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Pro SharePoint Migration

Moving from MOSS 2007 to SharePoint Server 2010

PLAN, PREPARE, AND EXECUTE A SEAMLESS MIGRATION FROM MOSS 2007 TO SHAREPOINT 2010

Sahil Malik and Srini Sistla

Apress®

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I would like to dedicate this book to my wife Vijaya and my daughters Anjali and Vaishnavi.

—Srini Sistla

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About the Authors

Sahil Malik, the founder and principal of Winsmarts.com, has been a Microsoft MVP and INETA Speaker for the past 11 years, an author and reviewer of many books and numerous articles in both the .NET and SharePoint spaces, a consultant, and a trainer at conferences internationally. Sahil has trained for the best names in the Microsoft technology space and has architected and delivered SharePoint-based solutions for extremely high-profile clients. Sahil is the author of *Microsoft SharePoint 2010: Building Solutions for SharePoint 2010* and coauthored *Pro SharePoint 2010 Business Intelligence Soltuions*, both published by Apress.

Srini Sistla is an author, Microsoft Certified Technology Specialist, and INETA speaker with over 12 years of experience in designing and implementing IT solutions on a variety of platforms and domains. Srini's core skills have always involved Microsoft technologies, and he has solid experience in building both Windows- and web-based solutions. He has worked with Windows SharePoint Services 3.0, Microsoft Office SharePoint Server 2007, and SharePoint Server 2010, and his expertise in SharePoint includes BI, ECM, the object model, and branding. As a subject matter expert, Srini is often asked to review, improve, and approve a variety of technical designs and approaches. He regularly contributes to several blogs, including his own. He has done a fair amount of speaking at various SharePoint user groups and provides training on SharePoint 2010 and MOSS 2007. Srini hails from Washington D.C. metro area and is currently working as a SharePoint architect and consultant. He coauthored *Pro SharePoint 2010 Business Intelligence Solutions.*

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■ **Robert Garrett** is the author of *Pro SharePoint 2010 Administration* and has extensive experience working with SharePoint 2007 and 2010. Prior to working with SharePoint, Robert developed web applications in ASP.NET and C#. Today, Robert works for Portal Solutions LLC as a lead architect and spends the majority of his time designing new solutions for the SharePoint 2010 platform.

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—Srini Sistla

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—Sahil Malik

CHAPTER 1

Migration Process

SharePoint 2007 has been an incredibly successful product. Many organizations have reaped the benefits. It is an undeniable conclusion that, sooner or later, you will be faced with the task of upgrading to SharePoint 2010. What are the new capabilities of SharePoint 2010? What are the differences between SharePoint 2007 and SharePoint 2010? What new benefits can you reap, and what unexpected differences will bite you during your eventual upgrade? This book answers all of these questions and more.

SharePoint 2010 is a complete package of powerful capabilities that you surely wouldn't skip as a product by itself. If you are a current user of or have implemented Microsoft Office SharePoint Server (MOSS) 2007, we don't need to explain to you the benefits of SharePoint at all. With SharePoint 2007's capabilities and the enhancements and new features in SharePoint 2010, migrating to the new platform is certainly a good step. This chapter walks you through the different upgrade approaches, as well as offering a high-level comparison of the two versions, including explaining new features, unsupported models, and useful resources that you can benefit from during the overall migration process. In the subsequent chapters, we will walk you through other important aspects, targeting topics that meet needs and some key knowhow for IT analysts, designers, and developers.

Like MOSS 2007, SharePoint 2010 comes in three different flavors: Foundation (free), Standard, and Enterprise. For a feature comparison and licensing overview, see `http://sharepoint.microsoft.com/en-us/buy/Pages/Editions-Comparison.aspx`. Another edition of SharePoint is the online version known as Office 365. We are *not* going to cover each the edition as well as Office 365 in this book. We'll cover enterprise-edition features, and that way, features of all editions will be covered. To begin with, we will start with the comparison sheet between MOSS 2007 and SharePoint 2010.

Comparing MOSS 2007 and SharePoint 2010

Let's begin with explaining the hardware requirements between the two versions. The biggest change in SharePoint 2010 is in the infrastructure: a 64-bit operating system is now a mandate. Second, SQL Server 2005 Service Pack 3 (SP3) or higher (also running on 64-bits) is required. The rest of the RAM, hard disk, and processor requirements can be scaled. Table 1-1 displays the minimum requirements on the server infrastructure. Note that all servers in the farm where you install SharePoint 2010 need to abide by these requirements, but the server on which SQL Server is installed may have its own additional server requirements.

Table 1-1. *Hardware and Operating System Comparison Between SharePoint 2007 and 2010*

MOSS 2007	SharePoint 2010
32-bit or 64-bit with Windows Server 2003 SP1 or higher	Requires 64-bit operating system and Windows Server 2008 SP2 or higher or Windows Server 2008 R2
Recommended for dual-core processor (x86/x64) with 2.5GHz	Recommended for dual-core processor (x64) with 3GHz
1GB RAM minimum; 2GB RAM recommended	4GB RAM minimum; 8GB recommended for a multiple-server farm
3GB minimum disk space	80GB minimum disk space
SQL Server 2000 SP4 or higher	SQL Server 2005 SP3 or higher
.NET Framework 3.0	.NET Framework 3.5 SP1

As discussed earlier, SharePoint 2010 has been very popular ever since the beta versions arrived in late 2009, and its popularity grew with the release to manufacturing (RTM) in early 2010 and the SP1 release in during November 2011. Significant features are newly introduced or improved from the previous version, which is MOSS 2007. You have probably seen the feature wheel of SharePoint 2010 in the site http://sharepoint.microsoft.com/en-us/product/capabilities/Pages/default.aspx many times. These feature changes have been broken down in Table 1-2 to show each function and its corresponding features.

Table 1-2. *Some New and Improved Capabilities of SharePoint 2010 (All Editions)*

Function	Feature	Status
Communities	Blogs I	mproved
Collea	gue Suggestions	New
My	Content	New
My	Profile	Improved
Organization	Browser	New
	Photos and Presence	New
Ra	tings	New

Rec	ent Activities	New
Tagging		New
Wikis		Improved
Composites	Access Services	New
Bro	wser-Based customizations	New
	BCS (formerly BDC)	Improved
Sandboxed	Solutions	New
SharePoint	Designer	Improved
	Silverlight Web Part	New
Content	Compliance Everywhere	Improved
Document	Sets	New
Insights	Business Intelligence Center	Improved
Dashboards		New
Decom	position Tree	New
Visio	Services	New
Search	Contextual Search	Improved
Meta	data-driven Refinement	Improved
	People and Expertise Search	Improved
Sites	Accessibility Impro	ved
C	ross-Browser Support	Improved
Multilingual	User Interface	Improved
	Out-of-the-box web parts	Improved

	SharePoint Health Analyzer	New
Sha	rePoint Ribbon	New
	Streamlined Central Administration Impro	ved
	Unattached Content Database Recovery	New
	Visual Upgrade	New
Web	Parts	Improved
	Windows PowerShell Support	New

As Table 1-2 shows, there have been changes and improvements at every level, from infrastructure right up to the functional aspects. Without a proper understanding of the new version capabilities, planning for migration will be very hard. This chapter provides you with insight into what you need to know and understand to plan and accomplish a successful migration.

There are many steps to ensuring a smooth upgrade process and avoiding failures, including planning that is involved before, during and after the migration. Microsoft provided various mechanisms and tools that help you to have an error-free transition. In the next section, we discuss the available process and ways to upgrade your MOSS 2007 platform to SharePoint 2010.

Overview of Upgrading from MOSS 2007 to SharePoint 2010

Have patience while you upgrade no matter which approach you pick. It is going to take a lot of time, and sometimes, you might end up redoing things if it fails. However, things have changed a lot in this version to make upgrading much better when compared with the upgrade from SharePoint Server (SPS) 2003 to MOSS 2007. Here's an overview of this chapter's coverage of the upgrade process in SharePoint 2010:

- *Hardware requirements*: Upgrading requires meeting specific hardware, operating system, and database needs.
- *Preupgrade checker*: This tool is a "getting ready" application for your infrastructure; it helps you realize what you are missing or need to fix before you start the actual upgrade process.
- *New upgrade methods*: Two new upgrade methods are available to choose, or maybe you'll even use a hybrid of the two.
- *PowerShell cmdlets*: SharePoint administrators have always wanted a scripting language to help them administer the farm. You can use the following command to test an existing content database before attaching it to the SPS 2010 farm:

```
test-spcontentdatabase -name {content db name} -webapplication {webapplicationname}
```

- *Visual upgrade*: This new feature allows you to check how your new web application or site collection looks visually when you finish upgrading. Site and site collection administrators have the option to turn on the new look and feel or delay turning it on for a time, until they can upgrade to the new look and feel. Using visual upgrade is not automatic but can be achieved by manually changing the settings through the UI or by running PowerShell commands. It is also a mechanism by which backward compatibility of visual aspects is achieved.
- *Feature upgrade*: With the help of new members and types, you can upgrade your Windows SharePoint Services (WSS) 3.0/MOSS 2007 features as they are or convert them to the new SPS 2010 type. For more information on feature upgrades, see `http://msdn.microsoft.com/library/aa544511(office.14).aspx`.
- *Reporting and logging*: Better status reporting and logging mechanisms are provided in this edition.
- *Downtime*: When you do simple math, you can see that the greater the complexity and number of sites, the more time will be needed to upgrade your databases. SharePoint 2010 offers better downtime management during the upgrade process in two ways:
    - *Parallel upgrade*: In MOSS 2007, all the content databases were upgraded in sequence, and this took a lot of time. In SPS 2010, you can decide to upgrade in parallel, or select to upgrade the database manually using a hybrid approach.
    - *Read-only databases for continuous access*: Again, by using a database attach upgrade, you can set MOSS 2007 databases to read-only mode first. This will ensure that the content in the 2007 farm remains accessible in read-only mode, but users cannot perform any write operations on it, thus preventing loss of data during the upgrade process.

Every organization may be unique in its infrastructure. And every SharePoint implementation might or might not have customizations implemented. How would you effectively upgrade your existing farms to new ones? Even before you think you are ready, it is important to verify if your existing MOSS 2007 infrastructure is ready or not? First, ensure that your MOSS 2007 farm is patched with all required hot fixes, most importantly SP2 and the October 2009 cumulative updates. Consider this as one of your key prerequisites. It is particularly important to have SP2, because it comes with a preupgrade checker that you can use to verify how your infrastructure and farm is ready for SharePoint 2010 migration.

■ **Note** We also recommend installing SP3 (optional), but installing SP2 is mandatory.

Hardware Requirements

As discussed earlier, SPS 2010 only runs on a 64-bit platform and requires either the Windows Server 2008 SP2 or Windows Server 2008 R2 operating system. If you have a 32-bit operating system, you must upgrade to 64-bit first. Also, if you have Windows Server 2003, you will have to first upgrade your operating system before you can migrate to SPS 2010. In both cases, an in-place upgrade is not possible,

and you will have to use database attach upgrade option (you will learn more about upgrade options in the next section). It is equally important to have either the SQL Server 2005 SP3 or SQL Server 2008 SP1 64-bit version installed.

■ **Note** These infrastructure rules apply to each and every server in the farm.

If none of the infrastructure outlined in the previous paragraph is available, we recommend that you initiate the infrastructure setup changes as a separate project from the migration, to isolate any issues that occur during each type of upgrade.

Preupgrade Check

The preupgrade check command-line tool is to be run on your existing MOSS 2007 environment to find any potential issues as well as review recommendations and best practices. When you run a preupgrade check, you will be provided with information on various features, such as the following:

- *Search content sources and start addresses*: Displays the list of content sources and start addresses for each shared service provider configured in the farm.
- *Search Server Topology*: Details about the office server search topology in the farm and its components, such as shared service providers.
- *Servers in the farm*: Displays details about all the servers that are installed as part of the SharePoint farm.

■ **Note** This list does not include SQL Server. Also, remember to run preupgrade check on each SharePoint Server instance in the farm.

- *Components in the farm*: Displays the current version of the MOSS software running on your farm (e.g., 12.0.0.6421) as well as information such as number of servers, number of web applications, content database (and size), and site collections.
- *Supported upgrade types*: Informs you what types of upgrade approaches are possible on this farm.
- *Site definition information*: Displays all the installed or referenced site definitions. Keep informed that all the out-of-the-box site definitions are upgraded automatically; you need to ensure that custom site definitions are upgraded accordingly (see `http://support.microsoft.com/kb/960577`).
- *Language pack information*: Displays the current language packs installed. After upgrading, these language packs (other than the global server language) will not work. You will have to install the new versions to ensure that your sites work.

- *Feature Information*: Displays all the installed or referred features. If you have custom features or any missing features, you will have to install each one of them to ensure the site works as expected.
- *Alternate access mapping URLs*: List of alternate access mapping (AAM) URLs in your current environment that you need to consider or configure when upgrading.
- *Lists and Libraries*: List of all lists and libraries.
- *Informational rules to list the WSS Search topology information*: List of all WSS Search topology components that belong to the farm.
- *Hardware*: Informs you whether your existing farm meets the necessary hardware and operating system requirements.
- *Unsupported customizations*: List of unsupported customizations.
- *Databases or site orphans*: List of the content databases and any orphaned sites.
- *Invalid configuration settings including missing web.config file*: List of all configuration settings and related information.
- *Database upgrade requirements check*: List of information about whether or not there is a need for database upgrade requirements.

■ **Note** These are informational rules that are part of the preupgrade checker. For a list of all information and errors, see `http://technet.microsoft.com/en-us/library/dd793609.aspx`.

As mentioned earlier, you need to have the MOSS 2007 SP2 and October 2009 cumulative updates; if necessary, you can download and install these from `http://go.microsoft.com/fwlink/?LinkID=169179`. Once you are ready, you can run the preupgrade check using the following SharePoint Team Services Administration (STSADM) command:

```
stsadm –o preupgradecheck
```

The output will look like Figure 1-1, and the results will be saved as an `.htm` report in the `12hive\logs` folder, as shown in Figure 1-2.

You can run the `preupgradecheck` command with additional parameters to detect more routines. For instance, you can define a set of rules in a file and provide the file path as a parameter. Rules can be of different types, including informational, error rules, default, and upgrade checker rules. For more information on rules, see `http://technet.microsoft.com/en-us/library/dd793609(office.12).aspx`. The following line of code shows how to use preupgrade check with the `-rulefiles` parameter:

```
stsadm –o preupgradecheck –rulefiles <rule file name>
```

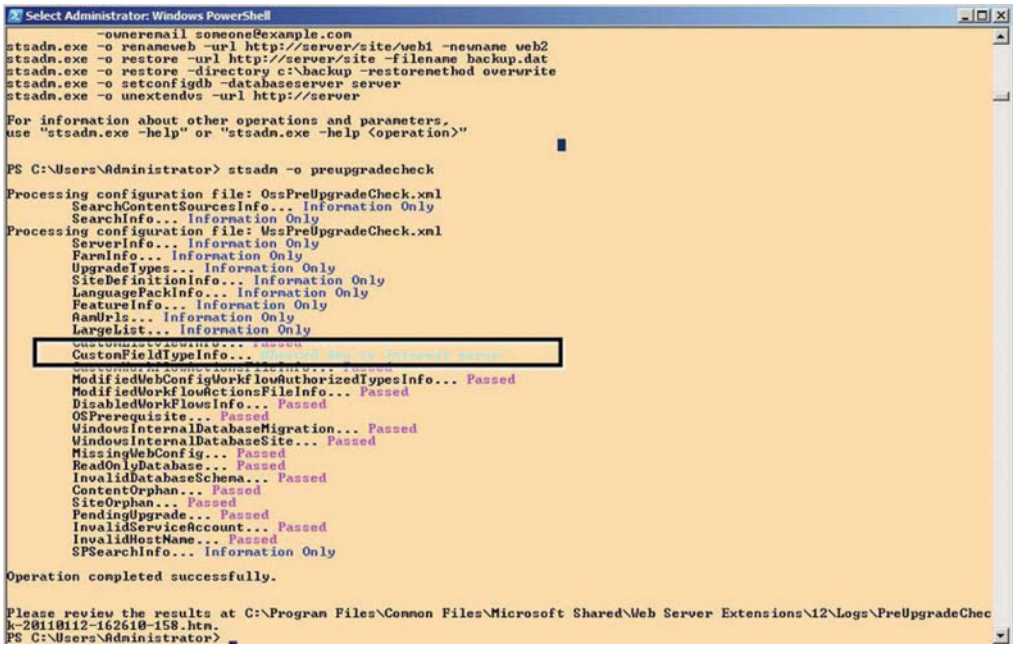

Figure 1-1. *STSADM preupgrade check*

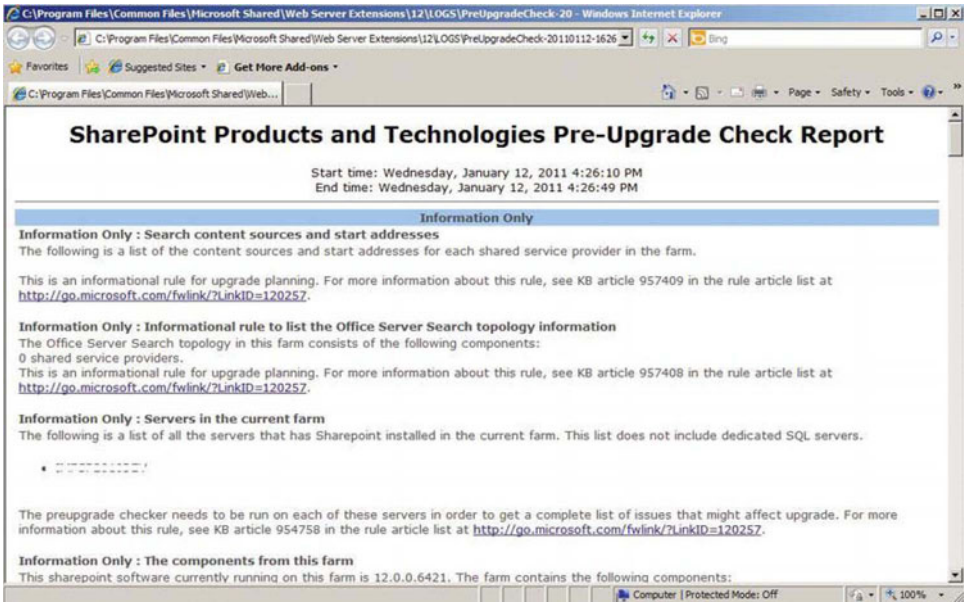

Figure 1-2. *Preupgrade check results*

If you find any issues when your preupgrade check is run, it is important to fix them and follow any recommendations offered and subsequently run the check again to confirm that all issues are resolved and you're ready to go for migration. At the same time, ignore errors related to the resources that you are not planning to use anymore or won't migrate. Once the environment is clean, you can plan for the upgrade approach. There are two upgrade approaches that you can follow, as you will learn in the next section.

Supported Upgrade Approaches

Depending on your existing environment, you can pick one of the two upgrade approaches or use a hybrid approach. If you are unsure what to do, at the end of this section, we have provided a decision tree to help you to make the right call. OK, let's dig deep into the two approaches and look at a hybrid model of these two.

■ **Note** There is a Single Click Install—SQL Migration that is not covered in this chapter.

In-Place Upgrade

An in-place upgrade, as the name says, is one in which you run SharePoint 2010 installation software on your existing MOSS 2007 environment. Very few platforms in the market fall into this case because not everyone had the foresight to accommodate the current 64-bit requirement four years back. But if you had (and have) a very good IT professional in your organization who planned ahead well, you are all good to go.

It's pretty much understood that, for an in-place upgrade, your existing environment needs to be 64-bit and meet the operating system requirements as well. If your hardware and infrastructure meet SharePoint 2010 infrastructure requirements, you can use the same hardware and install SharePoint 2010 on it. The advantage of this approach is that all your existing settings and customizations be available after upgrade. However, you will have to make some manual changes to your customizations to get them working. Well, of course, your preupgrade checker will notify you if anything is going to fail during the upgrade. Additionally, all custom solutions should be recompiled with the new SharePoint 14 DLLs and redeployed.

■ **Note** A word about prerequisites—To do an in-place upgrade, you need to ensure that your infrastructure is running MOSS 2007 SP2 x64 on a Windows Server 2008 operating system with the x64 version of SQL Server 2008 R2, or SQL Server 2008 with SP1 and CU 2, or SQL Server 2005 SP3 and CU 3.

Preparing to Upgrade

Before you begin in-place upgrade, it is important to first verify the following:

1. Run the `stsadm -o preupgradecheck` command to learn more details about your infrastructure and make sure it is ready for the upgrade.
2. Create a test environment before trying the upgrade process on actual servers to avoid unknowns and issues.
3. Make sure to certify all the user accounts with the required permissions to run and configure setup.
4. Be prepared for the servers' downtime.

Running SharePoint 2010 Setup and Configuring Your Server

If you have a single server, run the SharePoint Products Configuration wizard on it. However, if you have a server farm, perform installation on each of the servers in the farm, beginning with the server on which Central Administration is running. Make sure that the account you use for installation is a member of `db_owner` database role. After the installation is complete, you can verify the status of each site from Upgrade Status page in SharePoint Central Administration or by using the `localupgradestatus` operation in `stsadm`.

The following steps need to be performed in sequence after the preupgrade installation is complete:

1. Run SharePoint 2010 Server setup on the server that has Central Administration. In this case, "In-Place upgrade" is automatically selected.
2. Once step 1 is successful, run setup on all the other web front ends, as well as the application servers.
3. Run the SharePoint Products Configuration wizard on the server where Central Administration exists. Once configuration is complete, the configuration database, all the services, and the content databases are upgraded in order.
4. Run the SharePoint Products Configuration wizard on rest of the servers that are part of the farm.
5. Once configuration is successful on all the servers, the upgrade is complete as shown in Figure 1-3.