

# Infor PLM Accelerate 11

Microsoft Reporting Services Guide For use with Microsoft SQL Server 2012

#### Copyright © 2018 Infor

#### **Important Notices**

The material contained in this publication (including any supplementary information) constitutes and contains confidential and proprietary information of Infor.

By gaining access to the attached, you acknowledge and agree that the material (including any modification, translation or adaptation of the material) and all copyright, trade secrets and all other right, title and interest therein, are the sole property of Infor and that you shall not gain right, title or interest in the material (including any modification, translation or adaptation of the material) by virtue of your review thereof other than the non-exclusive right to use the material solely in connection with and the furtherance of your license and use of software made available to your company from Infor pursuant to a separate agreement, the terms of which separate agreement shall govern your use of this material and all supplemental related materials ("Purpose").

In addition, by accessing the enclosed material, you acknowledge and agree that you are required to maintain such material in strict confidence and that your use of such material is limited to the Purpose described above. Although Infor has taken due care to ensure that the material included in this publication is accurate and complete, Infor cannot warrant that the information contained in this publication is complete, does not contain typographical or other errors, or will meet your specific requirements. As such, Infor does not assume and hereby disclaims all liability, consequential or otherwise, for any loss or damage to any person or entity which is caused by or relates to errors or omissions in this publication (including any supplementary information), whether such errors or omissions result from negligence, accident or any other cause.

Without limitation, U.S. export control laws and other applicable export and import laws govern your use of this material and you will neither export or re-export, directly or indirectly, this material nor any related materials or supplemental information in violation of such laws, or use such materials for any purpose prohibited by such laws.

#### **Trademark Acknowledgements**

The word and design marks set forth herein are trademarks and/or registered trademarks of Infor and/or related affiliates and subsidiaries. All rights reserved. All other company, product, trade or service names referenced may be registered trademarks or trademarks of their respective owners.

#### **Publication Information**

Publication date: May 18, 2018

# Contents

dience	5
uments	5
nfor	5
Introduction	6
Installing Reporting Services	7
allation is a component of SQL Server 2012	7
ault Instance	8
<i>r</i> ice account Setup	8
abase Engine Configuration and Authentication Mode	9
lysis Services Configuration	9
orting Services Options	10
naining Selections	10
Configuring Reporting Services	11
Reports Folder	11
Shared Data Source	12
Reporting User and Role	14
local User Account for Reporting	15
the Reporting Role	15
Using Visual Studio for Report Design	19
ate a New Report Project	19
figure Project Properties	20
New Shared Data Source	21
nection Properties	21
loy the Shared Data Source	23
Creating your First Report	24
t a New Report using the Wizard	24
ect the Data Source	25
ign the Query	26
ect the Report Type	27
	dience

Choose the Table Style
Wizard Report Results
Visual Studio Layout
Deploying the Report
Confirm Deployment
Running the Report from within Infor PLM Accelerate
Adding Infor PLM Accelerate Report Item
Passing Named Parameters to the ReportServer
Chapter 6. Report Server query_string Parameters
Named Parameters
Format Parameter
Report Toolbar
Parameters Form
Zoom
Reports Folder
Report Name
Chapter 7. Report Manager
Opening the Report Manager page
Export the RDL
Import the RDL
Select the Shared Data Source
Chapter 8. Date Related SQL Queries

# About this guide

This document provides information about the installation and configuration of Infor PLM Accelerate Microsoft Reporting Services which is used with the Microsoft SQL Server 2012.

# Intended audience

This guide is intended for system administrators. This document assumes that you have at least some knowledge in:

- System architecture and function for your Infor system
- SQL Server database

For the most up-to-date list of software and hardware requirements for Infor products, see the documentation for your system.

## **Related documents**

You can find the documents in the product documentation section of the Infor Xtreme Support portal, as described in the "Contacting Infor" section below.

# **Contacting Infor**

If you have questions about Infor products, go to the Infor Xtreme Support portal at <u>www.infor.com/inforxtreme</u>.

If we update this document after the product release, we will post the new version on this Web site. We recommend that you check this Web site periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

## Chapter 1. Introduction

Infor PLM Accelerate's Report ItemType includes support for Microsoft's 'Reporting Services' in addition to supporting the existing XSLT based reports.

Reporting Services is an integral component of SQL Server 2012, and any customer with a SQL Server 2012 license can install Reporting Services. (See installation instructions below).

Usage of this release is recommended only for those with advanced Infor PLM Accelerate and SQL training.

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

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

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

To learn more about Microsoft Reporting Services visit: Microsoft SQL Server: Reporting

## Chapter 2. Installing Reporting Services

Reporting Services is a component of Microsoft SQL server 2012 and can be installed by selecting the 'Reporting Services' option during the SQL server installation.

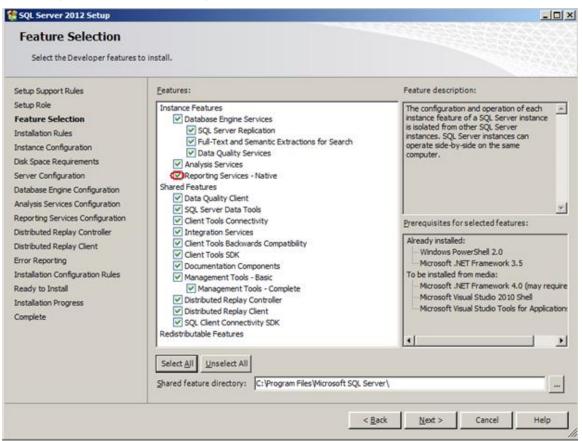


Figure 1.

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

Selecting the 'Reporting Services' option also installs components of Visual Studio 2012 for report design and deployment

Installation is a component of SQL Server 2012

The following is a summary of dialogs to be used when installing SQL server 2012.

Note: If you view dialog boxes not listed here, use the default selections.

### **Default Instance**

🚼 SQL Server 2012 Setup					<u>- 0 ×</u>
Instance Configuration Specify the name and instance II		ver. Instance ID becomes part of the installation path.			
Setup Support Rules Setup Role Feature Selection Installation Rules <b>Instance Configuration</b> Disk Space Requirements Server Configuration Database Engine Configuration Analysis Services Configuration Reporting Services Configuration Distributed Replay Controller Distributed Replay Controller Distributed Replay Controller Distributed Replay Client Error Reporting		MSSQLSERVER2012   C: Program Files (Microsoft SQL Server \  C: (Program Files (Microsoft SQL Server (MSSQL11.  y: C: (Program Files (Microsoft SQL Server (MSS11.  ny: C: (Program Files (Microsoft SQL Server (MSS11.			
Installation Configuration Rules	Instance Name	Instance ID	Features	Edition	Version
Ready to Install	MSSQLSERVER	MSSQL10_50.MSSQLSERVER,MSAS10_50.MSSQLSERVER,MSRS10_50.MSSQLSERVER	SQLEngine,AS,RS	Developer	10.50.1617.0
Installation Progress	<shared components=""></shared>		SSMS, Adv_SSMS, Conn, BC, SDK, IS		10.50.1617.0
Complete				1	
			< <u>B</u> ack <u>N</u> ext >	Cance	el Help

Figure 2.

## Service account Setup

Specify the service accounts and o	conation configuration.			
tup Support Rules tup Role ature Selection	Service Accounts Collation Microsoft recommends that you use a separate account f	or each SQL Server service.		
stallation Rules	Service	Account Name	Password	Startup Type
stance Configuration	SQL Server Agent	NT AUTHORITY WETWORK SERVICE		Manual
sk Space Requirements	SQL Server Database Engine	NT AUTHORITY WETWORK SERVICE		Automatic 💌
erver Configuration	SQL Server Analysis Services	NT AUTHORITY WETWORK SERVICE		Automatic 💌
atabase Engine Configuration	SQL Server Reporting Services	NT AUTHORITY WETWORK SERVICE		Automatic 💌
alysis Services Configuration	SQL Server Integration Services 11.0	NT AUTHORITY WETWORK SERVICE		Automatic 💌
porting Services Configuration	SQL Server Distributed Replay Client	NT AUTHORITY WETWORK SERVICE		Manual
stributed Replay Controller stributed Replay Client	SQL Server Distributed Replay Controller	NT AUTHORITY WETWORK SERVICE		Manual
ror Reporting	SQL Full-text Filter Daemon Launcher	NT AUTHORITY\LOCAL SERVICE		Manual
stallation Configuration Rules	SQL Server Browser	NT AUTHORITY\LOCALSERVICE		Automatic 💌
eady to Install stallation Progress mplete				



## Database Engine Configuration and Authentication Mode

🍀 SQL Server 2012 Setup		
Database Engine Confi Specify Database Engine authent	iguration ication security mode, administrators and data directories.	
Setup Support Rules Setup Role Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration <b>Database Engine Configuration</b> Analysis Services Configuration Distributed Replay Controller Distributed Replay Controller Distributed Replay Client Error Reporting Installation Configuration Rules Ready to Install Installation Progress Complete	Server Configuration       Data Directories       FILESTREAM         Specify the authentication mode and administrators for the Database Engine.         Authentication Mode <ul> <li>Windows authentication mode</li> <li>Mixed Mode (SQL Server authentication and Windows authentication)</li> <li>Specify the password for the SQL Server system administrator (sa) account.</li> <li>Enter password:</li> <li>Specify SQL Server administrators</li> <li>Specify SQL Server administrators</li> <li>SUILTIN/Administrators (Administrators)</li> <li>BUILTIN/Administrators (Administrators)</li> <li>Add Current User</li> <li>Add Current User</li> <li>Add Current User</li> <li>Add Current User</li> <li>Emove</li> <li>Enter Server Server Administrators</li> <li>Suit Tin/Administrators (Administrators)</li> <li>Add Current User</li> <li>Enter Server Administrators</li> <li>Suit Tin/Administrators (Administrators)</li> <li>Add Current User</li> <li>Enter Server Administrators</li> <li>Suit Tin/Administrators</li> <li>Suit Tin/Administrators (Administrators)</li> <li>Enter Server Administrators</li> <li>Suit Tin/Administrators (Administrators)</li> <li>Enter Server Administrators</li> <li>Suit Tin/Administrators</li> <li< th=""><th>SQL Server administrators have unrestricted access to the Database Engine.</th></li<></ul>	SQL Server administrators have unrestricted access to the Database Engine.
		< <u>Back</u> <u>N</u> ext > Cancel Help

Figure 4.

## Analysis Services Configuration

🚼 SQL Server 2012 Setup		
Analysis Services Confi Specify Analysis Services server n	iguration nodes, administrators, and data directories.	
Setup Support Rules Setup Role Peature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Analysis Services Configuration Analysis Services Configuration Distributed Replay Controller Distributed Replay Client Error Reporting Installation Configuration Rules Ready to Install Installation Progress Complete	Server Configuration     Data Directories       Server Mode: <ul> <li>Multidimensional and Data Mining Mode</li> <li>Tabular Mode</li> <li>Specify which users have administrative permissions for Analysis Services.</li> <li>BULTIN/Administrators (Administrators)</li> <li>Add <u>Current User</u></li> <li><u>Add</u></li> <li><u>Bemove</u></li> </ul>	Analysis Services administrators have unrestricted access to Analysis Services.
		< <u>Back Next &gt; Cancel Help</u>

Figure 5.

## **Reporting Services Options**

🚼 SQL Server 2012 Setup	
Reporting Services Co	nfiguration
Specify the Reporting Services of	onfiguration mode.
Setup Support Rules Setup Role Feature Selection Installation Rules Instance Configuration Disk Space Requirements Server Configuration Database Engine Configuration Analysis Services Configuration <b>Reporting Services Configuration</b> Distributed Replay Controller Distributed Replay Controller Distributed Replay Controller Installation Configuration Rules Ready to Install Installation Progress Complete	Reporting Services Native Mode  Install and configures the report server in native mode. The report server is operational after setup completes. Installs and configures the report server files. After installation, use Reporting Services Configuration Manager to configure the report server for native mode. Reporting Services SharePoint Integrated Mode  Install only. Installs the report server files. After installation use SharePoint Central Administration to complete the configuration. Verify the SQL Server Reporting Services service is started and create at least one SQL Server Reporting Services service application. For more information, click Help.
	< <u>Back</u> <u>N</u> ext > <u>Cancel</u> Help

Figure 6.

## **Remaining Selections**

The default selections can be used from this point forward.

## Chapter 3. Configuring Reporting Services

The Reporting Services use Folders to organize Reports. The Infor PLM Accelerate integration with Reporting Services use as a default the Folder named 'Innovator Reports'.

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

#### Add Reports Folder

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

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

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

Reporting Services Configuration Mana	ager: ARA500208\M55QL5ERVER2012	
SQL Server 2012 Reporting Services Configu	rration Manager	
Connect	Report Manager URL	
Service Account	Configure a URL to access Report Manager. Click Advanced to define multiple URLs, or to specify additional parameters on the URL.	
🔊 Web Service URL	Report Manager Site Identification	
间 Database	URLs: http://ARAS00208:80/Reports MSSQLSERVER2012 Advanced	
Report Manager URL		
🚖 E-mail Settings		
Execution Account		
유 Encryption Keys		
	Results	
	Creating virtual directory Reports_MSSQLSERVER2012	
	Reserving url http://+:80	
	The url was successfully reserved.	
	<u>qo2</u>	Y
0	Apply	<u>E</u> xit

Figure 7.

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

A Home - Report Manager - Windows Internet Explorer			×
C	т.аярж	💌 🐓 🗙 Google 🖉 🔎	•
😭 🐼 🌈 Home - Report Manager	1	💁 • 🔂 - 🖶 Bage • 🎯 Tgols •	39
		Home   My Subscriptions   Site Settings   Help	×
SQL Server Reporting Services			
		Search 👂	
New Folder 🦉 New Data Source 🕕 🍇 Report Builde	r 🤉 🖬 Folder Settings 🦾 🎗 Upload File	🔛 Details View	
There are no items in Home. Click Help for more information about	this page.		

Figure 8.

- 2. Click New Folder.
- 3. Enter Innovator Reports for the name and click OK.

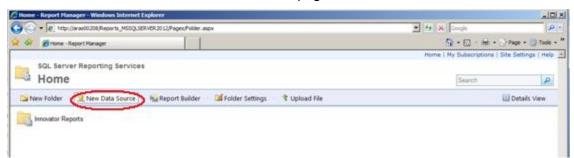
New Folder - Report Hanager - Windows Internet Explorer			
🕒 🕢 🕶 📳 http://aras00208/Reports_MSSQLSERVER.201	2,Pages,FolderProperties.aspxPCreateNew=True&ItemPath+	%2fNew +Folder &Redirect.kf =http:%3a%2 💌 👫 🔀 Coople	p.
🖌 🐼 💋 Mew Folder - Report Manager		🧿 • 🗊 • 📾 • 🕑	Eage + 🕜 Tools + '
Home		Home   My Subscriptions   Ste	e Settings   Help 👱
SQL Server Reporting Services			
New Folder		Search	P
Create a new folder in Home. Name: Innovator Reports Description: Hide in tile view OK Cancel	2 Y		

- Figure 9.
- 4. If you use a folder name that is not 'Innovator Reports', you need to change the 'Report Server Folder' variable in the database as well in Administration\Variables in the TOC. The default value for this is **Innovator Reports** but can be customized for each database. For the purposes of these instructions, we assume the default value is used.

#### Add Shared Data Source

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

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





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

```
data source=<SQLServerName>;initial catalog=<InnovatorDatabase>
e.g.
data source=server1;initial catalog=innovator
```

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

New Data Source - Re	oort Manager - Windows Internet Explorer						>
🕘 🕤 👻 🙋 http://ara	s00208/Reports_MSSQLSERVER2012/Pages/DataSource.aspx	?CreateNew=True&ItemsParentPath=%2f	8Redir	ectUrl=	nttp%3a%	%2f%2faras 🔽 😽 🗙 🛛 Google	P -
🖌 🕸 🔏 New Data So	urce - Report Manager					🟠 👻 🔜 👻 🖶 Page	• 💮 T <u>o</u> ols •
New Da	ta Source					Search	۶.
			-		_		
Name:	nnovator						
Description:							
	-						
	☐ Hide in tile view						
	Enable this data source						
	Microsoft SQL Server						
	data source=aras00208						
	VMSSQLSERVER2012;initial						
	catalog=Solutions5722S93						
Connect using:	upplied by the user running the report						
	following text to prompt user for a user name and pa	ssword:					
	er a user name and password to access the data so						
Use as 1	Windows credentials when connecting to the data so	urce					
Credentials s	tored securely in the report server						
User name							
Password:	•••••						
	Vindows credentials when connecting to the data so						
	nate the authenticated user after a connection has be	een made to the data source					
C Windows inte							
C Credentials a	re not required						
Test Connection Connection created s	uccessfully						
	01						
ne						🔍 Local intranet   Protected Mode: Off	🔍 100% 🛛 🛨

Figure 11.

### Add Reporting User and Role

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

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

The initial release of the Infor PLM Accelerate Reporting Services uses one shared User Account for all Report requests. The Infor PLM Accelerate Client calls the Infor PLM Accelerate Reporting Services Gateway to request Reports. The Gateway submits the actual Report request using this shared User Account and propagates the results back to the client. The Report renders without the authentication dialog appearing.

If the user attempts to view the Report directly outside Infor PLM Accelerate they view the authentication dialog as normal and unless the IT department shares the credentials, the users can only view the Reports through Infor PLM Accelerate.

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

#### Add local User Account for Reporting

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

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

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

#### Add the Reporting Role

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

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

🖉 Home - Report Hanager - Windows Internet Explorer	
🚱 🕢 = 🕐 http://aras00208,Reports_MSSQLSERVER2012,Pages,Folder.aspx	💌 🐓 🗙 Google 🛛 🖉 •
😭 🐼 🌈 Home - Report Manager	💁 = 🔂 - 🛞 = 🕑 Page = 🎯 Tools = **
	Home   My Subscriptions Ste Settings Help 🔳
SQL Server Reporting Services Home	Search
🖼 New Folder 🦷 🧕 New Data Source 👘 🍇 Report Builder 👘 🍱 Folder Settings 👘 🎗 Upload File	🛄 Details View
Innovator Reports	

Figure 12.

2. Click on the Security tab.

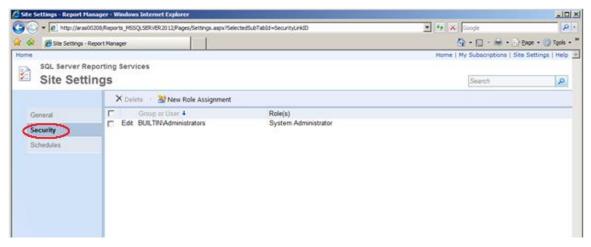


Figure 13.

3. Click **New Role Assignments** to map the Reporting User Account as a Reporting Services Role.

Site Settings - Report I	Manager - Windows Internet Explorer			1012
🔵 🕒 🔹 🙋 http://ara	s00208,Reports_MSSQLSERVER2012,Pages,Settings.asp	x?SelectedSubTabId=SecurityLinkID	💌 🏘 🗶 Google	P -
😵 🎯 Site Settings	- Report Manager		<u>@</u> •⊡·#•3	) Eage + 🕜 Tgols -
some			Home   My Subscriptions   S	ite Settings   Help
SQL Server F	Reporting Services			
Site Set	tings		Search	P
	X Delete Assignm	and	Friday State	
-	Group or User	Role(s)		
General	Edt BUILTINAdministrators	System Administrator		
Security				
Schedules				



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

	_MSSQLSERVER2012/Pages,EditGroup.aspx?ItemPath=&RedrectLH=http%3a%2f%	source and a second s	P
🔗 🍘 New System Rale Assignment	t - Report Manager	▲・□・★・☆	Bage + 🕜 Tgols +
ne		Home   My Subscriptions   Site	Settings   Help
SQL Server Reporting S	ervices		
New System R	ole Assignment	Search	P
	to the group or user		
elect one or more roles to assign			
Select one or more roles to assign	Description	ons, system properties, and shared schedules.	
System Administrator	Description View and modify system role assignments, system role definit		
Select one or more roles to assign	Description		



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

🖉 Nome - Report Hanager - Windows Internet Explorer	
🚱 🕗 📲 🖉 Mtts://www.00208.Reports_MSSQLSBK/BR2012/Pages/Polider.augux	<ul> <li>++ × Google</li> <li>(P)</li> </ul>
😧 🐼 👩 Hone - Report Manager	🚱 + 🖸 - 📾 + 🔿 Fage + 🔘 Toolo +
	Home   Ny Subscriptions   Site Settings   Help
SQL Server Reporting Services Home	Search P
💁 New Folder 🐘 📃 New Data Source 🛛 🙀 Report Builder 🔰 Folder Settings 👘 🐮 Upload File	E Details View
Innovator Reports	Entails Verv.



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

🖉 Home - Report Hanager - Windows Internet Exp	Aures					210 ×
🕒 🕞 🔹 🕼 Milli / Wax () ar and 0.2001, Reports _ MSSQL SERVI	ER 2012/Pages/Folder.aspx?Vie	Mode-Oetal		* **	X Soogle	8.
🖉 🤗 👩 Hone - Report Manager					9.0	
SQL Server Reporting Services Home				Hen	e   Ny Subscriptione   Gearch	Eite Settings   Help 💌
X Delete de Move Solder	New Data Source	Report Builder	Solder Settings	R Upload File		III Tile View
Type Name 4		Description	Poder Setting		ed Date Modifie 012 5 45 PM ARAS C	Contraction of the second s



7. Click New Role Assignment.

and the second se	indows Internet Explorer	لا الله
🔆 🔁 • 🖉 Masliw	as01208,Reports_MSSQLSERVER2012;Pages,Folder.aspx?ttenPath=%2%SelectedTabld=PropertiesTab	• f# X Loops P.+
😥 🐼 📸 - Report Manager		💁 • 🔂 - 📾 • 🕐 Page • 🕞 Tools • "
		Home   My Subscriptions   Site Settings   Help 🚊
	Reporting Services	
Home		Search P
	X Delete / Whee Role Assignment	
Security	Group or User 4 [New Role Assignment] Role(s)	
	C Edit BULTINAdministrators Content Manager	



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

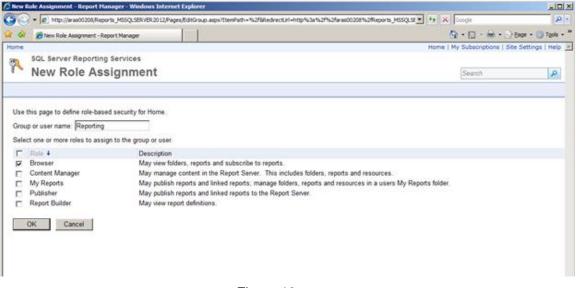


Figure 19.

## Chapter 4. Using Visual Studio for Report Design

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

**Note:** It is required that you follow the exact naming conventions as shown here to ensure that the Infor PLM Accelerate integration with the Reporting Services works correctly.

### Create a New Report Project

Start **SQL Server Data Tools** and create a new project named **Innovator Reports**. This becomes the Reporting Services Folder to hold the Reports for Infor PLM Accelerate.



Figure 20.

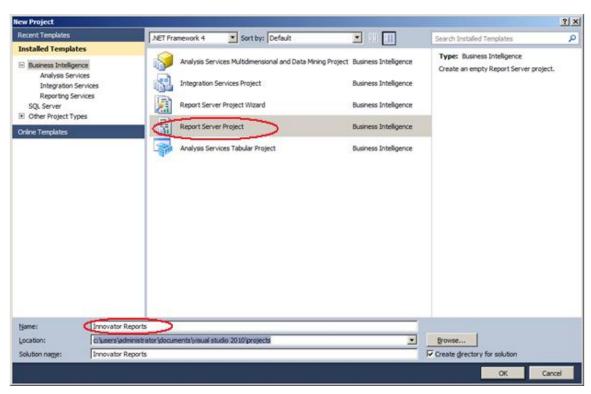


Figure 21.

### **Configure Project Properties**

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

Right-click the Innovator Reports folder and select the Properties context menu choice.

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

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

onfiguration: Active(Debug)	Blatform: N/A	Configuration Manager
Configuration Properties	🗆 Build	
General	ErrorLevel	2
	OutputPath	bin\Debug
	Debug	
	Startitem	
	Deployment	
	OverwriteDatasets	False
	OverwriteDataSources	True
	TargetDatasetFolder	Datasets
	TargetDataSourceFolder	Data Sources
	Target Report Folder	Innovator Reports
	TargetReportPartFolder	Report Parts
	Target ServerURL	http://localhost/ReportServer_M
	TargetServerVersion	SQL Server 2008 R2 or later
		ative mode, enter the path to the report server for example, http:// <servername>/reportserver, F,</servername>

Figure 22.

#### Add New Shared Data Source

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

#### **Connection Properties**

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

Shared Data Source Pro	operties	×
General Credentials	Change name, type, and connection options.	
	Innovator	
	Type:	
	Microsoft SQL Server	•
	Connection string:	
	Click here to type or paste a connection string	Edit
Help		OK Cancel

Figure 23.

Connection Properties	? ×
Data <u>s</u> ource:	
Microsoft SQL Server (SqlClient)	Change
S <u>e</u> rver name:	
ARAS00208\MSSQLSERVER2012	<u>R</u> efresh
Log on to the server	
C Use Windows Authentication	
Use SQL Server Authentication	
User name: innovator	
Password:	
Save my password	
Connect to a database	
Select or enter a <u>d</u> atabase name:     Solutions5722S93	
C Attach a database file:	Browse
Logical name:	Diowse
	Ad <u>v</u> anced
Test Connection OK	Cancel

Figure 24.

### Deploy the Shared Data Source

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

		Solution Explorer	+ # X
		012	
		🔮 Innovator Repo	
		E Description	
0	Open	plane	
	Exclude From Pro	ect	
x	C/A	Chi+X	
140	Capy	CWI+C	
×	Delete	Del	
	Rename		
	build	-	
	Deploy		
12	Properties	Alt +Enter	
		10000	
		Solution Explorer	Class Yes

Figure 25.

## Chapter 5. Creating your First Report

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

### Start a New Report using the Wizard

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



Figure 26.

### Select the Data Source

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

	eport Wizard	
Se	Elect the Data Source Select a data source from which to obtain data for this report or create a new data source.	
œ	Shared data source	
	Innovator	
0	New data source	
	Name:	
	Data Source 1	
	Type:	
	Microsoft SQL Server	
	Connection string:	
	Edit	
	Credentials	1
	<u>Make this a shared data source</u>	
	Help < Back Next > Finish >>  C	ancel

Figure 27.

#### Design the Query

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

🧟 Report Wizard	
Design the Query Specify a query to execute to get the data for the report.	
Use a query builder to design your query.	
Q <u>u</u> ery Builder	
Query string:	
SELECT FIRST_NAME, LAST_NAME, EMAIL, TELEPHONE FROM [USER] ORDER BY LAST_NAME]	
Help < Back Next > Enish >>	Cancel

Figure 28.

Note: It is possible to pass Named Parameters into the query such as: SELECT \* FROM [PROJECT] WHERE id=@ID The 'Edit...' button opens a Query Builder interface, which is covered later in more detail.

### Select the Report Type

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

<u> Report Wizard</u>		
Select the Report Type Select the type of report that you want to create.		
_		
Tabular	****	
© <u>M</u> atrix	NNNN         NNNN         NNNN         NNNN         NNNN           XXXXXX         XXXXXX         XXXXXX         XXXXXX         XXXXXX           XXXXXX         XXXXXX         XXXXXX         XXXXXX         XXXXXX           XXXXX         XXXXXX         XXXXXX         XXXXXX         XXXXXX           XXXXXX         XXXXXX         XXXXXX         XXXXXX         XXXXXX           XXXXXX         XXXXXX         XXXXXX         XXXXXX         XXXXXX           XXXXXX         XXXXXX         XXXXXX         XXXXXX	
Help < Back	<u>N</u> ext > <u>F</u> inish >>  Ca	incel

Figure 29.

### Design the Table

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

Report Wizard Design the Tab Choose how to gro	<b>ble</b> up the data in the table.		
<u>A</u> vailable fields:	<u>P</u> age>	Displayed fields:	
	<u>G</u> roup>		×××× ×××× ×××× ××× ××× ××× ××× ××× ××× ××× ×××
	<u>D</u> etails>	FIRST_NAME LAST_NAME EMAIL TELEPHONE	
Help	< R <u>e</u> move	Next >	<u>Finish &gt;&gt; </u> Cancel

Figure 30.

### Choose the Table Style

Select the style for the table for the Report. This example simply uses the default **Bold** style.

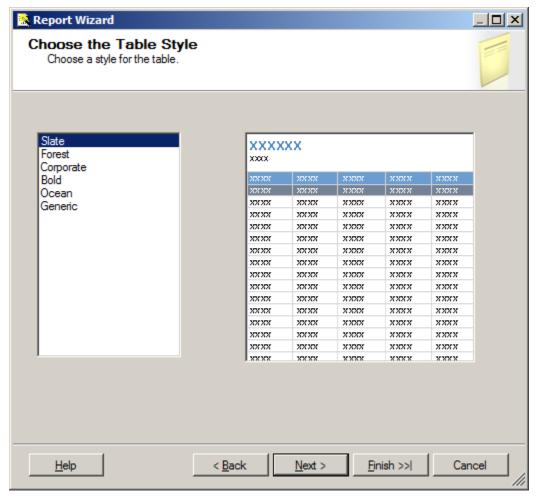


Figure 31.

### Name the Report

The final step in the Report wizard is to name the Report.

# **Note:** The **Report Name** must be chosen to be meaningful and should be the same name you set as the name of the Report Item in Infor PLM Accelerate.

🧟 Report Wizard	_ 🗆 🗙
Completing the Wizard Provide a name and click Finish to create the new report.	
Report name:	
User Report	
Report summary:	
Data source: Innovator	
Connection string:	
Report type: Table	
Layout type: Stepped	
Style: Slate	
Details: FIRST_NAME, LAST_NAME, EMAIL, TELEPHONE	
Query: SELECT FIRST_NAME, LAST_NAME, EMAIL, TELEPHONE FROM [USER] ORDER BY LAST_NAME	
Preview report	
Help < Back Next > Finish Ca	ancel

Figure 32.

#### Wizard Report Results

The Report wizard builds the report, which looks similar to following screen shot:

User R	eport		
FIRST NAME	LAST NAME	EMAIL	TELEPHONE
Innovator	Admin		
Vault	Admin		
Super	User		

Figure 33.

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

#### Visual Studio Layout

The Report pane has three Tabs:

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

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

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

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

#### Note:

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

### Deploying the Report

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

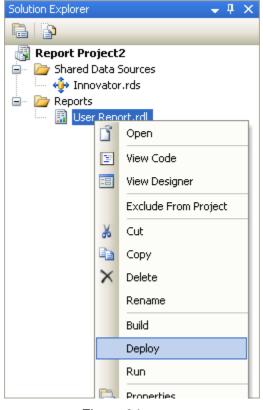


Figure 34.

### Confirm Deployment

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

Select the hyperlink for the new Report and after it opens, run the Report.

**Note:** The URL for directly testing this report outside of Infor PLM Accelerate would look like this: <u>http://localhost:8080/ReportServer?/Innovator Reports/User Directory</u>.

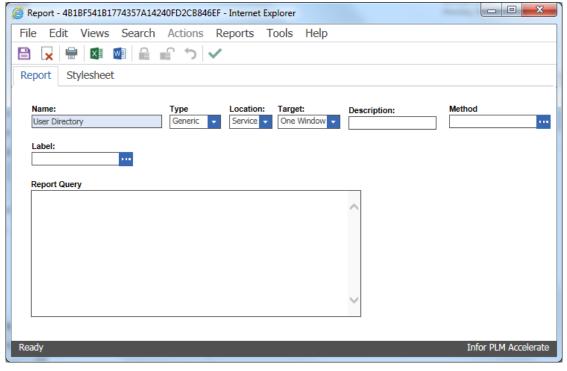
### Running the Report from within Infor PLM Accelerate

In order for users to run the new Reporting Services Report from within Infor PLM Accelerate you need to create a Report Item. The important settings to enable the Reporting Services interface are:

- The Report Item name must be exactly the same as the Reporting Services Report name.
- The Location Field choice must be set to the new Service option.
- The Report Query Field specifies the parameters that are passed to the Report Server.

#### Adding Infor PLM Accelerate Report Item

- 1. Log into Infor PLM Accelerate as admin.
- 2. In the TOC, navigate to Administration --> Reports.
- 3. Click New on the main Toolbar.
- 4. When the new Report Form opens enter the name of the Report (again this is the name you specified when you created the Report in Visual Studio).
- 5. Select the Report Type, which in this case is **Generic** meaning this Report, is available always.
- 6. Select the Report Location, which in this case is **Service**.
- 7. Select the Report Target, which in the case we want **Window**.
- 8. Because this sample Report is of type ItemType there is no Report query Value.





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

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

#### Passing Named Parameters to the ReportServer

As step 4 describes in the section 3.1, Report Server Variable, the value of the Report Item Property report\_query is appended to the ReportServer URL providing additional parameters to control the ReportServer.

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

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

To pass the ID for the context Item (the selected Item) on the URL to the ReportServer, the Report Item report\_query Property would look like this:

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

This is actually an XSLT stylesheet fragment and is the directive for Infor PLM Accelerate to add the string &id=ACBDEF0123456789ACBDEF0123456789 to the end of the ReportServer URL (but the actual ID value is used).

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

@ Report - 4B1BF541B1774357A1424	10FD2CB846EF - Internet Explorer		
File Edit Views Search	Actions Reports Tools Help		
🗎 🙀 🖶 🖾 🚳 🔒	Ê <b>*) ✓</b>		
Report Stylesheet			
Name: User Directory	Type     Location:     Target:       Generic     ✓     Service     One Window	Description: N	lethod
Label:			
Report Query rs:Format=PDF		~	
		~	
Ready			Infor PLM Accelerate



**Note:** If you need to include more than one parameter for the report\_query value, you need to use the Entity & amp; rather than the actual & symbol to delimit the parameters. Recall that the report\_query value is eventually part of the query\_string for the URL to the ReportServer but is actually an XSLT stylesheet fragment and so the special symbols like <, >, and & need to be protected in XML need to be entered as Entities &It; &gt; and & amp; respectively.

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

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

## Chapter 6. Report Server query\_string Parameters

There are several parameters that you can use to control how the Reporting Services run your Report requests. You include these in the Report Item's report\_query property, which the client then uses to form the query\_string for the ReportServer request:

#### **Named Parameters**

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

np:last name=Kohl

Would map the value Kohl to the Named Parameter @last\_name in the SQL Select:

SELECT \* FROM [USER] WHERE last\_name=@last\_name

#### **Format Parameter**

Format parameter to control the format the Report is rendered:

rs:Format=XML

rs:Format=PDF

rs:Format=HTML4.0

rs:Format=MHTML

rs:Format=EXCEL

rs:Format=Word

#### **Report Toolbar**

Turn off the Report Toolbar:

rc:Toolbar=false

#### **Parameters Form**

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

rc:Parameters=false

rc:Parameters=Collapsed

### Zoom

Control the zoom:

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

#### **Reports Folder**

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

irs:Folder=Your Folder Name

#### **Report Name**

The Infor PLM Accelerate client automatically appends the Parameter to specify the Report to run on the query\_string, which is the name of the Report Item. However, if run reports programmatically you may need to set this directly yourself:

irs:Report=Your Report Name

## Chapter 7. Report Manager

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

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

The process of exporting a Report and importing it into another ReportServer and enabling the Report in Infor PLM Accelerate is a four step process:

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

#### Opening the Report Manager page

- 1. In the TOC, navigate to Administration --> Reports.
- 2. Click **Reports** on the main menu and the **Report Manager** choice.
- 3. The **Report Manager** page opens in a new window as shown below:

You may need to click Show Details.

C Ho	me - I	Report Manager - Windows Internet Explo	rer				_ 🗆 ×
0	•	http://aras00208/Reports_MSSQLSERVEF	12012/Pages/Folder.aspx?ViewMk 🔎 🔹 🎸 🗙 🎯 Home - Report Manager	×		ŵ	r 🖈 🌐
					Home   My Subsc	riptions   Site Settings	Help 👱
		QL Server Reporting Services					
_[		lome			Searc	h	P
×	Dele	ete 🕴 💣 Move 🕴 🚞 New Folder 🕴	길 New Data Source 👘 🗳 Report Builder 👘 🎽 Folder Settings 👘	🕆 Upload I	File	💷 Tile Vi	ew
	Туре	Name 🗸	Description	Last Rur	n Modified Date	Modified By	
		Data Sources			4/27/2012 5:41 PM	ARAS\Administrator	
		Innovator Reports			4/27/2012 6:33 PM	ARAS\Administrator	
	<u>.</u>	Innovator			4/26/2012 5:49 PM	ARAS\Administrator	

Figure 37.

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

### Export the RDL

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

Select **Download** from the Report Context menu. This opens a dialog asking for confirmation that you want to save the RDL file.

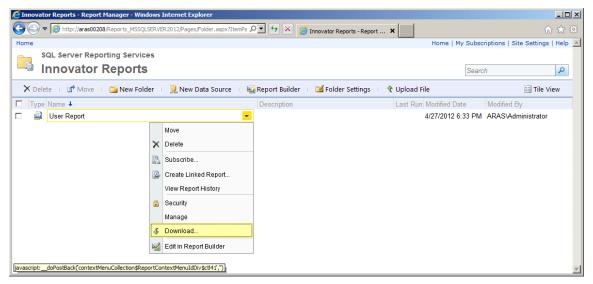


Figure 38.

#### Import the RDL

Log into the target Infor PLM Accelerate Server:

- 1. In the TOC, navigate to Administration --> Reports.
- 2. Click Reports on the main menu and the Report Manager choice.
- 3. The Report Manager page opens in a new window as shown below:

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

	R2012/Pages/Folder.aspx?ViewMk 🔎 🗹 🚱 Home - Report Mana		û 🖈
SQL Server Reporting Services		Home   My Subs	criptions   Site Settings   Help
🗙 Delete 🛛 💣 Move 📄 🔛 Kew Folder	🧕 New Data Source 🕕 🍇 Report Builder 👘 🌌 Folder Setti	ngs 🔹 🎕 Upload File	III Tile View
Type Name ↓	Description	Last Run Modified Date	Modified By
		4/27/2012 5:41 PM	ARAS\Administrator
Data Sources			
Data Sources		4/27/2012 6:33 PM	ARAS\Administrator



4. Click on the **Innovator Reports** Folder and you see a list of Reports and Shared Data Sources.

SQL Server Reporting Services Innovator Reports		Search
🗙 Delete – 🧊 More – 🥥 New Folder – 🧕 New Data Source – 🙀 Report Builder – 🍱 Folder Settings	1 Upload File	III Tile View
To The Name + Construction of the State of t	4/27/2012 6	e Modified Dy 33 PM ARASVAdministrator



5. Click **Upload File** in the middle of the screen. This opens the Upload File page.

Colsiona i ne	Report Manager - Windows Internet Explorer		<u>_ 0 ×</u>
<b>3</b> • 6	http://aras00208,Reports_MSSQLSERVER2012/ 🔎 🔹 🎸 🛛 🎯 Upload	File - Report Manager X	♠ ★ @
Home > Innov	ator Reports	Home   My Subscriptions	Site Settings   Help 📩
SQL	Server Reporting Services		
🕲 Up	load File	Search	·····
Upload a rep File to uploa Name:	port (.rdi), model (.smdi), shared dataset (.rsd), report part (.rsc), or o d:	ther resource into Innovator Reports.	
File to uploa	d Browse	ther resource into Innovator Reports.	
File to uploa	d Browse	ther resource into Innovator Reports.	

Figure 41.

- 6. Click Browse..., which opens a File Selection dialog for you to select the RDL file to upload.
- 7. Select the RDL file and click **Open**. This inserts the file name in the File to upload field and also set the Name field to the name of the RDL file selected.
- 8. If this is a new version of an existing Report select the Overwrite checkbox.
- 9. Click **OK** to complete the upload. The RDL file is uploaded to the target ReportServer and deployed. You should see the new Report in the Folder now.

### Select the Shared Data Source

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

葠 User Report - Report Manage	er - Windows Internet Explorer	
🔆 🔄 🗢 🎑 http://aras00208	Reports_MSSQLSERVE 🔎 🚽 😽 🔏 User Report - Report Manager 🗙 🚺 🏠	÷.
Home > Innovator Reports	Home   My Subscriptions   Site Settings   Help	
SQL Server Repor	-	
	🗙 Delete 👘 🖆 Move 👘 📓 Create Linked Report 👘 🐗 Download 👘 🏌 Replace	
Properties	Modified Date: 4/27/2012 6:33 PM	
Data Sources	Modified By: ARASVAdministrator Creation Date: 4/27/2012 6:33 PM	
Subscriptions	Created By: ARASVAdministrator Size: 17 KB	
Processing Options	Properties	
Cache Refresh Options	Name: User Report	
Report History	Description:	
Snapshot Options	v.	
Security	☐ Hide in tile view	
	Apply Create a linked report when you want to use different security or parameters with the report.	•

Figure 42.

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

#### **Report Manager**

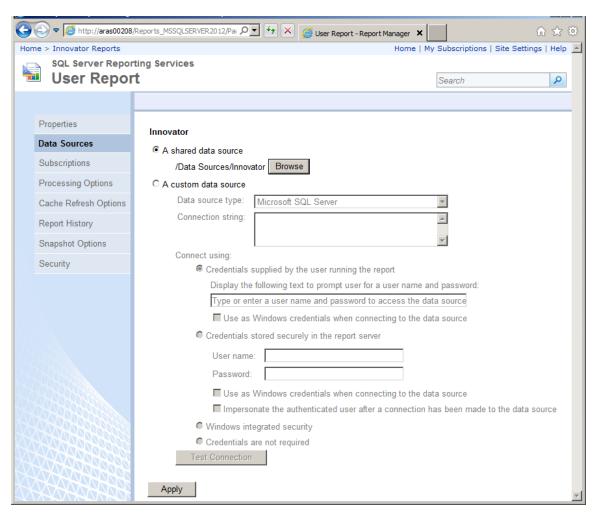
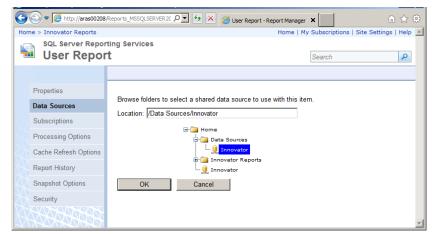


Figure 43.

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





## Chapter 8. Date Related SQL Queries

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

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

#### Example:

select item number, created on

from innovator.Document

#### Would be written as

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

from innovator.Document

#### Or

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

#### from innovator.Document

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

#### Example:

update innovator.Documnet

set effective date = '1/1/2007 00:00:00.00'

#### Would be written as

update innovator.Documnet

set effective\_date = innovator.ConvertFromLocal('1/1/2007
00:00:00.00',DEFAULT)

#### Or

update innovator.Documnet

set effective\_date = innovator.ConvertFromLocal('1/1/2007 00:00:00.00','Eastern Standard Time')

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

select item\_number, innovator.ConvertToLocal(release\_date,DEFAULT) as
ReleaseDate

from innovator.Document

where created\_on >= innovator.ConvertFromLocal('1/1/2007 00:00:00.00', DEFAULT)