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The Shortcut Guide[™] To



Centralized SharePoint Administration

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Wendy Henry

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Chapter 3: Managing Multiple SharePoint Locations

Large, geographically dispersed enterprises face a unique challenge in data delivery despite their platform choice. For example, data that is confidential or not easily managed may need to remain centrally located among the many servers of a large network. Other data may be stored on servers closest in network location to the users who most frequently access that data. Supporting any data platform across multiple server locations requires planning, flexibility, and diligent monitoring.

Few software platforms exemplify such network management requirements quite like Microsoft SharePoint. Enterprise-class scaled SharePoint farm layouts often employ servers located far away from one another both geographically and in terms of TCP/IP network infrastructure. Additionally, the logical architecture of sites in a SharePoint Web application allow for content to be delivered via multiple sites or via multiple lists and libraries within a site. So although managing multiple SharePoint locations may seem like a concern reserved only for large implementations, small single-server SharePoint deployments also face the challenge of determining just where and how to deliver their information.

This chapter will examine the concept of single-instance storage as it relates to SharePoint content as well as its advantages and disadvantages. We will also look at localizing content for multi-language or multi-metadata needs, and the limitations of native SharePoint tools for replicating and translating content. We will discuss the need for a centralized management tool in a multiple server location SharePoint enterprise as well as the process of maintaining consistent security settings across locations, and the shortcomings of SharePoint native utilities in managing these requirements.

Single Instance Storage

The *concept* of single instance storage is not unique to SharePoint or even to Microsoft for that matter, but the name Single Instance Storage (SIS) was filed at the US Patent Office in 1998 by Microsoft. The idea behind single instance storage is simple: data is entered into a repository only once, then as many consumers as are necessary access that one existence of the data. The type of consumer is not relevant; it could be software, an associated container (such as a referencing column in a database), or a user. Figure 3.1 illustrates such a notion by depicting multiple users vying for a single document library item. Microsoft, like other software manufacturers such as Novell, employed this technology in various products from Exchange to NTFS to Windows Storage Server 2003 and others after they patented their new technology under the name of the concept itself. The concept can just as aptly be applied to SharePoint storage and delivery.

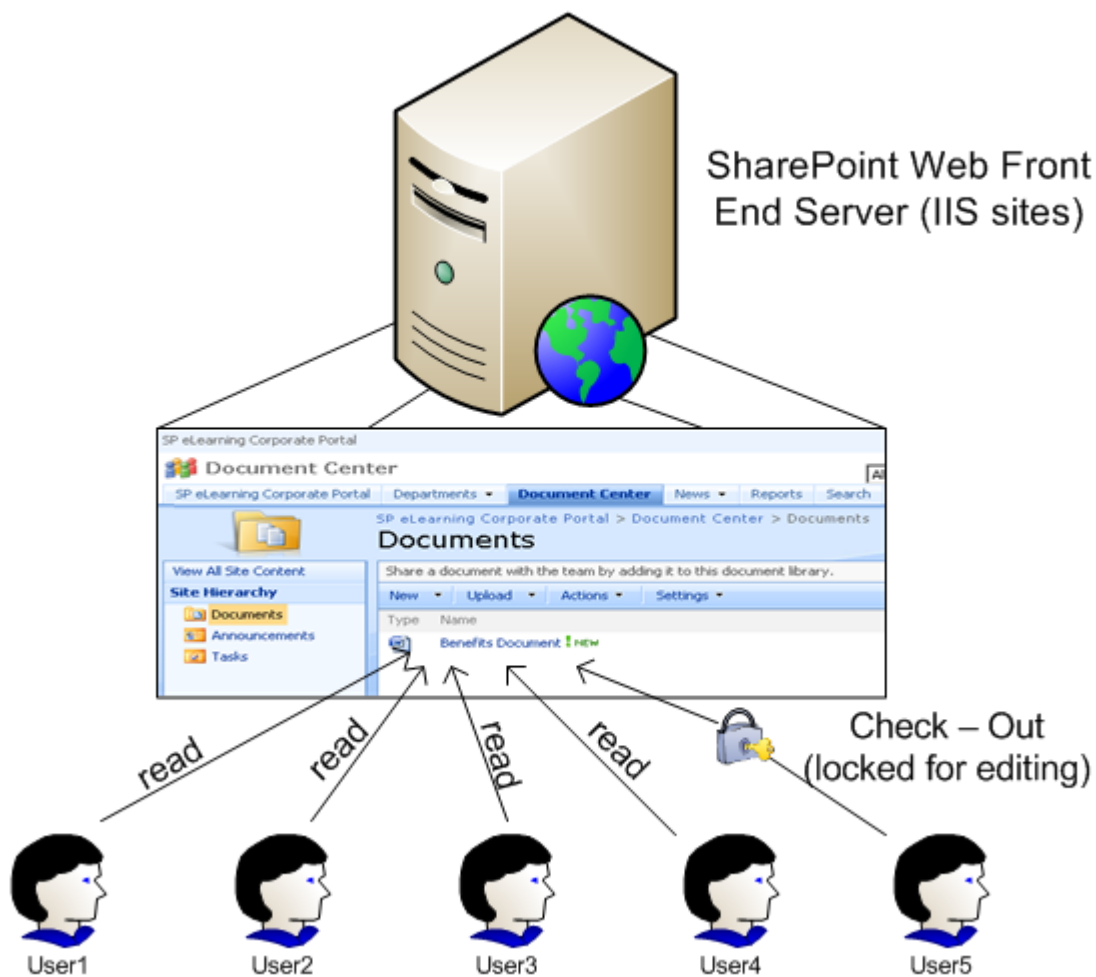


Figure 3.1: Single instance concept in a SharePoint document library.

For SharePoint, single instance storage can translate to many scenarios. Some examples include:

- Uploading a given document into a particular library on only one site, then bringing everyone who needs the document to that one existence of the item in that particular library on that certain site;
- Maintaining an events list in calendar view on one certain site and allowing all users to link directly to that list;
- Delivering a particular Web part page full of content from only one certain site and bringing all users to the URL of the page on the site that hosts the Web parts.

SIS negates the need for data replication because its very nature discourages data duplication. Yet unlike products such as Windows Storage Server 2008 or Exchange 2007, SharePoint does not employ Microsoft's SIS technology under the hood but rather relies on user behavior and workflow automation to enforce business rules that benefit from a single copy of data rather than multiple copies. The schema of a SharePoint content database is not highly normalized and allows multiple instances of the same content as long as the objects have different Globally Unique ID (GUID) numbers in the content database.

Cross Reference

For more information about Microsoft's patent on SIS technology, visit <http://patft.uspto.gov> and perform a Patent Number Search for Patent # 5813008.

Advantages and Disadvantages of Single Instance Storage

Efficient data storage may seem the most obvious advantage to employing a single instance storage philosophy in SharePoint. Fewer copies of like content will take up less space on the hard drives. But there is more to the argument of single instances than storage concerns (see Table 3.1). For example, any documents residing in a library with the Force Check Out setting enabled will result in multiple editors waiting for edit access to the document.

Advantages	Disadvantages
Leaner space requirements	Increased contention for single resource
Increased cache hits in SQL Server	Increased network utilization
No synchronicity concerns	Check Out waits
Reduced administration	Single language and localization
Reduced attack surface	Single metadata structure

Table 3.1: Advantages and disadvantages of SIS in SharePoint.

So although single instance storage may sound nifty in theory, it can be impractical in practice. Localization requirements are difficult to meet and there are concurrency issues with content access. Plan to train users of single instance resources and set reasonable expectations or else the efficiency you enjoy on the servers and network wires may be overshadowed by increased technical support calls.

Common Multiple Instance Storage Scenarios

In a perfect world of unlimited hardware capabilities, limitless bandwidth, and a single common language around the globe, perhaps true single instance storage could be achieved on large SharePoint enterprises. But it is more likely that in a large, multi-lingual enterprise, multiple copies of SharePoint content such as documents or Web pages will be necessary. In fact, there are several scenarios where multiple instances of SharePoint content are preferable over maintaining only a single instance. The following list highlights a few examples:

- Imagine a team of five writers working together on a document (recall Figure 3.1). Now imagine that document is stored in a SharePoint document library with the Force Check Out setting enabled. This means only one writer can have the document open for editing purposes at a time. But what if the five writers all work on separate sections of the document? Maintaining only the single instance of the document in the library requiring check out prevents all the writers from working simultaneously and producing a finished product quickly and efficiently. In fact, in terms of document management, it would make sense to maintain a duplicate document in a document workspace as a work-in-progress, publishing changes when necessary to another library from which other users read the public instance of the document.
- In a multi-lingual environment, the same document or page may need to be available from SharePoint in multiple languages. Although MOSS 2007 offers variations, a feature that can translate a Web page to an alternative language and layout at runtime, there is no such tool for library items such as documents. Therefore, you may need multiple instances of a given document or library item to represent the item in each required language.
- If a specific Web page or library item is utilized by two distinct teams of users but in a different manner from each other, that content resource will need to be in SharePoint twice. For example, a single document explaining employment benefits is uploaded to the Human Resources Team Site's document library. However, the Finance team needs access to the information in said benefits document to plan employee payroll deductions. The HR team and the Finance team plan to maintain different metadata about the benefits document as tailored to each team's use of the document. Thus, each team maintains a separate (duplicate) copy of the benefits document in their respective team libraries. Because WSSv3 and MOSS2007 do not support a multi-faceted taxonomy design, this scenario is quite common.

To remain consistent in multiple instance storage, consider developing a standard operating procedure that includes the criteria necessary for a library item or page to qualify for multiple storage and the justifications for storing it more than once in SharePoint. Such a document can assist in governance, security enforcement, and planning for SharePoint growth. Also, be aware of alternative solutions to multiple instance storage, such as providing single instance item navigation tools to users, such as the *Link to a Document* content type, to prevent unnecessary multiple instance storage.

Native SharePoint Solutions for Multiple Instance Storage

Invariably, when hosting multiple instances of library items or Web pages in SharePoint, the question of synchronicity will arise. Who is keeping all copies of a multiple instance item updated so that they are identical? If no synchronization is required between the multiple instances of a resource, the first update made to one instance will immediately render that content separate and different (which no longer qualifies as multiple instances of the same content). However, if synchronization of the multiple instances is required, you must select a method of ensuring updates are made to all copies of the resource. Beware of manual update methods, as repetitive manual updates can be time consuming and vulnerable to human errors and omission. Both WSSv3 and MOSS 2007 offer native tools to assist in synchronizing multiple instances of content:

- WSSv3 Document Workspace—The work-in-progress document or page in the workspace can be published back to the originating library to synchronize both items
- MOSS 2007 Content Deployment Tool—Use paths and jobs to push content to alternative SharePoint sites including those in other farms
- WSSv3 Library Send-To Option—Deliver a library item to an alternative URL including other SharePoint libraries

Note

Alternatively, SharePoint can rely on other systems for content replication such as SQL Server to replicate its content database or SAN software to replicate its data at the bit or logical unit level. For more information about these strategies, check out *The Shortcut Guide to Storage Considerations for SharePoint* at <http://nexus.realtimepublishers.com/sgscms.php>.

Unfortunately, the native tools in SharePoint do not address critical issues such as maintaining metadata across multiple instances or transferring security settings and changes. For these needs, Microsoft partner and third-party software providers are poised to deliver content deployment solutions that can handle most multiple instance storage environments.

Localizing Content Delivery

SharePoint as a platform for information distribution is highly scalable and in large enterprises may consist of multiple SharePoint servers geographically dispersed around the country or even the world. Thousands of users can be supported by a single SharePoint farm providing business-critical data across large TCP/IP networks. Furthermore, international corporations likely support users from different regions who work with resources in different languages. Some of these users may work in multiple languages and need the opportunity to refine the resource being delivered by SharePoint as they request it. Maintaining data in multiple locations and keeping the data in each location unique to its region's requirements is the art of *localization*.

Storing Data Near Users

When users in different locations need access to data in SharePoint, they will likely launch a Web browser or Microsoft Office application to retrieve content from a SharePoint URL. The SharePoint server running IIS that handles their request (called the SharePoint Web Front End—WFE—server) will depend on the URL entered and DNS resolution. That chosen WFE server will retrieve the necessary content from a local Master page and the necessary data from the SharePoint content database to render the information back to the user's client application. That WFE server could be on the same TCP/IP network as the user's client PC or a network across many router hops. Additionally, the content database being accessed in this scenario could be on the WFE server or on a separate SQL Server that houses the SharePoint databases (called the SharePoint Content server). If the WFE and SharePoint Content servers are different servers, they could be located on the same TCP/IP network or across router hops from each other.

In this scenario, by the time all is said and done, the content the user needed from SharePoint potentially had to come from far away on the TCP/IP network. Depending on network capacity and contention, this can cause performance delays and latency issues. In large enterprises, one way to improve network utilization is to locate data near the users who access it frequently. If users in more than one location access a particular data set frequently, multiple copies of that data set will need to be maintained at those locations. Storing data near the users means nearby in the network sense, not necessarily geographic sense (see Figure 3.2).

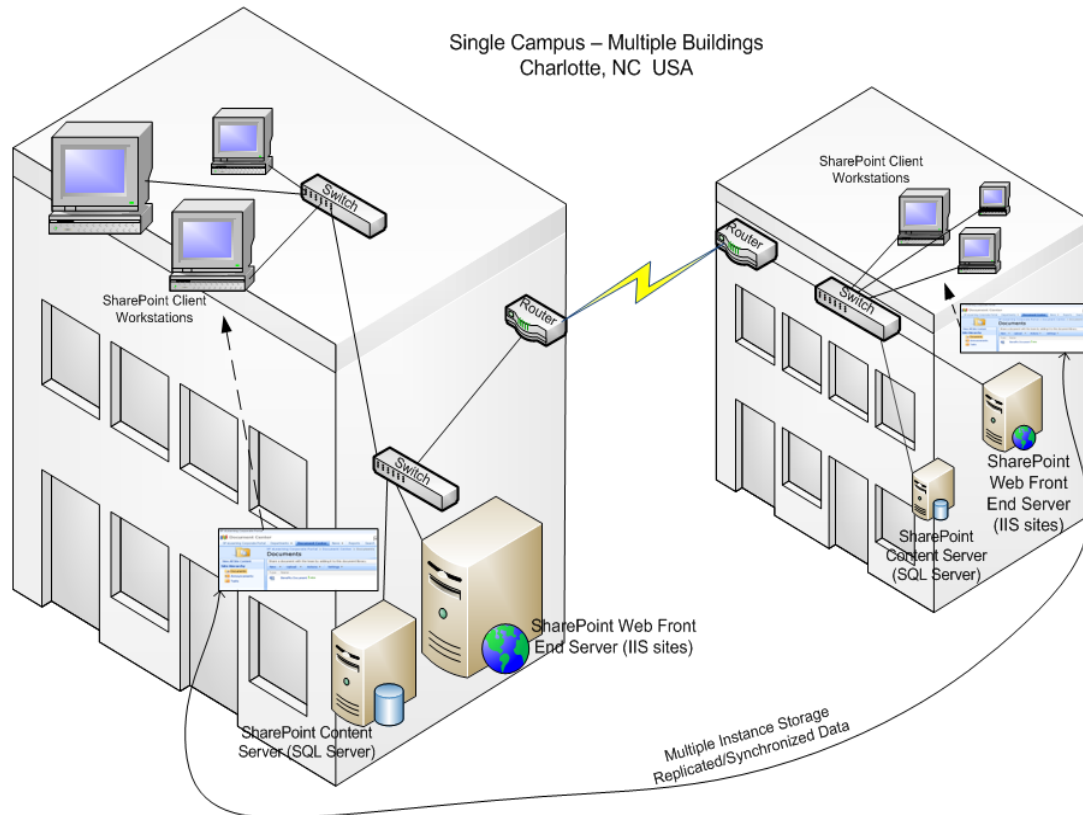


Figure 3.2: Network-dispersed geographically-centralized data access example.

Unfortunately, the native tools that ship with SharePoint for copying data to multiple locations are designed more for content publishing and deployment scenarios than for actual replication situations. Most WSSv3 utilities must be invoked at the individual item level, making them too granular and impractical for mass migration or duplicity needs. Conversely, the MOSS 2007 Content Deployment Tool is so broad that it can move entire Web applications, site collections, or subsets of site collections both within and between SharePoint farms. But it is a complex tool that relies on the Windows SharePoint Services Timer service to run jobs that must be configured in Central Administration or by using the STSADM.exe command-line utility. Table 3.2 highlights the disadvantages of native SharePoint content migration/deployment tools.

Tool	Purpose	Disadvantages
WSSv3 Publish & Send-To (Figure 3.3)	Copy library item to alternative URL (library); offers synchronization choices	<ul style="list-style-type: none"> Item level utility No permissions transfer No metadata transfer
WSSv3 Document Workspace (Figure 3.3)	Subsite for work-in-progress document and supporting content	<ul style="list-style-type: none"> Item level utility No permissions transfer Added site admin
STSADM.exe	Export/Import operations for copying entire sites	<ul style="list-style-type: none"> Admin required Site level utility (broad)
MOSS 2007 Content Deployment Tool	Deploy content to alternative site, site collection, or Web application either within the same or alternative farm	<ul style="list-style-type: none"> Admin required Complex design Timer service dependant Fragile (prone to error)

Table 3.2: Disadvantages of native SharePoint content migration/deployment tools.

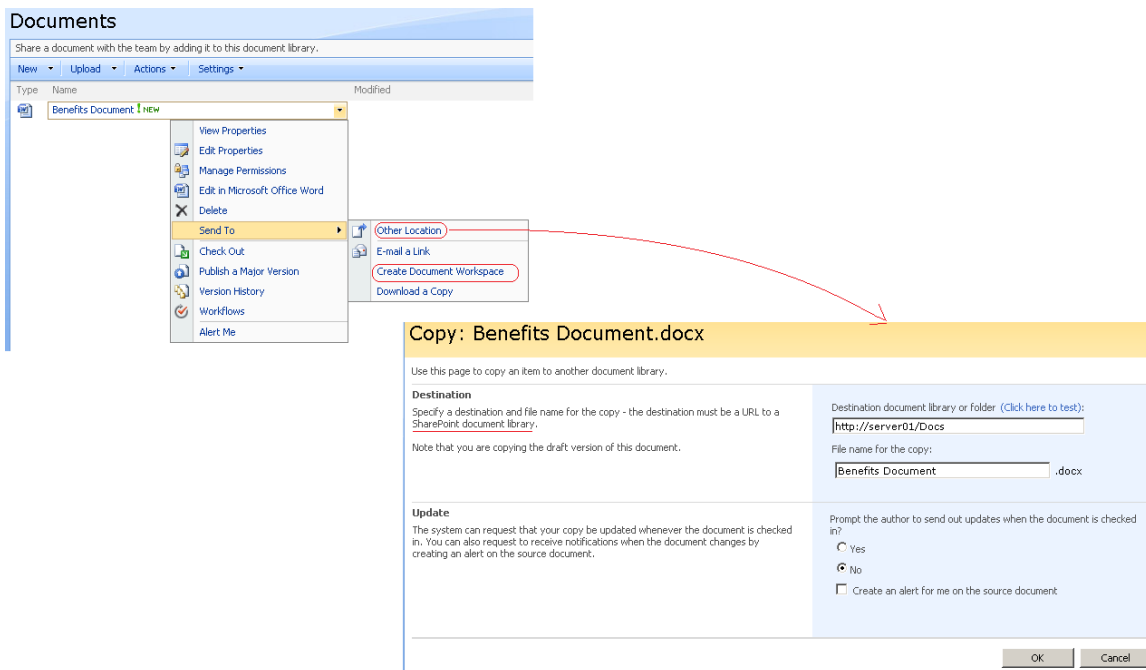


Figure 3.3: WSSv3 Item Send-To alternative library.

SharePoint Multi-Lingual Support

In a multiple-location SharePoint enterprise, different locations may require their business data be stored and displayed in a specific language or even multiple languages. Although Microsoft extols multi-lingual support as one of the selling points of WSSv3 and MOSS 2007, beware—the configuration of SharePoint for multi-language content is cumbersome and challenging to maintain. For starters, language support begins in the OS, so Windows administrators will need to be involved to get the necessary languages installed into the OSs of the SharePoint WFE servers. Once the OS has been taken care of, WSSv3 or MOSS 2007 will need the SharePoint Language Pack installed for the additional languages in which you plan to display SharePoint Web pages and store SharePoint documents. Each SharePoint WFE server in the SharePoint farm needs the language pack installed.

That doesn't sound so bad, does it? Wait, there's more than meets the eye. The following list highlights considerations while constructing your plan for SharePoint language support:

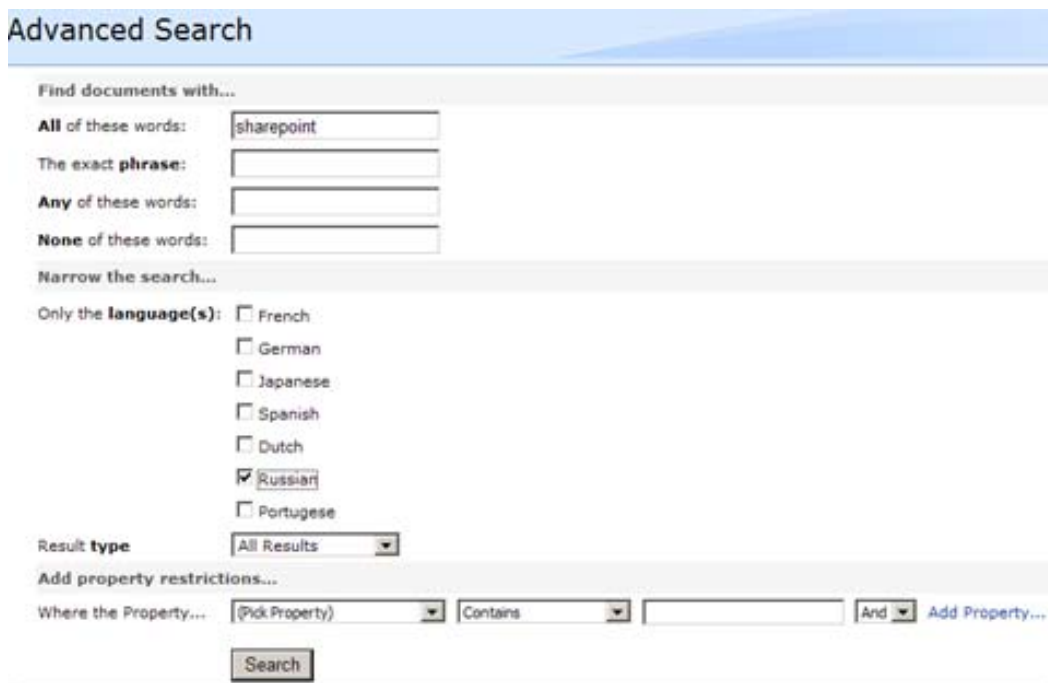
- **OS Regional Settings**—Before the Windows administrator can add the necessary language to the regional settings applet in Windows Server 2003 or 2008, they must be in possession of the OS installation files. Also, the language update will require a reboot, so plan for downtime.
- **Download the SharePoint Language Pack**—Not so fast! There is a different language pack for WSSv3 from the pack for MOSS 2007, so choose the right file for the environment. If you are running only WSSv3 and do not have MOSS 2007 installed, choose only the Windows SharePoint Services 3.0 Language Pack (a self-extracting .exe file). If you do have MOSS 2007, choose both the Windows SharePoint Services 3.0 Language Pack and the Office SharePoint Server 2007 Language Pack (yes, both must be installed). Be aware that the Office SharePoint Server 2007 Language Pack is an .img file, so you'll need an .img file extraction utility to extract it. And one more thing: Each product's language pack is offered in either 32- or 64-bit, so click wisely.
- **Update the SharePoint Language Pack**—The Windows SharePoint Services 3.0 Language Pack is service packed separately from the Office SharePoint Server 2007 Language Pack (you'll need to keep the updates synchronized across the two packs on a MOSS 2007 server; for example, don't run the WSS Language Pack on SP1 and the OSS 2007 Language Pack on SP2). Keeping the language pack(s) updated is a separate maintenance task from updating the SharePoint software itself, let alone the OS.
- **Install the SharePoint Language Pack**—Both the Windows SharePoint Services 3.0 Language Pack and the Office SharePoint Server 2008 Language Pack downloads are compressed file types that include a separate language pack install program for each available language. Be ready when you choose which language pack install program you want to run—the setup dialog boxes will actually display in that alternate language!

- SharePoint Products and Technologies Configuration Wizard—After installing and updating the appropriate language pack to SharePoint, you must run the SharePoint Products and Technologies Configuration Wizard. Doing so will prepare the SharePoint services for multi-lingual support but requires stopping some Web and SharePoint services, thereby interrupting user access to SharePoint content.
- Existing Content—There is no way to convert an existing site from its current language to a new language template. Be sure to install the language pack prior to creating alternative language sites or you will need a third-party translation tool to convert existing sites.
- Uninstall—Should you need to uninstall WSSv3 or MOSS 2007 from your server, you must first uninstall all SharePoint language packs.

Cross Reference

For more information about downloading and installing SharePoint Language Packs, see the following Microsoft TechNet articles: WSSv3.0 is at <http://technet.microsoft.com/library/cc288518.aspx> and MOSS 2007 is at <http://technet.microsoft.com/library/cc262108.aspx>.

Once you have the necessary language packs installed, new language-specific site templates will be added to the site template gallery for creating new sites in the alternative language. Creating a site in, say, Russian on a US English SharePoint server will result in the new site's pages displaying title, text, and navigation links in Russian. In fact, with the correct iFilters installed, SharePoint's Search service can even index the alternative language content, allowing users to perform advanced searches for language-specific items (see Figure 3.4).



The screenshot shows the 'Advanced Search' interface. Under 'Find documents with...', the 'All of these words:' field contains 'sharepoint'. Under 'Narrow the search...', the 'Only the language(s):' section has 'Russian' selected with a checked checkbox. The 'Result type' dropdown is set to 'All Results'. At the bottom, there are fields for 'Where the Property...', a dropdown for '(Pick Property)', a dropdown for 'Contains', and a 'Search' button.

Figure 3.4: Example of selecting a language-specific search.

Proactive Content Delivery

Today's companies demand not only relative, useful business content from SharePoint but also assurance that the data is safe and in accordance with regulatory standards. In order to satisfy these requirements efficiently, it is not enough to audit content that has already been placed into SharePoint. Smart networks must also validate potential content *before* it makes its way into SharePoint. Proactive measures can prevent inappropriate or infected content from contaminating the SharePoint farm as well as assist in qualifying data by the corporate taxonomy design to ensure proper placement in SharePoint.

Unfortunately, there is very little native functionality in SharePoint to provide proactive content analysis. For example, two configuration settings that operate proactively against content do so only against items being uploaded to libraries (not Web part content). The first is Blocked File Types (Web application setting), which prevents files of specific filename extensions from being uploaded to any libraries (see Figure 3.5)

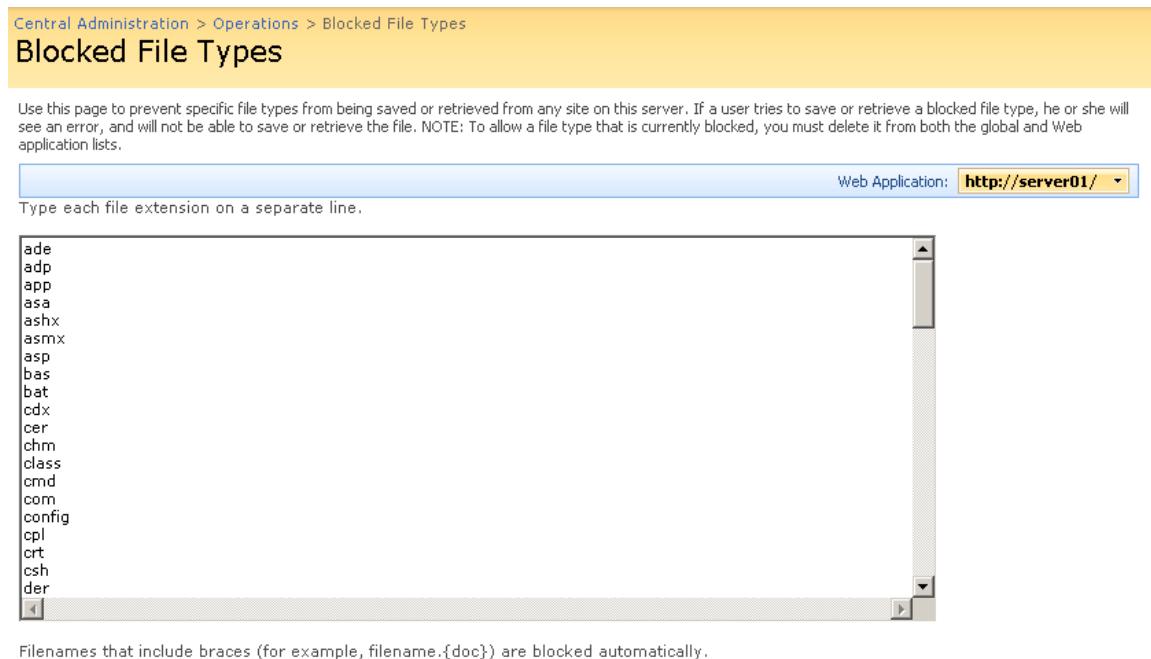


Figure 3.5: Blocked File Types set per Web application via Central Administration Operations.

The second is Quota Limits (Site Collection setting), which prevents any additional files from being uploaded to any libraries once the host site reaches a specified size limit (Figure 3.6)

Central Administration > Application Management > Site Collection Quotas and Locks

Site Collection Quotas and Locks

Use this page to change the quota template or individual quota values for a Web site collection, or to clear a lock set by an application or caused by exceeding a quota. [Learn about configuring site quotas and locks.](#)

To define or edit a quota templates, use the [Manage quota templates page](#).

Site Collection Select a Site Collection.	Site Collection: <input type="text" value="http://server01"/>
Site Lock Information Use this section to view the current lock status, or to change the lock status.	Web site collection owner: SPELEARNING\administrator Lock status for this site: <input checked="" type="radio"/> Not locked <input type="radio"/> Adding content prevented <input type="radio"/> Read-only (blocks additions, updates, and deletions) <input type="radio"/> No access
Site Quota Information Use this section to modify the quota template on this Web site collection, or to change one of the individual quota settings.	Current quota template <input type="text" value="Individual Quota"/> <input type="checkbox"/> Limit site storage to a maximum of: <input type="text" value="0"/> MB <input type="checkbox"/> Send warning e-mail when site storage reaches: <input type="text" value="0"/> MB Current storage used: 5 MB

Figure 3.6: Quota Limits set per site collection via Central Administration Application Management.

But there are no true analysis features that will compare content being added to a SharePoint site against configured criteria to determine validity, whether the data is a file being uploaded to a library or content within a Web part. Even complex programmatic .NET workflows operate reactively once data has entered SharePoint (workflows associated with content types or libraries initiate in reaction to user interaction with the SharePoint services such as adding an item to a library or manually invoking a workflow). If the enterprise truly needs files scanned for viruses prior to being uploaded to libraries, code scanned for malicious intent prior to being added to a page as a Web part, or multi-lingual content compared against multiple language dictionaries to reveal forbidden or confidential composition, a Microsoft partner or third-party software will be necessary.

The Art of Centralized Administration

Unlike other network applications, SharePoint's unique Administration Model (which includes delegated site administrators who may not even work for the IT department) lends itself to a decentralized approach to management. But just because the personnel responsible for different logical levels of SharePoint may be decentralized, there are still benefits to providing centralized tools at each logical level of administration. First and foremost, consistency among the tools used and documentation regarding standard operating procedures for administration should be developed to ensure like management by multiple administrators at each level.

Diversity of Native Administration Tools

Both WSSv3 and MOSS 2007 ship with tools to help administrators manage the SharePoint farm (see Table 3.3). In fact, the tools are so specific to particular logical levels in SharePoint that multiple utilities are necessary to configure every aspect of the entire farm. And for those of you who have had the pleasure of working in the native administration tools, you know how granularly they are focused resulting in repetitive keystrokes to configure multiple logical SharePoint entities the same way (such as setting multiple Web applications to use the same Quota Limit Templates). The diversity and segregation of the native administration tools can add complexity to centralized management at each Administration Model Tier (review Chapter 2).

Tool	Format	Location	Level	Scope
Central Administration	Web Site	1 CA web site per farm by default (on first WFE server by default)	Farm	Operations pages are focused per farm or per server or per service
			Web App	Application Management pages are focused per Web application
			Site Collection	Application Management pages are focused per site collection per Web application
Shared Service Provider Administration	Web Site	SSP (each SSP has unique admin site)	SSP	All pages focused per SSP
Site Settings	Web Page	Site Actions Menu of each SharePoint site	Site Collection	All links are per current site collection
			Site	All links are per current site
STSADM.exe	Command Line	12 hive \bin directory	All	Commands are scope centric

Table 3.3: Native administration tools in SharePoint.

The Central Administration Web site is installed during the SharePoint Products and Technologies Configuration Wizard and assists Tier-1 administrators with setting farm-level configuration. Most of the farm settings can be found in the links on the Operations page of the site while Web application tasks performed by Tier-1 administrators are found on the Application Management page of the site. Only one Central Administration Web site is generated on only one WFE server in the farm (by default, it is the first WFE built into the farm). Although it is possible to install a second instance of Central Administration on another WFE server in the farm (say for fault tolerance), to use the second Central Administration a registry hack is necessary even after configuring the URL in alternative access mappings. Microsoft does not make it easy to run multiple instances of Central Administration because their best practice is to use only a single Central Administration tool to prevent conflicts that could lead to corruption of the SharePoint Configuration database.

In MOSS 2007 enterprises, the Shared Service Provider (SSP) can be configured by Tier-2 administrators using the Shared Service Provider Administration Web site (GUI), which can be navigated to via links in Central Administration or by knowing the URL. If multiple SSPs have been created, each SSP is managed from its own Shared Service Provider Administration Web site. Alternatively, the STSADM.exe command-line utility can be used to perform the same tasks that are available in Central Administration plus more. The STSADM.exe utility is not interactive (that is, none of the operations prompt the executer for input parameter values), so it can be scripted using OS command files such as batch files. This allows automation of administrative tasks, whereas the Central Administration GUI tool is only interactive. However, writing the batch files and scheduling them in the OS requires Windows administration, and the STSADM.exe syntax itself is not intuitive and requires experience in writing for this utility.

Cross Reference

For a list of all STSADM.exe operations, see Microsoft TechNet article <http://technet.microsoft.com/library/cc263384.aspx>. For a list of those operations that can only be accomplished in STSADM.exe and are not available in the Central Administration or Shared Service Provider Administration pages, see Microsoft TechNet article <http://technet.microsoft.com/library/cc288981.aspx>.

The only remaining native administration tool is actually not a separate utility at all but rather a series of control Web pages available in the \templates_layouts directory of the SharePoint “12 hive” (%PROGRAM FILES%\Common Files\Microsoft Shared\web server extensions\12) that can be accessed via a Web browser application. Every Web site created using an out-of-the-box site definition file will contain links to the control pages on its Site Settings page. There are Site Collection Administration links for making collection-wide changes and Site Administration links for configuring only the current site (review Chapter 2). In fact, on all sites beneath the top-level-site of the site collection, the Site Collection Administration category of links will only display one hyperlink called *Go to top level site settings* that will take the user back to the Site Settings page on the top-level site of the site collection so that they may see all Site Collection Administration links.

Disadvantages of Repetitive Administration

At every level of the logical SharePoint architecture, performing administration is a granular isolated experience using the native tools. At the farm level, each farm has its own Central Administration Web site, so similar configuration settings that must be made to multiple farms will have to be made multiple times (such as changing a service setting identically across all farms). Within a farm, each service on each server is configured separately in Central Administration, so making similar edits to all services in the farm will require repetitive administration (such as managing service accounts).

At the SSP level, each SSP generates its own Administration site when created within a unique Web application, so identical changes to all SSPs must be conducted multiple times (such as adding the same new Content Source to the Search feature of multiple SSPs). At the Web Application level, all Web application management pages in Central Administration focus on a single Web application (review Chapter 2), so any similar editing must be performed repeatedly after changing a drop-down menu selection to the target Web application. And, of course, the site collection and site administration performed by visiting the actual target site in a browser application and using the Site Settings links is single-site specific.

Even the command-line utility STSADM.exe offers few multiple-target capabilities. When performing Web application administration, each operation requires the URL to the root site of the target Web application, and the parameter is a single value switch, so each operation can only be performed against a single Web application at a time. This results in repetitive commands to multiple target Web applications. This behavior persists in STSADM.exe for site collection operations (requires a single URL to the top-level-site of the target site collection) and site operations (requires a single URL to the target site).

Therefore, in order to accomplish an identical setting on multiple farms, SSPs, Web applications, site collections, or sites using only the native tools that ship with SharePoint, administrators are forced to perform the same operations repeatedly. Repetitive administration is vulnerable to inconsistent outcome due to human errors and omissions, latency between targets, or delays in updates being made due to project time constraints (performing the same change over and over again on different systems is time consuming). Unfortunately, there are not even any administrative actions in the SharePoint Designer Workflow Wizard to create administration task workflows that could be kicked off to configure multiple logical entities similarly and perhaps reduce typographical errors. To write such a workflow would require coding in .NET against the SharePoint object model, which is a complex endeavor requiring a uniquely skilled developer.

Another disadvantage of SharePoint's native administrative tools is the lack of automation opportunities beyond those tasks managed by the SharePoint Timer Service (we'll discuss more about the Timer in the next section). Unless you schedule STSADM.exe batches (via the OS) or write your own WMI scripts for scheduled execution (again, via the OS), getting routine administrative tasks to execute without human interaction is almost impossible. Luckily, several Microsoft partner and third-party software manufacturers have seized the opportunity to provide management applications for SharePoint that can centralize, automate, and even discover necessary administrative tasks across a single or even multiple farms. Caveat Emptor! Be sure to choose a third-party solution that can handle the complexity of your enterprise while maintaining efficient bandwidth utilization and upholding necessary security to prevent unauthorized changes.

Native SharePoint Management and Scheduling Tools

Both the SharePoint Central Administration and Shared Service Provider Administration interfaces offer selections for scheduling routine maintenance activities such as backups and index rebuilds. The Windows SharePoint Services Timer service is responsible for executing such tasks automatically. This service uses configured jobs to define its agenda and schedules to set the execution times for the jobs. These jobs and their schedules can be seen on the Operations page of Central Administration (see Figure 3.7) or enumerated using one of the STSADM.exe utility's job operations, such as the *enumsptimerjobs* operation to expose the jobs configured for a specific SSP. Notice in Figure 3.7 that both the Job Status and the Job Definitions pages can be filtered by services or Web applications.

The screenshot shows the SharePoint Central Administration interface. At the top, the breadcrumb is 'Central Administration > Operations' and the page title is 'Operations'. Below this is a navigation pane with 'Topology and Services' and 'Global Configuration'. Under 'Global Configuration', there are links for 'Timer job status' and 'Timer job definitions'. A red arrow points from 'Timer job status' to the 'Timer Job Status' page below. This page has a breadcrumb 'Central Administration > Operations > Timer Job Status' and a table with columns: Job Title, Server, Status, Progress, Start, and a 'View' dropdown menu. The table lists several timer jobs, including 'Application Server Administration Service Timer Job' (Failed) and several 'Bulk workflow task processing' jobs (Succeeded). Another red arrow points from 'Timer job definitions' to the 'Timer Job Definitions' page below. This page has a breadcrumb 'Central Administration > Operations > Timer Job Definitions' and a table with columns: Title, Web Application, and Schedule Type. It lists the same timer jobs as the status page, showing their associated web applications and schedules.

Job Title	Server	Status	Progress	Start
Application Server Administration Service Timer Job	SERVER01	Failed	100%	10/1
Application Server Timer Job	SERVER01	Succeeded	100%	10/1
Bulk workflow task processing	SERVER01	Succeeded	100%	12/8/2008 7:16 PM
Bulk workflow task processing	SERVER01	Succeeded	100%	12/8/2008 7:28 PM
Bulk workflow task processing	SERVER01	Succeeded	100%	12/8/2008 7:04 PM
CEIP Data Collection	SERVER01	Succeeded	100%	12/10/2008 1:32 AM
Change Log	SERVER01	Succeeded	100%	12/11/2008 9:10 PM

Title	Web Application	Schedule Type
Application Server Administration Service Timer Job	N/A	Minutes
Application Server Timer Job	N/A	Minutes
Bulk workflow task processing	SharePoint - 14456	Daily
Bulk workflow task processing	SharePoint - 31165	Daily
Bulk workflow task processing	SharePoint - 80	Daily
Bulk workflow task processing	SharePoint - 8888	Daily

Figure 3.7: Timer service links on the Operations tab of Central Administration.

Unfortunately, the links seen in Figure 3.7 are more informational than configurable. The jobs actually get created automatically when other services such as the Office SharePoint Search service is configured to repeat an operation such as a full crawl on a defined schedule. Thus, keeping the Timer service healthy is imperative to maintaining SharePoint, which makes the service a candidate for proactive monitoring and alerts. In fact, this service can even be exploited to run just about any task in SharePoint that an administrator may need to schedule on an automated basis. Unfortunately, doing so requires a skilled programmer who can write .NET code against the SharePoint object model, which can be a daunting project rather than a simple automation solution. Instead, consider purchasing a Microsoft partner or third-party solution that can assist in creating custom Timer jobs.

Cross Reference

For more information about programming custom Timer service jobs, see the MSDN article at <http://msdn.microsoft.com/library/cc406686.aspx>.

Synchronizing Security and Content Control Across Locations

Earlier in this chapter, we discussed the need to store identical content in multiple locations to better support SharePoint users with faster access to their business data. However, one of the considerations that must be addressed when duplicating content in SharePoint is whether the duplication of security parameters is necessary and if so, the methods employed to ensure identical permissions are configured for the duplicate data copies. Synchronizing security and content control among all locations is a vital concern in large SharePoint enterprises.

Access and Permissions Synchronicity Challenges

Windows SharePoint Services v3.0 and MOSS 2007 both offer the enterprise architect the ability to employ different authentication providers to authenticate users onto a SharePoint site. Additionally, the sophisticated security mechanisms in SharePoint allow granular permissions explicitly assigned from the site all the way down to the item level according to users identified by the authentication provider. When content is duplicated among multiple Web applications or perhaps between disparate farms, it is possible that a different authentication provider will be in service at the destination.

Additionally, permissions that exist on the original data may include users who are not registered in the destination site. Or users in the destination site who will need access to the duplicated content will not exist in the transferred permission sets because they did not have user objects in the origin site. Manipulating the permission structure of content during migration/deployment is crucial to establishing appropriate access proactively as data is written to the destination. The alternative is to first place the content into the destination then address its permission set, creating a latency period during which unauthorized users may gain access to the data.

Content Control Synchronicity Challenges

A primary cornerstone of SharePoint governance is controlling the content users are allowed to place into SharePoint. Control policies such as quota limits on site collections and sites, blocked file types on Web applications, and content types with site columns that have been associated with a list or library must be correctly conveyed when transporting content between sites or libraries. Otherwise, the subsequent instances of the data could be unnecessarily compromised (see Figure 3.8). To synchronize data restrictions requires like configuration in the source and destination server which, while a noble aspiration, is sometimes politically undesirable in large SharePoint enterprises.

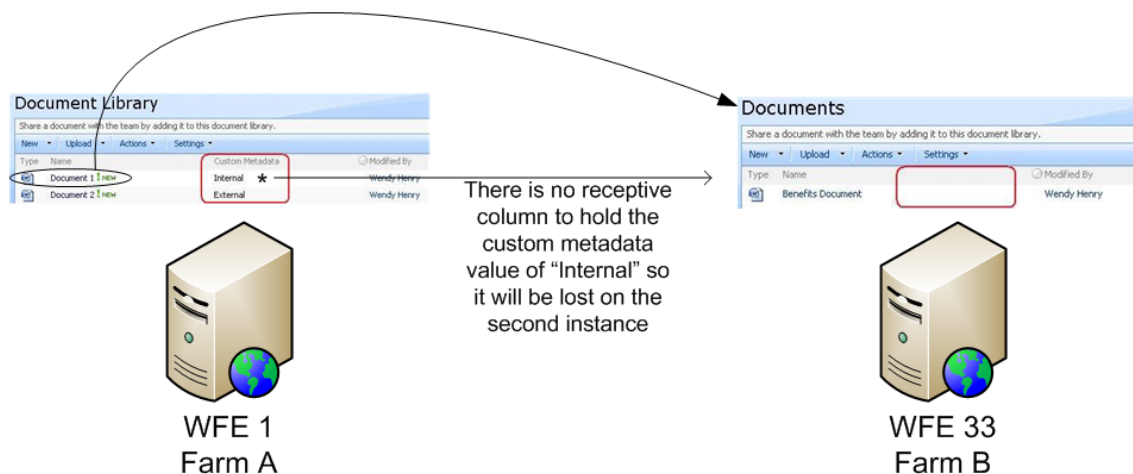


Figure 3.8: Metadata loss during multiple instance creation due to insufficient destination columns.

Limitations of Native SharePoint Tools

The native tools in SharePoint that allow permissions to transfer along with the content (such as Send To or MOSS 2007 Content Deployment Tool) do not accommodate different authentication providers at the destination. Furthermore, these tools offer no manipulation opportunities to the permission structure during transport so as to include users in the destination site that may need permission to the duplicated content but who did not exist in the data's original site.

Another unfortunate shortcoming of native SharePoint tools is the inability to maintain metadata and content control measures during content transfer. For example, custom column (metadata) values can be lost when duplicating library items to alternative libraries that do not have such columns in the schema, along with content types and library settings that constrain item behavior (workflows, views, and so on). To synchronize security (access and permissions) and content control across multiple sites, servers, or locations, look to Microsoft partner or third-party software solutions that specialize in content migration and duplication.

Summary

In this chapter, we outlined the concept of single instance storage as it relates to SharePoint and examined the practice of localizing content for multi-language or multi-metadata needs. We explored the native SharePoint tools for replicating and translating content and the limitations of each as well as the difficulty native administration tools introduce when attempting centralized administration at different levels of the SharePoint logical architecture. Lastly, we discussed the limitations of native SharePoint tools for synchronizing content control and security across servers and locations.

In the remaining chapter, this guide will examine the best practices for archiving and reporting on SharePoint content. It will expose the MOSS Record Center and Report Center site templates, the danger of directly querying SharePoint databases in SQL Server, and the strengths of Microsoft partner and third-party vendors in the realm of archiving and reporting. Don't miss it!

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