

Best Practices for Migrating to SharePoint 2013

Written by Jason Miller, Senior Consultant, Summit 7 Systems



Abstract

This white paper details a number of best practices for migrating to SharePoint 2013. These best practices also apply to migrations to most earlier versions of SharePoint.

Introduction

That SharePoint farm of yours has been around for a number of years now. How has it been running? Great!

Now that you have it stable and everything is sorted out, it's time to migrate to the next version of SharePoint—and that can be a daunting prospect. Understanding the best practices for a SharePoint migration will help ensure success. This paper details several of those best practices:

1. Establish good governance
2. Develop an effective communication plan
3. Perform thorough discovery and assessment
4. Evaluate the available migration approaches
5. Review the technical requirements for your target SharePoint version

While this paper focuses on migrations to SharePoint 2013, the methodology can be applied to migrations to previous versions of SharePoint as well.

Best practice #1: Establish good governance

It's no secret that most of your time should be invested in planning. What kind of planning? You'll read a lot of Microsoft TechNet sites that present various formulas on scaling your architecture. But what about the business needs of your organization? The only entity that can address the business needs of an organization is the organization. This type of planning should result in governance.

What is governance?

What is governance? Why do you need it?

Governance seeks to control how you use SharePoint and what should be stored there. Governance not only provides a basic set of rules for SharePoint usage, it enlightens departments on how to utilize SharePoint to meet the goals of business

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processes. Without governance, you will likely experience the “Bucket Full of Chaos” (BFOC).

A migration to a new SharePoint environment is an opportune time to review your existing governance and decide what to keep and what to throw away. You’ll also find that establishing governance for your new SharePoint farm can often dictate the parameters for the migration project.

Learn about your business processes and workflows

The creation of an effective governance strategy begins with an analysis of your business. Take the time to understand your business processes and workflows by asking questions such as these:

- How does the business process work?
- What does the process seek to accomplish?
- What is the history behind the process or workflow?
- How does this process plug in to SharePoint (if at all)?

Be sure to collect feedback from employees at multiple levels within the enterprise; understanding how people would like to use SharePoint is critical to the success of your project. Some roles to target for feedback include:

- Stakeholders of projects within the company
- Administrative assistants
- Business users and process pushers
- Technical staff
- Technical administrators

Follow the principles for a sound governance plan

Here are the principles of a sound governance plan:

- Control and manage the BFOC. SharePoint is not a file dump; it is a collaboration platform. If users are dumping files in here, get a handle on the Bucket Full of Chaos!
- Avoid heavy custom coding whenever possible. The more custom code that exists in your SharePoint solution, the more difficult it will be to migrate.
- Keep it simple.

- Create an environment that encourages project-based and cross-team collaboration.
- Do not make it harder for users to do their jobs.
- If a policy isn’t enforceable, throw it out.
- Foster an environment that strives for process optimization.
- Understand SharePoint’s criticality to your business. Many people who perform discovery and analysis are surprised to discover the operational procedures, SLAs and architecture diagrams that exist on SharePoint—and nowhere else. Your SharePoint farm could be mission critical!

Consider technical constraints

Remember that your governance is constrained by what you can support. For instance, if you cannot spend funds on a quality backup solution, you certainly do not want to place your company’s critical assets only on the SharePoint farm. Be sure to discover the tolerance level of users for a critical system outage, and make sure you engineer around single points of failure. The care and feeding of SQL Server is especially important in a SharePoint farm, so be sure to focus on the back end.

Consider business requirements and user expectations

Think about how your company does business. The solution you design has to fit into the culture of your company. Not only does it have to please the stakeholders and funding sources, it has to please the users. All of the analysis here will impact your governance and logical architecture.

Reassess your information architecture

Your information architecture defines how you will organize information and how your users will discover it. You may have found out that your prior information architecture (if you have one) wasn’t working out the way you wanted. Now is a great time to prepare a new one.

Consider how you will lay out your SharePoint farm's site collections and subsites as part of your migration planning. Many third-party tools (such as Migration Suite for SharePoint) can assist in restructuring these sites as you migrate to streamline information access and simplify navigation. Use the logical architecture to help you plan the physical architecture of your environment.

Develop a migration governance plan and clean up before you migrate

When you analyze your current farm, you'll likely discover that it hosts a good chunk of information that does not need to be migrated. How will you decide what content should be removed before you migrate? How will you tell your users about these guidelines? Consider creating a migration governance plan.

A migration governance plan sets rules for the migration before it takes place. If you bring over all of the existing content without pruning it, you may discover that you wasted valuable time preserving information or functionality that is no longer needed, and complicated the migration unnecessarily. Cleaning up your farm and consolidating content before you migrate can simplify the migration and reduce project costs and timelines. Equally important, it will make your target environment more clean and compliant from a governance perspective.

Best practice #2: Consider data externalization

Data externalization can be part of your cleanup strategy. Take advantage of SharePoint's data externalization by using a tool like Storage Maximizer for SharePoint to move large, old and unused data from SQL Server content databases to secondary, less-expensive repositories. In the short term, you'll gain performance efficiencies; in the long term, you'll ease the upgrade or migration process.

For example, one of Canada's largest credit unions, Conexus, wanted to migrate investment, loan, membership

and other documents from its legacy data system into Microsoft SharePoint. The credit union's database engineers, however, were rightly concerned about how storing 1.2 million documents in SharePoint on SQL Server would affect performance—Conexus staff interact with customers every day and need quick and reliable access to the data.

Data externalization provided the solution, enabling Conexus to use SharePoint to manage their business-critical data while storing, securing and protecting that data in a repository other than SQL Server. Using Storage Maximizer for SharePoint, Conexus was able to externalize the data during the migration into SharePoint so that it was never stored, even temporarily, in the SQL Server database. This approach eliminated the need to ensure that the database had enough space to hold the data and also eliminated the burden the new data would have placed on SQL Server, yielding better performance for users and enhancing employee productivity.

Best practice #3: Develop an effective communication plan

It's important to publish the migration governance plan to your user base. Hold calls with the stakeholders and site administrators to ensure that they understand what they need to do. Consider all the outreach options at your disposal, including using change management processes to get the necessary approvals before you begin working. Set firm deadlines on actions and make it clear that the migration cannot take place until everyone has done their part to prune information and prepare the site for migration.

Also consider your end users: SharePoint 2013 imposes a fairly hefty GUI change on users who are accustomed to SharePoint 2010 or 2007. After the migration, SharePoint 2013 will keep your site collection in legacy mode until you execute the command to upgrade. This means that not only will your site look like a SharePoint 2010 site, but

Cleaning up your farm and consolidating content before you migrate can reduce migration costs and timelines, and will make your target environment more clean and compliant.

SharePoint 2013 imposes a fairly hefty GUI change on users who are accustomed to SharePoint 2010 or 2007, so you can expect your users to ask questions. Get in front of it with an effective communication and training plan.

none of the SharePoint 2013 features will be activated. You can remain on the prior version's look and feel for a while if you like, but eventually you'll have to throw the switch on the upgrade. Once you upgrade, both the features and user interface will be updated to the 2013 experience. SharePoint 2013's visual interface is not unlike Windows 8 and Office 2013, so you can expect your users to ask questions. Get in front of it with an effective communication and training plan.

Finally, don't overlook the help desk—they should always know what's going on with your migration project. The help desk can communicate with your users on your behalf and lighten your migration project stress.

Best practice #4: Perform thorough discovery and assessment

Never assume

A man is sitting on a park bench beside a rather large dog. Another man approaches with a smile. "Does your dog bite?"

"No."

The man suddenly gets bit. "Ouch! I thought you said your dog didn't bite?"

"That wasn't my dog."

The first rule of discovery is: never assume. No matter how long you have been with your company, you should never assume anything when it comes to discovery and assessment of your farm. Many times we have been called in to assess the state of a farm and enjoyed the surprised looks on the faces of SharePoint administrators after they discover what users are doing in the environment.

Assess your environment

Think about the many different types of documents, data and solutions in your environment—in SharePoint and beyond. To be sure you know about all of them, be sure to ask a lot of questions

from your users, stakeholders and site collection administrators. It is vital that you communicate with a large cross-section of your user base. While most of your documents may be housed within SharePoint, your governance plans may encompass other documents in your enterprise (on network file servers or other collaboration systems, for example). The new governance plan may require these documents to be migrated into SharePoint.

Here are some of the types of data and documents to consider while performing the assessment:

- Project management plans, process improvement plans, and file or record plans—Is your SharePoint farm a record management system? More than likely, some of your users think it is and others think it is not. Decide, and include the answer in your governance. Be sure to consider the impact your decision will have on existing and future content.
- Enterprise content management platforms and governance plans
- Collaboration platforms—Many departments are likely using SharePoint to collaborate on documents. Sometimes they may be collaborating with outside users. Are you sure you know the details of what they are doing?
- Workflows and business process management products
- Business intelligence products
- Executive vision and strategy—Look around on the walls of your company.
- Governance plans for other systems
- Organizational charts for your company or organization
- Outside sources that have been identified as integration needs
- List of applications and file types
- Employee responsibility and usage policy

Pay special attention to potential trouble spots

Spend time performing an inventory of your current SharePoint system. Understand what is going on with your farm before you try to move it. If you don't understand the full scope of what

you're moving, you're likely to run into more problems during the migration.

The following items are typically included in the inventory and analysis because they can cause issues during migration:

- **Server-side data connections that may not work properly**—If there are firewalls in your environment, be sure to verify that any server-side data connections will still work after the migration. Also check server names and IP addresses.
- **Document versions**—A lot of folks use document versioning, so take a good look at its use in your environment. As part of your migration governance, decide whether to keep all of the versions, some of the versions, or none of the versions.
- **Alerts**—Almost everyone uses alerts to some degree. Verify the use of alerts and its impact on the environment if they are an issue during migration.
- **Incoming email on document libraries**—Another favorite SharePoint feature is incoming email. Consider whether it will still function once you migrate to SharePoint 2013. There's a lot to think about there, so plan time to study this issue.
- **Web parts**—Are all of your web parts out of the box? If there are any third-party web parts, be sure they are compatible with your new SharePoint 2013 farm. If you use Quick Apps for SharePoint (formerly Web Parts for SharePoint), you'll have confidence knowing that Dell takes responsibility for ensuring that everything built using Quick Apps will run in your new SharePoint environment.
- **Farm solutions**—Third-party farm solutions must be installed on the new farm – but be sure the solution is still needed. If a farm solution is no longer used, why migrate it?
- **Web customizations (CSS, master pages, page layouts)**—The more customizations you have on your SharePoint farm, the more difficult it will be to migrate. Therefore your overall migration governance plan should include a lot of time for correcting sites that include heavy custom code. Be sure to communicate with your users and help them to understand the difficulties that custom coding brings to the migration process. This applies mainly to customized code from SharePoint Designer or Visual Studio.
- **.Content types**—Some migration approaches may not preserve any extra content types you have in your farm. Take an inventory of the content types in use on your SharePoint farm and study whether your preferred migration method will assist with migrating them.
- **Custom site and list definitions**—Custom site and list definitions can be challenging to migrate. Seek to understand the use of custom site and list definitions so you can control them.
- **Custom search scopes**—Search scopes rarely migrate, so include a plan to reestablish them as part of your migration governance plan.
- **Content sources**—Content sources may have been established and forgotten during the lifetime of your SharePoint farm. Make sure to ask your site collection administrators and users whether there are content sources being indexed that you may not know about.
- **Custom field types**—Take note of any special custom field types in your environment. They may be lurking where you do not expect – and they may not migrate well!
- **Custom crawler impact rules and crawl schedules**—You'll need to write down the custom crawl schedules and impact rules that are used in your environment. In the case of crawler impact rules, they may no longer apply if you were able to beef up the hardware of your new farm. Crawl schedules may also deserve review because of better hardware.
- **iFilters that exist on the source that need to be on the destination**—iFilters are a separate installation. Be sure you know what iFilters are used in your SharePoint environment so you can reinstall them on the new environment.
- **InfoPath forms**—InfoPath forms are an interesting situation. By and large, they will migrate. However, you should take special care to understand if they are using code-behind, security in forms (digital signatures, etc.), or data connections that may be troublesome in the new environment. If so, include the migration of InfoPath forms

The more customizations you have on your SharePoint farm, the more difficult it will be to migrate. Therefore, your overall migration governance plan should include a lot of time for correcting sites that include heavy custom code.

Are your backups healthy? Have you tested a complete farm restoration? If not, do it now!

in your migration governance plan; for example, you might plan to deprecate the use of some forms in the environment and remove them before you begin migrating.

- **Authentication in current farm**—Does your authentication scheme jive with the capabilities of SharePoint 2013?
- **Custom navigation**—Verify the use of custom navigation in your environment and plan accordingly. If the custom navigation proves to be problematic in the destination environment, you'll need to know details of what to recreate.
- **Incoming content feeds or automation**—Take inventory of the content feeds in your environment. Make sure they will function when you introduce the site into the new environment.
- **Multiple language packs**—If you are using multiple language packs on SharePoint, verify that you have the same language packs installed in the new environment.
- **Workflows**—Workflows are a fantastic feature of SharePoint. Consider the three types of workflows: out-of-the-box, SharePoint Designer and Visual Studio workflows. Make sure that you understand how each is used and make plans to deal with them if they misbehave in the new environment. Be sure to include this information in your migration governance plan. Also be aware that workflows in SharePoint 2013 are radically different (see msdn.microsoft.com/en-us/library/jj163276.aspx for more information). You'll be re-engineering this part of your farm in SharePoint 2013. Pay close attention to the Workflow Manager requirements!
- **Other custom code solutions**—You may have enjoyed a staff of SharePoint developers who created a vast array of event listeners or other .NET code to plug in to your SharePoint farm. Are they still on staff? Will their code work in SharePoint 2013? Chances are very good that these customizations will be difficult to migrate. But there is an alternative: consider whether the new functionality in SharePoint 2013 will suffice. When you're evaluating tools and techniques, be sure to ask whether they will be supported and easy to migrate.
- **Network considerations**—Consider all of the elements of network connectivity, such

as subnets, VLANs, firewalls, load balancers and the use of SSL offloading. How will they impact your migration or the new farm?

- **Inventory of server tweaks**—While you were operating the old version of SharePoint, you likely made many fixes and tweaks to have the server running at peak efficiency. Assemble as much documentation about those changes as you can, including:
 - o Registry fixes/changes
 - o Cumulative updates
 - o Hotfixes
 - o Patches
 - o Network card settings
- **Backups**—Are your backups healthy? Have you tested a complete farm restoration? If not, do it now! Also be sure to consider the impact of operating two SharePoint farms on your backup system. Do you have enough capacity to maintain all of the data?

SharePoint 2013 gotchas

You should also be aware of changes from SharePoint 2010 to SharePoint 2013. If you want the full story, there is a [Microsoft article](#) that describes the features in SharePoint 2010 that have been deprecated or removed from SharePoint 2013. This section will focus on the key gotchas.

Visual upgrade

When you attach databases from 2007 to 2010, you are offered a visual upgrade procedure to get you to the 2010 look and feel. However, that procedure is not an option with SharePoint 2013. Now it's called a "deferred site collection upgrade." SharePoint 2013 will not automatically upgrade either your site collection's look and feel or its features—and once you decide to do the upgrade, you must upgrade both. In other words, you can't get any of the 2013 features while still retaining the old look—it's all or nothing. Your site will work as a 2010 site until you're ready to push that big red button. And once you do, it is a one-way transition; you can't back out of it. So before you take the plunge, make sure you have backups.

Site templates

Microsoft is removing a number of templates from SharePoint 2013 in order to simplify the list of templates that are available when a user creates a new site collection. Templates that will be removed include:

- Document workspace site template (Team Site templates are now used for document collaboration)
- Personalization template
- Meeting workspace template
- Group work site template
- Visio process repository template

Now, I will warn you the [Microsoft article](#) is not really all that clear. It says these templates are no longer there and will be removed in a future release of SharePoint. It's not clear to me and it may not be clear to you whether that means the templates will be removed from the release version of 2013 or the next after 2013. So read the article carefully and check it out.

Imaging Web service

The Imaging Web service, which provides functionality for creating and managing picture libraries, is included and supported in SharePoint 2013, but it will be removed from the next major release of SharePoint. The Imaging Web service is being removed to reduce security vulnerabilities and to simplify the number of ways to connect to SharePoint 2013. All the functionality of the Imaging Web service is available through the client-side object model (CSOM).

Excel services

In SharePoint 2013, users can't edit in the browser workbooks that have external data connections. Instead, you are prompted to open the workbook in the Excel client program.

Web Analytics

SharePoint Server 2010 Web Analytics has been discontinued and is not available in SharePoint 2013. Analytics processing for SharePoint 2013 is now a component of the Search service.

Use of SQL Server 2008 with SharePoint 2013

If you're planning on using SQL 2008 R2 with 2013, you need to be aware of an option that needs to be set: the max degree of parallelism option. When SQL Server runs on a computer with more than one microprocessor or CPU, it detects the best degree of parallelism—that is, the number of processors employed to run a single statement for each parallel plan execution. The max degree of parallelism option controls the number of processors used in parallel plan execution.

The default value for SQL 2008 R2 is zero, which lets the server determine the maximum degree of parallelism. However, 2013 requires it to be set to 1. You have to change that before you install 2013 or you won't get through the install. Note that SQL Server 2012 has the value set correctly out of the box.

A [Microsoft article](#) shows you how to set that option. Basically, you run a SQL script and SQL Management Studio. But, after you do that, 2008 R2 will happily reconfigure the maximum number of database locks for you to 5000. So you have to go back in and set the value back to zero. Here is a script that you can use:

```
sp_configure 'show advanced options',
1;
GO
reconfigure
GO
sp_configure 'locks', 0;
GO
```

Best practice #5: Evaluate migration approaches

Overview

SharePoint 2013 is the first SharePoint release where you won't be able to upgrade your SharePoint farm in place. Instead, you have two migration approaches to choose from:

- Database attach upgrade
- Upgrade using third-party tools

You must set max degree of parallelism option before you install SharePoint 2013 with SQL Server 2008 R2.

In-place upgrades are no longer an option with SharePoint 2013; database attach is now the default native approach.

This means you're going to operate two farms at once. You can decide to only use one approach or combine both approaches. Whatever you decide, you need to make sure that the approach best meets the goals of your organization.

Database-attach upgrade

If you migrated from an earlier version of SharePoint to SharePoint 2010, you had two upgrade options:

- **In-place upgrade method**—This is where you run the SharePoint setup wizard on your existing server and wait for it to lay down the new binaries and upgrade your databases.
- **Database-attach method**—This involves setting up a new server farm, installing the new version of SharePoint to it, and reconnecting content databases to upgrade your sites.

In-place upgrades are no longer an option with SharePoint 2013; the database attach approach is now the default native option. You will build

a brand new SharePoint 2013 farm and attach the databases from the old farm using Central Administration. This enables you to bring over a content database into a fresh, new farm that is free of problems. After the database is attached, upgraded and set up into a new Web application and site collection, you can change DNS over to the new farm.

This approach offers a number of benefits over the in-place upgrade. Many of them are obvious: If you make a mistake or something goes wrong, you can have your users continue to use the old farm until you work out the issues. You can even attach and upgrade multiple databases at the same time.

Of course there are negatives. Users will not be able to work on the sites with the new database until the upgrade is completed. The server itself and farm settings are not upgraded with this approach, so you'll have to manually transfer settings that you want to

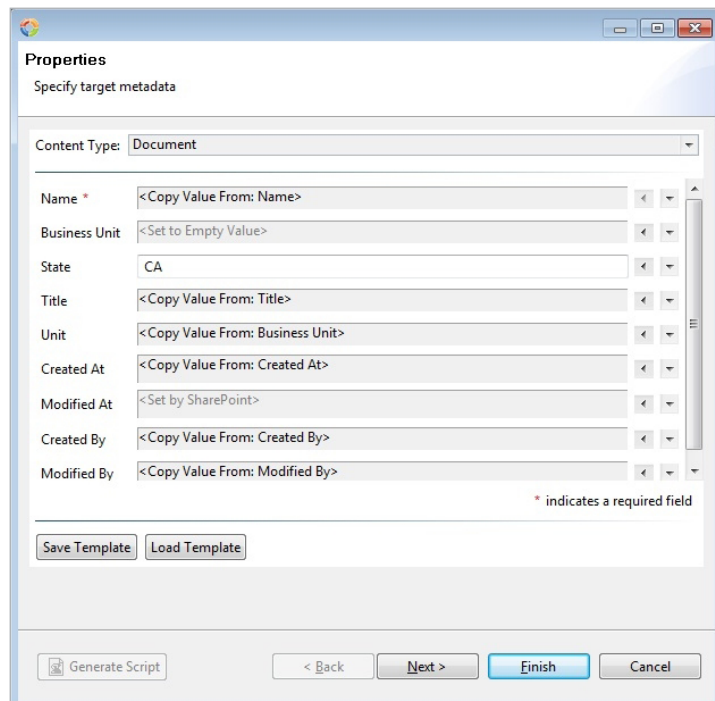
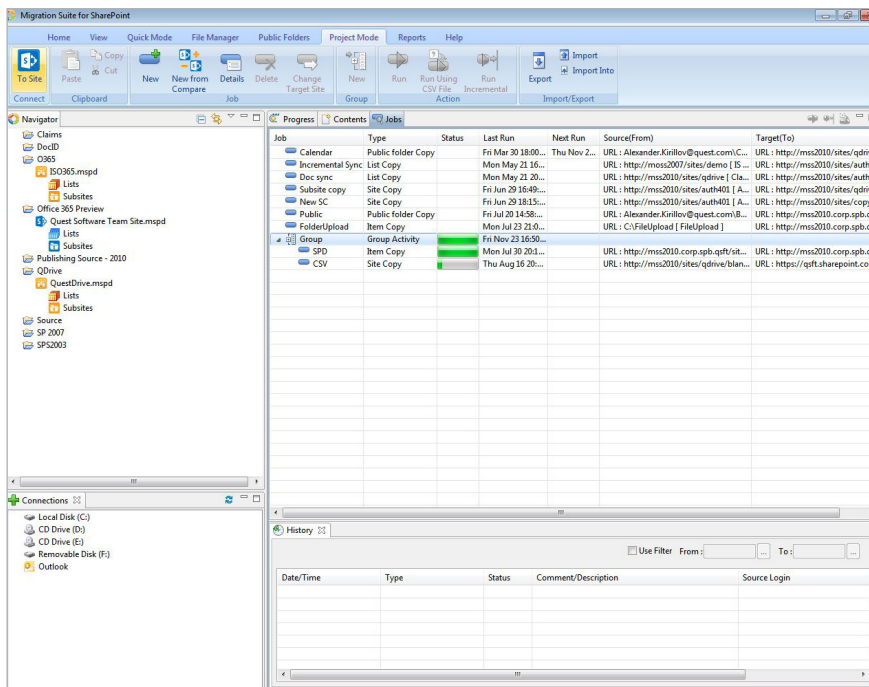


Figure 1. With Migration Suite for SharePoint, you can tag and classify items both on the fly and in place.





Third-party tools can offer significant flexibility with your migration efforts.

Figure 2. With Migration Suite for SharePoint, you can create migration jobs and schedule them to run at specific times and in a specific order.

preserve from the old farm into the new one. Customizations will also have to be transferred over manually. In addition, content databases are often quite large, so transferring them over the network can take significant time. Finally, you will have very little (if any) flexibility to rearrange your information architecture if you choose the database attach upgrade approach.

What if you need to achieve the ultimate in flexibility during your migration? Bring on the third-party tools.

Third-party tools

Third-party tools can offer significant flexibility with your migration efforts. Using Migration Suite for SharePoint, you can build a second farm and migrate bits of content at a time, as needed. You can also restructure your sites into the desired information architecture on the destination farm, copying sites or subsites into any level of the SharePoint hierarchy. For example, if your new information architecture calls for the promotion of one department into a new site collection, you can migrate the content

and change its location in the logical architecture of the destination farm.

Using a tool such as Migration Suite also enables your source and target farms to co-exist during the migration and testing: you migrate content when you want and flip DNS to the new farm when the destination is ready. Migration Suite also supports incremental migration of content; if anything changes on the source SharePoint farm while you're in a co-existence phase, you can kick off a job to migrate only the information that has changed.

You can also use Migration Suite to schedule migration jobs ahead of time or script them. If you have special circumstances, like migrating to a new farm in a different domain, Migration Suite can remap the security of your users and content into the new farm.

After analyzing the requirements for migration and how long an outage can be tolerated, most people find that using a third-party tool to perform a bulk of the migrations is a strong approach.



Be sure to carefully review SharePoint 2013's technical requirements. They're more significant than with prior versions of SharePoint, especially in the area of memory.

Best practice #6: Review SharePoint 2013 technical requirements

Finally, be sure to carefully review SharePoint 2013's technical requirements. They are more significant than with prior versions of SharePoint, especially in the area of memory.

At a high level, you want to throw a lot of processors and memory at your SQL Server machines, and as much horsepower to multiple Web front ends and application servers as you can. Consider using virtual servers; they can often save a great deal of money.

The sections below list the minimum system requirements. You can read more about these requirements at <http://technet.microsoft.com/en-us/library/cc262485.aspx>.

Software requirements

Microsoft's guidance on the minimum requirements for Windows and SQL Server is as follows:

One of the following:

- The 64-bit edition of Microsoft SQL Server 2012.

- The 64-bit edition of SQL Server 2008 R2 Service Pack 1

One of the following:

- The 64-bit edition of Windows Server 2008 R2 Service Pack 1 (SP1) Standard, Enterprise, or Datacenter
- The 64-bit edition of Windows Server 2012 Standard or Datacenter

What does this mean for those of you who are moving to SharePoint 2013 from legacy versions? SharePoint 2010 does run on older versions. So, for example, if you are on Windows 2008 or SQL 2005, there will be some base level infrastructure readiness steps you will need to take to prepare for your migration to SharePoint 2013.

Note that if you plan to use SQL Server 2008 R2, you will need to set a server option ("max degree of parallelism") for SharePoint 2013 to install and operate properly. This was covered earlier in this paper.

You should also spend a lot of time gathering information on performance

Hardware requirements—web servers, application servers, and single server installations

Installation scenario	Deployment type and scale	Processor	RAM	Disk space
Single server with a built-in database or single server that uses SQL	Development or evaluation installation of SharePoint Foundation 2013	64-bit, 4 cores	8 GB	80 GB
Single server with a built-in database or single server that uses SQL Server	Development or evaluation installation of SharePoint Server 2013	64-bit, 4 cores	24 GB	80 GB
Web server or application server in a three-tier farm	Pilot, user acceptance test, or production deployment of SharePoint Server 2013	64-bit, 4 cores	12 GB	80 GB

Table 1. SharePoint 2013 minimum hardware requirements for web servers, application servers and single server installations



Component	Minimum requirement
Processor	64-bit, 4 cores for small deployments
	64-bit, 8 cores for medium deployments
RAM	8 GB for small deployments
	16 GB for medium deployments
	<i>See scaling requirements for large deployments.</i>
Disk	80GB

Table 2. SharePoint 2013 minimum hardware requirements for database servers

counters to watch on SharePoint 2013. If you experience performance issues with SharePoint, you will want to have the performance counter information handy for trouble-shooting. For a good resource for monitoring and maintaining SharePoint 2013, see <http://technet.microsoft.com/en-us/library/ff758658.aspx>.

Conclusion

I'm not a wise, bearded man sitting on a stone pedestal high in the mountains, and I certainly cannot predict how your migration will go. But I know that following the best practices discussed here will help you have a faster, less stressful migration.

Here are a few final thoughts to keep in mind during your migration project:

- **Be realistic about your project timeline.** Don't sell yourself short and do not sell high expectations to your users. Be honest and build in plenty of "pad time" to complete your project. Likewise, be realistic about your expectations for your users. You're moving their cheese, so to speak. Be respectful of that and the time they will invest getting used to the changes.
- **Include project milestones.** Everyone likes project milestones. Define them and the clear goals to reach them.
- **Keep in touch with users, stakeholder and help desk.** Keeping everyone informed will make the project proceed more smoothly.
- **Evaluate third-party tools.** The right tools can pay for themselves many times

over by reducing your migration timeline and helping to deliver an optimal target environment.

- Hopefully the tips and information presented in this white paper will arm you with enough information to succeed.

About the author

Jason Miller (MCITP, MCTS, MCSE, MCSA + Messaging, MCP) has more than 18 years of technology experience. Years ago, he was a theater major and computers were his hobby. Over time, the hobby became the love and he found himself living and breathing technology. Today at Summit 7 Systems, he engineers anything from small projects to gargantuan enterprise behemoths, working to build awesome, creative solutions that help customers improve their lives.

Jason came to Summit 7 Systems from NASA, where he was the chief engineer of an agency-wide messaging system for 65,000 users. The project was based on Microsoft Exchange Server and also involved SharePoint and Office Communications Server, along with Mac and Linux. Prior to NASA, Jason helped the PEO-Aviation office at Redstone Arsenal achieve success in information technology.



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