's life cycle, if that fits your enterprise's culture and goals, but also to let you implement a more loosely structured system, if that better suits your enterprise.

The elements of a document management system

An effective document management solution specifies:

- What types of documents and other content can be created within an organization.
- What template to use for each type of document.
- What metadata to provide for each type of document.
- Where to store a document at each stage of its life cycle.
- How to control access to a document at each stage of its life cycle.
- How to move documents within the organization as team members contribute to the documents' creation, review, approval, publication, and disposition.
- What policies to apply to documents so that document-related actions are audited, documents are retained or disposed of properly, and content that is important to the organization is protected.
- Whether a document has to be converted from one format to another as it moves through the stages of its life cycle.
- How documents are treated as corporate records, which must be retained according to legal requirements and corporate guidelines.

SharePoint Server 2010 includes features that implement all these aspects of document management. To ensure that information workers can easily take advantage of these capabilities without having to depart from their day-to-day operations and familiar tools, applications in the the Microsoft Office

system — such as Microsoft Outlook and Microsoft Word — also include features that support each stage in a document's life cycle.

The planning process

The document management planning process consists of the following major steps:

1. **Identify document management roles** Ensure that your plans incorporate the feedback of your organization's key stakeholders, that you have the right team in place to implement the solution, and that you know who will participate in document management processes. See [Identify users and analyze document usage \(SharePoint Server 2010\)](#) for more information about creating a document management planning team.
2. **Analyze document usage** After you identify who works on documents, determine the types of documents they work on and how they use them. For more information, see [Identify users and analyze document usage \(SharePoint Server 2010\)](#).
3. **Plan the organization of documents** You can organize documents in site collections, sites, and libraries. SharePoint Server 2010 offers a range of features to help organize and store documents, from specialized sites such as the Records Repository to loosely structured document libraries for quick document creation and collaboration. Within a library, you can further organize content into folders and subfolders. For more information, see [Document library planning \(SharePoint Server 2010\)](#) and Plan enterprise content storage and version control.
4. **Plan how content moves between locations** It might be necessary to move or copy a document from one site or library to another at different stages of its life cycle. For example, the publishing process might include moving a document from a staging site to a public Internet site. If content has to be converted from one format to another as it moves from site to site, you will also want to plan content conversions. For more information, see "Plan the flow of content" in [Document library planning \(SharePoint Server 2010\)](#).
5. **Plan content types** Use content types to organize information about types of documents, such as metadata, document templates, policies, and workflow processes. This is an essential step to help you organize your documents and enforce consistency across your organization. For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).
6. **Plan workflows** When you plan workflows for your organization, you can control and track how documents move from one team member to another as each participant collaborates in a document's life cycle. SharePoint Server 2010 includes workflows for common team tasks such as reviewing and approving documents. SharePoint Server 2010 also supports creating and installing custom workflows. For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).
7. **Plan content control** You can plan the appropriate degree of control based on content type or storage location. For example, for a document library you can plan to require check-in and check-out and to protect documents from unauthorized distribution by using Information Rights Management. For more information, see [Document library planning \(SharePoint Server 2010\)](#) and [Information management policy planning \(SharePoint Server 2010\)](#).

8. **Plan policies** For each content type, plan information management policies to ensure that documents are properly audited, retained, labeled, and otherwise handled according to your organization's institutional and legal requirements. SharePoint Server 2010 includes policies that implement auditing, document retention, labeling, and barcodes (to ensure that printed content can be correlated with corresponding electronic versions). For more information, see [Information management policy planning \(SharePoint Server 2010\)](#).

Identify users and analyze document usage (SharePoint Server 2010)

The first step to plan your document management solution is to identify users and analyze how documents are used. This article provides guidance to identify users and analyze document usage for your solution based on Microsoft SharePoint Server 2010.

In this article:

- [Identify users](#)
- [Analyze document usage](#)
- [Worksheets](#)

Identify users

To determine the stakeholders and participants in your document management solution, you can use a survey to collect this information. For example, your survey might contain the following questions:

- Who in your organization creates documents?
- What types of documents do they create?
- Who reviews documents?
- Who edits documents?
- Who uses documents?
- Who approves the publication of documents?
- Who designs Web sites used for hosting documents?
- Who sets guidelines and policies for managing documents?
- Who manages records in your organization?
- Who deploys and maintains the servers on which documents are stored?

Worksheet action

Each of these questions can yield multiple answers. Record the information you gather from the survey in the [Document management participants worksheet](http://go.microsoft.com/fwlink/?LinkId=165871&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165871&clcid=0x409), as in the following example.

Document participant's worksheet example:

Position	Types of documents	Role
Financial analyst Technical writer	Equity research note Financial model Web page	Author
Financial analyst Manager	Equity research note Financial model	Reviewer
Technical editor	Equity research note Web page	Editor
Customer	Equity research note Financial model Web page	Reader
Corporate lawyer Manager	Equity research note Financial model Web page	Content approver
Server administrator	All	IT specialist
Database manager	All	Database specialist
Compliance officer	All	Legal specialist
Records manager	All	Records manager
Site manager	All	Content publisher
Site administrator	All	Content auditor

Identifying content stakeholders can help you ensure that your document management solution is comprehensive and that you design sites and document libraries that suit your enterprise's content needs and processes.

Analyze document usage

After you identify your content stakeholders, collect information from them that will help you analyze how documents are used in your organization. This is an important part of the planning process because the analysis helps you determine:

- How document libraries should be structured.
- Which site templates to use.

- How many sites you will need.
- Which information management policies to apply to the sites.
- Which physical server topology you will need to implement your solution.

The information to collect includes:

- Document type, such as equity research note, employee performance review, internal memo, or product specification.
- Purpose of each document type, such as "provides customers with recommendations about equities along with supporting data."
- Author of each document type (it is helpful to list the role of the author — such as "financial analyst" or "product manager" — rather than individual names).
- Format of the document. If the document has to be converted from one format to another at any point in its life cycle, record that information.
- Users of each document type, such as "customers" or "team members."
- Other roles that apply to the document's life cycle, such as "technical reviewer" or "copy editor."
- Location of the document, such as "client computer," "Web server," or "file server." Note that this question could have multiple answers, for example when a document is authored on a client computer and then published to a Web server.
- How readers view the document, such as from a Web page or a file share.

Worksheet action

The [Analyze document usage worksheet](http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409) is provided to record your document usage analysis. The following are examples of information that might be collected and recorded in the worksheet from two different organizations in an enterprise.

Document usage worksheet example:

Type	Purpose	Author	User	Format	Other Roles	Locations
Equity research note	Gives premium customers of a financial service guidance on	Financial analyst	Customer	DOCX (for authoring); PDF (for publishing)	Reviewer (technical); reviewer (legal); approver; copy editor; records	<ul style="list-style-type: none"> • Authoring site • Testing site • Internet • Records

Type	Purpose	Author	User	Format	Other Roles	Locations
	whether to buy or sell one or more stocks				manager; site administrator	repository

Analysis The separate authoring and publishing formats require a format conversion. The large number of reviewers requires one or more workflows (business processes implemented on the server). The four sites (authoring, testing, Internet, and records repository) require mechanisms for moving the content from one site to another. The need to archive the content in a corporate records repository and the regulatory implications of publishing equities advice require corporate policies and best practices, such as content auditing and retention.

Type	Purpose	Author	User	Format	Other Roles	Locations
Employee performance review	Evaluates the performance of an employee — including self-evaluation and manager's evaluation	Information worker; manager	Managers; human resources specialists	.DOC	Reviewer (human resources); reviewer (legal); approver (upper manager); records manager	<ul style="list-style-type: none"> • Client computer • E-mail server (as attachment) • Corporate Web server • Corporate records repository

Analysis Two authors and multiple reviewers require one or more workflows. The document is handled by many different people, then resides in a corporate Web server (presumably highly secured) and is archived in a records repository. The sensitive nature of this content requires Information Rights Management (IRM) on the desktops and servers, in addition to corporate policies and best practices (such as auditing) that protect the employee's privacy and the enterprise's legal standing.

Worksheets

Use the following worksheets to record the information discussed in this article:

- [Document management participants worksheet](http://go.microsoft.com/fwlink/?LinkId=165871&clcid=0x409)

- [Analyze document usage worksheet](http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409)

Metadata-based routing and storage overview (SharePoint Server 2010)

This article contains information to help solution planners and designers understand how metadata-based routing and storage using the Content Organizer Feature in Microsoft SharePoint Server 2010 can be used as part of a comprehensive document management solution.

In this article:

- [About metadata-based routing and storage](#)
- [Content Organizer Settings](#)
- [Content Organizer Rules](#)

About metadata-based routing and storage

SharePoint Server 2010 introduces metadata routing and storage by using Content Organizer. Content Organizer builds upon document routing features that were introduced in the Records Center site template in SharePoint 2007.

With Content Organizer, new site level features make it easier for administrators and users to classify, route, and store content by using rules based on metadata. After the site administrator activates the Content Organizer Feature and configures settings and rules, instead of directly uploading a document to a library or folder, users can then save, route, and thereby apply rules to a document, by using one of the following methods:

- Upload a document to a Drop-off library. A Drop off library is created in every site in which the Content Organizer Feature is been activated.
- Use **Save as** from Word, Excel, and PowerPoint client applications.
- Use **Send To** from other SharePoint sites.
- Use the Web service object model.
- Use an E-mail drop-off zone. By using Exchange, documents can be e-mailed to the site, where metadata then must be applied before being routed by rules.
- Submit to a Record Center site as part of a document's life cycle or expiration. For example, as part of a workflow or retention policy.

Once a document is uploaded, based on the document's metadata, Content Organizer can route the document to a specified folder or automatically create a new folder. For example,

- A new folder can be created as a child of the target folder, because the target folder of the routing rule grew too large.
- Folders are created for each new value in a field (must be a required field for the content type). For example, if you have taxonomy with 100 terms, folders can be created automatically for each of

those 100 terms, each folder being created the first time Content Organizer evaluates a document that has a particular tag.

New folders will inherit settings from the parent folder. New folders can then also have additional rules that define additional parameters such as permissions, default metadata, retention policies, and workflows that the documents in them will inherit. For example;

- By tagging a document with "Corporate Affairs", the document is routed to a folder that has more restricted permissions than other documents in different folders in the library. This lets metadata to effectively apply permissions to a document in SharePoint.
- By tagging a document with "Accounting", the document is routed to a folder where it is subject to a retention policy insuring the document is saved.
- By tagging a document with "Human Resources", the document is then routed to a folder where any number of additional metadata tags is applied. This can reduce the need for users to apply lots of metadata tags reducing time that is spent tagging and potential errors when tagging.

By tagging content with metadata and by using Content Organizer settings and rules, in combination, you can effectively determine, route, store, and apply additional content parameters to any document in your organization.

Content Organizer Settings

Site administrators can configure Content Organizer settings that will determine how content uploaded to the site is routed. These settings apply to all content routed using Content Organizer. Content Organizer includes the following settings:

- **Redirect Users to the Drop Off Library** If enabled, this setting specifies that users are redirected to the Drop Off Library when uploading content in a site that has one or more content organizer rules applied. If this setting is disabled, users can bypass using the content organizer and upload files directly to a library or folder. This setting applies only when uploading a document by using the document library page or by using a client application.
- **Sending to Another Site** If enabled, rules can be created to redirect uploads in the current site to be sent to another site that also has the Content Organizer Feature activated.
- **Folder Partitioning** If enabled, subfolders will be created when a specified number of items in a folder is exceeded.
- **Duplicate Submissions** This option specifies whether to use SharePoint versioning or append unique characters to the end of duplicate file names if a document is uploaded that has the same name as a document that is already in the destination library.
- **Rule Managers** This setting specifies users or groups that can create rules and respond to and manage uploaded content that do not match any rule.
- **Submission Points** This non-configurable setting provides Web service and URL, and an E-mail address that you can use to set up other sites or e-mail messaging to send content to the site. When creating a new Send To location in Central Administration, this is the service URL that you

specify as the destination for files submitted to the Send-To location. Send To locations must be configured before they can appear as a submission point.

Content Organizer Rules

Rule managers can create rules. A rule determines whether the rule should be applied to the incoming document, and then performs actions specified in the rule. Rule options include the following:

- **Rule Name** The name of the rule.
- **Rule Status and Priority** Specifies this rules priority on a scale of 1 to 9 if more than one rule is applied. You can also specify that this rule is inactive and will not be applied to any incoming content.
- **Submission's Content Type** Specifies the content type group such as Document Content Types, Publishing Content Types, and so on. Based on the content group type group, you can additionally select a content type for the rule. If a content type in your organization uses a different name, you can specify an alternative name.
- **Conditions** Applies additional property-based filters for the rule to process.
- **Target Location** Specifies where to put content that matches the rule.
- **Submission Points** Where the item that has met all the criteria above will be saved. If you checked the Sending to Another Site option in the Content Organizer settings, you will see a drop-down box that has a list of other locations outside the current site to which a document can be routed.

Activating the Content Organizer Feature for a site

In order to use Content Organizer in a site, the Content Organizer Feature must be activated. Once activated for a site, **Content Organizer Settings** and **Content Organizer Rules** will appear under **Site Administration** on the Site Settings page.



Note:

When creating a site by using the Record Center site template, Content Organizer is activated by default.

▶ To activate the Content Organizer Feature for a site

1. On the Site Settings page, under **Site Action**, click **Manage site features**.
2. On the Features page, for **Content Organizer**, click **Activate**.

After the Content Organizer Feature is activated, you can create metadata based rules to move submitted content to a library or folder.

See Also

[Metadata navigation overview \(SharePoint Server 2010\)](#)

Metadata-based routing and storage planning (SharePoint Server 2010)

This article contains information to help IT Pros plan how to route and store content based on metadata using the Content Organizer Feature in Microsoft SharePoint Server 2010. For more general information about content routing and storage based on metadata, see [Metadata-based routing and storage overview \(SharePoint Server 2010\)](#).

In this article:

- [Planning for metadata-based routing and storage](#)
- [Determine how content is submitted](#)
- [Plan content organizer settings](#)
- [Plan content organizer rules](#)
- [Plan target location properties](#)

Planning for metadata-based routing and storage

One of the challenges facing users in many organizations is determining where a document that they have authored should go when it is saved. Even more challenging is how to apply additional properties or actions that should be performed on the document, such as more metadata tags, permissions, policies, and workflows.

SharePoint Server 2010 introduces the Content Organizer Feature. Once the Content Organizer Feature is activated for a site, the Content Organizer can be used to sort and then send content into different containers (sites, libraries, and folders) based on metadata. Those containers, or target locations, can have per-location settings on them that define additional properties that the content in them will inherit, such as additional metadata, permissions, policies, and workflows.

Using a content organizer, as few as one or two documents or collections of documents can be uploaded to the site. The content organizer settings and rules can then specify that those content items will be subjected to the rules and sent to a target location accordingly. Each site can use an individual instance of a content organizer, enabling you to create a network routing and storing content throughout multiple sites.

Although tagging content with metadata and using the content organizer can simplify how documents are routed and stored in your organization, it is very important that you take careful steps in planning how it can best serve your organization's needs. By using good planning and implementation, you can be more certain your content management solution best uses the SharePoint infrastructure while maximizing both system and user performance.

This article is provided with links to the Content Organizer settings worksheet and the Content Organizer rule worksheet available on Microsoft Download Center. Use the worksheets in combination

with this article when planning how to configure settings and rules that will apply to content organized using a content organizer.

Download worksheets

- [Content Organizer settings worksheet](http://go.microsoft.com/fwlink/?LinkId=189018&clcid=0x409)(http://go.microsoft.com/fwlink/?LinkId=189018&clcid=0x409)
- [Content Organizer rule worksheet](http://go.microsoft.com/fwlink/?LinkId=189019&clcid=0x409)(http://go.microsoft.com/fwlink/?LinkId=189019&clcid=0x409)

Determine how content is submitted

How users submit content that will be organized using a content organizer will be an important factor in developing your content routing and storage solution. After a site administrator activates the Content Organizer Feature for a site and configures settings and rules, users can upload and have their documents automatically routed and sent to the correct location by using one of the following methods:

- Upload content to a Drop-Off Library. A drop-Off library is created in every site in which the Content Organizer Feature is activated.
- Use **Save as** from Word, Excel, and PowerPoint client applications.
- Use **Send To** from other SharePoint sites manually or as part of a workflow, or as part of document's life cycle or expiration.
- Use the web service object model.
- Use an E-mail drop-off zone. By using Exchange, content items can be e-mailed to the site.

Worksheet action: On the Content Organizer settings worksheet, record how content will be uploaded or submitted to the site.

Plan drop-off libraries

Plan content organizer settings

It is important for site administrators to carefully plan how the content organizer settings for their site will affect their overall metadata-based routing and storage solution. It is also important to test various configurations before you implement your solution live on a site. Information provided in this section is meant to help you determine and record how the content organizer settings in your site can be an effective part of your metadata-based content routing and storage solution.

The [Content Organizer settings worksheet](#) is provided to help you in planning settings for a site. Fill out a separate Content Organizer settings worksheet for each site that will have the Content Organizer Feature activated.

Content redirection

With the **Redirect Users to the Drop Off Library** setting, you can specify whether users are redirected to the drop-off library. If this setting is checked (default), then all uploads are automatically sent to their target location that is specified by the rules or are put in the drop-off library if no rules apply. If not

selected, users can bypass rules and the drop-off library and upload documents to another library or folder.

A drop-off library is created in each site that has the Content Organizer Feature activated. By default, when content is submitted, the rules are applied to the document and it is then sent to its target location. If no rules apply, the item is then put in the drop-off library and an e-mail notification is sent to the rule managers. Rule managers can then apply additional metadata to those items to match a rule and allow the document to be sent to its target location. The drop-off library uses a timer job that specifies when to process items in the library. If a rule manager applies additional metadata to an item in the drop-off library, the rule will be applied and the item sent to its target location when the timer job is next run.

When a document is uploaded, the document properties window for the drop-off library is displayed. Then metadata properties can be selected and the submission process completed. After submitted, the content organizer rules are applied to send the document to its target location. The user is then shown a URL for the item. The URL includes a permalink created from the Document ID Feature, so that the URL that was provided will always link to the item even if it is moved again. If no rules are applied, the document is then put in the drop-off library and rule managers can be notified by e-mail.

A well designed metadata-based routing and storage solution uses content organizer rules to send to its intended target location every document that is submitted to a drop-off library. The drop-off library should then only include items submitted that did not match any rule. Documents that remain in the library enable rule managers to identify those that do not match any rule, and to then create a rule or require additional metadata tags that will apply.

When redirecting users to a drop-off library, it is important for those users to be aware of the specific drop-off library's purpose, and what they will see in the properties window will reflect the content types that are defined in the site gallery, and not necessarily those content types in the library they may be working in.

Worksheet action: On the Content Organizer settings worksheet, record whether users are redirected to the Drop-Off library.

Sending to another site

If this setting is checked, rules can be created that route uploads to the current site to be sent to another site that also has the Content Organizer Feature activated. When creating a new rule, in the rule configuration page, a drop-down list displays all the destination locations items can be sent to. In order to add a new destination that is not already included in the list, you must add the site configuration information by using the Configure Send To Connections page in Central Administration.

The list of document and record centers is maintained on a per web application basis. For example, if you have a Web site on port 80 and you want to add a new destination document library in a web application that is on port 81, you would add the URL to the library's Official File web service to the list of Send To Connections for the web application on port 80. The web service URL is entered in the URL-to-router edit box and takes the form `http://myserver/mysubsite/_vti_bin/OfficialFile.asmx`. You cannot add sites that do not have the Content Organizer feature activated.

Worksheet action: On the Content Organizer settings worksheet, record whether you will allow rules to specify another site as a target location.

Folder partitioning

In SharePoint Server 2010, there is no limit on the number of items a folder can contain. There is however a practical limit on the number of items a list view can display when viewing the contents of a folder: known as the List View Threshold, and by default, it is 5000 items. By using a content organizer, you can specify what happens when a folder exceeds a maximum specified number of items, effectively becoming too large to be useful in standard list views.

Using the Folder Partitioning setting in Content Organizer Settings, you can specify that subfolders should be created when the target location becomes too large. By default, this setting specifies to create new folders when the target location exceeds 2500 items. Each subfolder will inherit the properties of the target location which it was derived from. So, if for example, you have a folder named "Resumes" that has special permissions that are required to view and edit items in it, subfolders created from the Resumes folder will inherit those same permissions requirements.

It is important to be aware of your site or library's overall folder structure. The main purpose of folders is to organize content to match the expected functionality of the site or library. The Folder Partitioning setting should be considered carefully as part of an overall folder structure or even after a folder structure is established.

Worksheet action: On the Content Organizer settings worksheet, record whether to create subfolders when the number of items in the target location is exceeded, and the format of the folder name subfolders should be created by using folder partitioning.

Duplicate submissions

In any large organization there is always the possibility more than one document that has the same name and metadata is submitted to a site. By default, the content organizer will use SharePoint versioning to differentiate items with the same name if versioning is enabled in the document library. In Content Organizer Settings, you have two options for duplicate submissions. First, and by default, is to use SharePoint versioning. To use SharePoint versioning, versioning must be enabled for the document library. For more information about how to plan versioning, see [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#). The second option is to specify that the Content Organizer will append unique characters to the end of the duplicate file names. If versioning is not enabled for a target library, the Content Organizer will append unique characters to duplicate submissions regardless of the setting selected. It is important to remember that the unique characters appended to the file name may not identify the item in any particular way. This could prevent users from correctly identifying the document that they want if there are too many documents that have the same name, but unique characters added to the name do not provide any meaningful form of identification.

Worksheet action: On the Content Organizer settings worksheet, record whether you want to use SharePoint versioning (default) or to append unique characters to the end of duplicate file names.

Preserve context

When this setting is checked, for documents that include original audit logs and properties are retained and stored with it. This can be important when you want to retain all of the historical information about the document, such as a document sent to a Record Center site. When the context is preserved, users can click on **Compliance Details** from the View Properties page of an item.



Note:

Preserving context will affect storage. Audit data can quickly compound and occupy large amounts of space in a content database, especially if view auditing was turned on. For more information about how audit data may affect storage capacity, see [Storage and SQL capacity planning and configuration](#).

Worksheet action: On the Content Organizer settings worksheet, record whether you want to save the original audit log and properties for documents submitted to this site.

Rule managers

You can specify users who can create and edit rules. Rule managers must have Manage Web Site permissions in order to create and edit rules. Rule managers must be familiar with your metadata term sets and terms in order to create rules that most effectively implement your metadata based routing and storage solution. It is also important for rule managers to determine the broader implications of rules they create, for example, it is important that all rule managers in your organization determine the correct action when a folder becomes too full.

In most cases, the person creating the rule will serve as the rule manager, however, in some circumstances, such as when you are creating a series of new rules, you may want to specify other rule managers that will be responsible for making sure the rule is meeting the goals originally intended. If you specify that rule managers are to be e-mailed when submissions do not match a rule, or when content was left in the drop-off library, you may want to specify several rule managers in-case the original rule manager is not available. Rule managers have permissions to edit all items in the drop-off library in order to enter missing or incorrect metadata necessary for a document to match a rule.

Worksheet action: On the Content Organizer settings worksheet, record users or groups that will act as rule managers for the site.

Plan content organizer rules

Content organizer rules are the heart of routing and storing content based on metadata. It is the conditions in the rules that determine whether the rule should be applied to an item, and then, if all conditions in the rule are true, the target location specifies where to send the item.

When creating rules, there are some important things to consider. For example, it might be best to create common rules; to create and send to a unique folder for every unique value of a particular metadata column. Create rules that address all possible submissions. You can do so by creating as few as one simple rule that applies to a particular content type, or by creating many rules that send in any number of complex ways. If the drop-off library contains many items that do not match any of the rules,

it is important to verify those items to determine why no rules are being applied. This can occur if rules do not reflect the metadata properties available to users when tagging a document.

Information provided in this section is meant to help you plan rules that will be an effective part of your metadata-based routing and storage solution. The [Content Organizer rule worksheet](#) is provided to help in planning rules. Fill out a separate worksheet for each new rule that you plan to create.

Determine rule name

The rule name is used in site Content and File Plan reports. Determine a rule naming convention to make particular rules in reports and the Content Organizer Rules list more identifiable. If possible, the rule name should state the objective of the rule, the kinds of documents organized by the rule, and/or provide some distinction of the conditions of the rule.

Worksheet action: On the Content Organizer rule worksheet, record the rule name.

Determine rule status and priority

When creating a rule, you can specify if the rule is active or inactive. If a rule is active, you can specify a priority from 1, being the highest priority, to 9, being the lowest priority. If there is more than one rule that match the conditions, the rule with the highest priority will be applied first.

Worksheet action: On the Content Organizer rule worksheet, record the rule priority.

Determine content type

A rule must define at least one metadata property; the content type. From the content type, you can then select additional properties that will be used in the conditions for the rule. If a content type has an alternative name or alias in another site, you can specify it here. The content type groups available are those currently in the site collection or current site. When a document matches a rule by content type alias, the document will be organized by the content type of the rule, and not by the content type alias. Types available are those only for the selected content type group.

You can create a rule that will apply to documents of an unknown content type by selecting **This content type has alternate names in other sites** and typing * in **Add alternate name**.

Available content type groups and types (default)

Business Intelligence	Content Organizer	Digital Asset	Document	Document Set	Page Layout	Publishing	Special	Custom
Report	E-mail Submission	Audio	Basic Page	Document Set	Article Page	Page	Unknown Document Type	
Web Page Part with		Image	Document		Redirect Page	Page Layout		

Business Intelligence	Content Organizer	Digital Asset	Document	Document Set	Page Layout	Publishing	Special	Custom
Status List								
		Rich Media Asset	Dublin Core Columns		Welcome Page	Publishing Master Page		
		Video	Form					
			Link to a Document					
			List View Style					
			Master Page					
			Picture					
			Web Part Page					
			Wiki Page					

You can also create a rule that will apply to a custom content type that was derived from a default content type (in the table above) as the parent content type.

Worksheet action: On the Content Organizer rule worksheet, record the content type group, type, and alternate names in other sites.

Plan conditions

Rules are applied on property-based conditions. You can define up to 6 conditions in a single rule. All of the conditions must be true for the rule to be applied and the item sent to its target location. The properties that are available to be used in a condition are those associated with the content type. Because you must specify at least a content type, there will be at least one condition. When you specify a content type, but do not define any additional property-based conditions, the rule will organize all items based only on the content type.

When defining a condition, for the condition to be true, a value must be the product of a property and an operator. You cannot specify wildcards as a value for a condition. If a value does not match the condition, the rule will not be applied and the item will remain in the drop-off library.

Worksheet action: Use the Content Organizer Rule page to determine the properties available for the selected content type, and then on the Content Organizer rule worksheet, record conditions for the rule.

Plan the target location

Each rule must specify a target location where the items that match the rule will be sent. A target location can be another site, library, or folder. A rule can also specify that a new folder is created in the target location for each unique value of a particular property. When specifying another library, that library must include the content type specified in the rule.

You can specify a format for new folder names. By default, a new folder naming format is "%1 - %2", where %1 is replaced with the name of the property and %2 is replaced with the value of the property. For example, if you used the Report Status property and received a new item where the Report Status value is "Complete", it would create a folder named "Report Status - Complete". If there are many unique properties and many new folders will be created, make sure that you specify a format for the folder names that will make sense to users in your organization.

When choosing to create new folders for each unique property, it is important to consider how many items may populate each new folder. Consider creating folders based on a unique property when such grouping of items makes sense. Creating a new folder for each unique property when there may be hundreds or even thousands of unique properties may create a confusing and unnecessary number of folders that may be difficult to navigate in standard list views.

Worksheet action: On the Content Organizer rule worksheet, record the target location and whether a new folder is automatically created for each unique value of a property, and the format of the new folder name.

Plan target location properties

Once a content item is sent to its target location, new properties and settings that apply to all items in that location can be applied. For example, all items in a "Human Resources" library can have restricted view permissions. If you specify that new subfolders are created from the target location, those folders will inherit the properties of the parent target location. Additional properties and settings can be specified at the site level, in Site Settings, and at the library level, in Library Settings.

Additional properties

- **Permissions** By routing content to a target location based on metadata, you can specify a target location with unique permissions, effectively using metadata to apply permissions.
- **Versioning** By routing content to a target location based on metadata, that target location can specify a particular document version history (versioning).
- **Metadata** By routing content to a target location based on metadata, that target location can apply additional metadata and enterprise keywords.
- **Retention and content type policies** By routing content to a target location based on metadata, content in that target location can be subject to a retention policy, assuring that the content is saved.

- **Workflows** By routing content to a target location based on metadata, content in that target location can be subject to workflows.

Worksheet action: On the Content Organizer rule worksheet, record additional properties that will be applied at the target location.

See Also

[Plan managed metadata \(SharePoint Server 2010\)](#)

[Metadata-based routing and storage overview \(SharePoint Server 2010\)](#)

[Metadata navigation overview \(SharePoint Server 2010\)](#)

Metadata navigation overview (SharePoint Server 2010)

This article contains information to help solution planners and designers understand how the Metadata Navigation and Filtering Feature in Microsoft SharePoint Server 2010 can be used as part of a comprehensive document management solution.

In this article:

- [About metadata navigation in SharePoint Server 2010](#)
- [Metadata navigation user controls](#)
- [List owner controls](#)
- [Automatic indexing](#)
- [Indexed Queries](#)
- [Fallback queries](#)

About metadata navigation in SharePoint Server 2010

Metadata Navigation and Filtering is a new feature in SharePoint Server 2010 that enables users to filter and find content in document libraries by using metadata. The Metadata Navigation and Filtering Feature includes the following:

- **A simple user interface** Metadata navigation builds upon the SharePoint Tree view hierarchy control and combines it with a new *Key Filters* control providing users a powerful tool in finding content based on metadata.
- **List owner controls** By configuring metadata navigation settings, list owners can promote fields on a list as key navigation fields. Users viewing those lists can then further filter the current list view to show only items with the desired values in those fields.
- **Automatic indexing** This optional process can create list indices automatically depending on the fields promoted as navigational fields for the list. Automatic indexing can improve query results and improve performance.

Metadata navigation user controls

Metadata navigation builds on list view navigation features already in SharePoint. List views without metadata navigation configured provide a simple hierarchical view and work well when searching for content through its physical structure, for example sites, libraries, and folders. However, those list views are blocked when trying to navigate through many items, or by the list view threshold when browsing folders that contain more than five thousand items.



Note:

By default, the list view threshold is 5000 items. Administrators can change the list view threshold by using Windows PowerShell.

Metadata navigation expands the capabilities of list views and combines it with a Key Filters control making it easier for users to find content by filtering a view of documents to a subset based on one or more navigation filters.

Metadata navigation includes the following user controls:

- **Navigation hierarchies** Use and expand the capabilities of list views to navigate hierarchies of folders, content types, choice fields, or managed metadata term sets. This allows users to use list views to filter on a metadata hierarchy just like navigating folders.

When selecting an item in a hierarchy for a managed metadata column, all items will be shown that are tagged with the specified term or any of its descendant terms for the field associated with that hierarchy. Users can then select the item again to filter only on that particular term and not include the descendant child terms.

Navigation hierarchies' work together with filters specified in the list view definition and filters specified in the columns in the list view Web Part. Along with key filters, in-combination, provide up to four distinct ways that a list view can be filtered.

- **Key Filters** This control appears below the site hierarchy control and can consist of several fields such as date, choice, content type, single and multi-value fields, currency, yes / no, and user fields. Any number of key filters can be applied in combination with a selected navigation hierarchy.

Key filters can be specified for a much larger range of column types and consist of a blank field that matches the kind of column it represents. Users can then type text into the field to filter on that column. For example, you can add the **modified by** column as a key filter and then type a user display name or username alias and resolve to get results where **modified by** matches the user entered. Any number of key filters can be used at the same time and they can also be used in combination with a navigation hierarchy.

Managed metadata key filter fields enable entering multiple terms by typing and selecting from the suggestions displayed. A specially handled managed metadata field that is named **All Tags** can also be used, which matches the input terms against field values for an item in any of the managed metadata fields in the list schema. If the user is in the root folder of the list then applying key filters will query over all of the items from any of the folders in the list.

List owner controls

Once the Metadata Navigation and Filtering Feature is enabled for a site, list or library owners can configure settings on the Metadata Navigation Settings page available from the list or Document Library Settings page. Owners can specify navigation hierarchy and key filter fields and specify whether columns are automatically indexed.

Automatic indexing

On the Metadata Navigation Settings page for a list or library, with the **Configure automatic column indexing for this list** setting, list owners can specify whether indices are automatically created on the list to match selected navigation hierarchy and key filter fields. If this setting is enabled (default), when the metadata navigation settings page is saved, the following occurs:

- Single column indices will be created on all supported navigation hierarchy fields.
- Single column indices will be created on all supported key filter fields, except for the Content Type field and Choice fields
- Compound indices will be created on all supported combinations of navigation hierarchies and key filters.

When indices are created automatically, queries are allowed for lists that have more items than the list view threshold. In some cases, you may have to disable this setting and configure custom indices. For example, if a combination of single column and compound indices exceeds 20, Automatic Indexing must be disabled.

Indexed Queries

When the Metadata Navigation and Filtering Feature is enabled for a site, built-in optimization will select the best index to work every time that a list view is loaded. Each time that a user loads a list view, refreshes a list view by applying a new filter, clearing a filter, or by applying a sort on a field, query optimization determines the best way in which to query the database without view throttling.

Fallback queries

If metadata navigation determines that the current user request cannot be expressed as an indexed query that is selective, it will construct and perform a fallback query. A fallback query is a modified version of the original user query that queries against only a part of the list instead of the complete list. Fallback queries are intended to show the user a partial set of results that can be useful, even when the original query could not be run because of list view throttling. In addition, fallback queries can serve as a warning to list owners that the data distribution in the list is skewed and certain queries that users are running cannot return a full set of results, which means that users may be blocked from accessing content that they need. Fallback queries occasionally will return 0 results if no items in the part of the list scanned by the query contain results that match the original user query.

Since the results of a fallback query are only a partial set of the items that the user is requesting, the user is prompted via an on-screen message that only a partial set of results is being shown and that the user must apply additional filters in order to view a complete set. Every time that a user specifies an additional filter, this is another opportunity for the query engine to find a selective filter/index combination that does not exceed the list view threshold that result in a throttling exception.

See Also

[Metadata-based routing and storage overview \(SharePoint Server 2010\)](#)

Document library planning (SharePoint Server 2010)

This article describes how to plan document libraries and integrate libraries into your Microsoft SharePoint Server 2010 document management solution.

Document libraries are collections of files on SharePoint Server that you share with other site users. Most document management features are delivered through document libraries. As part of document management planning, you should determine the type of document libraries that best fit your organization's needs.

Plan document libraries

In this article:

- [Determine library type](#)
- [Plan the flow of content](#)
- [Promoting document libraries from Office client applications](#)
- [Worksheet](#)

Determine library type

When you identify which document libraries best match your organization's needs, you might also determine that you need multiple sites or site collections. For example, if you are authoring content for publication to external customers, you might need one site (and library) in which to author and review content and a separate site, perhaps in a separate SharePoint Server 2010 installation, in which to publish your content.

When you plan document libraries for multiple sites, you might also need to plan how content flows from one site to another — by manual processes, workflows, or custom solutions.

The following table lists typical uses of document libraries:

Library	Purpose
Library in a team site	Collaboration; easy sharing of content among peers; content control, such as versioning; SharePoint Server searching.
Library in a portal area	Content that is intended for a wider audience in the organization; similar to a library in a team site, but typically implemented with a more-stringent

Library	Purpose
	review and approval process.
Library in a Document Center site	A large-scale library useful as an enterprise knowledge base or historical archive; includes features to help users navigate, search, and manage a large number of documents in a deep hierarchy by using a set of specialized Web Parts.
Library in a Records Repository	Specialized records management; each library corresponds to a record type, such as contract, that the organization must retain for legal compliance purposes; libraries retain documents, metadata, and associated audits and are meant to be read-only.
Library in an Internet site (HTML)	Contains Web pages to incorporate in an Internet or intranet Web site; SharePoint Server supports editing Web pages directly and manages the underlying document libraries for each page automatically.
Library in an Internet site (hybrid)	Content available for downloading from a Web site; you can present content from document libraries on an Internet site.
Slide library	Supports sharing, managing, and reusing Microsoft PowerPoint slides.

The following example illustrates how to use the analysis that you completed in [Analyze document usage](#) to help you plan document library organization for your enterprise. In this example, Contoso Ltd. delivers content to clients based on market research. The content is created primarily by consultants operating remotely. This is done in a cycle in which:

1. A partner evaluates engagement ideas and requests for proposals.
2. After a contract is established, a project manager assembles a team of consultants and creates an engagement-specific working site in which the results of the research are recorded and the project is completed.
3. When the project is done, the deliverable documents are published to a secured Internet site, where customers have access to them.
4. The team writes best practices documents and case studies based on the project.
5. Knowledge managers collect, organize, and archive the best practices and other documents.
6. Deliverables, contracts, and other documents are retained as corporate records.

7. By using the content maintained by the knowledge managers, partners evaluate opportunities and create new proposals.

The following table illustrates a document usage analysis for this scenario:

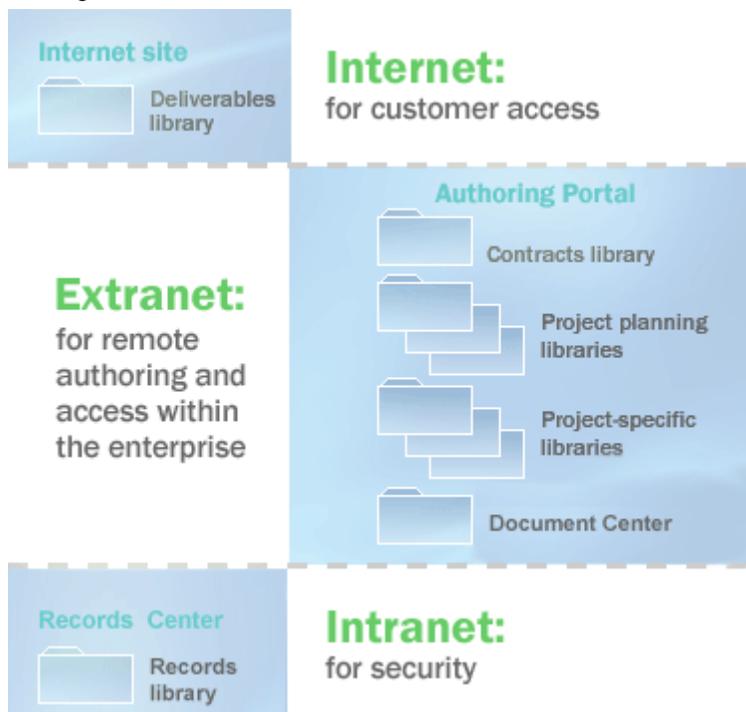
Documents	Purpose	Author	Users	Format
Engagement ideas and requests	Develop new customer engagements	Project leader	Sales manager; project leader	.doc
Proposals	Describe a proposed customer engagement	Project leader	Project managers; project team members; customers	.doc
Contracts	Commit to a consulting engagement	Lawyer	Project leader; project manager; sales manager; customers	.doc
Research results and project deliverable drafts	Generate documents related to the customer engagement	Project leader; project contributor; consultant	Editors; technical reviewers	.doc and other types
Deliverable documents	Generate final deliverables, probably converted from .doc format	Project leader	Customers	.pdf
Best practices and case study documents	Capture organizational knowledge	Project contributor; consultant; knowledge manager	All team members	Various types
Corporate records	Retain some content, such as deliverable documents, as corporate records	All	Corporate records managers; corporate lawyers	All

This document usage analysis suggests the following:

- Project leaders need libraries in team sites for storing engagement ideas, engagement requests, and proposal drafts.

- Lawyers need libraries in a portal or centralized document management site for storing contract templates and active contracts.
- Project leaders and contributors need libraries in team sites for authoring research results, deliverables, and case studies.
- Customers need libraries in an Internet site for viewing final deliverables.
- All members of the enterprise need access to a Document Center site for viewing best practices and case study documents.
- Corporate records managers and lawyers need access to an enterprise Records Repository to maintain corporate records.

The following figure illustrates how these libraries might be distributed. The sites are hosted in three site collections: an Internet site collection for customer access, an extranet site collection for remote authoring by team members, and an intranet site collection for secure maintenance of the records management site.



Worksheet action

The [Document libraries worksheet](http://go.microsoft.com/fwlink/?LinkId=165874&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165874&clcid=0x409) is provided to record your library planning decisions. Use this worksheet to list the libraries required for your solution, along

Worksheet action

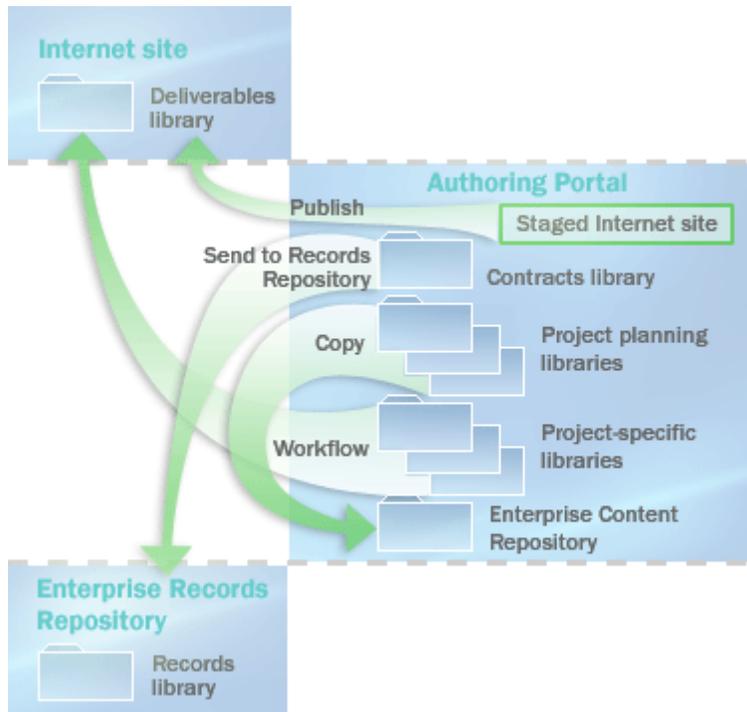
with the types of documents they contain. Note that libraries can contain more than one type of document.

Plan the flow of content

Content in a document management solution is often dynamic, moving from one site to another as needed to meet document users' needs. When you plan document libraries, therefore, also plan the flow of content from one library or site to another. SharePoint Server includes the following ways to move content, either manually or dynamically:

- You can create custom workflows that copy or move content from one site or library to another. A workflow guides a document through a business process and assigns tasks to participants when their role in the document's life cycle becomes active. A workflow can be designed to move a document from one site or library to another. For information about planning workflows, see [Content type and workflow planning \(SharePoint Server 2010\)](#).
- Authors can copy a document to a library in any site in which they have authoring permissions. The relationship between the source and the destination document is maintained so that the copy can be refreshed as needed.
- Web pages and entire Web sites can be staged and published from one site to another either manually or automatically based on a schedule.
- Content can be sent to the records management site by using the SharePoint Server user interface, by using a workflow, or by using a custom solution based on the Microsoft SharePoint Foundation object model.
- By using Web Folders or Network Places, an author can manually copy or move the contents of a document library from one library or site to another.

Returning to the example, the following figure illustrates how to apply some of these content flow techniques. Note that the Staged Internet site has been added to the Authoring portal site.



- By using publishing features, an author can publish Web pages to the Internet site.
- By using the Copy command, an author can copy documents to the Document Center site.
- By using a custom workflow, an author can copy documents to document libraries on the Internet site.
- By using the Send to Records Repository command, an author can send contracts to the enterprise Records Repository.

Promoting document libraries from Office client applications

You can customize the Microsoft Office Professional 2010 **Open** dialog box and the **Save** dialog box to encourage organization members to use document libraries as storage locations. By adding sites to the **My Places** bar next to the **Open** dialog box and the **Save** dialog box, you can provide single-click access to the locations where users should store their documents. This makes it possible for team members to interact with the document libraries when using Save from Office Professional 2010 client applications, rather than having to go directly to the server to upload their documents.

To promote using sites in the **Open** dialog box and the **Save** dialog box, you can publish them by using a Web service. This service provides a list of sites targeted to specific users based on their roles or the sites that they are members of. A Office Professional 2010 client application can automatically discover this Web service through the user's My SharePoint Sites. Other server products can also implement this Web service and provide the location of the service to the Office client application. After this is

configured, Office Professional 2010 adds an entry to the My Places bar and populates it with the locations that are defined by the Web service.

Alternatively, administrators can set registry keys to add specific sites to the My Places bar in the Office **Open** dialog box and the **Save** dialog box. Registry keys are deployed by using Group Policy and a Microsoft Active Directory directory service template provided in the Office 2010 Resource Kit.

You can limit the locations that organization members can save content to by using the Office **Save** dialog box. For example, you can restrict the ability to save files to desktops and force users to save content in a document library. In Office Professional 2010, you can control where users are allowed to browse to save their documents, thereby guiding users to save in approved locations. Note that this does not guarantee that users won't save files to their local computers or other unapproved locations. There are many ways to get files onto a computer, and motivated people can work around most restrictions. However, by limiting access to these locations through the Office **Save** dialog box, you can dramatically reduce the number of team members who use these unapproved locations.

To restrict the locations available in the Office **Save** dialog box, use Group Policy to set the appropriate registry keys to enable this setting and define the approved local, network, or server locations. When this setting is enabled, any location not defined in this manner — including standard links to the Desktop and My Network Places folders — will be removed from the My Places bar.

The list of approved locations can be limited to one or more Office applications. For example, an administrator can restrict save locations in Microsoft Access while allowing other Office applications to save anywhere.

Worksheet

Use the following worksheet to record the information discussed in this article:

- [Document libraries worksheet](http://go.microsoft.com/fwlink/?LinkID=165874&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkID=165874&clcid=0x409)

Enterprise content storage planning (SharePoint Server 2010)

This article describes how to plan an enterprise content storage solution that uses Microsoft SharePoint Server 2010. Although the examples in this article are primarily relevant for solutions that are based on SharePoint Server 2010, the prescriptive guidance information that is provided here applies to both SharePoint Server 2010 and SharePoint Foundation 2010 unless noted otherwise.

Information and guidance in this topic is meant to serve as an introduction to enterprise content storage concepts. Certain information in this topic is derived from other more detailed documents about performance and capacity testing performed at Microsoft and from other articles providing detailed guidance about particular concepts. We strongly recommended that you use all these resources when planning your enterprise content storage solution. For more information and links, see [Additional resources](#) later in this article.

In this article:

- [Understanding enterprise content storage](#)
- [Typical large-scale content management scenarios](#)
- [Storage levels: content storage benefits and considerations](#)
- [Routing and storing enterprise content based on metadata](#)
- [Navigating and filtering enterprise content by using metadata](#)
- [List views](#)
- [Additional resources](#)

Understanding enterprise content storage

A document management solution is about much more than only providing a location for documents. A complete enterprise-level document management solution addresses document storage at multiple levels, including storage within site collections, sites, libraries, and folders. It also enables companies to efficiently and effectively manage their growing volumes of enterprise documents and ensure that versions of documents from each stage of their life cycle can be retained for reference or legal reasons.

SharePoint Server 2010 supports high-capacity document storage. A document library can contain millions of documents. However, depending on how the content is used, the performance of sites that contain many documents can decrease. The prescriptive guidance provided in this article can help you design large-scale content management solutions that scale out to the requirements of your enterprise while providing the users of your solution with a high-performance environment in which to create and use documents.

Decisions you make about the capacities of site collections, sites, and libraries should allow for not only the physical storage constraints of your environment but also the content usage and viewing patterns of

users. For example, if users view or query a set of documents in a document library that contains thousands of documents, performance can decrease if the site is not configured correctly. Or if a service-level agreement requires that content be backed up two times a day, the service might not perform satisfactorily if the set of content is too large.

Typical large-scale content management scenarios

Typically, large-scale content management scenarios are variants of one of the following scenarios:

- Large-scale authoring environment
- Large-scale content archive
- Extremely large-scale content archive

The scenario descriptions provided here are intended to clarify what we mean by large-scale solutions and to provide high-level examples that hopefully reflect your content management goals. Of course, these descriptions do not include all aspects of a particular scenario. There are dozens, even hundreds, of unique aspects of a particular scenario that are beyond the scope of this article.

Large-scale authoring environment

In a large-scale authoring environment, for example, a site can contain a library in which users edit 50,000 or more documents across 500 or more folders. Versioning is enabled, and typically multiple versions of each document exist. Documents are checked in and out frequently, and workflows are used to control their life cycles. A typical database for this kind of site contains approximately 150 gigabytes (GB) of data. Library settings can be used to limit the number of versions saved, reducing database consumption. (Note that each version of a document is stored separately in the database.) Typically, in a large-scale authoring environment, 80 percent of site users are authors who have access to major and minor versions of documents, whereas 20 percent of site users have read-only permissions and can only view major versions of the content.

A large-scale authoring environment site can be based on the SharePoint Server 2010 Document Center site template, which includes a single, large document library that is optimized for large-scale authoring.

Large-scale content archive

A large-scale content archive is a document repository in which users either view documents or upload new documents. Little or no authoring occurs in the site. There are two primary large-scale content archive scenarios: knowledge base and records management.

In a knowledge base site, there is only a single version of most documents, so that the site can scale out to easily hold millions of documents (recommended maximum of 30,000,000 documents). The content is typically stored in a single database as large as 1 terabyte. In a typical scenario, such as an enterprise's technical support center, 10,000 users might access the content, primarily to read it. A subset of users (three or four thousand) might upload new content to the site. A knowledge base site can be based on the Document Center site template.

Another kind of large-scale content archive is a records center, based on the Records Center site template. Using the Records Center site template is recommended for sites that contain one million or more documents. This site template contains features that you can use to manage the retention and disposition of records (documents that serve as evidence of activities or transactions performed by the organization and that must be retained for some time period). Similar to a knowledge base site, a records center contains a single version of each document and could typically hold millions of documents. Many more users submit content to a records center than view or read it.

Extremely large-scale content archive

An extremely large-scale content archive can be used as a reference library or content repository. To provide scale beyond that of a large-scale content archive, a very large-scale content archive might contain 50,000,000 or more documents distributed across multiple site collections. Content in each site collection may be stored as BLOB (Binary Large Object) data in multiple content databases or by using Remote BLOB Storage (RBS). Remote BLOB Storage enables data to be stored outside SQL Server enabling less expensive storage options and reducing content database size. SharePoint Search or FAST Search for SharePoint is used to find content across multiple site collections.

Storage levels: content storage benefits and considerations

Site collections

A site collection is a set of web sites that has the same owner and shares administration settings. Each site collection contains a top-level Web site and can contain one or more subsites. A site collection usually has a shared navigation structure.

The sites in a site collection are usually interrelated by purpose. To maximize your solution's usability, store all related data and content in a single site collection. Benefits of doing this include the following:

- Content types and columns managed in a site collection can be shared across sites in the site collection. The managed metadata service can be used to syndicate content types and column definitions across multiple site collections.
- Information management policies managed in the site collection can be made available to content in all sites in the site collection.
- Search can be used across content in multiple site collections.
- Some views list documents from multiple sites in a single site collection (for example, a view enumerating all tasks assigned to a user across a site collection). Also, developers can create cross-site database queries in a site collection, but cross-site queries are not supported across multiple site collections.
- Content quotas and other quotas can only be managed at the site-collection level.

Consider the following limits when planning how to allocate your content across one or more site collections:

- All sites in a site collection share the same back-end resources. In particular, all content in a site collection must be stored in the same content database. Because of this, the performance of database operations— such as backing up and restoring content — will depend on the amount of content across the site collection, the size of the database, the speed of the servers hosting the database, and other factors. Depending on the amount of content and the configuration of the database, you might have to segment a site collection into multiple site collections to meet service-level agreements for backing up and restoring, throughput, or other requirements. It is beyond the scope of this article to provide prescriptive guidance about how to manage the size and performance of databases.
- Particularly, keep very active sites in separate site collections. For example, a knowledge base site on the Internet that enables anonymous browsing could generate lots of database activity. If other sites use the same database, their performance could be affected. By putting the knowledge base site in a separate site collection with its own database, you can free resources for other sites that no longer have to compete with it for database resources.



Note:

SharePoint Foundation and SharePoint Server 2010 include several features that reduce the need to have the IT department restore content. The Recycle Bin and the Site Collection Recycle Bin provide a double safety mechanism for restoring unintentionally deleted items. Document versioning also provides a safety net of sorts: if a document is lost, at least its previous version will be available. To better ensure the availability of previous versions, an administrator can remove an author's Delete Versions permission; this can help guarantee that previous versions of content are available without having to restore them from the database.

Sites

A web site is the primary way to organize related content in SharePoint Server 2010 and SharePoint Foundation.

Storing content in the same site has the following benefits:

- It is easier to create pages that display views of multiple libraries and lists when they are in the same site.
- You can use the Document Center site template to create a site that is optimized for creating and using many documents.
- The site navigation user interface is optimized to make it easy to find and locate libraries within the same site.
- You can define a set of content types and site columns for use in a site.

Libraries

Storing content in the same library provides the following benefits:

- It is easier for users to add new documents or find existing documents in a single library.
- Many document management settings— such as permissions, content versioning, and approval— are applied at the library level.
- Views created by using the user interface are bound to a particular library.
- Information management policies, such as content auditing and retention settings, can be applied to a library. For certain libraries, only retention policies can be used.

Think about the following limits when you plan how to organize content into the same library:

- Settings such as required checkouts or versioning are specified at the document library level. If you want to specify different settings for other documents, you must put those documents in a different library with the necessary particular settings.
- Views that contain columns that are used only on one content type may not be useful because no metadata value will be displayed for items of other content types.
- View performance is limited when the number of items viewed exceeds the list view threshold of 5,000 items (default). In addition, queries are prevented when they exceed the list view threshold. Organize content in the library into folders that contain 5,000 or fewer items, or create views that take advantage of metadata navigation and indexed columns to return sets of 5,000 or fewer items.

Folders

A *folder* is a named subdivision of the content in a library similar to folders in a file system. The main purpose of folders is to logically organize content to match the expected functionality of the library. For example, if a library is intended to provide product specifications, the set of folders in the library could be named for each feature area in the product or for each team member who writes product specifications.

When you divide content across multiple folders— each of which contains 5,000 (list view threshold default) or fewer items— views on the folders can perform well. Note that to take advantage of this, views available within folders must be configured to only show items inside the folders (this feature is available in the default view-creation interface). Note also that if folders contain 5,000 or fewer items, views in the folders do not have to be filtered by using indexed columns. For folders that contain more than 5,000 items, you can improve performance using metadata navigation and/or indexed columns and then filter the views to return less than 5,000 items.

Consider creating folders as part of a content routing and storage solution that is based on metadata. By using Content Organizer, you can configure settings that automatically create folders when a target folder becomes too large or to automatically create folders for each value of a metadata property. For more information, see [Routing and storing enterprise content based on metadata](#) later in this article.

Routing and storing enterprise content based on metadata

SharePoint Server 2010 introduces metadata routing and storage by using Content Organizer. By using Content Organizer, new site level features make it easier for administrators and users to classify, route, and store content by using rules based on metadata.

Based on a document's metadata, Content Organizer can route a document to a specified folder or automatically create a new folder. Folders can be created as a child of the target folder because the number of items in the target folder exceeds a specified limit, or new folders can be created for each new value in a field. New folders will inherit settings from the parent folder. New folders can then also have additional rules that define additional parameters such as permissions, additional metadata, retention policies, and workflows that the documents in them will inherit.

For more information, see [Metadata-based routing and storage overview \(SharePoint Server 2010\)](#).

Navigating and filtering enterprise content by using metadata

Metadata Navigation and Filtering is a new feature in SharePoint Server 2010 that enables users to filter and find content by using metadata. The Metadata Navigation and Filtering feature includes a simple user interface that builds upon the SharePoint Tree view hierarchy control and combines it with a new *Key Filters* control providing users a powerful tool in finding content based on metadata.

List owners can configure metadata navigation settings that promote fields on a list as key navigation fields. Users viewing those lists can then additionally filter the current list view to show only items with the desired values in those fields.

Automatic indexing features can create list indexes automatically depending on the fields promoted as navigational fields for the list. Automatic indexing can improve query results and improve performance.

For more information about how you can integrate metadata navigation into your enterprise content storage solution, see [Metadata navigation overview \(SharePoint Server 2010\)](#).

List views

At the heart of every enterprise content management solution is the ability for users to easily search for and find the content they are looking for. When moving through a library or folder, tree views and list views provide a simple interface for users to visually navigate through content storage taxonomy. At the same time, when a library or folder contains too many items, the ability for the list to query and quickly display results can require considerable system resources. SharePoint Server 2010 can maximize list view performance while minimizing system resource consumption by using Resource Throttling.

Resource Throttling properties are set for a web application in General Settings in Central Administration and affect resources allocated to querying and displaying lists within that web application.

Configuring your storage in ways so that when you view the contents of a library or folder the list view threshold is not exceeded prevents resource throttling and maximizes list view performance.

Resource Throttling includes the following properties that relate to list view performance:

Property	Description	Default value
List View Threshold	The maximum number of list or library items that a database operation, such as a query, can process at one time, outside the daily time window set by the administrator during which queries are unrestricted. We recommend that this property setting not be changed.	5000
Object Model Override	Specifies that users granted special permission can override the List View Threshold programmatically for particular queries.	Yes
List View Threshold for Auditors and Administrators	The maximum number of list or library items that a database operation, such as a query, can process at one time when it is done by an auditor or administrator with appropriate permissions. This setting works together with Allow Object Model Override.	20,000
List View Lookup Threshold	The maximum number of joins allowed per query, such as those based on lookup, Person/Group, or workflow status columns. If the query uses more than eight joins, the operation is blocked. This does not apply to single item operations. When using the maximal view via the OM (by not specifying any view fields), SharePoint will return up to the	8

Property	Description	Default value
	first eight lookups. We recommend that this property setting not be changed.	
Daily Time Window for Large Queries	A time period in which large queries can be executed. Time period should be set outside regular working hours because large queries may cause too much server load.	Disabled

Additional resources

In addition to the information in this article, the following resources can help you understand and plan an enterprise content storage solution.

- [SharePoint Server 2010 capacity management: Software boundaries and limits](#): This article provides information to help you understand the tested performance and capacity limits of Microsoft SharePoint Server 2010.
- [Microsoft SharePoint Server 2010 departmental collaboration environment: Technical case study](#): This article describes an actual SharePoint Server 2010 environment at Microsoft. Use this document to compare to your planned workload and usage characteristics.
- [Designing Large Lists and Maximizing List Performance](#): This white paper provides guidance on performance of large document libraries and lists in SharePoint Server 2010.
- [Metadata-based routing and storage overview \(SharePoint Server 2010\)](#): This article contains information to help solution planners and designers understand how metadata-based routing and storage using the Content Organizer feature in Microsoft SharePoint Server 2010 can be used as part of a comprehensive document management solution.
- [Metadata navigation overview \(SharePoint Server 2010\)](#): This article contains information to help solution planners and designers understand how the Metadata Navigation and Filtering feature in Microsoft SharePoint Server 2010 can be used as part of a comprehensive document management solution.
- [Document library planning \(SharePoint Server 2010\)](#): This article describes how to plan document libraries and integrate libraries into a Microsoft SharePoint Server 2010 document management solution.
- [Plan managed metadata \(SharePoint Server 2010\)](#): Articles in this section explain key concepts about managed metadata in SharePoint Server 2010. Additional articles provide guidance about how to identify managed metadata for your solution, and how to determine the services and connections that you must have to implement your solution.

Document Sets planning (SharePoint Server 2010)

This article describes Documents Sets and provides guidance on how you can integrate them with your Microsoft SharePoint Server 2010 document management solution.

In this article:

- [About documents sets](#)
- [Administering Document Sets](#)
- [Planning Document Set content types](#)
- [Worksheets](#)

About documents sets

Document Sets is a new feature in SharePoint Server 2010 that enables an organization to manage a single deliverable, or *work product*, which can include multiple documents or files. A Document Set is a special kind of folder that combines unique Document Set attributes, the attributes and behavior of folders and documents, and provides a user interface (UI), metadata, and object model elements to help manage all aspects of the work product.

For teams and users in many organizations, a set of documents, or a work product, is needed to better manage a project or deliverable. For example, a legal team might need to collect, create, and manage various documents, photos, and audio files that are related to a particular case. Or, a sales team might need to compile documents from various sources to create and manage a request for proposal (RFP) for a potential client. Documents Sets provide those teams and users with the ability to manage those sets of documents as a single collection, deliverable, or work product. Document Set owners can then create a custom Welcome Page that can display the items included and important information about the work product.

In SharePoint Server 2010, organizations that want to create and manage Document Sets consistently can configure a Document Set content type for each work product they typically create. A Document Set content type can then define approved content types, attributes, default items, columns, workflows, and policies. Additional customized Document Set content types can then be created from the parent content type, each inheriting properties and settings from the parent Document Set content type. After a content type is added to a library, users can then create a Document Set that will inherit the attributes of the Document Set content type by using the **New** command. A Document Set content type provides additional settings that enable you to specify allowed content types, default content, shared columns, Welcome Page columns, and default Welcome Page view.

For more information about content types, see [Content type and workflow planning \(SharePoint Server 2010\)](#).

For more information about how to create and manage Document Sets in SharePoint Server 2010, see [Document Sets](#) in SharePoint Server 2010 Help. (<http://go.microsoft.com/fwlink/?LinkId=186368&clcid=0x409>).

Administering Document Sets

Document Sets in SharePoint Server 2010 share many of the same attributes and properties as folders. However there are some important considerations you should be aware of when planning a Document Set solution.

- There is no limit on the number of documents that can exist in a Document Set. However, display load times may be limited by the list view threshold which by default is set at 5,000 items. Folders are not allowed in document sets, and metadata navigation cannot be used in a Document Set. Therefore, it is important to consider the possibility of exceeding list view thresholds and navigation design concerns when you determine how many items should exist in a Document Set. In addition, when you use the **Send to** feature with a Document Set, the sum for all documents in a Document Set cannot be larger than 50MB. For a collection or work product with a very large number of items, a folder structure in a document library may be a better solution.
- There is no limit on the number of Document Sets that can exist in a document library. However, the number of Document Sets that can appear in lists will be limited by the list view threshold.
- When using shared metadata, if there are more than 10 items in a Document Set, metadata updates will be run by a timer job every 15 minutes.
- When using Document Set routing, Document Sets that are sent to a content organizer will remain in the drop-off library and be moved to the appropriate location by the content organizer processing timer job, which by default runs daily.

In order to use Document Sets in a site collection, the Document Sets Feature must be enabled.

To enable Document Sets Feature for a site collection

1. On the Site Settings page, under **Site Collection Administration**, click **Site collection features**.
2. On the Features page, for **Document Sets**, click **Activate**.

After the Document Set Feature is enabled, you can create Document Set content types.

Planning Document Set content types

You can plan Document Set content types for your solution by using the Analyze document usage worksheet, which you can complete by using the article [Identify users and analyze document usage \(SharePoint Server 2010\)](#). You can then use the [Content type worksheet](#)

(<http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409>) worksheet to record your decisions about each new Document Set content type that you will use in your solution.

To plan Document Set content types by using the Content type worksheet.

1. Enter **Document Set** in the **Content Type** field of the Content type worksheet.
2. Enter the site URL at which the new Document Set content type will be defined. Note that the content types are available in the site in which they are defined and in all sites below that site.
3. **Determine the parent content type** Enter the parent Document Set content type in the **Parent Content Type** field of the Content type worksheet. This will be either a core Document Set content type or a custom Document Set content type that you have already planned.
4. **Determine Document Set settings** Determine and then specify the following Document Set settings in the Content type worksheet:
 - a. **Determine allowed content types** Specify the default content types that will be allowed in this Document Set content type.
 - b. **Determine default content** If the Document Set content type that you are creating will be configured to automatically create default content when you create a new instance of a Document Set, you can add files to the Document Set manually. Only files of the allowed content types for the Document Set can be added.
 - c. **Determine shared columns** Specify whether column values for the Document Set should be automatically synchronized to all documents that are contained in the set.
 - d. **Determine Welcome Page columns** Specify which columns should be shown on the Welcome Page for each Document Set.
 - e. **Determine the Welcome Page view** Specify the view to display the contents of the Document Set on the Welcome Page.
5. **Determine the columns and column order** In the **Plan Columns** table of the Content type worksheet:
 - a. Enter each column that is inherited from the parent content type. In the **New?** column, type **No** for each entry.
 - b. For each additional column, enter the name of a predefined column or of a column that you will create. Enter the names of the additional columns, their types, and indicate whether they are new.
6. In the **Plan Template** section of the worksheet, type **None**.
7. **Determine the workflows** If there is an available workflow that is relevant to the Document Set content type, you can optionally associate it with the content type. The workflow can then be initiated on any list item of that content type. For a full discussion of workflow planning, see [Plan workflows](#). After reviewing workflows and determining which workflows are available, enter each workflow to associate with the content type in the **Plan Workflows** table of the **Content** type worksheet. If the workflow is not inherited from the parent content type, enter that information in the **New?** column.

8. **Determine the policy** A policy is a set of rules for a kind of content; policy features provide the details of each rule, such as whether items of the content type can be printed or which actions on the item should be audited. You can apply a policy to any custom content type. Note that you cannot apply a policy to a core content type. For more information about policy planning, see [Information management policy planning \(SharePoint Server 2010\)](#). After reviewing policies and determining which policy features and policy templates are available, in the **Plan a Policy** section of the Content type worksheet, do the following:
- a. If the parent content type has policy settings, they will apply unchanged in the new content type. This ensures that policies, after they are set, are enforced in all relevant content types. If the current content type is inheriting its policy settings from its parent type, in the **Plan a Policy** section of the Content type worksheet, answer **Yes** to the question, "Is the policy defined in the parent content type?."
 - b. If the current content type is inheriting a policy based on the parent content type, in the **Record the Policy Name** field of the **Plan a Policy** section, type the name of the policy template. Similarly, if the current content type does not inherit a policy and you want to apply a policy template, in the **Record the Policy Name** field of the **Plan a Policy** section, type the name of the policy template.
 - c. If the current content type is inheriting one or more individual policy features from the parent content type, enter each policy feature in the **Feature** table in the **Plan a Policy** section of the worksheet. Conversely, if the current content type does not inherit a policy and you want to associate policy features with the current content type, enter those policy features in the **Feature** table. Note that you cannot associate both individual policy features and a policy by name to a content type.

Worksheets

Use the following worksheets to record the information that is discussed in this article:

- [Content type worksheet](http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409)
- [Analyze document usage worksheet](http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409)

See Also

[Content type and workflow planning \(SharePoint Server 2010\)](#)

Content type and workflow planning (SharePoint Server 2010)

This article describes content types and workflows and provides guidance on planning how you can integrate them into your Microsoft SharePoint Server 2010 document management solution.

In this article:

- [Plan content types](#)
- [Plan workflows](#)
- [Worksheets](#)

Plan content types

In this section:

- [What are content types?](#)
- [Properties integration with the 2010 Office release](#)
- [Column templates](#)
- [Folder content types](#)
- [Planning document content types](#)
- [Planning list content types](#)
- [Planning document conversions](#)

What are content types?

A *content type* defines the attributes of a list item, a document, or a folder. Each content type can specify:

- Properties to associate with items of its type.
- Metadata to associate with items of its type.
- Workflows that can be launched from items of its type.
- Information management policies to associate with items of its type.
- Document templates (for document content types).
- Document conversions to make available (for document content types).
- Custom features.

You can associate a content type with a list or library. When you do this, you are specifying that the list or library can contain items of that content type and that the **New** command in that list or library will let users create new items of that type.

**Note:**

You can also associate properties, workflows, policies, and templates directly with a list or library. However, doing this can limit these associations to the list or library and is not reusable across your solution. In SharePoint Server 2010 site level workflows can be associated with multiple lists or libraries.

Document libraries and lists can contain multiple content types. For example, a library can contain both the documents and the graphics related to a project. When a list or library contains multiple content types, the following apply:

- By default, the **New** command in that list or library lets users choose from among all available content types when they create a new item. Content type owners can configure the **New** command to display only certain content types.
- The columns associated with all available content types are displayed.

You can define custom content types in a site's content type gallery. A custom content type must be derived, directly or indirectly, from a core content type such as Document or Item. After it is defined in a site, a custom content type is available in that site and in all sites below that site. To make a content type most broadly available within a site collection, define it in the content type gallery of the top-level site. You can also create a custom content type in a content type hub that is defined in a managed metadata service instance. When it is created in a content type hub, the content type will be available to other site collections that are part of Web applications associated with that managed metadata service instance.

For example, if your organization uses a particular contract template, in the content type gallery of the top-level site in a site collection, you can create a content type that defines the metadata for that contract, the contract's template, workflows required to review and complete the contract, policies that enforce auditing of actions related to the contract, a retention period for retaining the contract, and labels to insert in printed versions of the contract. Then, any document library in your site collection to which you associate the Contract content type will include all of these features and will enable authors to create new contracts based on the template.

In sites based on SharePoint Server 2010, each default list item or library item — such as Contact, Task, or Document — has a corresponding core content type in the site's content type gallery. When you plan content types, you can use these core content type definitions as starting points and base new content types on existing ones as needed or modify the core types.

Content types are organized into a hierarchy that allows one content type to inherit its characteristics from another content type. This inheritance allows classes of documents to share characteristics across an organization, and it allows teams to tailor these characteristics for particular sites or lists.

For example, all customer-deliverable documents in an enterprise might require a set of metadata, such as account number, project number, and project manager. By creating a top-level Customer Deliverable content type from which all other customer-deliverable document types inherit, you ensure that required information, such as account numbers and project numbers, will be associated with all variants of customer-deliverable documents in your organization. Note that, if the content type owner adds another required column to the top-level Customer Deliverable content type, the content type owner can

propagate the changes to all content types that inherit from it, which will add the new column to all customer deliverable documents.

Properties integration with the 2010 Office release

In the Microsoft Office system, when a user is editing a document from a SharePoint Server 2010 document management server, a Document Information Panel is shown at the top of the document. The Document Information Panel displays an editable form of the document's properties on the server. SharePoint Server 2010 makes it easy to customize the property form for a content type. When you configure a content type, you can start Microsoft InfoPath 2010, which generates a default property form based on the properties of the content type. The default form includes the same controls, layout, and schema that InfoPath 2010 would use if no custom form were defined. You can then customize and deploy the form as you would any other InfoPath 2010 InfoPath form. For example, you can add your company logo, fonts, and color scheme to a form; connect it to a custom data source; add conditional logic; and design form features that are available to users based on their roles.

Along with editing properties in the Document Information Panel, authors who are using Microsoft Word 2010 can insert properties that are defined on the server into their documents. For example, if the document properties include a project manager name, this name can be inserted into the title page, the footer, or anywhere else the name is used in the document. If a new project manager is assigned to a project, the Project Manager property can be updated on the document management server; this updated project manager name will be reflected in every instance of this property that has been inserted into a document.

Using metadata with content types

Metadata, or columns, is information about a document that is used to categorize and classify your content. Metadata is associated with a content type as a column. Metadata can provide contextual information about your documents by associating it with an author, subject, audience, language, etc. Unlike properties, metadata are stored as columns and can be indexed and searched on by the SharePoint Search engine.

Metadata added at the site collection level can be associated with content types. Using metadata with content types allows all subsequent content types to inherit some or all of its metadata be derived from the parent content type at the site collection level. Additional metadata can then be added at a lower level such as a document.

Column templates

Each item of metadata that is associated with a content type is a column, which is a location in a list to store information. Lists or libraries are often displayed graphically as columns of information. However, depending on the view associated with the list, the columns can appear in other forms, such as days in a calendar display. In forms associated with a list or library, columns are displayed as fields.

You can define columns for use in multiple content types. To do this, create them in a Column Templates gallery. There is a Column Templates gallery in each site in a site collection. As with content

types, columns defined in the Column Templates gallery of a site are available in that site and in all sites below it.

Folder content types

Folder content types define the metadata that is associated with a folder in a list or library. When you apply a folder content type to a list or library, the **New** command in that list or library will include the folder content type, which makes it possible for users create folders of that type.

You can define views in a list or library that are available only in folders of a particular content type. This is useful when you want a folder to contain a particular type of document and you want views in that folder to only display columns that are relevant to the document type contained in that folder.

By using the SharePoint Server 2010 object model, you can customize the **New** command for a folder content type so that, when a user creates a new folder of that type, the folder is prepopulated with multiple files and documents based on templates stored on the server. This is useful, for example, for implementing a compound document type that requires multiple files to contribute to a single deliverable document.

Document sets is a new feature in SharePoint Server 2010 that makes it possible for you to use Microsoft Office 2010 to manage work products that span multiple documents. Document sets are special types of folders that are used to manage a single deliverable, or *work product*, which can include multiple documents in multiple locations. You create document sets by using extensible templates that are provided with SharePoint Server 2010. You can also customize Document Set templates to represent the work products that are relevant to your organization. Document sets also include version control, which makes it possible for you to capture the state of the entire document set at various points in its life cycle.

Planning document content types

Plan document content types for your solution by using the Analyze document usage worksheet, which you filled in by using the article [Identify users and analyze document usage \(SharePoint Server 2010\)](#). Use the [Content type worksheet](http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409) worksheet to record your decisions about each new content type.

Each document content type should inherit its settings directly from the core Document content type or from a content type that is descended from the Document content type. This will ensure that the basic columns for your document types, such as Title and Created By, are present and that you can associate a template with the content type.

The first stage in planning document content types is to review each document type that is listed in your Analyze document usage worksheet to determine whether an existing content type will work for that type of document. If a core content type (such as Document) is sufficient, enter the content type name in the Content Type column of the Analyze document usage worksheet.

After you review your list of document types to determine which ones can use core content types, plan new document content types by using the following steps. For each content type you plan, fill in a separate Content type worksheet.

1. Enter the document type from the Analyze document usage worksheet.
2. Enter the site URL at which the new content type will be defined. Keep in mind that content types are available in the site in which they are defined and in all sites below that site.
3. **Determine the parent content type** Enter the parent content type in the **Parent Content Type** field of the Content type worksheet. This will be either a core content type or a custom content type that you have already planned.
4. **Determine the columns** In the **Plan Columns** table of the Content type worksheet, do the following:
 - a. Enter each column that is inherited from the parent content type. In the **New?** column, type **No** for each entry.
 - b. For each additional column, enter the name of a predefined column or of a column that you will create. The name of a column is important, because it can communicate the column's purpose. Therefore, even if a column of a type that you need is already defined in the Site Collection Column gallery, you might decide to define a similar column by using a more relevant name for your application. Along with the names of the additional columns, enter their types and indicate whether or not they are new.
5. **Determine the template** In the **Plan Template** section of the worksheet, enter the name of the template to associate with this content type along with its type (such as .Docx) and a brief description of the purpose of the template. If the template is not inherited from the parent content type, in the **New?** field, type **No**.
6. **Determine the workflows** Workflows attach business logic to documents and list items. You can associate any available workflow with a content type; the workflow can then be initiated on any document of that content type. After reviewing workflows and determining which workflows are available, enter each workflow to associate with the content type in the **Plan Workflows** table of the Content type worksheet. If the workflow is not inherited from the parent content type, enter that information in the **New?** column.
7. **Determine the policy** A policy is a set of rules for a type of content and is made up of policy features that provide the details of each rule, such as whether items of the content type can be printed or which actions on the item should be audited. You can apply a policy to any custom content type. Note that you cannot apply a policy to a core content type. For more information about policy planning, see [Information management policy planning \(SharePoint Server 2010\)](#). After reviewing policies and determining which policy features and policy templates are available, in the **Plan a Policy** section of the Content type worksheet, do the following:
 - a. If the parent content type has policy settings, they will apply unchanged in the new content type. This ensures that policies, after they are set, are enforced in all relevant content types. If the current content type is inheriting its policy settings from its parent type, in the **Plan a Policy** section of the Content type worksheet, answer **Yes** to the question, "Is the policy defined in the parent content type?."
 - b. If the current content type is inheriting a policy based on the parent content type, in the **Record the Policy Name** field of the **Plan a Policy** section, type the name of the policy template.

Similarly, if the current content type does not inherit a policy and you want to apply a policy template, in the **Record the Policy Name** field of the **Plan a Policy** section, type the name of the policy template.

- c. If the current content type is inheriting one or more individual policy features from the parent content type, enter each policy feature in the **Feature** table in the **Plan a Policy** section of the worksheet. Conversely, if the current content type does not inherit a policy and you want to associate policy features with the current content type, enter those policy features in the **Feature** table. Note that you cannot associate both individual policy features and a policy by name to a content type.

8. **Determine document conversions** SharePoint Server 2010 supports installing document conversion components on the server that transform documents from one format to another. For an overview of document conversions, see [Planning document conversions](#), later in this article.

You can associate one or more document converters with a content type. For example, if a content type is associated with a template of type .docx, you can associate the **From Word Document to Web Page** converter that is included in SharePoint Server 2010 with the content type. This makes it possible for authors write documents of the content type in Microsoft Office Word 2007 and then convert them to Web pages for publication.



Note:

In the SharePoint Server 2010 Central Administration pages, administrators can enable a document converter so that it is available in any document library in a Web application. When a converter is enabled in this way, it is not necessary to associate it with individual content types in any site in the Web application.

In the **Plan Document Conversions** section of the Content type worksheet, record each document converter to associate with the content type, specify whether the converter is new (and requires installation), and add optional notes.

Planning list content types

The elements of a list content type include the columns of metadata that are associated with the content type, along with workflows that can run on items of that list content type. Use a list content type to define a type of list item that is unique to your solution. For example, in a customer call center solution, in which support professionals investigate and resolve customers' technical issues, a list content type could be used to standardize the data for each support incident and to track the incident by using a workflow.

Worksheet action

Plan new list content types by using the following steps. For each list content type that you plan, fill in a separate Content type worksheet. In the **Document Type** field of the worksheet, enter **List**.

1. Enter the site URL at which the new content type will be defined. Note that the Content types

Worksheet action

- are available in the site in which they are defined and in all sites below that site.
2. **Determine the parent content type** Enter the parent content type in the **Parent Content Type** field of the Content type worksheet. This will be either a core content type or a custom content type that you have already planned.
 3. **Determine the columns** In the **Plan Columns** table of the Content type worksheet, by doing the following:
 - a. Enter each column that is inherited from the parent content type. In the **New?** column, type **No** for each entry.
 - b. For each additional column, enter the name of a predefined column or of a column that you will create. Along with the names of the additional columns, enter their types and indicate whether or not they are new.
 4. In the **Plan Template** section of the worksheet, type **None**.
 5. **Determine the workflows** If there is an available workflow that is relevant to the list content type, you can optionally associate it with the content type. The workflow can then be initiated on any list item of that content type. For a full discussion of workflow planning, see [Plan workflows](#) later in this article. After reviewing workflows and determining which workflows are available, enter each workflow to associate with the content type in the **Plan Workflows** table of the Content type worksheet. If the workflow is not inherited from the parent content type, enter that information in the **New?** column.
 6. In the **Plan a Policy** section of the worksheet, type **None**.

Planning document conversions

SharePoint Server 2010 supports installing document conversion components on the server that convert documents from one format to another. Conversions can be run either from the user interface or programmatically, such as from a custom workflow. The relationship between source documents and their converted counterparts is maintained. SharePoint Server 2010 includes converters that create Web pages from Microsoft Office Word 2007 documents and from Microsoft Office InfoPath 2007 forms.

Along with providing the infrastructure on the server to install and run document converters, SharePoint Server 2010 includes a load balancer service that you can configure to optimize the use of your server resources. Part of planning document conversions is tuning your server farm to optimally balance the load when documents are converted.

To be available to users, a converter must be installed on the server farm and then enabled by a server administrator. After a converter is enabled for a server, it is available to run on source documents on that server.

You configure document converters by using the following steps:

1. In the document usage analysis that you perform in [Identify users and analyze document usage \(SharePoint Server 2010\)](#), identify candidates for document conversion — that is, documents that are written in one format but that should be published or archived in another.
2. For each conversion your documents require, locate converter programs that you can use to implement the conversion on your servers.
3. If needed, install the conversion programs on application (middle tier) servers in your farm.
4. Configure the launcher and load balancer services, either on the Web servers or application (middle tier) servers.
5. Identify the points in your document life cycle at which conversions take place.
6. Identify how conversions will be implemented — either manually or by using custom solutions that launch them.

Plan workflows

Workflows implement business processes on documents, Web pages, forms, and list items in SharePoint Server 2010. They can be associated with libraries, lists, or content types.

In document management, use workflows to route documents from person to person so that they can each complete their document management tasks, such as reviewing documents, approving their publication, or managing their disposition. Also, use custom workflows to move documents from one site or library to another. For example, you can design a workflow to copy a document from one site to another when the document is scheduled to be archived.

SharePoint Server 2010 includes workflows that address the following document management needs:

- **Collect Feedback** Sends a document for review.
- **Approval** Sends a document for approval, often as a prerequisite to publishing it.
- **Disposition** Manages document expiration and disposition.
- **Collect Signatures** Routes a document for signatures.
- **Translation** Manages the translation of a document into one or more languages.
- **East Asian Document Approval** Routes a document for approval by using stamp signatures and a group-oriented consensus process.

Associate a workflow with a content type when you want to make that workflow available whenever that content type is in use. For example, a purchase order content type could require approval by a manager before completing the transaction. To ensure that the approval workflow is always available when a purchase order is initiated, create a Purchase Order content type and associate the approval workflow with it. Then add the Purchase Order content type to any document libraries in which purchase orders will be stored.

To plan workflows for your document management solution, analyze each document content type you plan to implement and identify the business processes that need to be available to run on content of that type. Then identify the workflows you will need to make available for that content.

Worksheet action

In the Plan Workflows section of the [Content type worksheet](http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409>), enter the name of each workflow and its purpose, and indicate whether a new (custom) workflow is needed to implement the process.

The following is a sample table that analyzes workflows for a contract content type:

Contract Process	Contract Workflow	New?
Review drafts.	Collect feedback	No
Get approval from the manager and the legal counsel.	Approval	No
Resolve open issues.	Issue tracking	No
Get signatures.	Collect signatures	No

Worksheets

Use the following worksheets to record the information that is discussed in this article:

- [Content type worksheet](http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=165878&clcid=0x409>)
- [Analyze document usage worksheet](http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=165873&clcid=0x409>)

Information management policy planning (SharePoint Server 2010)

This article describes how you can plan and integrate information management policies with your Microsoft SharePoint Server 2010 document management solution.

In this article:

- [Information management policies and policy features](#)
- [Information management policy reporting](#)
- [Information management policy integration with Office system applications](#)
- [Policy features available in SharePoint Server 2010](#)
- [Plan document policies](#)

Information management policies and policy features

An *information management policy* is a set of rules for a type of content. Each rule in a policy is a *policy feature*. For example, an information management policy feature could specify how long a type of content should be retained, or it could provide document auditing. Information management policies enable you to control who can access your organizational information, what they can do with it, and how long the information should be retained.



Note:

In this article, the term, policy, refers to information management policy unless otherwise specified.

Policies can be implemented to help an organization comply with legally mandated requirements, such as the need to retain records. For example, a Human Resources policy, used in an organization to ensure that employee records are handled in accordance with legally recommended guidelines, could include the following policy features:

- Auditing, to record the editing and viewing history of each employee-related document.
- Retention, to ensure that work-in-progress content is not kept for an unnecessarily long period of time.
- Labels, to ensure that physical copies of each document are properly identifiable.
- Print Restrictions, to ensure that sensitive employee-related documents are printed only on secure printers. Note that this is an example of a custom policy feature that must be implemented by using the Microsoft SharePoint Server 2010 object model or acquired from a third-party software vendor.

Policy features are implemented as programs that run on SharePoint Server 2010. They can be enabled and configured by a server administrator and, when they are enabled, they can be used by site administrators to define policies. SharePoint Server 2010 includes policy features to help you manage

your content. By using the SharePoint Server 2010 object model, you can design and install custom policy features that meet unique enterprise needs.

A policy feature might use one or more *policy resources*, which are programs that provide some functionality to a policy feature. For example, a policy resource for a Barcode Generation policy feature could provide the unique barcode value. You can develop custom policy resources and install them to support policy features.

When your organization uses the Microsoft Office system client applications along with SharePoint Server 2010, policies are enforced both on the server and in the client applications. This is done transparently; policy features that apply to a document are described in a policy statement that is associated with the document, and policy-aware applications prevent users from doing tasks that violate the document's policy.

To implement a policy, associate it with content types, libraries, or lists in sites.



Note:

In the Site Content Type Gallery, you can apply a policy to any custom content type, but you cannot apply a policy directly to a core content type.

You can associate a policy with a library, list, or content type in the following ways:

- **Associate policy features with a Site Collection policy, and then associate that policy with a content type or with a list or library.** The top-level site of a site collection includes a Site Collection Policies gallery where administrators of the top-level site can create new policies. After creating a Site Collection policy, you can export it so that administrators of other site collections can import it into their Site Collection Policies galleries. This makes it possible for you to standardize policies across your organization.

When a Site Collection policy is associated with a content type and that content type is associated with a list or library, the owner of the list or library cannot modify the Site Collection policy in the list or library. This ensures that policies that are assigned to a content type are enforced at each level of the site hierarchy.

- **Associate a set of policy features directly with a content type, and then add that content type to one or more lists or libraries.** To ensure that a policy that is created by using this method will be used in an entire site collection, associate it with a content type in the Site Content Type gallery of the top-level site collection. Then every item of that content type in the site collection, and every item of a content type that inherits from the original content type, will have the policy. When you use this method of associating a policy with a content type, it is harder to reuse the policy in other site collections, because policies created by using this method cannot be exported.



Note:

To more tightly control which policies are in use in a site collection, site collection administrators can disable the ability to set policy features directly on a content type. When setting policy features on a content type is restricted, content type designers can only associate policies from the Site Collection Policies gallery with content types. To learn more

about setting policy features for a site collection, see [Create, delete, and view site collections](#).

- **Associate a set of policy features directly with a list or library.** You can only use this method if the list or library does not support multiple content types. This method of creating a policy is only useful for a narrowly defined policy that applies to a single list or library.



Note:

To more tightly control which policies are in use in a site collection, site collection administrators can disable the ability to set policy features directly on a library. When setting policy features on a library is restricted, content type designers can only associate policies from the Site Collection Policies gallery with libraries.

Information management policy reporting

To track how policies are being used in each Web application in your solution, you can configure information management policy usage reporting by using SharePoint Server 2010 Central Administration. Information management policy reports help you monitor how well your organization uses policies. Because policies are often implemented to help an organization comply with particular regulations, frequent monitoring of policy usage can help you ensure that your organization is compliant.

SharePoint Server 2010 includes a default policy report template in XML-spreadsheet format, or you can create a custom report template based on the same schema. You can specify a schedule for policy reporting and you can generate reports manually.

A policy report is generated for each site collection in a Web application. For each list and library, a report records:

- The number of items that use each policy.
- For each policy in use, either based on a Site Collection policy or configured in a content type, a summary of that policy — its description, along with a description of each policy feature.

Information management policy integration with Office system applications

SharePoint Server 2010 information management policies are exposed in the Office system client applications. When you configure an information management policy on the server, you can write a policy statement that informs information workers about the policies that are enforced on documents. For example, the policy statement might indicate that a document will expire after a certain period of time, or that it contains sensitive information that should not be communicated outside the company. The statement might even provide a contact name if the information worker needs more information about the policy.

The policies that are included in SharePoint Server 2010 are exposed to information workers through features of the Office system client applications. For example, when a label is defined as part of a

policy, users can insert labels into documents from the Insert menu of most the Office system client applications. If a label is required, users are prompted when they are saving documents in which a label has not been inserted. Similarly, users will be able to insert barcodes from client applications if that policy feature is part of the document's policy.

Custom policy features can also be integrated in the Office system client applications. However, you must implement policy-specific behaviors that you want to be available from the Office system client applications, and you must give users a way to install these behaviors on their client computers via mechanisms such as add-ins to make them available from the Office system client applications. For example, if you implement a custom policy feature that restricts the printers that can be used to print a content type, you must provide a custom add-in for Microsoft Office client applications to enforce the restriction from these applications.

Policy features available in SharePoint Server 2010

This section describes the policy features that are included in SharePoint Server 2010.

- **Expiration** The Expiration policy feature helps dispose of or process content in a consistent way that can be tracked and managed. When a content item expires, you can specify that it is disposed of or that a custom workflow is run. You can set content of a specific type to expire on a particular date, based on a date or time columns that are associated with the content type, list, or library, or within a calculated amount of time after some document activity (such as creating the document).
- **Auditing** The Auditing policy feature logs events and operations that are performed on documents and list items. You can configure Auditing to log events such as:
 - Editing a document or item
 - Viewing a document or item
 - Checking a document in or out
 - Changing the permissions for a document or item
 - Deleting a document or item
- **Labeling** The Labeling policy feature specifies a label to associate with a type of document or list item. Labels are searchable text areas that SharePoint Server 2010 generates based on properties and formatting that you specify. For example, in a law firm, a document related to a legal matter could include a label containing the clients' names, the case number, and the attorney assigned to the matter. Labels are particularly useful in printed versions of documents as a way to display document properties in printed copy. Along with using labels for documents, you can associate a label with a list item and include that label in views of the list.
- **Barcode** The Barcode policy feature enables you to track physical copies of a document by creating a unique identifier value for a document and inserting a barcode image of that value in the document. By default, barcodes are compliant with the common Code 39 standard (ANSI/AIM BC1-1995, Code 39), and you can plug in other barcode providers by using the policies object model.

Plan document policies

When you plan your solution's policies, first determine organization-wide policy needs, and then design Site Collection policies to meet those needs and distribute those policies for inclusion in the Site Collection Policy galleries of all relevant site collections. This might require planning custom policy features. Note that, if your policy requires custom policy features and resources, those features and resources must be installed and enabled on all server farms on which your solution is used.

A typical example of an organization-wide policy is one that is designed to promote best practices in auditing and retaining product specifications across the divisions of an organization. A single Site Collection policy is designed to be applied to all product specifications so that they are consistently audited and retained. After defining the Site Collection policy and testing it, it is exported and then imported to Site Collection Policy galleries of other site collections in which product specifications are stored. It is then associated with all product specification content types in the various site collections to impose the policy on all product specifications.

Worksheet action

To help you plan document policies, use the [Policy worksheet](http://go.microsoft.com/fwlink/?LinkId=165883&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=165883&clcid=0x409>). Create a separate worksheet for each policy you are planning. In each worksheet, record:

- The purpose of the policy, such as "Policy to apply to all product specifications."
- The site collection in which the policy is being designed.
- The scope at which the policy is being defined. If the policy is to be used across multiple site collections, define it in the Policy Template gallery. Define a policy for a content type if the policy is more narrowly targeted to a single content type in a site collection.
- Each policy feature, such as "Expiration" or "Auditing." Optionally enter configuration notes for a policy feature. For example, for Auditing, you could specify which actions to audit, such as "Editing Items." If this is a custom policy feature, list all resources that must be installed for the feature to work.
- All content types that the policy will be applied to and list all site collections in which the content types are in use.

Worksheet

Use the following worksheet with this article to help plan your deployment:

- [Policy worksheet](http://go.microsoft.com/fwlink/?LinkId=165883&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkId=165883&clcid=0x409))

Versioning, content approval, and check-out planning (SharePoint Server 2010)

This article describes how to plan to use versioning, content approval, and check-out in Microsoft SharePoint Server 2010 to control document versions throughout their lifecycle.

In this article:

- [About versioning, content approval, and check-outs](#)
- [Plan versioning](#)
- [Plan content approval](#)
- [Plan check-out and check-in](#)
- [Worksheet](#)

About versioning, content approval, and check-outs

Microsoft SharePoint Server 2010 includes the following features that can help you control documents in a document library:

- *Versioning* is the method by which successive iterations of a document are numbered and saved.
- *Content approval* is the method by which site members with approver permissions control the publication of content.
- *Check-out* and *Check-in* are the methods by which users can better control when a new version of a document is created and also comment on changes made when a document is checked in.

You configure settings for the content control features discussed in this article in document libraries. To share these settings across libraries in your solution, you can create document library templates that include your content control settings; this ensures that new libraries will reflect your content control decisions.

Plan versioning

The default versioning control for a document library depends on the site collection template. However, you can configure versioning control for a document library depending on your particular requirements. Each document library can have a different versioning control that best suits the type of documents in the library. SharePoint Server 2010 has three versioning options:

- **No versioning** Specifies that no previous versions of documents are saved. When no versioning is in use, previous versions of documents are not retrievable, and document history also is not retained because comments that accompany each iteration of a document are not saved. Use this option on document libraries containing unimportant content or content that will never change.

- **Create major versions** Specifies that numbered versions of documents are retained using a simple versioning scheme (such as 1, 2, 3). To control the effect on storage space, you can specify how many previous versions to keep, counting back from the current version.

In major versioning, each time a new version of a document is saved, all users with permissions to the document library will be able to view the content. Use this option when you do not want to differentiate between draft versions of documents and published versions. For example, in a document library that is used by a workgroup in an organization, major versioning is a good choice if everyone on the team needs to be able to view all iterations of each document.

- **Create major and minor (draft) versions** Specifies that numbered versions of documents are retained by using a major and minor versioning scheme (such as 1.0, 1.1, 1.2, 2.0, 2.1). Versions ending in .0 are major versions and versions ending with non-zero extensions are minor versions. Previous major and minor versions of documents are saved along with current versions. To control the effect on storage space, you can specify how many previous major versions to keep, counting back from the current version. You also can specify how many major versions being kept should include their respective minor versions. For example, if you specify that minor versions should be kept for two major versions and the current major version is 4.0, then all minor versions starting at 3.1 will be kept.

In major and minor versioning, any user with read permissions can view major versions of documents. You can specify which users can also view minor versions. Typically, grant users who can edit items permissions to view and work with minor versions, and restrict users with read permissions to viewing only major versions.

Use major and minor versioning when you want to differentiate between published content that can be viewed by an audience and draft content that is not yet ready for publication. For example, on a human resources Web site that describes organizational benefits, use major and minor versioning to restrict employees' access to benefits descriptions while the descriptions are being revised.



Note:

Regardless of the versioning control you choose, it is important to consider the effect that retaining multiple versions of the same document can have on storage space.

Worksheet action

In the [Document libraries worksheet](http://go.microsoft.com/fwlink/?LinkId=165874&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=165874&clcid=0x409>), for each document library listed, specify the versioning scheme to use: none, major, or major and minor.

Plan content approval

Use content approval to formalize and control the process of making content available to an audience. For example, an enterprise that publishes content as one of its products or services might require a legal review and approval before publishing the content. Content publishing can also be scheduled depending on the document state. For more information, see [Plan content approval and scheduling](#).

A document draft awaiting content approval is in the Pending state. When an approver reviews the document and approves the content, it becomes available for viewing by site users with read permissions. A document library owner can enable content approval for a document library and optionally can associate a workflow with the library to run the approval process.

The way that documents are submitted for approval varies depending on the versioning settings in the document library:

- **No versioning** If no versioning is in use and changes to a document are saved, the document's state becomes Pending. SharePoint Server 2010 keeps the previous version of the document so users with read permissions can still view it. After the pending changes have been approved, the new version of the document is made available for viewing by users with read permissions and the previous version is not retained.

If no versioning is in use and a new document is uploaded to the document library, it is added to the library in the Pending state and is not viewable by users with read permissions until it is approved.

- **Create major versions** If major versioning is in use and changes to a document are saved, the document's state becomes Pending and the previous major version of the document is made available for viewing by users with read permissions. After changes to the document are approved, a new major version of the document is created and made available to site users with read permissions, and the previous major version is saved to the document's history list.

If major versioning is in use and a new document is uploaded to the document library, it is added to the library in the Pending state and is not viewable by users with read permissions until it is approved as version 1.

- **Create major and minor (draft) versions** If major and minor versioning is in use and changes to a document are saved, the author has the choice of saving a new minor version of the document as a draft or creating a new major version, which changes the document's state to Pending. After the changes to the document are approved, a new major version of the document is created and made available to site users with read permissions. In major and minor versioning, both major and minor versions of documents are kept in a document's history list.

If major and minor versioning is in use and a new document is uploaded to the document library, it can be added to the library in the Draft state as version 0.1, or the author can immediately request approval in which case the document's state becomes Pending.

Worksheet action
In the Document libraries worksheet

Worksheet action

(<http://go.microsoft.com/fwlink/?LinkID=165874&clcid=0x409>), specify whether or not to require content approval for each document library listed.

Plan check-out and check-in

You can require that users check out documents from a document library before editing the documents. It is always recommended to do this. The benefits of requiring check-out and check-in include:

- Better control of when document versions are created. When a document is checked out, the author can save the document without checking it in. Other users of the document library will not be able to see these changes and a new version is not created. A new version (visible to other users) is only created when an author checks in a document. This gives the author more flexibility and control.
- Better capture of metadata. When a document is checked in, the author can write comments that describe the changes made to the document. This promotes creation of an ongoing historical record of the changes made to the document.

If your solution requires that users check in and check out documents when editing them, the Microsoft Office 2010 client applications include features that support these actions. Users can check out documents, undo check-outs, and check in documents from Office 2010 client applications.

When a document is checked out, it is saved in the user's My Documents folder in a subfolder named "SharePoint Drafts." This folder is displayed in the Office 2010 client applications. While the document is checked out, the user can only save edits to this local folder. When the user is ready to check the document in, the document is saved back to the original server location.

From Office 2010 client applications, users can optionally choose to leave checked-out documents on the server by changing content editing options.

Worksheet action

In the [Document libraries worksheet](#) (<http://go.microsoft.com/fwlink/?LinkID=165874&clcid=0x409>), specify whether or not to require check-in and check-out for each document library listed.

Worksheet

Use the following worksheet to help you plan versioning, content approval, and check-outs:

- [Document libraries worksheet](http://go.microsoft.com/fwlink/?LinkID=165874&clid=0x409) (http://go.microsoft.com/fwlink/?LinkID=165874&clid=0x409)

See Also

[Document library planning \(SharePoint Server 2010\)](#)

Co-authoring overview (SharePoint Server 2010)

In today's highly connected work environment, documents created by multiple authors, editors, and stakeholders are becoming the rule, instead of the exception. Organizations look to the communication and collaboration capabilities of Microsoft SharePoint Server 2010 to help them foster communication and collaboration between end-users while reducing administration required to support it. Microsoft Office 2010 continues this trend with co-authoring functionality for Microsoft PowerPoint 2010, Microsoft Word 2010, and Microsoft OneNote 2010 documents on SharePoint Server 2010.

Co-authoring removes barriers to server-based document collaboration and helps organizations to reduce the overhead associated with traditional document sharing through attachments. Co-authoring simplifies collaboration by enabling multiple users to work productively on the same document without intruding on one another's work or locking one another out. This functionality requires no additional server setup and is the default state for documents stored in SharePoint Server 2010. Co-authoring functionality is managed by using the same tools and technologies that are already used to manage SharePoint, helping to minimize the impact on administrators.

In this article:

- [Co-authoring functionality in SharePoint Server 2010](#)
- [Understanding the end-user experience](#)
- [Important considerations](#)
- [OneNote Notebooks](#)
- [Software Version Requirements](#)
- [Co-Authoring in a mixed Office environment](#)
- [Performance and scalability](#)

Co-authoring functionality in SharePoint Server 2010

In traditional collaboration, documents are shared via e-mail attachments. Tracking versions and edits from multiple authors is difficult and time-consuming for users. E-mail systems have to contend with storing multiple copies of the same document, not to mention increased network traffic as documents are sent repeatedly.

The use of SharePoint to store documents for collaboration has reduced these problems by providing consistent access to up-to-date versions of documents, the ability to track previous versions, and centralized management. Storing a single document, instead of many attachments, also reduces network and storage overhead.

But this solution hasn't been perfect. When one author has a document open, other authors cannot work on it. If someone forgets to close a document or check it in, other users may be locked out indefinitely, a situation that often requires a call to the IT department to resolve the problem.

Co-authoring in SharePoint Server 2010 addresses these issues by making it possible for multiple users to work on a document, at any time, without interfering with each other's changes. This approach streamlines many common document-collaboration scenarios. For example:

- Two or more authors are working on different parts of a composite document. While one author works on his section of the document, another author can work on hers, without either interrupting their work.
- Several authors are working on a composite slide show. Each author can add slides to the presentation and edit them, instead of working in isolation and trying to merge several documents and make them consistent all at the same time.
- A document is sent out to several experts and stakeholders, each of whom has some edits or additions. No user's edits are lost, because they are all working on a central, server-stored document.

Understanding the end-user experience

Co-authoring is easy to use from the end user's point of view. When a user wants to work on a document in Word 2010, PowerPoint 2010, or OneNote 2010, he or she merely opens it from SharePoint Server, as usual. If another user already has the document open, both users are able to edit the document at the same time; access to the document is not blocked and no error appears

In Word 2010 and PowerPoint 2010, saving to a document notifies other users viewing the document that there are new edits. Those users can refresh their view immediately to see those changes or continue their work and refresh later to see the latest edits. The authors can also see one another's work, and everyone knows who is working on the document. SharePoint Server 2010 versioning and tracking tools protect the document so that authors can roll back unwanted changes. When Office Communication Server is available, users can see the online status of fellow co-authors and initiate instant messaging conversations without leaving the document.

With OneNote 2010, shared notebooks enable users to share notes seamlessly. When a user edits a page of the notebook, those edits are automatically synchronized with other users of that notebook to ensure everybody has a complete set of notes. Edits made by multiple users on the same page appear automatically, enabling near real-time collaboration. Versioning and other shared features in OneNote make it possible for users to roll back edits, show what edits are new, and determine who made a specific edit.

The Excel 2010 client application does not support co-authoring workbooks in SharePoint Server 2010. However, the Excel client application does support non-real-time co-authoring workbooks stored locally or on network (UNC) paths by using the Shared Workbook feature. Co-authoring workbooks in SharePoint is supported by using the Microsoft Excel Web App, included with Office Web Apps. Office Web Apps is available to users through Windows Live and to business customers with Microsoft Office

2010 volume licensing and document management solutions based on Microsoft SharePoint 2010 Products. For more information, see [Office Web Apps \(Installed on SharePoint 2010 Products\)](#).

Important considerations

There are several factors that administrators will want to consider when planning how to use co-authoring in their environment.

Co-authoring functionality in SharePoint is designed to be easy to set up and requires minimal effort to manage. However there are several things to consider when you set up and manage co-authoring:

- **Permissions** – For multiple users to be able to edit the same document, users need edit permissions for the document library where that document is stored. The simplest way to ensure this is to give all users access to the SharePoint site where documents are stored. In cases in which only a subset of users should have permission to co-author documents in a particular library, SharePoint permissions can be used to manage access.
- **Versioning** – SharePoint Server versioning keeps track of changes to documents while they are being edited, and even stores previous versions for reference. By default, this feature is turned off in SharePoint Server 2010. SharePoint Server 2010 supports two kinds of versioning, major and minor. It is best that minor versioning not be turned on for document libraries used for co-authoring in OneNote, as this may interfere with the synchronization and versioning capabilities that are part of the product. This limitation only applies to minor versioning; major versioning may be used with OneNote.
- **Number of versions** – The number of document versions retained affects storage requirements on the server. This number can be tuned in the document library settings to limit the number of versions retained. OneNote notebooks that are frequently updated may result in many versions being stored on the server. To avoid using unnecessary disk space, we recommend that an administrator set the maximum number of versions retained to a reasonable number on document libraries used to store OneNote notebooks.
- **Versioning period** – The versioning period determines how often SharePoint Server will create a new version of a Word or PowerPoint document that is being co-authored. Setting this period to a low value will capture versions more often, for more detailed version tracking, but may require more server storage. The versioning period does not impact OneNote notebooks. This value can be altered by adjusting the `coAuthoringVersionPeriod` property on the server. For more information about adjusting this setting, see [Configure the co-authoring versioning period \(SharePoint Server 2010\)](#).
- **Check out** – When a user checks out a document for editing, this locks the document for editing to only that user, which prevents co-authoring. Require Check Out should not be enabled in document libraries where co-authoring will be used. By default, Require Check Out is not enabled in SharePoint Server 2010. Users should not check out documents manually when co-authoring is being used.

OneNote Notebooks

Unlike Microsoft Word and Microsoft PowerPoint, Microsoft OneNote stores version information within the file itself. For this reason, administrators should follow these recommended practices when storing OneNote notebooks in a SharePoint Server document library:

- Do not enable minor versioning. By default, minor versioning is not enabled in SharePoint Server 2010.
- If major versioning is enabled, set a reasonable maximum number of versions to store. By default, major versioning is not enabled in SharePoint Server 2010.

Software Version Requirements

For users to co-author documents by using Office 2010, those documents must be stored in SharePoint Server 2010 or SharePoint Foundation 2010. To take advantage of the co-authoring functionality, users must have Word 2010, PowerPoint 2010, or OneNote 2010.



Note:

The co-authoring functionality in Office 2010 can also be used without SharePoint Server 2010 or SharePoint Foundation 2010 if users have Windows Live SkyDrive accounts. Using co-authoring without SharePoint Server 2010 or SharePoint Foundation 2010 is not covered in this article.

Co-Authoring in a mixed Office environment

Some organizations may want to use co-authoring in an environment where users have different versions of Office.

Mixed environment that has Microsoft Office PowerPoint and Word 2007

Users of earlier versions of PowerPoint and Word can share and edit documents stored in SharePoint Server 2010 exactly as with previous versions of SharePoint. However, they cannot use co-authoring to work on them at the same time. To collaborate best in PowerPoint and Word, we recommend that all users work with Office 2010. Users of Office PowerPoint and Word 2007 will not experience any significant difference between their current experience and their user experience on Office 2010. For instance, if Office 2007 users open a document stored in Office 2010 that is currently being edited by another user, they will see a message that the document is being used and will be unable to edit it. If no other user is editing the document, Office 2007 users will be able to open it as usual. When an Office 2007 user opens a document, this creates a lock on the document and prevents users of Office 2010 from using co-authoring to edit the document. This behavior matches earlier versions of SharePoint.

Mixed environment that has Microsoft Office OneNote 2007

OneNote 2010 is backward compatible with the Office OneNote 2007 file format and supports co-authoring with OneNote 2007 users. In mixed environments, notebooks must be saved in the OneNote 2007 file format for OneNote 2007 and OneNote 2010 users to work on it together. By upgrading to the OneNote 2010 file format, however, users gain several key features, including compatibility with the Microsoft OneNote Web App that allows users without any version of OneNote installed to edit and co-author notebooks.

OneNote 2010 includes the ability to upgrade OneNote 2007 files to OneNote 2010 files at any time, providing an easy upgrade path for organizations that are moving from a mixed environment to a unified environment on Office 2010.

Performance and scalability

SharePoint Server 2010 and Office 2010 applications have been designed to minimize the performance and scalability impact associated with co-authoring in your environment. Office clients do not send or download co-authoring information from the server until more than one author is editing. When a single user is editing a document, the performance impact resembles that of previous versions of SharePoint Server.

Office clients are configured to reduce server impact by reducing the frequency of synchronization actions related to co-authoring when the server is under heavy load, or when a user is not actively editing the document, further helping to reduce overall performance impact.

See Also

[Co-authoring administration \(SharePoint Server 2010\)](#)

Records management planning (SharePoint Server 2010)

A *record* is a document or other electronic or physical entity in an organization that serves as evidence of an activity or transaction performed by the organization and that requires retention for some time period. Records management is the process by which an organization:

- Determines what kinds of information should be considered records.
- Determines how active documents that will become records should be handled while they are being used, and determines how they should be collected after they are declared to be records.
- Determines in what manner and for how long each record type should be retained to meet legal, business, or regulatory requirements.
- Researches and implements technological solutions and business processes to help ensure that the organization complies with its records management obligations in a cost-effective and non-intrusive way.
- Performs records-related tasks such as disposing of expired records, or locating and protecting records related to external events such as lawsuits.

The articles in this section describe records management in Microsoft SharePoint Server 2010 and provide guidelines for planning your records management solution. In this section:

- [Records management overview \(SharePoint Server 2010\)](#)
This article describes records management and summarizes planning for records management.
- [Create a file plan to manage records in SharePoint Server 2010](#)
This article describes the contents of a file plan and summarizes how to create a file plan for your organization.
- [Plan how records are collected \(SharePoint Server 2010\)](#)
This article reviews techniques that you can use to declare active documents to be records.
- [Physical records planning \(SharePoint Server 2010\)](#)
This article describes how to plan to use SharePoint Server to manage physical records.
- [Planning for eDiscovery \(SharePoint Server 2010\)](#)
This article describes how SharePoint Server supports eDiscovery.
- [Using a records archive versus managing records in place \(SharePoint Server 2010\)](#)
This article describes the differences between managing records in a records archive and managing records in place.
- [Designing for in-place records management](#)
This article describes how you can manage records in the same SharePoint Server library as active documents, and presents a process for determining how you will manage records in place.

- [Choose an e-mail and messaging records management strategy \(SharePoint Server 2010\)](#)

This article contains an overview and comparison of the records management functionality available in Exchange Server 2010 and SharePoint Server 2010 to help you choose a management solution for messages if your organization uses both products.

Records management overview (SharePoint Server 2010)

In this article:

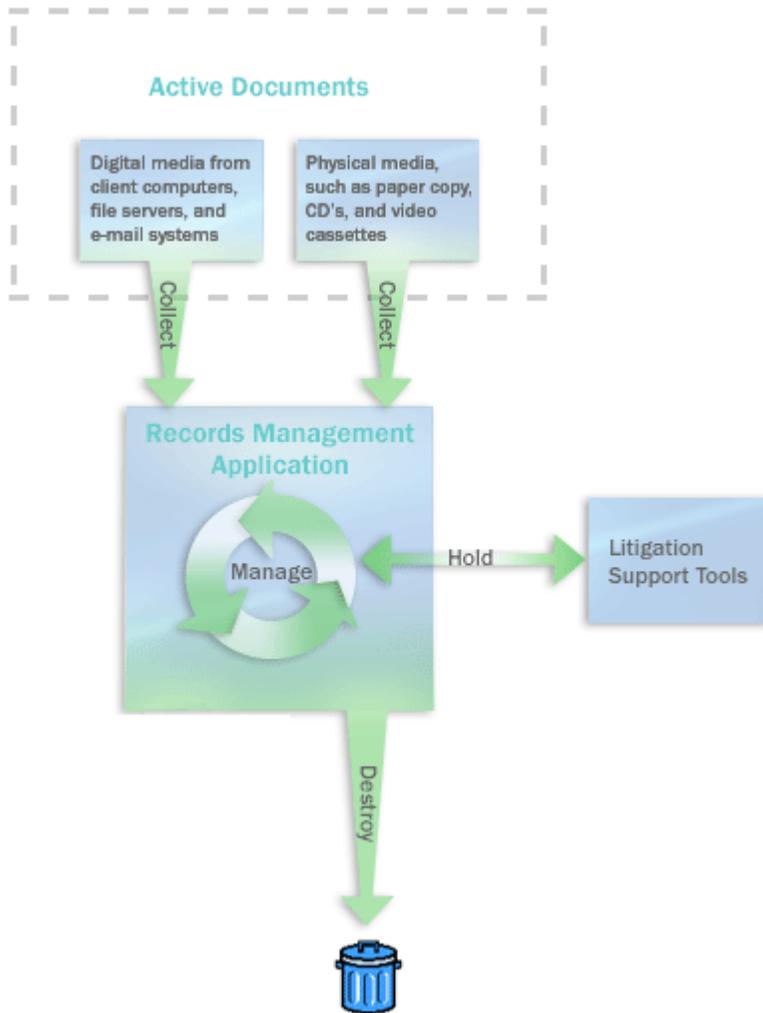
- [Elements of a records management system](#)
- [Overview of records management planning](#)

Elements of a records management system

A *record* is a document or other electronic or physical entity in an organization that serves as evidence of an activity or transaction performed by the organization and that requires retention for some time period. Records management is the process by which an organization:

- Determines what kinds of information should be considered records.
- Determines how active documents that will become records should be handled while they are being used, and determines how they should be collected after they are declared to be records.
- Determines in what manner and for how long each record type should be retained to meet legal, business, or regulatory requirements.
- Researches and implements technological solutions and business processes to help ensure that the organization complies with its records management obligations in a cost-effective and non-intrusive way.
- Performs records-related tasks such as disposing of expired records or locating and protecting records that are related to external events such as lawsuits.

Determining which documents and other physical or electronic items in your organization are records is the responsibility of corporate compliance officers, records managers, and lawyers. By carefully categorizing all enterprise content in your organization, these people can help you ensure that documents are retained for the appropriate period of time. A well-designed records management system helps protect an organization legally, helps the organization demonstrate compliance with regulatory obligations, and increases organizational efficiency by promoting the disposition of out-of-date items that are not records.



A records management system includes the following elements:

- **A content analysis** that describes and categorizes content in the enterprise that can become records, that provides source locations, and that describes how the content will move to the records management application.
- **A file plan** that indicates, for each kind of record in the enterprise, where they should be retained as records, the policies that apply to them, how long they must be retained, how they should be disposed of, and who is responsible for managing them.
- **A compliance requirements document** that defines the rules that the organization's IT systems must follow to ensure compliance and the methods that are used to ensure the participation of enterprise team members.
- **A method for collecting records that are no longer active** from all record sources, such as collaboration servers, file servers, and e-mail systems.

- **A method for auditing records** while they are active.
- **A method for capturing records' metadata** and audit histories and for maintaining them.
- **A process for holding records** (suspending their disposition) when events such as litigations occur.
- **A system for monitoring and reporting on the handling of records** to ensure that employees are filing, accessing, and managing them according to defined policies and processes.

Microsoft SharePoint Server 2010 includes features that can help organizations implement integrated records management systems and processes.

Overview of records management planning

This topic describes the planning steps that you should take to help ensure that the records management system that you implement based on SharePoint Server 2010 will achieve your organization's records management goals. The following is a preview of the records management planning process:

1. **Identify records management roles** Successful records management requires specialized roles, including the following:
 - Records managers and compliance officers to categorize the records in the organization and to run the records management process.
 - IT personnel to implement the systems that efficiently support records management.
 - Content managers to find where organizational information is kept and to ensure that their teams follow records management practices.
2. **Analyze organizational content** Before creating a file plan, records managers and content managers survey document usage in the organization to determine which documents and other items can become records.
3. **Develop a file plan** After you have analyzed your organizational content and determined retention schedules, fill in the rest of the file plan. File plans differ from organization to organization, but generally they describe the kinds of items the enterprise acknowledges to be records, indicate where they are stored, describe their retention periods, and provide other information, such as who is responsible for managing them and which broader category of records they belong to.
4. **Develop retention schedules** For each record type, determine when it is no longer active (being used), how long it should be retained after that, and how it should ultimately be disposed of.
5. **Evaluate and improve document management practices** Make sure that required policies are being applied in document repositories. For example, ensure that content is being appropriately audited so that suitable audits are retained together with records.
6. **Design the records management solution** Determine whether to create a records archive, to manage records in place, or to use a combination of the two approaches. Based on your file plan, design the record archive, or determine how to use existing sites to contain records. Define content

types, libraries, policies, and, when it is required, metadata that determines the location to route a document to.

7. **Plan how content becomes records** If you are using SharePoint Server 2010 for both active document management and records management, you can create custom workflows to move documents to a records archive. If you are using either SharePoint Server 2010 or an external document management system, you can plan and develop interfaces that move content from those systems to the records archive, or that declare a document to be a record but do not move the document. You also create a training plan to teach users how to create and work with records.
8. **Plan e-mail integration** Determine whether you will manage e-mail records within SharePoint Server 2010, or whether you will manage e-mail records within the e-mail application itself.
9. **Plan compliance for social content** If your organization uses social media such as blogs, wikis, or My Site Web sites, determine how this content will become records.
10. **Plan compliance reporting and documentation** To verify that your organization is performing its required records management practices, and to communicate these practices, you should document your records management plans and processes. If your enterprise becomes engaged in records-related litigation, you might have to produce these records management guidelines, implementation plans, and metrics on effectiveness.

See Also

[Create a file plan to manage records in SharePoint Server 2010](#)

[Plan how records are collected \(SharePoint Server 2010\)](#)

Create a file plan to manage records in SharePoint Server 2010

The file plan is the primary records management planning document in SharePoint Server 2010. Although file plans can differ across organizations, they typically:

- Describe the kinds of items the organization acknowledges to be records.
- Describe what broader category of records the items belong to.
- Indicate where records are stored.
- Describe retention periods for records.
- Delineate who is responsible for managing the various kinds of records.

This article describes the contents of a file plan and summarizes how to create a file plan for your organization. The article also directs you to a worksheet in which you can record the file plan.

In this article:

- [Identify kinds of records](#)
- [Complete the file plan](#)
- [Worksheet](#)

Identify kinds of records

Determining which active documents in your organization might be declarable as records requires the collaboration of records managers, lawyers, compliance officers, and content managers. Note that, even if your enterprise is not in a highly regulated industry, there are general laws that might obligate your enterprise to keep records. Along with general business laws, you must evaluate legal requirements that are specific to your enterprise.

It is beyond the scope of this article to provide more than general information about how to determine what is a record in your organization. Most likely, your enterprise is already doing some form of records management and has filled most of the records management roles that you need, and you might already have a taxonomy of records.

Generally, to determine what are records in your organization:

1. Understand your enterprise's legal obligations and business needs.
2. In a collaborative effort across the divisions of your organization, analyze how active documents are used.
3. Develop a list of the kinds of documents that should become records. For example, you might determine that the following should be retained as records:
 - Contracts to rent corporate space.
 - Documents related to employees' benefits.

- Documents related to product research and development.
4. Categorize the records. Records in the same category often have the same retention periods and might require similar treatment in other ways.

Record the information that you collected. You can use the worksheet mentioned in the section [Worksheet](#) for this purpose. Record the kind of record, the category that records of this kind belong to, and a brief description of the kind of record.

The following is a sample worksheet:

Kind of record	Record category	Description
Benefit plans, insurance plans, pension plans	Employee Benefit Descriptions	Descriptions of all employee benefit plans.
Payroll timesheets, supplementary payroll information	Payroll Records	Summaries of hours worked, overtime, and salary paid.
Vendor invoices	Invoices	Records of goods or services purchased from vendors.
Product surveys, questionnaires, training manuals, training videos	Training Materials	Provides internal or external training.
Shipping forms, shipping reports	Shipping Records	Documents the shipment of materials.
Press releases, newspaper articles	Press Releases	Public relations information about products and services.
Emergency contact sheets, medical plan enrollment forms, resumes, benefits status reports	Personnel Records	Records of individuals' employment histories and related personnel actions.

Complete the file plan

After you determine which documents should be retained as records and after you create a set of record categories, complete your file plan by providing additional information about each kind of record. Indicate the following:

- How long each kind of record should be retained.
- How records should be disposed of when the retention period expires.
- Who is the primary records manager for records of this kind.
- What kind of media are records of this kind stored in.

The following is a completed sample file plan:

Records	Description	Media	Record category	Retention	Disposition	Contact
401k plans	Description of employee benefit plan.	Web pages	Employee Benefit Plans	X years	None	Kathi Flood
Insurance plans	Description of employee insurance plan.	Print	Employee Benefit Plans	X years	None	Reshma Patel
Pension plans	Description of employee pension plan.	Print	Employee Benefit Plans	X years	None	Reshma Patel
Payroll timesheets	Summaries of hours worked, overtime, and salaries paid.	Electronic documents	Payroll Records	X years	Destroy	Reshma Patel
Supplementary payroll information	Summaries of sick time, vacation time, and other non-salary payroll items.	Electronic documents	Payroll Records	X years	Destroy	Reshma Patel
Vendor invoices	Records of goods or services purchased from vendors.	Print	Invoices	X years	Destroy	Eric Lang
Product surveys	Customer satisfaction survey.	Web pages	Survey Materials	X years	Archive	Molly Dempsey
Questionnaires	Questionnaire to determine customer demographics.	Print	Survey Materials	X years	Archive	Molly Dempsey
Training manuals	Hard-copy training content.	Print	Training Materials	X years	Destroy	Molly Dempsey

Records	Description	Media	Record category	Retention	Disposition	Contact
Training videos	Video training content.	Video	Training Materials	X years	Destroy	Molly Dempsey
Shipping forms	Configuration of materials shipments	Print	Shipping Materials	X years	Destroy	Eric Lang
Shipping reports	Documentation of the shipment of materials.	Electronic spreadsheets	Shipping Materials	X years	Destroy	Eric Lang
Press releases	Releases about products and services.	Electronic documents	Public Relations Information	X years	Archive	Molly Dempsey
Newspaper articles	News about products and services.	Print	Public Relations Information	X years	Archive	Molly Dempsey
Emergency contact sheets	Employee information.	Electronic documents	Personnel Records	X years	Destroy	Reshma Patel
Medical plan enrollment forms	Employees' sign-up forms for health plans.	Electronic documents	Personnel Records	X years	Destroy	Reshma Patel
Resumes	Resumes received.	Mixed	Personnel Records	X years	Destroy	Reshma Patel



Note:

The example earlier in this section is a sample. It is not a recommendation of any particular file plan settings. To reinforce that this is an example and not a recommendation of any records management policy, no retention periods are supplied.

Worksheet

You can use the following worksheet with this article to help plan your deployment:

- [Record categories worksheet](http://go.microsoft.com/fwlink/?LinkID=179987&clcid=0x409) http://go.microsoft.com/fwlink/?LinkID=179987&clcid=0x409

Plan how records are collected (SharePoint Server 2010)

After you develop a file plan and design your records management solution in SharePoint Server 2010, plan how active documents in your organization – electronic and hard copy – will become records. This article reviews techniques that you can use to declare active documents to be records and suggests one way to plan how items in your file plan will become records.

In this article:

- [Techniques for converting active documents to records](#)
- [Completing your plan](#)

Techniques for converting active documents to records

You can use the following techniques convert active documents to records:

- Manually declaring a document to be a record by using a Web site based on Microsoft SharePoint Server.
- Defining a policy that declares a document to be a record or sends a document to a Records Center site at a specified time.
- Creating a workflow that sends a document to a Records Center site.
- Using a custom solution that is based on the SharePoint Server object model.

Creating records manually

If in-place records management is enabled for a document library, users can explicitly declare a document in the library to be a record by editing the document's compliance details. When the site collection administrator enables in-place records management, the site collection administrator specifies who should be able to declare and undeclare records, and whether users should be able to edit or delete documents after they become records.

If a connection to a Records Center site was created, users can manually send documents to the Records Center site by using the **Send to** command. When a farm administrator configures a connection to the Records Center site, this command becomes available on all active documents. Depending on how the connection is configured, documents can be either copied to the Records Center site, moved to the Records Center site, or moved to the Records Center site with a link to the document maintained. For more information about creating a connection to a Records Center site, see [Add, modify, or delete a connection to a document repository or a records center \(SharePoint Server 2010\)](#).

Although manually sending records to the Records Center site is not a practical large-scale solution, you can use it to supplement other methods of creating records.

Defining a policy

A retention policy specifies actions to take on documents at certain points in time. Policy actions occur automatically; users do not need to start the action.

Two policy actions relate specifically to managing records: transferring a document to another location, and declaring a document to be a record. If a connection to a Records Center site exists, you can create a policy that sends documents to a Records Center site. The policy also specifies whether to copy the document to the Records Center site, move it, or move it and leave a link in the document library. If in-place records management is enabled for the site, you can create a policy that declares a document to be a record. You can also use the SharePoint Server object model to create a custom action.

A retention policy can have multiple stages. For example, you could create a retention policy that deletes all previous versions of a document one year after the document was last modified, and transfers the document to a Records Center site five years after the document was last modified.

If in-place records management is enabled for a site, the site can contain both active documents and records. In this case, you can specify different retention policies for active documents and records. For example, you could create a policy that declares an active document to be a record two years after the document was created, and create a second policy that deletes a record seven years after it was declared to be a record.

For more information about defining information management policies, see [Office.com](http://go.microsoft.com/fwlink/?LinkId=191521&clcid=0x409) (<http://go.microsoft.com/fwlink/?LinkId=191521&clcid=0x409>).

Creating a workflow

When you use Microsoft Office SharePoint Designer to create a workflow, you can add an action to send an item to a repository. By using this action, you can create workflows that send documents to a Records Center site. You can also include other actions in the workflow. For example, you could create a workflow that sends an e-mail message to a document's author requesting approval, and then sends the document to a Records Center site. You could combine policies and workflows by creating a retention policy that runs the new workflow one year after a document is created.

You can also use the SharePoint Server object model to create a custom workflow that copies files to the Records Center site. A workflow that sends files to the Records Center site can be integrated into your document management system as part of a workflow that guides a document through its life cycle. For document types that have a predictable life cycle, such as expense reports, you could implement a workflow that guides the document through its various stages and, as a final step, sends a copy of the document to the Records Center site. The workflow could be triggered by creating a new document.

Using a custom solution

You can develop custom solutions that use objects in the

Microsoft.Office.RecordsManagement.OfficialFileWSPProxy namespace to send content from other data sources to the Records Center site. For more information about how to implement custom solutions using the SharePoint Server 2010 object model, see the SharePoint Server 2010 [Software Development Kit](http://go.microsoft.com/fwlink/?LinkID=166117&clcid=0x409) (http://go.microsoft.com/fwlink/?LinkID=166117&clcid=0x409).

Completing your plan

After you develop the file plan and review the methods for moving content into the Records Center site, complete your file plan by determining how to send each kind of record to the Records Center site. The things to consider include the following:

- Is compliance enforced or voluntary?
- Can you depend on the cooperation of users in your organization to comply with records management processes? In general, avoid manual processes. However, where they are needed, create suitable training and monitoring to ensure team compliance.
- Will content be stored on SharePoint Server 2010 document management servers?
- Are you maintaining physical content? Managing active physical content, such as hard copy or CD-ROM, and sending it to a records vault for retention (together with tracking the record in a Records Center site) requires unique planning not described in this topic. For example, if no electronic version of a paper document exists, you might have to track the item by using a list that has associated policies and workflows. For a full discussion of strategies and techniques for tracking a physical record, both while it is active and after it is sent to the Records Center site, see the article [Physical records planning \(SharePoint Server 2010\)](#).

The following table shows how some records in a sample file plan will move to a Records Center site:

Documents	Description	Media	Source location	Becomes a record...
Benefit plan	Description of employee benefit plan.	Web pages	SharePoint Server 2010 document library	Using a custom workflow associated with expiration policy
Insurance plan	Description of employee insurance plan.	Print	Physical document associated with list item in SharePoint Server 2010	By sending to a physical vault and creating a list item in the Records Center site to track (using a barcode)

Documents	Description	Media	Source location	Becomes a record...
Payroll timesheets	Summaries of hours worked, overtime, and salaries paid.	Electronic documents	Payroll records server not based on SharePoint Server 2010	Using a custom program
Product development files	Specifications of products and associated documents.	Electronic documents	SharePoint Server 2010 document library	Using custom workflow associated with expiration policy and manually by using Send to command

See Also

[Add, modify, or delete a connection to a document repository or a records center \(SharePoint Server 2010\)](#)

[Create a file plan to manage records in SharePoint Server 2010](#)

[Physical records planning \(SharePoint Server 2010\)](#)

Physical records planning (SharePoint Server 2010)

In SharePoint Server 2010, you can manage physical and electronic records in the same records archive. However, you manage them in different ways. Electronic records can be stored directly in Microsoft SharePoint Server. Physical records must be stored outside SharePoint Server, for example in boxes in a warehouse. To manage physical records in SharePoint Server, you create a list item, relate the list item to the physical item, and manage the list item.

This article describes how to plan to use SharePoint Server to manage physical records. It does not contain the specific procedures to implement your plan. Before you perform the activities that are described in this topic, you should have already created a file plan. For more information about file plans, see [Create a file plan to manage records in SharePoint Server 2010](#).

In this article:

- [Identify record types](#)
- [Identify properties of each record type](#)
- [Organize content types](#)
- [Organize the records archive](#)
- [Worksheet](#)

Identify record types

Your file plan should identify the kinds of physical items that your organization considers to be records. If this is not the case, update the file plan to include physical records. For each kind of physical record in the file plan, indicate what kind of media that the records will be. For example, signed legal agreements might be paper records; engineering models might be large-format blueprints.

For more information about file plans, see [Create a file plan to manage records in SharePoint Server 2010](#).

Identify properties of each record type

All records of the same type should have the same properties. The properties of physical records that you should consider in this planning step include the following:

- Attributes (which will become columns in SharePoint Server)
- Processes (which will become workflows in SharePoint Server)
- Information management policies
- Forms

For each type of record, identify the attributes that you want to capture for records of this type. These attributes will be columns of the SharePoint Server content type that represents this kind of record. Information that you would use to categorize records might be an attribute. Data that people search for might also be an attribute. Other attributes of physical records tie the record in SharePoint Server, represented by an item in a list, to the physical object that is stored in a physical location. The location and some way to identify the physical object are probably attributes that you will want to capture.

As with electronic records, you probably want to apply certain policies to physical records. All records are likely to have an expiration policy and an auditing policy. Physical records in particular might have a policy that requires a barcode. An image of the barcode that is attached to the physical object could be associated with the list item that represented the physical record. A labeling policy could require that each physical object be labeled with the same attributes that are associated with the list item that represents the physical object. For each kind of physical record, indicate whether the expiration, auditing, barcode, and label policies are required. Also note any additional policies that are required.

A physical record in SharePoint Server (an item in a list) is only a placeholder for the actual record; it is not the physical object itself. Therefore, it is likely that you will add processes to keep the physical items synchronized with actions that are taken on the list items. These processes correspond to SharePoint Server workflows. Identify the processes that should be associated with each type of record. Common processes for physical records include the following:

- Disposing of the physical record when the list item that represents the record has expired.
- Moving the physical object to a storage location when a new item is added to the list.
- Retrieving the physical object.

Are there any forms that should be associated with records of this type? You might need a form for each process that you identified. Or you might use a form to provide access to the inventory of physical records.

Use the **Physical records** tab of the worksheet in the [Worksheet](#) section to record the information that you identified about each type of physical record. Do not fill in the content type for the type of record yet.

Organize content types

The simplest way to associate content types with physical records is to have one content type for each type of physical record. However, if multiple types of physical records share the same columns, workflows, information management policies, and forms, you can use one content type to represent all of the similar types of physical records.

Organize the content types. Consider creating one content type from which all other content types for physical records will descend. This parent content type would be derived from the Item content type. To the parent content type, add any properties (columns, information management policies, workflows, and forms) that are common to the content types for all physical records.

There are two ways to organize the content types after you have created the parent content type.

1. Create a flat structure in which each content type that represents a type of physical records is a child of the parent content type that you created previously.
2. Create a hierarchy, descending from the parent content type, based on the similarities between the properties of the content types.

On the **Content Types** tab of the worksheet, identify each content type that represents a type of physical record. For each content type, note its parent content type. In the **Columns** column, enter the name of every column that is defined *at the level of the content type*. Do not enter the names of columns that are inherited from other content types. In the **Workflows** column, enter the name of every workflow that is defined at the level of the content type. In the **Information Management Policies** column, enter the name of every information management policy that is defined at the level of the content type. In the **Forms** column, enter the name of every form that is defined at the level of the content type.

Organize the records archive

It is common to use separate archives for physical records and electronic records. However, you can decide to have a list or lists of items that represent physical records interspersed with the document libraries that contain electronic records.

After you have decided which records archive to store physical records in, determine how you will organize the lists within the records archive. You can create folders within lists, and use the folders to create a deeper organizational structure for physical records. As you determine which lists to create, be aware that metadata navigation and workflows can both be applied to lists.

Some ideas for organizing lists and folders include the following:

- By record type
- In the same manner that the physical objects are organized. (For example, a folder could represent a box, and the items in the folder could represent the objects in the box.)
- By using a business-related organizational scheme, such as by project or by division
- By year

Because physical records will not be moved to the records archive by using the **Send to** option, you cannot use the content organizer with physical records. Instead, the records manager who creates the physical record must put the record in the correct folder in the correct list.

In the **Lists and folders** tab of the worksheet, enter the URL of each list that you identified. For each list, in the **Content Types** column, determine the content types that will be allowed within the list. Use the **Folder Level 1**, **Folder Level 2**, **Folder Level 3**, and **Folder Level 4** columns to record the hierarchy of folders and sub-folders in the list. Add more columns if you will nest folders deeper than four levels.

Worksheet

You can use the following worksheet to help plan how you will manage physical records:

[Physical records planning worksheet](http://go.microsoft.com/fwlink/?LinkID=179986&clid=0x409) http://go.microsoft.com/fwlink/?LinkID=179986&clid=0x409

See Also

[Create a file plan to manage records in SharePoint Server 2010](#)

Planning for eDiscovery (SharePoint Server 2010)

Electronic discovery, or *eDiscovery*, is locating and producing electronic information to support events such as litigation, audits, or investigations. If you use Microsoft SharePoint Server 2010 to manage any electronic information, you should consider eDiscovery when you plan your SharePoint Server solution. Auditing, expiration policies, and search are considerations that you should evaluate. Your planning decisions in these areas should be completed in advance of the possibility of any need arising for using eDiscovery.

In this section:

- [How SharePoint Server 2010 supports eDiscovery](#)
- [Auditing](#)
- [Expiration](#)
- [Search](#)

How SharePoint Server 2010 supports eDiscovery

There are two parts to eDiscovery in SharePoint Server: finding relevant documents, and restricting what users can do with the documents after they have been identified.

A *hold* is a set of documents that might be produced as part of an eDiscovery request. Within SharePoint Server, you enable or disable the Hold and eDiscovery feature at the level of an individual site. This feature is enabled by default in a Records Center site, and is disabled by default in all other kinds of sites. The Hold and eDiscovery feature enables you to create and manage holds, to add items to a hold, and to use search to discover content and copy the content to another location, or lock the content down so that it cannot be modified or deleted.

When you perform an eDiscovery search, you can do one of two things. You can copy all documents that are retrieved to a content organizer, that routes documents to their correct location based on the documents' metadata. Or you can leave the documents in place, but lock them down. Locking down a document prevents users from modifying or deleting the document.

To support eDiscovery in SharePoint Server, you enable the Hold and eDiscovery feature in every site collection in which relevant information might exist. Then you configure the search service to crawl the sites for which eDiscovery is enabled.

When circumstances occur that require your organization to produce relevant documents, an eDiscovery process can be initiated. A records manager, an attorney, or another individual may take the following actions to produce the required documents.

1. Create a hold to contain the relevant documents.
2. Initiate an eDiscovery search for relevant documents.

The eDiscovery search runs at a time that is controlled by the Search and Process timer job. By default this is 10:30 PM every day. Search results are added to the hold automatically.

3. Review the items in the hold and create additional eDiscovery searches.
4. Locate documents manually, and add them to the hold.
5. Run reports against the hold.

Hold reports are run at a time that is controlled by the Hold Processing and Reporting timer job. By default this is 11:30 PM every day.

6. Review the documents in the hold and remove irrelevant documents.
7. Identify specific documents in the hold for which more information is needed, and review the audit log for these documents.
8. Deliver all documents that are associated with the hold.

Auditing

When you send a document to a content organizer, the document's version history is erased. To keep a history of who changed a document and when each change was made, you will need an audit log. We recommend that you enable the auditing policy in all site collections that contain active document libraries. For more information about the auditing policy, see [Governance overview \(SharePoint Server 2010\)](#).

Expiration

Any information that an organization stores is subject to discovery. In addition, electronic documents consume disk space. Consider implementing an expiration policy to delete documents automatically when they are no longer needed. For more information about the expiration policy, see [Governance overview \(SharePoint Server 2010\)](#).

Search

When an organization has to produce documents in a litigation scenario, it must often produce them quickly or pay a fine. Make sure that Search is configured correctly *before* the first time that you have to use eDiscovery. In particular, ensure that Search is configured to crawl all sites in which you may have to discover content.

Search engines are usually optimized to return only a few highly relevant results. In eDiscovery, the goal of search is to return all results that match a query, not just the few most relevant results. Search in SharePoint Server 2010 was improved to better meet the needs of eDiscovery.

To help protect against common malicious attacks, SharePoint Server 2010 searches that run for more than a specific time are stopped. If your eDiscovery search might run for a long time, consider the following options:

- Create a more tightly scoped search. If you are searching for documents related to a potential partnership with Contoso, Ltd., for example, consider searching for documents that contain the word “Contoso” and that were created in a specific date range, instead of only searching for the word “Contoso”.
- Run multiple, narrower searches. For example, assume that you are searching for documents related to recruiting a new CEO from Fabrikam, Inc. Instead of doing one search for “Fabrikam (CEO, “Anders Riis”, recruit)”, do three separate searches for “Fabrikam CEO”, “Fabrikam “Anders Riis””, and “Fabrikam recruit”.

Using a records archive versus managing records in place (SharePoint Server 2010)

Prior to Microsoft SharePoint Server 2010, you managed records by creating a Records Center site to serve as an archive, then copying documents to the archive when they became records. Whether a document was a record or not was determined by whether it lived in the records archive or elsewhere.

In Microsoft SharePoint Server 2010 you can manage records in an archive, or you can manage records in the same document repository as active documents. With the Microsoft SharePoint Server 2010 in-place approach, when you declare that a document has become a record, the record remains in place, but Microsoft SharePoint Server 2010 now manages it as a record. For example, a document might get a different retention policy when it is declared to be a record, or users might not be able to edit it.

A hybrid approach is also possible. For example, you could keep records in place with active documents for two years, and then move records to a records archive when a project is complete.

As you think about whether to manage records in a separate records center or in the same collaboration site in which the documents were created, consider the following questions:

- Is the governance of the collaboration site appropriate for managing records? Is your industry subject to regulatory requirements that mandate records be separated from active documents? Should the administrator of a collaboration site be trusted to manage a site that contains records? You might want to store records in a site that uses more restricted access than the collaboration site, or in a site that is backed up on a different schedule.
- How long will the collaboration site be in use? If records will have to be kept for longer than the project is ongoing, choosing an in-place records management strategy means that you will have to maintain the collaboration site even after it is no longer used.
- Will the project members need frequent access to the documents after the documents have become records? If you use an in-place approach, project members can access documents in the same manner regardless of whether the documents are active or are records.
- Are records managers in your organization responsible for only records, or are they responsible for all information, regardless of whether it is active or a record? If records managers are responsible only for official records, having a separate records center might be easier for them.

The following table describes differences between what you can do with records in a record center and with records that are managed in-place in a collaboration site. The differences are presented from the point of view of both records managers and employees collaborating on a project team.

Differences between a records archive and in-place records

Factor	Records archive	In-place records
Managing record retention	The content organizer	There may be different policies

Factor	Records archive	In-place records
	automatically puts new records in the correct folder in the archive's file plan, based on metadata.	for records and active documents based on the current content type or location.
Restrict which users can view records	Yes. The archive specifies the permissions for the record.	No. Permissions do not change when a document becomes a record. However, you can restrict which users can edit and delete records.
Ease of locating records (for records managers)	Easier. All records are in one location.	Harder. Records are spread across multiple collaboration sites.
Maintain all document versions as records	The user must explicitly send each version of a document to the archive.	Automatic, assuming versioning is turned on.
Ease of locating information (for team collaborators)	Harder, although a link to the document can be added to the collaboration site when the document becomes a record.	Easier.
Clutter of collaboration site	Collaboration site contains only active documents.	Collaboration site contains active and inactive documents (records), although you can create views to display only records.
Ability to audit records	Yes.	Dependent on audit policy of the collaboration site.
Scope of eDiscovery	Active documents and records are searched separately.	The same eDiscovery search includes records and active documents.
Administrative security	A records manager can manage the records archive.	Collaboration site administrators have permission to manage records and active documents.

The following table describes differences between the two records management approaches that might affect how you manage IT resources.

Resource differences between a records archive and in-place records

Factor	Records archive	In-place records
Number of sites to manage	More sites; that is, there is a separate archive in addition to collaboration sites.	Fewer sites.
Scalability	Relieves database size pressure on collaboration sites.	Maximum site collection size reached sooner.
Ease of management	Separate site or farm for records.	No additional site provisioning work beyond what is already needed for the sites that have active documents.
Storage	Can store records on different storage medium.	Active documents and records stored together.

Designing for in-place records management

In Microsoft SharePoint Server 2010 you can manage records in an archive, or you can use in-place records management, managing records in the same document repository as active documents. By using in-place records management, when you declare that a document is a record, it remains in the same location, but SharePoint Server 2010 now manages it as a record.

By using in-place records management in SharePoint Server 2010, you can:

- Decide what actions will cause an active document to become a record. For example, a user could select an option to declare a document to be a record; a workflow could run after a specific event and turn an active document into a record; or you could define a retention policy that turns an active document into a record after a certain time.
- Restrict who can perform records-related operations. For example, you could specify that any user can declare a document to be a record, but only records managers can edit or delete a record.
- Restrict what actions users can perform on records. For example, you might prevent users from deleting records, or from both editing and deleting them.
- Specify a retention policy for active documents, and a different retention policy for records.

For more information about deciding whether to use in-place records management or a records archive, see [Using a records archive versus managing records in place \(SharePoint Server 2010\)](#).

This article describes how to make the planning decisions that are required before you can implement in-place records management. It does not explain how to implement the decisions that you make. Before working through the steps in this article, you should already have created a file plan. For more information about file plans, see [Create a file plan to manage records in SharePoint Server 2010](#).

If you are using in-place records management, it is assumed that you are also using SharePoint Server for another purpose, such as team collaboration sites. (If this is not true, consider using a records archive.) Therefore, you should already know the content types and folder hierarchy that your existing solution uses, or be defining these in parallel with designing your records management solution if your other SharePoint Server solution is being developed at the same time.

In this article:

- [Overview of in-place records management planning](#)
- [Folders or content types?](#)
- [Defining content types](#)
- [Organizing folders for in-place records management](#)
- [General records management planning tasks](#)
- [Worksheets](#)

Overview of in-place records management planning

You can set up retention policies for records based either on content types or on the folder in which a document is stored. Whether to organize records by content type or by location is the primary decision that you must make when you plan for in-place records management. After you have determined how to organize records, you design either the content types or the folder hierarchy. Then you define other aspects of records management, such as auditing policies. Finally, you decide what can be done with a document after it is declared to be a record.

If your solution will use both in-place records management and a records archive, you do not have to plan both aspects at the same time. For example, if you base your in-place records management plan on content types, you do not have to organize records in the archive based on content types.

Folders or content types?

You can define retention policies based on an item's content type or based on the folder in which an item is located. For any given library, you must select one or the other; you cannot base retention policies on a combination of content types and folders within the same library. Your choice will greatly affect how you set up the site and how users use the site. It is usually simpler to base retention policies on content types, if this works in your situation.

Consider the kinds of records that you identified in your file plan. Use the following heuristics to determine whether to organize based on content types or on location. Follow the first heuristic that applies to your situation.

- Do all records of the same record type have the same retention policy? If so, organize based on content types.
- Do *most* record types consist of records with the same retention policy? Is the case of a record type having records of different retention policies rare? If so, can you easily and logically create subtypes so that the same retention policy applies to every record of the subtype? If so, organize based on content types.

For example, if non-disclosure agreements (NDAs) are retained for five years; leases are retained for 10 years; and partnership agreements are retained for 15 years but you classified them all as legal agreements, not all legal agreements have the same retention period. But if you subdivided legal agreements into three separate kinds of legal agreement records – NDAs, leases, and partnership agreements – then all records of the same type would have the same retention period.

- Will all records have common attributes, or metadata, that determine the retention policy? If so, organize based on location.

For example, if every record will have a “customer” attribute, and records for government customers have a different retention policy than records for corporate customers, then organize based on location.

- Does your organization already have a folder structure that users are familiar with? Does the same retention policy apply to all records in a folder? Can you rely on users to store documents in the correct place in the folder structure? If all these are true, organize based on location.

If none of the previous heuristics applies, an in-place records management implementation is probably not a natural fit for your situation. Reconsider whether using a records archive will work. If you use an in-place approach, you have two options. The first option is to create additional content types whose only purpose is to differentiate items with different retention periods. The second option is organize items within folders as much as possible, and then to use sub-folders to hold items with different retention periods. Either of these options is likely to be confusing to users.

If your organization already uses SharePoint to manage documents and you are now starting to use the Records Management functionality, content types and a folder structure already exist. If neither of these map well to retention policies, you will either have to convert some items to new content types or move some items to new folders.

Defining content types

For each kind of record in your file plan, determine the content type or content types that records of this kind could be. You can enter this information on the **records and content types** tab of the In-place records planning worksheet.

Now consider each content type. If documents of the content type might become records, note the retention policy that applies to records of the content type. You can use the **content types and retention** tab of the worksheet for this purpose. If your solution will use a records archive in addition to in-place records management, only note the part of the retention policy that applies to the record before it moves to the records archive. When an item is sent to a records archive, the item's policies are erased, and the item is given the policies that are specified within the records archive.

If the previous task resulted in a content type having more than one retention policy, you will have to split the content type. Find a logical way of splitting the content type into multiple sub-types so that each sub-type can have a single retention policy. Update your mapping of records to content types to reflect the new content types.

Organizing folders for in-place records management

You will probably organize folders differently depending on whether users will determine where they want to store documents or whether you will use the Content Organizer to route documents to the correct location. These options are described in the following sections.

Option 1: Users decide where they want to store documents

If users will decide in which folder to store their documents, the folder hierarchy must make it easy for them to place documents in the correct location. Start with the folder structure that your current SharePoint Server solution uses, or the folder structure that you are designing for the other parts of your SharePoint Server solution. For each folder that might contain records, determine the kinds of records that might be in the folder. Use the record types and your file plan to determine the retention policies that could apply to items in the folder. You can enter this information on the folders and retention tab of the worksheet.

If the previous task resulted in a folder having more than one retention policy, you will have to create subfolders. For each folder that could contain items with different retention policies, create a sub-folder for each retention policy. Since users will determine where they want to store documents, there must be an easy way to explain to users what to put in each sub-folder. If there is not, consider forbidding users from choosing where they want to store documents and using the Content Organizer instead. Update your mapping of record types to folders to reflect the new sub-folders.

If you have an existing SharePoint Server solution, you will probably have to move some existing documents to put them in the folders that have the appropriate retention policies.

Determine how you will train users to place documents in the correct location and whether you will audit where documents are put. The successful application of retention policies depends on records being stored in the correct folder.

Option 2: Use the Content Organizer to determine where to store documents

If you will use the Content Organizer to route documents to the correct folder, it is less important that the folder hierarchy be easy for users to navigate. You can hide the folder structure from the users, and create views that they can use to navigate. Because the Content Organizer routes documents based on their metadata, a unique combination of metadata must apply to each folder that will contain documents.

Examine your file plan and determine which combination of attributes corresponds to each retention policy. It is okay if different combinations of metadata have the same retention policy. However, each unique combination of metadata can only correspond to one retention policy. If this is not the case, determine additional metadata to differentiate between retention policies. You can enter this information in the first two columns of the **metadata and folders** tab of the In-place records planning worksheet.

Next, identify a folder to correspond to each set of metadata. Enter the name of the folder in the third column of the **metadata and folders** tab of the worksheet. You will need this information when you create the rules that the Content Organizer uses to route documents to the correct location. You will also have to enable the content organizer to force all uploaded and new documents to go through the drop-off library.

If you have an existing SharePoint Server solution, you probably will have to move some existing documents to put them in the folders that have the appropriate retention policies.

Determine how you will train users to apply the appropriate metadata to documents. The successful application of retention policies depends on all documents having the correct metadata.

General records management planning tasks

Once you plan how to structure content for in-place records management, most of the remaining planning tasks resemble those that you would perform for a records archive. Consider the following records management decisions.

How a document will become be a record There are several ways that a document can become a record:

- You can define a retention policy on active documents that automatically makes an active document a record after a certain time.
- You can create a workflow that makes an active document a record, and cause the workflow to be triggered by specific events.
- A user can manually declare a document to be a record.
- You can configure a library so that every document that is placed in the library is converted to a record.

How will active documents become records in your solution? If a document should become a record a fixed time period after it is created or modified, using a retention policy is a good solution. For example, you can specify that six months after the last time that a document is modified, the document becomes a record. Users will not have to take any action to make documents become records; this will occur automatically.

If there is no standard time when documents become records in your organization, there are two possibilities. If you can specify the rules under which a document becomes a record, you can create a workflow that evaluates a given document against the rules, and declares the document to be a record when it is suitable. You can then create a retention policy that starts the workflow periodically. However, if only users of a document know when a document should become a record, you should provide a manual way for a user to declare a document to be a record.

Who can declare and undeclare records You can specify that anyone can declare documents to be records, that only administrators can declare documents to be records, or that only policy actions can declare documents to be records. If you select “only policy actions,” then users cannot manually declare a document to be a record. Documents can be converted to records only by a rule in a retention policy.

The same options are available for defining who can un-declare a record as for defining who can declare a document to be a record.

What actions can users take on records You can restrict the actions that users can take on records without restricting what users can do to active documents in the same library. The three levels of restriction that you can set are as follows:

- No restriction. Users can perform the same actions on records that they can perform on active documents.
- Block delete. Records can be edited, but they cannot be deleted.
- Block edit and delete. Records cannot be edited or deleted.

Retention policies Your retention policies should already have been defined in the file plan.

Auditing The same auditing policies apply to both records and active documents. Determine which actions that users might perform on a document that you want to track. You can define the auditing policy either at the folder level or by content types. Defining auditing policies based on content types usually results in fewer unnecessary events being logged.

**Note:**

All policies are removed when a record is sent to the records archive. Therefore, if you are using a multi-stage retention policy that includes sending a record to an archive after a certain time, the archive's retention policies will apply after the record is in the archive.

Workflows Will you use workflows to track any actions that are specific to records management? If so, determine what the workflows will be, and which type of items they will be applied to. For example, you could have a workflow requests approval from a records manager when a user tries to declare an item to be a record.

Worksheets

You can use the following worksheet with this article to help plan for in-place records management:

- [In-place records planning worksheet](http://go.microsoft.com/fwlink/?LinkId=185011&clcid=0x409) http://go.microsoft.com/fwlink/?LinkId=185011&clcid=0x409

See Also

[Using a records archive versus managing records in place \(SharePoint Server 2010\)](#)

Choose an e-mail and messaging records management strategy (SharePoint Server 2010)

Use the information in this article to plan a solution for managing messages as records in your organization, specifically when your organization uses both Microsoft SharePoint Server 2010 and Microsoft Exchange Server 2010.

Messages are content that users send from messaging applications such as Outlook. Message types include e-mails, meetings, tasks, notes, journals, contacts, instant messages, voice mails, faxes, posts, and RSS feed items. Like other kinds of content, messages often contain important information and they are a key consideration in an overall records management implementation.

This article contains an overview and comparison of the records management functionality available in Exchange Server 2010 and SharePoint Server 2010 to help you choose a management solution for messages if your organization uses both products. If you use a product other than Exchange Server 2010, you can still use this article to understand the advantages of using SharePoint Server 2010 to manage messages as records, and compare these capabilities with your product to make a choice. It does not contain general information about records management or in-depth information about records management approaches for either product, nor does it provide the specific procedures to implement a solution.

Before you choose a records management solution for messages, complete your file plan and determine what kind of messages to keep as records. For more information, see [Records management overview \(SharePoint Server 2010\)](#) and [Create a file plan to manage records in SharePoint Server 2010](#).

In this article:

- [Understand approaches to records management in Exchange Server 2010 and SharePoint Server 2010](#)
- [Considerations for choosing a records management solution for messages](#)

Understand approaches to records management in Exchange Server 2010 and SharePoint Server 2010

Both Exchange Server 2010 and SharePoint Server 2010 provide records management capabilities that are specific to the types of content that each product is optimized for. Use the information in this section as an overview of the functionality in each product, and follow the links for more in-depth information.

Exchange Server 2010 messaging records management

Messaging records management (MRM) is the records management technology in Exchange Server 2010. In MRM, there are the following two approaches to managing messages as records:

- Retention tags: An administrator creates retention tags and links those tags to a retention policy. The administrator also configures a default retention policy that applies to untagged messages. Users can tag their messages and folders, and use rules to apply retention policies that define how messages are handled as records. This is a user-centric approach that enables end-users to tag and store content based on their individual needs. For more information, see [Understanding Retention Tags and Retention Policies](http://go.microsoft.com/fwlink/?LinkID=195435) (http://go.microsoft.com/fwlink/?LinkID=195435).
- Managed folders: An administrator creates managed folders and links them to a managed folder mailbox policy. Users can then organize their messages in those managed folders to apply the desired policy. This is an administrator-centric approach that enables the organization to define specific rules for classifying content that end-users must follow. For more information, see [Understanding Managed Folders](http://go.microsoft.com/fwlink/?LinkID=205098) (http://go.microsoft.com/fwlink/?LinkID=205098).

For more information about Exchange Server 2010 MRM, see [Understanding Messaging Records Management](http://go.microsoft.com/fwlink/?LinkID=205099) (http://go.microsoft.com/fwlink/?LinkID=205099).

SharePoint Server 2010 records management

You can use SharePoint Server 2010 to manage broad types of content, including messages, as records. In SharePoint Server 2010, there are two approaches to managing records: in a records archive or in place with other content. Whether you use the records archive, an in-place approach, or a hybrid approach for messages depends on your overall records management strategy and implementation. For more information about how to determine which approach to use, see [Using a records archive versus managing records in place \(SharePoint Server 2010\)](#).

To manage message records in SharePoint Server, you have to move or copy messages from Exchange Server to SharePoint Server. There are third-party solutions available that provide this functionality. Links to some of these partner solutions are available from the [Records Management in SharePoint Server 2010](#) resource center.



Note:

When you create a Records Center in SharePoint Server 2010, the **E-mail Integration with Content Organizer** feature is included only for legacy Exchange Server 2007 deployments that support journaling mail to SharePoint Server. Exchange Server 2010 no longer supports this functionality. Directly sending mail to the content organizer is not supported.

Considerations for choosing a records management solution for messages

The main advantage of SharePoint Server 2010 records management over Exchange Server 2010 messaging records management is that the SharePoint Server enables broad records management of content while Exchange Server is specific to messaging records management. Additionally, by using SharePoint Server, you can use other rich SharePoint Server functionality such as collaboration and document management for messages.

If you must have a message archive solution that provides retention management for messages in your organization, Exchange functionality might be all that you need. However, if you have additional needs for your messages, SharePoint Server can provide useful functionality for your messages in addition to other content. Consider SharePoint Server in the following situations:

- You prefer to manage messages in context with other content for completeness or to use collaboration, metadata, workflow, and search capabilities.
- You must manage message records together with other content records as part of a centrally-managed file plan that defines metadata, workflow, and sophisticated retention requirements.

Review the considerations in the following table to determine whether Exchange Server 2010 MRM or SharePoint Server 2010 records management fits the needs of your organization. If you use a product other than Exchange Server 2010, you can still use the information about SharePoint Server 2010 to compare considerations with your product.

Consideration	Exchange Server 2010	SharePoint Server 2010
Content management needs	Message records do not require SharePoint Server 2010 functionality in your organization.	It is important that users in your organization be able to use SharePoint Server 2010 features such as content types, multistage retention policies, and workflows with content that originates as messages.
Purpose for managing messages as records	You want or have to manage message records separately from other content in your organization.	You want or have to manage message records together with other kinds of content in your organization, especially when message context is related to other content that is maintained as records.
Scope of retention policy	Retention policies in your organization apply widely across message types.	You have sophisticated retention policies that are driven by advanced metadata models defined in SharePoint Server 2010 and cannot be replicated in Exchange Server 2010.
Isolation	Messages do not have to be managed with other content by information workers.	Messages can be managed together with other content by information workers in SharePoint Server 2010.

Consideration	Exchange Server 2010	SharePoint Server 2010
Scope of holds	Legal holds for messages can be managed separately from other kinds of content.	Legal holds apply to all content types in the same manner.

See Also

[Records management overview \(SharePoint Server 2010\)](#)

[Create a file plan to manage records in SharePoint Server 2010](#)

[Messaging Policy and Compliance \(http://go.microsoft.com/fwlink/?LinkID=196071\)](http://go.microsoft.com/fwlink/?LinkID=196071)

Digital asset library planning (SharePoint Server 2010)

Microsoft SharePoint Server 2010 provides an asset library, which lets you store and manage digital assets such as images, audio, video, and other reusable content fragments from many applications. Content types that are designed specifically for audio and video assets support the storage and playback of those assets in Web Parts and Web Parts pages, and the Microsoft Silverlight 3 player is integrated with the user interface to enhance the media playback experience for end users. Use the articles in this chapter to guide you in planning the management of digital assets in a solution based on SharePoint Server 2010.

The articles in this chapter include the following:

- [Managing digital assets overview \(SharePoint Server 2010\)](#) describes managing digital assets, details the users of a digital asset library, outlines key functionality for managing digital assets in SharePoint Server 2010, and summarizes potential scenarios for managing digital assets.
- [Plan for asset libraries](#) covers the planning process for managing digital assets. This process includes steps for planning for asset libraries and describes tasks associated with planning various aspects of a digital asset solution, such as storage and performance, permissions and security, metadata and Search, Web Parts, views and filters, and client support.
- [Digital asset library topology and architecture \(SharePoint Server 2010\)](#) discusses logical architecture and topology decisions that are related to deploying digital asset libraries

Managing digital assets overview (SharePoint Server 2010)

This article describes digital assets (also referred to as rich media) and defines key terms used in relation to managing digital assets in Microsoft SharePoint Server 2010. It also explains aspects of managing digital assets by using the assets library in SharePoint Server 2010, describes the primary users of an asset library, and outlines common scenarios for using the asset library in SharePoint Server 2010.

For more information about how to plan a solution for managing digital assets, see [Plan digital asset libraries \(SharePoint Server 2010\)](#).

Increasing numbers of office workers create or reuse images and other rich media assets as part of their daily tasks. Often, however, no common repository exists at the departmental or enterprise level that is optimized for storing these assets. A common repository lets users easily discover and reuse rich media assets that others have already created. The asset library in SharePoint Server 2010 can save an organization time and other resources by providing a specialized repository for storing and managing digital assets. Users no longer have to look for assets in multiple locations over the network, or re-create assets from scratch. By using a centralized repository for managing digital assets, the organization also exerts tighter control over brand-sensitive content and can ensure that only approved assets for products are made available to the appropriate users.

In this article:

- [About managing digital assets](#)
- [Users of an asset library](#)
- [Managing digital assets in SharePoint Server 2010](#)
- [Scenarios for using the asset library](#)

About managing digital assets

A *digital asset* is an image, audio, or video file, or other reusable rich content fragment that an organization uses in applications across the enterprise. The asset library in SharePoint Server 2010 enables users to easily create, discover and reuse existing digital assets within the organization.

In SharePoint Server 2010 you use an *asset library* to store and share digital assets with users. The asset library is a SharePoint Server 2010 library template that is customized to use content types designed specifically for storing and cataloging rich media assets.

An effective solution for managing digital assets specifies:

- The metadata to provide for each kind of asset.
- The amount of storage space that is needed for the assets, and the performance issues to consider for serving the assets to users.

- Where to store assets at each stage of the life cycle of an asset.
- How to control access to an asset at each stage of its life cycle.
- How to move assets within the organization as team members contribute to creation, review, approval, publication, and disposition of assets.
- The policies to apply to assets so that asset-related actions are audited, assets are retained or disposed of correctly, and assets important to the organization are protected.
- How assets are treated as corporate records, which must be retained according to requirements and corporate guidelines.

For information about how to plan a digital asset solution by using SharePoint Server 2010, see [Plan digital asset libraries \(SharePoint Server 2010\)](#).

Users of an asset library

Users of an asset library in SharePoint Server 2010 generally fall into one of three categories:

- **Asset creators** This group includes people who create individual assets, such as graphic artists, video producers, or marketing copywriters, and who submit assets to the asset library. For example, a graphic artist might create a product logo in multiple resolutions and sizes, and in both color and black and white, and then upload all versions of the logo to the asset library for use by other members of a product marketing team.
- **Asset managers** This group includes people who manage the assets in the library. They are in charge of the end-to-end workflow from the time that an asset is first submitted, through publication, to the time when an asset expires. They are also in charge of managing and organizing assets in the library. For example, an asset manager might take multiple versions of a product logo and categorize them appropriately in the library, and add important metadata such as keywords, and set a date after which the asset cannot be used.
- **Asset consumers** This group includes people who have to find and use assets from the library to create other work products. For example, Web designers can use a product logo from the asset library when they create marketing pages for product Web sites.

Depending on the scenario, there can be crossover between these groups of users. For example, users who have permission to upload assets to the library may also have permission to categorize and manage the assets they submit to the archive. Asset creators can also be asset consumers if they look for and use assets that are added to other work products, which in turn are uploaded as separate assets. For example, a video producer might use a product logo while making a marketing video for a product, and then upload the video to the library as a separate asset.

Managing digital assets in SharePoint Server 2010

SharePoint Server 2010 provides a library template called Asset Library that is customized to use new image, audio, and video content types designed specifically for storing and cataloging rich media assets. These new content types use new column types such as Preview, Picture Size, Date Picture

Taken, and Length (seconds) that contribute to the metadata for a particular asset. The asset library also has a preview mode that displays a thumbnail and some of this metadata when you hover the pointer over an asset. Enterprise keywords can be assigned to assets to make them more easily found through search queries. Keywords can be assigned by asset creators when a new asset is uploaded, or can be added later by an asset manager. Users can rate assets, a capability that provides additional metadata for assets. The metadata can then be used when assets are displayed in a Web Part. For example, if you have a library of training videos that users have viewed and rated, you can use a Web Part to display the top-rated videos on a Web page.

Asset creators and managers work directly in the asset library to upload, categorize and manage assets. Asset consumers can browse the library to find assets for inserting into projects in other applications. Consumers can browse an asset library from Microsoft Office applications and insert an asset into the open application, such as Microsoft Word or Microsoft PowerPoint.

There are four ways to display digital assets to users in SharePoint Server 2010:

- Allow users to browse the asset library.
- Insert a Web Part into a Web page on a team site.
- Use the video field control on a publishing page on a publishing site.
- Use the Content Query Web Part.

The specific methods that you use to display asset to users of your asset library will vary depending on who the users are, how they have to use assets from the library, and which methods for displaying assets are most appropriate for an asset library scenario.

In addition to the features that are part of the asset library, you can take advantage of SharePoint Server features such as workflows, routing, rules, and policies. These features help manage the assets as they come into the asset library, track the progress of assets, automate publication of assets on approval, and set the expiration for assets.

Scenarios for using the asset library

The asset library can be added to any SharePoint Server 2010 site collection or site, and can be used to provide digital assets to users in many scenarios. The following table describes possible scenarios in which you might use a digital asset library.

Scenario	Description
Corporate brand library	Uses the asset library to store branded corporate assets such as logos, artwork, and other digital assets, and uses moderate-to-heavy workflows and policies to manage the content. Creative teams can submit digital assets to the asset library where they are reviewed and published. Content stewards manage and edit the digital assets to

Scenario	Description
	<p>ensure that they have been correctly tagged and organized. Information worker consumers and extranet partners who have to access to official, authorized corporate logos or brand assets use the library to find the content they need.</p>
Divisional portal	<p>Uses the asset library as a repository for images and rich media files for a single portal site. In this scenario, any contributor or designer can upload logos and images to the library for other people to view and use. The content is generally managed as needed by contributors, and uses minimal workflow or policy for its addition to and management in the library. For example, the divisional portal library might have multiple contributors but only a few approvers. Authors and Web designers of the site use content in the library by viewing, downloading, and inserting it into their work products, such as documents or presentations.</p>
Team site	<p>Similar to a divisional portal but smaller. Uses the asset library as a repository for images and rich media for a single team site. In this scenario, any team member can upload assets to the library for other team members to view and use. The content is managed as needed by contributors, and uses very little workflow or policy for its addition to and management in the library. Team members use content in the library by viewing, downloading, and inserting it into their work products, such as documents or presentations.</p>
Corporate archive	<p>Uses the asset library strictly as an archive that catalogs pictures, video, documents, and other assets that have historical value to an organization. Users can submit current and past items, which are collected, scanned, organized, and tagged by curators who manage the library so that other users can browse, search, and view archived content.</p>

Scenario	Description
Divisional media sharing site	Uses the asset library to store audio and video files. In this scenario, anyone can contribute to the library, and there is little or no management of items in the library. Ratings are enabled for the library, and are combined with social tagging of assets to drive the structure and presentation of assets within the library.

See Also

[Plan digital asset libraries \(SharePoint Server 2010\)](#)

Plan digital asset libraries (SharePoint Server 2010)

This article describes the tasks involved in planning a digital asset library solution in Microsoft SharePoint Server 2010.

The SharePoint Server 2010 asset library, which is a kind of document library, is a collection of media files — such as image, audio, and video files — that are shared with other site users. This article first summarizes the asset library, and tells how to plan for it. Next, the article describes additional tasks associated with planning various aspects of managing digital assets in an enterprise.

For information about managing digital assets, see [Managing digital assets overview \(SharePoint Server 2010\)](#).

In this article:

[Asset library overview](#)

[Plan for asset libraries](#)

[Plan for permissions and security](#)

[Plan for storage and performance](#)

[Plan for metadata and Search](#)

[Plan for Web Parts and Web pages](#)

[Plan for client support](#)

Asset library overview

Asset libraries are collections of media files — such as image, audio, and video files — on SharePoint Server 2010 that you share with other site users. As part of planning for managing digital assets, you must determine the asset library that best fits the needs of the organization. Because the asset library is nothing more than a SharePoint Server library with specialized content types for digital assets, you use many of the same methods to plan a digital asset solution as you use to plan a document management solution.

You can use an asset library in two ways:

- **As a general document library for digital assets at the team level** This can be as simple as a place to store images, audio, and video files for use by your team. You might give everyone on the team permissions to upload, organize and manage assets, or you might restrict the task of organizing and managing assets to a small subset of people on your team.



Note:

SharePoint Server 2010 does not support live streaming of audio or video content.

- **As a centralized repository for digital assets for the organization** In this situation, you use content approval and workflow for all assets that are added to the library, and you might have people with different roles who are responsible for separate stages of the approval process. For example, graphic designers and audio/video producers could upload assets to the library. But a content manager could be responsible for triaging incoming assets and approving them for publication, in addition to assigning additional metadata to the assets.

Plan for asset libraries

The process of planning the asset libraries for your digital asset solution consists of the following major steps:

1. [Identify roles for managing digital assets](#)
2. [Analyze asset usage](#)
3. [Plan organization of asset libraries](#)
4. [Plan content types](#)
5. [Plan content governance for digital assets](#)
6. [Plan workflows](#)
7. [Plan policies](#)
8. [Other uses for an asset library](#)

Identify roles for managing digital assets

As with planning a document library, the first step in planning a digital asset library is to determine the participants and stakeholders for your solution. This will help you answer questions such as who creates digital assets in your organization, what kinds of assets do they create, who manages the assets, and who maintains the servers on which the assets are stored? For more information and for a worksheet to record the data that you collect, see [Identify users and analyze document usage \(SharePoint Server 2010\)](#).

Analyze asset usage

After you identify who works on assets, determine the kinds of assets they work on, and how the assets will be used. This analysis will help you determine important information such as how to structure the asset libraries, how many libraries you will require, which content types to use for the assets, and which information management policies to apply to the asset libraries. Because the size of most digital assets will be much larger than standard documents, you must also plan for storage capacity. For more information and for a worksheet to record the data that you collect, see [Identify users and analyze document usage \(SharePoint Server 2010\)](#).

Plan organization of asset libraries

As you plan the asset libraries, you must make decisions about the libraries specifically, where to create them, how they must be used, how many are needed, and how to organize them. You use the same methods for planning asset libraries as for planning document libraries. This section describes special considerations for planning asset libraries:

- Determine how many asset libraries are needed
- Decide where you want to create the asset library
- Choose a fixed or collaborative library
- Decide how to organize the asset library

Determine how many asset libraries are needed This determination, as in the earlier analysis and planning steps, also depends on how the asset library will be used. For example, if you have individual teams that must use asset libraries for collaboration, and who must use content governance such as versioning while they work on assets, you can create an asset library for each team site that needs one. You can then let the teams manage their own assets. If you want the asset library to serve as a large-scale centralized repository for use by many teams, you might create a single asset library and adjust the permissions to restrict those who use, manage, and search the library. For more information, see [Document library planning \(SharePoint Server 2010\)](#).



Note:

If you enable the disk-based cache for a Web application, every site collection within that Web application will use the cache. If you do not have to have the disk-based cache for most the sites, consider putting in a separate Web application only those site collections containing an asset library that requires the disk-based cache.

Decide where to create the asset library Where you create the asset library depends on how you plan to use it. For a general asset library that will be used at the team level, you might create the asset library at the site level. For a centralized repository, you might create the asset library at the site collection level. If the asset library will be used with a Web publishing site, place the library in the same site collection as the publishing site so that asset files that are used by publishing pages are available to the publishing site. Use your asset analysis to determine who creates and uses assets, and how those assets are used. This will help you decide where asset libraries are needed in the enterprise.

Choose a fixed or collaborative library Depending on your scenario, the asset library will be either primarily a fixed library, where completed assets are checked in and the library is read-only, or it will be a collaborative environment, where versioning is enabled for the library, and users who have appropriate permissions are able to both read and write to existing assets.

Decide how to organize the asset library You can plan to store all assets in the root of the asset library, and use custom views to display assets to library users based on certain criteria. You can also use folders to hold assets based on criteria that you specify. For example, you might put all videos in one folder and audio files in another, or you might create folders based on products and put all assets related to a particular product into each folder. Refer to your asset analysis to determine the most common scenarios for how assets are used in your organization.

Plan content types

The content types included in an asset library are image, audio, and video. You can either use these content types or create your own custom content types that are derived from them, depending on the classification needs of your organization. For example, you might create two separate content types for posters and product logos, and derive the base characteristics for those new content types from the image content type. This arrangement would let you associate separate properties for the two new content types, specify different workflows, or set different information management policies based on the content types. For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).

Plan content governance for digital assets

You plan the appropriate degree of control for each content type and storage location for digital assets. For example, if the asset library is a collaborative solution, you can use versioning to store successive iterations of assets in the library, and can require users to check assets in and out before working on assets. You can also specify an approval process by which assets must be approved before they can be made available to an audience. For more information, see [Versioning, content approval, and check-out planning \(SharePoint Server 2010\)](#).

Plan workflows

You use workflows to perform management tasks on assets in the asset library as you do with documents in a document management library. Important questions include the following: Do assets have to be reviewed and approved before they can be used by asset consumers? Who is responsible for managing the expiration of assets? Are assets retained or deleted after expiration? For more information, see [Content type and workflow planning \(SharePoint Server 2010\)](#).

Plan policies

For each content type to be used in your asset library, you must to plan the information management policies that determine how assets are audited, retained, and labeled. For more information, see [Information management policy planning \(SharePoint Server 2010\)](#).



Important:

SharePoint Server 2010 does not automatically apply Information Rights Management (IRM) protection to audio or video content that is stored in a SharePoint Server 2010 asset library. Additionally, when audio or video assets stored in SharePoint Server 2010 are viewed by a user, copies of those assets might be stored in the user's local browser cache. The SharePoint Server 2010 media player supports playing IRM-protected audio and video formats where the DRM protection was applied by an external IRM provider that is supported by Microsoft Silverlight 3 or subsequent versions. For more information, see [Digital Rights Management \(DRM\)](#) (<http://go.microsoft.com/fwlink/?LinkId=154933>).

Other uses for an asset library

The following table lists additional uses for an asset library in SharePoint Server 2010.

Feature	Description
Podcasts	With the new audio and video content types that are included with asset libraries, the library RSS feed can be used for podcasting. Users can take the URL for the library RSS feed and enter it into their podcast application to receive updates for when new audio and video files are added to the asset library.
Suggested Content Browser Locations	When using a publishing site, the URL for an asset library in a separate site can be added to the Suggested Content Browser Locations list for the publishing site. This will enable content creators to access the asset library when they insert assets into Web pages within SharePoint Server 2010, or within Microsoft Office 2010 suite applications, such as Microsoft Word.
Content Organizer	<p>When using an asset library as a centralized repository, consider using the Content Organizer feature to automate the routing of assets that are uploaded to the library by users. When the Content Organizer feature is started in Site Settings, a new library called Drop Off Library is automatically created. This allows for the creation of rules for how assets added to this library are routed to other libraries, such as the asset library. For example, you can direct all audio assets into one folder of the asset library, whereas all video assets are stored in another folder.</p> <p>An advantage to using the Content Organizer is that certain metadata fields can be required to receive user input when new assets are added. This helps control where different types of assets are put, and reduces the work that would otherwise be performed by content managers who are responsible for administering the asset library and managing the assets it contains.</p>

Feature	Description
Published links	Administrators can add links to SharePoint sites and lists from client applications in the Microsoft Office 2010 suites such as Word, Microsoft Excel, and Microsoft PowerPoint. These links appear on the My SharePoint Sites tab of the Open , Save , and Save As dialog boxes when you open and save documents from these applications. Users can manually add links to their published link lists by browsing to a library and clicking Connect to Office . For more information, see Add or delete links to Office client applications (SharePoint Server 2010) .

Plan for permissions and security

Planning for permissions and security in an asset library is the same as planning for permissions and security in a document library. For information about the available default groups, permission levels, and when to use custom groups or levels, see [Determine permission levels and groups \(SharePoint Server 2010\)](#).

Plan for storage and performance

Because an asset library is a specialized kind of document library, determining storage requirements for digital assets will resemble determining storage requirements for documents. The primary difference is that asset libraries contain fewer assets than document libraries contain. But the assets in an asset library are larger than those in a document library. When you plan for storage, analyze the content to determine the number of assets that will be stored in the asset library, and the average size of those assets. For example, if you have 50,000 assets and the average file size is 10 megabytes (MB), you must have a minimum 500 gigabytes (GB) of storage on the database server. If you will be using the disk-based binary large object (BLOB) cache, you must also make sure that the front-end Web server has sufficient disk space available in which to store the cached files.

Depending on the type of digital asset files that will be stored in your asset library, you should enable the disk-based BLOB cache and Bit Rate Throttling in order to provide better performance for users. It is usually a good idea to enable the disk-based BLOB cache. When the BLOB cache is enabled, it stores specified file types on the front-end Web server to reduce the load put on the database server when those files are requested and served to users.

If you will be using the asset library to serve audio and video files to users, we recommend that you always enable the BLOB cache, and that you enable Bit Rate Throttling on the server. Bit Rate

Throttling controls the rate at which audio and video files are downloaded to the client so that overall performance on the site is not affected. Bit Rate Throttling also allows for progressive downloading and viewing of these assets by users. For more information about the disk-based cache, see [Plan for caching and performance \(SharePoint Server 2010\)](#). For information about how to enable and configure Bit Rate Throttling, see [Bit Rate Throttling Readme](http://go.microsoft.com/fwlink/?LinkId=154962) (<http://go.microsoft.com/fwlink/?LinkId=154962>).

Plan for metadata and Search

The addition of metadata that helps describe the type and content of a digital asset greatly improves the discoverability of content in an asset library. When you plan an asset library, remember that rich media files are not automatically searchable because they do not contain text that a search engine can index. The metadata that is used to describe digital assets can include information such as the title, description, author, copyright, and enterprise keywords that provide additional details about the asset. Some metadata, such as the size and dimensions of an image, is entered automatically when the asset is uploaded to the asset library. Other metadata, such as a text description of an image, is added manually either by the asset creator when the asset is uploaded, or by the library manager during triage of incoming assets or performance of administrative tasks, such as the addition of keywords or approval status to library assets.

Plan for Web Parts and Web pages

SharePoint Server 2010 has many Web Parts and field controls that have been added or updated to take advantage of the new content types that are included as part of an asset library. Web Parts are added to Web zones in Web Part pages by content owners, whereas field controls are added to publishing pages by site developers and designers. Examples of Web Parts and field controls that are used to display digital assets include the following:

- **Media Web Part and field control** Used to display embedded video in a Web page.
- **Image Web Part and field control** Used to display images on a Web page.
- **Content by query Web Part** Used to display items from all sites in a site collection, a selected site or subsite, or a specific list or library. The query can be configured to return a list of items based on list and content types, and can be filtered and targeted to a specific audience.

When you design Web pages for sites, consider which fields to expose to users in Web pages and Web Parts to help users find the assets they need. You can customize the information that is displayed when a user lets the pointer pause on an asset in the asset library by editing the Thumbnail view in the Library Settings page.

Plan for client support

If you want enterprise users to be able to take advantage of the rich media experience offered in SharePoint Server 2010, install Silverlight 3 or subsequent versions on all client computers that will access your Web sites. You must plan how and when Silverlight 3 is installed. For example, will all

users access the asset library, and must they all have the Silverlight 3 player installed? Will the organization require a managed deployment of the Silverlight 3 client to all desktops, or will you let users install the client on an as-needed basis? For more information about Silverlight 3, see [Silverlight Overview](http://go.microsoft.com/fwlink/?LinkId=154002) (http://go.microsoft.com/fwlink/?LinkId=154002).



Note:

When a user who does not have Silverlight 3 installed on a computer tries to play an audio or video asset, that asset opens with whatever media application is set as the default player on the computer.

See Also

[Managing digital assets overview \(SharePoint Server 2010\)](#)

Digital asset library topology and architecture (SharePoint Server 2010)

This article discusses logical architecture and topology decisions that are related to deploying digital asset libraries. For information about managing digital assets, see [Managing digital assets overview \(SharePoint Server 2010\)](#).

The Microsoft SharePoint Server 2010 asset library, which is a kind of document library, is a collection of media files — such as image, audio, and video files — that are shared with other site users. Because the asset library is nothing more than a SharePoint Server library with specialized content types for digital assets, the overall architecture and topology is minimally affected. The factors that can potentially influence logical architecture and topology decisions include the following:

- The placement of digital asset libraries in the overall site structure.
- The relationship between digital asset libraries and content databases in the logical architecture.
- Optimizing a server farm with a binary large object (BLOB) cache or with Bit Rate Throttling.
- Scaling out a server farm with dedicated databases or server hardware for digital assets, if it is necessary, to accommodate a large volume of digital assets.

In this article:

- [Logical architecture for managing digital assets](#)
- [Components of a digital asset library topology](#)
- [Typical digital asset library topology](#)
- [Scaling topologies for digital asset libraries](#)

Logical architecture for managing digital assets

The core element of managing digital assets in SharePoint Server 2010 is the asset library. You can add the asset library to any site, at any level within your solution. However, if you will be storing a large total volume of data, such as thousands to tens of thousands of files in an asset library, or audio or video files that in total require hundreds of gigabytes of storage space, you must carefully plan for the location in which the asset library is created and in which assets will be stored.

For example, if you have a collaboration site in which multiple individual teams each have their own sites but have to use a shared set of media, you might create an asset library at the top-level site to store the assets that will be used by the individual teams. In this scenario, the content database is shared by all sites within the site collection, so the quantity and size of the files that are stored in the asset library might be significantly smaller than in the previous example.

The following figure shows an example of the logical architecture for when an asset library is put at the root of a site collection and shares a content database that has other sites in the site collection.

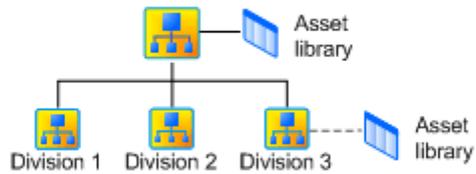
Example 1: Single site collection

Application Pool

Web application

Site Collection

http://companyweb

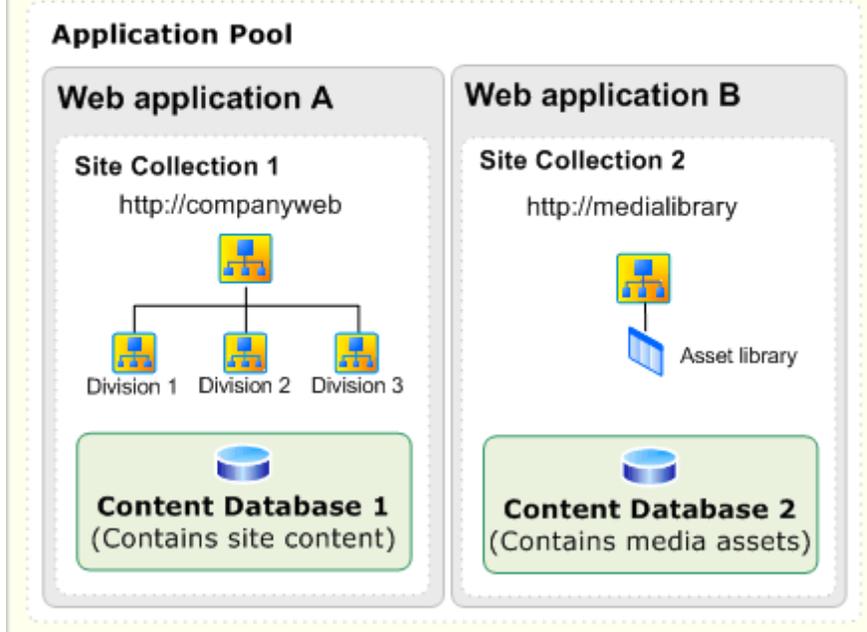


Content Database
(Contains all site content,
including media assets)

As another example, for a large corporate training site which will contain training videos used by internal employees, you might place the asset library in the top-level site of a site collection that uses its own content database, and that has no other sites under it in the site hierarchy. By doing this, you can ensure that there is sufficient storage space for the files that will be uploaded to the asset library. This also lets you plan for future expansion, because the content database is already isolated by itself, and does not share content with any other sites in your solution.

The following figure shows an example of the logical architecture for when an asset library is put in a separate site collection with a content database that is separate from the rest of the sites:

Example 2: Separate site collection



The following table summarizes these two approaches. Note that you can implement a combination of these two approaches.

Area	Single site collection	Separate site collection
Description	A digital asset library is contained within the same site collection as other content. Multiple digital asset libraries can be created within the site structure.	A separate site collection is deployed to host a digital asset library.
Usage	Teams can add digital asset libraries to their team sites or use the library contained at the top-level site.	Teams add and use media files from the centrally managed digital asset library.  Note: When using a publishing site, the URL for an asset library in a separate site can be added to the

Area	Single site collection	Separate site collection
		Suggested Content Browser Locations list for the publishing site. This will enable content creators to access the asset library when they insert assets into Web pages within SharePoint Server 2010, or within Microsoft Office 2010 suite applications, such as Microsoft Word.
Management	Teams manage their own libraries. Media files are managed in the same manner as all other content in the site collection.	Because media files reside in a separate database, this content can be managed separately and according to a different service level agreement.
Performance and capacity	A large total volume of media files can affect the overall performance of sites. If site collections approach or exceed database size limits, it is more difficult to scale out the overall server farm.	Because media files reside in a separate database, the database can be scaled out to dedicated hardware, if it is necessary, to reduce the performance effect this content has on the rest of the server farm.

When you plan to incorporate the management of digital assets into your solution, you should carefully consider the quantity and size of the files that will be stored and also how they will be used. This will help you design your site architecture when you determine where the asset library should be located.

Components of a digital asset library topology

Digital asset library topologies use the same elements as any standard SharePoint topology, such as Web servers, application servers, and database servers. Components that are specific to managing digital assets are put in certain locations within the topology, but they do not change the overall structure of the topology. The following are components about which you must make configuration decisions for your digital asset library topology:

- BLOB cache** The disk-based BLOB cache controls the caching for binary large objects (BLOBs), such as frequently used image, audio, and video files, and other files that are used to display Web pages, such as .css and .js files. The BLOB cache should always be enabled if your solution will include asset libraries, and is enabled on every front-end Web server in a server farm.

- **Bit Rate Throttling** Bit Rate Throttling is an Internet Information Services (IIS) 7.0 extension that meters the download speeds of media file types and data between a server and a client computer. Bit Rate Throttling can be enabled on every front-end Web server in a server farm, and it should always be enabled if your solution will include audio or video files in asset libraries. For more information, see [Bit Rate Throttling](http://go.microsoft.com/fwlink/?LinkId=155151) (http://go.microsoft.com/fwlink/?LinkId=155151).
- **Maximum file upload size** The maximum upload file size is a setting that is used by the SharePoint Server 2010 Web application that specifies the maximum size of a file that a user can upload to the server. The maximum file upload size is configured for every Web application on the server that hosts Central Administration, and should be adjusted to accommodate the size of files that will be uploaded to asset libraries.

For more information, see [Plan for caching and performance \(SharePoint Server 2010\)](#).

If your digital asset library solution will be used to store a very large amount of content, you should consider using Remote Blob Storage (RBS) to move the storage of large binary data (BLOBs) from Microsoft SQL Server 2008 to an external storage solution. RBS is not a feature of SharePoint Server 2010 or Internet Information Services (IIS) 7.0. For more information, see [Overview of Remote BLOB Storage \(SharePoint Server 2010\)](#).

Typical digital asset library topology

This section shows components that can affect the overall server farm topology.

Digital asset libraries work well with any server farm topology that is supported by SharePoint Server 2010. The server farm can be a single server, a small server farm, or a large server farm.

When you decide to deploy BLOB cache or Bit Rate Throttling, you must deploy them to Web servers:

- BLOB cache is enabled in IIS 7.0 and stored on every front-end Web server.
- If Bit Rate Throttling is used, it must be installed and configured in IIS 7.0 on every front-end Web server.

Additionally, the server that hosts the Central Administration Web site is used to configure the maximum file upload size for each Web application it contains.

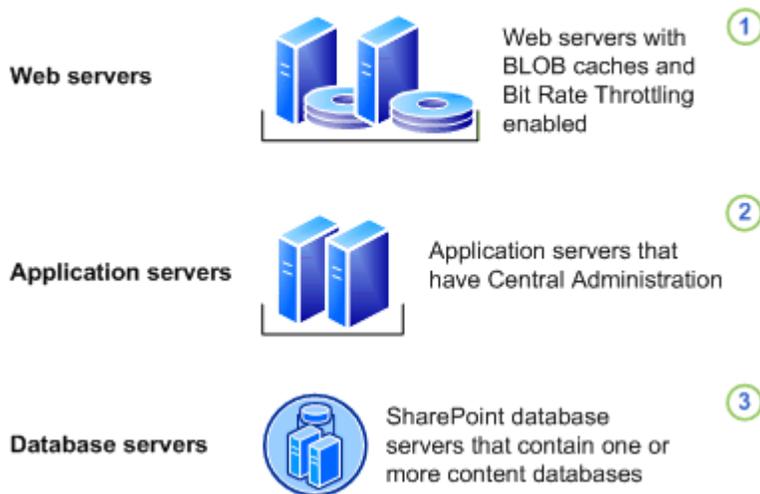


Note:

Depending on the size of your server farm and the kind of solution that you are implementing, you might have additional servers that are designated for specific roles, such as Search databases, or query and index servers.

The following illustration shows a typical three-tier server farm topology with components added for a digital asset library topology:

Typical three-tier server farm topology



Callout	Element
1	Front-end Web servers, each with their own BLOB cache and Bit Rate Throttling enabled (if applicable).
2	Application server that runs Central Administration. The maximum file upload size is specified for each Web application in Central Administration.
3	Database servers that contain one or more content databases.

Scaling topologies for digital asset libraries

When planning and scaling a solution that includes digital asset libraries, the two main factors that you must consider are capacity planning and performance. Because video and audio files can be much larger than images or other kinds of files, you will potentially reach storage capacity more quickly with them than you would without them. And depending on the number of users who must access these files at any time, the rate at which requests for the files are made to the server and then sent to the client browser will affect network performance.

For example, if you plan to use an asset library for storing training videos, you must consider the average size of each video, and the estimated total number of videos that will be needed for your organization. You must also consider the number of users who will view the videos, and which videos are likely to be requested most frequently.

For each main component in a digital asset library topology, consider the following issues:

- **Database storage** Is there sufficient storage capacity on the content database servers for all the files that users will upload? It is important to understand the average size of the files and the number of files that you expect the users will upload to the server.
- **BLOB Cache storage** Is there sufficient storage capacity on the front-end Web servers for the files that will be cached?
- **Remote BLOB storage (RBS)** If you will have large volumes of content, you should consider using RBS to move storage of BLOBs out of the content database and into an external storage solution. For more information, see [Overview of Remote BLOB Storage \(SharePoint Server 2010\)](#).

The logical architecture of your digital asset library plan will influence options for scaling out a server farm. If a digital asset library is contained in a dedicated site collection, you can easily move the database to a dedicated server, if it is necessary, to improve capacity and performance.

See Also

[Plan digital asset libraries \(SharePoint Server 2010\)](#)

[Managing digital assets overview \(SharePoint Server 2010\)](#)

[Plan for caching and performance \(SharePoint Server 2010\)](#)

Planning worksheets for SharePoint Server 2010

In this article:

- [Planning worksheets by task](#)
- [Planning worksheets by title](#)

This article provides links to worksheets that you can use to record information that you gather and decisions that you make as you plan your deployment of Microsoft SharePoint Server 2010. Use these worksheets in conjunction with — not as a substitute for — [Planning and architecture for SharePoint Server 2010](#).

Planning worksheets by task

For this task	Use this worksheet	To do this
Plan sites and site collections (SharePoint Server 2010)	Site planning data worksheet (http://go.microsoft.com/fwlink/?LinkID=167837)	Plan top level site collections and sites, and record decisions about site themes and navigation.
Plan site navigation (SharePoint Server 2010)	Site planning data worksheet (http://go.microsoft.com/fwlink/?LinkID=167837)	Plan top level site collections and sites, and record decisions about site themes and navigation.
Plan for using themes (SharePoint Server 2010)	Site planning data worksheet (http://go.microsoft.com/fwlink/?LinkID=167837)	Plan top level site collections and sites, and record decisions about site themes and navigation.
Plan incoming e-mail (SharePoint Server 2010)	Plan incoming e-mail worksheet (http://go.microsoft.com/fwlink/?LinkId=200542)	Plan incoming e-mail in order to enable SharePoint

For this task	Use this worksheet	To do this
		sites to receive and store e-mail messages and attachments in lists and libraries.
Plan content deployment (SharePoint Server 2010)	Content deployment data worksheet (http://go.microsoft.com/fwlink/?LinkID=167835)	Plan the export and import servers in the farms in your content deployment topology, and to plan the content deployment paths and jobs.
Plan managed metadata (SharePoint Server 2010)	Term sets planning worksheet (http://go.microsoft.com/fwlink/?LinkID=163486)	Determine basic taxonomy, including term, usage, owner, and group.
Plan managed metadata (SharePoint Server 2010)	Detailed term set planning worksheet (http://go.microsoft.com/fwlink/?LinkID=163487)	Determine taxonomy including detailed identifying characteristics such as measurements.
Plan managed metadata (SharePoint Server 2010)	Managed metadata services planning worksheet (http://go.microsoft.com/fwlink/?LinkID=164578)	Plan to share metadata information using managed metadata services and connections.
Document management planning (SharePoint Server 2010)	Document management participants worksheet (http://go.microsoft.com/fwlink/?LinkID=165871)	Identify document management planning stakeholders and record document management practices.
Document management planning	Analyze document usage worksheet (http://go.microsoft.com/fwlink/?LinkID=165873)	Record information gathered when analyzing document

For this task	Use this worksheet	To do this
(SharePoint Server 2010)		usage.
Document management planning (SharePoint Server 2010)	Policy worksheet (http://go.microsoft.com/fwlink/?LinkID=165883)	Plan information management policies for content types.
Records management planning (SharePoint Server 2010)	In-place records planning worksheet (http://go.microsoft.com/fwlink/?LinkId=185011)	Identify record types and content types to be stored in normal document libraries.
Plan for backup and recovery (SharePoint Server 2010)	Backup and recovery planning workbook (http://go.microsoft.com/fwlink/?LinkID=184385)	Help you plan strategies for backup and recovery for SharePoint Server 2010 environment.
Document management planning (SharePoint Server 2010)	Document management planning (SharePoint Server 2010)	Plan a content type.
Plan and prepare for upgrade (SharePoint Server 2010)	Upgrade worksheet (http://go.microsoft.com/fwlink/?LinkId=179928)	Record information about your environment while you prepare for upgrade.
Metadata-based routing and storage planning (SharePoint Server 2010)	Content Organizer settings worksheet (http://go.microsoft.com/fwlink/?LinkId=189018&clcid=0x409)	Determine and record how the content organizer settings in your site can be an effective part of your metadata-based content routing and storage solution.

For this task	Use this worksheet	To do this
Metadata-based routing and storage planning (SharePoint Server 2010)	Content Organizer rule worksheet (http://go.microsoft.com/fwlink/?LinkId=189019&clcid=0x409)	Plan rules that will be an effective part of your metadata-based routing and storage solution.

Planning worksheets by title

Use this worksheet	For this task	To do this
Analyze document usage worksheet (http://go.microsoft.com/fwlink/?LinkID=165873)	Document management planning (SharePoint Server 2010)	Record information gathered when analyzing document usage.
Backup and recovery planning workbook (http://go.microsoft.com/fwlink/?LinkID=184385)	Plan for backup and recovery (SharePoint Server 2010)	Help you plan strategies for backup and recovery for SharePoint Server 2010 environment.
Content deployment data worksheet (http://go.microsoft.com/fwlink/?LinkID=167835)	Plan content deployment (SharePoint Server 2010)	Plan the export and import servers in the farms in your content deployment topology, and to plan the content deployment paths and jobs.
Content Organizer rules worksheet (http://go.microsoft.com/fwlink/?LinkId=189019&clcid=0x409)	Metadata-based	Plan rules that will be an

Use this worksheet	For this task	To do this
	routing and storage planning (SharePoint Server 2010)	effective part of your metadata-based routing and storage solution.
Content Organizer settings worksheet (http://go.microsoft.com/fwlink/?LinkID=167835)	Metadata-based routing and storage planning (SharePoint Server 2010)	Determine and record how the content organizer settings in your site can be an effective part of your metadata-based content routing and storage solution.
Content type worksheet (http://go.microsoft.com/fwlink/?LinkID=165878)	Document management planning (SharePoint Server 2010)	Plan a content type.
Detailed term set planning worksheet (http://go.microsoft.com/fwlink/?LinkId=163487&clcid=0x409)	Plan managed metadata (SharePoint Server 2010)	Determine taxonomy including detailed identifying characteristics such as measurements
Document libraries worksheet (http://go.microsoft.com/fwlink/?LinkID=165874)	Document management planning (SharePoint Server 2010)	Plan libraries based on sites and on document types.
Document management participants worksheet (http://go.microsoft.com/fwlink/?LinkID=165871)	Document management	Identify document

Use this worksheet	For this task	To do this
	t planning (SharePoint Server 2010)	management planning stakeholders and record document management practices.
In-place records planning worksheet (http://go.microsoft.com/fwlink/?LinkId=185011&clcid=0x409)	Records management planning (SharePoint Server 2010)	Identify record types and content types to be stored in normal document libraries.
Managed metadata services planning worksheet (http://go.microsoft.com/fwlink/?LinkId=164578)	Plan managed metadata (SharePoint Server 2010)	Plan to share metadata information using managed metadata services and connections.
Plan incoming e-mail worksheet (http://go.microsoft.com/fwlink/?LinkId=200542)	Plan incoming e-mail (SharePoint Server 2010)	Plan incoming e-mail in order to enable SharePoint sites to receive and store e-mail messages and attachments in lists and libraries.
Policy worksheet (http://go.microsoft.com/fwlink/?LinkID=165883)	Document management planning (SharePoint Server 2010)	Plan information management policies for content types.
Site planning data worksheet	Plan sites	Plan top level

Use this worksheet	For this task	To do this
<p>(http://go.microsoft.com/fwlink/?LinkID=167837)</p>	<p>and site collections (SharePoint Server 2010)</p> <p>Plan site navigation (SharePoint Server 2010)</p> <p>Plan for using themes (SharePoint Server 2010)</p>	<p>site collections and sites, and record decisions about site themes and navigation.</p>
<p>Term sets planning worksheet(http://go.microsoft.com/fwlink/?LinkId=163486)</p>	<p>Plan managed metadata (SharePoint Server 2010)</p>	<p>Determine basic taxonomy, including term, usage, owner, and group.</p>
<p>Upgrade worksheet (http://go.microsoft.com/fwlink/?LinkId=179928)</p>	<p>Plan and prepare for upgrade (SharePoint Server 2010)</p>	<p>Record information about your environment while you prepare for upgrade.</p>