

*IBM Rational Insight  
and  
IBM Rational System Architect  
Integration Guide*

Before using this information, read the “Notices” section on page 82.

This edition applies to IBM® Rational® System Architect®, version 11.3.1 and to all subsequent releases and modifications until otherwise indicated in new editions.

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# Rational Insight and Rational System Architect Integration

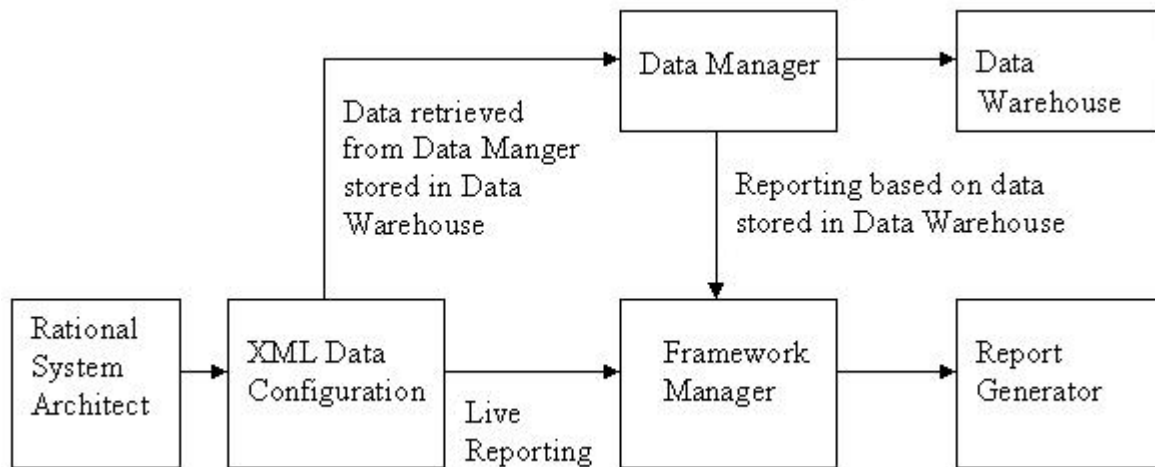
## 1

### Introduction

This chapter provides instructions for producing two reports - a simple report showing list of definitions, and a sample visual, business report from Rational Insight using Rational System Architect repositories. Although you can generate report from live data sources as well, the scope of this chapter is to provide instructions for generating reports from data stored in a data warehouse.

### Generating a simple report from a data warehouse

The figure shown below indicates the phases required to generate reports from a data warehouse and through live reporting. The scope of this chapter is to generate a report from the Data Warehouse.



The overall tasks for generating reports from a data warehouse are as follows:

- Generate a XDC file using XML Data Configuration.
- Model the physical database in the Data Manager by using the XDC file.
- Extract the data from Rational System Architect through the ETL process.
- Model the metadata and publish packages using the framework manager.
- Publish the report using the browser.

## Generating the XDC file using XML Data Configuration

Generate the XDC with the XML Data Configuration as follows:

1. Start XML Data Configuration.
2. Click File>Create Configuration. **The New Configuration** dialog is displayed.
3. Enter a file path in the **Location field** and a name in the **Name** field.
4. Click **OK**.

Once the New Connection is created, you need to create the following items:

- A Resource Group
- Resource under the Resource Group
- Data Mapping Templates

## Creating Resource Group

The XML Data Configuration gets loaded with a tree structure.

1. Right click on **Resource** and select **New > Resource Group**. The new Resource Group dialog is displayed.

**Create a Resource Group**

Specify a name, description, and authentication type for the new resource group. Select a URL type, enter the URL, and click Finish.

Name: SystemArchitectDefinition

Description: Retrieval of System Architect Definition through REST API

Authentication type: None

URL:

Data service  
http://localhost:8889/SARest/SQL/TLOGICSA/libnettest/1

Generic XML

Link to existing resource group

Name	URL
------	-----

Test Connection...

Finish Cancel

2. Enter values for the **Name** and **Description** fields.
3. Chose the **Authentication Type** as **None**. Ensure that the client logged in to this machine has sufficient access to Rational System Architect encyclopedia repository from where the information is fetched.
4. Provide the REST URI in the Data Service field. The REST URI should be specified till the workspace level.
5. Click on **Test Connection** to validate the connection to the REST URI. Click **Finish** after testing the connection.

A message box informs you if the connection is successful. If the connection is not successful, the message box displays a “Connection Refused” message. This means that the Rational System Architect REST Service is not running on the specified machine.

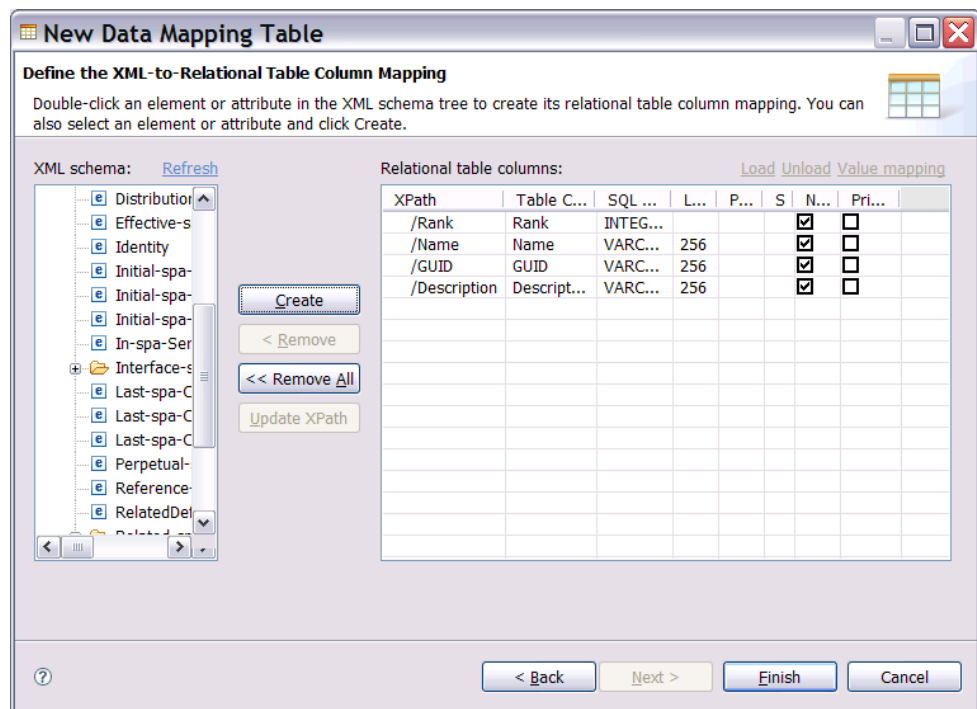
## Creating Resource under the Resource Group

1. Right click on the above-created Resource Group to create Resource under it.
2. Enter values for the **Name** and **Description** fields.
3. Select the **Locate using data** service and click **Next**. The encyclopedia tree panel is shown.
4. Select the **class** node in the right side of the tree.
5. Check the **href** and **name** checkboxes and click **Next**.
6. Select the **Definitions** URI and click on **Next**. The Definition tree panel is displayed.
7. In the **XML schema** pane, select the **type** node.
8. In the **Element attributes** pane check the **href** and **name** checkboxes and click **Next**.
9. Select the definition type to generate for your report and click **Finish**.

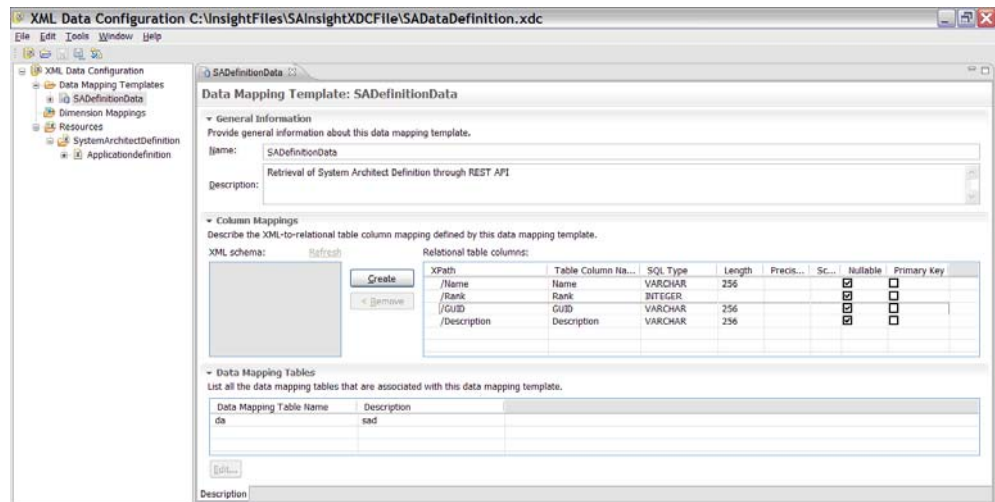


## Creating Data Mapping Templates

1. Right-click on the resource created above, and select **New> Data Mapping Table**. The **New Data Mapping Table** dialog is displayed.
2. Enter values in the **Name** and **Description** field. You should enter suitable values, such as the name “SADefinitionMapping,” and description “Retrieval of Rational System Architect definitions through the REST API.”
3. Click **Next**.
4. Under the **Definitions** node, select definition your are mapping click **Next**. The **Create or Select a Data Mapping Table** screen is displayed.
5. Select **Create a new template**, if you do not have an existing template, and click **Next**. The **Create a Data Mapping Template** screen is displayed.
6. Enter values for the **Name** and **Description** fields and click on **Next**.
7. Define the **XML data to Relation Table Mapping**, as shown below.



8. Click **Finish** when you are done mapping.
9. On the newly created **Data Mapping Template**, right-click and select **Open**. The Data Mapping between the XML and the Relation Table is shown below. If errors arise, they are displayed at the top of the window. This step completes process of generating the XDC files.



## Model the physical database in the Data Manager by using the XDC file

Once the XDC file is created, the Data Manager is used to configure the physical database from which the information retrieved from Rational System Architect will be stored under the data warehouse. The steps for creating the Data Manager are as follows.

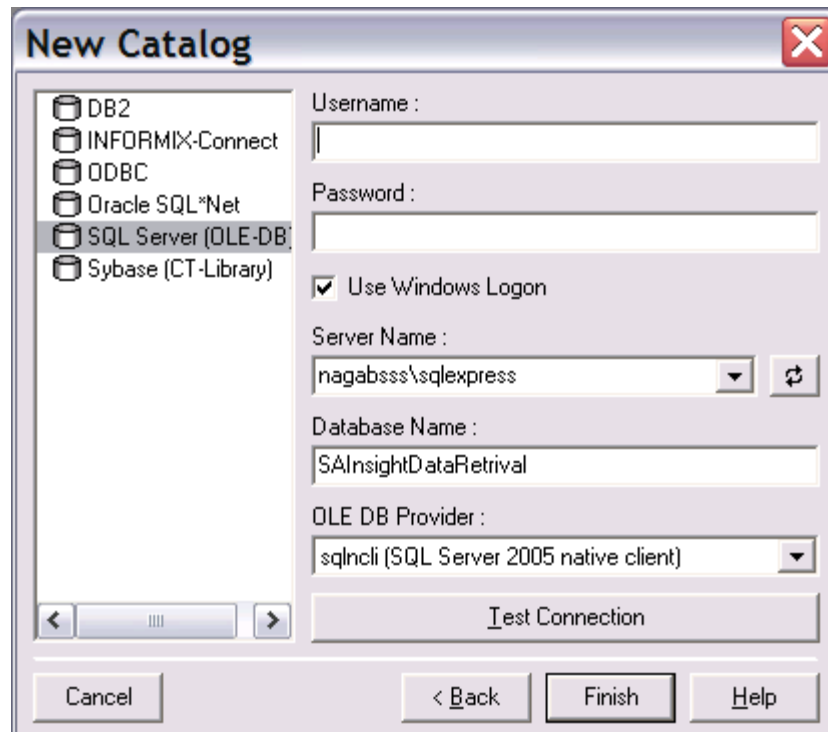
The overall steps you need to take in Data Manager are as follows:

- Create /Open the Catalog.
- Import the XDC files created through XML Data Configuration.
- Import the Data from Rational System Architect into the Data warehouse.

## **Create/Open the Catalog**

The catalog in Data Manager stores all the configuration information.

1. To run the Data Manager, click the Start> Program Files> IBM Rational Insight> IBM Cognos 8> and select Data Manager.
2. Click the **Create a new catalog** icon. You can also click **Open an existing catalog** if you have one.
3. In the **New Catalog dialog**, enter values for the **Name**, **Business name**, and **Description** fields.
4. Click **Next**.
5. Choose the database server that you are using, as shown below in the example below.



6. Choose the authentication mechanism, and enter values for the **Server Name** and **Database Name** fields.
7. Click **Test Connection**. A message box displays test results.  
  
If it the test fails, an **Error** dialog is displayed with error information.  
If the test succeeds, a message box displays “Connection OK..”
8. Click **Finish** when the connection test succeeds.
9. Click **OK** to continue.

## Import the XDC files created through XML Data Configuration

In the Data Manager, proceed as follows:

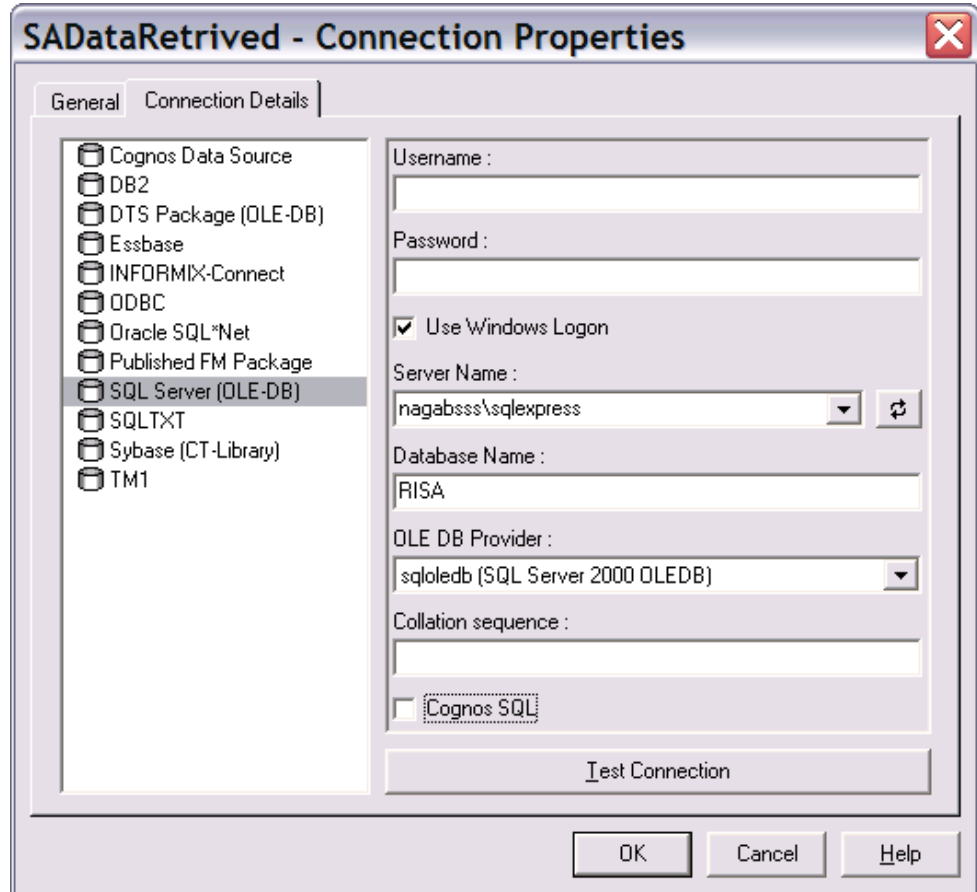
1. Click Tools and select ODBC Administrator....
2. The **ODBC Data Source** dialog is displayed.

3. Click the **System DSN** tab and click **Add**. The **Create New Data Source** dialog is displayed.
4. Select IBM Rational Insight XML ODBC Driver and click Finish.
5. Enter values in **Data Source Name** and **Description** fields.
6. For the **Configuration** field, click **Browse** and locate the XDC you created through the **XML Data Configuration** wizard.
7. Click on **OK** on all the opened dialogs.

## **Import Data from Rational System Architect into the Data warehouse**

In the Data Manager, proceed as follows:

1. Right-click Builds and JobStreams and select Insert Folder.
2. Enter values for the **Name**, **Business name**, and **Description** fields and click **OK**.
3. Create a folder hive under the folder you created above as necessary.
4. Right-click on the **Connections** node to create new connection to the ODBC driver you created for the XDC file.
5. Choose the Data source name, which you specified in the IBM Rational Insight XML Data ODBC Setup.
6. Click on **Test Connection** to check the connection. If the connection succeeds, a “Connection OK” message is displayed.
7. Click **OK** once the connection succeeds.
8. Right-click on the connection node to create a new connection to the Rational System Architect Data Source, where the data retrieved from Insight will be stored.
9. Specify the **Data source** name, which will be storing the data retrieved from Rational System Architect in Rational Insight. As shown below, the data retrieved from the Rational System Architect **SQL server** will be stored in the database name **RISA**.



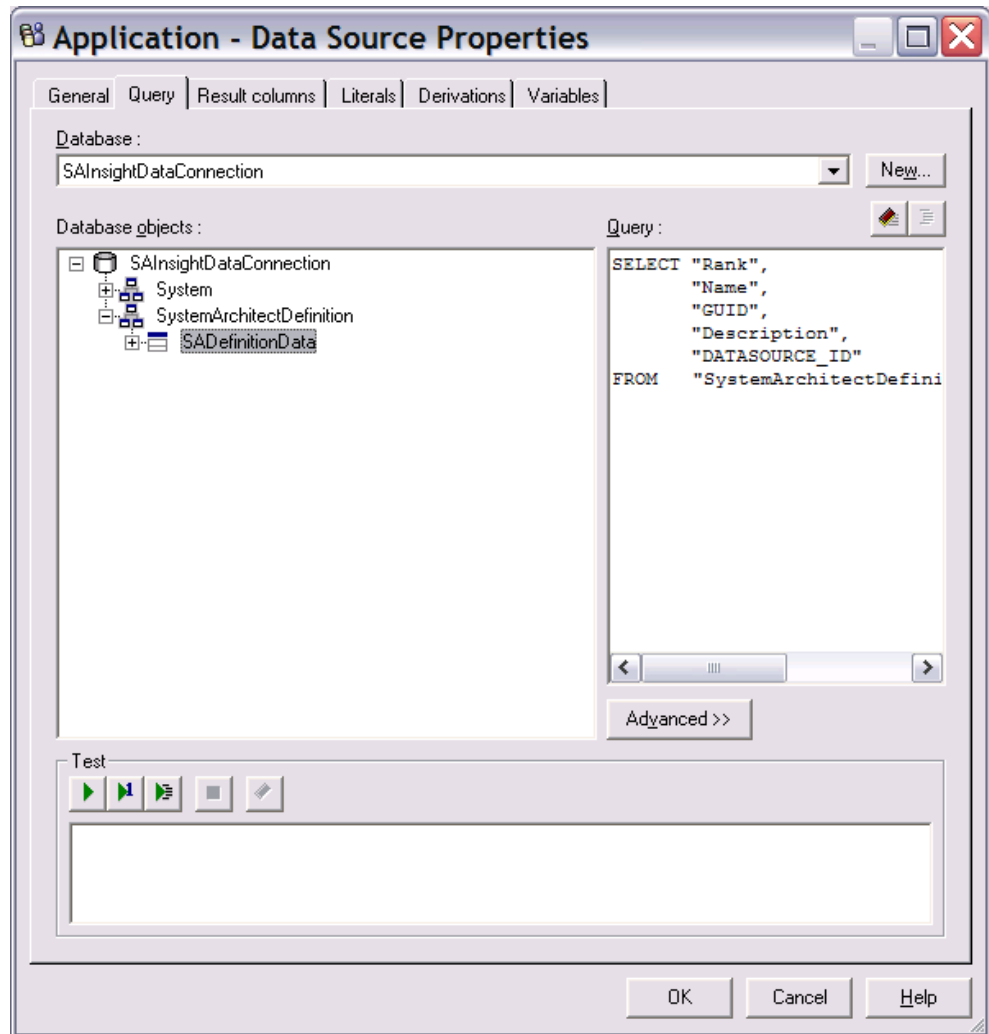
10. Click **Test Connection** to validate the connection.
11. In the Data Manager window, expand the **Builds and JobStreams** folder.
12. Right-click on the **ApplicationDefinition** subfolder and select **Insert Fact Build** to initiate the data transfer from Rational System Architect to Rational Insight.

### Create a Data Source

In the Data Manager Window, create a Data Source on the above-created Fact as described below.

1. Right-click on the **DataStream** folder and select **Insert Data Source**.
2. In the **General** tab, enter values for the **Name** and **Description** fields.

3. In the **Query** tab do the following tasks:
  - o Select the data source, which was specified in the IBM Rational Insight XML Data ODBC Setup.
  - o Expand the nodes and select the Rational System Architect data in which you are interested. Right-click on the selected node and click on **Add table select statement**.
4. The **Query** tab now displays the **Query** statement, as shown below.



Optionally, click **Test** to check the data retrieval from Rational System Architect.

5. If the data retrieval from Rational System Architect succeeds, click the **Result Columns** tab and click **Refresh**. The selected data will turn to the output as desired columns.
6. Click **OK** to close the **Data Source Properties** panel.



## Auto Mapping to Database

In the Data Manager Window, create a Data Source on the above-created Fact as described below.

1. Right-click on the **Data Stream**, and select **Properties** to perform the mapping.
2. Click Auto Map.
3. Right-click on **Transformation Model**, and select **Mapping**. The Rational System Architect data is transformed and mapped to the desired database selection.
4. Click Auto Map, and select Create New Element as Attribute.
5. Right-click on the Fact Delivery, and select Insert Relational Table Delivery.
6. Enter a value in the **Name** field in the **Table Delivery** dialog.
7. Click the Table Properties tab.
8. Select connection as **SADDataRetrieved**.
9. Click on the button next to **Table Name**.  
**Note:** In Rational Insight , SADDataRetrieved is the name of the connection to the database that will store the information retrieved from Rational System Architect.
10. Specify a Table name in the **Table Name** field.
11. Click **Execute** under the context menu displayed on the Fact Build. The data will be fetched from Rational System Architect and stored in the data warehouse.
12. Click **OK** on the **Execute Build** dialog. If the data transfer from Rational System Architect is successful then amount of data transferred is shown in the console window.

## Framework Manager

Once the data is the Rational Insight data warehouse, you use Framework Manager to model metadata and publish packages.

Before starting Framework Manager, you need to ensure that the Data Warehouse is configured to the correct database and that the sign on user is created. By default, Rational Insight points to the “SAMPLEDW” data warehouse when it is installed.

The instructions that follow point you to a “RISA” data warehouse, as an example. Therefore, you need change the data warehouse to “RISA.” Please refer to “Creating and changing Data Warehouse Signon” section (pg. 24) which describes how to change the

Data Warehouse and create a sign on user.

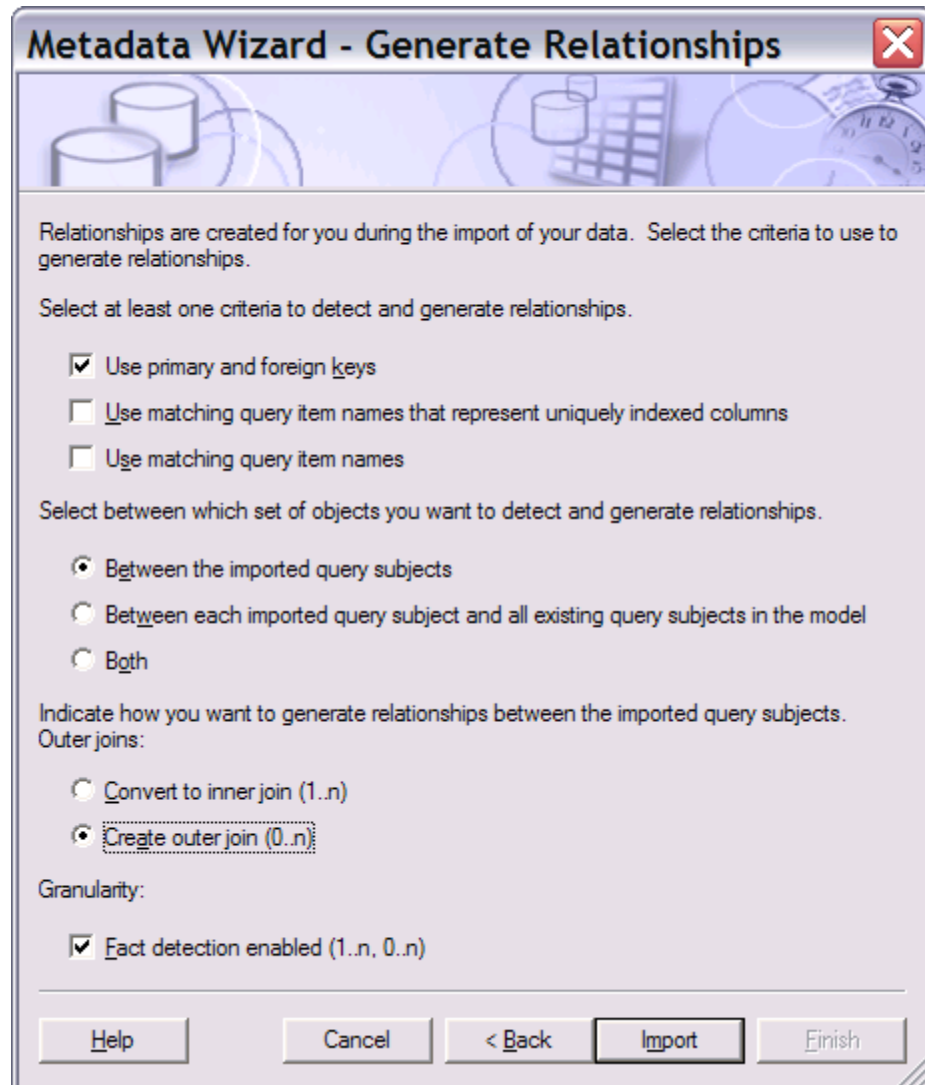
To start Framework Manager proceed as follows:

1. Click the Start> Program Files> IBM Rational Insight> IBM Cognos 8> and select Framework Manager.
2. Execute each of the following tasks in the Framework Manager (each task is detailed in the sections that follow):
  - o Create or open a project.
  - o Create a new query subject on a project.
  - o Create and publish a new package.

## Creating or opening a project

Rational Insight provides some out-of-the-box (OOB) projects. You can use the existing OOB projects and model your data or create a new project. The instructions in this section are for creating new project. A project is a set of files that define the metadata in one or more models. Models represent data source information.

1. Click on the **Create a new project...** hyperlink in the Framework Manager.
2. Enter values for the **Project name** field (for example, "SARationalInsight"), for the **Location** field, and click **OK**.
3. Select a language in the **Select Language** field and click **OK**.
4. In the **Metadata Wizard**, select **Data Sources**, since the data pulled from Rational System Architect is stored in the database. This data was pulled from Rational System Architect through the Data Manager.
5. Click **Next** to choose the database under the selected data source.
6. Select **RISA** from the data source list. This database stores the Rational System Architect data pulled through Data Manager.
7. Click **Next**.
8. Select **dbo** from the object list since the data from Rational System Architect was stored in this object, which was pulled through Data Manager.
9. Click **Next**. The **Metadata Wizard** dialog shows the following options:

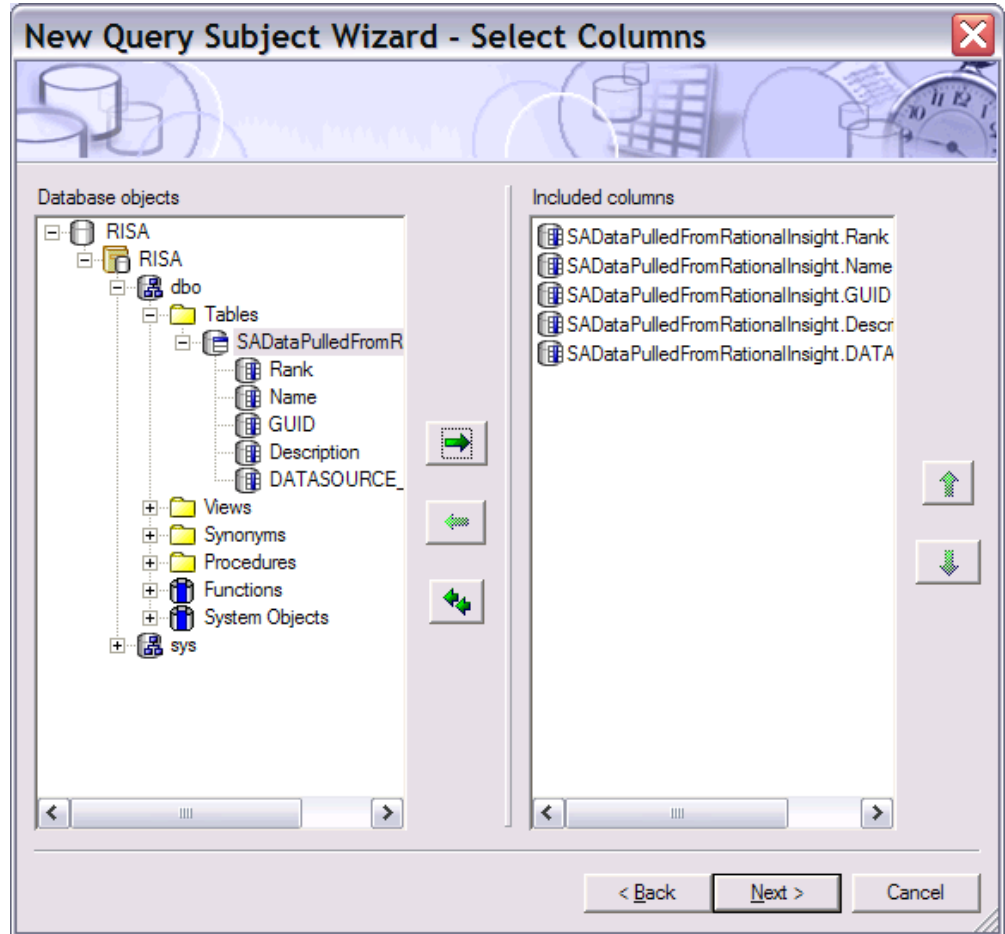


10. Click **Import**. Once the import is done, the project will be loaded.

## Creating a new Query Subject on a Project

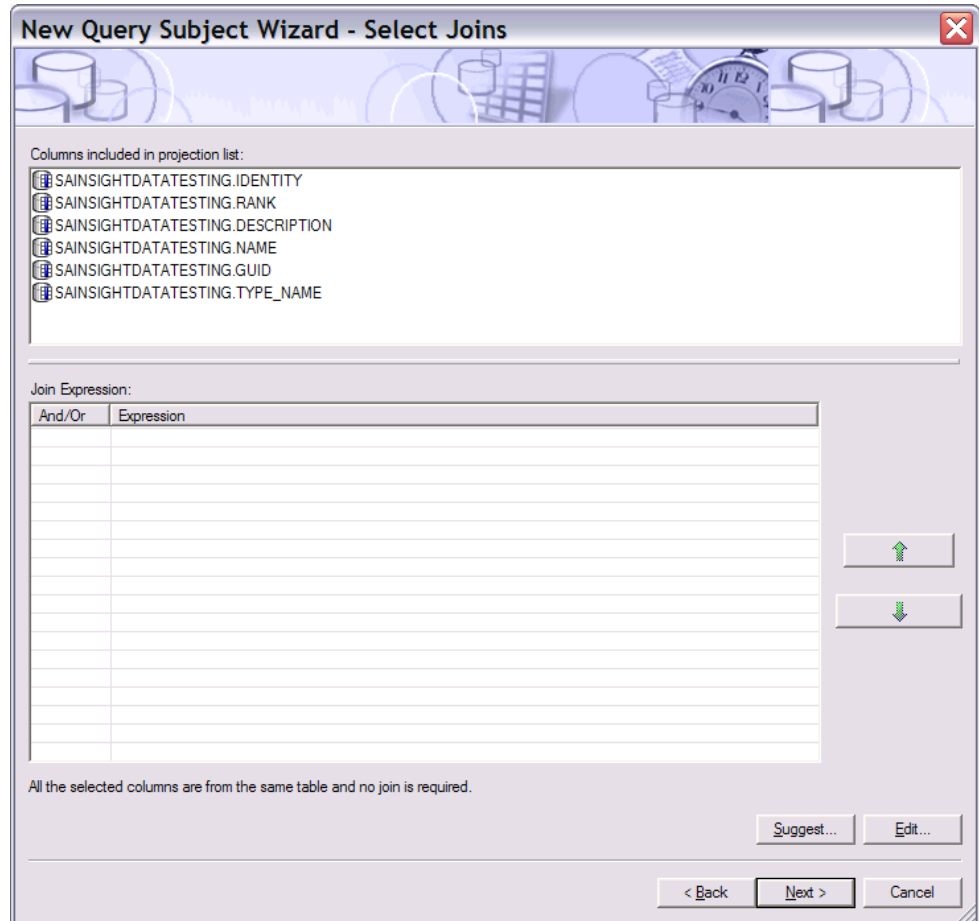
Once the project is loaded, you can insert a new query, through the **Query Subject** context menu, as described below.

1. Enter a name in the **Name** field and chose **Data Source (Tables and Columns)**, since the data is being retrieved from the tables.
2. Click **OK**. The **New Query Subject Wizard** is displayed.
3. Select **RISA** from the data source list. The **Run database query subject wizard** checkbox should be checked.
4. Click **Next**. The following options are displayed.
5. Select the table from the data source list.

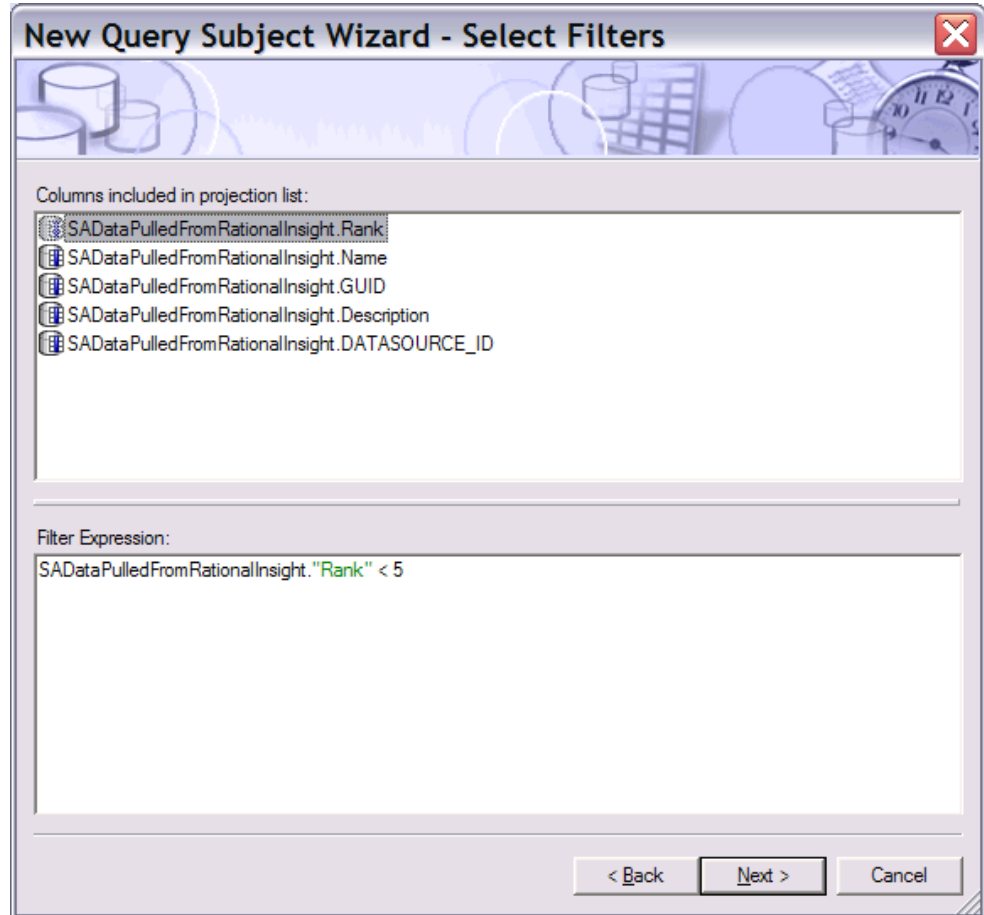


6. Click **Next**.

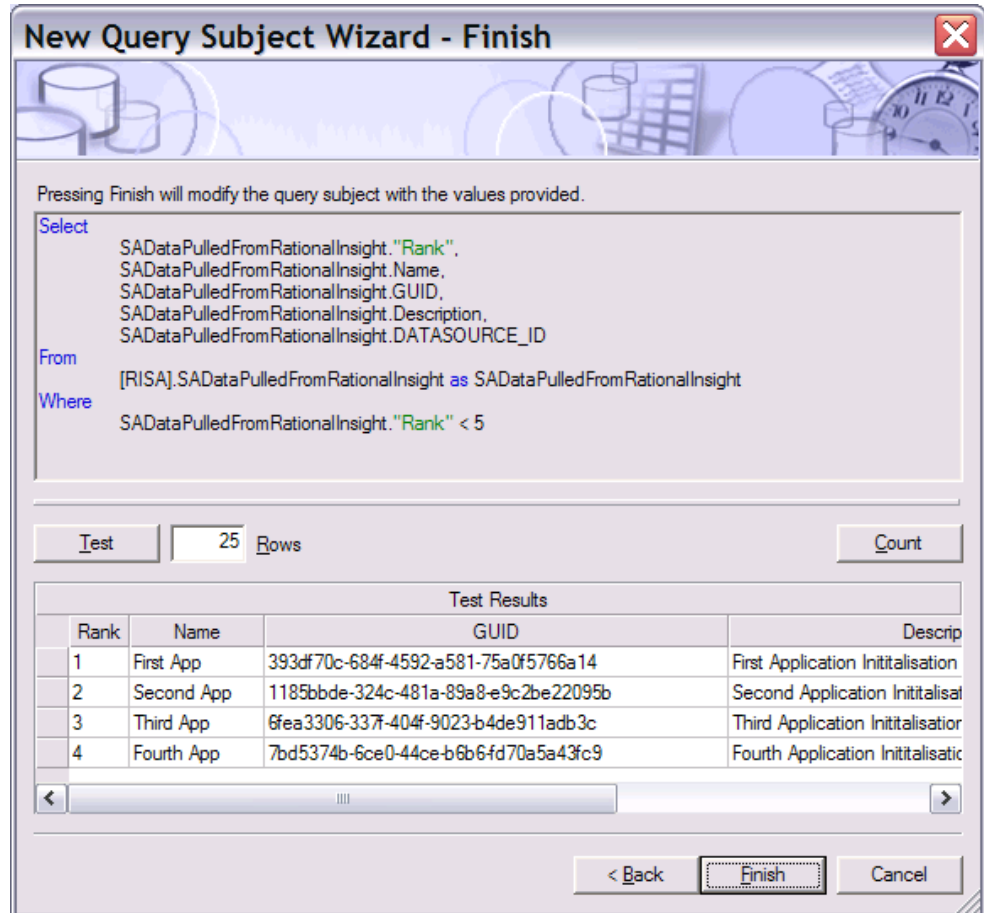
The subsequent dialogs provide an option where you can modify the data through some logical expression and filtering. As an example, the dialogs below show how modify the data with the relevant information to your requirements.



A Filter Expression is shown below.



7. Click **Next**. The dialog below query subject, with the modifications you made for the example.



8. Click **Test** to validate the query against the Rational System Architect data warehouse.
9. Click **Finish** to insert a query object in to the project.

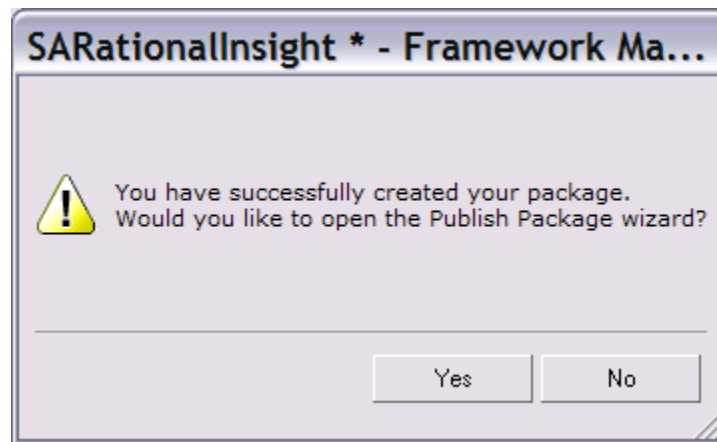
## Creating and publishing a new Package

Once the query object is inserted, you have to create a new package and publish it. Create the package as described below.

1. Right-click on **Packages** node, and select **Create> Package**.
2. Enter values for the **Name**, **Description**, and **Screen tip** fields.



3. Ensure that the query object selected below is included in the package in the screen displayed below.
4. Select **SQL server** as the function sets. If you have stored the database in some other data source then select the appropriate data source.
5. Click **Finish**. The following dialog is displayed.



Now that the package has been created, it has to be published through the publishing wizard.

6. Click **Yes**. In the dialog shown, note the folder location where the package will be published. You will need this folder location later when you publish the report.
7. Click **Next**. The access control of user on the published package can be controlled through the dialog shown.
8. Add the necessary user and click **Next**.
9. Click **Publish** to publish the packages.
10. Click **Finish**. If there are any errors or warnings found during package publishing, a **Verify** checkbox.

## Publishing Reports

Once the package is published, using the framework manager the report can be generated using the published package. The steps for generating the report is mentioned below

1. Open the browser window and enter the URI <http://localhost:9080/insight/servlet>.
2. The screenshot shown below is displayed
3. Click on **Report studio** in the menu shown below to open the report generating UI.
4. Navigate to your desired folder and select the Package, which was published through the Framework Manager.
5. Click on the **SARationalInsightProject** package, which was published in the Framework Manager; the package opens in the Reporting UI.
6. Click on the **Create a new report or Template** to create new report. Click the **Existing Template** icon if you prefer to open an existing one.
7. Chose the list item and click **OK** to produce a sample report with a list of definitions.
8. The reporting UI opens with the list view. The query object is populated in the tree view in the explorer window.
9. Traverse to the **SARationalInsightQuery** query object in the explorer window. This query object was created in the Framework manager.
10. Switch to the **Toolbox** pane to drop the relevant controls on the report-editing window.
11. Drag and drop the table control on to the editing window.
12. Drag and drop the necessary fields from the **SARationalInsightQuery** query object in to the table.
13. Click on the **Run Report** in the **Report** UI to generate the report.
14. The output report is as shown below. You can export it to Microsoft Excel, Microsoft Word and other formats.

## Creating and changing Data Warehouse Signon

In Rational Insight, you have to change the data warehouse to point to point to the data warehouse where the Rational System Architect information is stored. You can do so with IBM Cognos Administration, as follows.

1. Open the browser window and enter the following URI:  
<http://localhost:9080/insight/servlet>.

The **IBM Cognos Connection** screen is displayed with the **Public Folders** tab selected.

2. On the toolbar, click on query drop-down field and select **IBM Cognos Administrator**.
3. Click the **Configuration** tab.
4. Click **RISA** in the data source list. It contains the table from where the information pulled from Rational System Architect is stored.
5. Click on the **properties** icon, (left of the **More...** link.).
6. Click the **Connection** tab.
7. Click the **Edit the connection string** icon (right of the **Connection string** field). Ensure that the data warehouse **RISA** is selected as the **Database name** value. Select **RISA** if is not the currently selected data warehouse.
8. After you configure the database, from the **Configuration** tab, click the **New Signon** icon to create a signon user.
9. In the **New Signon Wizard** screen, enter a unique name in the **Name** field, and optionally, enter values in the **Description**, and **Screen tip** fields. Ensure this signon user is added to the RISA database in the SQL server.
10. Click **Next**.
11. Enter values for the **User ID** and **Password** fields, and click **Next**. The **Select the users** screen is displayed.
12. To add users and groups that can use the signon, and click **Add...**
13. To choose from listed entries, click the appropriate namespace, and then select the check boxes next to the users, groups, or roles.
14. Click the right-arrow button to add entries from the **Available entries** column to the **Selected entries** column.
15. Click **OK**.
16. Click **Finish**. The new data source signon now appears in the **Type** field in the **Connection** tab.

# ***Generating a visual business report***

# **2**

## **Introduction**

Before starting here, please read Section ‘Generating a simple report from a data warehouse’ section (pg. 3) which details all steps to create a simple report for Rational System Architect users using Rational Insight.

This chapter guides you through real-world scenario, showing you how to use Rational System Architect to create a sample, visual business report with Rational Insight to analyze your business, as modeled in Rational System Architect. You can take similar steps to create Rational Insight reports for any other products that provide suitable data import mechanisms.

The sample scenario here shows how a report author can create “Costing Dashboard Reports” (generated from Rational System Architect) using Rational Insight. Report users can then execute the report to see a visual summary of the relative costs spent by an organization in the Enterprise Architecture (EA) domains of Process, Technology, Application, and so on.

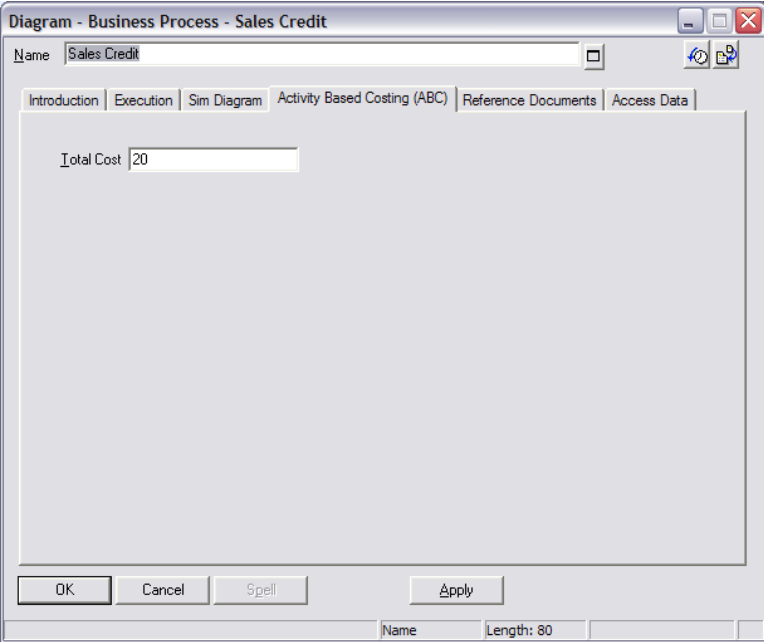
## **Enterprise Architecture Domain Definitions**

Most of the data used for the sample report is available via the out of the box metamodel. However, some of the data is obtained from properties that need to be added to the metamodel. This is done by inserting code to your encyclopedia’s USRPROPS.TXT file. See the ‘Code to add to the USRPROPS.TXT file’ section (pg. 30) for the code that you need to add.

The sections below show and describe the Rational System Architect definitions used to create the sample report.

## **Business Process data**

The process data will come from the Activity Based Costs inside a Business Process definition in Rational System Architect:



**Application data**

The application data is taken from the Cost Center that is associated with an Application definition.

*Generating a visual business report*

---

Model Object - Application - Customer Maintenance

Name: Customer Maintenance

Technologies | Application Type | Application Interface | Approach | Application Detail | Matrix | Portfolio Mgt

Dates  
Effective Date: 12/01/2009

Costs  
Perpetual License Cost: 300  
Yearly Maintenance Cost: 42  
Yearly Rental Cost:   
Build Cost:

Budget  
Cost Center: Detroit  
Define Check Choices...

OK Cancel Spell Delete Apply

## Organizational Unit data

The organizational data comes from a summation of new properties added to an Organizational Unit definition. See the “DEFINITION "Organizational Unit”” section of the USRPROPS code (pg. 31). The properties added are Annual Salary, Annual Bonuses, and Other Contributions.

Dictionary Object - Organizational Unit - ABC Enterprises

Name: ABC Enterprises

Introduction | Costs | Reference Documents | Access Data

Annual Salary:

Annual Bonuses:

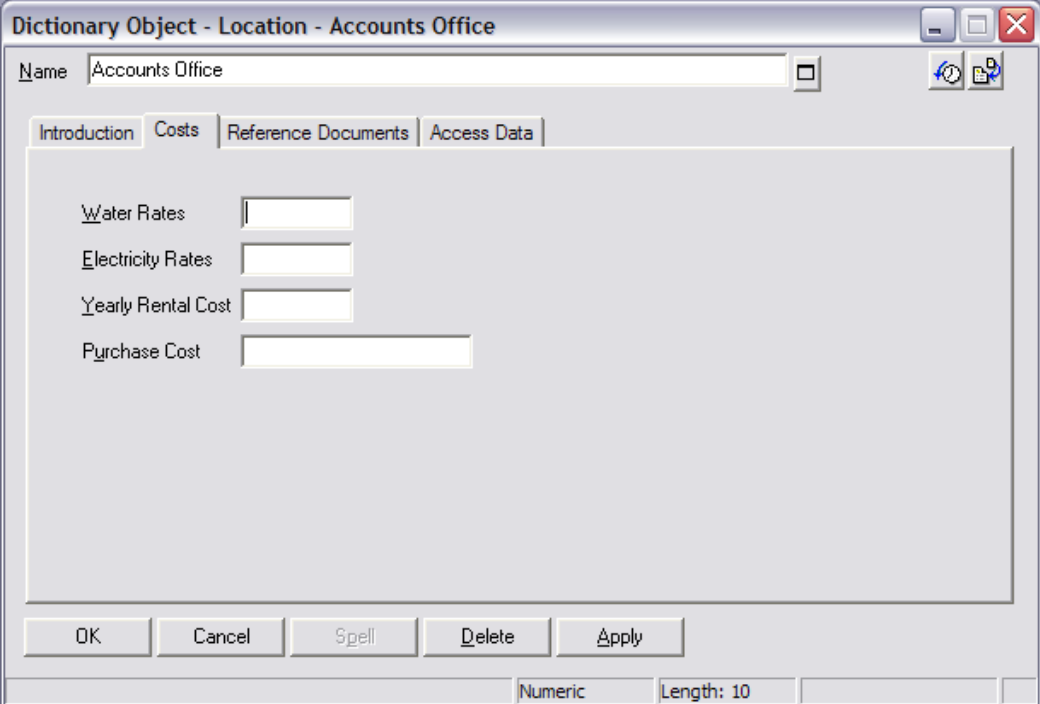
Other Contributions:

OK Cancel Spell Delete Apply

Numeric Length: 10

## Location data

The location data is a summation of the following for each location definition:



The screenshot shows a dialog box titled "Dictionary Object - Location - Accounts Office". The "Name" field is set to "Accounts Office". There are four tabs: "Introduction", "Costs", "Reference Documents", and "Access Data". The "Costs" tab is active, displaying four input fields: "Water Rates", "Electricity Rates", "Yearly Rental Cost", and "Purchase Cost". At the bottom, there are buttons for "OK", "Cancel", "Spell", "Delete", and "Apply". A status bar at the bottom right shows "Numeric" (checked) and "Length: 10".

Properties from “Project” and “Technology” definition types will also be used in this example, and are specified later in the document, where the property mappings are described.

## Code to add to the USRPROPS.TXT file

To begin, you need to copy the code in step 4 below into your encyclopedia’s USRPROPS.TXT, file as follows:

1. From the Rational System Architect Tools menu, and select Encyclopedia File Manager.
2. Select the USRPROPS.TXT file and click “Export a file from the encyclopedia” icon.
3. Open the USRPROPS.TXT file from the file onto which you exported it.



4. Copy the code below onto your USRPROPS.TXT file.

**Note:** The “Energy Cost” definition is not provided out of the box, and therefore is added to the metamodel below (in the first line). The other definitions are provided out of the box, and are extended with additional properties.

```

RENAME DEFINITION "User 1" TO "Energy Cost"

DEFINITION "Application"
{
  CHAPTER "Technologies"
  PROPERTY "User" { EDIT ListOf "Organizational Unit" }
  PROPERTY "Action By" { EDIT DATE }
  PROPERTY "Flag For Upgrade" { EDIT BOOLEAN DEFAULT "F" }
  PROPERTY "Application Improvement Requirements" { EDIT
ListOf "Requirement" }
}

DEFINITION "Organizational Unit"
{
  CHAPTER "Costs"
  LAYOUT { ALIGN OVER TAB COLUMNS 3 }
  PROPERTY "Annual Salary" { EDIT NUMERIC LENGTH 10 }
  PROPERTY "Annual Bonuses" { EDIT NUMERIC LENGTH 10 }
  PROPERTY "Other Contributions" { EDIT NUMERIC LENGTH 10 }
}

DEFINITION "Location"
{
  CHAPTER "Costs"
  PROPERTY "Water Rates" { EDIT NUMERIC LENGTH 10 }
  PROPERTY "Electricity Rates" { EDIT NUMERIC LENGTH 10 }
  PROPERTY "Yearly Rental Cost" { EDIT NUMERIC LENGTH 10 }
  PROPERTY "Purchase Cost" { EDIT NUMERIC LENGTH 10 }
}

DEFINITION "Project"
{
  CHAPTER "Costs"
  PROPERTY "Approximate Cost" { EDIT NUMERIC LENGTH 10 }
}

DEFINITION "Computer"
{
  CHAPTER "Green Enterprise"
  PROPERTY "Energy Supplier Cost" { EDIT OneOf "Energy Cost"

```

```
LENGTH 81}
}

DEFINITION "Energy Cost"
{
  CHAPTER "Costs"
  PROPERTY "Electricity Cost" { EDIT NUMERIC LENGTH 10}
}

DEFINITION "Hardware Processor"
{
  CHAPTER "Green Enterprise"
  PROPERTY "Energy Supplier Cost" { EDIT OneOf "Energy Cost"
LENGTH 81}
}

DEFINITION "Server"
{
  CHAPTER "Green Enterprise"
  PROPERTY "Energy Supplier Cost" { EDIT OneOf "Energy Cost"
LENGTH 81}
}

DEFINITION "Storage Device"
{
  CHAPTER "Green Enterprise"
  PROPERTY "Energy Supplier Cost" { EDIT OneOf "Energy Cost"
LENGTH 81}
}
```

The USRPROPS code screen captures above apply to an encyclopedia where the TOGAF support is not enabled. If TOGAF is enabled in your encyclopedia, change the following types in USRPROPS accordingly:

"Organizational Unit" to "Organization Unit"  
"Application" to "Application Component"

Additionally, any references in this guide to "Application" or "Organization Unit" should be substituted accordingly in the property mappings.

## **Generating a Report from live data**

To see the illustration of the overall steps to create and generate reports, see the section 'Generating a simple report from a data warehouse' above (pg. 3).

To generating a report from live data, the overall steps are as follows:

- Generate a XDC file using XML Data Configuration
- Create or open an existing Resource Group
- Create Data Mapping Templates
- Model the physical database in the Data Manager by using the XDC file
- Publish the report using the browser

The sections that follow guide you through the above steps, as they relate to creating the sample business report.

## Generating the XDC file using XML Data Configuration

Create or open an XML Data Configuration file using “XML Data Configuration” tool as explained in the ‘Generating the XDC file using XML Data Configuration’ section above (pg. 4).

## Creating or open an existing Resource Groups

1. Create or use a Resource group specifying the REST URI in the Data Service field. The REST URI should be specified until the workspace level and be of the following format:

```
http://localhost:8889/SARest/SQL/{database_instance}/{ency_name}/1/
```

2. In this example, we create a Resource group named “SystemArchitectDefinition” and use the REST URI:

```
http://localhost:8889/SARest/SQL/ibm/Samples/1.
```

**New Resource Group**

**Create a Resource Group**

Specify a name, description, and authentication type for the new resource group. Select a URL type, enter the URL, and click Finish.

Name: SystemArchitectDefinition

Description: Retrieval of System Architect Definition through REST API

Authentication type: None

URL:

Data service

http://localhost:8889/SARest/SQL/ibm/Samples/1

Generic XML

Link to existing resource group

Name	URL
------	-----

Test Connection...

Finish Cancel

## Creating Resource under the Resource Group

In the created Resource Group, create Resources for the EA domains to be reported on. While creating the resources, use the radio button “Locate using Data Service,” and complete the creation using the following Resource URL’s for respective Resources.

LocationDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Location`

ApplicationDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Application`

OrganizationalUnitDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Organizational-spa-Unit`

ProcessDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Process`

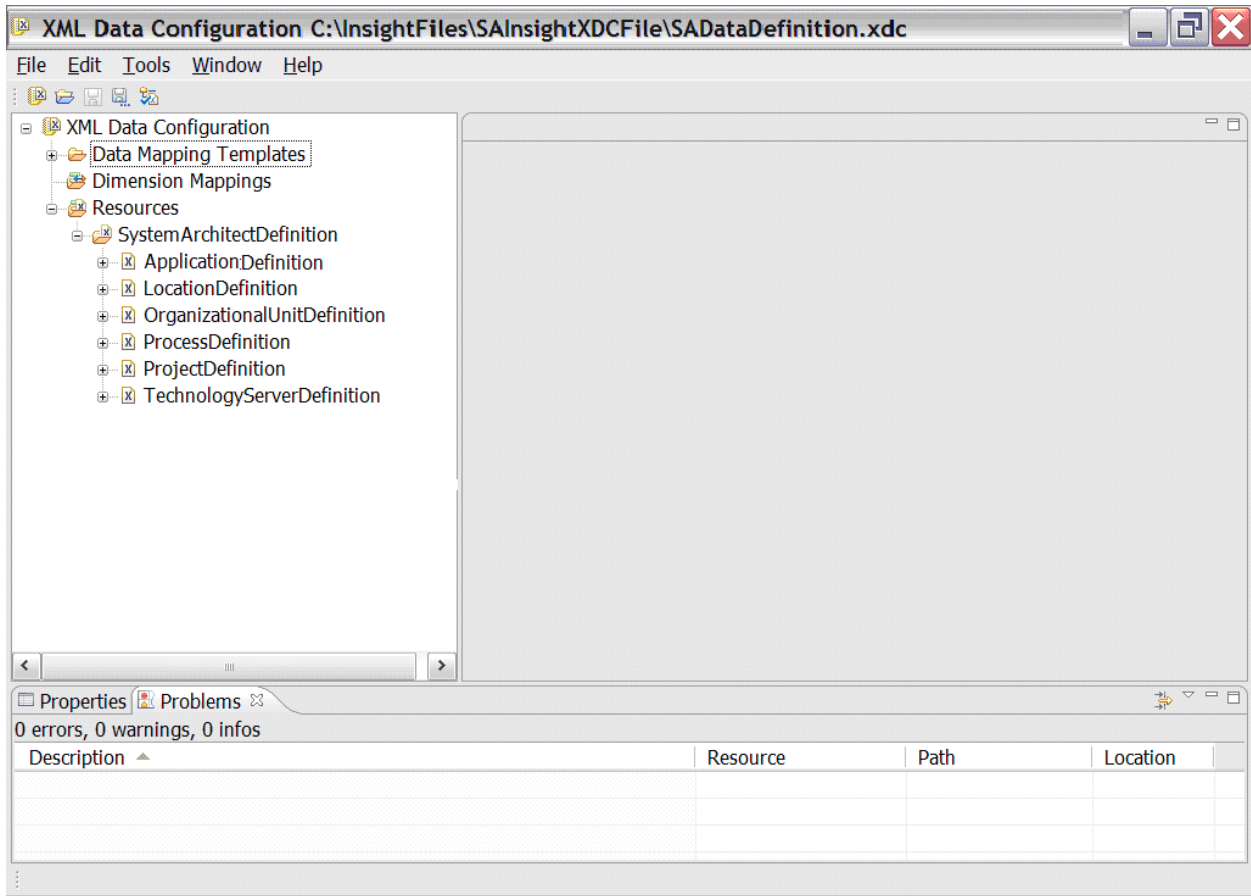
ProjectDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Project`

TechnologyServerDefinition:

`http://localhost:8889/SARest/SQL/ibm/Samples/1/Definitions/  
Server`

Ultimately, the configuration should look as follows:



## Creating Data Mapping Templates

Select each of the resources created above (for example ‘ApplicationDefintion’, ‘LocationDefinition’, and so on), and create Data Mapping for each of them, as shown in Screens 1 – 6 below.

### Screen 1 – ApplicationMap

The screenshot shows the 'XML Data Configuration' window for a file named 'C:\InsightFiles\SAInsightXDCFile\SADataDefinition.xdc'. The main area is titled 'Data Mapping Table: ApplicationMap' and contains a 'Column Mappings' section. Below this, there is a table of 'Relational table columns' with columns for XPath, Table Column Name, SQL Type, Length, Precision, Scale, Nullable, and Primary Key. The table lists five mappings: Identity (INTEGER), Description (VARCHAR, 256), Name (VARCHAR, 256), Related\_CostCenter\_TotalCost (INTEGER), and GUID (VARCHAR, 256). The 'Identity' and 'GUID' rows have their 'Nullable' checkbox checked. At the bottom, there is a 'Properties' pane showing '0 errors, 0 warnings, 0 infos' and a table with columns for Description, Resource, Path, and Location.

XPath	Table Column Name	SQL Type	Length	Prec...	Sc...	Nullable	Primary Key
/Identity	Identity	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Description	Description	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Cost-spa-Center/Cost-spa-Center/prp_Total-spa-Center-spa-Cost	Related_CostCenter_TotalCost	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_GUID	GUID	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>

Screen 2 – LocationMap

The screenshot shows the 'XML Data Configuration' application window. The title bar indicates the file path: C:\InsightFiles\SAInsightXDCFile\SADataDefinition.xdc. The main window is titled 'LocationMap' and displays the 'Data Mapping Table: LocationMap' configuration. Under the 'Column Mappings' section, there is a table of relational table columns with the following data:

XPath	Table Column Name	SQL Type	Length	Preci...	Scale	Nullable	Primary
/prp_Yearly-spa-Rental-spa-Cost	Yearly_Rental_Cost	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Description	Description	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Identity	Identity	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Water-spa-Rates	Water_Rates	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_GUID	GUID	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Electricity-spa-Rates	Electricity_Rates	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Purchase-spa-Cost	Purchase_Cost	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom of the window, the 'Properties' tab is active, showing a table with the following columns: Description, Resource, Path, and Location. The 'Description' column is currently expanded.



Screen 3 – OrganizationalUnitMap

**Data Mapping Table: OrganizationalUnitMap**

Column Mappings

Describe the XML-to-relational table column mapping used by this data mapping table.

Relational table columns: [Modify](#) [Load](#) [Unload](#) [Value mapping](#)

XPath	Table Column Name	SQL Type	Length	Precision	Scale	Nullable	Primary Key
/prp_Annual-spa-Bonuses	Annual_Bonuses	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_GUID	GUID	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Other-spa-Contributions	Other_Contributions	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Description	Description	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Identity	Identity	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Annual-spa-Salary	Annual_Salary	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>

Properties Problems

0 errors, 0 warnings, 0 infos

Description	Resource	Path	Location

Screen 4 – ProcessMap

The screenshot shows the 'XML Data Configuration' application window. The main pane displays the 'Data Mapping Table: ProcessMap' with the following column mappings:

XPath	Table Column Na...	SQL Type	Length	Precision	Scale	Nullable	Primary Key
/prp_Total-spa-Cost	Total_Cost	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Identity	Identity	INTEGER				<input type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input type="checkbox"/>	<input type="checkbox"/>
/prp_Description	Description	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>

Below the table, there is a 'Properties' pane showing '0 errors, 0 warnings, 0 infos' and a table with columns: Description, Resource, Path, Location.

Screen 5 – ProjectMap

The screenshot shows the 'XML Data Configuration' application window. The title bar indicates the file path: C:\InsightFiles\SAInsightXDCFile\SADataDefinition.xdc. The main workspace is titled 'Data Mapping Table: ProjectMap'. Under the 'Column Mappings' section, there is a table for 'Relational table columns:'.

XPath	Table Column Name	SQL Type	Length	Precision	Scale	Nullable	Primary Key
/Identity	Identity	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input type="checkbox"/>	<input type="checkbox"/>
/prp_Approximate-spa-Cost	prp_Approximate_Cost	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom of the window, the 'Properties' pane shows '0 errors, 0 warnings, 0 infos'. Below this, a table lists resource details:

Description	Resource	Path	Location

Screen 6 – TechnologyMap

The screenshot shows the 'XML Data Configuration' application window. The title bar indicates the file path: C:\InsightFiles\SAInsightXDCFile\SADataDefinition.xdc. The main window displays a 'Data Mapping Table: TechnologyMap'. Below the title, there is a section for 'Column Mappings' with a description: 'Describe the XML-to-relational table column mapping used by this data mapping table.' A link for 'Modify Load Unload Value mapping' is visible. The table below lists the mappings:

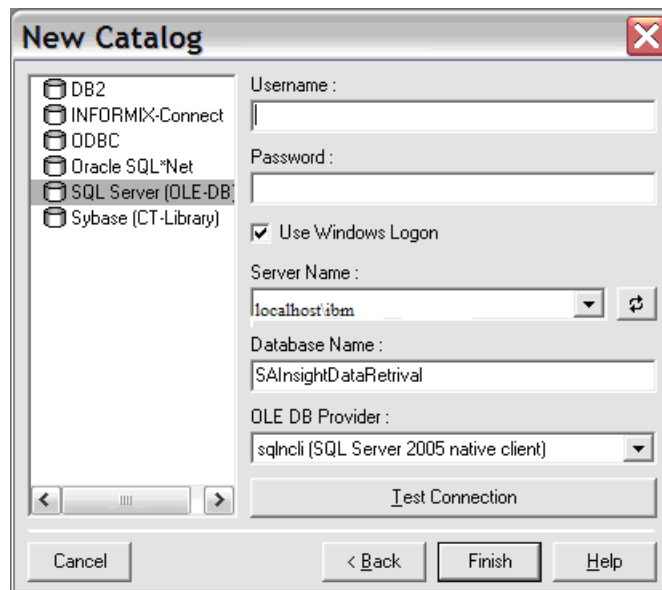
XPath	Table Column Name	SQL Type	Len...	Preci...	Scale	Nullable	Primar
/prp_Description	Description	VARCHAR	256			<input checked="" type="checkbox"/>	<input type="checkbox"/>
/prp_Energy-spa-Supplier-spa-Cost/Energy-spa-Cost/prp_Electricity-spa-Cost	EnergySupplier_Elec_Cost	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>
/Name	Name	VARCHAR	256			<input type="checkbox"/>	<input type="checkbox"/>
/prp_GUID	GUID	VARCHAR	256			<input type="checkbox"/>	<input type="checkbox"/>
/Identity	Identity	INTEGER				<input checked="" type="checkbox"/>	<input type="checkbox"/>

At the bottom of the window, there is a 'Properties' tab showing '0 errors, 0 warnings, 0 infos' and a table with columns: Description, Resource, Path, Location.

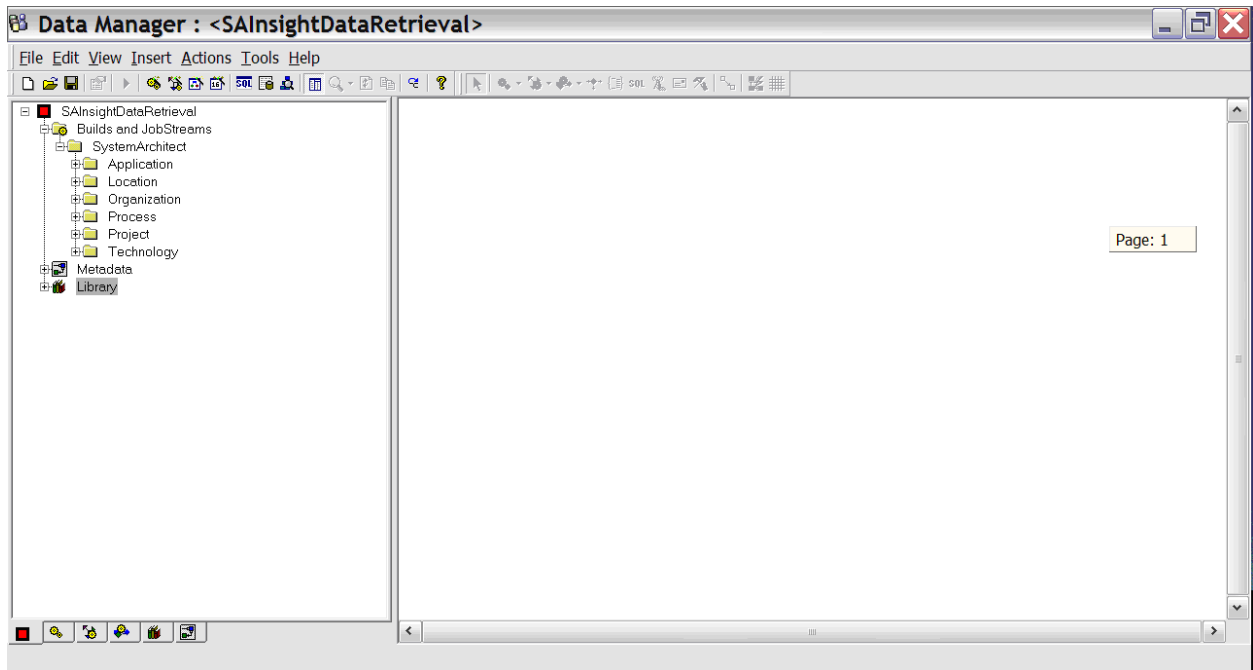
## Modeling the Physical Database in the Data Manager with the XDC file

Once the XDC file is created, use the Data Manager to configure the physical database from which the information retrieved from Rational System Architect will be stored under the data warehouse.

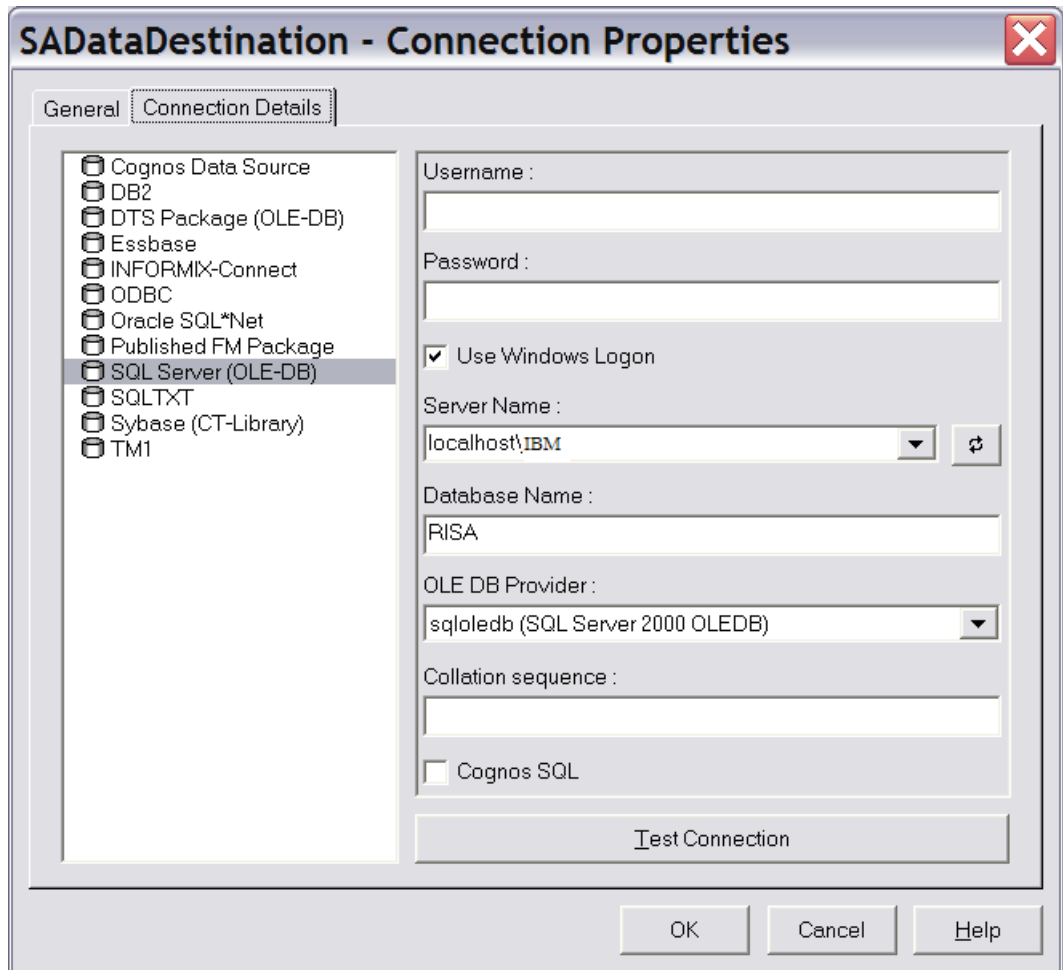
1. Create or Open the Catalog as follows:



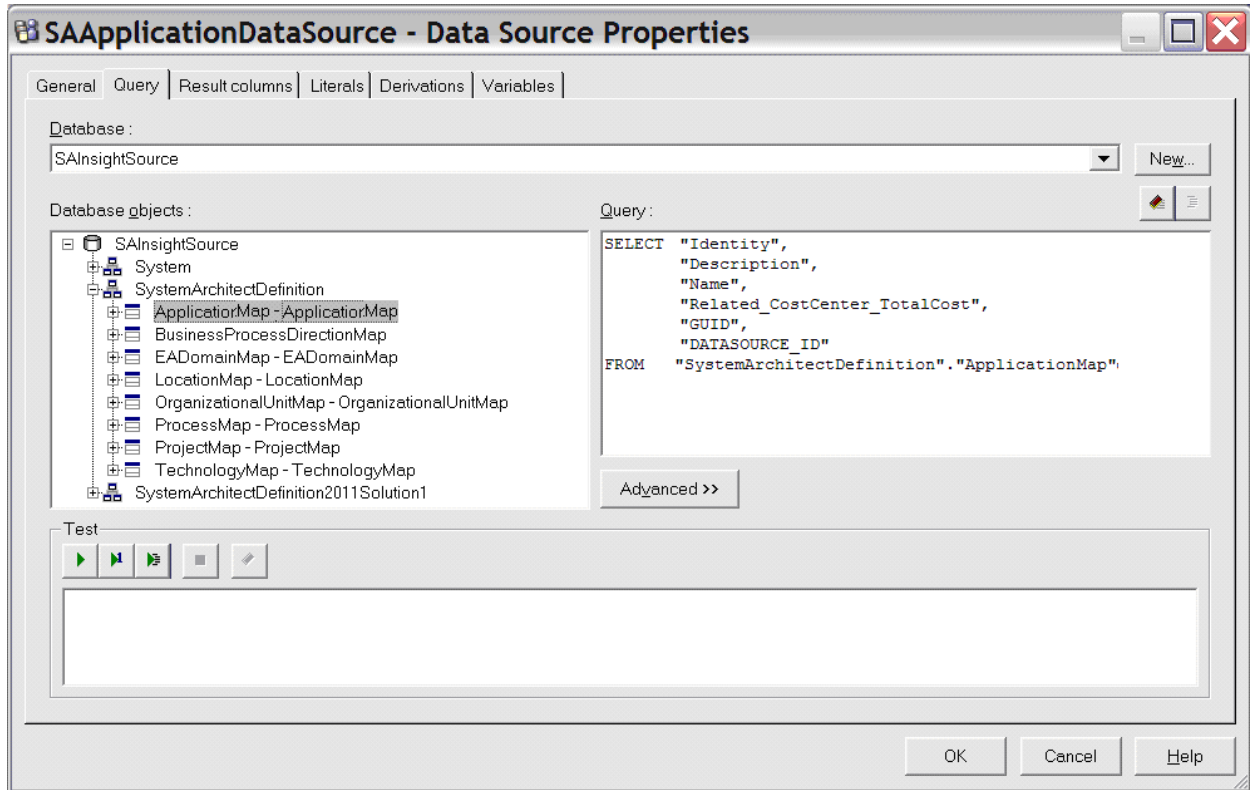
2. Next import the XDC files created through XML Data Configuration.
3. Create a folder hive as shown below.



4. Create a connection to import data from System Architect into Data Warehouse.



5. In the **Data Manager** window, expand the **Builds and JobStreams** folder, and select the “Application” subfolder within “System Architect.”
6. Select **Insert Fact Build** to initiate the data transfer from Rational System Architect to Rational Insight.
7. Create a Data Source on the ‘Fact’ created above as shown in the screen below.

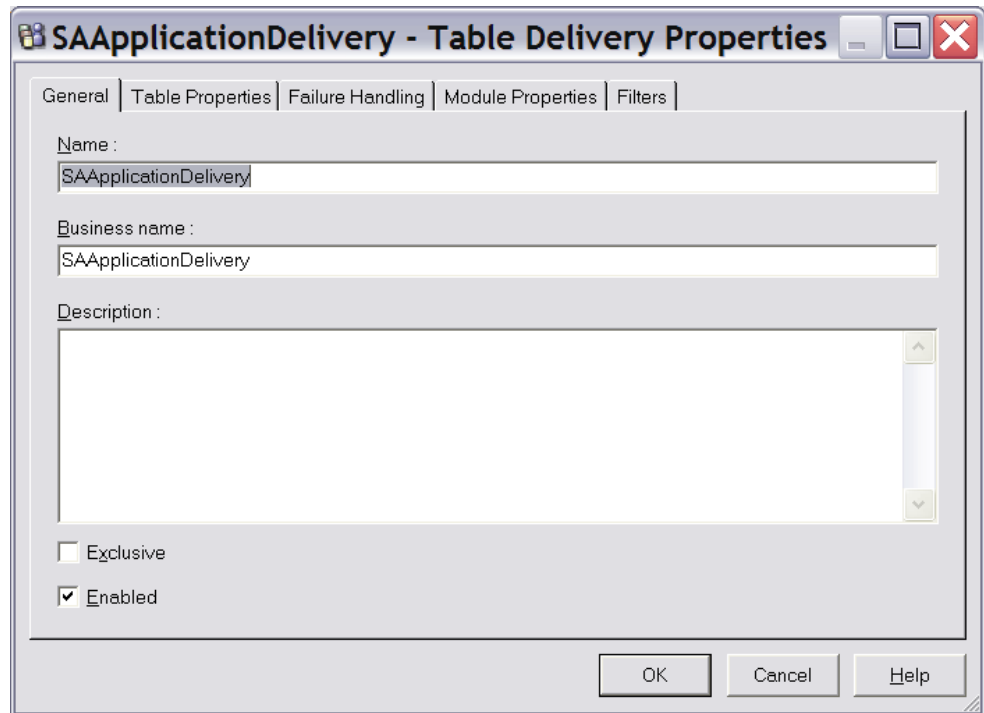


8. Use the **Test** buttons to check the data retrieval from Rational System Architect and complete creation of the Data Source.

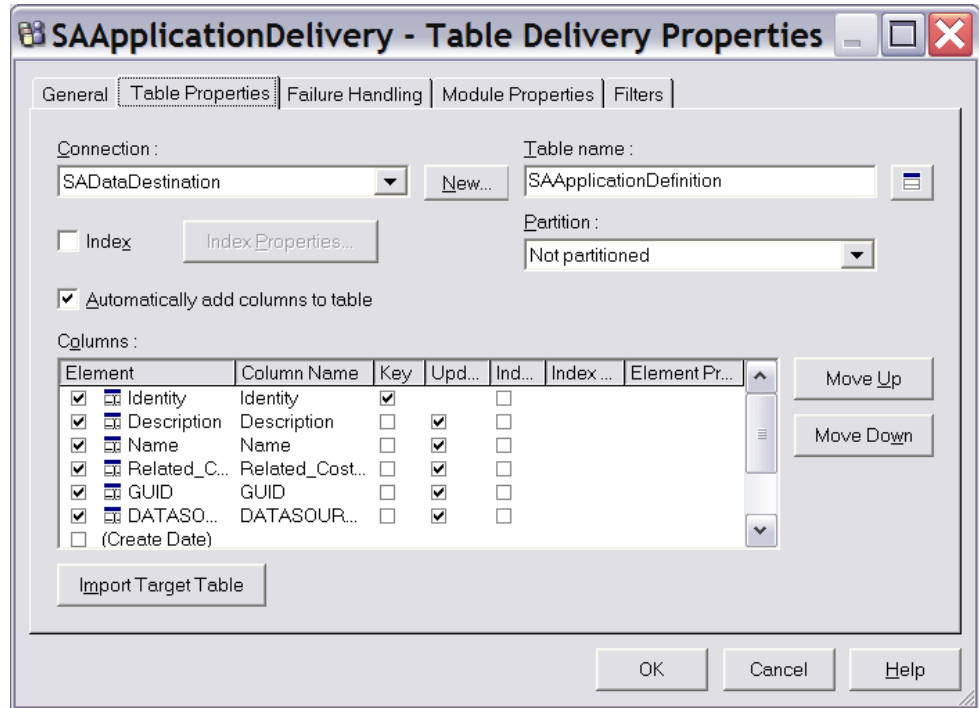
## Auto Mapping to Database

1. Right-click on the Data Stream, and select Properties to perform the mapping as explained in the 'Creating Data Mapping Templates' section above (pg. 7).
2. Right click on the "Fact Delivery" and click on "Insert Relational Table Query" to create a Fact Delivery as explained in the 'Auto Mapping to Database' section (pg. 15). Fill up the information as follows:





3. Select Connection, Table Name and other attributes as follows:



4. Click Execute under the context menu displayed on the Fact Build to fetch Application data from Rational System Architect into the data warehouse.
5. Repeat the above procedure for all sub-folders, viz. Location, Organization, Process, Project, and Technology.

Use Screens 1 – 6 below as guides to create each Fact Delivery.

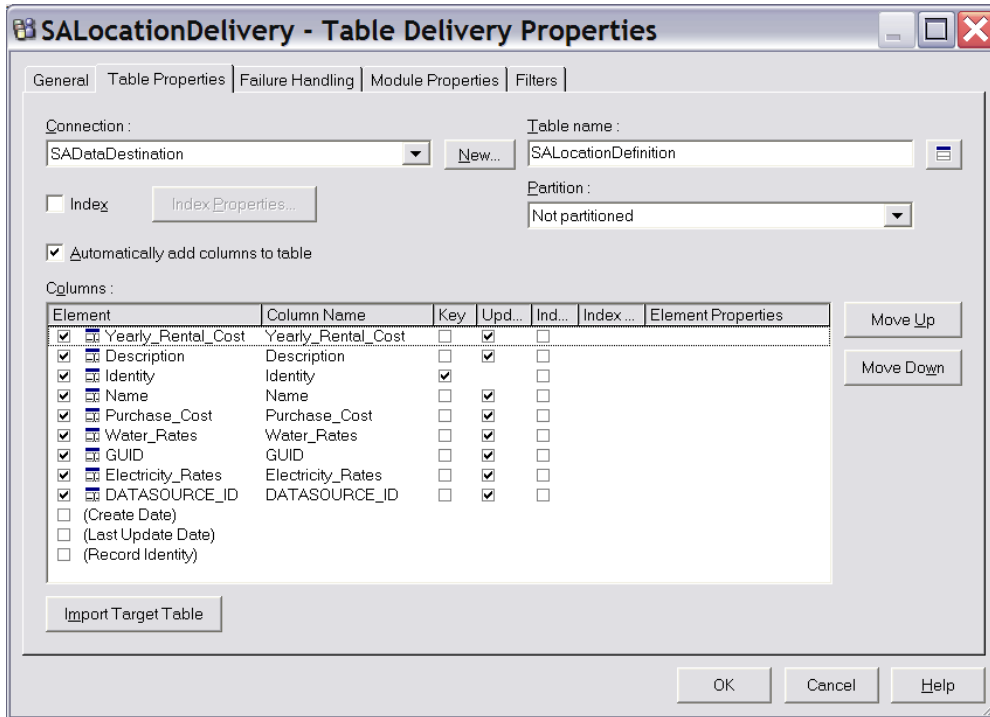
Screen 1 – SALocationDelivery (General tab)

The screenshot shows a dialog box titled "SALocationDelivery - Table Delivery Properties". The dialog has a tabbed interface with the following tabs: "General", "Table Properties", "Failure Handling", "Module Properties", and "Filters". The "General" tab is selected. The dialog contains the following fields and controls:

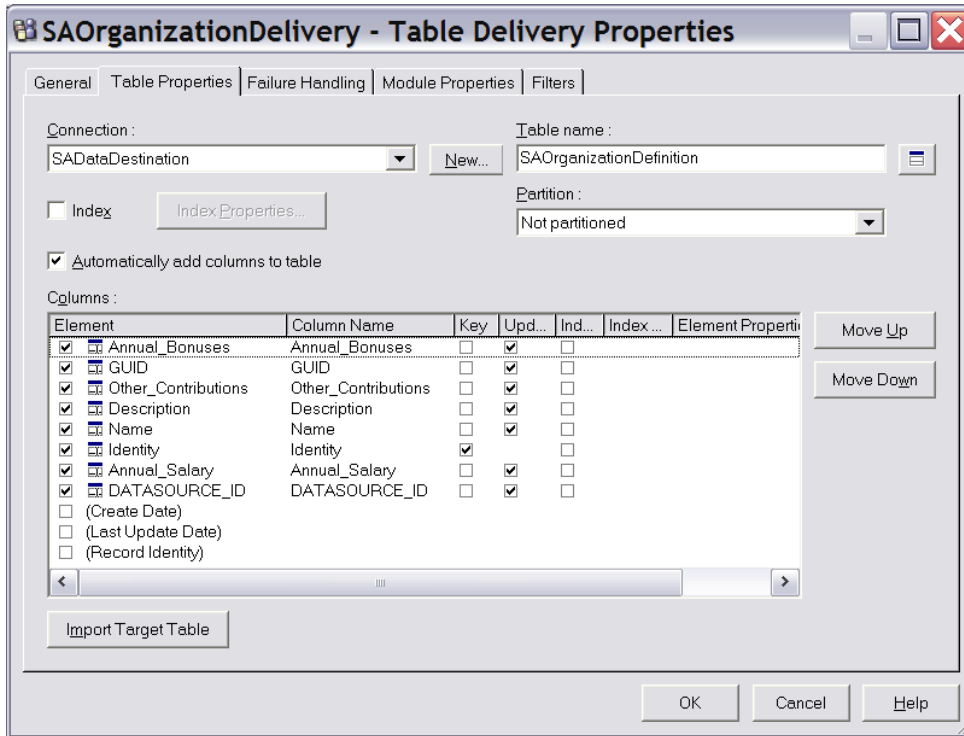
- Name :** A text input field containing "SALocationDelivery".
- Business name :** A text input field containing "SALocationDelivery".
- Description :** A large, empty text area with a vertical scrollbar on the right side.
- Exclusive :** A checkbox that is unchecked.
- Enabled :** A checkbox that is checked.

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

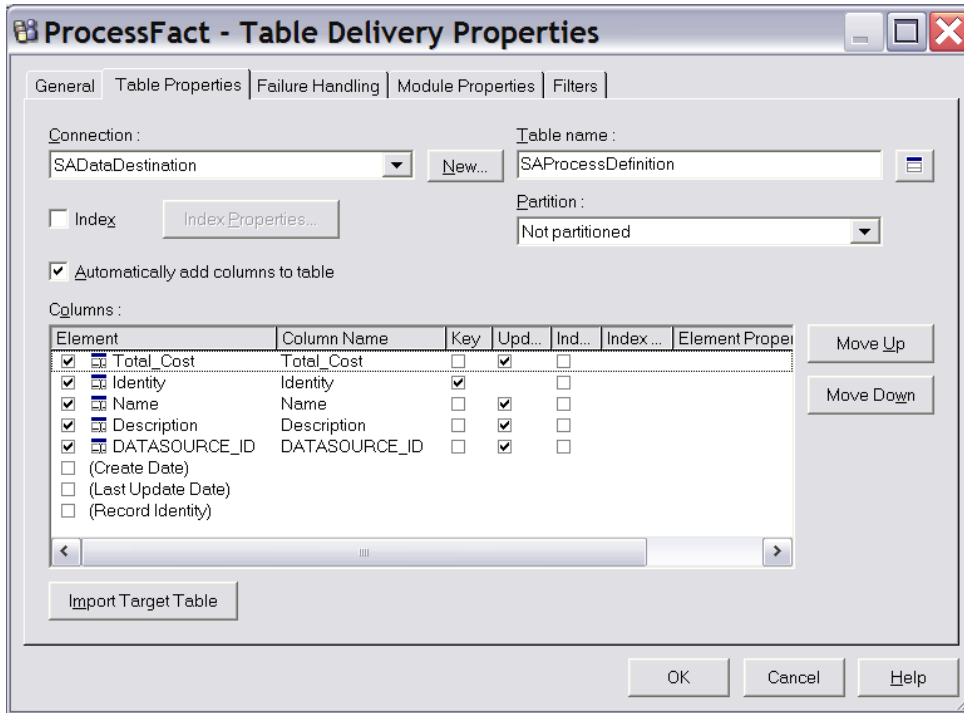
Screen 2 – SALocationDelivery (Table Properties)



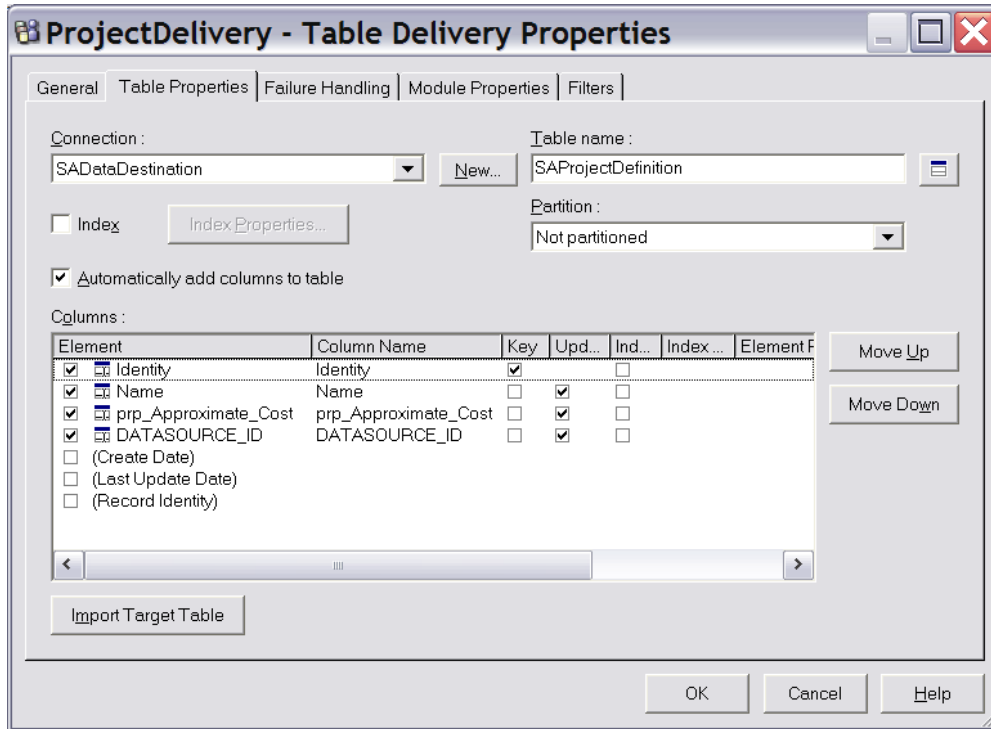
Screen 1 – SAOrganizationDelivery (Table Properties)



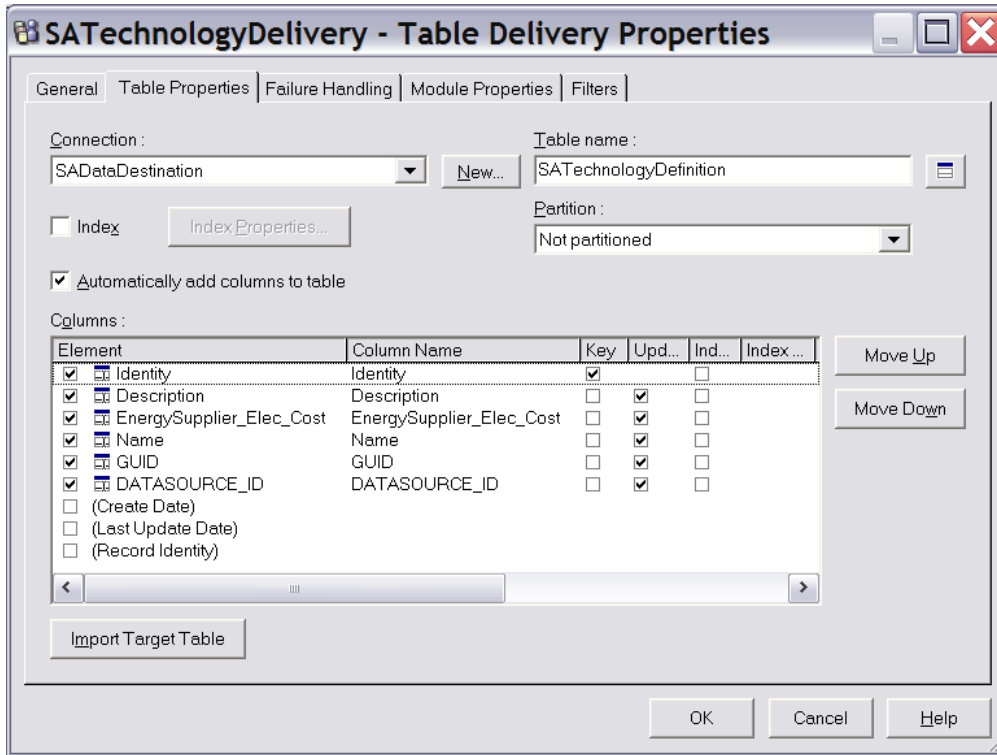
Screen 3 – SAPProcessFact (Table Properties)



Screen 4 – SAPProjectDelivery (Table Properties)



Screen 5 – SATechnologyDelivery (Table Properties)



6. Close **Data Manager** after accepting and saving all changes.



## Framework Manager

Once the data is in the Rational Insight data warehouse, you use Framework Manager to model metadata and publish packages, as explained in the 'Framework Manager' section above (pg. 15).

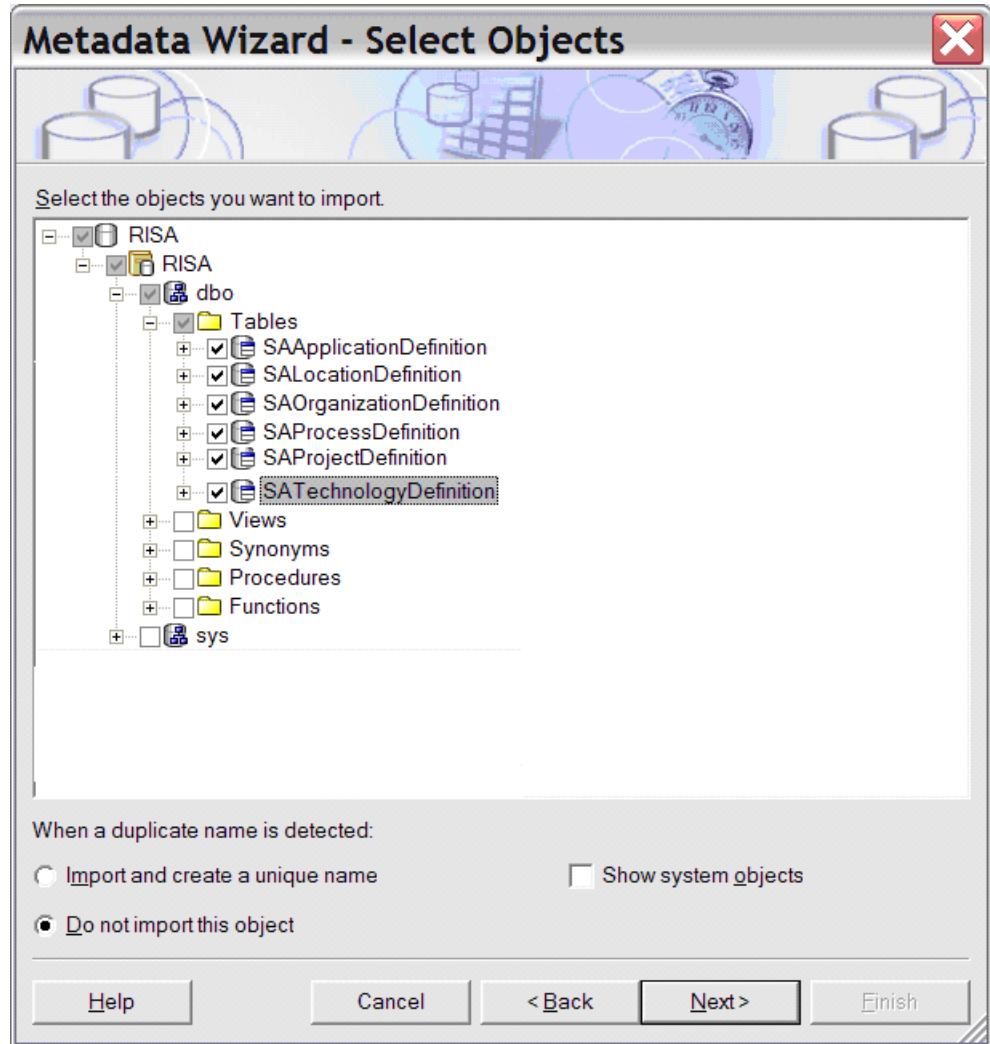
Before starting Framework Manager, ensure that the Data Warehouse is configured to the correct database and that the sign on user is created. By default, Rational Insight points to the "SAMPLEDW" data warehouse when it is installed.

The instructions that follow point you to a "RISA" data warehouse, as an example. Therefore, you need change the data warehouse to "RISA." Please refer to "Creating and changing Data Warehouse Signon" section (pg. 24) which describes how to change the Data Warehouse and create a sign on user.

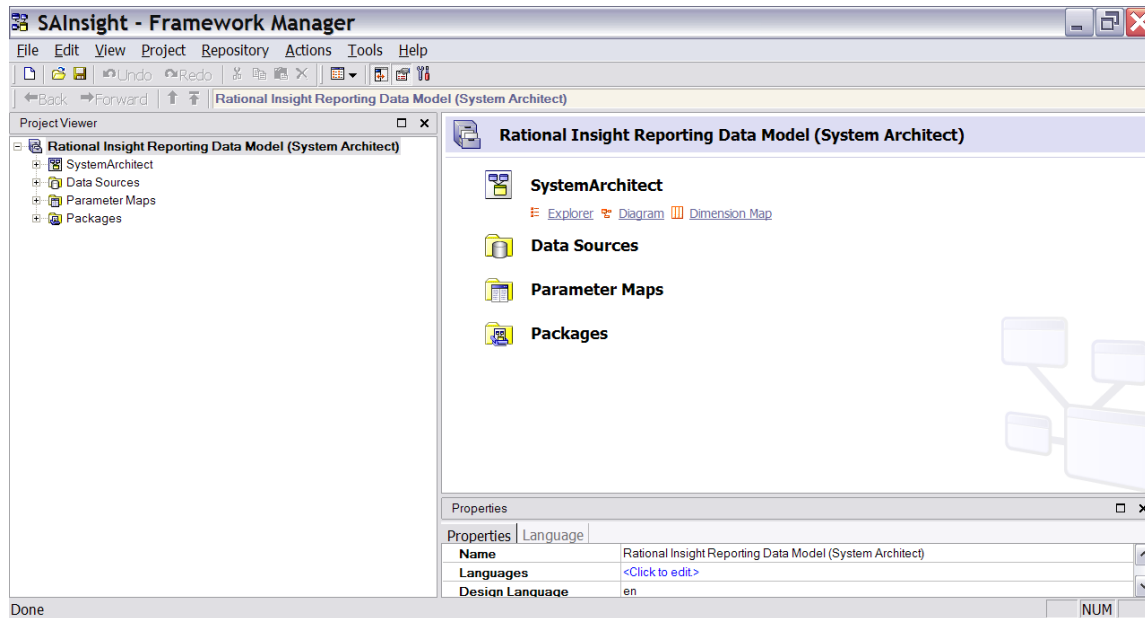
### Creating a new project named "SAInsight"

Refer the 'Creating or opening a project' section above (pg. 16) for information on creating a new project.

1. Select **RISA** from the data source list. This database stores the Rational System Architect data pulled through Data Manager.
2. Select **dbo** from the object list since the data from Rational System Architect was stored in this object, which was pulled through Data Manager, and select the tables.

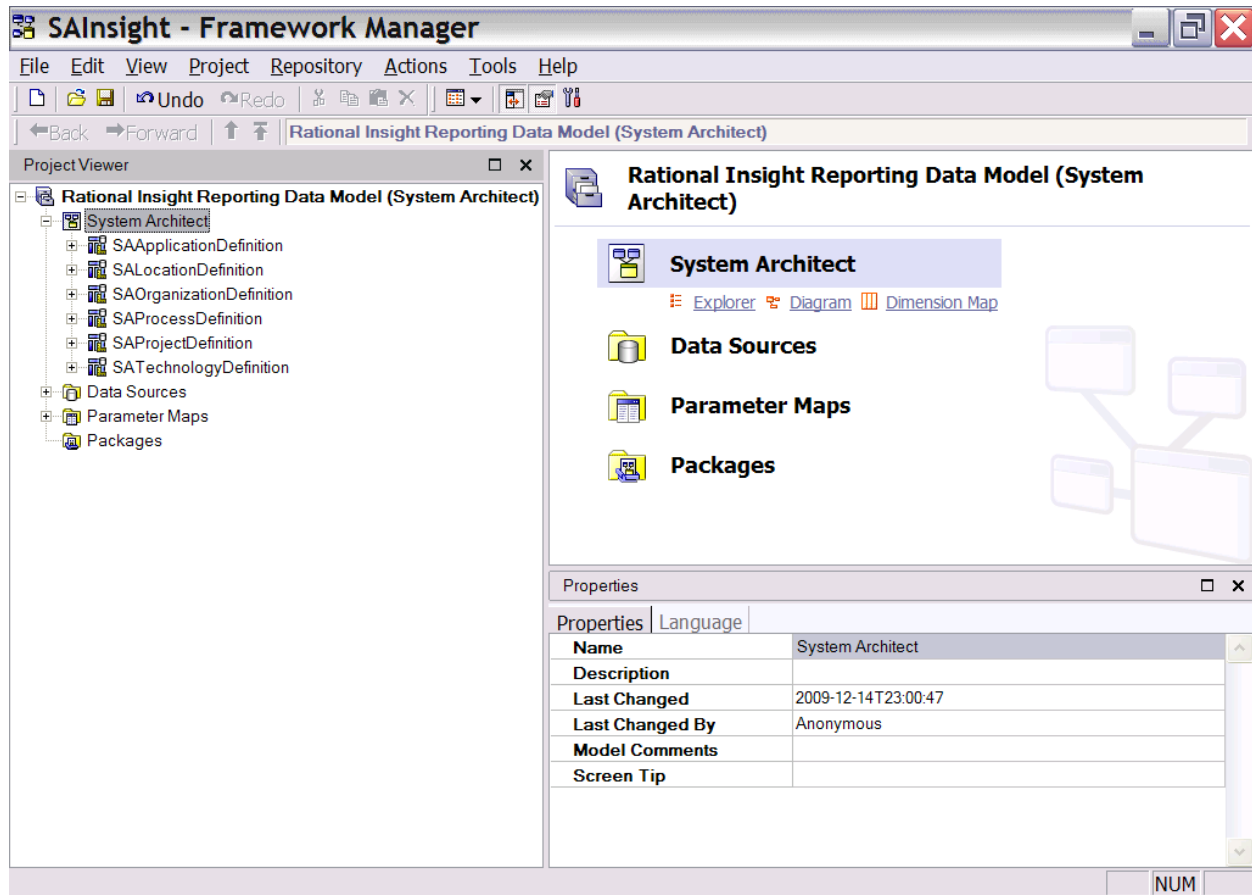


3. Complete the steps in the above dialog.
4. In **Framework Manager**, select the project name “SAInsight” in the Left Hand Side tree view, and modify it to “Rational Insight Reporting Data Model (System Architect)”. Select the namespace RISA below it and change it to “System Architect.”



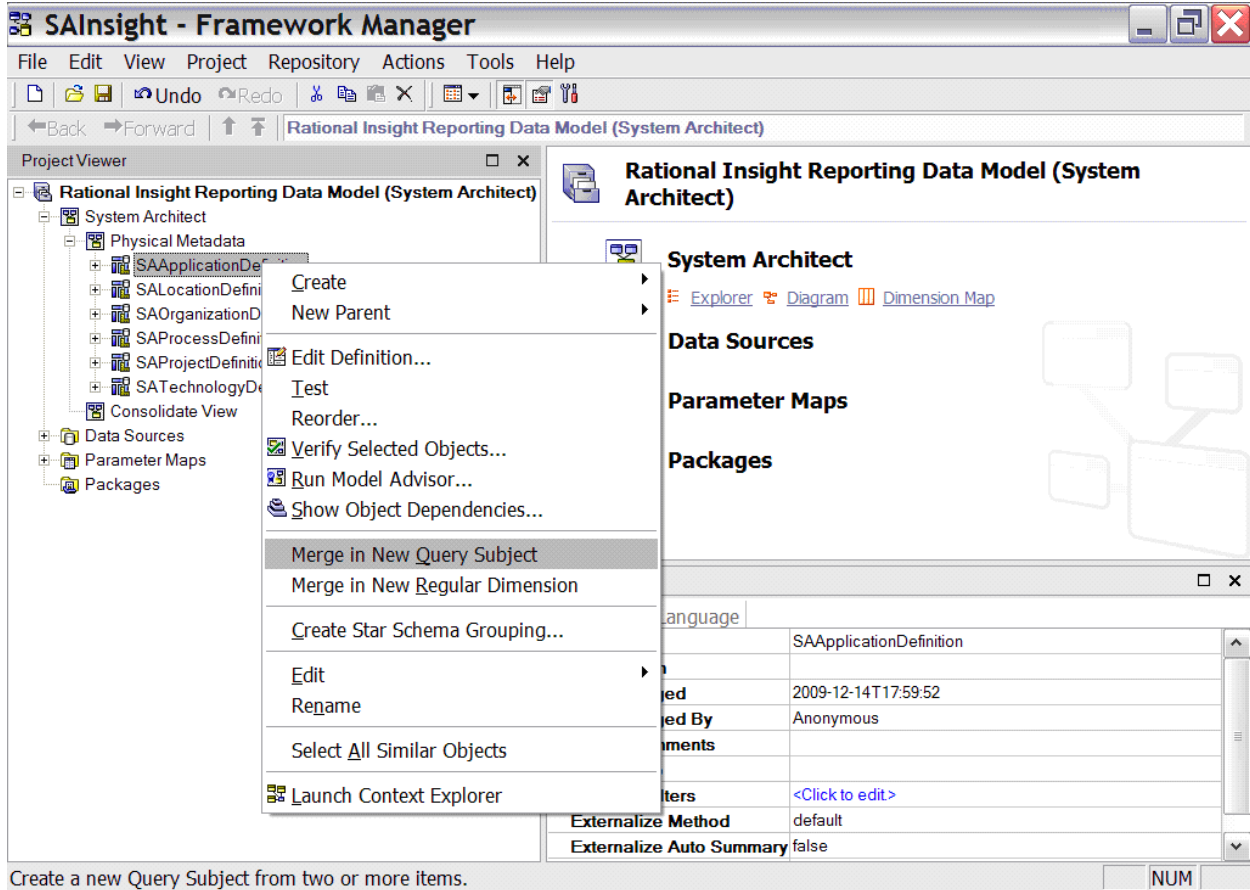
5. Expand the namespace “System Architect” to verify the Query Subjects.

These Query Subjects have been obtained from the Physical Database. Therefore, create a Namespace “Physical Metadata” under “System Architect,” and move the query subjects to the namespace.

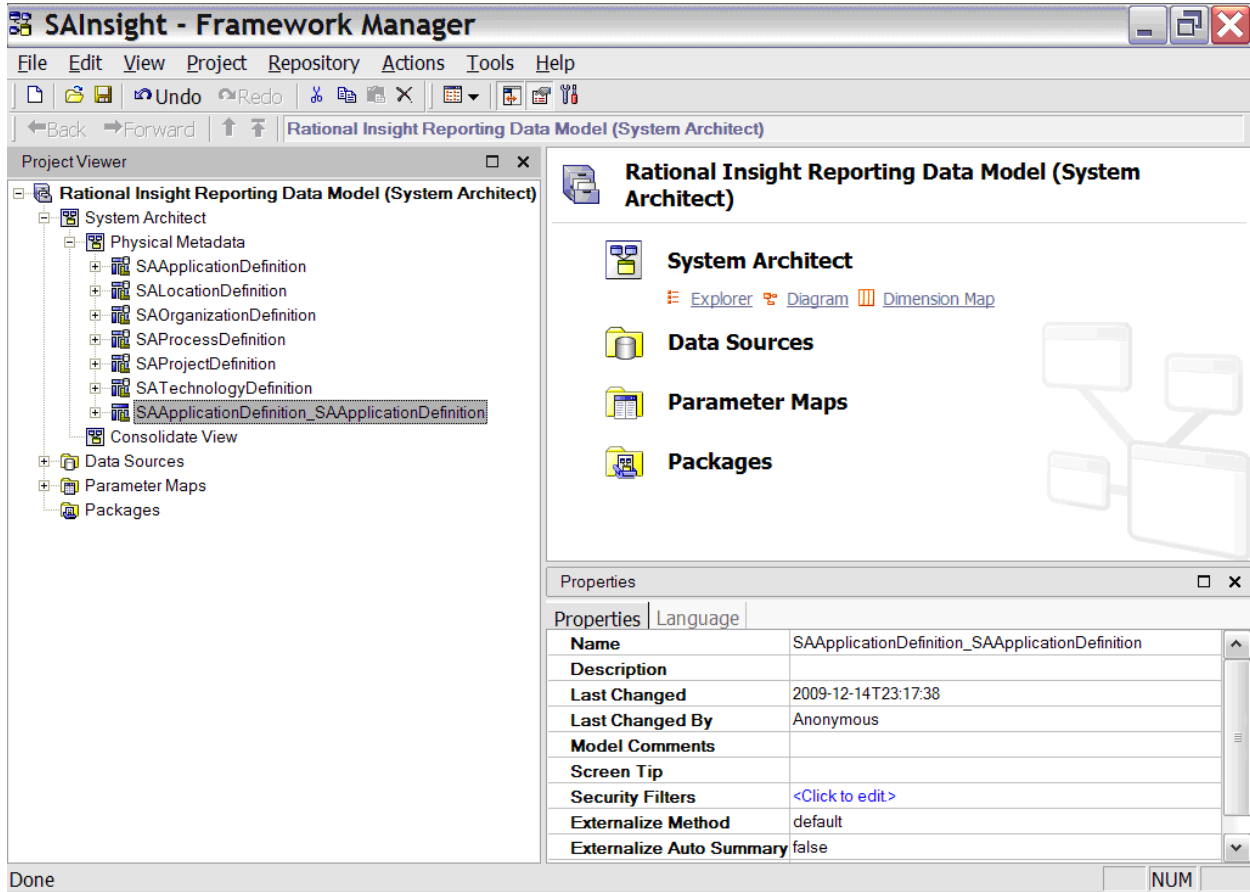


## Creating a new Query Subject on a project

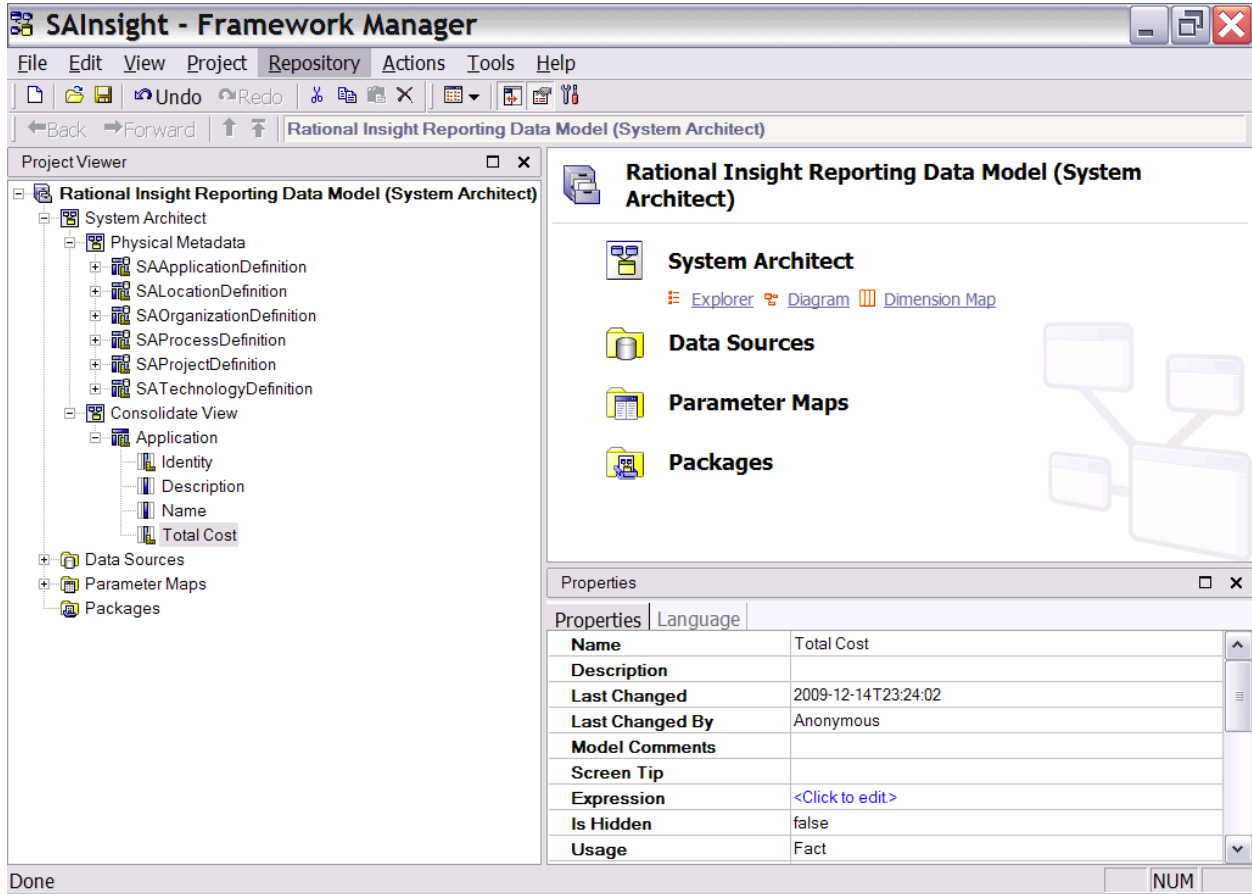
1. Create another namespace “Consolidate View” under “System Architect,” where we will capture the logical model.
2. Then select a Query Subject in the Physical Model, right-click and select “Merge In New Query Subject.”



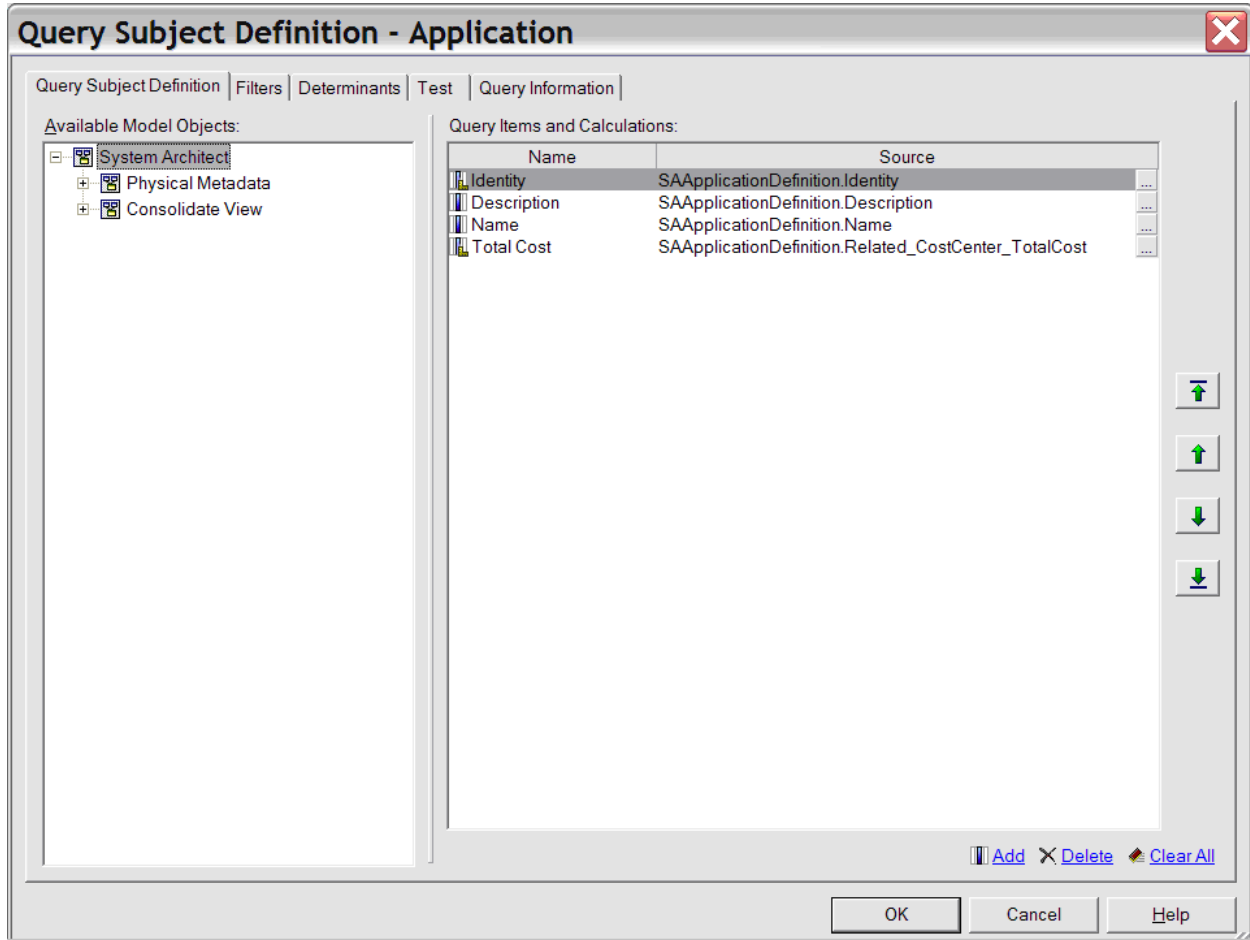
3. Move the newly created query subject, SAApplicationDefinition\_SAApplicationDefinition in the below snapshot, into the Consolidate View.



- In the Consolidate View, rename the Query Subject to a logical name by which it will be referred in report creation, e.g. Rename "SAApplicationDefinition\_SAApplcationDefinition" to "Application." In the logical query subject, delete the properties not relevant or required for reporting, and rename the properties to logical names, as shown below (for example, rename "Related\_CostCenter\_TotalCost" to "Total Cost").

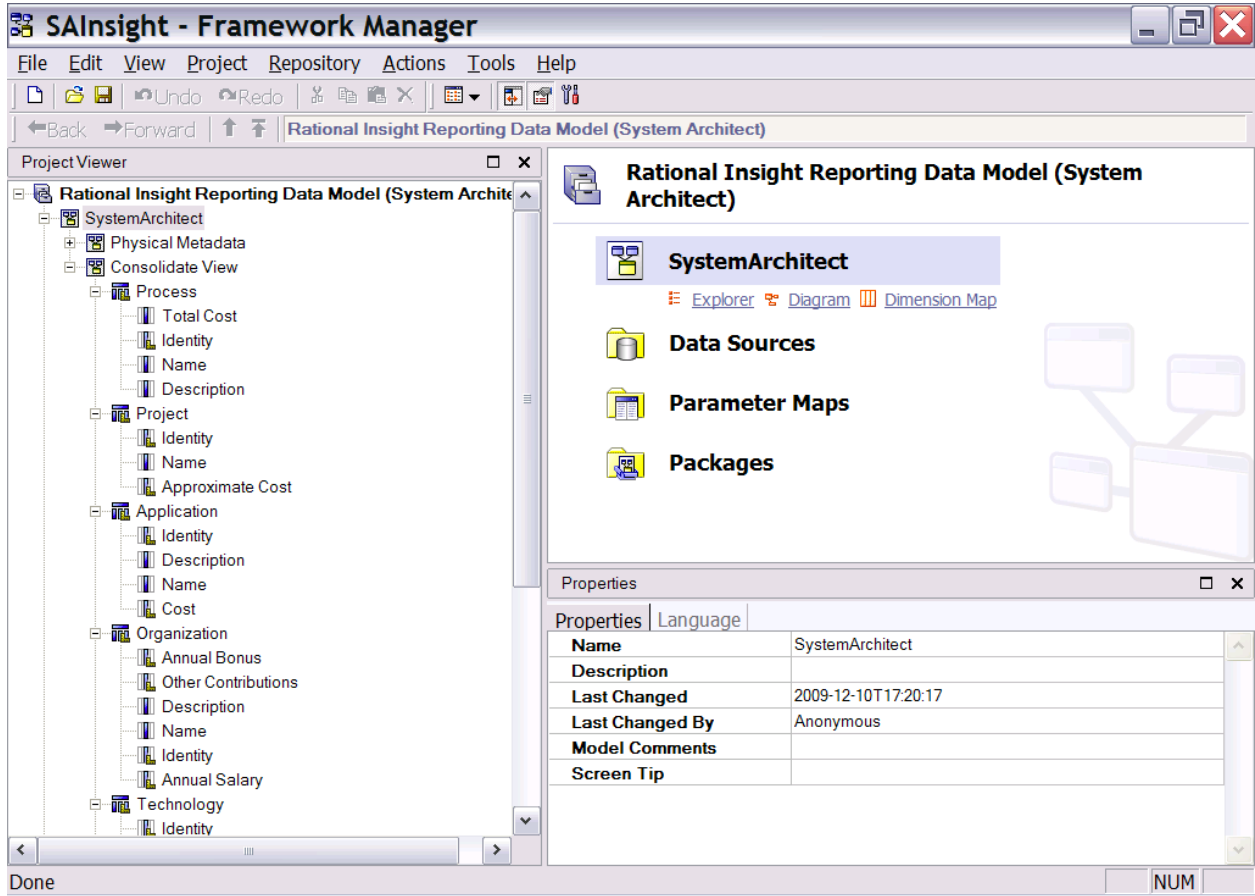


5. Double-clicking “Application” query subject will show that the properties of the logical query refer the relevant properties of the physical query.

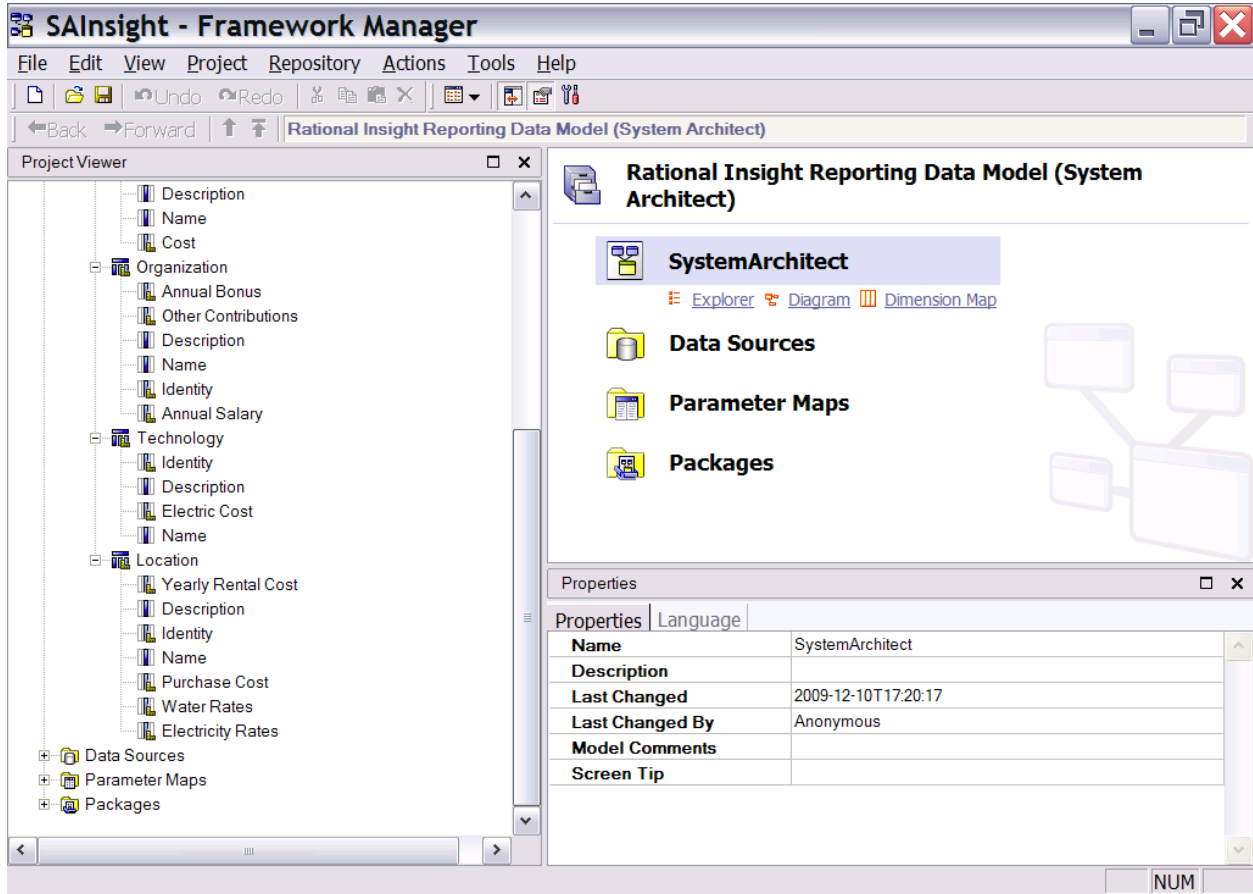


- Repeat the same process for all the Query subjects in the “Physical Metadata” namespace to obtain the following Query Subjects in the Consolidate View.



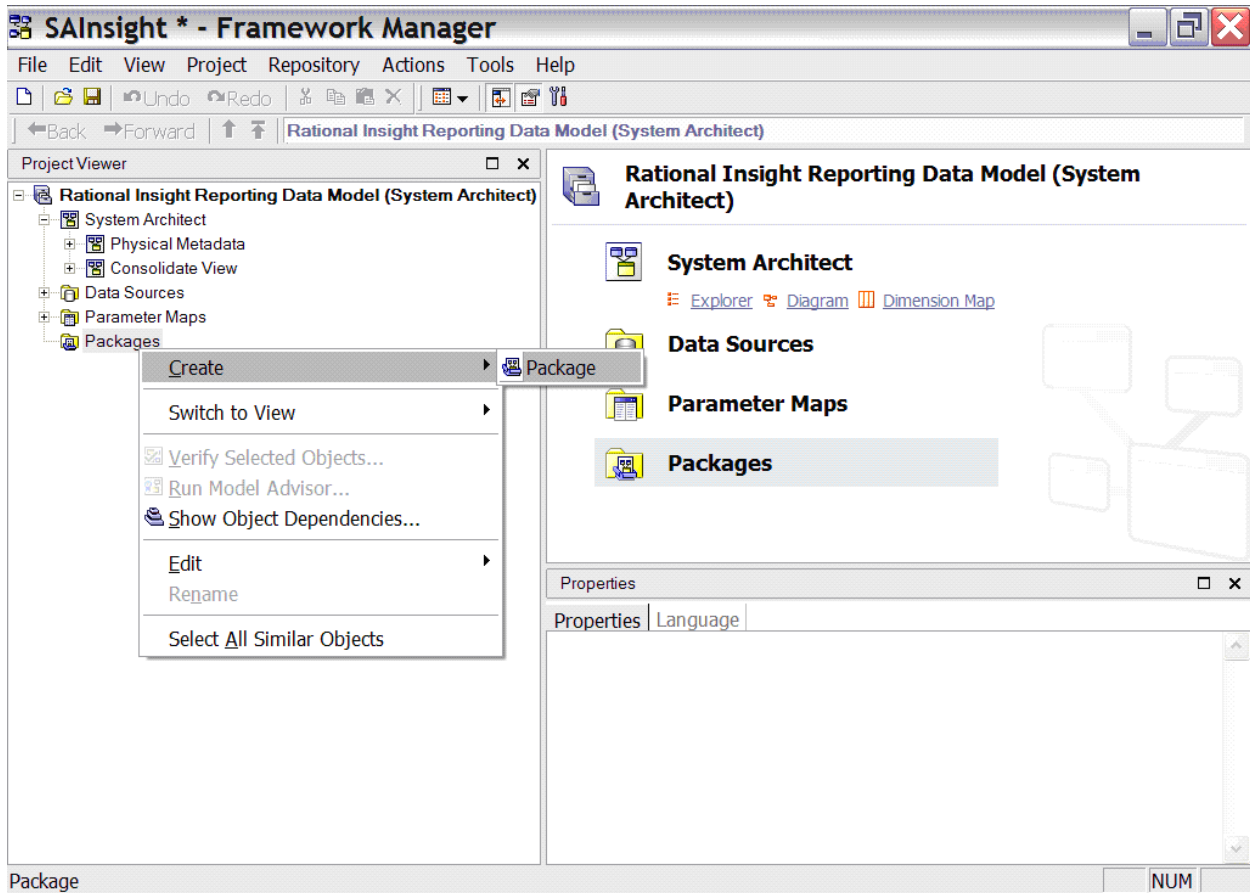


*Generating a visual business report*

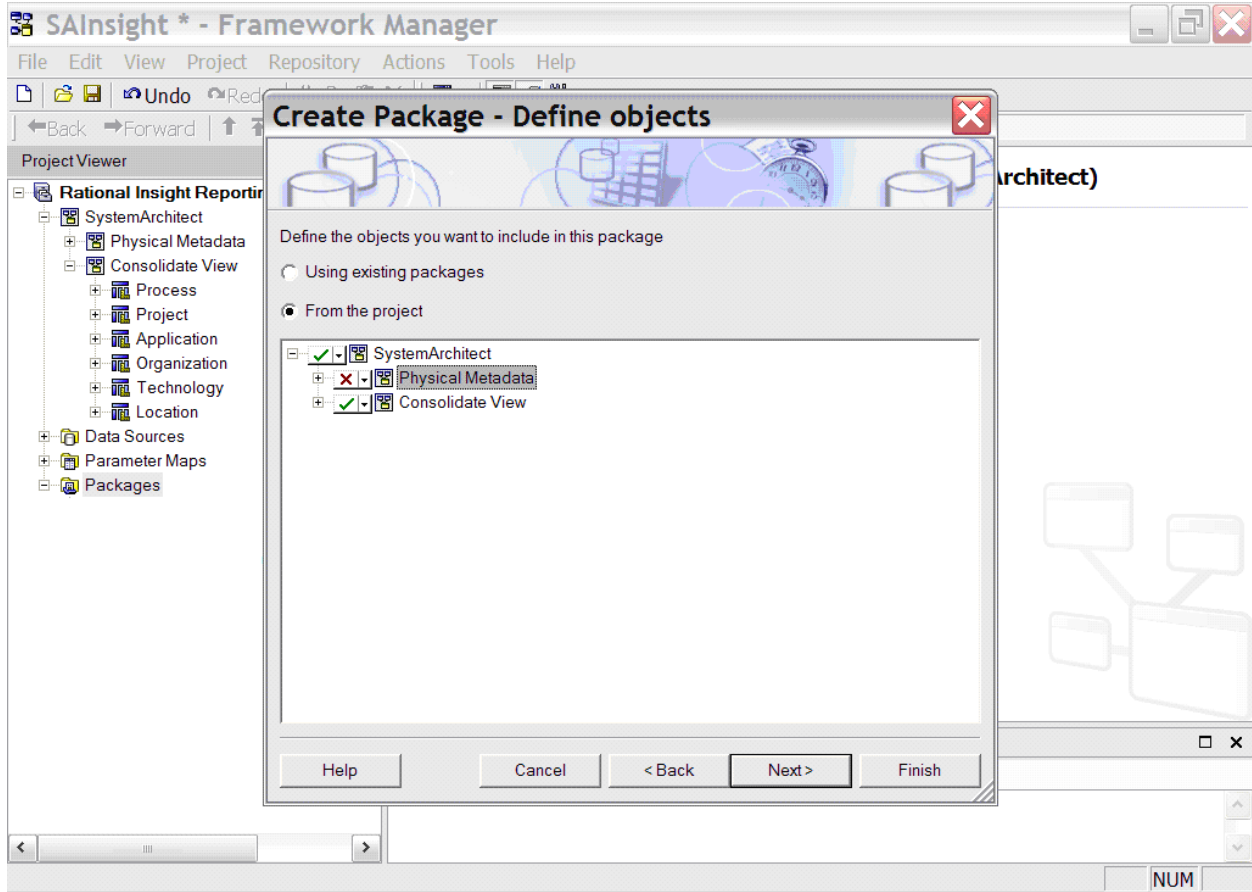


## Creating and Publishing a new package

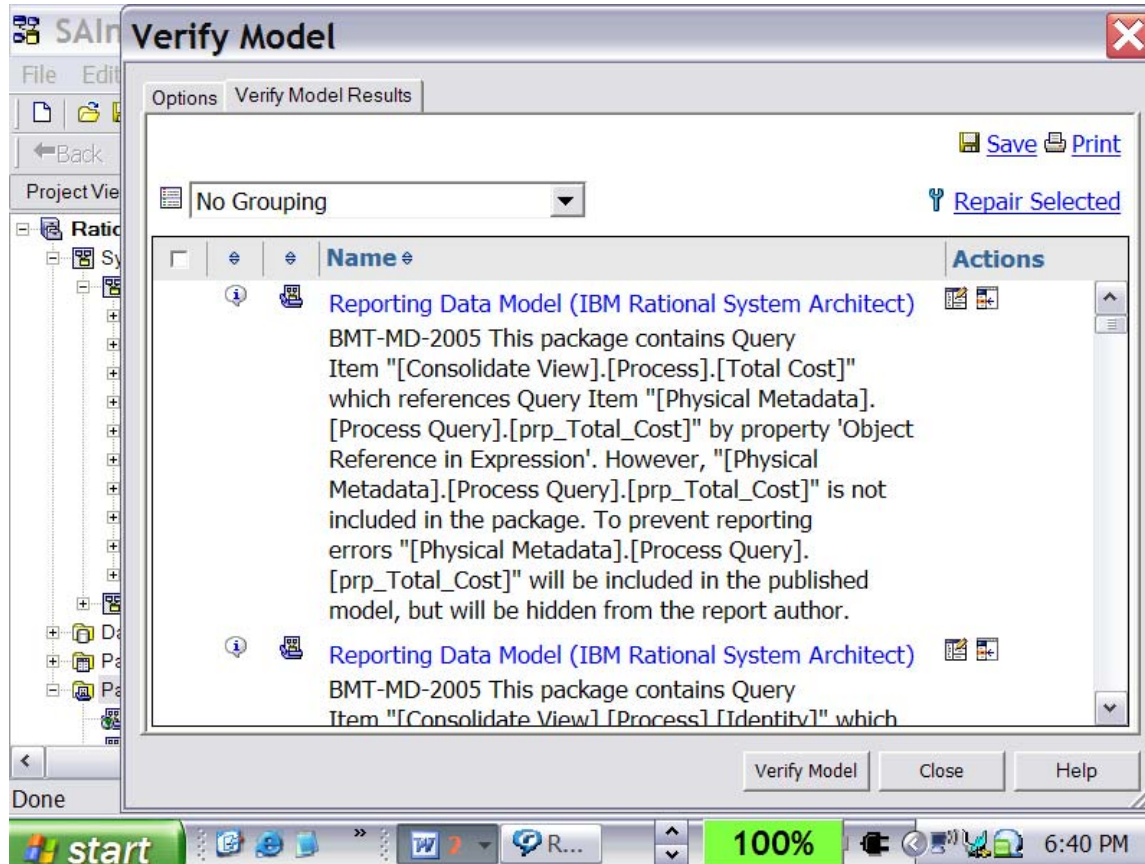
1. Once the query object is inserted, create a new package named “Reporting Data Model (IBM Rational System Architect)” and publish it, as shown below.



2. Select only the Consolidate View into the package.

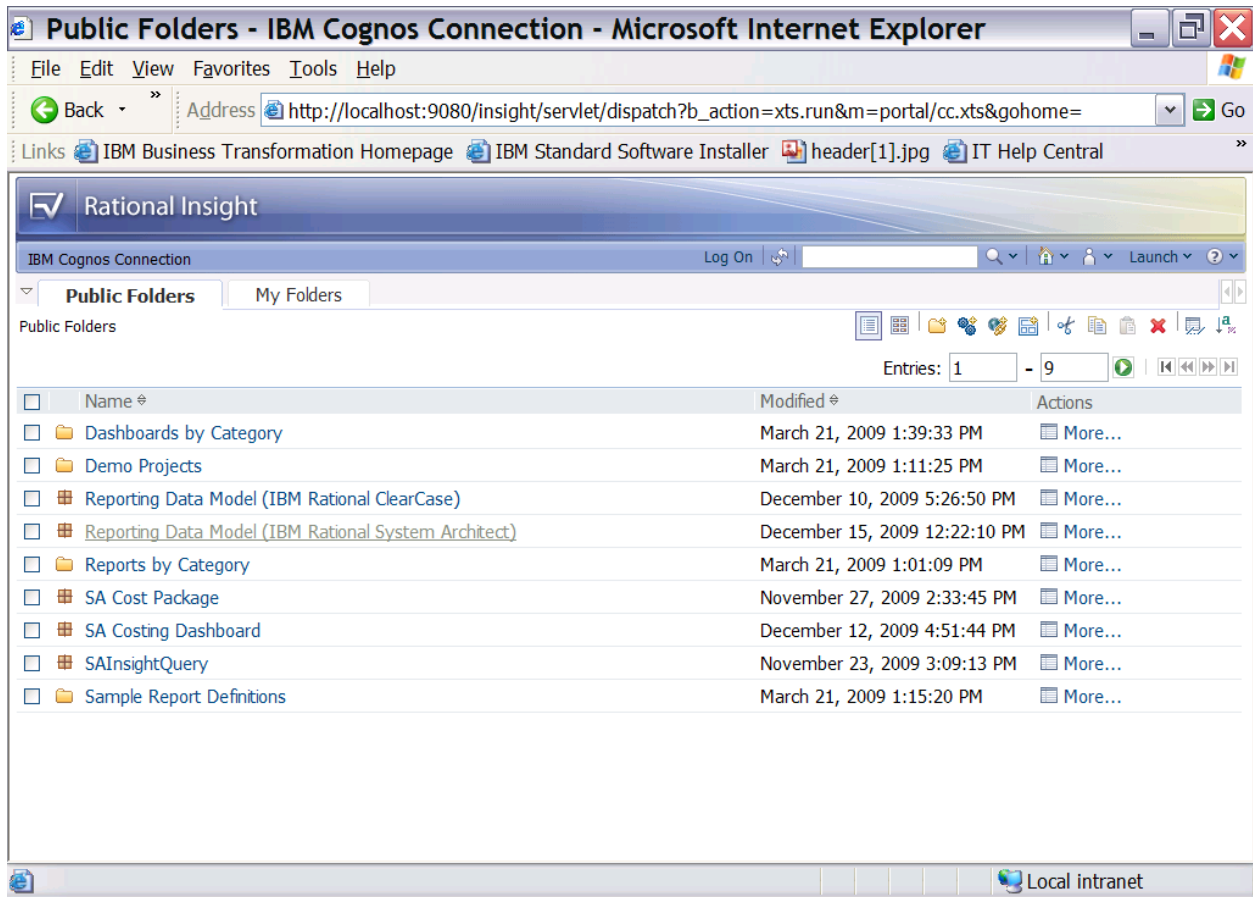


3. While publishing, you will see a message which essentially highlights that the “Physical Metadata” would be included in the published model since the “Consolidate View” queries depend on it, but will be hidden from users since reports should be decoupled from the “Physical Metadata”, and only run off “Consolidate View”



## Publishing Reports

1. Once the package is published using the framework manager, reports can be generated using the published package. Here we describe the steps for generating the “Cost vs. EA Domain” summary reports.
2. Open the browser window and enter the URI `http://localhost:9080/insight/servlet`.
3. Launch Report Studio and select package “Reporting Data Model (IBM Rational System Architect)”



4. Select option to create a new report, of type Chart, select Pie, Donut among the Chart types, and select the right-most shaded Donut image.

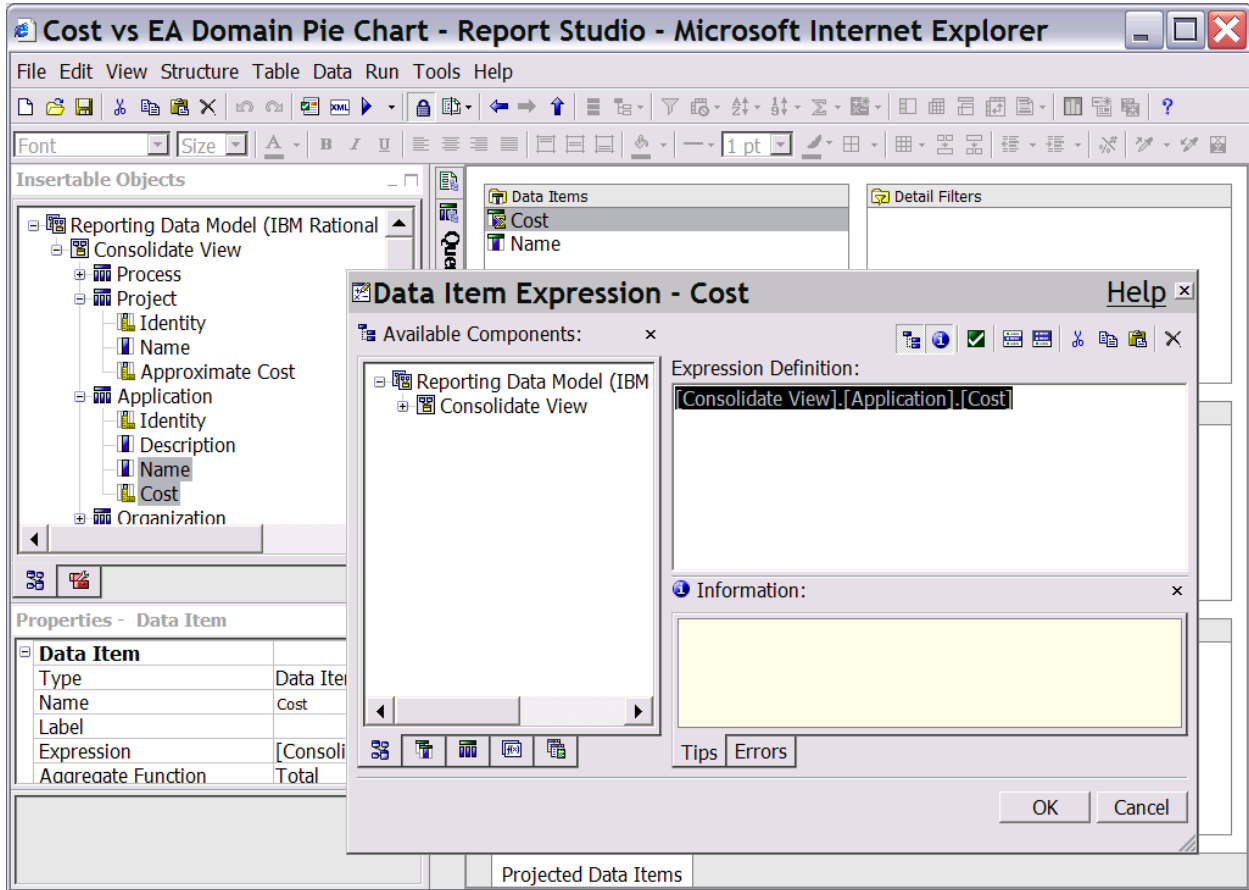
## Report Design

A word about the report design here – we are looking at reporting costs across multiple Query subject's corresponding to different domains, but the number and name of cost fields and other fields are not uniform. The next step is to create “Query” objects to unify the data from multiple sources, to be displayed in the report.

1. Queries specify what data appears in the report. In Report Studio, you create and modify queries using Query Explorer Query Explorer provides an alternative way to modify existing reports or to author new reports. You can use Query Explorer

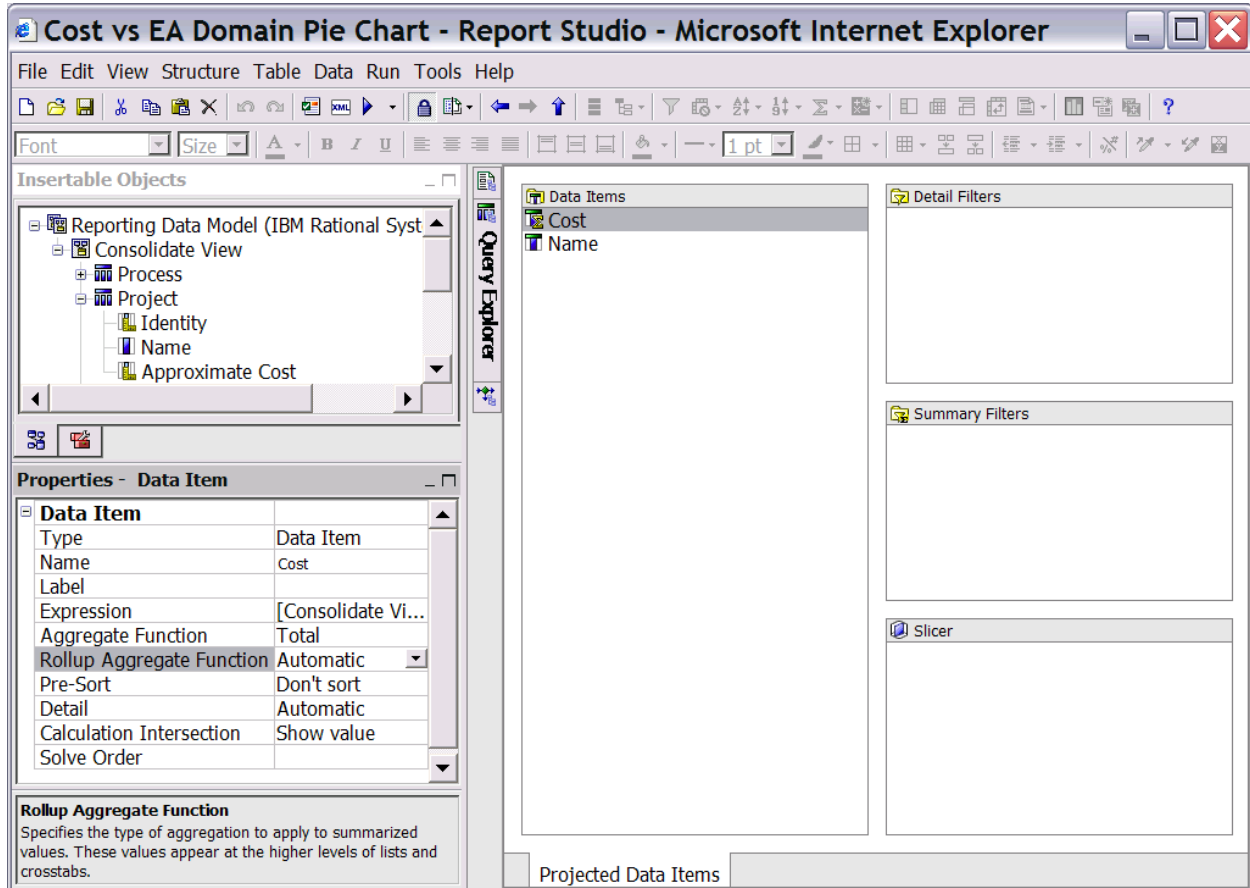
to perform complex tasks and other tasks that are more difficult to do in the report layout.

2. For this, select the Query Explorer pane, Right Click on the Query Explorer Window and select “Manage Queries.” On the Query explorer, create Queries named after the EA domain areas, viz. Application, Location, Organization, Process, Project, and Technology.
3. Select “Application” query, and double-click. From the “Insertable Objects” window on the Left side, expand “Application” Query Subject in the Consolidate View and select properties “Name” and “Cost.” Drag and drop the properties into the Data Item window on the right hand side. The “Application” query now has data items, which refer to respective properties in the “Application” Query Subject.
4. Double click data item Cost to see that it refers [Consolidate View].[Application].[Cost]

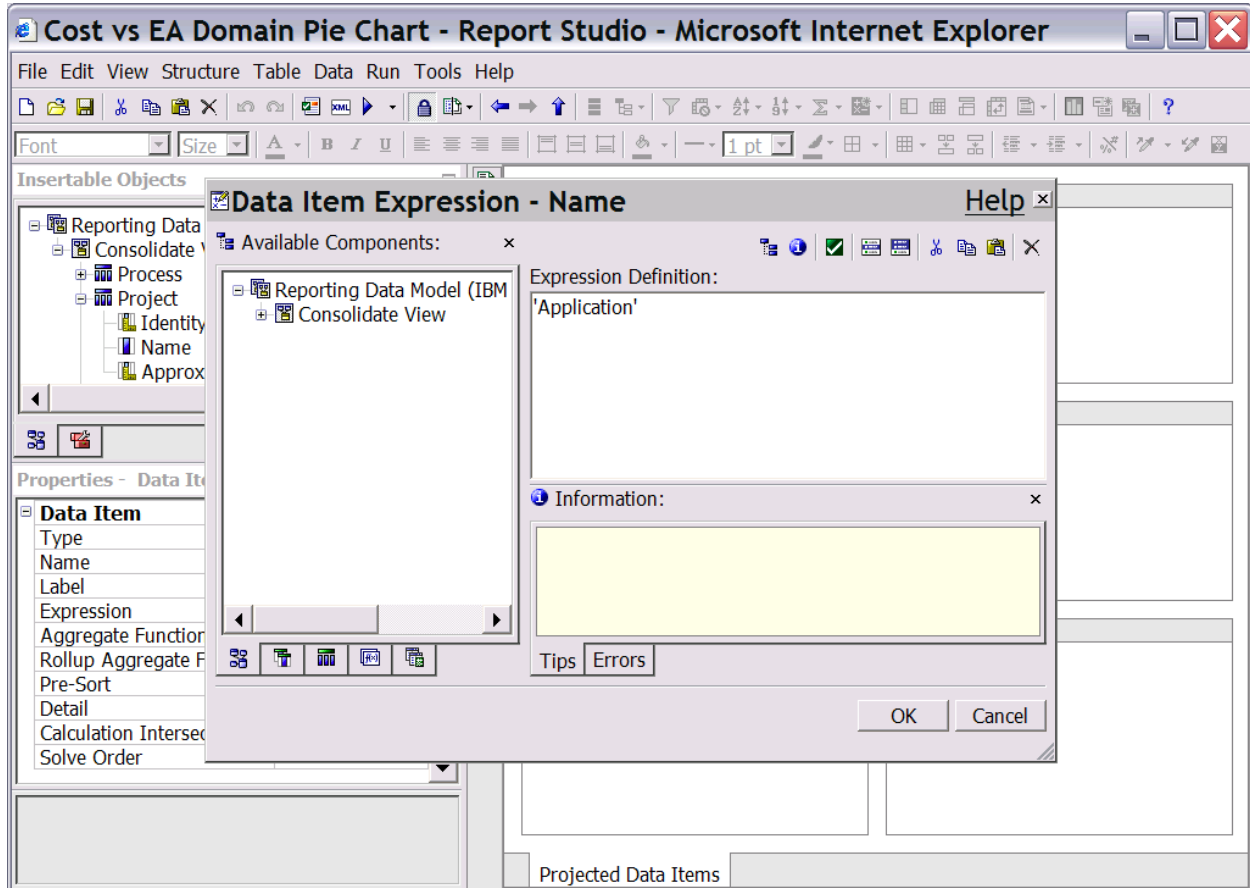


5. Cancel the dialog, and keep the Data item “Cost” selected.
6. On the “Properties – Data Item” pane, select the values for properties “Aggregate Function” and “Rollup Aggregate Function” to “Total” and “Automatic” as shown below. This is required because we want to display aggregated cost for the Domain Query in the pie chart.

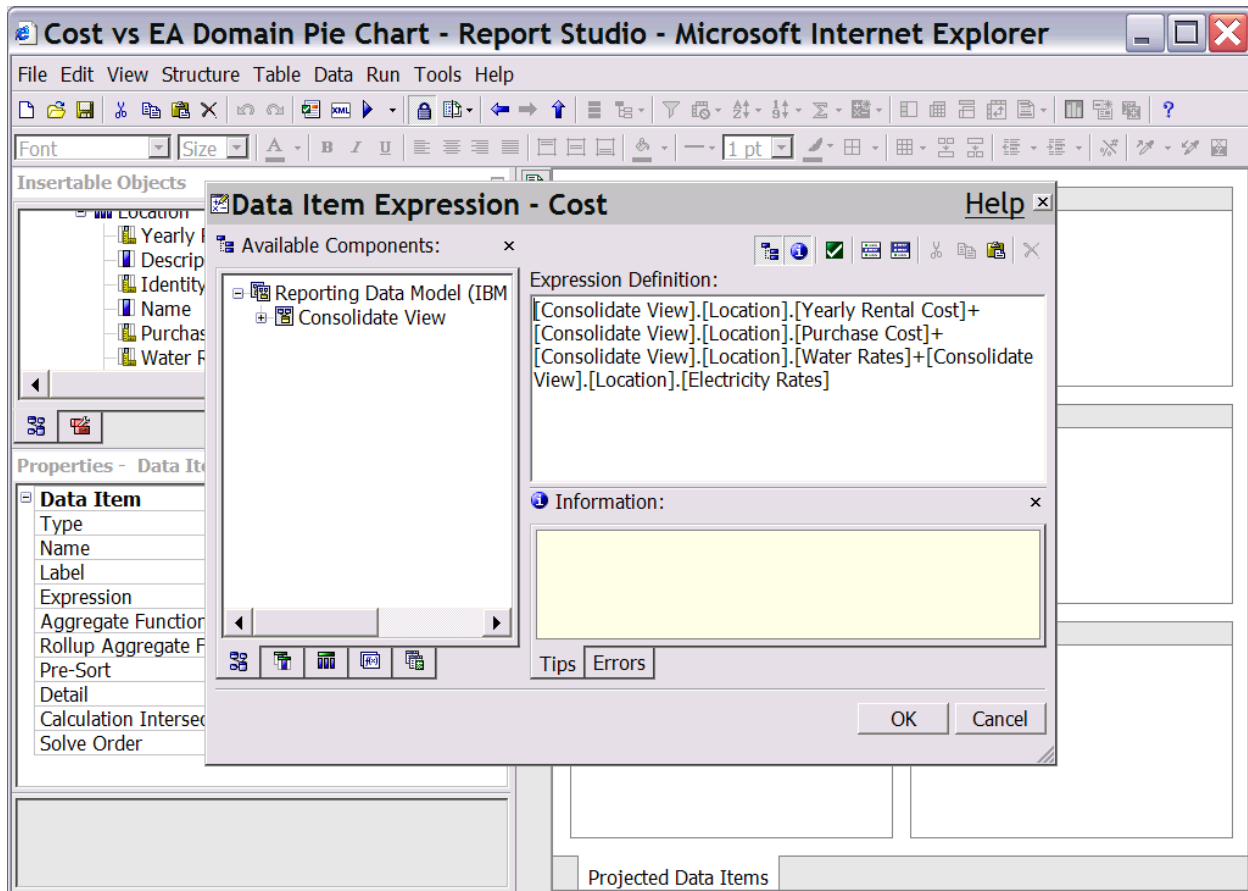




7. Select Data Item "Name" and change the value of its property "Expression" to 'Application' – either in the "Properties-Data Item" pane or double-clicking the data item.



8. Note the sequence of Data Items used - we used Cost followed by Name, you can use any sequence (by dragging the Data Items up/down) but the sequence has to follow uniformly in the other queries for reasons explained later.
9. Next, open the “Location” query in Query explorer. From the Consolidate View select the “Location” Query subject and drag and drop the properties “Yearly Rental Cost”, “Purchase Cost”, “Water Rates”, “Electricity Rates” and “Name” to make Data Items.
10. Create a Data Item named cost, and enter into expression the sum of the expressions of “Yearly Rental Cost”, “Purchase Cost”, “Water Rates”, “Electricity Rates.” If you have followed the nomenclature used in this example it will look as follows:



11. The Data Item “Cost” now summarizes all the costs related to Location. Delete the “Yearly Rental Cost,” “Purchase Cost”, “Water Rates”, and “Electricity Rates” from the “Location” query.
12. Again, on the “Properties – Data Item” pane for “Cost” Data Item, select the values for properties “Aggregate Function” and “Rollup Aggregate Function” to “Total” and “Automatic”.
13. Change the expression of “Name” data item to ‘Location’. Remember to keep the same sequence of “Cost” and “Name” Data Items as earlier.
14. Repeat the same steps for all the other Queries, the expressions to be used are given below:

Organization:

```
Cost = [Consolidate View].[Organization].[Annual  
Bonus]+[Consolidate View].[Organization].[Annual  
Salary]+[Consolidate View].[Organization].[Other Contributions]  
Name = 'Organization'
```

Process:

```
Cost = CAST([Consolidate View].[Process].[Total Cost], INTEGER)  
(The cast is required because "Total Cost" is character type  
field in SA and mapped accordingly.)
```

**IMPORTANT:** Make sure all the "Total Cost" values in Rational System Architect are numeric. If the field holds any non-numeric values in Rational System Architect, the cast and the query will not work properly and the user will get an error when the report (developed using this query) is run.

```
Name = 'Process'
```

Project:

```
Cost = [Consolidate View].[Project].[Approximate Cost]  
Name = 'Project'
```

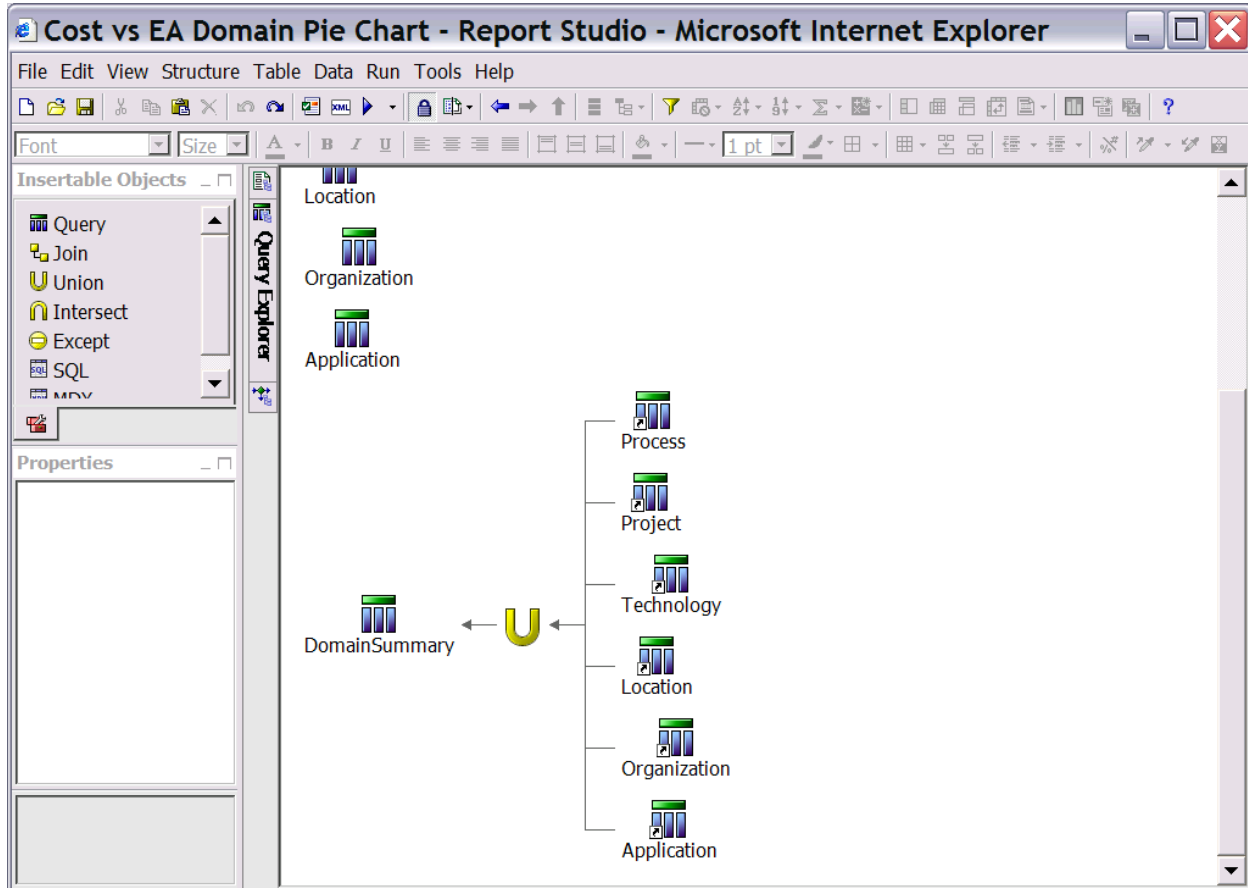
Technology:

```
Cost= [Consolidate View].[Technology].[Electric Cost]  
Name=' Technology'
```

## **Dropping a new Query**

At this stage, you need to drop a new query, as follows:

1. Open Query Explorer, and drop a new Query named "Domain Summary", drag and drop an "Union" from the "Insertable Objects" window to the side of "Domain Summary" query, and drag and drop the six queries viz. 'Application', 'Location', 'Organization', 'Process', 'Project', 'Technology' to the right side of the union.
2. This will cause the query relationship to be displayed as follows:



3. This signifies that 'Domain Summary' query is a summary of all the Domain costs summarized by type.
4. "Domain Summary" does not have any data item yet. Double-click on the "Domain Summary" query in "Query Explorer" to bring up the "Data Items" pane. From the "Insertable Objects" pane, "Source" tab on the left hand side, drag and drop the "Cost" and "Name" properties under "Union 1" into the "Data Items" pane. "Domain Summary" query now has the required data items to report, and you can now use it in summary report creation.
5. Select the Page Explorer Pane, and click Report Pages->Page1 to select the Report page for design. You may also navigate through the View menu.
6. Select the Pie/Donut, and then set the values of 'Query' in the Properties pane to

'DomainSummary'.

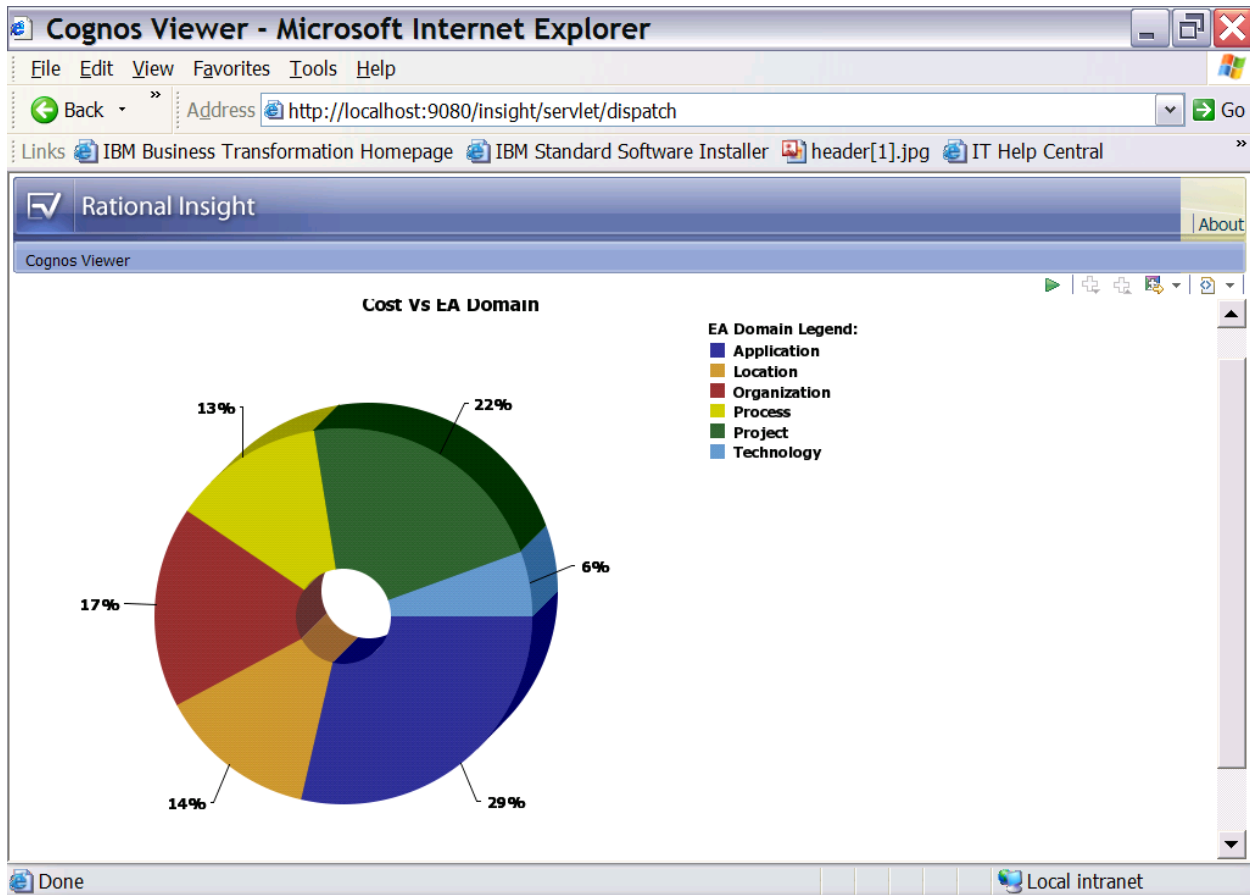
7. On the top is the Title EditBox that says "Double Click to edit text", set it to "Cost Vs EA Domain"
8. Next select the 'Insertable Objects' window pane, and select Data Item tab. Locate 'Cost' belonging to "Domain Summary" query and drop onto text box below 'Default Measure' on the Design page.
9. Drop 'Name' onto 'Series (Pie Slices)'
10. Select 'Default Legend Title' on the Design page, and Set property 'Default Title' to 'No'. Then double click the text box and enter 'EA Domain Legend'
11. Select the Pie/Donut again, and then set the values of the Properties pane as follows:

```
Depth: 50
Hole size (%): 25
Chart Title->Title: Show
Chart Title->AxisTitle: Hide
Chart Labels -> Values: Outside slices with lines
Chart Labels -> Pie Labels: Hide
Chart Labels -> Value Representation: Percent
Positioning-> Size & Overflow: Height=500, Width=700
```

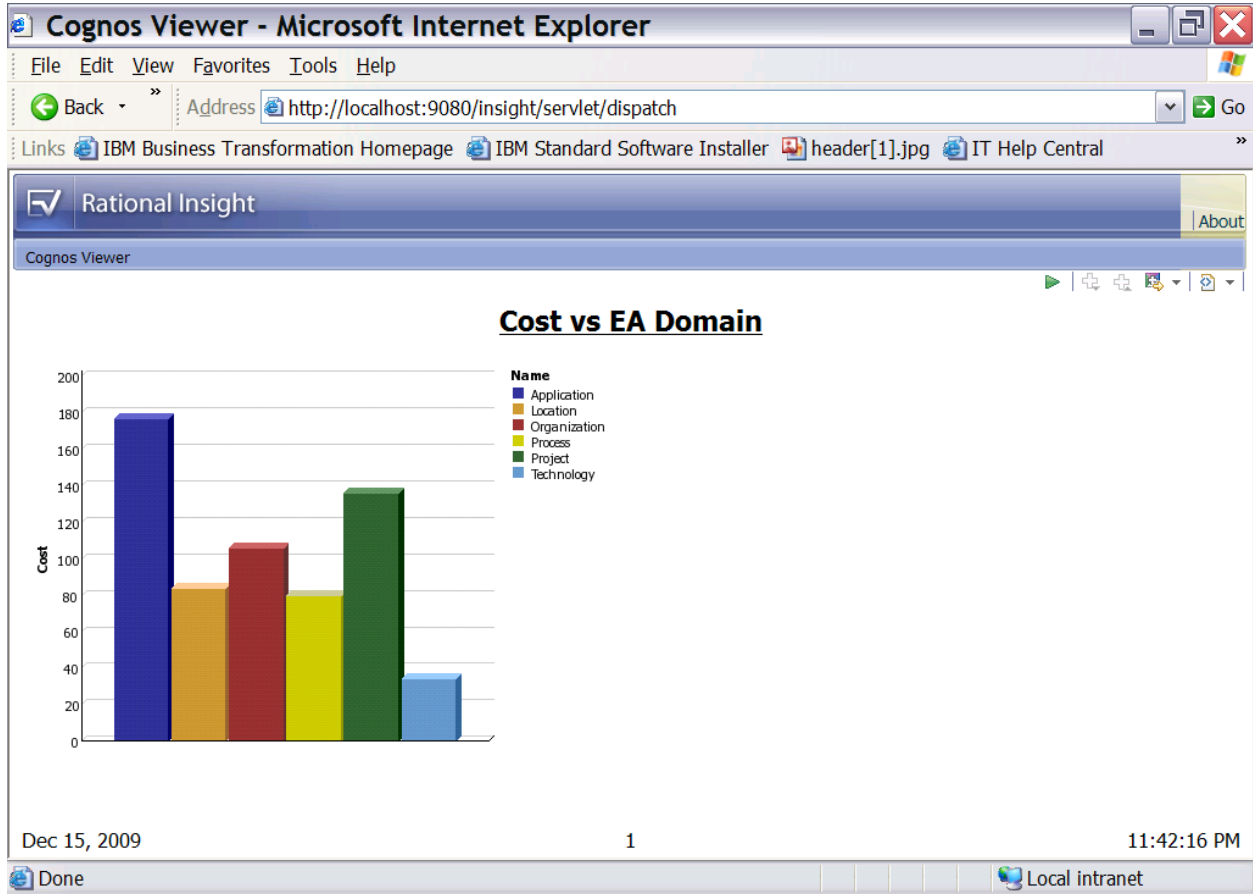
## **Executing the report**

To execute the report, proceed as follows:

1. Click on menu Run->Run Report-HTML and you get a report like the following:



2. You can set different properties on the Pie Chart object, or use different report format to tune your report outputs.
3. Click Save on the toolbar and save the report design as “Cost vs. EA Domain Pie Chart” in the package “Reporting Data Model (IBM Rational System Architect)”.
4. Now save the report as “Cost vs. EA Domain Column Chart.” Select the Donut, right-click and press ‘Convert Chart’, select “Column” from the “Chart group” and chose “Column with 3D Visual Effect” on the right side.
5. Click “OK” on the message shown.
6. Execute the report to get an output as follows:



7. You can also try converting and saving this report as a “Bar Chart.”

## Summary

This completes a sample report representing summary information in visual format. Based on your requirement, you can obtain necessary data from SA, and use relevant “Query Subject” and “Query” to obtain powerful visual reports to report and analyze on your business.



## Contacting IBM Rational Software Support

If you cannot resolve a problem with the self-help resources, contact IBM® Rational® Software Support.

**Note:** If you are a heritage Telelogic customer, you can find a single reference site for all support resources at <http://www.ibm.com/software/rational/support/telelogic/>

### Prerequisites

To submit a problem to IBM Rational Software Support, you must have an active Passport Advantage® software maintenance agreement. Passport Advantage is the IBM comprehensive software licensing and software maintenance (product upgrades and technical support) offering. You can enroll online in Passport Advantage at <http://www.ibm.com/software/lotus/passportadvantage/howtoenroll.html>.

- To learn more about Passport Advantage, visit the Passport Advantage FAQs at [http://www.ibm.com/software/lotus/passportadvantage/brochures\\_faqs\\_quickguides.html](http://www.ibm.com/software/lotus/passportadvantage/brochures_faqs_quickguides.html).
- For further assistance, contact your IBM representative.

To submit a problem online (from the IBM Web site) to IBM Rational Software Support:

- Register as a user on the IBM Rational Software Support Web site. For details about registering, go to <http://www.ibm.com/software/support/>.
- Be listed as an authorized caller in the service request tool.

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## Other information

For Rational software product news, events, and other information, visit the IBM Rational Software Web site: <http://www.ibm.com/software/rational/>.

## Submitting Problems

To submit a problem to IBM Rational Software Support:

1. Determine the business impact of the problem. When you report a problem to IBM, you are asked to supply a severity level. Therefore, you need to understand and assess the business impact of the problem.

To determine the severity level, use the following table.

Severity	Description
1	The problem has a critical business impact: you are unable to use the program, resulting in a critical impact on operations. This condition requires an immediate solution.
2	The problem has a significant business impact: the program is usable, but it is severely limited.
3	The problem has some business impact: the program is usable, but less significant features (not critical to operations) are unavailable.
4	The problem has minimal business impact: the problem causes little impact on operations or a reasonable circumvention to the problem was implemented.

Describe the problem and gather background information. When you describe the problem to IBM, be as specific as possible. Include all relevant background information so that IBM Rational Software Support specialists can help you solve the problem efficiently. To save time, know the answers to these questions:

- What software versions were you running when the problem occurred?
- To determine the exact product name and version, use the option applicable to you:
  - Start the IBM Installation Manager and click **File > View Installed Packages**. Expand a package group and select a package to see the package name and version number.

- Start your product, and click **Help > About** to see the offering name and version number.
- What is your operating system and version number (including any service packs or patches)?
- Do you have logs, traces, and messages that are related to the problem symptoms?
- Can you recreate the problem? If so, what steps do you perform to recreate the problem?
- Did you make any changes to the system? For example, did you make changes to the hardware, operating system, networking software, or other system components?

Are you currently using a workaround for the problem? If so, be prepared to describe the workaround when you report the problem.

Submit the problem to IBM Rational Software Support in one of the following ways:

- Online: Go to the IBM Rational Software Support Web site at <https://www.ibm.com/software/rational/support/>. In the Rational support task navigator, click **Open Service Request**. Select the electronic problem reporting tool, and open a Problem Management Record (PMR) to describe the problem.
- For more information about opening a service request, go to <http://www.ibm.com/software/support/help.html>.
- You can also open an online service request by using the IBM Support Assistant. For more information, go to <http://www.ibm.com/software/support/isa/faq.html>.
- By phone: For the phone number to call in your country or region, visit the IBM directory of worldwide contacts at <http://www.ibm.com/planetwide/> and click the name of your country or geographic region.
- Through your IBM Representative: If you cannot access IBM Rational Software Support online or by phone, contact your IBM Representative. If necessary, your IBM Representative can open a service request for you. For complete contact information for each country, visit <http://www.ibm.com/planetwide/>.

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