DENIM GROUP

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Securing SharePoint
Texas Regional Infrastructure Security Conference (TRISC)

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Agenda

- Background
- SharePoint Basics
- Securing SharePoint
  - *Common Approaches*
  - *Common Blind Spots*
- Questions and Answers

Denim Group Background

- Texas-based consultancy
- Build and Secure Enterprise Applications
  - ***Build****: .NET, JEE, SharePoint*
  - ***Secure****: Assessments, Penetration Tests, Code Reviews, Training, Process Consulting*
- "Go-To" Gold Partner for .NET Security in North America

- Dan Cornell
  - *MCSD, Java 2 Certified Programmer*
  - *Twitter: danielcornell*

Key Learning Objectives

- Understand some of the up-front configurations that you can implement to secure your SharePoint deployment
- These initial steps are important, but are a starting point for in-depth security maintenance
- Areas of Emerging Security Coverage
  - *Data leakage protection*
  - *Ongoing external/internal assessments*
  - *Custom web part security*
- A Comprehensive SharePoint Security strategy must combine an up-front and ongoing security activities that address evolving risks
- A starting point is a SharePoint security health check to quantify your risks

SharePoint – Why Worry About Security?

- SharePoint is used as a “front end” for an increasing number of activities and systems
  - *Collaboration*
  - *Application Delivery*
  - *MySites*
  - *Corporate Social Networking*
- As the amount of data and the value of the data stored in SharePoint increases, the attractiveness of SharePoint to attackers increases
- SharePoint security is seen as a nice-to-have:
  - *http://secprodonline.com/articles/2009/01/27/sharepoint-security.aspx*

Two Scenarios

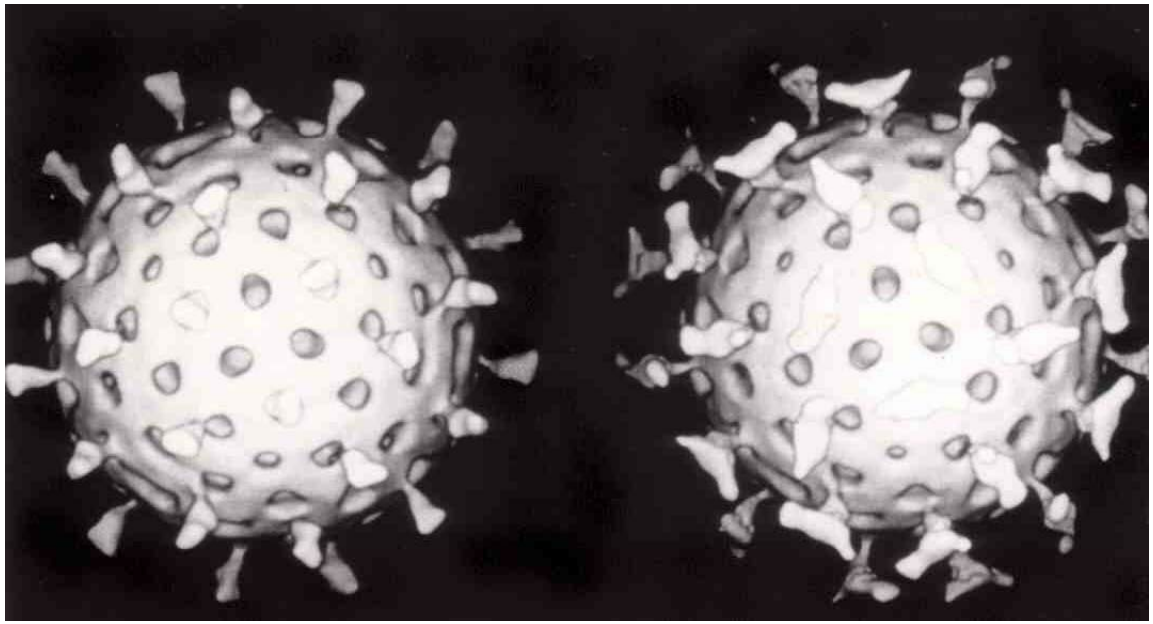
- Organizations standardize on SharePoint as the platform technology for future IT initiatives
- Organizations deployed SharePoint in an ad hoc manner

SharePoint as the Platform

- Often a top-down decision
- Touches many lines of business
- Lots of customization and custom software development

Ad Hoc Deployments (Viral!)

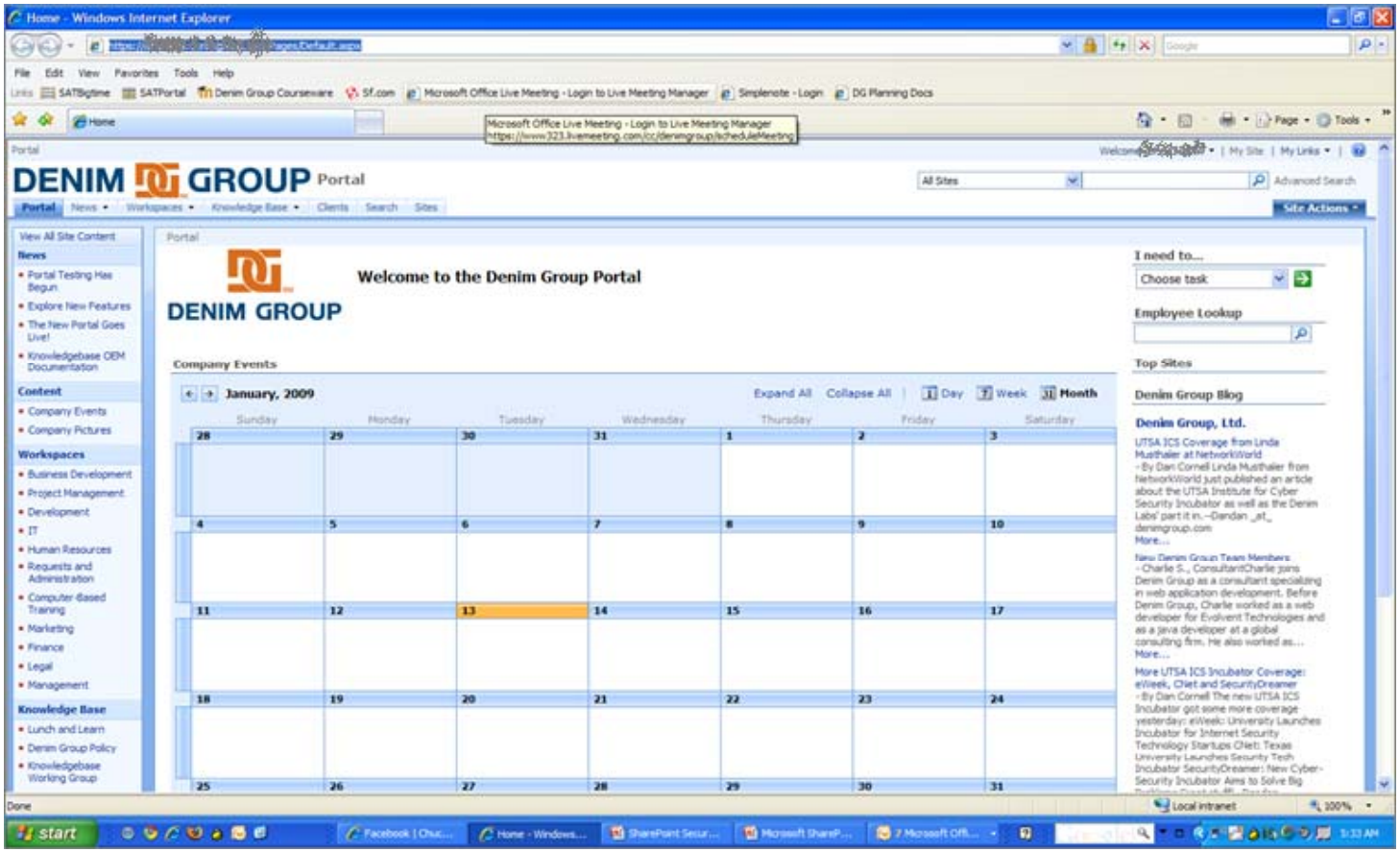
- SharePoint deployed on a whim or as a proof-of-concept
- Virally becomes critical to many business processes
- Inadequate infrastructure, no controls, etc



SharePoint Overview

- Microsoft Office SharePoint Server (MOSS)
  - *Software system used to build portal solutions*
  - *Fully-packaged ASP.NET application*
  - *Collaboration, Document Management, Enterprise Search, ECM, BI*
  - *Adopted throughout enterprise and upper mid-market clients*
- Based on the freely-available Windows SharePoint Services (WSS)
  - *Most of this talk probably applies to WSS, but the focus is on Enterprises with MOSS*

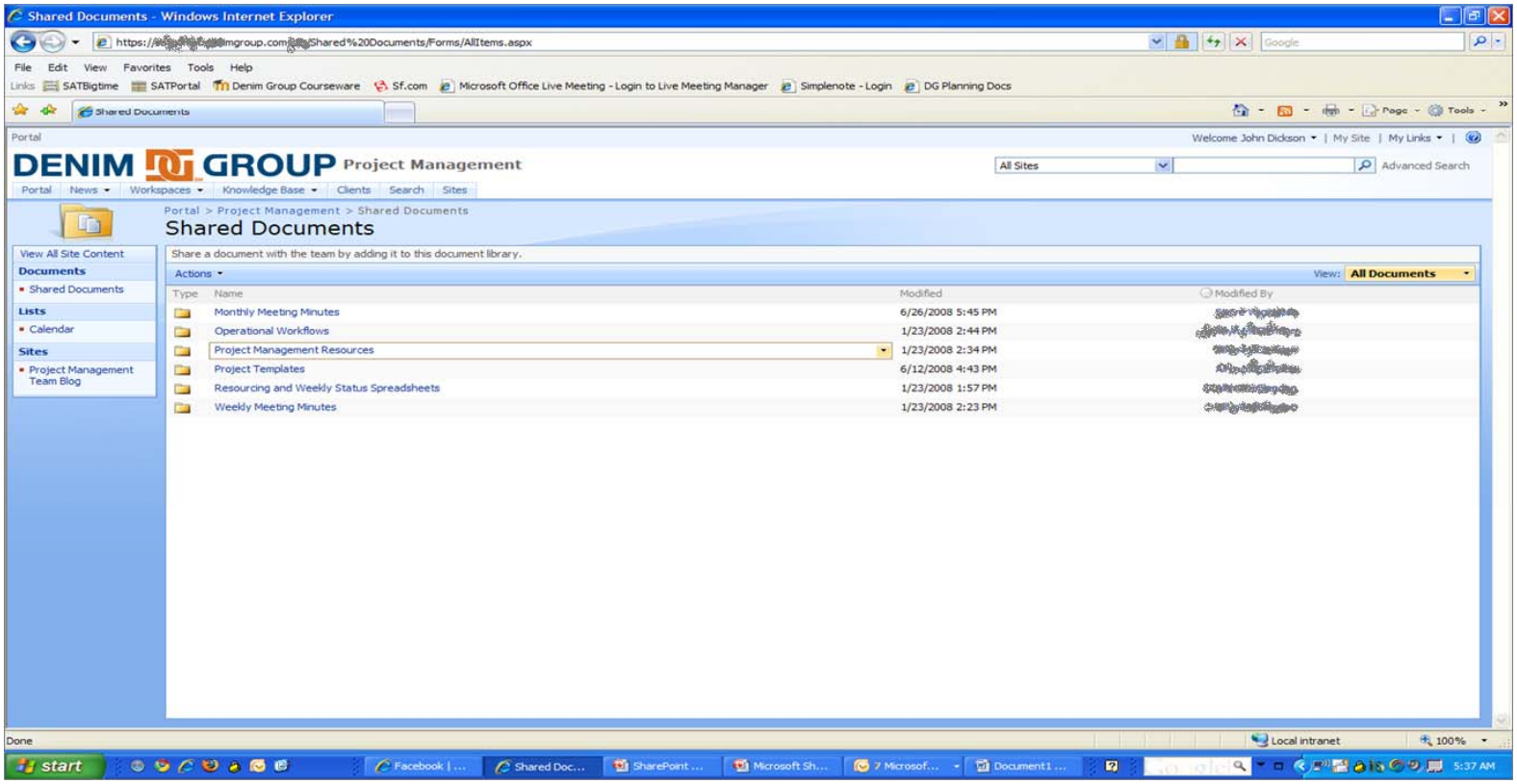
SharePoint Overview



Nature of SharePoint as a Web Application

- A MOSS deployment is essentially a collection of websites
  - *Structured in a hierarchal fashion*
- Web parts are the core component that helps provide functionality and content on a page
  - *Can provide simple functionality or…*
  - *Contain items such as document libraries that have additional security capabilities*
  - *Can be developed as custom software*
- User-provisioned sites
  - *Users have the ability to create and edit collaboration sites*
  - *Do not have to have IT involvement to build capability*

Nature of SharePoint as a Web Application



Approaching SharePoint Security

- Typical Approach to SharePoint Security:
  - *Infrastructure*
  - *SharePoint Security Features*
  - *Add-On Products*
- Common Blind Spots Include:
  - *Custom Web Part Security*
  - *Data Security, Compliance, and Enterprise Search*

Typical Approaches

- Secure the Infrastructure
- Use SharePoint Product Features
- Deploy Add-On Products

- Microsoft's Office SharePoint Server Security document:
  - *Short: http://is.gd/oHaw*
  - *Original: http://office.microsoft.com/download/afile.aspx?AssetID=AM10235994103*

Infrastructure Security

- Goal: Identify threats to the system from poorly configured or maintained infrastructure components

- Assess the security of infrastructure components
  - *Available services*
  - *Service and server configuration*
  - *Patch levels*
- Assess from multiple vantage points
  - *Internet*
  - *Corporate network*
  - *In-DMZ*

SharePoint Product Security Features

- Authentication
- Authorization
- Users, Groups

Up-Front Security for SharePoint

- Secure Access to SharePoint Deployment
  - *Validate a user's access to the site via authentication*
- Most common approach:
  - *Windows Authentication via Active Directory (AD)*
  - *Pump users and groups from AD to SharePoint*
- Can also implement other authentication mechanisms
  - *Extranets*
  - *Internet sites*

Five Elements of Site Security in MOSS

- Individual User Permissions
- SharePoint-specific permission levels
  - *Limited Access, Read, Contribute, Design, Full Control*
- User
- Group
  - *Understand Windows Groups vs. SharePoint Groups*
- Securable Objects
  - *Site, List, Library*

SharePoint Default Groups

- Administration
  - *Site collection administrators*
  - *Farm administrators*
  - *Administrators*
- Default groups for sites
  - *Restricted readers*
  - *Style Resource Readers*
  - *Viewers*
  - *Home Visitors*
  - *Home Members (contribute)*
  - *Quick Deploy Users*
  - *Approvers*
  - *Designers*
  - *Hierarchy Managers*
  - *Home Owners (Full control)*

Defining Permissions for SharePoint

- Can Assign fine-grained Permissions to:
  - *Site*
  - *List or Library*
  - *Folder*
  - *Item or Document*
- Permissions Include
  - *Limited Access, Read, Contribute, Design, Approve, Manage Hierarchy, Restricted Read, Full Control*
- By Default, permissions within a site are inherited from the parent site

Defining Permissions for SharePoint

- Keys for success:
  - *Understand risk*
  - *Make the schema straightforward*
  - *Strike a balance between simplicity and security*
- Anti-patterns:
  - *Everyone is an Administrator (although this* is *easy to set up and maintain)*
  - *Every new site requires a new Active Directory (AD) group*

Add-On Products: Microsoft ForeFront

- Used to scan content being uploaded to document repositories:
  - *Viruses*
  - *Spyware*
  - *Other malware*
- Multiple3rd party engines are included
- “Thanks for buying SharePoint. Now pay $X to secure it.”

Common Blind Spots

- Custom Software on SharePoint is Still Custom Software
- Appreciating Data Security and Compliance Implications
  - *Enterprise Search being a common attack vector*

Custom Software on SharePoint

- SharePoint is a platform that can be extended
- There are many ways to extend its capabilities – both 3rd party and custom-developed components
  - *WebParts*
  - *Workflows*

Custom Software on SharePoint

- Components deployed to SharePoint can be vulnerable to common web application attacks
  - *SQL Injection*
  - *XML Injection*
  - *Cross Site Scripting (XSS)*
  - *Cross Site Request Forgery (CSRF)*
- XML Injection is particularly interesting and scary
  - *SharePoint uses XML-based APIs to communicate internally*
- Custom components with poor security create an excellent window for attackers

Why Is This a Problem?

- Some common ASP.NET protections against XSS are not enabled
- Often SharePoint development is done outside normal development groups
  - *Marketing, Internal Communications, etc – not IT/Development*
- Many static analysis tools do not have SharePoint-aware rulesets

Security Code Review

- Goal: Identify threats to the system based on security defects in custom code and 3rd party extensions

- Enumerate 3rd party and custom code components
- Perform a scan of the source code using best of breed source code analyzer
  - *Using a proprietary Denim Group custom ruleset to optimize results for SharePoint components*
- Manually review results
- Manually review code for additional business logic vulnerabilities

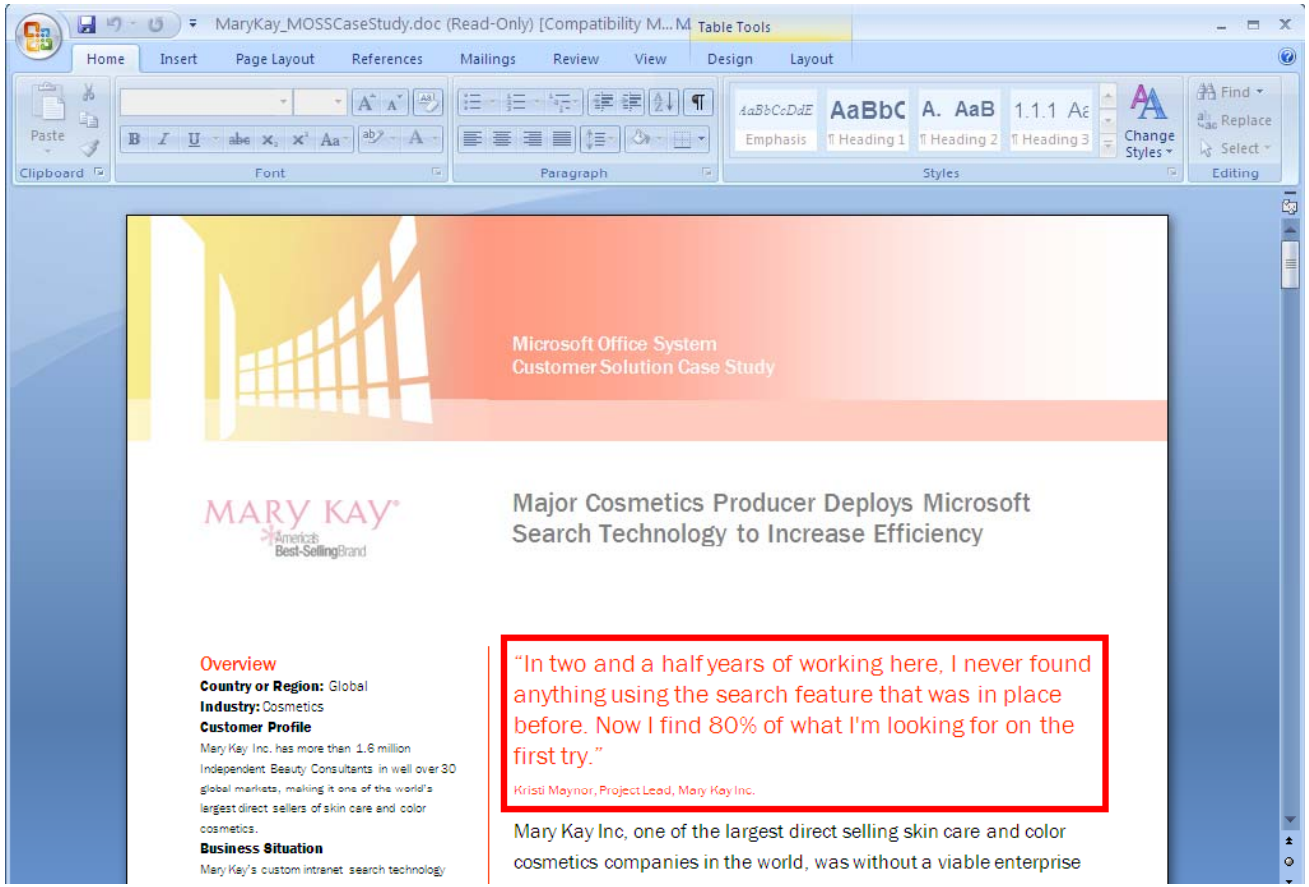
Data Security, Compliance and Enterprise Search

- Collaboration is good
  - *Sort of*
- Questions that are often unanswered:
  - *Who is allowed to create sites*
  - *What sort of data is allowed in SharePoint*
  - *How should SharePoint data be protected*

Data Security, Compliance and Enterprise Search

- A lot of data finds a home in SharePoint
  - *PII, PHI, Credit Card, Financial, etc*
  - *That is kind of the point*
- SharePoint search has become more better and more powerful over time

How Much Better?



So What?

- SharePoint may be indexing sensitive data that it then makes available via search
  - *Sites*
  - *Documents in Document Libraries*
  - *File Shares*
  - *Etc.*
- What data is living in SharePoint and who has access to it?

Data Security, Compliance, & Enterprise Search

- Goal: Identify potential confidentiality and compliance issues associated with sensitive data being stored in SharePoint data stores
- When sensitive data is identified, review the users and groups who have access to determine if this is in-line with organizational data classification policies

Helpful Tools

- SharePoint web services allows access to Search:
  - *http://msdn.microsoft.com/en-us/library/ms470518.aspx*
  - *Only allows access to SQL-style LIKE and CONTAINS queries*
- Regular Expression Searching
  - *http://www.codeplex.com/MossRegExSearch*

Logging and Auditing

- SharePoint logs to the IIS log files
  - *Whoop dee doo*
- SharePoint also has the capability to log and report
  - *Done at the Site Collection level (Site Settings -> Configure Audit Settings)*
  - *Great intro article: http://is.gd/oH0j*
  - *http://admincompanion.mindsharp.com/BillBlog/Lists/Posts/Post.aspx?List=2d22afa2-592b-471a-9cd1-4e8de8a2abc0&ID=18*
  - *Be careful how much logging you enable because you can run into disk space issues*

3rd Party SharePoint Auditing Tools

- Several 3rd party tools are available to navigate SharePoint audit trails:
  - *http://www.syntergy.com/sharepoint/products/current/audit/index.html*
  - *http://www.invenioworks.com/*
  - *http://www.alcero.com/solutions/audit.htm*

Denim Group SharePoint Auditing Tool

- VERY early stage
- Provides a console interface to query SharePoint constructs

Need for Ongoing Scrutiny

- SharePoint is a collaboration technology
  - *When (l)users collaborate they change the state of the system*
  - *New Sites, new documents in Document Libraries, etc*
- What business process now critically depends on SharePoint?

Conclusions

- As SharePoint is used to store an increasing amount of sensitive data, the security of SharePoint systems becomes paramount
- Traditional approaches to SharePoint security have yet to address certain significant areas of risk
  - *A more comprehensive approach to SharePoint security is required*
- Augment SharePoint security efforts with:
  - *High level focus on policy, compliance and auditability*
  - *Low level focus on secure coding for custom extensions*

Questions and Answers

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