

## Chapter 2 – Product features

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### Terms

This Windows SharePoint Services Operations Guide (WSSOPS) from the Computer Information Agency is provided as is. Every effort has been made by the author to ensure that information provided is correct however this cannot be guaranteed.

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### 2.1 Scope

This chapter will focus on the features of Windows SharePoint Foundation 2010 (WSF) and how they can be utilized within a business. It is designed to give you a basic understanding of the structure of the product as well as features which set it apart from previous versions.

### 2.2 Windows SharePoint Foundation 2010 Overview

Microsoft SharePoint 2010 enables organizations to connect and empower people through an integrated set of rich features. SharePoint 2010 facilitates business collaboration in its broadest sense and helps colleagues, partners, and customers to work together in new and effective ways.

Microsoft SharePoint Foundation is the essential solution for organizations that need a secure, manageable, web-based collaboration platform. It helps teams stay connected and productive by providing easy access to the people, documents, and information that they need to make well-informed decisions and get work done.

Some of the benefits include:

#### *Collaborate Easily and Effectively*

Connect teams and increase productivity by providing easy access to the people, documents, and information they need through SharePoint Foundation 2010 out of the box elements such as blogs, wikis, team workspaces, and document libraries, providing employees with the ideal way to share information and collaborate around a customized website.

#### *Deploy a Manageable Infrastructure*

SharePoint Foundation 2010 offers new tools such as Windows PowerShell Administration to boost administrators' productivity and advances in health monitoring to provide deep insight into server performance and health; enabling you to make the most of your organization's resources by deploying a manageable, scalable, and reliable collaboration platform that enables self-service by employees.

#### *Build Web Applications*

Increase business process efficiency by creating Web applications and workflow scenarios on the highly customizable, extensible platform of SharePoint Foundation 2010 which also offers new tools such as the Developer Dashboard

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and Resource Throttling to help manage site customization and application development.

The best way to understand what SharePoint 2010 provides is to download the following document:

### ***Introducing SharePoint Foundation 2010***

*This paper describes how Microsoft® SharePoint® Foundation 2010 is the next step forward for the Microsoft fundamental collaboration technology framework, Windows® SharePoint Services 3.0. An overview of SharePoint Foundation 2010 as the essential solution for organizations that want a secure, manageable, Web-based collaboration platform is provided.*

<http://go.microsoft.com/?linkid=9691436>

### **2.3 Previous Versions**

WSF is by no means a new product, it originally started life out as SharePoint Team Services, then Windows SharePoint Services v2 after which came Windows Sharepoint Services v3 (WSS v3). You will find WSS v3 an integrated component of Small Business Server 2008 for example.

So what are the major differences between WSS v3 and WSF? In summary, WSF supports all the features and functionality of WSS v3 but also includes:

- ***Alerts Enhancements*** : Microsoft SharePoint Foundation 2010 expands the alerts framework to enable users to have alerts sent as Short Message Service (SMS) messages to their mobile devices.
- ***Business Connectivity Services*** : Business Connectivity Services (formerly named the Business Data Catalog) provides read/write access to external data from line-of-business (LOB) systems, Web services, databases, and other external systems within Microsoft SharePoint 2010. SharePoint 2010 has product features that can use external data directly, both online and offline. Developers can gain access to a rich set of features and rapidly build solutions using familiar tools such as Microsoft Visual Studio 2010 and Microsoft SharePoint Designer 2010. Microsoft Business Connectivity Services (BCS) enhances SharePoint application capabilities and their UI through features, services, and tools. These enhanced capabilities and UI streamline development of solutions with deep integration of external data and services. Power users, developers, and business unit IT professionals can integrate assets from external systems and enable interaction with the external data through many types of applications. The Business

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Connectivity Services feature set enables rapid development and deployment of scalable and security-rich solutions.

- **Client Object Model** : Microsoft SharePoint Foundation 2010 introduces three new client APIs for interacting with SharePoint sites: from a .NET managed application (Microsoft® .NET Framework 3.5 or later), from a Silverlight application (Microsoft® Silverlight™ 2.0), or from ECMAScript (JavaScript, JScript) that executes in the browser. These new APIs provide access to a subset of the types and members that are contained in the Microsoft.SharePoint namespace of the server-side object model.
- **Events Improvements** : Microsoft SharePoint Foundation 2010 supports multiple new events, including on-create events for lists and Web sites and support for synchronous after events. Many of the new events are available in both synchronous and asynchronous modes. SharePoint Foundation offers a more approachable events infrastructure that is easier to program against than earlier versions.
- **Microsoft Synch Framework** : The Microsoft Synch Framework in SharePoint Foundation is a comprehensive and unified synchronization architecture that provides data-agnostic and bidirectional capabilities to developers. Because it was designed to provide cross-application synchronization, implementing the Microsoft Synch Framework allows other Microsoft and third-party applications to synch more easily with SharePoint Foundation 2010 deployments.
- **Mobile Device Development Enhancements** : Microsoft SharePoint Foundation 2010 greatly expands access from mobile devices to SharePoint Foundation pages, lists, and functionality.
- **Query Enhancements** : Microsoft SharePoint Foundation 2010 includes several new ways to query and filter data.
- **Ribbon** : The Ribbon offers new functionality in the Microsoft SharePoint Foundation 2010 user interface. The Ribbon serves as the primary command surface that you can use to interact with objects inside of SharePoint Foundation. In earlier product versions, commands were accessed across multiple surfaces and located in varying menus. With the introduction of the Ribbon, commands are grouped in a logical manner through the use of tabs and groups, making them easy to find. You can also extend the functionality of the Ribbon to include your own custom functions.
- **Sandboxed Solutions** : A sandboxed solution is a new concept in Microsoft SharePoint Foundation that allows site collection users to upload their own custom code solutions. A sandboxed solution uses a subset of the

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Microsoft.SharePoint namespace. These objects are marked in the object model to show their availability in a sandboxed solution. All sandboxed solutions are stored in a solution gallery. In addition, there are facilities provided to help server farm administrators monitor and validate solutions that have been uploaded to these galleries. Performance can be monitored by measuring CPU execution time, memory consumption, and database query time. You can also monitor other aspects of operation including abnormal termination, critical exceptions, unhandled exceptions, and data marshaling size.

- **Service Application Framework** : The Service Application Framework provides a platform that allows developers to build scalable middle-tier applications that are hosted in Microsoft SharePoint Foundation 2010 and that provide data or processing resources to other SharePoint features. The Service Application Framework enables services to be shared between computers on a server farm; it also helps load balance and manage services in SharePoint. The Service Application Framework provides over 20 services that are built into the core product. For example, SharePoint Search is implemented by Service Application Framework. The Service Application Framework is an API provided by back-end application servers and consumed by front-end Web servers. The Service Application Framework replaces the Shared Services Provider in Microsoft Office SharePoint Server 2007.
- **Silverlight Integration and the Fluid Application Model** : In Windows SharePoint Services 3.0, you could host a Microsoft Silverlight application in a Web Part. Microsoft SharePoint Foundation 2010 goes beyond by providing a built-in, extensible, Silverlight Web Part specifically designed to host Silverlight applications. Closely related to the new Web Part is the Fluid Application Model (FAM) that enables secure, cross-domain, integration between external applications and SharePoint Foundation deployments.
- **UI Improvements** : The user interface (UI) in Microsoft SharePoint Foundation has been upgraded significantly. This includes the introduction of the Ribbon, a revamped master page, and new cascading style sheets (CSS). Each of these enhancements creates a more consistent experience for users across pages and makes it easier to work with objects inside SharePoint Foundation.
- **Windows PowerShell for SharePoint** : Windows PowerShell™ command-line interface is a new command-line tool and supporting scripting language from Microsoft that complements Cmd.exe in the Windows administration context. In the SharePoint administration context, Windows PowerShell supersedes the Stsadm.exe administration tool. Moving forward, you should use Windows PowerShell scripting technology to develop any new command-line scripts in SharePoint Foundation 2010.

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- **Workflow Improvements** : In Windows SharePoint Services 3.0, the Windows Workflow Foundation provided a highly extensible workflow model to the SharePoint platform. Microsoft SharePoint Foundation 2010 continues to build upon the functionality available in Windows SharePoint Services 3.0 and improves and expands your options so that you can build rich workflows that can accommodate even more complex business scenarios. This topic presents the new features that are available for workflows in SharePoint Foundation 2010.

For further details see the following web site:

<http://technet.microsoft.com/hi-in/sharepoint/ee518670%28en-us%29.aspx>

### 2.4 Microsoft Office SharePoint Server 2010

SharePoint Server 2010 takes the capabilities of WSF and adds Enterprise features such as portals, enterprise search, enterprise content management, business processes and forms as well as business intelligence.

Unlike WSF, SharePoint Server 2010 is a commercial product that requires the purchase of server and client licensing. In most cases for the target audience of this Guide, SharePoint Server 2010 is not considered a viable option, however it is important to understand there are fundamental differences between it and WSF.

### 2.5 Prerequisites

So what do you need to get WSF running? You will need to install the WSF software onto a Windows Server 2008 (64 bit) or better, with Internet Information Server (IIS) and ASP .NET installed. The Windows Server will also require the installation of the DotNet3.5 framework. Both WSF and DotNet3.5 Framework are free downloads from Microsoft.

WSF can be installed onto Windows Small Business Server 2008 Standard, however it must be done in an approved manner. It can also be installed on the second server of Windows Small Business Server 2008 Premium. You should allow about 3GB of disk space to install the WSF program files. WSF will also need room to store a number of system databases, the most important of which will be the content database. This content database holds all the information that you place into WSF over time and will continue to grow.

It is therefore important to plan up front how and where you will store your WSF content. A lot of this will be determining the type of database storage option you require for WSF as many have restrictions. More detailed information about this can be found in **Chapter 8 – Database operations**.

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Clients can access information in WSF sites via a variety of methods with the most common being through a web browser like Internet Explorer. Other browsers such as Firefox will also operate with WSF but Internet Explorer provides the most functionality. It is also possible to use Microsoft applications like Outlook to 'link' to WSF. If clients are working on documents stored in WSF document libraries, such as Word documents, they will require the same application on their machine to work with that document. Thus, if you wish to work on a Word document held in a WSF library, then you will require Microsoft Word on your local machine just as if you had opened that file from a network file share.

### 2.6 Intranet or Extranet?

First and foremost WSF can be thought of as an Intranet, that is, an internal web site available only to users within the business. However, these days it is more important than ever to have the ability to access information anywhere. With this in mind WSF has been created to allow it to be easily extended beyond the organization to trusted third parties to form an Extranet.

Because WSF is built using standard 'web services' and accessible through a web browser it is a relatively simple matter to publish any internal site out to the public Internet. Obviously things like security play a much greater role when providing anything to the Internet but you will find that WSF has been created with this already in mind, making it a far easier task than it once used to be.

In most cases the first step is to get an Extranet operational and then extend or 'publish' this to other parties. It is even possible to extend WSF to use SSL. For more information on this see – **Chapter 9 – Advanced Configuration**.

It should also be remembered that many companies now offer 'hosted' SharePoint services. This means that you can gain access to the functionality that WSF provides without having to maintain your own network infrastructure. You and your team simply access WSF across the Internet from a browser. Apart from that, everything else is exactly the same.

### 2.7 Databases

There are two types of databases that WSF uses, the configuration and content database. These databases contain the following information:

*Configuration database:* contains all the configuration settings for the WSF environment such as what servers exist and what their roles are. A WSF installation can start at a single server but expand to many servers as dictated by the growth in information and reliability required. All servers in a WSF installation



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are referred to as a 'farm'. There is only a single configuration database and it is shared amongst all the servers in the WSF farm.

If you expand an existing WSF farm you will be given the option to connect to an existing farm during the installation of a new server. This is very similar to the concept of adding an additional Windows domain controller to an existing Windows domain.

*Content database:* contains all the data and information that belongs to the WSF sites such as document libraries, lists, etc. It is important to remember that all WSF information effectively lives in a single database. Failure of this database will mean users are unable to access any WSF information. This database will increase in size as users add information to the WSF site. It also includes all the user security information and permission settings. You can have as many content databases as you desire but the default name for the first content database is WSS\_Content. Like all data storage you need to take appropriate steps to ensure that it is backed up and maintained.

One of the core components required for WSF to operate is a place to hold its content and configuration data. It does so in SQL databases. There are quite a range of SQL databases available from Microsoft starting with the Express Edition 2008 (free), moving up to Workgroup, Standard and Enterprise. There are also different versions when you consider SQL 2005 vs SQL 2008. The good news is that they can all be used to store WSF content and configuration.

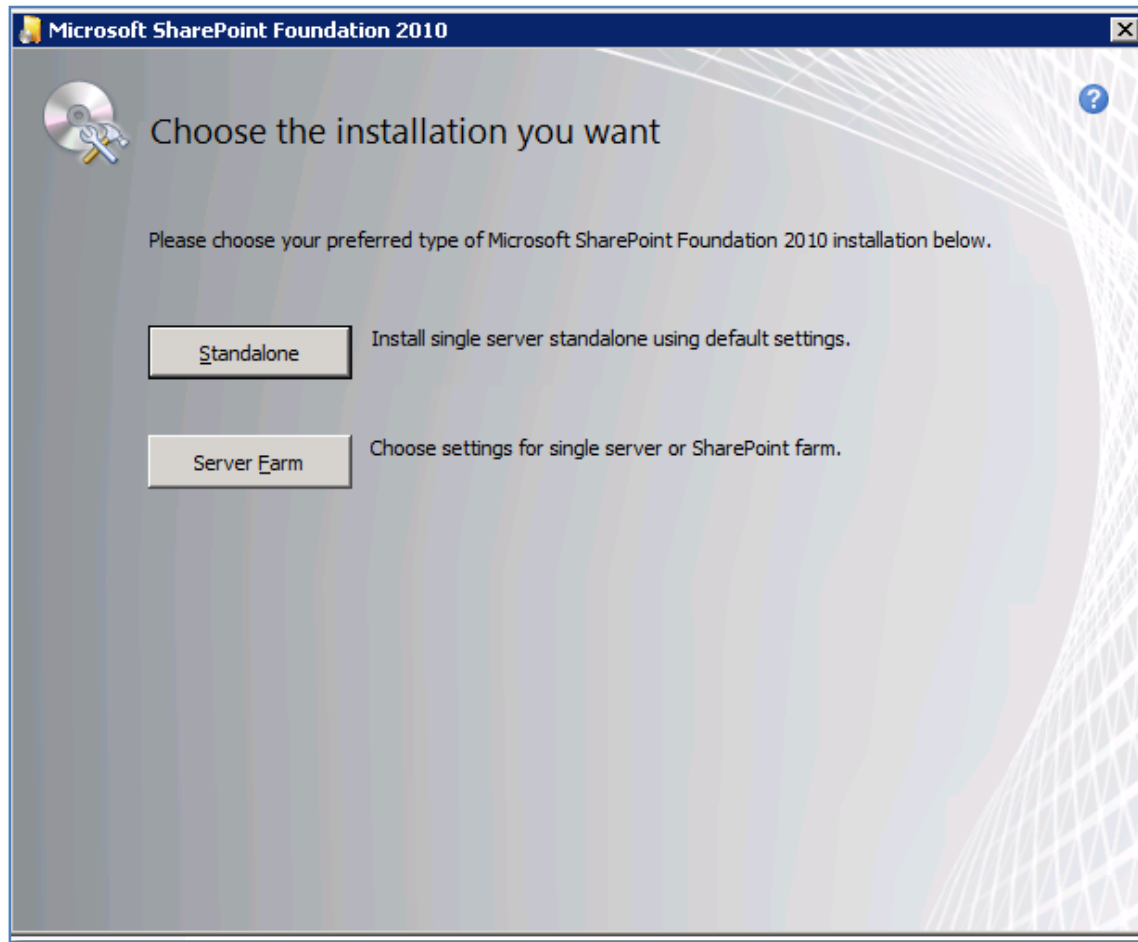
### [Microsoft SQL Server 2008 Feature comparison](#)

Prior to installing WSF on a machine a SQL Server instance needs to exist. If one is not present then you can select to have WSF install SQL Server 2008 Express Edition. By default SQL Server 2008 Express Edition doesn't come with any GUI tools. Another overlooked default is that fact that it installs itself, programs and data, into the C: drive which can lead to space issues later. One major drawback of the SQL Server Express Edition is it places a limit on the size of a database of 4GB. SQL Server Express 2008 R2 now allows databases up to 10GB.

People have said that you should use a more up market version of SQL (e.g. Workgroup or Standard) because it gives better performance. It is not evident that SQL Express Edition is any slower than SQL Standard for typical WSF sites. Now that may not be the case when you get really large WSF sites but how many WSF sites have you ever come across that are that large initially? The only reason to use a more up market version of SQL is if you wanted some of the specific high end SQL tools and abilities, like integrated SQL backup and restore as well as clustering and to overcome the 4-10GB database size limitation (SQL Express 2008 R2 allows up to 10GB databases while other versions only allows 4GB). However, for most WSF sites, at least initially, this is generally not required

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and because you can easily upgrade to another version of SQL later if required it doesn't make sense to go this expense until absolutely necessary.



If you are happy using the SQL Express Edition that comes with WSF then you can simply complete a Standalone install. This will install SQL Server 2008 Express Edition onto your machine, install WSF and use SQL Server 2008 Express Edition automatically to store content and configuration. Nothing could be simpler. If however you want to use another version of SQL server as your data repository then that version needs to be installed prior to installing WSF and then you'll need to select Advanced install.

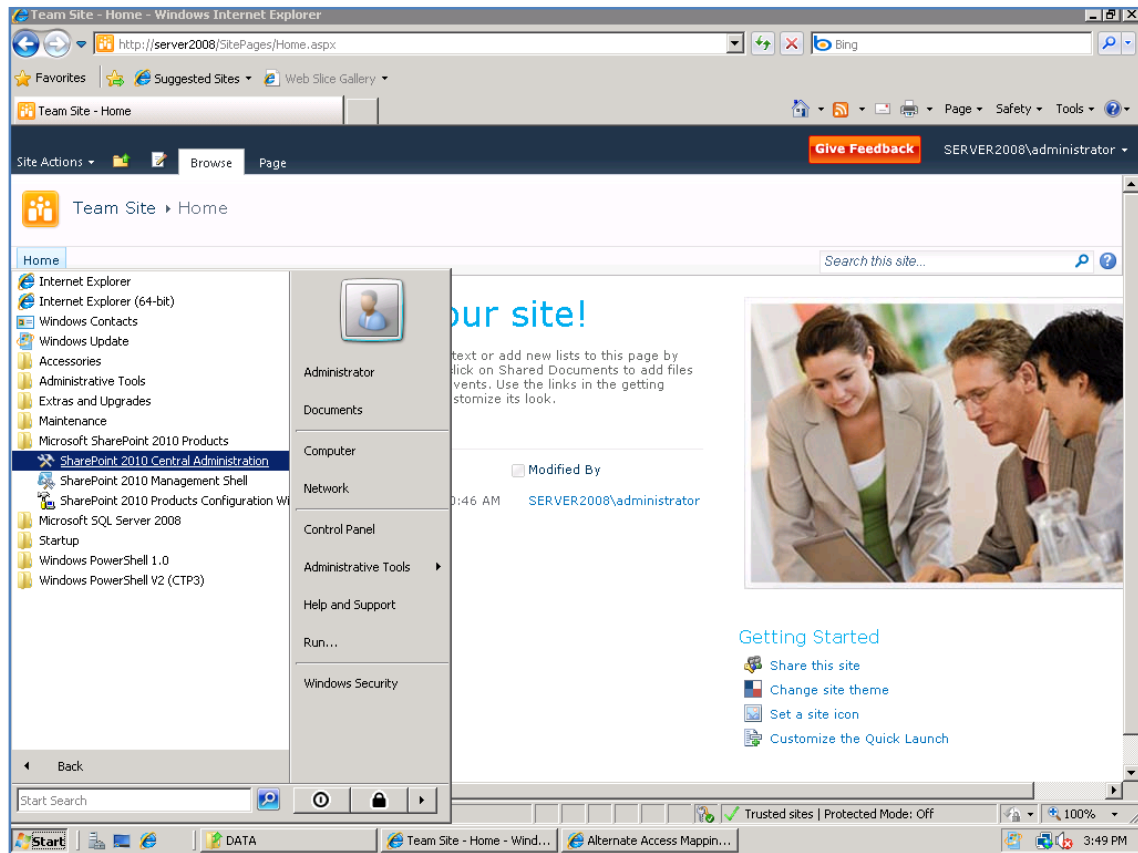
The difference between a Standalone and Advanced install are quite marked in that a Standalone install does everything for you, including setting up the first WSF site. With the Advanced install you need to do everything manually.

In summary then, WSF requires a version of SQL Server to hold its content and configuration databases. You can choose from a wide range of SQL Server version from Microsoft, however the 2008 Express Edition that comes with WSF is suitable for most

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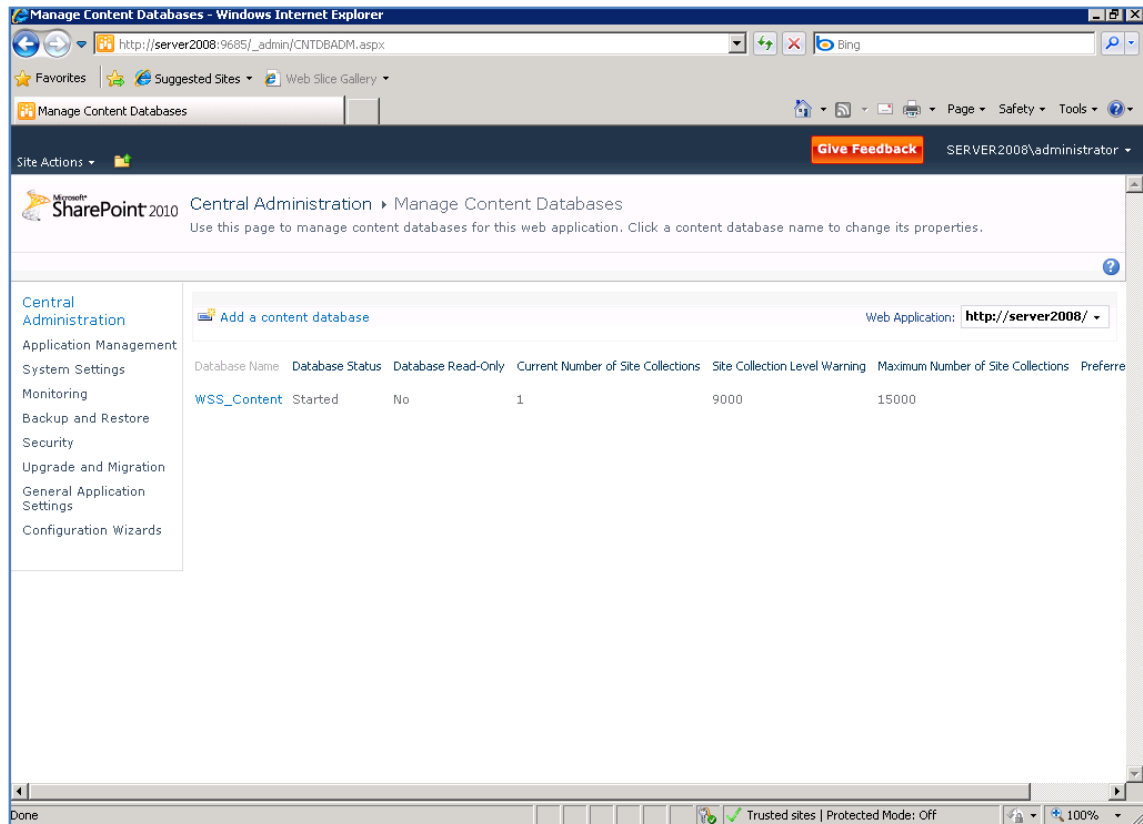
initial deployments. If you plan to do much work with WSF then it is beneficial to have a good basic knowledge of SQL Server as well.

After creating a WSF site the information that is now entered into SharePoint is stored in a SQL database. To locate the name of this database you need to go into the *SharePoint Central Administration* for your site. You do this on the server on which you installed SharePoint via *Start | Microsoft SharePoint 2010 Products | SharePoint 2010 Central Administration* like so:



Now select the *Application Management* then the *Content Databases*. You should now see the name of the database used by SharePoint like that shown below:

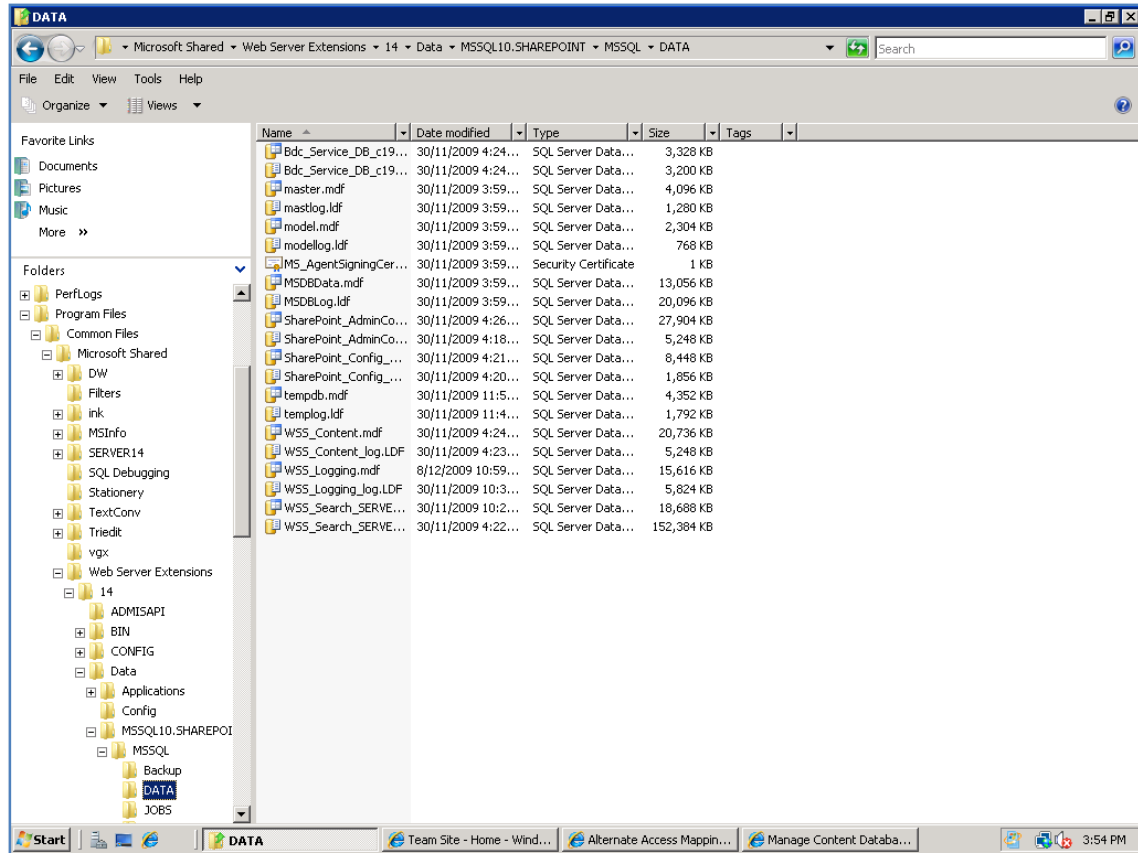
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If you click on the database name (in this case WSS\_Content) it will bring up further information about the database. As you can see from the above screen shot it is also possible to add additional databases from this window. Another important fact to remember about SharePoint is that you not only have GUI tools like what is shown here but you also have similar tools that can be run from the command line, allowing for scripting if necessary.

In terms of the file system, where exactly is the SharePoint content database stored? It is stored wherever the default data directory is for the SQL instance that you installed on your machine. In this case because we are examining Companyweb on SBS2008, which is using SQL 2005 Embedded Edition you will find those files in *C:\program files\microsoft shared\web server extensions\14\data\mssql10.sharepoint\mssql\data* like shown below.

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Remember that for each SQL database there are normally two associated files, a .MDF (data) and .LDF (index). Both of these files are important for correct database operations. The actual file size of these database files will grow as the information in your SharePoint site increases, to as large as allowed by your version of SQL server or hardware. Note that you can relocate these databases to other locations if required.

Finally, if we take a look in the SQL management tools we can also see the database. By default, the GUI management tools don't come with SQL 2008 Express Edition but they are a free download from Microsoft. To launch the GUI tools go *Start / All Programs / Microsoft SQL Server 2008* and run *SQL Server management Studio Express*. To connected to the SQL 2008 Embedded Edition instance you will need to use the following connection string

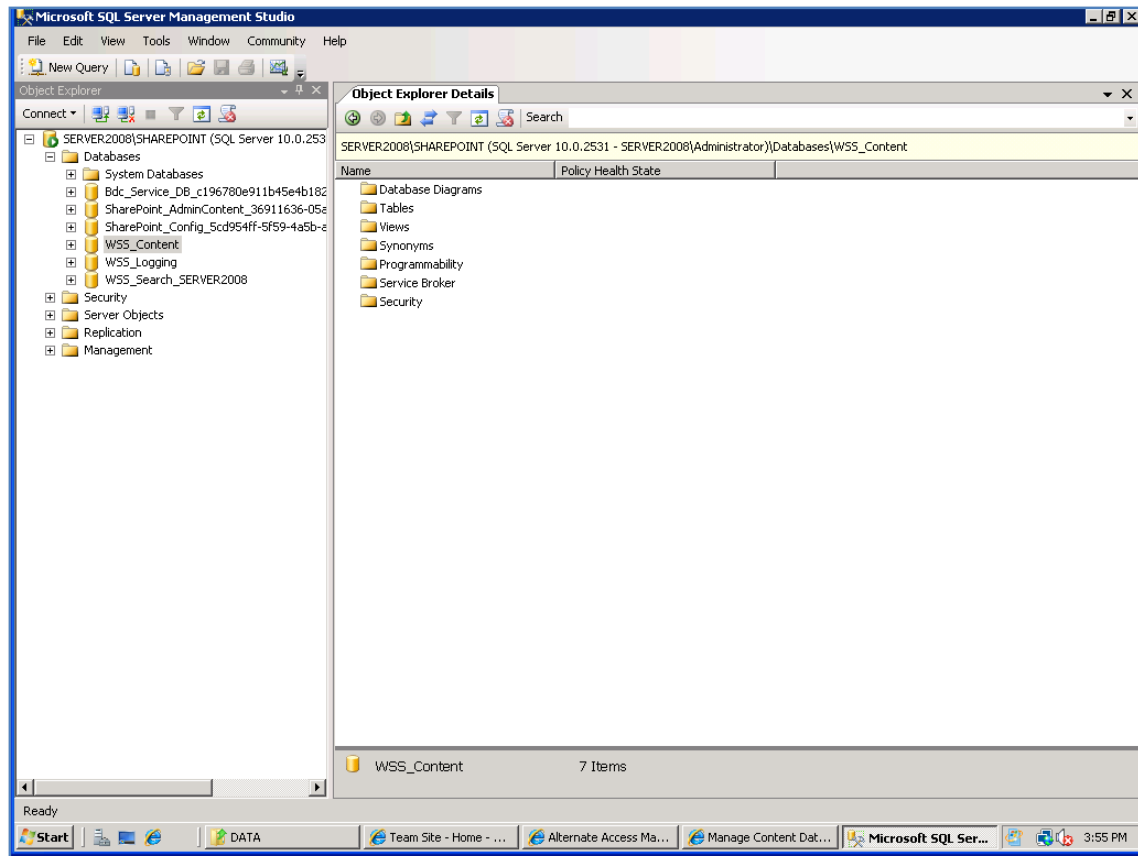
`<Servername>\<SQL_Instance>`

In this case it will be:

`SERVER200\SHAREPOINT`

Once entered you should see something like:

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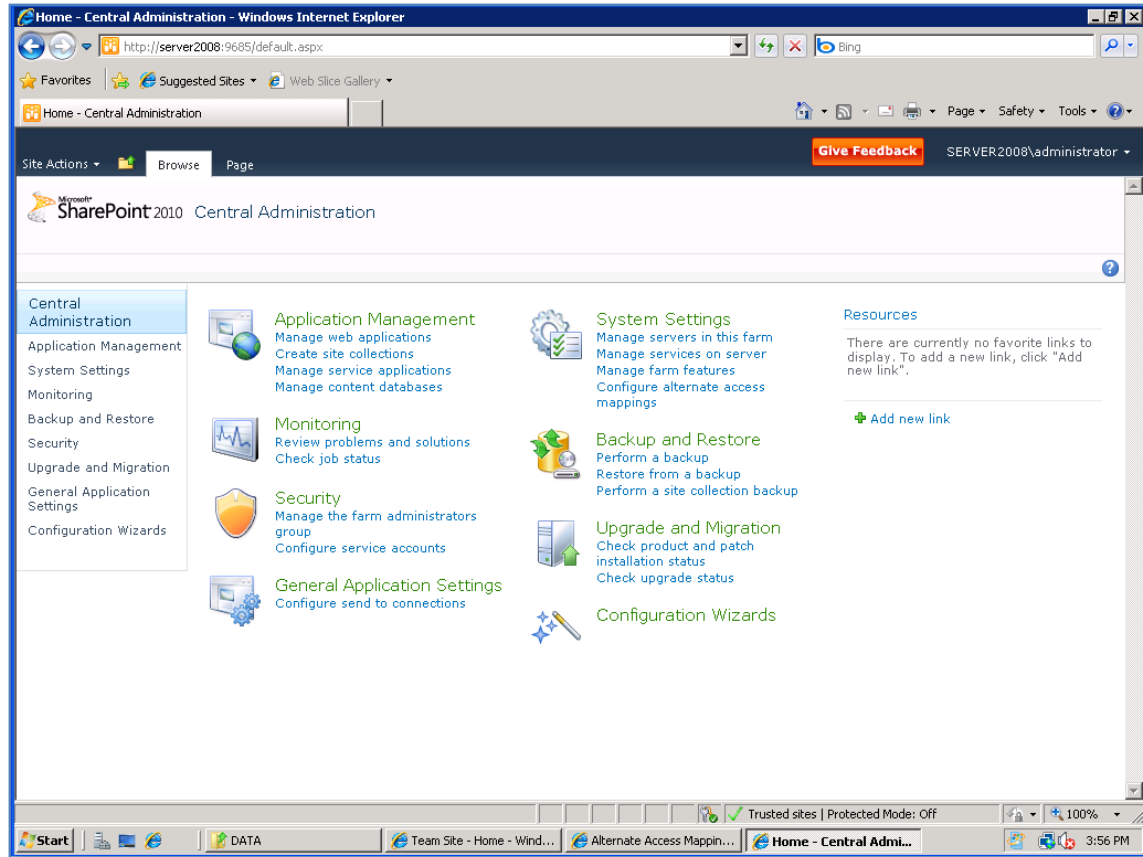


Now, simply locate the database (WSS\_Content) under the databases folder and right mouse click to view the properties.

### 2.8 Web sites

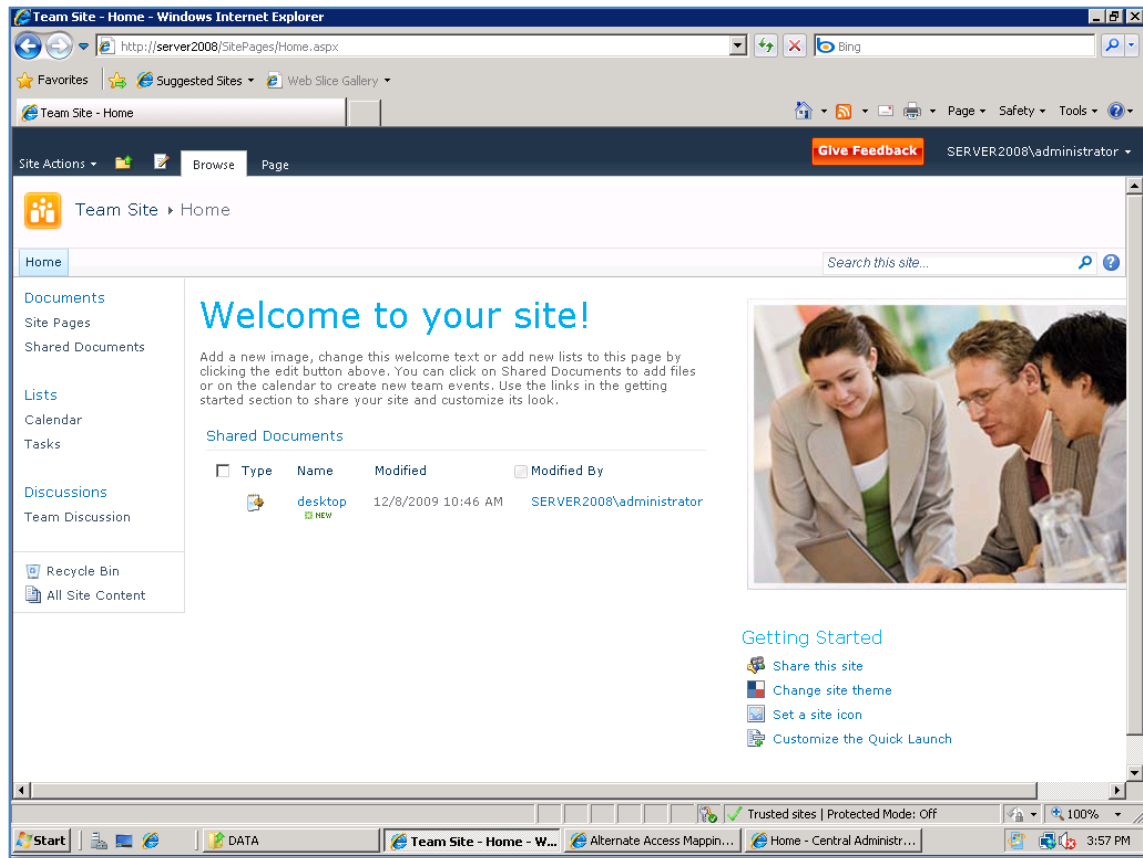
WSF is based around the concept of web sites. When you start working with WSF you will initially be working with two different WSF web sites.

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The first, which is created automatically, is the *SharePoint Central Administration* site that is used for advanced configuration and management of the WSF environment.

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The other site is the 'data' web site that you create during the installation of WSF. It is into this web site that all the content will be placed including documents, lists, pictures, etc. This 'data' web site is what your users will be interacting with.

WSF sites are arranged with a starting page and from there can grow in a tree structure with additional content "underneath" this starting page. All the content contained in WSF can be secured to whatever level you desire. One of the major benefits now with WSF is that if a user hasn't got access to something then they won't even see that option (this is known as security trimming).

In WSF you can only have a single Central Administration web site but you may have as many 'data' web sites as you wish. Access to the Central Administration web site is restricted to WSF Administrators only. The Central Administration web site also runs in its own Internet Information Server (IIS) application pool and is hosted on a random TCP port that is determined during the installation. For more information about this see **Chapter 5 – Central Administration**.

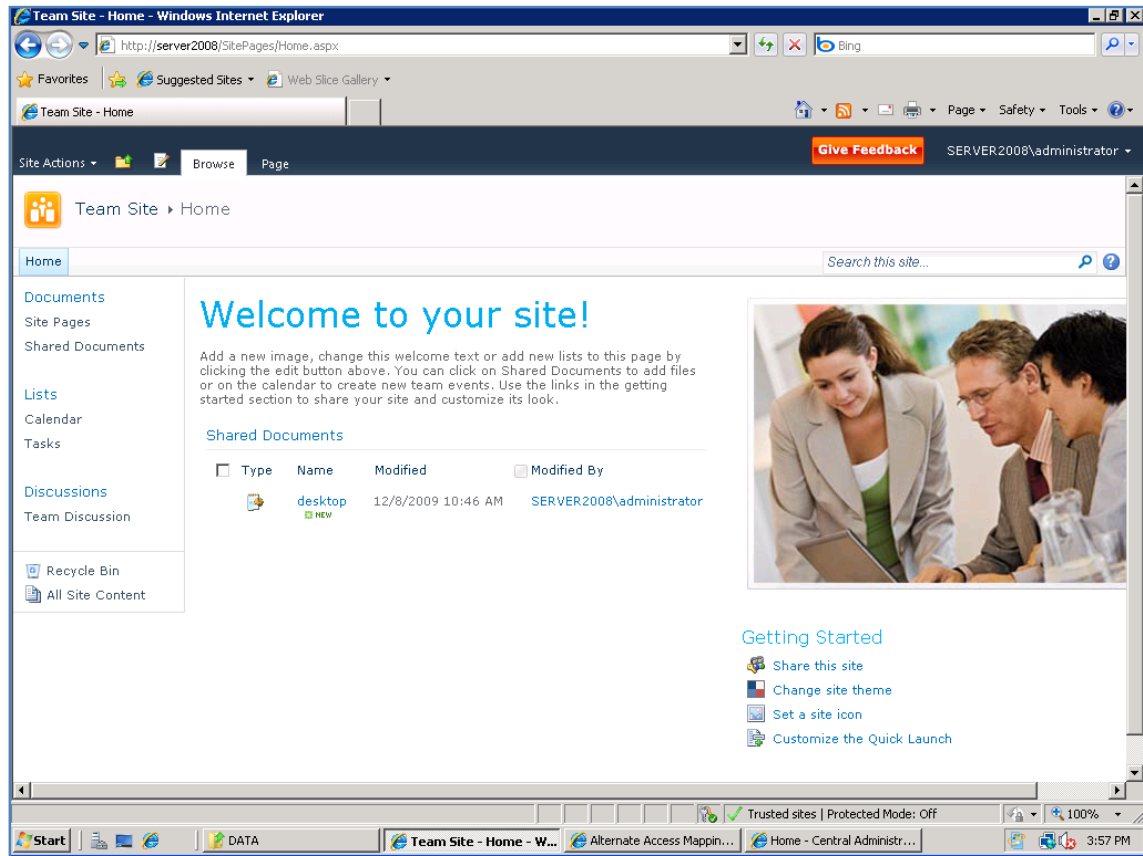
### 2.9 Using



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As mentioned previously, WSF is a tool that allows you to capture business information. Not only that, it can be used as a central repository of information linked to applications like Outlook for 'off-line' use.

Once WSF is operational you should see the initial screen like so:



The WSF site is accessed through a web browser and used by simply clicking on the active links in the page, just like any other web site. It is important to remember that just about everything that you see on a WSF is able to be customized in some shape or form.

### Home page

Across the top of the site you will see a number of tabs, these are known as the *Top Link* bar. Down the left hand side of the window is the *Quick launch* bar. Both provide speedy access to information and importantly, both are totally configurable.

In the top right you will see the currently logged in user name (in this case SERVER2008\administrator). You will also see a down arrow to the right of this name. If you click that you will be presented with a menu that allows you do things such as change the user with which you are logged into WSF with. WSF can use authentication

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from a number of different providers but in most cases it will be from a Windows Active Directory.

Under this area you will find the search box. Any query entered here will be used to query information held in WSF. A great feature of WSF search is that it will not only search the information in WSF but also inside the documents that are contained in your WSF site. Therefore it is possible to search all the content of Word, Excel, PowerPoint and even Adobe PDF's. For more information about correctly configuring this see **Chapter 11 – Search** of this guide.

On the left hand side is the *Site Actions* option. Selecting this option will allow you to create new data storage containers in your WSF site as well as manage the settings of this site. It is important to note that only users who have been configured with the rights to make changes will be able to see the *Site Actions* option. This applies across the whole WSF site in that you are only able to see items that you have rights for. If users don't have rights then they won't even see the menu option or item. This is a feature of WSF and is known as security trimming.

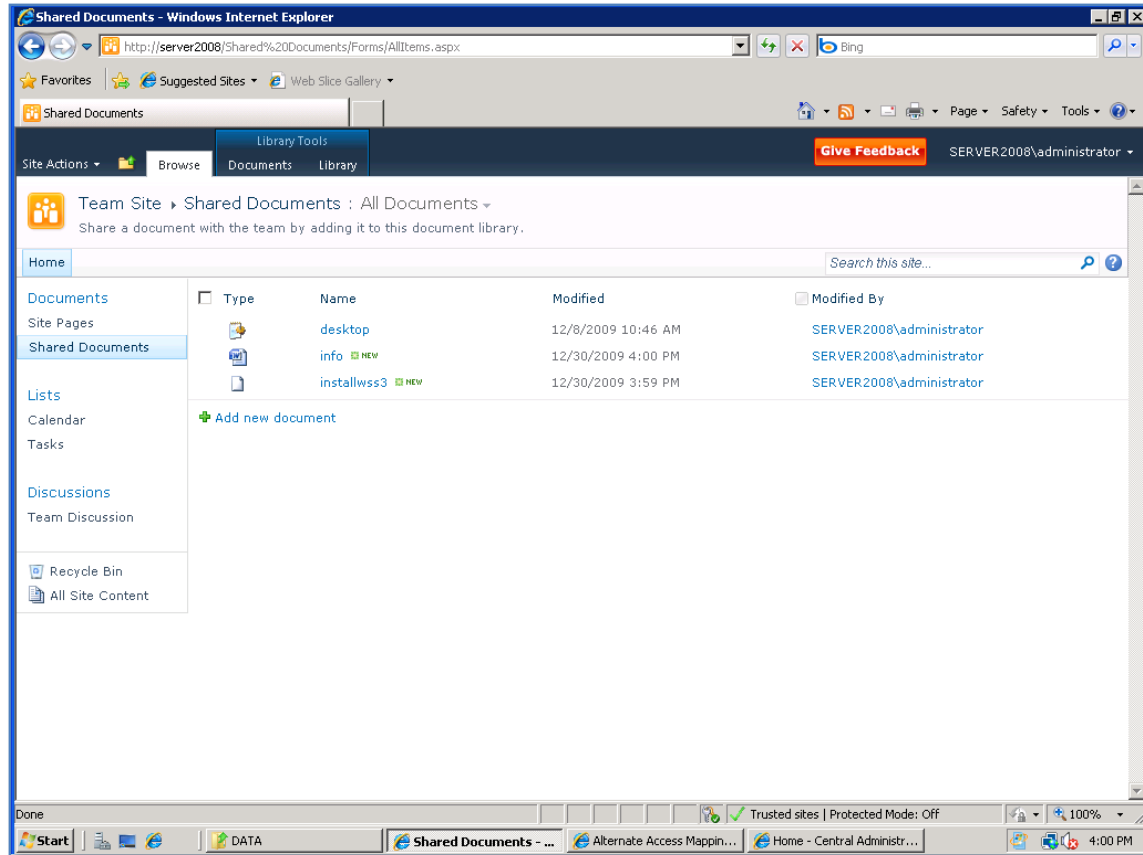
Finally, under the *Site Actions* option is the main page. This main page is what is known as a *Web Part* page. Web parts are special items that can be placed on a page that actually connects to data from other locations in WSF. So, for every data container you create on WSF an associated '*web part*' is also created which can be used to display that data elsewhere in your site. In this case the main page displays an announcements, calendar and links web part. The other handy thing about '*web parts*' is because they are self-contained they can be located anywhere on a '*web part*' page.

Another feature of WSF is shown on this page. In the lower left of the screen you will find the Recycle Bin. Like a normal recycle bin on a PC, anything a user deletes will firstly end up here. Clicking on the recycle bin will display its contents and all the recovery of any information.

### *Document libraries*

A WSF document library is a data repository specially designed to hold and manage documents. It is similar in many ways to a network share on a file server but has a number of features that make it vastly superior.

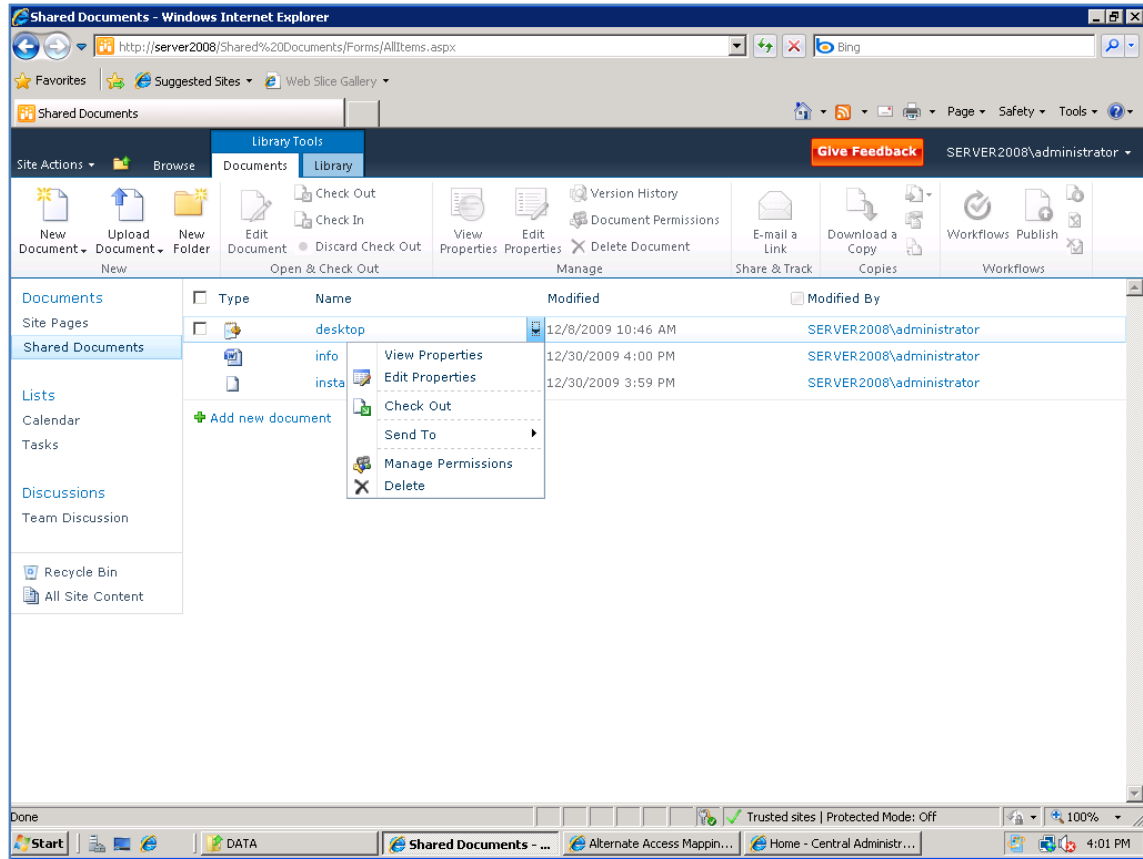
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The above example shows a document library that contains a number of documents. As you can see, these documents are in a number of different formats and if WSF recognizes the format it will display an appropriate icon. By default, WSF will recognize Microsoft Office documents but it is possible to add additional formats like Adobe Acrobat, see **Chapter 11 – Search** for more information about configuring this.

To open a document in the library, simply click on the document name. If the appropriate program for that document format is available on the client machine the document will open automatically.

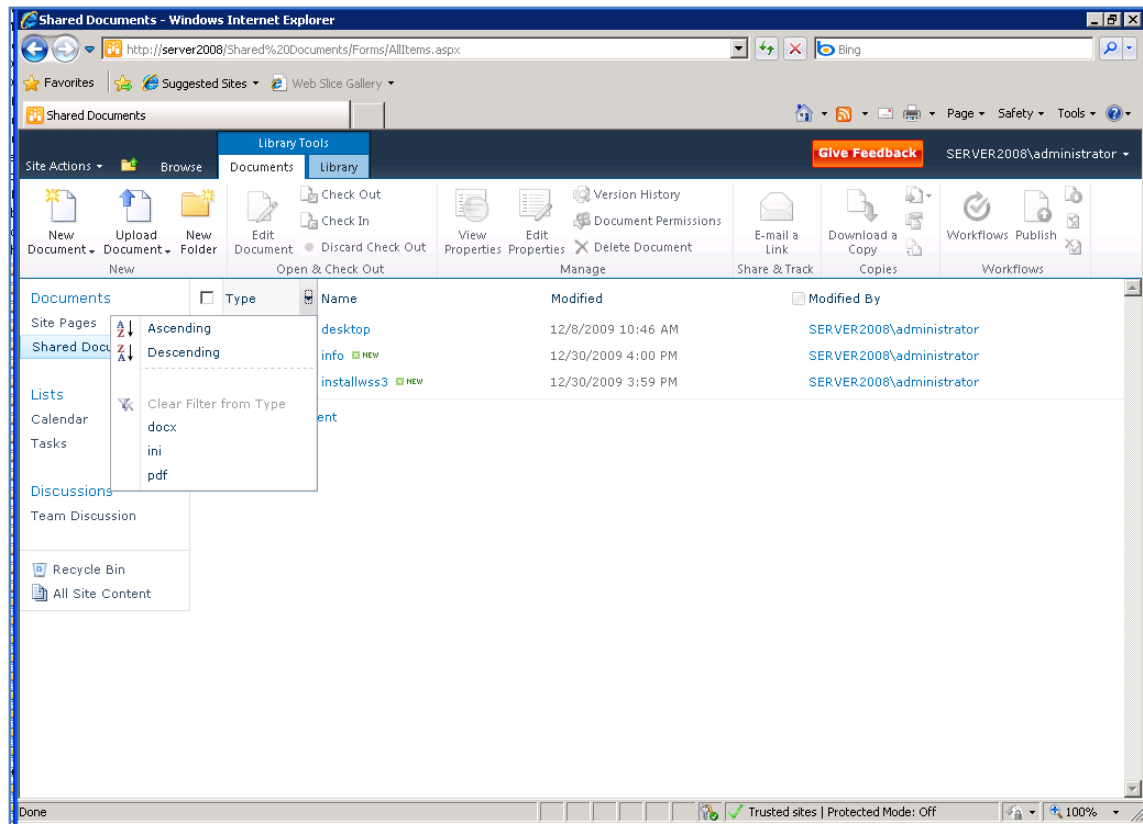
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If you pull down the arrow to the right of the document name when you hover over it with your mouse, you will be presented with a menu of the other options available for that document. One of these options is the ability to '*Check out*' the document. WSF can function as a basic document management system, allowing you to work on documents without the fear of other users overwriting or changing what you have created. Another great feature is the fact that WSF can track each version and even allows you to roll back to a previous version if required.

It is also really easy to sort and filter the information displayed in a document library by simply clicking on any of the column headers.

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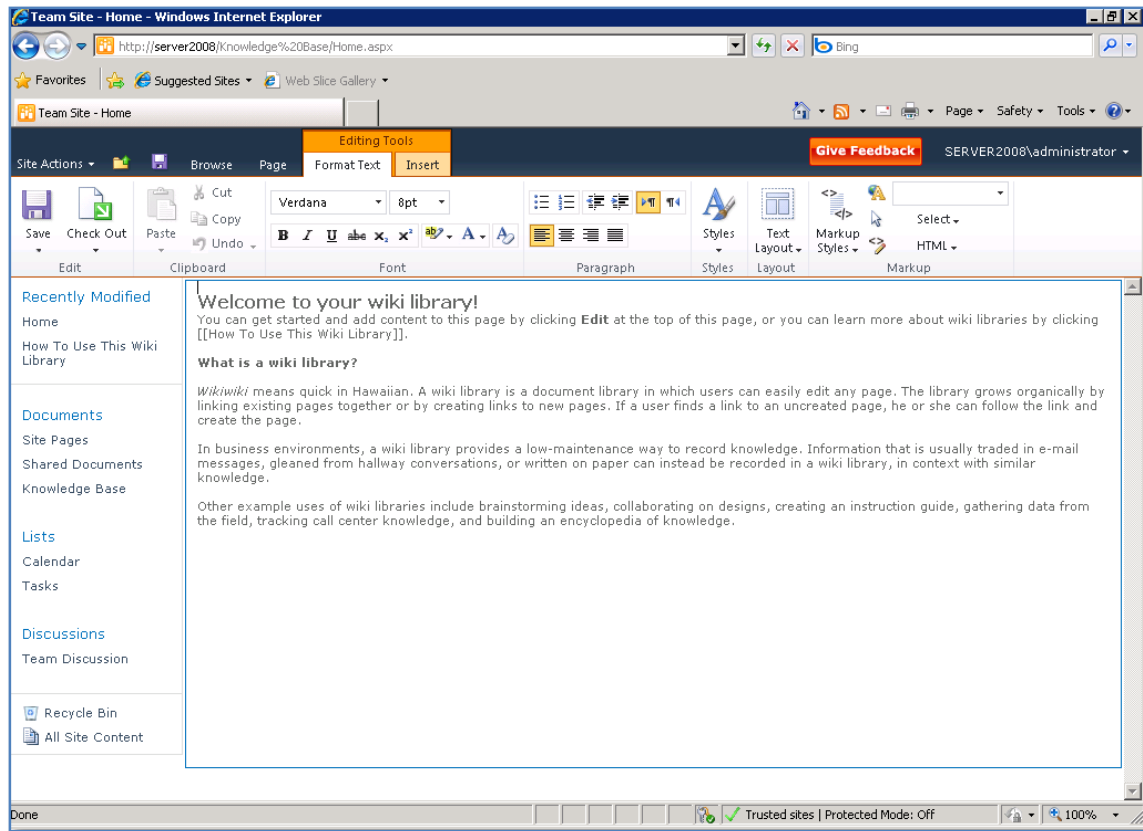


As you can see when this is done you are able to not only sort the entries in that column but also filter what is displayed. So if you only want to see Word documents displayed, simply click the *Type* column heading and select the Word document option. Then this display will be filtered to only display Word documents. All the information is still in the WSF document library but you are now able to control exactly the information you see. This makes locating documents and information much quicker.

### Wikis

A wiki is a means of capturing information using an online editor without the need for applications on the client machine. This means that users can create, add, edit and share information about just about anything. A WSF wiki is a great for use as a business knowledge base.

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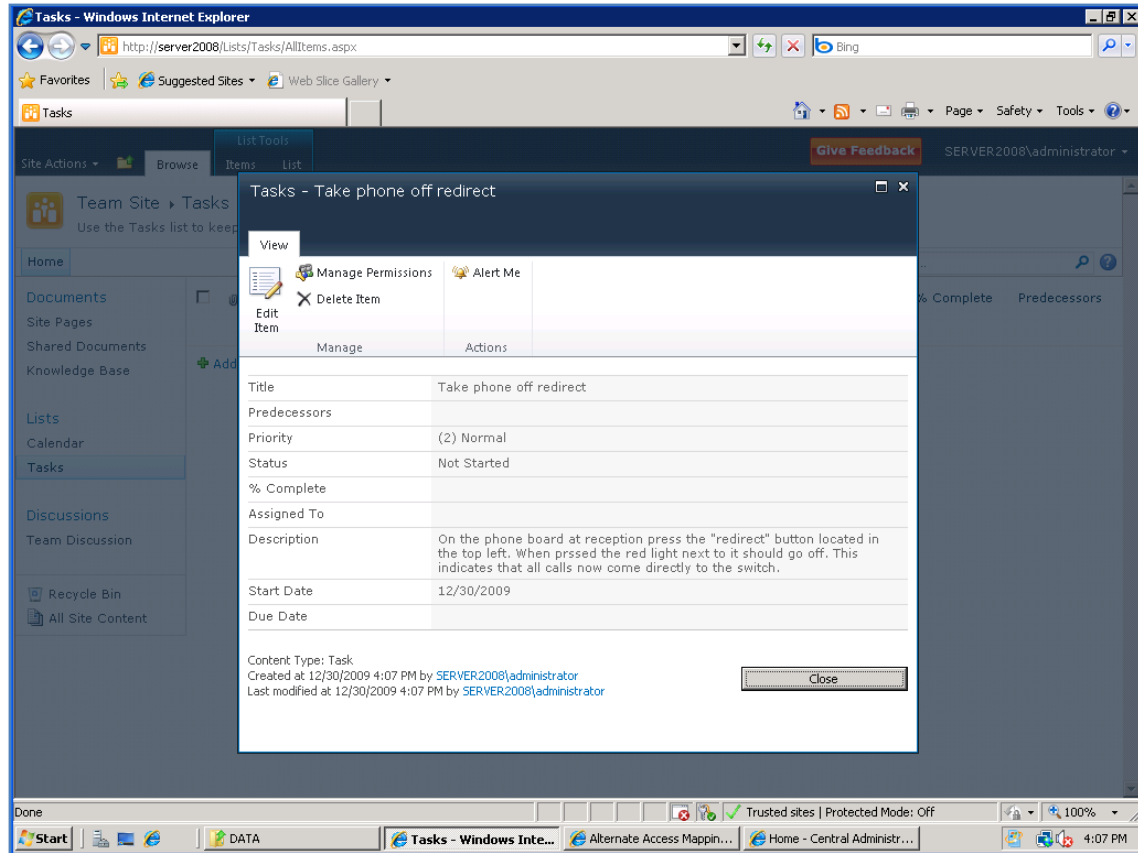
Each wiki you create holds a number of 'online documents' that are created with an browser based online editor like show above. The editor allows rich text formatting, hyper linking, table creation, and more. WSF also tracks the changes made to each item and can be configured to only allow updates via approval if required.

Because WSF is so flexible, you can customize the wiki to suit any business by including additional fields that help in sorting information.

### *Lists*

Another data depository is *Lists*. Here you can add a list of information with any number of columns you require.

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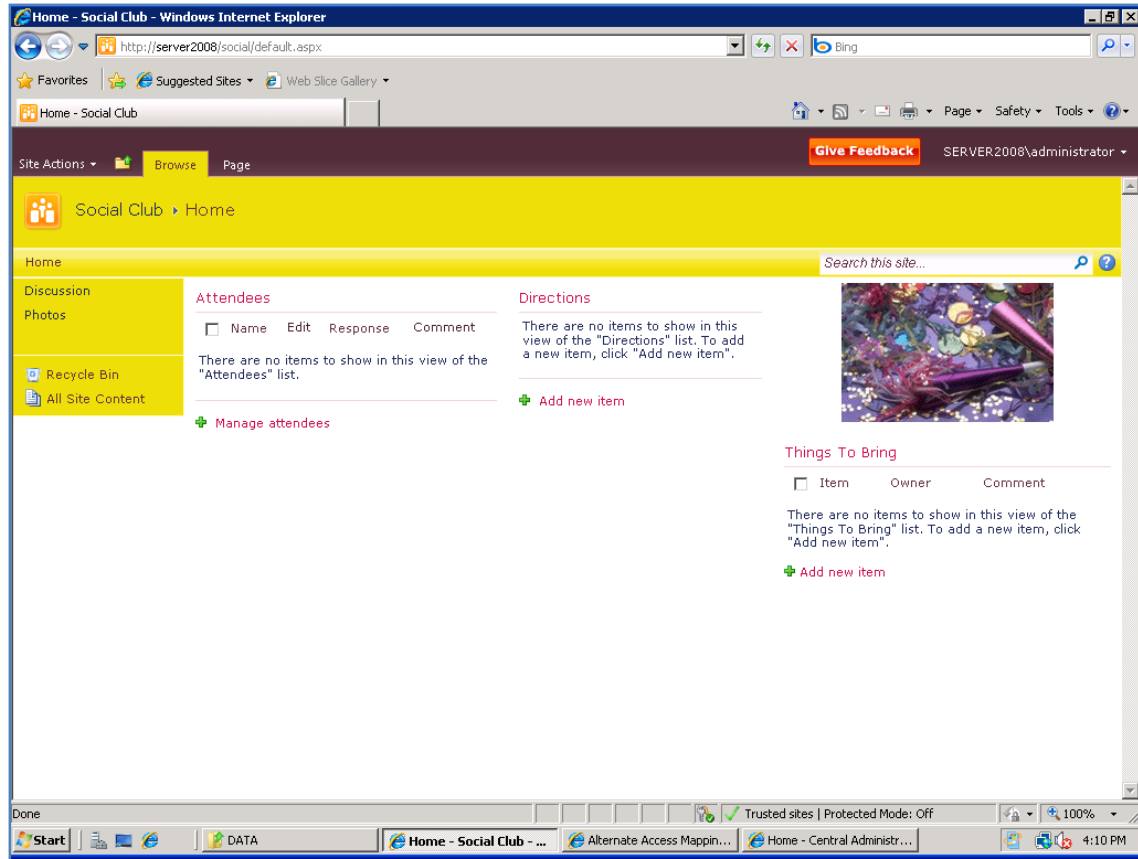


A good example maybe a list of receptionist duties. As you can see from above, you create a list with as many fields of whatever type you require. As with document libraries, you are able to go into each item and edit the information if you have permissions, to keep the information up to date.

### *Sub-Sites*

If there is a need for an independent area to manage information within WSF then it is simple to create an additional WSF sub-site. Any new WSF sub-site can contain all the features of the parent site but if required, also be isolated from the parent site via user permissions.

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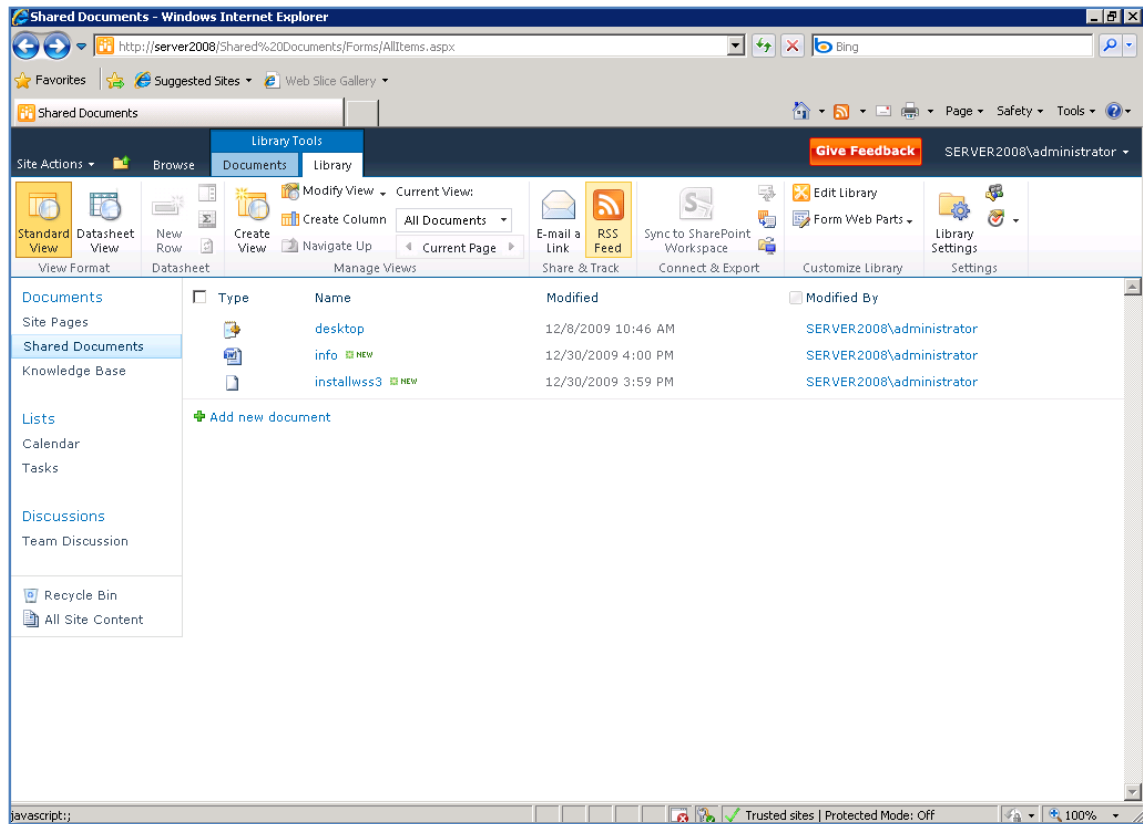
As you can see from the above, the sub-site 'Social Club' has a completely different look and feel to the main site, however it remains readily accessible using the *Top Link* bar. Each 'sub-site' can be created using a number of default or add on templates. For more information about WSF templates see – **Chapter 10 – Templates**.

### *Really Simply Syndication*

Many users these days do not want to have to view a web page to receive information updates. WSF makes this readily available via RSS feeds.



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Most data depositories you create in your WSF site are automatically RSS enabled. This means that users can subscribe to these feeds in any supported RSS reader (of which Outlook 2007 is one). In that way when information is updated in the WSF component users can be notified of the changes without having to visit the page.

### *Alerts*

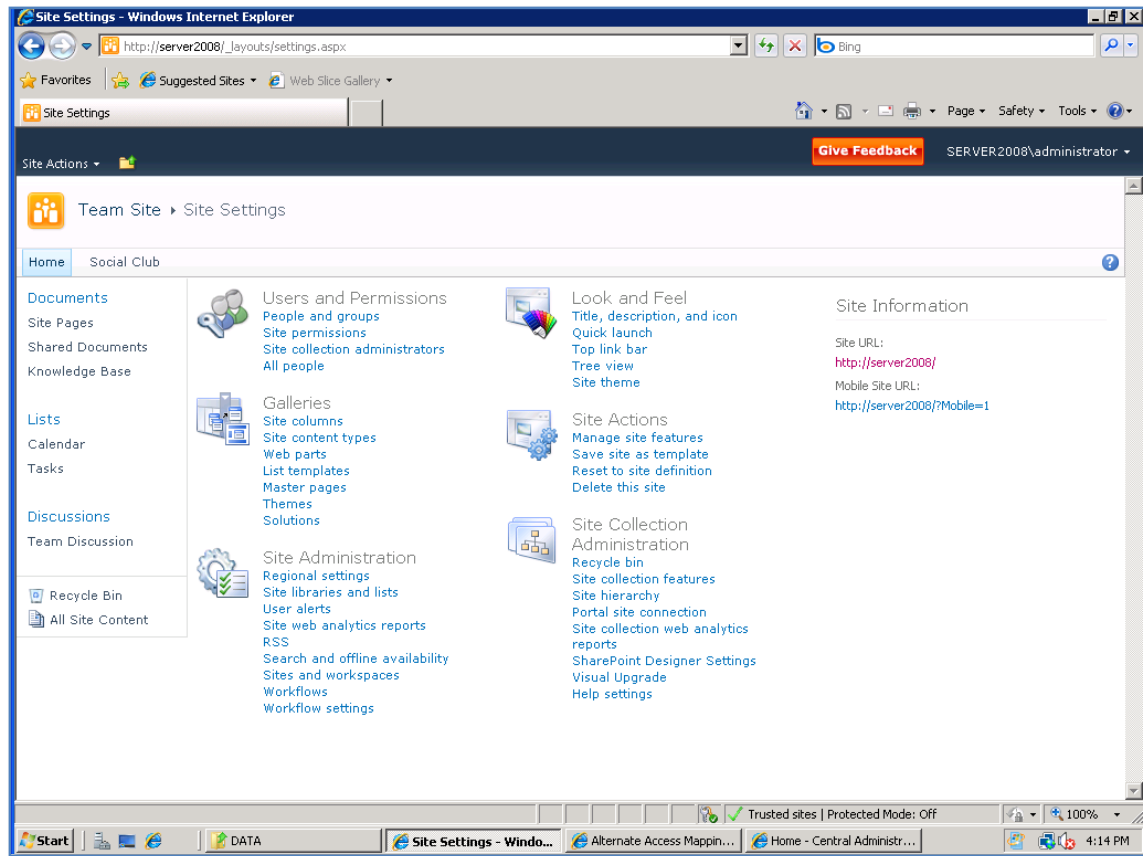
Another way for users to be kept informed of changes made in a WSF site is via email alerts.

Each user can configure the alert settings they require. In this way when information with selected components is changed users will receive an email. Alerts can also be configured in a variety of ways ranging from sending emails immediately to sending summaries once a week.

### *Site Settings*

Many of the configuration features of each WSF site are located under **Site Actions**.

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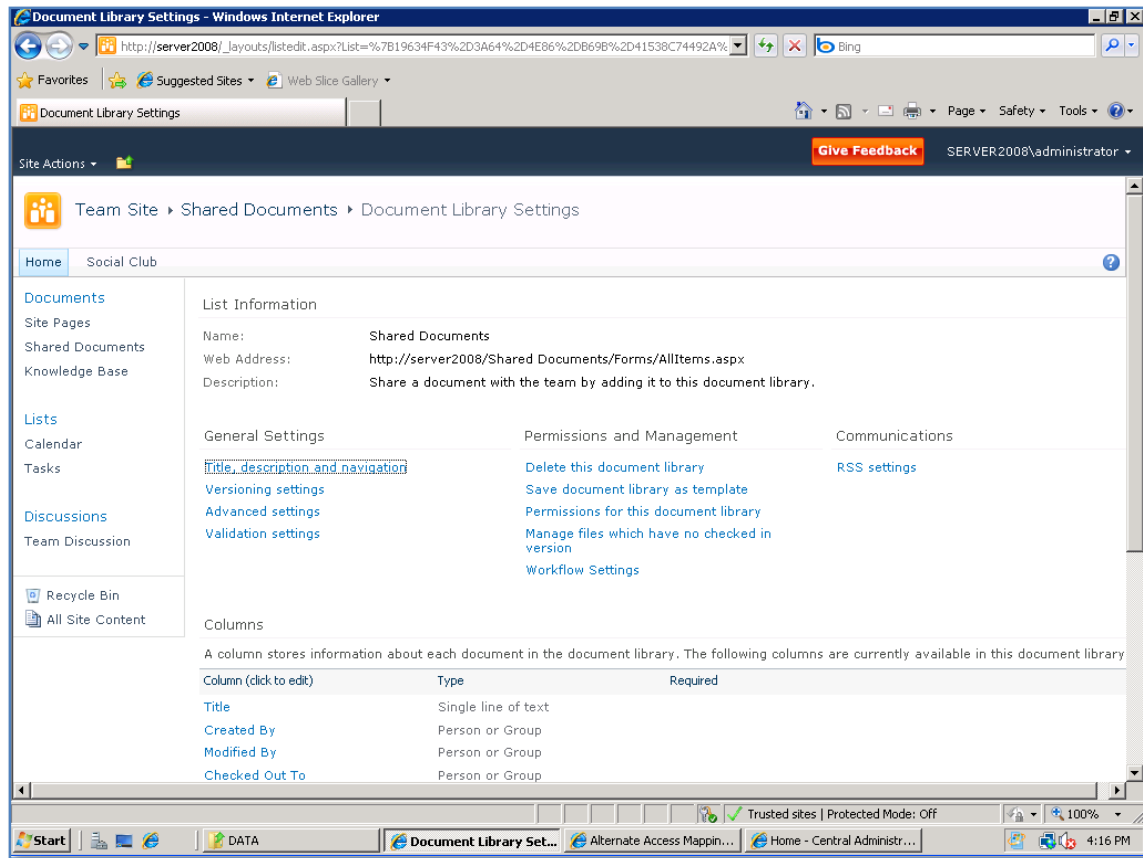


Here you can change user permissions, look and feel, and generally administer the site. For more information see **Chapter 6 – Site Settings**.

### *Data Depository settings*

Most items that you create in WSF to store data can be customized by selecting **Settings | <Item> Settings** from the menu within their area.

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In the above example we selected the *Shared Documents* document library then **Settings | Document Library Settings** from the menu. These settings allow you to customize your data repository but creating or editing fields and views. This is also the location in which you can delete your data repository if necessary.

### 2.10 Outlook 2007

With Outlook 2007 you can:

- Obtain two-way synchronization of WSF task lists. You can view, add and modify in a linked list in Outlook and all changes will be replicated back to WSF.
- Obtain two-way synchronization of WSF contact lists. Again, you can change the contacts contents, add or delete and all changes will be replicated back to WSF. Outlook will also search these lists when you search for a contact.
- Obtain two-way synchronization with WSF Calendar lists. Any changes made to these lists in Outlook 2007 will be copied back to WSF.

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- Obtain the ability to use Offline content. You can download a complete document library to the local machine which can then be viewed and edited offline.
- Obtain the ability to view WSF content via RSS feeds. Outlook 2007 has the ability to read RSS and WSF can create RSS feeds on most data components.

### 2.11 Recommended reading

### 2.12 Conclusion

There are many features of WSF that this chapter has not covered. Unfortunately, there is just not enough room to cover all of these in detail. WSF has many features that work simply through a web browser, however additional functionality is also available via integration with versions of Microsoft Office.

It is important to understand that WSF is a flexible tool designed to capture all sorts of business information, however it is up to you to create a system that works for your business or for your customer.

You should also consider WSF as more than just a single stand-alone product. A significantly greater amount of productivity and flexibility can be achieved when it is used with products like Microsoft Office.

Please send your comments and feedback to [director@ciaops.com](mailto:director@ciaops.com).