Aras Innovator 12

Microsoft Reporting Services Guide

For use with Microsoft SQL Server 2019

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Document Conventions

The following table highlights the document conventions used in the document:

Table 1: Document Conventions

Convention	Description		
Bold	This shows the names of menu items, dialog boxes, dialog box elements, and commands. Example: Click OK .		
Code	Code examples appear in courier text. It may represent text you type or data you read.		
Yellow highlight	Code with yellow highlight is used to draw attention to the code that is being indicated in the content.		
Yellow highlight with red text	Red color text with yellow highlight is used to indicate the code parameter that needs to be changed or replaced.		
Italics	Reference to other documents.		
Note:	Notes contain additional useful information.		
Warning	Warning contains important information. Pay special attention to information highlighted this way.		
Successive menu choices	Successive menu choices may appear with a greater than sign (>) between the items that you will select consecutively.		
	Example: Navigate to File> Save> OK.		

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1 Introduction

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

Reporting Services is an integral component of SQL Server 2019, and any customer with a SQL Server 2019 license can install Reporting Services. (See installation instructions below).

Usage of this release is recommended only for those with advanced Aras Innovator and SQL training. Primary benefits to switching from stylesheet driven reports to Report Server:

- 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



2 Installing Reporting Services

Reporting Services is a component of Microsoft SQL server 2019. Click on this link to download Reporting Services separately: <u>https://www.microsoft.com/en-us/download/details.aspx?id=100122</u>. The Microsoft Download page appears.

Use the following procedure to download Microsoft SQL Server 2019 Reporting Services and install it:

1. Scroll down to Microsoft SQL Server 2019 Reporting Services:

Microsoft SQL Server 2019 Reporting Services					
<i>Important!</i> Selecting a language below will dynamically change the complete page content to that language.					
Select Language:	English	~	Download		



2. Click **Download**. The following dialog box appears:

What do you want to do with			
SQLServerReportingServices.exe (105 MB)?	Run	Cancel	×
From: download.microsoft.com			·

Figure 2.

3. Click **Run**. A security scan is run. When that is successfully completed, the following screen appears:



$- \times$

Microsoft SQL Server 2019 Reporting Services

Welcome

Install Reporting Services

SQL Server Reporting Services transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about SQL Server Reporting Services data processing and privacy controls, please see Privacy Statement. Learn how to opt out of collection here.

Figure 3.

4. Click Install Reporting Services. The following screen appears:



Microsoft SQL Server 2019 Reporting Services	_ X
Choose an edition to install	
Choose a free edition:	
Evaluation (expires in 180 days)	
○ Enter the product key:	
Learn more	
Cancel < Previous Next	>

Figure 4.

- 5. Select the Enter the product key button and type the product key in the appropriate field.
- 6. Click Next. The License Terms screen appears.



		_ ×
Microsoft SQL Server 20	19 Reporting Se	rvices
Review the license terms		
MICROSOFT SOFTWARE LICENSE TERMS		0
MICROSOFT SQL SERVER 2019		
These license terms are an agreement between live, one of its affiliates) and you. Please read th named above, which includes the media on whi any Microsoft	em. They apply to the evaluation	n software
• updates,		
 supplements, 		
 Internet-based services, and 		
 support services 		
✓ I accept the license terms		



7. Select I accept the license terms and click Next. The Install Database Engine screen appears.



	_ ×
Microsoft SQL Server 2019 Reporting S	ervices
Install Database Engine	
You'll need an instance of SQL Server Database Engine to store the report serv	er database.
Install Reporting Services only	
You'll need to have or install a Database Engine instance on this server or o	n a different server.
Learn more about supported Database Engine versions and editions	
Cancel < Previous	Next >

Figure 6.

8. Click Next. The Install Location screen appears.



		_ ×
Microsoft SQL Server 2019 R	eporting Se	ervices
Specify an install location		
Install location		
C:\Program Files\Microsoft SQL Server Reporting Services	Brov	vse
Cancel	< Previous	Install

Figure 7.

- 9. Use the default location shown here or click Browse to select a different install location.
- 10. Click Install. When the set up procedure is complete, a screen similar to the following appears:



-	_ ×
Microsoft SQL Server 201	9 Reporting Services
Setup completed	
Setup has installed the files you need. You're ready	to configure your report server.
Configure manually and customize settings	
We'll start Report Server Configuration Manager	for you to configure your report server.
Learn more	
	Configure report server Close

Figure 8.

11. Click **Configure report server**. The Configure report server screen appears.



Report Server Configuration Manage	97				-	\times
Report Server Configurat	tion Manager					
	1					
Server						
Service Account	The Report Server Configuration Co	nnection		X		
	, .					
	Report Server Connection	on				
🚺 Database	Please specify a server name, click t instance to configure.	he Find button, and select a	report server			
Web Portal URL						
🚖 E-mail Settings	Server Name:	ASCOTT01		Find		
	Report Server Instance:	SSRS		~		
Execution Account						
R Encryption Keys						
	0		Connect	Cancel		
剧 Subscription Settings						

Figure 9.

- 12. Click **Find** to select a different server name. Click the down arrow in the **Report Server Instance** field to select a different Report Server Instance.
- 13. Click **Connect** to connect to the appropriate server. The following Report Server Manager screen appears:



Report Server Configuration Manager	: ASCOTT01\SSRS				\times
Report Server Configuration	on Manager				
nect 2	Report Server Status				
ASCOTT01\SSRS					
💐 Service Account	Use the Report Serve Before you can use t URL.	er Configuration Mana the report server, you	ger tool to define or modify settings for the report server and w must configure the Web Service URL, the database, and the W	veb portal. Ieb Portal	
🔊 Web Service URL	Current Report Server				
Database			SSRS		
Web Portal URL	Instance ID: Edition:		SQL Server Evaluation		
🚖 E-mail Settings	Product Version: Report Server Database Name:		15.0.1102.675		
Execution Account	Report Server Mode: Report Service Status:		Stopped		
R Encryption Keys		Start	Stop		
良 Subscription Settings					
ੂੰ ^ਸ ੂ Scale-out Deployment					
II Power BI Service (cloud)	Results				
	11:40:17.4121 Stopping repo	ort server "SQLServerR	eportingServices" on ASCOTT01.		
	The task completed successful	lly.			
				Сору	

Figure 10.

14. Click **Start.** You can modify or define settings for the Report Server. Click **Stop** to stop the Report Server.

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

2.1 Installation is a component of SQL Server 2019

The following is a summary of dialogs to be used when installing SQL server 2019.

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



2.1.1 Default Instance

📸 SQL Server 2019 Setup					-	-	X I
Instance Configuration Specify the name and instance		QL Server. Instance IE	becomes part of	f the installation (path.		
Product Key License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Ready to Install Installation Progress Complete	<u>D</u> efault instance N <u>a</u> med instance:	MSSQLSERVER]
	Instance <u>I</u> D:	MSSQLSERVER					
	SQL Server directory: Insta <u>l</u> led instances:	E:\Program Files\Mi	crosoft SQL Serve	er\MSSQL15.MSS	QLSERVER		
	Instance Name	Instance ID	Features	Edition		Version	
				< <u>B</u> ack	<u>N</u> ext >	Ca	ancel

Figure 11.



2.1.2 Service account Setup

Server Configuration Specify the service accounts and	d collation configuration.				
Product Key Jicense Terms Slobal Rules	Service Accounts Collation Microsoft recommends that you use a separate account	t for each SQL Server service.			
Microsoft Update	Service	Account Name	Password	Startup Type	
roduct Updates	SQL Server Agent	NT Service\SQLSERVERAGENT		Automatic	~
nstall Setup Files	SQL Server Database Engine	NT Service\MSSQLSERVER		Automatic	~
nstall Rules	SQL Server Analysis Services	NT Service\MSSQLServerOLAPService		Autor Auton	natic
eature Selection	SQL Server Integration Services 15.0	NT Service\MsDtsServer150	10	Automatic	~
eature Rules	SQL Server Integration Services Scale Out Master 15.0	NT Service\SSISScaleOutMaster150		Automatic	~
nstance Configuration	SQL Server Integration Services Scale Out Worker 15.0	NT Service\SSISScaleOutWorker150		Automatic	~
erver Configuration	SQL Server Distributed Replay Client	NT Service\SQL Server Distributed Rep		Manual	~
Database Engine Configuration	SQL Server Distributed Replay Controller	NT Service\SQL Server Distributed Rep		Manual	~
Analysis Services Configuration	SQL Full-text Filter Daemon Launcher	NT Service\MSSQLFDLauncher		Manual	
ntegration Services Scale Out	SQL Server Browser	NT AUTHORITY\LOCAL SERVICE		Disabled	~
Distributed Replay Controller Distributed Replay Client Feature Configuration Rules Ready to Install Installation Progress Complete	Grant Perform Volume Maintenance Task privilege t This privilege enables instant file initialization by av deleted content to be accessed. <u>Click here for details</u>	a statute de la construction de la	d to information disc	closure by allowing	
		Γ	< Back	Next > Can	- al





2.1.3 Database Engine Configuration and Authentication Mode

籠 SQL Server 2019 Setup	- 🗆 X
Database Engine Config Specify Database Engine auther settings.	uration cation security mode, administrators, data directories, TempDB, Max degree of parallelism, Memory limits, and Filestream
License Terms Global Rules Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Feature Configuration Rules Installation Progress Complete	Server Configuration Data Directories TempDB Memory User Instances FILESTREAM Specify the authentication mode and administrators for the Database Engine. Authentication Mode
	< <u>B</u> ack <u>N</u> ext > Cancel

Figure 13.



2.1.4 Analysis Services Configuration

Specify which users have administrative permissions for Analysis Services.	Analysis Services administrators have unrestricted access to Analysis Services.

Figure 14.



2.1.5 Reporting Services Options

Reporting Services Con Specify the Reporting Services of	
Global Rules Product Updates Install Setup Files Install Rules Installation Type Product Key License Terms Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Analysis Services Configuration Reporting Services Configura Feature Configuration Rules Ready to Install Installation Progress Complete	 Reporting Services Native Mode Install and configure. Installs and configures the report server in native mode. The report server is operational after setup completes. Install only. Installs 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.
	< Back Next > Cancel



2.1.6 Remaining Selections

The default selections can be used from this point forward.



3 Configuring Reporting Services

The Reporting Services use Folders to organize Reports. The Aras Innovator integration with Reporting Services uses 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.

3.1 Installing Reporting Services

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

Open your browser with the URL http://localhost:80/Reports (on a default install).

To set up Reporting Services:

- 1. Open the Reporting Services Configuration Manager
- 2. Set up a Service Account

∰Cgnnect	Service Account		
CAWDR20128/29659C0246	Specify a built-in acc	count or Windows domain user account to run the report server service.	
M Web Service URL	Report Server Service Account Choose an option to set the ser	rvice account and then click Apply.	
() Catabase	Use built-in account:	Wrtual Service Account	~
Web Portal URL	 Use another account: Account (Domain'user): 		
🚔 E-mail Settings	Bassword:		
Recution Account			
Subscription Settings			
	Results		
	Kesura		
	Starting report server "MSSQL	2016" on QAWIN201282.	<u> </u>
	Removing un http://+:80		
	Reserving un http://+:80		
	The uni was successfully reserve	ved.	<u>С</u> ору <u>v</u>
0		<u>Beels</u>	Bet

Figure 16.



3. Set up a Web Service URL

QAWIN2012R2M55QL2016			
Alexandra and Encoderation	Configure a URL us	ed to access the Report Server. Click Advanced to define mu	Itiple URLs for a single Report Server
Service Account:	instance, or to spec	ofy additional parameters on the URL.	
1 Web Service URL	Report Server Web Service Wrt Virtual Directory:	And the second se	
	Trade criticary.	ReportServer2016	
Cotabase	Report Server Web Service Site	e identification	
Web Portal URL	IP Address:	All Assigned (Recommended) v	
😤 E-mail Settings	TCP Perts	80	
🔄 t-mai secongi	HTTPS Certificate:	(Not Selected) v	Advanced
Execution Account	HTTPS Port:		Advanced
Chargotion Keys	Report Server Web Service UR	La .	
	URLat	https://Q4W3N2012R2:80/ReportServer2016	
Subscription Settings	_		
	Results		Copy

Figure 17.

4. Set up the Database



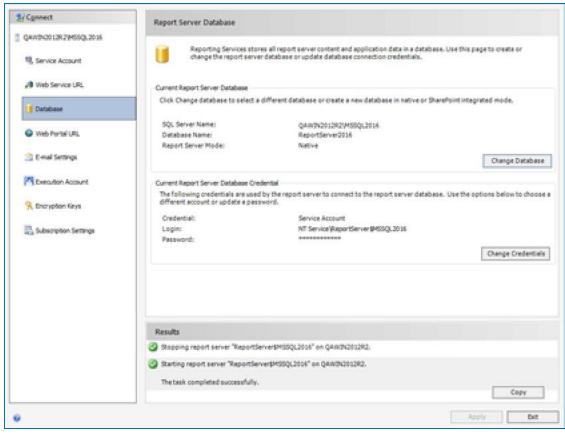


Figure 18.

5. Set up the Web Portal URL

Seconnect	Web Portal URL	
QAWIN2012R2[MSSQL2016 Service Account	Configure a URL to access Web Portal. Click Advanced to define multiple URLs, the URL.	or to specify additional parameters on
Web Service URL Contact Serv	Web Portal Site Identification Virtual Directory: Reports_MSSQL2016 URLs: http://QAWIN2012R2:80/Reports_MSSQL2016	Agranced
	Results Creating virtual directory Reports_MSSQL2016 Reserving url http://+:80 Sopping report server "ReportServer\$MSSQL2016" on QAWIN2012R2. Resulting report server "ReportServer\$MSSQL2016" on QAWIN2012R2. Resulting report server "ReportServer\$MSSQL2016" on QAWIN2012R2. The task completed successfully.	<u>Copy</u> Apply Bat

Figure 19.

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3.2 Setting Up the Report Folder

1. Open the Report Manager page (defined above) in a new window:

\Box Home - SQL Server Rep $~ imes~+$						—		\times
← → Č 192.168.169.38/repo	rts_mssql2016/browse			☆	=		٩	
SQL Server Reporting Services			ŝ	\downarrow	?	F	Reporti	ng
★ Favorites 🛛 Browse	+	↑ □	V	Search				Q
{ ∏ Home	Folder							
Home	KPI							
	Mobile Report							
FOLDERS (1)	Paginated Report							
Innovator Reports	Dataset							
DATA SOURCES (1)	Data Source							
								~

Figure 20.

2. Click +, then Folder.



3. Enter 'Innovator Reports' for the name and click Create.

Home - SQL Server Rep ¹ × +			—		×
	□ ☆	≡		٩	
SQL Server Reporting Services	ŝ	± ?		Report	ing
★ Favorites		l-	1		
Create a new folder in Home		\times			
Home Name					
Home Innovator Reports		×			
FOLDERS (1)					
Create Create	c	ancel			
DATA SOURCES (1)					



Note: If you use a folder named something other than '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.

3.3 Adding a 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 + then **Data Source** inside the Innovator Reports folder.



\Box Innovator Reports - SQL $ imes$ +						-		×
\leftarrow \rightarrow \circlearrowright 192.168.169.38/reports	_mssql2016/browse/Innovat	or%20Reports		☆	=	2	٩	•••
SQL Server Reporting Se	rvices	n dave Cain	ŝ	\downarrow	,	?	Repor	ting
★ Favorites 🔲 Browse	+	↑ □	Y	Searc	h			Q
Innovator Reports	Folder							
Home > Innovator Reports	KPI							
	Mobile Report							
	Paginated Report	1.						
	Dataset							
	Data Source							

Figure 22.

The New Data Source dialog appears.



SQL Server Repo	orting Services	ŝ	$\overline{\uparrow}$?	Reporting
★ Favorites 🛛 Browse				Rectang	ular Snip
린 New data sou	rce				
Home > Innovator Reports	s > New data source				
	Properties				Î
	Name				
	Description				_
	Description				
	🗌 Hide this item 🗹 Enable this data source				
	Connection				
	Type Microsoft SQL Server				U.S.
	WICHOSOTE SELVER				_
	Connection string Learn more				
	Credentials				
	Log into the data source				
	As the user viewing the report				
	 Your organization must have specific securit option to work. Learn more 	y infrastru	icture in p	lace for th	is

Figure 23.

2. Enter innovator_regular for the Data Source Name.

Note: 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 as well as the actual database name.

data source=<SQLServerName>;initial catalog=<InnovatorDatabase>
e.g.
data source=NuCarrownNACCOLCEDWED2010.initial catalog=ConcernenterCollege

- data source=MyServer\MSSQLSERVER2019; initial catalog=InnovatorSolutions
- 4. Select the **Using the following credential** choice for the **Connect Using** Field and enter the **DB Client Login** credentials for your database.

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5. Click **Create** to deploy the shared Data Source.

3.4 Adding Reporting Services User and Role

The entry point for the Microsoft Reporting Services is the ReportServer.asmx file. The same Web Service is used to request Reports and administer the Report Server.

The Web Service is configured by default to use Windows Authentication. You can't simply open the security for anonymous Web users because that would open the Report Manager as well.

This security model requires the User be authenticated when they request Reports. A dialog 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 Aras Innovator this would not be desirable. Users would not only have to constantly provide login credentials to access reports, but each Innovator user would also have to have either a domain or local user access on the server.

To handle this problem, Aras provides the Innovator Reporting Services Gateway that processes requests to Reporting Services. This gateway uses one shared User Account for all Report requests. 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 Aras Innovator, they still see the authentication dialog as normal. So users can only view the Reports through Aras Innovator.

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.

3.4.1 Add local User Account for Reporting

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

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

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

3.4.2 Add the Reporting Role

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

- 1. Create a user on the Server named "Reporting"
- 2. Click on the 'Site Settings' link in the upper right hand corner of the Report Manager page.



\Box Home - SQL Server Rep \times +					_		×
\leftarrow \rightarrow \circlearrowright 192.168.169.38/reports_mssql2016/	/browse		☆	—		٩	
SQL Server Reporting Services	19.38/reports_mssql2016/browse Ing Services Settings Search Site settings 						
★ Favorites Browse	Settings		Search.				Q
∏ Home	My subscrip	otions					
Home	Site setting:	S					
FOLDERS (1)							
Innovator Reports							
DATA SOURCES (1)							
••• Innovator					Reporting		
							~

Figure 24.

3. Click on the 'Security' tab.

\Box Security - SQL Server Re $ imes$	+			_	
\leftarrow \rightarrow \circlearrowright 192.10	68.169.38/reports_mssq	2016/manage/security/b	rc 🔟 🕁		\$
SQL Server Repo	orting Servic	es	\$\$\$ ↓	?	Reporting
★ Favorites 🛛 🗌 Browse					
င်္ဂြို Site settings					
General	+ Add group or use	r 🗊 Delete 🛛 Sear	ch		
Branding	🗌 Edit Grou	o or user	Roles		
Schedules		IN\Administrators	System Adminis	trator	
Security		SSQLV04\Reporting	System Adminis		n User
	- :	Iro 25			



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		1 0
\Box Security - SQL Server Re $ imes$	+	- 🗆 X
\leftarrow \rightarrow \circlearrowright 192.	168.169.38/reports_mssql2016/manage/security/bro	
SQL Server Rep	orting Services	to the second s
★ Favorites 🛛 Browse		
ష్రొకి Site settings		
General	+ Add group or user	h
Branding	Edit Group or user	Roles
Schedules	Edit BUILTIN\Administrators	System Administrator
Security	Edit ANDCSSQLV04\Reporting	System Administrator, System User
	Figure 26.	

4. Click 'Add group or user' to map the Reporting User Account as a Reporting Services Role.

Figure 26.

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



\Box Security - SQL Server Re $ imes$	+	- 🗆 X
\leftarrow \rightarrow \circlearrowright 192.1	68.169.38/reports_mssql2016/manage/security/edit?syst	
SQL Server Rep	orting Services 🔹 🕸	? Reporting
★ Favorites 🛛 🗍 Browse		
င်္လိနဲ Site settings		
General	Use this page to assign a user or group to a system role. You can also u	se this page to
Branding	create or modify a system role definition.	
Schedules	Group or user: Reporting Select one or more roles to assign to the group or user.	
Security	Role Description	
	System Admi View and modify system role assignments, system nistrator system properties, and shared schedules.	n role definitions,
	System User View system properties, shared schedules, and all Builder or other clients that execute report definiti	
	OK Cancel	

Figure 27.

6. Click on the **Browse** link in the upper left corner on the page



🗇 Security - SQL S	Server Re $ imes$	+						—		×
\leftarrow \rightarrow ζ) 192.1	68.169.3	38/reports_mssq	l2016/manage/security/edit?syst		☆	₽	1	٩	
SQL Serv	ver Repo	ortin	ng Servio	ces	ŝ	\downarrow	?		Repor	ting
★ Favorites	Browse									
శ్రస్తి Site se	ettings									
General		Use 1	this page to as	sign a user or group to a syste	m role. Y	ou can al	so use t	this pa	age to	^
Branding		creat	e or modify a s	system role definition.						
Schedules			•	Reporting roles to assign to the group of	r user.					
Security			Role	Description						
			System Admi nistrator	View and modify system rol system properties, and share	5		stem rol	le def	initions,	
			System User	View system properties, sha Builder or other clients that					f Report	:
			ОК	Cancel						~

Figure 28.

7. Click on Manage Folder link

Home - SQL Server Rep × +					—		×
← → Č) 192.168.169.38/reports_mssql2016/browse			☆│	=	1	٩	•••
SQL Server Reporting Services		ŝ	\downarrow	?	R	eporti	ng
★ Favorites Browse	⊦ ↑	7	Search.				Q
Home							
FOLDERS (1)							
Innovator Reports							
DATA SOURCES (1)							
							~

Figure 29.



8. In the settings tab, click Add group or user.

Home - SQL Server Reportir	Propertie	es - SQL Server	× +		- o ×
\leftarrow \rightarrow \circlearrowright 192.1	68.169.38/rep	orts_mssql2016	6/manage/catalogitem/security		
SQL Server Repo	orting S	Services	;		
★ Favorites 🛛 Browse					
🔲 Manage /					
Home > Manage > Securi	ty				
Security	+ Add gro	up or user	Delete Search		
		Edit	Group or user	Roles	
		Edit	BUILTIN\Administrators	Content Manager	
		Edit	ANDCSSQLV04\Reporting	Browser, Content Manager	

Figure 30.

9. Enter **Reporting** in the Group or User field and check the **Browser** checkbox. Click **OK** to create a new Role Assignment for the Innovator Reports folder.

Home - SQL Server Reportir	\Box Properties - SQL Server $ imes$	+	-	
\leftarrow \rightarrow \circlearrowright 192.	168.169.38/reports_mssql2016/mai	age/catalogitem/addrole		¢
SQL Server Rep	orting Services	© 7	?	Reporting
★ Favorites 🛛 Browse				
🔲 New Role Ass	ignment			
Home > Manage > Secur	ity > New Role			
Security	Use this page to define role- Group or user: Reporting Select one or more roles to a Role Browser Content Manager My Reports Publisher Report Builder			

Figure 31.



4 Using Visual Studio for Report Design

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

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

4.1 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 Aras Innovator.

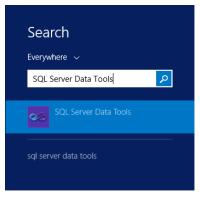


Figure 32.

	New Project	? X
Recent Templates	.NET Framework 4 🔻 Sort by: Default 💌 📰	Search Installed Templates
Installed Templates	Analysis Services Multidimensional and Data Min Business Intelligence Integration Services Project Business Intelligence Report Server Project Wizard Business Intelligence Report Server Project Business Intelligence Analysis Services Tabular Project Business Intelligence	Type: Business Intelligence Create an empty Report Server project.
	ivator Reports	
-	iQLServerReports\	Browse
	ate new solution	
Solution name: Inno	vator Reports	Create directory for solution
		OK Cancel

Figure 33.

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4.2 Configure Project Properties

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

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

On the Properties dialog set the TargetServerURL field to the URL of the Report Server. For example, <u>http://localhost:80/ReportServer</u> where the actual name of the server host name is entered in place of localhost.

Also set the OverwriteDateSources flag to True.

Configuration Properties General A Build ErrorLevel 2 OutputPath bin\Debug Starttem Debug Starttem Deployment OverwriteDataSources TargetDatasets False OverwriteDataSources TargetDatasetFolder Data Sources TargetDatasetFolder Data Sources TargetDatasetFolder Data Sources TargetExportFolder Innovator Reports TargetServerURL TargetServerURL TargetServerVersion SQL Server 2008 R2 or later ErrorLevel Specifies the seventy level of the build issues that are reported as e	Configuration:	Active(Debug)	✓ P	Platform: N/4		~	Configuration	Manager
Specifies the seventy level of the build issues that are reported as errors. Issues			ErrorLevel OutputPati Debug Startitem Overwrtte[TargetDat TargetRep TargetRep TargetRep TargetSen	ent Datasets DataSources asetFolder aSourceFolder sourceFolder vortFolder verURL	Faise True Data Sc Innovat Report http:///d	s ources or Reports Parts ocalhost/Rep		3
			Specifies the s					

Figure 34.

4.3 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.

4.3.1 Connection Properties

- 1. Select or enter the 'Server 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 Properties	x
General Credentials	Change name, type, and connection options.	
	Name:	
	Innovator	
	Туре:	
	Microsoft SQL Server 🗸	
	Connection string:	
	Click here to type or paste a connection string Edit	
Help	OK Ca	ncel

Figure 35.

	Connection Properties	? X
Data source:		
Microsoft SQL Serv	rer <mark>(</mark> SqlClient)	Change
Server name:		
ANDQASQLV02\M	ISSQL2012 V	Refresh
Log on to the serv	rer	
O Use Windows	Authentication	
Use SQL Sen	ver Authentication	
User name:	innovator_regular	
Password:	•••••	
	Save my password	
Connect to a data	hase	
	r a database name:	
InnovatorSol		~
O Attach a data	have file:	
		Browse
Logical name	;	
		Advanced
Test Connection	ОК	Cancel

Figure 36.

4.3.2 Deploy the Shared Data Source

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

		Solution Explorer	▼ ╄ ×
		🖻 🗗	
		📳 Innovator R	Reports
		⊿ 📄 Shared D	ata Sources
ß	Open		rator.rds
			atasets
	Exclude From Project		
*	Cut	Ctrl+X	
	Сору	Ctrl+C	
×	Delete	Del	
	Rename		
	Build		
	Deploy		
	Properties	Alt+Enter	

Figure 37.



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:

5.1 Start a New Report using the Wizard

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

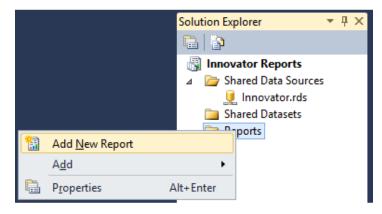


Figure 38.



5.2 Select the Data Source

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

8	Report Wizard		-		x
Se	Elect the Data Source Select a data source from which to obtain data for this report or source.	create a new dat	a		
۲	Shared data source				
	Innovator v				
0	N <u>e</u> w data source N <u>a</u> me: Data Source 1 <u>Type:</u> Microsoft SQL Server ✓ <u>Connection string:</u>				
	Make this a shared data source	Creder	it		
	Help < Back Next >	<u>Finish >> </u>	(Cance	e

Figure 39.



5.3 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.

8	Report Wizard	-	D X
Design t Specify a	he Query a query to execute to get the data for the report.		
Qu	builder to design your query. ery Builder		
Query string SELECT FROM ORDER BY	FIRST_NAME,LAST_NAME,EMAIL,TELEPHONE INNOVATOR.[USER] LAST_NAME		×
<u>H</u> elp	< <u>B</u> ack <u>N</u> ext > <u>Finish >> </u>	C	ancel

Figure 40.

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.



5.4 Select the Report Type

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

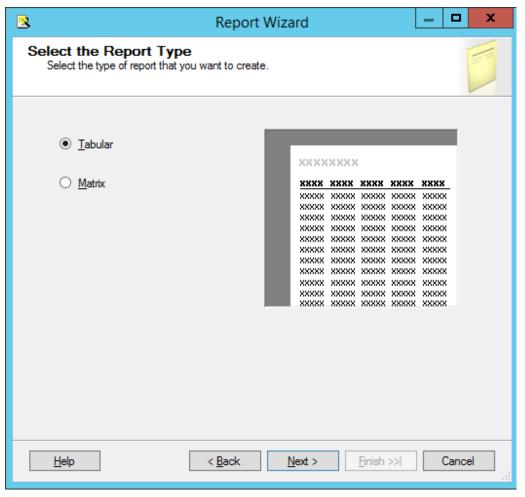


Figure 41.



5.5 Design the Table

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

<u>.</u>	Report \	Nizard	_ □ X
Design the Ta Choose how to g	able roup the data in the table.		
<u>Available fields:</u>	Dis	played fields:	
	Page>	[XXXXX XXXXX XXXXX XXXXX XXXXXX XXXXXX XXXXXXXXX XXXXXXXXXX XXXXXXXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
	LA	RST_NAME ST_NAME IAIL LEPHONE	
Help	< <u>B</u> ack	<u>N</u> ext >	<u>Finish >> </u> Cancel

Figure 42.



5.6 Choose the Table Style

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

State XXXXX XXXXX XXX	Choose a style for the ta	able.					
Bold XXXXX XXXXXX XXXXX XXXXX <th< th=""><th>Forest</th><th></th><th></th><th>xx</th><th></th><th></th><th></th></th<>	Forest			xx			
XXXX XXXX <th< th=""><th></th><th></th><th>XXXX</th><th>XXXX</th><th>XXXX</th><th>XXXX</th><th>XXXX</th></th<>			XXXX	XXXX	XXXX	XXXX	XXXX
XXXX XXXX <th< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>							
XXXXX XXXXX XXXXX XXXXX XXXXX			XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX	Generic		XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	XXXX	XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	XXXX	XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	XXXX	XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	XXXX	XXXX
XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX XXXX XXXXX XXXXX			XXXX	XXXX	XXXX	хххх	XXXX
XXXX XXXX XXXX XXXX XXXX			XXXX	XXXX	XXXX	XXXX	XXXX
			XXXX	XXXX	XXXX	XXXX	XXXX
			XXXX	XXXX	XXXX	XXXX	XXXX
			XX XX	XXXX	XXXX	XXXX	XXXX

Figure 43.



5.7 Name the Report

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

Note: The **Report Name** must be chosen to be meaningful and should be the same name you set as the name of the Report Item in Aras Innovator.

Report Wizard –	D X
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 INNOVATOR.[USER] ORDER BY LAST_NAME	
Preview report	
Help < Back Next > Finish C	iancel

Figure 44.



5.8 Wizard Report Results

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

User Report						
FIRST NAME	LAST NAME	EMAIL	TELEPHONE			
ES	Admin					
Innovator	Admin					
Vault	Admin					
Super	User					

Figure 45.

Once the Report is opened in the Layout Tab you can make further changes as required.

5.9 Visual Studio Layout

The Report pane has three Tabs:

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

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

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

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

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.



5.10 Deploying the Report

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

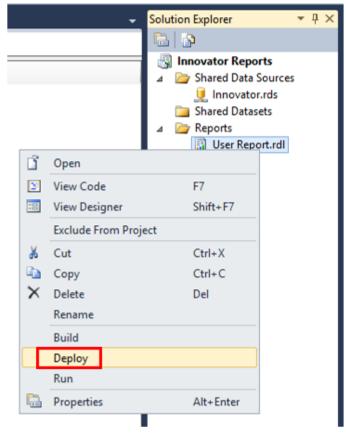


Figure 46.

5.11 Confirm Deployment

To confirm the new report has been deployed, open IE Browser and navigate to <u>http://localhost:80/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.



5.12 Running the Report from within Aras Innovator

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

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

5.12.1 Adding Aras Innovator Report Item

- 1. Log into Aras Innovator as administrator.
- 2. In the Navigation pane, navigate to **Administration --> Reports**. The following menu appears:

← 📶 Reports	*
🗘 Create New Report	
Q Search Reports	

Figure 47.

3. Click Create New Report. A blank Report form appears:

User Directory x
III User Directory
<mark>∕ Edit</mark> ★
Report
Report Stylesheet
Name: Type Location: Target: Description: Method User Directory Generic Service Window Vertice Vertice
Label:
Report Query

Figure 48.

- 4. 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.

 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.

5.12.2 Passing Named Parameters to the ReportServer

As step 4 describes in section 3.1, Installing Reporting Services, the value of the Innovator Report Item Property report_query is appended to the ReportServer URL providing additional parameters to control the ReportServer.

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

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

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

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

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

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

User Directory 🗙					
🔟 User Directory \sqcap	Σ				
🖍 Edit	·				
^ Report					
Report Stylesheet					
Name: User Directory Label:	Type Location: Target: Generic Service One Window	Description: Metho	d		
Report Query					
rs:Format=PDF					
					11

Figure 49.



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 & lt; > 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"/>&rs:Format=PDF



6 Report Server query_string Parameters

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

6.1 Named Parameters

Named Parameters passed onto the SQL Select query. For example, np:last_name=Kohl Would map the value Kohl to the Named Parameter @last_name in the SQL Select: SELECT * FROM [USER] WHERE last name=@last name

6.2 Format Parameter

Format parameter to control the format the Report is rendered:

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

6.3 Zoom

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

6.4 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



6.5 Report Name

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

irs:Report=Your Report Name



7 Report Manager

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

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

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

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

7.1 Opening the Report Manager page

- 1. In the TOC, navigate to **Administration** \rightarrow **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 here:

SQL Ser	ver Rep	orting	Service	25			۲	Ŧ	? Administrator
★ Favorites	Browse			Manage folder	+ New ~	Ť Upload	∀View ~	Search	ې
Home Home	e								
FOLDERS (2)									
Data S	ources		Innova	tor Reports					

Figure 50.

Note: This same page can be opened from your browser with the URL http://localhost:80/Reports



7.2 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 '**Manage**' from the Report Context menu, and then select '**Download**' from the User Report page. This opens a dialog asking for confirmation that you want to save the RDL file.

S	QL Server Reporting Services				٢	$\overline{\mathbf{A}}$?	Administrator
* [H	User Report × Changed by QAWIN2012R2\Administrator on 9/30/2016 12:21 PM Created by QAWIN2012R2\Administrator on 9/30/2016 12:17 PM	e folder	+ New ¥	Ť Upload	¶ View ∨	Search	L	م
PJ	☆ ADD TO FAVORITES MANAGE							
	Innovator							





SQL Server Rep	orting Services					۲	¥	?	Administrator
★ Favorites 🛛 Browse									
Edit User Report									
Properties	🖉 Edit in Report Builder	1 Download	↑ Replace	G Move	1 Delete	℃ri	eate linke	d report	
Parameters Data sources	Changed by QAWIN2012 Created by QAWIN2012F 17 K8								
Shared datasets	Properties								
Dependent items	Name					_			
Security	User Report								
	Description								
	Hide in tile view Advanced Report timeout: Use the system defaul Allow the report to run Allow the report to run Allow the report to run Carry Caryy Carry Carry Carry	n for 1800 s	econds before imeout)	timing out					

Figure 52.

7.3 Import the RDL

Log into the target Aras Innovator Server:

- 1. In the TOC, navigate to Administration \rightarrow 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:80/F	eports
---	--------

★ Favorites	Browse		П	Manage folder	+ New ~	↑ Upload	∀View ~	Search	ر
	C around					1 011000			
/ Hom	e								
Home									
FOLDERS (2)									
_									
L ^I Data S	ources	Ľ	Innovator Rep	orts					



4. Click on the '**Innovator Reports**' Folder and you see a list of Reports and Shared Data Sources. Click '**Upload**' in the middle of the screen.

SQL Ser	ver Rep	orting	g Servic	es				۲	¥	?	Administrator
★ Favorites	Browse			🗌 Manage	e folder	+ New ~	↑ Upload	🛛 View ∽	Search	۰	م
	vator Rep ovator Repo										
PAGINATED R	EPORTS (1)										
User R	eport										
DATA SOURCE	ES (1)										
Innova	itor										

Figure 54.



rganize 🔻 New folder					
				3==	• 🔟 (
🔶 Favorites	e	Date modified	Туре	Size	
📃 Desktop 🛛 🎍 A	rasES	7/19/2016 11:58 AM	File folder		
🗼 Downloads 🛛 🔒 b	atchloader	6/23/2016 2:26 PM	File folder		
🔚 Recent places 🛛 🔒 F	ullWindowsAuthExp	6/23/2016 8:31 AM	File folder		
🔒 R	eportServer	9/30/2016 8:16 AM	File folder		
💺 This PC 🛛 🚳 A	rasSecurityManager.bat	10/16/2015 8:24 PM	Windows Batch File	5 KB	
膧 Desktop 🛛 🚊 🧵 IE	Hostlog32.log1	12/16/2015 3:00 PM	LOG1 File	27 KB	
Documents	est.txt	4/21/2016 10:45 AM	Text Document	1 KB	
〕 Downloads 🛛 🔝 U	lser Report.rdl	9/30/2016 12:43 PM	Report Definition	17 KB	
Music					
崖 Pictures					
📴 Videos					
🚢 Local Disk (C:)					
👝 New Volume (D:)					
my shared folder					
File <u>n</u> ame:			V AILE	Files (*.*)	



This opens the File Selection dialog for you to select the RDL file to upload.

5. Select the RDL file and click **Open**. The RDL file is uploaded to the target ReportServer and deployed. You should see the new Report in the Folder now.



7.4 Select the Shared Data Source

The Data Source for the Report may need to be changed if the name of the Shared Data Source is different on the target ReportServer. Select '**Manage**' from the Report Context menu; this opens the **Properties** page for the Report where you can select its Shared Data Source.

SQL Server Rep	orting Services					۲	Ŧ	?	Administrator
★ Favorites 🔲 Browse									
Edit User Rep									
Properties	🖉 Edit in Report Builder	$\frac{1}{2}$ Download	[↑] Replace	G Move	🗎 Delete	ூ Cr	eate linke	d report	
Parameters Data sources Shared datasets Dependent items Security	Changed by QAWIN2012 Created by QAWIN2012R 17 KB Properties Name User Report Description Hide in tile view Apply Car	2VAdministrator o							

Figure 56.

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

SQL Server Rep	۲	Ŧ	?	Administrator	
★ Favorites 🛛 Browse					
Edit User Report					
Properties Parameters Data sources Shared datasets Dependent items Security	Innovator Connect to: A shared data source /Data Sources/Innovator A custom data source Save Cancel				

Figure 57.

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

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SQL Server Reporting Services	Ŧ	?	Administrator
★ Favorites 🔲 Browse			
🖬 Edit User Report			
Home > Innovator Reports > User Report			
Prop Data source Para Home > Data Sources			×
Shar Innovator			
Dep Secu			

Figure 58.



8 Date Related SQL Queries

AML is the language of Aras Innovator, but some external add-ons do connect to Aras Innovator on a direct SQL level. Because Aras Innovator stores DateTimes in SQL Server as UTC, we have provided an add-on function for Microsoft SQL Server that 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 *Aras Innovator - Configuring Internationalization*). To use the DEFAULT parameter for the {Time Zone}, it is required that a value be set for CorporateTimeZone.

Example:

select item_number, created_on

from innovator.Document

Would be written as

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

from innovator.Document

Or

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

from innovator.Document

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

Example:

update innovator.Document

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

Would be written as

update innovator.Document

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

Or

update innovator.Document

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)
```

```
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```

