



# SharePoint Security

Advanced SharePoint Security Tips and Tools

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# Agenda

## OVERVIEW

- Brief Intro to SharePoint
  - Overview of Major Components
- SharePoint Security
  - Security Tips and Tools

# Background

GETTING UP TO SPEED

# Background

MS SharePoint Products & Technologies



- Windows SharePoint Services (WSS)
- Office SharePoint Server 2007/2010 (MOSS)
- SharePoint Designer 2007/2010 (SPD)



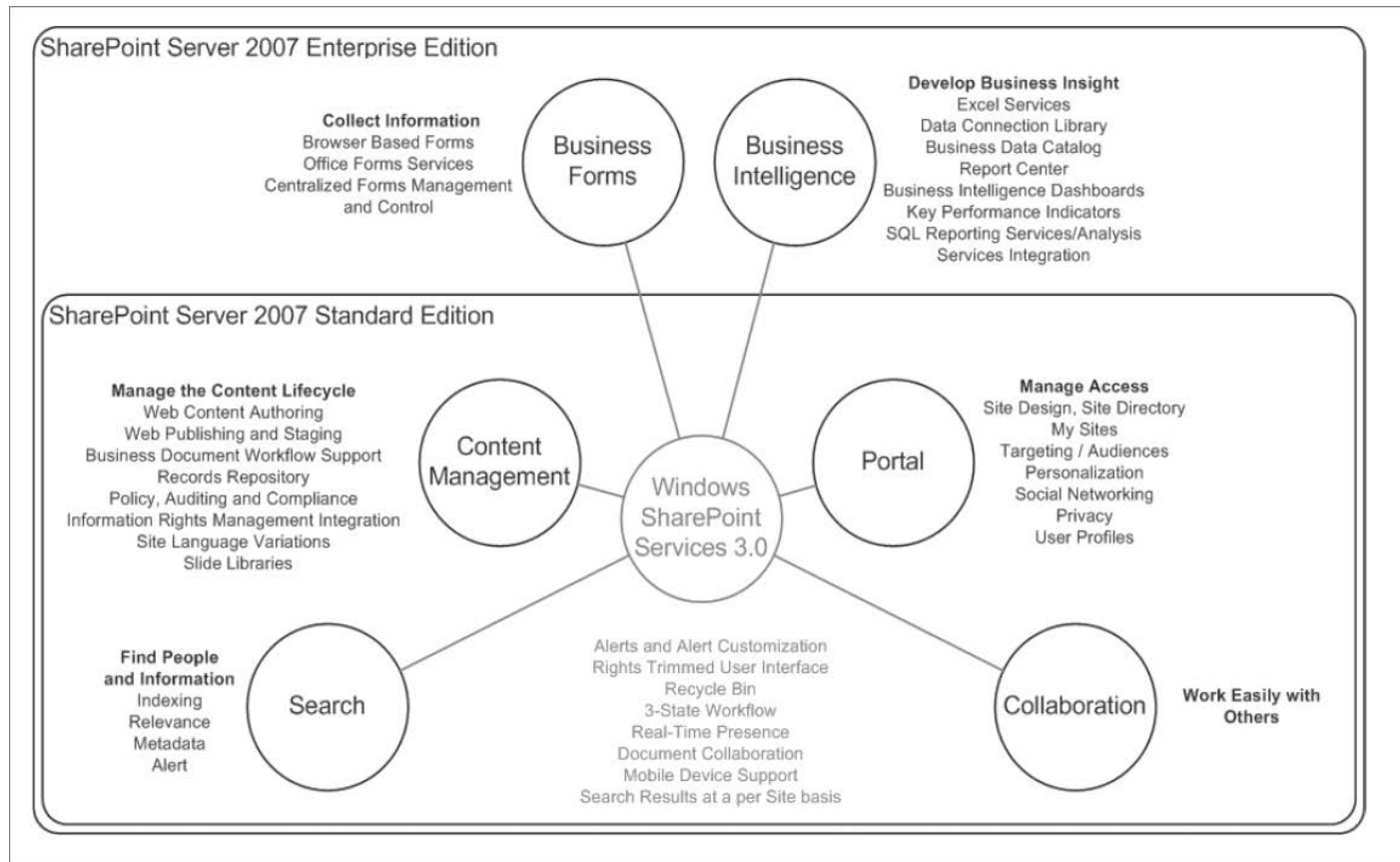
# Core Components

MS SharePoint Products & Technologies



# Core Components

## MS SharePoint Products & Technologies



# Core Components

MS SharePoint Products & Technologies

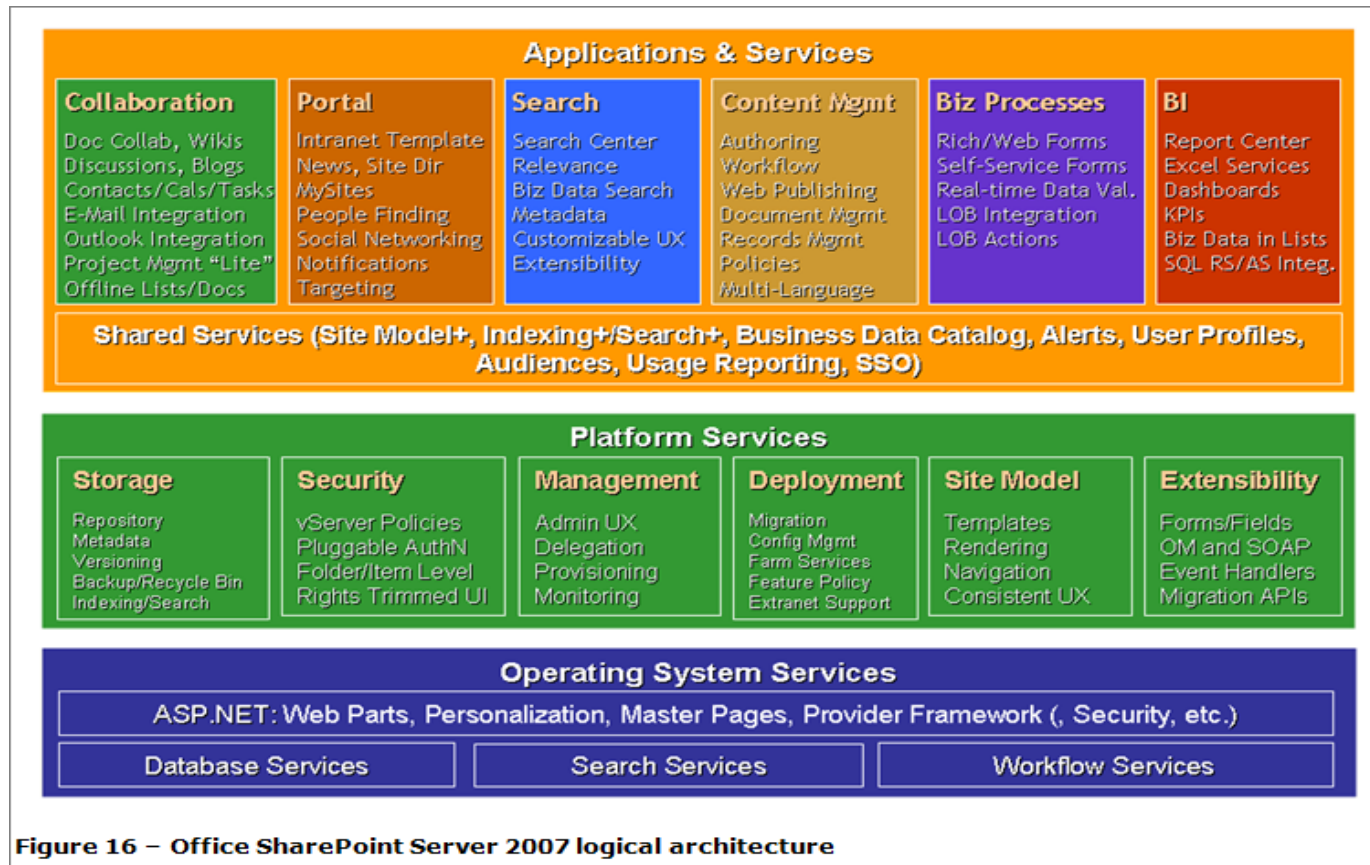


Figure 16 – Office SharePoint Server 2007 logical architecture

# Centralized Portal

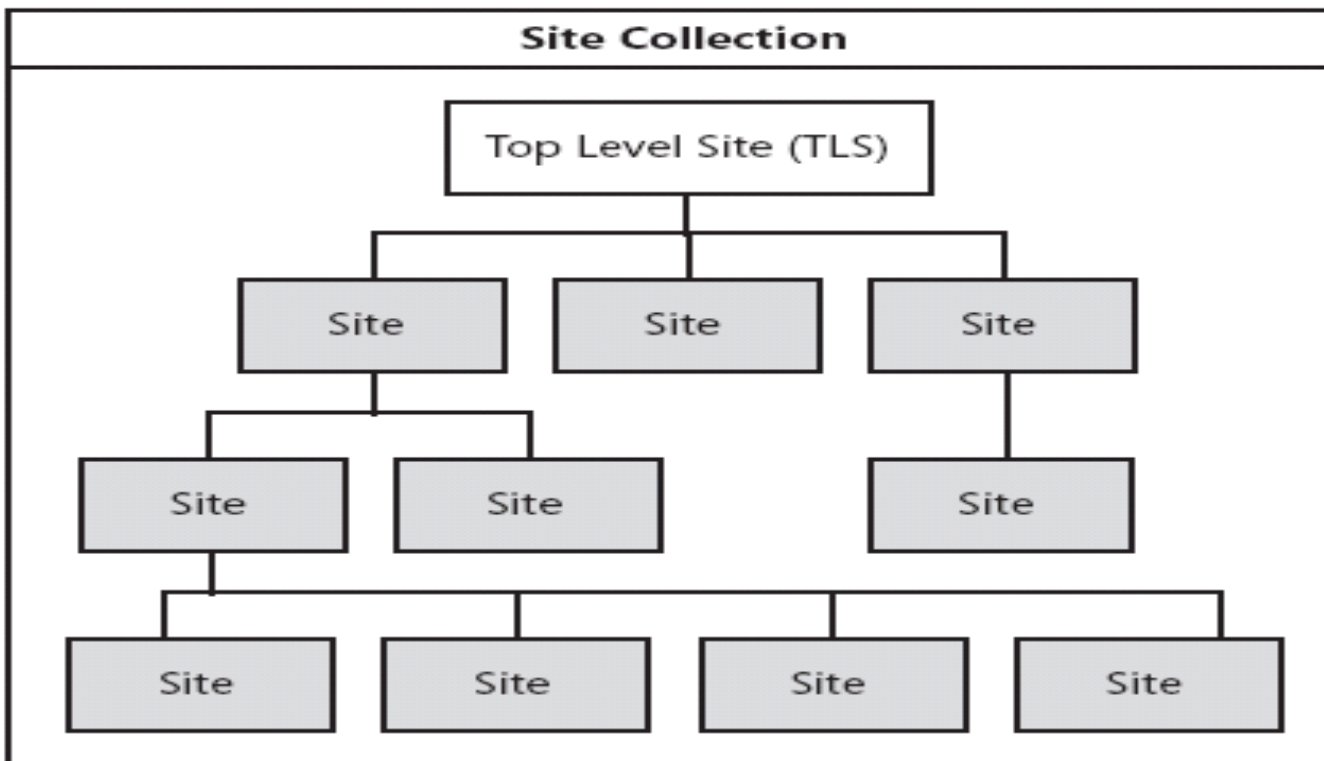
MS SharePoint Products & Technologies





# Site Hierarchy

Intro to SharePoint



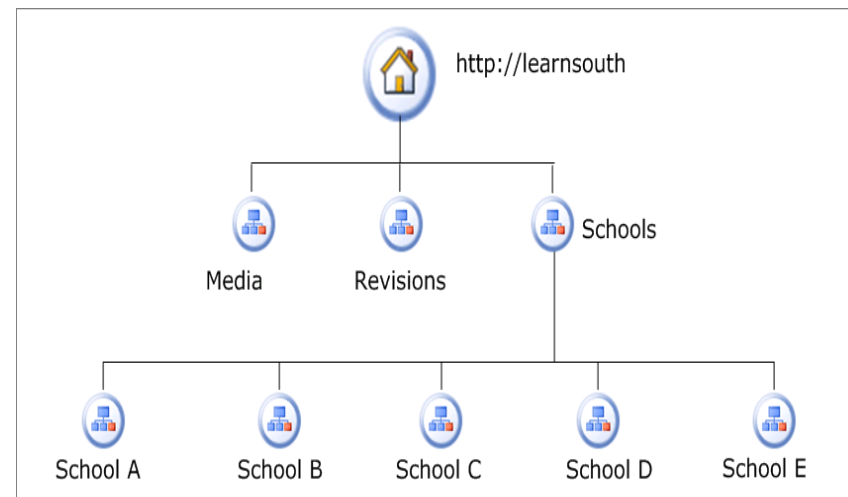
**Figure 1-6** Site collections are a structured collection of sites.

# SharePoint Site Hierarchy

Intro to SharePoint

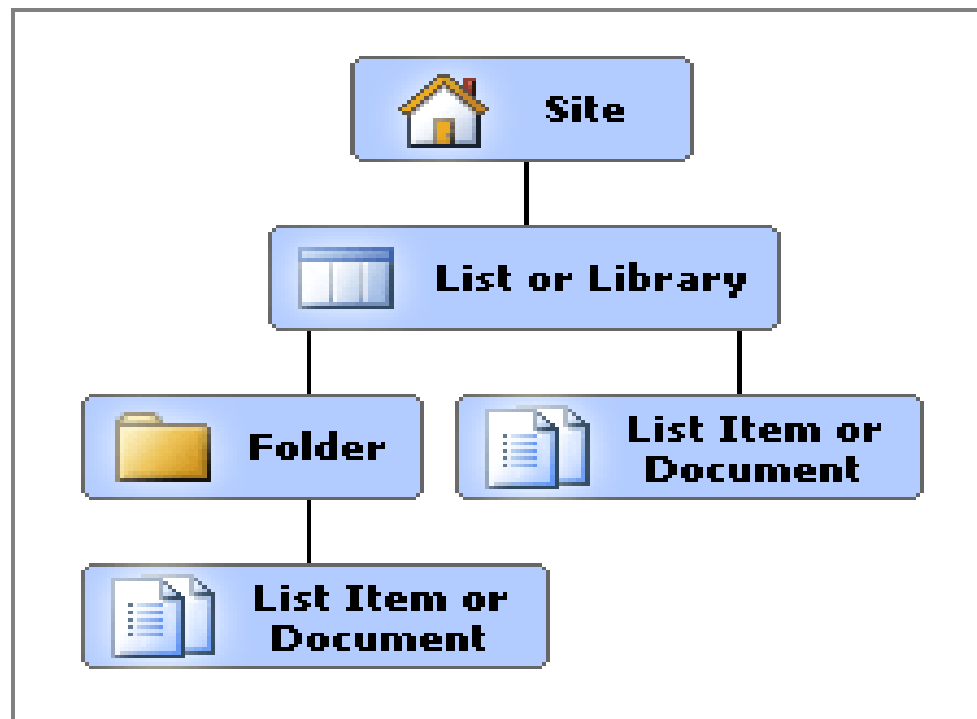
## Base Site URLs:

- <http://learnsouth/>
- <http://learnsouth/Media/>
- <http://learnsouth/Revisions/>
- <http://learnsouth/Schools/>
- <http://learnsouth/Schools/SchoolA/>
- <http://learnsouth/Schools/SchoolB/>
- <http://learnsouth/Schools/SchoolC/>



# Site Structure

Intro to SharePoint



# Site Navigation

## Intro to SharePoint

The screenshot shows a SharePoint site titled "STACH&LIU Home". The interface includes a top navigation bar with "Home", "Management", "Clients", "Resources", and "Site Index". A breadcrumb trail reads "Home > All Site Content". A left sidebar contains a "Site Hierarchy" tree view with categories like "Management", "Clients", "Resources", and "Site Directory". A central "All Site Content" table lists various libraries and lists. A right sidebar contains "Site Actions" and "Manage Content and Structure" options. Red callout boxes identify the following elements:

- Home
- Global Navigational Breadcrumb
- Top Link Bar
- Personalization - My Site
- Site Actions
- Content Navigational Breadcrumb
- All Site Content
- Site Actions
- Site Settings
- Manage Content and Structure
- Quick Launch Bar
- Tree View

Name	Description	Created	Modified
<b>Document Libraries</b>			
Documents	This library was created by the Publishing feature to store documents that are used on pages in this site.	0	4 months ago
Form Templates	This library contains administrative forms that were activated to this site collection.	0	4 months ago
Images	This system library was created by the Publishing feature to store images that are used on pages in this site.	0	4 months ago
Pages	This system library was created by the Publishing feature to store pages that are created in this site collection.	0	4 months ago
Site Collection Documents	This system library was created by the Publishing feature to store documents that are used throughout the site collection.	0	4 months ago
Site Collection Images	This system library was created by the Publishing Resources feature to store images that are used throughout the site collection.	0	4 months ago
Style Library	This system list was created by the Publishing feature to store custom XSL styles and stylesheets.	63	4 months ago
<b>Picture Libraries</b>			
There are no picture libraries. To create one, click <b>Create</b> above.			
<b>Lists</b>			
Contacts	Create a contacts list when you want to manage information about people that your team works with such as customers or partners. You can share information between your contacts list and Windows SharePoint Services-compatible contacts programs.	0	4 months ago
Content and Structure Reports	Use the reports list to customize the queries that appear in the Content and Structure Tool views	7	4 months ago
Events	Use the Events list to post information about meetings, deadlines, and other events related to this area.	1	4 months ago
Links	Create a links list when you have links to Web pages or other resources that you want to share.	0	4 months ago

# Security Tips

WHAT YOU SHOULD KNOW

# Security Tips

## SHAREPOINTSECURITY

#	Security Tip
1	Know your external exposure...
2	Beware of normal users with excessive access...
3	Spot check user permissions and inheritance...
4	Beware third-party plugins/code...BUT not too much...
5	Backup every which way from Sunday...
	...

# Security Tip #1

KNOW YOUR EXTERNAL EXPOSURE



# External Exposure

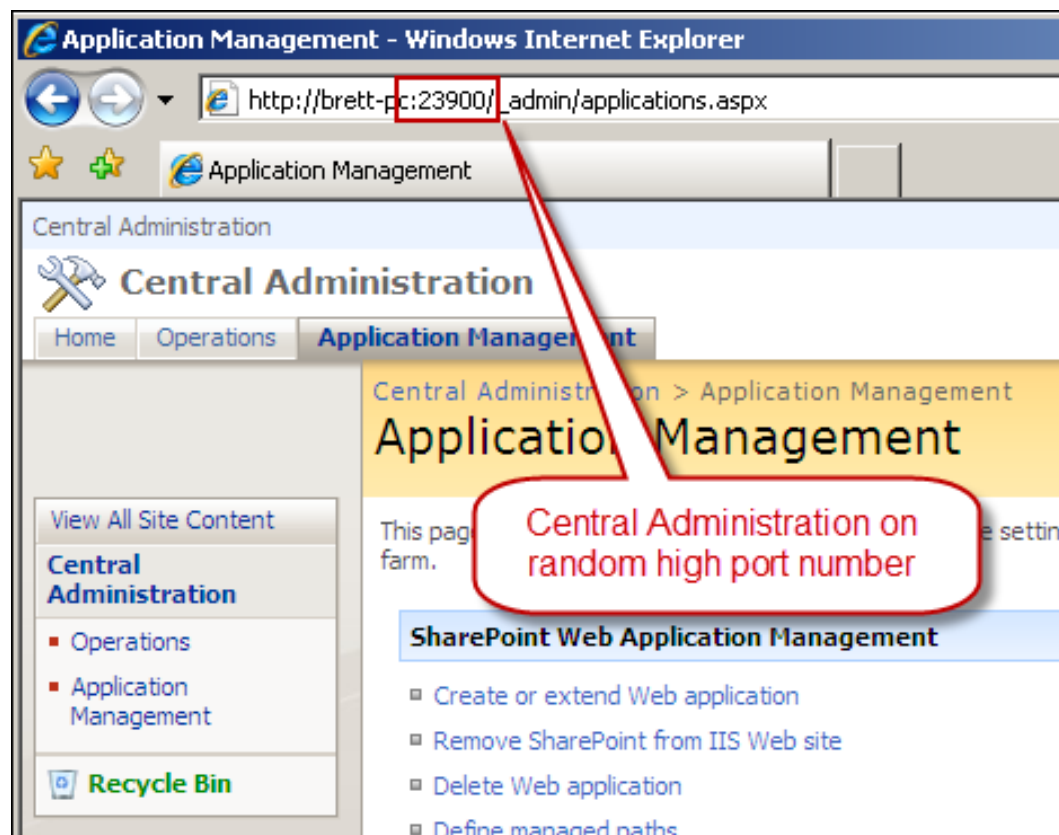
## FINDING HOLES

1. "Google Hack yourself"
  1. Search Google for exposed SharePoint admin pages
  2. E.g. `inurl:"/_catalogs/wt/"`
  3. **NEW**: SharePoint Google Regexs for S&L SearchDiggity – 118 queries
2. SharePoint URL Brute-forcing
  1. Forceful browse to common SharePoint extensions to test access
  2. **NEW**: Tool to bruteforce SharePoint URLs – 99 known extensions
3. Nmap for other SharePoint administrative apps
  1. E.g. Central Administration, Shared Service Providers (SSP)



# External Exposure

SHAREPOINT ADMIN WEB APPS



# External Exposure

## GOOGLE HACKING SHAREPOINT

Google

"all site content" site:.com filetype:aspx  Instant is on ▾

About 215,000 results (0.16 seconds) [Advanced search](#)

**Everything**

- Images
- Videos
- News
- Shopping
- More

Tempe, AZ  
[Change location](#)

**All Site Content** 🔍  
Home > All Site Content. All Site Content. Quick Launch. View All Site Content ... View: All Site Content Use SHIFT+ENTER to open the menu (new window). ...  
[www.ppg.com](#) > Home - Cached - Similar

**All Site Content** 🔍  
All Site Content. Quick Launch. View All Site Content ... View: All Site Content Use SHIFT+ENTER to open the menu (new window). ...  
[research.datcommunity.com/exchange\\_login/.../viewlists.aspx](#) - Cached

**All Site Content** 🔍  
State of Vermont Judiciary > All Site Content ... View: All Site Content Use SHIFT+ENTER to open the menu (new window). ...  
[iweb.synecology.com/ layouts/viewlists.aspx](#) - Cached - Similar

215,000 "All Site Content" SharePoint pages

# External Exposure

GOOGLE HACKING SHAREPOINT

The image shows a Google search interface. The search bar contains the query `"/_vti_bin/lists.asmx" filetype:asmx`. Below the search bar, a red box highlights the text "About 98,300 results (0.21 seconds)". To the right of this box, a red callout bubble contains the text "98,000 exposed SharePoint 'Lists Web Service'". The search results list several instances of "Lists Web Service" with their respective URLs and HTTP headers. The left sidebar shows navigation options like "Everything", "Images", "Videos", "News", "Shopping", and "More". The location is set to "Tempe, AZ".

Google  Search Instant is on ▾

About 98,300 results (0.21 seconds) [Advanced search](#)

- [Lists Web Service](#)   
POST /\_vti\_bin/lists.asmx HTTP/1.1 Host: www.wssdemo.com Content-Type: text/xml; charset=utf-8 Content-Length: length SOAPAction: ...   
[www.wssdemo.com/\\_vti\\_bin/lists.asmx?op=GetListItems](http://www.wssdemo.com/_vti_bin/lists.asmx?op=GetListItems) - Cached - Similar
- [Lists Web Service](#)   
POST /\_vti\_bin/lists.asmx HTTP/1.1 Host: jubileeminneapolis.org Content-Type: text/xml; charset=utf-8 Content-Length: length SOAPAction: ...   
[https://jubileeminneapolis.org/\\_vti\\_bin/lists.asmx](https://jubileeminneapolis.org/_vti_bin/lists.asmx)
- [Lists Web Service](#)   
POST /\_vti\_bin/lists.asmx HTTP/1.1 Host: www.votorantim.com Content-Type: text/xml; charset=utf-8 Content-Length: length SOAPAction: ...   
[www.votorantim.com/\\_vti\\_bin/lists.asmx?op=GetListItems](http://www.votorantim.com/_vti_bin/lists.asmx?op=GetListItems) - Cached

Everything  
Images  
Videos  
News  
Shopping  
More

Tempe, AZ  
[Change location](#)

SHAREPOINT HACKING TOOLS

**DEMO**

# External Exposure

## SHAREPOINT URL BRUTEFORCING

```
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\GH\>perl "SharePointURLBrute.pl" TestApps.txt SharePoint-UrlExtensionsv4.txt

Starting search for common SharePoint Pages

FOUND: http://www.example.com/_catalogs/wp/Forms/AllItems.aspx
FOUND: http://www.example.com/_catalogs/wt/Forms/Common.aspx
FOUND: http://www.example.com/_layouts/listedit.aspx
FOUND: http://www.example.com/_layouts/MyInfo.aspx
FOUND: http://www.example.com/_layouts/MyPage.aspx
FOUND: http://www.example.com/_layouts/MvTasks.aspx
FOUND: http://www.example.com/_layouts/picker.aspx
FOUND: http://www.example.com/_layouts/policyconfig.aspx
FOUND: http://www.example.com/_layouts/Policylist.aspx
FOUND: http://www.example.com/_layouts/useredit.aspx
FOUND: http://www.example.com/_layouts/viewgrouppermissions.aspx
FOUND: http://www.example.com/default.aspx
FOUND: http://www.example.com/Pages/Forms/AllItems.aspx

Search Complete

C:\GH\>
```

**picker.aspx** is the  
Active Directory  
lookup tool

# Security Tip #2

BEWARE USERS WITH EXCESSIVE ACCESS



# Excessive User Access

MORE THAN YOU BARGAINED FOR...

- Web Services examples
  - Admin.asmx
  - Permissions.asmx
- User Administration examples
  - "People and Groups"
  - "Add Users"
  - "PeoplePicker"

CONTINUED SHAREPOINT HACKING  
**DEMO**





# Excessive User Access



SHAREPOINT WEB SERVICES

## Permissions

The following operations are supported. For a formal de

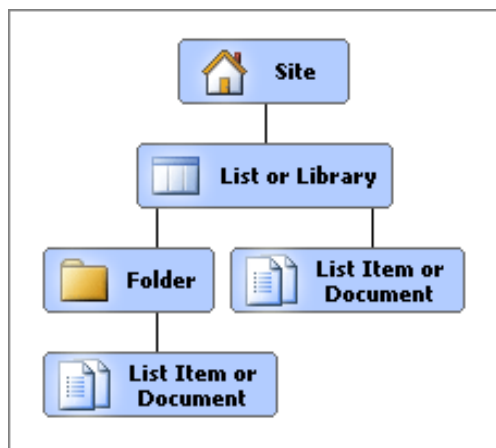
- [AddPermission](#)
- [AddPermissionCollection](#)
- [GetPermissionCollection](#)
- [RemovePermission](#)
- [RemovePermissionCollection](#)
- [UpdatePermission](#)

# Security Tip #3

CHECK PERMISSIONS AND INHERITANCE

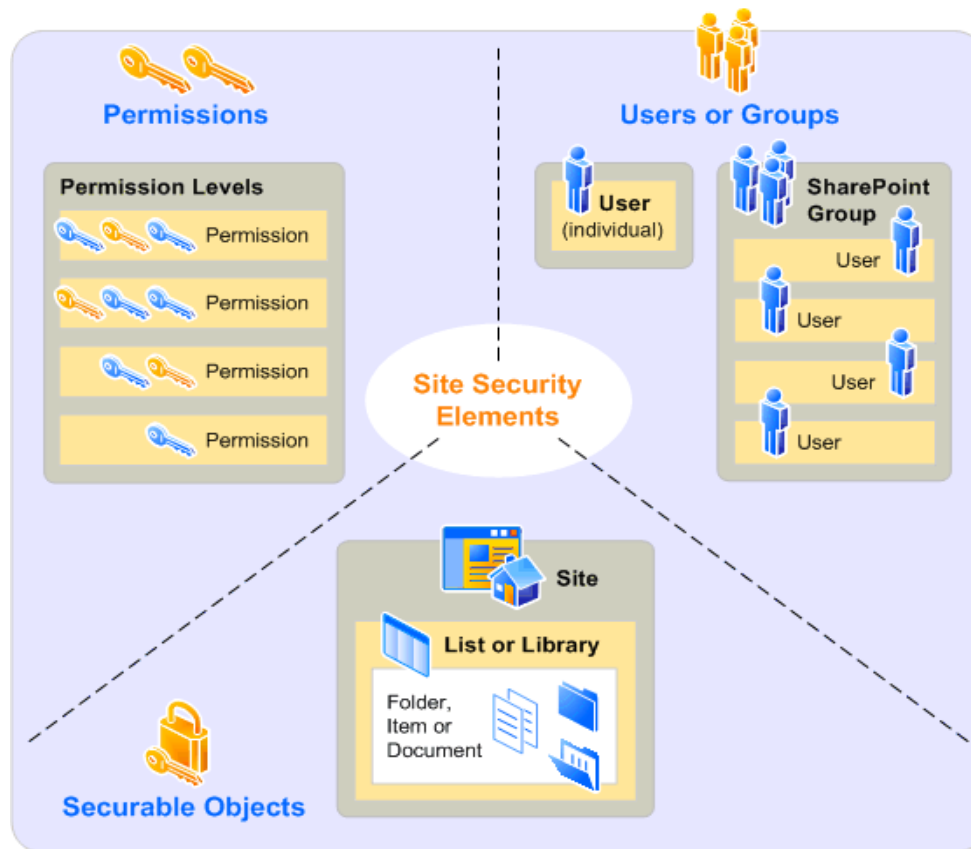
# User Permissions

## SECURITY TIPS



# User Permissions

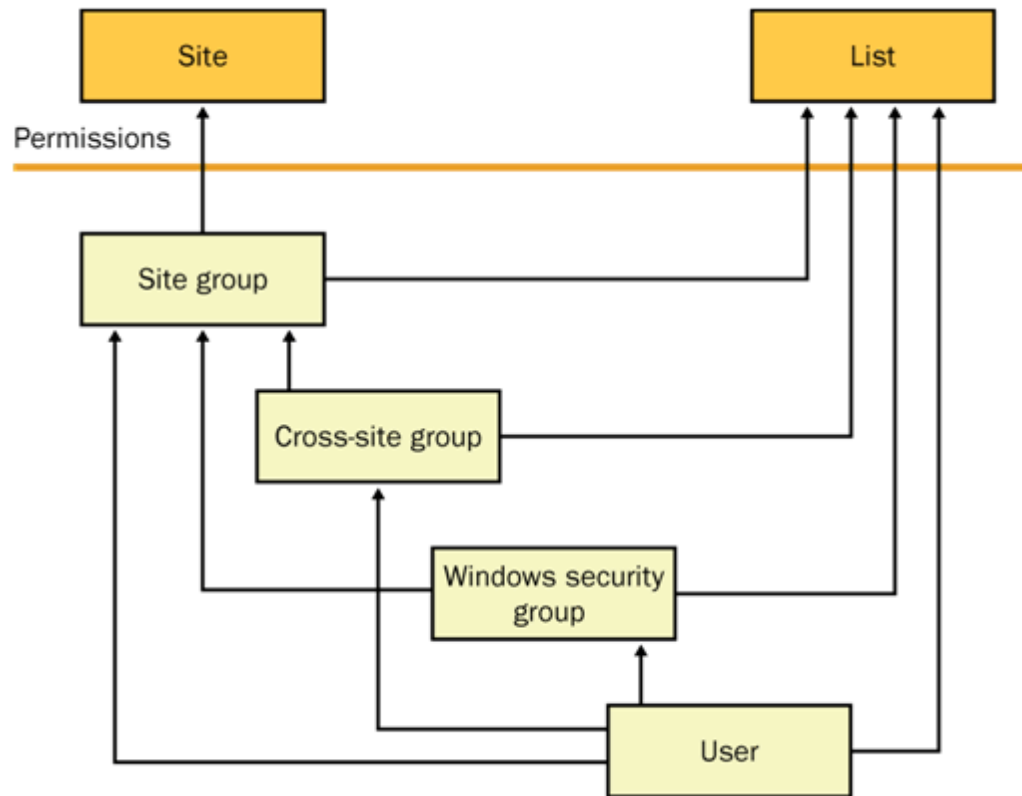
## SECURITY TIPS





# User Permissions

## SECURITY TIPS



# Security Tools

## USER PERMISSIONS

### Site Security Management

- ▣ Manage Site Security
- ▣ Set Site Security
- ▣ Restore Default Security

Team Site > Site Settings > Set Site Security

### Set Site Security

Use this page to give new permissions.

**NOTE:** This will clear all selected items of their inherited AND custom security and replace it with the security specified on this page.

#### Add Users

You can enter user names, group names, or e-mail addresses. Separate them with semicolons.

Users/Groups:

#### Give Permission

Choose the permissions you want these users or groups to have.

Give Permission

- Full Control - Has full control.
- Design - Can view, add, update, delete, approve, and customize.
- Contribute - Can view, add, update, and delete.
- Read - Can view only.
- Restricted Read -

[Add to List](#)

	Users/Groups	Type	User Name	Permissions
Remove	WSSDEVELOPMENT\administrator	User	WSSDEVELOPMENT\administrator	Full Control
Remove	WSSDEVELOPMENT\domain admins	Domain Group	WSSDEVELOPMENT\domain admins	Full Control
Remove	Test Members	SharePoint Group	Test Members	Contribute
Remove	User, Test	User	WSSDEVELOPMENT\testuser	Restricted Read

[Set Security](#)

# Security Tools

## USER PERMISSIONS

### Users and Permissions

- ▣ People and groups
- ▣ Site collection administrators
- ▣ Advanced permissions
- ▣ **Check User Access**
- ▣ View Permission Inheritance

### Check User Access

IT > Site Settings > Check User Access

This page allows you to check a users access to sites and lists.

Download Report Check Access

Login Name:

Access:

Filter Options:

- Show All
- Only show items where the user does not have access
- Only show items where the user has access

Green - Tom Shirley has Contribute or greater access.  
Red - Tom Shirley does not have Contribute or greater access.

- /IT
  - After Hours Contacts (2)
  - Announcements (1)
  - Calendar (0)
  - Links (0)
  - Policies and Procedures (4)
  - Shared Documents (0)
  - Site Contacts (1)
  - Tasks (0)
  - Team Discussion (0)
  - Useful References (3)
- /IT/Management
  - Announcements (1)
  - Calendar (0)
  - Links (0)
  - Shared Documents (2)
  - Site Contacts (1)
  - Tasks (0)
  - Team Discussion (0)

# Security Tools

## USER PERMISSIONS

The screenshot shows the SUSI Security Reports tool interface. The left sidebar contains a navigation menu with categories: Administration (Security Reports, Profile Images Import, Backup, Restore, Email Test), Lists (Copy A View, Meta Data, Bulk List Creation, Bulk Site Columns, Import Documents, Delete Old Documents), and Sites (Bulk Site Creation, Themes, Help & Settings). The main content area is titled "Security Reports" and includes a "Select a site" dropdown showing "site found: http://test-a4q5oui8zq ✓". Below this, the "SharePoint Site:" field contains "http://test-a4q5oui8zq". The "Choose A Security Report" section has three radio buttons: "Show Permissions Inheritance For Site Collection", "List Group Membership for User" (selected), and "Find All P...". A "Get Users" button is next to a "User:" dropdown menu showing "TEST-A4Q50UI8ZQ\ad". A "Run Security Report" button is highlighted with a dashed border. The main display area shows the results for "Group Membership for User TEST-A4Q50UI8ZQ\admini" for the site collection "http://test-a4q5oui8zq". The results are as follows:

```
Site Collection Administrators:
  user TEST-A4Q50UI8ZQ\administrator is a site collection admin
SharePoint Groups:
  Approvers
  Designers
  Hierarchy Managers
  Home Owners
  Quick Deploy Users
  Restricted Readers
  Style Resource Readers
  Viewers
Active Directory Groups:
```



# Security Tip #4

BEWARE THIRD-PARTY CODE...NOT TOO MUCH

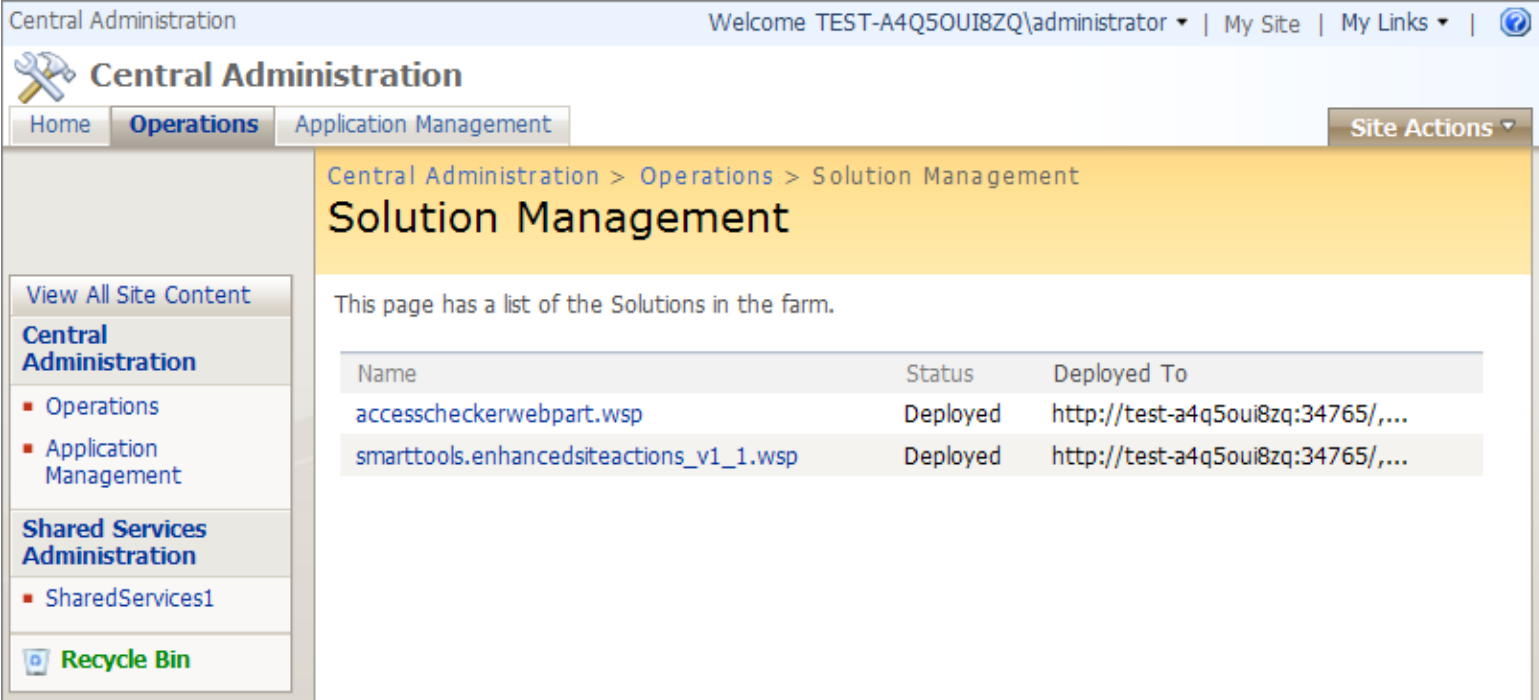
# Third-Party Plugins

## NECESSARY EVIL

- SharePoint without third-party plugins is like an iPhone with no apps
  - Solutions, Features
  - Web Parts, Templates
- If too strict, people will circumvent you

# Third-Party Plugins

## SOLUTIONS



The screenshot displays the 'Central Administration' interface. The top navigation bar includes 'Home', 'Operations' (selected), and 'Application Management'. The breadcrumb trail is 'Central Administration > Operations > Solution Management'. The main heading is 'Solution Management'. Below the heading, a message states: 'This page has a list of the Solutions in the farm.' A table lists the solutions:

Name	Status	Deployed To
<a href="#">accesscheckerwebpart.wsp</a>	Deployed	http://test-a4q5oui8zq:34765/,...
<a href="#">smarttools.enhancedsiteactions_v1_1.wsp</a>	Deployed	http://test-a4q5oui8zq:34765/,...

The left sidebar contains navigation links: 'View All Site Content', 'Central Administration' (with sub-links for 'Operations' and 'Application Management'), 'Shared Services Administration' (with sub-link for 'SharedServices1'), and 'Recycle Bin'.

# Third-Party Plugins

## SOLUTIONS

The screenshot shows a Windows file explorer window with the following files:

Name	Size	Type	Date Modified	Attributes
EULA.rtf	1 KB	Rich Text Document	7/7/2009 10:12 AM	A
readme.html				
Setup.exe				
Setup.exe.config				
TheExpertCalendar.wsp				

A red callout box points to the `TheExpertCalendar.wsp` file with the text: **\*.wsp SharePoint solution file**.

The **The Expert Calendar System Check** dialog box displays the following status:

- ✓ Windows SharePoint Service 3.0 is installed.
- ✓ You have permission to install and deploy SharePoint solutions.
- ✓ The Windows SharePoint Services Administration service is started.
- ✓ The Windows SharePoint Services Timer service is started.
- ✓ Solution file found.
- ✓ The Expert Calendar is not installed.

The **The Expert Calendar Installation Successfully Completed** dialog box shows the following details:

```
***** SOLUTION DEPLOYMENT *****
TEST-A4Q50UI8ZQ : http://test-a4q5oui8zq:34765/ : The solution was successfully deployed.
TEST-A4Q50UI8ZQ : http://test-a4q5oui8zq:25321/ : The solution was successfully deployed.
TEST-A4Q50UI8ZQ : http://test-a4q5oui8zq/ : The solution was successfully deployed.
```

# Third-Party Plugins

## FEATURES



The screenshot displays the 'Site Collection Features' page in a SharePoint environment. The page title is 'STACH&LIU Home' and the breadcrumb trail is 'Home > Site Settings > Site Features'. The page lists several features, each with a description, a 'Deactivate' button, and a status indicator (Active or Inactive).

Name	Status
<b>Access Checker Web Part</b> Quickly check what objects within a Sharepoint site hierarchy a user has access to.	Active
<b>Bamboo Calendar Plus Web Part</b> Add advanced calendaring display capabilities to a site with the Bamboo Calendar Plus Web Part.	Active
<b>Bamboo ListRollup WebPart</b> Bamboo ListRollup WebPart	Active
<b>Bamboo World Clock And Weather Web Part</b> Bamboo World Clock And Weather Web Part	Active
<b>Collect Signatures Workflow</b> Gathers signatures needed to complete a Microsoft Office document.	Active
<b>Content By Type and Filter Web Parts</b> Enable the Community Web Parts by Ton Stegeman for this site collection. This feature activates the 'Content By Type' and the filter web parts 'List Item Filter', 'Web Context Filter' and 'Page Column Filter'.	Active
<b>Disposition Approval Workflow</b> Manages document expiration and retention by allowing participants to decide whether to retain or delete expired documents.	Active
<b>Enhanced Content Query Web Part</b> Provides the same functionality that the regular content query web part gives, with some added bonuses such as context menus per item support.	Active

# Third-Party Plugins

## FEATURES



STACH&LIU Clients

Home Management Clients Resources Site Index Site Activ

Home > Clients > Site Settings > Site Features

### Site Features

Name	Status
<b>Office SharePoint Server Enterprise Site features</b> Features such as the business data catalog, forms services, and Excel Services, included in the Office SharePoint Server Enterprise License	Deactivate <b>Active</b>
<b>Office SharePoint Server Publishing</b> Create a Web page library as well as supporting libraries to create and publish pages based on page layouts.	Activate
<b>Office SharePoint Server Standard Site features</b> Features such as user profiles and search, included in the Office SharePoint Server Standard License	Deactivate <b>Active</b>
<b>Team Collaboration Lists</b> Provides team collaboration capabilities for a site by making standard lists, such as document libraries and issues, available.	Deactivate <b>Active</b>
<b>Translation Management Library</b> Create a translation management library when you want to create documents in multiple languages and manage translation tasks. Translation management libraries include a workflow to manage the translation process and provide sub-folders, file versioning, and check-in/check-out.	Deactivate <b>Active</b>

# Third-Party Plugins

## FUTURE SECURITY

- SharePoint 2010 has sandboxed solutions
- Minimize risk of running untrusted third-party plugins



SharePoint Customization Wizard

Specify the site and security level for debugging

What local site do you want to use for debugging?

What is the trust level for this SharePoint solution?

**Deploy as a sandboxed solution**  
Clicking this option causes the solution to be deployed as a Sandboxed solution. Sandboxed solutions can be deployed by the site collection owner and are run in a secure, monitored process that has limited resource access.

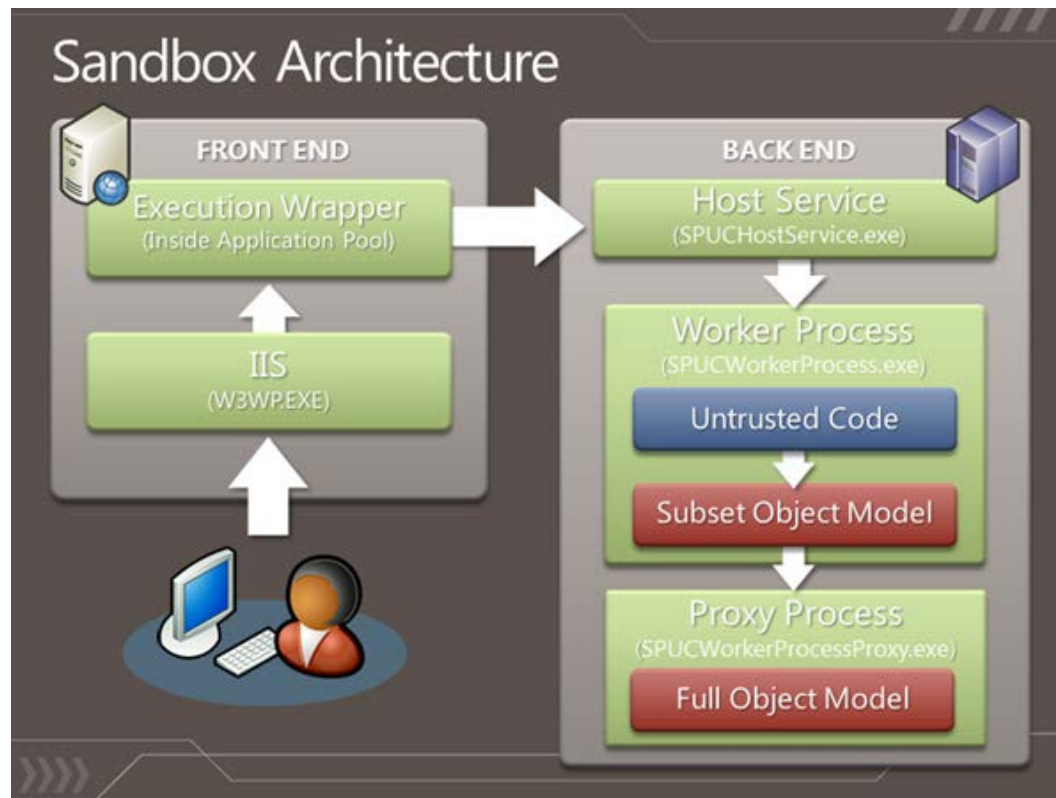
**Deploy as a farm solution**  
Clicking this option means that users must have SharePoint administrator privileges to run or deploy the solution.

[Learn more about sandboxed solutions](#)

< Previous   Next >   **Finish**   Cancel

# Third-Party Plugins

## SANDBOXED SOLUTIONS







# Security Tip #5

BACKUP EVERY WHICH  
WAY FROM SUNDAY



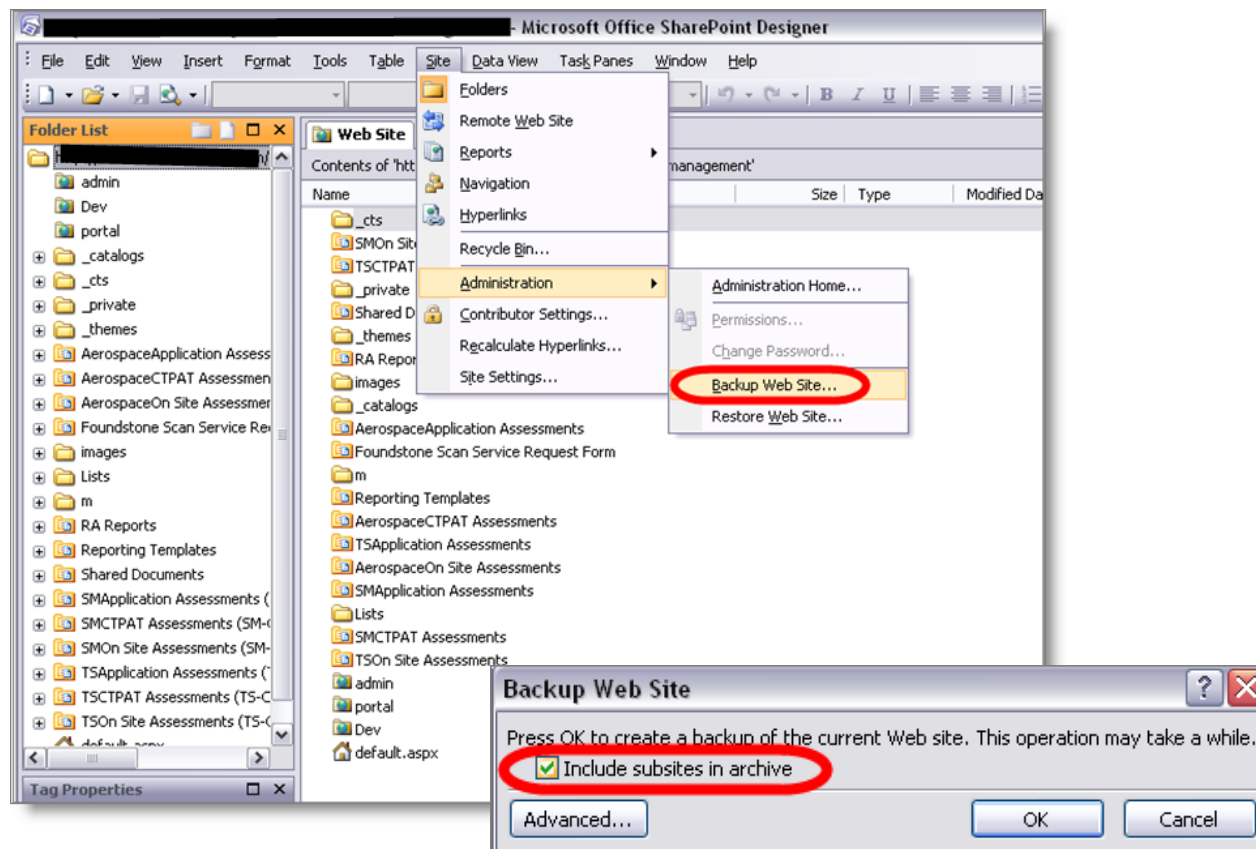
# Backups

MANY METHODS ... MOST TERRIBLE

1. Microsoft System Center: Data Protection Manager
2. Windows 2003/2008 Server backups
3. Stsadm.exe cmdline tool backups
4. Central Administration v3 backups
5. SharePoint Designer backups
6. Site and List template backups
7. Raw MS SQL database backups

# Backups

## SHAREPOINT DESIGNER



# Backups

## STSADM / CENTRAL ADMINISTRATION

```
stsadm.exe -o backup -url <URL name> -filename <\\server.name\folder name\file name> [-overwrite]
```

The screenshot shows the Central Administration web interface. The 'Operations' menu item in the top navigation bar is circled in red. The main content area is titled 'Operations' and contains a list of links organized into sections: 'Topology and Services', 'Global Configuration', 'Security Configuration', and 'Backup and Restore'. The 'Backup and Restore' section is also circled in red and contains the following links: 'Perform a backup', 'Backup and restore history', 'Restore from backup', and 'Backup and restore job status'.

Central Administration

Welcome CHEESE\administrator

Central Administration

Home **Operations** Application Management

View All Site Content

**Central Administration**

- Operations
- Application Management

**Shared Services Administration**

- SharedServices1

Recycle Bin

Central Administration > Operations

### Operations

This page contains links to pages that help you manage your server or server farm, such as changing the server farm topology, specifying services running on each server, and changing settings that affect multiple servers or applications.

#### Topology and Services

- Servers in farm
- Services on server
- Outgoing e-mail settings
- Incoming e-mail settings
- Approve/reject distribution groups

#### Global Configuration

- Timer job status
- Timer job definitions
- Master site directory settings
- Site directory links scan
- Alternate access mappings
- Manage farm features
- Quiesce farm
- Solution management

#### Security Configuration

- Service accounts
- Information Rights Management
- Antivirus
- Blocked file types
- Update farm administrator's group
- Information management policy configuration
- Manage settings for single sign-on

#### Backup and Restore

- Perform a backup
- Backup and restore history
- Restore from backup
- Backup and restore job status

# Backups

## SITE AND LIST TEMPLATES

The screenshot shows the SharePoint 'Site Settings' page. The breadcrumb trail is 'Home > Site Settings'. The page title is 'Site Settings'. Under 'Site Information', the Site URL is 'http://test-a4q5oui8zq/' and the Mobile Site URL is 'http://test-a4q5oui8zq/m/'. The version number is 12.0.0.6535. The page is divided into several sections: 'People and Permissions', 'Look and Feel', 'Galleries', and 'Site Templates'. The 'Look and Feel' section contains a list of options: 'Title, description, and icon', 'Tree view', 'Site theme', 'Top link bar', 'Quick Launch', 'Save site as template', and 'Reset to site definition'. The 'Galleries' section contains: 'Master pages', 'Site content types', 'Site columns', 'Site templates', 'List templates', 'Web Parts', and 'Workflows'. Two red callout boxes are present. The first callout, labeled 'Backup current site as a "site template"', points to the 'Save site as template' option in the 'Look and Feel' section. The second callout, labeled 'Manage site and list templates', points to the 'Site templates' and 'List templates' options in the 'Galleries' section. Both 'Save site as template' and 'List templates' are circled in red.

Home > Site Settings

### Site Settings

**Site Information**

Site URL: http://test-a4q5oui8zq/  
Mobile Site URL: http://test-a4q5oui8zq/m/  
Version: 12.0.0.6535

**People and Permissions**

- People and groups
- Collection administrators
- Advanced permissions
- Check User Access
- View Permission Inheritance

**Look and Feel**

- Title, description, and icon
- Tree view
- Site theme
- Top link bar
- Quick Launch
- Save site as template
- Reset to site definition

**Galleries**

- Master pages
- Site content types
- Site columns
- Site templates
- List templates
- Web Parts
- Workflows

# Backups

## SITE AND LIST TEMPLATES

Home > Site Settings > Save as Template

### Save Site as Template

Use this page to save your Web site as a site template. Users can create new Web sites from this template.

<b>File Name</b> Enter the name for this template file.	File name: <input type="text" value="mysite"/> .stp
<b>Name and Description</b> The name and description of this template will be displayed on the Web site template picker page when users create new Web sites.	Template name: <input type="text" value="Site Backup"/> Template description: <input type="text"/>
<b>Include Content</b> Include content in your template if you want new Web sites created from this template to include the contents of all lists and document libraries in this Web site. Some customizations, such as custom workflows, are present in the template only if you choose to include content. Including content can increase the size of your template.  <b>Caution:</b> Item security is not maintained in a template. If you have private content in this Web site, enabling this option is not recommended.	<input checked="" type="checkbox"/> <u>Include Content</u>

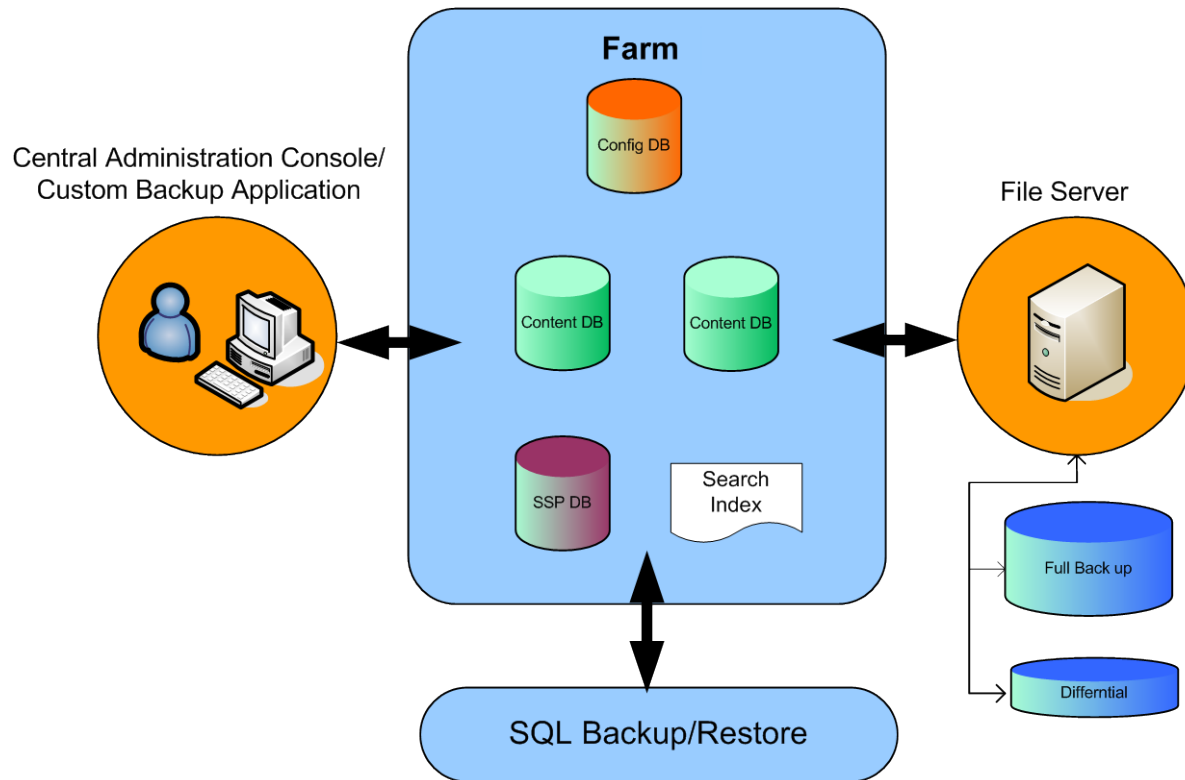
OK Cancel

**Saves as single \*.stp file**

**Can opt to include content (e.g. files, list items, etc.)**

# Backups

RAW SQL DATABASES





Questions?  
Ask us something  
We'll try to answer it.

For more info:  
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# Thank You

Stach & Liu SharePoint Hacking Diggity Project info:

<http://www.stachliu.com/index.php/resources/tools/sharepoint-hacking-diggity-project/>