Aras Innovator Microsoft Reporting Services Guide

For use with Microsoft SQL Server 2008 R2

Aras Innovator 10.0

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1 Introduction

Aras Innovator's Report ItemType includes support for Microsoft's "Reporting Services" in addition to supporting the existing XSLT based reports.

Reporting Services is an integral component of SQL Server 2008, and any customer with a SQL Server 2008 license can install Reporting Services. (See installation instructions below).

Usage of this release is recommended only for those with advanced Aras Innovator and SQL training.

Primary benefits to switching from stylesheet driven reports to Report Server:

1. Query building is in SQL, and is graphical (same as in Enterprise Manager).
2. Report definitions are transportable, you can develop on your laptop, and then deploy to a production server.
3. Report layout is more drag-n-drop and has more powerful formatting tools.
4. The resulting reports are paginated.
5. The end-user can easily print, PDF, or export to Excel the report output.
6. Excel like Charts and graphs can be produced

Planned enhancements are a tighter integration of the authentication / permissions model, and finding an alternative to Visual Studio for end-use report layout.

To learn more about Microsoft Reporting Services visit:

Microsoft SQL Server: Reporting

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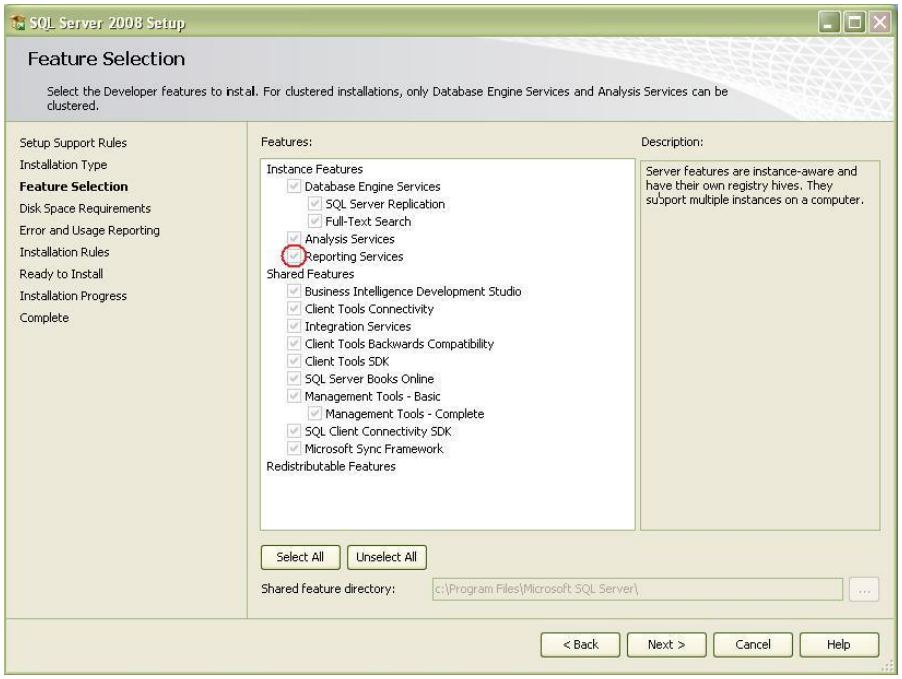
2 Installing Reporting Services

Reporting Services is a component of Microsoft SQL server 2008 and can be installed by selecting the "Reporting Services" option during the SQL server installation.



In addition to selecting the Reporting Services option, you can select "Analysis Services" which provides graphing and charting functionality.

Selecting the "Reporting Services" option also installs components of Visual Studio 2008 for report design and deployment

2.1 Installation is a component of SQL Server 2008

The following is a summary of dialogs to be used when installing SQL server 2008.

Use the default selections for dialogs not shown here

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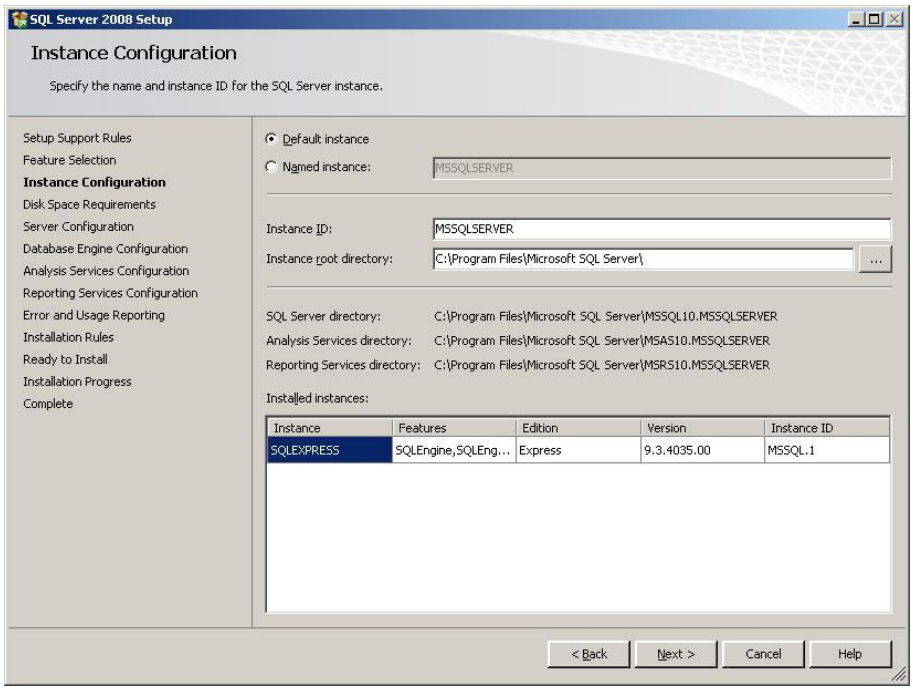
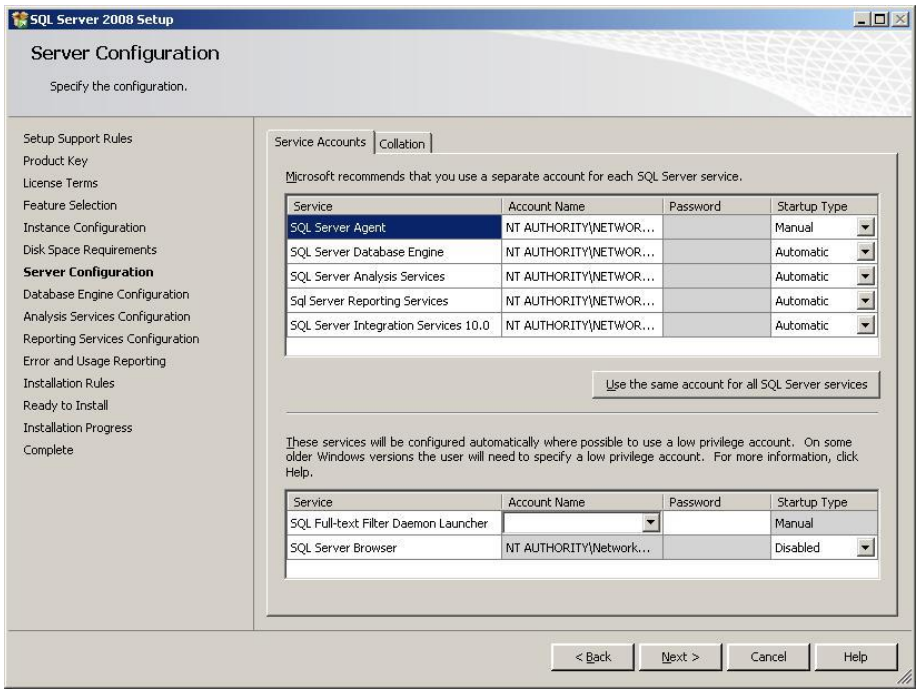
2.1.1 Default Instance



2.1.2 Service account Setup



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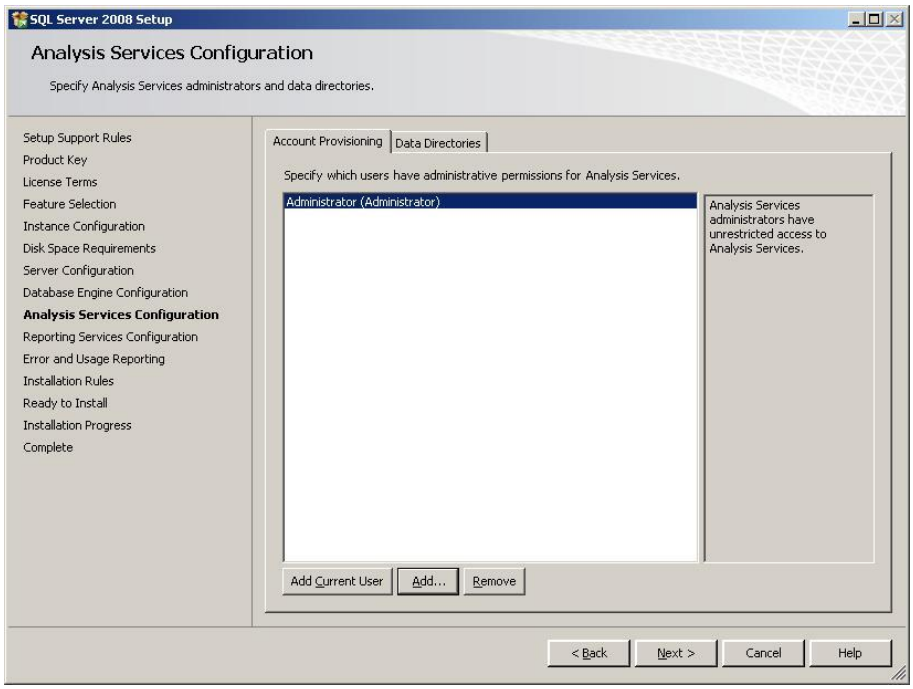
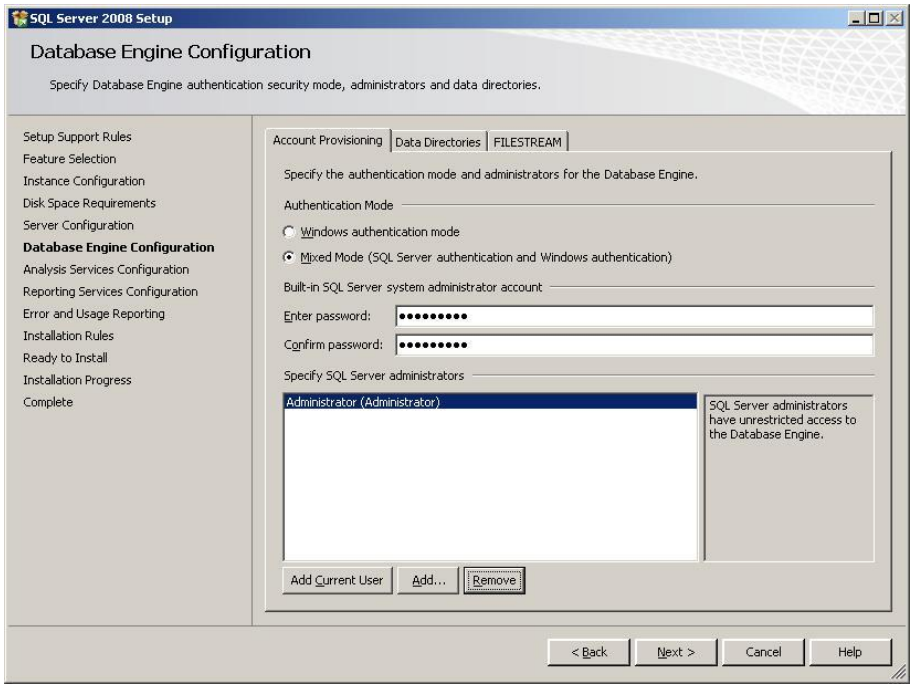
2.1.3 Analysis Services Configuration



2.1.4 Authentication Mode



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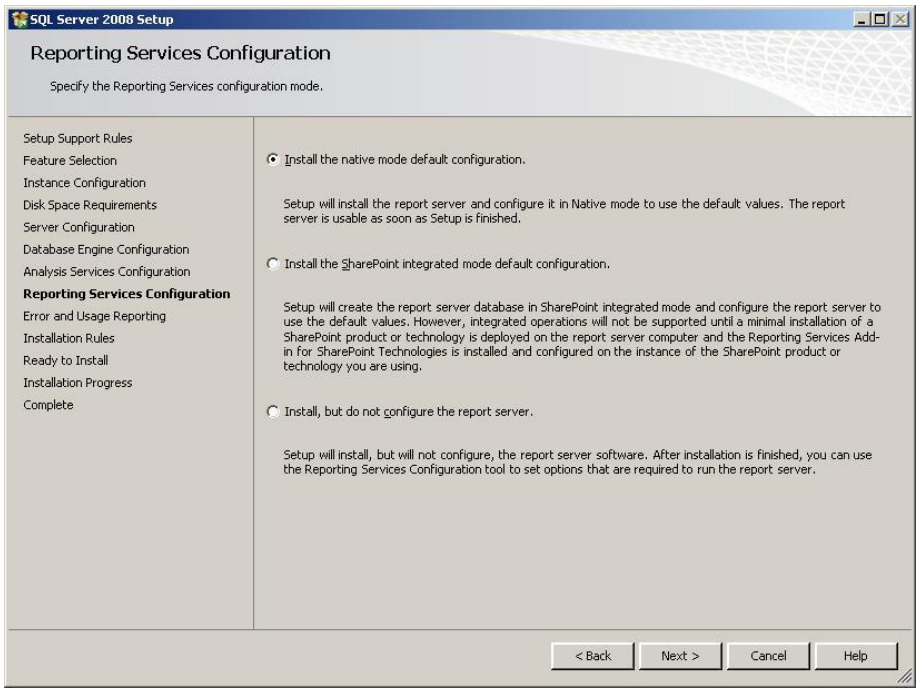
2.1.5 Reporting Services Options



2.1.6 Remaining Selections

The default selections can be used from this point forward.

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3 Configuring Reporting Services

The Reporting Services use Folders to organize Reports. The Aras Innovator integration with Reporting Services use as a default the Folder named "Innovator Reports"

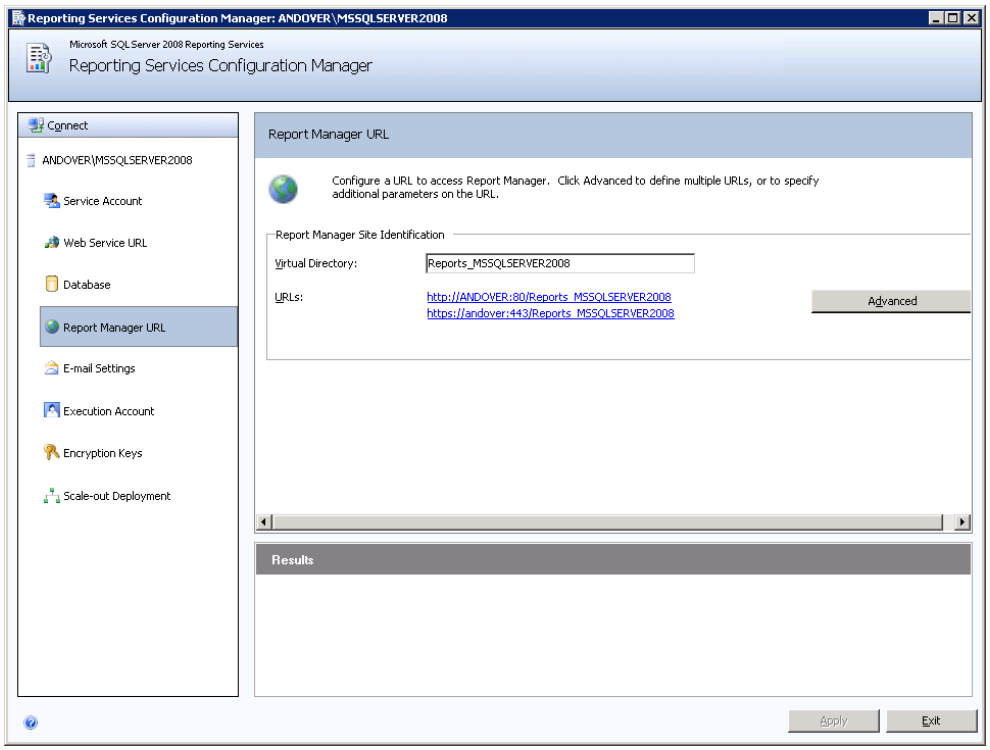
In this section we will configure the Reporting Services using the Report Manager by adding the "Innovator Reports" Folder and a Shared Data Source, which the Reports use to connect to the database.

3.1 Add Reports Folder

The Reporting Services ReportServer comes with a Report Manager page used to configure the Reports, Folders, Data Sources, and so on. This page has been integrated into Innovator client via an Innovator Report that opens the Report Manager page.

Open your browser with the URL http://localhost:8080/Reports (on a default install)

If your installation is not default, open the Reporting Services Configuration Manger to verify the URL



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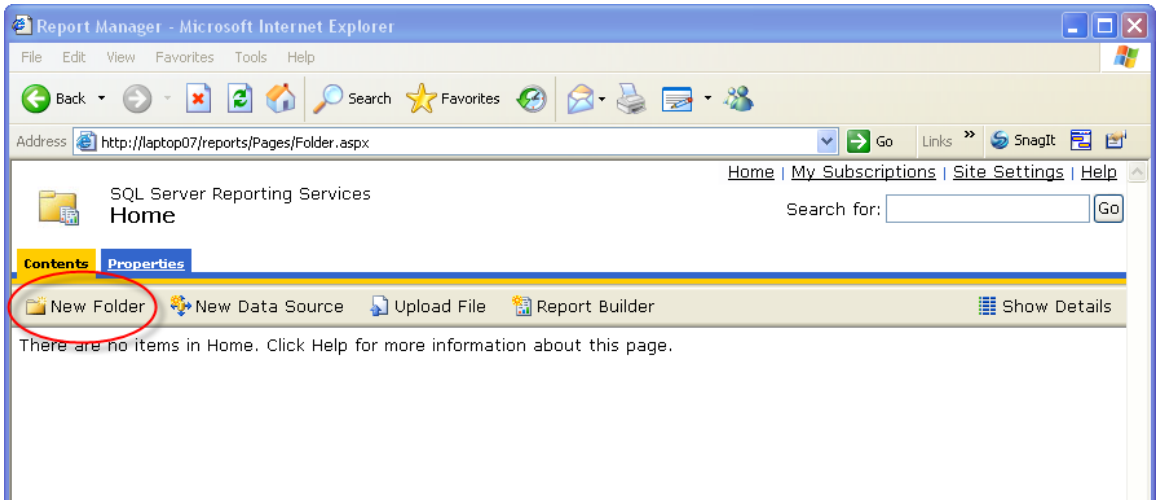
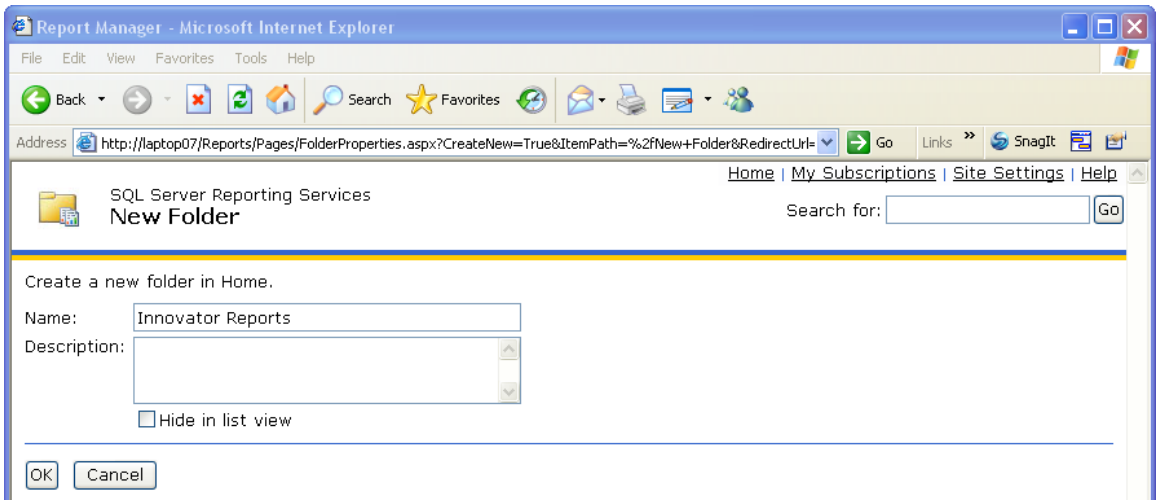
1. The **Report Manager** page will open in a new window as shown below:



2. Click on the "**New Folder**" button.
3. Enter "**Innovator Reports**" for the name and click the OK button.



If you use a folder named something other than "Innovator Reports", you will need to change the "Report Server Folder" variable in the database as well in Administration\Variables in the TOC. The default value for this is "Innovator Reports" but can be customized for each database. For the purposes of these instructions, we will assume the default value is used.

3.2 Add Shared Data Source

Once you add the "Innovator Reports" Folder navigate into it by clicking on the link. Now you will add a Shared Data Source for the Reports to use to connect to the database.

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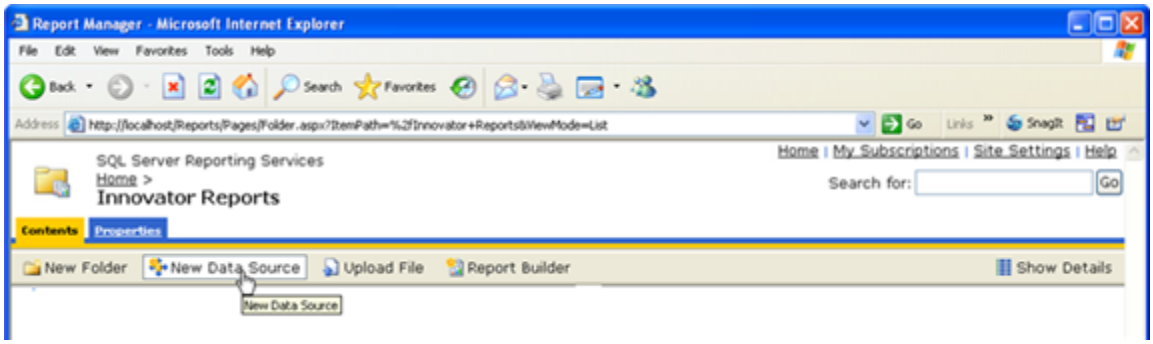
1. Click on the "**New Data Source**" button in the center of the page.



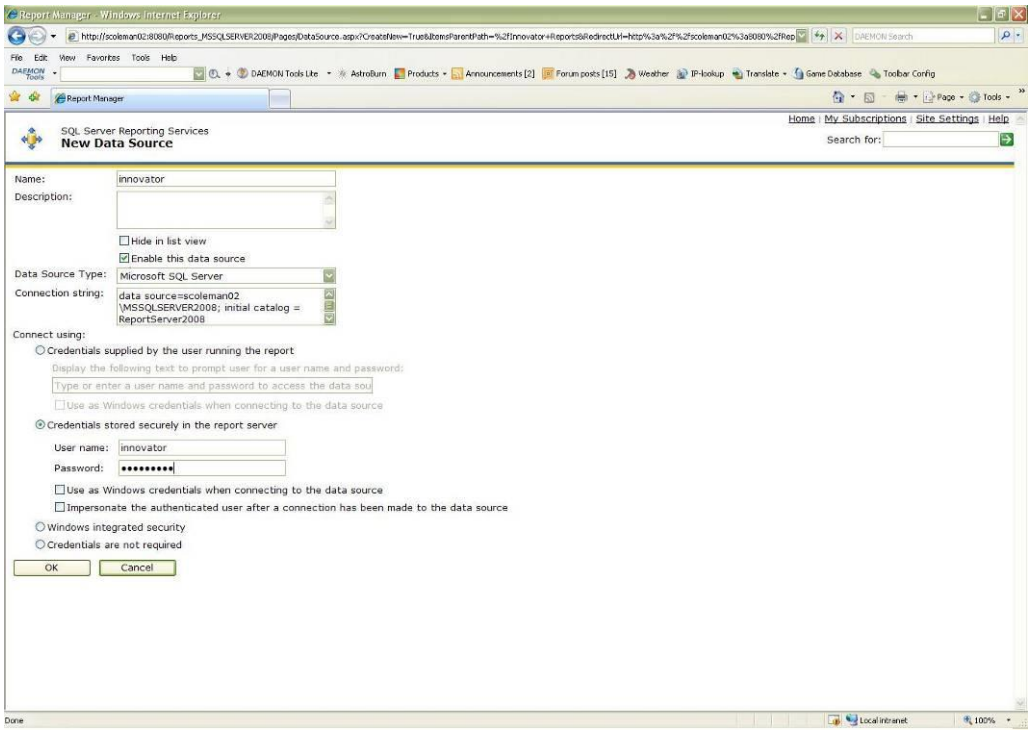
2. Enter "**Innovator**" for the **Data Source Name**. By using this same name for both the development and production servers exporting/importing Reports becomes simpler because there will be no need to reassign the Data Source for the Reports you import.
3. Enter the following for the "Connection String" replacing the values for the two parameters with the actual server name where SQL Server is installed and the actual database name.

   data source=<SQLServerName>**;initial catalog=**<InnovatorDatabase>

   e.g.

   data source=server1**;initial catalog=**innovator

4. Select the "**Credentials stored securely in the report server**" choice for the "**Connect Using**" Field and enter the login credentials for your database.
5. Click the "**Apply**" button to deploy the shared Data Source.



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3.3 Add Reporting User and Role

The ReportServer.asmx Web Service is the Report Server entry point for the Microsoft Reporting Services. The same Web Service is used to request Reports and administer the Report Server. The Web Service is by default configured to use Windows Authentication. You can't simply open the security for anonymous Web users because that would open the Report Manager as well.

This security model requires the User be authenticated when they request Reports. A dialog will open requesting the user's login credentials the first time they request a Report each time the browser is opened again. When requesting the Report from within Aras Innovator this would not be desirable. This also means the user must have a domain or local User Account on the server and that becomes an issue for not 100% Microsoft shops with Intranet only Aras Innovator.

The initial release of the Aras Innovator Reporting Services will use one shared User Account for all Report requests. The Aras Innovator Client will call the Aras Innovator Reporting Services Gateway to request Reports. The Gateway will submit the actual Report request using this shared User Account and propagate the results back to the client. The Report will render without the authentication dialog appearing.

If the user attempts to view the Report directly outside Aras Innovator they will get the authentication dialog as normal and unless the IT department shares the credentials the users will only be able to view the Reports through Aras Innovator.

The local User Account on the server by default is named "Reporting" with a default password will be "reporting" and must be mapped as a Role in the Report Server.

3.3.1 Add local User Account for Reporting

The administrator for the server where Microsoft Reporting Services is installed must add a new Windows User Account named "Reporting". Once the User Account is created you can configure Aras Innovator by setting the user name and password in the InnovatorServerConfig.xml configuration file:

```
<ReportingServices>
  <ReportServer>http://localhost/ReportServer/</ReportServer>
  <User>Reporting</User>
  <Password>reporting</Password>
  <Domain>Domain for the above User</Domain>
</ReportingServices>
```

Optional node, `<Domain>`, should contain the domain name you want to use to connect to Reporting services.

3.3.2 Add the Reporting Role

The Reporting User Account must next be mapped as a Role in the Reporting Services enabling this account Browser privileges.

1. Click on the "**Site Settings**" link in the upper right hand corner of the Report Manager page.

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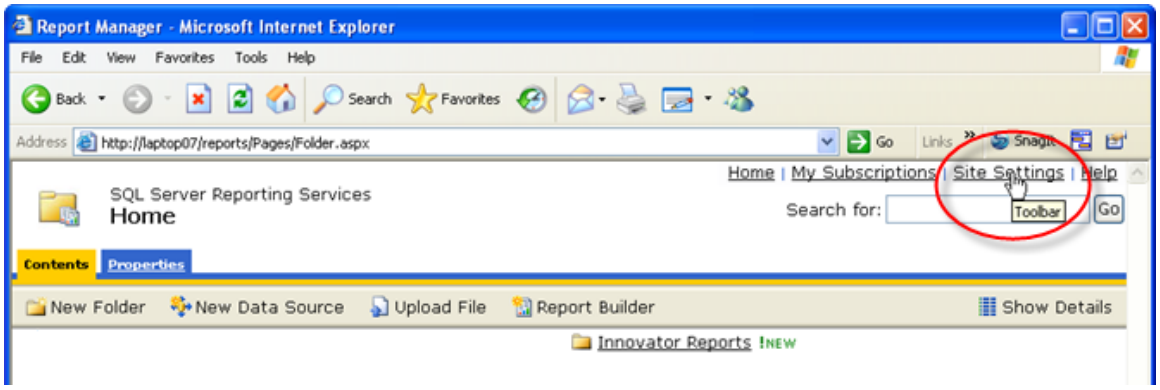
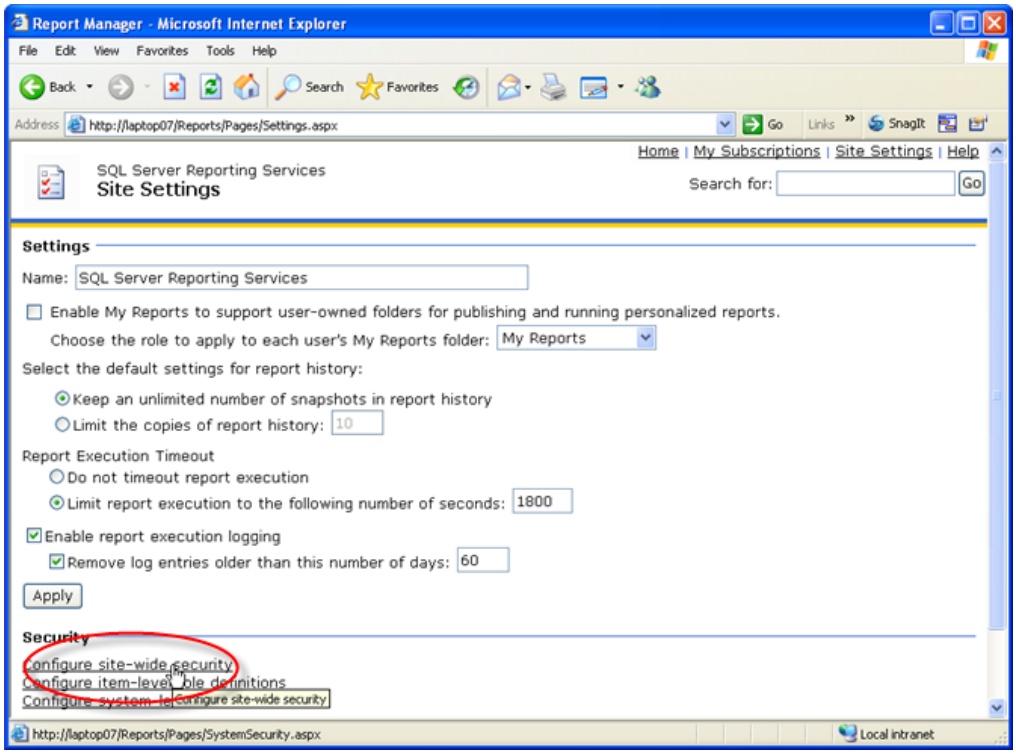
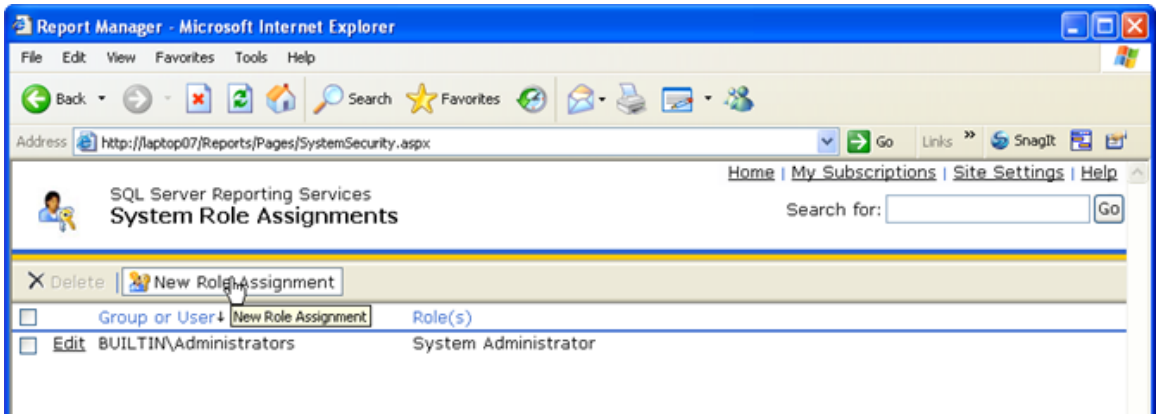


2. Next click on the "**Configure site-wide security**" link.



3. Next click on the "**New Role Assignments**" button to map the Reporting User Account as a Reporting Services Role.



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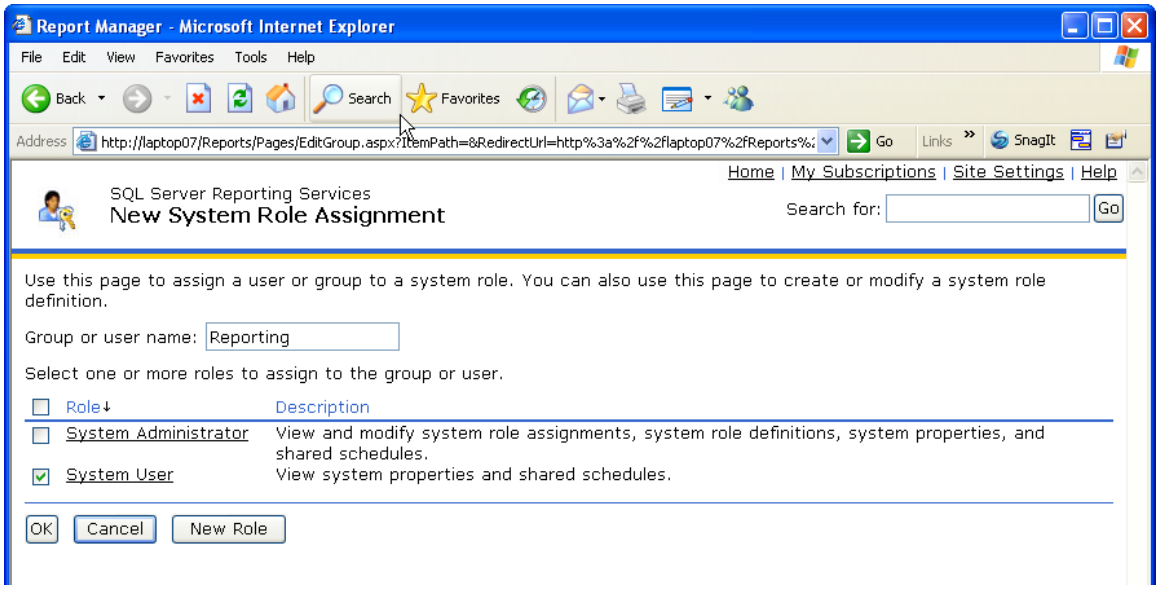
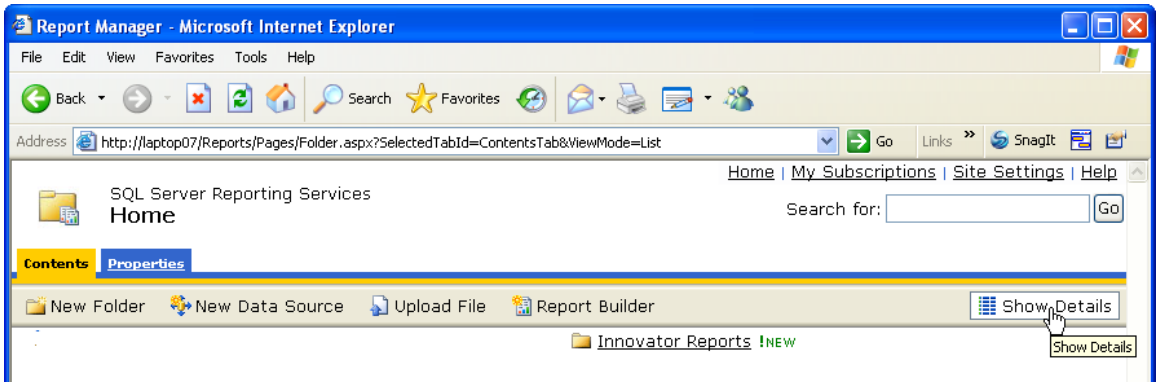
4. Enter the User Account name Reporting and check the "System User" checkbox and click the "**OK**" button to create the new Role.



5. Next we need to add the new Reporting Role to the "Innovator Reports" folder's security. Click on the "**Home**" link in the upper right hand corner on the page, then on Show Details and select the Edit icon for the Innovator folder.



6. Click on the "**Security**" link on the left had side of the page to open the Security page for the Innovator Reports folder.

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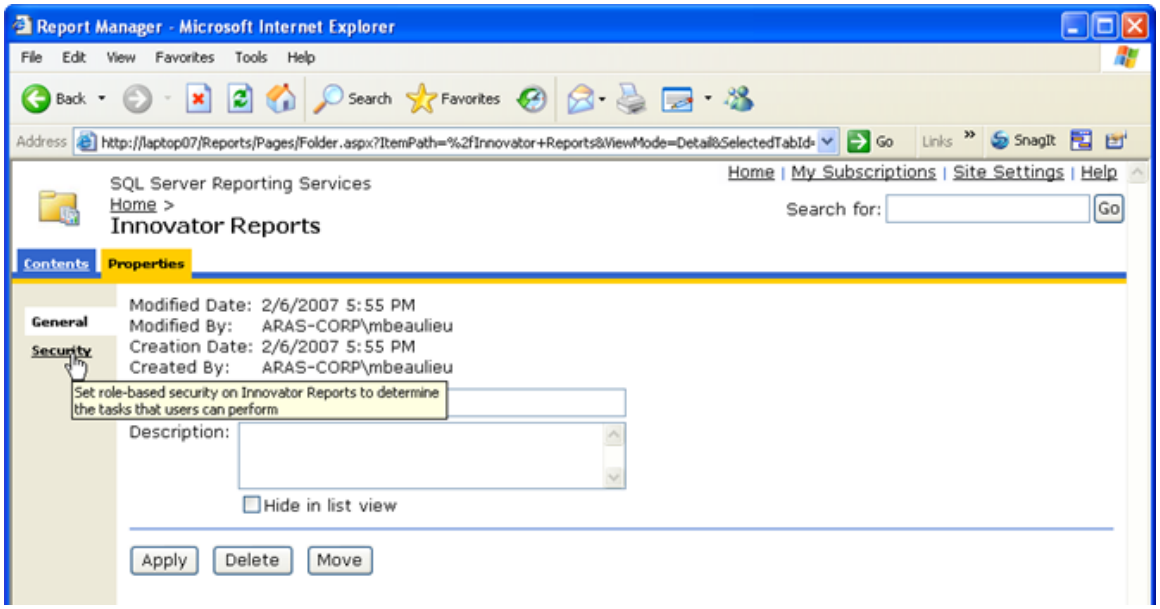
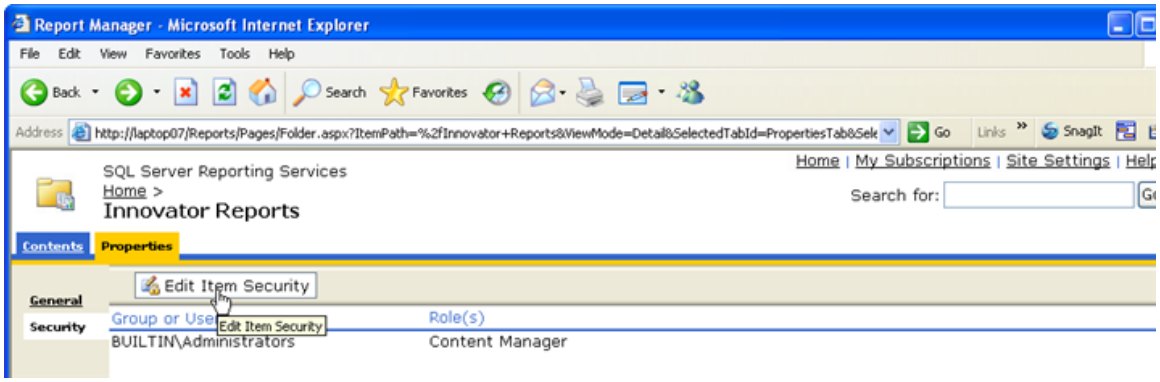
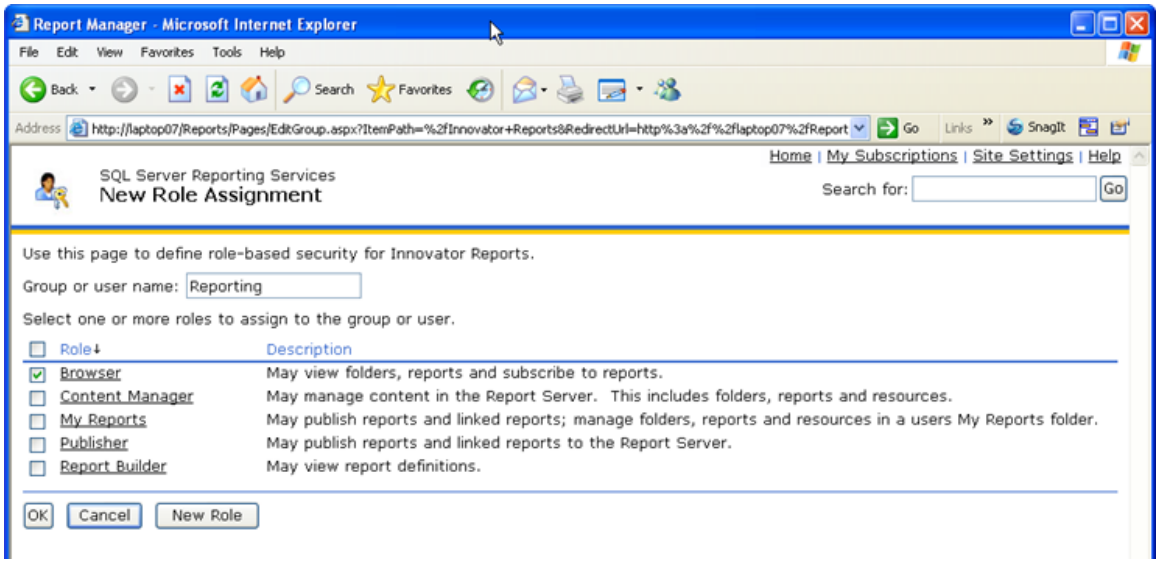


7. Click on the "**Edit Item Security**" button.



8. Enter the Reporting Role and check the "**Browser**" checkbox and click the "**OK**" button to create a new Role Assignment for the Innovator Reports folder.



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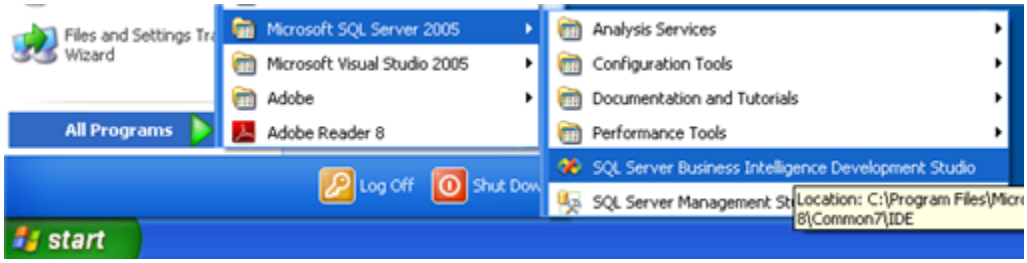
4 Using Visual Studio for Report Design

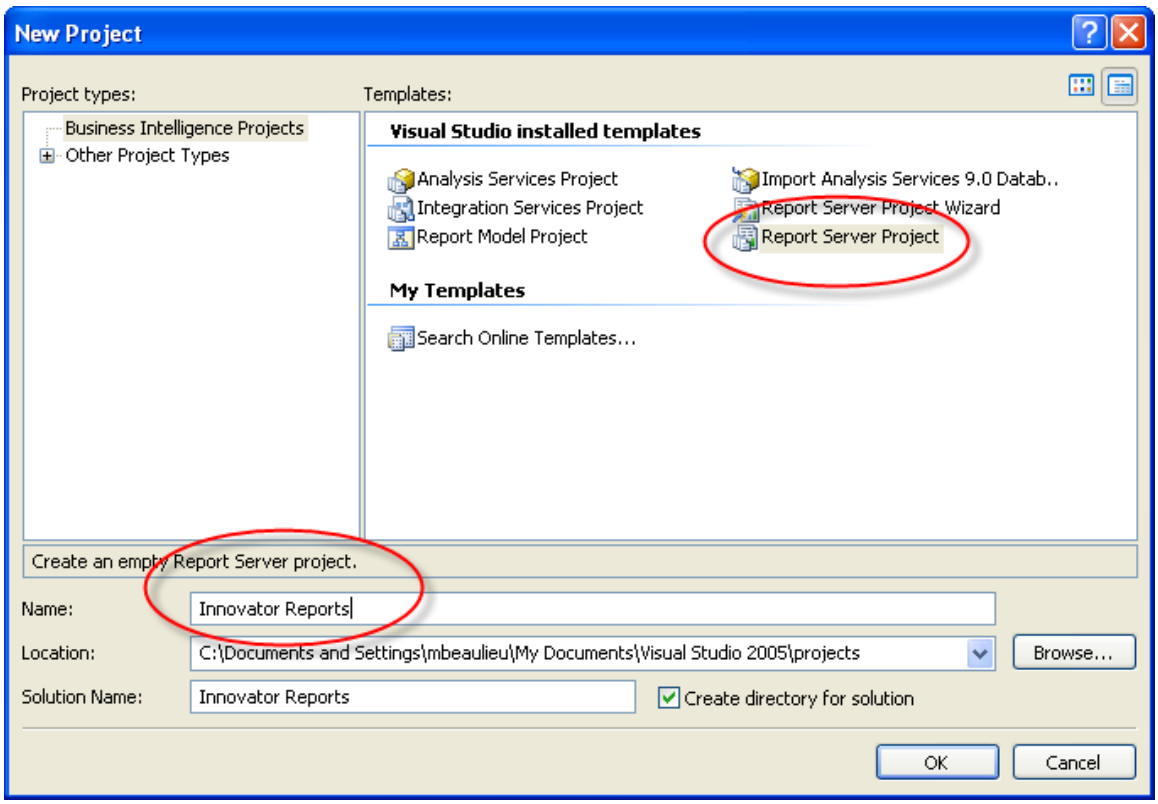
Once the Reporting Services is installed you need to configure Visual Studio to create a Project to hold the Reports. Plus configure a Shared Data Source, which is the database connection information for the Reports.

NOTE: It is required that you follow the exact naming conventions as shown here to ensure that the Aras Innovator integration with the Reporting Services will work correctly.

4.1 Create a New Report Project

Start **Microsoft SQL Server Business Inteligence Development Studio** and create a new **project** named "**Innovator Reports**". This becomes the Reporting Services Folder to hold the Reports for Aras Innovator.





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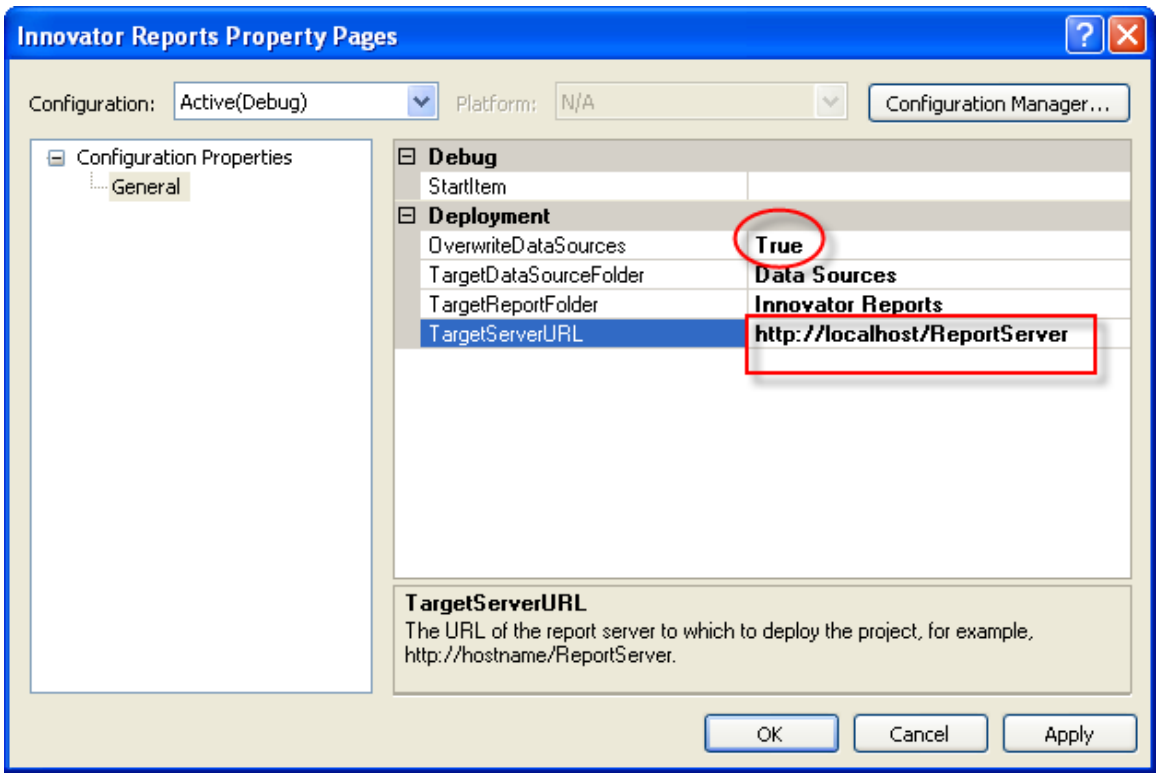
4.2 Configure Project Properties

Open the "**Solutions Explorer**" panel from the menu **View->Solutions Explorer** if it is not already opened.

Right mouse click on the "**Innovator Reports**" folder and select the **Properties** context menu choice.

On the Properties dialog set the **TargetServerURl** field to the URL of the Report Server. For example, http://localhost:8080/ReportServer where the actual name of the server host name is entered in place of localhost.

Also set the **OverwriteDateSources** flag to True.



4.3 Add New Shared Data Source

In the same "Solutions Explorer" panel right mouse click on the "**Shared Data Sources**" folder and select "**Add New Data Source**" context menu choice. Click on the **Edit button** to configure the new datasource

4.3.1 Connection Properties

1. Select or enter the "**Sever name**" for the machine SQL Server is installed.
2. Select the "**Use a specific user name and password**" radio button choice and enter the login credentials for the database and check the **Save My password**.
3. Select or enter the "**Database name**".

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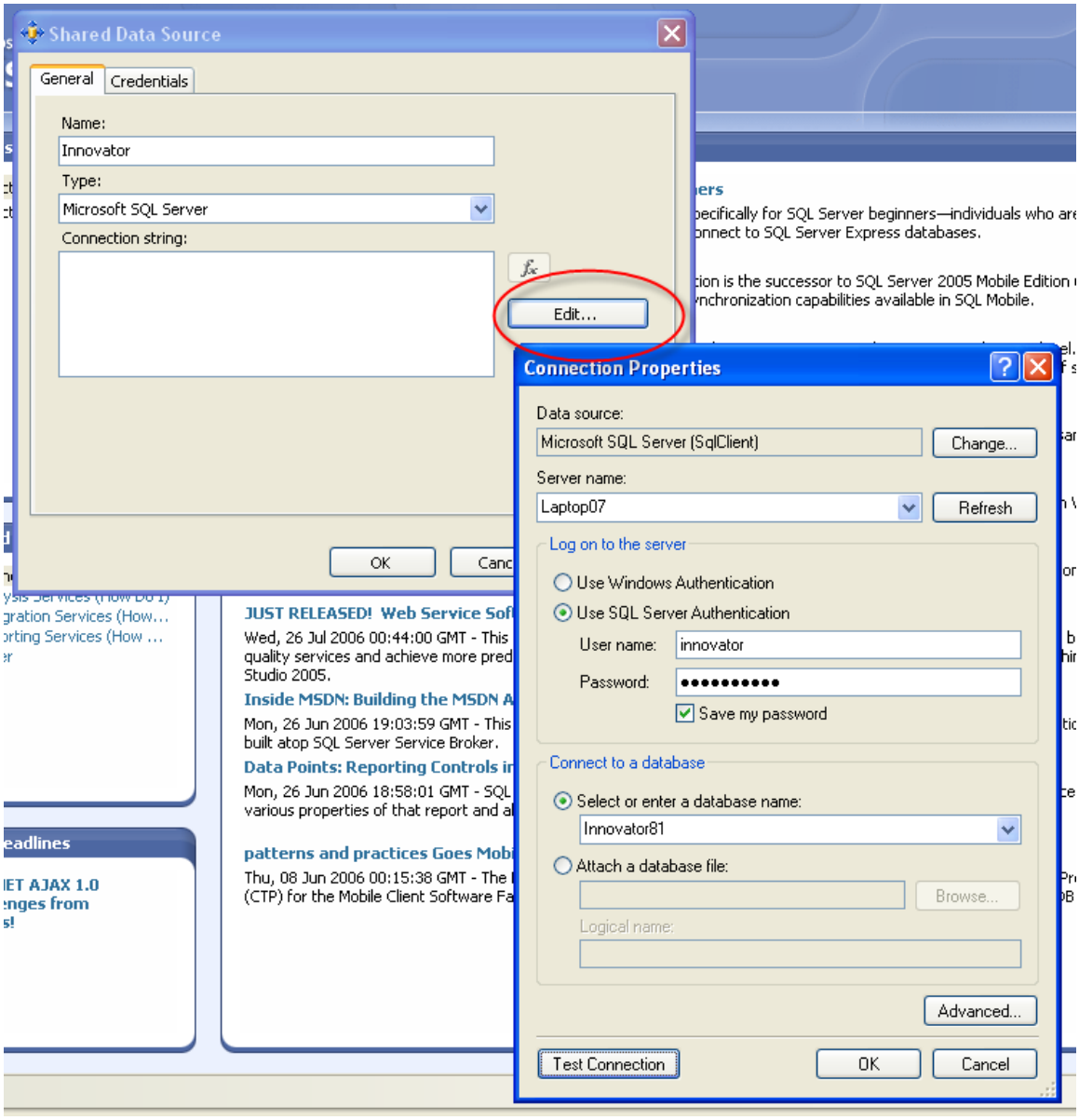

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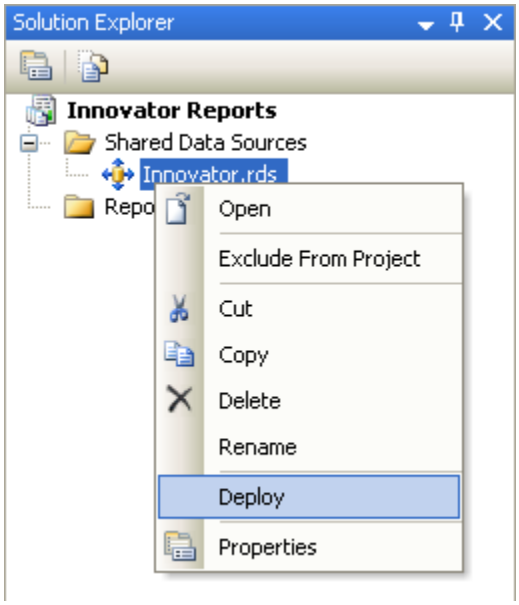
4.3.2 Deploy the Shared Data Source

By default the name of the Shared Data Source is the name of the Database you selected above. You can rename this if you want. Finally you need to deploy this new Shared Data Source.



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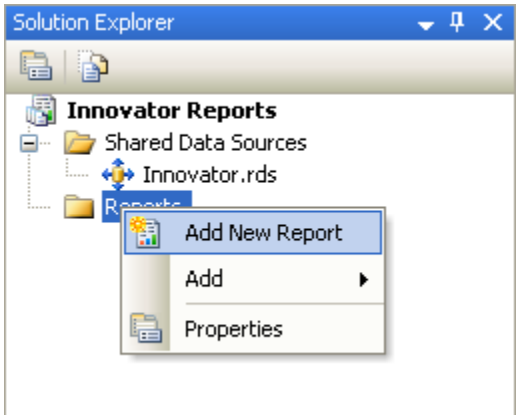
5 Creating your First Report

The following illustrates using the Report Wizard to create a new Report. For this Report we will create a simple User Directory Report showing the Users First Name, Last Name, Email, Phone Number, and Company Name. The following is a screen shot of the Report that we will be creating:

5.1 Start a New Report using the Wizard

From the "Solution Explorer" panel right mouse click on the "**Reports**" folder and select the context menu choice "**Add New Report**".



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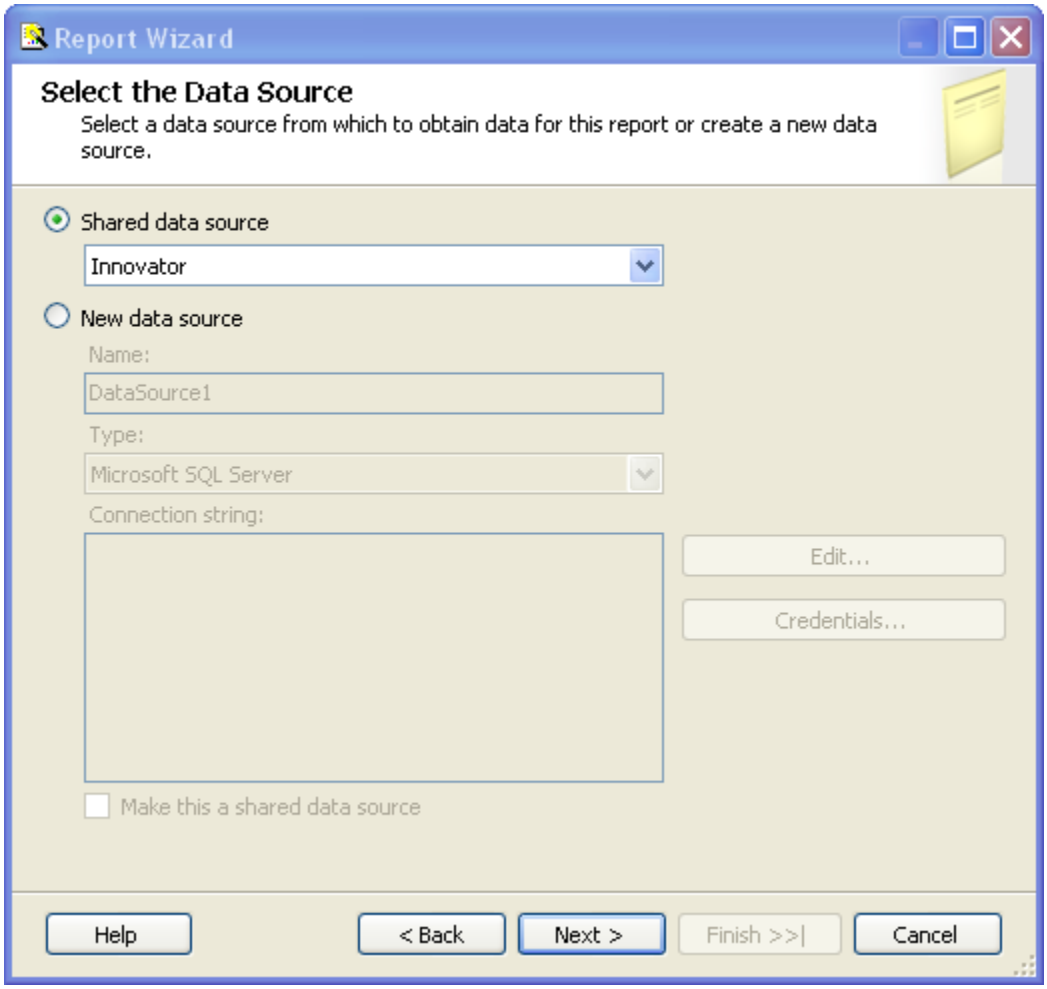
5.2 Select the Data Source

You can create a unique Data Source for this Report but it typical that you use the default Shared Data Source that you just created above.



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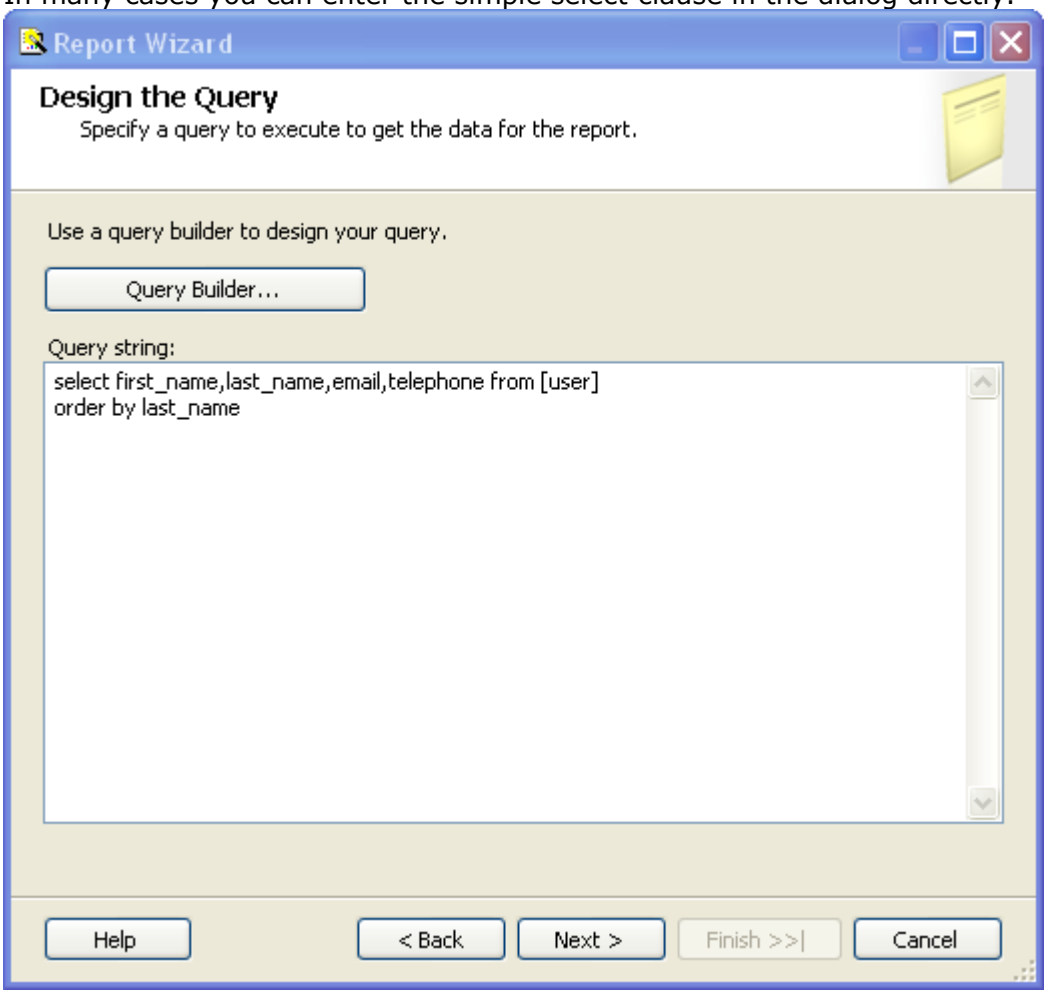
5.3 Design the Query

You need to provide the SQL Select query that will get the data for the Report. In many cases you can enter the simple select clause in the dialog directly.



NOTE: It is possible to pass Named Parameters into the query such as:

```
SELECT * FROM [PROJECT] WHERE id=@ID
```

The "Edit…" button opens a Query Builder interface, which will be covered in more detail later.

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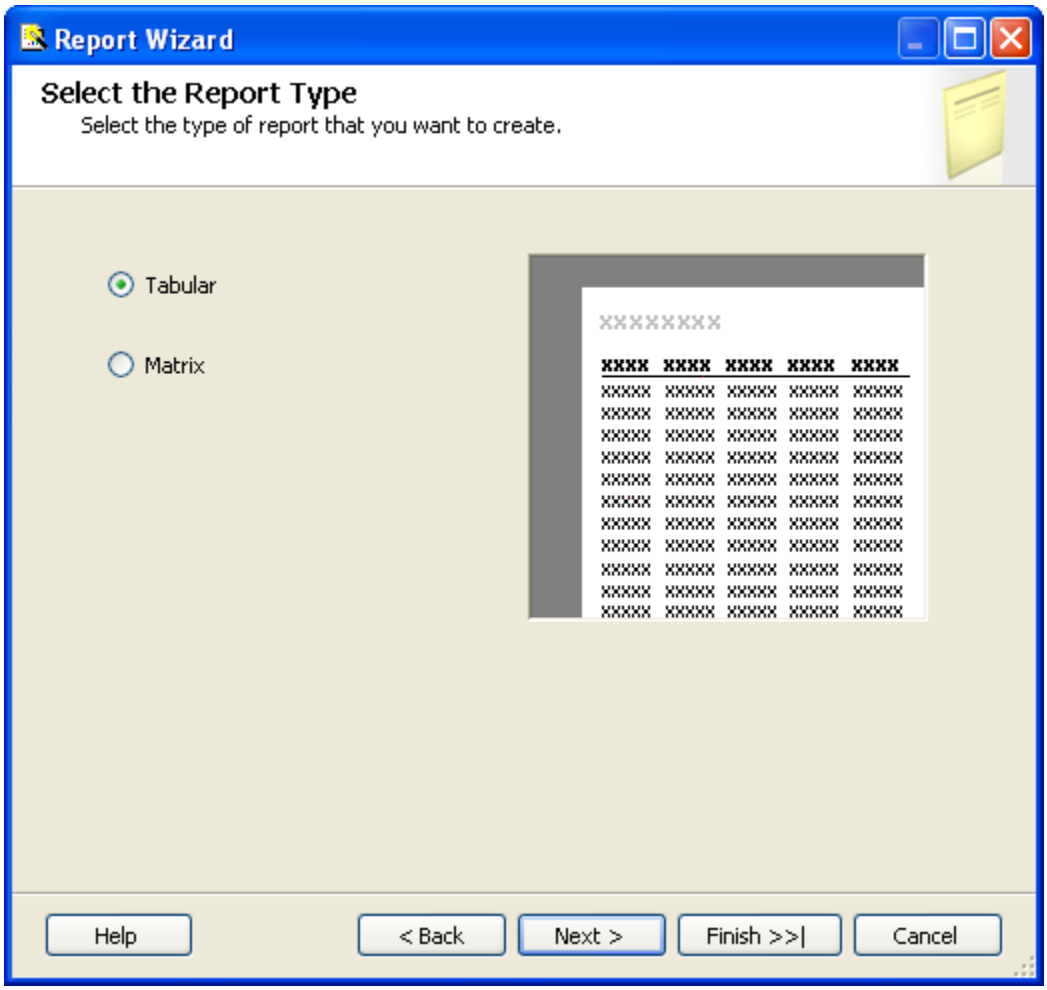
5.4 Select the Report Type

There are two choices for the Report Type: Tabular (column layout) and Matrix (rows and columns layout). Select the Tabular type:



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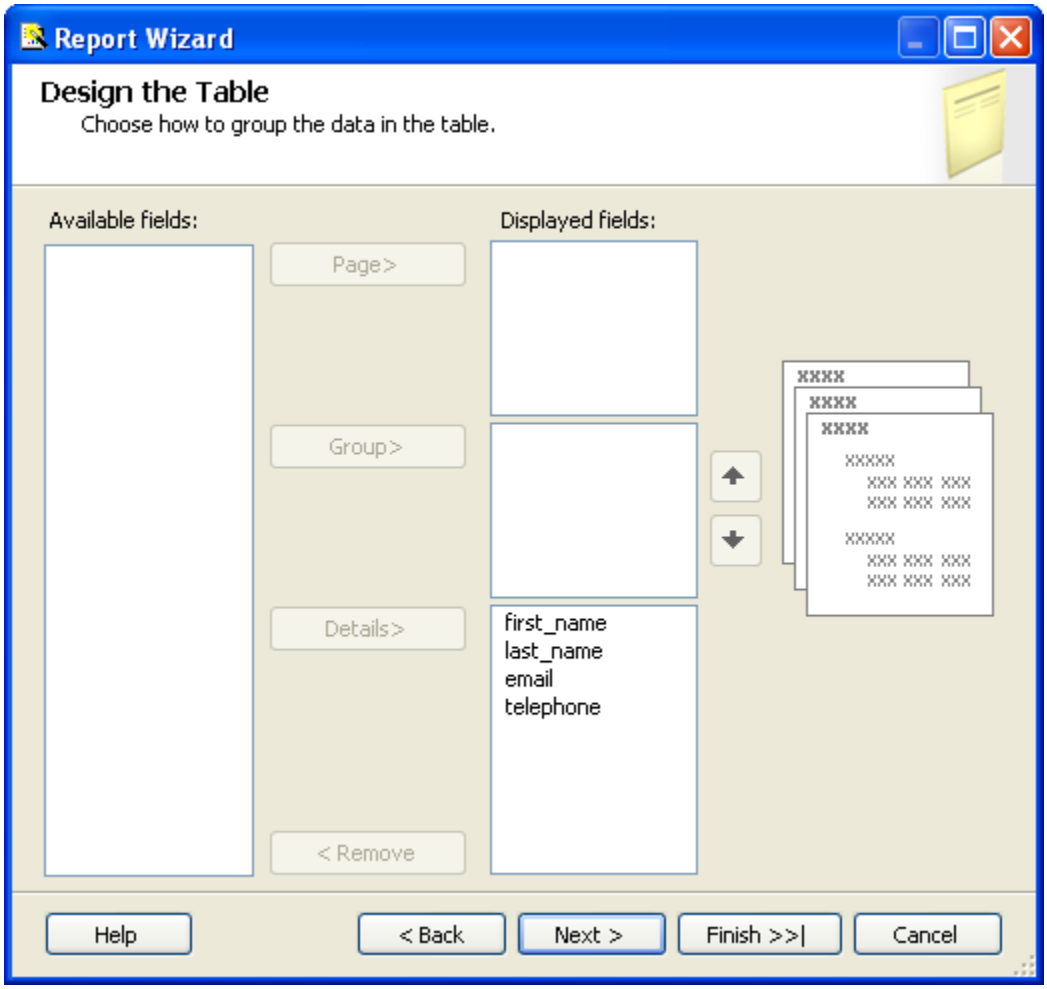
5.5 Design the Table

Select the fields that you want to show on the Report. In this case we were selective about which fields to return from the query select clause so we want all the fields.



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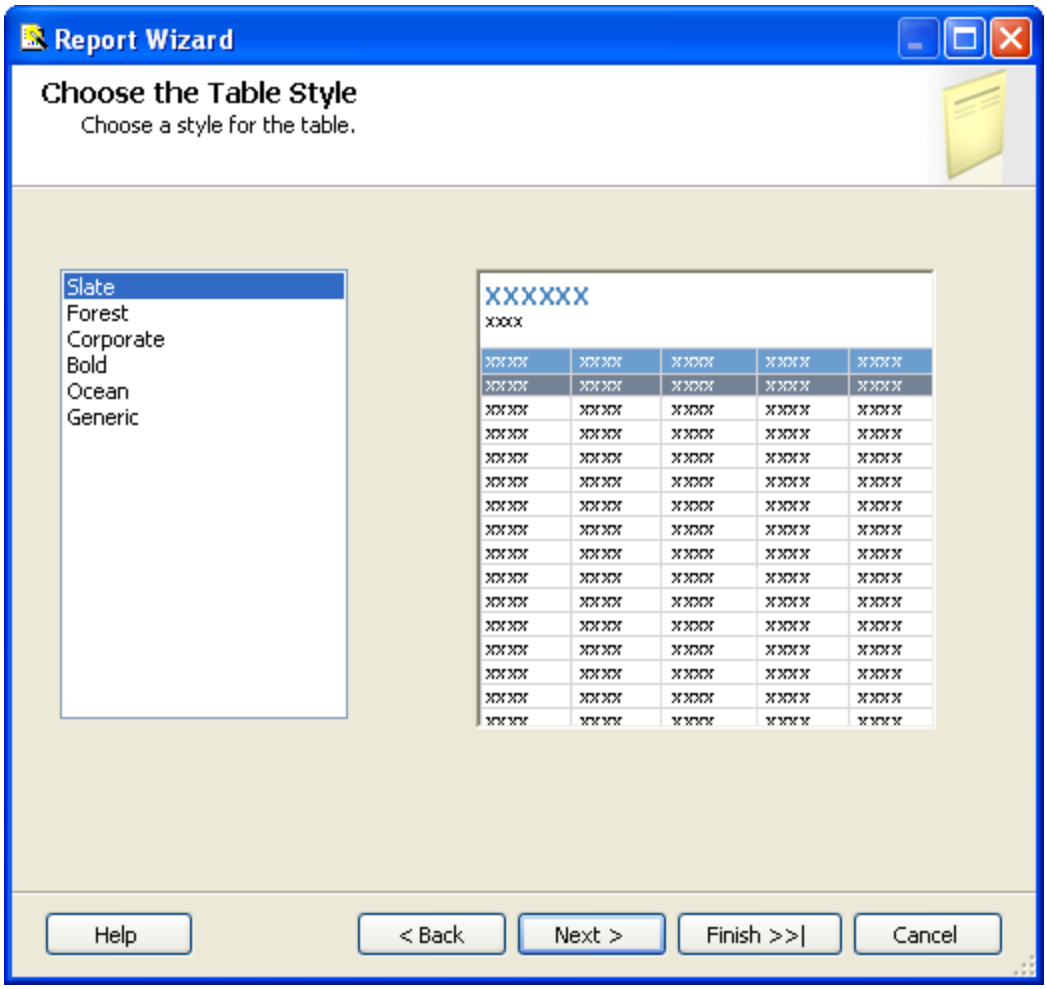
5.6 Choose the Table Style

Select the style for the table for the Report. This example will simply use the default bold style.



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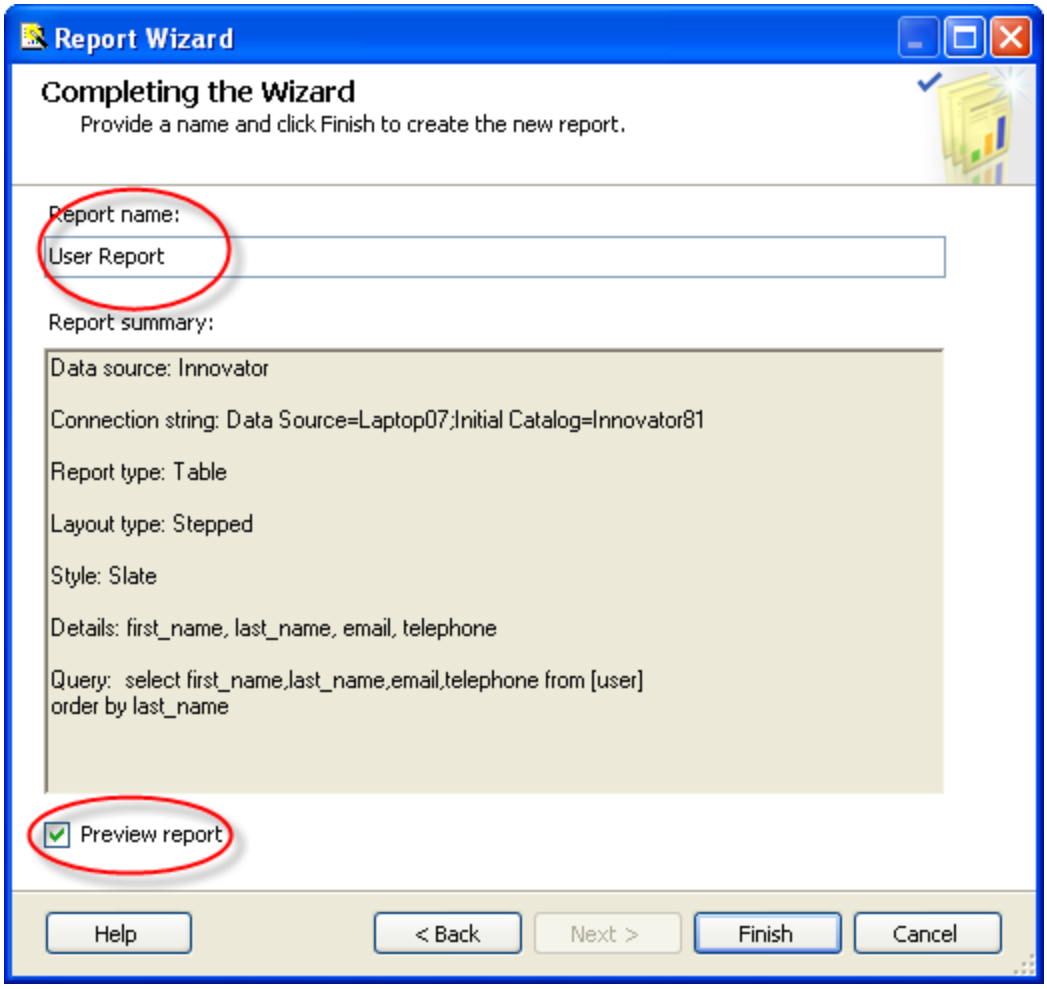
5.7 Name the Report

The final step in the Report wizard is to name the Report. **NOTE**: The Report Name must be chosen to be meaningful and will be the same name you set as the name of the Report Item in Aras Innovator.



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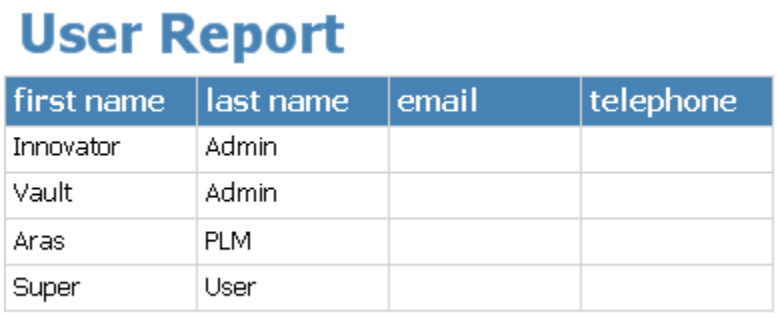
5.8 Wizard Report Results

The Report wizard will build the report, which will look like the following screen shot:



User Report

first name	last name	email	telephone
Innovator	Admin		
Vault	Admin		
Aras	PLM		
Super	User		

Once the Report is opened in the Layout Tab you can make further changes as you please. In this example we will camel case the column headers for example, first name becomes First Name and we will resize the width of the table and the columns to take up 6.5 inches horizontally.

5.9 Visual Studio Layout

The Report pane has three Tabs:

- **Data**: For editing the query for the Report. Look at the appendix in this document to see a more complex Report query example, using the graphical query builder instead of the wizard.
- **Layout**: For visually designing the Report with drag and drop functionality.
- **Preview**: For viewing the finished report with real data.

The "**Properties**" panel on the right is used for setting fonts, color, and other visual properties.

The "**Fields**" panel on the left is used to drag database fields onto the report.

The "**Toolbox**" panel also on the left is for dragging Report controls onto the Report layout. This is how you can add tables, labels, images, and charts to the Report layout.

Tips:

- Use the **View->Fields** menu pick to open the Fields panel when in Layout mode.
- Use the **View->Toolbox** menu pick to open the Toolbox panel.
- To open the Header and Footer right mouse click to open the context menu in the pink field in the Report layout.

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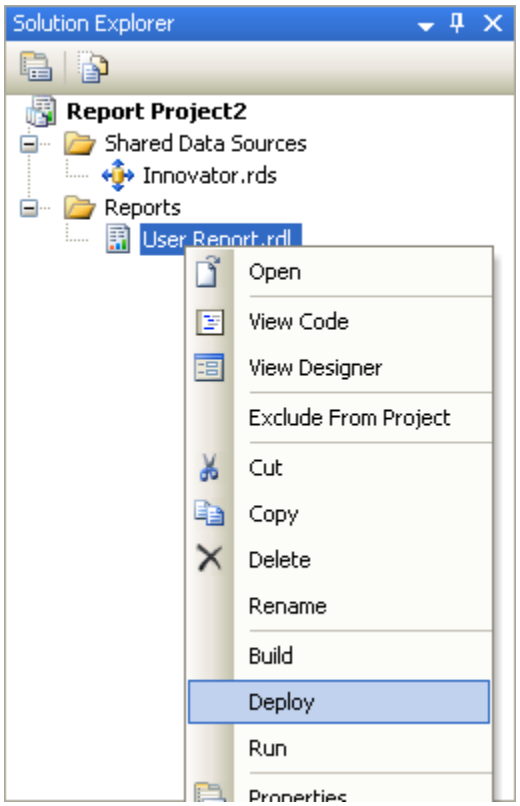
5.10 Deploying the Report

Once you are satisfied with the Report query and layout as viewed from the Preview Tab you need to deploy the Report to the Reporting Service. From the "Solution Explorer" panel right mouse click on the "User Directory" Report item and select the context menu choice Deploy. Watch for error messages in the output window at the bottom of the frame.



5.11 Confirm Deployment

To confirm the new report has been deployed, open IE Browser and navigate to http://localhost:8080/Reports. You should see the "**Innovator Reports"** folder. Click on that link and you should see the report you just created

Select the hyperlink for the new Report and it will be opened and run the Report.

NOTE: The URL for directly testing this report outside of Aras Innovator would look like this: http://localhost:8080/ReportServer?/Innovator Reports/User Directory

5.12 Running the Report from within Aras Innovator

In order for users to run the new Reporting Services Report from within Aras Innovator you need to create an Innovator Report Item. The important settings to enable the Innovator/Reporting Services interface are:

- The Innovator Report Item name must be exactly the same as the Reporting Services Report name.
- The Location Field choice must be set to the new "**Service**" option.

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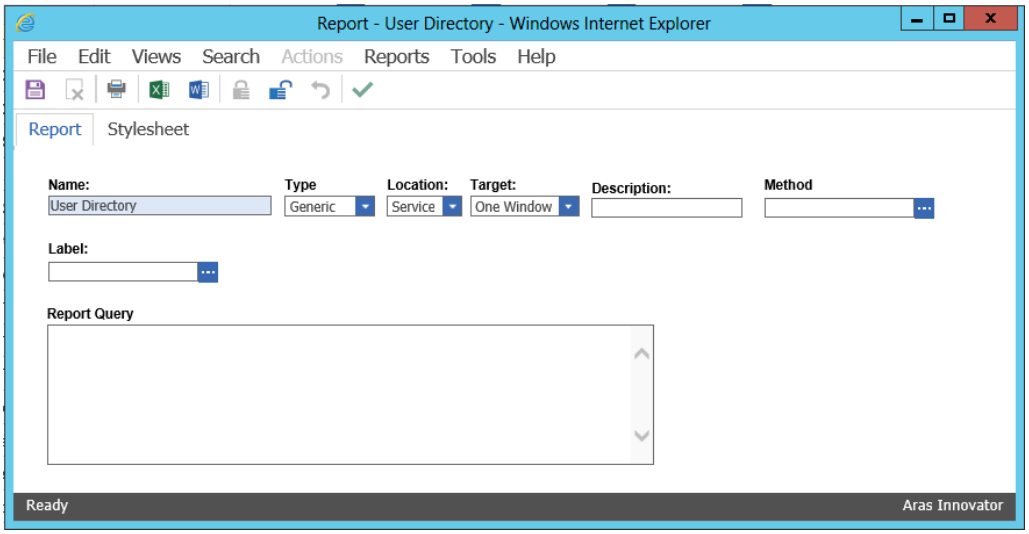
- The Report Query Field specifies the parameters that will be passed to the Report Server.

5.12.1 Adding Aras Innovator Report Item

- Log into Aras Innovator as admin.
- Navigate to the /**Administration/Reports** off the main tree item.
- Click the New button on the main Toolbar.
- When the new Report Form opens enter the name of the Report (again this is the name you specified when you created the Report in Visual Studio).
- Select the Report Type, which in this case is "**Generic**" meaning this Report, is available always.
- Select the Report Location, which in this case is "**Service**".
- Select the Report Target, which in the case we want "**Window**".
- Because this sample Report is of type ItemType there is no Report query Value.



Note: If you are using FireFox, you have to manually enter a stylesheet under the **Stylesheet** tab.

- Test the Report by clicking on the Reports main menu bar choice and you should see the new "**User Directory**" choice. Click on the menu choice and you should see a new window open with the "User Directory" Report.

5.12.2 Passing Named Parameters to the ReportServer

As bullet 4 describes in the section *2.1 Report Server Variable* the value of the Innovator Report Item Property report_query is appended to the ReportServer URL providing additional parameters to control the ReportServer.

For example, the ID of the Item can be passed as the Named Parameter @ID for the SQL Select for the Reporting Services Report as in this example:

```
SELECT * FROM [PROJECT] WHERE id=@ID
```

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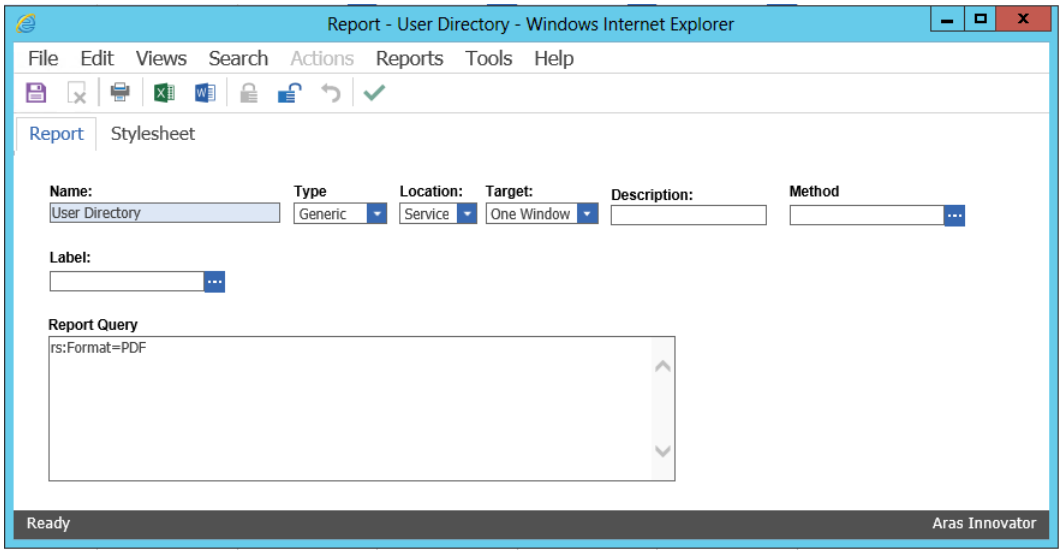
To pass the ID for the context Item (the selected Item) on the URL to the ReportServer the Innovator Report Item report_query Property would look like this:

```
np:id=<xsl:value-of select="@id"/>
```

This is actually an XSLT stylesheet fragment and is the directive for Innovator to add the string `&id=ACBDEF0123456789ACBDEF0123456789` to the end of the ReportServer URL (but the actual ID value will be used of course).

In this case the Innovator Report is of type *Generic* so no ID is required but perhaps we want the Reporting Services Report to be returned in PDF or Excel format. We can control the ReportServer by adding the following parameter as the report_query value for the "User Directory" Report: `rs:Format=PDF`



Note that if you need to include more then one parameter for the report_query value you will need to use the Entity `&` rather then the actual & symbol to delimit the parameters. Recall that the report_query value is eventually part of the query_string for the URL to the ReportServer but is actually an XSLT stylesheet fragment and so the special symbols like <, >, and & need to be protected in XML need to be entered as Entities < > and & respectively.

For example, to pass the Named Parameter ID and also the Format PDF in the same report_query the value would look like this:

```
np:id=<xsl:value-of select="@id"/>&amp;rs:Format=PDF
```

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6 Report Server query_string Parameters

There are several parameters that you can use to control how the Reporting Services run your Report requests. You include these in the Innovator Report Item's report_query property, which the client will then use to form the query_string for the ReportServer request:

6.1 Named Parameters

Named Parameters passed onto the SQL Select query. For example,

np:last_name=Kohl

Would map the value Kohl to the Named Parameter @last_name in the SQL Select:

SELECT * FROM [USER] WHERE last_name=@last_name

6.2 Format Parameter

Format parameter to control the format the Report is rendered:

rs:Format=XML
rs:Format=PDF
rs:Format=HTML4.0
rs:Format=MHTML
rs:Format=EXCEL
rs:Format=Word

6.3 Report Toolbar

Turn off the Report Toolbar:

rc:Toolbar=false

6.4 Parameters Form

Turn off the Parameter Collection area above the Report, which is a simple dynamically created Form with Fields to allow the user to enter input for the Named Parameters for the SQL Select query. The Named Parameters passed on the ReportServer URL query_string are shown and the user fills in the rest:

rc:Parameters=false
rc:Parameters=Collapsed

6.5 Zoom

Control the zoom:

rc:Zoom=100
rc:Zoom=% zoom as integer
rc:Zoom=Page Width
rc:Zoom=Whole Page

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6.6 Reports Folder

The default Folder where Reporting Services Reports are deployed is in "Innovator Reports" however, you may deploy the Reports in other Folders and you specify this using the this Paramater:

irs:Folder=*Your Folder Name*

6.7 Report Name

The Aras Innovator client will automatically append the Parameter to specify the Report to run on the query_string, which is the name of the Innovator Report Item. However, if run reports programmatically you may need to set this directly yourself:

irs:Report=*Your Report Name*

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7 Report Manager

The Reporting Services ReportServer comes with a Report Manager page to administer the Reports, Folders, Data Sources, and so on. This page has been integrated into Aras Innovator client via an Innovator Report that opens the Report Manager page (see section *2 Configuring Aras Innovator* for more information about this Report Item).

Reports that are created and tested on the development machine can be moved to a production ReportServer by exporting the RDL file for the Report from your local development machine and then importing it into the production machine.

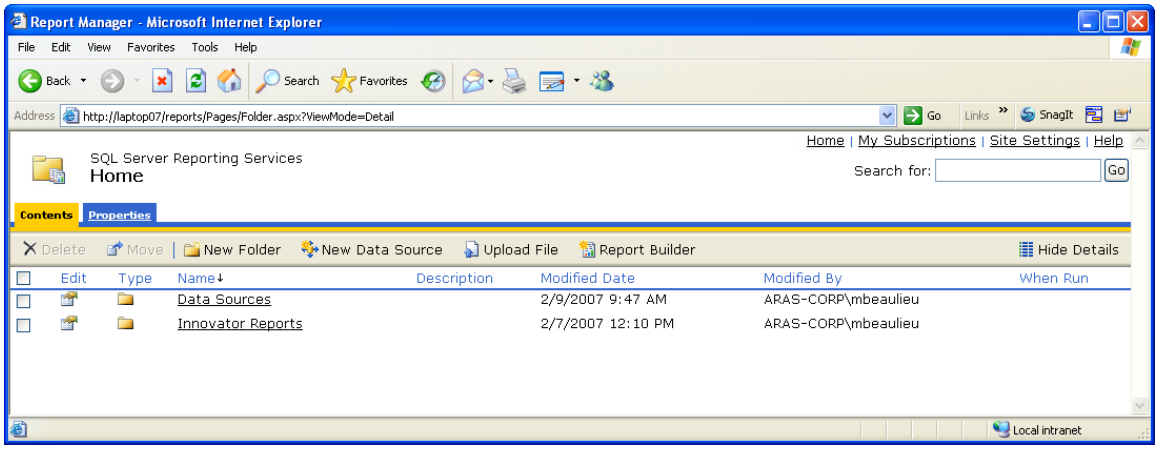
The process of exporting a Report and importing it into another ReportServer and enabling the Report in Aras Innovator is a four step process:

1. Export the RDL file via the Report Manager page.
2. Import the RDL file via the Report Manager page.
3. Reassign the Data Source to the imported Report.
4. Add an Innovator Report Item to call the Reporting Services Report.

7.1 Opening the Report Manager page

1. Navigate to the main tree item /**Administration/Reports**.
2. Click on the main menu **Reports** button and the "**Report Manager**" choice.
3. The **Report Manager** page will open in a new window as shown below:

   You may need to click on the "**Show Detail**s" button



Note: This same page can be opened from your browser with the URL http://localhost:8080/Reports

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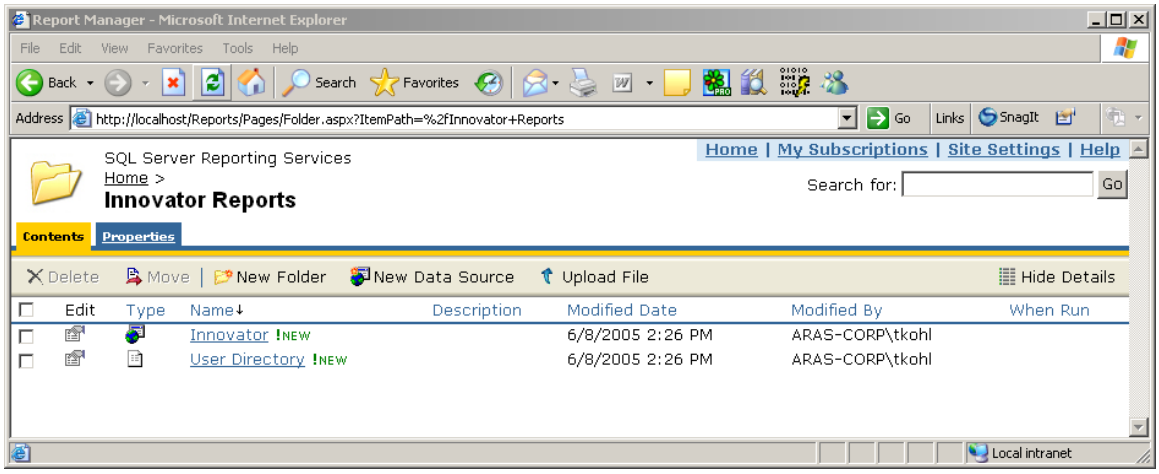
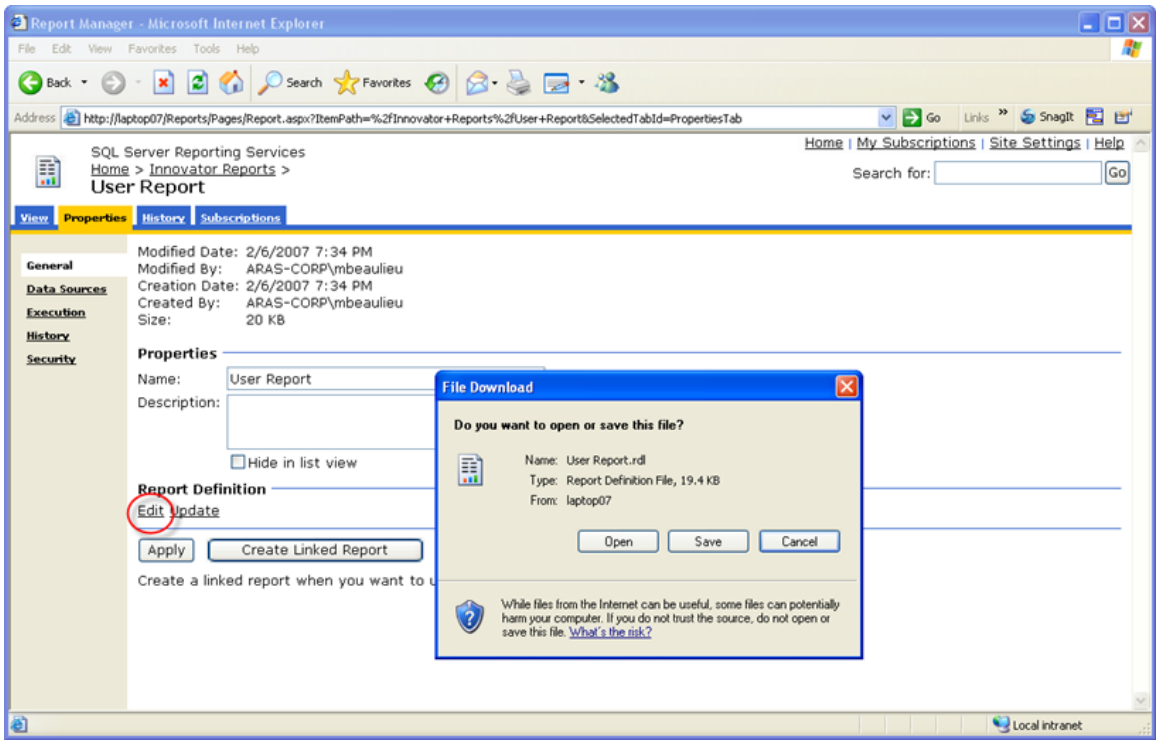
7.2 Export the RDL

To export a RDL file for a Report, click on the "Innovator Reports" Folder. You will see a list of Reports and Shared Data Sources.



Click on the properties icon in the Edit column for the Report you want to export. This will open the Properties Page for the Report.

Click on the "**Edit**" link below the "Report Definition" label. This will open a dialog asking for confirmation that you want to save the RDL file.



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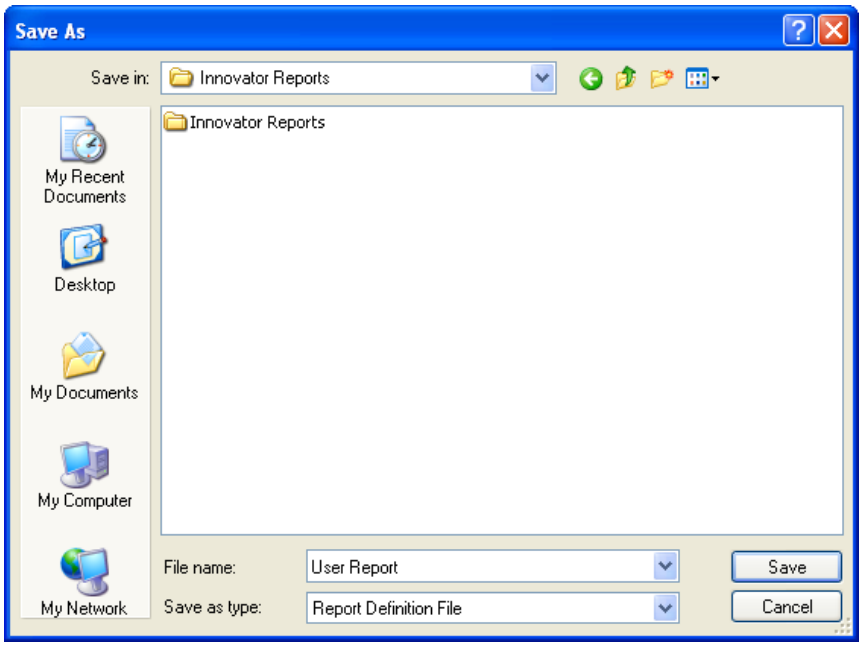
Click the "**Save**" button, which will open a File "**Save As**" dialog.

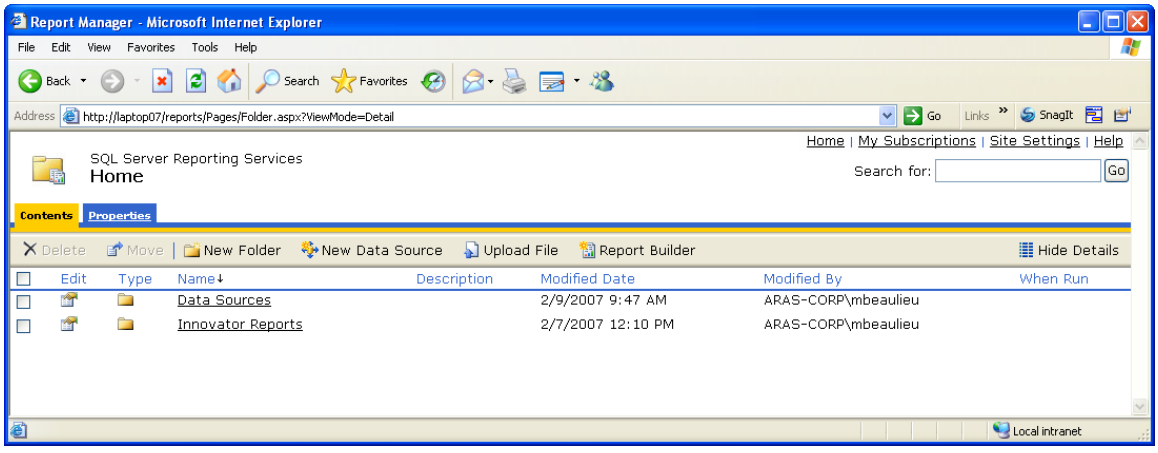


7.3 Import the RDL

Log into the target Aras Innovator Server:

1. Navigate to the main tree item /**Administration/Reports**.
2. Click on the main menu **Reports** button and the "**Report Manager**" choice.
3. The **Report Manager** page will open in a new window as shown below:

Note: This same page can be opened from your browser with the URL http://localhost:8080/Reports



Click on the "Innovator Reports" Folder and you will see a list of Reports and Shared Data Sources. Click the "Upload File" button in the middle of the screen.

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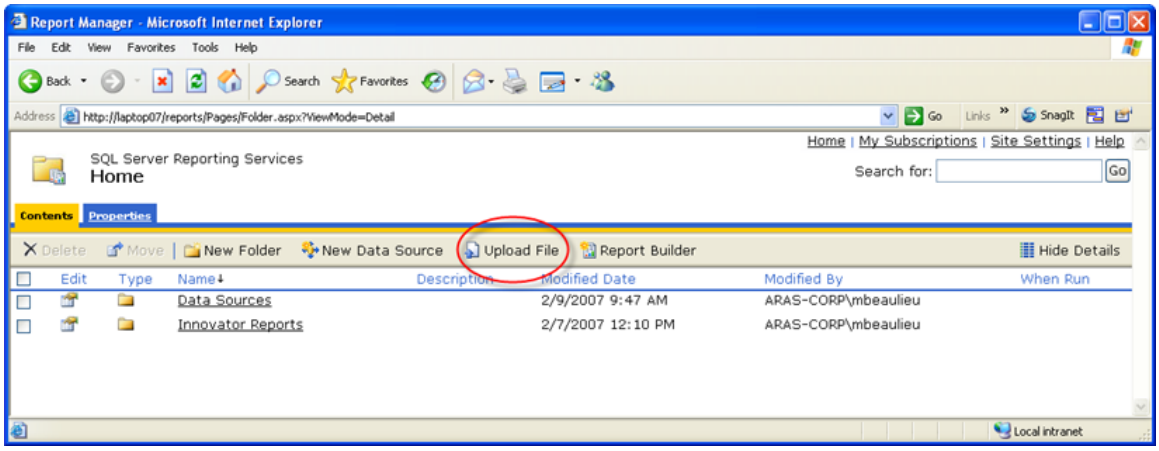
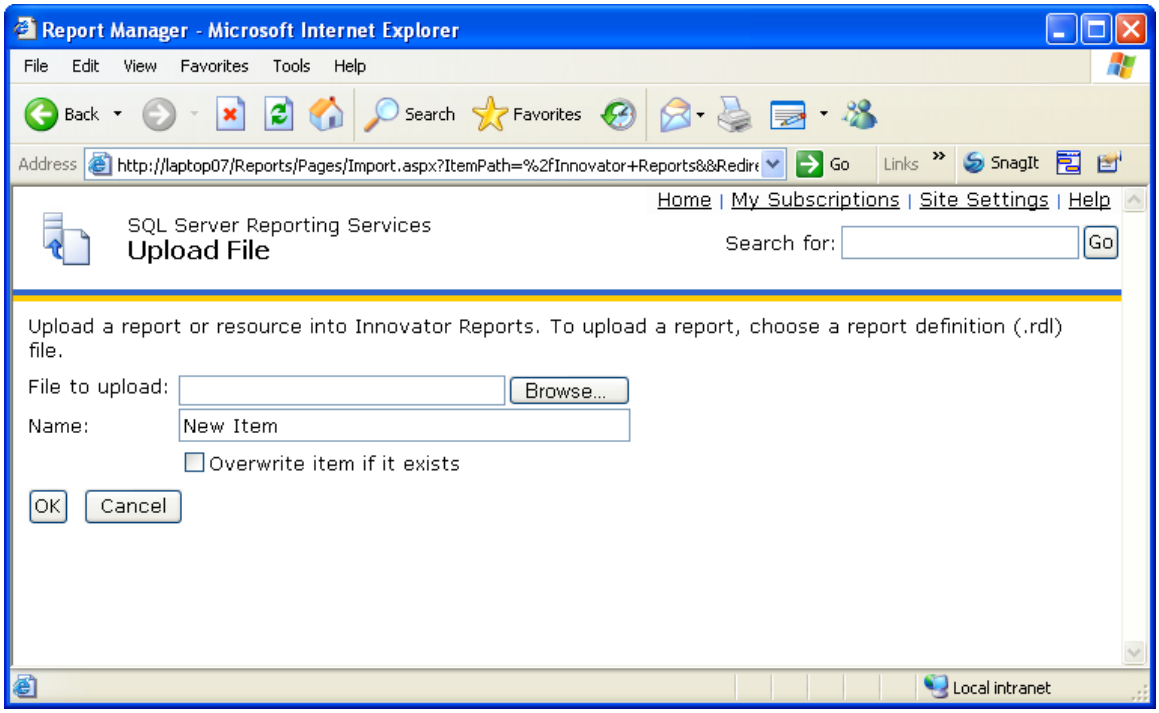


This will open the Upload File page.



Click the "**Browse...**" button, which will open a File Selection dialog for you to select the RDL file to upload.

Select the RDL file and click the "**Open**" button. This will insert the file name in the File to upload field and also set the Name field to the name of the RDL file selected.

If this is a new version of an existing Report select the Overwrite checkbox. Click the "**OK**" button to complete the upload. The RDL file will be uploaded to the target ReportServer and deployed. You should see the new Report in the Folder now.

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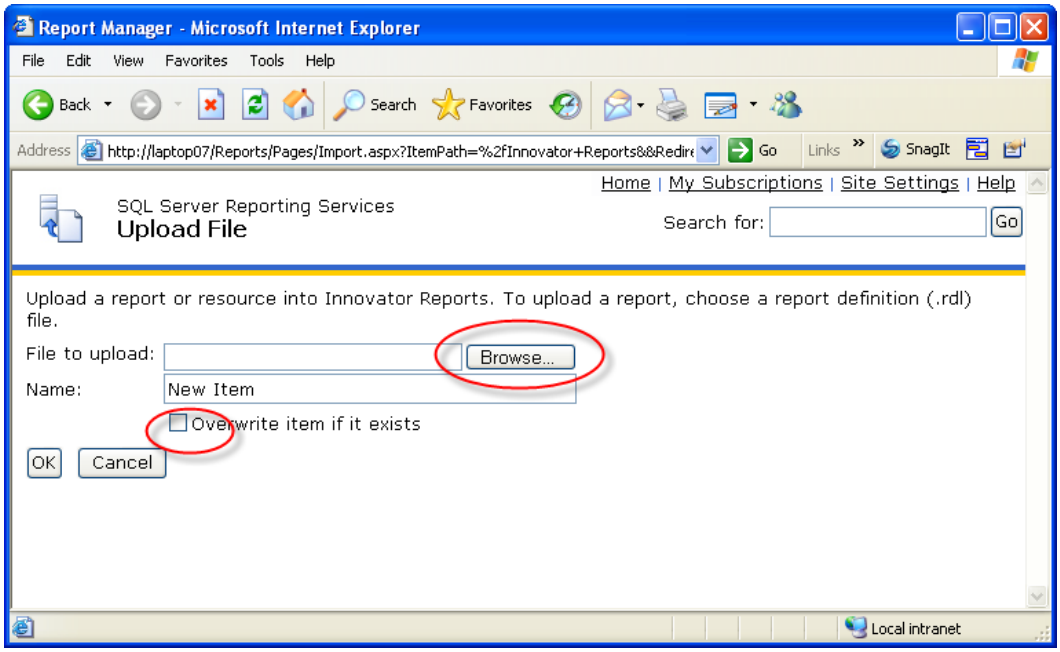
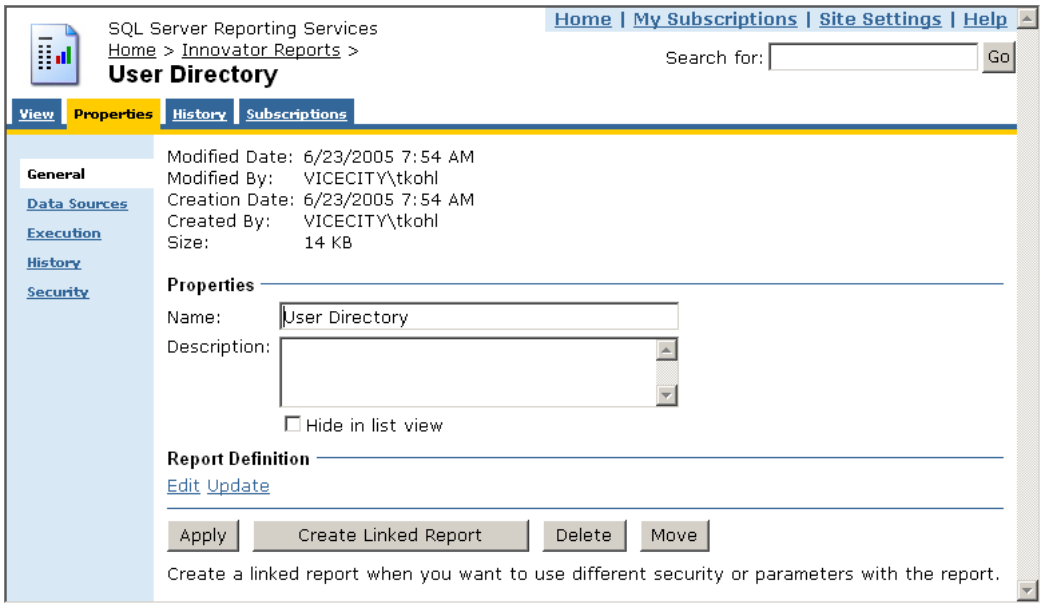


7.4 Select the Shared Data Source

The Data Source for the Report may need to be changed if the name of the Shared Data Source is different on the target ReportServer. Click on the properties icon in the Edit column for the new Report that was uploaded. This will open the Properties page for the Report where you can select its Shared Data Source.



Select the "**Data Sources**" navigation link. The first choice "**A shared data source**" should be selected.

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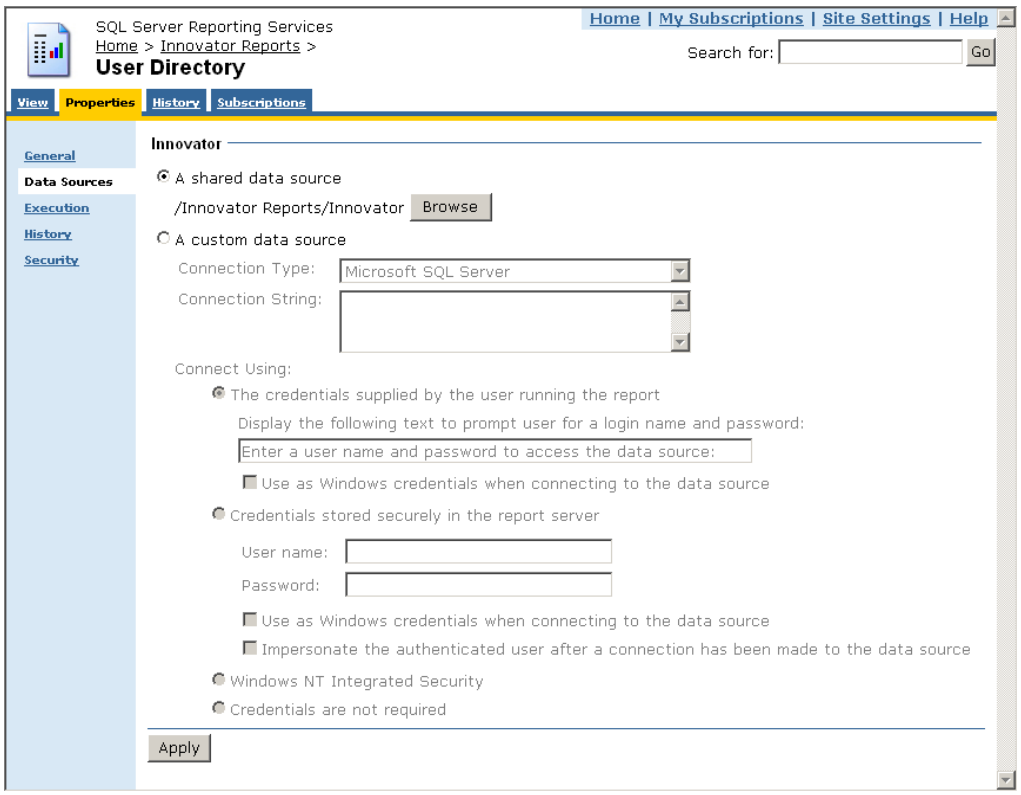
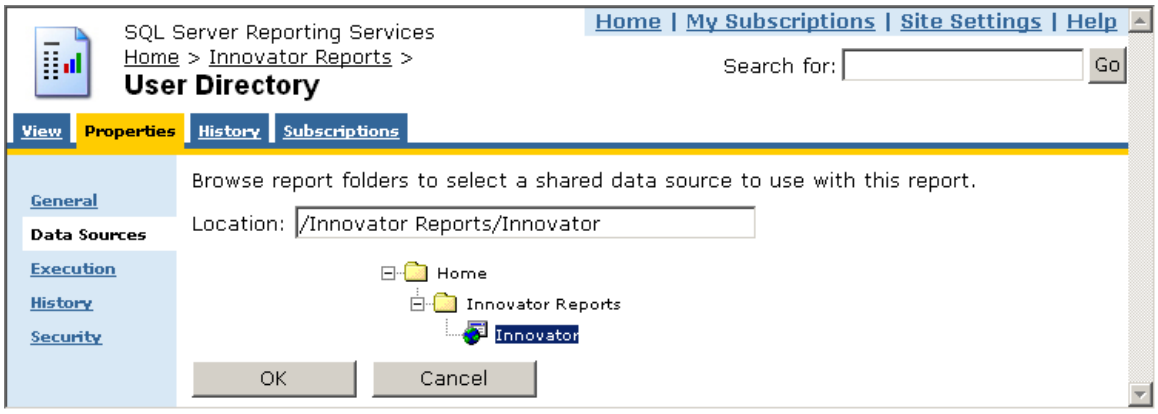


If the named Shared Data Source is incorrect for this ReportServer click the "**Browse**" button to open the Shared Data Source page. Navigate the Folders to locate the desired Shared Data Source, select it, and click the "**OK**" button.



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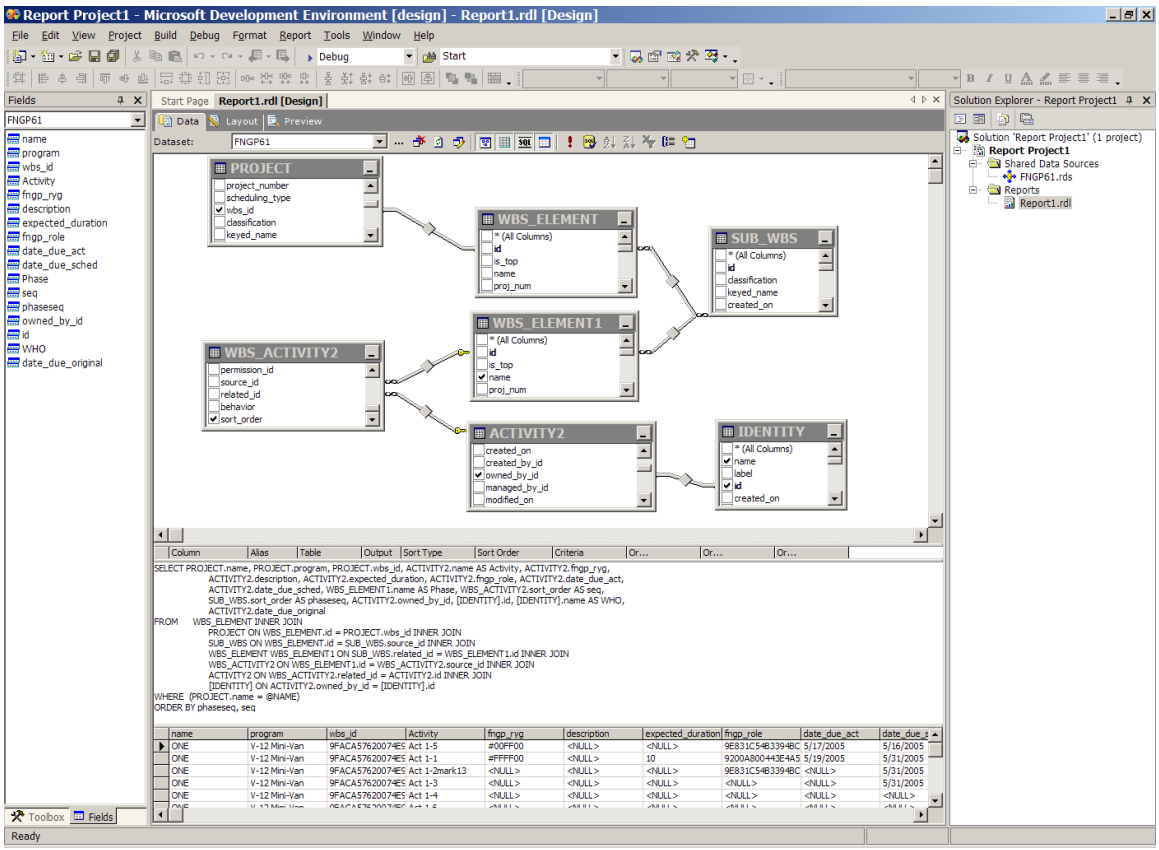
8 Graphical Query Builder

The Visual Studio report designer has a graphical query builder that can be useful when constructing reports for deep item structures such as the Project Item structure.

On the Data Tab in the report designer select the icon which opens the graphic design window.



Manipulating the graphics automatically creates the correct query with the joins.

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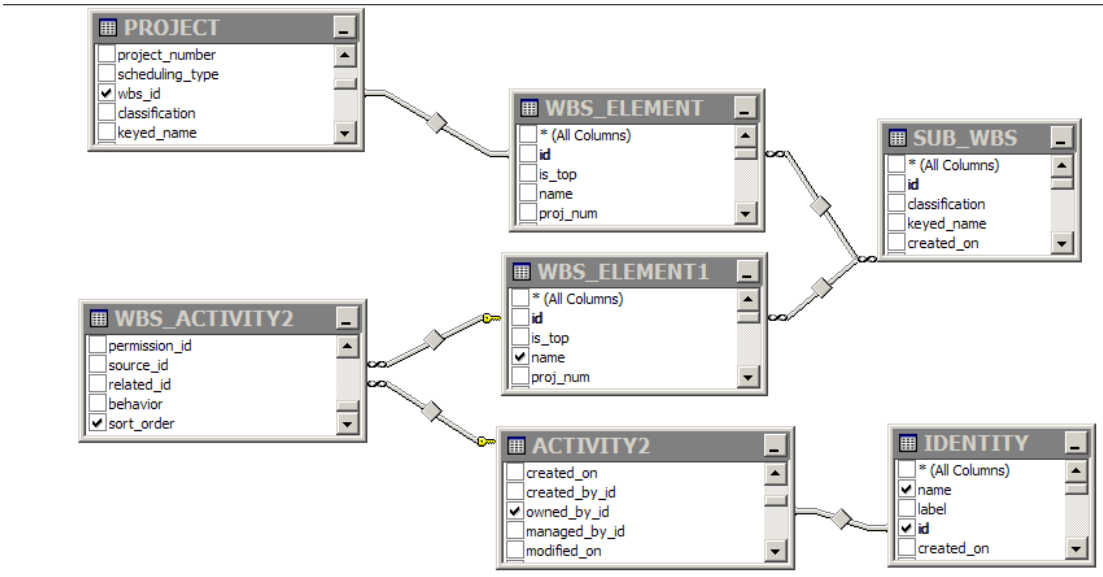

This results in the SQL query:

```
SELECT PROJECT.name, PROJECT.program, PROJECT.wbs_id, ACTIVITY2.name AS Activity,
ACTIVITY2.fngp_ryg, ACTIVITY2.description, ACTIVITY2.expected_duration,
ACTIVITY2.fngp_role, ACTIVITY2.date_due_act, ACTIVITY2.date_due_sched, WBS_ELEMENT1.name
AS Phase, WBS_ACTIVITY2.sort_order AS seq,  SUB_WBS.sort_order AS phaseseq,
ACTIVITY2.owned_by_id, [IDENTITY].id, [IDENTITY].name AS WHO, ACTIVITY2.date_due_original
FROM      WBS_ELEMENT INNER JOIN
      PROJECT ON WBS_ELEMENT.id = PROJECT.wbs_id INNER JOIN
      SUB_WBS ON WBS_ELEMENT.id = SUB_WBS.source_id INNER JOIN
      WBS_ELEMENT WBS_ELEMENT1 ON SUB_WBS.related_id = WBS_ELEMENT1.id INNER JOIN
      WBS_ACTIVITY2 ON WBS_ELEMENT1.id = WBS_ACTIVITY2.source_id INNER JOIN
      ACTIVITY2 ON WBS_ACTIVITY2.related_id = ACTIVITY2.id INNER JOIN
      [IDENTITY] ON ACTIVITY2.owned_by_id = [IDENTITY].id
WHERE  (PROJECT.name = @NAME)
ORDER BY phaseseq, seq
```

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9 Date Related SQL Queries

AML is the language of Aras Innovator, but some external add-ons do connect to Aras Innovator on a direct SQL level. Because Aras Innovator stores DateTimes in SQL Server as UTC, we have provided an add-on function for Microsoft SQL Server that will allow the easy conversion of DateTime to and from UTC.

To convert DateTime values from UTC to a specific time zone, use the function ConvertToLocal ({value},{Time Zone}). The time zone should be specified according to the registry key name of the time zone desired. (See *Aras Innovator - Configuring Internationalization*) To use the DEFAULT parameter for the {Time Zone}, it is required that a value be set for CorporateTimeZone.

Example:

```
select item_number, created_on
from innovator.Document
```

Would be written as

```
select item_number, innovator.ConvertToLocal(created_on,DEFAULT) as
CreadtedOn
from innovator.Document
```

Or

```
select item_number, innovator.ConvertToLocal(created_on,'Eastern
Standard Time') as CreadtedOn
from innovator.Document
```

To convert DateTime values from a specific time zone to UTC, use the function ConvertFromLocal({value},{Time Zone}). The time zone should be specified according to the registry key name of the time zone desired. (See *Aras Innovator - Configuring Internationalization*) To use the DEFAULT parameter for {Time Zone}, it is required that a value be set for CorporateTimeZone.

Example:

```
update innovator.Documnet
set effective_date = '1/1/2007 00:00:00.00'
```

Would be written as

```
update innovator.Documnet
set effective_date = innovator.ConvertFromLocal('1/1/2007
00:00:00.00',DEFAULT)
```

Or

```
update innovator.Documnet
set effective_date = innovator.ConvertFromLocal('1/1/2007
00:00:00.00','Eastern Standard Time')
```

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This will allow users to write queries in a familiar time zone context.

```
select item_number, innovator.ConvertToLocal(release_date,DEFAULT) as
ReleaseDate
from innovator.Document
where created_on >= innovator.ConvertFromLocal('1/1/2007
00:00:00.00',DEFAULT)
```

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10 Cookbook

This section provides a set of recipes for doing common reporting tasks.

10.1 User Input Reports

You need a Form to collect user input for Named Parameters for the SQL query for Reporting Services based Reports.

Technique
An XSLT based Report is used to present a Form to collect the user input. The user input is mapped to a query_string for the Report Server request via the RSGatwway.aspx page.

In the ReportTool/Templates folder there is a UserInputTemplate.txt file that you can use as a template to build the XSLT based Form. This provides a generic way to define the Fields for the user input Form, which opens a modal dialog with a generic HTML page dynamically building the Form based on the Fields defined in the template file.

Note: To use "User Input Reports" you must add the following script to the UserInputDialog.html located in the ReportTool folde and save itr:

```
<script type="text/javascript" src="../../javascript/AddConfigurationLink.js"></script>
```

Procedure for building a user input Form for Reporting Services based Reports with Named Parameters:

1. Login to Aras Innovator as admin.
2. Navigate to the Administration->Reports off the Main Tree.
3. Open a new Report Item.
4. Set the Report Item properties as following:
    a. Name = the name of your Report as deployed in Visual Studio to the Report Server.
    b. Type = Generic or ItemType depending on when you want the Report to appear on the Report menu; Generic always, ItemType only when that ItemType is selected off the Main Tree.
    c. Location = Server; this is required because the XSLT page will return an HTML page with JavaScript that needs to be parsed and Client side Report only writes the transformed page to the browser window and thus the JavaScript is not parsed.
    d. Target = Window; again because the page has JavaScript we need a window to parse the JavaScript. This page will present status info to the user as the Report is being processed and the final Report results will be shown in this same window.
    e. Report Query = leave blank it is currently not used for this purpose.
5. Click on the Stylesheet Tab to insert the template code for setting up the Fields for the modal dialog:
    a. Scroll to the bottom of the page.

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b. Open the ReportTool/Templates/UserInputTemplate.txt file and select the whole document content.

c. Replace the <body> tag in the Stylesheet Tab with the content from the UserInputTemplate.txt file.

d. Edit the userInputFields object, which is an IOM Item by setting the properties for the Item to match the Named Parameters for the SQL query for the Report as deployed to the Report Server.

```
///
/// Set the User Input Fields...
/// The property names must match exactly the names you used for the
/// Named Parameters in the SQL Query.
///
/// For example, this SQL Query for the GetParts Report in the
/// Report Server has the following
/// Named Parameters: part_number, description, and cost;
///
/// SELECT     part_number, description, cost
/// FROM         MY_PART
/// WHERE     (part_number LIKE @part_number)
///      AND    (description LIKE @description)
///      AND    (cost LIKE @cost)
///
var userInputFields = opener.top.myInnovator.newItem();
userInputFields.setProperty('part_number', '%');
userInputFields.setProperty('description', '%');
userInputFields.setProperty('cost', '%');
```

e. Click the Apply button at the bottom of the Stylesheet Tab.

f. Click the Save button on the Report Tool toolbar.

That's it, the Report Item should now appear on the Report menu and when selected the User Input Dialog should open. When the user clicks the Submit button the user input is mapped as a query_string and the actual Report is requested from the Report Server via the RSGateway.

If the future the Named Parameters and Report name will be derived and the XSLT based Report Stylesheet will be automatically generated but for now you need to set these values when using the template.

If you want to add validation or rearrange the Fields on the Form you can make a copy of the ReportTool/UserInputDialog.html page and modify it to meet your needs.

If you have the need to pass attributes or property values from the selected context Item use the following technique to set the values to hidden form fields:

1. Edit the section from the UserInputTemplate.txt file to pack the desired Item attributes and properties into hidden form fields:

```
<!--
  The following is an example for passing attributes and properties
  from the selected context Item as hidden fields.

  For example, pack the id attribute from the context Item using
  XSLT Attribute Substitution and nested xsl tags for the properties.
```

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```
<form>
  <input type="hidden" name="id" value="{//Item/@id}/>
  <input type="hidden" name="name">
    <xsl:attribute name="value" select="//Item/name"/>
  </input>
</form>
-->
```

2. Also edit the section from the UserInputTemplate.txt file to pass those hidden field values as Field values for the user input dialog:

```
///
/// If there are properties from the selected context Item packed
/// as hidden fields on the form use this:
///
userInputFields.setProperty('id', document.form[0]['id'].value);
userInputFields.setProperty('name', document.form[0]['name'].value);
```

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10.2 Report Chooser

You need a dialog to present a set of Reporting Services based Reports to choose from for the selected Item.

Technique
An XSLT based Report is used to present a dialog to get the Report choice. The user selection is mapped to a query_string for the Report Server request via the RSGatwway.aspx page. This is similar to recipe 9.1 User Input Form but in this case we do want the ID for the selected Item to be passed as a Named Parameter on the query_string.

In the ReportTool/Templates folder there is a file ChooseReportTemplate.txt that you can use as a template to build the XSLT based Form. This template provides a generic way to define the Reports choices and it opens a modal dialog.

Procedure for building a Report Chooser dialog for Reporting Services based Reports:

1. Login to Aras Innovator as admin.
2. Navigate to the Administration->Reports off the Main Tree.
3. Open a new Report Item.
4. Set the Report Item properties as following:
    a. Name = the name of your Report as deployed in Visual Studio to the Report Server.
    b. Type = Item (You do not need the report_query template when prompted).
    c. Location = Server; this is required because the XSLT page will return an HTML page with JavaScript that needs to be parsed and Client side Report only writes the transformed page to the browser window and thus the JavaScript is not parsed.
    d. Target = Window; again because the page has JavaScript we need a window to parse the JavaScript. This page will present status info to the user as the Report is being processed and the final Report results will be shown in this same window.
    e. Report Query = leave blank it is currently not used for this purpose.
5. Click on the Stylesheet Tab to insert the template code for setting up the Report choices for the modal dialog:
    a. Scroll to the bottom of the page.
    b. Open the ReportTool/Templates/ChooseReportTemplate.txt file and select the whole document content.
    c. Replace the <body> tag in the Stylesheet Tab with the content from the UserInputTemplate.txt file.
    d. Edit the AddReport() calls to the Report choices:

```
///
/// Add your Report Choices here...
```

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```
///
AddReport('Report1', 'Report One', 'rs:Format=Excell');
AddReport('Report2', 'Report Two', 'rs:Format=HTML4.0');
AddReport('Report3', 'Report Three', 'rs:Format=PDF');
```

e. Click the Apply button at the bottom of the Stylesheet Tab.

6. Click the Save button on the Report Tool toolbar.
7. Navigate to the Administration->ItemTypes off the Main Tree.
8. Search for the ItemType for this Report.
9. Edit the ItemType and select the Reports Tab.
10. Add an Existing related Item and select this Report.
11. Click the Save button on the ItemType toolbar.

That's it the Report should now appear on the Report menu when the Item is selected. When the user clicks the Submit button the selected Report the actual Report is requested from the Report Server via the RSGateway.

The ID for the selected Item is automatically passed as a Named Parameter np:id so you must name your Named Parameter in the SQL query with lowercase id also.

10.3 Date Selector

You need a Form with two date fields to collect user input for Named Parameters for narrowing the results of a SQL query for Reporting Services based Reports.

Technique
A Client-Side Report is used to call JavaScript which will present the user with a dialog for selecting a date range. Upon the selection of the date range the user will click on the "Run Report" button which will call the RSGateway.aspx page directly passing the date range as named parameters to the report query.
Procedure for building a Date Selector dialog:

1. Log into Aras Innovator as an administrator
2. Navigate to Administration->Methods and create a new method
   a. Name = run_report_button_click
   b. Type = JavaScript
   c. Method Code =

```
var fromDate = document.forms[0].from_date.value;
var toDate = document.forms[0].to_date.value;
if(new Date(toDate) < new Date(fromDate))
{
  alert("To Date must be greater then from date");
}
else
{
  var retVal=new Array();
  retVal["runReport"]="1";
  retVal["to_date"] = toDate;
  retVal["from_date"] = fromDate;
  window.returnValue = retVal;
  window.close();
}
```

3. Save, Unlock, and Close method

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4. Navigate to Administration->Forms and create a new Form
    a. Name=DateRangeSelector
5. Add a new field
    a. Name=form_setup
    b. Field Type = HTML
    c. Label = <empty string>
    d. HTML Code

```
<font size="6">Date Range Selector</font>
<script>
document.isEditMode=true;
var myInnovator = dialogArguments.innovator;
setTimeout('startup();',100);

function startup()
{
var displayDate =  new Date();
document.forms[0].to_date.value=fixDate(displayDate);
document.forms[0].from_date.value=fixDate(displayDate);
}
function fixDate(inDate)
{
    var Day = inDate.getDate();
    var DayStr = (Day < 10) ? '0' + Day : Day;
    var Month = inDate.getMonth();
    Month++;
    var MonthStr = (Month < 10) ? '0' + Month : Month;
                    var cntx = myInnovator.getI18NSessionContext();
                    return cntx.ConvertFromNeutral( inDate.getFullYear() + "-
" + MonthStr + "-" + DayStr, 'date', 'short_date');
}

</script>
```

6. Add a new field
    a. Name = from_date
    b. Type=Date
    c. Label = From Date
7. Add a new field
    a. Name = to_date
    b. Type = Date
    c. Label = To Date
8. Add a new field
    a. Name = run_report
    b. Type = Button
    c. Label = Run Report
    d. Add a new Field Event
        i. Method Name = run_report_button_click
        ii. Event = onClick

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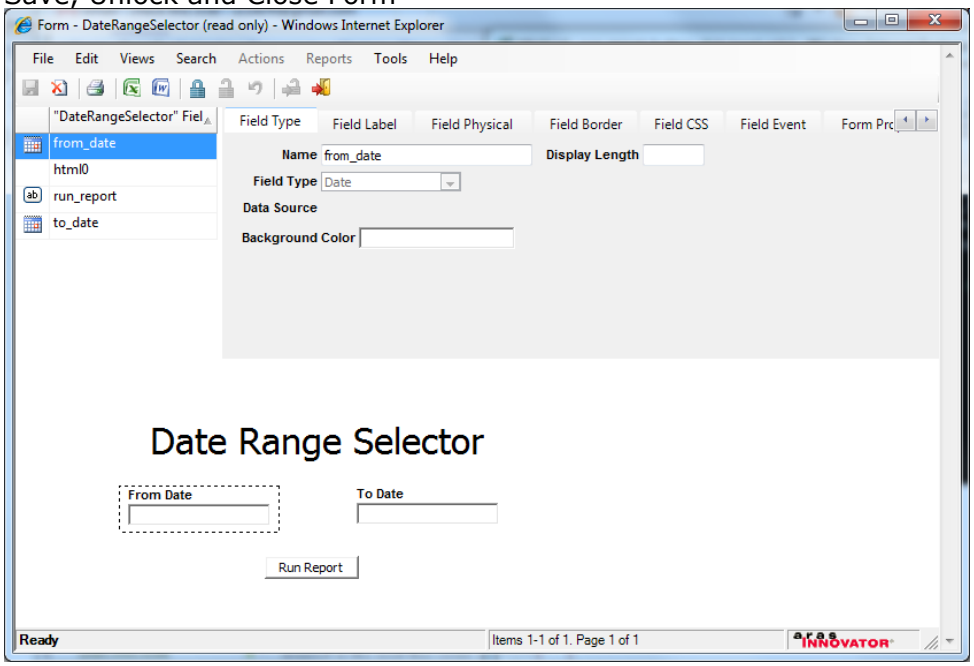
9. Save, Unlock and Close Form



10. Navigate to Administration->Methods and create a new method

    a. Name = Report_Date_Select

    b. Method Code:

```
var param = new Object();
param.title  = "Date range selector for Reporting Services Report";
param.formId = "A0DC688E91834EC98E013A8046F60692"; //ID ofDate Range Selector
Form
params.isEditMode = "1";
param.aras   = top.aras;
param.innovator = this.getInnovator();


var res = showModalDialog("ShowFormAsADialog.html", param,
        "dialogHeight:300px; dialogWidth:450px; " +
        "status:0; help:0; resizable:0; scroll:0;");
// debugger;
if (res)
{
var fromDate = top.aras.convertToNeutral(res["from_date"], 'date',
"short_date");
fromDate= fromDate.substring(0,fromDate.indexOf("T"));
var toDate = top.aras.convertToNeutral(res["to_date"], 'date', "short_date");
toDate= toDate.substring(0,toDate.indexOf("T"));

var reportName = "TestReport";  //Your Report Name Here
var url   = top.aras.getServerBaseURL() + "RSGateway.aspx?irs:Report=" +
reportName;

//Date Variables in this example is fromDate and toDate
url += "&amp;np:fromDate=" + fromDate;
url += "&amp;np:toDate=" + toDate;
//url += "&amp;rs:Format=Excel";

var w = window.open(url, "TestReport",
"width=800,height=600,status=yes,resizable=yes,toolbar=no,menubar=no,scrollbar
s=yes");
}
return "<html></html>";
```

11. Save, Unlock, and Close method

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12. Navigate to Administration->Reports and create a new Report
    a. SSRS Date Selector
    b. Type = Generic
    c. Location = Client
    d. Target = None
    e. Method = Report Date Select
13. Save, Unlock and Close report

The new generic report should appear in Reports Menu. Your SQL query will now accept the name parameters of fromDate and toDate into the SQL query as a way to narrow your results in a where clause.

You must simply modify the Report_date_Select method to point to the proper Report and use the proper ID of the DateRangeSelector form

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