



SHAREPOINT **SATURDAY**



Dayton

SharePoint Saturday
Dayton, Ohio
June 30, 2012

Hypermiling with SharePoint Data Protection

Sean P. McDonough (@spmcdonough)

General Information

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Hypermiling?

Wikipedia article page for "Hypermiling".

Page title: **Hypermiling**

From Wikipedia, the free encyclopedia

Hypermiling is the act of driving using techniques that **maximize fuel economy**. Those who practice these techniques are referred to as "hypermilers."^[1]

Hypermiling can be practiced in any vehicle regardless of its **fuel economy**. It gained popularity as a result of the **rise in gasoline prices during the 2000s**.^[2] Some hypermiling techniques are illegal in some jurisdictions because they are dangerous.^[3]

In 2008, the word *hypermiling* was selected as the best new word of the year by **New Oxford American Dictionary**.^[4]

Navigation: Article, Talk, Read, Edit, View history, Search

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Top right: Log in, Create account

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Log in Create account

Article Talk Read Edit View history


Search

Hypermiling

From Wikipedia, the free encyclopedia

 To comply with Wikipedia's [lead section guidelines](#), the **introduction of this article may need to be rewritten**. Please discuss this issue on the [talk page](#) and read the [layout guide](#) to make sure the section will be inclusive of all essential details. *(July 2011)*

Hypermiling is the act of driving using techniques that **maximize fuel economy**. Those who practice these techniques are referred to as "hypermilers."^[1]

 Look up *hypermiling* in Wiktionary, the free dictionary.

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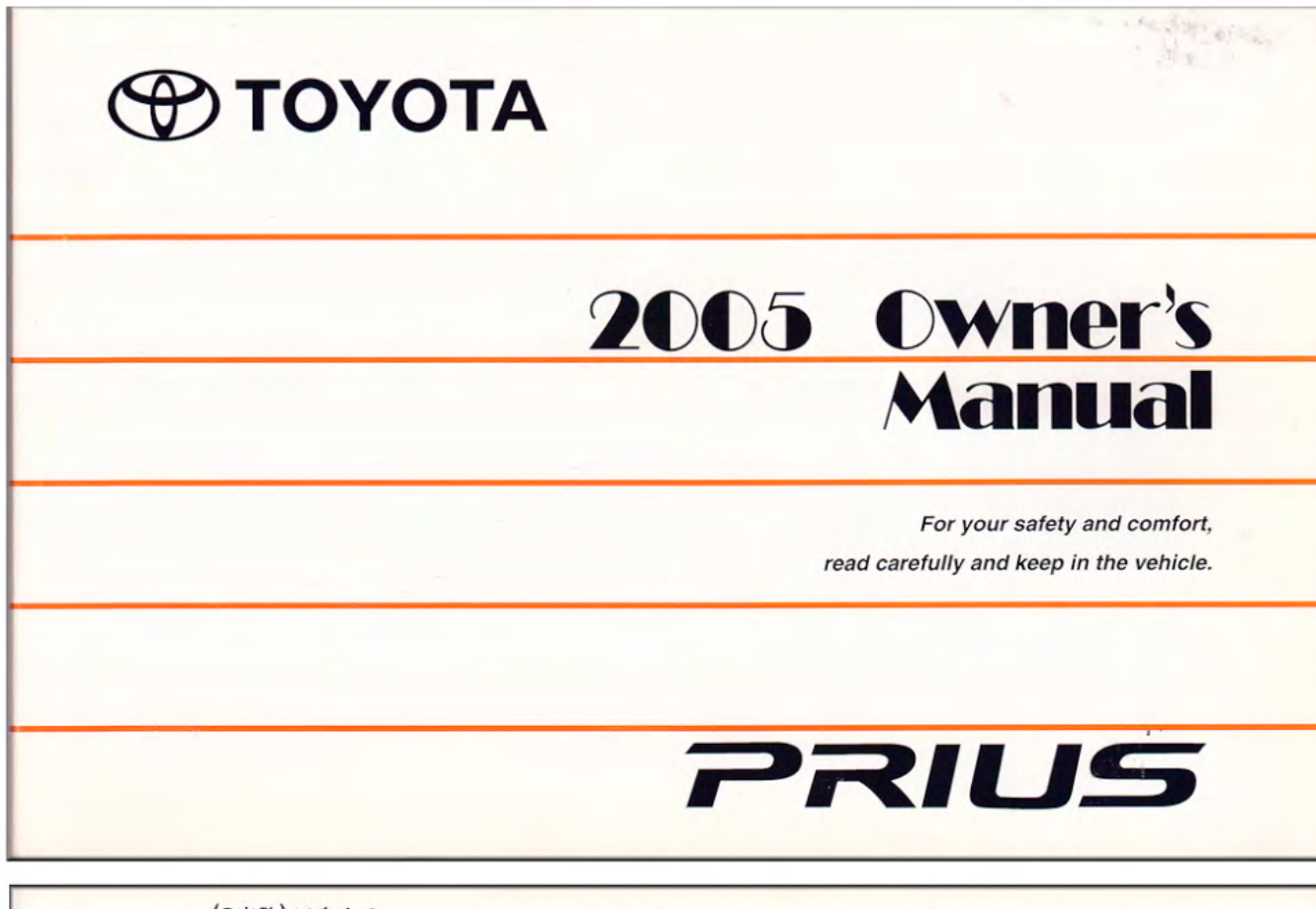
Contents [hide]

How do we extend this concept to SharePoint?



Hypermiling?

The owner's manual
for my Prius



The Agenda for this Session

二U-7

Core Concepts

- Backup and Restore
- Export and Import
- High Availability

Task-Oriented Discussion + Demos

- Farm Backup/Restore
- Using SQL Server's Tools
- Content Export/Import
- Site Collection Backup/Restore

Add-Ons for "Greater Mileage"

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Core Concepts

- Backup and Restore
- Export and Import
- High Availability

• High Availability

Protection through redundancy

- SQL Clustering
- SQL Database Mirroring
- SQL Transaction Log Shipping
- SQL Always-On (SQL 2012)

Not on-tap for today's discussion



Where we will focus:



- Backup and Restore
- Export and Import



What's the difference?

Let's start with a backup

Source Data:



Source Data:



Backup

Backup Set:



The call comes ...



Backup Set:



Restore

Result:



▼
Result:



1-to-1 equivalence
with source data

Now let's look at an export

Source Data:



Source Data:



Export

Export Package:



The call comes ...



Export Package:



Import

Result:

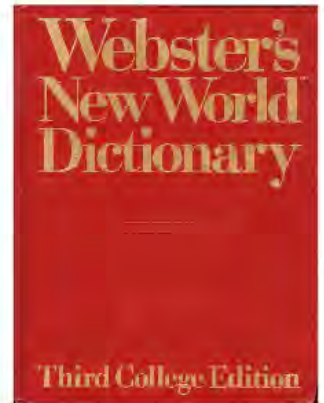


Result:



Not an identical copy of original. Still \$2.00, but a transformation has occurred.

How I define things




Backup/Restore

- Captures source data in full-fidelity, 1:1 fashion
- What you put in is exactly what you get back out

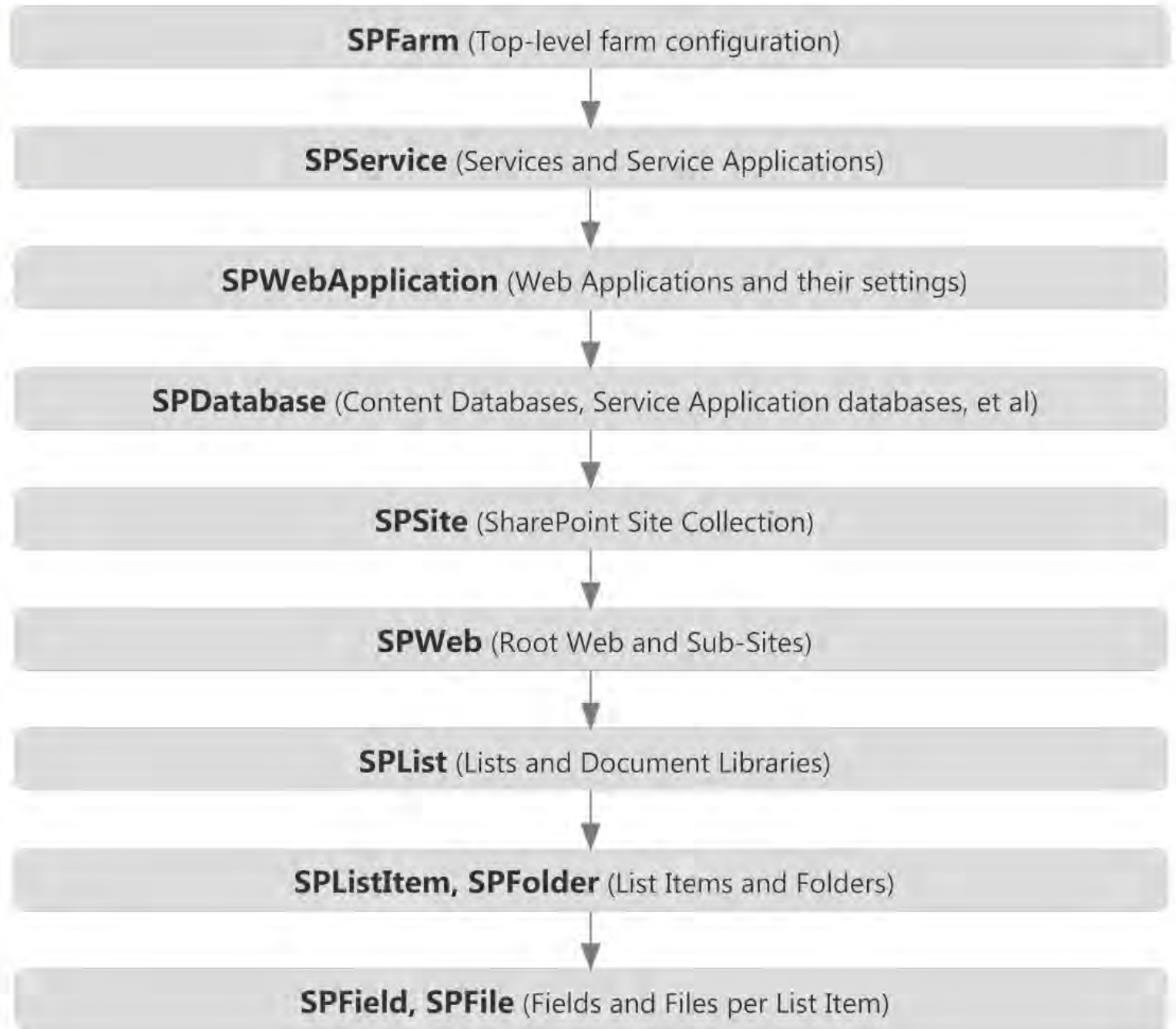
Export/Import

- Captures source data at less than full-fidelity
- Some transformation of data may occur
- You get out a "relevant" subset of what goes in
- More portable and manipulable than backups

Two hands are positioned to form a square frame around the text. The top hand is on the right, with its index finger pointing left and its thumb pointing down. The bottom hand is on the left, with its index finger pointing right and its thumb pointing up. The text is centered within the square formed by the tips of the fingers.

So, to take a
step back ...

SharePoint
Object
Model
Hierarchy



Parent




Children






Farm
Backup &
Restore




Granular
Backup


Site Actions  Browse Page SPDEMO\Administrator

Microsoft SharePoint 2010 Central Administration > Backup and Restore  

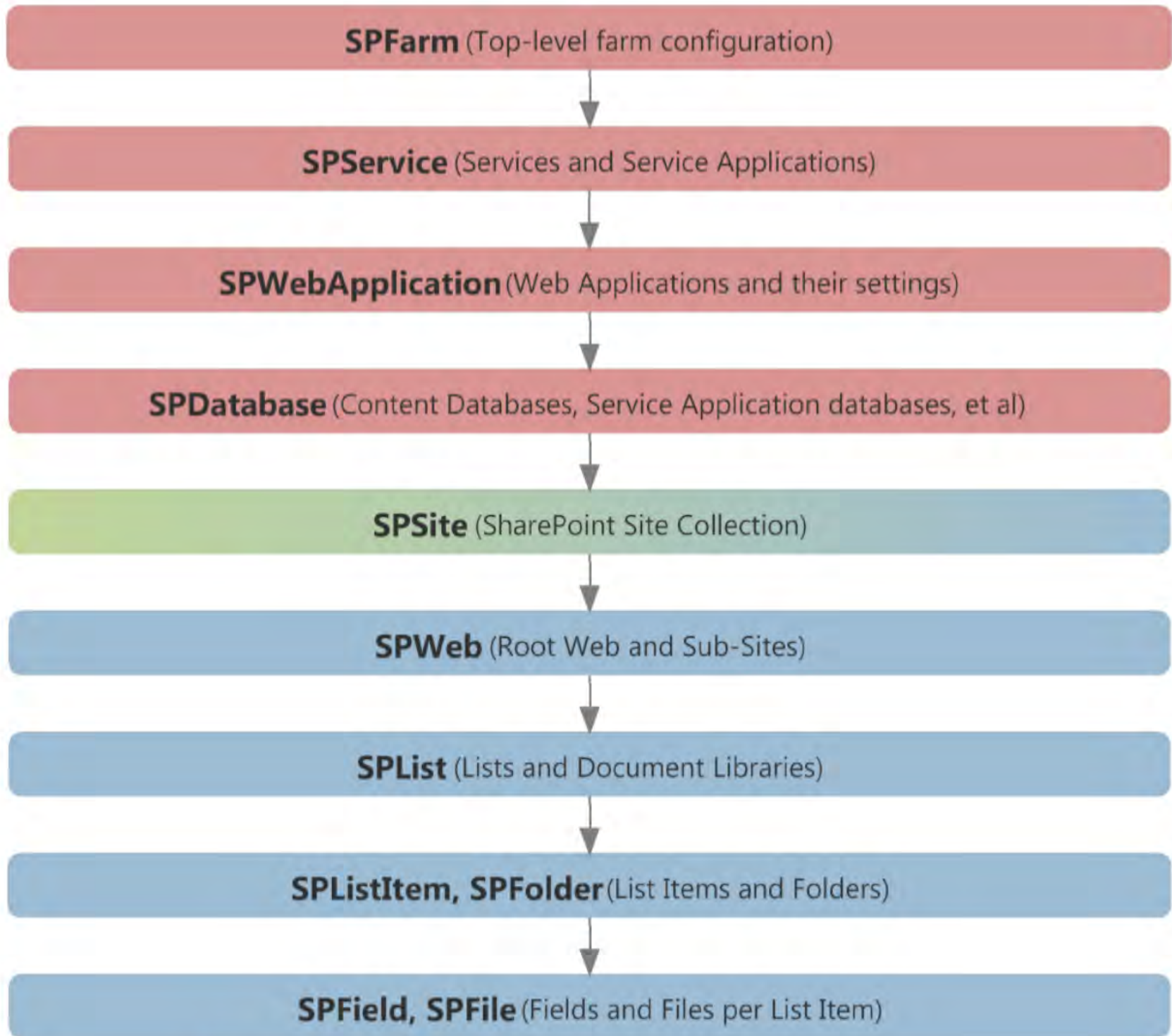


- Central Administration
- Application Management
- System Settings
- Monitoring
- Backup and Restore**
- Security
- Upgrade and Migration
- General Application Settings
- Configuration Wizards

 **Farm Backup and Restore**
[Perform a backup](#) | [Restore from a backup](#) | [Configure backup settings](#) | [View backup and restore history](#) | [Check backup and restore job status](#)

 **Granular Backup**
[Perform a site collection backup](#) | [Export a site or list](#) | [Recover data from an unattached content database](#) | [Check granular backup job status](#)

Backup and Restore in Central Administration



"Catastrophic" farm protection

- Backup-SPFarm
- Backup-SPConfigurationDatabase
- Restore-SPFarm
- STSADM -o backup with -filename specified



SPFarm (Top-level farm configuration)



SPService (Services and Service Applications)



SPWebApplication (Web Applications and their settings)



SPDatabase (Content Databases, Service Application databases, et al)



SQL Server Database
backups can also be
used to great effect
here



"Catastrophic"

- Backup-SPFarm
- Backup-SPConfigurat
- Restore-SPFarm
- STSADM -o backup w

SPFarm (Top-level)

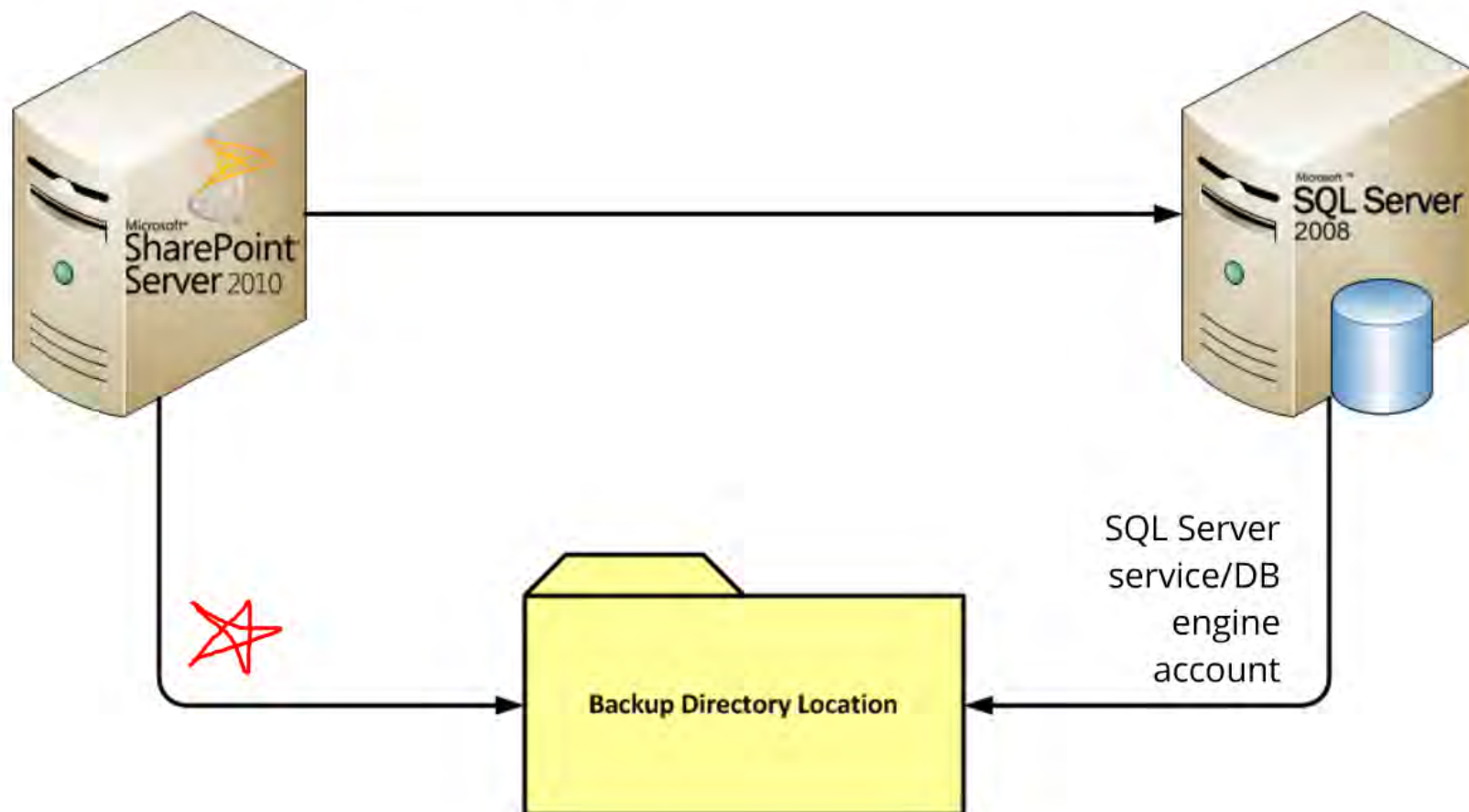
SPService (Services a

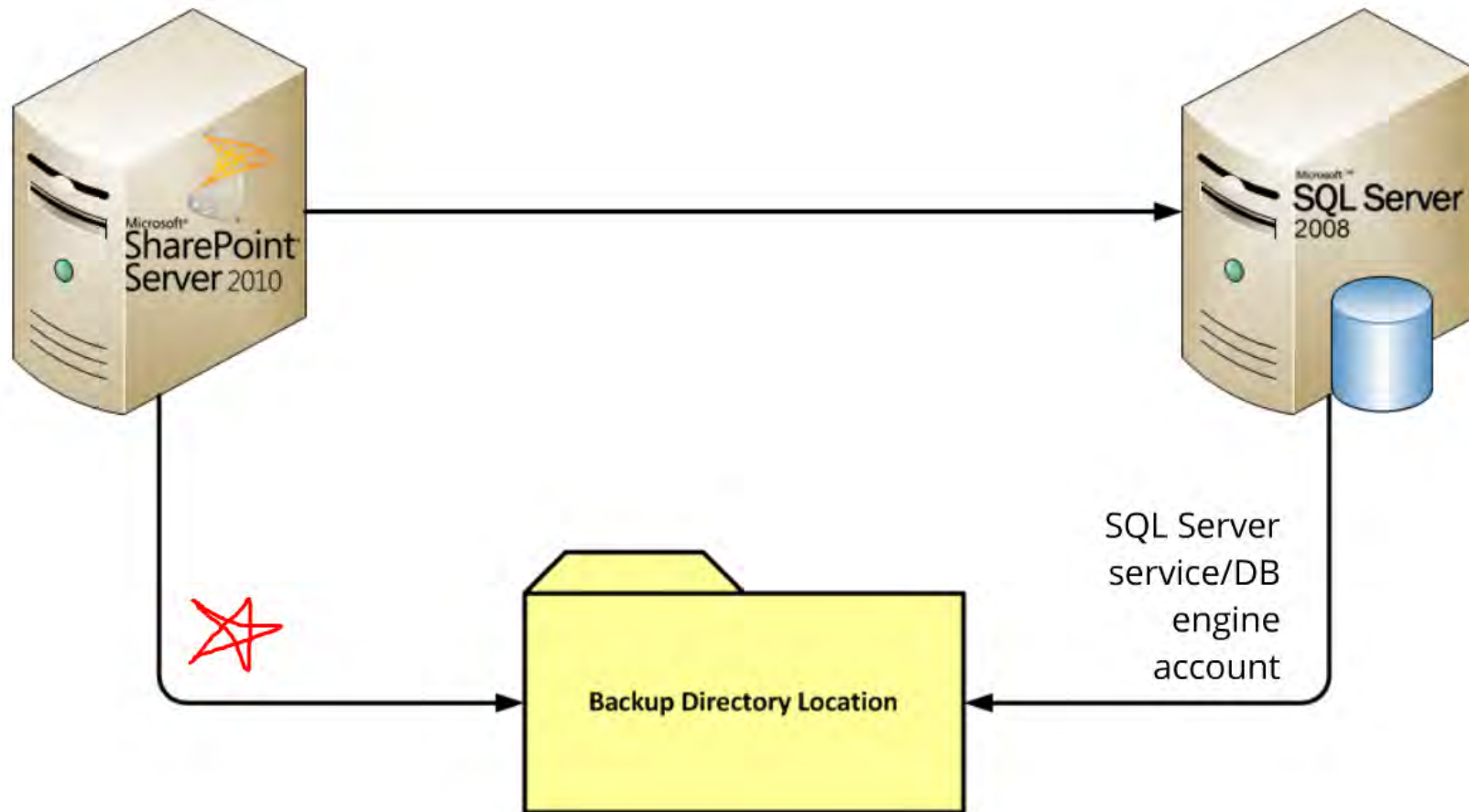
SPWebApplication (Web

SPDatabase (Content Databases,

Tips

- Understand the permissions you need before you begin





Central Admin

★ SharePoint
Timer Service
account context

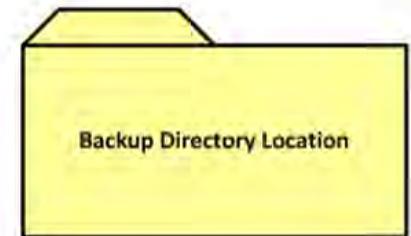
Command Line/PowerShell

★ Your account context! Make sure
you've got rights. (e.g., through
Add-SPShellAdmin)

Read/write access required for accounts

Tips

- Your backup directory location needs to be a UNC path unless you're on a single server (SQL Server + SharePoint)



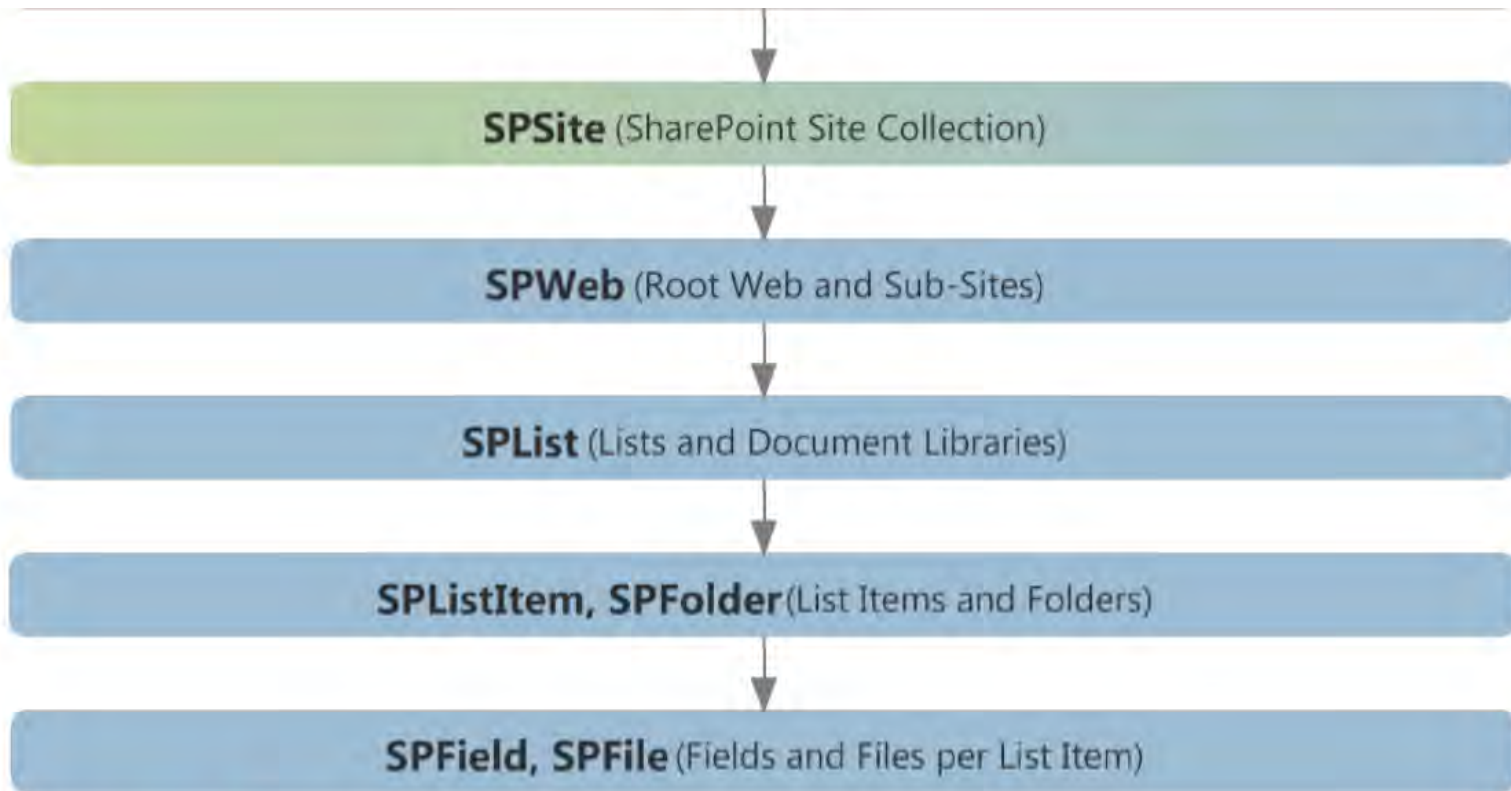
- Plan your storage! Backups will grow to consume all available disk space unless you somehow groom them ...
- When in doubt, start with a full-farm, full-mode backup

Demo

“The Treasure Trove
of Lost Goodness”



- Restore a Web Application (+ DBs)
- Watch the moving parts



 **Content export (via the Content Deployment API aka PRIME API)**

- Export-SPWeb
- Import-SPWeb
- STSADM -o export
- STSADM -o import

Tips

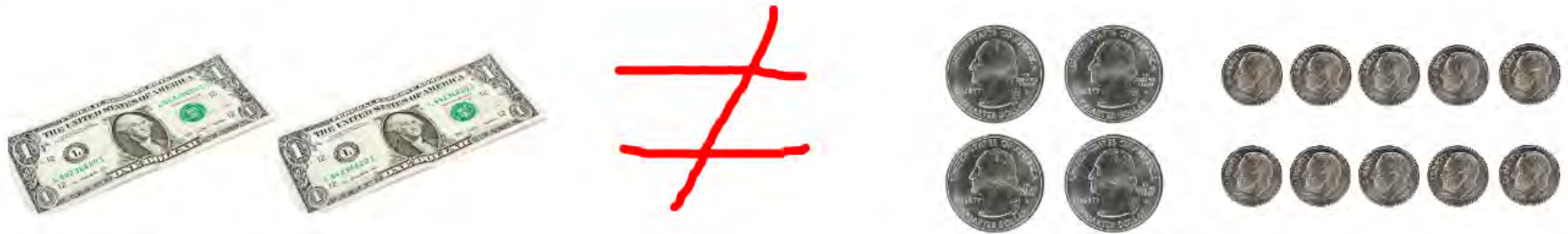
- You (or Timer Service account) require access to export/import location
- Do you have SQL Server Enterprise? Consider the -UseSqlSnapshot switch
- Imports must be done from the command line, but Exports can be done in Central Admin (much easier)

Tips

- Unattached database recovery is your friend: use it (via Central Administration)
- Publishing sites cause problems for some export/import operations.
- Be careful if you are importing into a (sub-) site that is based on a template that is different from the source (export) site or sub-site

Remember

- Content deployment is an export process



What you lose:

- alerts
- audit trails
- change log history
- recycle-bin items
- workflow tasks/state
- ...

Demo

"The Treasure Trove
of Lost Goodness"



- Perform a content export
- Restore a SQL database (SQL Server)
- Use unattached database recovery
- Import a content migration package

Site Collection backup

- Backup-SPSite
- Restore-SPSite
- STSADM -o backup with -url specified



SPService (Serv

SPWebApplication

SPDatabase (Content Data)

SPSite (Sh

SPWeb (R

SPList (Lists

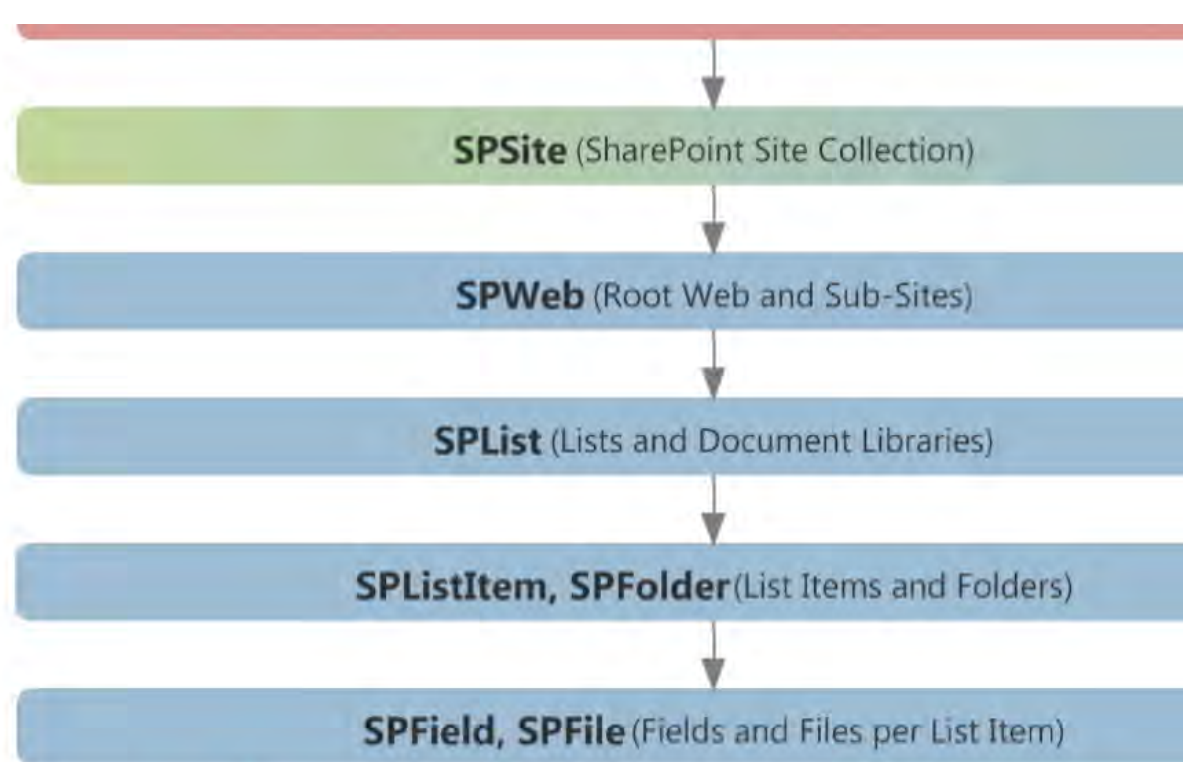
SPListItem, SP

SPField, SPFile

Site Collection backup

- Backup-SPSite
- Restore-SPSite
- STSADM -o backup with -url specified

Yes, site collections can be both backed-up and exported.



Content export (via the Content Deployment API aka PRIME API)

Tips

- Stay away from the -NoSiteLock switch
- Do you have SQL Server Enterprise?
Consider the -UseSqlSnapshot switch
- The recycle bin and gradual site deletion jobs can impact your restore operations
- GUID collisions happen. It's okay; create another database to restore to the same (source) Web Application

Demo

"The Treasure Trove
of Lost Goodness"



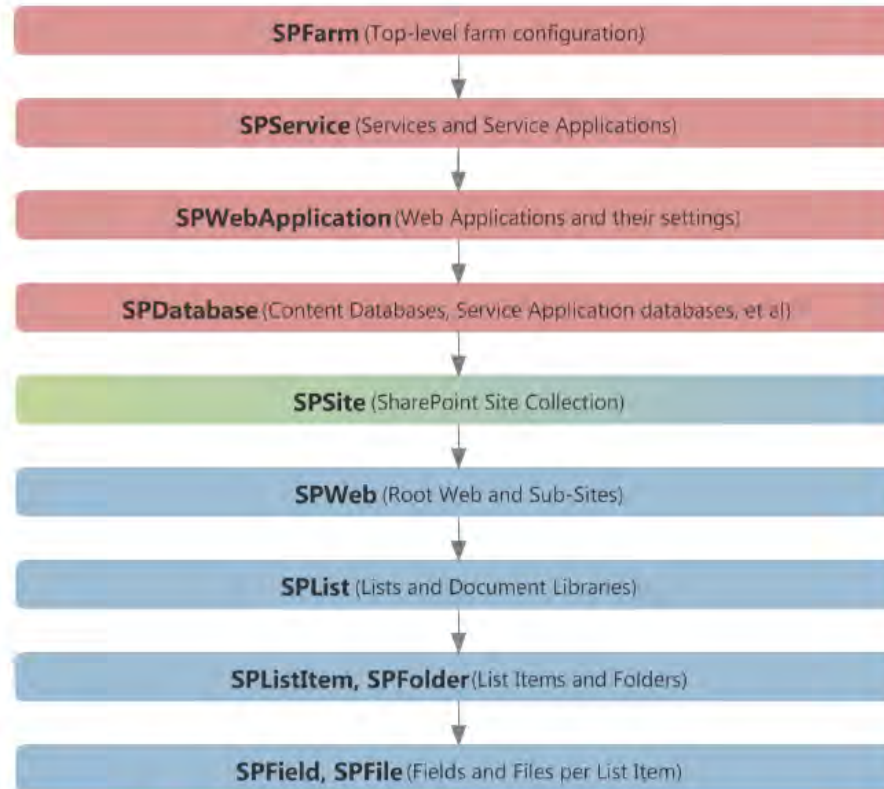
- Perform a site collection backup
- Execute a site collection restore

SQL Server Database backups can also be used to great effect here

"Catastrophic" farm protection

- Backup-SPFarm
- Backup-SPConfigurationDatabase
- Restore-SPFarm
- STSADM -o backup with -filename specified

Backup and export
"cheat sheet"



Site Collection backup

- Backup-SPSite
- Restore-SPSite
- STSADM -o backup with -url specified

Yes, site collections can be both backed-up and exported.

Content export (via the Content Deployment API aka PRIME API)

- Export-SPWeb
- Import-SPWeb
- STSADM -o export
- STSADM -o import



A Few Free Tools

(to give you some additional options)

- * John Ferringer's farm backup script
- * My SharePoint backup augmentation cmdlets
- * Chris O'Brien's content deployment wizard

(links in "Resources" at end of presentation)

John Ferringer's Farm Backup (PowerShell) Script

```
<#
.SYNOPSIS
Backs up a SharePoint farm on a scheduled basis.

.DESCRIPTION
At its core, the BackupSharePoint script backs up a SharePoint farm. When run as a
scheduled task, it generates a full farm backup once a week. On other days, it
performs incremental backups. It also deletes the oldest backup to manage disk
storage management.

.PARAMETER
-drive <string[]>
    Indicates the drive letter of the server where the backup files are stored. The script
    also assumes this drive also hosts the shared directory for the backups.
-backupDir <string[]>
    The shared UNC path for your backups to be stored in.
    Example: \\<YOUR SHAREPOINT SERVER>\<YOUR BACKUP FOLDER>
-fullBackupDay <string[]>
    The day that a full backup should be run on.
    Example: "Sunday"
-configDBInstance <string[]>
    The SQL Server Database Server and Instance name hosting the configuration
    database. Example: "<YOUR SQL SERVER>\<YOUR SQL INSTANCE>"
-configDBName <string[]>
    The name of the farm's SharePoint configuration database.
    Example: "<YOUR CONFIG DB>"
-nbrDaysRetained <string[]>
    The number of days that backups should be retained.
-Computer <string[]>
    The name of the computer the script is being run on. If not specified, the
    script will default to the local computer name environment.

.EXAMPLE
----- EXAMPLE 1 -----
.\BackupSharePoint.ps1 -drive "C:" -backupDir "\\server\backups" -fullBackupDay "Sunday" -configDBInstance sql\sql01 -nbrDaysRetained 14

This command generates a backup of a SharePoint 2010 environment on the local drive C: on a scheduled task. To create the backup, run the script on a scheduled task.
```

- Great as-is or as a starting point for your own farm protection script
- Works for SharePoint 2007 and SharePoint 2010
- Includes backup directory rotation to avoid complete consumption of all available storage space

SharePoint Backup Augmentation Cmdlets for PowerShell (SharePointBAC)

```
Administrator: SharePoint 2010 Management Shell
PS C:\Users\s01render> Get-SPBackupCatalog

CatalogPath           : \\sculptedsystem.com\Network Files\Backup\2010 Farm
CatalogSize           : 102628388035
DifferentialBackupCount : 33
FullBackupCount       : 6
IsValidCatalog        : True
LastBackupErrorCount   : 0
LastBackupDuration     : 00:18:18
LastBackupFinish       : 6/28/2012 3:48:33 AM
LastBackupMethod       : Differential
LastBackupPath         : \\sculptedsystem.com\Network Files\Backup\2010 Farm\
                        spbr00ED\
LastBackupRequestor    : 
LastBackupSize         : 1431181434
LastBackupStart        : 6/28/2012 3:30:15 AM
LastBackupTopComponent : Farm
LastBackupWarningCount : 0
SizePercentageOfLastFull : 15.93

PS C:\Users\s01render> _
```

Extends OOTB backup with new cmdlets to support grooming, e-mail status, and more

SharePoint Status Report: Last Backup

The following summary was generated at 11:50 PM on Tuesday, June 26, 2012

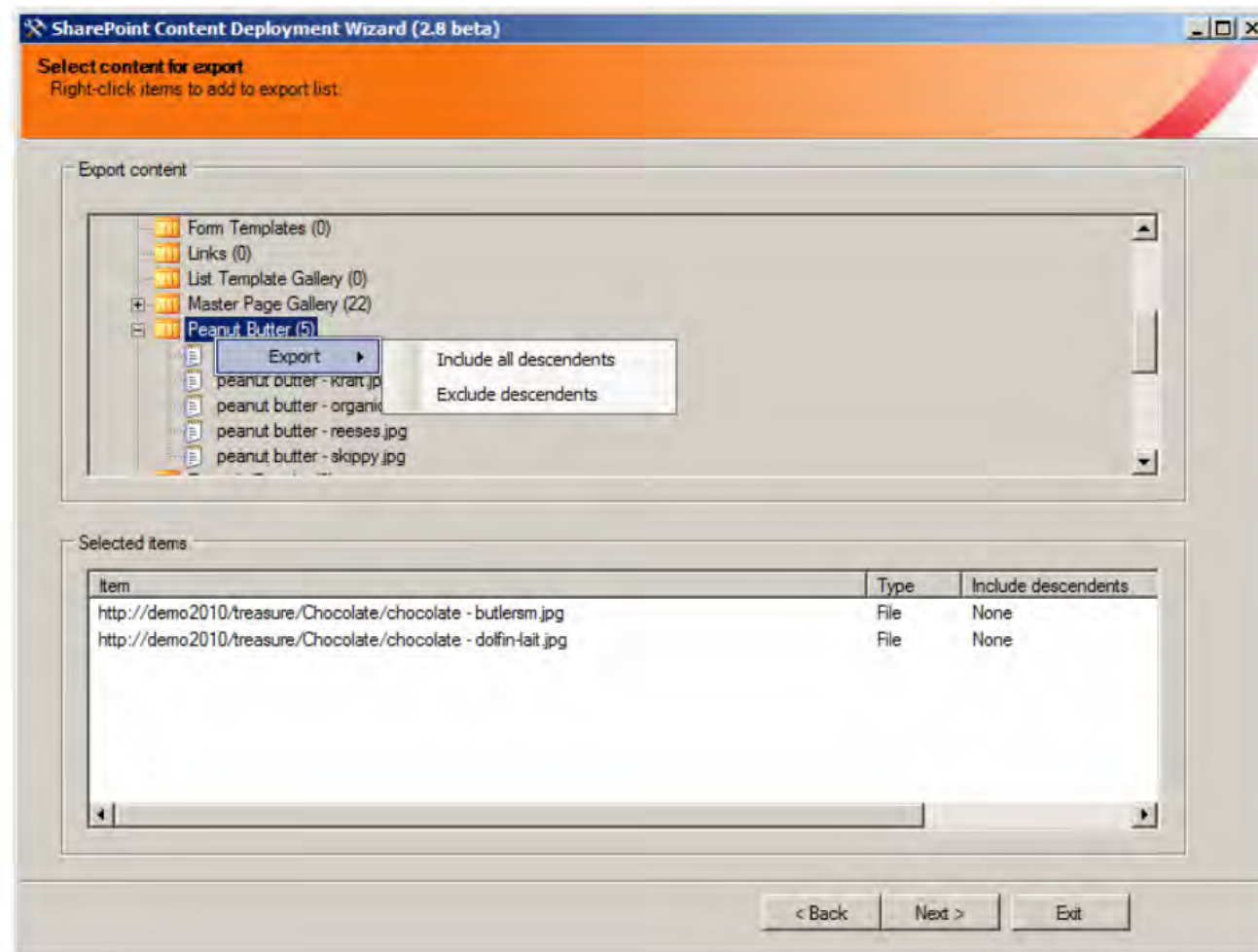
General Backup Information	
Backup Set Location	\\sculptedsystem.com\Network Files\Backup\2010 Farm\spbr00E\
Top Component	Farm
Backup Method	Differential
Requested By	

Backup Execution Details	
Backup Initiated	11:30 PM on Tuesday, June 26, 2012 (Eastern Daylight Time)
Backup Completed	11:50 PM on Tuesday, June 26, 2012 (Eastern Daylight Time)
Duration	19 minutes and 55 seconds
Backup Set Size	1.32 GB
Errors	0
Warnings	0

- Get-SPBackupCatalog
- Export-SPBackupCatalog
- Remove-SPBackupCatalog
- Send-SPBackupStatus
- Set-SPBackupCatalog

Chris O'Brien's Content Deployment Wizard

Provides significantly enhanced content export and import functionality in an easy-to-use UI



Resources

Backup and recovery overview (SharePoint Server 2010)

- <http://technet.microsoft.com/en-us/library/ee663490>

Configuration-Only Backup and Restore in SharePoint 2010

- <http://sharepointinterface.com/2010/09/10/configuration-only-backup-and-restore-in-sharepoint-2010/>

A Tale of Two Cmdlets

- <http://sharepointinterface.com/2010/10/03/a-tale-of-two-cmdlets/>

Scheduling SQL backups for SharePoint

- <http://www.toddklindt.com/blog/Lists/Posts/Post.aspx?ID=248>

Limitations of STSADM -o export/import related to publishing sites

- http://blogs.technet.com/b/stefan_gossner/archive/2009/05/27/limitations-of-stsadm-o-export-import-related-to-publishing-sites.aspx

Resources

Gradual Site Collection Deletion

- <http://reality-tech.com/2012/04/04/gradual-site-collection-deletion/>

The Importance of Consistency when Creating SharePoint Backups

- <http://www.idera.com/Downloads/ProdCollateral/Consistency-Creating-SharePoint-Backups.pdf>

Use PowerShell to Back Up Your SharePoint Farm

- <http://blogs.technet.com/b/heyscriptingguy/archive/2011/06/22/use-powershell-to-back-up-your-sharepoint-farm.aspx>

SharePoint Backup Augmentation Cmdlets (SharePointBAC)

- <http://sharepointbac.codeplex.com/>

SharePoint Content Deployment Wizard

- <http://spdeploymentwizard.codeplex.com/>

Questions and Evals...

- Fill out your evaluations to receive
 - Parking Pass
 - SPS Dayton T-Shirt

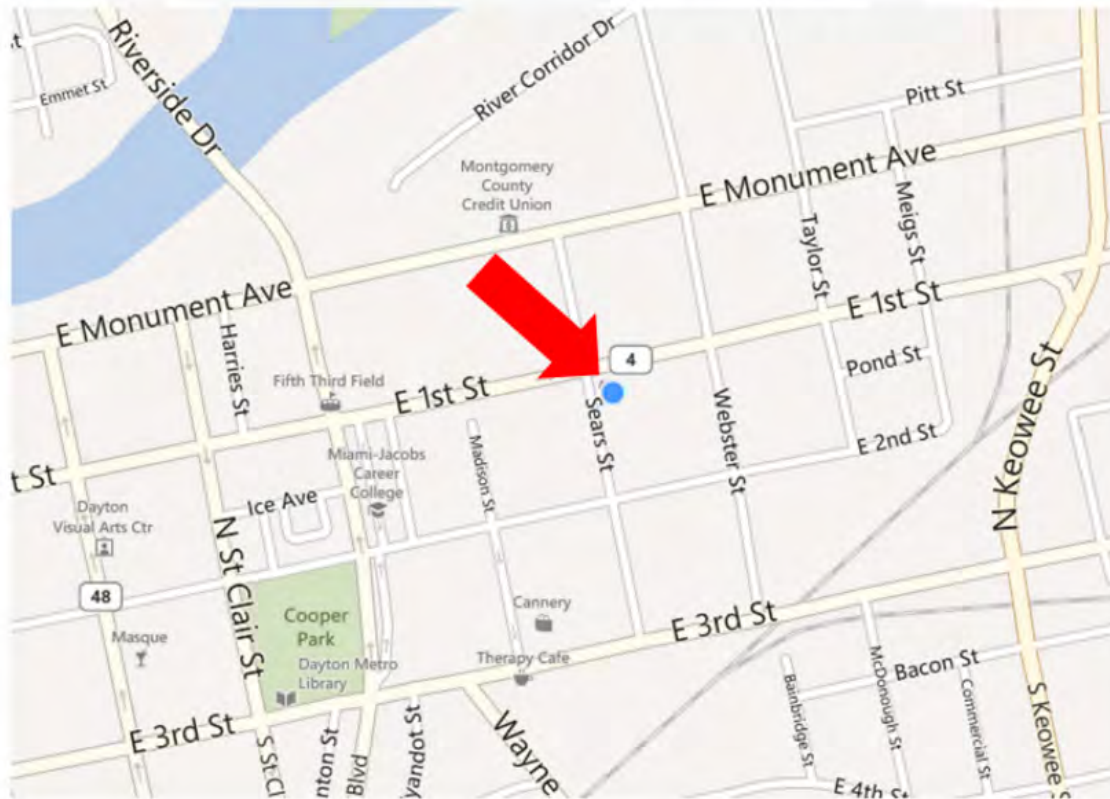




SharePint

SharePoint by day, SharePint by night

Brixx Ice Co.
500 East First St., Dayton



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Sean P. McDonough

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LinkedIn: <http://www.linkedin.com/in/smcdonough>

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SharePoint 2010 Disaster Recovery Guide
<http://tinyurl.com/SPDRGuide2010>