

SSRS –Integration-Microsoft Dynamics CRM

SQL vs. FetchXML reports in CRM

When it comes to building reports for CRM, there are two options available: SQL reports or FetchXML reports. Both make use of SQL Reporting Services and require the SSRS Data Connector to be installed to interface with CRM. In the following table I am attempting to summarize the differences between these two reporting options:

	SQL Reports	FetchXML Reports
Building experience	Requires a separate program for designing the report such as SQL Business Intelligence Development Studio (BIDS) or Report Builder.	CRM comes with a Report Wizard which can be used for building these reports. The report wizard is a web report designer integrated with CRM. These reports can also be designed using BIDS (must download the Report Authoring Extension).
Skill set	Building SQL reports requires SQL Server skills and development experience.	When built using the Report Wizard, advanced CRM users can have the skills to build reports (or super-users) without requiring a developer.
Flexibility	These reports can take data from CRM and present it in multiple ways. Reports can achieve complex requirements as you can use any feature from SQL Reporting Services.	Functionality is restricted to what the Report Wizard can support which can be quite limiting at times.
Queries	Data is queried using SQL statements that read the filtered views in the organization database.	FetchXML queries are used for retrieving data for these reports (Advanced Find can be used to generate FetchXML queries).

Reporting mechanism	These reports can be scheduled, delivered by email and other mechanisms.	Must be executed on-demand.
CRM Online Support	Not supported	Supported

Creating Dynamics CRM Reports in SQL Reporting Services with Pre-Filtering and Default Filters

With the release of Microsoft Dynamics CRM 2011 and the rapid proliferation of through cloud deployments, Microsoft had to make some changes to how SQL Reporting Services worked to make it possible to write SRS Reports without physical database access that could be easily published to either On Premise or Through Cloud deployments of Dynamics CRM 2011. They accomplished that with the release of the Dynamics CRM 2011 Report Authoring Extension--a plug in to SQL Business Development Studio that allows you to select FethXML as a data source when authoring a report in SQL Server Reporting Services.

In this blog post, I am going to walk you through creating an SRS Report and publishing that report to Dynamics CRM 2011. I am also going to show you how to enable the report to use Pre-Filtering and Default Filters. What you will see here will work with On Premise and Through Cloud deployments of Dynamics CRM 2011. In my environment, I will be connecting to a Dynamics CRM 2011 Organization in the NjevityToGo CRM Cloud.

Before we begin, lets talk a little about Pre-Filtering and Default Filters so you have a good understanding of why this is important to your report design.

Pre-Filtering

Have you ever run a report in Dynamics CRM 2011 and been prompted to select whether you want the report to use All Applicable Records, The Selected Records, or All Records on all pages in the current view? Or have you opened the Account Form for a specific account and run a report from the Account Ribbon that only displays data for the account you had opened? In both of these cases, you are using Pre-Filtering.

Pre-Filtering gives you the ability to supply one or more selected records as parameters to the report. This allows the user to select one or more records within the Dynamics CRM 2011 Application and run a report just for those records. It is a much more intuitive way to

supply a parameter to the report than using visible parameters on the report. This should be a basic requirement in most of the reports you author for Dynamics CRM 2011.

Default Filters

When you run a report in Dynamics CRM 2011 that uses Default Filters, there will be an Edit Filters button in the top left corner of the report. Additionally, if you double click a report in the Report List that uses Default Filters, the Default Filters window will open before you are able to run the report. The Report Filtering Criteria window allows you to apply Advanced Find filter criteria to the report using all of fields and relationships on the entities you are reporting against...regardless as to whether or not those fields and relationships exist in the report.

This is a fantastic way for users to supply parameters to reports. It uses the Advanced Find Query Structures, so it is familiar to the users. And it does not require the report designer to know about every possible filter the user might want to use so they can be part of the report. The user can provide default filters and save them into the report so they are used everytime the report runs. And the user can change the filters at any time. The user can even add new filters that were never part of the original design.

I just wrote a report where the requirement was for the report to always show 'This Month's' data. But sometimes they want to be able to change it to show 'last month's' data. Now I could have put a FROM and TO date parameter into the report and created some functions to default them to the beginning and end of the current month. But that is quite a bit of work. And tomorrow, the requirement could have changed to use the Modified Date instead of the Created On date as the basis of the filter. Or another filter could have been added. In the old way of working with parameters, any of these changes would have required additional report design work. But with using Default Filters, I was able to write the report without any parameters, and then setup the default filters using standard Dynamics CRM 2011 capabilities. And the user can change this at any time on their own.

In the following example, I will show you how to do this. So, let's get started.

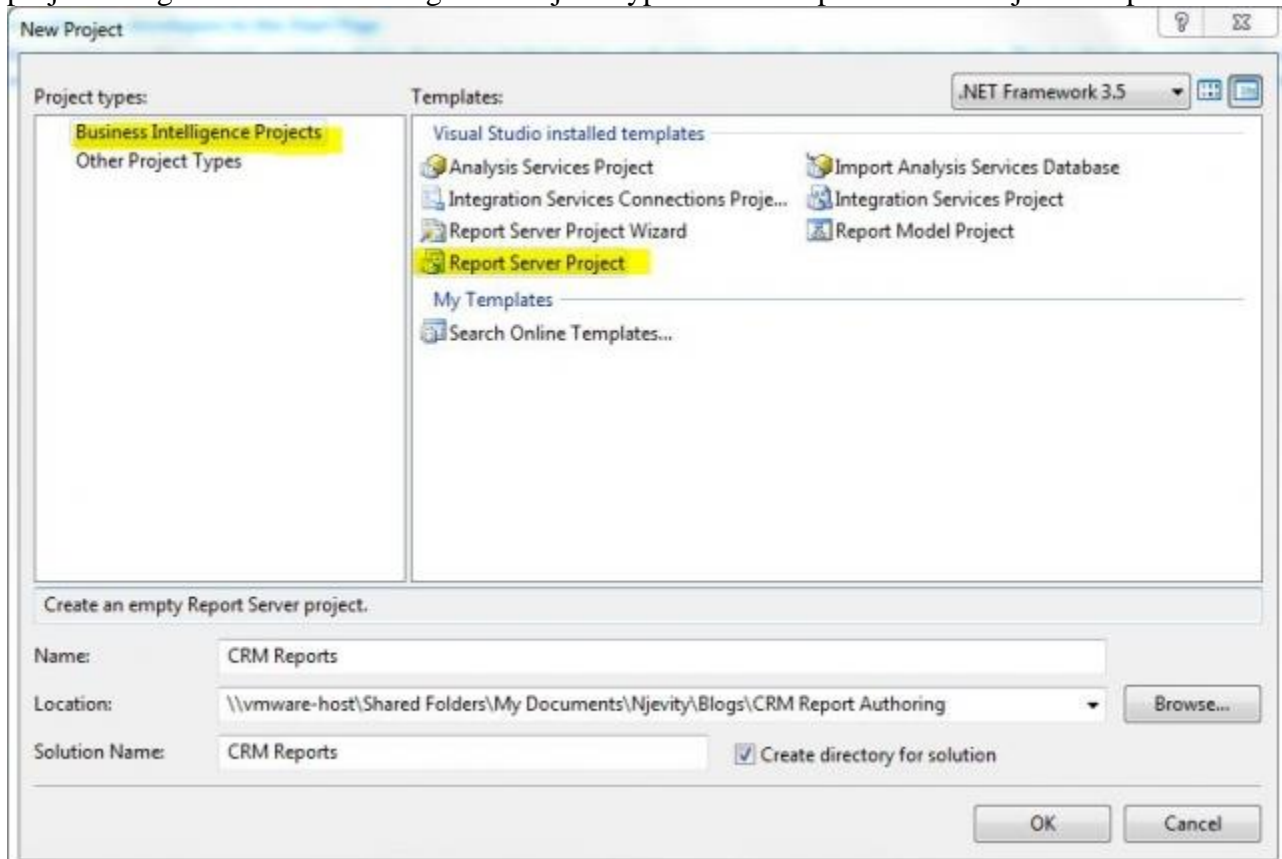
Authoring a Dynamics CRM 2011 Report that uses Pre-Filtering and Default Filters

Before we begin, you will need the following to author and publish a report for Dynamics CRM 2011:

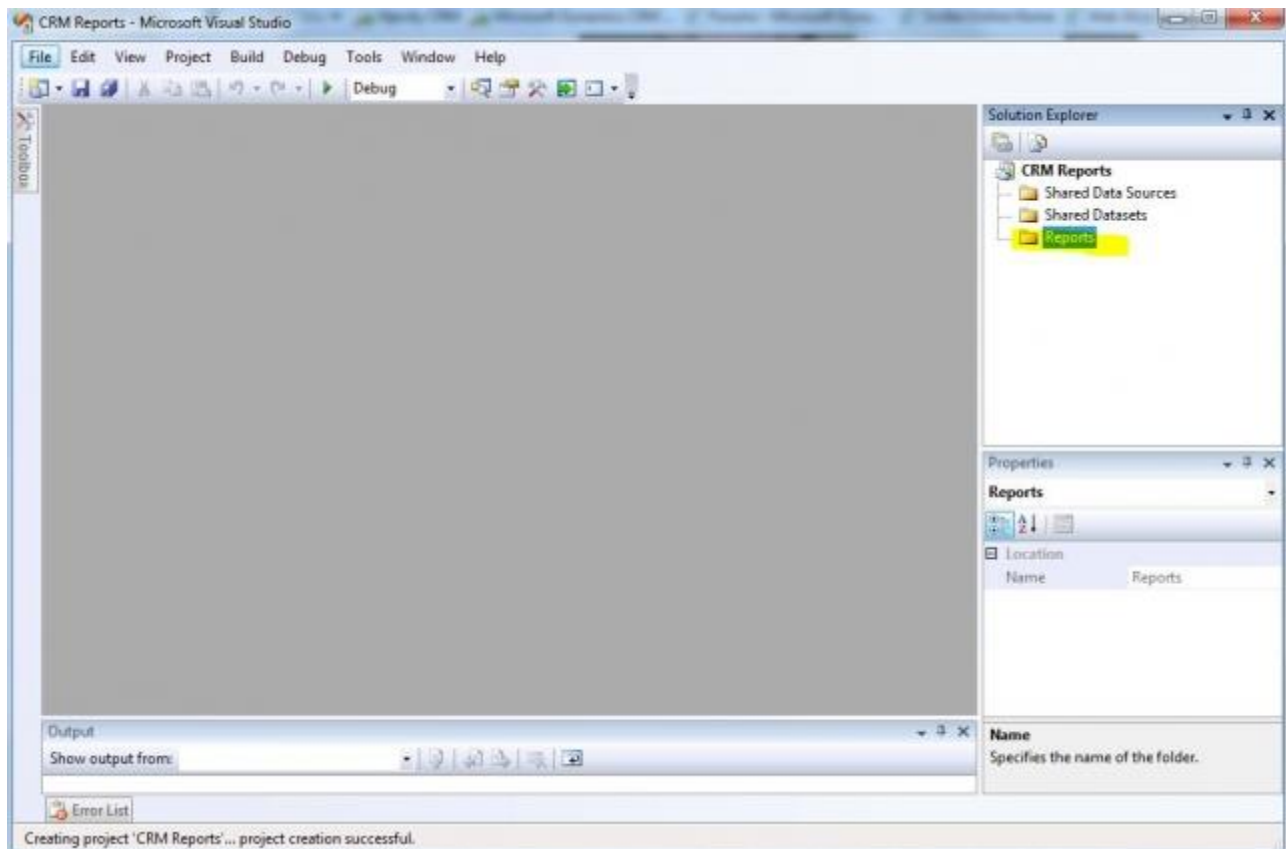
1. You will need access to a Dynamics CRM 2011 Organization and have the proper security roles to publish reports. This includes:
 1. Organization URL
 2. Organization Unique Name (**Settings >> Customization >> Developer Resources**)

3. UserName and Password for that organization
2. You will need to have SQL Server Business Intelligence Development Studio Installed with the SQL Reporting Services components. (I am using version 2008 R2)
3. You will need to download and install the Dynamics CRM 2011 Report Authoring Extension.
[You can download it here.](#)

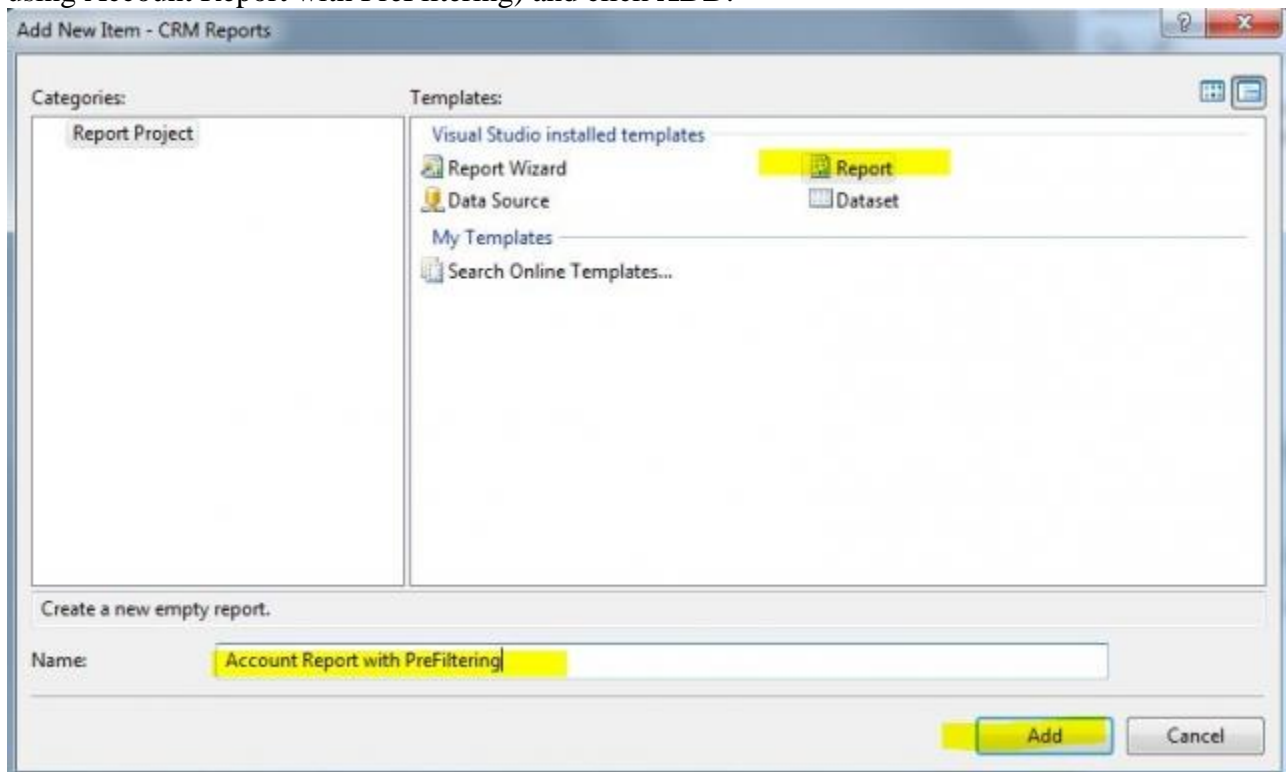
First, we will need to open the Business Intelligence Development Studio and create a new project using the Business Intelligence Project Type and the Report Server Project Template.



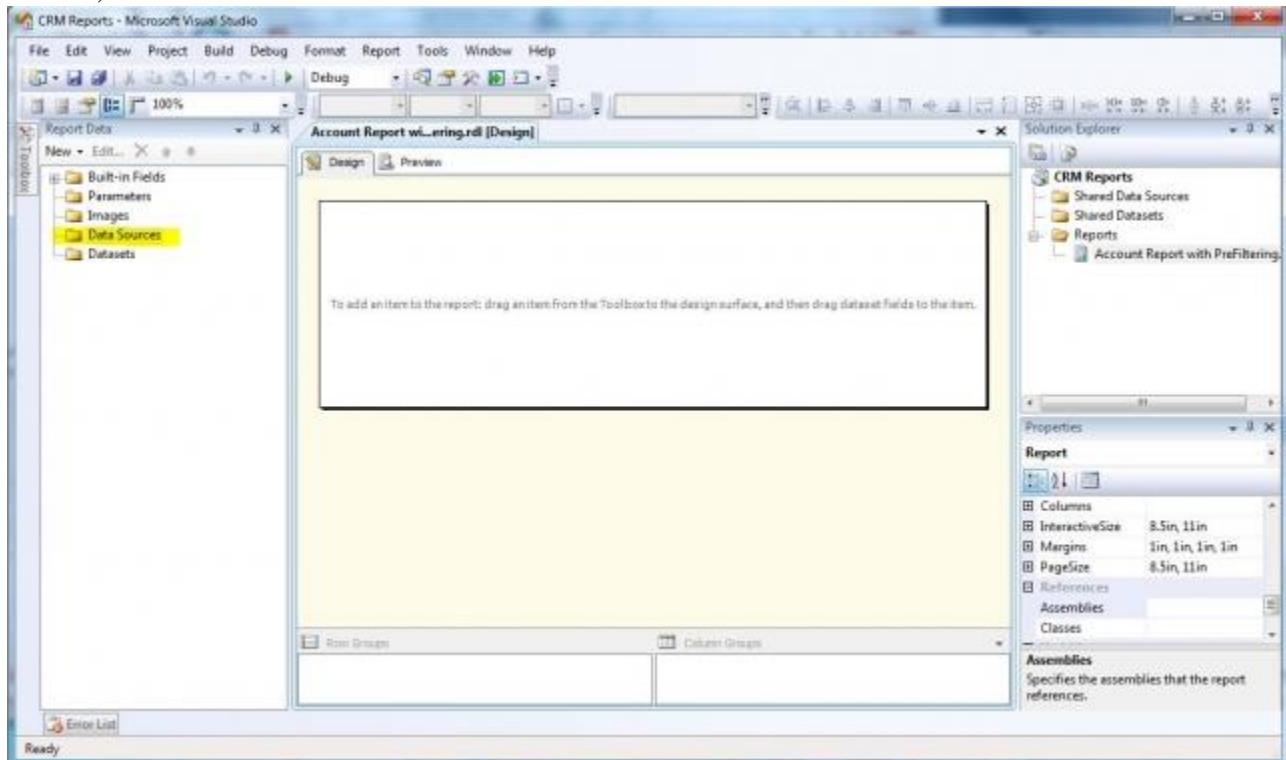
Next, we will create the report. To do this, right click on the Reports folder in the Solution Explorer and select **Add >> New Item** (do not choose Add New Report as this will create the report with the Report Wizard).



From the **Add New Item** window, select the Report Template, give your Report a name (I am using Account Report with PreFiltering) and click **ADD**.



Next, we need to create the data source for the report. With Dynamics CRM 2011 Reports, you should use a Data Source embedded in the report, not a shared data source. To do this, in the Report Data pane on the left side of Visual Studio, right click on the Data Sources Folder and choose, **Add Data Source**.



In the Data Source Properties window:

1. Give the Data Source a Name (I am using CRMDData)
2. Select Embedded Connection of Type: **Microsoft Dynamics CRM Fetch**
3. In the connection string box, enter the url of your CRM Organization followed by a semicolon and your organization unique name. You should be able to copy and paste the first part of this from your web browser. I am using <https://test01.crm.njevitytogo.com>;test01
4. Click the **Credentials** tab
5. Select **'Use this user name and password'** and enter the user credentials that you use when connecting to your CRM Organization.
6. Then click **OK**

Data Source Properties

General
Credentials

Change name, type, and connection options.

Name:
CRMDData

☒ Embedded connection:

Type:
Microsoft Dynamics CRM Fetch

Connection string:
https://test01.crm.njevitytogo.com;test01

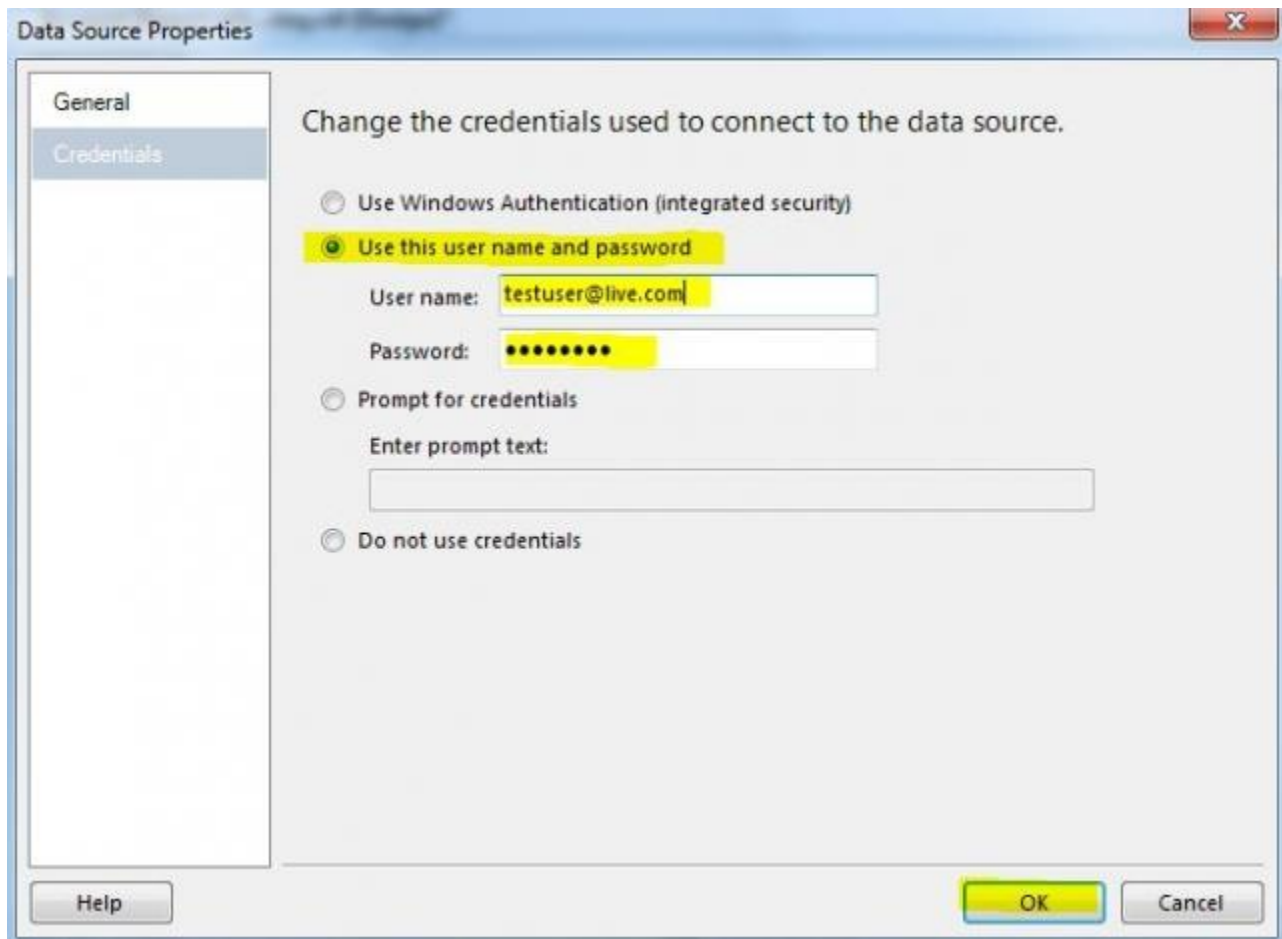
Edit...
fx

☐ Use shared data source reference

Edit... New...

☐ Use single transaction when processing the queries

Help OK Cancel



Next, we need to create the dataset for the report. Because we chose to use CRM Fetch in the previous step, we will be using FetchXML as the query language. Fortunately, for those of us who do not know how to write FetchXML queries, there is a very simple way to do this: we will let Advanced Find create the FetchXML for us!

To do this, we will create an Advanced Find that contains the columns we want on our report as well as the filters that we want always applied to the report. For this example, we will create an advanced find that returns ACTIVE Accounts and displays a few relevant columns. So, in Dynamics CRM 2011, navigate to an account list and click the **Advanced Find** button.

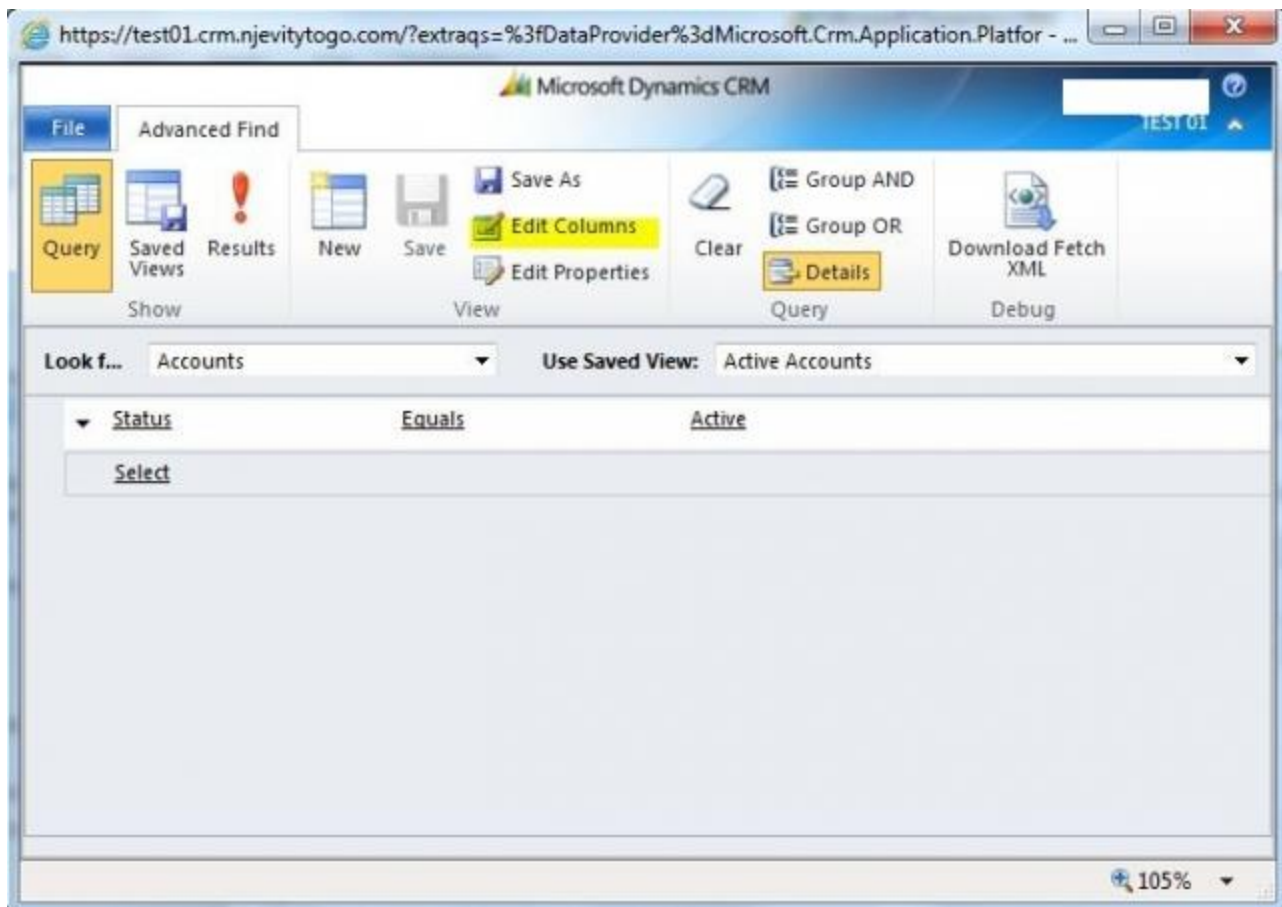
Microsoft Dynamics CRM

Accounts: Active Accounts

Account Name	Main Phone	Address 1: City	Primary Contact
A Store (sample)	555-0136	Renton	Adrian Dumitrascu (sample)
Advanced Components (sample)	555-0135	Dallas	Brain Lahlee (sample)
Affordable Equipment (sample)	555-0162	Santa Cruz	Cat Francis (sample)
Basic Company (sample)	555-0174	Lynnwood	Cathan Cook (sample)
Best o' Things (sample)	555-0145	Los Angeles	Darren Parker (sample)
Blue Company (sample)	555-0131	Redmond	Forrest Chand (sample)
CJD Test account			
Designer Goods (sample)	555-0197	Redmond	Eva Corets (sample)
Elemental Goods (sample)	555-0127	Missoula	Gabriele Cannata (sample)
Grand Store (sample)	555-0135	Redmond	George Sullivan (sample)
Litware Inc. (sample)	555-0116	Phoenix	Marco Tanara (sample)
Magnificent Store (sample)	555-0135	Daly City	Patrick Steiner (sample)
Recreation Supplies (sample)	555-0171	Newport Beach	Susan Burk (sample)
Unusual Store (sample)	555-0178	Lebanon	Thomas Axen (sample)
Variety Store (sample)	555-0135	Port Orchard	Yvonne McKay (sample)

1 - 15 of 15 (0 selected) Page 1

Because I had the Active Accounts view displayed on the Account List when I opened Advanced Find, the Advanced Find query automatically opens with the **Status = Active** filter applied. Because we **ONLY** want active accounts and we do not want the user to be able to edit this filter, we will keep this filter in place. We could add additional filters here, just keep in mind that the *users cannot change these filters when they run the report.*

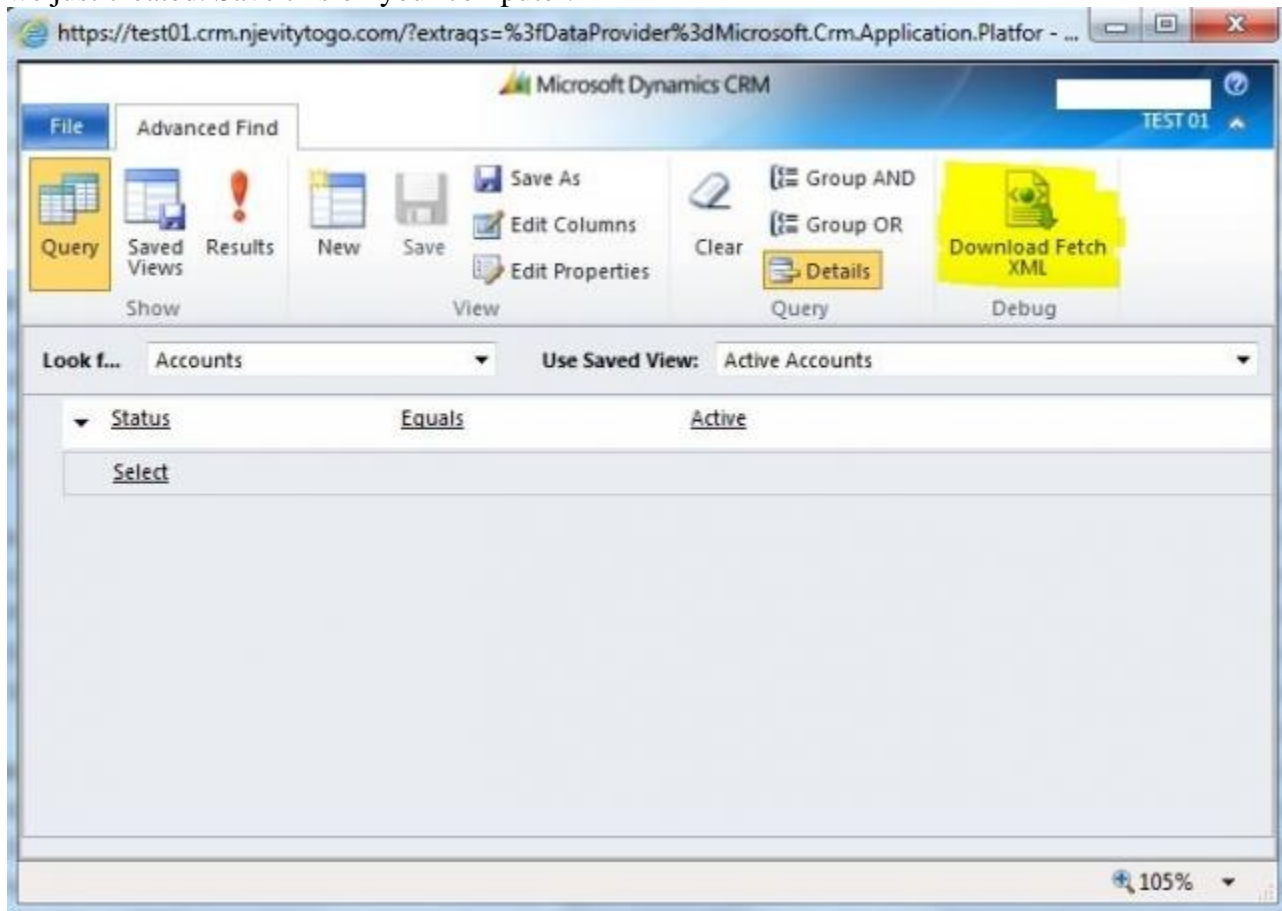


Next we will select the columns that we want to work with on our report. To do this, click the **Edit Columns** button and add and remove columns until you have the ones that you want on the report. The order of the columns in the Advanced Find is not relevant.

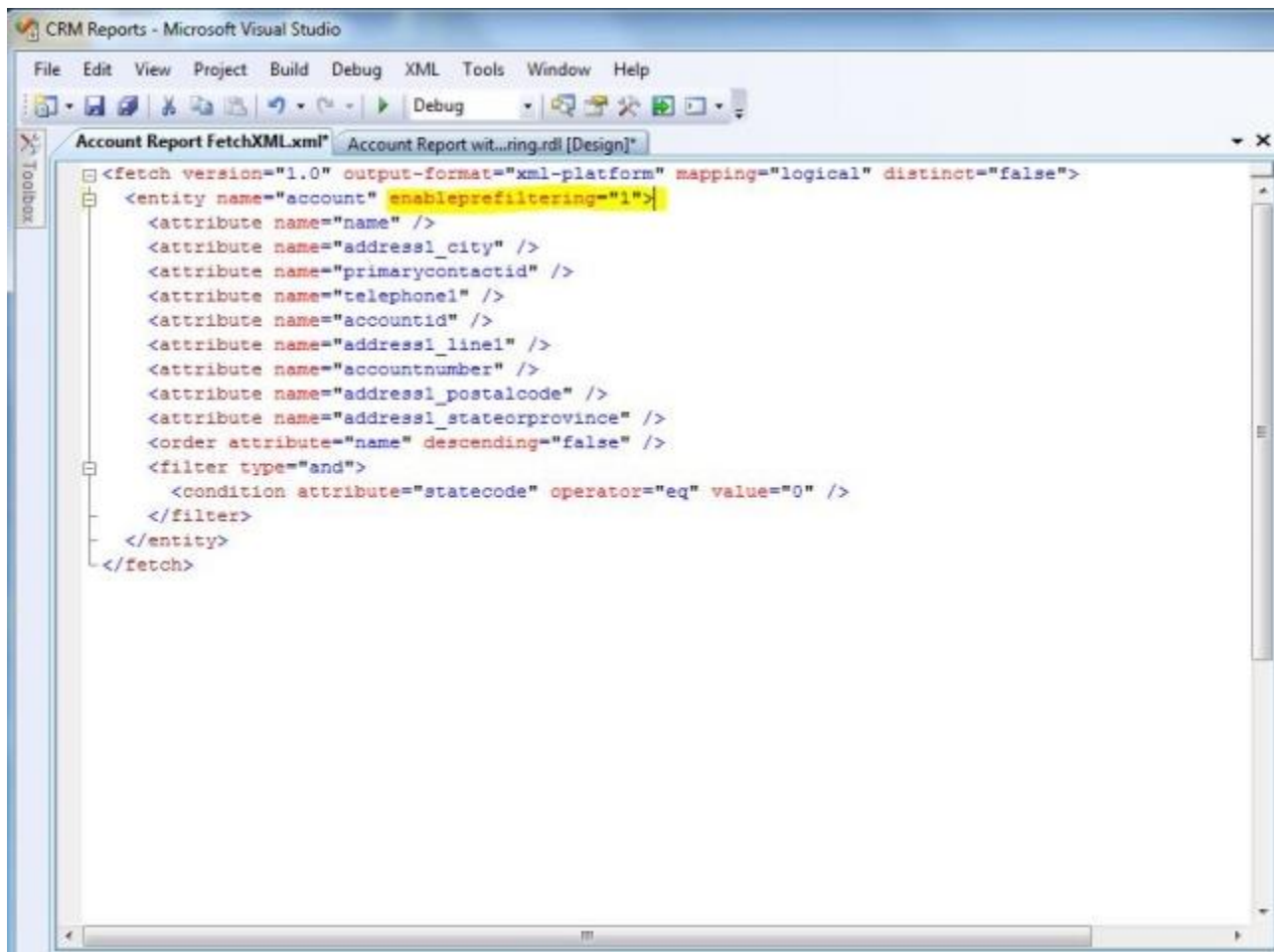


Click the **OK** button to close the Edit Columns window and return to the Advanced Find window. At this point, you might want to run the Advanced Find to make sure that the data set looks right. Once you are comfortable with the dataset, click the **Download Fetch XML** button

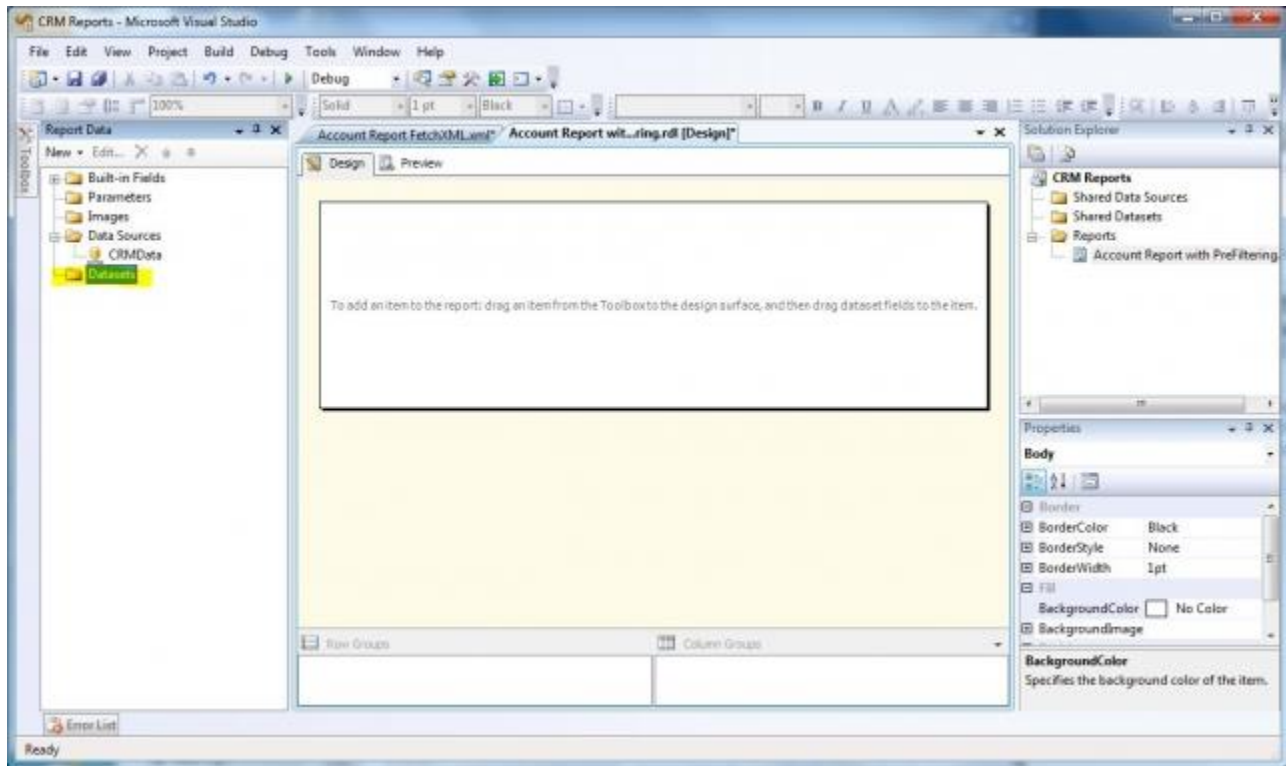
in the Advanced Find Ribbon. This will download an xml file that contains the FetchXML query we just created. Save this on your computer.



Then locate the file, right click and open the file in Visual Studio. It should look like the file below. Now, add the **enableprefiltering** parameter and set its value to "1" as indicated below. This will enable Pre-Filtering and Default Filters on the report. If you do not add this parameter, you can still run the report in Dynamics CRM 2011, but you will not be able to apply filters to it in Dynamics CRM 2011.



Next, copy the xml to your clipboard and return to the report in Visual Studio. Right click the **Datasets** folder in the Report Data pane on the left side of the Visual Studio window and select **Add Dataset**.



On the Dataset Properties window:

1. Give your dataset a name. I am calling mine AccountData.
2. Select the radio button labeled 'Use a dataset embedded in my report'.
3. In the Data Source drop down, select the data source you created in a previous step.
4. Click the **Query Designer** button

Dataset Properties

Query

Fields

Options

Filters

Parameters

Choose a data source and create a query.

Name:

AccountData

☐ Use a shared dataset.

☒ Use a dataset embedded in my report.

Data source:

CRMDData

New...

Query type:

☒ Text ☐ Table ☐ Stored Procedure

Query:

fx

Query Designer... Import... Refresh Fields

Time out (in seconds):

0

Help OK Cancel

In the text box at the top of the query designer, paste the FetchXML you copied from the XML File. Then click the **Red Exclamation Point** button to execute the query. When the Define Query Parameters window opens, leave the parameter value for the **CRM_account** parameter blank and click OK. This will return the same set of records that were in the advanced find query.

Query Designer

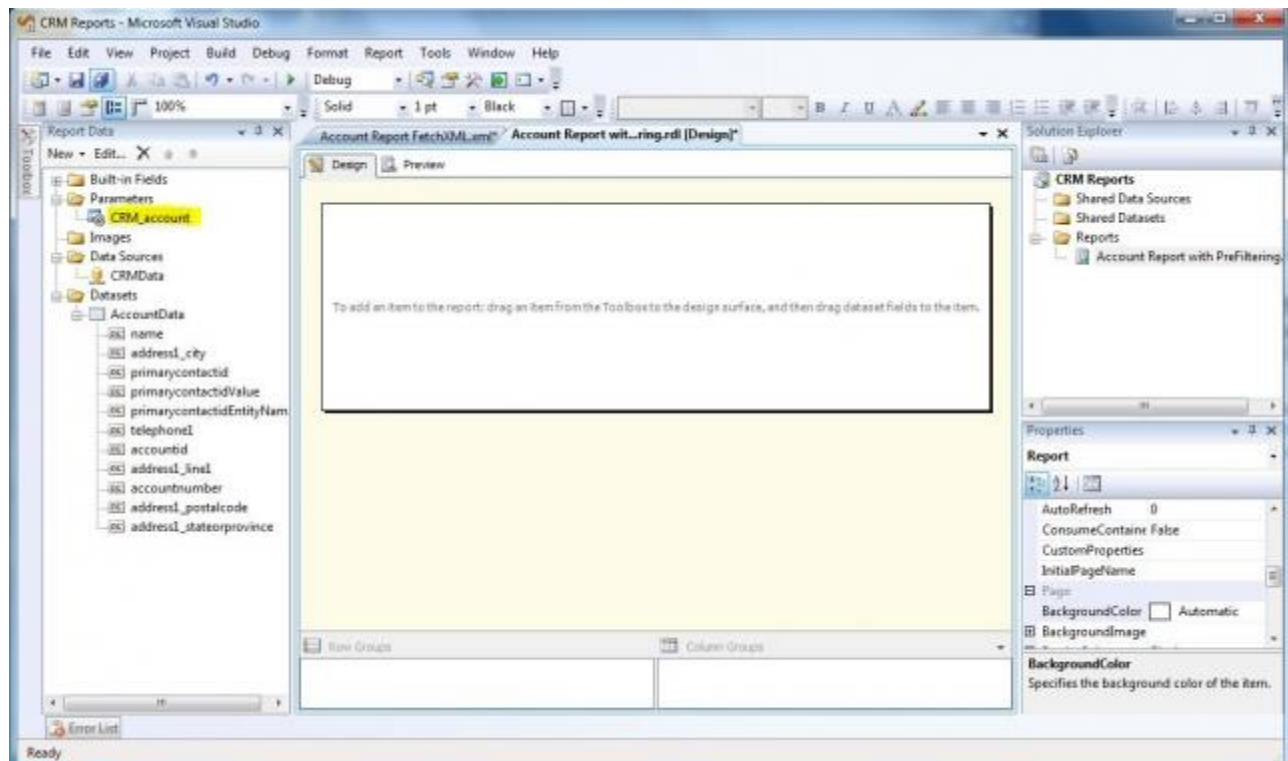
Command type: Text

```
<fetch version="1.0" output-format="xml-platform" mapping="logical" distinct="false">
  <entity name="account" enableprefiltering="1">
    <attribute name="name" />
    <attribute name="address1_city" />
    <attribute name="primarycontactid" />
    <attribute name="telephone1" />
    <attribute name="accountid" />
    <attribute name="address1_line1" />
    <attribute name="accountnumber" />
    <attribute name="address1_postalcode" />
    <attribute name="address1_stateorprovince" />
    <order attribute="name" descending="false" />
    <filter type="and">
      <condition attribute="statecode" operator="eq" value="0" />
    </filter>
  </entity>
</fetch>
```

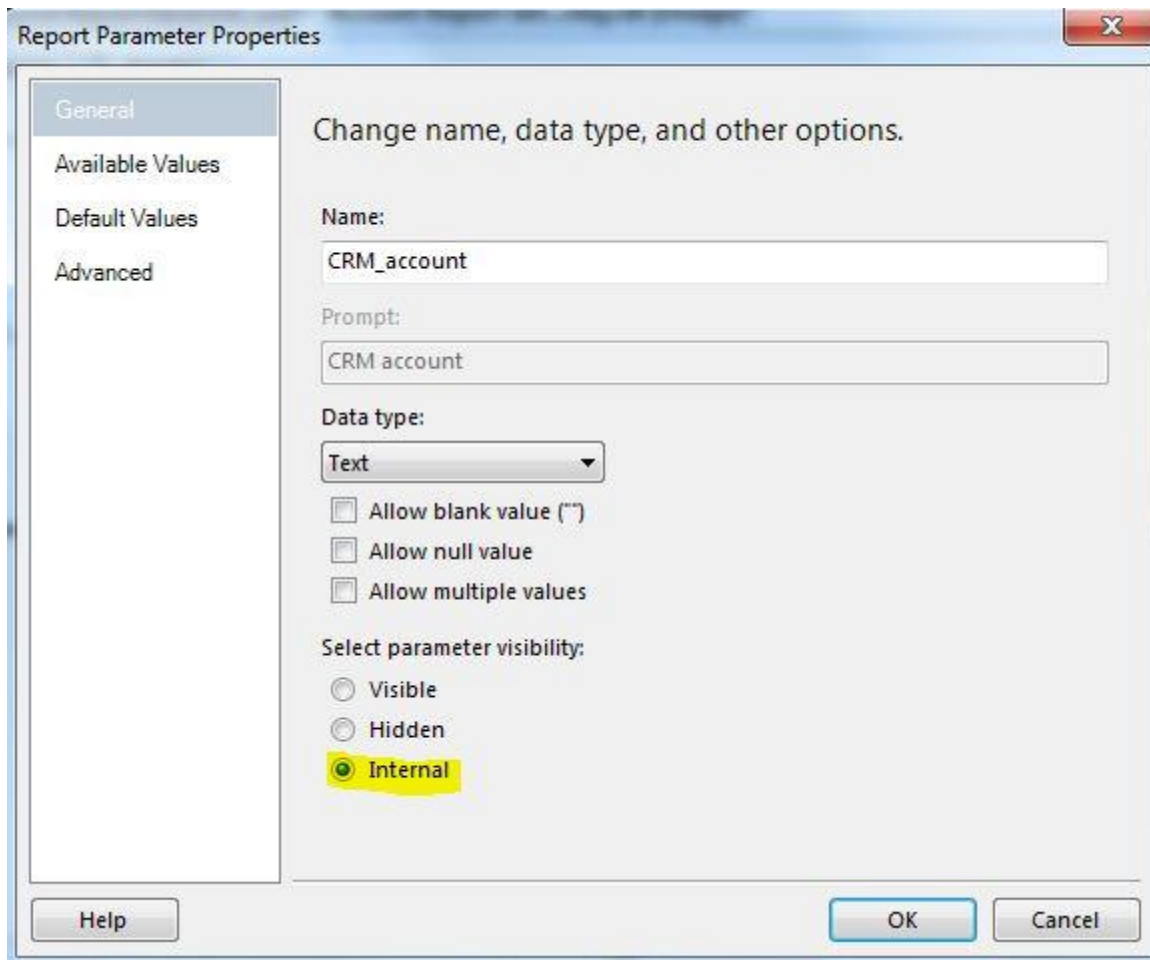
name	address1_city	primarycontactid	primarycontacti...	primarycontacti...	telephone1	accountid	address1_line1	accountnumbe
A Store (sample)	Renton	Adrian Dumitr...	d937548f-9e59...	contact	555-0136	7537548f-9e59...	5009 Orange S...	ABSS4G45
Advanced Com...	Dallas	Brain LaMee (s...	db37548f-9e59...	contact	555-0135	7737548f-9e59...	100 Red Oak L...	ACTB8DC3
Affordable Eq...	Santa Cruz	Cat Francis (sa...	dd37548f-9e59...	contact	555-0162	7937548f-9e59...	4405 Balboa C...	ABC2BUU7
Basic Company...	Lynnwood	Cathan Cook (...	df37548f-9e59...	contact	555-0174	7b37548f-9e59...	7995 Edwards ...	AFF5E9IK
Best o' Things ...	Los Angeles	Darren Parker (...)	e137548f-9e59...	contact	555-0145	7d37548f-9e59...	9068 Muir Road	ACSHN254
Blue Company ...	Redmond	Forrest Chand ...	e537548f-9e59...	contact	555-0131	8137548f-9e59...	9906 Oak Grov...	
CJD Test account						e68d671e-508...		
Designer Goo...	Redmond	Eva Corets (sa...	e337548f-9e59...	contact	555-0197	7f37548f-9e59...	3397 Rancho V...	
Elemental Goo...	Missoula	Gabriele Cann...	e737548f-9e59...	contact	555-0127	8337548f-9e59...	2313 B Southa...	ABCO9M32
Grand Store (s...	Redmond	George Sulliva...	e937548f-9e59...	contact	555-0135	8537548f-9e59...	2137 Birchwoo...	
Litware Inc. (sa...	Phoenix	Marco Tanara (...)	eb37548f-9e59...	contact	555-0116	8737548f-9e59...	137 Lancelot Dr	BABCO8BH
Magnificent St...	Daly City	Patrick Steiner ...	ed37548f-9e59...	contact	555-0135	8937548f-9e59...	3421 Gehring...	BOBC3J9U
Recreation Su...	Newport Beach	Susan Burk (sa...	ef37548f-9e59...	contact	555-0171	8b37548f-9e59...	4915 Pear Dr.	BAKBJYGF
Unusual Store ...	Lebanon	Thomas Axen (...)	f137548f-9e59...	contact	555-0178	8d37548f-9e59...	4650 Franklin ...	BTBS3G34
Variety Store (s...	Port Orchard	Yvonne McKay ...	f337548f-9e59...	contact	555-0135	8f37548f-9e59...	2265 Park Glen...	BBA38GHT

Help OK Cancel

If you are happy with the results, click **OK** to close the **Query Designer**, then click **OK** to close the **Dataset Properties** window. If you expand the Dataset, you should see the list of fields just like below. Next, we need to edit the Parameter that was automatically created for the Pre-Filtering. In this case, the parameter is called CRM_account. To edit this, right click the parameter and select **Parameter Properties**.



On the Report Parameter Properties window, select the radio button labeled '**Internal**'. This will prevent the user from being prompted for a value for this parameter when they run the report. Since we are getting this parameter value directly from CRM, there is no need for the user to interact with this parameter. Click **OK** to close this window.

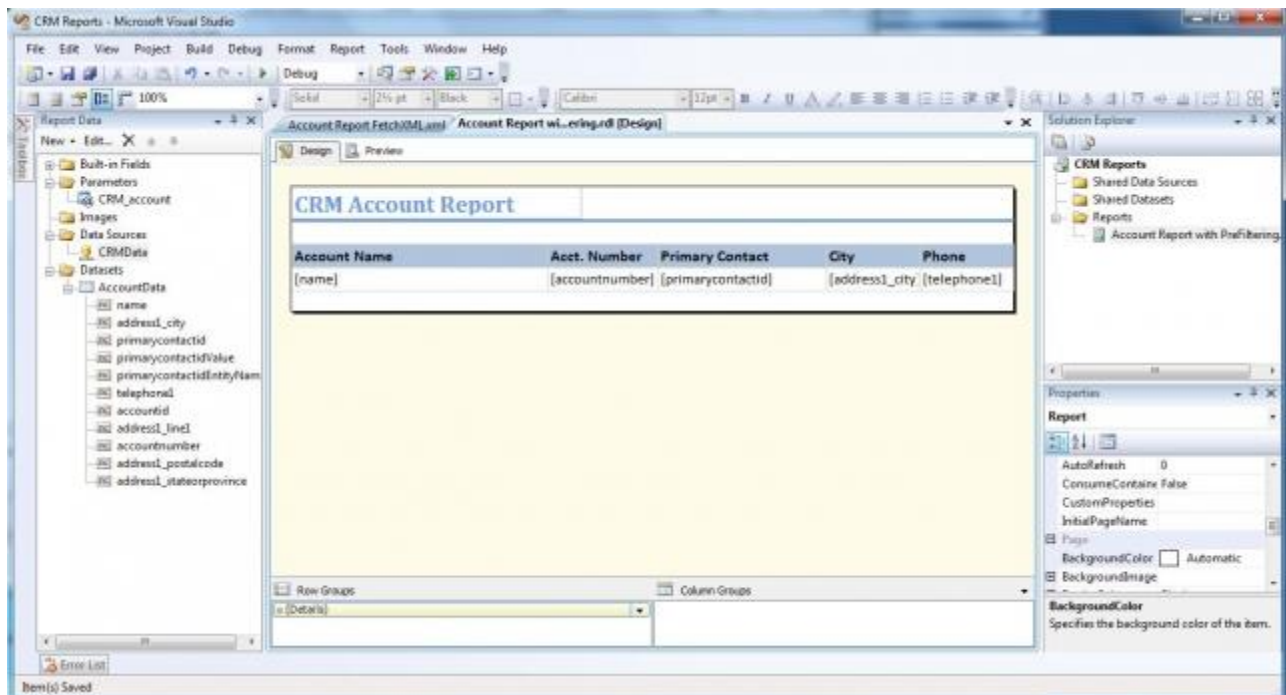


The image shows a 'Report Parameter Properties' dialog box. On the left is a sidebar with four tabs: 'General' (selected), 'Available Values', 'Default Values', and 'Advanced'. The main area is titled 'Change name, data type, and other options.' and contains the following fields and options:

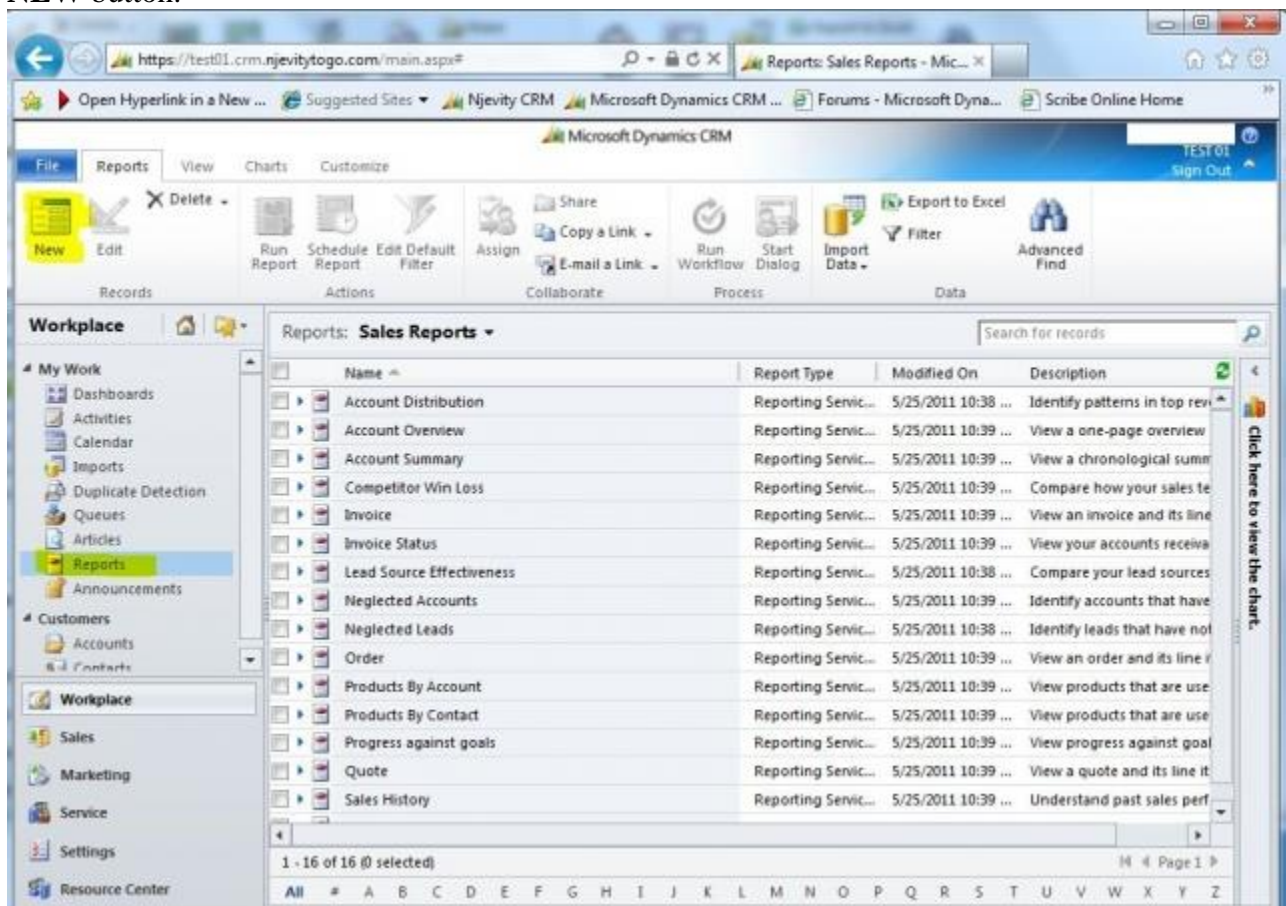
- Name:** A text box containing 'CRM_account'.
- Prompt:** A text box containing 'CRM account'.
- Data type:** A dropdown menu currently set to 'Text'.
- Options:** Three unchecked checkboxes: 'Allow blank value ("")', 'Allow null value', and 'Allow multiple values'.
- Select parameter visibility:** Three radio buttons: 'Visible', 'Hidden', and 'Internal' (which is selected and highlighted with a yellow background).

At the bottom of the dialog are three buttons: 'Help', 'OK', and 'Cancel'.

At this point, you can design this report just like you would any other SRS Report. In this example, I have added a title and table to the report and put a few of the fields into the table. When you are satisfied with the report, **save** your changes.



Now, we need to upload the report to Dynamics CRM 2011. To do this, we will log in to Dynamics CRM 2011 and navigate to the Report List (**Workplace >> Reports**) and click the **NEW** button.



From the new report window:

1. Report Type: Existing File
2. File Location: Navigate to the RDL file that you created in Visual Studio. Mine is called 'Account Report with PreFiltering.RDL'
3. Name: This defaults from the RDL file name, but you can change it if you wish
4. Related Record Types: This is the CRM Entity the report is linked to. In this case, Accounts
5. Display In: Select:
 1. Reports Area
 2. Forms for related record types
 3. Lists for related record types

The screenshot shows the 'Report: New' window in Dynamics CRM 2011. The window has a title bar with the URL 'https://test01.crm.njevitytogo.com/ - Report: New - Windows Internet Explorer'. Below the title bar is a menu bar with 'File', 'Save and Close', and 'Help'. The main content area is divided into two tabs: 'General' and 'Administration'. The 'General' tab is active, showing the following sections:

- Source**
 - Report Type: Existing File (dropdown menu)
 - File Location: \\vmware-host\Shared Folders\My Documents\Njevity\Blogs\CRM Report Authoring\CRM Re (text field with a 'Browse...' button)
- Details**
 - Name: Account Report with PreFiltering (text field)
 - Description: (empty text field)
- Parent Report**
 - Parent Report: (empty text field with a search icon)
- Categorization**
 - Categories: (empty text field with a search icon)
 - Related Record Types: Accounts (text field with a search icon)
 - Display In: Reports area;Forms for related record types;Lists for related record types (text field with a search icon)

At the bottom of the window, there is a status bar showing 'Status: New' and a zoom level of '100%'.

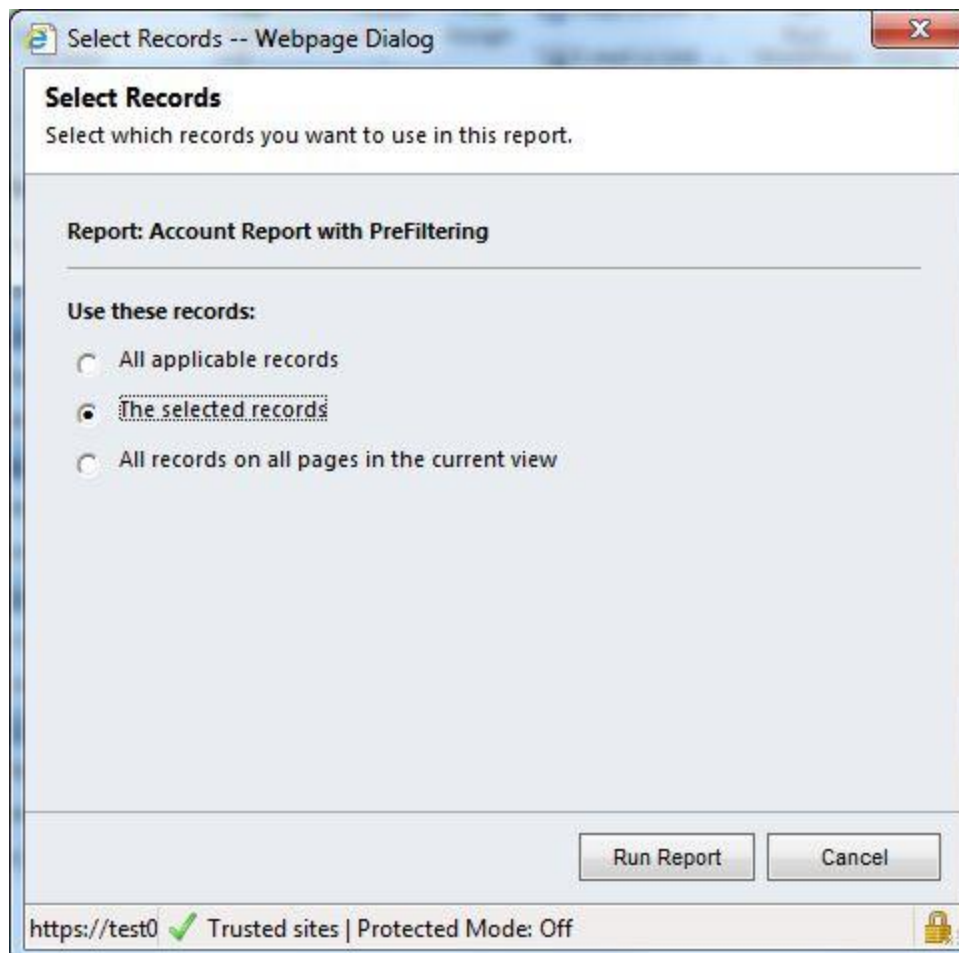
Once this is done, click **SAVE AND CLOSE** to upload and save the report to Dynamics CRM 2011.

Now, let's go run the report. Navigate to the Account List. Select a few accounts and click the **Run Report** button in the Account Ribbon. You should see the Account Report with PreFiltering report in the list of reports. Click it.

The screenshot shows the Microsoft Dynamics CRM interface. The ribbon at the top includes tabs for File, Accounts, View, Charts, Add, and Customize. The 'Accounts' tab is active, and the 'Run Report' button is highlighted. The main workspace displays a list of accounts under the heading 'Accounts: Active Accounts'. The list has columns for Account Name, Main Phone, Address 1: City, and Primary Contact. Four accounts are selected, indicated by checkmarks in the first column: Advanced Components (sample), Best o' Things (sample), Elemental Goods (sample), and Magnificent Store (sample). The status bar at the bottom indicates '1 - 15 of 15 (4 selected)' and 'Page 1'.

Account Name	Main Phone	Address 1: City	Primary Contact
A Store (sample)	555-0136	Renton	Adrian Dumitrascu (sample)
Advanced Components (sample)	555-0135	Dallas	Brain LaMee (sample)
Affordable Equipment (sample)	555-0162	Santa Cruz	Cal Francis (sample)
Basic Company (sample)	555-0174	Lynnwood	Cathan Cook (sample)
Best o' Things (sample)	555-0145	Los Angeles	Darren Parker (sample)
Blue Company (sample)	555-0131	Redmond	Forrest Chand (sample)
CJD Test account			
Designer Goods (sample)	555-0197	Redmond	Eva Corets (sample)
Elemental Goods (sample)	555-0127	Missoula	Gabriele Cannata (sample)
Grand Store (sample)	555-0135	Redmond	George Sullivan (sample)
Litware Inc. (sample)	555-0116	Phoenix	Marco Tanara (sample)
Magnificent Store (sample)	555-0135	Daly City	Patrick Steiner (sample)
Recreation Supplies (sample)	555-0171	Newport Beach	Susan Burk (sample)
Unusual Store (sample)	555-0178	Lebanon	Thomas Axen (sample)
Variety Store (sample)	555-0135	Port Orchard	Yvonne McKay (sample)

Choose to run the report on **the selected records**.



As you can see, the only Accounts that are included on the report are the ones that you selected. **This is a successful implementation of Pre-Filtering on the report.**

https://test01.crm.njevitytogo.com/?action=run&context=records&helpID=Account%20Report%20with%2 - Windows Internet Explorer

File Help

Edit Filter

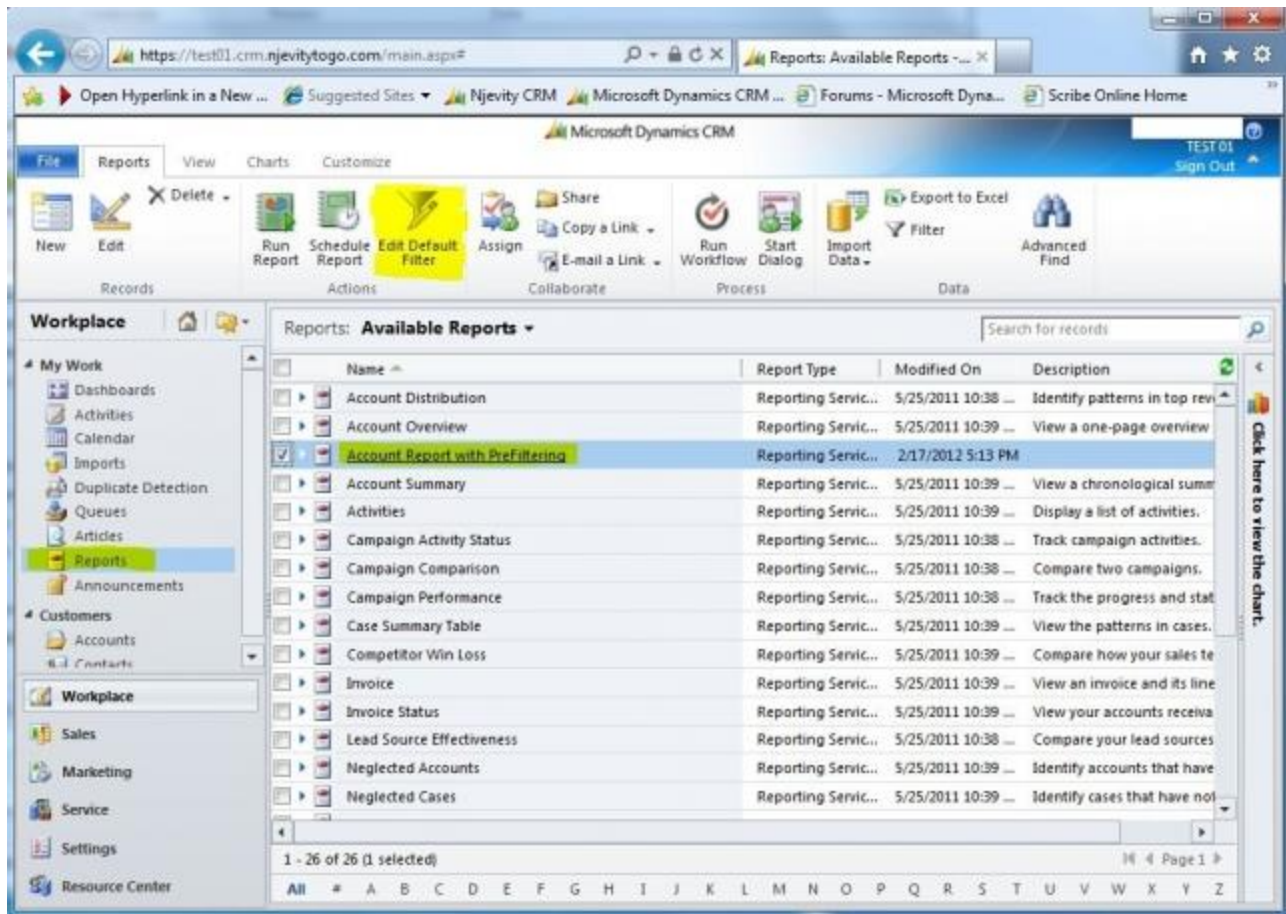
1 of 1 100% Find | Next

CRM Account Report

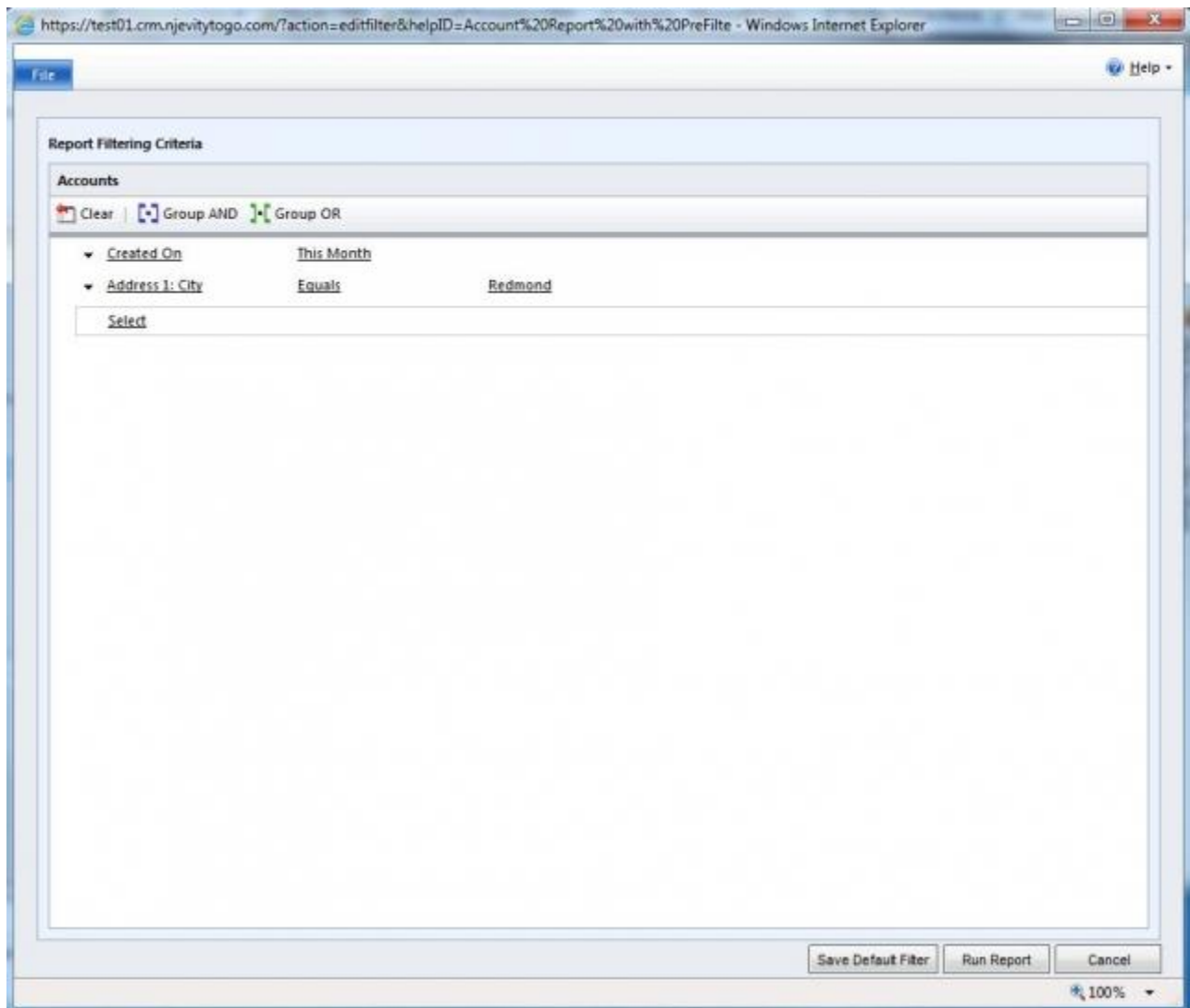
Account Name	Acct. Number	Primary Contact	City	Phone
Advanced Components (sample)	ACTBBDC3	Brain LaMee (sample)	Dallas	555-0135
Best o' Things (sample)	ACSHN2S4	Darren Parker (sample)	Los Angeles	555-0145
Elemental Goods (sample)	ABCO9M32	Gabriele Cannata (sample)	Missoula	555-0127
Magnificent Store (sample)	BOBC3J9U	Patrick Steiner (sample)	Daly City	555-0135

100%

Now, let's look at setting a default filter on the report. To do this, return to the Reports List (**Workplace >> Reports**) and find the **Account Report with PreFiltering** report on the list. Select it and click the **EDIT DEFAULT FILTER** button in the Reports List Ribbon.



On the Report Filter Criteria window, enter your filters just like you would in Advanced Find. Notice that you have access to every field and every relationship in CRM--not just the ones included in the report. In this case, I am selecting to only display Accounts that were created This Month and are in the City of Redmond. Click the **SAVE DEFAULT FILTER** button to save this as the default filter on the report. When you do this, this will be the filter applied by default when you run the report from the Reports List or from the Account List when you select to run the report on applicable records. If you run the report on the selected records as we did above, that filter will replace the default filter.



Users may change the filter each time they run the report by clicking the **Edit FILTER** button in the top left corner of the report.

https://test01.crm.njevitytogo.com/?action=editfilter&helpID=Account%20Report%20with%20PreFiltre - Windows Internet Explorer

File Help

Edit Filter

1 of 1 100% Find | Next

CRM Account Report

Account Name	Acct. Number	Primary Contact	City	Phone
Blue Company (sample)		Forrest Chand (sample)	Redmond	555-0131
Designer Goods (sample)		Eva Corets (sample)	Redmond	555-0197
Grand Store (sample)		George Sullivan (sample)	Redmond	555-0135

100%

This is how you can create a report and allow the users to specify any filters (parameters) when they run the report. And as you can see, making these changes does not require any report development work. It can all be done by the end user. Simple. Easy. Hard not to love it!