



## SSRS (SQL Server Reporting Services) in iMIS 15.1

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Session Description: SSRS Reporting support is new in iMIS 15.1 and reporting capabilities are built into IQA. Learn about how SSRS has been incorporated into iMIS and how you can build SSRS reports that follow the ASI templates and integrate them into iMIS seamlessly.

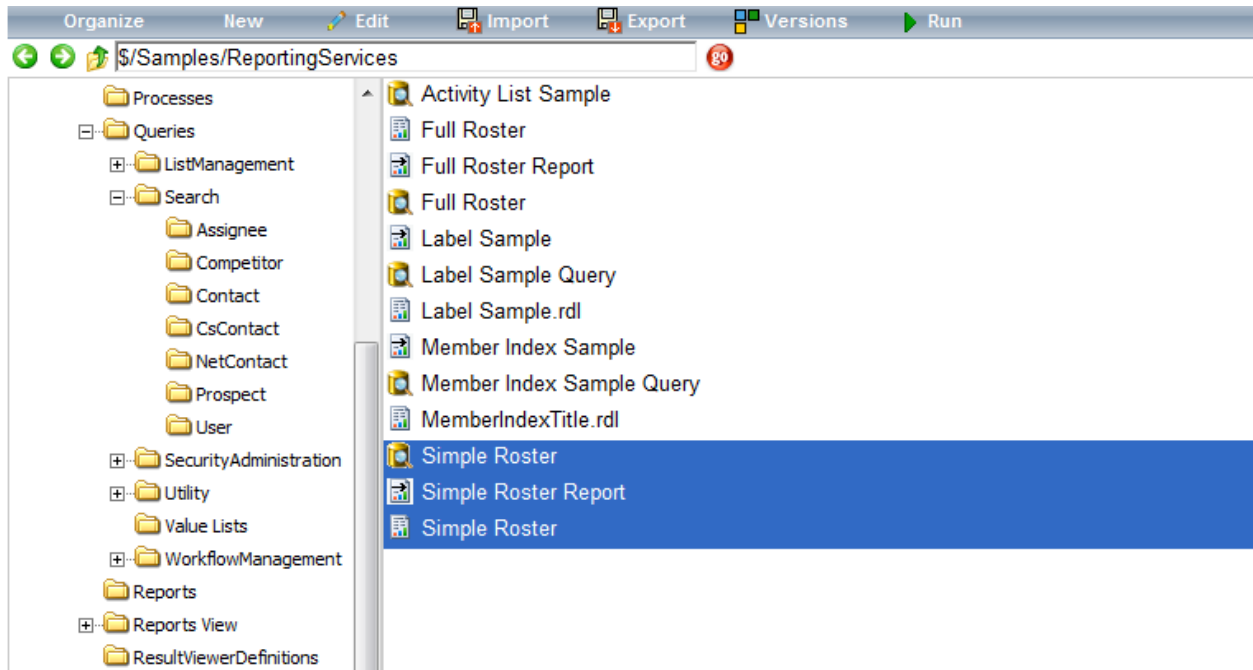
### Introduction

There are two distinct implementations of SSRS for iMIS 15.1 – Document System Integration, and iQA Integration. In addition to being a powerful feature on its own, iQA integration is designed to coordinate with Document System integration. It allows creation of SSRS template files in iMIS standard format, which can be edited in SQL Server Business Intelligence Studio, and then stored back into the Document System.

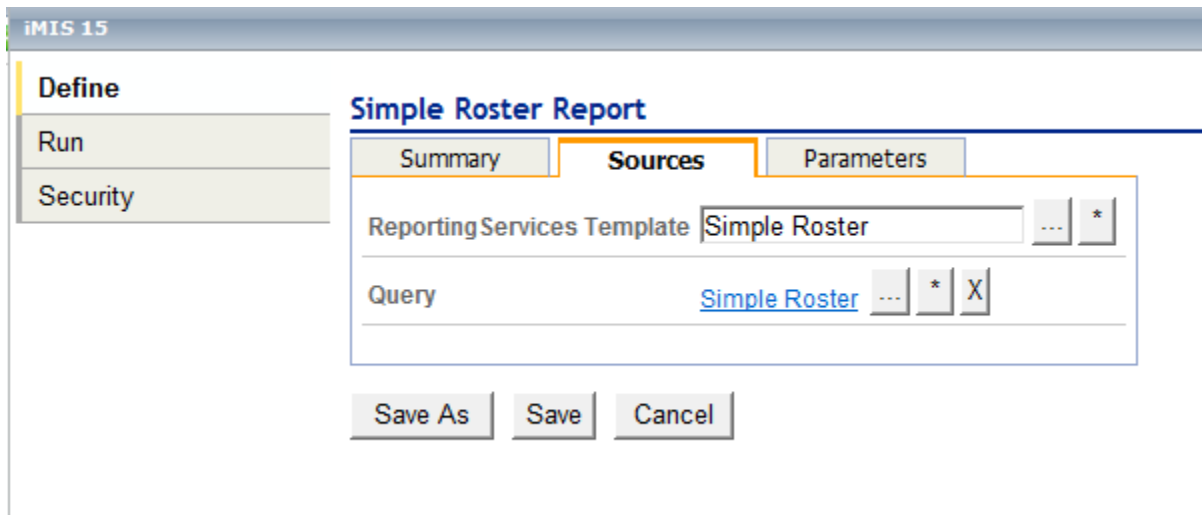
### Document System Integration

The initial implementation of SSRS for iMIS 15.1 was based on the Crystal Reports implementation, where there are three components to a report, each stored in the Document System. There's a Reporting Services Template containing the report definition, a Query to provide the data, and a Reporting Services Report (a process engine) to execute the report.

In the following image, the selected items for Simple Roster are the query, the process engine, and the template. Each has different associated actions.



The process engine Sources tab shows the associated Template and Query.





The Parameters tab lets the user specify whether parameters are shown at runtime; the parameters themselves come from the underlying query.

iMIS 15

Define  
Run  
Security

### Simple Roster Report

Summary Sources **Parameters**

Show Parameters at Runtime  
Last Name Starts With

Save As Save Cancel

When a report is executed with the Run command, the user is prompted for parameters if there are any, and then the report output is generated in memory and rendered inside a ReportViewer control, which is a Microsoft redistributable component.



IMIS 15

Define **Simple Roster Report**

Run Change Parameters

Security Hide

Page 1 of 3 | Page Width | Find | Next

### Simple Roster

FullName	Company	City	StateProvince
MANAGER		Alexandra	VA
GUEST			
Test Lasttest1			
John 6964test			
The Honora Chong Adam		Seattle	WA
Rusminah Amin	Creative Distractions	Austi	TX
Fernando Amor	Creative Distractions	Austin	TX
Mr. Peter L. Bachman	American Business Services	Houston	TX
Albert Bachman	Bachman Floral	Dallas	TX
Carol Behm	Creative Distractions	Austi	TX
Mr. Duane D. Bell	Bell Cardiac Services, Inc	Minneapolis	MN
Mr. Robert L. Berry	International Book Publishers	Fort Worth	TX
Mr. Charles P. Better, LLM	Software Distributors	Dallas	TX
Juan Bianchi	Creative Distractions	Austin	TX
George Blackwood	Blackwood Electric	Ft. Worth	TX

## IQA Integration

This enhancement adds an additional panel to IQA called Report. It is intended to work with any IQA query, generate an SSRS template file, and render the report with data inside a ReportViewer control within IQA. The user can export the rendered report to .PDF format. The generated template file can be saved for customization in SQL Server Business Intelligence Studio. In addition, the administrator can customize the characteristics of the generated reports using SystemConfig settings.



The ReportViewer control is a Microsoft redistributable component. Installing Reporting Services on the SQL Server is not a requirement, since the ReportViewer can do all the necessary processing. Everything that's necessary for this enhancement is distributed with iMIS. There is no license fee associated with the ReportViewer.

## Viewing the report on the Report panel

The screenshot below shows the report generated from the `$/Common/Queries/Search/Contact/Name` query. This is the original query in an upgraded db, with no changes; there is no upgrade requirement for existing queries to make them compatible. When the user clicks the Report link in the IQA left navigation, the report is generated in memory and displayed to the user.

If the query includes Filters, they are displayed in the Options area above the report display itself. When the user enters a filter value and clicks Refresh, the report is redisplayed based on the filter.

The screenshot displays the IQA - Intelligent Query Architect application window. The title bar reads "IQA - Intelligent Query Architect". The interface is divided into several sections:

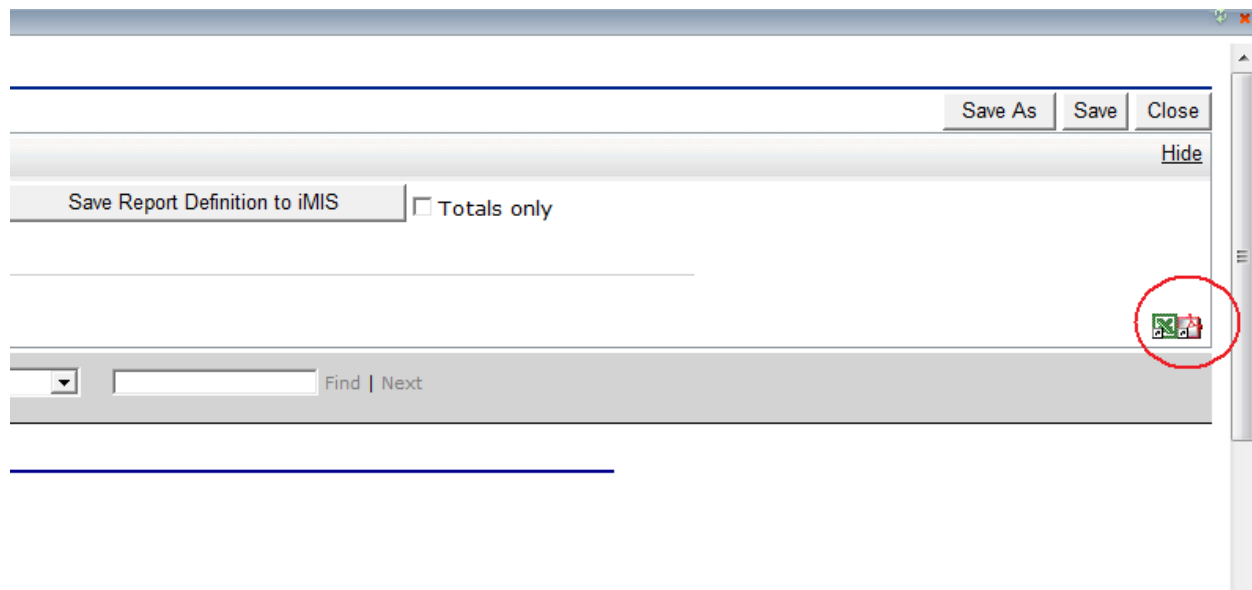
- Navigation Pane (Left):** Contains a tree view with the following items: Define, Run, Report (highlighted), and Security.
- Options Section:** Located above the report, it includes:
  - Buttons: Save As, Save, Close, Hide.
  - Checkboxes: Save Report Definition to Workstation, Save Report Definition to iMIS, and Totals only (unchecked).
  - Filter: A text input field labeled "Name contains" with a "Refresh" button below it.
  - Page Navigation: A set of navigation arrows, a page number "1 of 4", a zoom level "100%", and "Find | Next" buttons.
- Report Content:** A table titled "Name" with the following data:
 

Full Name	ID
	218
	265
	262
Academy of Child Professors	137
Acme, Inc.	159
The Honora Chong Adam	195
American Business Services	155
Rusminah Amin	206
Fernando Amor	257
Bachman Floral	161
Mr. Peter L. Bachman	156
Foo Barston	212
Baxter Products	172
Carol Behm	237
Bell Cardiac Services, Inc	162
Mr. Charles P. Better, LLM	123
Juan Bianchi	259
Bison Foto Inc.	224
Bison Foto Inc.	222
Bison Foto Inc.	221
Bison Foto Inc.	220
Blackwood Electric	163
Mr. James N. Bondlum	121
Mr. Tom L. Basso	120



## Exporting to .PDF format

Printing is handled through the export to .PDF facility. The Adobe Acrobat viewer must be installed on the workstation to support this. When the user does an export to .PDF by clicking the circled Export link (the red Adobe icon) shown below, a prompt to Open or Save is displayed.



When the user clicks Open (or opens a .PDF file from Windows Explorer after saving it), the exported .PDF is shown in the Acrobat viewer, and can be printed by clicking the Print icon on the toolbar. Printer destination, pagination, and so forth are handled by Acrobat.



Name	
Full Name	ID
Academy of Child Professors	137
The Honora Chong Adam	195
American Business Services	155
Rusminah Amin	206
Bachman Floral	161
Mr. Peter L. Bachman	156
Foo Barston	212
Baxter Products	172
Carol Behm	237
Bell Cardiac Services, Inc	162
Mr. Charles P. Better, LLM	123
Bison Foto Inc.	224
Bison Foto Inc.	220
Bison Foto Inc.	222

## Using Subtotals

Subtotals can be specified in the query definition. In SSRS terms, these are “groups”. A group is added for each Display field where the new Subtotal box is checked; the groups are nested in the order specified in the query definition. Here is the definition of a simple Activity List query, based on CsActivity and CsContact. This sample query is available under `$/Samples/ReportingServices` in the Document System.



## Activity List

Summary Sources Filters **Display** Sorting

View Selected ▾ Mode Advanced ▾

➔ Query Display Columns

Only display unique results

Selected Refresh

Display Property	Function	Alias	Subtotal	Order
<input checked="" type="checkbox"/> CsActivity.Id	None ▾	<input type="text"/>	<input checked="" type="checkbox"/>	1 ▾
<input checked="" type="checkbox"/> CsContact.Full Name	None ▾	<input type="text"/>	<input type="checkbox"/>	2 ▾
<input checked="" type="checkbox"/> CsActivity.Activity Type	None ▾	<input type="text"/>	<input checked="" type="checkbox"/>	3 ▾
<input checked="" type="checkbox"/> CsActivity.Description	None ▾	<input type="text"/>	<input type="checkbox"/>	4 ▾
<input checked="" type="checkbox"/> CsActivity.Amount	None ▾	<input type="text"/>	<input type="checkbox"/>	5 ▾

Below is the third page of the generated report (the Report Viewer provides navigation controls on its toolbar – first page, last page, next page, previous page, and specific page number). Note that ID 108 has 9 activities (separate Activity Types) – 1 MEETING, 3 ORDER, 4 DUES, 1 Gift. A group header is printed for the first group only; group footers, with a count and the value being grouped, are printed for all groups.



iQA - Intelligent Query Architect

iQA Activity List Sample

Save As Save Close

Options Hide

Save Report Definition to Workstation Save Report Definition to iMIS  Totals only

3 of 18 100% Find | Next

ID	FullName	ActivityType	Description	TransactionDate	Amount
107	Ms. Paula D. Caller, CPA	CERTIFICAT	Certified Government Accounting Specialist - Initial	1/24/2000	0.00
<b>Count of CERTIFICAT: 2</b>					<b>0.00</b>
107	Ms. Paula D. Caller, CPA	DUES	Basic Membership Dues	11/5/1995	115.00
107	Ms. Paula D. Caller, CPA	DUES	Basic Membership Dues	11/4/1996	115.00
107	Ms. Paula D. Caller, CPA	DUES	Basic Membership Dues	12/10/1994	115.00
107	Ms. Paula D. Caller, CPA	DUES	Basic Membership Dues	12/20/1993	115.00
<b>Count of DUES: 4</b>					<b>460.00</b>
107	Ms. Paula D. Caller, CPA	Gift	General Distribution	8/29/2000	50.00
<b>Count of Gift: 1</b>					<b>50.00</b>
<b>Count of 107: 7</b>					<b>510.00</b>
108	Mr. David F. Cookie, Jr.	DUES	Basic Membership Dues	1/15/1995	75.00
108	Mr. David F. Cookie, Jr.	DUES	Basic Membership Dues	1/6/1997	75.00
108	Mr. David F. Cookie, Jr.	DUES	Basic Membership Dues	1/1/1997	75.00
108	Mr. David F. Cookie, Jr.	DUES	PAC Contribution	1/1/1997	20.00
<b>Count of DUES: 4</b>					<b>245.00</b>
108	Mr. David F. Cookie, Jr.	Gift	General Distribution	10/16/2000	50.00
<b>Count of Gift: 1</b>					<b>50.00</b>
108	Mr. David F. Cookie, Jr.	MEETING	First Conference on Windows for Associations	7/15/1993	50.00
<b>Count of MEETING: 1</b>					<b>50.00</b>
108	Mr. David F. Cookie, Jr.	ORDER	Video - Creating a New Business	8/15/1995	78.00
108	Mr. David F. Cookie, Jr.	ORDER	Publication - Power Management	1/26/2001	60.00
108	Mr. David F. Cookie, Jr.	ORDER	Video - Creating a New Business	11/12/1999	78.00
<b>Count of ORDER: 3</b>					<b>216.00</b>
<b>Count of 108: 9</b>					<b>561.00</b>
109					

## Saving Report Definitions in .RDL format

The SSRS template file format is called Report Definition Language (RDL); an .RDL extension is used for this type of file. These are similar in concept to Crystal .RPT files. The user can edit .RDL files using the SQL Server Business Intelligence Studio.

An .RDL file is generated in memory when the user clicks Report. The user can then save the .RDL to the local file system (the "Save Report Definition to Workstation" button), or to the iMIS document system ("Save Report Definition to iMIS"). When saving the definition to workstation, the user is given the option to Open or Save the file. Open will open the file in whatever application is associated with the .RDL extension; Save will let the user save the file wherever desired.



iQA - Intelligent Query Architect

iQA

- Define
- Run
- Report
- Security

Name

Options

Save Report Definition to Workstation Save Report Definition to iMIS

Name contains

Refresh

1 of 3 100% Find | Next Acrobat (PDF) file Export

Name

Full Name	ID
Academy of Chi...	210
The Honora Cho...	
American Busin...	
Rusminah Amin...	
Bachman Floral...	
Mr. Peter L. Ba...	
Foo Barston	
Baxter Products	
Carol Behm	
Bell Cardiac Se...	
Mr. Charles P. B...	
Bison Foto Inc.	
Bison Foto Inc.	
Bison Foto Inc.	222
Bison Foto Inc.	221
Disturbed Elect...	402

File Download

Do you want to open or save this file?

Name: Name.rdl  
Type: Application, 8.75KB  
From: localhost

Open Save Cancel

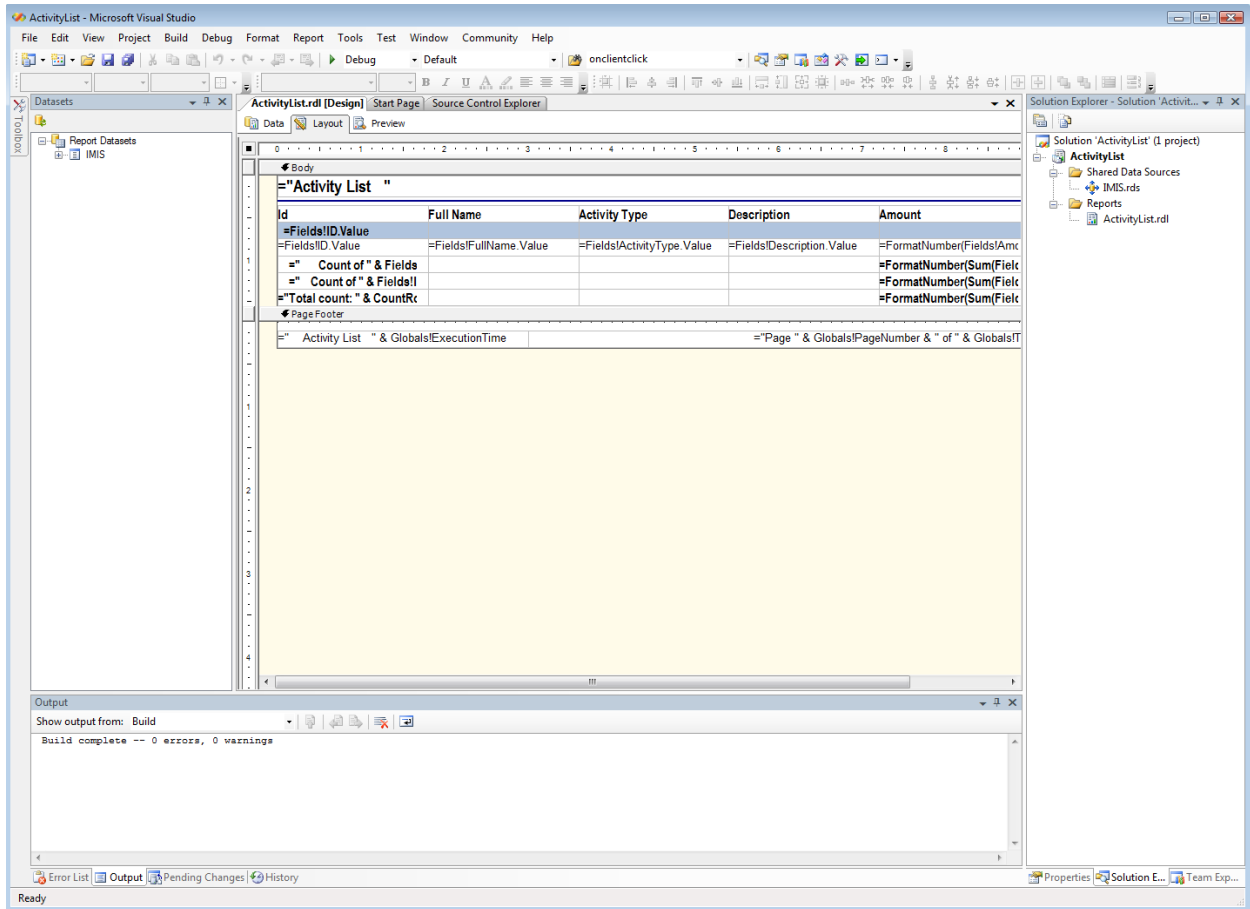
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. [What's the risk?](#)

## SQL Server Business Intelligence Studio

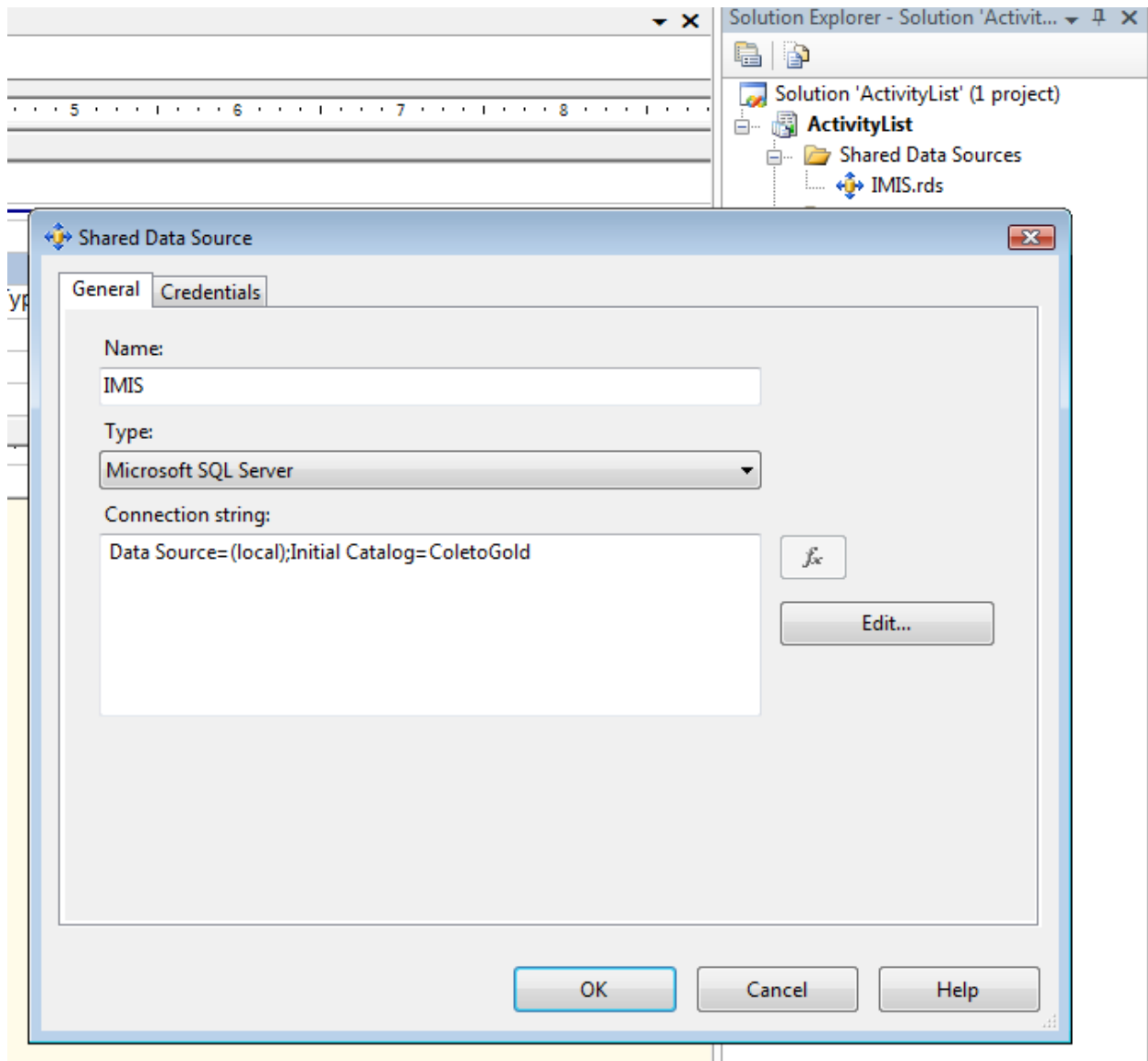
SQL Server Business Intelligence Studio is a free download from Microsoft, in the SQL Server 2005 Express Edition Toolkit found here:

<http://www.microsoft.com/downloads/details.aspx?familyid=3C856B93-369F-4C6F-9357-C35384179543&displaylang=en>.

To work with a downloaded .RDL in SQL Server Business Intelligence studio as shown below, it's necessary to create a new "Report Server" project (File / New / Project / Report Server Project).



As shown in the next screenshot, create a new Shared Data Source named "IMIS" (all caps); use the Edit... button to specify server and database, and the Credentials tab to specify the SQL Server login.



In the Solution Explorer, right-click Reports, Add / Existing Item, and browse to the .RDL file downloaded from IQA. The report definition can then be edited and imported back into iMIS for use by the



document system SSRS implementation. It can also be used in a separate SQL Server Reporting Services server environment.

## SystemConfig Customization of Generated Reports

The SystemConfig table in the iMIS database stores configuration information that controls the style of the generated report. Using these lets the administrator control the look and feel of reports system wide (although if the style is changed, that style is not applied to previously saved reports). It is also possible to configure the reports for A4 format (21.0 x 29.7 cm), and other sizes, for international customers. At this time, there is not a user interface to these columns; they must be updated using a SQL query tool. The table below was generated using this query:

```
select ParameterName, ParameterValue, Description from SystemConfig where
ParameterName like 'SSRS%' order by ParameterName
```

SSRS.BodyReportItemsHeight	0.2	Body report items height (units only, no UOM) used when generating SSRS reports
SSRS.BottomMargin	0.5	Bottom margin (units only, no UOM) used when generating SSRS reports
SSRS.DetailFont	Arial	Detail font for generated SSRS reports
SSRS.EnableGreenBar	false	Turns on alternating background color in rows of generated SSRS reports
SSRS.FieldHeaderBackgroundColor	White	Named color used when generating SSRS reports
SSRS.FieldHeaderForegroundColor	Black	Named color used when generating SSRS reports
SSRS.FooterHeight	0.3	Footer height (units only, no UOM) used when generating SSRS reports
SSRS.GreenBarBackgroundColor	LightSteelBlue	Named background color used when EnableGreenBar is true for generated SSRS reports
SSRS.GroupHeaderBackgroundColor	LightSteelBlue	Named color used when generating SSRS reports
SSRS.GroupHeaderForegroundColor	Black	Named color used when generating SSRS reports
SSRS.HeaderFont	Arial Narrow	Header font for generated SSRS reports
SSRS.HeaderHeight	0.25	Header height (units only, no UOM) used when generating SSRS reports
SSRS.LandscapeTotalWidth	11	Total page width (units only, no UOM) for landscape orientation paper used when generating SSRS reports
SSRS.Language	en-US	Default language used when generating SSRS reports
SSRS.LeftMargin	0.5	Left margin (units only, no UOM) used



		when generating SSRS reports
SSRS.PageFooterBackgroundColor	White	Named color used when generating SSRS reports
SSRS.PageFooterForegroundColor	Black	Named color used when generating SSRS reports
SSRS.PageHeaderBackgroundColor	White	Named color used when generating SSRS reports
SSRS.PageHeaderForegroundColor	Black	Named color used when generating SSRS reports
SSRS.PortraitTotalWidth	8.5	Total page width (units only, no UOM) for portrait orientation paper used when generating SSRS reports
SSRS.RightMargin	0.5	Right margin (units only, no UOM) used when generating SSRS reports
SSRS.SeparatorLineColor	DarkBlue	Color of the separator line for generated SSRS reports
SSRS.TableCellWidth	1.8	Width for table cells (units only, no UOM) used when generating SSRS reports
SSRS.TopMargin	0.5	Top margin (units only, no UOM) used when generating SSRS reports
SSRS.UnitOfMeasure	in	Unit of measure used when generating SSRS reports

This scheme reflects the iMIS standard for reports. Any IQA generated .RDL file thus reflects the standard.

Note that this configuration does not apply to .RDL files stored in the document system. Those reports, executed via the Process Engine mechanism, use whatever settings are stored in the file.

There are many web sites that provide a list of the named colors used in the parameter values; here's one: <http://www.cambiaresearch.com/c4/7cb36a7b-3731-48f6-b91b-1d8c503f140e/What-are-the-aspnet-Named-Colors.aspx>

Here, for example, is a different version of the Activity List report using a different color scheme and the "EnableGreenBar" feature to highlight alternating lines.



## Activity List

Id	Full Name	Activity Type	Description	Amount
101				
CALL				
101	Mr. Douglas A. Hunt, Jr.	CALL		0.00
	Count: 1			0.00
COMMITTEE				
101	Mr. Douglas A. Hunt, Jr.	COMMITTEE	Education Committee	0.00
	Count: 1			0.00
DONORCLUB				
101	Mr. Douglas A. Hunt, Jr.	DONORCLUB	Ambassador Donor Club	0.00
101	Mr. Douglas A. Hunt, Jr.	DONORCLUB	Brick Donor Club	0.00
	Count: 2			0.00
DUES				
101	Mr. Douglas A. Hunt, Jr.	DUES	Basic Membership Dues	950.00
101	Mr. Douglas A. Hunt, Jr.	DUES	PAC Contribution	20.00
101	Mr. Douglas A. Hunt, Jr.	DUES	Basic Membership Dues	950.00
101	Mr. Douglas A. Hunt, Jr.	DUES	PAC Contribution	20.00
101	Mr. Douglas A. Hunt, Jr.	DUES	Basic Membership Dues	950.00
101	Mr. Douglas A. Hunt, Jr.	DUES	PAC Contribution	20.00
101	Mr. Douglas A. Hunt, Jr.	DUES	Harris County	15.00
101	Mr. Douglas A. Hunt, Jr.	DUES	Basic Membership Dues	950.00
101	Mr. Douglas A. Hunt, Jr.	DUES	PAC Contribution	20.00

## Learning from iMIS Standard SSRS Reports

At this time, most of the reports distributed with iMIS in the Document System are still Crystal Reports. However, new reports are being implemented using SSRS, and can contain good opportunities to figure out how something is done. For example, in the Content Management system, under `$/ContentManagement/DefaultSystem/Reports`, there's a report called "Items By Tag Report". It shows two hyperlinks to additional content. If you go to the Templates folder and download the underlying template, you can determine that the hyperlink uses javascript and a special ServerURL parameter to create the hyperlink, its popup window, and the necessary URL parameters.



```
<Hyperlink>="javascript:void(window.open("'" + Parameters!ServerURL.Value +  
"/iMIS/ContentManagement/ViewContent.aspx?ContentKey=" + Fields!UniformKey.Value.ToString() +  
"&Mode=Edit','_blank'))"</Hyperlink>
```

## SQL Server 2005 ReportViewer does not contain a definition for 'Reset'

SQL Server Reporting Services support for the 15.1 release uses the ReportViewer control (<http://gotreportviewer.com/>). iMIS uses the Reset method, which was not in the original distribution of the control. Unfortunately, an older version of the 2005 ReportViewer control, without the Reset method, is included in several Microsoft installers. These place the older control in the GAC, where it's found before the newer version in the iMIS bin folder. Compounding this problem, the internal assembly version and public key token are the same for the two ReportViewer .dlls (Microsoft.ReportViewer.Common.dll and Microsoft.ReportViewer.WebForms.dll), even though they're different, and one includes the Reset method. That's the reason .NET uses the older version from the GAC instead of the newer version in the iMIS bin folder. If you encounter an error like this, you've run into that scenario:

```
'Microsoft.Reporting.WebForms.ReportViewer' does not contain a definition for 'Reset' and no  
extension method 'Reset' accepting a first argument of type
```

```
'Microsoft.Reporting.WebForms.ReportViewer' could be found (are you missing a using directive or an  
assembly reference?)
```

To fix this, install the Report Viewer Redistributable 2005 SP1 package:

<http://www.microsoft.com/downloads/details.aspx?FamilyId=E7D661BA-DC95-4EB3-8916-3E31340DDC2C&displaylang=en>