Business continuity management for Microsoft SharePoint Server 2010

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Abstract

This book provides information about business continuity management, which consists of the business decisions, processes, and tools you put in place in advance to handle crises. Information includes features of Microsoft SharePoint Server 2010 that are likely to be part of your business continuity management strategy.

The content in this book is a copy of selected content in the SharePoint Server 2010 technical library (*http://go.microsoft.com/fwlink/?LinkId=181463*) as of the publication date. For the most current content, see the technical library on the Web.

Microsoft

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Getting help

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Plan for business continuity management (SharePoint Server 2010)

Published: May 12, 2010

Business continuity management consists of the business decisions, processes, and tools you put in place in advance to handle crises. A crisis might affect your business only, or be part of a local, regional, or national event.

Features of Microsoft SharePoint Server 2010 are likely to be part of your business continuity management strategy, but your overall plan should be much more comprehensive and include the following elements:

- Clearly documented procedures.
- Offsite storage of key business records.
- Clearly designated contacts.
- Ongoing staff training, including practices and drills.
- Offsite recovery mechanisms.

In this article:

- Business continuity management capabilities
- Service level agreements

Business continuity management capabilities

Microsoft SharePoint Server 2010 includes the following capabilities that support business continuity management.

- **Versioning** Users can lose data by overwriting a document. With versioning, users can keep multiple versions of the same document in a document library. In the event of an unwanted change, an overwritten document, or document corruption, the previous version can easily be restored by the user. When versioning is enabled, users can recover their data themselves.
  For more information, see Plan to protect content by using recycle bins and versioning (SharePoint Server 2010).
- **Recycle Bin** SharePoint Server 2010 includes a two-stage Recycle Bin. Users who have the appropriate permissions can use the first-stage Recycle Bin to recover documents, list items, lists, and document libraries that have been deleted from a site. Site collection administrators can use the second-stage Recycle Bin, also called the Site Collection Recycle Bin, to recover items that have been deleted from the first-stage Recycle Bin. When the first-stage Recycle Bin is enabled, users can recover their data themselves.
  For more information, see Plan to protect content by using recycle bins and versioning (SharePoint Server 2010).
- **Records Center** Records Center sites support managing records storage for legal, regulatory, or business reasons. For more information, see Records management planning (SharePoint Server 2010).

- **Backup and recovery** You can use Windows PowerShell cmdlets or the SharePoint Central Administration Web site to back up and recover farms, databases, Web applications, and site collections. There are also many external and third-party tools that you can use to back up and recover data. For more information, see Plan for backup and recovery (SharePoint Server 2010).
- **Availability** No single feature provides availability within a SharePoint Server 2010 environment. You can choose among many approaches to improve availability, including the following:
  - Fault tolerance of components and the network.
  - Redundancy of server roles and servers within a farm.
    For more information about availability, see Plan for availability (SharePoint Server 2010).
- **Disaster recovery** No single feature provides disaster recovery within a SharePoint Server 2010 environment. You can choose among many approaches to improve availability when a data center goes offline, including the following:
  - Offsite storage of backups, both within and outside your region.
  - Shipping images of servers to offsite locations.
  - Running multiple data centers, but serving data only through one, keeping the others available on standby.
    For more information about disaster recovery, see Plan for disaster recovery (SharePoint Server 2010).

Service level agreements

Business continuity management is a key area in which IT groups offer service level agreements (SLAs) to set expectations with customer groups. Many IT organizations offer various SLAs that are associated with different chargeback levels.
The following list describes common features of business continuity management SLAs:

- Versioning
  - Whether offered.
  - Amount of space allocated.
- Recycle Bins
  - Whether offered.
  - Amount of space allocated for the first-stage Recycle Bin and second-stage Recycle Bin.
  - Length of time that items are held before they are permanently deleted in each Recycle Bin.
  - Additional charges for recovering items that have been permanently deleted from the second-stage Recycle Bin.
- Backup and recovery
  Backup and recovery SLAs usually identify objects and services that can be backed up and recovered, and the recovery time objective, recovery point objective, and recovery level objective for each. The SLA may also identify the available backup window for each object. For more information about backup and recovery SLAs, see Plan for backup and recovery (SharePoint Server 2010).

- *Recovery time objective (RTO)* is the objective for the maximum time a data recovery process will take. It is determined by the amount of time the business can afford for the site or service to be unavailable.
- *Recovery point objective (RPO)* is the objective for the maximum amount of time between the last available backup and any potential failure point. It is determined by how much data the business can afford to lose in the event of a failure.
- *Recovery level objective (RLO)* is the objective that defines the granularity with which you must be able to recover data — whether you must be able to recover the entire farm, Web application, site collection, site, list or library, or item.

- Availability
  For each component within a farm that is covered by an availability plan, an availability SLA may identify availability as a percentage of uptime, often expressed as the number of nines — that is, the percentage of time that a given system is active and working. For example, a system with a 99.999 uptime percentage is said to have five nines of availability.
  Note:
  When calculating availability, most organizations specifically exempt or add hours for planned maintenance activities.
  For more information, see Plan for availability (SharePoint Server 2010).
- Disaster recovery
  For each component within a farm that is covered by a disaster recovery plan, an SLA may identify the recovery point objective and recovery time objective. Different recovery time objectives are often set for different circumstances, for example a local emergency versus a regional emergency.
  For more information, see Plan for disaster recovery (SharePoint Server 2010).

Related content

Resource center	Business Continuity Management for SharePoint Server 2010 (*http://go.microsoft.com/fwlink/?LinkId=199235*)
IT Pro content	Plan for backup and recovery (SharePoint Server 2010) Backup and recovery overview (SharePoint Server 2010) Plan to protect content by using recycle bins and versioning (SharePoint Server 2010) Plan for availability (SharePoint Server 2010) Availability configuration (SharePoint Server 2010) Plan for disaster recovery (SharePoint Server 2010)
Developer content	Data Protection and Recovery (*http://go.microsoft.com/fwlink/?LinkId=199237*)

Plan to protect content by using recycle bins and versioning (SharePoint Server 2010)

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Plan to use recycle bins and versioning in an environment to help users protect and recover their data. Recycle bins and versioning are key components of a business continuity strategy.

Recycle bins Users can use recycle bins to retrieve deleted objects. Microsoft SharePoint Server 2010 supports two stages of recycle bins, the first-stage Recycle Bin and the Site Collection — also called the second-stage — Recycle Bin. When Recycle Bins are enabled, users can restore items that are in them, including deleted files, documents, list items, lists, and document libraries.

Versioning Users can use versioning to help prevent data loss that is caused by overwriting a document. When a site owner turns on versioning in a document library or a list, the library or list keeps multiple copies of a document, item, or file. In the event of an unwanted change, an overwritten file, or document corruption, the previous version can be easily restored by the user.

In this article:

- Protecting content by using recycle bins
- Protecting content by using versioning

Protecting content by using recycle bins

SharePoint Server 2010 supports two stages of recycle bins, the first-stage Recycle Bin and the Site Collection, or second-stage, Recycle Bin. The recycle bins are enabled and configured at the Web application level. The recycle bins collect deleted documents and list items. When a list item is deleted, any attachments to the item are also deleted and can be restored from the Recycle Bin.

The Recycle Bins can contain multiple copies of a document that each have the same file name and source. These documents cannot be restored over an existing copy of a document. The Recycle Bins cannot be used to recover previous versions or accidental overwrites of documents — you must use versioning to enable this functionality.

The following table describes how an item is deleted and recovered from the first-stage Recycle Bin and the second-stage Recycle Bin.

When a user does this	The item is	The item can be restored by
Deletes an item	Held in the first-stage Recycle Bin until the item is deleted from the Recycle Bin or the item has been in the Recycle Bin longer than the	Users or site collection administrators

When a user does this	The item is	The item can be restored by
	time limit configured for an item to be held in the Recycle Bin.	
Deletes an item from the Recycle Bin	Held in the second-stage Recycle Bin	Site collection administrators

Turning off the Recycle Bin for a Web application empties all Recycle Bins and permanently deletes all items in them.

First-stage Recycle Bin

The first-stage Recycle Bin is located at the site level and is available to users who have Contribute, Design, or Full Control permissions on a site.When a user deletes an item from a Web site, the item is sent to the site's first-stage Recycle Bin. Items located in the first-stage Recycle Bin count toward the site quota.Items remain in one of the first-stage Recycle Bins in the site until a specified time period has been reached (the default setting is 30 days).

When an item is deleted from the Recycle Bin, the item is sent to the second-stage Recycle Bin.

Note:

The time limit for the Recycle Bins applies to the total time after the item was first deleted — not the time spent in either Recycle Bin stage.

Second stage (Site Collection) Recycle Bin

The second-stage Recycle Bin is located at the site collection administrator level. The second-stage Recycle Bin is organized into two views: objects in the first-stage Recycle Bins of all sites in the site collection, and objects in the second-stage Recycle Bin. When an item is deleted from the first-stage Recycle Bin, it can be recovered only by a site collection administrator from the second-stage Recycle Bin.

Items remain in the second-stage Recycle Bin until a specified time period has been reached (the default setting is 30 days) or until the second-stage Recycle Bin reaches its size limit, at which time the oldest items are deleted. The time limit for the Recycle Bins applies to the total time after the item was initially deleted — not the time spent in either Recycle Bin stage.

When a second-stage Recycle Bin is enabled for a Web application, we recommend that you designate how much disk space is available to the second-stage Recycle Bin as a percentage of the quota allotted to the Web application. Items stored in the second-stage Recycle Bin do not count toward the site quota; however, the size that is specified for the second-stage Recycle Bin increases the total size of the site and the content database that hosts it. If no site quota has been set, there is no limit on the size of the second-stage Recycle Bin.

For example, if you have allotted 100 megabytes (MB) of space for the Web application, allotting a 50 percent quota for the second-stage Recycle Bin allots 50 MB for the second-stage Recycle Bin and 150 MB for the Web application as a whole. You can allot up to 100 percent for the second-stage Recycle Bin quota.

For more information about setting quotas, see

- Plan site maintenance and management (SharePoint Server 2010)

- Create quota templates (SharePoint Server 2010)

For more information about how users can use the Recycle Bin in SharePoint Server 2010, see View, restore, or delete items in the Recycle Bin (*http://go.microsoft.com/fwlink/?LinkId=90917&clcid=0x409*)
For information about configuring the Recycle Bins, see Configure the Recycle Bin (SharePoint Server 2010).

Protecting content by using versioning

Versioning addresses the issue of losing data by overwriting a document. It allows the document library to keep multiple copies of the same document. In the event of an unwanted change, an overwrite, or a document corruption, the previous version can easily be restored by the user. Versioning can be enabled at the library or list level. Items and files can be versioned.
Before configuring versioning, be sure to read Plan site maintenance and management (SharePoint Server 2010).
For more information about configuring versioning, see Enable and configure versioning (SharePoint Server 2010).
Administrators must closely manage versioning, because if sites have many versions of files and documents, the sites can become quite large. If you do not restrict the size of sites, your sites can surpass your storage capacity. Farm administrators can manage this issue by establishing service level agreements with site owners and by setting size quotas on sites. For more information about managing versioning, see Manage versioning by using quotas (SharePoint Server 2010).

Plan for backup and recovery (SharePoint Server 2010)

Updated: July 8, 2010

This article describes the stages involved in planning for backup and recovery, which include determining backup and recovery strategies for a Microsoft SharePoint Server environment and deciding which tools to use. The stages do not need to be done in the order listed, and the process may be iterative.

When you plan for how you will use backup and recovery for disaster recovery, consider common events, failures, and errors; local emergencies; and regional emergencies.

For detailed information about Microsoft SharePoint Server backup and recovery, see Backup and recovery overview (SharePoint Server 2010).

In this article:

- Define business requirements
- Choose what to protect and recover in your environment
- Choose tools
- Determine strategies
- Plan for enhanced backup and recovery performance

Define business requirements

To define business requirements, determine the following for each farm and service in the environment:

- *Recovery point objective (RPO)* is the objective for the maximum amount of time between the last available backup and any potential failure point. It is determined by the amount of data that the business can afford to lose in the event of a failure.
- *Recovery time objective (RTO)* is the objective for the maximum time a data recovery process will take. It is determined by the amount of time the business can afford for the site or service to be unavailable.
- *Recovery level objective (RLO)* is the objective that defines the granularity with which you must be able to recover data — whether you must be able to recover the entire farm, Web application, site collection, site, list or library, or item.

Shorter RPO and RTO, and greater granularity of RLO, all tend to cost more.

A worksheet to help you plan your strategies for backup and recovery for your SharePoint Server 2010 environment can be downloaded from SharePoint 2010 Products backup and recovery planning workbook (*http://go.microsoft.com/fwlink/?LinkID=184385*).

Choose what to protect and recover in your environment

Your business requirements will help you determine which components of the environment you need to protect, and the granularity with which you need to be able to recover them.

The following table lists components of a SharePoint environment that you might decide to protect, and the tools that can be used to back up and recover each component.

Component	SharePoint backup	Microsoft SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2	System Center Data Protection Manager (DPM) 2010	File system backup
Farm	Yes		Yes6	
Service applications	Yes			
Web application	Yes			
Content databases	Yes	Yes	Yes	
Site collection	Yes1, 2	Yes1, 2	Yes1, 2	
Site	Yes2	Yes2	Yes	
Document library or list	Yes2	Yes2	Yes	
List item or document			Yes	
Content stored in remote BLOB stores	Yes3	Yes3	Yes3	
Customizations deployed as solution packages	Yes7	Yes7	Yes6, 7	
Changes to Web.config made by using Central Administration or an API	Yes	Yes	Yes4	
Configuration settings (SharePoint)	Yes2, 8	Yes2, 8	Yes 2, 9	
Customizations not deployed as solution packages			Yes. Files can be recovered if protected as files.4, 5	Yes
Changes to			Yes4	Yes

Component	SharePoint backup	Microsoft SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2	System Center Data Protection Manager (DPM) 2010	File system backup
Web.config *not* made by using Central administration or an API				
IIS configurations not set through SharePoint			Yes5	Yes
SQL Server Reporting Services databases		Yes	Yes	

1Farm-level and database-level backup and restore can be used for site collection recovery if a single site collection is stored in a database.
2Farm-level and database-level backups can be used with SharePoint Server unattached database recovery to restore site collections, sites, lists, and configurations.
3Content stored in remote BLOB stores is backed up and restored with other content, as long as the Remote BLOB Storage (RBS) provider in use has this capability.
4Changes to Web.config can be backed up by using file system backup from DPM 2010.
5IIS configurations can be recovered by using a bare metal backup from DPM 2010.
6 DPM 2010 can recover this item by using a combination of a bare metal backup and SharePoint Server backup. It cannot be backed up and recovered as an object.
7Fully-trusted solution packages are stored in the configuration database, and sandboxed solutions are stored in content databases. They can be recovered as part of farm or content database recovery.
8Configuration settings can be recovered from farm-level backups. For more information, see Restore a farm (SharePoint Server 2010).
9The Central Administration content database and the configuration database for a SharePoint Server 2010 farm can be recovered but only as part of a full-farm recovery to the same farm, with the same computers.

Note:
You can register SharePoint Server 2010 with Windows Server Backup by using the stsadm.exe **-o -registerwsswriter** operation to configure the Volume Shadow Copy Service (VSS) writer for SharePoint Server. Windows Server Backup then includes SharePoint Server 2010 in server-wide backups. When you restore from a Windows Server backup, you can select Microsoft SharePoint Foundation (no matter which version of SharePoint 2010 Products is installed), and all components reported by the VSS writer forSharePoint Server 2010 on that server at the time of the backup will be restored. Windows Server Backup is recommended only for use with for single-server deployments.

Choose what to recover from within SharePoint content databases
From within a content database, you can recover site collections, sites, lists and libraries. Backup and recovery tools provide different levels of recovery for content within a content database. Recovering an object from within a content database is always more complex than recovering an entire content database.
Protecting customizations
Customizations to SharePoint sites can include:

- Master pages, page layouts and cascading style sheets. These objects are stored in the content database for a Web application.
- Web Parts, site or list definitions, custom columns, new content types, custom fields, custom actions, coded workflows, or workflow activities and conditions.
- Third-party solutions and their associated binary files and registry keys, such as IFilters.
- Changes to standard XML files.
- Custom site definitions (Webtemp.xml).
- Changes to the Web.config file.

How customizations are deployed, and how changes are made to the Web.config file, have a significant effect on which tools can be used to back up and recover customizations. To provide the greatest opportunity for recovery, we recommend that you deploy customizations by using solution packages and make changes to the Web.config file by using Central Administration or the SharePoint APIs and object model.
Protecting workflows
Workflows are a special case of customizations that you can back up and recover. Make sure that your backup and recovery plan addresses any of the following scenarios that apply to your environment:

- Declarative workflows, such as those created in Microsoft SharePoint Designer 2010, are stored in the content database for the site collection to which they are they are deployed. Backing up the content database protects these workflows.
- Custom declarative workflow actions have components in the following three locations:
    1. The Visual Studio assemblies for the Activities are stored in the global assembly catalog (GAC).
    2. The XML definition files (.ACTIONS files) are stored in the 14\TEMPLATE\{LCID}\Workflow directory.

3. An XML entry to mark the activity as an authorized type is stored in the Web.config file for the Web applications in which it is used.
   If your farm workflows use custom actions, you should use a file backup system to protect these files and XML entries. Similar to SharePoint Server features such as Web parts and event receivers, these files should be reapplied to the farm as needed after recovery.

- Workflows that depend on custom code, such as those that are created by using Visual Studio, are stored in two locations. The Visual Studio assemblies for the workflow are stored in the global assembly catalog (GAC), and the XML definition files are stored in the Features directory. This is the same as other types of SharePoint Server features such as Web parts and event receivers. If the workflow was installed as part of a solution package, backing up the content database protects these workflows.
- If you create a custom workflow that interacts with a site collection other than the one where the workflow is deployed, you must back up both site collections to protect the workflow. This includes workflows that write to a history list or other custom list in another site collection. Performing a farm backup is sufficient to back up all site collections in the farm and all workflows that are associated with them.
- Workflows that are not yet deployed must be backed up and restored separately like any other data file. When you are developing a new workflow but have not yet deployed it to the SharePoint Server farm, make sure that you back up the folder where you store your workflow project files by using Windows Backup or another file system backup application.

Protecting service applications

Service applications in a SharePoint Server environment can be made up of both service settings and one or more databases, or just service settings. You cannot restore a complete service application by restoring the database only; however, you can restore the databases for a service application and then reprovision the service application. For more information, see Restore a service application (SharePoint Server 2010).

Protecting SQL Server Reporting Services databases

SharePoint Server backup and recovery does not include SQL Server Reporting Services databases. You must use SQL Server tools. For more information, see Backup and Restore Operations for a Reporting Services Installation (*http://go.microsoft.com/fwlink/?LinkId=186642*).

Choose tools

To choose the right tools for backup and recovery, you need to determine whether you can meet the continuity requirements you have set for your business within your budget for time and resources.

Key factors to consider when choosing tools include:

- Speed of backup: Can the tool perform within the maintenance window for your databases? You should test any backup system to ensure that it meets your needs on your hardware.
- Completeness of recovery.
- Granularity of objects that can be recovered.
- Backup type supported (full, differential, or incremental).

- Complexity of managing the tool.

The following table compares the type of backup and size of farm that can be backed up in a six-hour window for backup and recovery tools available from Microsoft.

Tool	Backup type	Size of backup completed in six hours1
SharePoint farm backup and recovery	Full, differential	600 GB
SQL Server	Full, differential	600 GB
System Center Data Protection Manager	Incremental	Terabytes

1Backup size was determined by backing up a system that totals the specified size on the test hardware listed in the following section.

Note:
The SharePoint Server and SQL Server backups were performed with backup compression turned on.

Test hardware

The following table lists the hardware used in the tests that determined the size of backup that could be completed in a six-hour window.

Component	Description
Processor	64-bit dual processor, 3 GHz
RAM	8 GB
Disk	2 terabyte NTFS file system-formatted partition
Network	100 megabits per second (Mbps) or faster connection between client computers and server
Network share	Network share with 1.25 terabytes free space

Note:
The upper size limit for performing SharePoint Server 2010 site collection backups is 85 GB.

For detailed information about the backup and recovery systems that can be used with Microsoft SharePoint Server, see the following resources:

- Backup and recovery overview (SharePoint Server 2010)
- Backing Up and Restoring Databases in SQL Server (*http://go.microsoft.com/fwlink/?LinkID=186643*)
- Data Protection Manager 2010 Release Candidate Overview (*http://go.microsoft.com/fwlink/?LinkID=186655*)

Determine strategies

Based on your business requirements, recovery needs, and the tools you have chosen, determine and document the backup and recovery strategies for your environment.
It is not uncommon for IT departments that support SharePoint Server environments to decide to use more than one tool to protect the environment, as they determine the strategies that they will use.
For example, in an environment with databases that are managed by DBAs, the strategies in the following list might be employed:

- All databases are backed up by SQL Server. The backup interval that is set for each database is based on the following:
  - The business impact of the content or service.
  - The standard rate of change for the database.
  - The effect on performance that the backup has on the environment.
- Small, rapidly changing, very high-business-impact content databases are additionally protected by SQL Server database snapshots that are stored on a separate physical disk. Only one snapshot is stored per database, and snapshots are discarded regularly, so that the effect on performance is minimized. The snapshot interval that is set for each database is based on the following:
  - The business impact of the content or service.
  - The standard rate of change for the database.
  - The effect on performance that the snapshot has on the environment.
  - The amount of space required to store the snapshot.
    Recovering from a snapshot is faster than standard recovery because a snapshot, along with its underlying database, can be treated by SharePoint Server as an unattached database. However, the process of creating snapshots can decrease the performance of the underlying database. We recommend that the effect that snapshots have on the performance of your system be tested before they are implemented, and that snapshots be discarded regularly to reduce the space required.
    Note:
    If you are using RBS, and the RBS provider that you are using does not support snapshots, you cannot use snapshots for backup. For example, the SQL FILESTREAM provider does not support snapshots.
- SharePoint Server backup is used to protect service applications. The backup interval is based on the following:
  - The business impact of the service.
  - The standard rate of change for the database.
  - The effect on performance that the backup has on the database.
- All restore operations are performed through SharePoint Server. The choice of which restore system to use is determined by the type of backup that is available and the object being restored.

Other tools should be part of your business continuity strategy. Consider how you will use Recycle Bins and versioning in site collections throughout the environment. For more information, see Plan for business continuity management (SharePoint Server 2010).

Plan for enhanced backup and recovery performance

As you plan your backup and recovery strategy, consider the following recommendations to help you decrease the effect of backup and recovery on system performance.
By design, most backup jobs consume as many I/O resources as they can to finish the job in the available time for maintenance; therefore, you might see disk queuing and you might see that all I/O requests come back more slowly than usual. This is typical and should not be considered a problem.

Follow recommendations for configuring SQL Server and storage

Follow the general recommendations for configuring SQL Server and storage for a SharePoint Server environment. For more information, see Plan for SQL Server, storage and BLOB configuration (SharePoint Server 2010) (*http://technet.microsoft.com/library/a96075c6-d315-40a8-a739-49b91c61978f(Office.14).aspx*).

Minimize latency between SQL Server and the backup location

In general, it is best to use a local disk, not a network drive, for backups. If you are backing up multiple servers, you may want to have a directly connected computer that both servers can write to. Network drives that have 1 millisecond or less latency between them and the computers that are running SQL Server will perform well. If your farm has multiple servers in it (including the computer that is running SQL Server), you must use UNC network paths for the SharePoint farm backup location.

Avoid processing conflicts

Do not run backup jobs during times in which users require access to the system.
To avoid I/O bottlenecks, perform the main backup to a separate disk, and only then copy to tape.
Consider staggering backups so that not all databases are backed up at the same time.
SharePoint Server backups use SQL Server backups. When using compression with your backups, be mindful not to overwhelm SQL Server. For example, some third-party backup tools compress data during backup, which can disrupt SQL Server performance. There are tools available to throttle the compression processes and control the effect on SQL Server.

Follow SQL Server backup and restore optimization recommendations

If you are running SQL Server 2008 Enterprise, we recommend that you use backup compression. For more information, see Backup Compression (SQL Server) (*http://go.microsoft.com/fwlink/?LinkId=179525*).
If you are using SQL Server backups, use a combination of full, differential, and transaction log backups for the full recovery model to minimize recovery time. Differential database backups are usually faster to create than full database backups, and they reduce the amount of transaction log required to recover the database.
If you are using the full recovery model in SQL Server 2008, we recommend that you use the truncate option during backup to avoid maintenance issues.
For detailed recommendations about how to optimize SQL Server backup and restore performance, see Optimizing Backup and Restore Performance in SQL Server (*http://go.microsoft.com/fwlink/?LinkId=126630*).

Ensure sufficient write performance on the backup drive

Carefully consider whether to use redundant array of independent disks (RAID) on your disk backup device. For example, RAID 5 has low write performance, approximately the

same speed as for a single disk. (This is because RAID 5 maintains parity information.) Using RAID 10 for a backup device may provide faster backups. For more information about how to use RAID with backups, see Configure RAID for maximum SQL Server I/O throughput (*http://go.microsoft.com/fwlink/?LinkId=126632*).

Related content

Resource center	Business Continuity Management for SharePoint Server 2010(*http://go.microsoft.com/fwlink/?LinkId=199235*)
IT Pro content	Backup and recovery overview (SharePoint Server 2010) Backup and recovery (SharePoint Server 2010) (*http://technet.microsoft.com/library/71abd06e-6730-442e-b2c1-e3ba9c04d497(Office.14).aspx*) Plan for availability (SharePoint Server 2010) Availability configuration (SharePoint Server 2010) Plan for disaster recovery (SharePoint Server 2010)
Developer content	Data Protection and Recovery (*http://go.microsoft.com/fwlink/?LinkID=199237*)

Backup and recovery overview (SharePoint Server 2010)

Updated: October 21, 2010

This article describes the backup architecture and recovery processes that are available in Microsoft SharePoint Server 2010, including farm and granular backup and recovery, and recovery from an unattached content database. Backup and recovery operations can be performed through the user interface or through Windows PowerShell cmdlets. Built-in backup and recovery tools may not meet all the needs of your organization.

In this article:

- Backup and recovery scenarios
- Backup architecture
- Recovery processes

Backup and recovery scenarios

Backing up and recovering data supports many business scenarios, including the following:

- Recovering unintentionally deleted content that is not protected by the Recycle Bin or versioning.
- Moving data between installations as part of a hardware or software upgrade.
- Recovering from an unexpected failure.

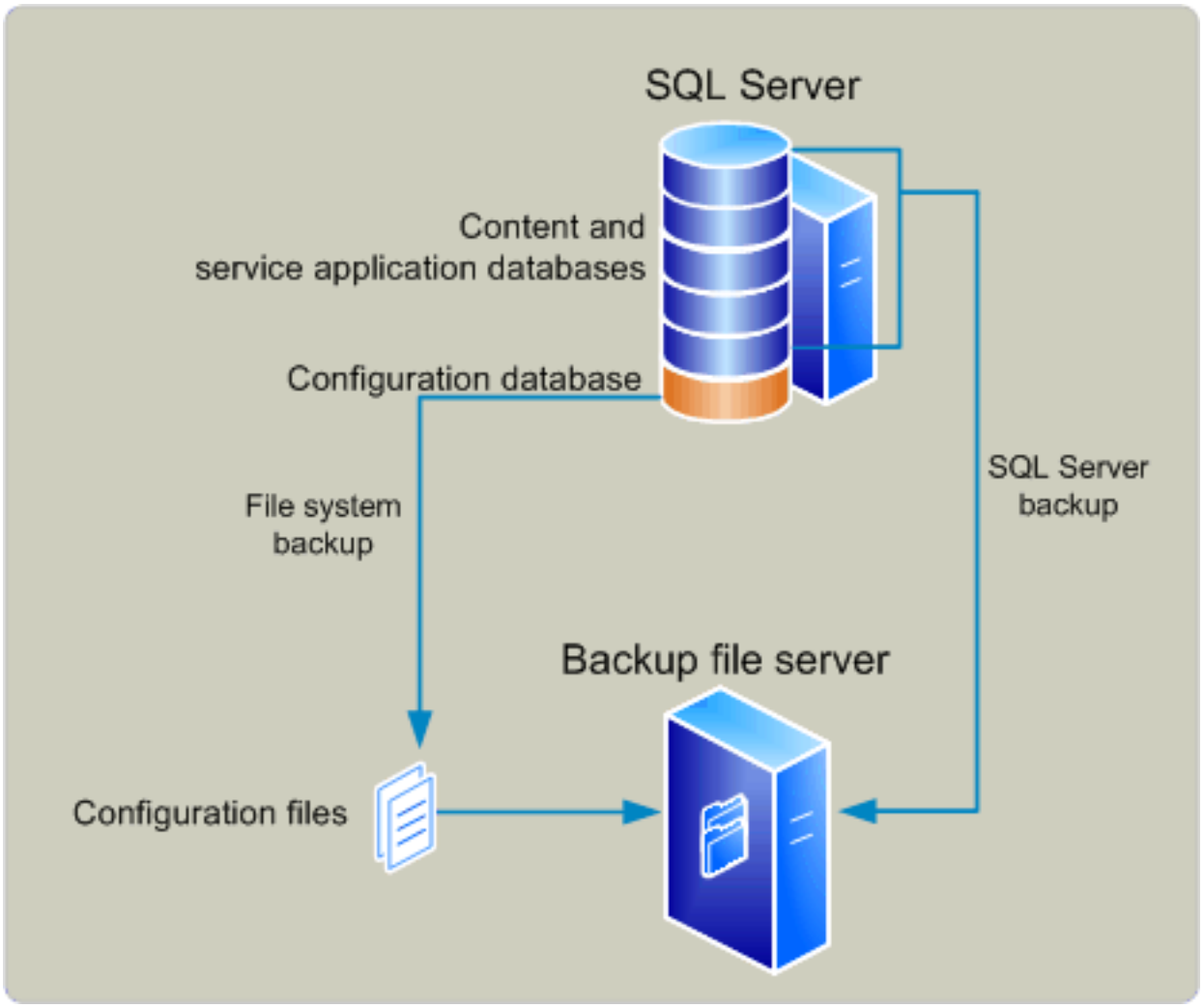
Backup architecture

SharePoint Server 2010 provides two backup systems: farm and granular.

Farm backup architecture

The farm backup architecture in SharePoint Server 2010 starts a Microsoft SQL Server backup of content and service application databases, writes configuration content to files, and also backs up the Search index files and synchronizes them with the Search database backups.

The following illustration shows the farm backup system.



Both full and differential backups are supported. *Full* backups create a new backup of the complete system. *Differential* backups create a backup of all the data that is stored in databases that has changed since the last full backup.

The farm backup system is organized hierarchically. The components in a farm that can be selected for backup include the following:

- **Farm** The farm is the highest-level object. You can select from the following options when you perform a farm backup:
  - Content and configuration data (default)
    The whole server farm is backed up. This includes settings from the configuration database.
  - Configuration-only
    Configuration database settings are backed up so that you can apply configurations across farms. For more information, see Configuration-only backup use and benefits later in this article.

- **Web application** Within a Web application, you can select one or more of the content databases to back up.
  A Web application backup includes the following:
  - Application pool name and application pool account
  - Authentication settings
  - General Web application settings such as alerts and managed paths
  - Internet Information Services (IIS) binding information, such as the protocol type, host header, and port number
  - Changes to the Web.config file that have been made through the object model or Central Administration
    Note:
    Changes to the Web.config file that have been made to support claims-based application that uses forms-based authentication are not included in backups, because those changes are made manually. For more information, see Considerations for using farm backups later in this article.
  - Sandboxed solutions
    For recommendations about how to protect these settings, see Plan for backup and recovery (SharePoint Server 2010).
- **Services and service applications (not shared)** An example of a service that is not shared is the State Service. Service and service application backups contain the settings for a service or service application and any databases associated with it.
  Important:
  Backups of service applications do not include the related proxy. To back up both the service application and the service application proxy, you must either back up the farm or perform two consecutive backups, selecting the service application in one backup, and selecting the associated service application proxy in the second backup.
  Many service application databases cannot be backed up individually from SharePoint Server 2010. To back up service application databases only, you must use SQL Server backup.
- **Proxies for service applications that are not shared**
- **Shared Services** Shared services require both a service application and a service application proxy to run. If you select the Shared Services node, all of the service applications and the related service application proxies on the farm will be backed up.

Note:
The backup hierarchy enables you to select individual service applications and service application proxies to back up. However, when you select one or all service applications, or one or all proxies, the related objects are not backed up by default. To back up both parts of a specific service, you must either select the Shared Services node or perform two consecutive backups, selecting the service application in one backup, and selecting the associated service application proxy in the second backup.

Note:
Some settings in the SharePoint Server environment are not included in a farm backup. They include the following settings that are stored on Web servers:

- Application pool account passwords
- HTTP compression settings
- Time-out settings
- Custom Internet Server Application Programming Interface (ISAPI) filters
- Computer domain membership
- Internet Protocol security (IPsec) settings
- Network Load Balancing settings
- Secure Sockets Layer (SSL) certificates
- Dedicated IP address settings

Search service application backup process

Backing up and recovering the Search service application is a special case because of the complexity of interactions between the components of the application.
When a backup of the Search service application is started, SharePoint Server 2010 starts a SQL Server backup of the Search administration database, crawl databases, and property databases, and also backs up the index partition files in parallel.
Consider how the backup and recovery processes for the Search service application affect your service-level agreement. For example, consider how pausing all crawls might affect the freshness of search results.
The backup process is as follows:

1. Master merges are paused to preserve the master index.
2. A full database backup starts.
3. The master index is backed up.
4. Crawls are paused. The pause in crawling is much shorter than during a backup of Microsoft Office SharePoint Server 2007 search, and does not last the full duration of the backup process.
5. All shadow indexes are backed up.
6. An incremental database backup starts.
7. Crawls are resumed.
8. Master merges are resumed.

Configuration-only backup use and benefits

A configuration-only backup extracts and backs up the configuration settings from a configuration database. By using built-in tools, you can back up the configuration of any configuration database, whether it is currently attached to a farm or not. For detailed information about how to back up a configuration, see Back up a farm configuration (SharePoint Server 2010).

A configuration backup can be restored to the same — or any other — server farm. When a configuration is restored, it will overwrite any settings present in the farm that have values that are set in the configuration backup. If any settings present in the farm are not contained in the configuration backup, they will not be changed. For detailed information about how to restore a farm configuration, see Restore a farm configuration (SharePoint Server 2010).

Note:
Web application and service application settings are not included in a configuration backup. You can use Windows PowerShell cmdlets to document and copy settings for service applications. For more information, see Document farm configuration settings (SharePoint Server 2010) and Copy configuration settings from one farm to another (SharePoint Server 2010).

Situations in which you might want to restore a configuration from one farm to another farm include the following:

- Replicating a standardized farm configuration to be used throughout an environment.
- Moving configurations from a development or test environment to a production environment.
- Moving configurations from a stand-alone installation to a farm environment.
- Configuring a farm to serve as part of a standby environment.

SharePoint Server stores the following kinds of settings in the configuration-only backup:

- Antivirus
- Information rights management (IRM)
- Outbound e-mail settings (only restored when you perform an overwrite).
- Customizations deployed as trusted solutions
- Diagnostic logging

Considerations for using farm backups

Consider the following before you use farm backups:

- There is no built-in scheduling system for backups. To schedule a backup, we recommend that you create a backup script by using Windows PowerShell, and then use Windows Task Scheduler to run the backup script on a regular basis.
- We do not recommend that you use IIS metabase backup to protect IIS settings. Instead, document all IIS configurations for each Web server by using a tool that provides the configuration monitoring you want, such asMicrosoft System Center Configuration Manager 2010.
- SharePoint Server 2010 backup and recovery can be run together with SQL Server Enterprise features such as backup compression and transparent data encryption. If you are running SQL Server Enterprise, we strongly recommend that you use backup compression. For more information about backup compression, see Backup Compression (SQL Server) (*http://go.microsoft.com/fwlink/?LinkID=129381*). If you decide to run databases with transparent data encryption, you must manually back up the key and restore the key — SharePoint Server 2010 backup and restore will not remind you about the key. For more information about transparent data encryption, see Understanding Transparent Data Encryption (TDE) (*http://go.microsoft.com/fwlink/?LinkID=129384*).

- If a content database is set to use the SQL FILESTREAM remote BLOB storage (RBS) provider, the RBS provider must be installed both on the database server that is being backed up and on the database server that is being recovered to.
- SharePoint Server 2010 backup does not protect:
  - Changes to the Web.config file on Web servers that are not made through Central Administration or the object model.
  - Customizations to a site that are not deployed as part of a trusted or sandboxed solution.
- If you are sharing service applications across farms, be aware that trust certificates that have been exchanged are not included in farm backups. You must back up the certificate store separately or keep the certificates in a separate location. When you restore a farm that shares a service application, you must import and redeploy the certificates and then re-establish any inter-farm trusts.
  For more information, see Exchange trust certificates between farms (SharePoint Server 2010) (*http://technet.microsoft.com/library/6d8a9d37-d400-4d7c-b4f1-bf3c5643c98c(Office.14).aspx*).
- When you restore a farm or Web application that is configured to use any kind of claims-based authentication, duplicate or additional providers may appear to be enabled. If duplicates appear, you must manually save each Web application zone to remove them.
- Additional steps are required when you restore a farm that contains a Web application that is configured to use forms-based authentication. You must re-register the membership and role providers in the Web.config file, and then redeploy the providers. You must perform these steps whether you are restoring at the Web application level or at the farm level.
  For more information, see Back up a Web application (SharePoint Server 2010), Plan authentication methods (SharePoint Server 2010) (*http://technet.microsoft.com/library/40117fda-70a0-4e3d-8cd3-0def768da16c(Office.14).aspx*) and Configure claims authentication (SharePoint Server 2010) (*http://technet.microsoft.com/library/83762baa-b23b-4b63-b14f-350421d9f18a(Office.14).aspx*).

Granular backup and export architecture

The granular backup and export architecture uses Transact-SQL queries and export calls. Granular backup and export is a more read-intensive and processing-intensive operation than farm backup.

From the granular backup system, a user can back up a site collection, or export a site or list.

Note:

Workflows are not included in exports of sites or lists.

If you are running SQL Server Enterprise, the granular backup system can optionally use SQL Server database snapshots to ensure that data remains consistent while the backup or export is in progress. When a snapshot is requested, a SQL Server database snapshot of the appropriate content database is taken, SharePoint Server uses it to create the backup or export package, and then the snapshot is deleted. Database snapshots are linked to the source database where they originated. If the source database goes offline

for any reason, the snapshot will be unavailable. For more information about database snapshots, see Database Snapshots (*http://go.microsoft.com/fwlink/?LinkId=166158*).
Benefits of backing up a site collection by using a snapshot include the following:

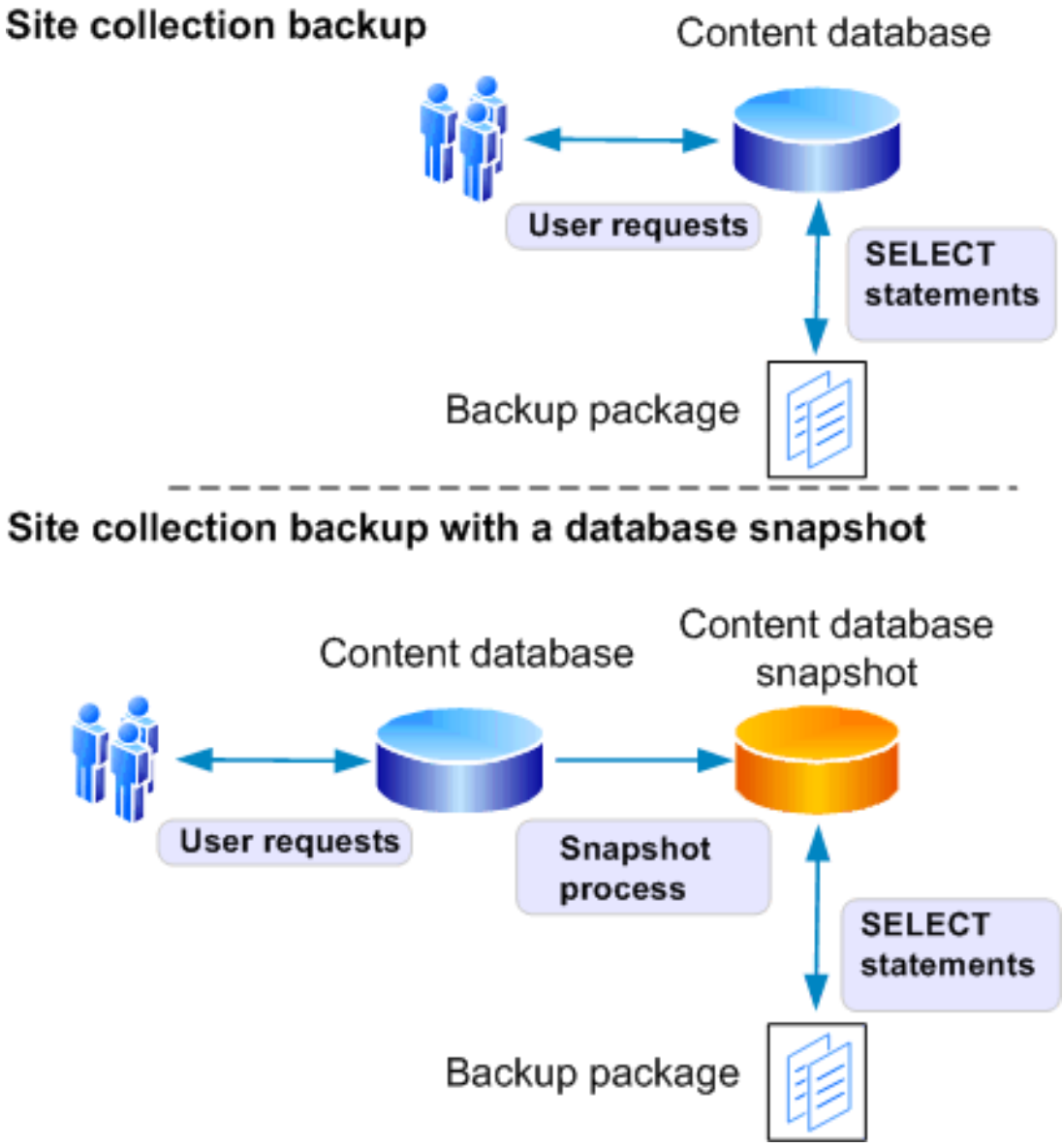
- The snapshot ensures that the data that is being read remains consistent while the operation is being performed.
- Users can continue to interact with the site collection while it is being backed up from the database snapshot. This includes adding, editing, and deleting content. However, the changes that users make to the live site will not be included in the site collection backup because the backup is based on the database snapshot.

However, database snapshots can adversely affect performance. For more information about database snapshots and performance, see Limitations and Requirements of Database Snapshots (*http://go.microsoft.com/fwlink/?LinkId=166159*).
You can use granular backup and export for content that is stored in a database that is configured to use the SQL FILESTREAM RBS provider.

Note:
If the RBS provider that you are using does not support snapshots, you cannot use snapshots for content deployment or backup. For example, the SQL FILESTREAM provider does not support snapshots.

Note:
We do not recommend that you use SharePoint Server 2010 site collection backup for site collections larger than 85 GB.

The following illustration shows the granular backup and export system.



Recovery processes

SharePoint Server 2010 supports the following primary, built-in recovery options:

- Restore from a farm backup that was created by using built-in tools, or restore from the backup of a component taken by using the farm backup system.
- Restore from a site collection backup.
- Connect to a content database by using the unattached content database feature, back up or export data from it, and then restore or import the data.

Restoring from a farm backup

Items that can be recovered from a farm backup include the following:

- Farm
  - Content and configuration data (default)
    The whole server farm is restored. This includes settings from the configuration database, and trusted solution packages.
  - Configuration-only
    Only the configuration data is restored. This overwrites any settings in the farm that have values that are set within the configuration-only backup.
- Web applications
  Restores Web applications.
- Service applications
  Restores service applications. Service application recovery can be complex because SharePoint Server 2010 cannot fully reconfigure service application proxies during the restore process. Service application proxies are restored, but are not put in proxy groups. Therefore, they are not associated with any Web applications. For more information about how to restore a Search service application, see Search service application recovery process. For specific information about the operations involved in restoring specific service applications, see Restore a service application (SharePoint Server 2010).
- Content databases
  When content databases are restored, the sandboxed solutions associated with the related site collections are also restored.

Restoring as new versus restoring as overwrite

By default, SharePoint Server 2010 recovery restores any object as a new instance of the object, instead of overwriting any existing instances with the same name.

When you restore a farm or object as new, the following objects will not work without adjustments, because all GUIDs for objects are assigned new values:

- **Farm.** When you restore a farm as new, you must do the following:
  - Re-create alternate access mapping settings. SharePoint Server 2010 recovery only restores the Default zone of the Web application.
  - Reconfigure settings for any Business Connectivity Services and Managed Metadata service application external sources.
  - Re-associate service application proxies with proxy groups because service application proxies are not assigned to proxy groups when restored. All Web applications will be associated with the default proxy group. You must associate Web applications with other proxy groups if you want to do that.
- Web application.
  - If the Web application name and URL that you provide match a Web application name and URL that already exist in the farm, SharePoint Server 2010 recovery combines them.
  - If you do not want to combine Web applications, you must rename the Web application when you restore it as new.
  - When you restore a Web application as new in the same environment but do not combine Web applications, many other parameters and objects must also be changed. For example, you may have to provide different database file paths and different database names.

- Service applications and service application proxies
  - If you recover a service application and also recover the related service application proxy, you must associate the service application proxy with a proxy group.
  - If you recover a service application and do not also recover the related service application proxy, you must re-create the service application proxy.
    Note:
    You cannot restore a service application as new in the same farm. You can restore a service application as new in another farm.

When you restore an object and overwrite the existing object, no changes are necessary.

Search service application recovery process

The recovery process for the Search service application varies depending on whether you are restoring as new or restoring as overwrite. When you restore as overwrite, no additional steps are necessary.

The restore as new process is as follows:

1. Restore the service application as new, and specify the new farm topology information as you restore.
2. Restore the service application proxy as new. If you did not restore the service application proxy, you must create a new service application proxy and associate it with the Search service application.
3. Associate the service application proxy with the appropriate proxy group and associate the proxy group (if it is not the default proxy group) with the appropriate Web application.
4. For least-privilege deployments, start the Search service and the Search admin query Web service with the appropriate account.

For more information about how to recover the Search service application, see Restore search (SharePoint Server 2010).

Restoring from a site collection backup

Only site collections can be recovered from a site collection backup.

Recovering from an unattached content database

SharePoint Server 2010 provides the ability to connect to, and back up from, a content database that is attached to an instance of SQL Server but is not associated with a local SharePoint Web application. Unattached databases that you can connect to include read-only content databases that have been restored from any supported backup technology and SQL Server database snapshots of content databases.

Recovery is the following two-stage process:

1. Back up or export the object from the unattached content database.
2. Restore or import the output of the prior step into SharePoint Server 2010.

The following items can be backed up or exported from an unattached database by using granular backup and export, and then restored:

- Site collection
  Back up by using site collection backup, and then recover by using a site collection restore.
- Site
  Export, and then import.
- Lists and libraries
  Export, and then import.

You can use import to recover content that you backed up from a database configured to use the SQL FILESTREAM RBS provider. The recovered content will be stored by SharePoint Server 2010 using the currently defined storage provider for that content database — that is, if the content database is not set to use RBS, the data will be stored in the content database; if the content database is set to use RBS, the data will be stored in RBS.

Related content

Resource center	Business Continuity Management for SharePoint Server 2010 (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT pro content	Plan for backup and recovery (SharePoint Server 2010) Backup and recovery (SharePoint Server 2010) (*http://technet.microsoft.com/library/71abd06e-6730-442e-b2c1-e3ba9c04d497(Office.14).aspx*)
Developer content	Data Protection and Recovery (http://go.microsoft.com/fwlink/?LinkID=199237)

Plan for availability (SharePoint Server 2010)

Updated: June 17, 2010

This article describes key decisions in choosing availability strategies for a Microsoft SharePoint Server 2010 environment.

As you carefully review your availability requirements, be aware that the higher the level of availability and the more systems that you protect, the more complex and costly your availability solution is likely to be.

Not all solutions in an organization are likely to require the same level of availability. You can offer different levels of availability for different sites, different services, or different farms.

In this article:

- Availability overview
- Choosing an availability strategy and level
- Redundancy and failover between closely located data centers configured as a single farm ("stretched" farm)

Availability overview

Availability is the degree to which a SharePoint Server environment is perceived by users to be available. An available system is a system that is resilient — that is, incidents that affect service occur infrequently, and timely and effective action is taken when they do occur.

Availability is part of business continuity management (BCM), and is related to backup and recovery and disaster recovery. For more information about these related processes, see Plan for backup and recovery (SharePoint Server 2010) and Plan for disaster recovery (SharePoint Server 2010).

Note:
When calculating availability, most organizations specifically exempt or add hours for planned maintenance activities.

One of the most common measures of availability is percentage of uptime expressed as *number of nines* — that is, the percentage of time that a given system is active and working. For example, a system with a 99.999 uptime percentage is said to have five nines of availability.

The following table correlates uptime percentage with calendar time equivalents.

Acceptable uptime percentage	Downtime per day	Downtime per month	Downtime per year
95	72.00 minutes	36 hours	18.26 days
99 (two nines)	14.40 minutes	7 hours	3.65

Acceptable uptime percentage	Downtime per day	Downtime per month	Downtime per year
			days
99.9 (three nines)	86.40 seconds	43 minutes	8.77 hours
99.99 (four nines)	8.64 seconds	4 minutes	52.60 minutes
99.999 (five nines)	0.86 seconds	26 seconds	5.26 minutes

If you can make an educated guess about the number of total hours downtime you are likely to have per year, you can use the following formulas to calculate the uptime percentage for a year, a month, or a week:
% uptime/year = 100 - (8760 - number of total hours downtime per year)/8760
% uptime/month = 100 - ((24 × number of days in the month) - number of total hours downtime in that calendar month)/(24 × number of days in the month)
% uptime/week = 100 - (168 - number of total hours downtime in that week)/168

Costs of availability

Availability is one of the more expensive requirements for a system. The higher the level of availability and the more systems that you protect, the more complex and costly an availability solution is likely to be. When you invest in availability, costs include the following:

- Additional hardware and software, which can increase the complexity of interactions among software applications and settings.
- Additional operational complexity.

The costs of improving availability should be evaluated in conjunction with your business needs — not all solutions in an organization are likely to require the same level of availability. You can offer different levels of availability for different sites, different services, or different farms.

Availability is a key area in which information technology (IT) groups offer service level agreements (SLAs) to set expectations with customer groups. Many IT organizations offer various SLAs that are associated with different chargeback levels.

Determining availability requirements

To gauge your organization's tolerance of downtime for a site, service, or farm, answer the following questions:

- If the site, service, or farm becomes unavailable, will employees be unable to perform their expected job responsibilities?
- If the site, service, or farm becomes unavailable, will business and customer transactions be stopped, leading to loss of business and customers?

If you answered yes to either of these questions, you should invest in an availability solution.

Choosing an availability strategy and level

You can choose among many approaches to improve availability in a SharePoint Server environment, including the following:

- Improve the fault tolerance of server hardware components.

- Increase the redundancy of server roles within a farm.

Hardware component fault tolerance

Hardware component fault tolerance is the redundancy of hardware components and infrastructure systems such as power supplies at the server level. When planning for hardware component fault tolerance, consider the following:

- Complete redundancy of every component within a server may be impossible or impractical. Use additional servers for additional redundancy.
- Ensure that servers have multiple power supplies connected to different power sources for maximum redundancy.

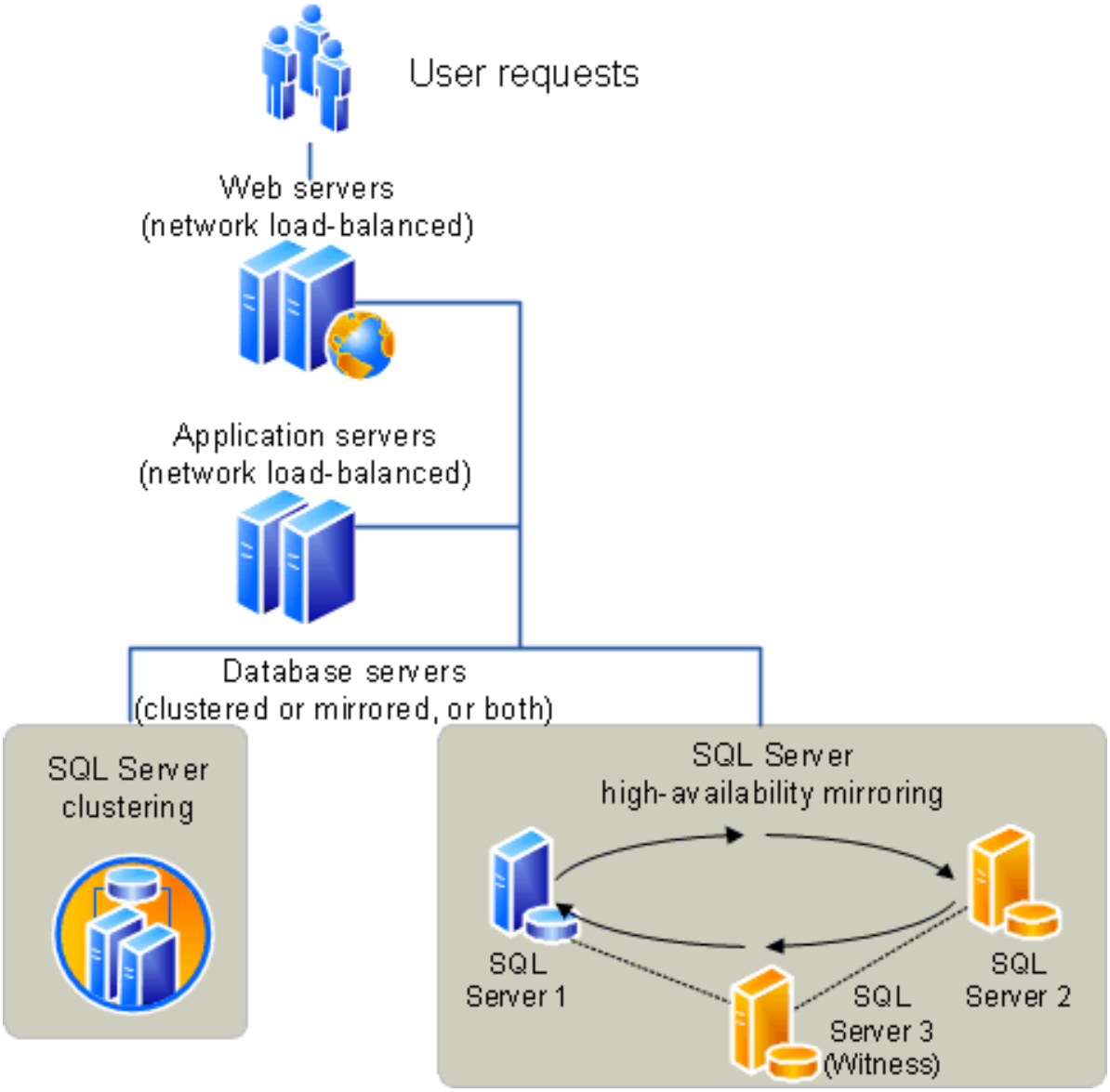
In any system, we recommend that you work with hardware vendors to obtain fault-tolerant hardware that is appropriate for the system, including redundant array of independent disks (RAID) arrays. For recommendations, see Plan for performance and capacity (Office SharePoint Server) (*http://technet.microsoft.com/library/8dd52916-f77d-4444-b593-1f7d6f330e5f(Office.14).aspx*) and Plan for SQL Server, storage and BLOB configuration (SharePoint Server 2010) (*http://technet.microsoft.com/library/a96075c6-d315-40a8-a739-49b91c61978f(Office.14).aspx*).

Redundancy within a farm

SharePoint Server 2010 supports running server roles on redundant computers (that is, scaling out) within a farm to increase capacity and to provide basic availability.

The capacity that you require determines both the number of servers and the size of the servers in a farm. After you have met your base capacity requirements, you may want to add more servers to increase overall availability. The following illustration shows how you can provide redundancy for each server role.

Availability within a server farm



The following table describes the server roles in a SharePoint Server 2010 environment and the redundancy strategies that can be used for each within a farm.

Server role	Preferred redundancy strategy within a farm
Front-end Web server	Deploy multiple front-end Web servers within a farm, and use Network Load Balancing (NLB).
Application server	Deploy multiple application servers within a farm.

Server role	Preferred redundancy strategy within a farm
Database server	Deploy database servers by using clustering or high-availability database mirroring.

Database availability strategies

You can use Microsoft SQL Server failover clustering or SQL Server high-availability database mirroring to support availability of databases in a SharePoint Server environment.

SQL Server failover clustering

Failover clustering can provide availability support for an instance of SQL Server. A failover cluster is a combination of one or more nodes or servers, and two or more shared disks. A failover cluster instance appears as a single computer, but has functionality that provides failover from one node to another if the current node becomes unavailable. SharePoint Server can run on any combination of active and passive nodes in a cluster that is supported by SQL Server.

SharePoint Server references the cluster as a whole; therefore, failover is automatic and seamless from the perspective of SharePoint Server.

For detailed information about failover clustering, see Getting Started with SQL Server 2008 Failover Clustering (http://go.microsoft.com/fwlink/?LinkID=102837&clcid=0x409) and Configure availability by using SQL Server clustering (SharePoint Server 2010).

SQL Server high-availability mirroring

Database mirroring is a SQL Server technology that can deliver database redundancy on a per-database basis. In database mirroring, transactions are sent directly from a principal database and server to a mirror database and server when the transaction log buffer of the principal database is written to disk. This technique can keep the mirror database almost up to date with the principal database. SQL Server Enterprise Edition provides additional functionality that improves database mirroring performance. For more information, see SQL Server 2008 R2 and SharePoint Products 2010: Better Together (White paper) (SharePoint Server 2010) (*http://technet.microsoft.com/library/665876e1-2706-42ad-bd76-8e4d1da0ce92(Office.14).aspx*).

For mirroring within a SharePoint Server farm, you must use high-availability mirroring, also known as high-safety mode with automatic failover. High-availability database mirroring involves three server instances: a principal, a mirror, and a witness. The witness server enables SQL Server to automatically fail over from the principal server to the mirror server. Failover from the principal database to the mirror database typically takes several seconds.

A change from previous versions is that SharePoint Server is mirroring-aware. After you have configured a database mirror instance of SQL Server, you then use SharePoint Central Administration or Windows PowerShell cmdlets to identify the failover (mirror) database server location for a configuration database, content database, or service application database. Setting a failover database location adds a parameter to the connection string that SharePoint Server uses to connect to SQL Server. In the event of a SQL Server time-out event, the following occurs:

1. The witness server that is configured for SQL Server mirroring automatically swaps the roles of the primary and mirror databases.
2. SharePoint Server automatically attempts to contact the server that is specified as the failover database.

For information about how to configure database mirroring, see Configure availability by using SQL Server database mirroring (SharePoint Server 2010).
For general information about database mirroring, see Database Mirroring (*http://go.microsoft.com/fwlink/?LinkID=180597*).

Note:
Databases that have been configured to use the SQL Server FILESTREAM remote BLOB store provider cannot be mirrored.

Comparison of database availability strategies for a single farm: SQL Server failover clustering vs. SQL Server high-availability mirroring
The following table compares failover clustering to synchronous SQL Server high-availability mirroring.

	SQL Server failover clustering	SQL Server high-availability mirroring
Time to failover	Cluster member takes over immediately upon failure.	Mirror takes over immediately upon failure.
Transactional consistency?	Yes	Yes
Transactional concurrency?	Yes	Yes
Time to recovery	Shorter time to recovery (milliseconds)	Slightly longer time to recovery (milliseconds).
Steps required for failover?	Failure is automatically detected by database nodes; SharePoint Server 2010 references the cluster so that failover is seamless and automatic.	Failure is automatically detected by the database; SharePoint Server 2010 is aware of the mirror location, if it has been configured correctly, so that failover is automatic.
Protection against failed storage?	Does not protect against failed storage, because storage is shared between nodes in the cluster.	Protects against failed storage because both the principal and mirror

	SQL Server failover clustering	SQL Server high-availability mirroring
		database servers write to local disks.
Storage types supported	Shared storage (more expensive).	Can use less-expensive direct-attached storage (DAS).
Location requirements	Members of the cluster must be on the same subnet.	Principal, mirror, and witness servers must be on the same LAN (up to 1 millisecond latency round trip).
Recovery model	SQL Server full recovery model recommended. You can use the SQL Server simple recovery model, but the only available recovery point if the cluster is lost will be the last full backup. For more information, see Plan for SQL Server, storage and BLOB configuration (SharePoint Server 2010) (*http://technet.microsoft.com/library/a96075c6-d315-40a8-a739-49b91c61978f(Office.14).aspx*).	Requires SQL Server full recovery model.
Performance overhead	Some decrease in performance may occur while a failover is occurring.	High-availability mirroring introduces transactional latency because it is synchronous. It also requires additional memory and processor overhead.
Operational burden	Set up and maintained at the server level.	The operational burden is larger than clustering. Must be set up and maintained for all databases. Reconfiguring after failover is

	SQL Server failover clustering	SQL Server high-availability mirroring
		manual.

Service application redundancy strategies

The redundancy strategy you follow for protecting service applications that run in a farm varies, depending on where the service application stores data.

Service applications that store data outside a database

To protect service applications that store data outside a database, install the service application on multiple application servers to provide redundancy within the environment. In this release of SharePoint Server, when you install a service application on multiple application servers, the timer jobs run either on all the application servers that are running the service instance associated with that service application or on the first available server. If an application server fails, timer jobs that are running on that server will be restarted on another server when the next timer job is scheduled to run.

Installing a service application on multiple application servers keeps the service application running, but does not guarantee against data loss. If an application server fails, the active connections for that application server will be lost and users will lose some data.

The following service applications store data outside a database:

- Access Services
- Excel Services Application

Service applications that store data in databases

To help protect service applications that store data in databases, you must follow these steps:

1. Install the service on multiple application servers to provide redundancy within the environment.
2. Configure SQL Server clustering or mirroring to protect the data.

The following service applications store data in databases:

- Search service application, including the following databases:
  - Search Administration
  - Crawl
  - Property

    Note:

    Mirroring the Search databases is supported, but providing redundancy for Search requires additional work. For details, see the section Search redundancy strategies within a farm (*http://technet.microsoft.com/library/67eb6292-98f2-4dea-93b8-110b9c6cb632(Office.14).aspx#Search*).
- User Profile service, including the following databases:
  - Profiles
  - Social
  - Synchronization

    Note:

    Mirroring the Synchronization database is not supported.
- Business Data Connectivity service application

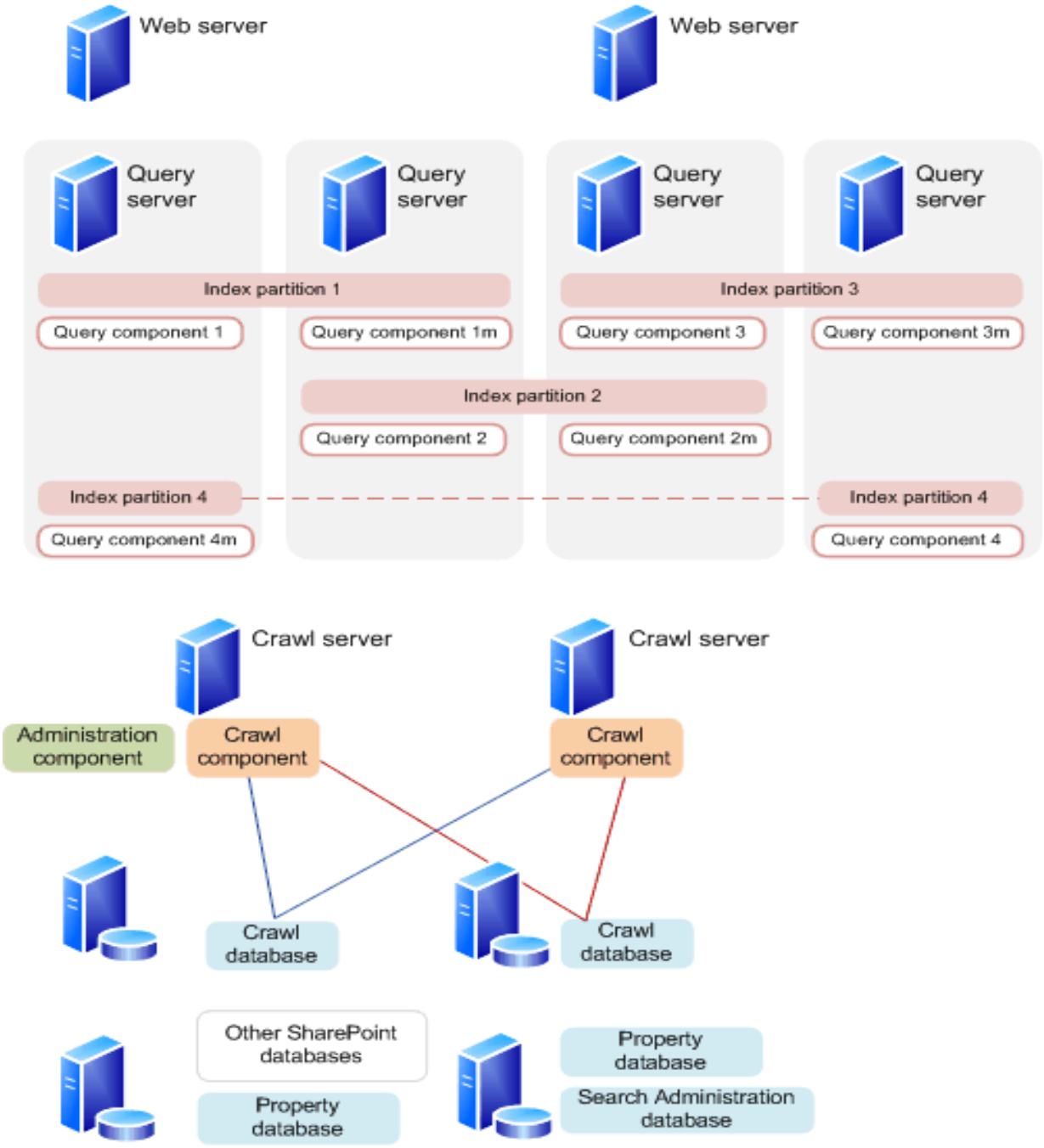
- Application Registry service application
  We do not recommend mirroring the Application Registry database, because it is only used when upgrading Microsoft Office SharePoint Server 2007 Business Data Catalog information to SharePoint Server 2010.
- Usage and Health Data Collection service application
  Note:
  We recommend that you do not mirror the Usage and Health Data Collection service application Logging database.
- Managed Metadata service application
- Secure Store service application
- State service application
- Web Analytics service application, including the following databases:
  - Reporting
  - Staging
    Note:
    Mirroring the Staging database is not supported.
- Word Automation Services service application
- Microsoft SharePoint Foundation Subscription Settings Service
- PerformancePoint Services

Search redundancy strategies within a farm

Server Only

The Search service application is a special case for redundancy within a farm. The following illustration shows how redundancy and failover can be configured for a medium dedicated Search service application that crawls approximately 40 million items. For more information about the architecture of the Search service application, see "Search Architectures for Microsoft SharePoint Server 2010" in the article Technical diagrams (SharePoint Server 2010) (*http://technet.microsoft.com/library/bcbae7bd-656b-4003-969c-8411b81fcd77(Office.14).aspx*).

Redundant Search service application



- Query server. A query server hosts query components and index partitions.

- *Query components* return search results. Each query component is part of an index partition, which is associated with a specific property database that contains metadata associated with a specific set of crawled content. You can make an index partition redundant by adding "mirror" query components to an index partition and putting them on different farm servers.
  Note:
  The use of the term *mirror query components* refers to identical file copies, not to SQL Server database mirroring.
- *Index partitions* are groups of query components, each of which holds a subset of the full text index and returns search results. Each index partition is associated with a specific property database that contains metadata that is associated with a specific set of crawled content. You can decide which servers in a farm will handle queries by creating a query component on that server. If you want to balance the load of handling queries across multiple farm servers, add query components to an index partition and associate them with the servers that you want to use to handle queries. For more information, see Add or remove a query component (*http://technet.microsoft.com/library/da990ab4-1164-412d-9b37-2c20b57bd5e2(Office.14).aspx*). You can make an index partition redundant by adding mirror query components to an index partition and putting them on different query servers.

- Crawl server. A crawl server hosts crawl components and a search administration component.
  - *Crawl components* process crawls of content sources, propagate the resulting index files to query components, and add information about the location and crawl schedule of content sources to their associated crawl databases. Crawl components are associated with a single Search service application. You can distribute the crawl load by adding crawl components to different crawl servers. You can have as many crawl components on a given crawl server as resources allow. If you have many content locations, you can add crawl components and crawl databases and dedicate them to specific content. Each crawl component on a given crawl server should be associated with a separate crawl database. For redundancy, we recommend that you have at least two crawl components. Each crawl component should be set to crawl both crawl databases. If a database grows to more than 25 million items, we recommend that you add a new crawl database and crawl component.
  - The *search administration component* monitors incoming user actions and updates the search administration database. Only one search administration component is allowed per Search service application.The search administration component can run on any server, preferably either a crawl server or a query server.
- Database servers. Database servers host crawl databases, property databases, the search administration database, and other SharePoint Server 2010 databases.
  - Crawl database
    Crawl databases contain data that is related to the location of content sources, crawl schedules, and other information that is specific to crawl operations for a specific Search service application. You can distribute the database load by adding crawl databases to different computers that are running SQL Server.

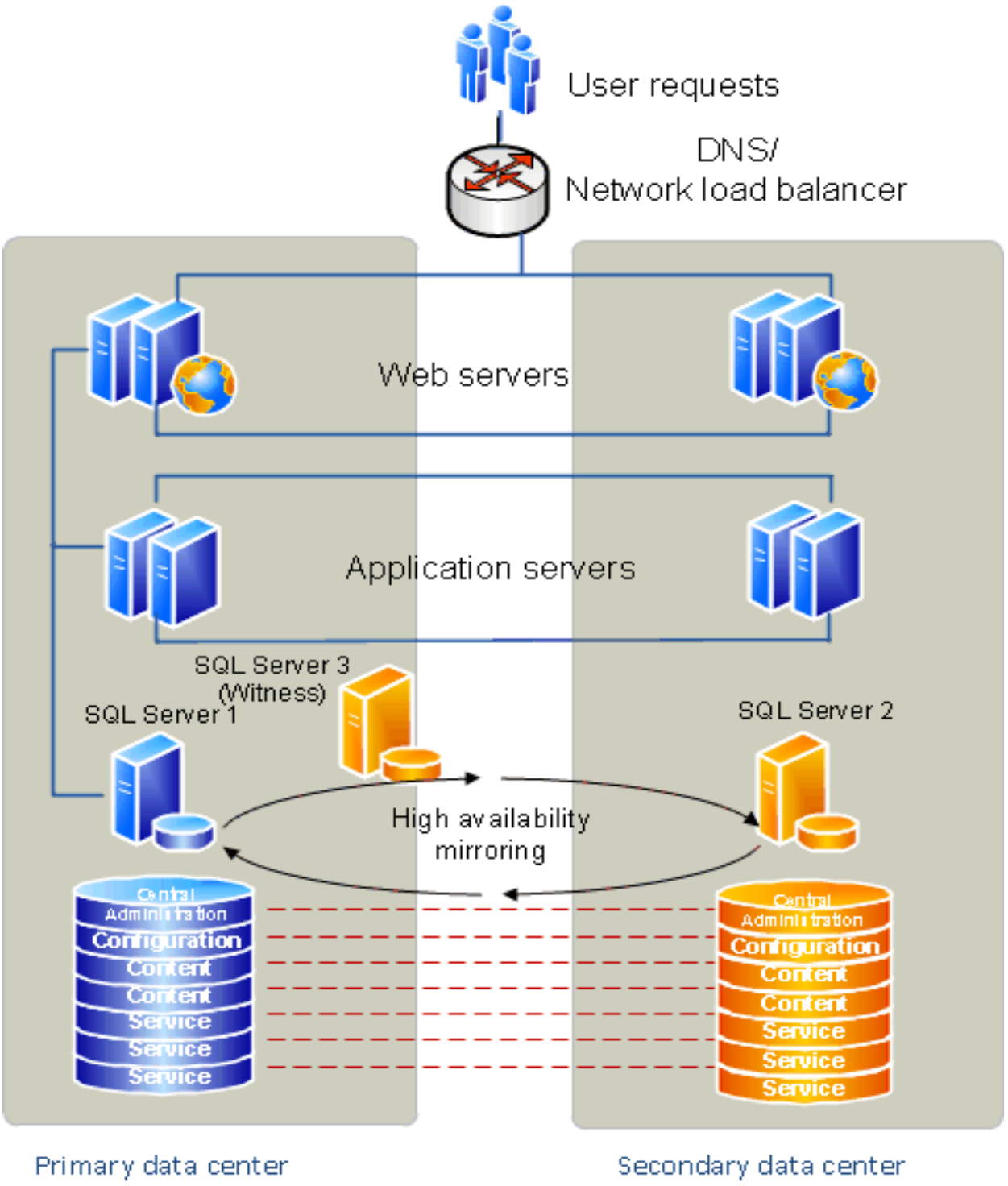
Crawl databases are associated with crawl components and can be dedicated to specific hosts by creating host distribution rules. For more information about crawl components, see Add or remove a crawl component (*http://technet.microsoft.com/library/7651c3d6-93f9-4b15-9e45-3c23f0f733e3(Office.14).aspx*). For more information about host distribution rules, see Add or remove a host distribution rule (*http://technet.microsoft.com/library/6ab1724f-8a5a-47f1-b9d6-719ae4f994fc(Office.14).aspx*). Crawl databases are redundant if they are mirrored or deployed to a SQL Server failover cluster.

- Property database
  Property databases contain metadata that is associated with crawled content. You can distribute the database load of queries by adding property databases to different computers that are running SQL Server. Property databases are associated with index partitions and return any metadata associated with content in query results.
  Property databases are redundant if they are mirrored or deployed to a SQL Server failover cluster.
- Search Administration database
  There is only one Search Administration database per Search service application instance in a farm.
  The Search Administration database is only redundant if it is mirrored or deployed to a SQL Server failover cluster.

For more information about search redundancy, see Manage Search topology (*http://technet.microsoft.com/library/ff30cd9b-a827-4bee-b38a-ed2c3b6b3b47(Office.14).aspx*).

Redundancy and failover between closely located data centers configured as a single farm ("stretched" farm)

Some enterprises have data centers that are located close to one another with high-bandwidth connections so that they can be configured as a single farm. This is called a *"stretched" farm*. For a stretched farm to work, there must be less than 1 millisecond latency between SQL Server and the front-end Web servers in one direction, and at least 1 gigabit per second bandwidth.
In this scenario, you can provide fault tolerance by following the standard guidance for making databases and service applications redundant.
The following illustration shows a stretched farm.
Stretched farm


User requests
DNS/
Network load balancer
Web servers
Application servers
SQL Server 3
(Witness)
SQL Server 1
SQL Server 2
High availability
mirroring
Central
Administration
Configuration
Content
Content
Service
Service
Service
Central
Administration
Configuration
Content
Content
Service
Service
Service
Primary data center
Secondary data center

Plan for disaster recovery (SharePoint Server 2010)

Updated: July 29, 2010

This article describes key decisions in choosing disaster recovery strategies for a Microsoft SharePoint Server 2010 environment.

In this article:

- Disaster recovery overview
- Choose a disaster recovery strategy
- Planning for cold standby data centers
- Planning for warm standby data centers
- Planning for hot standby data centers
- System requirements for disaster recovery

Disaster recovery overview

For the purposes of this article, we define disaster recovery as the ability to recover from a situation in which a data center that hosts SharePoint Server becomes unavailable. The disaster recovery strategy that you use for SharePoint Server must be coordinated with the disaster recovery strategy for the related infrastructure, including Active Directory domains, Exchange Server, and Microsoft SQL Server. Work with the administrators of the infrastructure that you rely on to design a coordinated disaster recovery strategy and plan.

The time and immediate effort to get another farm up and running in a different location is often referred to as a hot, warm, or cold standby. Our definitions for these terms are as follows:

Hot standby A second data center that can provide availability within seconds or minutes.

Warm standby A second data center that can provide availability within minutes or hours.

Cold standby A second data center that can provide availability within hours or days.

Disaster recovery can be one of the more expensive requirements for a system. The shorter the interval between failure and availability and the more systems you protect, the more complex and costly a disaster recovery solution is likely to be. When you invest in hot or warm standby data centers, costs include:

- Additional hardware and software, which often increase the complexity of operations between software applications, such as custom scripts for failover and recovery.
- Additional operational complexity.

The costs of maintaining hot or warm standby data centers should be evaluated based on your business needs. Not all solutions within an organization are likely to require the same level of availability after a disaster. You can offer different levels of disaster recovery for different content, services, or farms — for example, content that has high impact on your business, or search services, or an Internet publishing farm.

Disaster recovery is a key area in which information technology (IT) groups offer service level agreements (SLAs) to set expectations with customer groups. Many IT organizations offer a variety of SLAs that are associated with different chargeback levels. When you implement failover between server farms, we recommend that you first deploy and tune the core solution within a farm, and then implement and test disaster recovery.

Choose a disaster recovery strategy

You can choose among many approaches to provide disaster recovery for a SharePoint Server environment, depending on your business needs. The following examples show why companies might choose cold, warm, or hot standby disaster recovery strategies.

- Cold standby disaster recovery strategy: A business ships backups to support bare metal recovery to local and regional offsite storage on a regular basis, and has contracts in place for emergency server rentals in another region.
  Pros:
  - Often the cheapest option to maintain, operationally.
  - Often an expensive option to recover, because it requires that physical servers be configured correctly after a disaster has occurred.
    Cons: The slowest option to recover.
- Warm standby disaster recovery strategy: A business ships virtual server images to local and regional disaster recovery farms.
  Pros: Often relatively inexpensive to recover, because a virtual server farm can require little configuration upon recovery.
  Cons: Can be very expensive and time consuming to maintain.
- Hot standby disaster recovery strategy: A business runs multiple data centers, but serves content and services through only one data center.
  Pros: Often relatively fast to recover.
  Cons: Can be quite expensive to configure and maintain.

Important:
No matter which disaster recovery solution you decide to implement for your environment, you are likely to incur some data loss.

Planning for cold standby data centers

In a cold standby disaster recovery scenario, you can recover by setting up a new farm in a new location, (preferably by using a scripted deployment), and restoring backups. Or, you can recover by restoring a farm from a backup solution such as Microsoft System Center Data Protection Manager 2007 that protects your data at the computer level and lets you restore each server individually. This article does not contain detailed instructions for how to create and recover in cold standby scenarios. For more information, see:

- Restore a farm (SharePoint Server 2010)
- Restore customizations (SharePoint Server 2010)

Planning for warm standby data centers

In a warm standby disaster recovery scenario, you can create a warm standby solution by making sure that you consistently and frequently create virtual images of the servers in your farm that you ship to a secondary location. At the secondary location, you must have an environment available in which you can easily configure and connect the images to re-create your farm environment.

This article does not contain detailed instructions for creating warm standby solutions. For more information about how to plan to deploy farms by using virtual solutions, see DRAFT Plan for virtualization (SharePoint 2010) (*http://technet.microsoft.com/library/f8c0b31a-0120-40bd-9216-3f308e335cd4(Office.14).aspx*).

Planning for hot standby data centers

In a hot standby disaster recovery scenario, you can set up a failover farm to provide disaster recovery in a separate data center from the primary farm. An environment that has a separate failover farm has the following characteristics:

- A separate configuration database and Central Administration content database must be maintained on the failover farm.
- All customizations must be deployed on both farms.

  Note:
  We recommend that you use scripted deployment to create the primary and failover farm by using the same configuration settings and customizations. For more information, see Install SharePoint Server 2010 by using Windows PowerShell (*http://technet.microsoft.com/library/7443092a-87a6-4063-a7d0-8d10d9d23682(Office.14).aspx*).
- Updates must be applied to both farms, individually.
- SharePoint Server content databases can be successfully asynchronously mirrored or log-shipped to the failover farm.

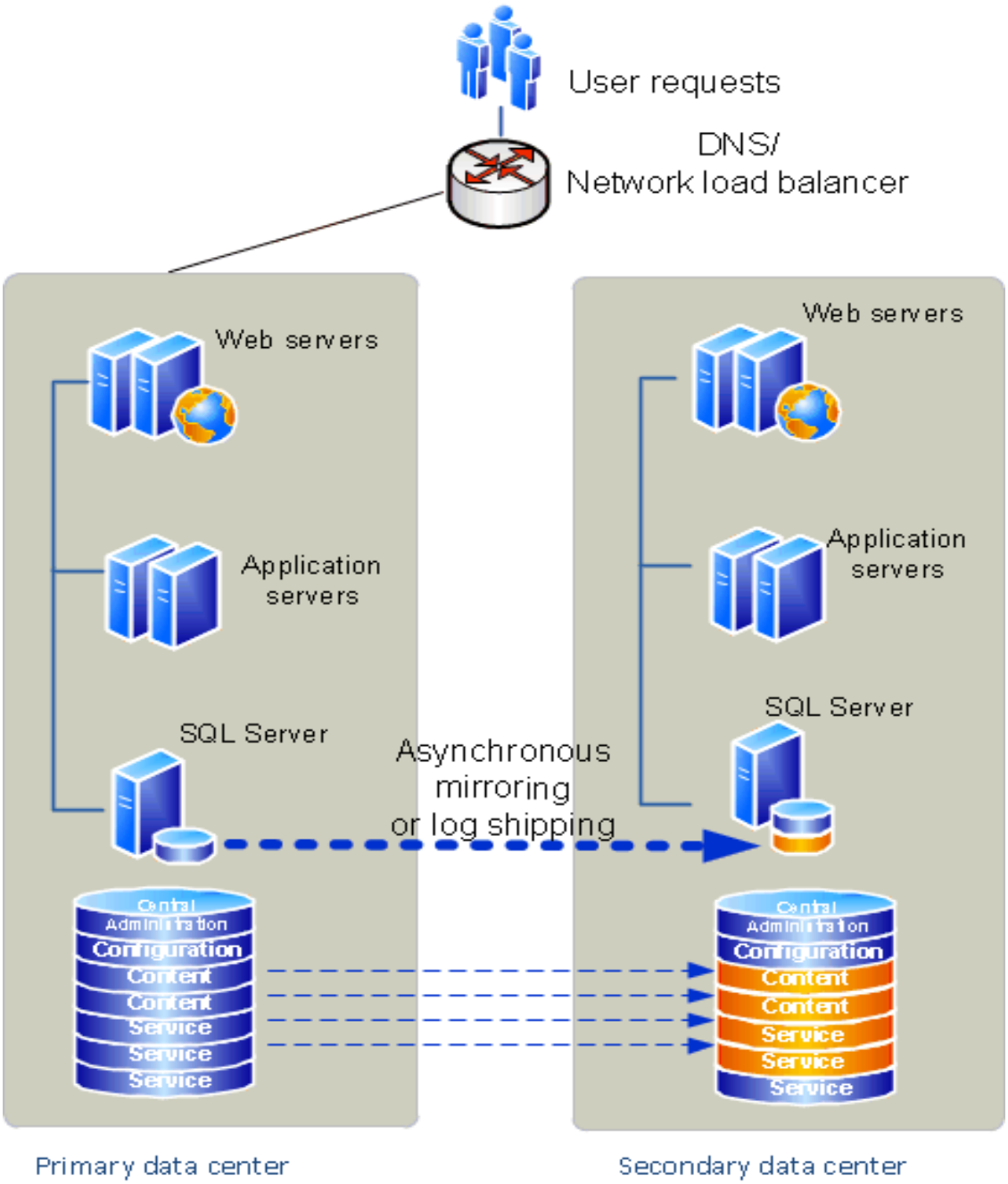
  Note:
  SQL Server mirroring can only be used to copy databases to a single mirror server, but you can log-ship to multiple secondary servers.
- Service applications vary in whether they can be log-shipped to a farm. For more information, see Service application redundancy across data centers (*http://technet.microsoft.com/library/84a80c36-f79a-4270-bb2c-d1eac72fcc36(Office.14).aspx#ServiceAppRedundancy*) later in this article.

This topology can be repeated across many data centers, if you configure SQL Server log shipping to one or more additional data centers.

Consult with your SAN vendor to determine whether you can use SAN replication or another supported mechanism to provide availability across data centers.

The following illustration shows primary and failover farms before failover.

Primary and failover farms before failover



Service application redundancy across data centers

To provide availability across data centers for service applications, we recommend that for the services that can be run cross-farm, you run a separate services farm that can be accessed from both the primary and the secondary data centers.

For services that cannot be run cross-farm, and to provide availability for the services farm itself, the strategy for providing redundancy across data centers for a service application varies. The strategy employed depends on whether:

- There is business value in running the service application in the disaster recovery farm when it is not in use.
- The databases associated with the service application can be log-shipped or asynchronously mirrored.
- The service application can run against read-only databases.

The following sections describe the disaster recovery strategies that we recommend for each service application. The service applications are grouped by strategy.

Databases that can be log-shipped or asynchronously mirrored

After a service application has been initially deployed on a secondary farm, the databases that support the following service applications can be asynchronously mirrored or log-shipped across farms:

- **Application Registry service application**
  Databases: Application Registry service
- **Managed Metadata service application**
  Databases: Managed Metadata service
  Note:
  If tagging is in use, to successfully use the Managed Metadata service application in the disaster recovery farm, you must also log-ship or mirror the Tagging database for the User Profile service application.
- **PerformancePoint Services**
  Databases: PerformancePoint Service application
- **Project Server service application**
  Databases: Draft, Published, Archive, Reporting
  Project Server 2010 requires synchronization between its databases. Project Server can be replicated between farms by using an asynchronous replication mechanism (asynchronous database mirroring, log shipping, or asynchronous SAN replication), but, for recovery, you must ensure that the Project database logs are synchronized as you restore.
  Note:
  Although we recommend that you log-ship or mirror the Project Server databases to the disaster recovery farm, the Project Server service application cannot run against read-only databases. Therefore, we recommend that you do not run the Project Server service application on the disaster recovery farm until after failover. To successfully synchronize the Project Server databases on the disaster recovery farm, you must configure either time stamps or log marking for the databases.
- **Secure Store service application**
  Databases: Secure Store
- **Usage and Health Data Collection service application**
  Databases: Logging
  Note:
  It is possible to log-ship or mirror the Logging database. However, we recommend that you do not run the Usage and Health Data Collection service on the disaster recovery farm, and that you do not mirror nor log-ship the Logging database.
- **User Profile service application**
  Databases: Profile, Synchronization, Social Tagging

The User Profile service Social Tagging database can be log-shipped. The Profile and Synchronization databases cannot be log-shipped.
To provide redundancy for the User Profile service application, you must first deploy the service application in both the primary and secondary data centers.
For the Social Tagging database, set up log-shipping.
To set up the Profile and Synchronization databases, we recommend that you recover a backup of the databases to the secondary data center and attach them to the User Profile service application in that data center.
To keep the profiles synchronized, you must run the User Profile Replication Engine that is included in the SharePoint Administration Toolkit after profile data has been updated on the primary farm. For more information, see User Profile Replication Engine Overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/d1e61565-7d7d-4694-aa8f-a0ca9ee20377(Office.14).aspx*).

- **Web Analytics service application**
  Databases: Staging, Reporting
  Note:
  We recommend that you log-ship or mirror the Web Analytics Staging and Reporting databases. However, we recommend that you not run the Web Analytics service application on the disaster recovery farm until after failover.

Service applications and databases that cannot be log-shipped or asynchronously mirrored

The following service applications must be deployed on both the primary and failover farms, and cannot be log-shipped or asynchronously mirrored. For most of these service applications, we recommend that you deploy them and then verify that the failover farm has the same configuration settings as the primary farm. If configuration changes that affect the service are made on the primary farm, you must update the failover farm.

- **Business Data Connectivity service application**
  Databases: Business Data Connectivity
- **Microsoft SharePoint Foundation Subscription Settings service application**
  Database: Subscription
  Note:
  Log-shipping the Subscription Settings database is not supported.
- **Access Services**
  Databases: None
- **Excel Services**
  Databases: None
- **Search**
  Databases: Crawl, Property, Search Administration
  Search requires complete synchronization between its databases and index. Because of this requirement, search cannot be replicated between farms by using an asynchronous replication mechanism (asynchronous database mirroring, log shipping, or asynchronous SAN replication).
  To provide up-to-date search on a failover farm, you must run search on the secondary farm.

Important:
The Search service application on the failover farm must be set to actively crawl the secondary farm. On failover, you must configure the Web application association to use the failover Search service application.

- **State service**
  Databases: State
  Note:
  Log-shipping the State database is not supported.
- **Visio Services**
  Databases: None
- **Word Automation Services**
  Databases: Word Automation Services
  Log-shipping the Word Automation Services database is not supported.

System requirements for disaster recovery

In an ideal scenario, the failover components and systems match the primary components and systems in all ways: platform, hardware, and number of servers. At a minimum, the failover environment must be able to handle the traffic that you expect during a failover. Keep in mind that only a subset of users may be served by the failover site. The systems must match in at least the following:

- Operating system version and all updates
- SQL Server versions and all updates
- SharePoint 2010 Products versions and all updates

Although this article primarily discusses the availability of SharePoint 2010 Products, the system uptime will also be affected by the other components in the system. In particular, make sure that you do the following:

- Ensure that infrastructure dependencies such as power, cooling, network, directory, and SMTP are fully redundant.
- Choose a switching mechanism, whether DNS or hardware load balancing, that meets your needs.

Records management planning (SharePoint Server 2010)

Published: May 12, 2010

A *record* is a document or other electronic or physical entity in an organization that serves as evidence of an activity or transaction performed by the organization and that requires retention for some time period. Records management is the process by which an organization:

- Determines what kinds of information should be considered records.
- Determines how active documents that will become records should be handled while they are being used, and determines how they should be collected after they are declared to be records.
- Determines in what manner and for how long each record type should be retained to meet legal, business, or regulatory requirements.
- Researches and implements technological solutions and business processes to help ensure that the organization complies with its records management obligations in a cost-effective and non-intrusive way.
- Performs records-related tasks such as disposing of expired records, or locating and protecting records related to external events such as lawsuits.

The articles in this section describe records management in Microsoft SharePoint Server 2010 and provide guidelines for planning your records management solution. In this section:

- Records management overview (SharePoint Server 2010)
  This article describes records management and summarizes planning for records management.
- Create a file plan to manage records in SharePoint Server 2010
  This article describes the contents of a file plan and summarizes how to create a file plan for your organization.
- Plan how records are collected (SharePoint Server 2010)
  This article reviews techniques that you can use to declare active documents to be records.
- Physical records planning (SharePoint Server 2010)
  This article describes how to plan to use SharePoint Server to manage physical records.
- Planning for eDiscovery (SharePoint Server 2010)
  This article describes how SharePoint Server supports eDiscovery.
- Using a records archive versus managing records in place (SharePoint Server 2010)
  This article describes the differences between managing records in a records archive and managing records in place.
- Designing for in-place records management (SharePoint Server 2010)
  This article describes how you can manage records in the same SharePoint Server library as active documents, and presents a process for determining how you will manage records in place.

- Choose an e-mail and messaging records management strategy (SharePoint Server 2010) (*http://technet.microsoft.com/library/8f752e21-b5af-4ed1-b48e-26a72a6d3eaf(Office.14).aspx*)
  This article contains an overview and comparison of the records management functionality available in Exchange Server 2010 and SharePoint Server 2010 to help you choose a management solution for messages if your organization uses both products.

Records management overview (SharePoint Server 2010)

Published: May 12, 2010

In this article:

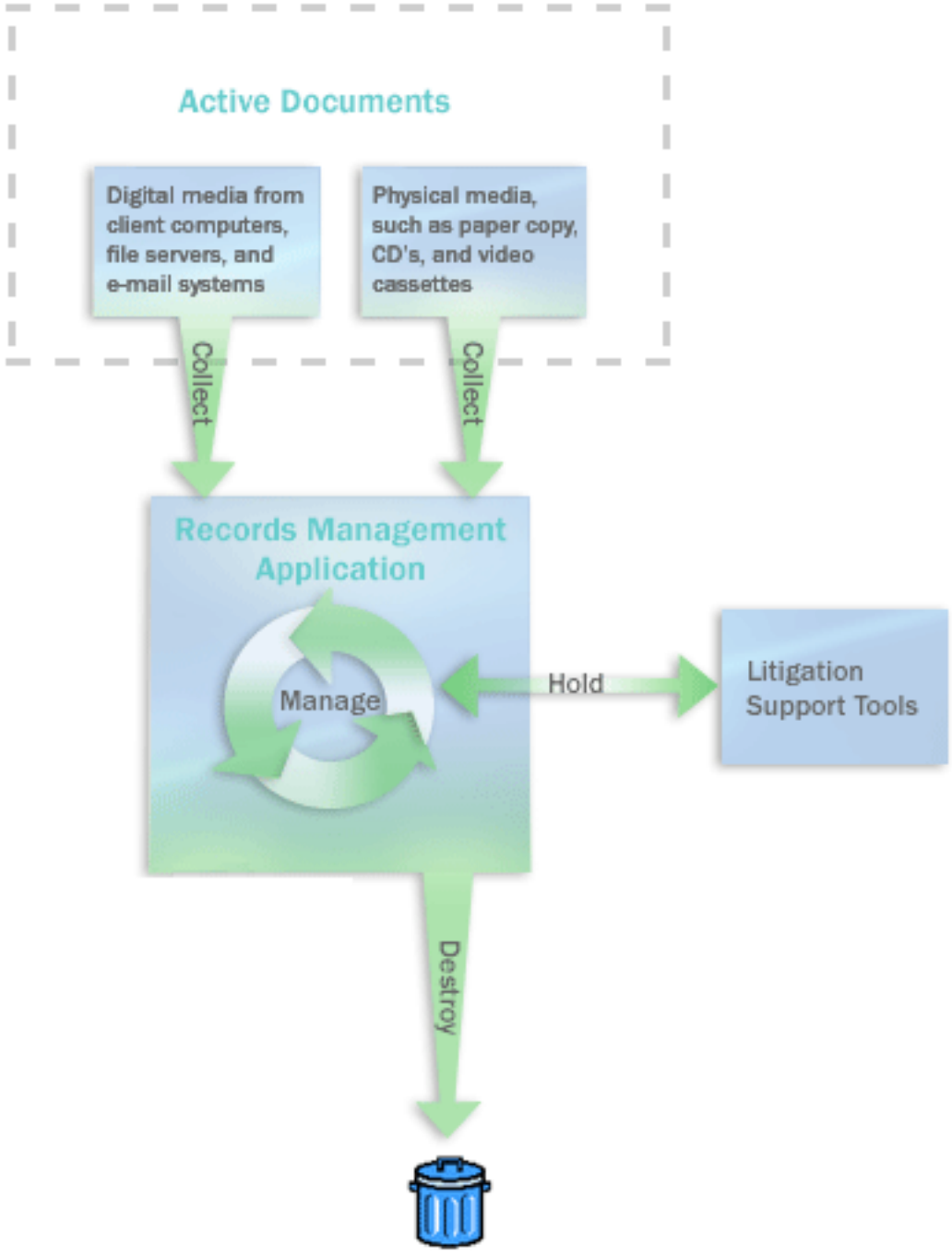
- Elements of a records management system
- Overview of records management planning

Elements of a records management system

A *record* is a document or other electronic or physical entity in an organization that serves as evidence of an activity or transaction performed by the organization and that requires retention for some time period. Records management is the process by which an organization:

- Determines what kinds of information should be considered records.
- Determines how active documents that will become records should be handled while they are being used, and determines how they should be collected after they are declared to be records.
- Determines in what manner and for how long each record type should be retained to meet legal, business, or regulatory requirements.
- Researches and implements technological solutions and business processes to help ensure that the organization complies with its records management obligations in a cost-effective and non-intrusive way.
- Performs records-related tasks such as disposing of expired records or locating and protecting records that are related to external events such as lawsuits.

Determining which documents and other physical or electronic items in your organization are records is the responsibility of corporate compliance officers, records managers, and lawyers. By carefully categorizing all enterprise content in your organization, these people can help you ensure that documents are retained for the appropriate period of time. A well-designed records management system helps protect an organization legally, helps the organization demonstrate compliance with regulatory obligations, and increases organizational efficiency by promoting the disposition of out-of-date items that are not records.



A records management system includes the following elements:

- **A content analysis** that describes and categorizes content in the enterprise that can become records, that provides source locations, and that describes how the content will move to the records management application.
- **A file plan** that indicates, for each kind of record in the enterprise, where they should be retained as records, the policies that apply to them, how long they must be retained, how they should be disposed of, and who is responsible for managing them.
- **A compliance requirements document** that defines the rules that the organization's IT systems must follow to ensure compliance and the methods that are used to ensure the participation of enterprise team members.
- **A method for collecting records that are no longer active** from all record sources, such as collaboration servers, file servers, and e-mail systems.
- **A method for auditing records** while they are active.
- **A method for capturing records' metadata** and audit histories and for maintaining them.
- **A process for holding records** (suspending their disposition) when events such as litigations occur.
- **A system for monitoring and reporting on the handling of records** to ensure that employees are filing, accessing, and managing them according to defined policies and processes.

Microsoft SharePoint Server 2010 includes features that can help organizations implement integrated records management systems and processes.

Overview of records management planning

This topic describes the planning steps that you should take to help ensure that the records management system that you implement based on SharePoint Server 2010 will achieve your organization's records management goals. The following is a preview of the records management planning process:

1. **Identify records management roles** Successful records management requires specialized roles, including the following:
   - Records managers and compliance officers to categorize the records in the organization and to run the records management process.
   - IT personnel to implement the systems that efficiently support records management.
   - Content managers to find where organizational information is kept and to ensure that their teams follow records management practices.
2. **Analyze organizational content** Before creating a file plan, records managers and content managers survey document usage in the organization to determine which documents and other items can become records.
3. **Develop a file plan** After you have analyzed your organizational content and determined retention schedules, fill in the rest of the file plan. File plans differ from organization to organization, but generally they describe the kinds of items the enterprise acknowledges to be records, indicate where they are stored, describe their retention periods, and provide other information, such as who is responsible for managing them and which broader category of records they belong to.

4. **Develop retention schedules** For each record type, determine when it is no longer active (being used), how long it should be retained after that, and how it should ultimately be disposed of.
5. **Evaluate and improve document management practices** Make sure that required policies are being applied in document repositories. For example, ensure that content is being appropriately audited so that suitable audits are retained together with records.
6. **Design the records management solution** Determine whether to create a records archive, to manage records in place, or to use a combination of the two approaches. Based on your file plan, design the record archive, or determine how to use existing sites to contain records. Define content types, libraries, policies, and, when it is required, metadata that determines the location to route a document to.
7. **Plan how content becomes records** If you are using SharePoint Server 2010 for both active document management and records management, you can create custom workflows to move documents to a records archive. If you are using either SharePoint Server 2010 or an external document management system, you can plan and develop interfaces that move content from those systems to the records archive, or that declare a document to be a record but do not move the document. You also create a training plan to teach users how to create and work with records.
8. **Plan e-mail integration** Determine whether you will manage e-mail records within SharePoint Server 2010, or whether you will manage e-mail records within the e-mail application itself.
9. **Plan compliance for social content** If your organization uses social media such as blogs, wikis, or My Sites, determine how this content will become records.
10. **Plan compliance reporting and documentation** To verify that your organization is performing its required records management practices, and to communicate these practices, you should document your records management plans and processes. If your enterprise becomes engaged in records-related litigation, you might have to produce these records management guidelines, implementation plans, and metrics on effectiveness.

Concepts

Create a file plan to manage records in SharePoint Server 2010
Plan how records are collected (SharePoint Server 2010)

Create a file plan to manage records in SharePoint Server 2010

Published: May 12, 2010

The file plan is the primary records management planning document in SharePoint Server 2010. Although file plans can differ across organizations, they typically:

- Describe the kinds of items the organization acknowledges to be records.
- Describe what broader category of records the items belong to.
- Indicate where records are stored.
- Describe retention periods for records.
- Delineate who is responsible for managing the various kinds of records.

This article describes the contents of a file plan and summarizes how to create a file plan for your organization. The article also directs you to a worksheet in which you can record the file plan.

In this article:

- Identify kinds of records
- Complete the file plan
- Worksheet

Identify kinds of records

Determining which active documents in your organization might be declarable as records requires the collaboration of records managers, lawyers, compliance officers, and content managers. Note that, even if your enterprise is not in a highly regulated industry, there are general laws that might obligate your enterprise to keep records. Along with general business laws, you must evaluate legal requirements that are specific to your enterprise. It is beyond the scope of this article to provide more than general information about how to determine what is a record in your organization. Most likely, your enterprise is already doing some form of records management and has filled most of the records management roles that you need, and you might already have a taxonomy of records.

Generally, to determine what are records in your organization:

1. Understand your enterprise's legal obligations and business needs.
2. In a collaborative effort across the divisions of your organization, analyze how active documents are used.
3. Develop a list of the kinds of documents that should become records. For example, you might determine that the following should be retained as records:
    - Contracts to rent corporate space.
    - Documents related to employees' benefits.
    - Documents related to product research and development.
4. Categorize the records. Records in the same category often have the same retention periods and might require similar treatment in other ways.

Record the information that you collected. You can use the worksheet mentioned in the section Worksheet for this purpose. Record the kind of record, the category that records of this kind belong to, and a brief description of the kind of record.
The following is a sample worksheet:

Kind of record	Record category	Description
Benefit plans, insurance plans, pension plans	Employee Benefit Descriptions	Descriptions of all employee benefit plans.
Payroll timesheets, supplementary payroll information	Payroll Records	Summaries of hours worked, overtime, and salary paid.
Vendor invoices	Invoices	Records of goods or services purchased from vendors.
Product surveys, questionnaires, training manuals, training videos	Training Materials	Provides internal or external training.
Shipping forms, shipping reports	Shipping Records	Documents the shipment of materials.
Press releases, newspaper articles	Press Releases	Public relations information about products and services.
Emergency contact sheets, medical plan enrollment forms, resumes, benefits status reports	Personnel Records	Records of individuals' employment histories and related personnel actions.

Complete the file plan

After you determine which documents should be retained as records and after you create a set of record categories, complete your file plan by providing additional information about each kind of record. Indicate the following:

- How long each kind of record should be retained.
- How records should be disposed of when the retention period expires.
- Who is the primary records manager for records of this kind.
- What kind of media are records of this kind stored in.

The following is a completed sample file plan:

Records	Description	Media	Record category	Retention	Disposition	Contact
401k plans	Description of employee benefit plan.	Web pages	Employee Benefit Plans	X years	None	Kathi Flood
Insurance plans	Description of employee insurance plan.	Print	Employee Benefit Plans	X years	None	Reshma Patel
Pension plans	Description of	Print	Employee	X years	None	Reshma

Records	Description	Media	Record category	Retention	Disposition	Contact
	employee pension plan.		Benefit Plans			Patel
Payroll timesheets	Summaries of hours worked, overtime, and salaries paid.	Electronic documents	Payroll Records	X years	Destroy	Reshma Patel
Supplementary payroll information	Summaries of sick time, vacation time, and other non-salary payroll items.	Electronic documents	Payroll Records	X years	Destroy	Reshma Patel
Vendor invoices	Records of goods or services purchased from vendors.	Print	Invoices	X years	Destroy	Eric Lang
Product surveys	Customer satisfaction survey.	Web pages	Survey Materials	X years	Archive	Molly Dempsey
Questionnaires	Questionnaire to determine customer demographics.	Print	Survey Materials	X years	Archive	Molly Dempsey
Training manuals	Hard-copy training content.	Print	Training Materials	X years	Destroy	Molly Dempsey
Training videos	Video training content.	Video	Training Materials	X years	Destroy	Molly Dempsey
Shipping forms	Configuration of materials shipments	Print	Shipping Materials	X years	Destroy	Eric Lang
Shipping reports	Documentation of the shipment of materials.	Electronic spreadsheets	Shipping Materials	X years	Destroy	Eric Lang
Press releases	Releases about products and services.	Electronic documents	Public Relations Information	X years	Archive	Molly Dempsey
Newspaper articles	News about products and services.	Print	Public Relations Information	X years	Archive	Molly Dempsey
Emergency contact sheets	Employee information.	Electronic documents	Personnel Records	X years	Destroy	Reshma Patel
Medical plan enrollment	Employees' sign-up forms	Electronic documents	Personnel Records	X years	Destroy	Reshma Patel

Records	Description	Media	Record category	Retention	Disposition	Contact
forms	for health plans.					
Resumes	Resumes received.	Mixed	Personnel Records	X years	Destroy	Reshma Patel

Note:
The example earlier in this section is a sample. It is not a recommendation of any particular file plan settings. To reinforce that this is an example and not a recommendation of any records management policy, no retention periods are supplied.

Worksheet

You can use the following worksheet with this article to help plan your deployment:

- Record categories worksheet (*http://go.microsoft.com/fwlink/?LinkID=179987&clcid=0x409*)

Plan how records are collected (SharePoint Server 2010)

Published: May 12, 2010

After you develop a file plan and design your records management solution in SharePoint Server 2010, plan how active documents in your organization – electronic and hard copy – will become records. This article reviews techniques that you can use to declare active documents to be records and suggests one way to plan how items in your file plan will become records.

In this article:

- Techniques for converting active documents to records
- Completing your plan

Techniques for converting active documents to records

You can use the following techniques convert active documents to records:

- Manually declaring a document to be a record by using a Web site based on Microsoft SharePoint Server.
- Defining a policy that declares a document to be a record or sends a document to a Records Center site at a specified time.
- Creating a workflow that sends a document to a Records Center site.
- Using a custom solution that is based on the SharePoint Server object model.

Creating records manually

If in-place records management is enabled for a document library, users can explicitly declare a document in the library to be a record by editing the document's compliance details. When the site collection administrator enables in-place records management, the site collection administrator specifies who should be able to declare and undeclare

records, and whether users should be able to edit or delete documents after they become records.

If a connection to a Records Center site was created, users can manually send documents to the Records Center site by using the **Send to** command. When a farm administrator configures a connection to the Records Center site, this command becomes available on all active documents. Depending on how the connection is configured, documents can be either copied to the Records Center site, moved to the Records Center site, or moved to the Records Center site with a link to the document maintained. For more information about creating a connection to a Records Center site, see Add, modify, or delete a connection to a document repository or a records center (SharePoint Server 2010) (*http://technet.microsoft.com/library/5f0402ca-90c6-4528-b1de-04d4f28fb2a6(Office.14).aspx*).

Although manually sending records to the Records Center site is not a practical large-scale solution, you can use it to supplement other methods of creating records.

Defining a policy

A retention policy specifies actions to take on documents at certain points in time. Policy actions occur automatically; users do not need to start the action.

Two policy actions relate specifically to managing records: transferring a document to another location, and declaring a document to be a record. If a connection to a Records Center site exists, you can create a policy that sends documents to a Records Center site. The policy also specifies whether to copy the document to the Records Center site, move it, or move it and leave a link in the document library. If in-place records management is enabled for the site, you can create a policy that declares a document to be a record. You can also use the SharePoint Server object model to create a custom action.

A retention policy can have multiple stages. For example, you could create a retention policy that deletes all previous versions of a document one year after the document was last modified, and transfers the document to a Records Center site five years after the document was last modified.

If in-place records management is enabled for a site, the site can contain both active documents and records. In this case, you can specify different retention policies for active documents and records. For example, you could create a policy that declares an active document to be a record two years after the document was created, and create a second policy that deletes a record seven years after it was declared to be a record.

For more information about defining information management policies, see Office.com (*http://go.microsoft.com/fwlink/?LinkId=191521&clcid=0x409*).

Creating a workflow

When you use Microsoft Office SharePoint Designer to create a workflow, you can add an action to send an item to a repository. By using this action, you can create workflows that send documents to a Records Center site. You can also include other actions in the workflow. For example, you could create a workflow that sends an e-mail message to a document's author requesting approval, and then sends the document to a Records Center site. You could combine policies and workflows by creating a retention policy that runs the new workflow one year after a document is created.

You can also use the SharePoint Server object model to create a custom workflow that copies files to the Records Center site. A workflow that sends files to the Records Center site can be integrated into your document management system as part of a workflow that guides a document through its life cycle. For document types that have a predictable life

cycle, such as expense reports, you could implement a workflow that guides the document through its various stages and, as a final step, sends a copy of the document to the Records Center site. The workflow could be triggered by creating a new document.

Using a custom solution

You can develop custom solutions that use objects in the **Microsoft.Office.RecordsManagement.OfficialFileWSProxy** namespace to send content from other data sources to the Records Center site. For more information about how to implement custom solutions using the SharePoint Server 2010 object model, see the SharePoint Server 2010Software Development Kit (*http://go.microsoft.com/fwlink/?LinkID=166117&clcid=0x409*).

Completing your plan

After you develop the file plan and review the methods for moving content into the Records Center site, complete your file plan by determining how to send each kind of record to the Records Center site. The things to consider include the following:

- Is compliance enforced or voluntary?
- Can you depend on the cooperation of users in your organization to comply with records management processes? In general, avoid manual processes. However, where they are needed, create suitable training and monitoring to ensure team compliance.
- Will content be stored on SharePoint Server 2010 document management servers?
- Are you maintaining physical content? Managing active physical content, such as hard copy or CD-ROM, and sending it to a records vault for retention (together with tracking the record in a Records Center site) requires unique planning not described in this topic. For example, if no electronic version of a paper document exists, you might have to track the item by using a list that has associated policies and workflows. For a full discussion of strategies and techniques for tracking a physical record, both while it is active and after it is sent to the Records Center site, see the article Physical records planning (SharePoint Server 2010).

The following table shows how some records in a sample file plan will move to a Records Center site:

Documents	Description	Media	Source location	Becomes a record...
Benefit plan	Description of employee benefit plan.	Web pages	SharePoint Server 2010 document library	Using a custom workflow associated with expiration policy
Insurance plan	Description of employee insurance plan.	Print	Physical document associated with list item in	By sending to a physical vault and creating a

Documents	Description	Media	Source location	Becomes a record...
			SharePoint Server 2010	list item in the Records Center site to track (using a barcode)
Payroll timesheets	Summaries of hours worked, overtime, and salaries paid.	Electronic documents	Payroll records server not based on SharePoint Server 2010	Using a custom program
Product development files	Specifications of products and associated documents.	Electronic documents	SharePoint Server 2010 document library	Using custom workflow associated with expiration policy and manually by using **Send to** command

Concepts

Create a file plan to manage records in SharePoint Server 2010

Physical records planning (SharePoint Server 2010)

Other Resources

Add, modify, or delete a connection to a document repository or a records center (SharePoint Server 2010) (*http://technet.microsoft.com/library/5f0402ca-90c6-4528-b1de-04d4f28fb2a6(Office.14).aspx*)

Physical records planning (SharePoint Server 2010)

Published: May 12, 2010

In SharePoint Server 2010, you can manage physical and electronic records in the same records archive. However, you manage them in different ways. Electronic records can be stored directly in Microsoft SharePoint Server. Physical records must be stored outside SharePoint Server, for example in boxes in a warehouse. To manage physical records in SharePoint Server, you create a list item, relate the list item to the physical item, and manage the list item.

This article describes how to plan to use SharePoint Server to manage physical records. It does not contain the specific procedures to implement your plan. Before you perform the activities that are described in this topic, you should have already created a file plan. For more information about file plans, see Create a file plan to manage records in SharePoint Server 2010.

In this article:

- Identify record types
- Identify properties of each record type
- Organize content types
- Organize the records archive
- Worksheet

Identify record types

Your file plan should identify the kinds of physical items that your organization considers to be records. If this is not the case, update the file plan to include physical records. For each kind of physical record in the file plan, indicate what kind of media that the records will be. For example, signed legal agreements might be paper records; engineering models might be large-format blueprints.

For more information about file plans, see Create a file plan to manage records in SharePoint Server 2010.

Identify properties of each record type

All records of the same type should have the same properties. The properties of physical records that you should consider in this planning step include the following:

- Attributes (which will become columns in SharePoint Server)
- Processes (which will become workflows in SharePoint Server)
- Information management policies
- Forms

For each type of record, identify the attributes that you want to capture for records of this type. These attributes will be columns of the SharePoint Server content type that represents this kind of record. Information that you would use to categorize records might be an attribute. Data that people search for might also be an attribute. Other attributes of

physical records tie the record in SharePoint Server, represented by an item in a list, to the physical object that is stored in a physical location. The location and some way to identify the physical object are probably attributes that you will want to capture.
As with electronic records, you probably want to apply certain policies to physical records. All records are likely to have an expiration policy and an auditing policy. Physical records in particular might have a policy that requires a barcode. An image of the barcode that is attached to the physical object could be associated with the list item that represented the physical record. A labeling policy could require that each physical object be labeled with the same attributes that are associated with the list item that represents the physical object. For each kind of physical record, indicate whether the expiration, auditing, barcode, and label policies are required. Also note any additional policies that are required.
A physical record in SharePoint Server (an item in a list) is only a placeholder for the actual record; it is not the physical object itself. Therefore, it is likely that you will add processes to keep the physical items synchronized with actions that are taken on the list items. These processes correspond to SharePoint Server workflows. Identify the processes that should be associated with each type of record. Common processes for physical records include the following:

- Disposing of the physical record when the list item that represents the record has expired.
- Moving the physical object to a storage location when a new item is added to the list.
- Retrieving the physical object.

Are there any forms that should be associated with records of this type? You might need a form for each process that you identified. Or you might use a form to provide access to the inventory of physical records.
Use the **Physical records** tab of the worksheet in the Worksheet section to record the information that you identified about each type of physical record. Do not fill in the content type for the type of record yet.

Organize content types

The simplest way to associate content types with physical records is to have one content type for each type of physical record. However, if multiple types of physical records share the same columns, workflows, information management policies, and forms, you can use one content type to represent all of the similar types of physical records.
Organize the content types. Consider creating one content type from which all other content types for physical records will descend. This parent content type would be derived from the Item content type. To the parent content type, add any properties (columns, information management policies, workflows, and forms) that are common to the content types for all physical records.
There are two ways to organize the content types after you have created the parent content type.

1. Create a flat structure in which each content type that represents a type of physical records is a child of the parent content type that you created previously.
2. Create a hierarchy, descending from the parent content type, based on the similarities between the properties of the content types.

On the **Content Types** tab of the worksheet, identify each content type that represents a type of physical record. For each content type, note its parent content type. In the

Columns column, enter the name of every column that is defined *at the level of the content type*. Do not enter the names of columns that are inherited from other content types. In the **Workflows** column, enter the name of every workflow that is defined at the level of the content type. In the **Information Management Policies** column, enter the name of every information management policy that is defined at the level of the content type. In the **Forms** column, enter the name of every form that is defined at the level of the content type.

Organize the records archive

It is common to use separate archives for physical records and electronic records. However, you can decide to have a list or lists of items that represent physical records interspersed with the document libraries that contain electronic records.

After you have decided which records archive to store physical records in, determine how you will organize the lists within the records archive. You can create folders within lists, and use the folders to create a deeper organizational structure for physical records. As you determine which lists to create, be aware that metadata navigation and workflows can both be applied to lists.

Some ideas for organizing lists and folders include the following:

- By record type
- In the same manner that the physical objects are organized. (For example, a folder could represent a box, and the items in the folder could represent the objects in the box.)
- By using a business-related organizational scheme, such as by project or by division
- By year

Because physical records will not be moved to the records archive by using the **Send to** option, you cannot use the content organizer with physical records. Instead, the records manager who creates the physical record must put the record in the correct folder in the correct list.

In the **Lists and folders** tab of the worksheet, enter the URL of each list that you identified. For each list, in the **Content Types** column, determine the content types that will be allowed within the list. Use the **Folder Level 1**, **Folder Level 2**, **Folder Level 3**, and **Folder Level 4** columns to record the hierarchy of folders and sub-folders in the list. Add more columns if you will nest folders deeper than four levels.

Worksheet

You can use the following worksheet to help plan how you will manage physical records:

Physical records planning worksheet
http://go.microsoft.com/fwlink/?LinkID=179986&clcid=0x409

Concepts

Create a file plan to manage records in SharePoint Server 2010

Other Resources

Plan content types (*http://technet.microsoft.com/library/63bb092a-00fe-45ff-a4b8-d8be998d1a3c(Office.14).aspx#bkmk_plan_content_types*)

Planning for eDiscovery (SharePoint Server 2010)

Published: May 12, 2010

Electronic discovery, or *eDiscovery*, is locating and producing electronic information to support events such as litigation, audits, or investigations. If you use Microsoft SharePoint Server 2010 to manage any electronic information, you should consider eDiscovery when you plan your SharePoint Server solution. Auditing, expiration policies, and search are considerations that you should evaluate. Your planning decisions in these areas should be completed in advance of the possibility of any need arising for using eDiscovery.

In this section:

- How SharePoint Server 2010 supports eDiscovery
- Auditing
- Expiration
- Search

How SharePoint Server 2010 supports eDiscovery

There are two parts to eDiscovery in SharePoint Server: finding relevant documents, and restricting what users can do with the documents after they have been identified.

A *hold* is a set of documents that might be produced as part of an eDiscovery request. Within SharePoint Server, you enable or disable the Hold and eDiscovery feature at the level of an individual site. This feature is enabled by default in a Records Center site, and is disabled by default in all other kinds of sites. The Hold and eDiscovery feature enables you to create and manage holds, to add items to a hold, and to use search to discover content and copy the content to another location, or lock the content down so that it cannot be modified or deleted.

When you perform an eDiscovery search, you can do one of two things. You can copy all documents that are retrieved to a content organizer, that routes documents to their correct location based on the documents' metadata. Or you can leave the documents in place, but lock them down. Locking down a document prevents users from modifying or deleting the document.

To support eDiscovery in SharePoint Server, you enable the Hold and eDiscovery feature in every site collection in which relevant information might exist. Then you configure the search service to crawl the sites for which eDiscovery is enabled.

When circumstances occur that require your organization to produce relevant documents, an eDiscovery process can be initiated. A records manager, an attorney, or another individual may take the following actions to produce the required documents.

1. Create a hold to contain the relevant documents.
2. Initiate an eDiscovery search for relevant documents.

The eDiscovery search runs at a time that is controlled by the Search and Process timer job. By default this is 10:30 PM every day. Search results are added to the hold automatically.

3. Review the items in the hold and create additional eDiscovery searches.
4. Locate documents manually, and add them to the hold.
5. Run reports against the hold.
   Hold reports are run at a time that is controlled by the Hold Processing and Reporting timer job. By default this is 11:30 PM every day.
6. Review the documents in the hold and remove irrelevant documents.
7. Identify specific documents in the hold for which more information is needed, and review the audit log for these documents.
8. Deliver all documents that are associated with the hold.

Auditing

When you send a document to a content organizer, the document's version history is erased. To keep a history of who changed a document and when each change was made, you will need an audit log. We recommend that you enable the auditing policy in all site collections that contain active document libraries. For more information about the auditing policy, see Governance overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/df399658-84ac-4ca6-aaf4-378eef361cbb(Office.14).aspx*).

Expiration

Any information that an organization stores is subject to discovery. In addition, electronic documents consume disk space. Consider implementing an expiration policy to delete documents automatically when they are no longer needed. For more information about the expiration policy, see Governance overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/df399658-84ac-4ca6-aaf4-378eef361cbb(Office.14).aspx*).

Search

When an organization has to produce documents in a litigation scenario, it must often produce them quickly or pay a fine. Make sure that Search is configured correctly *before* the first time that you have to use eDiscovery. In particular, ensure that Search is configured to crawl all sites in which you may have to discover content.

Search engines are usually optimized to return only a few highly relevant results. In eDiscovery, the goal of search is to return all results that match a query, not just the few most relevant results. Search in SharePoint Server 2010 was improved to better meet the needs of eDiscovery.

To help protect against common malicious attacks, SharePoint Server 2010 searches that run for more than a specific time are stopped. If your eDiscovery search might run for a long time, consider the following options:

- Create a more tightly scoped search. If you are searching for documents related to a potential partnership with Contoso, Ltd., for example, consider searching for

documents that contain the word “Contoso” and that were created in a specific date range, instead of only searching for the word “Contoso”.

- Run multiple, narrower searches. For example, assume that you are searching for documents related to recruiting a new CEO from Fabrikam, Inc. Instead of doing one search for “Fabrikam (CEO, “Anders Riis”, recruit)”, do three separate searches for “Fabrikam CEO”, “Fabrikam “Anders Riis””, and “Fabrikam recruit”.

Using a records archive versus managing records in place (SharePoint Server 2010)

Published: May 12, 2010

Prior to Microsoft SharePoint Server 2010, you managed records by creating a Records Center site to serve as an archive, then copying documents to the archive when they became records. Whether a document was a record or not was determined by whether it lived in the records archive or elsewhere.

In Microsoft SharePoint Server 2010 you can manage records in an archive, or you can manage records in the same document repository as active documents. With the Microsoft SharePoint Server 2010 in-place approach, when you declare that a document has become a record, the record remains in place, but Microsoft SharePoint Server 2010 now manages it as a record. For example, a document might get a different retention policy when it is declared to be a record, or users might not be able to edit it.

A hybrid approach is also possible. For example, you could keep records in place with active documents for two years, and then move records to a records archive when a project is complete.

As you think about whether to manage records in a separate records center or in the same collaboration site in which the documents were created, consider the following questions:

- Is the governance of the collaboration site appropriate for managing records? Is your industry subject to regulatory requirements that mandate records be separated from active documents? Should the administrator of a collaboration site be trusted to manage a site that contains records? You might want to store records in a site that uses more restricted access than the collaboration site, or in a site that is backed up on a different schedule.
- How long will the collaboration site be in use? If records will have to be kept for longer than the project is ongoing, choosing an in-place records management strategy means that you will have to maintain the collaboration site even after it is no longer used.
- Will the project members need frequent access to the documents after the documents have become records? If you use an in-place approach, project members can access documents in the same manner regardless of whether the documents are active or are records.
- Are records managers in your organization responsible for only records, or are they responsible for all information, regardless of whether it is active or a record? If records managers are responsible only for official records, having a separate records center might be easier for them.

The following table describes differences between what you can do with records in a record center and with records that are managed in-place in a collaboration site. The differences are presented from the point of view of both records managers and employees collaborating on a project team.

Differences between a records archive and in-place records

Factor	Records archive	In-place records
Managing record retention	The content organizer automatically puts new records in the correct folder in the archive's file plan, based on metadata.	There may be different policies for records and active documents based on the current content type or location.
Restrict which users can view records	Yes. The archive specifies the permissions for the record.	No. Permissions do not change when a document becomes a record. However, you can restrict which users can edit and delete records.
Ease of locating records (for records managers)	Easier. All records are in one location.	Harder. Records are spread across multiple collaboration sites.
Maintain all document versions as records	The user must explicitly send each version of a document to the archive.	Automatic, assuming versioning is turned on.
Ease of locating information (for team collaborators)	Harder, although a link to the document can be added to the collaboration site when the document becomes a record.	Easier.
Clutter of collaboration site	Collaboration site contains only active documents.	Collaboration site contains active and inactive documents (records), although you can create views to display only records.
Ability to audit records	Yes.	Dependent on audit policy of the collaboration site.
Scope of eDiscovery	Active documents and records are searched separately.	The same eDiscovery

Factor	Records archive	In-place records
		search includes records and active documents.
Administrative security	A records manager can manage the records archive.	Collaboration site administrators have permission to manage records and active documents.

The following table describes differences between the two records management approaches that might affect how you manage IT resources.

Resource differences between a records archive and in-place records

Factor	Records archive	In-place records
Number of sites to manage	More sites; that is, there is a separate archive in addition to collaboration sites.	Fewer sites.
Scalability	Relieves database size pressure on collaboration sites.	Maximum site collection size reached sooner.
Ease of management	Separate site or farm for records.	No additional site provisioning work beyond what is already needed for the sites that have active documents.
Storage	Can store records on different storage medium.	Active documents and records stored together.

Designing for in-place records management (SharePoint Server 2010)

Published: May 12, 2010

In Microsoft SharePoint Server 2010 you can manage records in an archive, or you can use in-place records management, managing records in the same document repository as active documents. By using in-place records management, when you declare that a document is a record, it remains in the same location, but SharePoint Server 2010 now manages it as a record.

By using in-place records management in SharePoint Server 2010, you can:

- Decide what actions will cause an active document to become a record. For example, a user could select an option to declare a document to be a record; a workflow could run after a specific event and turn an active document into a record; or you could define a retention policy that turns an active document into a record after a certain time.
- Restrict who can perform records-related operations. For example, you could specify that any user can declare a document to be a record, but only records managers can edit or delete a record.
- Restrict what actions users can perform on records. For example, you might prevent users from deleting records, or from both editing and deleting them.
- Specify a retention policy for active documents, and a different retention policy for records.

For more information about deciding whether to use in-place records management or a records archive, see Using a records archive versus managing records in place (SharePoint Server 2010).

This article describes how to make the planning decisions that are required before you can implement in-place records management. It does not explain how to implement the decisions that you make. Before working through the steps in this article, you should already have created a file plan. For more information about file plans, see Create a file plan to manage records in SharePoint Server 2010.

If you are using in-place records management, it is assumed that you are also using SharePoint Server for another purpose, such as team collaboration sites. (If this is not true, consider using a records archive.) Therefore, you should already know the content types and folder hierarchy that your existing solution uses, or be defining these in parallel with designing your records management solution if your other SharePoint Server solution is being developed at the same time.

In this article:

- Overview of in-place records management planning
- Folders or content types?
- Defining content types
- Organizing folders for in-place records management
- General records management planning tasks
- Worksheets

Overview of in-place records management planning

You can set up retention policies for records based either on content types or on the folder in which a document is stored. Whether to organize records by content type or by location is the primary decision that you must make when you plan for in-place records management. After you have determined how to organize records, you design either the content types or the folder hierarchy. Then you define other aspects of records management, such as auditing policies. Finally, you decide what can be done with a document after it is declared to be a record.

If your solution will use both in-place records management and a records archive, you do not have to plan both aspects at the same time. For example, if you base your in-place records management plan on content types, you do not have to organize records in the archive based on content types.

Folders or content types?

You can define retention policies based on an item's content type or based on the folder in which an item is located. For any given library, you must select one or the other; you cannot base retention policies on a combination of content types and folders within the same library. Your choice will greatly affect how you set up the site and how users use the site. It is usually simpler to base retention policies on content types, if this works in your situation.

Consider the kinds of records that you identified in your file plan. Use the following heuristics to determine whether to organize based on content types or on location. Follow the first heuristic that applies to your situation.

- Do all records of the same record type have the same retention policy? If so, organize based on content types.
- Do *most* record types consist of records with the same retention policy? Is the case of a record type having records of different retention policies rare? If so, can you easily and logically create subtypes so that the same retention policy applies to every record of the subtype? If so, organize based on content types.
  For example, if non-disclosure agreements (NDAs) are retained for five years; leases are retained for 10 years; and partnership agreements are retained for 15 years but you classified them all as legal agreements, not all legal agreements have the same retention period. But if you subdivided legal agreements into three separate kinds of legal agreement records – NDAs, leases, and partnership agreements – then all records of the same type would have the same retention period.
- Will all records have common attributes, or metadata, that determine the retention policy? If so, organize based on location.
  For example, if every record will have a "customer" attribute, and records for government customers have a different retention policy than records for corporate customers, then organize based on location.
- Does your organization already have a folder structure that users are familiar with? Does the same retention policy apply to all records in a folder? Can you rely on users to store documents in the correct place in the folder structure? If all these are true, organize based on location.

If none of the previous heuristics applies, an in-place records management implementation is probably not a natural fit for your situation. Reconsider whether using a

records archive will work. If you use an in-place approach, you have two options. The first option is to create additional content types whose only purpose is to differentiate items with different retention periods. The second option is organize items within folders as much as possible, and then to use sub-folders to hold items with different retention periods. Either of these options is likely to be confusing to users.
If your organization already uses SharePoint to manage documents and you are now starting to use the Records Management functionality, content types and a folder structure already exist. If neither of these map well to retention policies, you will either have to convert some items to new content types or move some items to new folders.

Defining content types

For each kind of record in your file plan, determine the content type or content types that records of this kind could be. You can enter this information on the **records and content types** tab of the In-place records planning worksheet.
Now consider each content type. If documents of the content type might become records, note the retention policy that applies to records of the content type. You can use the **content types and retention** tab of the worksheet for this purpose. If your solution will use a records archive in addition to in-place records management, only note the part of the retention policy that applies to the record before it moves to the records archive. When an item is sent to a records archive, the item's policies are erased, and the item is given the policies that are specified within the records archive.
If the previous task resulted in a content type having more than one retention policy, you will have to split the content type. Find a logical way of splitting the content type into multiple sub-types so that each sub-type can have a single retention policy. Update your mapping of records to content types to reflect the new content types.

Organizing folders for in-place records management

You will probably organize folders differently depending on whether users will determine where they want to store documents or whether you will use the Content Organizer to route documents to the correct location. These options are described in the following sections.

Option 1: Users decide where they want to store documents

If users will decide in which folder to store their documents, the folder hierarchy must make it easy for them to place documents in the correct location. Start with the folder structure that your current SharePoint Server solution uses, or the folder structure that you are designing for the other parts of your SharePoint Server solution. For each folder that might contain records, determine the kinds of records that might be in the folder. Use the record types and your file plan to determine the retention policies that could apply to items in the folder. You can enter this information on the folders and retention tab of the worksheet.
If the previous task resulted in a folder having more than one retention policy, you will have to create subfolders. For each folder that could contain items with different retention policies, create a sub-folder for each retention policy. Since users will determine where they want to store documents, there must be an easy way to explain to users what to put in each sub-folder. If there is not, consider forbidding users from choosing where they

want to store documents and using the Content Organizer instead. Update your mapping of record types to folders to reflect the new sub-folders.
If you have an existing SharePoint Server solution, you will probably have to move some existing documents to put them in the folders that have the appropriate retention policies. Determine how you will train users to place documents in the correct location and whether you will audit where documents are put. The successful application of retention policies depends on records being stored in the correct folder.

Option 2: Use the Content Organizer to determine where to store documents

If you will use the Content Organizer to route documents to the correct folder, it is less important that the folder hierarchy be easy for users to navigate. You can hide the folder structure from the users, and create views that they can use to navigate. Because the Content Organizer routes documents based on their metadata, a unique combination of metadata must apply to each folder that will contain documents.
Examine your file plan and determine which combination of attributes corresponds to each retention policy. It is okay if different combinations of metadata have the same retention policy. However, each unique combination of metadata can only correspond to one retention policy. If this is not the case, determine additional metadata to differentiate between retention policies. You can enter this information in the first two columns of the **metadata and folders** tab of the In-place records planning worksheet.
Next, identify a folder to correspond to each set of metadata. Enter the name of the folder in the third column of the **metadata and folders** tab of the worksheet. You will need this information when you create the rules that the Content Organizer uses to route documents to the correct location. You will also have to enable the content organizer to force all uploaded and new documents to go through the drop-off library.
If you have an existing SharePoint Server solution, you probably will have to move some existing documents to put them in the folders that have the appropriate retention policies. Determine how you will train users to apply the appropriate metadata to documents. The successful application of retention policies depends on all documents having the correct metadata.

General records management planning tasks

Once you plan how to structure content for in-place records management, most of the remaining planning tasks resemble those that you would perform for a records archive. Consider the following records management decisions.

How a document will become be a record There are several ways that a document can become a record:

- You can define a retention policy on active documents that automatically makes an active document a record after a certain time.
- You can create a workflow that makes an active document a record, and cause the workflow to be triggered by specific events.
- A user can manually declare a document to be a record.
- You can configure a library so that every document that is placed in the library is converted to a record.

How will active documents become records in your solution? If a document should become a record a fixed time period after it is created or modified, using a retention policy is a good solution. For example, you can specify that six months after the last time that a document is modified, the document becomes a record. Users will not have to take any action to make documents become records; this will occur automatically.

If there is no standard time when documents become records in your organization, there are two possibilities. If you can specify the rules under which a document becomes a record, you can create a workflow that evaluates a given document against the rules, and declares the document to be a record when it is suitable. You can then create a retention policy that starts the workflow periodically. However, if only users of a document know when a document should become a record, you should provide a manual way for a user to declare a document to be a record.

Who can declare and undeclare records You can specify that anyone can declare documents to be records, that only administrators can declare documents to be records, or that only policy actions can declare documents to be records. If you select "only policy actions," then users cannot manually declare a document to be a record. Documents can be converted to records only by a rule in a retention policy.

The same options are available for defining who can un-declare a record as for defining who can declare a document to be a record.

What actions can users take on records You can restrict the actions that users can take on records without restricting what users can do to active documents in the same library. The three levels of restriction that you can set are as follows:

- No restriction. Users can perform the same actions on records that they can perform on active documents.
- Block delete. Records can be edited, but they cannot be deleted.
- Block edit and delete. Records cannot be edited or deleted.

Retention policies Your retention policies should already have been defined in the file plan.

Auditing The same auditing policies apply to both records and active documents. Determine which actions that users might perform on a document that you want to track. You can define the auditing policy either at the folder level or by content types. Defining auditing policies based on content types usually results in fewer unnecessary events being logged.

Note:
All policies are removed when a record is sent to the records archive. Therefore, if you are using a multi-stage retention policy that includes sending a record to an archive after a certain time, the archive's retention policies will apply after the record is in the archive.

Workflows Will you use workflows to track any actions that are specific to records management? If so, determine what the workflows will be, and which type of items they will be applied to. For example, you could have a workflow requests approval from a records manager when a user tries to declare an item to be a record.

Worksheets

You can use the following worksheet with this article to help plan for in-place records management:

- In-place records planning worksheet (*http://go.microsoft.com/fwlink/?LinkId=185011&clcid=0x409*)

Concepts

Using a records archive versus managing records in place (SharePoint Server 2010)

Backup (SharePoint Server 2010)

Published: May 12, 2010

The articles in this section are written to meet the requirements of information technology (IT) professionals who are responsible for the planning, design, deployment, and operations of backup and recovery solutions. These solutions might be in enterprise, corporate, or branch office environments. The IT professionals who are responsible for backup and recovery solutions are expected to have an understanding of the technical details that are contained in this section.

A backup is a copy of data that is used to restore and recover that data after a system failure. Backups allow you to restore data after a failure. If you make the appropriate backups, you can recover from many system failures, including the following:

- Media failure
- User errors (such as deleting a file by mistake)
- Hardware failures (such as a damaged hard disk or permanent loss of a server)
- Natural disasters

Additionally, it is useful to keep backups of data for routine purposes. Those purposes include copying a database from one server to another, setting up database mirroring, and archiving to comply with regulatory requirements.

Back up all or part of a farm

The following tasks for backup and recovery are performed on the entire farm, farm databases, sites, subsites, or files:

- Back up a farm (SharePoint Server 2010)
  This article describes the procedures that you can use to back up the entire farm.
- Back up a farm configuration (SharePoint Server 2010)
  This article describes the procedures that you can use to back up farm configuration settings.
- Copy configuration settings from one farm to another (SharePoint Server 2010)
  This article describes the procedures that you can use to copy configuration settings from one farm to another, including how to back up and recover a farm without the content databases, how to back up and recover configurations only, and how to create a deployment script.
- Back up a Web application (SharePoint Server 2010)
  This article describes the procedures that you can use to back up a Web application that is associated with the farm, including configuration and content databases.
- Back up a service application (SharePoint Server 2010)
  This article describes the procedures that you can use to back up a service application that is associated with the farm, including configuration and content databases.
- Back up search (SharePoint Server 2010)
  This article describes the procedures that you can use to back up the Search service application that is associated with the farm, including configuration and indexes.

- Back up the Secure Store service (SharePoint Server 2010)
  This article describes the procedures that you can use to back up the Secure Store service application that is associated with the farm, including configuration and content databases.
- Back up a content database (SharePoint Server 2010)
  This article describes the procedures that you can use to back up a content database that is associated with the farm.
- Back up databases to snapshots (SharePoint Server 2010)
  This article describes the procedures that you can use to back up a content database that is associated with the farm by saving the database to a snapshot.
- Back up customizations (SharePoint Server 2010)
  This article describes the procedures that you can use to back up customizations that are associated with the farm.
- Back up a site collection (SharePoint Server 2010)
  This article describes the procedures that you can use to back up site collections that are associated with the farm.
- Export a site, list, or document library (SharePoint Server 2010)This article describes the procedures that you can use to export a list, site, or document library that is associated with the farm. You can then import the items into another farm or move them to another place in this farm.
- Back up or archive logs (SharePoint Server 2010)
  This article describes the procedures that you can use to back up or archive log files that are associated with the farm.

Concepts

Recovery (SharePoint Server 2010)

Back up a farm (SharePoint Server 2010)

Updated: September 16, 2010

This topic describes how to back up a whole server farm.

Procedures in this article:

- Use Windows PowerShell to back up a farm
- Use Central Administration to back up a farm
- Use SQL Server tools to back up a farm

For information about which tool to use for backups, see Plan for backup and recovery (SharePoint Server 2010).

We recommend that you regularly back up the complete farm by backing up both the configuration and content. Regularly backing up the farm reduces the possibility of data losses that might occur from hardware failures, power outages, or other problems. It is a simple process and helps to ensure that all the farm data and configurations are available for recovery, if that is required.

Considerations when backing up a farm

Consider the following when you prepare to back up a farm:

- Performing a backup does not affect the state of the farm. However, it does require resources and might slightly affect farm performance when the backup is running. You can avoid performance issues by backing up the farm during hours when farm use is lowest, such as outside office hours.
- The farm backup process does not back up any certificates that you used to form trust relationships. Endure that you have copies of these certificates before you back up the farm. You must re-establish these trust relationships after restoring the farm.
- Backing up the farm backs up the configuration and Central Administration content databases, but these cannot be restored using Microsoft SharePoint Server 2010 tools. For more information about backing up and restoring all the farm databases, see Move all databases (SharePoint Server 2010) (*http://technet.microsoft.com/library/d9dac189-0736-448d-928c-68bf38603613(Office.14).aspx*).
- When you back up a farm that contains a Web application that is configured to use forms-based authentication, you must also use a file backup system to protect the Web.config files because the Web.config files have been updated manually to register the membership and role providers, and manual changes to the Web.config files are not backed up. Similarly, Web.config files are not restored when you restore a Web application. After recovery, you must update the Web.config files and redeploy the providers. For more information, see Plan authentication methods (SharePoint Server 2010) (*http://technet.microsoft.com/library/40117fda-70a0-4e3d-8cd3-0def768da16c(Office.14).aspx*) and Configure claims authentication (SharePoint Server 2010) (*http://technet.microsoft.com/library/83762baa-b23b-4b63-b14f-350421d9f18a(Office.14).aspx*).

- SharePoint Server 2010 backup backs up the Business Data Connectivity service external content type definitions but does not back up the data source itself. To protect the data, you should back up the data source when you back up the Business Data Connectivity service or the farm.
  If you restore the Business Data Connectivity service or the farm and then restore the data service to a different location, you must change the location information in the external content type definition. If you do not, the Business Data Connectivity service might not be able to locate the data source.
- SharePoint Server 2010 backup backs up remote Binary Large Object (BLOB) stores but only if you are using the FILESTREAM remote BLOB store provider to put data in remote BLOB stores.
  If you are using another provider, you must manually back up the remote BLOB stores.
- If you are using SQL Server with Transparent Data Encryption (TDE), and you are backing up your environment by using either SharePoint tools or SQL Server tools, the TDE encryption key in not backed up or restored. You must back up the key manually. When restoring, you must manually restore the key before restoring the data. For more information, see Understanding Transparent Data Encryption (TDE) (*http://go.microsoft.com/fwlink/?LinkID=196394*).

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder. For more information about how to create a backup folder, see Prepare to back up and recover (SharePoint Server 2010).

Use Windows PowerShell to back up a farm

You can use Windows PowerShell to back up the farm manually or as part of a script that can be run at scheduled intervals.

To back up a farm by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:

   Backup-SPFarm -Directory <*BackupFolder*> -BackupMethod {Full | Differential} [-Verbose]
   Where <*BackUpFolder*> is the path of a folder on the local computer or the network in which you want to store the backups.

Note:
If you are backing up the farm for the first time, you must use the Full option. You must perform a full backup before you can perform a differential backup. For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a farm

You can use Central Administration to back up the farm.

To back up a farm by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select the farm from the list of components, and then click **Next**.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up the farm for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup.
5. In the **Back Up Only Configuration Settings** section, click **Back up content and configuration settings**.
6. In the **Backup File Location** section, type the UNC path of the backup folder, and then click **Start Backup**.
7. You can view the general status of all backup jobs at the top of the Backup and Restore Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 6.

Use SQL Server tools to back up a farm

If you want to back up the complete farm, you must use either Windows PowerShell or Central Administration. You cannot back up the complete farm by using the SQL Server tools because you cannot use the tools to back up the farm's configuration. However, you can back up all the databases that are associated with the farm. The databases that are associated with the farm are determined by the services and features that you have installed on the farm.

To back up the databases associated with a farm by using SQL Server tools

1. To use SQL Server tools to back up SharePoint Server 2010 databases, the account that is used to back up the databases must be a member of the SQL Server **db_backupoperator** fixed database role on the database server where each database is stored.
2. Open SQL Server Management Studio and connect to the database server.
3. In Object Explorer, expand **Databases**.
4. Right-click the database that you want to back up, point to **Tasks**, and then click **Back Up**.
5. In the **Back Up Database** dialog box, in the **Source** area, select the kind of backup that you want to perform from the **Backup type** list. For more information about which backup type to use, see Overview of Recovery Models (http://go.microsoft.com/fwlink/?LinkId=114396).
6. In the **Backup component** area, click **Database**.
7. Either use the default name provided or specify a name for the backup set in the **Name** text box.
8. Specify the expiration date for the backup set. This date determines how long, or when, the backup set can be overwritten by any later backups that have the same name. By default, the backup set is set to never expire (0 days).
9. In the **Destination** area, specify where you want to store the backup.
10. Click **OK** to back up the database.
11. Repeat steps 1-10 for each farm database.

Related content

Resource center	Business Continuity Management for SharePoint Server 2010 (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Restore a farm (SharePoint Server 2010) Restore a Web application (SharePoint Server 2010) Plan for backup and recovery (SharePoint Server 2010) Backup and recovery (SharePoint Server 2010) (*http://technet.microsoft.com/library/71abd06e-6730-442e-b2c1-e3ba9c04d497(Office.14).aspx*)
Developer content	Data Protection and Recovery (http://go.microsoft.com/fwlink/?LinkID=199237)

Back up a farm configuration (SharePoint Server 2010)

Published: May 12, 2010

This article describes how to back up the configuration of a server farm.

In earlier versions of Microsoft SharePoint Server, you could not back up or restore the configuration database. In Microsoft SharePoint Server 2010, you can perform the equivalent operation by backing up or restoring the configuration of the server farm.

We recommend that you regularly back up the complete farm by backing up both the configuration and content. However, you might want to perform configuration-only backups in test or development environments. Similarly, if you are using Microsoft SQL Server tools to back up the databases for the farm, you will want to back up the configuration. Regularly backing up the farm reduces the possibility of data losses that can occur from hardware failures, power outages, or other problems. It helps to ensure that all the farm data and configurations are available for recovery. For more information about what to back up, see Back up a farm configuration (SharePoint Server 2010).

The configuration backup will extract and back up the configuration settings from a SharePoint Server 2010 configuration database. You can back up configuration from any configuration database that includes the configuration database for the current farm or another farm, or a configuration database that is not associated with any farm.

For information about which tool to use for backups, see Back up a farm configuration (SharePoint Server 2010).

Procedures in this task:

- Task requirements
- Use Windows PowerShell to back up a farm configuration

Note:
You cannot use either SQL Server tools or Data Protection Manager to back up the farm configuration.

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder. For more information about how to create a backup folder, see Prepare to back up and recover (SharePoint Server 2010).

Important:
Backing up the farm configuration will not back up the information you have to have to restore service applications. If you want to restore a service application, you must perform a configuration and content backup of the farm. For more information about backing up service applications, see Back up a service application (SharePoint Server 2010).

Use Windows PowerShell to back up a farm configuration

You can use Windows PowerShell to back up the configuration from any configuration database on the current farm, on another farm, or from a configuration database that is not associated with any farm. You can back up a farm configuration manually or as part of a script that can be run at scheduled intervals.

To back up the configuration from any configuration database by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:

   Backup-SPConfigurationDatabase -Directory <*BackupFolder*> -DatabaseServer <*DatabaseServerName*> -DatabaseName <*DatabaseName*> -DatabaseCredentials <*WindowsPowerShellCredentialObject*> [-Verbose]
   Where:
   - <*BackupFolder*> is the path to the folder with the correct backup files.
   - <*DatabaseServerName*> is the name of the database server for the farm that you are backing up.
   - <*DatabaseName*> is the name of the farm configuration database.
   - If you are not logged on with an account with **db_backupoperator** fixed database role on the database server where the configuration database is stored, you must specify the value for DatabaseCredentials parameter.

For more information, see Backup-SPConfigurationDatabase (*http://technet.microsoft.com/library/28ddc176-1b7f-47dd-868f-39b7c403a900(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a farm configuration

You can use Central Administration to back up the configuration of the farm that Central Administration is running on. To back up the configuration of a remote farm, you must use the Central Administration Web site that is running on the remote farm. You cannot use Central Administration to back up an unattached configuration database.

To back up a farm configuration by using Central Administration

1. Verify that the user account performing this procedure is a member of the Farm Administrators group.
2. On the Central Administration Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select the farm from the list of components, and then click **Next**.
   Note:
   You can back up the configuration for any service or application. However, common practice is to back up configuration at the farm level.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select **Full**.
5. In the **Backup Only Configuration Settings** section, select the **Backup only configuration settings** option.
6. In the **Backup File Location** section, type the Universal Naming Convention (UNC) path of the backup folder, and then click **Start Backup**.
7. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually refresh the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 5.

Concepts

Restore a farm configuration (SharePoint Server 2010)

Back up a Web application (SharePoint Server 2010)

Updated: September 16, 2010

This article describes how to back up a Web application. Regularly backing up a Web application reduces the possibility of data losses that might occur from hardware failures, power outages, or other problems. It is a simple process that can help to ensure that all the Web application-related data and configurations are available for recovery, if that is required. We recommend that Web application backups be created in addition to regular backups at the farm level.

This topic describes how to back up a single Web application.

In this topic:

- Considerations when backing up a Web application
- Task requirements
- Use Windows PowerShell to back up a Web application
- Use Central Administration to back up a Web application
- Use SQL Server tools to back up a Web application

Considerations when backing up a Web application

Consider the following when you prepare to back up a Web application.

- You can back up only one Web application at a time by using the procedures in this article. However, you can simultaneously back up all Web applications by backing up the entire farm.
- Backing up a Web application does not affect the state of the farm. However, it does require resources and might slightly affect farm performance when the backup is running. You can avoid performance issues by backing up the Web application during hours when farm use is lowest, such as outside office hours.
- If the Web application uses the object cache, you must manually configure two special user accounts for the Web application after you restore the Web application. For more information about the object cache and how to configure these user accounts, see Configure object cache user accounts (*http://technet.microsoft.com/library/cd646bb3-28c6-4040-866c-7d7936837ade(Office.14).aspx*).
- When you back up a Web application, the Internet Information Services (IIS) settings and all content databases that are associated with the Web application are also backed up.
- When you back up a Web application that is configured to use forms-based authentication, you must also use a file backup system to protect the Web.config files because the Web.config files have been updated manually to register the membership and role providers, and manual changes to the Web.config files are not

backed up. Similarly, Web.config files are not restored when you restore a Web application. After recovery, you must update the Web.config files and redeploy the providers. For more information, see Plan authentication methods (SharePoint Server 2010) (*http://technet.microsoft.com/library/40117fda-70a0-4e3d-8cd3-0def768da16c(Office.14).aspx*) and Configure claims authentication (SharePoint Server 2010) (*http://technet.microsoft.com/library/83762baa-b23b-4b63-b14f-350421d9f18a(Office.14).aspx*).

Task requirements

Before you begin, you must create a network folder in which to store the backups. Both the Windows SharePoint Services Timer V4 service account and the server farm user account must have Full Control permissions to this folder. For more information about how to create a backup folder, see Prepare to back up and recover (SharePoint Server 2010).

Use Windows PowerShell to back up a Web application

You can use Windows PowerShell to back up a Web application manually or as part of a script that can be run at scheduled intervals.

To back up a Web application by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**. Additionally, the user account performing this procedure must be a member of the SQL Server **db_backupoperator** fixed database role on the database server where each database is stored.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:

   Backup-SPFarm -Directory <*BackupFolder*> -BackupMethod {Full | Differential} -Item <*WebApplicationName*> [-Verbose]

   Where:

   - <*BackupFolder*> is the path of the folder you use for storing backup files.
   - <*WebApplicationName*> is the name of the Web application.

     Note:

     If you are backing up the Web application for the first time, you must use the Full option. You must perform a full backup before you can perform a differential backup.

For more information, see Backup-SPFarm.(*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a Web application

You can use Central Administration to back up a Web application.

To back up a Web application by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select the Web application from the list of components, and then click **Next**.
   Note:
   The Web application might consist of several components. You must select the top-level component.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up the Web application for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup.
5. In the **Back Up Only Configuration Settings** section, click **Back up content and configuration settings**.
6. In the **Backup File Location** section, type the Universal Naming Convention (UNC) path of the backup folder, and then click **Start Backup**.
7. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 6.

Use SQL Server tools to back up a Web application

You cannot back up the complete Web application by using SQL Server tools. However, you can back up all the databases that are associated with the Web application. To back

up the complete Web application, use either Windows PowerShell or Central Administration.

To back up a Web application by using SQL Server tools

1. Verify that the user account that is used to back up the databases is a member of the SQL Server **db_backupoperator** fixed database role on the database server where each database is stored. Additionally, verify that the user account has Full Control permissions on the backup folder.
2. Open SQL Server Management Studio and connect to the database server.
3. In Object Explorer, expand **Databases**.
4. Right-click the database that you want to back up, point to **Tasks**, and then click **Back Up**.
5. In the **Back Up Database** dialog box, in the **Source** area, select the kind of backup that you want to perform from the **Backup type** list. For more information about which backup type to use, see Overview of Recovery Models (http://go.microsoft.com/fwlink/?LinkId=114396).
6. In the **Backup component** area, click **Database**.
7. Either use the default name provided or specify a name for the backup set in the **Name** text box.
8. Specify the expiration date for the backup set. This date determines how long, or when, the backup set can be overwritten by any later backups that have the same name. By default, the backup set is set to never expire (0 days).
9. In the **Destination** area, specify where you want to store the backup.
10. Click **OK** to back up the database.
11. Repeat steps 1-10 for each database that is associated with the Web application.

Related content

Resource center	Business Continuity Management for SharePoint Server 2010 (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Restore a Web application (Search Server 2010) (*http://technet.microsoft.com/library/eae9208d-00ea-4cc1-919a-c399a0407bad(Office.14).aspx*) Restore a Web application (SharePoint Server 2010) Back up a farm (SharePoint Server 2010) Plan for backup and recovery (SharePoint Server 2010) Backup and recovery (SharePoint Server 2010) (*http://technet.microsoft.com/library/71abd06e-6730-442e-b2c1-e3ba9c04d497(Office.14).aspx*)
Developer content	Data Protection and Recovery (*http://go.microsoft.com/fwlink/?LinkID=199237*)

Back up a service application (SharePoint Server 2010)

Published: May 12, 2010

We recommend that you regularly back up at the farm level. However, business or IT requirements might require that you back up a service application. Regularly backing up a service application reduces the possibility of data losses that might occur from hardware failures, power outages, or other problems. It is a simple process that helps to ensure that all the service application-related data and configurations are available for recovery, if that is required. You can back up one service application at a time, or you can back up all service applications at once. For information about what to back up and which tools to use, see Plan for backup and recovery (SharePoint Server 2010). For more information, see Back up a farm (SharePoint Server 2010).

Backing up a service application does not affect the state of the farm. However, it does require resources. Therefore, backing up a service application might affect farm performance while the backup is running. You can avoid performance issues by backing up the service application during hours when farm use is lowest.

Note:
SharePoint Server 2010 backup backs up remote Binary Large Object (BLOB) stores but only if you are using the FILESTREAM remote BLOB store provider to put data in remote BLOB stores.
If you are using another provider, you must manually back up the remote BLOB stores.

Procedures in this topic:

- Use Windows PowerShell to back up a service application
- Use Central Administration to back up a service application

Note:
You cannot use SQL Server tools or Data Protection Manager to back up a service application.

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder. For more information about how to create a backup folder, see Prepare to back up and recover (SharePoint Server 2010).

Note:
Microsoft SharePoint Server 2010 backup backs up the Business Data Connectivity service external content type definitions but does not back up the data source itself. To protect the data, you should back up the data source when you back up the Business Data Connectivity service or the farm.
If you back up the Business Data Connectivity service or the farm and then restore the data source to a different location, you must change the location information in the external content type definition. If you do not, the Business Data Connectivity service might not be able to locate the data source.

Use Windows PowerShell to back up a service application

You can use Windows PowerShell to back up one or more service applications manually or as part of a script that can be run at scheduled intervals.

To back up a service application by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:
   Backup-SPFarm -Directory <BackupFolder> -BackupMethod {Full | Differential} -Item <ServiceApplicationName> [-Verbose]
   Where:
   - <*BackupFolder*> is the path of a folder on the local computer or on the network in which you want to store the backups.
   - <*ServiceApplicationName*> is the name of the service application that you want to back up.

     Note:
     To back up all the service applications, at the Windows PowerShell command prompt, type the following command:
     Backup-SPFarm -Directory <BackupFolder> -BackupMethod {Full | Differential} -Item "Farm\Shared Service Applications" [-Verbose]

     Note:
     If you are backing up the service application for the first time, you must use the Full option. You must perform a full backup before you can perform a differential backup. Some service applications always require a full backup. For these service applications, even if you select the Differential option, the system performs a full backup.

For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a service application

You can use Central Administration to back up a service application.

To back up a service application by using Central Administration

1. Verify that the user account that performs this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select the service application from the list of components, and then click **Next**. To back up all the service applications, select the **Shared Service Applications** node.
   Note:
   The service application might consist of several components. You must select the top-level component.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up the service application for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup. Some service applications always require a full backup. For these service applications, the system performs a full backup even if you select the **Differential** option.
5. In the **Backup File Location** section, in the **Backup location box**, type the path of the backup folder, and then click **Start Backup**.
6. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 5.

Concepts

Restore a service application (SharePoint Server 2010)

Back up search (SharePoint Server 2010)

Published: May 12, 2010
We recommend that you regularly back up at the farm level. However, business or IT requirements might require that you back up the search service and related resources. Regularly backing up the search system reduces the possibility of data losses that might occur from hardware failures, power outages, or other problems. It is a simple process that helps to ensure that data and configurations that compose the search system are available for recovery, if that is required.
Backing up search does not affect the state of the farm. However, it does require resources. Therefore, backing up search might affect farm performance while the backup is running. You can avoid performance issues by backing up search during hours when farm use is lowest.

Important:
Use the procedures in this article to back up the search components of Microsoft SharePoint Server 2010. If the topology includes Microsoft FAST Search Server 2010 for SharePoint, the procedures in this article also back up the Content SSA and Query SSA (including the People Search index). However, in addition to the procedures in this article, you must run a backup of the FAST Search Server 2010 for SharePoint farm.

Procedures in this article:
- Use Windows PowerShell to back up search
- Use Central Administration to back up search

Note:
You cannot use SQL Server tools or Data Protection Manager to back up all of the search components.

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder.

Use Windows PowerShell to back up search

You can use Windows PowerShell to back up search manually or as part of a script that can be run at scheduled intervals. This procedure backs up all of the search components including the databases, the search service configuration, and all of the index files.
To back up search by using Windows PowerShell
1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.

3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Backup-SPFarm -Directory <Backup folder> -BackupMethod {Full | Differential} -Item <Search service application name> [-Verbose]
   Note:
   If you are backing up the farm for the first time, you must use the Full option. You must perform a full backup before you can perform a differential backup. To view the progress of the backup operation, use the Verbose parameter.

For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up search

You can use Central Administration to back up search. This procedure backs up all of the search components including the databases, the search service configuration, and all of the index files.

To back up search by using Central Administration

1. Verify that the user account that performs this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, in the list of components, expand **Shared Services** and then expand **Shared Services Applications** to view the list of service applications in the farm. Select the search service application from the list of components, and then click **Next**.
   Note:
   The search service application might consist of several components. You must select the top-level component. By default, the service application is named “Search Service Application”.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up search for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup.
5. In the **Backup File Location** section, in the **Backup location** box, type the path of the backup folder, and then click **Start Backup**.

6. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are timer service jobs. Therefore, it might take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 6.

Back up the Secure Store service (SharePoint Server 2010)

Published: May 12, 2010

In Microsoft SharePoint Server 2010, the Secure Store Service replaces Microsoft Office SharePoint Server 2007 Single Sign-on (SSO). The Secure Store Service provides the capability of securely storing credential sets and associating credentials to specific identities or a group of identities.

Every time you enter a new passphrase, SharePoint Server 2010 creates a new Master Key and re-encrypts the credentials sets with that key. The passphrase gives you access to the Master Key created by SharePoint Server 2010 that is used to encrypt the credential sets.

You should back up the Secure Store Service and record the passphrase after the Secure Store Service is initially configured and again every time that you make configuration changes to the Secure Store Service or re-encrypt the credential information.

Important:

Before backing up the Secure Store Service, do the following:

- Record the passphrase. You will need the passphrase when you access the restored Secure Store Service.
- Ensure that you back up the Secure Store Service every time you change or refresh the Master Key. When you change or refresh the Master key, the database is automatically re-encrypted with the new key. Backing up the Secure Store Service ensures that the database and the Master key are in synchronization.
- Keep the passphrase in a secure location.

Procedures in this task:

- Use Windows PowerShell to back up the Secure Store Service
- Use Central Administration to back up the Secure Store Service

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder.

Use Windows PowerShell to back up the Secure Store Service

You can use Windows PowerShell to back up the Secure Store Service manually or as part of a script that can be run at scheduled intervals.

To back up the Secure Store Service by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.

4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Backup-SPFarm -Directory <Backup folder> -BackupMethod Full -Item <Secure Store Service > [-Verbose]
   Note:
   You must use the Full
   option to back up the Secure Store Service.

For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up the Secure Store Service

You can use Central Administration to back up the Secure Store Service.

To back up the Secure Store Service by using Central Administration

1. Verify that the user account that performs this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, expand the **Shared Services Applications** node, select the Secure Store Service application from the list of components, and then click **Next**.
   Note:
   The Secure Store Service application might consist of several components. You must select the top-level component.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select **Full**.
5. In the **Backup File Location** section, in the **Backup location box**, type the path of the backup folder, and then click **Start Backup**.
6. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 5.

Concepts

Restore secure store services (SharePoint Server 2010)

Back up a content database (SharePoint Server 2010)

Updated: June 24, 2010

Microsoft SharePoint Server 2010 content databases can grow to be very large. Therefore, you might want to back them up separately from farm backups. Regularly backing up content databases reduces data losses that might occur from hardware failures, power outages, or other problems. It is a simple process and helps to ensure that all the data is available for recovery, if that is required. You can only back up one content database at a time.

This topic describes how to back up a single content database.

Procedures in this task:

- Use Windows PowerShell to back up a content database
- Use Central Administration to back up a content database
- Use SQL Server tools to back up a content database

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder.

Note:
SharePoint Server 2010 backup backs up remote Binary Large Objects (BLOB) stores but only if you are using the SQL Filestream remote BLOB store provider to place data in remote BLOB stores.
If you are using another provider you must manually back up these remote BLOB stores.

Important:
If you are using SQL Server with Transparent Data Encryption (TDE), and you are backing up your environment by using either SharePoint tools or SQL Server tools, the TDE encryption key in not backed up or restored. You must backup the key manually. When restoring, you must manually restore the key before restoring the data. For more information, see Understanding Transparent Data Encryption (TDE) (*http://technet.microsoft.com/en-us/library/bb934049.aspx*).

Use Windows PowerShell to back up a content database

You can use Windows PowerShell to back up a content database manually or as part of a script that can be run at scheduled intervals.

To back up a content database by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Backup-SPFarm -Directory <Backup folder> -BackupMethod {Full | Differential} -Item <Content database name> [-Verbose]
   Note:
   If you are backing up the content database for the first time, you must use the Full option. You must perform a full backup before you can perform a differential backup.

For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a content database

You can use Central Administration to back up a content database.

To back up a content database by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select the content database that you want to back up from the list of components, and then click **Next**.
   Note:
   Not all content databases can be selected in the list. If a database is not selectable, you must use Windows PowerShell to back up the content database.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up the content database for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup.
5. In the **Backup File Location** section, type the Universal Naming Convention (UNC) path of the backup folder, and then click **Start Backup**.
6. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status of the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, review the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 4.

Use SQL Server tools to back up a content database

You can use SQL Server tools to back up a content database.

To back up a content database by using SQL Server tools

1. Verify that the user account that is performing this procedure is a member of the SQL Server **db_backupoperator** fixed database role on the database server where each database is stored.
2. Open SQL Server Management Studio and connect to the database server.
3. In Object Explorer, expand **Databases**.
4. Right-click the database that you want to back up, point to **Tasks**, and then click **Back Up**.
5. In the **Back Up Database** dialog box, in the **Source** area, select the kind of backup that you want to perform from the **Backup type** list. For more information about which backup type to use, see Overview of Recovery Models (http://go.microsoft.com/fwlink/?LinkId=114396) in SQL Server Books Online.
6. In the **Backup component** area, click **Database**.
7. Either use the default name provided or specify a name for the backup set in the **Name** text box.
8. Specify the expiration date for the backup set. This date determines how long, or when, the backup set can be overwritten by any later backups that have the same name. By default, the backup set is set to never expire (0 days).
9. In the **Destination** area, specify where you want to store the backup.
10. Click **OK** to back up the database.
11. Repeat steps 1-9 for each content database that you want to back up.

Concepts

Restore a content database (SharePoint Server 2010)

Back up databases to snapshots (SharePoint Server 2010)

Published: May 12, 2010
This topic describes how to back up a farm database to a snapshot.
You can only use SQL Server tools to back up a farm database to a snapshot.

Important:
You must be running Microsoft SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2 Enterprise Edition to take database snapshots.

We recommend that you regularly back up the complete farm. Regularly backing up the farm reduces data losses that might occur from hardware failures, power outages, or other problems. It is a simple process and helps to ensure that that all the farm data and configurations are available for recovery, if that is required. For more information, see Back up a farm (SharePoint Server 2010). However, IT requirements might require that you backup databases to snapshots. Although you can back up any farm database to a snapshot, you typically back up content databases.
A database snapshot provides a read-only, static view of a source database as it existed at snapshot creation, minus any uncommitted transactions. Uncommitted transactions are rolled back in a newly created database snapshot because the Database Engine runs recovery after the snapshot has been created (transactions in the database are not affected). For more information about database snapshots, see Database Snapshots (*http://go.microsoft.com/fwlink/?LinkId=163950*).

Task requirements

Before you begin, you must create a folder on the database server. If you want to store the snapshots at another location, you can move the backup files to a backup folder on the network after the operation is finished.

Use SQL Server tools to back up a database to a snapshot

If you want to back up databases to snapshots, you must use SQL Server tools. The databases that are associated with the farm are determined by the service applications and features that you have installed on the farm.

To back up a database to a snapshot by using SQL Server tools

1. Verify that the account that is used to back up the databases is a member of the SQL Server **db_owner** fixed database role.
2. Open SQL Server Management Studio and connect to the database server.
3. In Object Explorer, expand **Databases**.
4. Select the database that you want to back up, and then click **New Query**.

5. Copy the following text, and then paste it to the query pane.

   CREATE DATABASE <snapshot name> ON (NAME=<logical name of the database file>, FILENAME = 'c:\WSS_Backup1.ss') AS SNAPSHOT OF <database name>;

Other Resources

Database Snapshots (*http://go.microsoft.com/fwlink/?LinkId=163950*)

Back up customizations (SharePoint Server 2010)

Updated: August 12, 2010

This article describes how to back up customizations that have been made to Microsoft SharePoint Server 2010 sites.

The following kinds of customizations can be made to sites:

- Customizations packaged as solutions (.wsp files). Solutions contain *developed site elements*, and are typically created by developers. Developed site elements include the following:
  - Web Parts
  - Workflows
  - Site and list definitions
  - Document converters
  - Event receivers
  - Timer jobs
  - Assemblies
- Authored site elements, which are typically created by Web designers, are not explicitly compiled and reside in a content database. Authored site elements include the following:
  - Master pages
  - Cascading style sheets
  - Forms
  - Layout pages
- Changes to the Web.config file
- Third-party solutions and their associated binary files and registry keys, such as IFilters
- Changes to sites created by direct editing through the browser
- Developed customizations that are not packaged as solutions

Each of these kinds of customizations requires a different type of backup.

In this article:

- Backing up solution packages
- Backing up authored site elements
- Backing up workflows
- Backing up changes to the Web.config file
- Backing up third-party products
- Backing up changes made by direct editing
- Backing up developed customizations that are not packaged as solutions

Backing up solution packages

Solution packages can be created by using Microsoft SharePoint Designer 2010 or Microsoft Visual Studio 2010. We strongly recommend that all customizations be deployed as solution packages.

A solution package is a deployable, reusable file that can contain a set of Features, site definitions, and assemblies that apply to sites, and that you can enable or disable individually. Solution packages can include Web Parts, site or list definitions, custom columns, new content types, custom fields, custom actions, coded workflows, or workflow activities and conditions.

The method that you use to back up solution packages is determined by whether the customizations are deployed as *trusted solutions* or *sandboxed solutions*.

Trusted solutions are solution packages that farm administrators deploy. Trusted solutions are deployed to the entire farm and can be used on any site within the farm. Trusted solutions are stored in the configuration database. Trusted solutions are backed up when a farm is backed up by using SharePoint Server 2010 backup, and are included in configuration-only backups. You can also back up trusted solutions as a group or individually. Trusted solutions are visible in the backup hierarchy.

Sandboxed solutions are solution packages that site collection administrators can deploy to a single site collection. Sandboxed solutions are stored in the content database that is associated with the site collection to which the solution packages are deployed. They are included in SharePoint Server 2010 farm, Web application, content database, and site collection backups, but are not visible in the backup hierarchy and cannot be selected or backed up individually.

We recommend that you keep a backup of the original .wsp file as well as the source code used to build the .wsp file for both trusted solutions and sandboxed solutions.

To back up trusted solutions by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a backup**.
3. On the Perform a Backup — Step 1 of 2: Select Component to Back Up page, select **Solutions**, and then click **Next**.
   You can also select an individual solution, if you only want to back up a single solution.
4. On the Start Backup — Step 2 of 2: Select Backup Options page, in the **Backup Type** section, select either **Full** or **Differential**.
   Note:
   If you are backing up the solution for the first time, you must use the **Full** option. You must perform a full backup before you can perform a differential backup.
5. In the **Backup File Location** section, type the Universal Naming Convention (UNC) path of the backup folder, and then click **Start Backup**.
6. You can view the general status of all backup jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status of the current backup job in the lower part of the page in the **Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.

If you receive any errors, review the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Spbackup.log file at the UNC path that you specified in step 4.

To back up trusted solutions by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command to back up all of the solutions in the farm. To back up a single solution, add the name of the solution to the item path "farm\solutions".

   Backup-SPFarm -backupmethod full -directory <*UNC location*> -item "farm\solutions"
   Where:
   - <*UNC location*> is UNC location of the directory that you want to back up to.

For more information, see Backup-SPFarm (*http://technet.microsoft.com/library/c37704b5-5361-4090-a84d-fcdd17bbe345(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Backing up sandboxed solutions

You cannot back up only sandboxed solutions. Instead, you must back up the farm, Web application, or content database with which the sandboxed solution is associated. For more information about these methods of backing up, see Related content.

Backing up authored site elements

You cannot back up only authored site elements. Instead, you must back up the farm, Web application, or content database with which the authored site element is associated. For more information about these methods of backing up, see Related content.

Backing up workflows

Workflows are a special case of customizations that you can back up. Make sure that your backup and recovery plan addresses any of the following scenarios that apply to your environment:

- Declarative workflows, such as those created in Microsoft SharePoint Designer 2010, are stored in the content database for the site collection to which they are they are deployed. Backing up the content database protects these workflows.
- Custom declarative workflow actions have components in the following three locations:
  1. The Visual Studio 2010 assemblies for the actions are stored in the global assembly cache (GAC).

2. The XML definition files (.ACTIONS files) are stored in the 14\TEMPLATE\<*LCID*>\Workflow directory.
3. An XML entry to mark the action as an authorized type is stored in the Web.config file for the Web applications in which it is used.
   If the farm workflows use custom actions, you should use a file backup system to protect these files and XML entries. Similar to SharePoint Server features such as Web Parts and event receivers, these files should be reapplied to the farm as needed after recovery.

- Workflows that depend on custom code, such as those that are created by using Visual Studio 2010, are stored in two locations. The Visual Studio 2010 assemblies for the workflow are stored in the GAC, and the XML definition files are stored in the Features directory. This is the same as other types of SharePoint Server features such as Web Parts and event receivers. If the workflow was installed as part of a solution package, backing up the farm, Web application, content database, or site collection protects these workflows.
- If you create a custom workflow that interacts with a site collection other than the one where the workflow is deployed, you must back up both site collections to protect the workflow. This includes workflows that write to a history list or other custom list in another site collection. Performing a farm backup is sufficient to back up all site collections in the farm and all workflows that are associated with them.
- Workflows that are not yet deployed must be backed up and restored separately. When you are developing a new workflow but have not yet deployed it to the SharePoint Server farm, make sure that you back up the folder where you store the workflow project files by a file system backup application.

Backing up changes to the Web.config file

A common customization to SharePoint Server 2010 is to change the Web.config file. We strongly recommend that you make changes to the Web.config file by using Central Administration or the SharePoint Server 2010 APIs and object model. Because these changes are stored in the configuration database, they can be recovered from a farm or configuration-only backup.
Changes to the Web.config file that are not made by using Central Administration or the SharePoint Server 2010 APIs and object model should be protected by using a file system backup.

Note:
If you are using forms-based authentication, provider registration in the Web.config file is manual, and is not protected by SharePoint Server 2010 backup. In this case, be sure to back up the Web.config file by using a file system backup.

Backing up third-party products

If third-party products are deployed as solution packages, they are protected by SharePoint Server 2010 backup. We recommend that you keep all the original files,

distribution media, documentation, and the license and product keys that are required for installation.

Backing up changes made by direct editing

Changes made directly to a site by directly editing through the browser can be difficult to back up. The following table describes backup strategies for specific objects.

Edited object	Backup strategy
List	Use SharePoint Designer 2010 and save as a template. For more information, see Save a SharePoint site as a template (*http://go.microsoft.com/fwlink/?LinkId=199515*).
Site	Use SharePoint Designer 2010 and save as a template. For more information, see Save a SharePoint site as a template (*http://go.microsoft.com/fwlink/?LinkId=199515*).
Site collection	Use site collection backup. For more information, see Back up a site collection (SharePoint Server 2010).

Backing up developed customizations that are not packaged as solutions

Backing up developed customizations that are not deployed as solution packages can be a complex process because the customization file locations might not be stored in standardized places and SharePoint Server 2010 does not automatically back them up. Consult with the development team or customization vendor to determine whether the customizations involve additional add-in software or files in other locations. We recommend that you back up these directories with a file system backup solution. The following table lists locations where developed customizations are typically stored on Web servers.

Location	Description
%COMMONPROGRAMFILES%\Microsoft Shared\Web Server Extensions\14	Commonly updated files, custom assemblies, custom templates, custom site definitions
Inetpub	Location of IIS virtual directories
%WINDIR%\Assembly	Global assembly cache (GAC): a protected operating system location where the Microsoft .NET Framework code assemblies are installed to provide full system access

Related content

Resource Center	Business Continuity Management for SharePoint Server 2010: Backup, Recovery, Availability, and Disaster Recovery (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Deploy customizations - overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/be4ca20f-520e-4fd7-9c42-140af800cbc8(Office.14).aspx*) Restore customizations (SharePoint Server 2010) Back up a farm (SharePoint Server 2010) Back up a farm configuration (SharePoint Server 2010) Back up a Web application (SharePoint Server 2010) Back up a content database (SharePoint Server 2010) Back up a site collection (SharePoint Server 2010)
Developer content	Using solutions (MSDN) (*http://go.microsoft.com/fwlink/?LinkID=156638*) Sandboxed solutions (MSDN) (*http://go.microsoft.com/fwlink/?LinkId=199517*)

Back up a site collection (SharePoint Server 2010)

Published: May 12, 2010

This article describes how to back up an individual site collection. We recommend that you regularly back up the complete farm. However, IT practices might require that you also back up a site collection. For more information about what to back up, see Plan for backup and recovery (SharePoint Server 2010).

Note:
If the site collection's **Lock status** is set to **Not locked** or **Adding content prevented**, Microsoft SharePoint Server 2010 temporarily sets the site to **Read-Only** while the backup operation is occurring. SharePoint Server 2010 does this to reduce the possibilities of users changing the site collection while it is being backed up. After the backup is finished, the setting is changed back its normal status.

Performing a site collection backup might require resources and might slightly affect farm performance when the backup is running. You can help avoid performance issues by backing up the farm during hours when farm use is lowest, such as outside office hours. Procedures in this task:

- Use Windows PowerShell to back up a site collection
- Use Central Administration to back up a site collection

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the backups. For better performance, we recommend that you back up to the local computer and then move the backup files to a network folder. For more information about how to create a backup folder, see Prepare to back up and recover (SharePoint Server 2010).

Use Windows PowerShell to back up a site collection

You can use Windows PowerShell to back up a site collection manually or as part of a script that can be run at scheduled intervals.

To back up a site collection by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt type the following command:

Backup-SPSite -Identity <Site collection name> -Path <backup file> [-Force] [-NoSiteLock] [-UseSqlSnapshot] [-Verbose]

If you want to overwrite a previously used backup file, use the Force parameter. You can use the NoSiteLock parameter to keep the read-only lock from being set on the site collection while it is being backed up. However, using this parameter can allow users to change the site collection while it is being backed up and might lead to possible data corruption during backup.

If the database server is running an Enterprise Edition of Microsoft SQL Server, we recommend that you also use the UseSqlSnapshot parameter for more consistent backups. You can also export sites or lists from these snapshots.

Important:

When you perform a backup that uses the UseSqlSnapshot parameter, a backup will be completed successfully. However, you will see an error similar to the following:

Backup-SPSite : Operation is not valid due to the current state of the object.
At line:1 char:14
+ Backup-SPSite <<<< *http://site* -Path + CategoryInfo : NotSpecified: (:) [Backup-SPSite], InvalidOperationException + FullyQualifiedErrorId : System.InvalidOperationException,Microsoft.SharePoint.PowerShell.SPCmdletBackupSite*yourpath*

Note:

If the RBS provider that you are using does not support snapshots, you cannot use snapshots for content deployment or backup. For example, the SQL FILESTREAM provider does not support snapshots.

For more information about using SQL snap-shots, see Back up databases to snapshots (SharePoint Server 2010) and Content deployment overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/b44a57af-98a1-4818-aab3-a561908d0e07(Office.14).aspx*).

For more information, see Backup-SPSite (*http://technet.microsoft.com/library/d4c31a1a-82a7-425f-b1bb-22e70bedd338(Office.14).aspx*).

Note:

We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to back up a site collection

You can use Central Administration to back up a site collection.

To back up a site collection by using Central Administration

1. Verify that the user account performing this procedure is a member of the Farm Administrators group. Additionally, verify that the Windows SharePoint Services Timer V4 service has Full Control permissions on the backup folder.

2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Perform a site collection backup**.
3. On the Site collection backup page, select the site collection from the **Site Collection** list.
4. Type the local path of the backup file in the **Filename** box.
   Note:
   If you want to reuse a file, select the **Overwrite existing file** check box.
5. Click **Start Backup**.
6. You can view the general status of all backup jobs at the top of the Granular Backup Job Status page in the **Readiness** section. You can view the status for the current backup job in the lower part of the page in the **Site Collection Backup** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Granular Backup Job Status page.

Concepts

Restore a site collection (SharePoint Server 2010)

Export a site, list, or document library (SharePoint Server 2010)

Published: May 12, 2010

We recommend that you regularly back up the complete farm. However, business or IT requirements might require that you export a site, list, or document library. Regularly exporting sites, lists, and document libraries reduces data losses that might occur from hardware failures, power outages, or other problems. It is a simple process and helps to ensure that data is available for recovery, if that is required. You can only export one site, list, or document library at a time.

For information about what to back up and which tools to use, see Plan for backup and recovery (SharePoint Server 2010).

Procedures in this task:

- Use Windows PowerShell to export a site, list, or document library
- Use Central Administration to export a site, list, or document library

Note:
You cannot use SQL Server tools or Data Protection Manager to export a site, list or document library.

Task requirements

Before you begin, you must create a folder on the local computer or the network in which to store the export file. For better performance, we recommend that you export to the local computer and then move the export file to a network folder.

Use Windows PowerShell to export a site, list, or document library

You can use Windows PowerShell to export a site, list, or document library manually or as part of a script that can be run at scheduled intervals.

To export a site, list or document library by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Export-SPWeb -Identity <Site URL> -Path <Path and file name> [-ItemUrl <URL of site, list, or library>] [-IncludeUserSecurity] [-IncludeVersions] [-NoFileCompression] [-GradualDelete] [-Verbose]
   If you are exporting a large site, list, or document library, you can use the GradualDelete

parameter. When this parameter is used, the site collection is marked as deleted, which immediately prevents any further access to its content. The data in the deleted site collection is then deleted gradually over time by a timer job instead of all at once, which reduces its impact on the performance of farm servers and SQL Server.
To specify which version of the site, list, or document library to include, use the IncludeVersions
parameter and specify “LastMajor” (default), “CurrentVersion”, “LastMajorandMinor”, or “All”. To include the user security settings with the list or document library, use the IncludeUserSecurity
parameter. If you want to overwrite the file that you specified, use the Force
parameter. To view the progress of the backup operation, use the Verbose
parameter.
The NoFileCompression
parameter lets you specify that no file compression is performed during the export process. Using this parameter can lower resource usage up to 30% during the export process. Using this parameter will result in a backup folder being created instead of a compressed file. If you use the NoFileCompression
parameter in the Export-SPWeb
command, you must also use it when you import the content by using the Import-SPWeb
command.

For more information, see Export-SPWeb (*http://technet.microsoft.com/library/cd85bf19-6f24-4f13-bd9c-37bbf279ea2b(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to export a site, list, or document library

You can use Central Administration to export a site, list, or document library. You can only export one site, list, or document library at a time.

To export a site, list, or document library by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, click **Backup and Restore**.
3. On the Backup and Restore page, in the **Granular Backup** section, click **Export a site or list**.
4. On the Site or List Export page, in the **Site Collection** section, select the site collection from the **Site Collection** list, and then select the site from the **Site** list.
5. If you are exporting a site, skip this step, Select the list or document library from the **List** list.
6. In the **File Location** section, in the **Filename** box, type the UNC path of the shared folder and the file to which you want to export the list or document library. The file name must use the .cmp extension.

7. If the file already exists and you want to use this file, select the **Overwrite existing files** check box. Otherwise, specify a different file name.
8. If you want to export all the security and permissions settings with the list or library, in the **Export Full Security** section, select the **Export full security** check box.
9. If you want to specify which version of the list or library to export, select one of the following versions from the **Export versions** list:
   - All Versions
   - Last Major
   - Current Version
   - Last Major and Last Minor
10. When you have specified the settings that you want, click **Start Export**.
11. You can view the status of all backup jobs at the top of the Granular Backup Job Status page. You can view the status of the current backup job in the **Content Export** section of the page. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the backup to start.
    If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the <file name>.export.log file at the UNC path that you specified in step 6.

Concepts

Plan for backup and recovery (SharePoint Server 2010)

Back up or archive logs (SharePoint Server 2010)

Published: May 12, 2010

A system-wide strategy for data protection should include backing up or archiving the logs in which data related to Microsoft SharePoint Server 2010 is recorded. This data can be useful for performance analysis, troubleshooting, monitoring compliance with service level agreements, and legal, regulatory, or business reasons. Therefore, protect this data as part of the routine maintenance by backing up or archiving the logs.

The following sections are labeled in the following manner to indicate how important it is to back up or archive this kind of log:

- **[Essential]** means that the log contains data that is essential to the environment. The data would be lost if a disk failure or other problem occurred.
- **[Recommended]** means that the log contains data that is useful in most environments for troubleshooting, operational, legal, or other needs.

In this article:

- [Essential] Back up transaction logs
- [Recommended] Collect usage data
- [Recommended] Archive diagnostic logs

[Essential] Back up transaction logs

Microsoft SQL Server 2008 R2, SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2, and SQL Server 2005 with SP3 and Cumulative Update 3 transaction logs record all changes that were made to a database since the last checkpoint or full backup. These logs contain required data for restoring the farm.

We recommend that you back up these logs every 5–10 minutes. When you back up these logs, they are automatically truncated. You can use the Microsoft SQL Server 2008 R2, SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2, and SQL Server 2005 with SP3 and Cumulative Update 3 tools to back up the transaction log. For more information, see Creating Transaction Log Backups (*http://go.microsoft.com/fwlink/?LinkId=124881*) in the Microsoft SQL Server 2008 R2, SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2, and SQL Server 2005 with SP3 and Cumulative Update 3 documentation.

Transaction logs are also automatically backed up when you back up the farm, Web application, or databases by using either the SharePoint Central Administration Web site or the Windows PowerShell. For more information, see Back up a farm (SharePoint Server 2010).

How transaction log size affects farm backup times

When you back up SharePoint Server 2010, the size of the transaction log can affect how long the backup operation takes. Because the transaction log records all changes to a database since the last checkpoint or full backup, the log can grow very large over time. If the transaction log has grown very large, backups might take a very long time. For more

information, see How to stop the transaction log of a SQL Server database from growing unexpectedly (*http://go.microsoft.com/fwlink/?LinkID=111458*).
The recommended way to truncate the transaction log if you are using a full recovery model is to back up the log. Microsoft SQL Server 2008 R2, SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2, and SQL Server 2005 with SP3 and Cumulative Update 3 automatically truncates the inactive parts of the transaction log when you back up the log. We also recommend that you pre-grow the transaction log to avoid auto-growing the log. For more information, see Managing the Size of the Transaction Log File (*http://go.microsoft.com/fwlink/?LinkId=124882*). For more information about using a full recovery model, see Backup Under the Full Recovery Model (*http://go.microsoft.com/fwlink/?LinkId=127985*). For more information about using a simple recovery model, see Backup Under the Simple Recovery Model (*http://go.microsoft.com/fwlink/?LinkId=127987*).
We do not recommend that you manually shrink the transaction log size or manually truncate the log by using the **Truncate** method.

[Recommended] Collect usage data

Usage analysis enables you to track how Web sites are being used. Log files are created daily to track usage. You can configure the setting for the collection of usage data. One of the most important settings is the location of the log files. By default, the log folder is configured to be on the same drive partition where SharePoint Server 2010 is installed. To make sure that the log files to not fill up that drive, you should change the log folder to be on a separate drive.
The location of the log directory is a farm-level setting, and the directory that is specified in this setting must exist on all servers in the farm. These logs are automatically backed up when you back up the farm.
For most environments, the default settings are adequate. For more information about configuring usage data collection settings, see Configure usage and health data collection (SharePoint Server 2010) (*http://technet.microsoft.com/library/33ed78c8-25fc-48ea-b0c1-50b540213cff(Office.14).aspx*).

[Recommended] Archive diagnostic logs

Diagnostic logs provide detailed information about the operation of the farm. You can configure the level of detail that is logged. We recommend that you archive these logs when you archive the farm. You can archive the logs for the whole farm or a specific server. You can archive these files by manually copying them to a shared folder, or by using the Windows PowerShell Merge-SPlogFile cmdlet. You can use the Merge-SPLogFIle cmdlet to archive the log files on all of the farm servers at once. You can use the Windows PowerShell Copy-Item cmdlet to archive log files from a single server. The Copy-Item cmdlet does not provide filtering and you must copy the entire log file.
For more information about how to configure diagnostic logging, see Configure diagnostic logging (SharePoint Server 2010) (*http://technet.microsoft.com/library/faab1eb4-5848-4970-b13f-ba6df14272fe(Office.14).aspx*).
To archive diagnostic logs from all farm servers by using Windows PowerShell
1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.

3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:
   Merge-SPLogFile -Path "<path to merged log file>.log" -Overwrite
   For example, Merge-SPLogFile -Path "C:\Logs\MergedFiles\AllFarm_merged_12.20.2009.log" -Overwrite
   Important:
   Merging all log entries for all farm servers can take a long time and use resources. We recommend filtering the entries to match a specific set of criteria before merging.
   To merge log entries that match a specific set of criteria, type the following command:
   Merge-SPLogFile -Path "<path to merged log file>.log" -Area "<Area>" -Category "<Category>"
   You can filter by one or more of the following:
   - Area (one or more, wildcard)
   - Category (one or more, wildcard)
   - Level
   - Correlation (one or more)
   - EventID (one or more, wildcard)
   - Message (wildcard)
   - StartTime
   - EndTime
   - Process (one or more, wildcard)
   - ThreadID (one or more)

     Tip:
     You can name the merged log file however you want. We recommend that you use a naming convention that makes it easy to determine what the log file contains, such as <date merged>_<farm name>_<filtering criteria>. For example, to signify all the farm server log entries forSharePoint Foundation 2010 that involve the database category and are marked as "High" use, "Dec_2009_ContosoInternet_Foundation_Database_High.log".

For more information, see Merge-SPLogFile (*http://technet.microsoft.com/library/759702d7-bda2-4302-9345-abb43b609ad4(Office.14).aspx*).

To archive diagnostic logs for a specific server by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:
   Copy-Item <Log folder path> -Destination <Archive folder path> -Recurse

For more information, type Get-Help Copy-Item -Full

.

Prepare to back up and recover (SharePoint Server 2010)

Published: July 8, 2010

It is important to ensure that you have backed up and can recover the data that you need should a failure occur. Consider the information, procedures, and precautions that are described in this article before you back up and restore the environment. This article discusses restrictions and requirements for backup and recovery and how to create a shared folder on the network that can receive backed-up data.

In this article:

- Restrictions
- Requirements
- How to create a shared folder

Restrictions

There are some restrictions in what can be backed up or restored. For more information about backup and recovery architecture and about what can or cannot be backed up and restored, see Backup and recovery overview (SharePoint Server 2010).

You cannot use a backup made from one version to restore to another version. To do this, you must use the upgrade process. You cannot restore to a farm with a lower update level than the update level of the farm that you backed up. The destination farm must have the same or newer update level. For information about how to upgrade, see Upgrading to SharePoint Server 2010 (*http://technet.microsoft.com/library/396c85d9-4b86-484e-9cc5-f6c4d725c578(Office.14).aspx*).

If you perform a backup while any task that creates or deletes databases is running, these changes might not be included in the backup.

Do not modify the spbackup.xml file. This file is used by SharePoint Server 2010 and changing it can make the backups unusable.

Requirements

Before you back up data, you must create a shared folder in which the data will be stored. For best performance, you should create this folder on the database server. If you want to archive the backups to another server, you can copy the whole backup folder to that server after backup is complete. Be sure to copy and move the whole backup folder and not the individual backup folders under this folder.

The SQL Server VSS Writer service, which is available with Microsoft SQL Server 2008 R2, SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2, and SQL Server 2005 with SP3 and Cumulative Update 3 database software, must be started for the SharePoint 2010 VSS Writer service to work correctly. By default, the SharePoint 2010 VSS Writer service is not automatically started.

You must make sure that the SharePoint 2010 Administration service is started on all farm servers before you perform a backup. By default, this service is not started on stand-alone installations.

You must ensure that the user accounts that you want to perform a backup have access to the shared backup folder.
If you are backing up by using Central Administration, the database server's SQL service account, the Timer service account, and the Central Administration application pool identity account must have Full Control permissions to the backup locations.
The database server and farm server that you want to back up must be able to connect to one another.
If you have changed the farm account, before you back up, you must grant the new account the correct permissions to the shared folder that will contain the backup data.
If you are using SQL Server with Transparent Data Encryption (TDE), and you are backing up your environment by using either SharePoint tools or SQL Server tools, the TDE encryption key is not backed up or restored. You must manually back up the key. When restoring, you must manually restore the key before you restore the data. For more information, see Understanding Transparent Data Encryption (TDE) (*http://go.microsoft.com/fwlink/?LinkId=196394&clcid=0x409*).

How to create a shared folder

Use this procedure to create a shared folder on the network that can receive and hold backed-up data. You can also use this shared folder when you restore data. If you already have a shared folder that serves this purpose, you do not have to perform this procedure. By performing the following procedure, you ensure that you can access the shared folder from the computer that runs Microsoft SQL Server database software and from the computer that hosts the SharePoint Central Administration Web site.
If you are backing up by using Central Administration and SQL Server is not running on the same server, the backup folder must be on the same network or on a database server as SharePoint Server 2010. If you have a stand-alone installation where both SQL Server and SharePoint Server 2010 are running on the same server, you can use a local drive path as the backup folder location. If you are using SQL Server to directly back up a database, such as by using SQL Server Management Studio, the backup folder can be either local or on the network. For best performance, we recommend that you back up to a local folder on the database server and then move or copy the backup files to a network folder.

To create a shared folder

1. Verify that the user account that is performing this procedure is a member of the Administrators group on the computer on which you want to create the shared folder.
2. If you create the shared folder on a computer other than the one running SQL Server, ensure that the service account for SQL Server (MSSQLSERVER) is using a domain user account and that it has Full Control permissions on the shared folder.
3. On the server on which you want to store the backup data, create a shared folder.
4. On the **Sharing** tab of the **Properties** dialog box, click **Share**, and then in the **File Sharing** dialog box, add the following accounts and assign them the Co-Owner role:
   - SQL Server service account (MSSQLSERVER)
   - The SharePoint Central Administration application pool identity account
   - The SharePoint 2010 Timer service account (if you are using SharePoint Server 2010 to perform backups) .

Other Resources

Shared Folders (*http://technet.microsoft.com/en-us/library/cc770406.aspx*)

Configuring permissions for backup and recovery (SharePoint Server 2010)

Published: May 12, 2010

Before backing up or restoring Microsoft SharePoint Server 2010, you must ensure that the timer service account, SQL Server service account, and users running the backup or restore operations have the correct permissions or are members of the correct Windows security groups or SharePoint groups. These permissions and group memberships must be configured initially. Subsequently, they must be updated when new farm components are added to the environment and if you want to add users who will perform backup and restore operations.

In this topic:

- Permissions for the SPTimerV4 timer service and SQL Server account
- Group memberships required to run backup and restore operations in Central Administration
- Setting permissions for running backup and restore operations by using Windows PowerShell

Permissions for the SPTimerV4 timer service and SQL Server account

The Windows SharePoint Services Timer V4 (SPTimerV4) and the SQL Server service account in SharePoint Server 2010 perform backup and restore operations on behalf of the user. These service accounts require Full Control permissions on any backup folders.

Group memberships required to run backup and restore operations in Central Administration

You must ensure that all user accounts that will be backing up or restoring your farm and farm components by using Central Administration have the group memberships that are described in the following table.

Required group memberships

Farm component	Member of Administrators group on the local computer	Member of Farm Administrators SharePoint group
Farm	Yes	No
Service Application	Yes	No
Content Database	Yes	No
Site Collection	No	Yes
Site, list, document library	No	Yes

Setting permissions for running backup and restore operations by using Windows PowerShell

You must ensure that all user accounts that will be backing up or restoring your farm and farm components by using Windows PowerShell are added to the **SharePoint_Shell_Access** role for a specified database and have the permissions described in the table later in this section.
You can run the Add-SPShellAdmin
cmdlet to add a user account to this role. You must run the command for each user account. Moreover, you must run the command for all databases to which you want to grant access.

Note:
You only need to grant a user account access to back up and restore a specific farm component one time. You will have to perform this task again only when new farm components are added to your environment or when you want to add users to perform backup and restore operations.

To add a user to or remove a user from the SharePoint_Shell_Access role by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Add-SPShellAdmin -Username <User account> -Database <Database ID>
   To add a user account to all the databases in the farm, type the following command, and then press ENTER:
   ForEach ($db in Get-SPDatabase) {Add-SPShellAdmin -Username <User account> -Database $db}
   To remove a user account from all the databases in the farm, type the following command, and then press ENTER:
   ForEach ($db in Get-SPDatabase) {Remove-SPShellAdmin -Username <User account> -Database $db}
   To view the user accounts currently added to the databases in the farm, type the following command, and then press ENTER:
   ForEach ($db in Get-SPDatabase) {Get-SPShellAdmin -Database $db}

For more information, see Add-SPShellAdmin (*http://technet.microsoft.com/library/2ddfad84-7ca8-409e-878b-d09cb35ed4aa(Office.14).aspx*).

You might also have to grant additional permissions to the users running the backup or restore operation by using Windows PowerShell. The following table shows the permissions that are required.

Required permissions for Windows PowerShell

Farm component	Member of Administrators group on the local computer	Member of Farm Administrators SharePoint group	Full Control on backup folder
Farm	Yes	No	Yes
Service application	Yes	No	Yes
Content database	Yes	No	Yes
Site collection	No	Yes	Yes
Site, list, document library	Yes	No	Yes

Recovery (SharePoint Server 2010)

Published: May 12, 2010

The articles in this section are written to meet the requirements of information technology (IT) professionals who are responsible for the planning, design, deployment, and operations of backup and recovery solutions. These solutions might be in enterprise, corporate, or branch office environments. The IT professionals who are responsible for backup and recovery solutions are expected to have an understanding of the technical details that are contained in this section. However, service-level expertise is not needed to understand the enterprise-level discussions and decisions.

Before you restore a farm, ensure that the following requirements are met:

- To restore a farm by using the SharePoint Central Administration Web site, you must be a member of the Farm Administrators group.
- To restore a farm by using Windows PowerShell, you must meet the following minimum requirements: See **Add-SPShellAdmin**.
- The database server's SQL Server account, the Timer service account, and the Central Administration application pool account must have Read permissions to the backup locations. (The Timer service account and the Central Administration application pool account are usually the same.) The database server's SQL Server account must be a member of the **sysadmin** fixed server role.
- Your login account must have Read permissions to the backup locations.
- Ensure that the SharePoint Foundation Administration service is started on all farm servers. By default, this service is not started on stand-alone installations.

Consider the following before you restore a farm:

- Restoring from one version of SharePoint Products and Technologies to a different version is not supported.
- After recovery, search might take as long as 15 minutes to be available again. It can take longer than 15 minutes if the search system has to crawl all the content again. If you back up and restore the complete service, the system does not have to perform a full crawl.
- You can only perform one recovery or one backup operation at a time.

Recover all or part of a farm

The following tasks for recovery are performed on the entire farm, farm databases, sites, subsites, or lists:

- Restore a farm (SharePoint Server 2010)
  This article describes the procedures that you can use to restore the entire farm from a backup.
- Restore a farm configuration (SharePoint Server 2010)
  This article describes the procedures that you can use to restore the farm configuration to the same farm from a backup.
- Document farm configuration settings (SharePoint Server 2010)

This article describes how to use Windows PowerShell to document the configuration settings for your farm. Documenting configuration settings is important both so that you can create scripted deployments for your environment, and so that you can quickly re-create a set of configurations in the event of a failure.

- Copy configuration settings from one farm to another (SharePoint Server 2010)
  This article describes the procedures that you can use to of copy configuration settings from one farm to another, including how to back up and recover a farm without the content databases, how to back up and recover configurations only, and how to create a deployment script.
- Restore a Web application (SharePoint Server 2010)
  This article describes the procedures that you can use to restore a Web application that is associated with the farm, including configuration and content databases, from a backup.
- Restore a service application (SharePoint Server 2010)
  This article describes the procedures that you can use to restore a service application that is associated with the farm, including configuration and content databases, from a backup.
- Restore search (SharePoint Server 2010)
  This article describes the procedures that you can use to restore the Search service application associated with the farm, including configuration and indexes, from a backup.
- Restore secure store services (SharePoint Server 2010)
  This article describes the procedures that you can use to restore the Secure Store service application that is associated with the farm, including configuration and content databases, from a backup.
- Restore a content database (SharePoint Server 2010)
  This article describes the procedures that you can use to restore a content database from a backup.
- Attach and restore a read-only content database (SharePoint Server 2010)
  This article describes the procedures that you can use to attach a read-only content database to the farm.
- Restore customizations (SharePoint Server 2010)
  This article describes the procedures that you can use to restore customizations that are associated with the farm from backups.
- Restore a site collection (SharePoint Server 2010)
  This article describes the procedures that you can use to restore a site collection from a backup.
- Import a list or document library (SharePoint Server 2010)
  This article describes the procedures that you can use to restore a site, list, or document library from a backup.

Concepts

Backup (SharePoint Server 2010)

Restore a farm (SharePoint Server 2010)

Updated: June 24, 2010

This article describes how to restore a Microsoft SharePoint Server 2010 farm. Farm-level recovery is usually performed only after a failure that involves the complete farm, or where partial recovery of part of the farm is not possible. If you only have to restore part of the farm, a specific database, a service application, a list, or document library, or a specific document, use another recovery method. For more information about alternate forms of recovery, see Related content.

Farm recovery is usually performed for any of the following reasons:

- Restoring a farm after a fire, disaster, equipment failure, or other data-loss event.
- Restoring farm configuration settings and data to a specific previous time and date.
- Moving a SharePoint Server 2010 deployment from one farm to another farm.

In this article:

- Considerations when recovering a farm
- Use Windows PowerShell to restore a farm
- Use Central Administration to restore a farm
- Use SQL Server tools to restore a farm

Considerations when recovering a farm

When you prepare to recover a farm, be aware of the following issues:

- You cannot restore a multiple-server farm to a single-server farm or a single-server farm to a multiple-server farm.
- You cannot back up from one version of Microsoft SharePoint Server and restore to another version of SharePoint Server.
- Backing up the farm will back up the configuration and Central Administration content databases, but these cannot be restored using Microsoft SharePoint Server 2010 tools. For more information about backing up and restoring all the farm databases, see Move all databases (SharePoint Server 2010) (*http://technet.microsoft.com/library/d9dac189-0736-448d-928c-68bf38603613(Office.14).aspx*).
- When you restore the farm by using Microsoft SharePoint Server 2010, the restore process will not automatically start all of the service applications. You must manually start them by using Central Administration or Windows PowerShell. Do not use SharePoint Products Configuration Wizard to start the services because doing so will also re-provision the services and service proxies.
- The identifier (ID) of each content database is retained when you restore or reattach a database by using built-in tools. Default change log retention behavior when using built-in tools is as follows:
    1. The change logs for all databases are retained when you restore a farm.
    2. The change log for content databases is retained when you reattach or restore a database.

When a database ID and change log are retained, the search system continues crawling based on the regular schedule that is defined by crawl rules.
When you restore an existing database and do not use the overwrite option, a new ID is assigned to the restored database, and the database change log is not preserved. The next crawl of the database will add data from the content database to the index.
If a restore is performed and the ID in the backup package is already being used in the farm, a new ID is assigned to the restored database and a warning is added to the restore log. The ability to perform an incremental crawl instead of a full crawl depends on the content database ID being the same as before and the change log token that is used by the search system being valid for the current change log in the content database. If the change log is not preserved, the token is not valid and the search system has to perform a full crawl.

- SharePoint Server 2010 backup backs up the Business Data Connectivity service external content type definitions but does not back up the data source itself. To protect the data, you should back up the data source when you back up the Business Data Connectivity service or the farm.
  If you restore the Business Data Connectivity service or the farm and then restore the data source to a different location, you must change the location information in the external content type definition. If you do not, the Business Data Connectivity service might be unable to locate the data source.
- SharePoint Server 2010 restores remote Binary Large Objects (BLOB) stores only if you are using the FILESTREAM remote BLOB store provider to put data in remote BLOB stores.
  If you are using another provider, you must manually restore the remote BLOB stores.
- If a user has taken copies of content for off-line editing in Microsoft SharePoint Workspace 2010 and the content is restored from a backup on the server, when the user re-connects, the server automatically synchronizes the off-line content with the restored content. This might result in data loss on the user's copies of the content.
- If you are sharing service applications across farms, be aware that trust certificates that have been exchanged are not included in farm backups. You must back up your certificate store separately or retain the certificates in a separate location. When you restore a farm that shares a service application, you must import and redeploy the certificates, and then re-establish any inter-farm trusts.
  For more information, see Exchange trust certificates between farms (SharePoint Server 2010) (*http://technet.microsoft.com/library/6d8a9d37-d400-4d7c-b4f1-bf3c5643c98c(Office.14).aspx*).
- After a Web application that is configured to use claims-based authentication has been restored, duplicate or additional claims providers are often visible. If duplicates appear, you must then manually save each Web application zone to remove them. For more information, see Restore a Web application (SharePoint Server 2010).
- Additional steps are required when you restore a farm that contains a Web application that is configured to use forms-based authentication. For more information, see Restore a Web application (SharePoint Server 2010).

Use Windows PowerShell to restore a farm

You can use Windows PowerShell to restore a farm.

To restore a farm by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:

   Restore-SPFarm -Directory <*BackupFolder*> -RestoreMethod Overwrite [-BackupId <*GUID*>]
   Where:
   - <*BackupFolder*> is the path of the folder you use for storing backup files.
   - <*GUID*> is the identifier of the backup to restore from.
     Note:
     If you are not logged on as the Farm account, you are prompted for the Farm account's credentials.
     If you do not specify the BackupId
     , the most recent backup will be used. To view the backups for the farm, at the Windows PowerShell command prompt, type the following command:

     Get-SPBackupHistory -Directory <*BackupFolder*> -ShowBackup [-Verbose]
     Where:
   - <*BackupFolder*> is the path of the folder you use for storing backup files.
     You cannot use a configuration-only backup to restore content databases together with the configuration.
6. To restart a service application, at the Windows PowerShell command prompt, type the following command:

   Start-SPServiceInstance -Identity <*ServiceApplicationID*>
   Where:
   - <*ServiceApplicationID*> is the GUID of the service application.
     For more information about restarting service applications by using Windows PowerShell, see Start-SPServiceInstance (*http://technet.microsoft.com/library/fcb4a4f8-a95f-468e-918b-d9a2d736cd2d(Office.14).aspx*).

For more information about restoring the farm by using Windows PowerShell, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a farm

You can use the Central Administration Web site to restore a farm.

To restore a farm by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators SharePoint group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, from the list of backups, select the backup job that contains the farm backup, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.
   Note:
   If the correct backup job does not appear, in the **Backup Directory Location** text box, type the Universal Naming Convention (UNC) path of the correct backup folder, and then click **Refresh**.
   You cannot use a configuration-only backup to restore the farm.
4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, select the check box that is next to the farm, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, ensure that **Farm** appears in the **Restore the following component** list.
   In the **Restore Only Configuration Settings** section, ensure that the **Restore content and configuration settings** option is selected.
   In the **Restore Options** section, under **Type of Restore**, select the **Same configuration** option. A dialog box will appear that asks you to confirm the operation. Click **OK**.
   Note:
   If the **Restore Only Configuration Settings** section does not appear, the backup that you selected is a configuration-only backup. You must select another backup.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 3.

7. When the restore process has completed, you may need to restart one or more service applications. In Central Administration, on the Home page, in the **Application Management** section, click **Manage services on server**.
8. On the Services on Server page, start any services related to service applications that you want to run by clicking **Start** in the **Actions** column next to the service application.
9. Re-establish any trust relationships. For more information, see Exchange trust certificates between farms (SharePoint Server 2010) (*http://technet.microsoft.com/library/6d8a9d37-d400-4d7c-b4f1-bf3c5643c98c(Office.14).aspx*).

Use SQL Server tools to restore a farm

Although you cannot restore the complete farm by using SQL Server tools, you can restore most of the farm databases. If you restore the databases by using SQL Server tools, you must restore the farm configuration by using Central Administration or Windows PowerShell. For more information about how to restore the farm's configuration settings, see Restore a farm configuration (SharePoint Server 2010).

Note:
The search index is not stored in SQL Server. If you use SQL Server tools to back up and restore search, you must perform a full crawl after you restore the content database.

Before you restore SharePoint Server 2010, we recommend that you configure a recovery farm for site and item recovery.
Restore the databases by following these steps:

1. If possible, back up the live transaction log of the current database to protect any changes that were made after the last full backup.
2. Restore the last full database backup.
3. Restore the most recent differential database backup that occurred after the most recent full database backup.
4. Restore all transaction log backups that occurred after the most recent full or differential database backup.

To restore a farm by using SQL Server tools

1. Verify that the user account that is performing this procedure is a member of the **sysadmin** fixed server role.
2. If the Windows SharePoint Services Timer service is running, stop the service and wait for several minutes for any currently running stored procedures to finish. Do not restart the service until after you restore all the databases that you have to restore.
3. Start SQL Server Management Studio and connect to the database server.
4. In Object Explorer, expand **Databases**.
5. Right-click the database that you want to restore, point to **Tasks**, point to **Restore**, and then click **Database**.
   The database is automatically taken offline during the recovery operation and cannot be accessed by other processes.
6. In the **Restore Database** dialog box, specify the destination and the source, and then select the backup set or sets that you want to restore.

The default values for destination and source are appropriate for most recovery scenarios.

7. In the **Select a page** pane, click **Options**.
8. In the **Restore options** section, select only **Overwrite the existing database**. Unless your environment or policies require otherwise, do not select the other options in this section.
9. In the **Recovery state** section:
   - If you have included all the transaction logs that you must restore, select **RECOVER WITH RECOVERY**.
   - If you must restore additional transaction logs, select **RECOVER WITH NORECOVERY**.
   - The third option, **RECOVER WITH STANDBY** is not used in this scenario.

     Note:
     For more information about these recovery options, see Restore Database (Options Page) (http://go.microsoft.com/fwlink/?LinkId=114420).
10. Click **OK** to complete the recovery operation.
11. Except for the configuration database, repeat steps 4 through 9 for each database that you are restoring.

    Important:
    If you are restoring the User Profile database (by default named “"User Profile Service_ProfileDB_<GUID>”), then also restore the Social database (by default named “User Profile Service_SocialDB_<GUID>”). Failing to do so can cause inaccuracies in the User Profile data that might be difficult to detect and fix.
12. To restore the configuration settings, you must use the existing configuration database or manually create a new database and restore the configuration to that database. For more information about restoring the farm configuration, see Restore a farm configuration (SharePoint Server 2010).
13. Start the Windows SharePoint Services Timer service.
14.
15. Start any service applications that have to be restarted. To do this, see steps 7 and 8 of the “Use Central Administration to restore a farm” procedure earlier in this article.

Related content

Resource Centers	Business Continuity Management for SharePoint Server 2010: Backup, Recovery, Availability, and Disaster Recovery (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Back up a farm (SharePoint Server 2010). Restore a farm configuration (SharePoint Server 2010) Restore a Web application (SharePoint Server 2010) Restore a content database (SharePoint Server 2010)

Restore a farm configuration (SharePoint Server 2010)

Published: May 12, 2010
This topic describes how to a restore the configuration of a farm.

Note:
In previous versions of Microsoft SharePoint Server 2010, you could not restore the configuration database and, therefore, you could not restore the configuration of a farm. In this version of SharePoint Server 2010, you do not have to restore the configuration database because you can restore the farm configuration directly.

Procedures in this task:
- Use Windows PowerShell to restore a farm's configuration
- Use Central Administration to restore a farm's configuration

Overview

Farm-level configuration recovery is performed only after a failure that involves the configuration database but does not involve other farm data, such as a content database or Web application. If restoring the farm configuration does not solve the problems, you must restore the complete farm. For more information about restoring the complete farm, see Restore a farm (SharePoint Server 2010). You can restore the configuration from a farm backup that used either the **Backup content and configuration settings** option or the **Backup only configuration settings** option.

Use Windows PowerShell to restore a farm's configuration

You can use Windows PowerShell to restore a farm's configuration.

To restore a farm's configuration by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. From the Windows PowerShell command prompt (that is, PS C:\>), type the following command and press ENTER:
   Restore-SPFarm -Directory <RestoreShare> -RestoreMethod Overwrite -ConfigurationOnly
   You must use the ConfigurationOnly parameter. To view the progress of the operation, use the Verbose parameter.

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a farm's configuration

You can use Central Administration to restore a farm's configuration.

To restore a farm's configuration by using Central Administration

1. To perform this procedure, you must be a member of the Farm Administrators SharePoint group on the computer that is running Central Administration.
   You must also be a member of the **sysadmin** fixed server role on the database server where each database is stored.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, select the backup job that contains the farm backup from the list of backups, and then click **Next**.
   Note:
   You can view additional information about the backups by expanding the row that contains the backup.
   Note:
   If the correct backup job does not appear, in the **Backup Directory Location** text box, enter the UNC path of the correct backup folder, and then click **Refresh**.
4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, select the check box that is next to the farm, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, ensure that "Farm" appears in the **Restore the following content** list.
   In the **Restore Only Configuration Settings** section, ensure that the **Restore content and configuration settings** option is selected.
   In the **Restore Options** section, select the **Type of Restore** option. Use the **Same configuration** setting. A dialog box will appear that asks you to confirm the operation. Click **OK**.
   Note:
   If the **Restore Only Configuration Settings** section does not appear, then the backup that you selected is a configuration-only backup.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Status page in the **Readiness** section. You can view the status of the

current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the recovery to start.
If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 2.

Use SQL Server to restore a farm's configuration

You cannot restore a farm's configuration by using SQL Server tools.

Concepts

Back up a farm configuration (SharePoint Server 2010)

Document farm configuration settings (SharePoint Server 2010)

Published: May 12, 2010

This article describes how to use Windows PowerShell 2.0 to document the configuration settings for your farm. Documenting configuration settings is important both so that you can create scripted deployments for your environment, and so that you can quickly re-create a set of configurations in the event of a failure.

To document configuration settings by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. Using Notepad, create a text file and then copy and paste the following script into the file. The commands in the example create XML files that document the configurations of the Web applications and service applications in the current farm. Choose only those commands that are relevant to your environment.

Common SharePoint configuration settings ## #Retrieve Web Application information. The default depth of 2 does not return much detail--we recommend that you use a depth of 4 for this cmdlet. Get-SPWebApplication | Export-Clixml .\WebAppFilename.xml -depth 4 #Retrieve custom layout information. Get-SPWebApplication | Get-SPCustomLayoutsPage | Export-Clixml .\Get-SPCustomLayoutsPage.xml #Determine how SharePoint designer access is configured. Get-SPWebApplication | Get-SPDesignerSettings | Export-Clixml .\Get-SPDesignerSettings.xml #Retrieve information about alternate access mapping Get-SPAlternateURL | Export-Clixml .\Get-SPAlternateURL.xml #Retrieve information about content databases Get-SPContentDatabase | Export-Clixml .\Get-SPContentDatabase.xml #Retrieve database properties for each database Get-SPDatabase | Export-Clixml .\Get-SPDatabase.xml #Retrieve information about all SharePoint Products installed in the farm, and the versions of all updates installed for each product. Get-SPProduct | Export-Clixml .\Get-SPProduct.xml #Retrieve farm information Get-SPFarm | Export-Clixml .\Get-SPFarm.xml Get-SPFarmConfig | Export-Clixml .\Get-SPFarmConfig.xml #Retrieve information about the servers in the farm Get-SPServer | Export-Clixml .\Get-SPServer.xml #Retrieve information about installed features Get-SPFeature | Export-Clixml .\Get-SPFeature.xml #Retrieve information about globally-installed site templates Get-SPWebTemplate | Export-Clixml .\Get-SPWebTemplate.xml #Retrieve information about deployed solutions Get-SPSolution | Export-Clixml .\Get-SPSolution.xml #Retrieve information about sandboxed solutions deployed in a site collection Get-SPSite | Get-SPUserSolution | Export-Clixml .\Get-SPUserSolution.xml #Retrieve information about claims authentication Get-SPTrustedIdentityTokenIssuer | Export-Clixml .\Get-SPTrustedIdentityTokenIssuer.xml Get-SPTrustedServiceTokenIssuer | Export-Clixml .\Get-SPTrustedServiceTokenIssuer.xml Get-SPTrustedRootAuthority | Export-Clixml .\Get-SPTrustedRootAuthority.xml #Retrieve information about installed Help Get-SPHelpCollection | Export-Clixml .\Get-SPHelpCollection.xml #Retrieve information about the logging levels that have been set Get-SPLogLevel | Export-Clixml .\Get-SPLogLevel.xml #Retrieve information about the sites in the farm Get-SPSite | Export-Clixml .\Get-SPSite.xml Get-SPSiteAdministration | Export-Clixml .\Get-SPSiteAdministration.xml Get-SPSiteSubscription | Export-Clixml .\Get-SPSiteSubscription.xml #Retrieve ULS logging information Get-SPDiagnosticConfig | Export-Clixml .\Get-SPDiagnosticConfig.xml Get-SPDiagnosticsPerformanceCounter | Export-Clixml .\Get-SPDiagnosticsPerformanceCounter.xml Get-SPDiagnosticsProvider | Export-Clixml .\Get-SPDiagnosticsProvider.xml #Retrieve information about accounts registered in the configuration database Get-SPManagedAccount | Export-Clixml .\Get-SPManagedAccount.xml Get-SPProcessAccount | Export-Clixml .\Get-SPProcessAccount.xml Get-SPShellAdmin | Export-Clixml .\Get-SPShellAdmin.xml #Retrieve specific information about the certificate authority Get-SPCertificateAuthority | Export-Clixml .\Get-SPCertificateAuthority.xml Get-SPClaimProvider | Export-Clixml .\Get-SPClaimProvider.xml Get-SPClaimProviderManager | Export-Clixml .\Get-SPClaimProviderManager.xml #Retrieve information about content deployment jobs Get-SPContentDeploymentJob | Export-Clixml .\Get-SPContentDeploymentJob.xml Get-SPContentDeploymentPath | Export-Clixml .\Get-

SPContentDeploymentPath.xml #Retrieve information about the Mobile Messaging account. Get-SPWebApplication | Get-SPMobileMessagingAccount | Export-Clixml .\Get-SPMobileMessagingAccount.xml ## ##Common service infrastructure settings ## #Retrieve information about the service applications in the farm Get-SPServiceApplication | Export-Clixml .\Get-SPServiceApplication.xml Get-SPServiceApplicationPool | Export-Clixml .\Get-SPServiceApplicationPool.xml Get-SPServiceApplicationProxy | Export-Clixml .\Get-SPServiceApplicationProxy.xml Get-SPServiceApplicationProxyGroup | Export-Clixml .\Get-SPServiceApplicationProxyGroup.xml Get-SPServiceApplication | Get-SPServiceApplicationEndpoint | Export-Clixml .\Get-SPServiceApplicationEndpoint.xml #Retrieve information about the services running in the farm Get-SPServiceInstance | Export-Clixml .\Get-SPServiceInstance.xml #Retrieve information about InfoPath form services Get-SPInfoPathFormsService | Export-Clixml .\Get-SPInfoPathFormsService.xml Get-SPInfoPathFormTemplate | Export-Clixml .\Get-SPInfoPathFormTemplate.xml ###WARNING: The following cmdlet requires run as administrator rights. Get-SPInfoPathUserAgent | Export-Clixml .\Get-SPInfoPathUserAgent.xml #Retrieve information about common Web service settings Get-SPServiceHostConfig | Export-Clixml .\Get-SPServiceHostConfig.xml ## ## Common service application settings ## #Access Services #Retrieve specific information for the Access Services service application Get-SPAccessServiceApplication | Export-Clixml .\Get-SPAccessServiceApplication.xml #Application Discovery and Load Balancer Service Application Get-SPTopologyServiceApplication | Export-Clixml .\Get-SPTopologyServiceApplication.xml Get-SPTopologyServiceApplicationProxy | Export-Clixml .\Get-SPTopologyServiceApplicationProxy.xml #Business Data Connectivity Service #Retrieve information about data connection files. ###WARNING: The following cmdlet requires run as administrator rights Get-SPDataConnectionFile | Export-Clixml .\Get-SPDataConnectionFile.xml ###WARNING: The following cmdlet requires run as administrator rights Get-SPDataConnectionFile | Get-SPDataConnectionFileDependent | Export-Clixml .\Get-SPDataConnectionFileDependent.xml #Excel Services Application #Note: An Excel service application must be provisioned for the following cmdlets to succeed. Get-SPExcelServiceApplication | Get-SPExcelBlockedFileType | Export-Clixml .\Get-SPExcelBlockedFileType.xml Get-SPExcelServiceApplication | Get-SPExcelDataConnectionLibrary | Export-Clixml .\Get-SPExcelDataConnectionLibrary.xml Get-SPExcelServiceApplication | Get-SPExcelDataProvider | Export-Clixml .\Get-SPExcelDataProvider.xml Get-SPExcelServiceApplication | Get-SPExcelFileLocation | Export-Clixml .\Get-SPExcelFileLocation.xml Get-SPExcelServiceApplication | Export-Clixml .\Get-SPExcelServiceApplication.xml Get-SPExcelServiceApplication | Get-SPExcelUserDefinedFunction | Export-Clixml .\Get-SPExcelUserDefinedFunction.xml Get-SPWebApplication | Get-SPInfoPathWebServiceProxy | Export-Clixml .\Get-SPInfoPathWebServiceProxy.xml Get-SPWebApplication | Get-SPManagedPath | Export-Clixml .\Get-SPManagedPath.xml #Managed Metadata Service #Note: A Managed Metadata service application must be provisioned for the following cmdlets to succeed. Get-SPServiceApplication | ?{$_.TypeName -eq "Managed Metadata Service"} | %{$id = $_.Id;Get-SPMetadataServiceApplication -Id $_ | Export-Clixml .\Get-SPMetadataServiceApplication-$id.xml} Get-

SPServiceApplicationProxy | ?{$_.TypeName -eq "Managed Metadata Service Connection"} | %{$id = $_.Id;Get-SPMetadataServiceApplicationProxy -Id $_ | Export-Clixml .\Get-SPMetadataServiceApplicationProxy-$id.xml} Get-SPSite | Get-SPTaxonomySession | Export-Clixml .\Get-SPTaxonomySession.xml #PerformancePoint Service Application #Note: A PerformancePoint service application must be provisioned for the following cmdlets to succeed. Get-SPPerformancePointServiceApplication | Get-SPPerformancePointSecureDataValues | Export-Clixml .\Get-SPPerformancePointSecureDataValues.xml Get-SPPerformancePointServiceApplication | Export-Clixml .\Get-SPPerformancePointServiceApplication.xml Get-SPPerformancePointServiceApplication | Get-SPPerformancePointServiceApplicationTrustedLocation | Export-Clixml .\Get-SPPerformancePointServiceApplicationTrustedLocation.xml #Search #Retrieve search information #Note: A Search service application must be provisioned for the following cmdlets to succeed. Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchAdministrationComponent | Export-Clixml .\Get-SPEnterpriseSearchAdministrationComponent.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlContentSource | Export-Clixml .\Get-SPEnterpriseSearchCrawlContentSource.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlCustomConnector | Export-Clixml .\Get-SPEnterpriseSearchCrawlCustomConnector.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlDatabase | Export-Clixml .\Get-SPEnterpriseSearchCrawlDatabase.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlExtension | Export-Clixml .\Get-SPEnterpriseSearchCrawlExtension.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlMapping | Export-Clixml .\Get-SPEnterpriseSearchCrawlMapping.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlRule | Export-Clixml .\Get-SPEnterpriseSearchCrawlRule.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchCrawlTopology | Export-Clixml .\Get-SPEnterpriseSearchCrawlTopology.xml $searchApp = Get-SPEnterpriseSearchServiceApplication; Get-SPEnterpriseSearchExtendedClickThroughExtractorJobDefinition -SearchApplication $searchApp | Export-Clixml .\Get-SPEnterpriseSearchExtendedClickThroughExtractorJobDefinition.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchExtendedConnectorProperty | Export-Clixml .\Get-SPEnterpriseSearchExtendedConnectorProperty.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchExtendedQueryProperty | Export-Clixml .\Get-SPEnterpriseSearchExtendedQueryProperty.xml ###WARNING: The following cmdlet generates a 120MB file that records the out of the box settings### Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchLanguageResourcePhrase | Export-Clixml .\Get-SPEnterpriseSearchLanguageResourcePhrase.xml Get-SPEnterpriseSearchServiceApplication | Get-

SPEnterpriseSearchMetadataCategory | Export-Clixml .\Get-SPEnterpriseSearchMetadataCategory.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchMetadataCrawledProperty | Export-Clixml .\Get-SPEnterpriseSearchMetadataCrawledProperty.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchMetadataManagedProperty | Export-Clixml .\Get-SPEnterpriseSearchMetadataManagedProperty.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchMetadataMapping | Export-Clixml .\Get-SPEnterpriseSearchMetadataMapping.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchPropertyDatabase | Export-Clixml .\Get-SPEnterpriseSearchPropertyDatabase.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQueryAuthority | Export-Clixml .\Get-SPEnterpriseSearchQueryAuthority.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQueryDemoted | Export-Clixml .\Get-SPEnterpriseSearchQueryDemoted.xml Get-SPEnterpriseSearchQueryAndSiteSettingsService | Export-Clixml .\Get-SPEnterpriseSearchQueryAndSiteSettingsService.xml Get-SPEnterpriseSearchQueryAndSiteSettingsServiceInstance | Export-Clixml .\Get-SPEnterpriseSearchQueryAndSiteSettingsServiceInstance.xml Get-SPEnterpriseSearchQueryAndSiteSettingsServiceProxy | Export-Clixml .\Get-SPEnterpriseSearchQueryAndSiteSettingsServiceProxy.xml Get-SPEnterpriseSearchService | Export-Clixml .\Get-SPEnterpriseSearchService.xml Get-SPEnterpriseSearchServiceInstance | Export-Clixml .\Get-SPEnterpriseSearchServiceInstance.xml Get-SPSearchService | Export-Clixml .\Get-SPSearchService.xml Get-SPSearchServiceInstance | Export-Clixml .\Get-SPSearchServiceInstance.xml ###WARNING: The following cmdlet generates a file per site collection### Get-SPSite | %{$id = $_.Id;Get-SPEnterpriseSearchQueryKeyword -Site $_ | Export-Clixml .\Get-SPEnterpriseSearchQueryKeyword-$id.xml} Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQueryScope | Export-Clixml .\Get-SPEnterpriseSearchQueryScope.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQueryScope | Get-SPEnterpriseSearchQueryScopeRule | Export-Clixml .\Get-SPEnterpriseSearchQueryScopeRule.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQuerySuggestionCandidates | Export-Clixml .\Get-SPEnterpriseSearchQuerySuggestionCandidates.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchQueryTopology | Export-Clixml .\Get-SPEnterpriseSearchQueryTopology.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchRankingModel | Export-Clixml .\Get-SPEnterpriseSearchRankingModel.xml Get-SPEnterpriseSearchServiceApplication | Get-SPEnterpriseSearchSecurityTrimmer | Export-Clixml .\Get-SPEnterpriseSearchSecurityTrimmer.xml Get-SPEnterpriseSearchServiceApplication | Export-Clixml .\Get-SPEnterpriseSearchServiceApplication.xml Get-SPEnterpriseSearchServiceApplicationProxy | Export-Clixml .\Get-SPEnterpriseSearchServiceApplicationProxy.xml Get-

SPEnterpriseSearchSiteHitRule | Export-Clixml .\Get-SPEnterpriseSearchSiteHitRule.xml #Security Token Service Application #Retrieve information about the security token service used for incoming SOAP messages. Get-SPSecurityTokenServiceConfig | Export-Clixml .\Get-SPSecurityTokenServiceConfig.xml #State Service #Retrieve information about the State Service. Get-SPSessionStateService | Export-Clixml .\Get-SPSessionStateService.xml Get-SPStateServiceApplication | Export-Clixml .\Get-SPStateServiceApplication.xml Get-SPStateServiceApplicationProxy | Export-Clixml .\Get-SPStateServiceApplicationProxy.xml Get-SPStateServiceDatabase | Export-Clixml .\Get-SPStateServiceDatabase.xml #Usage and Health data collection #Retrieve information about the Usage and Health Data Collection service application. Get-SPUsageApplication | Export-Clixml .\Get-SPUsageApplication.xml Get-SPUsageDefinition | Export-Clixml .\Get-SPUsageDefinition.xml Get-SPUsageService | Export-Clixml .\Get-SPUsageService.xml #Visio Service #A Visio service application must be provisioned for the following cmdlets to succeed. Get-SPVisioServiceApplication | Get-SPVisioExternalData | Export-Clixml .\Get-SPVisioExternalData.xml Get-SPVisioServiceApplication | Get-SPVisioPerformance | Export-Clixml .\Get-SPVisioPerformance.xml Get-SPVisioServiceApplication | Get-SPVisioSafeDataProvider | Export-Clixml .\Get-SPVisioSafeDataProvider.xml Get-SPVisioServiceApplication | Export-Clixml .\Get-SPVisioServiceApplication.xml Get-SPVisioServiceApplicationProxy | Export-Clixml .\Get-SPVisioServiceApplicationProxy.xml #Web Analytics Service Application A Web Analytics service application must be provisioned for the following cmdlets to succeed. Get-SPServiceApplication | ?{$_.TypeName -eq "Web Analytics Service Application"} | %{$id = $_.Id;Get-SPWebAnalyticsServiceApplication -Id $_ | Export-Clixml .\Get-SPWebAnalyticsServiceApplication-$id.xml} Get-SPServiceApplicationProxy | ?{$_.TypeName -eq "Web Analytics Service Application Proxy"} | %{$id = $_.Id;Get-SPWebAnalyticsServiceApplicationProxy -Id $_ | Export-Clixml .\Get-SPWebAnalyticsServiceApplicationProxy-$id.xml} Get-SPWebApplication | Get-SPWebApplicationHttpThrottlingMonitor | Export-Clixml .\Get-SPWebApplicationHttpThrottlingMonitor.xml Get-SPWebPartPack | Export-Clixml .\Get-SPWebPartPack.xml #Word Automation Services ###Note: These cmdlets are commented out because you are unlikely to want to run them. ### #Get-SPSite | %{$web=Get-SPWeb $_.Url;$webid=$web.Id;$web | Get-SPUser | Export-Clixml .\Get-SPUser-$webid.xml} # Get-SPSite | %{$web=Get-SPWeb $_.Url;$webid=$web.Id;$web | Export-Clixml .\Get-SPWeb-$webid.xml}

6. To run the script, in the Windows PowerShell console, at the command prompt (that is, PS C:\>), type the following command and press ENTER:C:\<path>\<filename>.ps1

For more information, see Export-Clixml (*http://technet.microsoft.com/en-us/library/dd347657.aspx*), Get-SPWebApplication (*http://technet.microsoft.com/library/11d6521f-f99c-433e-9ab5-7cf9e953457a(Office.14).aspx*), Get-SPServiceApplication (*http://technet.microsoft.com/library/71a467dc-3b95-4b65-af93-0d0d6ebb8326(Office.14).aspx*).

Example of using a cmdlet

This section provides an example of ways that you can use one of the recommended cmdlets.
The Get-SPAlternateURL cmdlet provides information about alternate access mapping. Piping the cmdlet to the Export-Clixml cmdlet writes the information to an XML file.

Get-SPAlternateURL | Export-Clixml .\Get-SPAlternateURL.xml

The following section lists the content of the Get-SPAlternateURL.xml file. Some sections are collapsed.

**- <Objs Version="1.1.0.1"
xmlns="http://schemas.microsoft.com/powershell/2004/04"> + <Obj RefId="0"> -
<Obj RefId="7"> <TNRef RefId="0" />
<ToString>Microsoft.SharePoint.Administration.SPAlternateUrl</ToString> -
<Props> <S N="IncomingUrl">http://servername</S> <URI
N="Uri">http://servername/</URI> + <Obj N="UrlZone" RefId="8"> - <Obj
N="Collection" RefId="9"> <TNRef RefId="2" /> - <IE> - <Obj RefId="10">
<TNRef RefId="0" />
<ToString>Microsoft.SharePoint.Administration.SPAlternateUrl</ToString> +
<Props> - <MS> <S N="Zone">Default</S> <S
N="PublicUrl">http://servername</S> </MS> </Obj> </IE> - <Props> <I32
N="Count">1</I32> <B N="IsReadOnly">false</B> <S N="TypeName">Alternate
Access Mapping Collection</S> <S N="DisplayName">SharePoint - 80</S>
<U64 N="DiskSizeRequired">0</U64> <B N="CanSelectForBackup">false</B>
<B N="CanRenameOnRestore">false</B> <B
N="CanSelectForRestore">false</B> <S N="Name">SharePoint - 80</S> <G
N="Id">5b65a69a-222d-4fe0-904b-0fb928bc7a89</G> <S N="Status">Online</S>
<S N="Parent">SPFarm
Name=SERVERNAME_SharePoint_Configuration_Database</S> <I64
N="Version">3661</I64> + <Obj N="Properties" RefId="12"> <TNRef RefId="3" />
<DCT /> </Obj> <S N="Farm">SPFarm
Name=SERVERNAME_SharePoint_Configuration_Database</S> <Ref
N="UpgradedPersistedProperties" RefId="11" /> </Props> </Obj> <Ref
N="UpgradedPersistedProperties" RefId="11" /> </Props> + <MS> + <Obj
N="Zone" RefId="13"> <TNRef RefId="1" /> <ToString>Default</ToString>
<I32>0</I32> </Obj> <S N="PublicUrl">http://servername</S> </MS> </Obj>
</Objs>**

This example imports the output from the XML file, so that you can see its contents more easily.

Import-Clixml .\Get-SPAlternateURL.xml

Once an XML file is imported, you can use the objects in the pipeline as though they were real objects of the given type.

Import-Clixml .\Get-SPAlternateURL.xml | %{$_.Uri}

You can also pipe the objects as part of the cmdlet, and view all of the expected properties, methods, and TypeNames. The following example pipes URIs.

Import-Clixml .\Get-SPAlternateURL.xml | %{$_.Uri | Get-Member}

For more information, see Export-Clixml (*http://technet.microsoft.com/en-us/library/dd347657.aspx*), Import-Clixml (*http://technet.microsoft.com/en-us/library/dd315355.aspx*), Get-SPAlternateURL (*http://technet.microsoft.com/library/ea38119d-a535-48a3-b498-9daa443399fb(Office.14).aspx*), ForEach-Object (*http://technet.microsoft.com/en-us/library/dd347608.aspx*), Get-Member (*http://technet.microsoft.com/en-us/library/dd315351.aspx*).

Copy configuration settings from one farm to another (SharePoint Server 2010)

Published: May 12, 2010

This article describes how to copy configuration settings from one Microsoft SharePoint Server 2010 farm to another SharePoint Server 2010 farm. Copying the configuration settings of one farm to another can be useful in the following circumstances:

- Setting up similar development, test, and production environments.
- Establishing an organization standard for farm configuration settings.
- Setting up a disaster recovery environment.

In this article:

- Back up and recover a farm without content databases to copy configuration settings (*http://technet.microsoft.com/library/ff524c73-4eb3-41c5-89a8-57befc0351a1(Office.14).aspx#Section1*)
- Back up and recover configuration settings only (*http://technet.microsoft.com/library/ff524c73-4eb3-41c5-89a8-57befc0351a1(Office.14).aspx#Section2*)
- Create a scripted deployment to copy configuration settings (*http://technet.microsoft.com/library/ff524c73-4eb3-41c5-89a8-57befc0351a1(Office.14).aspx#Section3*)

There are many ways in which you can copy configurations from one farm to another. Determine which method to use based on the configuration settings that you want to copy and how often you need to copy them.

- Back up and recover a farm without the content databases attached. This method provides you with farm settings and Web application settings, in addition to the settings for any service applications that you select.
- Back up and recover configurations only. This method provides you with the core SharePoint Foundation 2010 settings only.

  Note:
  This method does not include Web application or service application settings. If Web application settings are required in the recovered farm, use one of the other methods.
- Create a deployment script, based on your documented configuration. This method may be more work initially, but is easy to use to maintain standardization.

Back up and recover a farm without content databases to copy configuration settings

To copy configuration settings by using a farm backup, we recommend that you first detach the content databases from the farm. This is not a step that we recommend that you take with a live production farm.

Note:
Creating a farm backup without content databases does back up the service applications.

To back up and recover a farm without content databases by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command to document the current Web application URLs and content database mappings.

   Get-SPWebApplication |
   %{$_.Name;$_.Url;%{$_.ContentDatabases|%{$_.Name};Write-Host ""}}
6. Either dismount all content databases, as in the following example:

Get-SPContentDatabase | Dismount-SPContentDatabase

   Or dismount a specific content database, as in the following example:

   Get-SPContentDatabase WSS_Content | Dismount-SPContentDatabase
7. Back up the farm.

   Backup-SPFarm -Directory \\servername\share -BackupMethod Full
   Note:
   You can view the progress of the backup by looking at the *servername**share**spbr####*\spbackup.log file.
8. After the backup is complete, re-mount the content databases. Replace <*WSS_Content*> and <*http://servername*> with each of the mappings documented in step 1).
   p
   Mount-SPContentDatabase -Name <*WSS_Content*> -WebApplication <*http://servername*>

Back up and recover configuration settings only

As part of farm backup, you can choose to back up only configuration settings. A configuration-only backup extracts and backs up many, but not all, configuration settings from a configuration database. By using built-in tools, you can back up the configuration of any configuration database, whether it is currently attached to a farm or not. For detailed information about how to back up a configuration, see Back up a farm configuration (SharePoint Server 2010).A configuration backup can be restored to the same — or any other — server farm. When a configuration is restored, it will overwrite any settings present in the farm that have values that are set within the configuration backup. If any settings present in the farm are not contained in the configuration backup, they will not be overwritten. For detailed information about how to restore a farm configuration, see Restore a farm configuration (SharePoint Server 2010).

Create a scripted deployment to copy configuration settings

When you create a scripted deployment of SharePoint Server 2010, you are creating copies of configuration settings. For more information, see Install SharePoint Server 2010 by using Windows PowerShell (*http://technet.microsoft.com/library/7443092a-87a6-4063-a7d0-8d10d9d23682(Office.14).aspx*).

Restore a Web application (SharePoint Server 2010)

Updated: January 20, 2011

This article describes how to restore a Web application. When you restore a Web application, you also restore the Internet Information Services (IIS) settings and all content databases that are associated with the Web application.

In this article:

- Considerations when restoring a Web application
- Use Windows PowerShell to restore a Web application
- Use Central Administration to restore a Web application
- Use SQL Server tools to restore databases associated with a Web application
- Additional steps to restore a Web application that uses forms-based authentication
- Additional steps to remove duplicate claims providers after restoring a Web application that uses claims-based authentication
- Additional steps to re-configure object cache user accounts

Considerations when restoring a Web application

Consider the following information as you prepare to restore a Web application:

- You can only restore one Web application at a time by using the procedures in this article. However, you can simultaneously restore all the Web applications in the farm by restoring the complete farm.
- If a Web application uses the object cache, you must manually configure two special user accounts for the Web application after you restore the Web application. For more information about the object cache and how to configure these user accounts, see Configure object cache user accounts (*http://technet.microsoft.com/library/cd646bb3-28c6-4040-866c-7d7936837ade(Office.14).aspx*).
- You cannot use SQL Server tools to restore a Web application.
- When you restore a Web application that is configured to use claims-based authentication, there are additional steps that you must follow after restoring the Web application to restore claims-based authentication.

Use Windows PowerShell to restore a Web application

You can use Windows PowerShell to restore a Web application manually or as part of a script that can be run at scheduled intervals.

To restore a Web application by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:

   Restore-SPFarm -Directory <*BackupFolderName*> -RestoreMethod Overwrite -Item <*WebApplicationName*> [-BackupId <*GUID*>] [-Verbose]

   Where:

   - <*BackupFolderName*> is the full path to the folder you use for backup files.
   - <*WebApplicationName*> is the name of the Web application that was backed up.
   - <*GUID*> is the identifier of the back up to use for the restore operation. If you do not specify the value of the BackupID parameter, the most recent backup will be used. You cannot restore a Web application by using a configuration-only backup. You can view the backups for the farm by typing the following:

     Get-SPBackupHistory -Directory <*BackupFolderName*> -ShowBackup

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a Web application

You can use Central Administration to restore a Web application.

To restore a Web application by using Central Administration

1. Verify that the user account performing this procedure is a member of the Farm Administrators group. Additionally, verify that the Windows SharePoint Services Timer V4 service and the Farm Database Access account have Full Control permissions on the backup folder.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, from the list of backups, select the backup job that contains the farm or Web application backup, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.

Note:
If the correct backup job does not appear, in the **Current Directory Location** text box, type the Universal Naming Convention (UNC) path of the correct backup folder, and then click **Refresh**.
You cannot use a configuration-only backup to restore the Web application.

4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, select the check box that is next to the Web application, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, make sure that **Farm\<Web application>** appears in the **Restore the following content** list.
   In the **Restore Only Configuration Settings** section, make sure that the **Restore content and configuration settings** option is selected.
   In the **Restore Options** section, under **Type of Restore**, select the **Same configuration** option. A dialog box appears that asks you to confirm the operation. Click **OK**.
   Note:
   If the **Restore Only Configuration Settings** section does not appear, the backup that you selected is a configuration-only backup. You must select another backup.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified.

Use SQL Server tools to restore databases associated with a Web application

You cannot restore the complete Web application by using SQL Server tools. However, you can restore all the databases that are associated with the Web application. To restore the complete Web application, use either Windows PowerShell or Central Administration.

To restore databases associated with a Web application by using SQL Server tools

1. Verify that the user account performing this procedure is a member of the **sysadmin** fixed server role.
2. If the Windows SharePoint Services Timer service is running, stop the service and wait for several minutes for any currently running stored procedures to finish. Do not restart the service until after you restore the databases.
3. Start SQL Server Management Studio and connect to the database server.
4. In Object Explorer, expand **Databases**.
5. Right-click the database that you want to restore, point to **Tasks**, point to **Restore**, and then click **Database**.

The database is automatically taken offline during the recovery operation and cannot be accessed by other processes.

6. In the **Restore Database** dialog box, specify the destination and the source, and then select the backup set or sets that you want to restore.
   The default values for destination and source are appropriate for most recovery scenarios.
7. In the **Select a page** pane, click **Options**.
8. In the **Restore options** section, select only **Overwrite the existing database**.
   Unless the environment or policies require otherwise, do not select the other options in this section.
9. In the **Recovery state** section:
   - If you have included all the transaction logs that you must restore, select **RECOVER WITH RECOVERY**.
   - If you must restore additional transaction logs, select **RECOVER WITH NORECOVERY**.
   - The third option, **RECOVER WITH STANDBY** is not used in this scenario.
     Note:
     For more information about these recovery options, see Restore Database (Options Page) (http://go.microsoft.com/fwlink/?LinkId=114420).
10. Click **OK** to complete the recovery operation.
11. Repeat steps 4 through 10 for each database that you are restoring.
12. Start the Windows SharePoint Services Timer service.

Additional steps to restore a Web application that uses forms-based authentication

After you restore a Web application that uses forms-based authentication, you must perform the following steps to reconfigure the Web application to use forms-based authentication.

1. Re-register the membership and role providers in the Web.config file.
2. Redeploy the providers.

For more information, see Configure forms-based authentication for a claims-based Web application (SharePoint Server 2010) (*http://technet.microsoft.com/library/fd1391bb-c787-4742-b007-bf57e18dad66(Office.14).aspx*).

Additional steps to remove duplicate claims providers after restoring a Web application that uses claims-based authentication

After a Web application that is configured to use claims-based authentication has been restored, duplicate or additional claims providers are often visible. You must use the following process to remove the duplicate providers:

1. In Central Administration, click **Manage Web application**, select a Web application that uses claims-based authentication, and then click **Authentication Providers**.
2. Select a zone that the Web application is associated with to open the **Edit Authentication** page, and then click **Save**.

3. Repeat for each zone, and then for each Web application that uses claims-based authentication.

Additional steps to re-configure object cache user accounts

If you configured object cache user accounts for the Web application, the restore process will not restore these settings. You must re-configure the settings for the Web application. For more information, see Configure object cache user accounts (*http://technet.microsoft.com/library/cd646bb3-28c6-4040-866c-7d7936837ade(Office.14).aspx*).

Related content

Resource center	Business Continuity Management for SharePoint Server 2010 (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Back up a Web application (SharePoint Server 2010) Plan for backup and recovery (SharePoint Server 2010) Backup and recovery (SharePoint Server 2010) (*http://technet.microsoft.com/library/71abd06e-6730-442e-b2c1-e3ba9c04d497(Office.14).aspx*)
Developer content	Data Protection and Recovery (*http://go.microsoft.com/fwlink/?LinkID=199237*)

Restore a service application (SharePoint Server 2010)

Updated: July 8, 2010

There are situations in which you might have to restore a specific service application instead of restoring the complete farm. Some service applications — for example, the Business Data Connectivity service application and the User Profile service application — provide data to other services and sites. As a result, users might experience some service interruption until the recovery process is finished.

For information about how to simultaneously restore all the service applications in a farm, see Restore a farm (SharePoint Server 2010).

Important:

You cannot back up from one version of Microsoft SharePoint Server and restore to another version of SharePoint Server.

Note:

SharePoint Server 2010 backs up the Business Data Connectivity Service metadata store, which includes external content types, external systems, and BDC models. For more information, see Business Data Connectivity service administration overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/e58bd6c6-74b2-4471-80b0-b627b482ab33(Office.14).aspx*). Note that this does not back up the external data sources. To protect the data, the external data sources must be backed up.

If you restore the service application or the farm and then restore the data source to a different location, you must change the location information in the external content type definition. If you do not, the Business Data Connectivity Service might not be able to locate the data source.

Note:

SharePoint Server 2010 restores remote Binary Large Object (BLOB) stores but only if you are using the FILESTREAM provider to put data in remote BLOB stores.

If you are using another provider, you must manually restore remote BLOB stores.

Procedures in this article:

- Use Windows PowerShell to restore a service application
- Use Central Administration to restore a service application
- Use SQL Server tools to restore the databases for a service application

  Note:

  You cannot restore the complete service application but you can restore the databases associated with the service application.
- To flush the Office Web Apps cache by using Windows PowerShell

Use Windows PowerShell to restore a service application

You can use Windows PowerShell to restore a service application.

To restore a service application by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command: Restore-SPFarm -Directory <BackupFolder> -Item <ServiceApplicationName> -RecoveryMethod Overwrite [-BackupId <GUID>] [-Verbose]
   To specify which backup to use, use the BackupId
   parameter. You can view the backups for the farm by typing the following: Get-SPBackupHistory -Directory <Backup folder> -ShowBackup
   . If you do not specify the BackupId
   , the most recent backup will be used. You cannot restore a service application from a configuration-only backup.

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a service application

Use the following procedure to restore a service application by using the SharePoint Central Administration Web site.

To restore a service application by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators SharePoint group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, select the backup job that contains the service application backup, or a farm-level backup, from the list of backups, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.

Note:
If the correct backup job does not appear, in the **Backup Directory Location** text box, type the path of the correct backup folder, and then click **Refresh**.
You cannot use a configuration-only backup to restore the farm.

4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, expand **Shared Services Applications**, select the check box that is next to the service application, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, make sure that **Farm\Shared Services Applications\<Service application>** appears in the **Restore the following component** list.
   In the **Restore Options** section, under **Type of restore**, select the **Same configuration** option. A dialog box will appear that asks you to confirm the operation. Click **OK**.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take a several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 3.

Use SQL Server tools to restore the databases for a service application

You cannot restore the complete service application by using SQL Server tools. However, you can use SQL Server tools to restore the databases that are associated with the service application. To restore the complete service application, use either Windows PowerShell or Central Administration.

To restore the databases for a service application by using SQL Server tools

1. Verify that the user account that you are using to restore the databases is a member of the SQL Server **sysadmin** fixed server role on the database server where each database is stored.
2. Open SQL Server Management Studio and connect to the database server.
3. In Object Explorer, expand **Databases**.
4. Right-click the database that you want to restore, point to **Tasks**, point to **Restore**, and then click **Database**.
5. In the **Restore Database** dialog box, on the General page, select the database to restore to from the **To database** drop-down list.
6. Select the restore source from the **From database** drop-down list.
7. In the **Select the backup sets to restore section** area, select the check box next to the database.
8. On the Options tab, select the recovery state from the **Recover state** section.
   For more information about which recovery type to use, see Overview of Recovery Models (http://go.microsoft.com/fwlink/?LinkId=114396) in SQL Server Books Online.

9. Click **OK** to restore the database.
10. Repeat steps 1-9 for each database that is associated with the service application.

To flush the Office Web Apps cache by using Windows PowerShell

1. If you are restoring Microsoft Office Web Apps, you must flush the cache after the restore process is complete to ensure that the correct timer jobs are created.
2. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
3. On the **Start** menu, click **All Programs**.
4. Click **Microsoft SharePoint 2010 Products**.
5. Click **SharePoint 2010 Management Shell**.
6. At the Windows PowerShell command prompt, type the following command:

   Get-SPOfficeWebAppsCache | Remove-SPOfficeWebAppsCache -Confirm:$false

Restore search (SharePoint Server 2010)

Published: May 12, 2010

There are situations in which you might have to restore the search system instead of restoring the complete farm.

Important:

You cannot back up from one version of Microsoft SharePoint Server and restore to another version of SharePoint Server.

Important:

The procedures in this topic restore the search components of Microsoft SharePoint Server 2010. If the topology includes Microsoft FAST Search Server 2010 for SharePoint, then the procedures in this topic also restore the Content SSA and Query SSA (including the People Search index). However, in addition to the procedures in this topic, you must restore the FAST Search Server 2010 for SharePoint farm.

Procedures in this topic:

- Use Windows PowerShell to restore a search service application
- Use Central Administration to restore a search service application

Note:

You cannot use SQL Server tools to restore all of the search components.

Use Windows PowerShell to restore a search service application

You can use Windows PowerShell to restore search. This procedure restores all of the search components including the databases, the search service configuration, and all of the index files.

To restore a search service application by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Restore-SPFarm -Directory <Backup folder> -Item <Search service application name> -RecoveryMethod Overwrite [-BackupId <GUID>] [-Verbose]
   To specify which backup to use, use the BackupId parameter. To view the backups for the farm, type the following command, and then press ENTER: Get-SPBackupHistory -Directory <Backup folder> -ShowBackup. If you do not use the BackupId parameter, the most recent backup will be used. You cannot restore search from a configuration-only backup.

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a search service application

Use the following procedure to restore search by using the SharePoint Central Administration Web site. This procedure restores all of the search components including the databases, the search service configuration, and all of the index files.

To restore a search service application by using Central Administration

1. Verify that the user account performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, select the backup job that contains the search backup, or a farm-level backup, from the list of backups, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.
   Note:
   If the correct backup job does not appear, in the **Backup Directory Location** text box, type the Universal Naming Convention (UNC) path of the correct backup folder, and then click **Refresh**.
   You cannot use a configuration-only backup to restore search.
4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, expand the **Shared Services Applications** node.
5. Select the check box that is next to the search service application, and then click **Next**.
6. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, make sure that **Farm\Shared Services Applications\<Search service application>** appears in the **Restore the following content** list.
   In the **Restore Options** section, under **Type of restore**, select the **Same configuration** option. If you select this option, a dialog box appears that asks you to confirm the operation. Click **OK**.
7. Click **Start Restore**.
   You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are timer service jobs. Therefore, it may take a several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 3.

Restore secure store services (SharePoint Server 2010)

Published: May 12, 2010

In Microsoft SharePoint Server 2010, the Secure Store Service replaces Microsoft Office SharePoint Server 2007 Single Sign-on (SSO). The Secure Store Service provides the capability of securely storing credential sets and associating credentials to specific identities or a group of identities.

Every time you enter a new passphrase, SharePoint Server 2010 creates a new Master Key and re-encrypts the credentials sets with that key. The passphrase gives you access to the Master Key created by SharePoint Server 2010 that is used to encrypt the credential sets.

Important:

You will need the passphrase that was recorded when the Secure Store Service was backed up to restore the Secure Store Service.

Procedures in this task:

- Use Central Administration to restore the Secure Store Service
- Use Windows PowerShell to restore the Secure Store Service

Use Central Administration to restore the Secure Store Service

Use the following procedure to restore the Secure Store Service by using the SharePoint Central Administration Web site.

To restore the Secure Store Service by using Central Administration

1. Verify that the user account performing this procedure is a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, select the backup job that contains the backup that you want, or a farm-level backup, from the list of backups, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.

   Note:

   If the correct backup job does not appear, in the **Backup Directory Location** text box, type the path of the correct backup folder, and then click **Refresh**.

   You cannot use a configuration-only backup to restore the Secure Store Service.
4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, expand **Shared Services Applications** and select the check box that is next to the Secure Store Service application backup group, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, make sure that **Farm\Shared Services\Shared**

Services Applications\<Secure Store Service name> appears in the **Restore the following component** list.
In the **Restore Options** section, under **Type of restore**, select the **Same configuration** option. A dialog box will appear that asks you to confirm the operation. Click **OK**.
Click **Start Restore**.

6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take a several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the path that you specified in step 3.
7. After the restore operation has successfully completed, you must refresh the passphrase.
8. In Central Administration, on the Home page, in the **Application Management** section, click **Manage service applications**.
9. On the Service Applications page, click the Secure Store Service name. You might receive an error that says “Unable to obtain master key.”
10. On the Secure Store Service page, on the ribbon, click **Refresh Key**.
11. In the **Refresh Key** dialog box, type the passphrase in the **Pass Phrase** box, and then click **OK**.

Use Windows PowerShell to restore the Secure Store Service

You can use Windows PowerShell to restore a the Secure Store Service.

To restore the Secure Store Service by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Restore-SPFarm -Directory <Backup folder> -Item <Secure Store Service name> -RecoveryMethod Overwrite [-BackupId <GUID>] [-Verbose]
   To specify which backup to use, use the BackupId parameter. You can view the backups for the farm by typing the following: Get-SPBackupHistory -Directory <Backup folder> -ShowBackup. If you do not specify a value for the BackupId parameter, the most recent backup will be used. You cannot restore the Secure Store Service from a configuration-only backup.
   For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

6. After the restore operation has successfully completed, you must refresh the passphrase. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Update-SPSecureStoreApplicationServerKey -Passphrase <Passphrase>
   For more information, see Update-SPSecureStoreApplicationServerKey (*http://technet.microsoft.com/library/53234b26-d767-483a-a75f-0f2c195f8747(Office.14).aspx*).

Concepts

Back up the Secure Store service (SharePoint Server 2010)

Restore a content database (SharePoint Server 2010)

Updated: June 24, 2010

You can restore any content database or several content databases, one at a time. For information about how to back up all the content databases in a farm at the same time, see Back up a farm (SharePoint Server 2010).

Note:
SharePoint Server 2010 restores up remote Binary Large Objects (BLOB) stores but only if you are using the SQL Filestream remote BLOB store provider to place data in remote BLOB stores.
If you are using another provider you must manually restore these remote BLOB stores.

Note:
If a user has taken copies of content for off-line editing in Microsoft SharePoint Workspace 2010 and the content is restored from a backup on the server, when the user re-connects, the server automatically synchronizes the off-line content with the restored content. This might result in data loss on the user's copies of the content.

Procedures in this task:

- Use Windows PowerShell to restore a content database
- Use Central Administration to restore a content database
- Use SQL Server tools to restore a content database

Use Windows PowerShell to restore a content database

You can use Windows PowerShell to restore a content database.

To restore a content database by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Restore-SPFarm -Directory <Backup folder name> -RestoreMethod Overwrite -Item <Content database name> [-BackupId <GUID>] [-Verbose]
   Note:
   If you are not logged on as the Farm account, you are prompted for the Farm account's credentials.
   If you do not use the BackupId parameter, the most recent backup will be used. To view a list of the backups, including their Backup IDs, type the following command, and then press ENTER:

Get-SPBackupHistory -Directory <Backup folder>

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Use Central Administration to restore a content database

You can use Central Administration to restore a farm or components of a farm.

To restore a content database by using Central Administration

1. Verify that you are logged on as a member of the Farm Administrators group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, from the list of backups, select the backup job that contains the content database backup, and then click **Next**.
   Note:
   If the correct backup job does not appear, in the **Current Directory Location** text box, enter the path of the correct backup folder, and then click **Refresh**.
4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, select the check box that is next to the content database, and then click **Next**.
   Note:
   If the content database is not selectable, you must use Windows PowerShell or SQL Server tools to restore the content database.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Options** section, under **Type of Restore**, click the **Same configuration** option. A dialog box appears that asks you to confirm the operation. Click **OK**.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 2.

Use SQL Server tools to restore a content database

You can use SQL Server tools to restore a content database by following these steps:

1. If possible, back up the live transaction log of the content database to protect any changes that were made after the last full backup.
2. Restore the last full database backup.
3. Restore the most recent differential database backup that occurred after the most recent full database backup.
4. Restore all transaction log backups that occurred after the most recent full or differential database backup.

To restore a content database by using SQL Server tools

1. Verify that the user account performing this procedure is a member of the **sysadmin** fixed server role.
2. If the Windows SharePoint Services Timer service is running, stop the service and wait for several minutes for any currently running stored procedures to finish. Do not restart the service until after you restore the content databases.
3. Start SQL Server Management Studio and connect to the database server.
4. In Object Explorer, expand **Databases**.
5. Right-click the database that you want to restore, point to **Tasks**, point to **Restore**, and then click **Database**.
   The database is automatically taken offline during the recovery operation and cannot be accessed by other processes.
6. In the **Restore Database** dialog box, specify the destination and the source, and then select the backup set or sets that you want to restore.
   The default values for destination and source are appropriate for most recovery scenarios.
7. In the **Select a page** pane, click **Options**.
8. In the **Restore options** section, select only **Overwrite the existing database**.
   Unless the environment or policies require otherwise, do not select the other options in this section.
9. In the **Recovery state** section:
   - If you have included all the transaction logs that you must restore, select **RECOVER WITH RECOVERY**.
   - If you must restore additional transaction logs, select **RECOVER WITH NORECOVERY**.
   - The third option, **RECOVER WITH STANDBY** is not used in this scenario.
     Note:
     For more information about these recovery options, see Restore Database (Options Page) (http://go.microsoft.com/fwlink/?LinkId=114420).
10. Click **OK** to complete the recovery operation.
11. Repeat steps 4 through 10 for each database that you are restoring.
12. Start the Windows SharePoint Services Timer service.

Concepts

Back up a content database (SharePoint Server 2010)

Attach and restore a read-only content database (SharePoint Server 2010)

Published: May 12, 2010

A Microsoft SharePoint Server 2010 farm in which content databases have been set to be read-only can be part of a failure recovery environment that runs against mirrored or log-shipped content databases or part of a highly available maintenance or patching environment that provides user access when another version of the farm is being updated. When you re-attach the read-only databases, they become read-write.

For more information about how to use read-only databases, see Run a farm that uses read-only content databases (SharePoint Server 2010) (*http://technet.microsoft.com/library/8b91dc0a-c37d-4ec8-aa75-deb3f268fb97(Office.14).aspx*).

Use Windows PowerShell to attach and restore a read-only content database

You can use only Windows PowerShell to attach and restore a read-only content database.

To attach and restore a read-only content database by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Mount-SPContentDatabase -Name <Database name> -WebApplication <Web application ID> [-Verbose]
   Note:
   Attaching a content database by using the Mount-SPContentDatabase cmdlet differs from attaching a database in SQL Server by using SQL Server tools. Mount-SPContentDatabase associates the content database with a Web application so that the contents can be read.

For more information, see Mount-SPContentDatabase (*http://technet.microsoft.com/library/20d1bc07-805c-44d3-a278-e2793370e237(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Restore customizations (SharePoint Server 2010)

Updated: August 12, 2010

This article describes how to restore customizations that have been made to sites in a Microsoft SharePoint Server farm.

This article assumes that you are familiar with the concepts and procedures in Back up customizations (SharePoint Server 2010).

In this article:

- Restoring solution packages
- Restoring authored site elements
- Restoring workflows
- Restoring changes to the Web.config file
- Recovering changes made by direct editing
- Restoring developed customizations that are not packaged as solutions

Restoring solution packages

The method that you use to restore solution packages is determined by whether the customizations were deployed as *trusted solutions* or *sandboxed solutions*.

Trusted solutions are solutions that farm administrators deploy. They are deployed to the entire farm, and can be used on any site within the farm. Trusted solutions are stored in the configuration database. Trusted solutions are backed up when a farm is backed up by using SharePoint Server 2010 backup, and are included in configuration-only backups, and can also be backed up as a group, or individually. They are visible in the restore hierarchy.

Sandboxed solutions are solutions that site collection administrators can deploy to a single site collection. Sandboxed solutions are stored in the content database associated with the site collection that they are deployed to. They are included in SharePoint Server 2010 farm, Web application, content database, and site collection backups, but are not visible in the restore hierarchy, and cannot be selected or restored individually.

We recommend that you keep a backup of the original .wsp file as well as the source code used to build the .wsp file for both trusted and sandboxed solutions.

To restore a trusted solution by using Central Administration

1. Verify that the user account that is performing this procedure is a member of the Farm Administrators SharePoint group.
2. In Central Administration, on the Home page, in the **Backup and Restore** section, click **Restore from a backup**.
3. On the Restore from Backup — Step 1 of 3: Select Backup to Restore page, from the list of backups, select the backup job that contains the solution package, and then click **Next**. You can view more details about each backup by clicking the (+) next to the backup.

Note:
If the correct backup job does not appear, in the **Backup Directory Location** text box, type the Universal Naming Convention (UNC) path of the correct backup folder, and then click **Refresh**.

4. On the Restore from Backup — Step 2 of 3: Select Component to Restore page, select the check box that is next to the solution, and then click **Next**.
5. On the Restore from Backup — Step 3 of 3: Select Restore Options page, in the **Restore Component** section, ensure that **Solution** appears in the **Restore the following component** list.
   In the **Restore Only Configuration Settings** section, ensure that the **Restore content and configuration settings** option is selected.
   In the **Restore Options** section, under **Type of Restore**, select the **Same configuration** option. A dialog box appears that asks you to confirm the operation.
   Click **OK**.
   Click **Start Restore**.
6. You can view the general status of all recovery jobs at the top of the Backup and Restore Job Status page in the **Readiness** section. You can view the status for the current recovery job in the lower part of the page in the **Restore** section. The status page updates every 30 seconds automatically. You can manually update the status details by clicking **Refresh**. Backup and recovery are Timer service jobs. Therefore, it may take several seconds for the recovery to start.
   If you receive any errors, you can review them in the **Failure Message** column of the Backup and Restore Job Status page. You can also find more details in the Sprestore.log file at the UNC path that you specified in step 3.

To restore a trusted solution by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following command:

   Restore-SPFarm -Directory <*BackupFolder*> -RestoreMethod Overwrite -BackupId <*GUID*> -Item <*SolutionPath*>
   Where:
   - <*BackupFolder*> is the UNC location of the directory that you want to restore from.
   - <*GUID*> is the GUID of the backup ID that you want to restore from. If you do not specify a backup, the most recent one is used.
   - <*SolutionPath*> is the path of the solution within the backup tree (usually farm\solutions*SolutionName*).

For more information, see Restore-SPFarm (*http://technet.microsoft.com/library/8e18ea80-0830-4ffa-b6b6-ad18a5a7ab3e(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Restoring a sandboxed solution
You cannot restore only customizations that were deployed as sandboxed solutions. Instead, you must restore the farm, Web application, content database, or site collection with which the customization is associated. For more information about these methods of restoring, see Related content (*http://technet.microsoft.com/library/84346116-d592-4b9f-9992-b509ccdcefbe(Office.14).aspx#Related*) later in this article.

Restoring authored site elements

You cannot restore only authored site elements. Instead, you must restore the farm, Web application, or content database with which the authored site element is associated. For more information about these methods of backing up, see Related content (*http://technet.microsoft.com/library/84346116-d592-4b9f-9992-b509ccdcefbe(Office.14).aspx#Related*).

Restoring workflows

Workflows are a special case of customizations that you can restore. Make sure that the backup and recovery plan includes any of the following scenarios that apply to the environment:

- Declarative workflows, such as those created in Microsoft SharePoint Designer 2010, are stored in the content database for the site collection to which they are they are deployed. Restoring the content database or site collection restores these workflows.
- Custom declarative workflow actions have components in the following three locations:
    1. The Microsoft Visual Studio 2010 assemblies for the actions are stored in the global assembly cache (GAC).
    2. The XML definition files (.actions files) are stored in the 14\TEMPLATE\<*LCID*>\Workflow directory.
    3. An XML entry to mark the action as an authorized type is stored in the Web.config file for the Web applications in which it is used.
       If the farm workflows use custom actions, you should use a file restore system to restore these files and XML entries. You can reapply the files as needed after recovery.
- Workflows that depend on custom code, such as those that are created by using Visual Studio 2010, are stored in two locations. The Visual Studio 2010 assemblies for the workflow are stored in the GAC, and the XML definition files are stored in the Features directory. This is the same as other types of SharePoint Server features such as Web Parts and event receivers. If the workflow was installed as part of a solution package, follow the instructions for restoring solution packages.

- If you create a custom workflow that interacts with a site collection other than the one where the workflow is deployed, you must restore both site collections to recover the workflow. Restoring a farm is sufficient to recover all site collections in the farm and all workflows that are associated with them.
- Workflows that have not been deployed must be restored separately by using a file system backup application.

Restoring changes to the Web.config file

You can recover changes to the Web.config file made by using Central Administration or the SharePoint Server 2010 APIs and object model by performing a farm or configuration-only restore.
You should use a file system backup to protect changes to the Web.config file that are not made by using Central Administration or the SharePoint APIs and object model. You can recover the backup by using a file system restore.

Recovering changes made by direct editing

Changes made directly to a site by directly editing through the browser can be difficult to recover. The following table describes recovery strategies for specific objects.

Edited object	Backup strategy
List	If you have used SharePoint Designer 2010 to save as a template, you can deploy and activate the template. For more information, see Save a SharePoint site as a template (*http://go.microsoft.com/fwlink/?LinkID=199515*).
Site	If you have used SharePoint Designer 2010 to save as a template, you can deploy and activate the template. For more information, see Save a SharePoint site as a template (*http://go.microsoft.com/fwlink/?LinkID=199515*).
Site collection	Use site collection recovery. For more information, see Restore a site collection (SharePoint Server 2010).

Restoring developed customizations that are not packaged as solutions

Restoring developed customizations that are not packaged as solutions can be a complex process because the customization file locations are not standardized. Consult with the development team or customization vendor to determine whether the customizations involve additional add-in software or files in other locations. We recommend that you restore directories with a file system restore solution. The following table lists locations where customizations are typically stored on Web servers.

Location	Description
%COMMONPROGRAMFILES%\Microsoft Shared\Web Server Extensions\14	Commonly updated files, custom assemblies, custom templates, custom site definitions
Inetpub	Location of IIS virtual directories
%WINDIR%\Assembly	Global assembly cache (GAC): a protected operating system location where the Microsoft .NET Framework code assemblies are installed to provide full system access

Related content

Resource Center	Business Continuity Management for SharePoint Server 2010: Backup, Recovery, Availability, and Disaster Recovery (*http://go.microsoft.com/fwlink/?LinkID=199235*)
IT Pro content	Deploy customizations - overview (SharePoint Server 2010) (*http://technet.microsoft.com/library/be4ca20f-520e-4fd7-9c42-140af800cbc8(Office.14).aspx*) Back up customizations (SharePoint Server 2010) Restore a farm (SharePoint Server 2010) Restore a farm configuration (SharePoint Server 2010) Restore a Web application (SharePoint Server 2010) Restore a content database (SharePoint Server 2010) Restore a site collection (SharePoint Server 2010)
Developer content	Using solutions (MSDN) (*http://go.microsoft.com/fwlink/?LinkID=156638*) Sandboxed solutions (MSDN) (*http://go.microsoft.com/fwlink/?LinkID=199517*)

Restore a site collection (SharePoint Server 2010)

Updated: June 24, 2010
You can use only Windows PowerShell to restore a site collection.

Use Windows PowerShell to restore a site collection

You can use Windows PowerShell to restore a site collection manually or as part of a script that can be run at scheduled intervals.

Note:
If a user has taken copies of content for off-line editing in Microsoft SharePoint Workspace 2010 and the content is restored from a backup on the server, when the user re-connects, the server automatically synchronizes the off-line content with the restored content. This might result in data loss on the user's copies of the content.

To restore a site collection by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**. Additionally, verify that the user account performing this procedure has read permissions to the backup folder and is a member of the **db_owner** fixed database role on both the farm configuration database and the content database where the site collection is being restored.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:
   Restore-SPSite -Identity <Site collection URL> -Path <Backup file> [-DatabaseServer <Database server name>] [-DatabaseName <Content database name>] [-HostHeader <Host header>] [-Force] [-GradualDelete] [-Verbose]
   If you want to restore the site collection to a specific content database, use the DatabaseServer
   and DatabaseName
   parameters to specify the content database. If you do not specify a content database, the site collection will be restored to a content database chosen by Microsoft SharePoint Server 2010.
   If you are restoring a host-named site collection, use the Identity
   parameter to specify the URL of the host-named site collection and use the HostHeader parameter to specify the URL of the Web application that will hold the host-named site collection.
   If you want to overwrite an existing site collection, use the Force

parameter.

Note:
If the site collection that you are restoring is 1 gigabyte or larger, you can use the GradualDelete
parameter for better performance during the restore process. When this parameter is used, the site collection that is overwritten is marked as deleted, which immediately prevents any additional access to its content. The data in the marked site collection is then deleted gradually over time by a timer job instead of all at the same time, which reduces the impact on server performance.

For more information, see Restore-SPSite (*http://technet.microsoft.com/library/90f19a58-0455-470c-a8ee-3129fc341f62(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Concepts

Back up a site collection (SharePoint Server 2010)

Import a list or document library (SharePoint Server 2010)

Published: May 12, 2010

Although you can use either Windows PowerShell or Central Administration to export a site, list, or document library, you can use only Windows PowerShell to import a site, list, or document library. For information about how to export lists or libraries, see Export a site, list, or document library (SharePoint Server 2010).

You can use importing as a method of restoring the items, or as a method of moving or copying the items from one farm to another farm. You can import a site, list, or document library from a backup of the current farm, from a backup of another farm, or from a read-only content database. To import from a read-only content database, you must first attach the read-only database. For more information, see Attach and restore a read-only content database (SharePoint Server 2010).

Important:

You cannot import a site, list or document library exported from one version of Microsoft SharePoint Server to another version of SharePoint Server.

Import a site, list or document library

You can use Windows PowerShell to manually import a site, list, or document library or as part of a script that can be run at regular intervals.

To import a site, list or document library by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt (that is, PS C:\>), type the following command, and then press ENTER:

   Import-SPWeb -Identity <Site URL> -Path <Export file name> [-Force] [-NoFileCompression] [-Verbose]

   Important:

   The site or subsite that you are importing must have a template that matches the template of the site specified by Identity

   .

   You can also use the Get-SPWeb cmdlet and pass the ID to Import-SPWeb by using the Windows PowerShell pipeline. The value of the Path parameter specifies the path and file name of the file from which to import the list or library. To include the user security settings with the list or document library, use the IncludeUserSecurity

parameter. To overwrite the list or library that you specified, use the Force parameter. You can use the UpdateVersions parameter to specify how versioning conflicts will be handled. To view the progress of the operation, use the Verbose parameter.

The NoFileCompression parameter lets you specify that no file compression is performed during the import process. Using this parameter can lower resource usage up to 30% during the export and import process. If you are importing a site, list, or document library that you exported from Central Administration, or if you exported a site, list, or document library by using Windows PowerShell and you did not use the NoFileCompression parameter in the Export-SPWeb cmdlet, you cannot use this parameter in the Import-SPWeb cmdlet.

Note:
There is no facility in the Import-SPWeb cmdlet import a subset of the items within the export file. Therefore, the import operation will import everything from the file.

For more information, see Import-SPWeb (*http://technet.microsoft.com/library/2ecc5b6e-1b23-4367-a966-b7bd3377db3a(Office.14).aspx*).

Note:
We recommend that you use Windows PowerShell when performing command-line administrative tasks. The Stsadm command-line tool has been deprecated, but is included to support compatibility with previous product versions.

Concepts

Export a site, list, or document library (SharePoint Server 2010)

Availability configuration (SharePoint Server 2010)

Published: May 12, 2010

This section describes how to configure availability for Microsoft SharePoint Server 2010. The articles assume that you are familiar with the concepts and terms presented in Plan for availability (SharePoint Server 2010).

In this section:

- Configure availability by using SQL Server clustering (SharePoint Server 2010)
  This article describes how to use SQL Server clustering with SharePoint Server 2010.
- Configure availability by using SQL Server database mirroring (SharePoint Server 2010)
  This article describes how to configure SQL Server database mirroring for use with SharePoint Server 2010.
- Sample script for configuring SQL Server database mirroring (SharePoint Server 2010)
  This article provides a script to use in configuring SQL Server database mirroring for use with SharePoint Server 2010 in a test environment. In a production environment, we recommend that a database professional configure mirroring.

Concepts

Plan for availability (SharePoint Server 2010)

Configure availability by using SQL Server clustering (SharePoint Server 2010)

Published: May 12, 2010

Microsoft SQL Server 2008 with Service Pack 1 (SP1) and Cumulative Update 2 failover clustering can be used to configure availability within a farm for Microsoft SharePoint Server 2010. This article assumes that you are familiar with the concepts and terms presented in Plan for availability (SharePoint Server 2010).

Failover clustering provides availability support for an instance of SQL Server 2008 with SP1 and Cumulative Update 2. A failover cluster is a combination of one or more nodes or servers and two or more shared disks. A failover cluster instance appears as a single computer, but has functionality that provides failover from one node to another if the current node becomes unavailable.

SharePoint Server 2010 references the cluster as a whole; therefore, failover is automatic and seamless from the perspective of SharePoint Server 2010.

For detailed information about failover clustering, see Getting Started with SQL Server 2008 Failover Clustering (*http://go.microsoft.com/fwlink/?LinkID=102837&clcid=0x409*).

There are no instructions specific to setting up clustering for SharePoint Server 2010. For instructions on how to set up failover clustering, see Installing a SQL Server 2008 Failover Cluster (*http://go.microsoft.com/fwlink/?LinkId=132112&clcid=0x409*).

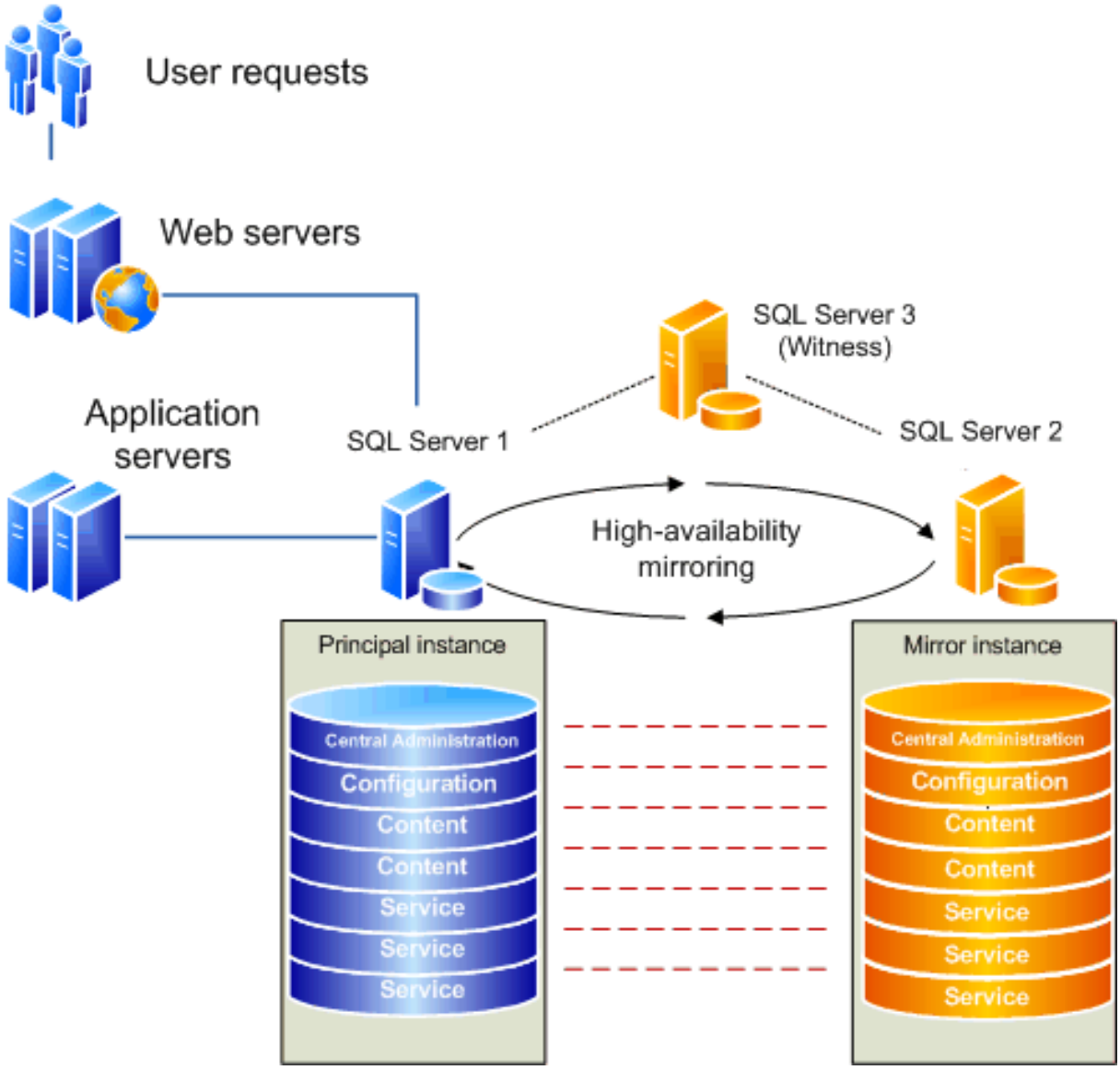
Configure availability by using SQL Server database mirroring (SharePoint Server 2010)

Published: May 12, 2010

This article describes how to use high-availability database mirroring to configure availability within a farm for Microsoft SharePoint Server 2010. The article assumes that you are familiar with the concepts and terms presented in Plan for availability (SharePoint Server 2010).

Microsoft SQL Server database mirroring provides availability support by sending transactions directly from a principal database and server to a mirror database and server when the transaction log buffer for the principal database is written to disk. For availability within a Microsoft SharePoint Server 2010 farm, you use high-availability database mirroring, also known as high-safety mode with automatic failover. High-availability database mirroring involves three server instances: a principal, a mirror, and a witness. The witness server enables SQL Server to automatically fail over from the principal server to the mirror server. Failover from the principal database to the mirror database typically takes several seconds.

Within a SharePoint Server 2010 farm, mirroring can provide redundancy for the content and configuration databases, and for many service databases. Even if your databases are mirrored to the same server, each database fails over individually. The following figure shows how mirroring is configured to provide availability within a SharePoint Server 2010 farm.



SharePoint Server 2010 is mirroring-aware. To use mirroring in your environment, first configure mirroring, and then set the failover database value in SharePoint Server.

In this article:

- Before you begin
- Security associated with database mirroring
- Configure SharePoint 2010 Products to be aware of mirrored databases
- User experience during a failover

Before you begin

Before you begin to configure mirroring, make sure that your database administrator is aware of the following requirements and supported topologies.

Database mirroring requirements

Become familiar with the recommendations in the following list, and ensure that your databases and system meet any requirements before you configure database mirroring for a SharePoint Server environment:

- We recommend that your system have latency no more than 1 millisecond.
- System bandwidth should preferably be 1 gigabyte (GB) per second.
- Logs are copied in real time between the principal and the mirror servers, and copying can affect performance. Make sure that you have sufficient memory and bandwidth on both the principal and mirror server.
- The principal server and mirror server must run the same version and edition of SQL Server, and they must run in the same language. Database mirroring is available only in the Standard, Developer, and Enterprise editions. The witness server can run any version of SQL Server, including SQL Server 2008 Express.
- Mirroring works only with databases that use the full recovery model.
  By default, SharePoint Server 2010 databases are configured to use the simple recovery model. To configure database mirroring, the recovery model of the database must be set to Full. For information about how to set the recovery model for a database, see How to: View or Change the Recovery Model of a Database (SQL Server Management Studio) (*http://go.microsoft.com/fwlink/?LinkId=132075&clcid=0x409*).
- If you plan to mirror databases, consider that the size of the transaction logs for these databases may become very large. To work around this, you can establish a recovery plan that truncates transaction logs as necessary. For more information, see the following article in the Microsoft Knowledge Base: How to stop the transaction log of a SQL Server database from growing unexpectedly (*http://go.microsoft.com/fwlink/?LinkId=111458&clcid=0x409*).
- Every database mirroring session creates at least two threads for each database. Ensure that your database server has enough threads to allocate for mirroring all the supported databases. If you have insufficient threads, performance can decrease as more databases are added to a session.

For more information about performance for database mirroring, see Database mirroring best practices and performance considerations (*http://go.microsoft.com/fwlink/?LinkId=185119*).

If you will be configuring mirroring for Microsoft Project Server 2010 databases, see Configure availability by using SQL Server database mirroring (Project Server 2010) (*http://technet.microsoft.com/library/b208f09c-df30-41f8-9fe5-bbc3db07fb03(Office.14).aspx*) for information specific to Project Server.

Security associated with database mirroring

Database mirroring uses TCP sessions to transport the transaction log from one server to another and to monitor the current health of the system for automatic failovers. Authentication is performed at the session level when a port is opened for connection. Database mirroring supports both Windows authentication (NTLM or Kerberos) and certificates.

Unless the network is secure, the data transmitted during the session should be encrypted. Database mirroring supports both Advanced Encryption Standard (AES) and RC4 encryption algorithms. For more information about the security associated with database mirroring, see Database Mirroring Transport Security (*http://go.microsoft.com/fwlink/?LinkId=83569&clcid=0x409*).

SharePoint 2010 Products security and mirrored servers

When you set up a mirrored database, the SQL Server logins and permissions for the database to be used with a SharePoint farm are not automatically configured in the **master** and **msdb** databases on the mirror server. Instead, you must configure the permissions for the required logins. These include, but are not limited to, the following:

- The Central Administration application pool account should be a member of the **dbcreator** and **securityadmin** fixed server roles.
- All application pool accounts, the default content access accounts, and any accounts required for service applications should have SQL Server logins, although they should not be assigned to SQL Server fixed server or fixed database roles.
- Members of the Farm Administrators SharePoint group should also have SQL Server logins and should be members of the same SQL Server roles as the Central Administration application pool account.

We recommend that you transfer your logins and permissions from the principal server to the mirror server by running a script. An example script is available in Knowledge Base article 918992 How to transfer the logins and the passwords between instances of SQL Server 2005 (*http://go.microsoft.com/fwlink/?LinkId=122053&clcid=0x409*). For more information about how to transfer SQL Server metadata between instances, see the SQL Server Books Online article Managing Metadata When Making a Database Available on Another Server Instance (*http://go.microsoft.com/fwlink/?LinkId=122055&clcid=0x409*).

Supported topologies

We recommend that you maintain a one-to-one mapping of principal server and database instance to mirror server and database instance to ensure compatibility with SharePoint Server 2010.

The supported topologies include mirroring all content databases, the configuration database, the Central Administration content database, and the service application databases except for the Web Analytics Staging database and the User Profile Synchronization database.

Note:

We do not recommend that you mirror the Usage and Health Data Collection Logging database. A SharePoint environment can continue to run if this database fails, and this data can be quickly regenerated.

Avoid topologies that do not have matching principal server and database instances and mirror server and database instances. Also, keep the configuration database and the administration content database on the same server.

Configure high-availability database mirroring

We recommend that a SQL Server database administrator configure high-availability mirroring for a production environment. For a test environment, we have provided

Transact-SQL scripts that you can use to configure your environment. For more information, see Sample script for configuring SQL Server mirroring (SharePoint Foundation) (*http://technet.microsoft.com/library/1dec713d-60a7-47fe-bd5d-04f24f366f8a(Office.14).aspx*).

Configure SharePoint 2010 Products to be aware of mirrored databases

To make SharePoint Server 2010 aware that failover mirrored databases exist, perform the following procedure for all configuration and content databases.

Note:

We recommend that you use Windows PowerShell cmdlets to set failover database values. Although you can use the Central Administration Web site to set some failover database values, you cannot use it for all databases.

To configure SharePoint 2010 Products to be aware of mirrored databases by using Windows PowerShell

1. Verify that you meet the following minimum requirements: See **Add-SPShellAdmin**.
2. On the **Start** menu, click **All Programs**.
3. Click **Microsoft SharePoint 2010 Products**.
4. Click **SharePoint 2010 Management Shell**.
5. At the Windows PowerShell command prompt, type the following commands, and then press ENTER:
   $db = get-spdatabase | where {$_.Name -eq "*database name***"}**
   $db.AddFailoverServiceInstance("*mirrored database name***")**
   $db.Update()

For more information, see Get-SPDatabase (*http://technet.microsoft.com/library/c9802bf8-5216-4ade-b559-7ee25fcfa666(Office.14).aspx*).

User experience during a failover

While SQL Server is switching to using a mirrored database, users of a SharePoint site that runs against the database may experience brief connectivity issues and data loss.

Monitoring and troubleshooting mirroring

To monitor the status and performance of mirroring within a farm, database administrators can use the Database Mirroring Monitor. Monitoring enables you to determine whether and how well data is flowing in the database mirroring session. Database Mirroring Monitor is also useful for troubleshooting the cause of reduced data flow. For more information, see Database Mirroring Monitor Overview (*http://go.microsoft.com/fwlink/?LinkId=185068*). Another resource to use in troubleshooting is the SQL Server Books Online article Troubleshooting Database Mirroring Setup (*http://go.microsoft.com/fwlink/?LinkId=185069*).

Other Resources

Database Mirroring (*http://go.microsoft.com/fwlink/?LinkID=180597*)

Sample script for configuring SQL Server database mirroring (SharePoint Server 2010)

Published: May 12, 2010

This article contains a series of sample scripts that you can use to set up Microsoft SQL Server mirroring for a test Microsoft SharePoint Server 2010 environment. We recommend that a SQL Server database administrator configure mirroring for a production environment.

To set up database mirroring with SharePoint Server 2010, you must work individually with each database that you want to mirror.

In this article:

- Configure database mirroring with certificates and full recovery (*http://technet.microsoft.com/library/028b9fa0-acd3-45a8-972b-6531751da293(Office.14).aspx#section1*)
- Set up a witness server (*http://technet.microsoft.com/library/028b9fa0-acd3-45a8-972b-6531751da293(Office.14).aspx#Section2*)
- Transfer permissions to the mirror server (*http://technet.microsoft.com/library/028b9fa0-acd3-45a8-972b-6531751da293(Office.14).aspx#Section3*)

The steps in the following section apply to the following server farm topology:

- One or more front-end Web servers
- Three servers that are running SQL Server 2008: principal server, mirror server, and witness server
- One configuration database
- Multiple content databases
- One or more service application databases

Configure database mirroring with certificates and full recovery

Each step lists the server on which it should be performed. Use Transact-SQL to send these commands to SQL Server. Placeholder information is denoted by angle brackets (<>); replace this with information that is specific to your deployment.

To set up the principal server for outbound connections

1. On the principal server, create a certificate and open a port for mirroring.

--On the master database, create the database master key, if needed CREATE MASTER KEY ENCRYPTION BY PASSWORD = '<test1234->'; GO -- Make a certificate for this server instance. USE master; CREATE CERTIFICATE <MASTER_HostA_cert> WITH SUBJECT = '<Master_HostA certificate>'; GO -- Create a mirroring endpoint for server instance by using the certificate CREATE ENDPOINT Endpoint_Mirroring STATE = STARTED AS TCP (LISTENER_PORT=5024 , LISTENER_IP = ALL) FOR DATABASE_MIRRORING (AUTHENTICATION = CERTIFICATE <MASTER_HostA_cert> , ENCRYPTION = REQUIRED ALGORITHM RC4 , ROLE = ALL); GO

2. On the principal server, back up the certificate.

   --Back up the HOST_A certificate. BACKUP CERTIFICATE MASTER_HostA_cert TO FILE = '<c:\MASTER_HostA_cert.cer>'; GO

3. On the principal server, back up the database. This example uses the configuration database. Repeat for all databases.

   USE master; --Ensure that SharePoint_Config uses the full recovery model. ALTER DATABASE SharePoint_Config SET RECOVERY FULL; GO USE SharePoint_Config BACKUP DATABASE SharePoint_Config TO DISK = '<c:\SharePoint_Config.bak>' WITH FORMAT GO BACKUP Log SharePoint_Config TO DISK = '<c:\SharePoint_Config_log.bak>' WITH FORMAT GO

4. Copy the backup file to the mirror server. Repeat for all databases.
5. By using any secure copy method, copy the backup certificate file (C:\HOST_HostA_cert.cer, for example) to the mirror server.
6. On the principal server, create a login and user for the mirror server, associate the certificate with the user, and grant the login connect permissions for the partnership.

   --Create a login on HOST_A for HOST_B USE master; CREATE LOGIN <HOST_HostB_login> WITH PASSWORD = '<1234-test>'; GO --Create a user for that login. CREATE USER <HOST_HostB_user> FOR LOGIN <HOST_HostB_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <HOST_HostB_cert> AUTHORIZATION <HOST_HostB_user> FROM FILE = '<c:\HOST_HostB_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<HOST_HostB_login>]; GO

To set up the mirror server for outbound connections

1. On the mirror server, create a certificate and open a port for mirroring.

--On the master database, create the database master key, if needed. USE master; CREATE MASTER KEY ENCRYPTION BY PASSWORD = '<1234-test>'; GO -- Make a certificate on the HOST_B server instance. CREATE CERTIFICATE <HOST_HostB> WITH SUBJECT = '<HOST_HostB certificate for database mirroring>'; GO --Create a mirroring endpoint for the server instance on HOST_B. CREATE ENDPOINT Endpoint_Mirroring STATE = STARTED AS TCP (LISTENER_PORT=5024 , LISTENER_IP = ALL) FOR DATABASE_MIRRORING (AUTHENTICATION = CERTIFICATE <HOST_HostB> , ENCRYPTION = REQUIRED ALGORITHM RC4 , ROLE = ALL); GO

2. On the mirror server, back up the certificate.

   --Back up the HOST_B certificate. BACKUP CERTIFICATE <HOST_HostB> TO FILE = '<C:\HOST_HostB_cert.cer>'; GO

3. By using any secure copy method, copy the backup certificate file (C:\HOST_HostB_cert.cer, for example) to the principal server.
4. On the mirror server, restore the database from the backup files. This example uses the configuration database. Repeat for all databases.

   RESTORE DATABASE SharePoint_Config FROM DISK = '<c:\SharePoint_Config.bak>' WITH NORECOVERY GO RESTORE log SharePoint_Config FROM DISK = '<c:\SharePoint_Config_log.bak>' WITH NORECOVERY GO

To set up the mirror server for inbound connections

1. On the mirror server, create a login and user for the principal server, associate the certificate with the user, and grant the login connect permissions for the partnership.

   --Create a login on HOST_B for HOST_A USE master; CREATE LOGIN <MASTER_HostA_login> WITH PASSWORD = '<test1234->'; GO --Create a user for that login. CREATE USER <MASTER_HostA_user> FOR LOGIN <MASTER_HostA_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <MASTER_HostA_cert> AUTHORIZATION <MASTER_HostA_user> FROM FILE = '<c:\MASTER_HostA_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<MASTER_HostA_login>]; GO

To set up the principal server for inbound connections

1. On the principal server, create a login and user for the mirror server, associate the certificate with the user, and grant the login connect permissions for the partnership.

--Create a login on HOST_A for HOST_B USE master; CREATE LOGIN <HOST_HostB_login> WITH PASSWORD = '<1234-test>'; GO --Create a user for that login. CREATE USER <HOST_HostB_user> FOR LOGIN <HOST_HostB_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <HOST_HostB_cert> AUTHORIZATION <HOST_HostB_user> FROM FILE = '<c:\HOST_HostB_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<HOST_HostB_login>]; GO

To set up the mirroring partners

1. On the principal server, set up the mirroring partnership. This example uses the configuration database. Repeat for all databases.

   --At HOST_A, set the server instance on HOST_B as a partner (mirror server). ALTER DATABASE SharePoint_Config SET PARTNER = '<TCP://databasemirror.adatum.com:5024>'; GO
2. On the mirror server, set up the mirroring partnership. This example uses the configuration database. Repeat for all databases.

   --At HOST_B, set the server instance on HOST_A as a partner (principal server): ALTER DATABASE SharePoint_Config SET PARTNER = '<TCP://databasemaster.adatum.com:5024>'; GO

Set up a witness server

Each step lists the server on which it should be performed. Use Transact-SQL to send these commands to SQL Server. Placeholder information is denoted by angle brackets (<>); replace this with information that is specific to your deployment.

1. On the witness server, set up the certificate and open the port.

   --On the master database, create the database master key, if needed CREATE MASTER KEY ENCRYPTION BY PASSWORD = '<1234test->'; GO -- Make a certificate for this server instance. USE master; CREATE CERTIFICATE <WITNESS_HostC_cert> WITH SUBJECT = '<Witness_HostC certificate>'; GO -- Create a mirroring endpoint for server instance by using the certificate CREATE ENDPOINT Endpoint_Mirroring STATE = STARTED AS TCP (LISTENER_PORT=5024 , LISTENER_IP = ALL) FOR DATABASE_MIRRORING (AUTHENTICATION = CERTIFICATE <WITNESS_HostC_cert , ENCRYPTION = REQUIRED ALGORITHM RC4 , ROLE = ALL); GO
2. On the witness server, back up the certificate.

   --Back up the HOST_C certificate BACKUP CERTIFICATE <WITNESS_HostC_cert> TO FILE = '<c:\ WITNESS_HostC_cert.cer>'; GO
3. By using any secure copy method, copy the backup certificate file (C:\WITNESS_HOSTC_cert.cer, for example) to the principal server and the mirror server.

4. On the witness server, create logins and users for the principal and mirror servers, associate the certificates with the users, and grant the logins connect permissions for the partnership.

   --Create a login on witness HOST_C for principal HOST_A USE master; CREATE LOGIN <MASTER_HostA_login> WITH PASSWORD = '<test1234->'; GO --Create a user for that login. CREATE USER <MASTER_HostA_user> FOR LOGIN <MASTER_HostA_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <MASTER_HostA_cert> AUTHORIZATION <MASTER_HostA_user> FROM FILE = '<c:\MASTER_HostA_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<MASTER_HostA_login>]; GO --Create a login for the mirror Host_B CREATE LOGIN <HOST_HostB_login> WITH PASSWORD = '<1234-test>'; GO --Create a user for that login. CREATE USER <HOST_HostB_user> FOR LOGIN <HOST_HostB_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <HOST_HostB_cert> AUTHORIZATION <HOST_HostB_user> FROM FILE = '<c:\HOST_HostB_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<HOST_HostB_login>]; GO
5. On the principal server, create a login and user for the witness server, associate the certificate with the user, and grant the login connect permissions for the partnership. Repeat for the mirror server.

   --Create a login on master HostA for witness HostC USE master; CREATE LOGIN <WITNESS_HostC_login> WITH PASSWORD = '<1234test->'; GO --Create a user for that login. CREATE USER <WITNESS_HostC_user> FOR LOGIN <WITNESS_HostC_login>; GO --Associate the certificate with the user CREATE CERTIFICATE <WITNESS_HostC_cert> AUTHORIZATION <WITNESS_HostC_user> FROM FILE = '<c:\WITNESS_HostC_cert.cer>' --do not use a network path, SQL Server will give an error about the key not being valid GO --Grant CONNECT permission on the login for the remote mirroring endpoint. GRANT CONNECT ON ENDPOINT::Endpoint_Mirroring TO [<WITNESS_HostC_login>]; GO
6. On the principal server, attach the witness server. This example uses the configuration database. Repeat for all databases.

   --Set up the witness server ALTER DATABASE SharePoint_Config SET WITNESS = '<TCP://databasewitness.adatum.com:5024>' GO

Transfer permissions to the mirror server

When you set up a mirrored database, the SQL Server logins and permissions for the database that will be used with a SharePoint farm are not automatically configured in the **master** and **msdb** databases on the mirror server. Instead, you must configure the permissions for the required logins.

We recommend that you transfer your logins and permissions from the principal server to the mirror server by running a script. The script that we recommend that you use is available in Knowledge Base article 918992: How to transfer the logins and the passwords between instances of SQL Server 2005 (*http://go.microsoft.com/fwlink/?LinkId=122053&clcid=0x409*).

Removing mirroring from a server

To remove mirroring from a server, see How to: Remove Database Mirroring (Transact-SQL) (*http://go.microsoft.com/fwlink/?LinkId=185070*).