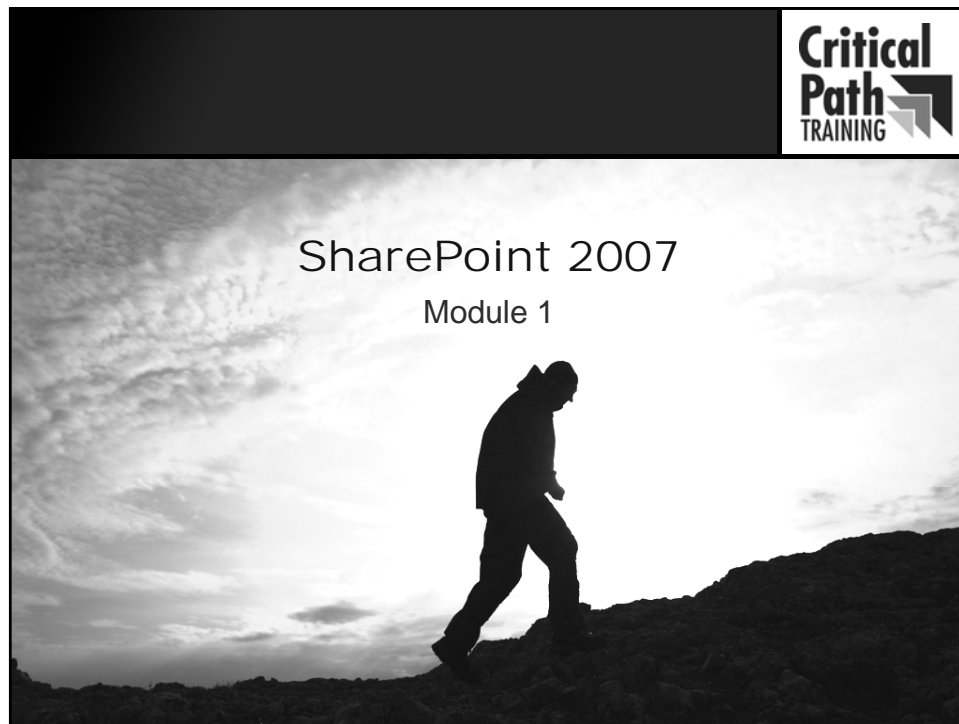# SPA401: Professional SharePoint 2007 Administration

Schedule of Lectures

1. SharePoint 2007
2. SharePoint Installation
3. SharePoint Administration Tools
4. Creating and Designing SharePoint Sites
5. Customizing SharePoint Sites
6. Installing and Configuring Components
7. Configuring Search
8. Profiles, Audiences and MySites
9. Creating Internet-facing Sites
10. Optimizing Performance
11. Deploying and Moving SharePoint Data
12. High Availability, Backups and Disaster Recovery

Revision: v3.0

SharePoint 2007

Module 1

Who Am I?

- ▪ ## Shane Young
- ▪ Owner of SharePoint911.com
- ▪ Microsoft Office SharePoint Server MVP
- ▪ Consultant, Trainer, Writer, & Speaker
  - shane@sharepoint911.com
  - Blog
    `http://msmvps.com/shane`
  - SharePoint Consulting
    `http://www.sharepoint911.com`
  - SharePoint Training
    `http://www.CriticalPathTraining.net`

Who are you?

- What is your name?
- Where are you from?
- What is your day job?
- What is your favorite animal?

Schedule of lectures

1. SharePoint 2007 Components and Services
2. SharePoint Installation
3. SharePoint Administrative Tools
4. Creating and Configuring SharePoint Sites
5. Customizing and Using SharePoint Sites
6. Installing and Configuring Additional Components
7. Configuring and Customizing Search
8. Profiles, Audiences, and My Sites
9. Creating and Configuring Internet-facing Sites
10. Optimizing SharePoint 2007 Performance
11. Deploying, Moving, and Rearranging SharePoint Data
12. High Availability, Backups, and Disaster Recovery

Agenda

- SharePoint SKU's and Licensing
- Pre-SharePoint Installation Issues
- Overview of Upgrading from 2003 to 2007

The Great SharePoint Story

- Where did SharePoint come from?
  - V1 – STS and SPS 2001
  - V2 – WSS v2 and SPS 2003
  - V3 – WSS v3 and MOSS 2007

- There is no such thing as SharePoint 2007
  - However, people often say the term out loud
  - Term represents related technologies not a product

Windows SharePoint Service 3.0 (WSS)

- WSS often referred to as a "free" product
  - Licensed as part of Windows 2003 Server (Win2K3)
  - Win2K3 CAL applies to sites running on WSS
- WSS is platform for building web-based solutions
  - Storage and Web Presentation
  - Authorization/User management
  - Interface to the Windows Workflow Foundation
  - APIs and Web Services that can be extended
  - Collaboration Tools and features

Collaboration with WSS

- WSS provides Collaboration Tools
  - Collaboration templates for lists and libraries
  - Provides basis for collaboration across teams
- Team Site can be designed with…
  - Document Libraries (file sharing)
  - Lists (calendars, contacts, links)
  - Surveys, discussion forms
  - Web 2.0 (RSS, wikis, blogs)

MOSS 2007

- Microsoft Office SharePoint Server 2007
- Requires both a per server license and CALs
- Usage:
  - Organization and aggregation (Intranet site)
  - Publishing controlled sites (Internet site)
- Has reusable, centrally managed services

Reusable Services

- The Shared Services Provider (SSP) allows…
  - Service to be shared across
    ```
    Web Applications
    SharePoint Farms
    ```
- Think of a parent-child relationship.
- MOSS Only Feature

SSP Services Available

- Services such as:
  - Search
  - Profiles and Audiences
  - My Sites
  - Excel Services
  - BDC

Where did MOSS come from?

- A collaboration of several Microsoft technologies
  - WSS (collaboration)
  - SPS 2003 (aggregation)
  - CMS 2002 (web publishing)

- Opens doors for standardizing on one technology

Several options to choose from

- Two Main Choices
  - MOSS 2007 Standard
  - MOSS 2007 Enterprise

MOSS 2007 Standard

- Some key features
  - Portal template for building your intranet
  - User Profiles, Social networking and My Sites
  - Site Directory for organizing sites in the enterprise
  - Rollup web parts for aggregating info
  - Enterprise search
  - Publishing features
  - Built in workflows
  - Records Management

MOSS 2007 Enterprise

- Everything from standard edition plus
  - BDC
  - Forms Server
  - Excel Services
  - More web parts

Forms Server 2007

- Can be bought separate of MOSS
- Licensed per server + CALs
- Unlimited Internet edition available

MOSS 2007 Internet Edition

- Same features as MOSS Enterprise.
- Allows unlimited <u>NON EMPLOYEE</u> access
- Licensed per server, no CALs

Demo: Walkthrough MOSS sites

- Check out typical collaboration environment
- Check out public websites
  - www.sharepoint911.com
  - www.sqlpass.org
  - www.paulmitchell.com
  - www.hedkandi.com
  - www.ocps.net
  - www.directenergy.com

Search Server 2008

- Throw away your search appliances!
- http://www.microsoft.com/enterprisesearch/server products/searchserver/default.aspx

Non SharePoint Servers

- Windows Server 2003
- SQL Server 2000 or 2005
- Email Server

Windows Server 2003

- Install on W2K3 SP1 or later
  - Works fine with R2
- All editions of server are supported.
  - Web edition require separate SQL Server
- Other pieces
  - .NET 3.0
  - IIS (common files, WWW, & SMTP)
  - AD required for multi server deployment
    `NT 4 domain does not work`

Windows Server 2008

- Supported as long as you are running SP1 for SharePoint
  - This means you will have to slipstream the install

- http://blogs.msdn.com/sharepoint/archive/2008/01/16/windows-server-2008-and-sharepoint-resources.aspx

Server Hardware Requirements

- From Microsoft: (Single Server MOSS Minimums)
  - 2.5 GHZ, 1 GB RAM

- In reality:
  - Dual processors with 4 GB of RAM
  - Gigabit network between servers in farm

- More details in Module 10

32 bit vs. 64 bit

- Both are supported and available
- 32 bit is generally faster
- Farm - Same role, same architecture
- New hardware?
  - Buy 64 bit hardware
  - V.next will only be 64 bit
- Use 64 bit if needed to support > 4GB of RAM
- Some 3rd party doesn't support 64bit

Why is SQL Server so important?

- Stores content in SQL databases.
- SQL Server 2000 SP3a or SQL Server 2005 sp1
- Basic install installs DB engine
  - MOSS - SQL Express 2005 - 4 GB database limit
  - WSS – Windows Internal Database – No limits

Email Servers

- Outgoing email – Any SMTP Server
  - Common issues:
    ```
    Port 25 is blocked (some AV products do this)
    Relaying is prohibited on the email server
    ```
- Incoming email
  - Receive email and route to document libraries
  - Requires: Installing SMTP service on SP server
  - Integrates nicely with Exchange Server

Need to move up from v2?

- There are 3 major options for upgrading
  - In place, gradual, and db migration

- Upgrade difficulty is based on
  - Use of FrontPage to modify pages (unghosting)
  - # of custom site definitions
  - Amount of data

SharePoint Installation
Module 2

Agenda

- Farm topologies
- Install roadblocks
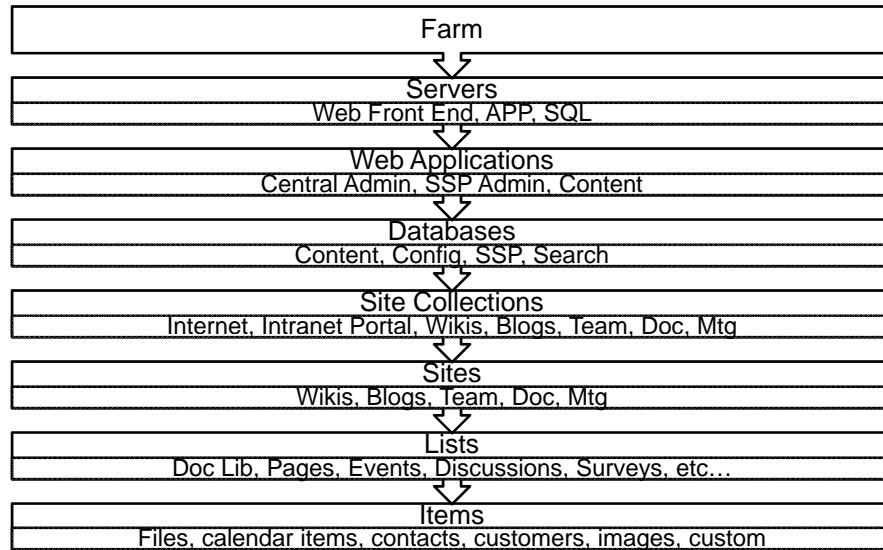- Accounts and permissions

Topologies

- SharePoint scales from a single server install all the way to very large farms of servers
- Uses assignment of roles to span multiple servers

Keep in mind

- Servers have roles
  - Web
  - Query, Index, Calculation
  - DB Server
- Farms have relationships
  - Authoring
  - Publishing
  - Dev, Test, Production
  - SSP

SharePoint Containment

Farm

Servers
Web Front End, APP, SQL

Web Applications
Central Admin, SSP Admin, Content

Databases
Content, Config, SSP, Search

Site Collections
Internet, Intranet Portal, Wikis, Blogs, Team, Doc, Mtg

Sites
Wikis, Blogs, Team, Doc, Mtg

Lists
Doc Lib, Pages, Events, Discussions, Surveys, etc…

Items
Files, calendar items, contacts, customers, images, custom

Web Front End Role

- Called WFE
- Provides the web interfaces for the users
- 1 to 8 servers with this role per farm
- Very little disk storage used
- Scaling seems to stop at 5 for collab
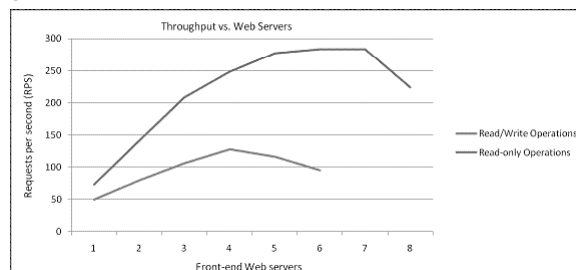
Index Role

- Crawls and indexes the content
- 1 Index per Server
- 1 Index per SSP
- Index Files = 5% - 12% of crawled content
  - 1% - 5% typical if only crawling SharePoint
- Database Storage = 4 x Index Files
- 50 Million item tested limit

Query Role

- Server that responds to user Search request
- Physical storage = 2.8 x Index
- No hard limit on number of servers
- Scale stops at 7

Throughput vs. number of query servers
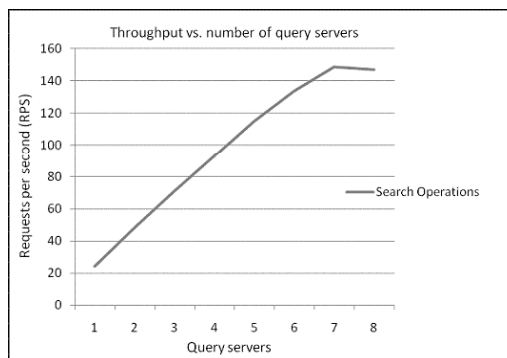
Excel Calculation Role

- In MOSS Enterprise farm this server handles calculating Excel Workbooks
- Also called Application Server
- Rendering components live on WFEs
- Calculation engine moved to own server
- No limit to number of servers
- Sizing is very complex

Topologies

- Spread the roles out across as many servers as you need and have at it.
- No restrictions

Single Server Farm

MOSS
WFE
Index
Query
Excel

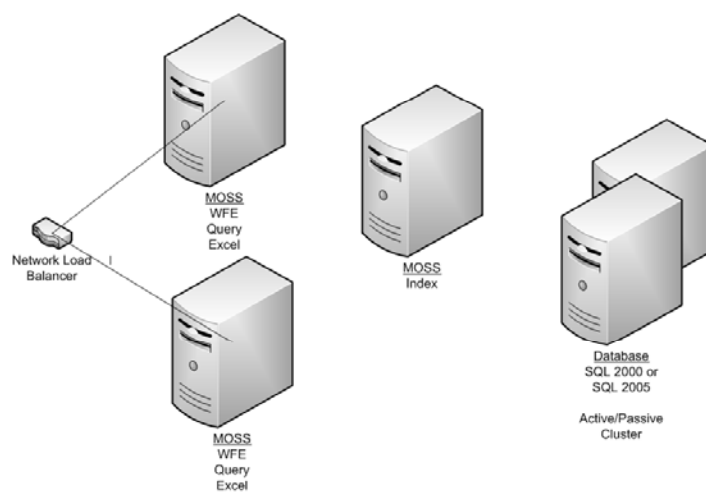Database
SQL 2000, 2005
Or
SQL Express

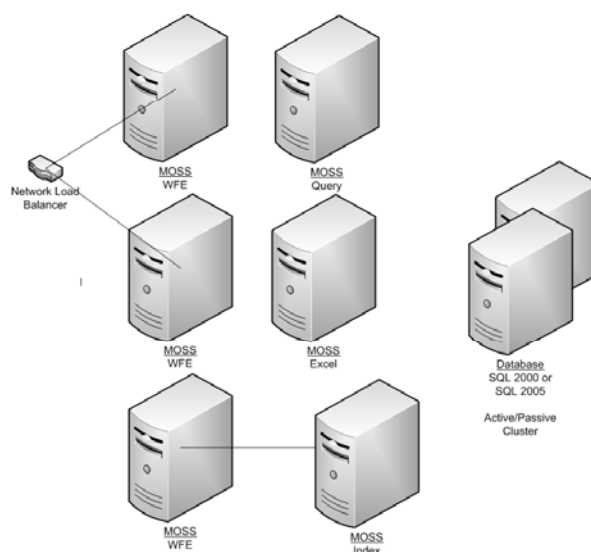## Small Farm

MOSS
WFE
Index
Query
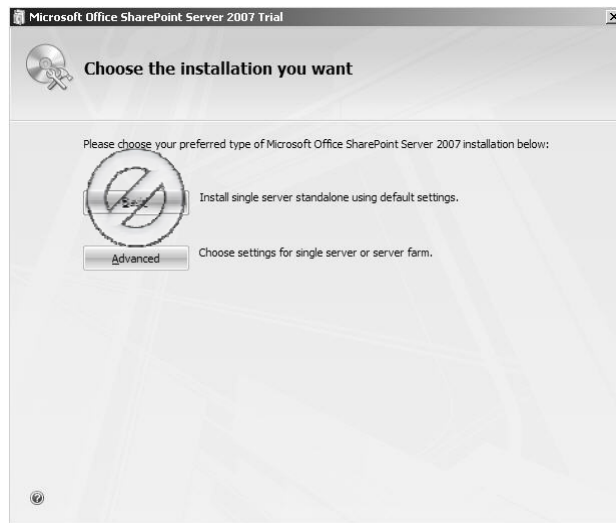Excel

Database
SQL 2000 or
SQL 2005

"Medium Farm"

MOSS
WFE
Query
Excel

Network Load
Balancer

MOSS
Index

Database
SQL 2000 or
SQL 2005

Active/Passive
Cluster

MOSS
WFE
Query
Excel

Considered Minimum High Availability Topology

A Possible Large Farm

MOSS
WFE

MOSS
Query

Network Load
Balancer

MOSS
WFE

MOSS
Excel

Database
SQL 2000 or
SQL 2005

Active/Passive
Cluster

MOSS
WFE

MOSS
Index

Don't choose Basic!

Microsoft Office SharePoint Server 2007 Trial

Choose the installation you want

Please choose your preferred type of Microsoft Office SharePoint Server 2007 installation below:

Basic — Install single server standalone using default settings.

Advanced — Choose settings for single server or server farm.

Unless you want to use SQL Express and Local System Account

Server Type

Microsoft Office SharePoint Server 2007 Trial

Server Type | File Location | Feedback

Server Type

Select the type of installation you want to install on the server.

- Complete – Install all components. Can add servers to form a SharePoint farm.
- Web Front End – Only install components required to render content to users. Can add servers to form a SharePoint farm.
- Stand-alone – Install all components on a single machine (includes SQL Server 2005 Express Edition). Cannot add servers to create a SharePoint farm.

Install Now

- •Complete – Used 99.9% of the time. Installs all components and gives you complete configuration flexibility.
- •Web Front End – Only installs web components of MOSS. Doesn't give you the option of later hosting other roles. No Flexibility = bad.
- •Stand-alone – Exact same as previous slide choosing basic. Refer to that slide if you are tempted to use.

Install Accounts

- First choice – 1 account for everything or account isolation
  - Account isolation has lots of challenges
- Second Choice – NTLM or Kerberos

NTLM vs. Kerberos

- Kerberos is generally preferred
  - No double hop problem
  - More secure
  - Less authentication traffic
- Downside
  - Requires extra work to setup
  - Domain needs to be in order (Server time off by > 5 minutes and auth fails)

Accounts you will need (MOSS)

- Setup User Account * – Used for running install and to admin server
- Server Farm Account * – Central Admin App Pool Account, Timer Service Account
- SSP App Pool Account
- SSP Service Account – All SSP services and jobs
- MOSS Search Account – Used by search service. Also become default content access account for search. You can change from the SSP level

* Account needed for WSS

More accounts (MOSS)

- WSS Search Service Account * – Used by the help system crawler
- WSS Search Content Account * – Used to access the data by the help system crawler
- Application Pool Identities * – The account used to access the content databases for the web app. Also account for w3wp.exe

* Account needed for WSS

SetSPN.exe

- Used to define Service Principal Names (SPN)
- An SPN is a multi valued attribute stored in AD for users.
- Services only know how to use them to request a ticket
- Example SPN = HTTP/server.domain.com

Account Setup Before Install

- Single account install – Make account local admin on all boxes
- Secure multi account Install
  - Setup Account – Domain User, Local admin on all servers you install MOSS on, SQL Server login with SecurityAdmin and dbcreator roles.
  - All other accounts – Domain User. Setup/config will automatically grant necessary rights.

Service Pack 1

- Available as of December 2007
- For more information on how to deploy it
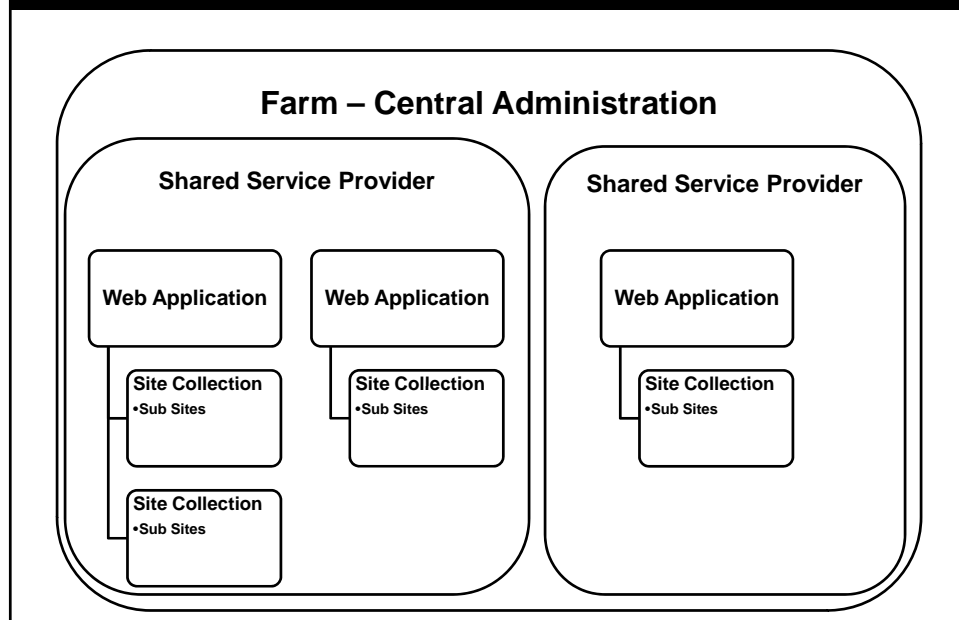 - http://msmvps.com/blogs/shane/archive/2007/12/14/how-to-install-wss-and-moss-sp1.aspx

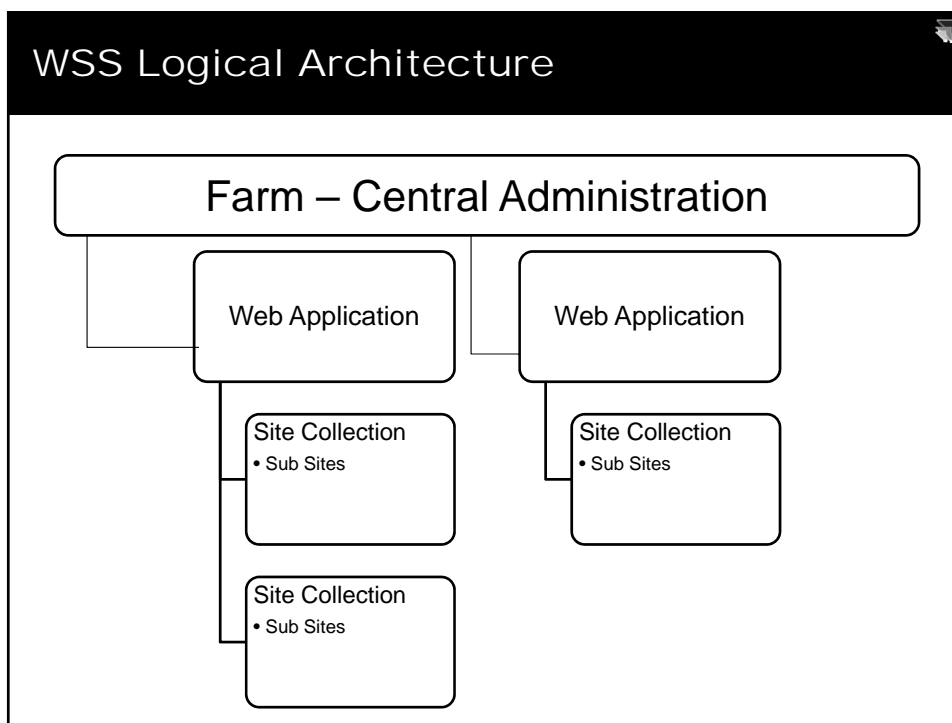**SharePoint 2007
Administration Tools**

Module 3

Agenda

- Welcome to Central Administration
- Starting with that first SSP
- Other admin tools

SharePoint Containment

Farm

| **Servers** |
| Web Front End, APP, SQL |

| **Web Applications** |
| Central Admin, SSP Admin, Content |

| **Databases** |
| Content, Config, SSP, Search |

| **Site Collections** |
| Internet, Intranet Portal, Wikis, Blogs, Team, Doc, Mtg |

| **Sites** |
| Wikis, Blogs, Team, Doc, Mtg |

| **Lists** |
| Doc Lib, Pages, Events, Discussions, Surveys, etc… |

| **Items** |
| Files, calendar items, contacts, customers, images, custom |

MOSS Logical Architecture

Farm – Central Administration

Shared Service Provider

Shared Service Provider

Web Application

Web Application

Web Application

Site Collection
•Sub Sites

Site Collection
•Sub Sites

Site Collection
•Sub Sites

Site Collection
•Sub Sites

WSS Logical Architecture

Farm – Central Administration

Web Application

Web Application

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Welcome to Central Administration

- The site for Administrators to make farm wide settings.

Enabling Services

- Based on the servers role you have chosen you will start specific services.
  - Web, Query, Index, Excel, Etc

- Don't be confused by Server role selection portion. Only a helper.

MOSS Services

Central Administration > Operations > Services on Server
Services on Server: server1

Complete all steps below

Server: server1

Select server role to display services you will need to start in the table below.

Open Menu

○ Single Server or Web Server for small server farms	All services run on this server	
◉ Web Server for medium server farms	Web application and Search Query services run on this server	
○ Search Indexing	Search Indexing service runs on this server	
○ Excel Calculation	Excel Calculation service runs on this server	
○ Custom	Services you choose run on this server	

Start services in the table below:

View: **Configurable**

Service	Comment	Status	Action
Document Conversions Launcher Service		Stopped	Start
Document Conversions Load Balancer Service		Stopped	Start
Excel Calculation Services	Required on Farm, not running	Stopped	Start
Office SharePoint Server Search	Required on Farm, not running	Stopped	Start
Windows SharePoint Services Search	Required on Farm, not running	Stopped	Start
Windows SharePoint Services Web Application		Started	Stop

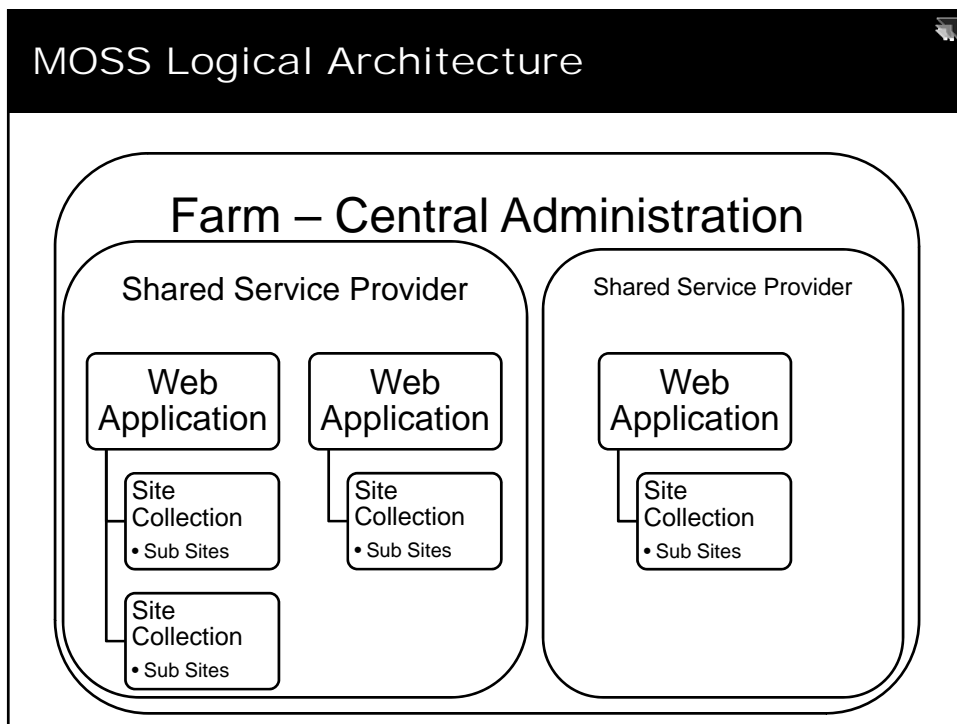When finished, return to the Central Administration home page

WSS Services

Central Administration > Operations > Services on Server
Services on Server: sp911genesis

Complete all steps below

☐ Server: **sp911genesis** ▾

☐ Start services in the table below:

View: **Configurable** ▾

Service	Comment	Status	Action
Central Administration		Started	Stop
Windows SharePoint Services Incoming E-Mail		Started	Stop
Windows SharePoint Services Search		Started	Stop
Windows SharePoint Services Web Application		Started	Stop

☐ When finished, return to the Central Administration home page

Starting Services

- As you hit Start you are taken to configuration screen for service.
- Make appropriate settings
- Plug in security accounts
- Search and Document conversion services correspond to actual server services.

Set Outgoing Email

- SharePoint just needs a SMTP server to relay through.
- Make sure
  - Server is setup to allow relay from SharePoint's IP
  - No firewall blocking port 25
  - Antivirus Software not blocking outbound

DEMO!

- Tour Central Administration

MOSS Logical Architecture

Farm – Central Administration

Shared Service Provider

Shared Service Provider

Web Application

Web Application

Web Application

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Site Collection
• Sub Sites

SSP = Reusable Services

- The Shared Services Provider (SSP) allows…
  - Service to be shared across
    - Web Applications
    - SharePoint Farms
- Think of a parent-child relationship.
- MOSS Only Feature

MOSS Logical Architecture

Farm	Farm

Shared Service Provider

Web Application

Web Application

Web Application

Site Collection
•Sub Sites

Site Collection
•Sub Sites

Site Collection
•Sub Sites

Site Collection
•Sub Sites
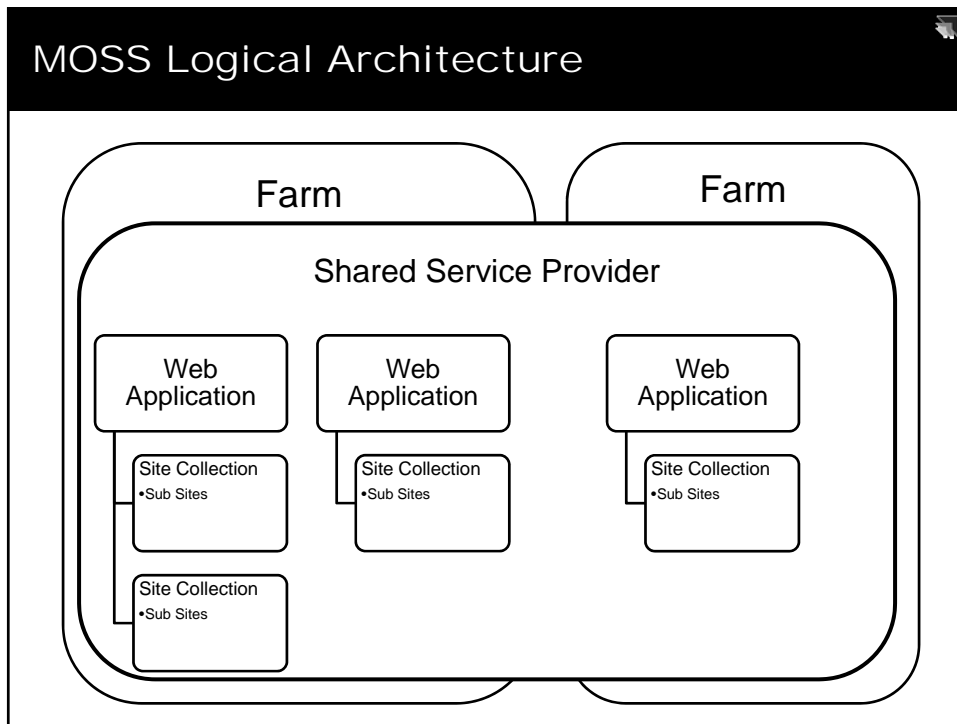
SSP Components

- SSP needs
  - A web application
  - Creates Site Collection at http://url/ssp/admin
  - Creates 2 databases – Search and everything else
  - Assign SSP to Index server
  - Service account that it runs as
  - Location of My Sites

DEMO!

- Creating an SSP

Planning number of SSPs

- For most companies the right answer is 1
- Reason's not to use 1
  - Don't want to share
  - Intranet vs. Extranet
  - Security concerns

DEMO!

- Tour of the SSP Admin interface

Separation of Powers

- Three tiers of administration available
- Farm Admins using Central Admin
- Role specific admins accessing SSP
- Site Collections Administrators taking care of business
- All can be mutually exclusive

Other Admin Tools

- Stsadm.exe
- SharePoint Configuration Wizard

Stsadm.exe

- Anything you can do in the GUI stsadm.exe can do better
- Located at c:\program files\common files\Microsoft shared\web server extensions\12\bin
- Has 184 different options available
  - Backup/restore, Import/export, create sites, add web parts, execute timer jobs, and 177 other things
- Extensible – Add your own functionality

DEMO!

- Can't talk about the coolest tool on the block without showing it off.

SharePoint Configuration Wizard

- GUI available from the Start menu
- Allows you to
  - Detach/reattach a server to a farm
  - Allows you to change what server hosts central admin
- Also available in command line form
  - Psconfig.exe in same directory as stsadm.exe
- Will stop IIS Web Services so be careful when you run this
- Most admins forget about this tool. Crucial when fixing major screw ups. ☺

Databases

- SharePoint_Config
- SharePoint_AdminContent_{GUID}
- WSS_Search_Litwareserver
- WSS_Content_SSP
- Primary_SSP_DB
- Primary_SSP_Search_DB
- WSS_Content_MY

Farm wide security

- Farm administrators group for central admin
  - Does not give you full access to all sites
- Need full access to all sites
  - Policy for web application
    ```
    Full Control
    Full Read
    Deny Write
    Deny All
    ```

A note on My Sites

- Choose their host location wisely
  - Same Web app as your SSP
  - Their own Web app
  - Same Web app as your portal

Critical Path TRAINING

Creating and Configuring SharePoint Sites

Module 4

Agenda

- Logical Architecture
- Web Applications
- Templates
- Site Security

SharePoint Containment

Farm

Servers
Web Front End, APP, SQL

Web Applications
Central Admin, SSP Admin, Content

Databases
Content, Config, SSP, Search

Site Collections
Internet, Intranet Portal, Wikis, Blogs, Team, Doc, Mtg

Sites
Wikis, Blogs, Team, Doc, Mtg

Lists
Doc Lib, Pages, Events, Discussions, Surveys, etc…

Items
Files, calendar items, contacts, customers, images, custom

MOSS Logical Architecture

Farm – Central Administration

Shared Service Provider

Web Application

Web Application

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Site Collection
• Sub Sites

Create Portal Web App

- Determine "friendly" URL
- Determine account
- Determine authentication method
- Crucial Terminology: Web Application = IIS Web Site or IIS Virtual Server

```
Internet Information Services
LITWARESERVER (local computer)
    Application Pools
    Web Sites
        Default Web Site
        SharePoint Central Administration v3
        SharePoint - ssp.tpg.local80
        SharePoint - my.tpg.local80
        Office Server Web Services
        SharePoint - portal.tpg.local80
    Web Service Extensions
```
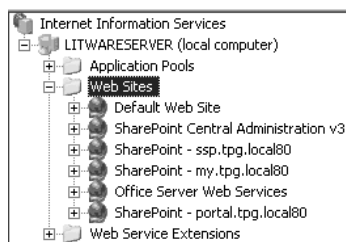
More Web App

- New web app = new content database
- Web App's can not share databases
- DB is default location of new site collections
- Want SSL?
  - Manually configure through IIS
  - Don't forget Alternate Access Mappings (AAM)

What is AAM?

- Maps incoming request to Web Apps
- Then tells SharePoint what URL to respond with
- Crucial in reverse proxy scenarios
- Very common source of support calls
  - Search results link to wrong URL
  - User redirected to different URL on login

Creating your first Site Collection

- Why are they important?
  - Separation of security
  - Level of ownership
  - Administration
  - Can have quotas
  - Smallest unit for controlling storage database
  - Sharing between sites confined to
  - Level of backup

Assign a template

- Site Collection is just a container
- Needs to have a template applied
- Different SKUs = Different OOTB Templates

WSS Templates

Select a template:

| Collaboration | Meetings |

Team Site
Blank Site
Document Workspace
Wiki Site
Blog

Select a template:

| Collaboration | Meetings |

Basic Meeting Workspace
Blank Meeting Workspace
Decision Meeting Workspace
Social Meeting Workspace
Multipage Meeting Workspace

MOSS Standard Templates
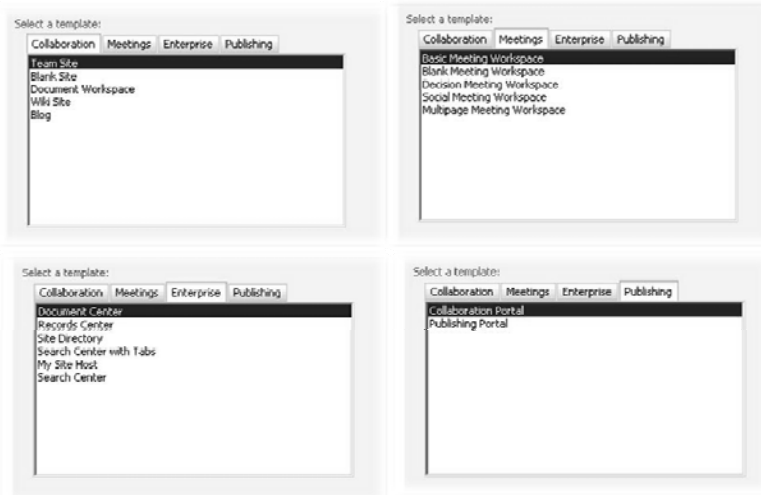
MOSS Enterprise Templates
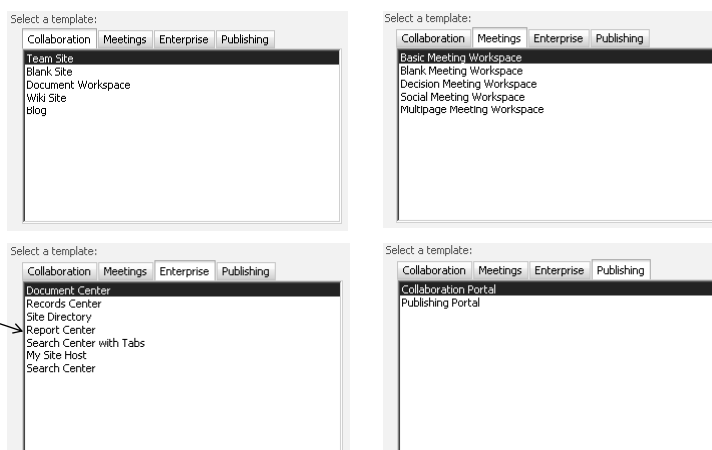
Getting Started

- Intranet/Portal = Collaboration Portal
- Internet Site = Publishing Portal
- Project/Department Work Site = Team Site

- Not required just the usual choices

The Collaboration Portal

- Great for those intranets
- Many readers/few contributors
- Publishing features great for static slow to change sites
- Search center is ready to go
- Built-in Web Parts focused on targeting and ease of use

Demo!

- Tour of collaboration portal
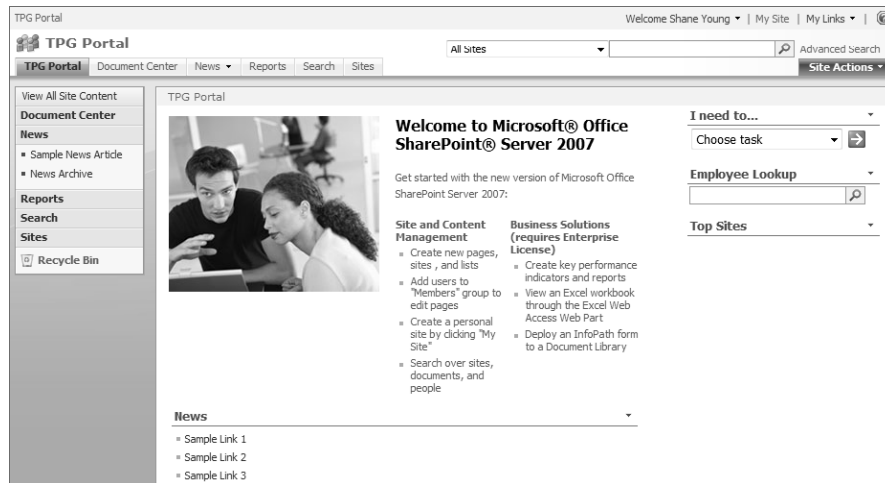
Publishing Portal

- Starting place for building lots of pages
- Publishing features put you in control of content
- Has approval workflow setup on pages
- Add your custom master page and ready to go

Demo!

- Tour of publishing portal
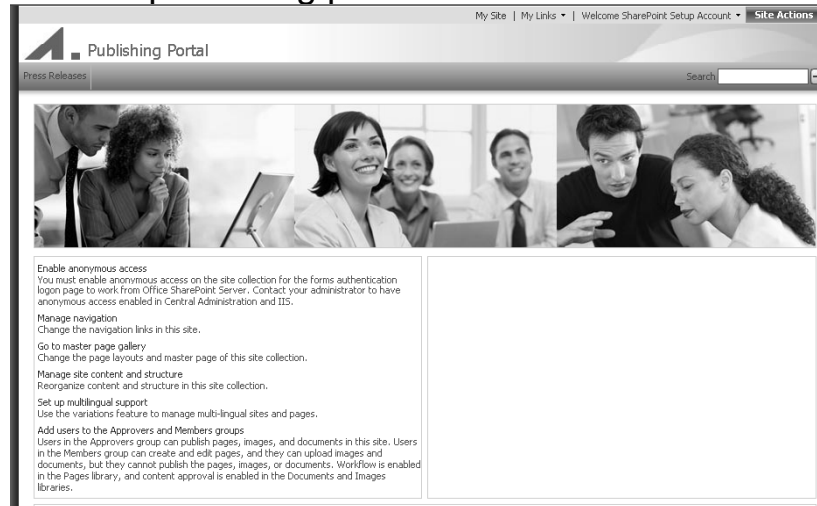
Team Site

- Start collaborating now
- Edit the page, see the results
- Ready for lots of contributors

Demo!

- Tour of team site
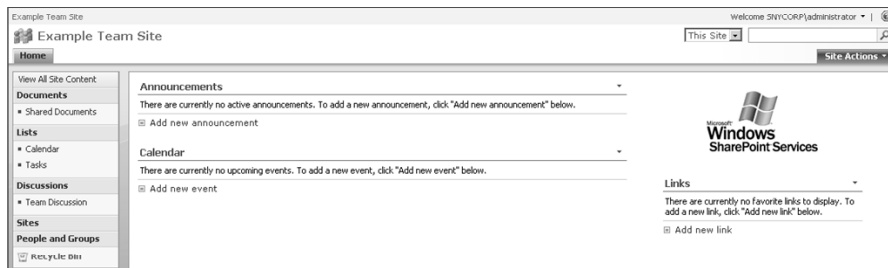
Site Security

- Can be broad or granular
- Inheriting permissions makes admin life easy
- Granted by applying permission levels to groups
- Can use AD groups directly
- Can use SharePoint Groups
  - AD groups can be assigned to SP groups
- Can assign permissions directly to an AD user
  - BAD! Management nightmare

Permission Levels

- 9 available OOTB (MOSS) 5 (WSS)
- Set default list permissions
- Set site and personalization permissions not available otherwise
- Don't modify instead create your own

SharePoint Groups

- 3 main groups to consider
- Owners – Can do everything on the site
- Member – Can add/edit/delete in existing list
- Visitors – Read access only

Site Collection Administrators

- Separate group for full control of the entire collection
- Site Collection Owners automatically added
- Special administrative menu

Site Collection Administration
- Search settings
- Search scopes
- Search keywords
- Recycle bin
- Site directory settings
- Site collection usage reports
- Site collection features
- Site hierarchy
- Portal site connection
- Site collection audit settings
- Audit log reports
- Site collection policies
- Site collection output cache
- Site collection cache profiles
- Site collection object cache
- Variations
- Variation labels
- Variation logs
- Translatable columns

Team Site Collection

Site Collection Administration
- Recycle bin
- Site collection features
- Site hierarchy
- Portal site connection

Collab Portal Collection

Demo!

- Security walk through time

The TPG Portal > People and Groups
People and Groups: The TPG Portal Members

Use this group to give people contribute permissions to the SharePoint site: The TPG Portal

New ▾ Actions ▾ Settings ▾

Picture | Name | About me
Mary Member

Groups
- The TPG Portal Members
- The TPG Portal Visitors
- The TPG Portal Owners
- Style Resource Readers
- Designers
- Hierarchy Managers
- Approvers
- Restricted Readers
- Quick Deploy Users
- Viewers
- More...

All People
Site Permissions

**Customizing and Using
SharePoint Sites**

Module 5

Core Features of SharePoint

- Everything is a list
- Web Parts
- Navigation
- Branding basics
- Advanced: Information Rights Management

Everything is a list

- List are used to store information
- Think of them kind of like a database table

Types of list

- Varies by site template and SP SKU

Create

KPI List
A KPI list is used to track and display a set of goals. Colored icons are displayed to communicate the degree to which the goals have been achieved.

Libraries	Communications	Tracking	Custom Lists	Web Pages
Document Library	Announcements	Links	Custom List	Basic Page
Form Library	Contacts	Calendar	Custom List in Datasheet View	Web Part Page
Wiki Page Library	Discussion Board	Tasks	Languages and Translators	Sites and Workspaces
Picture Library		Project Tasks	KPI List	Publishing Page
Report Library		Issue Tracking	Import Spreadsheet	
Translation Management Library		Survey		
Data Connection Library				
Slide Library				

What makes list great

- They are very easy to customize
- Experience is always the same
- Want more metadata?
  - Add a column
- Views
  - Filtering, sorting, grouping, styling…
- Security
  - Set at list or item level

Metadata vs. Folders

- A fun debate
- Folders
  - Traditional way of organizing content
  - Very easy for users
- Metadata
  - New hip way to organize
  - Requires users to input data
  - Allows better search relevance
  - More flexible for creating views
- SharePoint lists support both

Demo!

- Manipulate out of the box list
- Folders & Metadata
- Create a view
- Create a custom list

Customize Contacts

List Information

Name: Contacts
Web Address: http://portal.tpg.local/Lists/Contacts/AllItems.aspx
Description: 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.

General Settings	Permissions and Management	Communications
Title, description and navigation	Delete this list	RSS settings
Versioning settings	Save list as template	
Advanced settings	Permissions for this list	
Audience targeting settings	Workflow settings	
	Information management policy settings	

Columns

A column stores information about each item in the list. The following columns are currently available in this list:

Web Parts

- The basis of building the user experience
- Control that can be added to a page
- 2 "types" of Web Parts
  - List view Web Parts
  - Functional Web Parts

List View Web Parts

- List view WPs display SharePoint Lists
- Every time you create a new list you get a new Web part

HR Work Site > Shared Documents
Shared Documents

Share a document with the team by adding it to this document library.

| New ▾ | Upload ▾ | Actions ▾ | Settings ▾ | | View: **All Documents** ▾ |

Type	Name	Modified	○ Modified By	Even or Odd
📄	Document 1	9/30/2007 8:03 PM	Alan Admin	Odd
📄	Document 2	9/30/2007 8:04 PM	Alan Admin	Even
📄	Document 3	9/30/2007 8:01 PM	Alan Admin	Odd

List ⇧

Web Part ⇨

| Shared Documents | | ▾ |
Type	Name	○ Modified By
📄	Document 2	Alan Admin
📄	Document 1	Alan Admin
📄	Document 3	Alan Admin

⊞ Add new document

Functional Web Parts

- They Do Work
- Examples
  - Display data from a database, RSS feed, or user input
  - Transform the look of the page
  - Perform a search
- Lots of 3rd party and free web parts available
- Different SharePoint SKUs = different WPs

Demo!

- List Web Parts
- Functional Web Parts

Add a Web Part
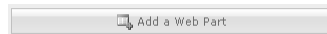
Navigation

- The key to finding things on the site
- Very flexible
  - Targeting
  - Security trimming
  - Open in new window
  - Flyouts
- Navigation Elements
  - Global Navigation
  - Current Navigation
  - Global Breadcrumb
  - Current Site Breadcrumb

Picture worth 1000 words?

1-Global Bread Crumb 2-Global Navigation 3-Current Navigation 4-Current Breadcrumb

The TPG Portal > Sales

Welcome SharePoint Setup Account ▾ | My Site | My Links ▾ | ⓦ

Sales

| Sales | Sales Meeting | Sales Reports | Customer Sites |

All Sites ▾   🔍 Advanced Search

Site Actions ▾

View All Site Content

The TPG Portal > Departments > Sales

Lists
- Sales Goals
- New Lead Tracking

Discussions
- Sales Talk

Documents
- Documents

▧ Recycle Bin

Global Navigation

- Also called Horizontal Nav
- Should make this as consistent as possible
- Inherits from parent by default
- Modify
  - Site Actions > Site Settings > Modify Navigation

Current Navigation

- Called Quick Launch bar and Left hand Nav
  - Important since products can change the name
- Provide links that are relevant to current site
- Customizable same as Global
- Can be disable thorough site admin

Breadcrumbs

- Both self maintaining
- Global is updated when you break global nav
- Current just shows your path on the site

Other nav

- Tree view
  - Looks cool
  - No settings
- Portal site connection (up to portal)
  - Key for connecting separate Site Collections
  - Site Collection Administrator setting
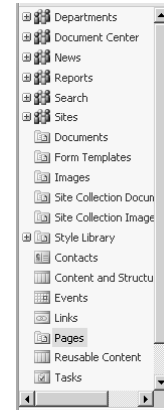
Portal Site Connection

Portal Configuration
To connect to a portal site, enter the URL and a friendly name for the portal.

○ Do not connect to portal site
◉ Connect to portal site
Portal Web Address:
`http://portal.tpg.local/departments/hr/`
Example: http://server/portal/
Portal Name:
`HR Work Site`

No Publishing Feature – Nav Changes

- Instead of Site Settings > Navigation use
  - Site Settings > Top link bar
  - Site Settings > Quick Launch

Look and Feel
- Master page
- Title, description, and icon
- Navigation
- Page layouts and site templates
- Welcome page
- Tree view
- Site theme
- Reset to site definition
- Searchable columns

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

Demo!

- Walkthrough navigation

Change the look

- Called branding
- Themes
- Master Pages

Themes

- Change the colors and images used
- Rely heavily on modifying CSS
- Does effect all of the pages in a site
- Relatively easy to develop your own

Demo!

- Apply some beautiful out of the box themes!

Master Pages

- Page made up of 2 parts
  - Master Page
  - Page layout

- Actually can modify the structure of the page
- Three types
  - Site
  - System
  - Application

Site Master

- Site Master
  - Set at the site level
  - Affects web part pages
- System Master
  - Set at the site level
  - Affects list view pages
- Application Master
  - Set at the farm level
  - Affects files in /_layouts
  - Stored on file system, do not modify

Demo!

- Change a site theme
- Change the master pages for the site
- Open a master page with SharePoint Designer

IRM

- Information Rights Management
- Relies on Rights Management Server (RMS)
  - Free add on to W2k3 Server
  - Works OOTB with Office 2003 and later
  - Free IE add-in available
- Provides you with portable security

- Integrates with SharePoint

IRM Rights

- Full Control
- Edit, Copy, and Save
- Read
- Print

Installing and Configuring Additional Components

Module 6

Agenda

- Site Templates
- Feature feature
- WSS Solution Packages
- Web Parts
- Web.config

Reusing Sites

- Save site as template
- Available from Site Settings
- Works for all sites except publishing sites
- Can choose to include content or not
- Default template limit 10 MB
  - Change via command line
  - Change to max of 500 MB

    ```
    Stsadm.exe –o setproperty – pn max-template-
    document-size –pv 524288000
    ```
- Does not save security

Site Templates Usage

- Save Site as template
- Saved to Site Template Gallery
  - 1 per Site Collection
- Now the template is available to all sites in collection

Use Template Globally

- Deploy via command line
- Add Template
    - `Stsadm –o addttemplate –filename YourFile.stp – title YourTitle –description YourDesc`
- Delete Template
    - `Stsadm –o deletetemplate –title YourTitle`
- List Templates
    - `Stsadm –o enumtemplates`

- After running Add/Delete IISReset required

List Templates

- Just like sites you can save list as template
- Choose to include content or not
- Add to list template gallery to make reusable
- No option for deploying globally

The Feature feature

- Building blocks of SharePoint Sites
- Package of functionality
  - Define and create site elements
  - Deploy and implement new functionality
- Can be turned on or off even after site is created

- Use feature "stapling" to modify default behavior of new sites

What can Features do?

- Deploy site columns and content types
- Define & deploy list templates
- Create list instance from templates
- Define & Deploy page templates
- Deploy web parts
- Deploy custom workflow templates
- Deploy event receivers to lists
- Create new menu items with site

Using Features

- Deploy to the farm
  - Copy files to all servers
  - \12\templates\features
- Install Feature
  - Stsadm.exe –o install feature
- Activate/Deactivate based on scope
  - Farm
  - Web Application
  - Site Collection
  - Site
- Can be hidden
- Feature deactivation
  - Removes functionality
  - Does not remove data created by feature

Demo!

- Copying feature files into place
- Installing feature
- Activating feature
- Open feature.xml

A better way - WSP

- WSS Solution Package
- FileName.wsp is a deployable package (CAB)
- May include
  - Site definitions
  - Feature definitions
  - Images, scripts, files, InfoPath Forms etc
  - Assemblies for bin or GAC
  - Custom Code Access Security (CAS) policy

You want an WSP

- Developer creates WSP
- Farm Administrator adds solution
  - Stsadm.exe –o addsolution
- Farm Administrator deploys solution
  - Stsadm.exe –o deploysolution
  - OR Central Admin > Operations > Solution Management
- Functionality available

Demo!

- Deploy a solution

Fun with Web Parts

- Comes packaged as .cab
- Deploy to web application or entire server
  - Stsadm –o addwppack -url
  - Or
  - Stsadm –o addwppack –global

- Downloads have many flavors.
- Ask for the WSP

Export Web Part Settings

- With page in edit mode
- Creates a .dwp or .webpart file
- XML file with all configuration settings

- Now upload this file to
  - Web Part Gallery
  - Single file import from add web parts menu
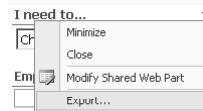
Demo!

- Configure and export web part
- Reuse the web part

Web.config

- Not just for developers
- XML configuration file
- 1 per web application
- Lots of other web.config files, leave them alone
- What is it?
  - .NET configuration file
- Generally updated by Central Admin
- File is case sensitive
- Don't edit with WordPad!

What is in web.config

- Safe Controls
- Cache configuration
- Security Level (Code Access Security)
- Authorization (anonymous, etc)
- User Store (AD, Forms Based, Etc)
- And a whole bunch more

Code Access Security

- Similar to setting permission on users except for code
- Default SharePoint runs with Minimal trust
- Raising level in web.config affects everything
- Better – Create custom policy file, specify permissions for particular web part

Setting trust level

- <trust level="WSS_Minimal" originurl="" />
- Options
  - WSS_Minimal (default)
  - WSS_Medium
  - Full (built in .NET Policy)

<securityPolicy>
  <trustLevel name="WSS_Medium" policyFile=…
  <trustLevel name="WSS_Minimal" policyFile=…
</securityPolicy>

Getting better error messages

- Edit Web.config for your web app
  - In <SharePoint> section
    ```
    <SafeMode MaxControls="200" CallStack="true"
    DirectFileDependencies="10"
    TotalFileDependencies="50"
    AllPageLevelTrace="false">
    ```
  - In <system.web> section
    ```
    <customErrors mode="Off" />
    ```

- Now you get detailed error messages

Demo!

- Open up the Web.config
- Enable custom errors

Featured Download

- In the lab you will be using the Free add on:
  - R.A.D. Editor for SharePoint 2007
  - http://sharepointcontrols.com/products/overview.aspx
- Provides rich text editor to non IE browsers

Critical Path TRAINING

Configuring and Customizing Search

Module 7

Agenda

- WSS vs. MOSS
- OOTB Search
- Administrate Search
- Customize Search Options

MOSS Search is Awesome!

- WSS Search is cool too!
- Same technology behind both
- WSS Search only works within the site collection
- MOSS can crawl just about anything
- Biggest difference?
  - WSS Search just runs
  - MOSS Search has lots of configuration options

- Remember MOSS Search and SSP

How search works

- Locates content
- Loads protocol handler
- Loads necessary ifilter
- Word breaks the file
- Writes info to index (physical file)
- Writes property info to search db

- Search honors security!

ifilters

- Core Microsoft search technology
- Allows SharePoint to index other file types
- OOTB only indexes
  - Plain text files
  - Word, PowerPoint, Excel files
- Places to find ifilters
  - File Manufacturer
  - 3rd party web sites
  - www.ifilter.org has list of free ones

Adding a new file type

- Install appropriate ifilter
- Add to SSP > Search Settings > File Types
- Add custom icon file
  - ..\12\template\xml\docicon.xml
  - Upload to ..\12\template\images (16x16)

- Double check file type is not excluded for server
  - Central Admin > Operations > Blocked file types

Noise words

- These are words that have no search value
- Files located in two places
  - C:\program files\Microsoft Office Servers\12.0\data\applications\{guid}\config
  - C:\program files\Microsoft Office Servers\12.0\data\config
- WSS change to
  - C:\program files\common files\Microsoft Shared\web server extensions\12\
- Different version for each language
  - Noiseenu.txt for US English
  - Noiseneu.txt for neutral files

Thesaurus File

- Allows expansion and replacement on queries
- Can also effect search weighting
- Files located in two places
  - C:\program files\Microsoft Office Servers\12.0\data\applications\{guid}\config
  - C:\program files\Microsoft Office Servers\12.0\data\config
- WSS change to
  - C:\program files\common files\Microsoft Shared\web server extensions\12\
- Different version for each language
  - Tsenu.xml for US English
  - Tsneu.xml for all files

Feature Breakdown – Content Sources

- WSS – Just your SharePoint Site Collection
- MOSS Standard– All of your SharePoint Sites at once and add things like
  - Exchange Public Folders
  - Other Web Sites
  - File Shares
  - Other SharePoint Sites
- MOSS Enterprise – The BDC baby!

Feature Breakdown – Scopes

- WSS not really – MOSS for sure.
- What is a scope?

All Sites Scope *
SharePoint Sites, Exchange PF, File Shares, Web Sites, Etc

HR Scope
http://portal.tpg.local/hr
\\server\HR
Exchange PF HR

People Scope *
All people

F: Drive Scope
\\server\share

* Automatically Created Scopes
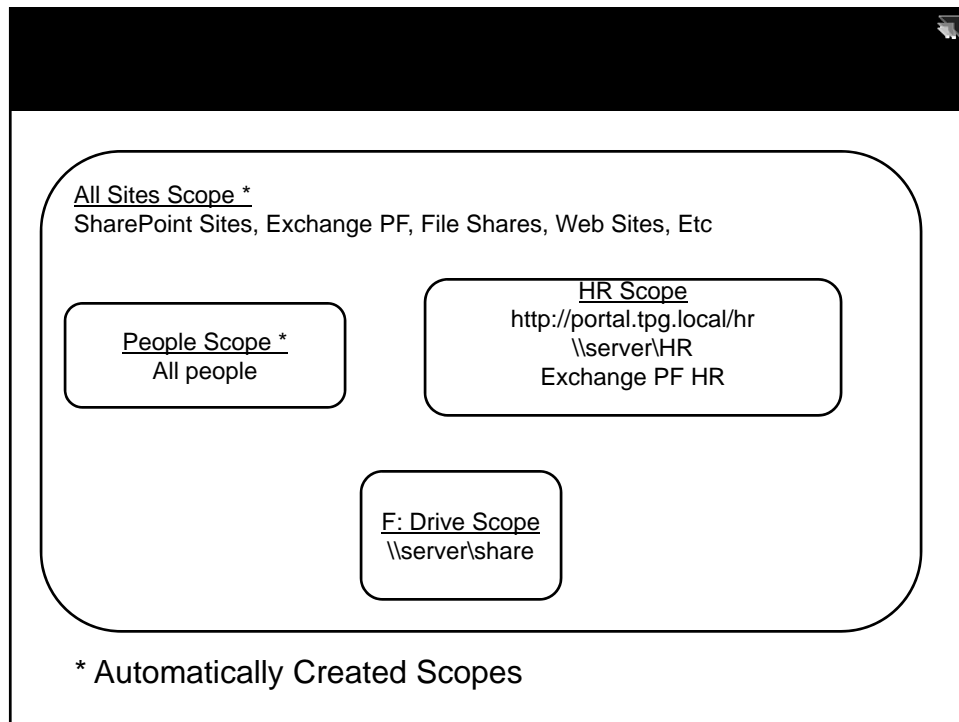
Feature Breakdown – Scheduling

- Indexing is one of the most resource intensive things you can do with SharePoint. Controlling when it happens can be key.
- WSS – Does a full crawl once a day when you choose.
- MOSS – Complete scheduling control. Full and incremental options.

Other MOSS only features

- Detailed easy to use logs
- Control over relevancy
- Crawl Rules
- Easy to grow out farm and off load roles
- Management of properties and advanced search
- Keywords and best bets
- Search center and 11 search web parts
- Detailed search reporting

Gather logs

- The place to figure out why search isn't behaving
- SSP > Search Settings > Crawl Logs

MOSS Includes 11 Search Web Parts

- Create custom search solutions
- Complete control over user search experience
- Search center provides starting point
  - Part of Collaboration Portal Template

Keyword/Best bets

- Highly under utilized
- Keyword is what your user is searching for
  - Can assign a definition to display
- Best bet is what you think they want
  - Links to any web url

- Administered by site collection admin

Advanced Search

- Built with configurable Web Parts

Advanced Search

Find documents with...

All of these words:	bmw
The exact **phrase**:	
Any of these words:	
None of these words:	

Narrow the search...

Only the **language(s)**: ☐ French
☐ German
☐ Japanese
☐ Spanish

Result **type**   All Results ▾

Add property restrictions...

Where the Property...   (Pick Property) ▾   Contains ▾   [   ]   And ▾   Add Property...

[Search]

Customizing Advanced Search

- Add your own properties
  - SSP > Search Settings > Metadata Property Mappings
- Edit Advanced Search Box WP
  - Properties section is XML
  - Add property definition

    `<PropertyDef Name="YourProperty" DataType="text" DisplayName="YourPropertyDisplayName"/>`
  - Add property reference

    `<PropertyRef Name="YourProperty" />`

Other happy user features

- Hit highlighting
- Did you mean
- Duplicate collapsing

Administrating Search

- Central Administration
  - Define services/server roles
  - Proxy & Crawler impact rules
- Site Collection
  - Keywords/best bets
  - Local scopes
  - The UI
- SSP
  - Everything else

Search Reporting

- Available from the SSP
- Two types of reports
  - Search queries
  - Search results
- Great feature for understanding your environment

Need to customize more?

- Use XSLT and CSS to transform search results
- Write code against Object Model or Web Services

- Look to 3rd party
  - http://www.codeplex.com/FacetedSearch
    `Free Community Tool`
  - http://www.ontolica.com/
    `Free Wild Card search/Pay full product`
  - http://www.coveo.com
    `Replaces SharePoint Search Engine`
  - http://www.ba-insight.net
    `Hit Highlighting, preview`

The MOSS Search Service

Indexer Performance Setting	Total # of threads	Maximum # of threads per host*
Reduced	# of CPUs	# of CPUs
Partially Reduced	4 times # of CPUs	# of CPUs plus 4
Maximum	16 times # of CPUs	# of CPUs plus 4

* Can be increased to 64 per host with crawl rule
** 64 is maximum amount of the threads index can have at one time

Demo!

- Everything search

Profiles, Audiences, and MySites

Module 8
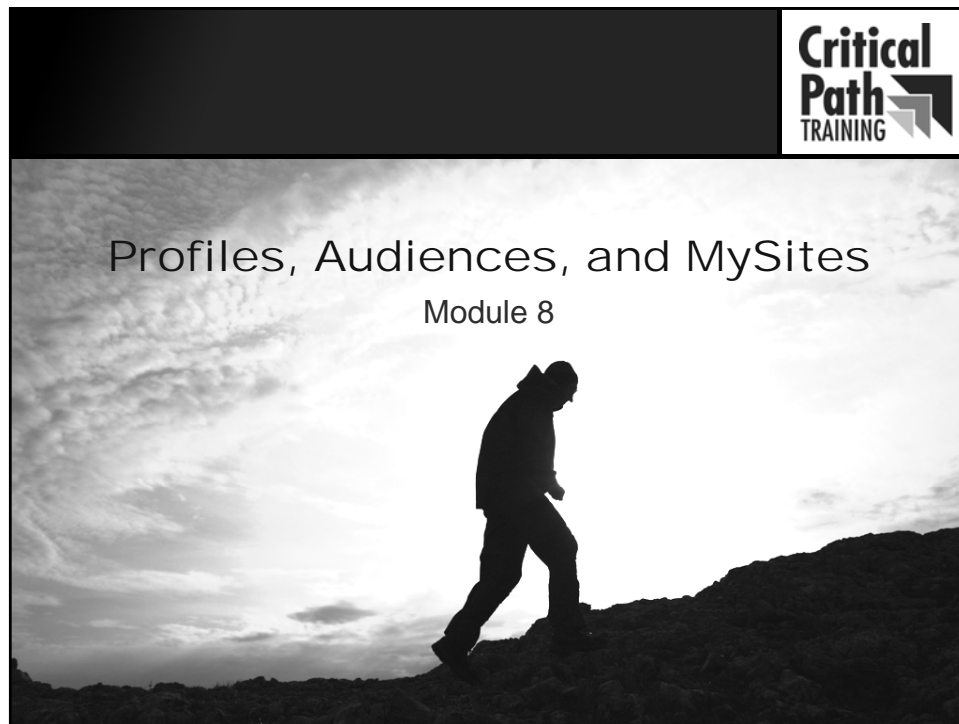
Agenda

- Profiles
- Audiences
- Targeting
- My Sites

Importing profile information

- Pull users and profile information from
  - Active Directory – Also imports group membership
  - LDAP
  - BDC
- Import on schedule
- Accepts connection filters
- This information is now available for search
- Populates info on My Site
- Compile audiences based on info

Default Properties

- 46 properties OOTB
- 21 mapped to AD attribute
- Completely configurable
  - Mapping to ad
  - User editable
  - Privacy settings

More on profiles

- Profile information is pulled from AD on first site access
- Profile Sync job
  - Syncs changes from profile database to site

- Name change example

Demo!

- Look at profile import connections
- Look at profile properties & mappings

Global Audiences

- Compile based on account or profile properties
- Used to target
  - Links
  - Web parts

- Schedule compile for after profile import

Other Targeting

- All Web Parts
- Choose from
  - Global Audiences
  - Distribution/Security Groups
  - SharePoint Group
- Content Query Web Part/List filtering
  - List Enable audience targeting
    `Creates new column — Assign target`
  - CQWP has filter to use targeting

Demo!

- Creating a global audience
- Targeting Web Parts
- The Content Query Web Part

My Sites

- Sites allow users a personal SharePoint site
- Can be used to expand people networking

Personal Site

- Automatically created first time accessed
  - Creates a new site collection (set quotas)
- Allows user to edit profile information
- Provides tools for organization
- Provides both public and private storage
- Web Parts for accessing Exchange
- Can create additional lists and sub-sites

People networking

- Add a picture
- Colleague tracker
- Contact info
- Special, "In common with you" web part
- Memberships
- Information is available via search
  - People search tab in Search Center
  - Sort by social distance
  - Refine by Job Title or Department

Demo!

- Fun with My Sites
- Other personalization settings
  - Personalization site links
  - Published links to Office client applications
- Discussion of moving My Sites

Critical Path TRAINING

Creating and Configuring Internet-facing sites

Module 9

Agenda

- WCM
- Authentication Providers
- FBA
- Proxies & SSL
- Firewall Ports

Web Content Management

- MOSS contains lots of publishing features allowing you to control the flow of information
  - Check in/out/versioning of pages
  - Approvals and workflows
  - Master Pages
  - Lots of plug-ins for developers (not us)

- Makes it practical to use for Internet/Extranet

What makes up a page?

- Master page + Page layout + Content
- Master page sets structure (and some branding)
- Page layout defines Web Part zones and content place holders
- Content is all of the stuff you add

The Challenge – A public site

- Allow some anonymous access
- Don't use AD Accounts
- Support multiple host headers
- Possibly use a reverse proxy
- Secure communications (SSL)

Anonymous Access

- 1st enable in Central Admin
  - App Management > Auth Providers
- 2nd administer at Site
  - Advanced Permissions
  - Inherited
  - Cannot be set at item level

Anonymous users can access:
- ◉ Entire Web site
- ○ Lists and libraries
- ○ Nothing

Other Authentication Providers

- ASP.NET 2.0's authentication provider model
- Setup SharePoint to use any LDAP repository
- SQL databases work too
- Then users login through forms based UI
- Hand modification of web.config
  - Specify connection settings
  - Specify membership provider
  - Specify role provider

Most Common Auth Provider

- SQL Database
- .NET 2.0 has wizard to create
  - **aspnet_regsql**
- Visual Studio has tool
  - Test web.config settings
  - Add users and roles

Demo!

- Create SQL Database to store FBA Users
- Use Visual Studio to create connections
- Use VS to create users and roles

Configure Site to use FBA

- Modify web app web.config with connection info
- Modify central admin the same
- Specify settings in authentication provider
- Grant access to FBA user
- Enjoy

Challenges

- OOTB no user or role manager interface
  - Write your own
  - Use 3rd party addin
- MOSS can not crawl FBA Site
  - Must have 2nd Web app configured to use Windows Auth
- Client Integration features not supported

Creating 2nd Web App

- Central Admin > Extend an existing Web app
- Creates new web app mapping it to existing
- Same Content
  - Different URL
  - Different Authentication provider

Want multiple host headers?

- http://www.sharepoint911.com and http://sharepoint911.com same site
- 1 Server
  - Just add HH to IIS directly, setup AAM
- Multiple Servers
  - Replication job will overwrite IIS edits
  - Either use multiple SharePoint Web apps
  - Or IIS Redirect site

Demo!

- Hook up FBA to Web App
- Extend Windows Auth Web App
- Show off some IIS tricks

Publish through proxy server

- Like ISA Server 2006
- Allows you to hide server information
- Use different external URL
- Supports
  - SSL Off Loading
  - Link translation
  - SSO Capabilities
  - Advanced routing "tricks"

Alternate Access Mappings

- AAM
- SharePoint sees URL requested by user
- Responds according to AAM table

Want SSL?

- Configure in IIS
- Setup AAM
- Consider IIS redirect site

SelfSSL

- Part of the IIS 6.0 Resource Kit
  - http://www.microsoft.com/downloads/details.aspx?FamilyID=56fc92ee-a71a-4c73-b628-ade629c89499&displaylang=en
- Allows you to create your own cert
- Downside?
  - Users don't trust the certificate by default
  - Add it to their certificate store
  - Or buy a trusted cert

Firewall Ports

Inbound/Outbound	From	Port	To
Inbound	ALL (as applicable)	TCP 80 or 443	ISA Web Pub or WFE
Inbound	TS Jump point	RDP (TCP 3389) For Remote Admin	APP (Central Admin /SSP Admin)
Inbound	All SharePoint Server (Depends on Central Admin config)	Office Server Web Services, TCP 56737, SSL 56738	App (Central Admin /SSP Admin)
Inbound	Index	TCP 80 or 443	WFE
Outbound	ALL SharePoint Svrs (Based on Auth)	DS (TCP 445) RPC (TCP 135) DNS (UDP 53) Kerberos (UDP 88) LDAP/S (UDP 389/636)	DC/DNS (LDAP)
Outbound/(Inbound if applicable)	WFE (alerts or mail enabled list)	SMTP (TCP 25)	SMTP/Exchange
Outbound	ALL SharePoint Svrs	SQL (TCP 1433) or SSL custom port	SQL
Outbound	WFE (Search Request)	Search Query, either NBT (TCP/UDP 137, 138,139) or Direct-hosted SMB (TCP/UDP 445)	Query
Outbound	Index (Propagation)	Search Query, either NBT (TCP/UDP 137, 138,139) or Direct-hosted SMB (TCP/UDP 445)	Query
Outbound	WFE (SSO)	RPC for SSO – (TCP 135), plus random high ports (Dynamic RPC) or restricted high ports (Static RPC)	APP Servers

Optimizing SharePoint 2007 Performance

Module 10
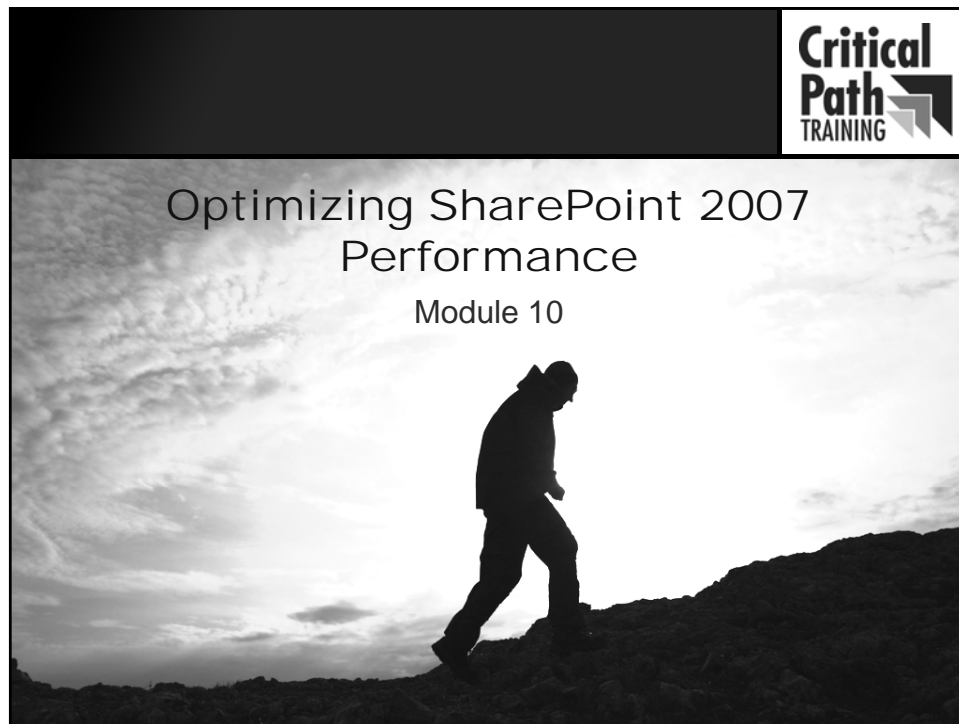
Capacity Planning

The art of evaluating a technology against
the needs of an organization,

and making an educated decision

about the procurement of HW to meet the demands specific to a system
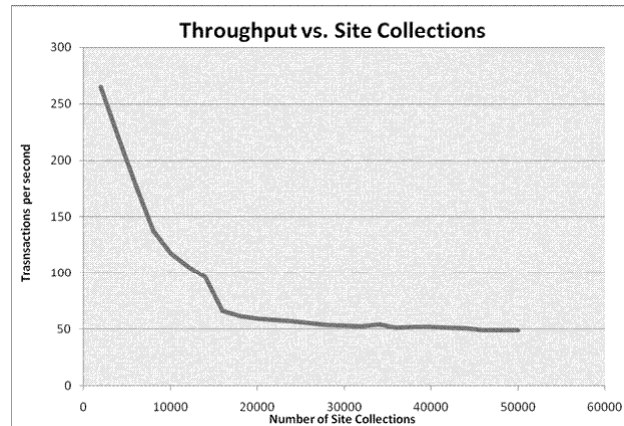being installed

A 4 step program

- 1: Plan for Software Boundaries
- 2: Estimate Performance and Capacity Requirements
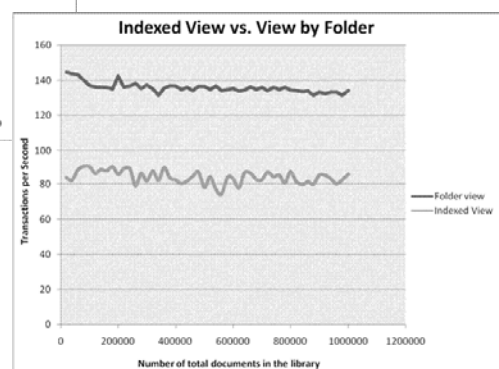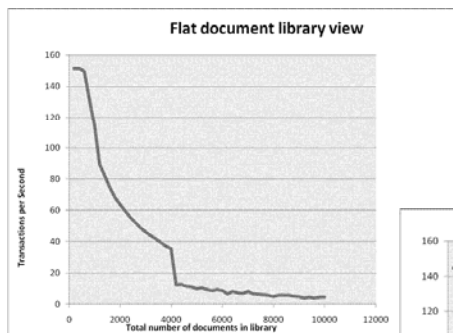- 3: Plan Hardware and Storage Requirements
- 4: Test

Software boundaries

- Two types of limits
  - Recommend limits (performance)
  - Hard limits (built in maximums)

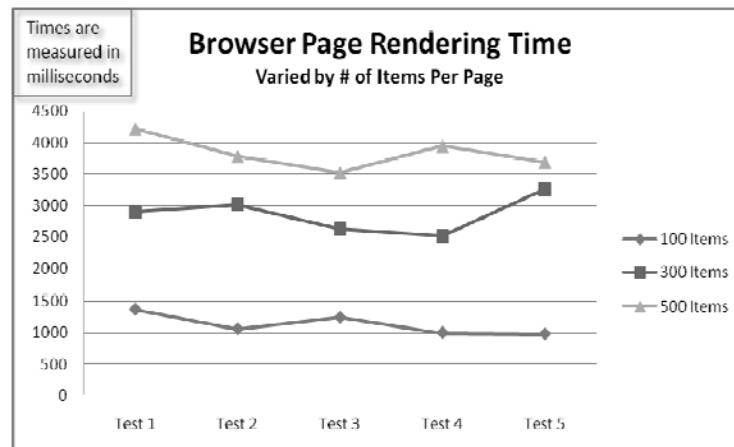# # of Site Collections

Document Libraries

More Software Boundaries

Site Collections	50,000 per DB	
Site Collections	50,000 per Web App	
Content DBs	100 per web app	
Web Sites	250k per Site Collection	Use nesting
Sub Sites	2,000 per site	Very hardware dependent
Documents	5 million per library	Use nesting
Security objects	2,000 per site	Groups or users
Indexes	1 per SSP	20 SSPs per farm (Hard)
Indexed Docs	50 Million per index	Buy Hardware
SSPs	3 recommend	20 Hard Limit
App Pools	8 per server	
WFEs	3 per Domain Controller	

Remember Everything is Hardware Dependent!

Items displayed on page matters

Times are measured in milliseconds

Browser Page Rendering Time
Varied by # of Items Per Page

Legend: 100 Items, 300 Items, 500 Items

4

Step 2: Estimate performance and capacity

- Usage Profiles
- Target performance levels

Usage Profiles

- Common profiles
  - Collaboration (Read/Write)
  - Portals (Everything)
  - Search (Search Server)
  - Business Intelligence (Calculations)
  - Internet (Read)

- Authentication vs. Anonymous

Determine usage profiles

- Existing solution? Data mining
  - IIS Log Parses 2.2
- Microsoft provides sample data

Target Performance

- Plan RPS for peak load not average
- Example
  - MSFT 1 farm average = 10 RPS Peak = 130 RPS

- Be careful what you read
  - Lots of # on the web but all have assumptions behind them

Demo!

- Take a closer look at Microsoft's Papers
  - Estimate performance and capacity requirements for Windows SharePoint Services collaboration environments (Office SharePoint Server)

Other performance factors

- Long running lock operations
  - Backups
  - Indexing
- Additions/Customizations
  - Page size
  - SQL Round trips (bad code)
- Permissions
  - Security trimming
- Cache?
  - MOSS brings huge performance increases

Output Cache

- Uses configurable profiles
- Keeps page from executing code
  - Lowers CPU load
- Stores page in memory
  - Consumes more RAM
- Multiple WFEs can cause varied results
  - Use persistence/affinity/sticky sessions
- .NET 2.0 Technology
- Set at collection/page/layout

Object Cache

- Caches
  - Page items
  - Cross list queries (CQWP)
- Configurable for site collection
- Used except when document is checked out

BLOB Caching

- Controlled via web.config
- Stores normally static files on disk
  - No more trips to the DB
- Disabled by default
- maxSize in GB
- Max-age can be added in seconds

```
</MergedActions>
<BlobCache location="C:\blobCache" path="\.(gif|jpg|png|css|js)$" maxSize="10" enabled="false" />
<RuntimeFilter Assembly="Microsoft.Office.Server, Version=12.0.0.0, Culture=neutral, PublicKeyToke
```

Demo!

- Setting MOSS to use Cache

Step 3: Hardware and Storage

- Servers
- Tuning
- Storage planning

32 bit vs. 64 bit

- Both supported and available
- 32 bit is generally faster
- Farm - Same role, same architecture
- New hardware?
  - Buy 64 bit hardware
  - Load 32 bit OS and SharePoint
  - V.next will only be 64 bit
- Use 64 bit if needed to support > 4GB of RAM
- Some 3rd parties do not support 64bit

Servers

- Network bandwidth is huge
  - Gigabit or vlan for farms
- Misconfigured network
- Geo solutions location important
  - Farm cannot be spread across WAN
  - Options
    ```
    Local SharePoint
    3rd party accelerators
    3rd party replication
    ```
- SLAs
- Understanding end to end usage

SQL Planning

- Database Storage 1.5:1 against file system
- Disk performance most important
- Plan DB needs sizing
  - Don't forget about backups

Understand IIS

- Choose # of App Pools carefully
  - Each one consumes resources
  - Find balance
- IIS does compression
  - SharePoint automatically adds JS and CSS files
- Web gardens help scale
- Watch out for IIS logs on C: drive

Demo!

- Fun with IIS tuning
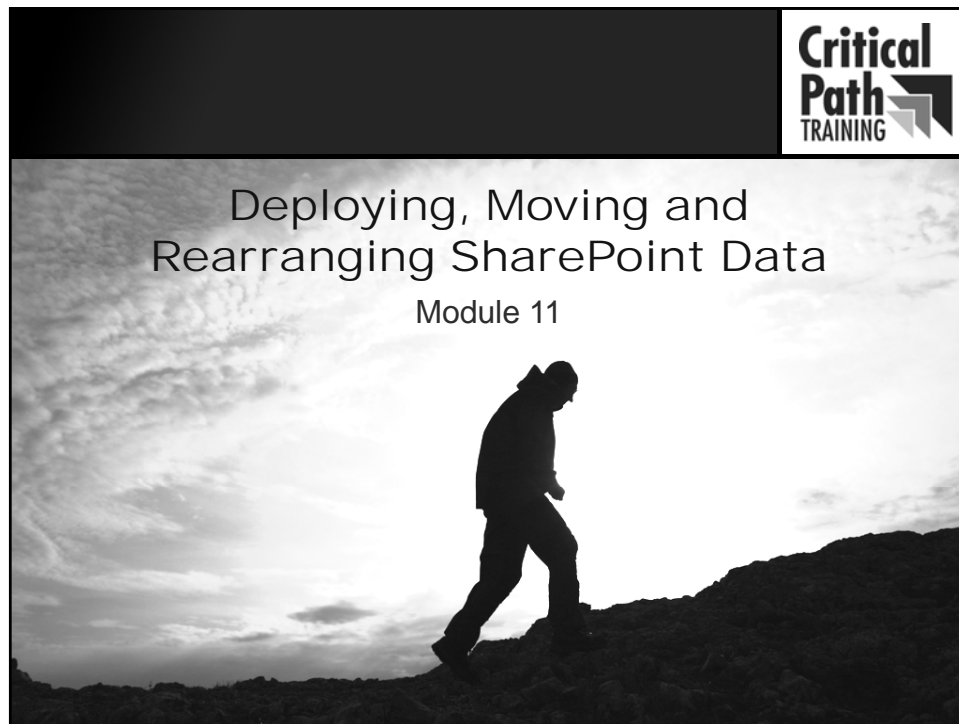
Random Tip

- Adjust server upload
  - 50 MB default upload max – configure central admin
  - Modify IIS property connection timeout (120 default)
  - Modify web.config

    ```
    change C:\Program Files\Common Files\Microsoft
    Shared\web server
    extensions\12\TEMPLATE\LAYOUTS\web.config
    <location path="upload.aspx"> <system.web>
    <httpRuntime maxRequestLength="2097151" />
    </system.web> </location>
    ADD executionTimeout="999999"
    ```

Are you a fiddler?

- http://www.fiddlertool.com/fiddler/
- Web Debugging Proxy
- Translation –
  - Lets you see the raw traffic between browser and server. Great for running down strange behavior.

Tune Performance from Microsoft

http://technet.microsoft.com/en-us/library/cc298550.aspx

Deploying, Moving and Rearranging SharePoint Data

Module 11

Critical Path TRAINING

Options for moving content

- Bulk Uploads
- Save Site as Template
- Stsadm and SPD
- Manage Content and Structure
- Content Deployment Jobs

Uploading documents

- Upload
- Upload multiple files
  - Only if you have Office 2003 or later
- Explorer view
- Map a drive
  - \\fqdn\document library
  - Enable web client service

Demo!

- Uploading files to SharePoint

Reusing Sites

- Save site as template
- Available from Site Settings
- Works for all sites except publishing sites
- Can choose to include content or not
- Default template limit 10 MB
  - Change via command line
  - Change to max of 500 MB
    ```
    Stsadm.exe –o setproperty – pn max-template-
    document-size –pv 524288000
    ```
- Does not save security

Site Templates Usage

- Save Site as template
- Saved to Site Template Gallery
  - 1 per Site Collection
- Template is now available throughout the Site Collection

Use Template Globally

- Deploy via command line
- Add Template

```
Stsadm –o addttemplate –filename YourFile.stp –
title YourTitle –description YourDesc
```

- Delete Template

```
Stsadm –o deletetemplate –title YourTitle
```

- List Templates

```
Stsadm –o enumtemplates
```

- After running Add/Delete IISReset required

The command line

- STSADM.exe is your friend
- Import/Export

```
stsadm.exe –o import
        –url <URL to import to>
        –filename <import file name>
        [–includeusersecurity]
        [–haltonwarning]
        [–haltonfatalerror]
        [–nologfile]
        [–updateversions <1-3>
            1 – Add new versions to the current file (default)
            2 – Overwrite the file and all its versions (delete then insert)
            3 – Ignore the file if it exists on the destination]
        [–nofilecompression]
        [–quiet]
```

SPD?

- SharePoint Designer of course
- Gives backup restore option
- Same output at export/import
- Gives option for doing subsites
- Doesn't require command line access

Publishing sites give you more

- Manage Content and Structure
- Web based tools
- Allows
  - Moving/Copying/Deleting Sites
  - Allows moving some list items
  - Allows bulk operations (check in, publish, etc)

Demo!

- A casual stroll through Manage Content & Structure

Moving from dev to prod

- Content Deployment Jobs
- One-way process
- Multi-tier? No problem
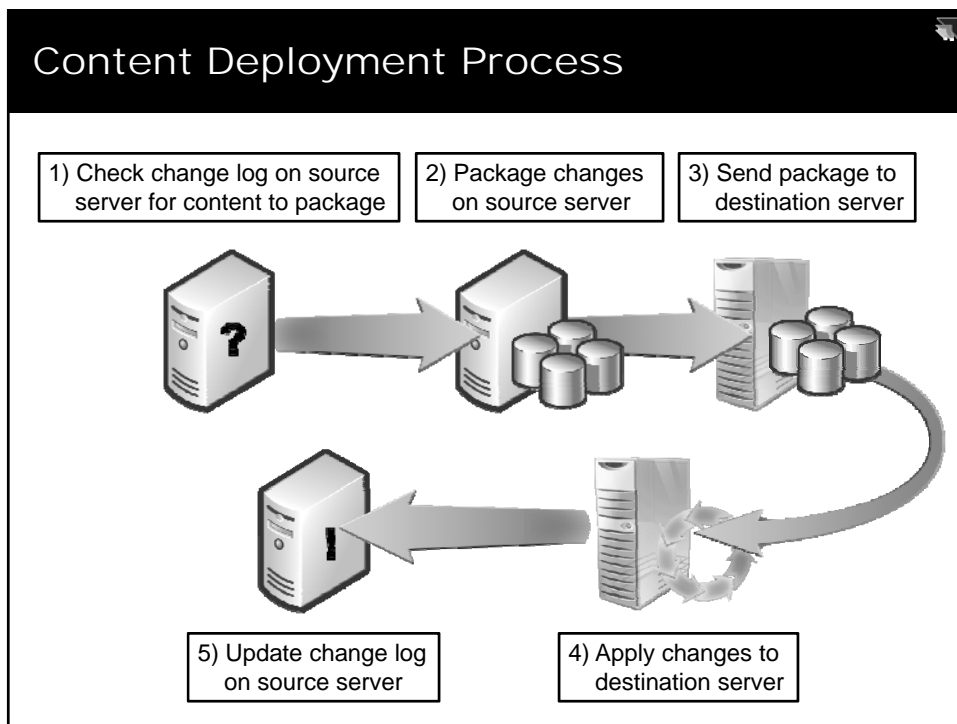 - Config doesn't change

Content Deployment
- Content deployment paths and jobs
- Content deployment settings
- Check deployment of specific content

Paths & Jobs

- Paths
  - Connects two site collection
  - Same or different farm
- Jobs
  - When things get moved
  - What are those things

- Quick deploy jobs
  - Automatically created
  - Allows pushing of just an item when needed

Setup

- Done through central admin
- Target should start as blank site template

Content Deployment Process

1) Check change log on source server for content to package	2) Package changes on source server	3) Send package to destination server

5) Update change log on source server	4) Apply changes to destination server

Demo

- Setup Content Deployment
- Deploy a portal

Critical Path TRAINING

High Availability, Backups and Disaster Recovery
Module 12

Agenda

- Protection
  - AV & ISA
- Recoverability
  - Versions, Recycle Bin, MSIT Tool
- High Availability Options
  - NLB, SQL Options
- Backups & Restores
  - STSADM, Central Admin, 3rd party

Protection

- Antivirus for SharePoint
  - All the normal reasons

- How does it work
  - SharePoint has APIs to attach to
  - Control if scan up or down or both

- Plan for some extra CPU overhead

Protection

- Application Firewall in front of SharePoint
- Most popular?
  - ISA Server 2006
- ISA does more than just lock down port
  - Packet inspection
  - Verb checking
  - Link translation
  - Advanced routing based on rules
  - And more
- This one time with ISA I…

Protection

- Thinking about both AV and ISA
- Look at Microsoft ForeFront
  - Suite of tools that combines both
  - Also allows for keyword scanning for compliance
  - Fully integrated

Recoverability

- Easy built in pieces
  - Versions
  - Two stage recycle bin

- Add a free piece
  - Microsoft IT Undelete tool

Versions

- Usually need to be turned on
  - Defined at the Library level
- Watch the added storage
  - Full version kept, not the delta
  - Consider limiting number

Create a version each time you edit a file in this document library?
- ◉ No versioning
- ○ Create major versions
  Example: 1, 2, 3, 4
- ○ Create major and minor (draft) versions
  Example: 1.0, 1.1, 1.2, 2.0

Optionally limit the number of versions to retain:
- ☐ Keep the following number of major versions:
- ☐ Keep drafts for the following number of major versions:

Two stage Recycle bin

- Good for Mother Earth and SharePoint
- Protects items and lists
  - Not Sites!
- Stage one
  - User recycle bin
  - View All Site Content
  - Easy to recover
- Stage two
  - Site Collection Administrator access only
  - Does not count against quota

Recycle Bin Status:
- ◉ On ○ Off

Delete items in the Recycle Bin:
- ◉ After [30] days
- ○ Never

Second stage Recycle Bin:
- ◉ Add [50] percent of live site quota for second stage deleted items.
- ○ Off

MS IT Site Backup Tool

- Free add on
  - www.codeplex.com/governance
- Backups sites or site collections before they are deleted
  - If backup fails does not allow site to be deleted
- Notifies owner of site via email of delete
- A must have add on!

All of those nines

Acceptable uptime percentage	Downtime per day	Downtime per month	Downtime per year
95	72.00 minutes	36 hours	18.26 days
99	14.40 minutes	7 hours	3.65 days
99.9	86.40 seconds	43 minutes	8.77 hours
99.99	8.64 seconds	4 minutes	52.60 minutes
99.999	0.86 seconds	26 seconds	5.26 minutes

High Availability

- Build a high avail farm
- Technologies involved
  - Network Load Balancing
  - SQL failover
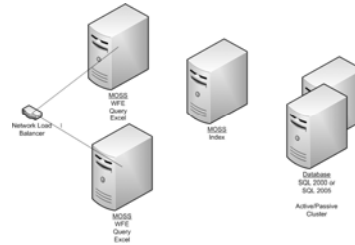
Network load balancing

- NLB
- Software or hardware supported
- W2k3 NLB performs well
- Hardware solutions are better (but not free)
- Couple of things to remember
  - Sessions must be persistent/sticky/single affinity
  - Kerberos has challenges with NLB
  - Windows NLB not intelligent

SQL Options

- SQL Snapshots
- SQL Mirroring
- SQL Log Shipping
- SQL Clusters

- Pick your poison

SQL Snapshots

- Takes a moment in time "snapshot" of your data
- Read only replica of the data
- Attach from separate SharePoint Farm
- Recover pieces of data

- KB929649 for details

SQL Mirroring

- Multiple configuration options
- Requires 2 or 3 SQL Servers
- If primary fails SQL can automatically failover
- SharePoint needs help with the move
  - Have to point DB connections to new SQL Server
- Considered warm backup
- Look to MSFT whitepaper for guidance
    - `http://go.microsoft.com/fwlink/?LinkId=83725&clcid=0x409`

Mirror recovery options

- High Performance (Enterprise)
- High Availability (Enterprise)
- High Protection (Standard or Enterprise)

SQL Log Shipping

- Like mirroring except server is cold
- Target server is read only
- Allows multiple target databases
- Performs well over WAN
- Not well documented for SharePoint

SQL Cluster

- Hot backup
- Typical Active/Passive cluster
  - Two SQL Servers (physical)
  - Shared storage (SAN) for Databases
  - Active server goes down Passive picks up
  - Since storage is shared databases are already there
- Negatives
  - Complex
  - Expensive
  - Servers same data center
  - Storage is single point of failure

Backup GUI

- Central Admin > Operation > Backup & Restore
- Backups to UNC path
- Allows whole farm or granular
  - Web apps
  - Content DBs
  - SSP DBs
  - Search DBs
  - Search Index

Backup details

- Backups Config DB
  - Restoring not supported
- GUI has no schedule
- Does not backup
  - Files on file system
  - IIS settings

- Whitepaper help
  - http://technet2.microsoft.com/Office/en-us/library/288fecfb-53fb-4988-89d7-b7888f82bf961033.mspx?mfr=true

Backup Stsadm

- Stsadm.exe –o backup
- Backup site collection
- Backup whole farm
  - -directory

```
For site collection backup:
    stsadm.exe -o backup
        -url <url>
        -filename <filename>
        [-overwrite]
For catastrophic backup:
    stsadm.exe -o backup
        -directory <UNC path>
        -backupmethod <full | differential>
        [-item <created path from tree>]
        [-percentage <integer between 1 and 100>]
        [-backupthreads <integer between 1 and 10>]
        [-showtree]
        [-quiet]
```

- Can script to setup automatic backups
  - Don't forget cleanup
- Performance intensive
  - Avoid running during usage hours

Other things to backup

- The 12 hive
- Inetpub folder
- C:\windows\assembly – GAC
- Alternate Access Mappings
- Anything you have ever installed on the server
  - Custom features and Web Parts
- All of your settings
  - Write the down. Sadly you can't restore the config DB so it would be nice to have a reference of the accounts and settings you have used.

SQL Backups

- Use existing procedures
- Allows for content recovery
- Will take extra work to restore
- Can not backup the index
- Don't bother backing up
  - Admin database
  - Config database
  - Search property database

Other backup gotchas

- Make sure you are at the same patch level
- Doesn't write to tape so pick the files up in your nightly job
- Permissions needed
  - SQL Service account
  - App pool account
  - Timer service account
  - All need write to backup location
- Can't backup/restore on same farm unless overwrite
  - No copies (Site GUIDS conflict)

3rd Party Options

- Microsoft Data Protection Manager
- Commvault
- AvePoint DocAve

Restore from backup

- Using Central Admin/Stsadm –directory
  - Rebuild server
  - Patch to same level
  - Configure central admin
  - Create same Web applications (no site collection)
  - Restore backup
  - Reconfigure IIS
  - Reconfigure AAM
  - Redeploy addon's (Features, etc)