SAB301

Creating Solutions with SharePoint Server 2007 Enterprise Edition

Schedule of lectures

1. Creating and Customizing WSS Sites
2. Lists, Document Libraries and Content Types
3. Introduction to SharePoint Designer 2007
4. Creating Corporate Portal Sites
5. User Profiles, MySites and Audience Targeting
6. Configuring and Extending Search
7. InfoPath 2007 and Forms Services
8. Workflow and Process Management
9. Web Content Management using Publishing Portals
10. Leveraging the Business Data Catalog
11. Publishing Spreadsheets with Excel Services
12. Creating Dashboards with Report Center

V3.0

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Agenda

- Architectural overview of SharePoint 2007
  - Windows SharePoint Services 3.0 (WSS)
  - Microsoft Office SharePoint Server 2007 (MOSS)
- WSS as a collaboration solution
- WSS as a server-side development platform
- Overview of MOSS components and services

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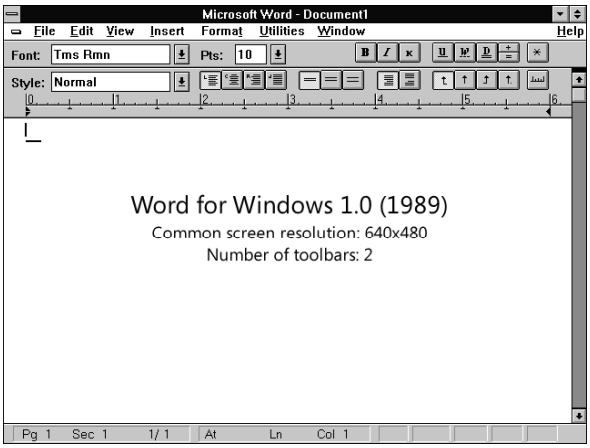
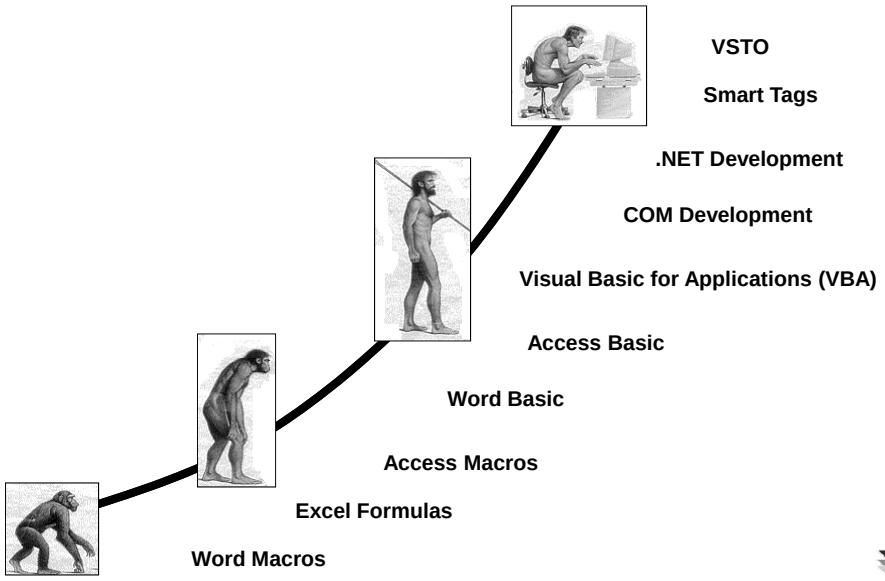
Microsoft Office Through the Ages

- It all started off with a modest productivity tool from a medium-sized company in Redmond



Evolution of the Office Power User



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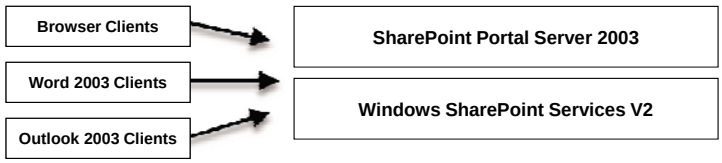
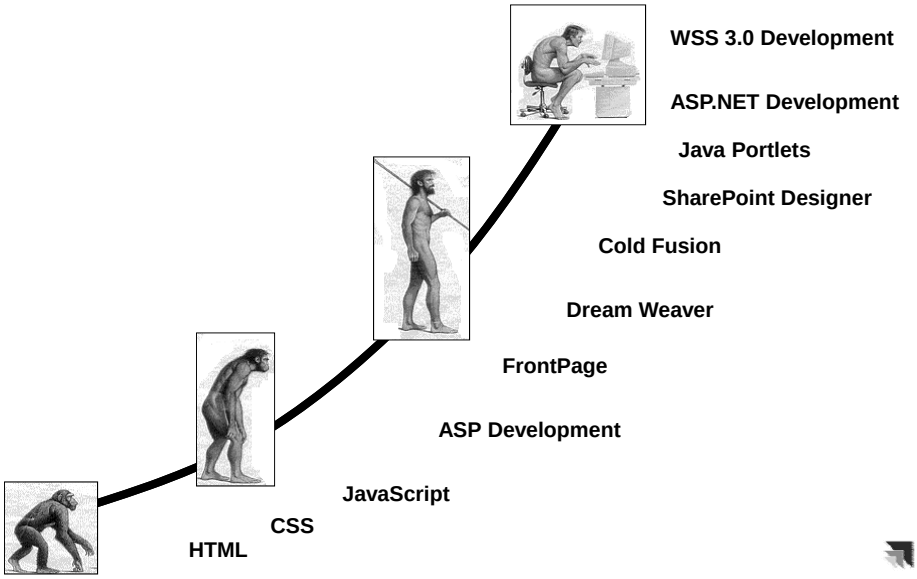
Office 2003 Server Components

- Windows SharePoint Services (WSS v2)
  - Site and Workspace Provisioning Engine
  - Accessibility from browser and Office client applications
  - Out-of-the-box Collaboration Services
- MS Office SharePoint Portal Server 2003 (SPS)
  - Aggregation and search features
  - Social networking (Profiles, Audiences, My Sites)



Evolution of the Web Designer



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Student Questionnaire

- What's Your Name?
- What Company are you with?
- How have you evolved as User, Designer and/or Developer?
  - Office products (Word, Excel, PowerPoint, Outlook)
  - SharePoint (any version)
  - Web Design (HTML, CSS, JavaScript)
  - Development (ASP.NET, WSS 2.0, WSS 3.0, other)

Introducing The Office 2007 System

- Windows SharePoint Services 3.0 (WSS)
  - Licensed as part of Windows Server 2003
  - Site provisioning engine and core workspace services
  - Out-of-box collaboration features
  - A development platform
    think of WSS as ASP.NET extensions
- Microsoft Office SharePoint Server 2007 (MOSS)
  - Licensed separately under its own SKUs
  - New components and services built on top of WSS 3.0
  - Unification of SPS 2003 and CMS 2002
  - Lots of functionality rolled in beyond SPS and CMS

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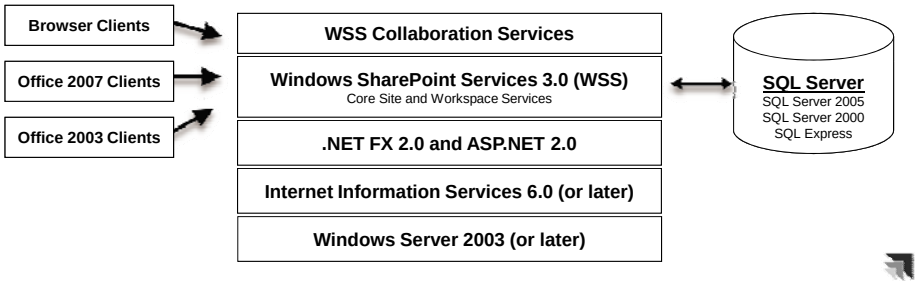
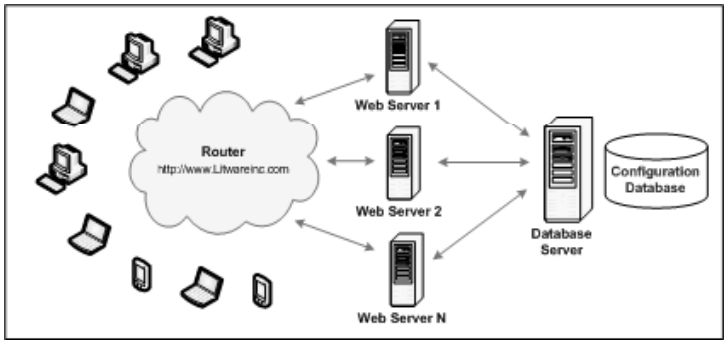
The WSS 3.0 Server-side Platform

- Windows SharePoint Services 3.0 (WSS)
  - An engine for creating/running/managing sites
  - Architecture designed to scale to 10,000s of sites
  - Platform for building Web application and solutions
  - Collaboration services included out-of-the-box



The WSS Farm

- WSS deployment based on a farm
  - Farm requires Web server(s) and database server
  - Farm can be single server or multi-server
  - Each farm has exactly one configuration database



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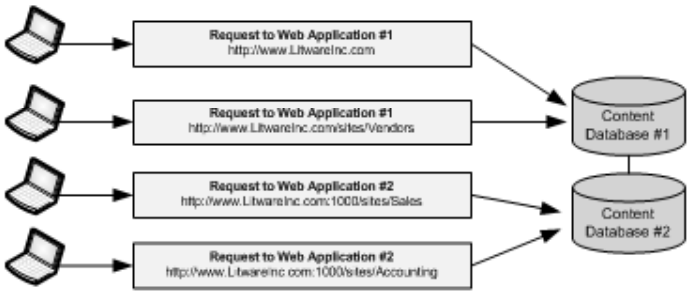
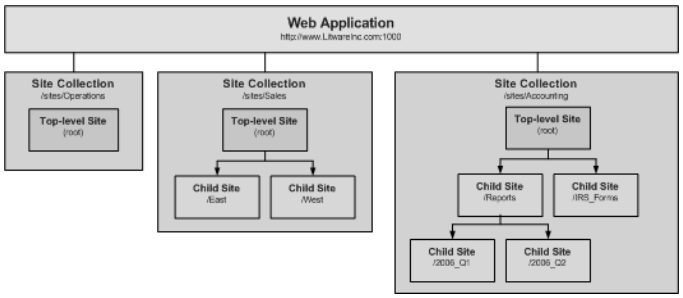
Web Applications

- Web Applications provide HTTP entry points
  - Web Applications based on IIS Web sites
  - Web Application defines one or more URL spaces
  - Web Application security configured independently



Site Collections and Sites

- Sites are partitioned using Site Collections
  - Site collection is scope for administrative privileges
  - Site collection always contains top-level site
  - Site collection may contain hierarchy of child sites
  - Web application can support 1000s of site collections



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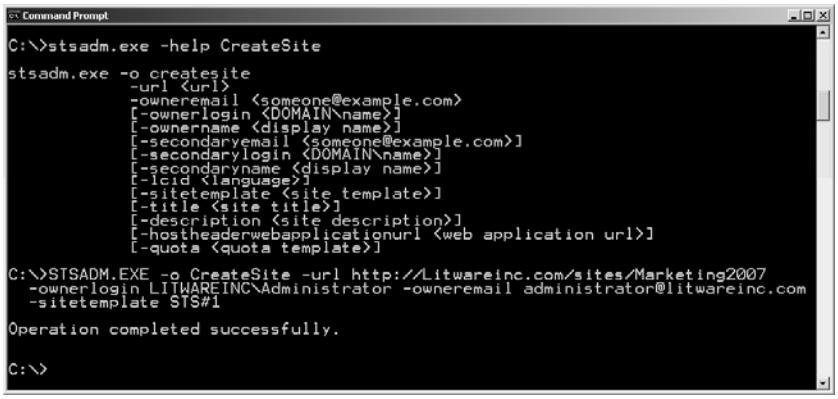
Watch Out: Inconsistent Terminology

New Term	Old Term	WSS Object Model
Site Collection	Site	SPSite
Site	Web	SPWeb

STSADM.EXE Command-line Utility

- Useful for running administrative commands
  - Can be used interactively from command line
  - Commands can be scripted using batch files



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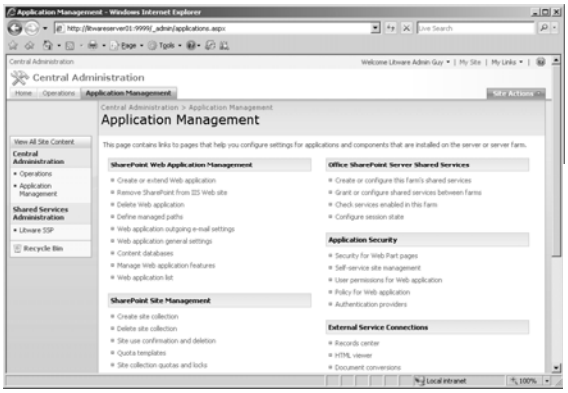
WSS Central Administration (WSS CA)

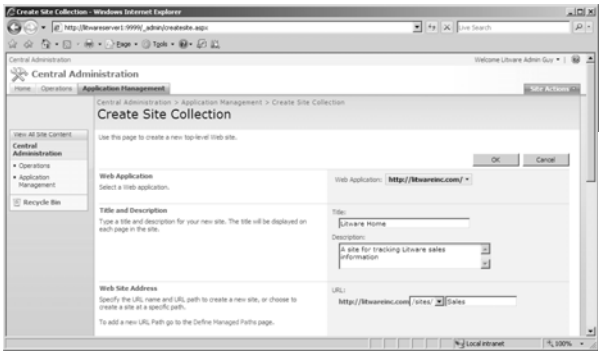
- WSS CA hosted in separate Web Application
  - Used by farm-level administrators
  - WSS CA pages have more links if MOSS is installed



Start >
All Programs >
Administrative Tools >
SharePoint 3.0 Central Administration

Creating New Site Collections

- Steps to provisioning new site collection
  - Go Application Management tab of WSS CA
  - Click Link titled Create site collection
  - Fill out input form and click OK



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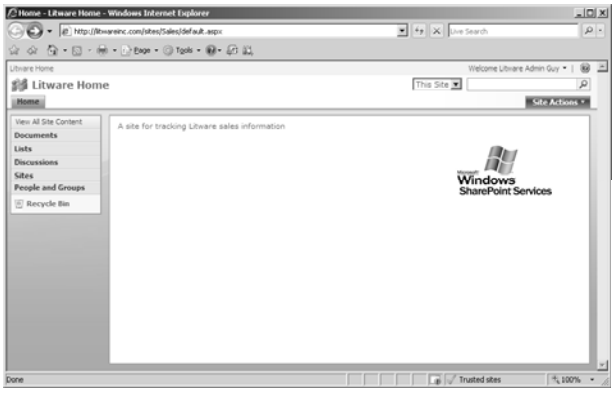
Creating New Site Collections (Part 2)

- Important site collection settings
  - Site template for top-level site
  - Site collection owner(s)

A New WSS Site

- New site collection has top-level sites
  - Site collection owner can provision site elements
  - Site collection owner can create child sites



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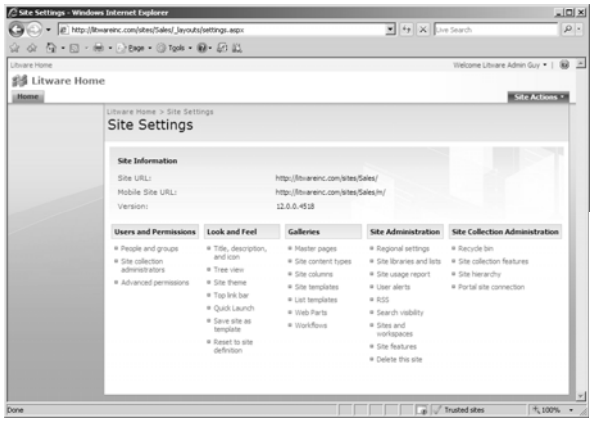
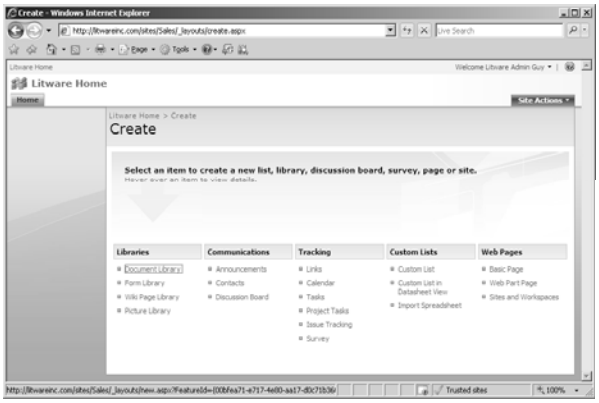
The Site Settings Page

- Site Settings accessible via Site Actions menu
  - Provides links for site and site collection administration



The Create Page

- Create page allows provisioning of site elements
  - WSS provides many collaboration list types out-of-box
  - You can also provision new pages and child site



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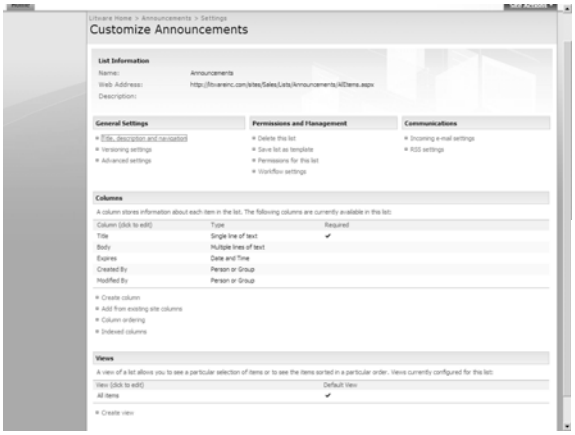
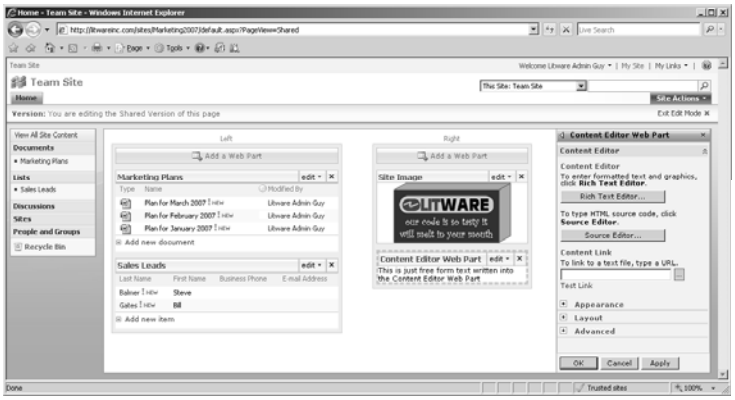
The List Settings Page

- Each List Instance provides a Settings Page
  - You can change list setting and add/remove columns



Page Customization using Web Parts

- Web Parts provide page-level customization
  - User can add Web Parts and modify their properties
  - Web Part support customization and personalization



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Customization Versus Development

- Site Customizations
  - Changes to one particular site
  - Done using the browser or the SharePoint Designer
  - Changes recorded in content database
  - Easy to do but hard to reuse
- WSS Development
  - Creation of reusable templates/components
  - Templates/components installed on Web server
  - Development based on Visual Studio projects
  - Project source files checked into source code control
  - Projects can be moved through staging to production

What is a Feature?

- A building block for creating SharePoint solutions
  - A unit of design, implementation and deployment
- Features can contain elements
  - e.g. menu items, links, list types and list instances
  - Many other element types possible
- Features can contain event handlers
  - You can add any code which used WSS object model

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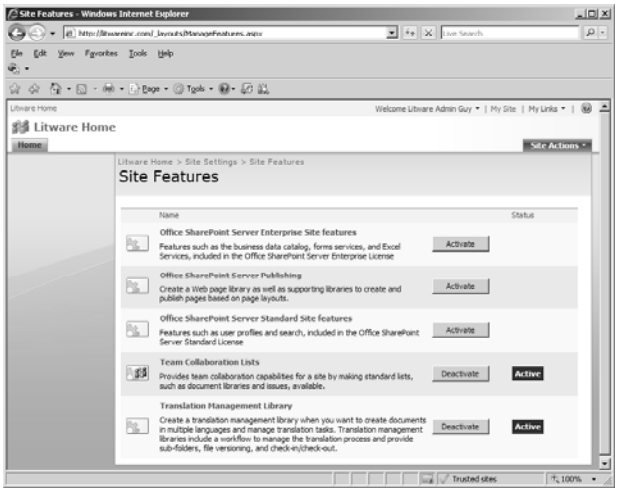
User's View of Features

- Features support concept of activation/deactivation

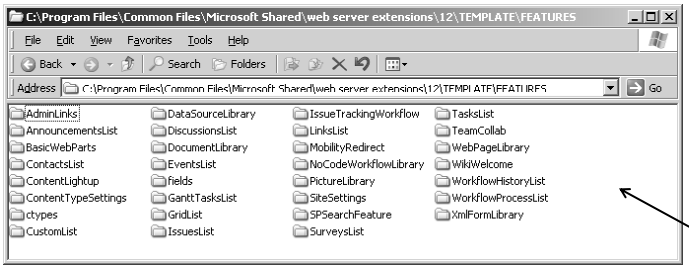


This is the site-level feature management page in a WSS farm where MOSS has been installed.

Much of the functionality of MOSS is enabled and disable by activating and deactivating features that have been developed by the MOSS team.

The Features Directory

- Functionality in WSS based on Features
  - Features are installed at farm level
  - Feature activation makes functionality available
  - WSS supports for different feature activation scopes
    (1) Site (2) Site Collection (3) Web Application (4) Farm



Your custom features will each need a directory created here

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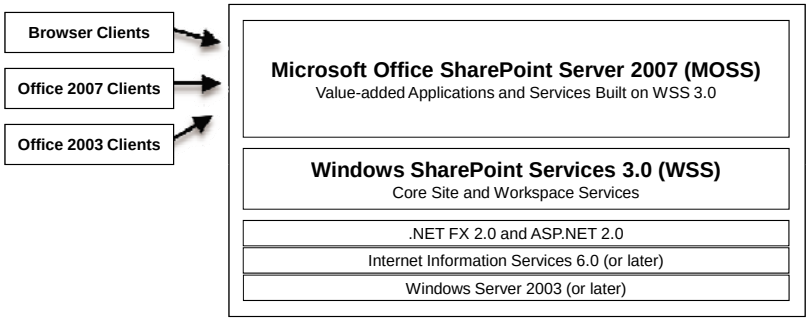
Microsoft Office SharePoint Server 2007

- Microsoft Office SharePoint Server 2007 (MOSS)
  - Components and services built on WSS 3.0



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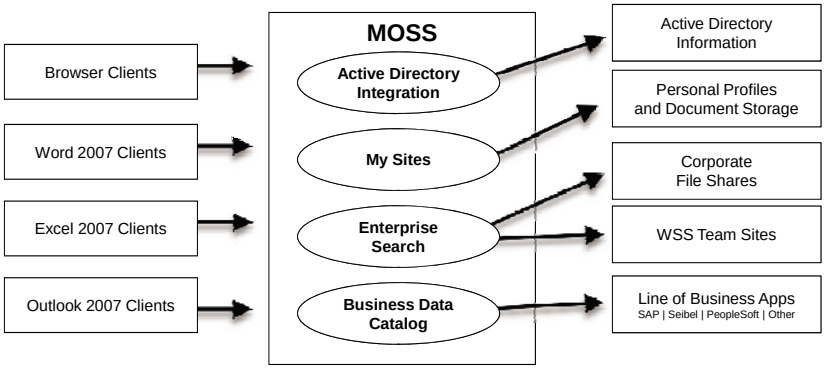
MOSS Services and Components

- What does MOSS Standard Edition provide?
  - Next-generation features of SPS 2003 (Portal)
  - Next-generation features of CMS 2002 (WCM)
- What does MOSS Enterprise Edition provide?
  - Forms Services
  - Business Data Catalog
  - Excel Services

Portal and Search

- MOSS includes next-generation of SPS features
  - User profiles, audience targeting and MySites
  - Enterprise search
  - Introduces Business Data Catalog



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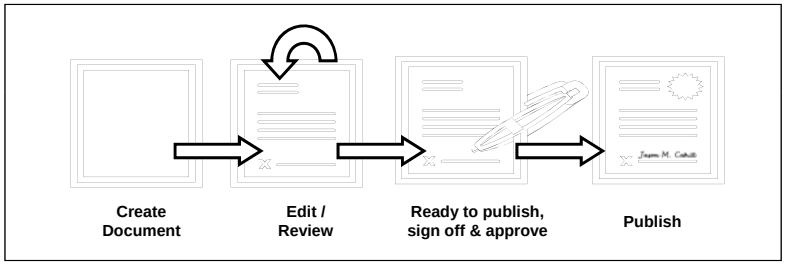
InfoPath 2007 and Forms Services

- InfoPath 2003
  - Capture business data with dynamic, XML-based forms
  - Rich data entry and validation
  - Integration with back-end LOB systems
- InfoPath 2007 and Forms Services
  - Ability to push InfoPath forms to browser-based clients
  - Integration with Office 2007 client applications

SharePoint 2007 Workflows

- WSS and MOSS provide rich workflow support
  - Support built on Windows Workflow Foundation (WF)
  - WSS provides development platform for workflows
  - MOSS provides several valuable workflows out-of-box



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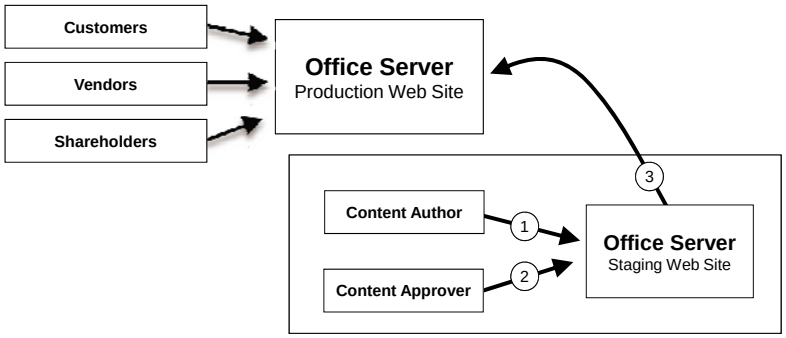
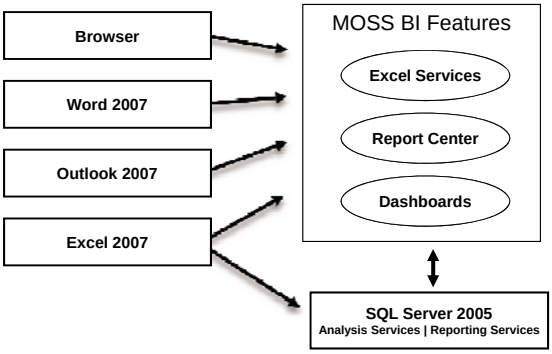
Web Content Management

- WCM features designed for public Web sites
  - Core CMS features integrated into MOSS
  - Features for site branding and customized page layouts
  - Profession publishing features for content approval



Business Intelligence

- The MOSS Vision for Business Intelligence (BI)
  - Provide business insight to all employees
  - Lead to better, faster, more relevant decisions
  - Integrate with BI features of SQL Server and Excel



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Schedule of Lectures

1. Creating and Customizing WSS Sites **<<< (you are here)**
2. Lists, Document Libraries and Content Types
3. Introduction to SharePoint Designer 2007
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Summary

- Architectural overview of SharePoint 2007
  - Windows SharePoint Services 3.0 (WSS)
  - Microsoft Office SharePoint Server 2007 (MOSS)
- WSS as a collaboration solution
- WSS as a server-side development platform
- Overview of MOSS components and services

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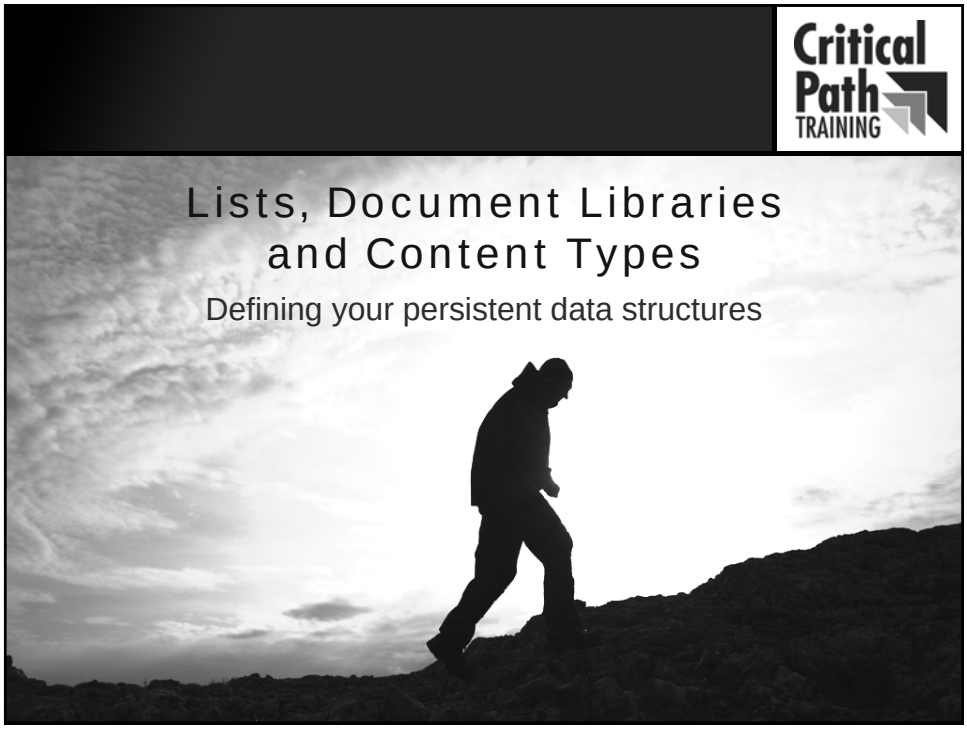

Agenda

- Content storage enhancements in WSS 3.0
- WSS storage fundamentals
- Site columns
- Content types
- Provisioning lists and document libraries

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Motivation: Content Storage in WSS

- All storage in WSS based on concept of the list
  - Everything is modeled in terms of rows and columns
  - Document library is really just a hybrid list
- WSS adds value on top of generic list concept
  - Transparent content storage in SQL Server
  - Automatic generation of user interface

Platform Storage Enhancements

- Parity between lists and document libraries
  - Folders supported for lists as well as document libraries
  - Versioning supported for list items as well as document
  - Events supported on lists as well as document libraries
- List and Document Library Enhancements
  - Recycle bin
  - Required check-out
  - Enhanced versioning
  - New productivity-oriented built-in field types
  - Wide list support allowing 100s of columns (e.g. surveys)
  - Custom column indexing to improve performance

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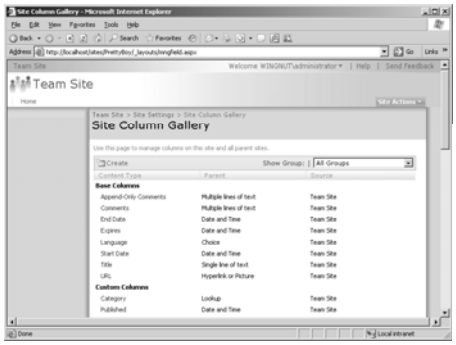
Issues with Managing Content

- Problems with managing content in large companies
  - Many document types identified in an organization, but there is no clear way to enforce standards
  - There's a need to create different types of documents and store them all in one central location
  - Content management application should make list of actions available to users depend on the type of content or document
- WSS provides new features to solve these problems
  - Site Columns
  - Content Types

Site Columns

- Site column is a reusable column definitions
  - Site column can be reused across multiple lists
  - Site column scoped to site in Site Column Gallery
  - Site column visible within site collection to all child sites



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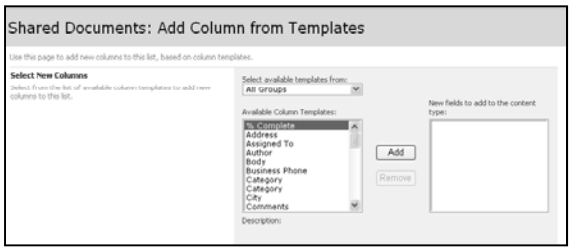
Using a Site Column in a List

- Site Columns can be used in List Definitions
  - Site column represents a reusable, named column definition
  - Site column used in lists, document library or content types
  - Updates to a site column can optionally be pushed out to lists, document libraries and content types where it has been used



Creating Site Columns

DEMO

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Introduction to Content Types

- Foundation for content management in WSS v3
  - Reusable definition for list schema
  - Defines constraints and requirements for an item type
  - Created by users and developers
  - Reused and extended by users

Examples for Content Types

- Proposals for software projects
  - Requires client assignment
  - Requires review by legal department
- Customer presentation
  - Requires client assignment
  - Requires review by art department

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Content Types

- A content type definition can include…
  - Columns to represent metadata or properties
  - A document template for creating new documents
  - Custom forms for new, edit, display (dev only)
  - Event handlers (dev only)
  - Workflows (dev only)

Supporting Multiple Content Types

- Lists can support multiple content types
  - Makes it possible to support heterogeneous content
  - "New button" becomes a dropdown list
  - Input and display forms change depending on content type

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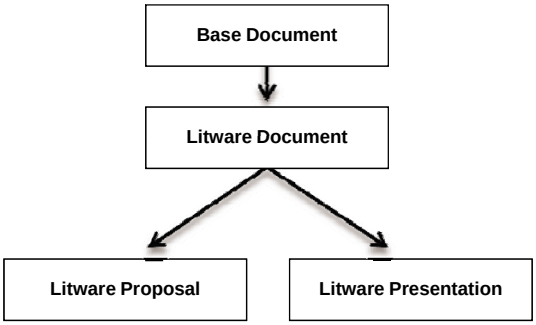
Inheriting Content Types

- Allows base definition reuse across multiple types
  - Core properties can be defined in base content type
  - Base content type inherited by more specific content types



Creating Content Types

DEMO

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Summary

- Content storage enhancements in WSS 3.0
- WSS storage fundamentals
- Site columns
- Content types
- Provisioning lists and document libraries

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Agenda

- Introduction to SharePoint Designer
- Creating and Customizing Pages
- Working with Master Pages
- Creating Pages with the DataView Web Part
- Configuring Security with SPD

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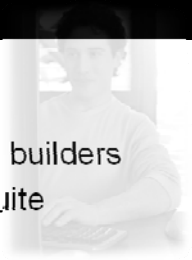
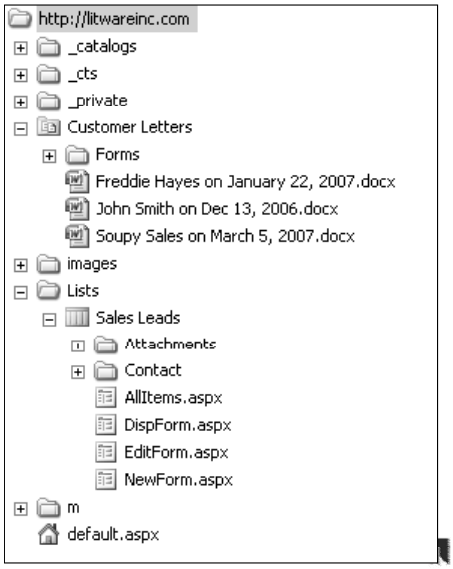
SharePoint Designer (SPD)



- Next version of FrontPage 2003
  - SharePoint-specific version for solutions builders
  - SPD split apart from new Expressions suite
- Enables four fundamental usage scenarios
  - Customize SharePoint sites
  - Assemble composite applications that pull data from multiple sources
  - Build workflow applications and add application logic
  - Create page templates for WCM (MOSS only)

The Virtual File System of a Site

- Site is a virtual file system
  - made up of folders and files
  - Pages are files
  - Documents are files
  - Stored in content database
- How can you look at it?
  - SharePoint Designer (SPD)
  - Windows Explorer
- SPD uses WebDav protocol for access



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Site Pages Versus Application Pages

- Site Pages exist within virtual file system of site
  - They may or may not be ghosted
  - They support customization via Web Parts
  - They support customization via SharePoint Designer
  - They can be added dynamically within a site
  - Customized pages impact performance and security
- Application Pages are deployed once per farm
  - They do not support customization or Web Parts
  - They are parsed/compiled as classic ASP.NET pages
  - They cannot be added nor modified with SPD

Opening a Site with SPD

- Provides access to virtual file system
  - You can see and open files for editing
  - You can drag-and-drop to add new files

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ASP.NET Pages

- .aspx are parsed/processed by ASP.NET runtime
  - Provide more functionality than .htm files
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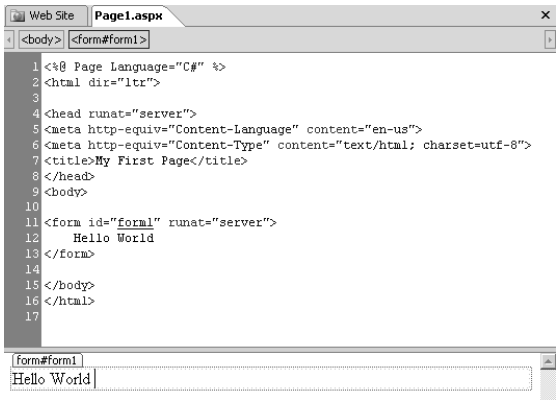
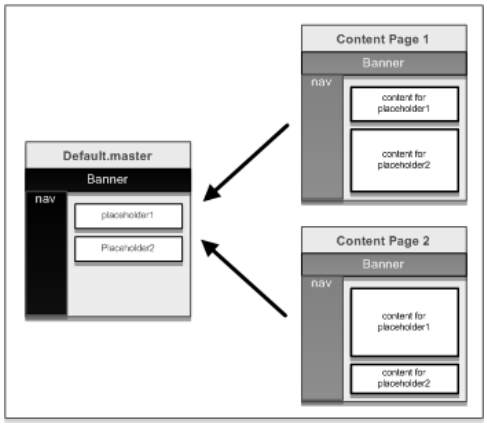


ASP.NET Background: Master Pages

- ASP.NET 2.0 introduces Master Pages
  - Defines common layouts used across content pages



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Master Page Defined in ASP.NET

```
<!-- default.master -->
<%@ Master %>
<html><body>
  <form id="frmMain" runat="server">
    <table width="100%">
      <tr><td> <h1>Litware Inc.</h1><hr /></td></tr>
      <tr>
        <td> <!-- Display Main Body of Page -->
          <asp:contentplaceholder id="PlaceHolderMain" runat="server" />
        </td>
      </tr>
    </table>
  </form>
</body></html>
```

```
<!-- content page linking to default.master -->
<%@ Page Language="C#" MasterPageFile="~/default.master" Title="Page 1" %>

<asp:Content ID="Main" ContentPlaceHolderID="PlaceHolderMain">
  Unique page content goes here
</asp:Content>
```

Master Pages in WSS

- Application pages use application.master
  - Farm-wide master page
  - Cannot be customized on per-site basis
- Site Pages use default.master by default
  - default.master is a page template
  - default.master instance created in Master Page Gallery
  - default.master can be customized on per-site basis
  - default.master can be replaced with different template

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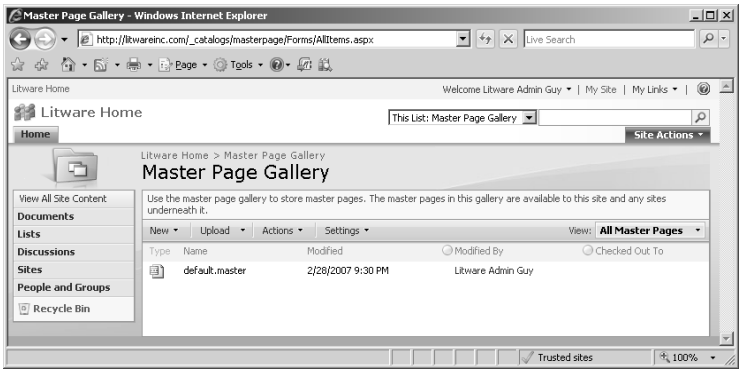
The Master Page Gallery

- Each site has a Master Page Gallery
  - Instance of default.master automatically provisioned
  - default.master can be customized on per-site basis



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PlaceHolderTitleRightMargin	PlaceHolderTitleAreaSeparator	PlaceHolderLeftNavBarDataSource
PlaceHolderCalendarNavigator	PlaceHolderLeftNavBarTop	PlaceHolderLeftNavBar
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  - Applying WSS styles (meant for end users)
  - Applying custom CCS files (meant for developers)

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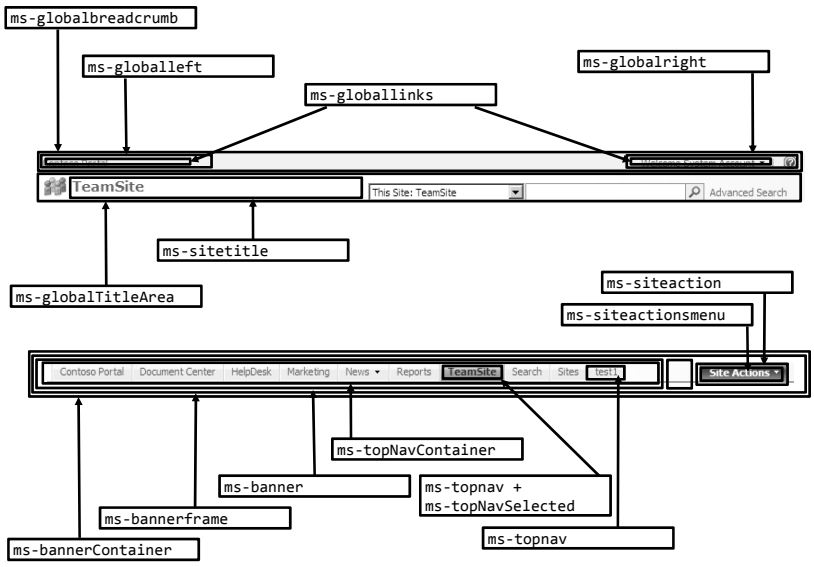

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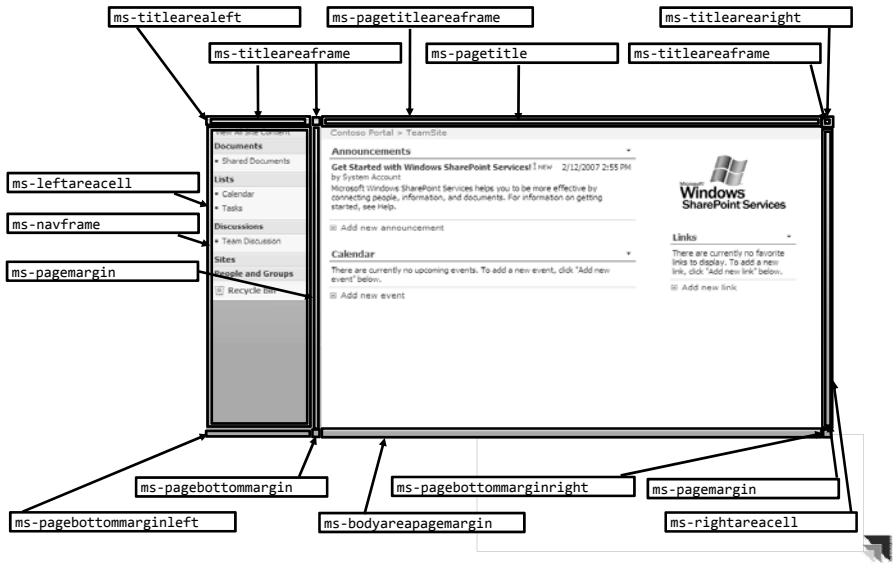

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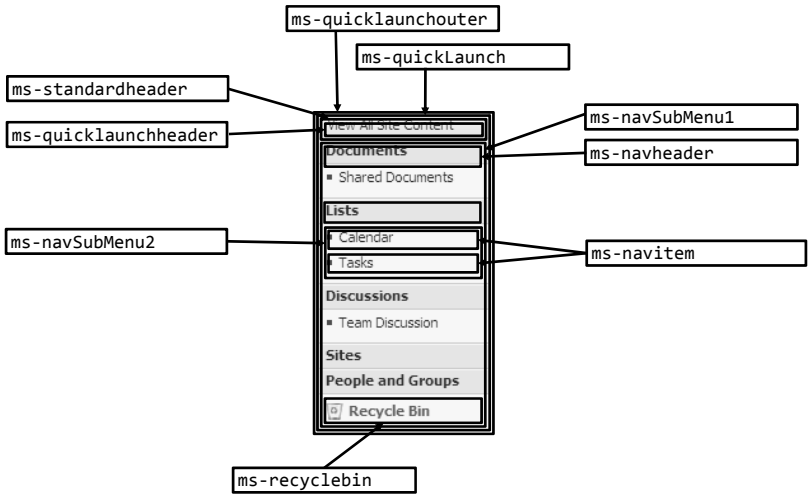
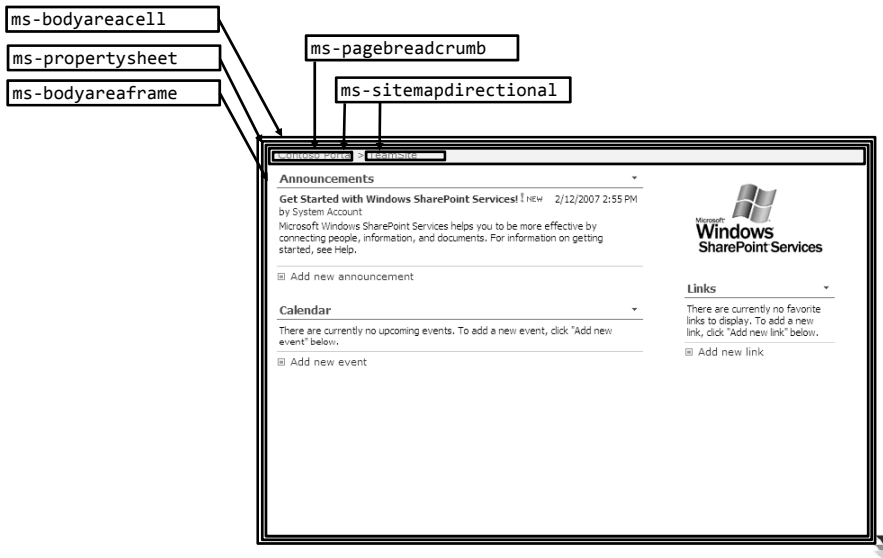
Quick Launch



Page Body



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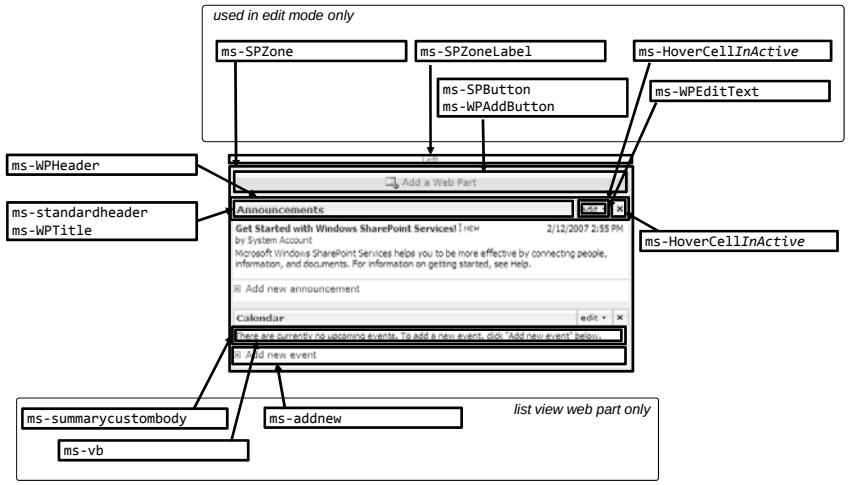
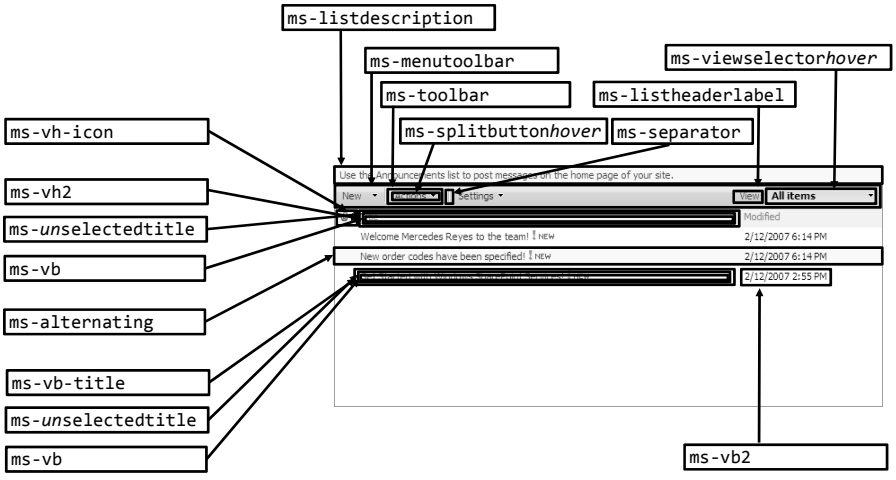
Web Parts



List Views



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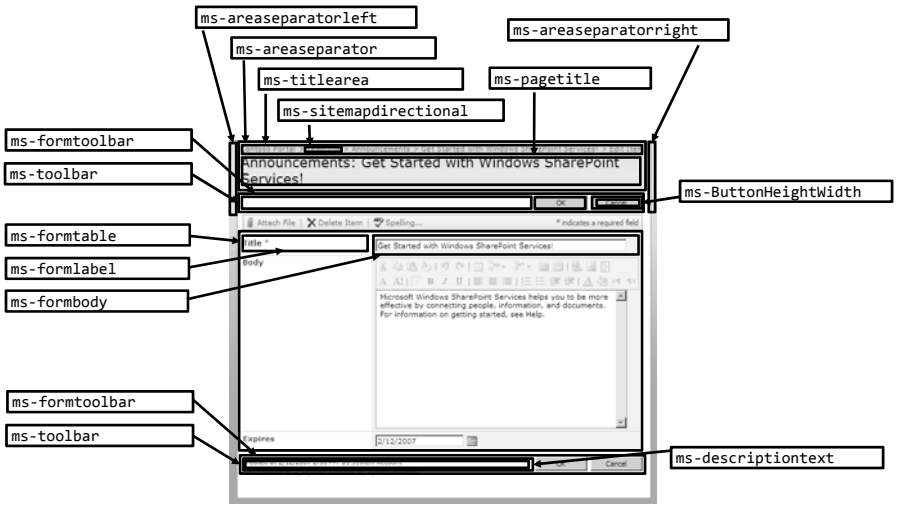
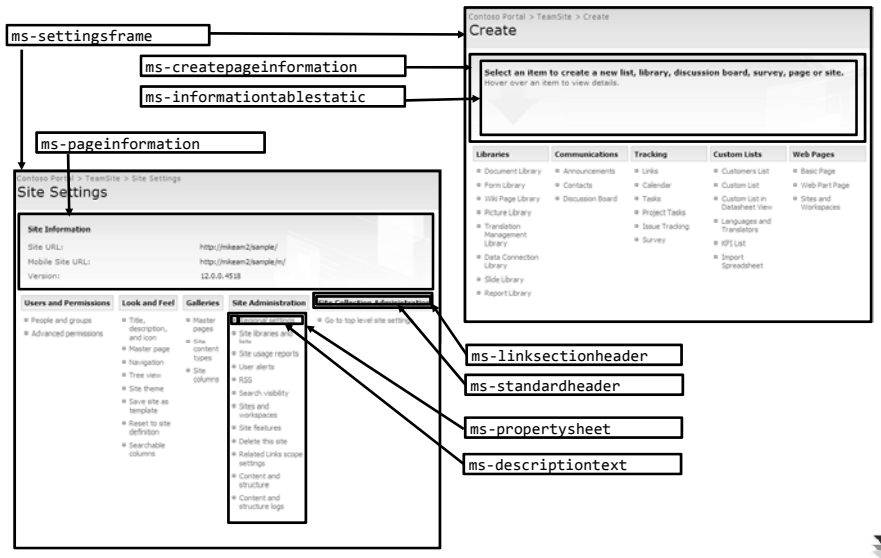
Forms



Application Pages (Landing Pages)



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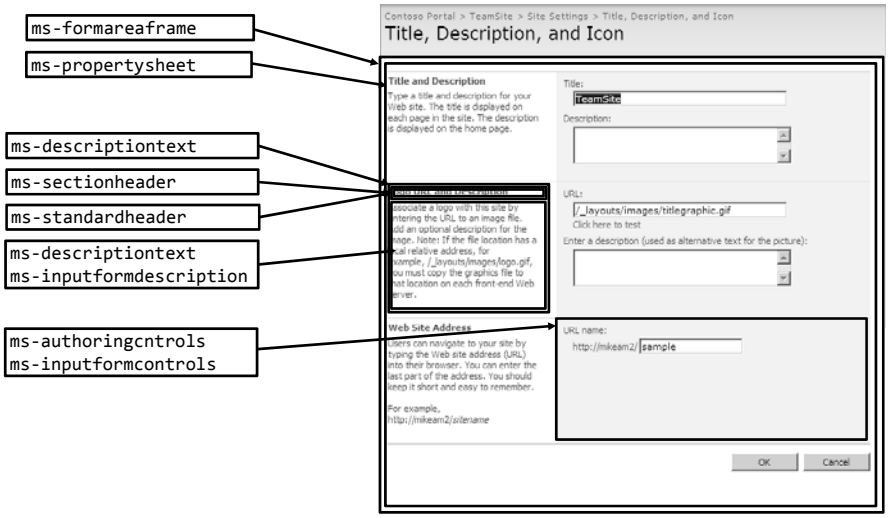
Application Pages (Form Pages)



The DataView Web Part

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  - SharePoint Lists
  - Databases through OLEDB (SQL Server, ORACLE, etc.)
  - Web Services and RSS Feeds
- Provides WYSIWYG environment for creating display
  - Drag-and-drop fields from data source onto view
  - Automatically format fields (currency, date, etc)
  - Use conditional formatting
  - Use Web Part connections
- SPD generates XSLT behind the scenes

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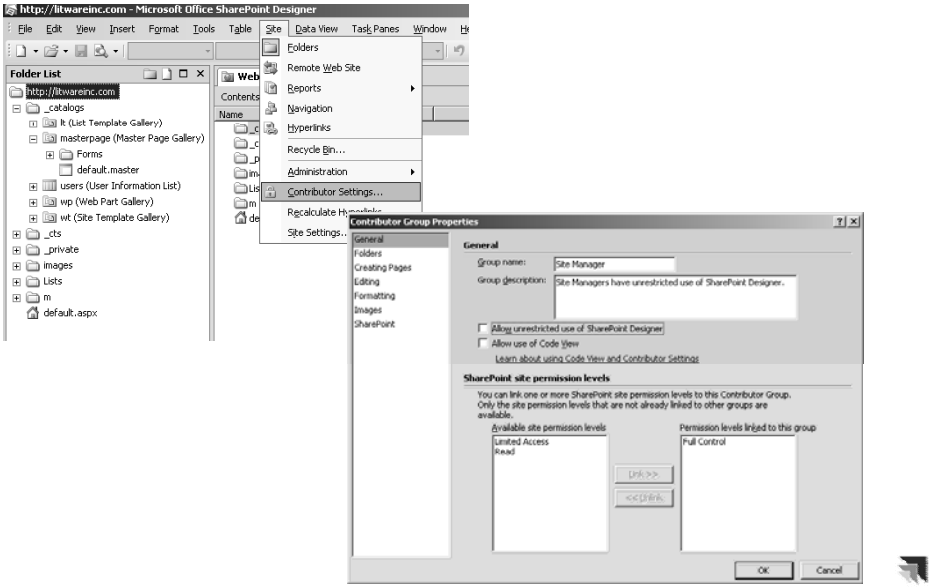
Control Access to SharePoint Objects



Summary

- Introduction to SharePoint Designer
- Creating and Customizing Pages
- Working with Master Pages
- Creating Pages with the DataView Web Part
- Configuring Security with SPD

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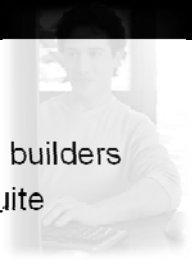
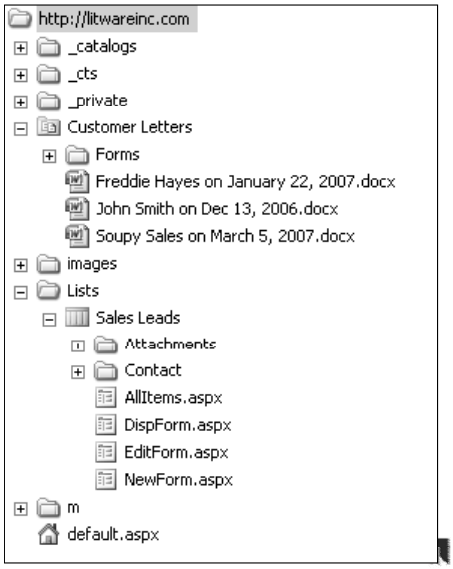
SharePoint Designer (SPD)



- Next version of FrontPage 2003
  - SharePoint-specific version for solutions builders
  - SPD split apart from new Expressions suite
- Enables four fundamental usage scenarios
  - Customize SharePoint sites
  - Assemble composite applications that pull data from multiple sources
  - Build workflow applications and add application logic
  - Create page templates for WCM (MOSS only)

The Virtual File System of a Site

- Site is a virtual file system
  - made up of folders and files
  - Pages are files
  - Documents are files
  - Stored in content database
- How can you look at it?
  - SharePoint Designer (SPD)
  - Windows Explorer
- SPD uses WebDav protocol for access



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Site Pages Versus Application Pages

- Site Pages exist within virtual file system of site
  - They may or may not be ghosted
  - They support customization via Web Parts
  - They support customization via SharePoint Designer
  - They can be added dynamically within a site
  - Customized pages impact performance and security
- Application Pages are deployed once per farm
  - They do not support customization or Web Parts
  - They are parsed/compiled as classic ASP.NET pages
  - They cannot be added nor modified with SPD

Opening a Site with SPD

- Provides access to virtual file system
  - You can see and open files for editing
  - You can drag-and-drop to add new files

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ASP.NET Pages

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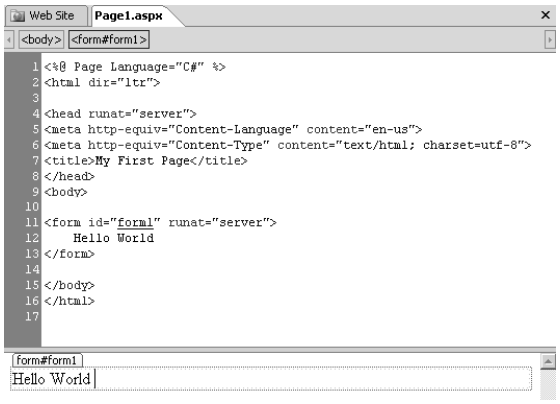

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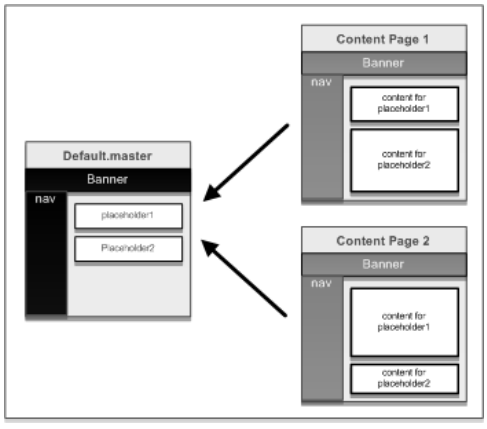

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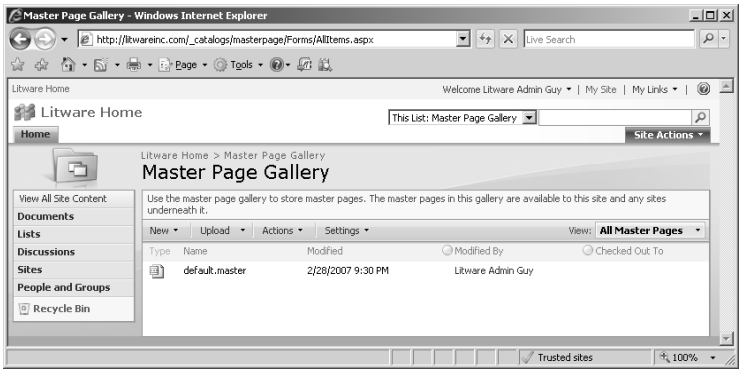

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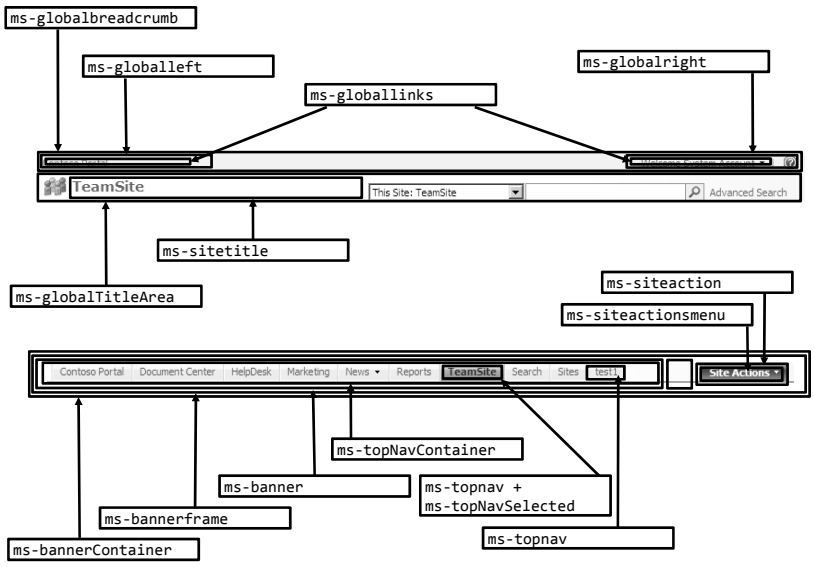
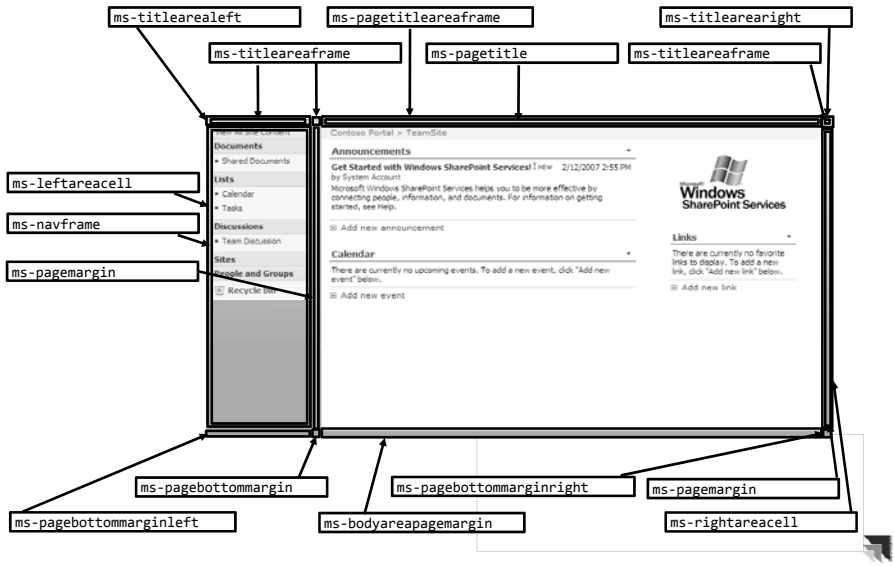


Body Structure



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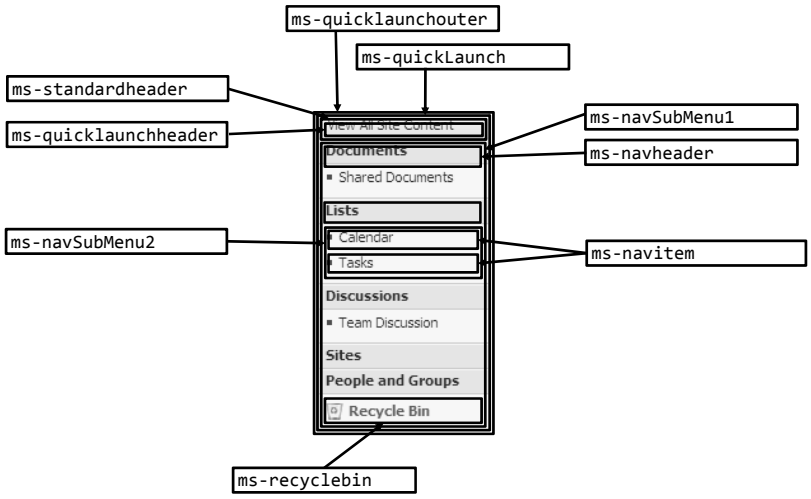
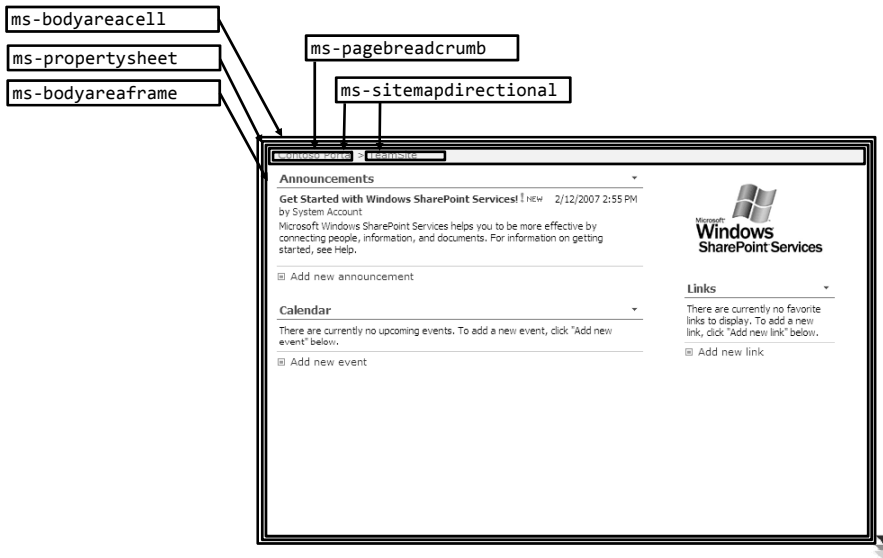


Page Body



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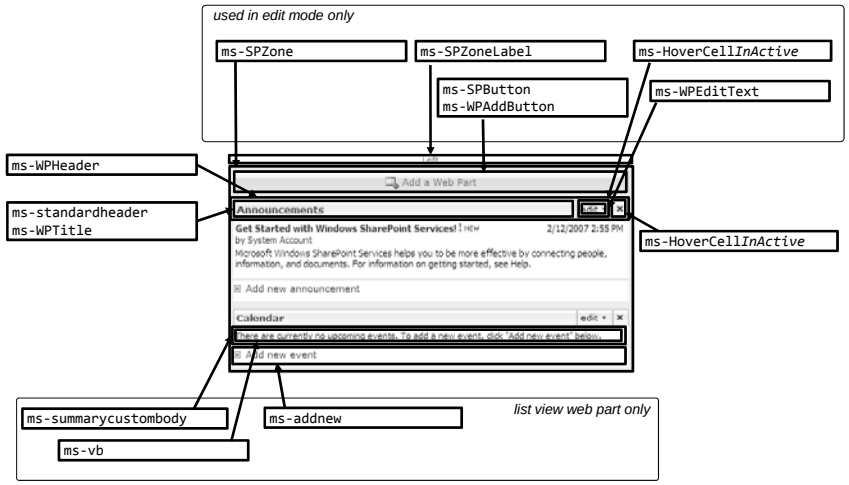
Web Parts



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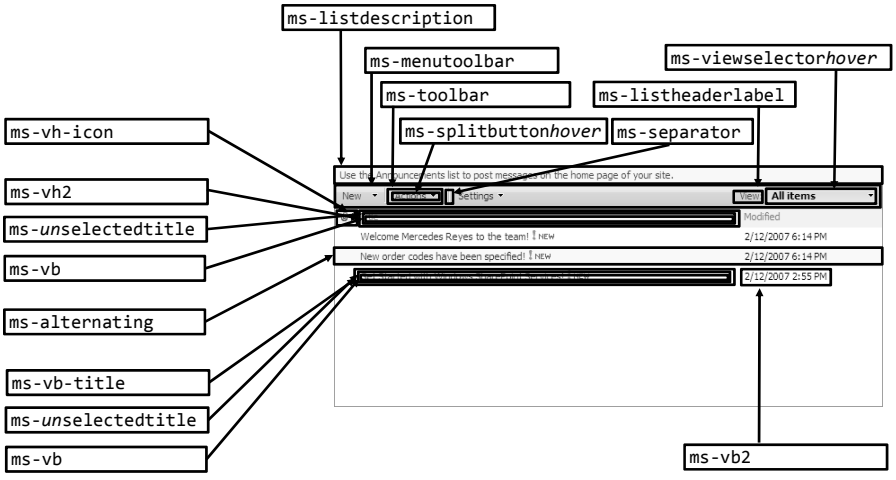

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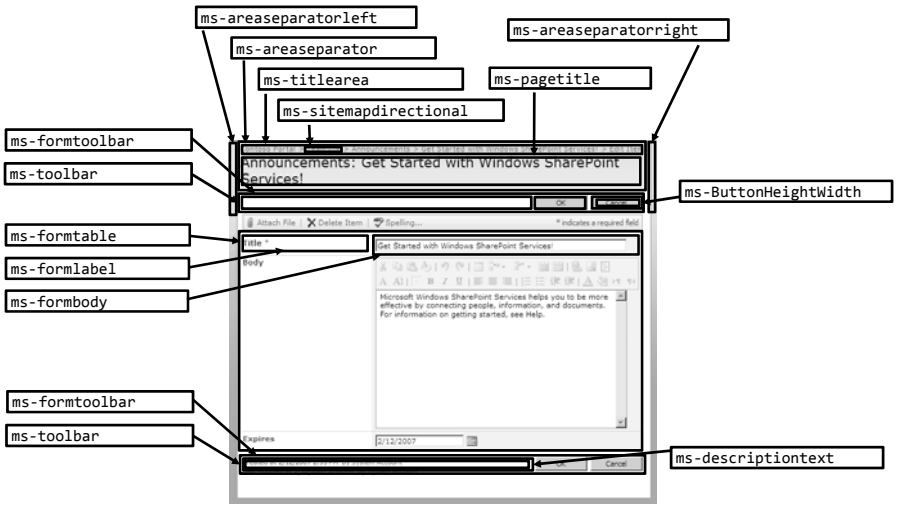
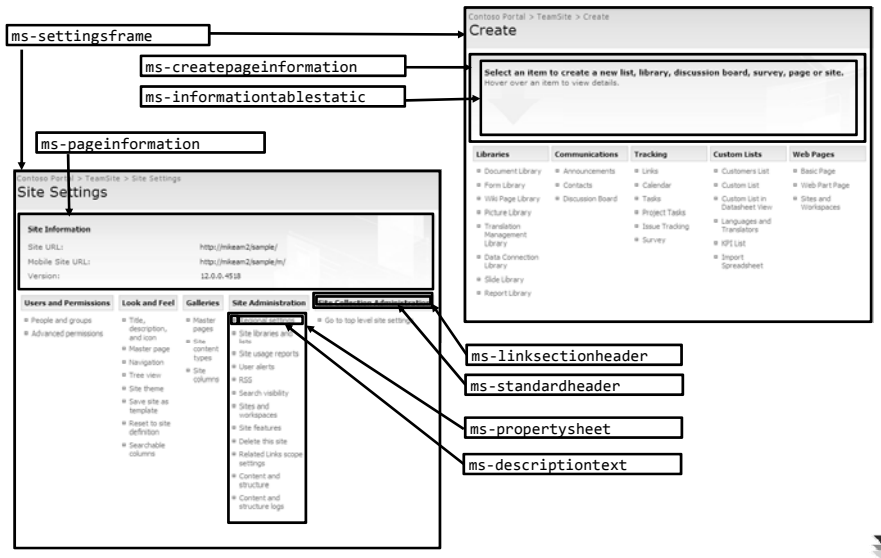
Forms



Application Pages (Landing Pages)



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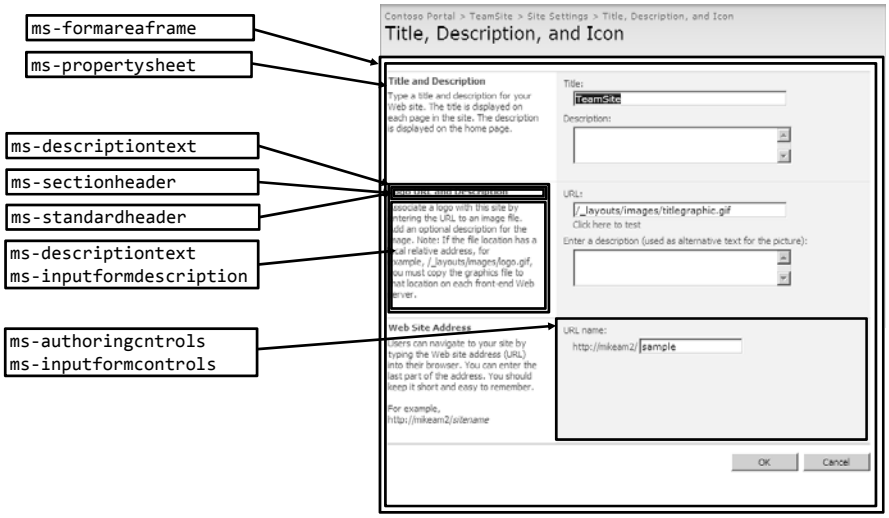

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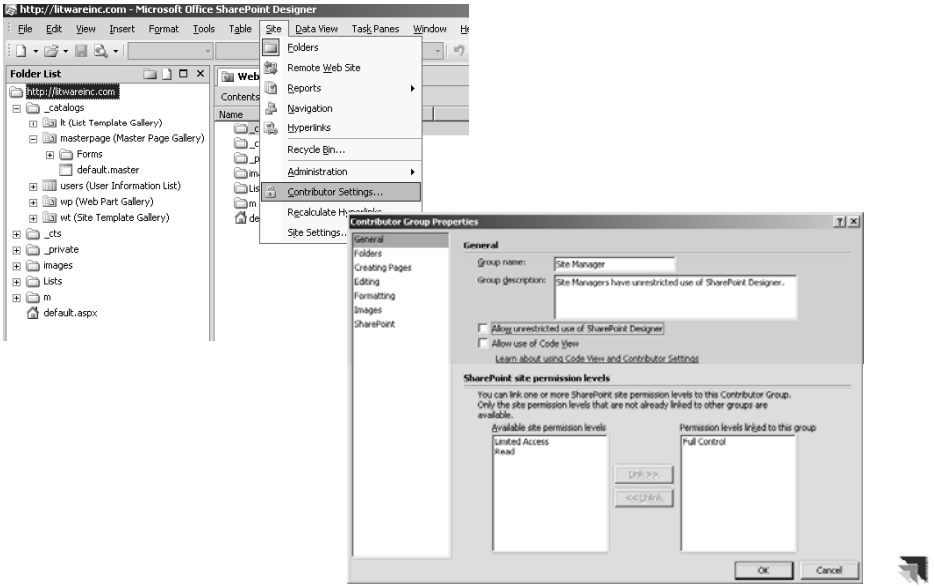

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Agenda

- History: SharePoint Portal Server 2003
- The Corporate Portal Site Template
- Managing Content
- Shared Service Provider Architecture

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SharePoint Portal Server 2003 (SPS)

- SharePoint Portal Server 2003 Features
  - Areas and listings
  - User profiles and audience targeting
  - Search
  - My Sites
  - Shared Services
  - Single sign on

Problems with SPS 2003

- Problems with SharePoint Portal Server 2003
  - A strange semi-undocumented layer on top of WSS V2
  - Limited to one SPS portal site per IIS Web application
  - Portal user interface hard to customize and extend
  - Shared Services architecture hard to deploy and administrate
  - Limited and clunky integration with Content Management Server

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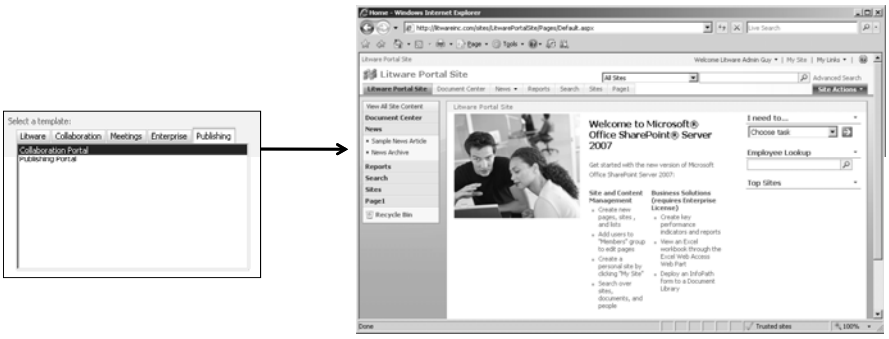
Collaboration Portal Site Template

- Used to create SPS-like Portal sites
  - Supplies same basic features as SPS
  - Except that Areas and Listing have been eliminated



Collaboration Portal Architecture

- A collaboration portal is a hierarchy of WSS sites
  - Created as a WSS site collection
  - Created using standard Site Definitions and Features

- Architectural improvements over SPS portals
  - Not limited to one portal per IIS Web site
  - Portals extended using standard WSS V3 development

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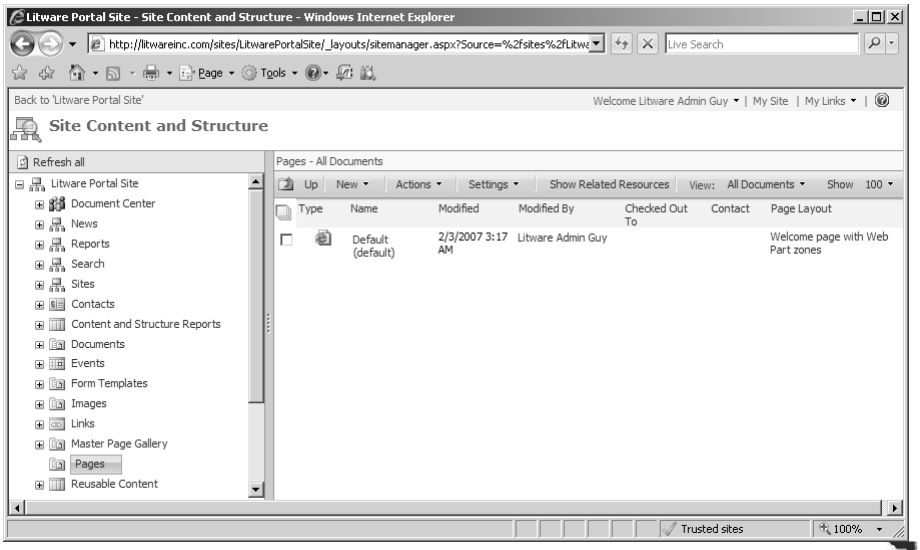
Site Content and Structure



Sharing Resources and Services

- Need to share resources/services across sites
  - Content crawling and index creation
  - Querying for search results
  - Allocating and managing storage for My Sites
- SPS used 1st generation shared services model
  - One portal site is selected as "Master" portal
  - Other portals use shared services of master portal
- MOSS takes a different and better approach
  - Enter the Shared Service Provider (SSP)

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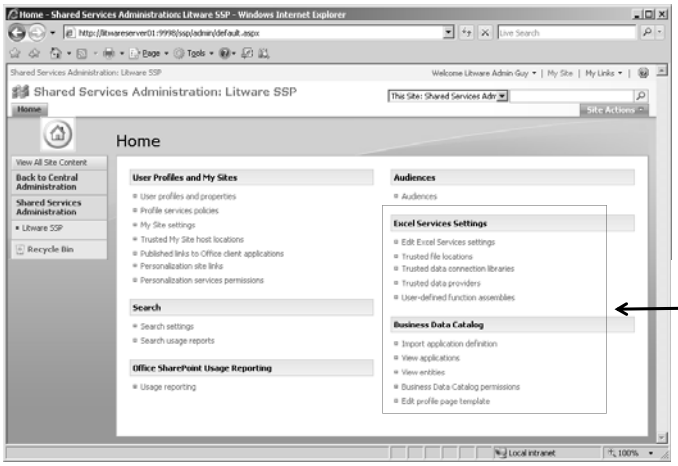
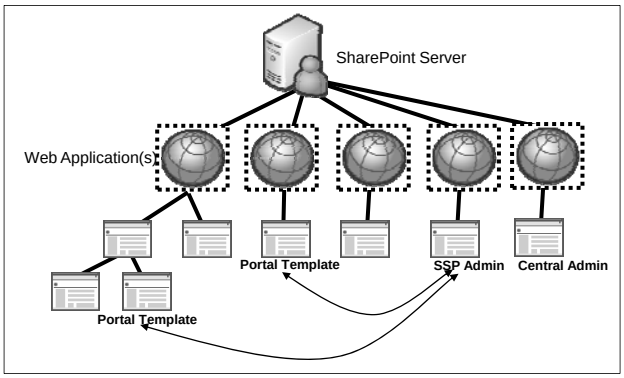
SSP Administration

- Functionality of SSP Broken out into Sections



So what is a Portal, Really?

- A Site Collection that…
  - has the correct features activated
  - is consuming services from an underlying SSP
  - might or might not have been created from a portal site template



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Collaboration Portal

- Collaboration Portals are
  - For Sharing Information
  - Expanded through Business Users/End Users adding and editing content
- SharePoint features to use to make it easier for your content creators:
  - Create reusable templates
  - Consistent navigation

Save Site as Template

- Custom Site Templates can be created and reused
- Site can be saved with or with out content
- The following items will be included with the template:
  - Theme
  - Web Parts
  - Lists/Libraries

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Save List as Template

- Helpful when same list structure is going to be used on multiple sites.
- List can be saved with or without content
- Template will include:
  - Views
  - Columns
  - Settings

Navigation

- Like security navigation is inherited
- Links may be added or removed
- The main elements are:
  - Quick Launch Bar (Current Navigation)
  - Top Link Bar (Global Navigation)
  - Breadcrumb

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Summary

- History: SharePoint Portal Server 2003
- The Corporate Portal Site Template
- Managing Content
- Shared Service Provider Architecture

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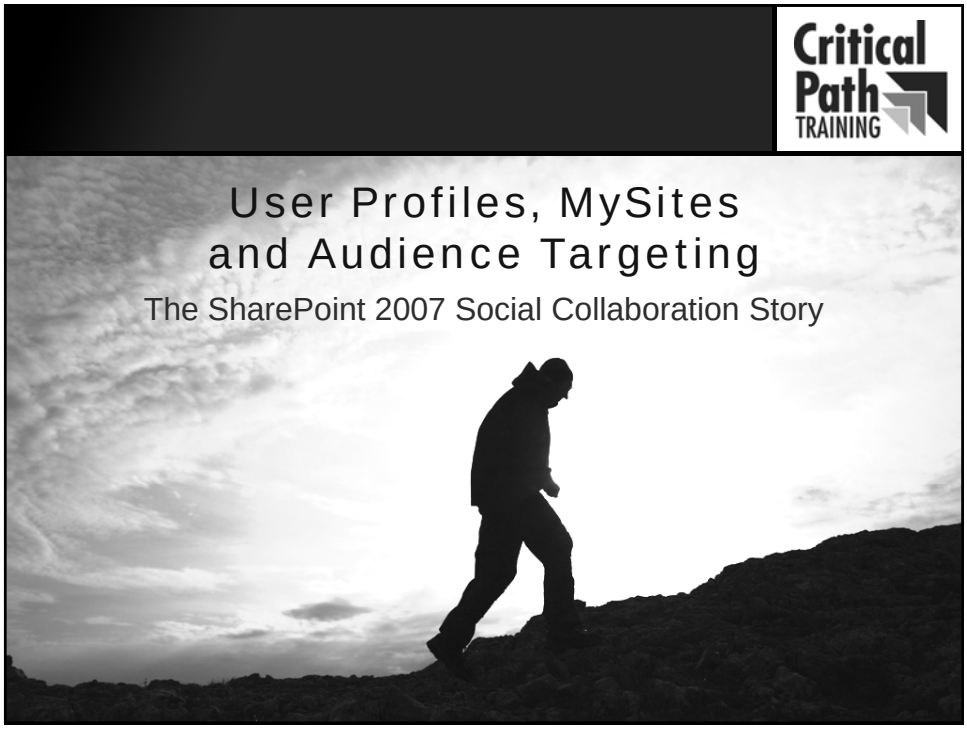

Agenda

- User Profiles
- My Sites
- Colleagues
- Personalization
- Audience targeting

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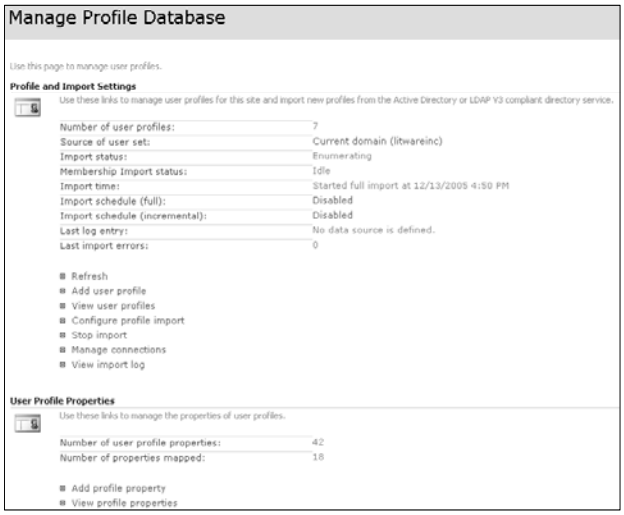
User Profiles

- User profiles track user information for social networking
  - Information used to describe users to each other
  - Information users to target information to interested parties
- MOSS maintains user profiles in SQL Server
  - Profile data can be imported from Active Directory or LDAP
  - Profile data can be extended with custom properties
  - Profiles can be extended with BDC data source
- MOSS features that utilize profiles
  - My Sites
  - Audience Targeting
  - People Search

Configuring User Profiles

Administrative control for adding, viewing, managing and importing profiles

You can see and modify user profile properties



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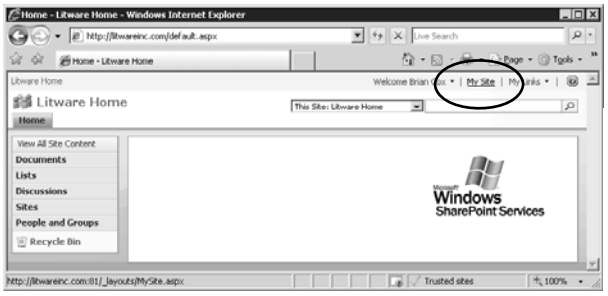
Creating a new My Site

- Each My Sites is a site collection that…
  - is provided on demand upon first access
  - maps to a specific user profile
  - enables users to edit some aspects of their profile



Private vs. Public My Site Views

- Private
  - Organize personal information
  - Data only they are interested in
  - Personalized Web Parts
- Public
  - Share documents with Colleagues
  - User Profile/Contact Information
    - Determine who sees what information
  - Common Information between user and visitor

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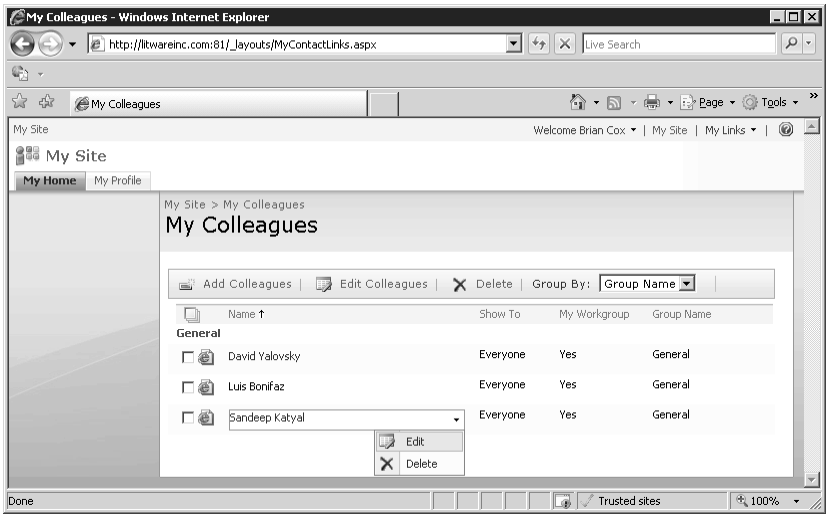
Updating A User Profile

Colleagues



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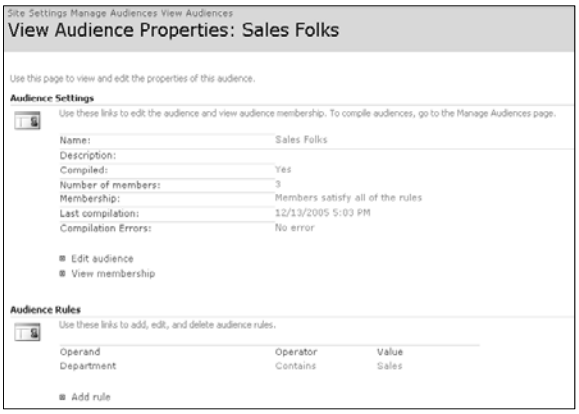
Audiences

- Audience involves creating rules and then compiling
  - Rules define what user accounts should be included or excluded
  - Compilation process adds users to audience table in SQL Server



Audience Targeting

- Content can be targeted at an audience
  - The following groups can be targeted:
    - **Distribution/Security Groups**
    - **SharePoint Groups**
    - **Global Audiences**
  - Great way to get content to interested parties while filtering noise from those that are not interested
  - It is not Security!

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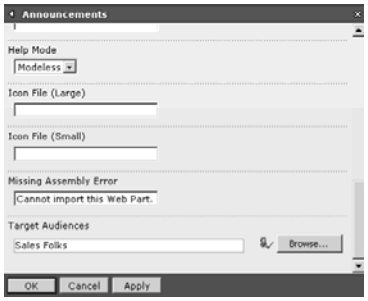
Audience Targeting (Cont.)

- The following content can be targeted:
  - Navigational links
  - Web Parts
  - Documents in a library
  - Items in a List



Personalization Sites

- Site template that allows for targeting of information
- Utilizes Current User Filter Web Part
- Link to site can appear in My Site navigation bar
  - Administrator can force link in navigation bar
  - User can “Pin” the site

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Summary

- User Profiles
- My Sites
- Colleagues
- Personalization
- Audience targeting

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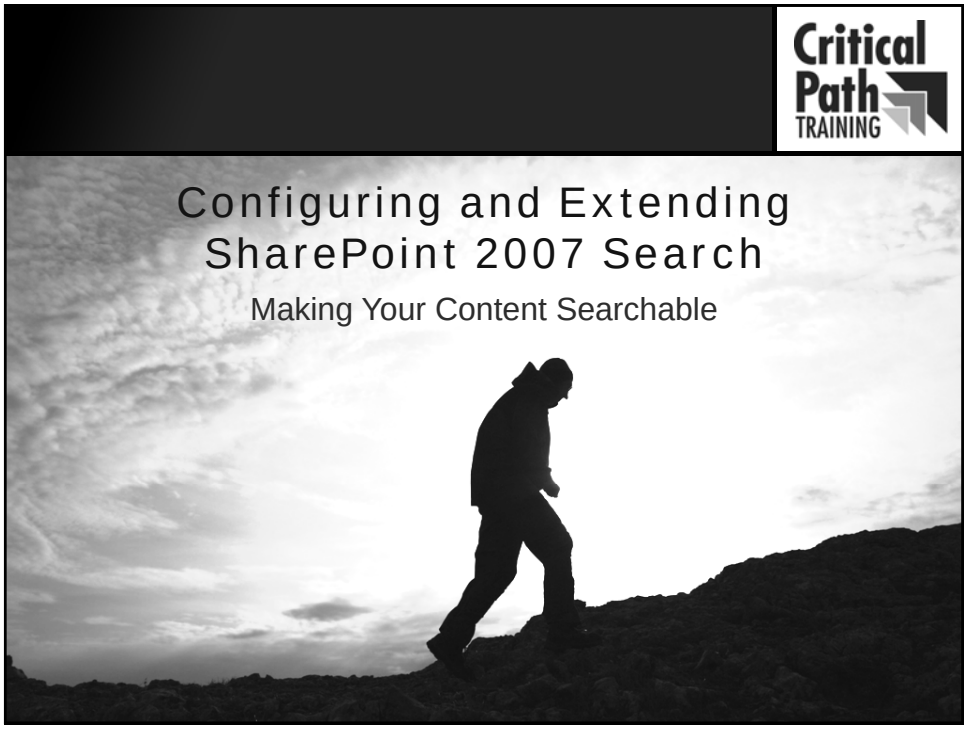

Agenda

- MOSS Search Architecture
- Configuring content sources
- Creating search scopes
- Using Search Center
- Creating custom search pages

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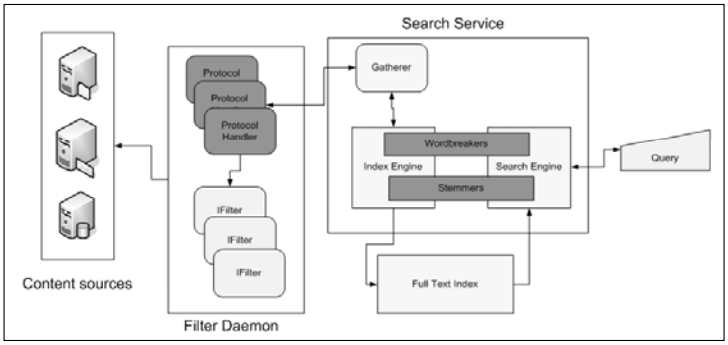
WSS Verses Office Server Search

- Windows SharePoint Services (WSS 3.0)
  - WSS search is a subset of MOSS search feature
  - Eases transition from WSS to MOSS
  - Indexing and query always on the same machine
  - Search over site content only
- Microsoft Office SharePoint Server (MOSS)
  - Adds new search functionality over base WSS search
  - Indexer and query can be separated on different machines
  - Multiple catalog supported per indexer and query servers
  - Aggregated content - local + external

Search Architecture and Terminology

- Key pieces to search infrastructure
  - The Gatherer
  - Content sources, protocol handlers and IFilters
  - Index Files



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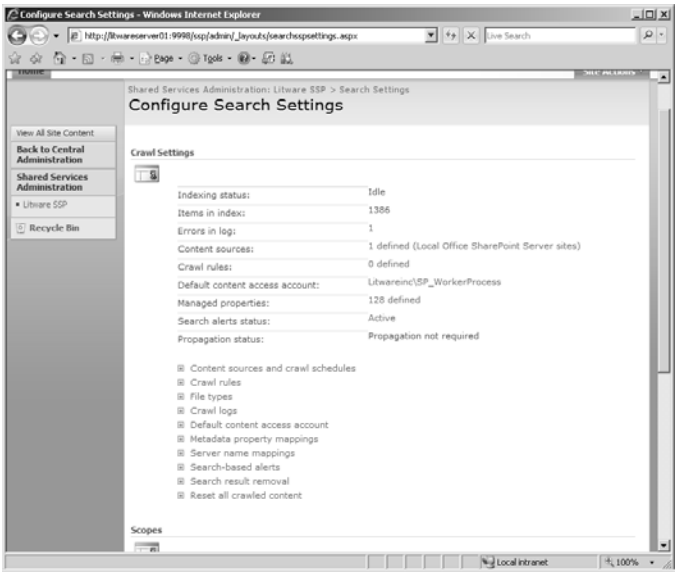
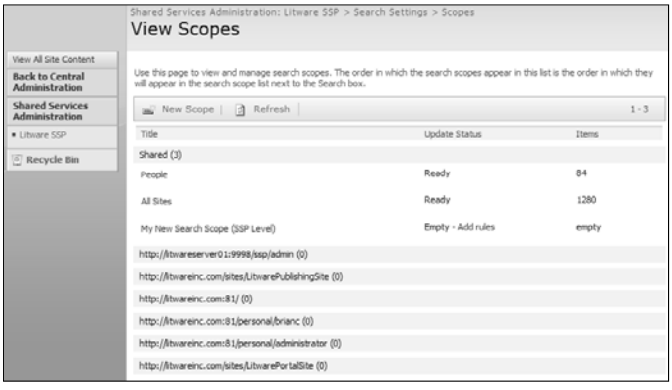
Configuring Search



Search Scopes

- Created at one of two different levels
  - Can be created within content of an SSP
  - Can be created within context of a site collection



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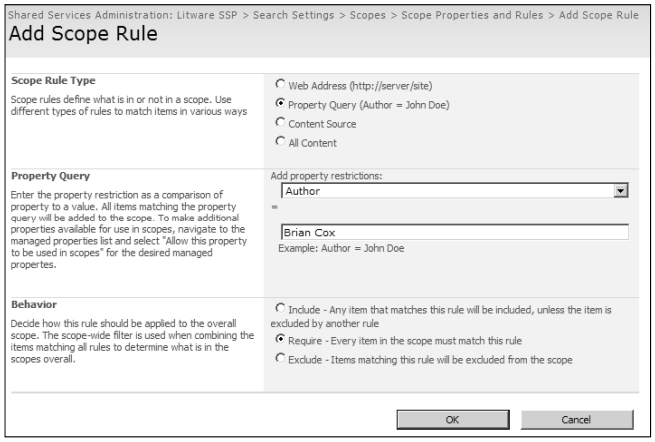
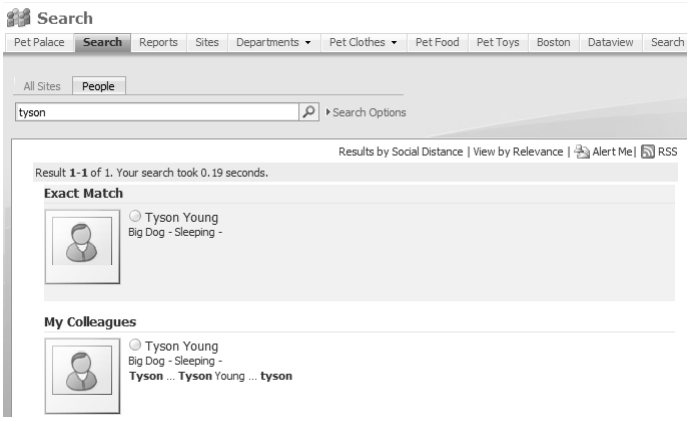
Adding Rules to a Search Scope

- Each search scope has one or more rules
  - Rules define criteria to include/exclude content



People Search



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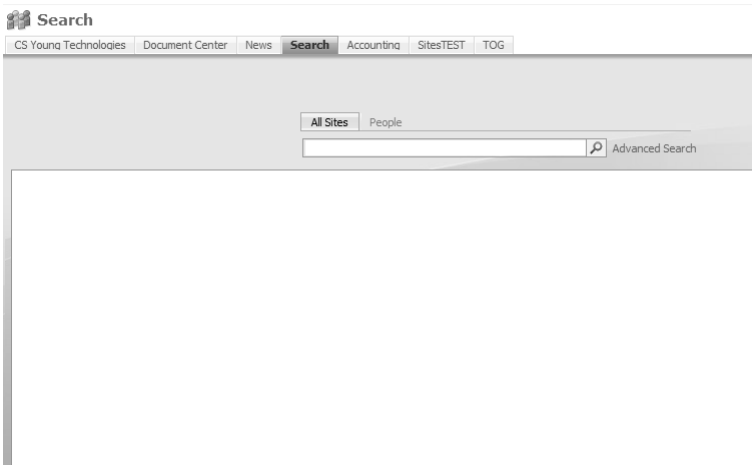
Search Center

- Customize and extend Search Center
  - Modify query parameters
  - Add tabs
  - Modify XSLT, CSS on results
  - Custom search Web Parts

Search Center and Search Pages



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Search Web Parts

- 9 OOB web parts including
  - Search Box
  - Core Results
  - High Confidence
  - Statistics
  - Pagination
  - Action Links
  - Matching Keywords and Best Bets
  - Search Summary (Did you mean?)
  - Advanced Search

Search Features

- Duplicate Collapsing
- Synonyms
- Hit Highlighting
- Did You Mean?

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Possible customizations

- Customize Thesaurus
  - Located at drive:\Program Files\Microsoft Office Servers\12.0\Data\Config
  - Replacement or Expansion sets
  - Eg. Replace “Weirdo” with “Eccentric”
  - Substitution weighs and stemming is supported
- Noise Words

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

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Search Reporting

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

Agenda

- MOSS Search Architecture
- Configuring content sources
- Creating search scopes
- Using Search Center
- Creating custom search pages

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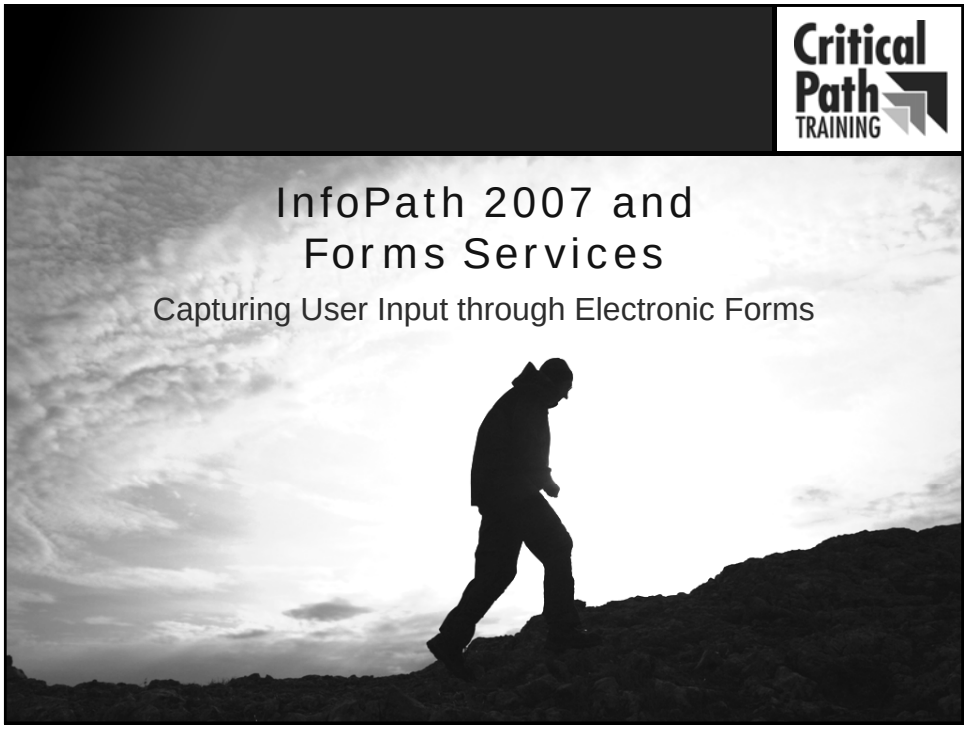

Agenda

- Background in InfoPath 2003
- The InfoPath Forms Designer
- Integration with WSS forms libraries
- Forms Services Architecture
- Designing Browser-Enabled forms with InfoPath 2007

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The Role of InfoPath in Office 2003

- InfoPath was introduced with Office 2003
  - Platform for next generation of electronic forms
- InfoPath Forms
  - Captures XML data
  - Based on XML Schema
  - Requires little/no code

Challenges with InfoPath 2003

- Companies like InfoPath 2003, but…
  - They want better support for offline scenarios
  - They want to greater reach (browser-based clients)
  - They want a better code-behind model
- InfoPath 2007 introduces several improvements
  - Improved offline support through wizard
  - Forms Services extended InfoPath forms to browser
  - IT People Responsible for the Deployment
  - Code-behind using Visual Studio Tools Applications

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Security – Trust Levels

Restricted

- Deployed via email, no auto-updates
- No data connections, no managed code
- Not applicable for browser forms

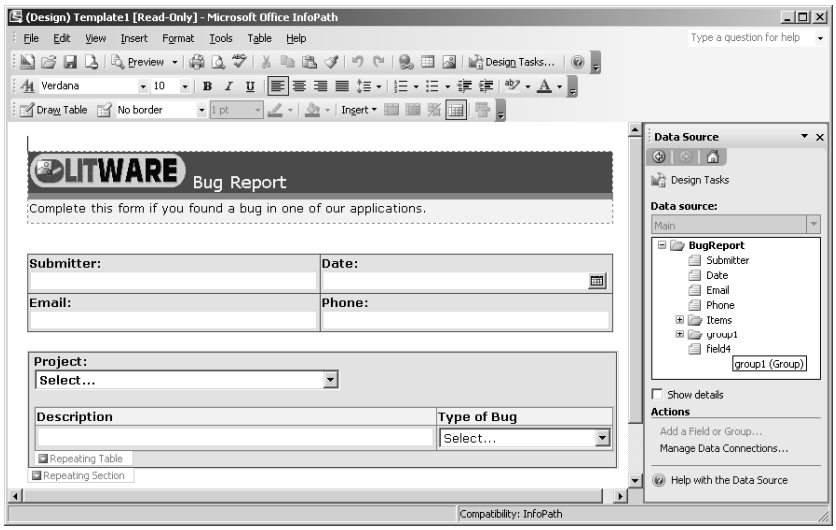
Domain

- Deployed to SharePoint library, browser forms
- Connect to own server only, no code for browser forms
- Use trusted Data Connection Library for cross-domain

Full Trust

- Installed, Digitally Signed, or .NET Code Group
- Must be admin-deployed for browser forms
- Connect to any server, managed code in browser forms

Demo: The InfoPath Forms Designer



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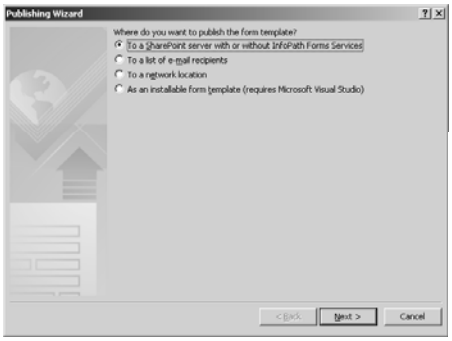
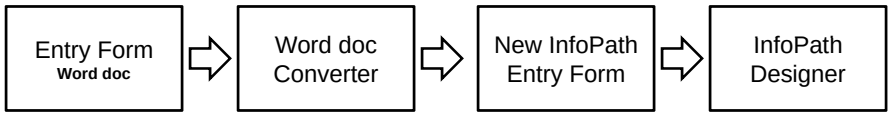
InfoPath Integration with WSS

- Forms Libraries
  - A document library with a .XSN document template
  - Introduced with InfoPath 2003 and WSS 2.0
  - Create by users through InfoPath Publishing command



Template Importing



- Built-in support for Word, Excel documents
- Use in combination with the Design Checker

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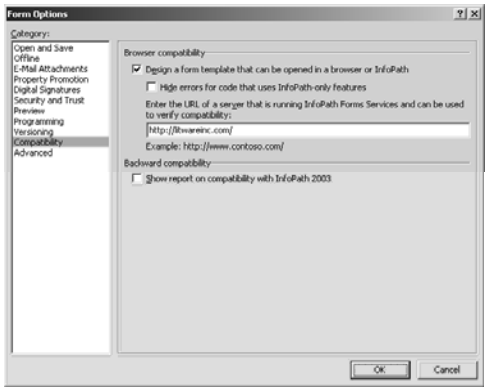
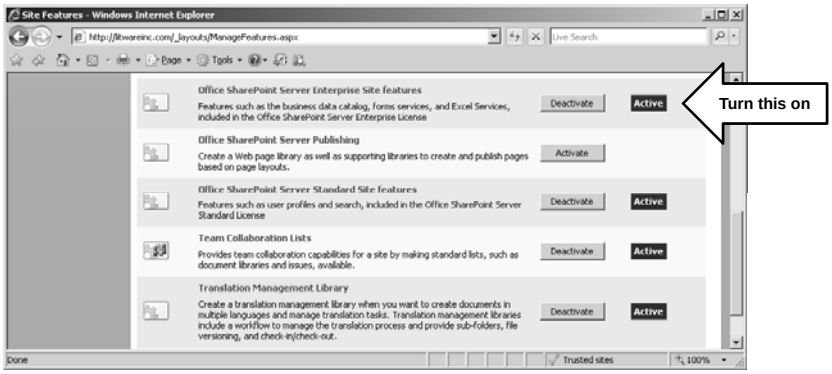
Browser-based Forms

- Forms Services provides HTML rendering
  - Forms must be designed using InfoPath 2007
  - Forms must be designed to be browser compatible



Sites and Browser-based Publishing

- Activate MOSS Standard and Enterprise features
  - Should be done for target site and site collection



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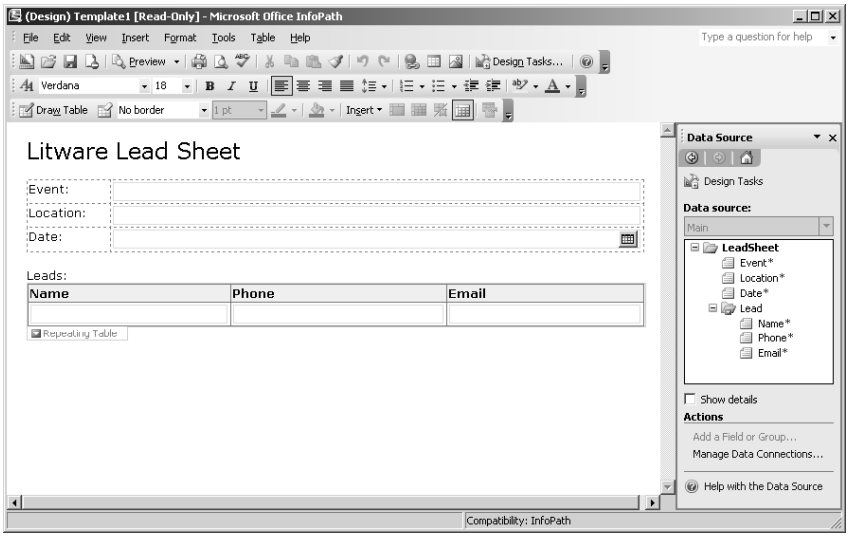
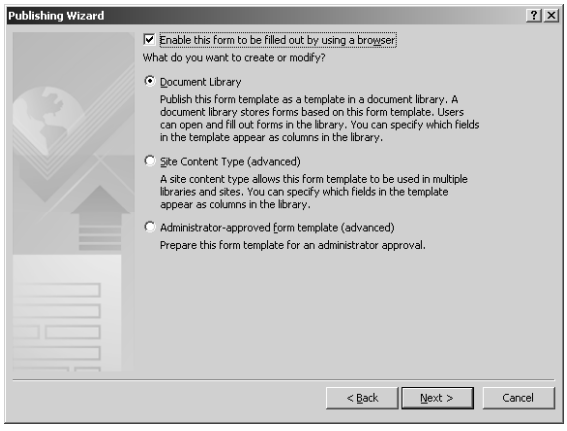
Designing a Browser-based Form



Publishing a Browser-based Form

- Saved up to WSS Forms Library
  - MOSS uses document template .xsn file for rendering



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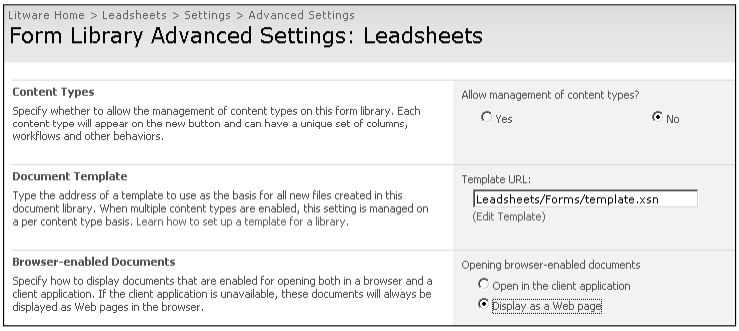
Forms Library Settings

- Important Forms Library settings
  - template.xsn is the editable InfoPath form template
  - Open browser-enabled documents
    `The default is to open with InfoPath rich client if possible`



Browser-based Rendering

- Browser-based rendering for wide reach
  - Based on DHTML and JavaScript
  - Tested with IE, FireFox, Netscape & hand-held devices

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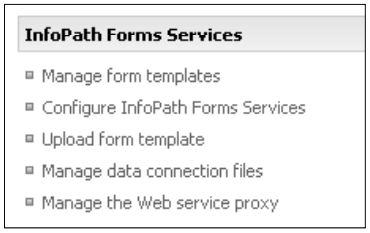
Forms Services Administration

- Part of WSS Central Administration
  - Used to upload/manage forms and data connections



Summary

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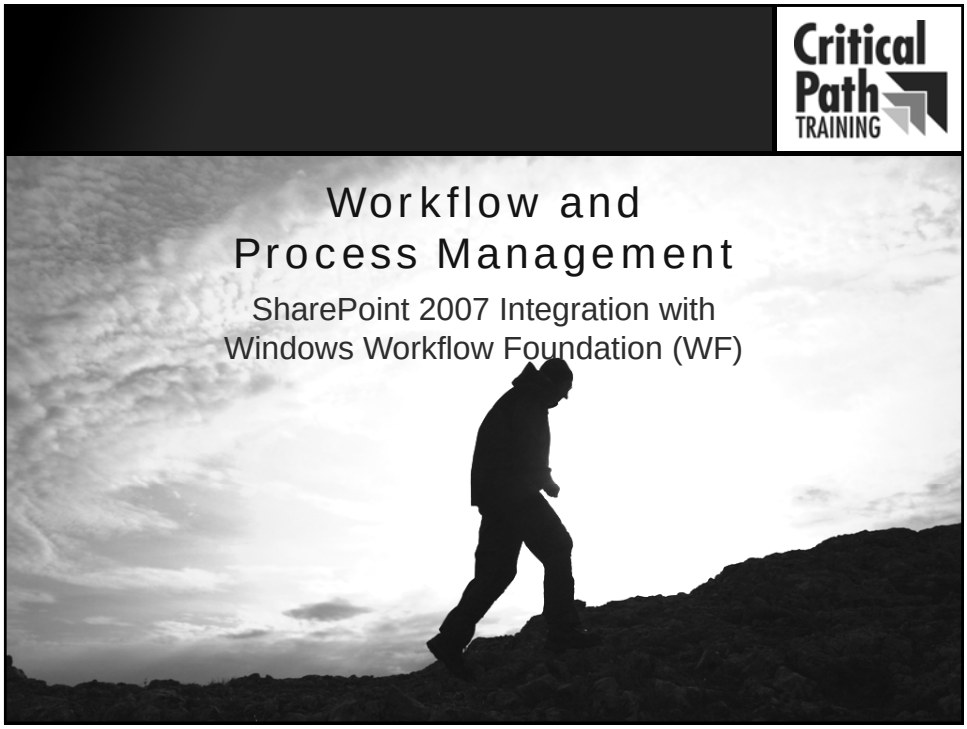

Agenda

- Windows Workflow Foundation (WF)
- Understanding Workflow Templates
- The MOSS Workflow Templates
- Creating Workflow Associations
- Starting and monitoring workflow instances
- Creating Workflows with the SharePoint Designer

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Process Management

Windows Workflow Foundation (WF)

- What is the Windows Workflow Foundation?
  - Development platform for building reactive programs
  - Set of development tools integrated with Visual Studio
  - Runtime components that ship with.NET FX 3.0
- Windows Workflow Foundation concepts
  - WF program
  - Workflow instance
  - Activities

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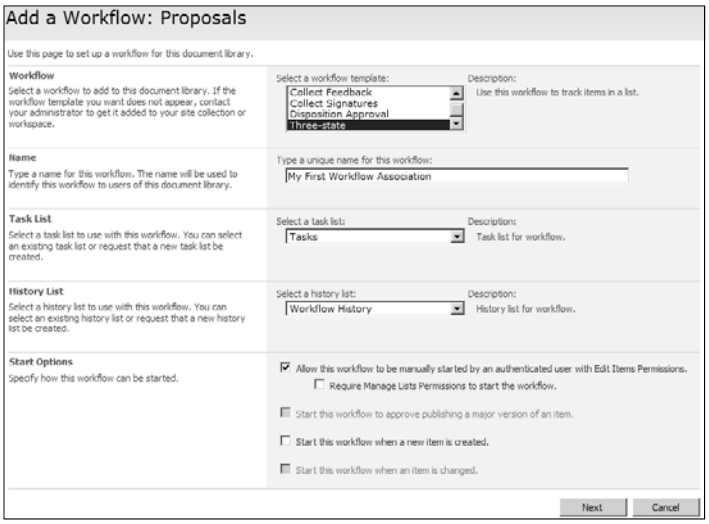
Out-of-the-Box Workflows

	Description
Approval	Routes the content for approval. You can setup this workflow as serial or parallel plus preset the approvers.
Collect Feedback	Routes the content for feedback. When the workflow completes all the feedback is sent to the originator of the workflow.
Collect Signatures	Rather than just sending content for approval, this workflow requires digital signatures on the content. This workflow requires the Office 2007 client and can only be initiated from a client application.
Disposition Approval	This workflow works with the records management capabilities of SharePoint. It allows you to manage document expiration and retention.
Group Approval (available in some languages)	To support hierarchical approvals, this workflow presents a hierarchical control to select the approvers and stamping rather than signatures for approval.
Translation Management	This workflow is used with the Web content management features of SharePoint to support a translation workflow for content to multiple languages.
Three-state (Included in Windows SharePoint Services; works with Issue Tracking list or any list with a Choice column with 3 values)	This workflow ships with Windows SharePoint Services and is a simple issue tracking workflow that shows status of active and resolved issues.

Creating a Workflow Association



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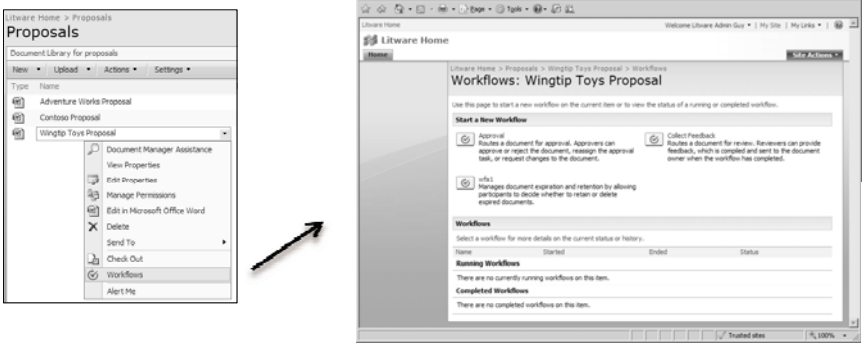
Starting a Workflow Instance

- Users can manually start workflows



Automatically Start a Workflow

- Most of the time to ease the burden on the users workflows are automatically started.
- With SharePoint there are two options:
  - Item is Created
  - Item is Changed

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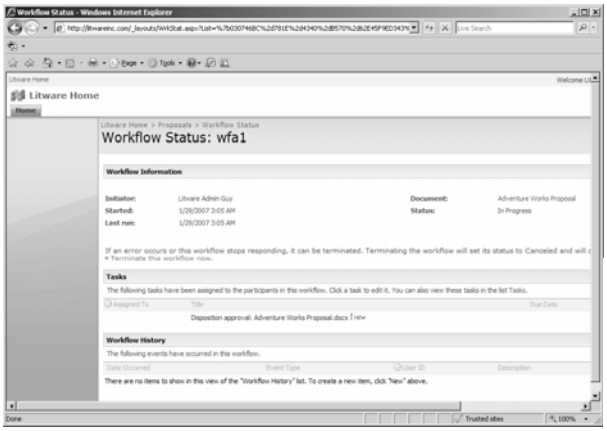
The Workflow Status Page

- Any user can see the status of workflow instance



Workflows and SharePoint Designer

- SPD supports creating workflow associations
  - SPD provides Workflow Designer
  - Offer “no code” approach to adding custom workflows
- Advantages over development with Visual Studio
  - Much lower learning curve
  - Workflow created by user directly in live site
- Disadvantages compared to development
  - Not as much flexibility
  - Very limited reuse

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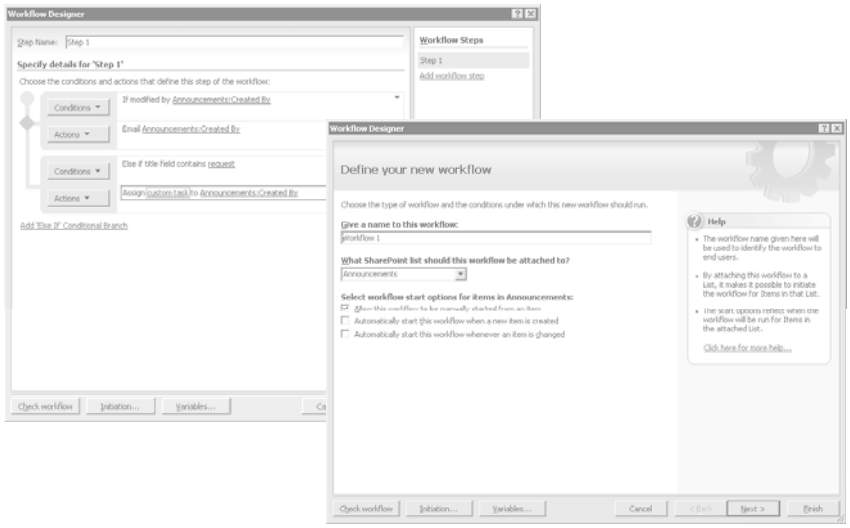
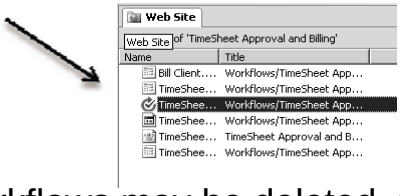


Editing SharePoint Designer Workflows

- SharePoint Designer Workflows can only be edited with SharePoint Designer



- Workflows may be deleted, paused, or resumed through the browser
- Workflow reports are available in browser
  - Activity and Duration
  - Cancellation and Error

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	SharePoint Designer	Visual Studio
Supported WF Hosts	WSS/SharePoint Server	WSS/SharePoint Server/Others
Development Model	Wizard-based	Graphical Designer
Types of Workflows Supported	Sequential	Sequential and State
Workflow Type	Markup only; markup file, rules and supporting files are not compiled	Markup with code behind compiled into an assembly
Code Behind	No	Yes
Activities	Built-in and use custom	Built-in, use and develop custom
Forms Technology	Auto-generated, customizable ASP.NET Forms	Design forms in any technology including ASP.NET or Microsoft Office InfoPath
Association	Associated automatically with a single list at design time. No other associations possible.	Can be associated with multiple content types, lists, and document libraries
Initiation	Initiation forms are supported	Initiation forms are supported
Modification	Cannot modify workflow using modification forms	Can modify workflows
Tasks	Supports custom task forms	Supports custom task forms
Deployment	Constructed in live environment	Must build package and deploy workflow using SharePoint feature technology
Debugging	No Debugging	Visual Studio Debugging

Summary

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Web Content Management using Publishing Portals

Publishing content on Internet-facing sites

Agenda

- The Publishing Site template
- The MOSS Approval Process
- Creating custom page layouts
- Optimization through Caching Profiles
- Content Translation using Variations
- Converting Office documents
- Paths and Deployment

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MOSS WCM Features

- Branding
  - Define the look, feel, and navigation of the site
- Decentralized Authoring
  - Allow users to easily create and contribute content
- Workflow/Scheduling
  - Supervisors approve content before it is posted.
- Data Integrity
  - Enforce validation of content structure for publishing
  - Ensure content published/removed in timely manner

MOSS WCM Design Goals

- Integrate CMS and SharePoint
  - Remove forced choice “CMS vs. SharePoint”
  - Move towards integrated ECM solution
  - Add Internet readiness to Sharepoint
- Make creation of dynamic, produced websites dramatically faster and easier
  - Lower amount of costly custom code
  - Provide great OOB experience
  - Improve user experience across all features

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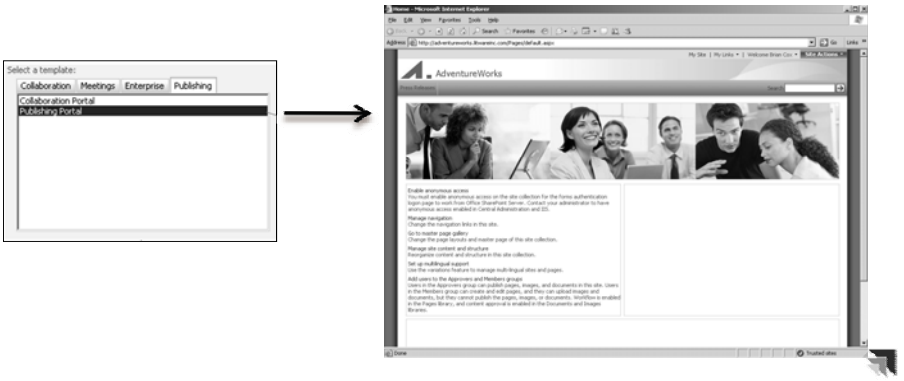
Creating A Publishing Portal

- Creating with WSS Central Administration
  - Create a site collection based on Publishing Portal



Site Hierarchy

- In the past a lot of confusion
  - Windows SharePoint Services 2003 → sites
  - SharePoint Portal Server 2003 → areas
  - Content Management Server 2002 → channels
- In SharePoint 2007 everything is a site

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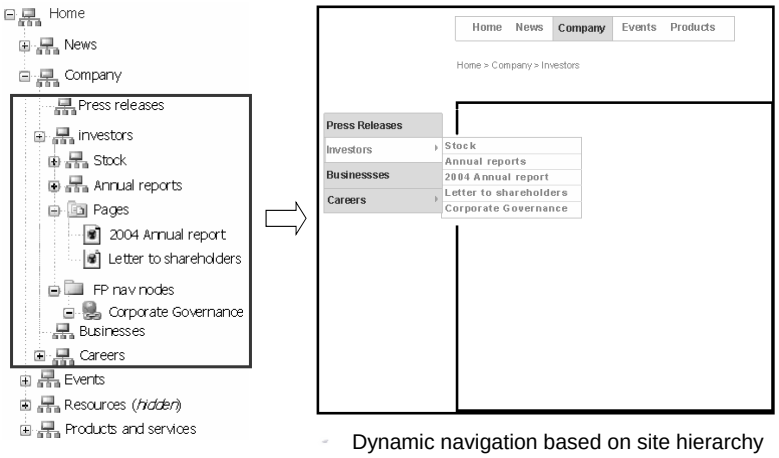
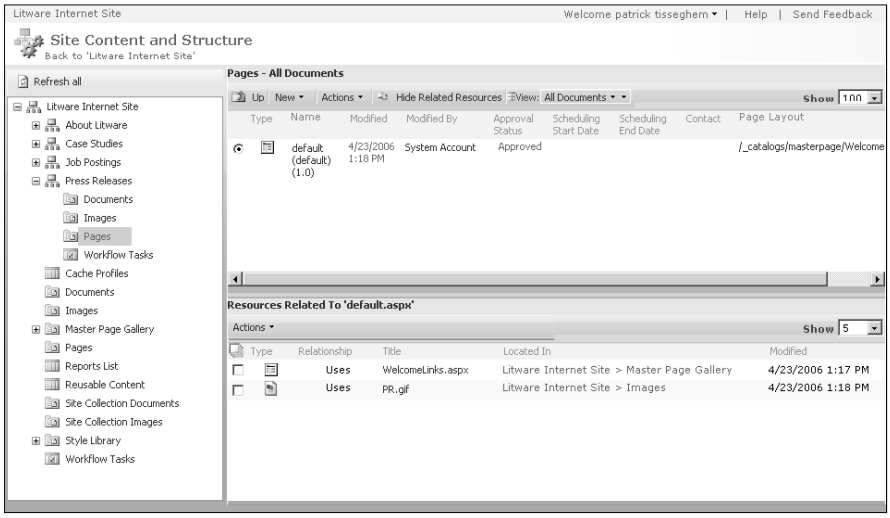
Navigation



- Dynamic navigation based on site hierarchy
- Includes webs, pages and authored links
- Navigation links trimmed based on security, workflow state and publishing schedule

Site Content and Structure



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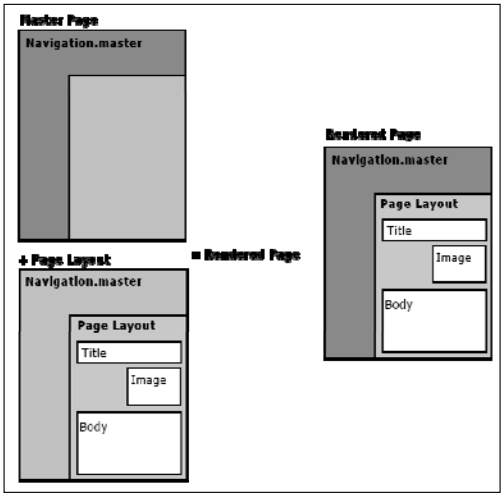
Page = Master Page + Page Layout

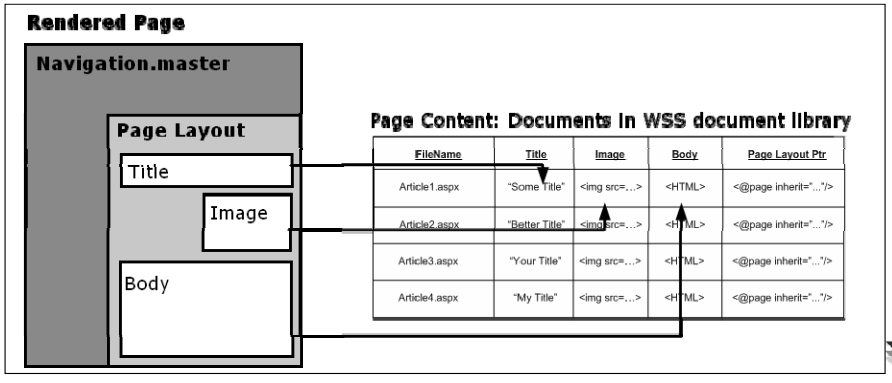
- Master page defines banner and navigation
- Page layout ASPX defines how page content is rendered
- Possible scenario
  - 1-3 Master pages
  - 10-25 Page Layouts
  - 10s of 1000s of Content Pages



Page Layouts

- Page execution:
- Page URL requested
- Page layout executed in content of page
- Content server controls bind to page fields
- Rendered page returned

Inherited from WSS:
- Versioning,
- Check-in/Check-out
- Content types
- Access control
- Workflow



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Steps to Create a New Page Layout

- Create shared columns
- Create content type
- Add created site columns to content type
- In the Master Page Gallery
  - Create new Page Layout file
  - Check-out file and edit in SharePoint Designer
  - Populate the file with content fields
  - Check-in and approve
- Use the new page layout file

Publishing Cycle

- Workflow based on Windows Workflow Foundation
- Light-weight approval workflow is active OOB
  - Based on approval
  - Minor versions need to be approved to become major versions
  - Visitors only see the major (published) versions
- Workflow can be replaced by custom workflow
  - OOB delivered with MOSS 2007
  - Designed using SharePoint Designer 2007
  - Created using Visual Studio.NET 2005

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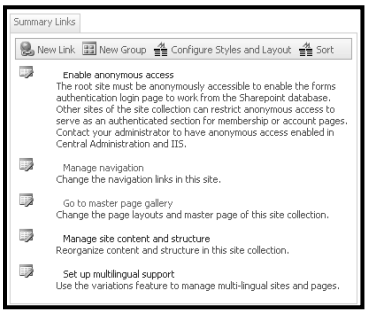
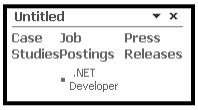
WCM Web Parts

- Summary Links Web Part
  - Custom annotated, stylized links



- Table of Contents Web Part
  - Displays navigation information of your site



- Content Query Web Part
  - Displays a dynamic view of the content in your site

Multilingual sites

- Common pattern
  - Parallel sites in multiple languages
  - In concept, they are localized mirrors
  - In reality, there are exceptions and customizations for different regions
- Modeled as variations
  - Admin creates multiple labels
  - System creates and maintains parallel versions of containers and items
  - Exceptions are allowed
- Not just for language translations
  - Multilingual sites, multi-device sites, and multi-branded sites

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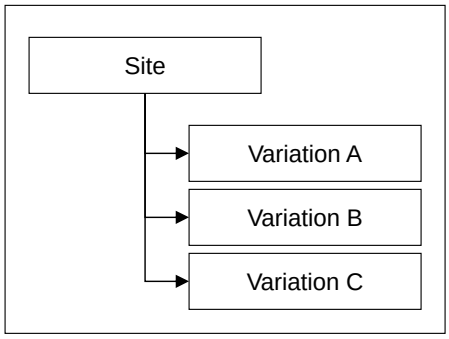
Site Variations

- Allow for publishing of related sites and pages
  - Multilingual scenario
  - Device targetting



Content Deployment

- Transfers content from one site collection to another
  - Paths define the relationship between source and destination
  - Jobs define the content to deploy and a schedule

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Summary

- The Publishing Site template
- The MOSS Approval Process
- Creating custom page layouts
- Optimization through Caching Profiles
- Content Translation using Variations
- Converting Office documents
- Paths and Deployment

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Agenda

- Motivation for the BDC
- Application Definition Files
- Application, Entities, Methods and Associations
- Using the built-in BDC Web Parts
- BDC integration with MOSS search
- Creating custom BDC Web Parts

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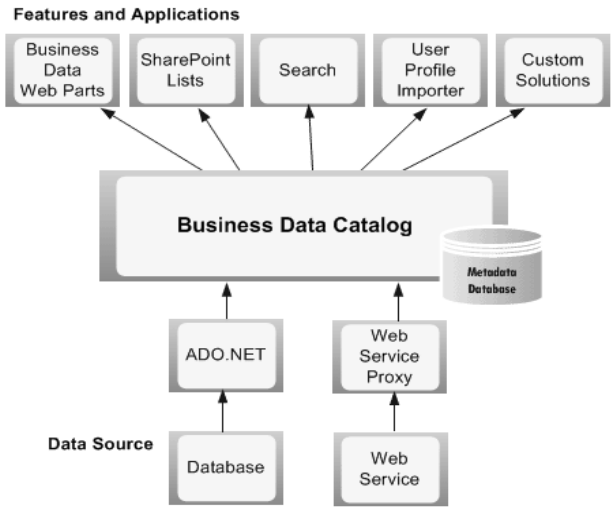
Design Motivations

- Reduce the need for custom front-end code
  - Reuse SOA investments already in place
- Create manageable method for reusing data
  - Centralized deployment
  - Centralized data security
  - Low latency
- Designed for portal & collaboration scenarios
  - Data query, indexing, personalization
- The BDC is not about: transactions, workflow, data transformation, adapters, precomposition

BDC Architecture



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Application Definition Files

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<LobSystem xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xsi:schemaLocation="http://schemas.microsoft.com/office/sps/2005/bdcMetadata BDCMetadata.xsd"
 Type="Database" Version="1.0.0.0" Name="AdventureWorksSample"
 xmlns="http://schemas.microsoft.com/office/sps/2005/bdcMetadata">

 <LobSystemInstances>
    <LobSystemInstance Name="AdventureWorksSample">
      <Properties>
        <Property Name="AuthenticationMode" Type="System.String">PassThrough</Property>
        <Property Name="DatabaseAccessProvider" Type="System.String">SqlServer</Property>
      </Properties>
    </LobSystemInstance>
 </LobSystemInstances>

 <Entities>
    <Entity EstimatedInstanceCount="10000" Name="Product"/>
    <Entity EstimatedInstanceCount="10000" Name="SalesOrder"/>
    <Entity EstimatedInstanceCount="10000" Name="Customer"/>
 </Entities>

  <Associations>
    <Association AssociationMethodEntityName="Customer"
                 AssociationMethodName="GetSalesOrdersForCustomer"
                 AssociationMethodReturnParameterName="SalesOrders"
                  Name="CustomerToSalesOrder" IsCached="true">
      <SourceEntity Name="Customer" />
      <DestinationEntity Name="SalesOrder" />
    </Association>
  </Associations>
</LobSystem>
```

Tools for Building Definitions

- BDC Meta Man
  - http://www.bdcmetaman.com/
  - Free version for SQL Server data sources
  - Licensed version adds Web service, Oracle, ODBC

    Action builder
    Visual designer
    Multiple entity support
    Configuration of LOBSystems, LOBSystemInstances, Entities, Methods, etc.
- Simego MOSS BDC Design Studio
  - http://www.simego.com/#MOSS
- Various efforts on CodePlex, GotDotNet
- Some SDK-delivered functionality is in the works

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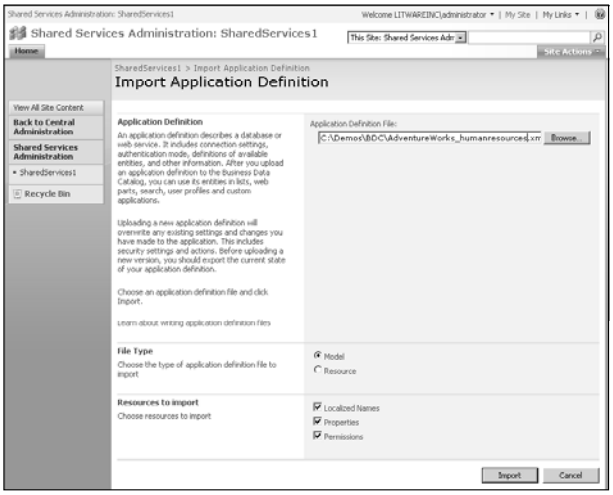
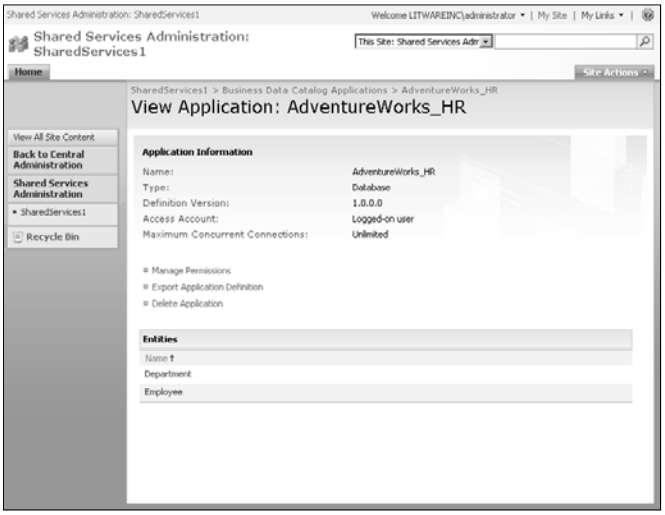
Importing Application Definition Files



Administration of BDC Applications



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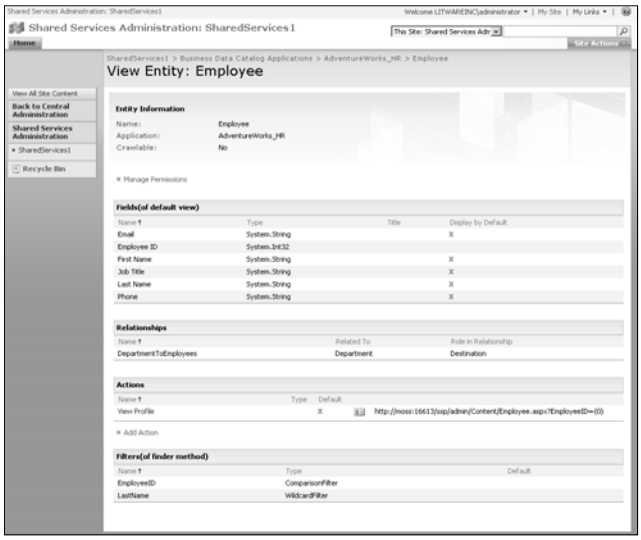
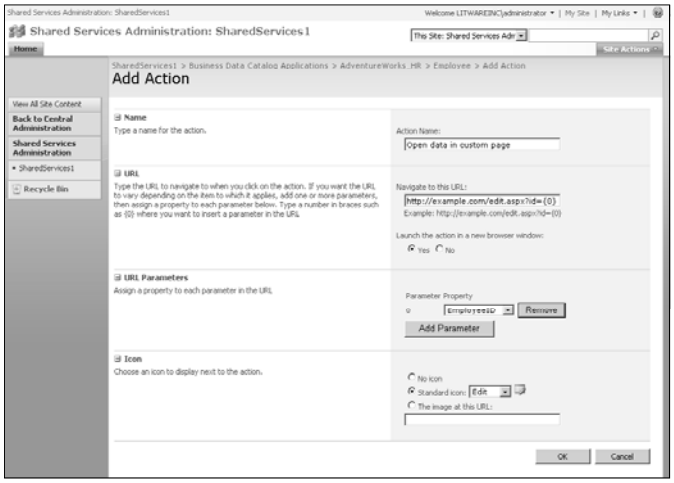
Examining BDC Application Entities



Adding Actions to an Entity



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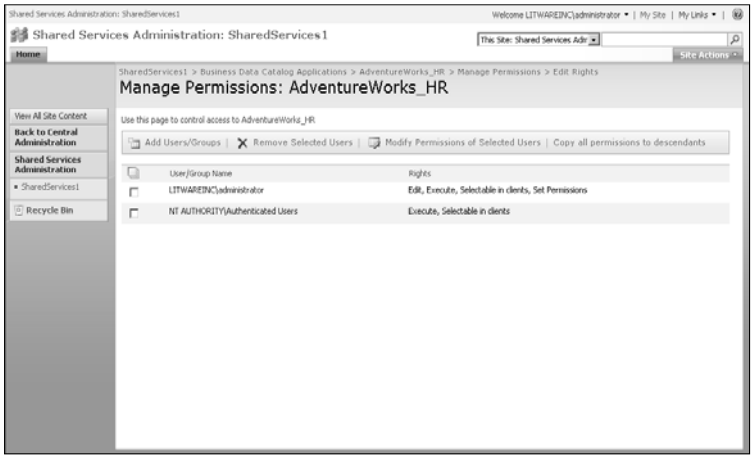
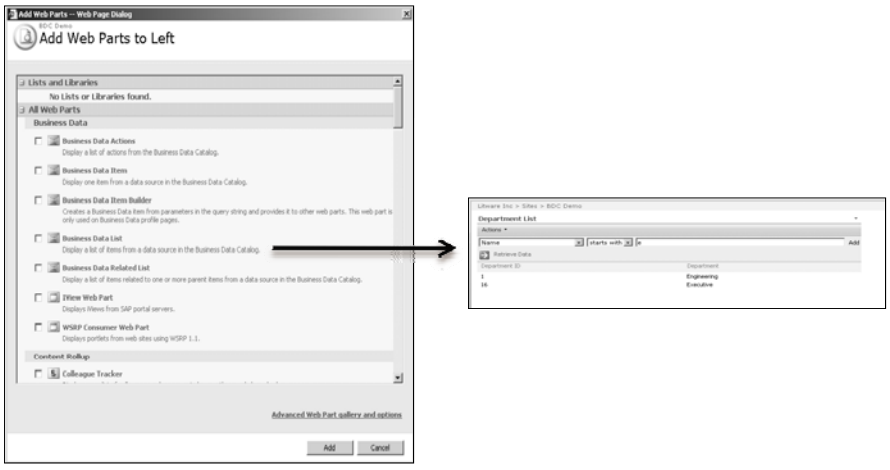
Administrating Security



Using BDC Web Parts



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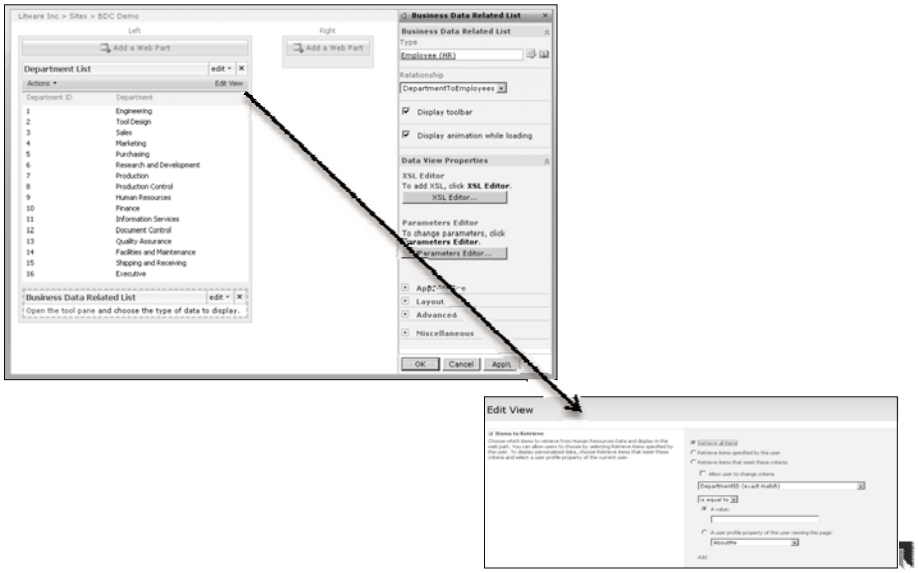
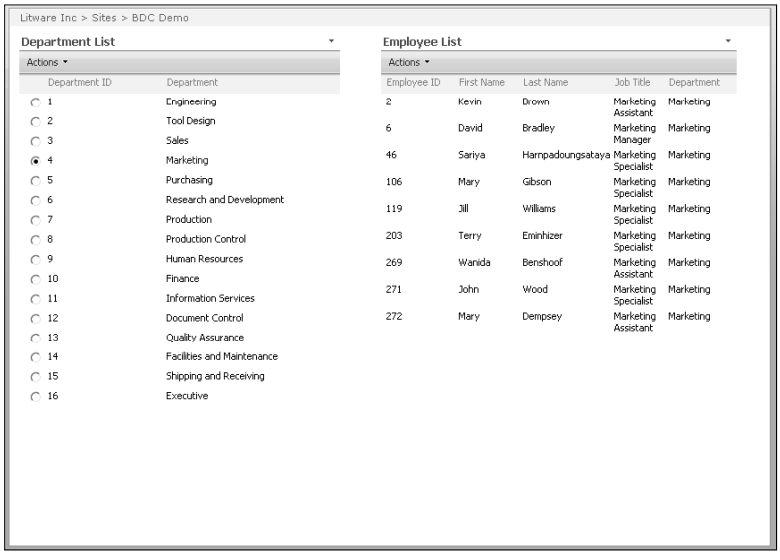
Editing BDC Web Parts



Connecting Web Parts with Associations



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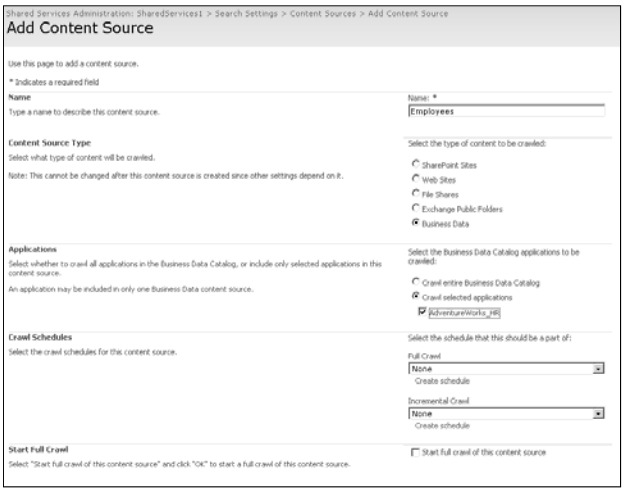
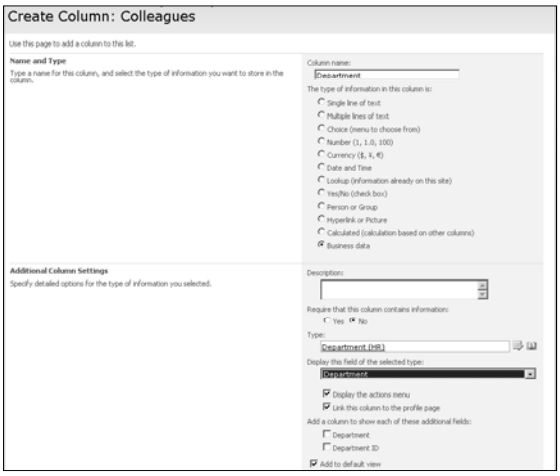
Searching through BDC Applications



Adding BDC Columns to WSS Lists



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Summary

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Agenda

- Excel Services Architecture
- Configuring Trusted Locations
- Publishing spreadsheets that render as HTML
- Using Data Connections

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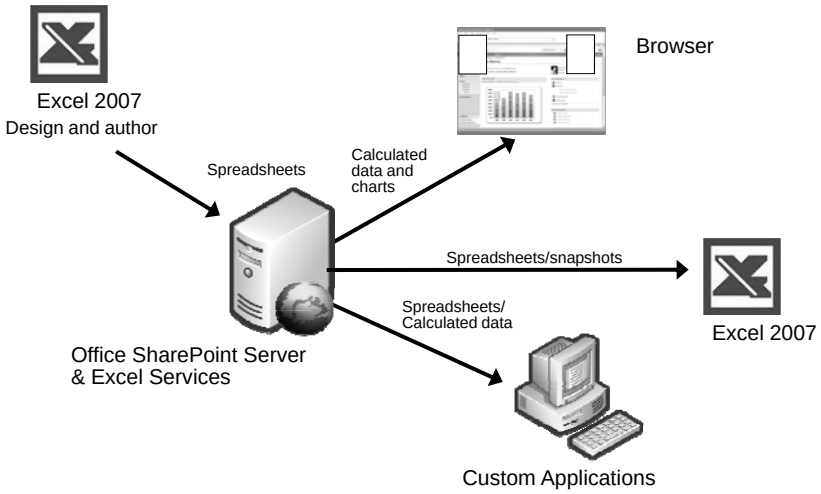
Why Do We Need Excel Services?

- Common customer requirements/complains
  - Distributing spreadsheets to users creates many copies
  - Excel doesn't play well in the BI dashboard and reporting world
  - It's difficult to protect proprietary information in spreadsheets
  - Incorporating Excel logic into applications is hard
  - Excel was designed as a desktop application
    (read: Excel really stinks as a server-side application)

Excel Services



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Excel 2007

Configuring Trusted Locations

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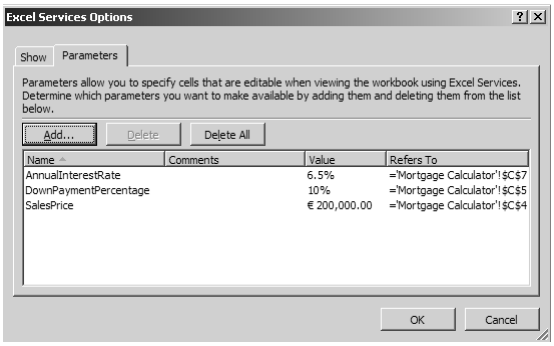
Walk Through of using Excel Services

1. Add the URL of the document library as trusted location
   1. SharePoint Central Administration
   2. In Application Management, configure the Farm's core services
   3. In Excel Services Management, add the URL of the doc lib as a trusted file location
2. In Excel 2007, publish to Office Server
   1. Decide what worksheets to publish
   2. Named ranges can be dynamically populated with values in the browser
   3. Give the URL of a document library
3. Users now have Web access to the spreadsheet

Parameters

- Allows the creator of the document to determine what cells can be edited by the user viewing the workbook in Excel services.



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Excel Features will not load

- **Code**
- Information Rights Management (IRM) protection.
- ActiveX controls.
- Embedded smart tags.
- PivotTables report with multiple consolidation ranges.
- External references (workbooks that contain links to other workbooks).
- Workbooks saved in formula view.
- XML expansion packs.
- XML maps.
- Data validation.
- Query tables, SharePoint lists, Web queries, and text queries.
- Workbooks that reference add-ins.
- Workbooks that use the **RTD()** function.
- Workbooks that use workbook and worksheet protection.
- Embedded pictures or clip art.
- Cell and sheet background pictures.
- AutoShapes and WordArt.
- Ink annotations.
- Organization charts and diagrams.
- DDE links.

Workbooks that will not render

- Split and frozen panes
- Headers and footers
- Page layout view
- Cell patterns
- Zoom
- Microsoft SQL Server Analysis Services' member properties in ScreenTips
- Some cell formatting, such as diagonal borders and border types not supported by HTML

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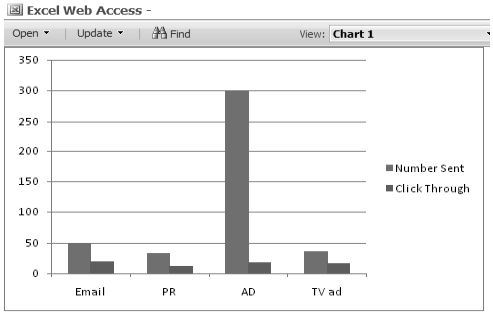
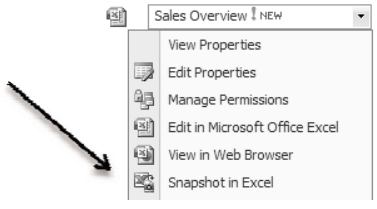
Excel Web Access Web Part

- Web Part to view Excel workbooks on a page
  - Entire Workbook
  - Specified range of cells
  - Named Item



Snap Shot

- Allows for the limited viewing of a workbook from Excel Services
- Items such as private information, formulas, and hidden data are removed



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Summary

- Excel Services Architecture
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Agenda

- The Report Center site template
- Creating Dashboards
- Key Performance Indicators (KPIs)
- Filters

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Report Center

- With Office 2007, SharePoint Server become the hub for BI on the server
  - Excel Services and Reporting Services in the portal
  - Out-of-the-box BI portal experience
  - Dashboards, KPIs, and Report Libraries
  - Integrated with Portal, Collaboration, Enterprise Content Management and Workflow functionality

SQL Server Reporting Services

- Integrated with WSS to enable publishing, viewing, and management of reports
- Microsoft Office SharePoint Server light up
  - Report library integration
  - Dashboards and filter Web Parts
- Integration is interesting because…
  - New capabilities for Reporting Services users
  - Great example of deep integration for ISVs

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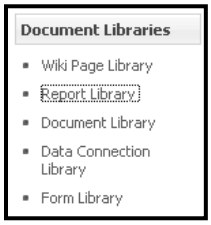
Storing Reports

- Reports have more specific needs than documents
  - History is very important
  - Many instances of the same report can exist
- Therefore, Office Server adds a Report Library template
  - Displays current spreadsheet / report by default
  - History available via search and list views
  - Custom profile page
  - Can be part of Report Center
  - A list template that can be used anywhere



Key Performance Indicators

- Goals
  - KPIs can be an important instrument in the organization, so let's make it easier to create them
  - And let's use the environment we already know – the portal and team sites
  - Support KPI types from simple to enterprise class
- Types
  - Manually entered
  - SharePoint list
  - Excel workbook
  - SQL Server Analysis Services
- Technologies
  - KPI web part & list
  - Customizable KPI profile page
  - Dashboard template focused on KPIs

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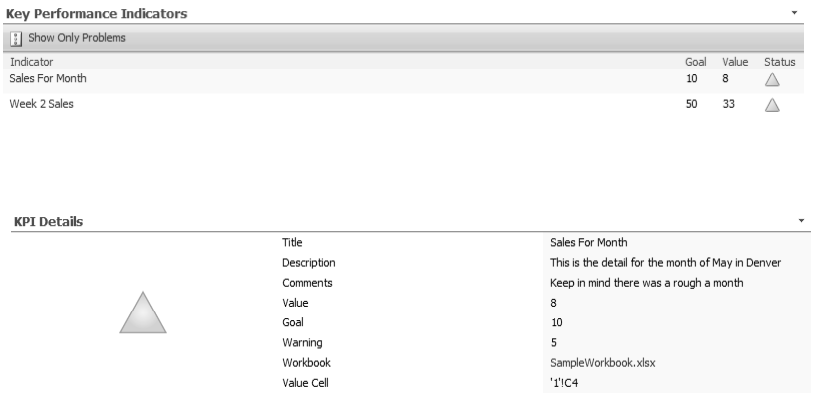
KPI Web Parts



Dashboards

- Dashboards are SharePoint pages
- Dashboard pages are in same document library as spreadsheets and reports
- Types
  - Generic dashboard
  - KPI focused

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Filtering

- Filtering is the natural next step after building a dashboard
- Filter for eastern region, last quarter
- Automatically show just *your* customers when you load page
- Accept values from query string
  - http://server/dashboard.aspx?Product=452

Filtering Web Parts

Display options

- Type in value
- Pick from list
- Tree view
- Hidden

Extensibility

- Custom providers & consumers
- Standard interfaces that ship in WSS

Filter value sources

- User entered value
- Manual list
- SharePoint list
- Analysis Services
- Bus. Data Catalog
- SharePoint profile
- Query string

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Summary

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