

List of Quest Software Rules in Server Administrator *for SharePoint v1.2*

Assessing SharePoint Size	2
Improving Performance	3
Antivirus	3
Farm Configuration	4
Server	5
Improving Availability	10
Farm Configuration	10
Search Topology	12
Farm Configuration	12
Security.....	13
Antivirus	13
Farm Configuration	13
SharePoint 2010 Upgrade	14
Farm Configuration	14
Internet Information Services	14
Microsoft Pre-Upgrade Check.....	15
Server	15
SQL	15
Supportability.....	17
Farm Configuration	17
Network.....	17

Assessing SharePoint Size

One of the biggest strengths of SharePoint is its ease of adoption: users work within a familiar Microsoft Office environment. SharePoint is so easy to use that hundreds or even thousands of new sites are created monthly in some large enterprise environments.

SharePoint relies on Microsoft SQL Server technology to store its data. When the volume of data in back-end SQL databases grows, associated maintenance costs also increase. To control costs and growth, you need to understand how and when the data in your SharePoint environment is used. This information will help you determine, for example, when to proactively increase capacity for business-critical data.

To view the SharePoint configuration details

1. Select the required farm and the Overview tab.

You can quickly see the number of servers, sites, site collections, solutions, features, and web applications within the selected farm. As well as the space currently used by the content database.

2. You can select to print this report and save it for future use, or to present to required stakeholders.

Improving Performance

Example Use Case: A SharePoint administrator who is responsible for hosting the company's intranet portal built on SharePoint 2007 has been noticing some performance issues and users are complaining.

To determine where the issues are originating

1. The administrator opens Server Administrator *for SharePoint*, selects the **Scan Farm** option, and enters the farm hosting the intranet portal.
2. Once the scan completes, he selects the farm in the treeview.

From the Risk Summary tab, he sees there are there are numerous performance risks.

3. He clicks the **Performance** section in the Risk by Category pie chart and sees the risks arranged by severity.
4. He selects the first critical risk and learns that his web servers do not have the minimum recommend memory for the SharePoint web server of 2GBs.
5. He closes the risk detail window and selects the next risk. This risk notes that the SQL server is not using a 64 bit-Operating System (OS) even though the hardware is capable of 64 bit.

He uses the resolution information for the risk to arrive at a mitigation strategy.

Potential Risks to Performance

The following rules highlight potential issues to performance and the actions required to resolve the issues:

Antivirus

Rule	Description
Antivirus scan on download is enabled	The Antivirus scan on download functionality helps protect end users from downloading virus laden documents from SharePoint sites. However, downloading too many documents could overwhelm the antivirus engine which could result in server downtime.
Antivirus threads less than core CPU count	The SharePoint antivirus API lets administrators adjust how many processor threads the antivirus scanning engine can use while scanning documents. Document upload and download performance may increase by configuring the antivirus engine to use a number of threads equal to the number of physical processor cores on each web server front-end.

For example, if a Web server contains two hyper-threaded quad core processors, the number of antivirus threads should be set to 8 threads (2 x 4 physical cores). This will allow more simultaneous scans and may more evenly distribute server workload across processors.

Farm Configuration

Rule	Description
Search index files are on the same drive as the OS	<p>The Search index file is located on the same drive as the operating system. The Search Index and/or Query service store index files on a local disk. By default, this disk is configured to be the same disk on which the application is stored, however, this is not best practice and may result in critical performance or availability issues.</p>
Too many databases per web application	<p>Microsoft recommends that no more than 100 databases be attached to a single Web application.</p> <p>Server Administrator for SharePoint uses the following scale when determining the level of risk, determined by the by number of databases per Web application:</p> <ul style="list-style-type: none">• Low: 10 or more• Medium: 20 or more• High: 30 or more• Critical: 50 or more
Too many SharePoint web applications installed in a single farm	<p>Microsoft recommends that no more than 99 Web applications be associated with a single service application (described as a Shared Service Provider (SSP) in 2007). Service performance declines as the number of Web applications associated with the service increases. Server Administrator for SharePoint uses the following scale when determining the level of risk.</p> <p>Risk severity by number of SharePoint Web applications in a single farm:</p> <ul style="list-style-type: none">• None: 9 or less• Low: 10 or more• Medium: 20 or more• High: 30 or more• Critical: 50 or more

Too many site collections in a single content database

Microsoft testing has shown that SharePoint performance dramatically decreases as the number of site collections per database increase. Microsoft recommends that a content database contain no more than 50,000 sites, but indicates through testing that performance rapidly declines after just 2000 sites. Additionally, it can be difficult to control content database size as the number of site collections increase and larger databases may be harder to backup, move, and otherwise manipulate which can complicate operational procedures.

Server Administrator for SharePoint uses the following scale when determining the level of risk, determined by the number of site collections in a single content database:

- Low: 250 or more
 - Medium: 500 or more
 - High: 1000 or more
 - Critical: 15000 or more
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Server

Rule	Description
Server does not meet minimum memory requirements: SharePoint database server role	<p>A SharePoint database server requires a minimum amount of memory to ensure minimum performance and availability.</p> <p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> The minimum memory requirement is 1 GB.</p> <p><i>SharePoint 2010</i> The minimum memory requirement depends on your farm size:</p> <ul style="list-style-type: none">- A small farm (a farm with two or fewer servers, not including database servers) requires a minimum of 8 GB.- A large farm (a farm with more than two servers, not including database servers) requires a minimum of 16 GB.

<p>Server does not meet minimum processor requirements: SharePoint database server role</p>	<p>A SharePoint database server requires a minimum amount of processing power in order to ensure minimum performance and availability.</p>
	<p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> A database server processor should have at least one core with a speed of at least 1.4 GHz.</p>
	<p><i>SharePoint 2010</i> The number of cores you need to ensure minimum performance and availability depends on your farm size:</p> <ul style="list-style-type: none"> - A small farm (a farm with two or fewer servers, not including database servers) requires a minimum of four cores. - A large farm (a farm with more than two servers, not including database servers) requires a minimum of eight cores.
<p>Server does not meet minimum disk space requirements: SharePoint database server role</p>	<p>A SharePoint database server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher.</p>
	<p><i>Windows/SharePoint Services 3.0/SharePoint 2007</i> The minimum disk space required is 3 GB.</p>
	<p><i>SharePoint 2010</i> The minimum disk space required is twice the amount of RAM, or 16GB, whichever is larger. For example, if you have 16 GB RAM installed, you should have a minimum of 32 GB free disk space.</p>
<p>Server does not meet minimum memory requirements: SharePoint index server role</p>	<p>A SharePoint index server requires a minimum amount of memory to ensure minimum performance and availability. The minimum memory requirement is 2 GB.</p>
<p>Server does not meet minimum processor requirements: SharePoint index server role</p>	<p>A SharePoint index server requires a minimum amount of processing power in order to ensure minimum performance and availability. An index server processor should have at least one core with a speed of at least 2.5 GHz.</p>
<p>Server does not meet minimum disk space requirements: SharePoint index server role</p>	<p>A SharePoint index server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher. The minimum disk space required is 3 GB.</p>
<p>Server does not meet minimum memory requirements: SharePoint query server role</p>	<p>A SharePoint query server requires a minimum amount of memory to ensure minimum performance and availability. The minimum memory requirement is 2 GB.</p>

<p>Server does not meet minimum processor requirements: SharePoint query server role</p>	<p>A SharePoint query server requires a minimum amount of processing power in order to ensure minimum performance and availability. A query server processor should have at least one core with a speed of at least 2.5 GHz.</p>
<p>Server does not meet minimum disk space requirements: SharePoint query server role</p>	<p>A SharePoint query server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher. The minimum disk space required is 3 GB.</p>
<p>Server does not meet minimum memory requirements: SharePoint application server role</p>	<p>A SharePoint application server requires a minimum amount of memory to ensure minimum performance and availability.</p> <p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> The minimum memory requirement is 2 GB.</p> <p><i>SharePoint 2010</i> The minimum memory requirement is 8 GB.</p>
<p>Server does not meet minimum processor requirements: SharePoint application server role</p>	<p>A SharePoint application server requires a minimum amount of processing power in order to ensure minimum performance and availability.</p> <p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> An application server processor should have at least one core with a speed of at least 2.5 GHz.</p> <p><i>SharePoint 2010</i> An application server processor should be a 64-bit processor with a minimum of four cores.</p>
<p>Server does not meet minimum disk space requirements: SharePoint application server role</p>	<p>A SharePoint application server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher.</p> <p><i>SharePoint 2007/WSS 3.0</i> The minimum disk space required is 3 GB.</p> <p><i>SharePoint 2010</i> The minimum disk space required is twice the amount of RAM, or 16GB, whichever is larger. For example, if you have 16 GB RAM installed, you should have a minimum of 32 GB free disk space.</p>

Server does not meet minimum memory requirements: SharePoint Excel server role	A SharePoint Excel server requires a minimum amount of memory to ensure minimum performance and availability. <i>SharePoint 2007</i> The minimum memory requirement is 2 GB. <i>SharePoint 2010</i> The minimum memory requirement is 8 GB.
Server does not meet minimum processor requirements: SharePoint Excel server role	A SharePoint Excel server requires a minimum amount of processing power in order to ensure minimum performance and availability. <i>SharePoint 2007</i> An Excel server processor should have at least one core with a speed of at least 2.5 GHz. <i>SharePoint 2010</i> An Excel server processor should be a 64-bit processor with a minimum of four cores.
Server does not meet minimum disk space requirements: SharePoint Excel server role	A SharePoint Excel server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher. <i>SharePoint 2007</i> The minimum disk space required is 3 GB. <i>SharePoint 2010</i> The minimum disk space required is twice the amount of RAM, or 16GB, whichever is larger. For example, if you have 16 GB RAM installed, you should have a minimum of 32 GB free disk space.
Server does not meet minimum memory requirements: SharePoint web server role	A SharePoint Web server requires a minimum amount of memory to ensure minimum performance and availability. <i>Windows SharePoint Services 3.0/SharePoint 2007</i> The minimum memory requirement is 2 GB. <i>SharePoint 2010</i> The minimum memory requirement is 8 GB.

Server does not meet minimum processor requirements: SharePoint web server role	<p>A SharePoint Web server requires a minimum amount of processing power in order to ensure minimum performance and availability.</p> <p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> A Web server processor should have at least one core with a speed of at least 2.5 GHz.</p> <p><i>SharePoint 2010</i> A Web server processor should be a 64-bit processor with a minimum of four cores.</p>
Server does not meet minimum disk space requirements: SharePoint web server role	<p>A SharePoint Web server requires a minimum amount of disk space in order to function properly. Please note that this is a minimum, and your storage requirements may be considerably higher.</p> <p><i>Windows SharePoint Services 3.0/SharePoint 2007</i> The minimum disk space required is 3 GB.</p> <p><i>SharePoint 2010</i> The minimum disk space required is twice the amount of RAM, or 16GB, whichever is greater. For example, if you have 16 GB RAM installed, you should have a minimum of 32 GB free disk space.</p>
Server not running 64-bit operating system	A 64-bit operating system is necessary in order to facilitate good performance and availability, and for upgrade to SharePoint 2010 which only supports 64-bit servers.
Server is not running 64-bit hardware	64-bit hardware is necessary in order to facilitate good performance and availability at scale, and for upgrade to SharePoint 2010 which only supports 64-bit servers.

Improving Availability

Example Use case: The Finance department wants to build a new SharePoint site to support its operations. They decide to leverage the current SharePoint hosting solution provided by their IT team. This site will be mission critical and availability of this environment is paramount.

To determine how availability can be improved and guaranteed

1. The administrator opens *Server Administrator for SharePoint*, selects the **Scan Farm** option for the hosting environment.
2. Numerous issues related to availability including Farm topology risks are identified.
3. The administrator prints the risks details on each.

He determines that to improve availability, they need to add two new servers to the farm, one web server, and one application server.

4. To identify the specifications for these servers, the administrator navigates through the SharePoint configuration in the treeview to view the hardware Properties. Through *Server Administrator for SharePoint*, they note that the current hardware is underpowered and new servers are required.

The SharePoint administrator builds the new servers, adds them to the farm, and notices major improvements in performance and availability.

The department publishes new SLA guidance for the hosting environment guaranteeing 99.9% availability for all hosted tenants. The finance team is satisfied with their new site and has not experienced any outages since going into production.

Potential Risks to Availability

The following rules highlight potential issues to performance:

Farm Configuration

Rule	Description
Farm using SQL Server Embedded Edition	Free versions of SQL Server such as the Windows Internal Database and SQL Express are limited to 4 GB database size. This size limitation can pose serious risks to farm availability and can hinder upgrade readiness.
The Central Admins service has not been detected on the farm	The central administration website allows farm and service administrators access to view and modify farm and service configuration and is a critical component to administration. It must be installed and properly configured.

Farm is not highly available	To prevent downtime all farm components should be configured for redundancy,
An Excel server has not been configured	To host Excel server service functionality using an Enterprise version of SharePoint, an Excel server must be configured within the farm.
No Index service is configured and running	The Search Index server is used to facilitate search functionality and is a critical component to farm services. There should be a Search Index server in each farm topology.
No Query service is configured and running	The Search Query server is used to facilitate search functionality and is a critical component to farm services. There should be a Search Query server in each farm topology.
Only 1 Excel Server is configured	A minimum of two Excel servers are required to ensure availability of the Excel server service in the event of a server outage.
Only 1 Web Server is configured	A minimum of two Web servers are required to ensure availability of the Web server service in the event of a server outage.
The Search service has not been enabled	The SharePoint server search service allows end users the ability to quickly locate items within and across sites by name or other identifying metadata. If no search service is enabled, users will see search available on sites, but will receive error messages when attempting to use this capability.
Outgoing SMTP is not configured	The outgoing SMTP service is used by SharePoint to send alerts and notifications to administrators and users. These alerts and notifications will not be sent until the service is configured.
Timer Service is not running	The SharePoint timer service is a critical component to SharePoint health and availability and must be running in order to support normal SharePoint farm functions.
Recycle bin is not enabled	The SharePoint Recycle Bin stores a copy of lists, libraries, items, and documents when users delete those items from SharePoint sites. This gives end users a quick method of recovery for those items. Without the Recycle Bin configured, users will not be able to recover these items themselves and will instead need the help of a server administrator to recover the content from backup.

Search Topology

Server Administrator *for SharePoint* allows you to discover how SharePoint is being used across the organization to ensure the accessibility of your data. If risks are found in this area, users may run into issues when searching for data.

Potential Risks to Search Topology

The following rules highlight potential issues to Search Topology:

Farm Configuration

Rule	Description
Index and query roles are assigned to the same server	The search index service and search query service should not be assigned to the same server. With both services assigned to the same server, additional query servers cannot be assigned to the farm due to an issue with index file propagation.
Index and query roles assigned to the same server although another query server exists	The search index service and search query service should not be assigned to the same server when you have another query server in a farm. With both services assigned to the same server, additional query servers cannot be assigned to the farm due to an issue with index file propagation.

Security

SharePoint plays an important role within your business. Specifically, employees count on SharePoint to do their jobs and the business may be at risk if SharePoint is unavailable and data is unsecured.

Potential Risks to Security

The following rules highlight potential issues to security:

Antivirus

Rule	Description
Antivirus scan on upload is not enabled	The "Scan documents on upload" antivirus setting protects your end users from uploading virus laden documents and data. When "Scan documents on upload" is enabled and a SharePoint antivirus solution is installed, any files uploaded to the SharePoint farm will be scanned for viruses as they are uploaded. Files containing viruses can optionally be blocked from upload or cleaned.

Farm Configuration

Rule	Description
Incoming email is configured	The incoming email service allows end users the ability to email-enable SharePoint lists. By default, the incoming email service is started but not configured for use. The service should be disabled if not in use.

SharePoint 2010 Upgrade

Example Use Case: The SharePoint administrator must determine if his deployment of 1 farm consists of 6 servers: 2 web servers, 2 query servers, 1 index server, and 1 SQL server is ready to be upgraded to SharePoint 2010.

To determine if the environment is ready to upgrade

1. The administrator opens *Server Administrator for SharePoint*, selects the **Scan Farm** option.
2. He selects the farm in the treeview. From the Overview tab, he can see the report: the farm is Not Ready for upgrade to SharePoint 2010. He clicks the upgrade status to drill into the upgrade report.

The upgrade report shows the following information and issues:

- The farm is patched to the required level for upgrade (Service Pack 2).
 - The database, query, and index servers have the necessary server architecture (x64), OS (Windows Server 2008 standard), and prerequisites installed. (.Net framework 3.5 Service Pack 1)
 - The web servers are not ready for upgrade, due to not having the proper server architecture and OS.
3. He selects the identified risk and learns why Windows Server 2008 x64 is required to upgrade to 2010 and the steps he can take to remedy the issue.

Potential Risks to a SharePoint 2010 Upgrade

The following rules highlight potential issues to SharePoint 2010 performance:

Farm Configuration

Rule	Description
An unfinished gradual upgrade has been detected	Incomplete upgrades to previous versions such as WSS 3.0 can cause loss of content or other issues when upgrading to SharePoint 2010.

Internet Information Services

Rule	Description
Application pool using a system account	SharePoint requires that an application pool use a supported Active Directory account. NT Authority, Local System or Local Service accounts cannot be used as the service account.

A required web.config is missing

SharePoint Web sites do not function correctly without working web.config files. If a web.config file is missing or corrupt, SharePoint will not render properly from any server where this problem exists.

Microsoft Pre-Upgrade Check

Rule	Description
Microsoft Pre-Upgrade Check Issues	<p>Before migrating to SharePoint 2010, you should identify and resolve as many potential issues as possible. When you scan an eligible farm (you must have SP2 installed on a SharePoint 2007 or WSS 3.0 farm), you can have Server Administrator for SharePoint collect Microsoft pre-upgrade checker results. When you run this rule, the data collected from each server in the farm is examined for issues that could cause difficulty when upgrading. These issues are used by Server Administrator for SharePoint to generate server-level risks.</p> <p>For each server, a risk is generated for each Microsoft pre-upgrade check issue found. The potential issues depend on the version of SharePoint and the services that are installed, and may vary across farms - many different risks can be generated from this rule. The title of a risk generated by this rule is always prefaced by "Microsoft Pre-Upgrade Check Issue", followed by a description of the issue.</p>

Server

Rule	Description
Upgrade requires 64-bit Windows installation	SharePoint 2010 requires a 64-bit operating system. If you aren't running a 64-bit operating system, you must be install one prior to the SharePoint 2010 upgrade.
Upgrade requires Microsoft Windows Server 2008 or higher	SharePoint 2010 requires a 64-bit version of Windows 2008 standard or enterprise. If you aren't running a compatible operating system, you must be install one prior to the SharePoint 2010 upgrade.

SQL

Rule	Description
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Windows Internal Database is larger than 4 GB

Databases hosted on a Windows Internal Database or SQL Express SQL instance are subject to a 4 GB size limitation. A large size can prevent a database from being upgraded.

Supportability

Potential Risks to Supportability

The following rules highlight potential issues to supportability:

Farm Configuration

Rule	Description
A Web Server has not been configured	A Web server is required to host SharePoint sites or end user functionality. However, if this farm does not host end user functions (for example, if it is a dedicated search farm or shared services provider), a risk may be safely ignored.

Network

Rule	Description
A dynamically assigned IP address has been detected	SharePoint servers should use static IP addresses in order to ensure availability. A dynamic IP address can cause serious availability issues when that IP address changes.