



SharePoint Best Practices

SharePoint Products and Technologies Disaster Recovery

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Backup Procedures

This document outlines the procedures for backing up and restoring SharePoint Portal Server 2003, Windows SharePoint Services, the SharePoint database, and related topics. The procedures also encompass third-party utilities, add-ons, and supporting files upon which SharePoint Portal Server or Windows SharePoint Services depend. Applications which run within the SharePoint environment but which are not a part of SharePoint, or directly related to the operation of SharePoint, are not included within the scope of this document.

Portal Backup

Portal backups should be performed at least weekly using the SPS Backup and Restore utility. Backups may be performed manually or automated using the command-line interface and the Windows scheduler.

Manual Portal Backup

To perform a manual backup using the GUI version of SPS Backup on the SharePoint server, perform the following steps:

1. Click **Start**, point to **All Programs**, point to **SharePoint Portal Server**, and then click **SharePoint Portal Server Data Backup and Restore**.
2. The **Microsoft Office SharePoint Portal Server 2003 Backup and Restore** dialog box opens.
3. Click the **Backup** tab.
4. In the **Backup** location and name box, do the following:
5. Type or browse to the location where you want to store the backup files.
6. After the folder name, type the file name that will be the prefix for each backup file.
7. In the tree view, expand **Available** components by clicking the plus sign.
8. Click the components that you want to back up.
9. In the **Backup** comment box, type a comment.
10. Optionally, select the **Overwrite** existing files check box.
11. Click **Backup**.
12. On the successful completion message box, click **OK**.

A sample command structure for backing up the entire portal (including team and personal sites) to a date- and time-stamped file using the command-line utility would be as follows:

```
"C:\program files\sharepoint portal server\bin\spsbackup.exe" /all  
/file {path}\%date:~4,2%_%date:~7,2%_%date:~10,4%  
%time:~0,2%_%time:~3,2%
```

This command will produce the following file set for each portal instance:

[MM]_[DD]_[YYYY]-[HH]_[MM].XML

[MM]_[DD]_[YYYY]-[HH]_[MM]-[DATABASE]-[PORTAL]_SITE.SPB

[MM]_[DD]_[YYYY]-[HH]_[MM]-[DATABASE]-[PORTAL]_PROF.SPB

[MM]_[DD]_[YYYY]-[HH]_[MM]-[DATABASE]-[PORTAL]_SERV.SPB

NOTE: The SPS Backup utility will only accept a {Path} setting that is formatted as a UNC share, such as [\\Server\Share](#). Before running the utility from the command line, set up a shared directory to store the backup files.

Automated Portal Backup

Portal backups can be automated by creating a task in Windows Scheduler using the command syntax above.

WARNING: Portal backups may consume a large amount of disk space. For this reason, it may be necessary to archive old backup sets to removable media and delete the original set to conserve disk space. A recommended set rotation would be every thirty days if sufficient disk space exists; otherwise, a weekly rotation schedule should be used.

To add a portal backup task to Windows Scheduler, do the following on any Front-End Web Server:

1. Under **Accessories > System Tools**, click on **Scheduled Tasks**.
2. Double-click **Add Scheduled Task** to open the Scheduled Task wizard.
3. Follow the wizard steps, adding `C:\program files\sharepoint portal server\bin\spsbackup.exe` when prompted for the filename.
4. Set the appropriate time and day(s) for the backup to run.
5. Supply the SharePoint Administrator credentials for the backup (be sure that the SharePoint admin account is a local administrator on the machine running the backup).
6. In the final dialog, check the **Open the advanced properties for this task when I click Finish** box.
7. Click **Finish**.
8. Replace the value in the **Run** field with the complete SPS backup command, including parameters, as follows (replace the {Path} variable with the UNC share backup location):

```
"C:\program files\sharepoint portal server\bin\spsbackup.exe" /all  
/file {Path}\%date:~4,2%_%date:~7,2%_%date:~10,4%  
-  
%time:~0,2%_%time:~3,2%
```

9. In the **Run As** field, set the password for the SharePoint Administrator account.
10. Save and close.

WSS Site Backup

Unlike SharePoint Portal Areas, Windows SharePoint Services Sites can be backed up and restored individually or in specified collections. All backup and restore operations in WSS are performed using the STSADM command-line tool.

Sites, Personal Sites and Site Collections

A site, personal site, or site collection backup includes the content database, all pages in the site, files in document libraries or lists, security and permission settings, and feature settings. The backup process creates a single file that contains all of this data. The site can then be restored to either the same location, or to a new location. The backup file for a site includes any subsites of the site collection; therefore, backing up a top-level site, such as `http://server/sites/site1`, will also capture `sites/site1/site2`, `sites/site1/site2/site3`, etc.

- NOTE:** You must be a member of the server computer's Administrators group to back up or restore a site.

The command syntax for backing up a site or site collection is as follows:

```
stsadm.exe -o backup -url http://{Portal}/site -filename file_name.dat
```

The command syntax for backing up a personal site is as follows:

```
stsadm.exe -o backup -url http://{Portal}/personal/{NT Login ID} -  
filename file_name.dat
```

To obtain a complete list of sites on the server, enter the following from the command-line:

```
stsadm.exe -o enumsites -url <URL>
```

Subsites

Subsites are typically captured as part of the parent site collection; however, should a subsite need to be backed up individually, the site name may be substituted for the site collection in the command syntax:

```
stsadm.exe -o backup -url http://server_name/site/subsite -filename  
file_name.dat
```

To obtain a complete list of subsites for a given site collection, enter the following from the command-line:

```
stsadm.exe -o enumsubwebs -url <URL>
```

Automated Site Backup

Site backups can be automated by creating a task in Windows Scheduler using the command syntax above.

⚠ WARNING: Site backups may consume a large amount of disk space. For this reason, it may be necessary to archive old backup sets to removable media and delete the original set to conserve disk space. A recommended set rotation would be every thirty days if sufficient disk space exists; otherwise, a weekly rotation schedule should be used.

Backing up multiple sites requires a script to be created which retrieves the list of sites then loops through that list, executing the backup command for each site or site collection. A script for backing up all sites in the portal to a given destination is as follows (in this case D:\Backup_[DateTime]; replace the value of the backupFolder variable with a valid path):

```
Option Explicit

Const STSADM_PATH = "C:\Program Files\Common Files\Microsoft Shared\web  
server extensions\60\BIN\stsadm"

Dim objFso, objFolder, objFiles, objFile, objShell, objExec, strResult,  
objXml, objSc, objUrl, strUrl, strFileName, strCmd

Dim datetime  
dim oExec  
dim backupFolder  
dim http  
dim portalURL

http = "https"  
portalURL = "fwl-ws23"

datetime = replace(replace(replace(cstr(now),":","_")," ","_"),"/","_")  
backupFolder = "d:\Backup_" & datetime

Set objFso = CreateObject("Scripting.FileSystemObject")

' Create a folder with current date  
objFso.CreateFolder (backupFolder)

'WScript.Echo STSADM_PATH & " -o enumsites -url " & http & "://" &  
portalURL & "/"
```

```

Set objShell = CreateObject("WScript.Shell")

Set objExec = objShell.Exec(STSADM_PATH & " -o enumsites -url " & http
& "://" & portalURL & "/")

strResult = objExec.StdOut.ReadAll

dim xmlFile

set xmlFile = objFso.CreateTextFile(backupFolder & "\" & datetime &
.xml", True)
xmlFile.WriteLine(strResult)
xmlFile.Close

' Load XML in DOM document so it can be processed.
Set objXml = CreateObject("MSXML2.DOMDocument")
objXml.LoadXML(strResult)

' Loop through each site collection and call stsadm.exe to make a
backup.
For Each objSc in objXml.DocumentElement.ChildNodes
    strUrl = objSc.Attributes.GetNamedItem("Url").Text
    strFileName = backupFolder & "\" & Replace(Replace(strUrl, http &
"://", ""), "/", "_") & "_" &
replace(replace(replace(cstr(now), ":", "_"), " ", "_"), "/", "_") & ".bak"
    strCmd = STSADM_PATH & " -o backup -url "" + strUrl + "" -
filename "" + strFileName + ""
    ' WScript.Echo "Backing up site collection " & strUrl & " to file "
& strFileName & " using the following command " & strCmd
    Set oExec = objShell.Exec(strCmd)

Do While oExec.Status = 0
    WScript.Sleep 100
Loop

Next

```

This script will create a .bak file for each site with the date and time the backup was run appended to the site name. Once the script has been created, it may be added to Windows Scheduler in the same manner as the portal backup; however, no additional settings are required as all parameters are specified within the script itself.

Database Backup

The core SharePoint databases are backed up as part of the Portal Backup process. As an additional disaster recovery procedure, regular SQL Server backups may also be performed which include these databases. For each portal, include the *portalname_PROF*, *portalname_SERV*, and *portalname_SITE* databases. Backing up the configuration database (*_Config_db*) is optional.

- ❗ **NOTE:** The configuration database is not included in the portal backup set because, according to Microsoft documentation, it would be impossible to guarantee a successful restore of it. The configuration database that is to be restored would need to match the existing topology exactly. Furthermore, existing team sites stored across all the content databases would have to match exactly the sites in the configuration database being restored. The correct restore procedure indicates that the farm must be rebuilt – which will rebuild the configuration database and ensures a new configuration database is created that is guaranteed to work.

File Backup

The Carter-Burgess portal utilizes a highly-customized set of site definitions, templates, administration, configuration and presentation files. In addition, there are a number of critical web parts, user controls, server controls, and third-party utilities stored in various locations. All of these files play crucial roles in portal operation. Key files and directory locations that must be backed up include:

<u>Location</u>	<u>Scope</u>
C:\Program Files\Common Files\Microsoft Shared\Web Server Extensions\60	Entire Directory
D:\inetpub\Wwwroot\{Virtual Server}	Entire Directory

- ❗ **NOTE:** The Front-End Web Servers should be monitored for any new file locations that must be added to the backup set to insure successful portal recovery.

- ❗ **NOTE:** Indexes are stored on each the Front-End Web Server but should not be included as part of the backup set. Indexes should be regenerated by running a new indexing job once the portal has been restored.

Data Recovery

Unfortunately, there are no item-level data recovery options in SharePoint; data must be restored for an entire site, site collection, or portal. Unlike WSS sites, which can be backed up and restored individually, portal areas and content may not be recovered on an area-by-area basis. In order to recover lost portal data or repair an installation the entire portal must be recreated from scratch then the archive data restored into it. Recovery procedures for both portal and site data are outlined below.

Portal Data

Portal data cannot be restored at a granular level; the entire portal must be restored to an existing or new installation. If the portal is restored to a new installation, **supporting files must be restored BEFORE the portal can be restored** (see **Section 2.5**).

To restore a portal in a server-farm environment using the **SharePoint Portal Server Backup and Restore** utility, perform the following steps from the primary Front-End Web Server:

1. On the front-end Web server where SharePoint Portal Server is installed, start the **SharePoint Portal Server Data Backup and Restore** utility.
2. Click the **Restore** tab, and then click **Browse** to browse to the latest backup manifest file.
3. On the left side of the window, under **Available Components**, click **All Server farm components** under **Select the component to restore and the items to restore**.
4. On the right side of the window, all other portal sites have the restore status of **Cannot be selected**; the portal site that you need to restore has a restore status of **Parameters needed**.
5. Select the portal site labeled **Parameters needed**, and then click **Edit**.
6. By default, the original values of the portal site to be restored are displayed, including the portal site name, portal site URL, database file names, and information. Ensure that all these parameters are correct, and then click **OK**.
 - ❗ **NOTE:** If a portal site must be restored and the databases for the portal site still exist in SQL Server, you must enter new database names for the portal site's database because the SharePoint Portal Server Data Backup and Restore utility cannot restore over an existing database.
7. The portal site's status is set to **Ready**. Select the **Ready** check box, and then click **Restore**.
8. After the portal site has been restored, click **Extend** to extend the restored portal site to the second front-end Web server.

- ❗ **NOTE:** You must unextend the virtual server for the portal site before restoring the portal site on the first front-end Web server with the SharePoint Portal Server Data Backup and Restore

utility. Once you have done this, you only have to extend the virtual server on the other front-end Web servers.

- ❗ **NOTE:** Some information for the portal site is not restored and must be configured after restore has completed. This includes proxy settings, custom Web Parts, customized templates, e-mail settings, and various registry settings described in the documentation.
- ⚠ **WARNING:** When you perform a complete portal restoration all Windows SharePoint Services site data is restored as well.

Site Data

To restore individual site collections, use the Stsadm.exe tool with the Restore option. There are three options for restoring sites with the Stsadm.exe backup:

1. Restore a site collection over an existing site.

⚠ **WARNING:** When you overwrite an existing site, all existing site data—including subsites and content—are completely overwritten.

2. Restore a site collection to a new site on the same server.

This is the recommended option for recovering data without overwriting the entire site collection. When you restore a site collection to a new site on the same server, you can copy the data from the restored site collection or subsite back to its original site.

3. Restore a site to a separate server.

The separate server must have a separate installation of WSS. This option is more complex and requires additional hardware to purchase and manage. Also, the following settings and configurations of the backup server must match those of the restore server:

- The type of installation configuration.
- The schema or XML files on the file system defining fields or global customizations.
- Managed paths.
- Active Directory domain.
- Any user-added front-end templates, Web Parts, and changes to layouts.
- Any changes made by the user to the IIS metabase.

The following command restores a site or site collection to the original site or to a new site, overwriting any existing site at that location:

```
stsadm -o restore -url http://{Portal}/sites/{Site} -filename  
{Site}.bak -overwrite
```

NOTE: Before running this command, ensure that a content database exists for the restored site collection.

The following command restores a personal site to the original site or to a new site, overwriting any existing site at that location:

```
stsadm -o restore -url http://{Portal}/personal/{NT Login ID} -filename  
{Site}.bak -overwrite
```

Database

Restoring the portal using the SPS Backup utility is the only supported method for database recovery. Direct database restoration via SQL Server should only be performed as a last resort. Because of the multitude of tables in each database and the constant real-time data modifications being made by SharePoint, a point-in-time database restore may cause the portal to stop functioning. If a database restoration must be performed, first shut down or disable all SharePoint FEWS and Job/Index servers, drop the existing databases, then perform the restore. Monitor the event viewer logs on each FEWS after restarting to identify any database connection or data retrieval errors.

Web parts

If the portal is restored to the same machine(s) on which it was originally installed then the Global Assembly Cache (GAC) will already contain the proper web part assemblies; however, if the portal is restored to a different server then all required assemblies must be reinstalled in the GAC.

To obtain a list of installed web parts execute the following command:

```
stsadm -o enumwppacks
```

Each web part should have a corresponding .CAB file or installable in the C:\Sharepoint directory; most files are located in the \Deployment subdirectory but third-party web parts may be located in their own subdirectory. Each .CAB file should be redeployed using the following command:

```
STSADM.exe -o addwppack -filename "c:\sharepoint\{Web Part  
Filename}.cab" -url "http://{Portal URL}" -globalinstall -force "
```

NOTE: Omit the `-url "http://{Portal URL}"` option to deploy the web part to all virtual servers .

Web parts which were installed manually or not deployed to the GAC must be installed in the appropriate `/bin` directory and enabled in the portal `web.config` file to work correctly. Examine the existing `web.config` files to determine which, if any, of the web parts listed in the `<SafeControls>` section must be installed manually. If a web part registration exists without a corresponding entry from the `enumwppacks` command then the settings should be copied to the new (restored) `web.config` file and the `.dll` placed in the `/bin` directory under the portal root.

Documents

Each portal area and WSS site contains a protected library titled "Recycle Bin". Custom event handlers are attached to each document library which capture each document delete event. When a document is deleted, the library structure, including subfolders, is copied into the Recycle Bin library. The deleted documents are stored within this structure and may be restored by a site or area administrator.

To restore a 'recycled' document, do the following:

1. Navigate to the Recycle Bin library for the area or site.
2. Locate and open the document library the document was deleted from in the root folder structure of the Recycle Bin library.
3. When the appropriate document has been located, save it to your computer.
4. Upload the saved document to its original location.

Supporting Files

Should portal restoration be necessary, the blank portal created for restoration purposes will contain only the default files included on the original installation media. Any additional or modified files must be restored **BEFORE** attempting to restore the portal itself. Refer to **Section 1.4 File Backup** above for a list of files to restore.