Exploration of SharePoint 2013 Requirements for Contoso

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Overview

Contoso is currently planning to incorporate Microsoft technologies into their current environment. There are several core pieces of technology that will be implemented in various segments. The goal of this document is to outline the requirements that will have an effect on how Microsoft SharePoint 2013 will be architected to fit their needs.

Contents

The implementation of Microsoft SharePoint 2013 will be conducted in several distinct phases that include:

- Discover and Refine Requirements
- Analyze and Prioritize Requirements
- Design a Solution That Meets the Requirements
- Govern Solution Delivery, Operation, and Maintenance

This document will cover the first phase: Discover and Refine Requirements. In order to be successful in the planning of Microsoft SharePoint, we will focus on gathering requirements that focus on these key areas:

- Understanding the Minimum Hardware Requirements
- Understanding BCM Options
- Planning a Successful SharePoint Solution Strategy
- Planning a Governance Strategy
- Planning the Information Architecture
- Discovery of Business Processes that will use Microsoft SharePoint 2010
- Understanding the Security Requirements
- Understanding the Business Intelligence Requirements
- Understanding how the Role of the Office Client
- Understanding the Business Continuity Requirements
- Understanding of Performance and Reliability Requirements

We will break down each of these sections in hopes of capturing all of the requirements in the planning phase as to alleviate any confusion or exclusion of the requirements.

Understanding the Minimum Requirements

In the proposed architecture, the servers outlined do not have enough RAM, processors, or operating systems. In order to properly plan for Microsoft SharePoint 2010, the servers must meet the minimum requirements.

Review the Minimum Requirements

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

The requirements in the following table apply both to installations on a single server with a built-in database and to servers running SharePoint Server 2013 in a multiple server farm installation.

Component	Minimum requirement
Processor	64-bit, four cores
RAM	• 8 GB for developer or evaluation use • 12 GB for production use in a single server or multiple server farm
Hard disk	80 GB for system drive You must have sufficient space for the base installation and sufficient space for diagnostics such as logging, debugging, creating memory dumps, and so on. For production use, you also need additional free disk space for day-to-day operations. Maintain twice as much free space as you have RAM for production environments.

Hardware requirements—Database servers

The requirements in the following table apply to database servers in production environments with multiple servers in the farm.

Component	Minimum requirement
Processor	• 64-bit, four cores for small deployments • 64-bit, eight cores for medium deployments
RAM	• 8 GB for small deployments • 16 GB for medium deployments
Hard disk	80 GB for system drive Hard disk space is dependent on the size of your SharePoint content. For information about estimating the size of content and other databases for your deployment.

Software requirements

The Microsoft SharePoint Products Preparation Tool can assist you in the installation of the software prerequisites for SharePoint 2013. Ensure that you have an Internet connection, because some prerequisites are installed from the Internet. For more information about how to use the Microsoft SharePoint Products Preparation Tool, see Install SharePoint 2013 on a single server with SQL Server and Install SharePoint 2013 across multiple servers for a three-tier farm.

Minimum software requirements

This section provides minimum software requirements for each server in the farm.

Minimum requirements for a database server in a farm:

- 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
- The 64-bit edition of Windows Server 2008 R2 Service Pack 1 (SP1) Standard, Enterprise, or Datacenter or the 64-bit edition of Windows Server 2012 Standard or Datacenter
- The SharePoint parsing process crashes in Windows Server 2008 R2 (KB 2554876)
- FIX: IIS 7.5 configurations are not updated when you use the ServerManager class to commit configuration changes (KB 2708075)
- Hotfix: ASP.NET (SharePoint) race condition in .NET 4.5 RTM (KB 2759112)
- Microsoft .NET Framework version 4.5

Minimum requirements for a single server with built-in database:

- The 64-bit edition of Windows Server 2008 R2 Service Pack 1 (SP1) Standard, Enterprise, or Datacenter or the 64-bit edition of Windows Server 2012 Standard or Datacenter
- The SharePoint parsing process crashes in Windows Server 2008 R2 (KB 2554876)
- FIX: IIS 7.5 configurations are not updated when you use the ServerManager class to commit configuration changes (KB 2708075)
- Hotfix: ASP.NET (SharePoint) race condition in .NET 4.5 RTM (KB 2759112)
- The Setup program installs the following prerequisite for a single server with built-in database:
    - Microsoft SQL Server 2008 R2 SP1 - Express Edition
- The Microsoft SharePoint Products Preparation Tool installs the following prerequisites for a single server with built-in database:
    - Web Server (IIS) role
    - Application Server role
    - Microsoft .NET Framework version 4.5
    - SQL Server 2008 R2 SP1 Native Client
    - Microsoft WCF Data Services 5.0
    - Microsoft Information Protection and Control Client (MSIPC)
    - Microsoft Sync Framework Runtime v1.0 SP1 (x64)
    - Windows Management Framework 3.0 which includes Windows PowerShell 3.0
    - Windows Identity Foundation (WIF) 1.0 and Microsoft Identity Extensions (previously named WIF 1.1)
    - Windows Server AppFabric
    - Cumulative Update Package 1 for Microsoft AppFabric 1.1 for Windows Server (KB 2671763)

Minimum requirements for front-end web servers and application servers in a farm:

- The 64-bit edition of Windows Server 2008 R2 Service Pack 1 (SP1) Standard, Enterprise, or Datacenter or the 64-bit edition of Windows Server 2012 Standard or Datacenter.
- The SharePoint parsing process crashes in Windows Server 2008 R2 (KB 2554876)
- FIX: IIS 7.5 configurations are not updated when you use the ServerManager class to commit configuration changes (KB 2708075)
- Hotfix: ASP.NET (SharePoint) race condition in .NET 4.5 RTM (KB 2759112)
- The Microsoft SharePoint Products Preparation Tool installs the following prerequisites for front-end web servers and application servers in a farm:
  - Web Server (IIS) role
  - Application Server role
  - Microsoft .NET Framework version 4.5
  - SQL Server 2008 R2 SP1 Native Client
  - Microsoft WCF Data Services 5.0
  - Microsoft Information Protection and Control Client (MSIPC)
  - Microsoft Sync Framework Runtime v1.0 SP1 (x64)
  - Windows Management Framework 3.0 which includes Windows PowerShell 3.0
  - Windows Identity Foundation (WIF) 1.0 and Microsoft Identity Extensions (previously named WIF 1.1)
  - Windows Server AppFabric
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Minimum requirements for client computers

- A supported browser. For more information, see [Plan browser support in SharePoint 2013](#).

Source: http://technet.microsoft.com/en-us/library/cc262485.aspx

Understanding Business Continuity Management Options

Business Continuity Management (BCM) has several key areas that relate to disaster recovery for SharePoint 2013. These include: Failover Clustering, Database Mirroring, Network Load Balancing, and the Backup and Restore options available through the product. Prior to configuring a solution, planning should be done first.

Business continuity management is an ongoing process that should begin with an understanding of what should be protected before developing a plan on how to protect it. As an ongoing process there is no point of conclusion until an event arises that necessitates the implementation of your solution, such as a disaster that impacts your service as provided in the primary site. Once you have determined what content should be protected, you can now

consider how to protect that content in which the solution design is determined by your objectives to include any service level agreements (SLA), recovery point objectives (RPO), and recovery time objectives (RTO). Another key objective that is commonly overlooked are operating level agreements –these are the agreements between yourself and any ancillary dependencies on which your service relies –such as Active Directory or infrastructure. Your individual service level agreements and recovery time objectives should be mapped to any existing operating level agreements.

Keep in mind that service level agreements are largely applied to high availability scenarios, whereas RPO and RTO are applied to disaster recovery scenarios.

Most Microsoft SharePoint Server 2010 deployments are content driven, in that much of the critical data hosted within SharePoint is comprised of user generated content, such as Lists or individual List items, I.e. documents. Unless the deployment is largely a Web Content Management scenario, you should considering focusing your attention on protecting the content prior to customizations for example.

A deployment's configuration may be one of the most commonly overlooked components in a business continuity management plan; however, configuration is critical to your ability to rapidly recover and provide a service that is consistent to the source service. Replicating configuration changes manually is an arduous and time consuming task when considering the number of unique configuration areas within SharePoint, from general Web application settings to individual Service Applications.

The objectives are measured in many cases through SLA, RPO, and RTO requirements, as RPO and RTO are decreased, the overall cost of the solution in many cases will increase to facilitate these stricter requirements. For example, SQL Server Log Shipping can provide a RPO of 5 minutes; however, if the RPO is considerably less than 5 minutes, you will need to start looking at other solutions which as a result can increase the overall cost of the business continuity management solution – keep in mind that while the solution cost may increase, data loss is non-negotiable, meaning you can't buy back lost data.

Understanding what is provided natively and how to capture and leverage new features and improvements is an important step in business continuity management planning since there is no one solution that can meet every need. In this session we'll cover what Microsoft SharePoint Server 2013 provides out of the box in way of improvements that support high availability and disaster recovery as well as discuss the differences between cold and warm standby solutions.

Some of the native capabilities in SharePoint 2010 that focus on BCM include High Availability (HR) and Disaster Recovery (DR).

High Availability includes SQL Server Database Mirroring, Failover Clustering, and Network Load Balancing. There is some overlap with disaster recovery, as it includes SQL Server Database Mirroring, Fail Over Clustering, and Log Shipping. SQL Server Replication is not supported in SharePoint 2010.

Failover Clustering is a proven technology and provides horizontal scale for SQL Server but although it does provide a good HR and DR plan, it cannot solve both at the same time without combining it with other technologies such as database mirroring or log shipping. Failover Clustering performs at the server level. All of the servers in the cluster must be identical.

Database Mirroring is new to SharePoint 2010 at works at the individual database level not the OS or SQL Server level. Database mirror maintains two copies of a single database on separate, distinct SQL Server instances. When one fails, the other SQL instance can be configured to take over automatically. There is a delay in this switch. Database Mirroring does not require the same hardware set up and is a cheaper option than Failover Clustering.

Log Shipping allow you to send transaction log backups from a primary database on a primary server instance to one or more secondary databases on separate secondary server instances. The transaction log backups are applied to each of the secondary database individually.

Attribute	Failover Clustering	Log Shipping	Database Mirroring
Distance	Limited	No distance limitation	No distance limitation
Server Switch	Automatic or Manual	Manual	Automatic or Manual
Avg. Switch Time	30 sec - 2 min	Minutes	10 sec - 1 min
Protects	Full SQL Server Instance	Individual Database	Individual Database
Granularity	Entire Instance	Per Transaction log	Per Transaction
Recovery Node Requirements	None	Bulk logged or Full	Full
Works with other SQL Server Editions		Yes	No
# of Standby Servers	Up to 8	Unlimited	1
Editions Supported	Dev, Enterprise, Standard	Dev, Enterprise, Standard, Workstation	Dev, Enterprise, Standard
Special Hardware	Yes	No	No
Data Loss	None	Likely	Maybe
Single Point of Failure	Disk Subsystem	None	None
Redundant Server can be used for reporting	No	Maybe Yes	

These solutions can be combined. A given database can be mirrored or log shipped at the same time.

Network Load Balancing is available in both hardware and software options. Microsoft provides a free software version with Windows Server called Network Load Balancer (NLB). Each product can vary widely and should be considered on a case by case basis.

SharePoint 2010 as a product offers us several scripting options through PowerShell as well as backup and restore capabilities through Central Administration. Depending on the version of SQL Server, SQL Snapshots are also an option (Enterprise Only).

Outside of the options listed above, we also have the ability to do SharePoint Farm backups using:

- Systems Center Data Protection Manager 2010
- SharePoint 2013
- VSS Writer

Each of these offers Full and differential backups but SCDPM also offers incremental. SCDPM supports backups up to 80 TB, while SharePoint has a limitation of up to 1.5 TB.

Planning a Successful SharePoint Solution Strategy

Prior to gathering the requirements for how Microsoft SharePoint should work, it is important to understand the following:

- Who are the key players involved with the project?
- What are the reporting relationships between the stakeholders?
- Why is each stakeholder involved?
- What are the overall business objectives? Vision statements for each?
- How do the business objectives relate to the organization's strategic initiatives and mission?
- Are there any differing goals, conflicts, etc?
- What will determine the success of the project?
- What processes are in place to maximize and measure user adoption?
- What are the plans for continuing maintenance and monitoring of the environment?

The above questions are more than just "fill in the blanks". These are generally conversation starters to ensure that enough thought has been put into these areas. Often times, these items are overlooked and it is tough to understand if the implementation was successful or not.

It is important to map the overall business objectives to SharePoint functionality early in the process to help decide if SharePoint is a good solution – these cannot be forced.

Planning a Governance Strategy

Once we have been able to identify who the stakeholders are and how they will be measuring the success, we will be able to continue on by gaining an understanding of their governance strategy.

One of the first steps in defining a governance strategy is to build a governance team that will be comprised of members of IT, Corporate Training, HR, Corporate Communications, Cyber Security, Site Collection administrators, etc.

- Who will make up the governance board?
- What is the vision statement of the project?

- What are the defined roles and responsibilities?
- What are the policies and standards in regards to:
    - SharePoint Content
    - Information Design
    - Security
    - Features
    - Navigation
    - Custom Code
    - Composite Applications
    - Branding

Planning the Information Architecture

The information architecture of SharePoint describes how content will be organized and accessed. This can be a time consuming process and should be well planned prior to adding content into SharePoint. Some of the key topics around this area include:

- What type of sites will be included and how will they be accessed?
- What type of content will SharePoint contain?
- Are there any security restrictions on particular content?
- How will users find this information?
- What is the expected user experience?
- How will documents be stored?
- What properties are important for each type of document?
- What are the commonalities of these properties?
- How are the documents being stored prior to moving them to SharePoint?
- Are there any specific policies around document management?
- What managed terms and keywords are expected?

Discovery of Business Processes that will use Microsoft SharePoint 2013

Microsoft SharePoint 2010 offers much more than document management. It is important to identify what business processes as well. It is important to help the stakeholders understand which processes can be simplified in SharePoint and which ones cannot.

- What business processes are tied to content stored in SharePoint?
- Are there any policies around information stored in SharePoint?
- What type of browsers will be supported in the organization?
- Who is responsible for defining the processes? [governance]
- Who is responsible for maintain or creating workflows with SharePoint? [governance]
- What composite applications will be available? [governance]
- Do you expect to integrate Line of Business data within SharePoint?

Understanding the Security Requirements

Security within SharePoint is a critical piece and understanding the requirements prior to building out the farm is critical to project success. Changes in security requirements can affect how the overall SharePoint farm is constructed and the communication protocols used for each. It is important to gather the following:

- Who will have access to the system?
- Who will maintain those users?
- How will they access the system?
- Will a user be able to access the system externally? If so, will their rights differ?
- What form of authentication do we expect to use?
- Will the farm contain PII or information that has specific security around it?
- Are there any specific requirements on how the data should be stored? (TDE, etc)
- Are there any specific requirements on how the information should be transported?
- Will certificates be used within the system?
- Will ports be blocked?
- Will anti-virus be configured?
- What server hardening techniques are expected?
- Are there plans for any gateway or proxy devices?
- What type of load balancers will be used and what protocols do they support?
- Are there any pre-defined network topologies that we need to be aware of?
- Will Right Management be required?
- Will compliance and auditing be required?
- What is the planned response to security threats? [governance]
- What are the current password policies?
- What are the current GPO settings?
- Will security groups be maintained in AD and\or SharePoint?

Understanding the Business Intelligence Requirements

Business Intelligence requires additional planning over and above that needed on a typical SharePoint implementation and can be critical in not only dictating how the farm is constructed, but what SQL Server product is used for support. The following items should be considered:

- Do you plan to incorporate any of the following:
    - Reports
    - Charts
    - Dashboards
    - Scorecards
    - KPIs
    - Excel Services

- o PerformancePoint
  - o Visio
- Each of the above will need to be planned for not only its existence, but also the type of data, freshness of data, amounts expected, etc.

Understanding how the Role of the Office Client

Microsoft Office has tight integration with Microsoft SharePoint 2013. There are many features that can be implemented and should be taken in account for.

- What version of Microsoft Office is available to the end-users?
- Will all end-users have a copy of Microsoft Office locally?
- Do you expect that users will work offline?
- Do you expect a large number of users to be accessing the same documents?
- Do you expect co-authoring?
- Do you expect to support mobile applications?

Understanding the Business Continuity Requirements

The following questions will help identify how to capture the business continuity requirements for the organization.

- Do you have any defined SLAs?
- What is your expected RPO?
- What is your expected RTO?
- Who is responsible for taking backups? How often?[governance]
- Who is responsible for creating and maintaining the DR plan? [governance]
- How often do you plan on testing your DR plan?
- What is the location of your data centers?

Understanding of Performance and Reliability Requirements

Once the content of the SharePoint site has been identified, it will be important to gain an understanding the performance and reliability requirements.

- How many concurrent users do you expect?
- What is your expected growth or adoption rate over the next three years?
- What is the expected performance metrics?
- What services do you expect to be available at all times?
- Do you expect to span geographical areas? Distance?
- What is the distance from AD to SharePoint to SQL Server?
- When are your peak hours?

- Who is responsible for monitoring and maintaining SharePoint? [governance]
- What is the expected load on the servers?
- How much RAM can we expect to have on each server?
- What is the network speed?
- Are there any specific encryption requirements?
- Will all of the servers be virtual? Vendor? Blade distribution? NUMA Boundaries? RAM Allocation?
- Describe the Load Balancers that will be used? Who is responsible for their configuration?
- Is there budget for Staging and Development servers?
- What is the current Software Development Life Cycle process?
- Are there any concerns on being able to acquire the requested hardware?
- How much time is allocated in the deployment plan for performance and reliability testing?

Summary

Every Microsoft SharePoint 2013 implementation is different and it is vital to understand the requirements that will help build a system to will promote success. This document is meant to help trigger requirements that may be critical architecture component.