

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

Before using this information, read the “Notices” section on page 30.

This edition applies to IBM® Rational® System Architect®, version 11.3.1.3 and to all subsequent releases and modifications until otherwise indicated in new editions.

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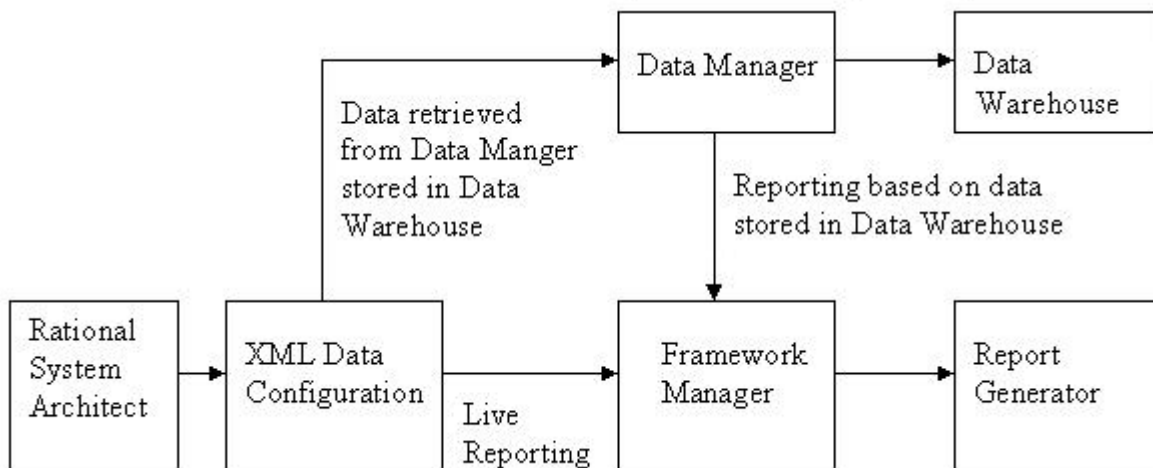
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Rational Insight and Rational System Architect Integration

Introduction

This guide provides instructions for producing a simple report from Rational Insight using Rational System Architect repositories. Although you can generate report from live data sources as well, the scope of this document is to provide instructions for generating reports from data stored in a data warehouse.

The figure shown below indicates the phases required to generate a report.



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:

- Create Resource Group
- Create Resource under the Resource Group
- Create 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.

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/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.

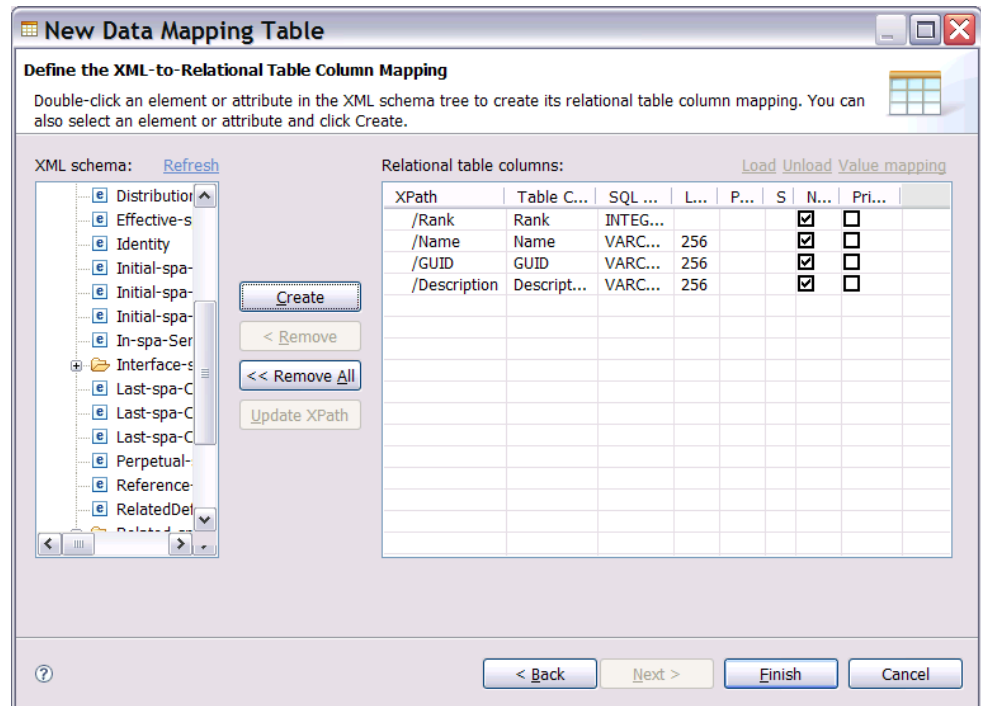
A message box informs you if the connection is successful. If the connection is not successful, the message box displays a “Connection Refused” message. This means that the Rational System Architect REST Service is not running on the specified machine.

Creating Resource under the Resource Group

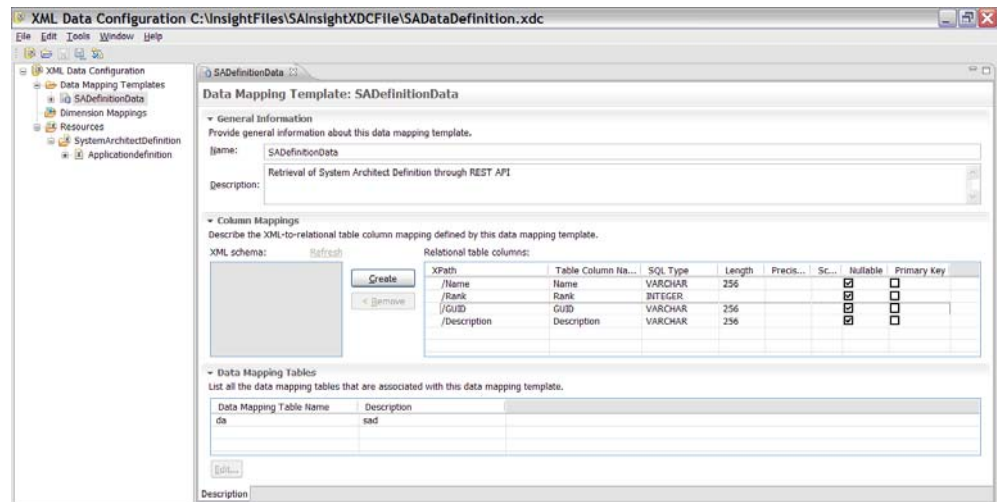
1. Right click on the above created Resource Group to create Resource under it.
2. Enter values for the **Name** and **Description** fields.
3. Select the **Locate using data** service and click **Next**. The encyclopedia tree panel is shown.
4. Select the **class** node in the right side of the tree.
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 Manger 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 Manger are as follows.

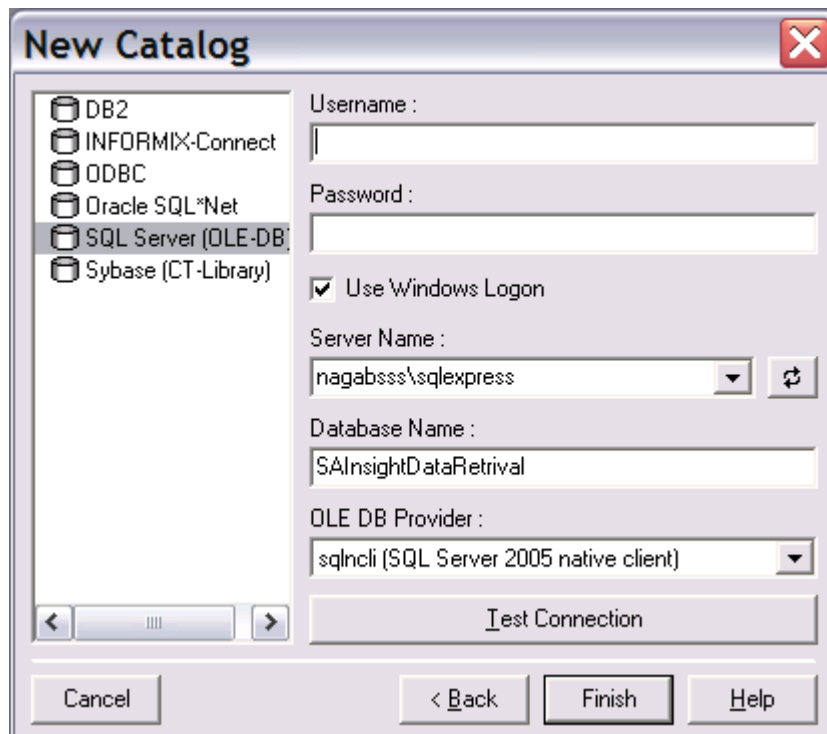
The overall steps you need to take in Data Manager are as follows:

- 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:

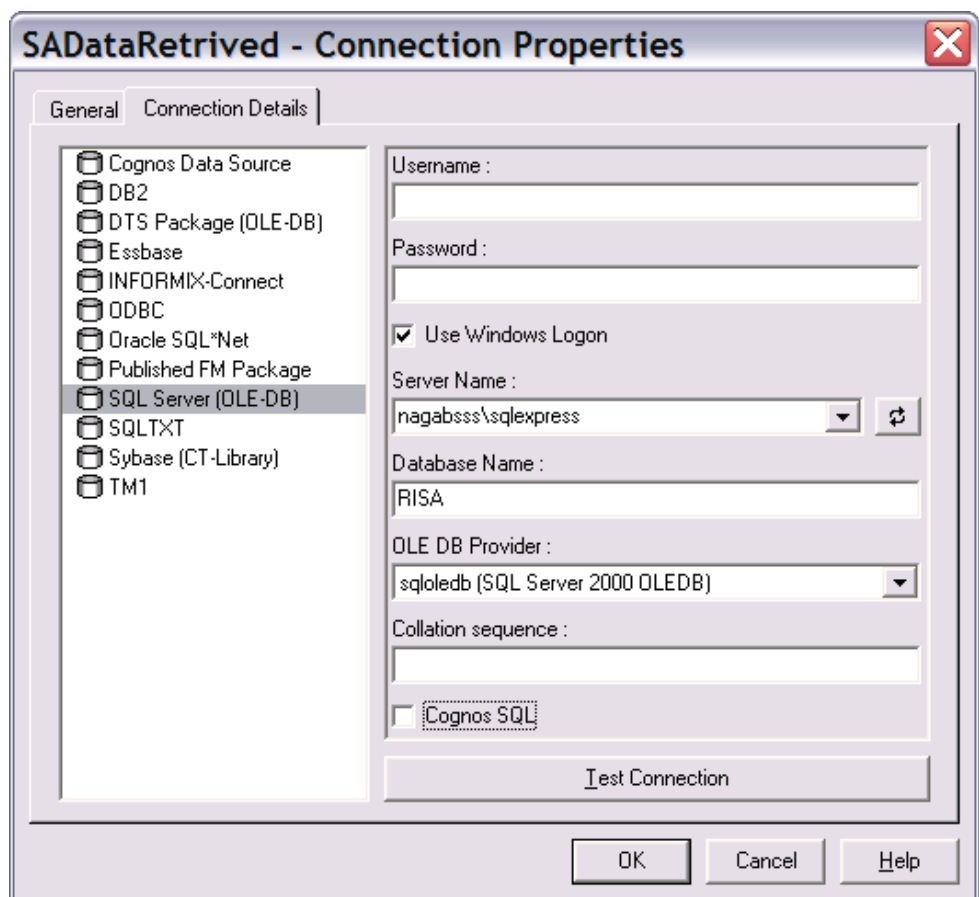
1. Click **Tools** and select **ODBC Administrator...**
2. The **ODBC Data Source** dialog is displayed.
3. Click the **System DSN** tab and click **Add**. The **Create New Data Source** dialog is displayed.
4. Select IBM Rational Insight XML ODBC Driver and click **Finish**.
5. Enter values in **Data 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**.



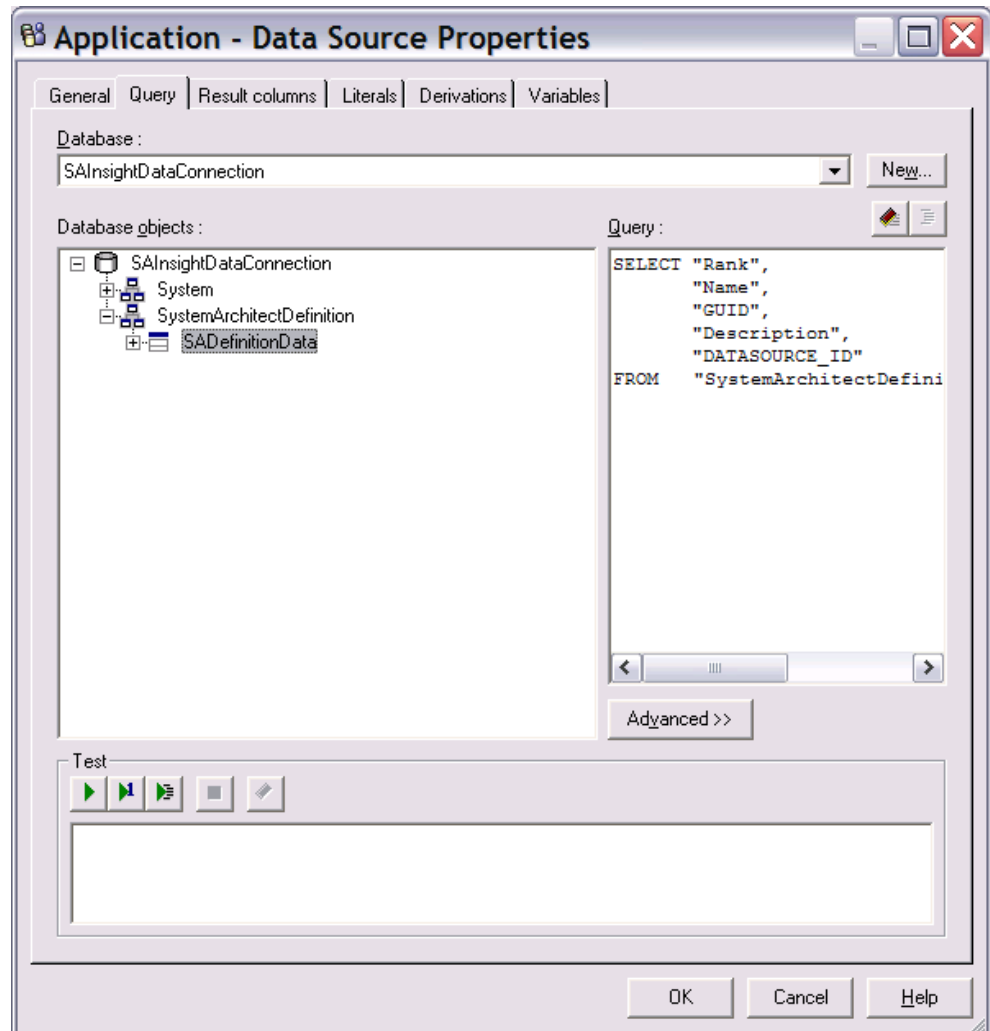
10. Click **Test Connection** to validate the connection.
11. In the Data Manger window, expand the **Builds and JobStreams** folder.
12. Right-click on the **ApplicationDefinition** subfolder and select **Insert Fact Build**

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.

AutoMapping 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 in 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 “Data Warehouse Change and Signon Creation” section (pg. 23) which describes how to change the Data Warehouse and create a sign on user.

To start Framework Manager proceed as follows:

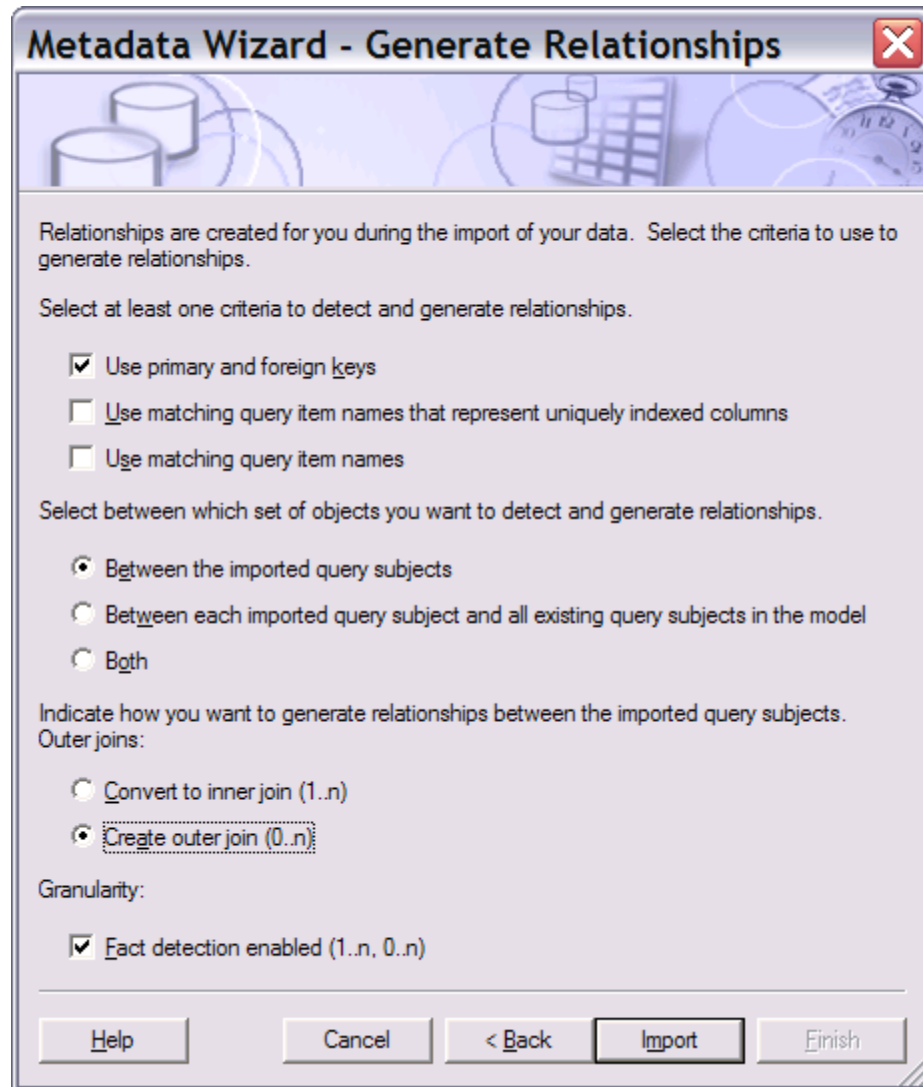
1. Click the **Start > Program Files > IBM Rational Insight > IBM Cognos 8 >** and select Framework Manager.
2. Execute each of the following tasks in the Framework Manager (each task is detailed in the sections that follow):
 - Create or open a project.
 - Create a new query subject on a project.
 -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

3. Click on the **Create a new project...** hyperlink in the Framework Manager.
4. Enter values for the **Project name** field (for example, “SARationalInsight”), for the **Location** field, and click **OK**.
5. Select a language in the **Select Language** field and click **OK**.
6. 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.

7. Click **Next** to choose the database under the selected data source.
8. Select **RISA** from the data source list. This is the database that stores the Rational System Architect data pulled through Data Manager.
9. Click **Next**.
10. Select **dbo** from the object list since the data from Rational System Architect was stored in this object which was pulled through Data Manager.
11. Click **Next**. The **Metadata Wizard** dialog shows the following options:

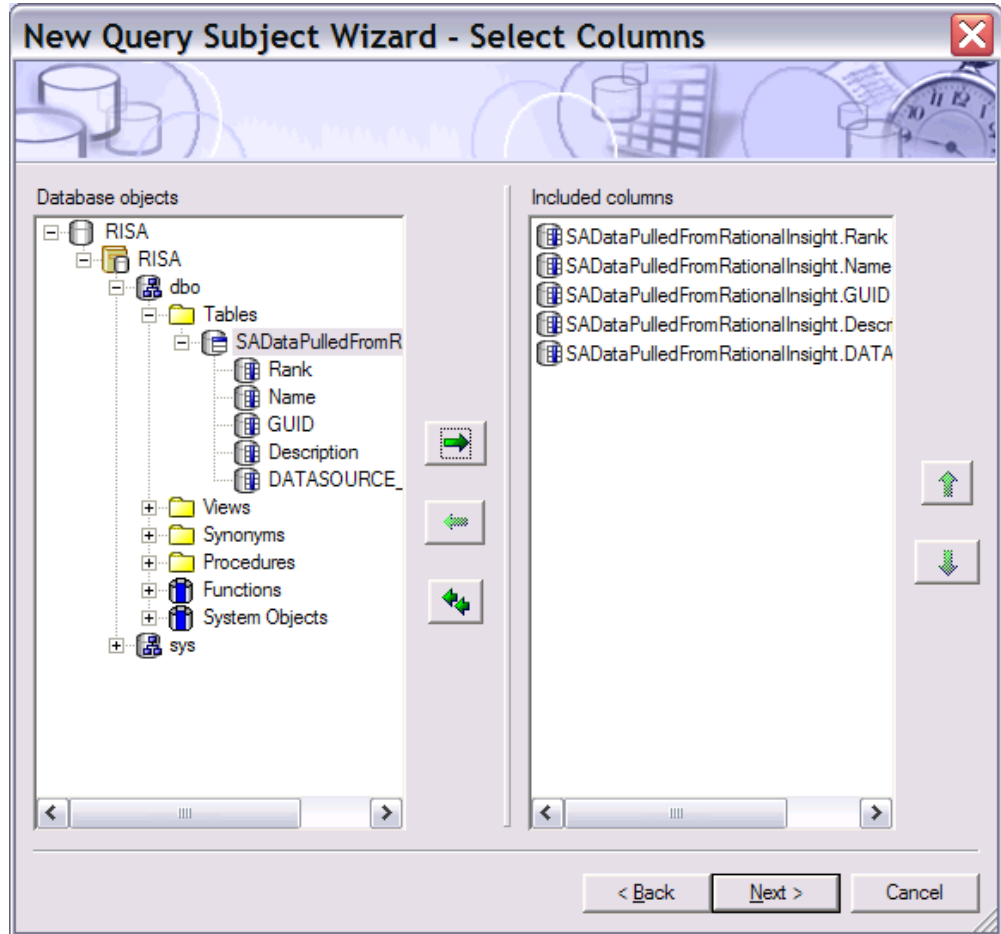


12. Click **Import**. Once the import is done the project will be loaded.

Creating a new Query Subject on a project

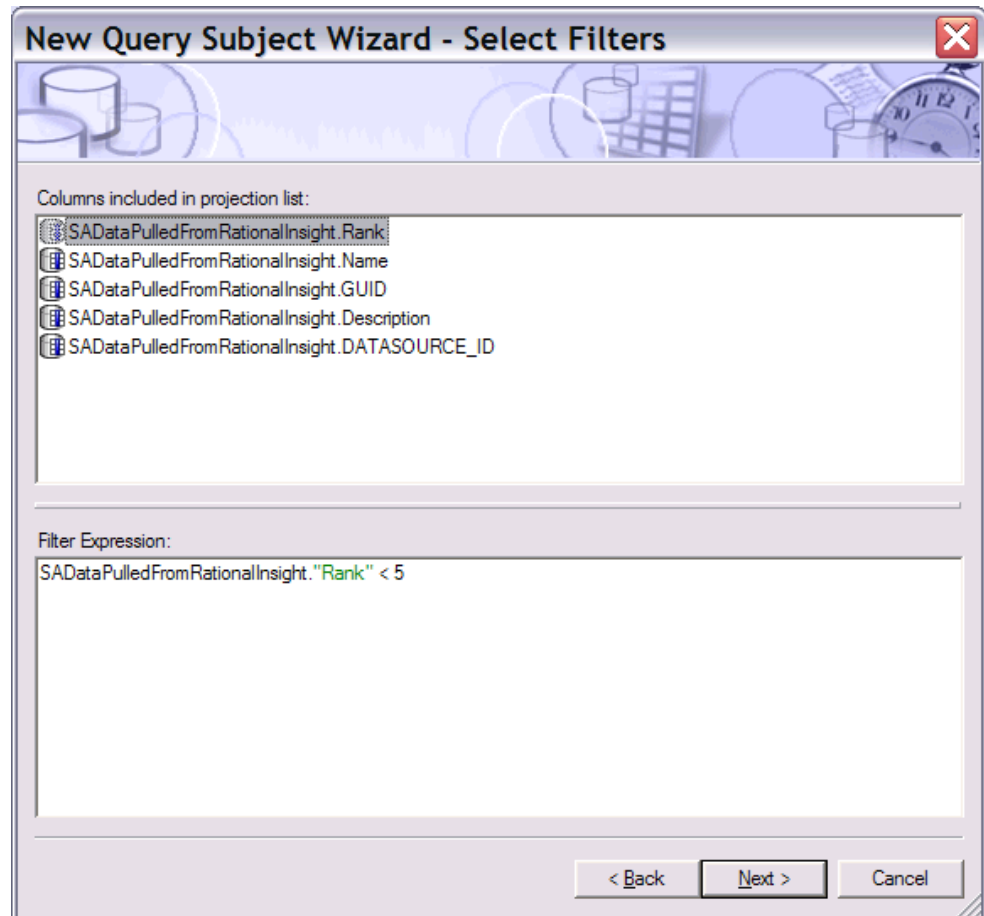
Once the project is loaded you can insert a new query, through the **Query Subject** context menu, as described below.

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.

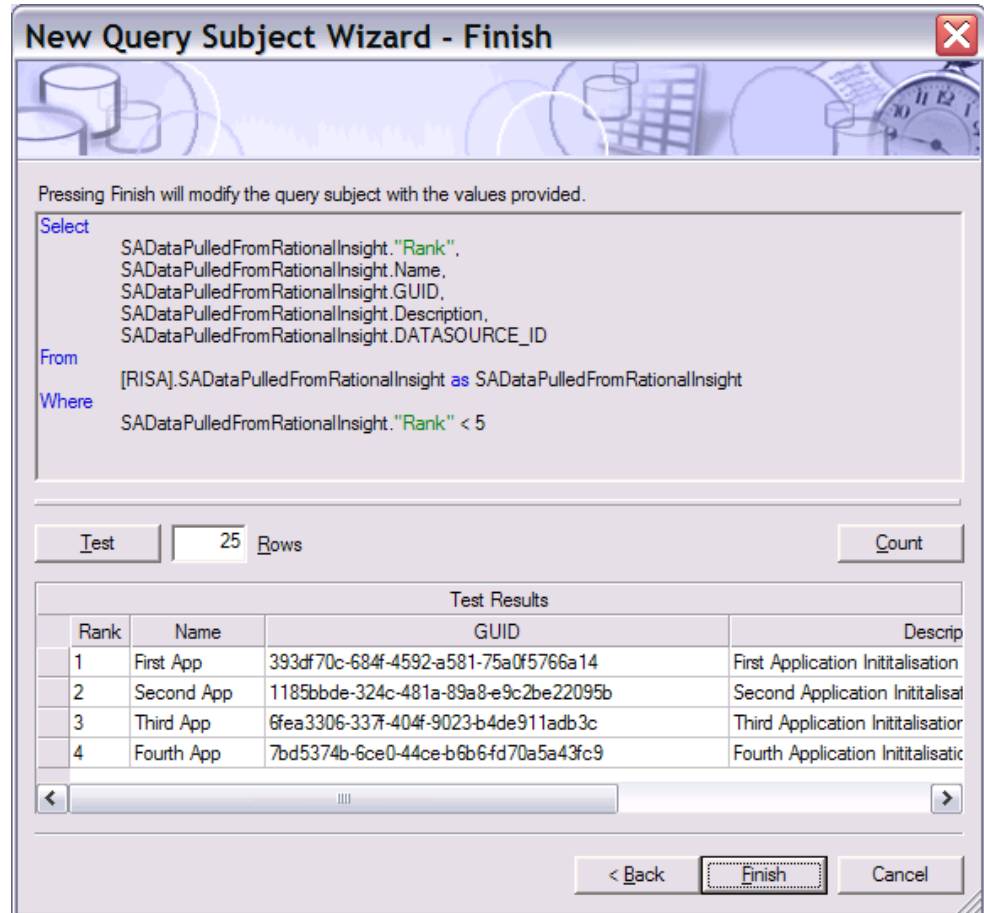


6. Click **Next**.

The subsequent dialogs provides 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.



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



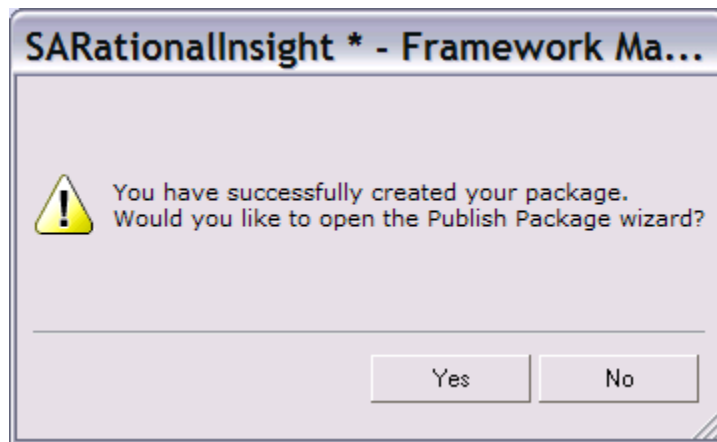
8. Click **Test** to validate the query against the Rational System Architect data warehouse.
9. Click **Finish** to insert a query object in to the project.

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.

Data Warehouse Change and Signon Creation

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 it 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.

IBM Support

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.
- 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.

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:

17. 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>.
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