1. Safe Act Observation

Overview

RCR Tomlinson business unit Safety has their own Safe Act Observation (SAO) sub-site that allows its staff members to upload, check-in/out and maintain various documents and submit InfoPath forms with SharePoint 2010. Every changes made to a document will need to be easily found with the SharePoint portal Search Centre 2013.

SAO has an InfoPath form, which in particular has custom Meta data fields that needs to be searchable. This is achieved with developing the following solutions:

- Custom display templates to render results as a table grid;

- Using DataTable plug-in for JQuery to provide rich UI experience; and

- Create button to show more search results for OOTB Content Search Web Part

The above solutions are packaged for SAO as specified below. All two package solutions are required for successful deployment in order to run ASC.

Title	Solution Package Filename	Description
SharePoint Framework	rcr.sp.framework.wsp	DLL that contains the SharePoint services re-usable for many applications
SAO Solution Package	rcr.safeactobservation.wsp	Custom solution package that contains CSS, list and display templates content web part feature

TFS

- SAO - $/SafeActObservation/RCR.SafeActObservation
- SharePoint 2013 Framework Project - $/RCR.SP2013.Framework/RCR.SP.Framework

2. Installation

The following instructions in this section 2 are to be carried out only for a NEW installation of SAO solution package that has not yet exist on a SharePoint 2013 farm. For installation to existing ASC solution, *read Appendix 1.*

Pre-requisite
Prior to installing the ASC solution package, the SharePoint 2013 Framework Windows solution package (WSP) MUST be installed in Central Administration:

Run a PowerShell script that will deploy the Windows Solution Package (WSP) file called
- **rcr.sp.framework.wsp**

A successful installation on the SharePoint farm will deploy these WSP file below in Central Administration:

| rcr.sp.framework.wsp | Deployed | Globally deployed. |

For more details, read: http://webservices.rcrtom.com.au/corporate-it/spprojects/Solutions%20Documentation/SharePointFrameWork.docx

Installing SAO Solution Package
Run a **installsao.ps1** PowerShell script that will deploy the Windows Solution Package (WSP) file called
- **rcr.safeactobservation.wsp**

A successful installation on the SharePoint 2013 farm will deploy this WSP file below in Central Administration:

Solution Properties

Retract Solution | Back to Solutions

Name:	rcr.safeactobservation.wsp
Type:	Core Solution
Contains Web Application Resource:	No
Contains Global Assembly:	Yes
Contains Code Access Security Policy:	No
Deployment Server Type:	Front-end Web server
Deployment Status:	Deployed
Deployed To:	Globally deployed.
Last Operation Result:	The solution was successfully deployed.
Last Operation Details:	VM304 : The solution was successfully deployed.
Last Operation Time:	12/4/2014 9:11 AM

2.1   Feature Activation

After installing the solution package in section 2.0, activate the feature from Search Centre site.

1. Go to the Search Centre site collection where the SAO feature will be activated.

2. Go to Site Site Settings->Site collection features

3. Activate **SAO Feature**
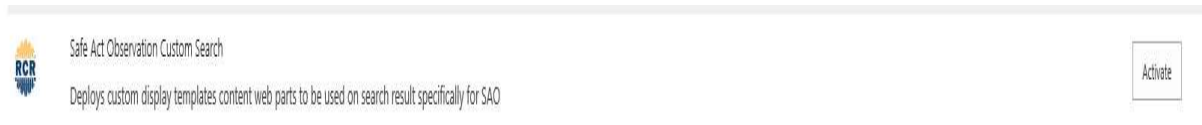
A successful SAO feature activation will install the following files:

*   **Display Template files (/Display Templates/Content Web Parts/)** – Folder containing HTM, Jquery & JavaScript to run the search content web part on the search result page

*   **SAO List** – Custom list containing some default configurations for running SAO

*   **CSS (/Display Templates/Server Style Sheets)** – Custom CSS and image files.

2.2 Creating Search Result Page

After the feature has been activated in section 2.1, the next step is to edit the existing search result under SAO Search Centre site collection.

NOTE: Before doing this section 2.2, the **pre-requisite** is that you have already implemented custom search scope in appendix 3.1

1. Edit the SAO search result page results.aspx

2. Add content search web part on the result page
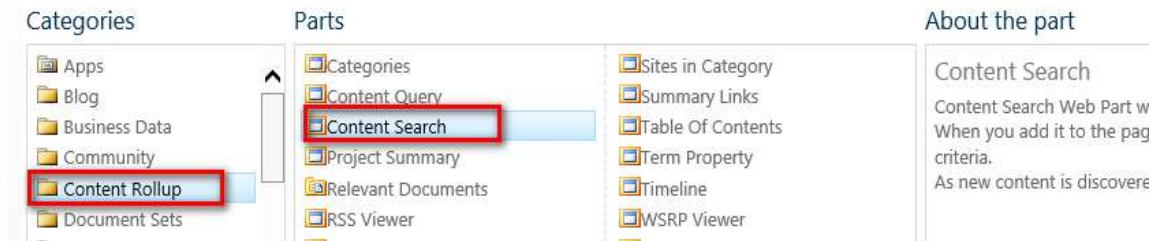
3. Configure the content search web part settings as follows:
   - Click **Change Query** button
   - Switch to advance mode
   - Select SAO search scope (Site Collection)
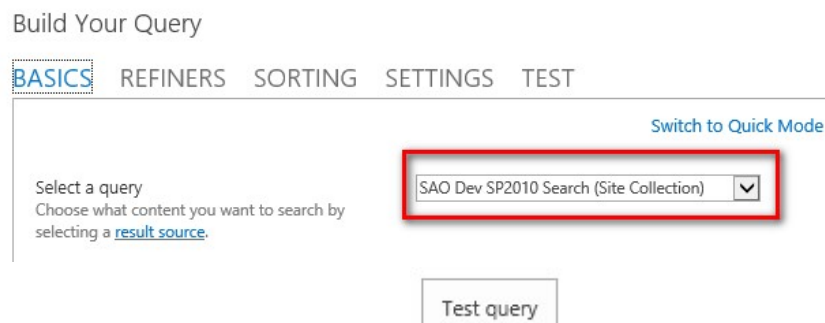
   - Click on "Test query" button and should return some results

   - If there are some return search results, click OK to exist the Build Your Query pop up window
   - Setup the following:

4. Click Ok to save the search content web part setting. Then save the page

5. Check the result page displays the correct results.
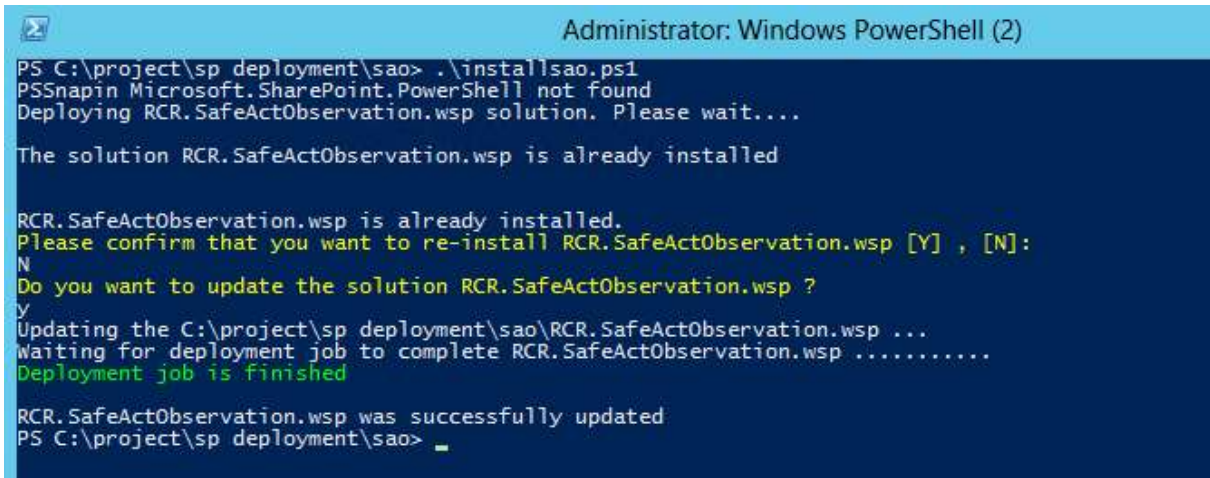
6. Check-in and publish the result page

2.3 Setting up Security Permissions

TBA

Appendix 1 – Upgrading Safe Act Observation

The following instructions is to how to perform existing SAO site upgrades with changes to existing **rcr.safeactobservation.wsp**

1. Get All the latest deployment files below from network shared folder \\vm304\SP Deployment\SAO
   - installsao.ps1
   - RCR.SafeActObservation.wsp

2. Copy the 2 files across to the test or production SharePoint farm

3. On the SharePoint farm, run PowerShell prompt command as Administrator

4. In PowerShell prompt go the directory where the 2 files has been copied in step 2

5. Run this command: **.\installsao.ps1**

```
Administrator: Windows PowerShell (2)

PS C:\project\sp deployment\sao> .\installsao.ps1
PSSnapin Microsoft.SharePoint.PowerShell not found
Deploying RCR.SafeActObservation.wsp solution. Please wait....

The solution RCR.SafeActObservation.wsp is already installed


RCR.SafeActObservation.wsp is already installed.
Please confirm that you want to re-install RCR.SafeActObservation.wsp [Y] , [N]:
N
Do you want to update the solution RCR.SafeActObservation.wsp ?
y
Updating the C:\project\sp deployment\sao\RCR.SafeActObservation.wsp ...
Waiting for deployment job to complete RCR.SafeActObservation.wsp ...........
Deployment job is finished

RCR.SafeActObservation.wsp was successfully updated
PS C:\project\sp deployment\sao> _
```

6. Go to Central Administration to check that the WSP file has successfully been upgraded

Solution Properties

Retract Solution | Back to Solutions

Name:	rcr.safeactobservation.wsp
Type:	Core Solution
Contains Web Application Resource:	No
Contains Global Assembly:	Yes
Contains Code Access Security Policy:	No
Deployment Server Type:	Front-end Web server
Deployment Status:	Deployed
Deployed To:	Globally deployed.
Last Operation Result:	The solution was successfully deployed.
Last Operation Details:	VM304 : The solution was successfully deployed.
Last Operation Time:	12/4/2014 9:11 AM

7. Check the SAO search centre site to confirm the site is back online after the application pool has been recycle.

Test SAO site	https://search.webservicestest.rcrtom.com.au/areas/corporate/Safety/sao/Pages/default.aspx
Live SAO site	TBA

Appendix 2 – SAO Troubleshooting

2.1 Missing Server Side Dependencies

Problem:
You get this error in Central Admin SharePoint 2013:

[MissingFeature] Database [WSS_Search_Content] has reference(s) to a missing feature: Id = [49c69ac6-61e8-4dd8-80ee-6f5d79053ece], Name = [Safe Act Observation Custom Search], Description = [Deploys custom display templates content web parts to be used on search result specifically for SAO], Install Location = [RCR.SafeActObservation_Safe Act Observation]. The feature with Id 49c69ac6-61e8-4dd8-80ee-6f5d79053ece is referenced in the database [WSS_Search_Content], but is not installed on the current farm. The missing feature may cause upgrade to fail. Please install any solution which contains the feature and restart upgrade if necessary.
[MissingSetupFile] File [Features\RCR.SafeActObservation_Safe Act Observation\DisplayTemplates\Control_SAO_ListHeader.html] is referenced [2] times in the database [WSS_Search_Content], but is not installed on the current farm. Please install any feature/solution which contains this file. One or more setup files are referenced in the database [WSS_Search_Content], but are not installed on the current farm. Please install any feature or solution which contains these files.
[MissingSetupFile] File [Features\RCR.SafeActObservation_Safe Act Observation\DisplayTemplates\Item_SAO_ListRow.html] is referenced [2] times in the database [WSS_Search_Content], but is not installed on the current farm. Please install any feature/solution which contains this file. One or more setup files are referenced in the database [WSS_Search_Content], but are not installed on the current farm. Please install any feature or solution which contains these files.

Solution:

Re-installing the SAO solution package is required to clear this error.

1. Firstly **deactivate** the SAO feature (e.g. here) from Search Centre 2013 site collection. Go to: Site settings->Site collection features

2. Go to SP2013 Central Administration site. Go to: Systems Settings->Manage farm solutions
3. Click on **rcr.safeactobservation.wsp** link and click on "Retract Solution" button.
4. Remote login to the SharePoint 2013 server farm.
5. Run **InstallSAO.ps1** (See section 2 for more details).
6. After SAO solution package has been successfully deployed, Activate the SAO feature (See section 2.1 for more details).
7. Go to SharePoint 2013 Central Administration site, and click on "Reanalyse Now" button on the issue.
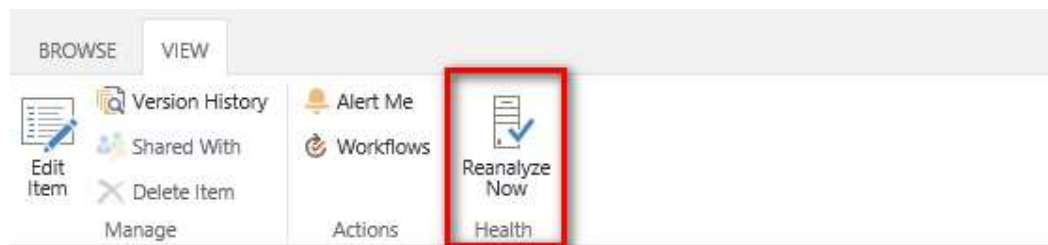

8. The error log should be clear after the update.

Appendix 3 – Search Scope

3.1 Customising Search Scope

To create a scope search, use **Manage Result Sources** feature. After configure managed result source, the next step is to configure search result page (See appendix 3.2 for more detail instructions not related to SAO).

1. Go the search centre search site collection that was created in step 13 of section 2.6.0

2. Go to **site settings** from top right side drop down menu
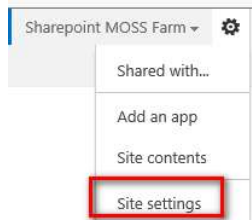
3. Click on **Result Sources** link under Site Collection Administrator
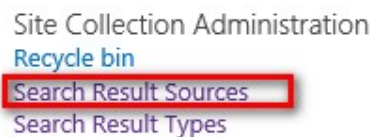
4. Click "New Result Source" button

5. Enter the following details below and click the **save** button when finish:

Type

Select SharePoint Search Results to search over the entire index.

⦿ SharePoint Search Results
○ People Search Results

Select People Search Results to enable query processing specific to People Search, such as phonetic name matching or nickname matching. Only people profiles will be returned from a People Search source.

Query Transform

Change incoming queries to use this new query text instead. Include the incoming query in the new text by using the query variable "{searchTerms}".

[{searchTerms}]   [Launch Query Builder]
Learn more about query transforms.

Use this to scope results. For example, to only return OneNote items, set the new text to "{searchTerms} fileextension=one". Then, an incoming query "sharepoint" becomes "sharepoint fileextension=one". Launch the Query Builder for additional options.

Credentials Information

Select Default Authentication if users will connect to this source using the default SharePoint authentication.

⦿ Default Authentication

Common:

Select Common if all users will connect to this source using the same credential.

○ Basic Authentication - Specify a user name and password

[Save] [Cancel]

The query builder looks like this:

Build Your Query

BASICS   SORTING   TEST

Keyword filter
[Query after all transformations ▾]

[Add keyword filter]

Property filter
[Select property ▾]
[Contains ▾] [Select value ▾]

[Add property filter]

Query text

{searchTerms} Path:"http://vm188.rcrtom.com.au/Safety/SafeActObservations" IsContainer<>true - Filename:AllItems -contentclass:STS_ListItem_Links -contentclass:STS_List_Links - contentclass:STS_List_850

[Test query]

SEARCH RESULT PREVIEW
⊟ RelevantResults (8)
  SafeActObservations - My Documents
    vm188.rcrtom.com.au/Safety/Forms/MyItems.aspx
  SAO-Elizabeth Kougianos-2014-08-28T10_00_00.xml
    vm188.rcrtom.com.au/.../SAO-Elizabeth Kougianos-2014-0...
  SAO-Elizabeth Kougianos-2014-09-10T00_00_00.xml
    vm188.rcrtom.com.au/.../SAO-Elizabeth Kougianos-2014-0...
  SAO-Elizabeth Kougianos-2014-09-17T09_42_00.xml
    vm188.rcrtom.com.au/.../SAO-Elizabeth Kougianos-2014-0...
  SAO-Elizabeth Kougianos-2014-11-11T09_00_00.xml
    vm188.rcrtom.com.au/.../SAO-Elizabeth Kougianos-2014-1...
  SAO-Elizabeth Kougianos-2014-11-12T10_00_00.xml
    vm188.rcrtom.com.au/.../SAO-Elizabeth Kougianos-2014-1...
  SAO-Ian MacGregor-2014-09-16T00_00_00.xml
    vm188.rcrtom.com.au/.../SAO-Ian MacGregor-2014-09-16T0...
  SAO--.xml
    vm188.rcrtom.com.au/Safety/SAO--.xml

After saving the result source, it should look like this:

Site Collection Administration › Manage Result Sources

Use result sources to scope search results and federate queries to external sources, such as internet search engines. After defining a result source, configure search web parts and query rule actions to use it. about result sources.

Result Sources replace Search Scopes, which are now deprecated. You can still view your old scopes and use them in queries, but not edit them.
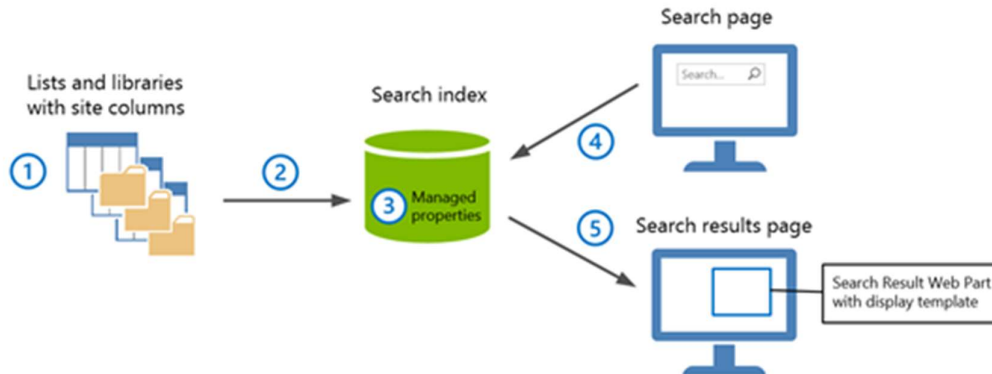
New Result Source

Name	Creation Date	Default	Status
Defined for this site collection (1)			
SAO Dev SP2010 Search	11/20/2014 4:17:59 PM		Active
Provided by SharePoint (16)			

3.2 Customising Search Result Page

How search works in a few words

In case you're not so familiar with how search works, here's a high level representation that might be useful for this series.

1. Content is stored in lists and libraries. Site columns are used to store values, or in other words information, about each item in a list or library.
2. When lists and libraries are crawled, site columns and the site column values are added to the search index.
3. In the search index, site columns are "transformed" into managed properties. Site column values are "transformed" into managed property values
4. On a search page, a user enters a query in a Search Box Web Part. The query is sent to the search index.
5. Search results are sent from the search index to a search results page, and displayed in a Search Results Web Part. The Search Results Web Part uses display templates that specify which managed property values should be displayed.

<u>**Overview**</u>
1   Introduction - How search results are displayed in SP 2013
2   How to map network drive to display templates (or see appendix 8.14)
3   Understand site column and managed property
            3.1   Transforming site column to managed property
            3.2   Automatically created managed properties
1   Understanding display templates file
            1.1   Understanding hit highlights
2   How to create a new display template
3   How to create a new result type

Creating a New Custom Display Templates

You can say goodbye (happily) to the need for using XSLT to modify the search results UI, and say hello to display templates, which control how an item is displayed. A display template consists of two files:

- an HTML file and
- JavaScript fi le.

The specific display pattern is contained in the HTML, and the JavaScript is generated automatically when you upload the HTML file. SharePoint 2013 provides several display templates, which you can copy and customize.

They are located in the Display Templates folder of the Master Page Gallery in the site collection. From this result type table (See Appendix 8.15), determine and decide which copy of a new item display template that you will need.

Therefore, the following example walks through the process of modifying a copy of the display template item_default.html so that custom lists are displayed in the search result. The user modifying the template requires at least Designer permissions:

1 Browse to the Master Page Gallery of your search centre site collection.

2 Click the folder labelled Display Templates. Note the different categories of templates.

3 On the Display Templates page, click the folder called Search.

4 Locate and download a copy of the Item_Default.html file.

5 Using your favourite text editor, update the following content:
   5.1 Change the <title> tag. This will later be reflected in the configuration of adding a new result type
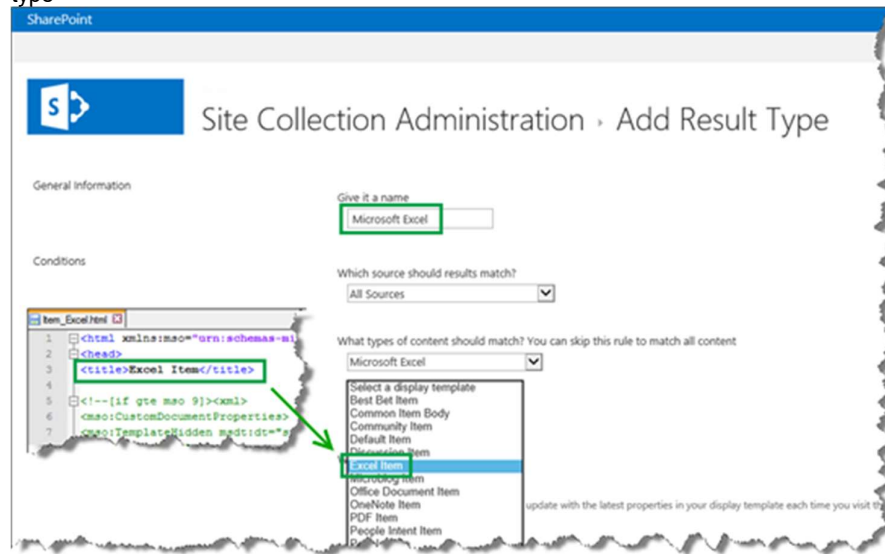
6 After changing the value, save the display template file with different filename (e.g. Item_Test.html).

7   Upload the file to the Display Templates and publish it. There are two ways to publish a display template:

   7.1 Publish via Master Page Gallery:
o   Repeat step 1 to 3
o   Click on Files tab on the Ribbon toolbar -> Upload Document
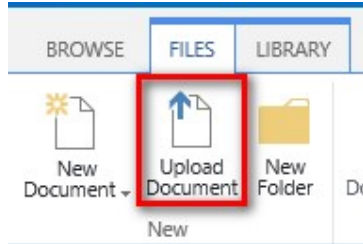
o   Uploading the HTML file will automatically generate its associated JavaScript file as well

🅴	Item_Test.html	11/20/2014 1:46 PM	☐ I
🅳	Item_Test.js	11/20/2014 1:46 PM	☐ I

   7.2 Upload via Window Explorer:
o   Follow the instruction steps on how to map network drive to display template in appendix 8.13
o   Copy the display template file to the map drive using Window Explorer. Refresh Window Explorer and in a few seconds SharePoint 2013 will also automatically generate JavaScript file associated with the uploaded display template file.

▸ Computer ▸ masterpage (\\vm304\DavWWWRoot\search\area_catalogs) (W:) ▸ Display Templates ▸ Search

| Name	Date modified	Type	Size
Item_Test.js	20/11/2014 1:46 PM	JS File	4 KB
Item_Test.html	20/11/2014 1:46 PM	HTML Document	3 KB

Creating a New Result Type

Depending on your permission level, you create a result type on two levels:

Permission level	Where the result type will be added
Site collection administrator	To all sites within a site collection
Site collection owner	To a single site

To save space, I will only show you how to create a result type as a Site collection administrator.

1. Go to **Site settings** --> **Search Result Types**.
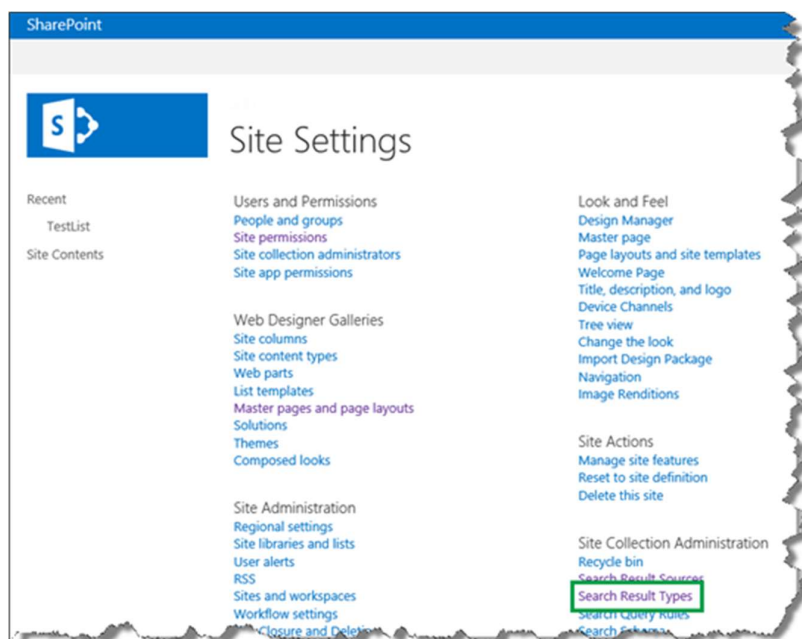
Instead of creating a new result type from scratch, you could make your life a bit easier by copying an existing result type and modifying it to fit your new result type. If you do this, ensure that you copy a result type that closely resembles the new result type you want to create.

2. On the **Manage Result Types** page, from the result type menu field, select **Copy**.

In my scenario, I wanted to customize search results for SharePoint list items, so I copied the **SharePoint List Item** result type.

3. On the Add Result Type page, here's what you need to do:

a. In the **Give it a name** field, enter a name for your new result type.
   In my scenario, I entered T*echNet content.*

b. From the **Which source should results match** menu, select the result source that you have used to configure the query in your Search Result Web Part.

c. In the **What types of content should match? You can skip this rule to match all content** menu, all the default result type are listed.
   In my scenario, I chose **Select a value**.

d. Click **Show more conditions**.

This opens up a menu where you can specify the result type based on managed property values.

In my scenario, all list items contain a site column called *Distribution Channel*. As I showed you at the beginning of this blog, this site column contains the publication platform value, for example *TechNet Library*. I wanted to use values from this site column to specify which list items should belong to my new result type

e. From the **Which custom properties should match** menu, I selected *DistributionChannelOWSCHCS*. *DistributionChannelOWSCHCS* is the managed property that represents the *Distribution Channel* site column. In the fields below, I entered all the values that should specify the new *TechNet content* result type.

f. From the **What should these results look like** menu, select the display template that should be used by this result type.

In my scenario, I selected my newly created *TechNet content* display template.

g. Click **Save**.

Your newly created result type is now listed on the **Managed Result Types** page.

In my scenario, I could see that the *TechNet content* result type had been created.

So now that we have a new result type, the next step is to modify the display template that is associated with this result type. There are different ways you can go about doing this, so in the next two steps, I'll explain two different options.

Reference:
1. How to change the way search results are displayed in SharePoint Server 2013
2. https://sharepoint2010search.codeplex.com/documentation