Business Intelligence Development Studio (SSRS/Dashboard) and U2 Toolkit for .NET v.2.1.0

# Overview

SQL Server Reporting Services provides a full range of ready-to-use tools and services to help you create, deploy, and manage reports. Reporting Services tools work within the Microsoft Visual Studio environment and are fully integrated with SQL Server tools and components. With Reporting Services, you can create interactive, tabular, graphical, or free-form reports from relational, multidimensional, or XML-based data sources. Reports can include rich data visualization, including charts, maps, and sparklines. You can publish reports, schedule report processing, or access reports on-demand. You can select from a variety of viewing formats, export reports to other applications such as Microsoft Excel, and subscribe to published reports. The reports that you create can be viewed over a Web-based connection or as part of a Microsoft Windows application or SharePoint site.

U2 Toolkit for .NET v2.1.0 supports:

* SQL Access
* Native Access

U2 Toolkit for .NET v2.1.0 is Shared Data Source in SSRS Project.

**Note**

**You need to register U2 Toolkit for .NET with SSRS. See below for details.**

**You can find more information here “**[Register a Standard .NET Framework Data Provider (SSRS)](http://msdn.microsoft.com/en-us/library/bb326409.aspx)**”.**

# Requirements

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| --- | --- |
| **U2** | **Version** |
| UniVerse | **10.3 or later** |
| UniData | **7.1 or later** |

|  |  |
| --- | --- |
| **Microsoft** | **Version** |
| Visual Studio | * **2010 SP1** * **2012 Update 4** * **2013 Update 2 RC** |
| Business Intelligence Development Studio (BIDS)  (SSIS and SSRS) | * **BIDS 2010** * **BIDS 2012** |

# Registering U2 Toolkit for .NET Provider on the Report Server

You must modify the following configuration files so that U2 Database can be visible in SSRS Shared Data Source. Configuration file path depends upon BIDS/SQL Server SSRS version. In this example, we have used SQL Server 2012.

|  |  |
| --- | --- |
| Configuration File Name | Add/Modify |
| C:\Program Files\Microsoft SQL Server\MSRS11.MSSQLSERVER\Reporting Services\ReportServer\ rsreportserver.config | See Appendix A |
| C:\Program Files\Microsoft SQL Server\MSRS11.MSSQLSERVER\Reporting Services\ReportServer\ rssrvpolicy.config | See Appendix B |
| C:\Program Files (x86)\Microsoft Visual Studio 11.0\Common7\IDE\PrivateAssemblies\ RSReportDesigner | See Appendix C |
| C:\Program Files (x86)\Microsoft Visual Studio 11.0\Common7\IDE\PrivateAssemblies\ RSPreviewPolicy.config | See Appendix D |

# Create a Basic Table Report

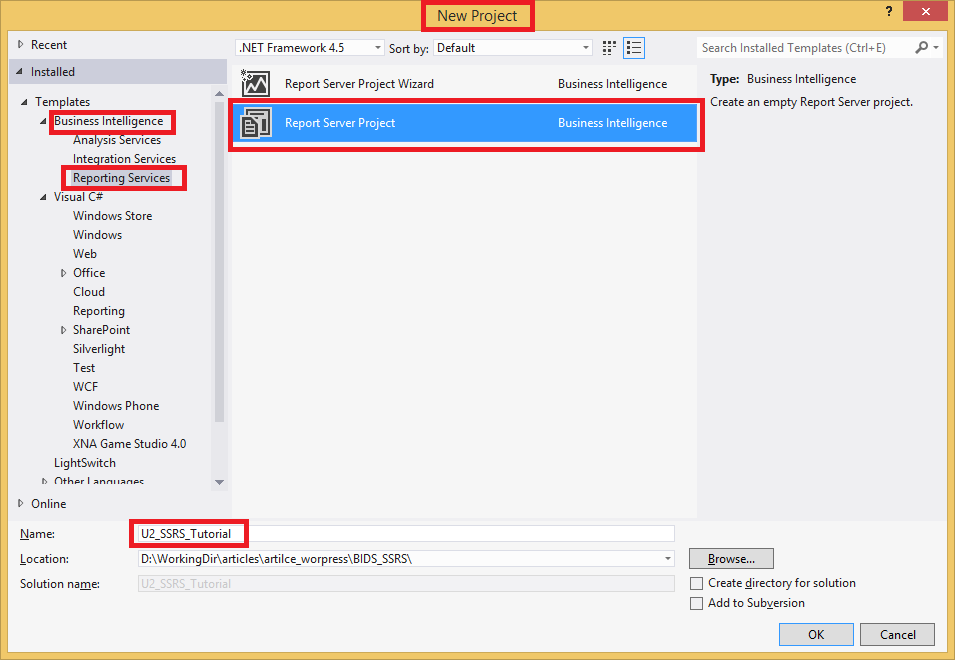
We will create basic table report based on the U2 Database (UniVerse/HS.SALES Account) using Report Designer. In this tutorial, you will create a report project, set up U2 connection information, define a query, add a Table data region, group and total some fields, and preview the report.

## Step 1: Creating a Report Server Project (Reporting Services)

First you need to create a report server project where you will save your report definition (.rdl) file and any other resource files that you need for your report. Then you will create the actual report definition file, define a data source for your report, define a dataset, and define the report layout. When you run the report, the actual data is retrieved and combined with the layout, and then rendered on your screen, from where you can export it, print it, or save it. In this lesson, you will learn how to create a report server project in SQL Server Data Tools (SSDT). A report server project is used to create reports that run on a report server.

**To create a report server project**

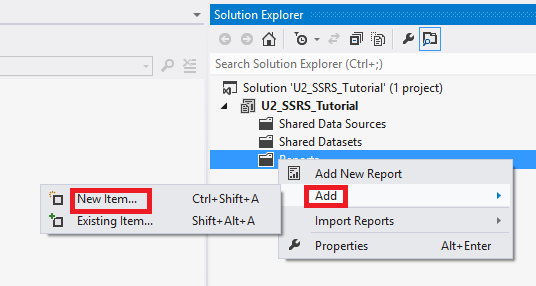
1. Click Start, point to All Programs, point to Microsoft SQL Server, and then click SQL Server Data Tools. If this is the first time you have opened SQL Server Data Tools, click Business Intelligence Settings for the default environment settings.
2. On the File menu, point to New, and then click Project.
3. In the Installed Templates list, click Business Intelligence.
4. Click Report Server Project.
5. In Name, type U2\_SSRS\_Tutorial.
6. Click OK to create the project.



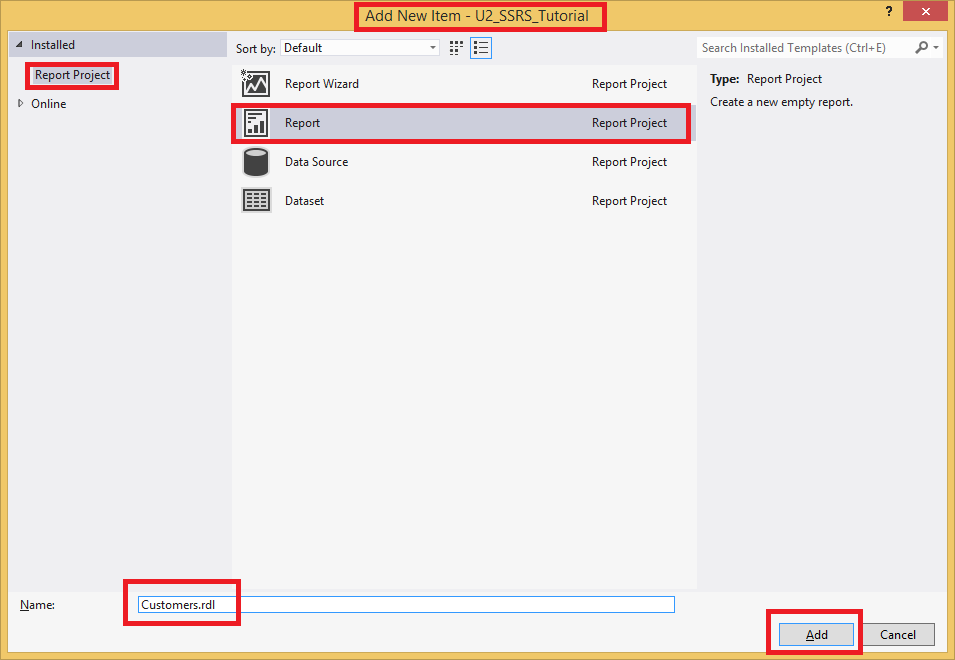
The Tutorial project is displayed in Solution Explorer.

**To create a new report definition file**

1. In Solution Explorer, right-click Reports, point to Add, and click New Item.



1. In the Add New Item dialog box, under Templates, click Report.
2. In Name, type Customers.rdl and then click Add.
3. Report Designer opens and displays the new .rdl file in Design view.



Report Designer is a Reporting Services component that runs in SQL Server Data Tools (SSDT). It has two views: Design and Preview. Click each tab to change views. You define your data in the Report Data pane. You define your report layout in Design view. You can run the report and see what it looks like in Preview view.

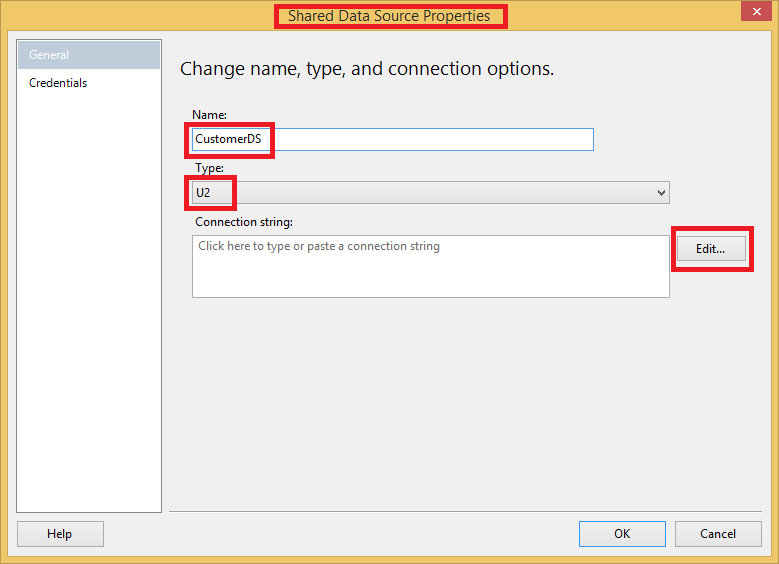
## Step 2: Specifying Connection Information (Reporting Services)

***Before this step, you must complete step “Registering U2 Toolkit for .NET Provider on the Report Server”.***

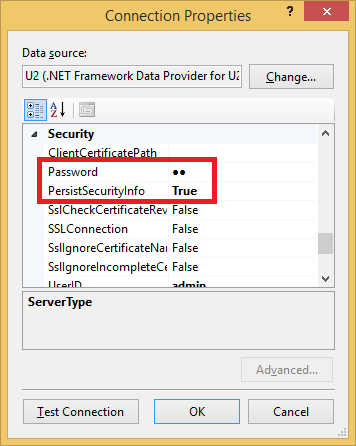
You need to define a data source, which is connection information the report uses to access data from U2 database. You will use the U2 Database (UniVerse/HS.SALES Account) sample database as your data source.

**To set up a connection**

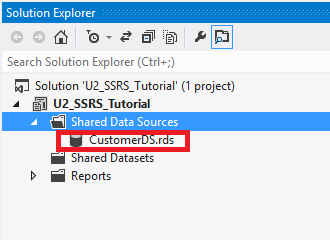
1. In the Report Data pane, click New and then click Data Source….
2. In Name, type CustomerDS .
3. In Type, select U2.



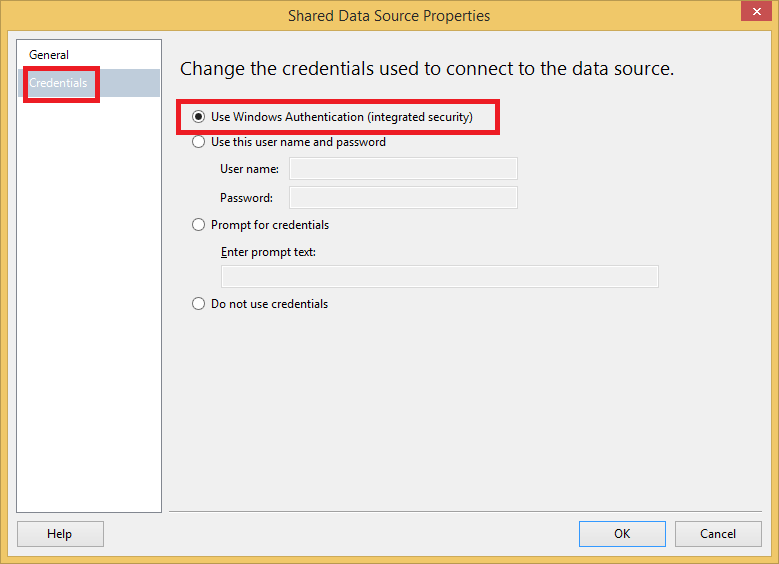
1. Click Edit… (You need to enter: User, Password, Server, Database, ServerType, AccessMode and PersistSecurityInfo)



1. Test Connection
2. Press OK



1. Click Credentials in the left pane and click Use Windows Authentication (integrated security).



## Step 3: Defining a Dataset for the Table Report (Reporting Services)

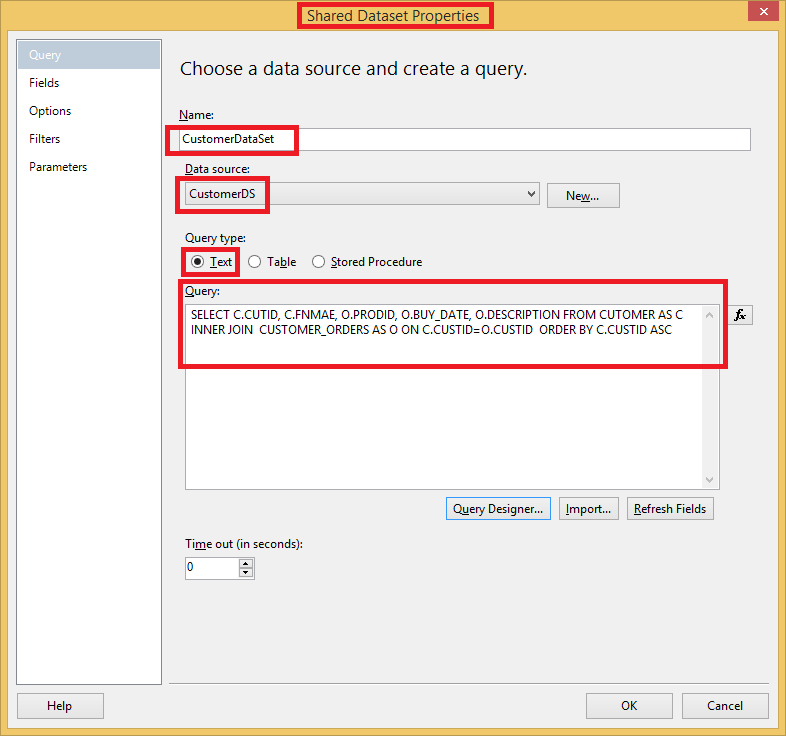
After you define the data source, you need to define a dataset. In Reporting Services, data that you use in reports is contained in a dataset. A dataset includes a pointer to a data source and a query to be used by the report, as well as calculated fields and variables.

***Query Designer is not supported for Custom .NET Provider.***

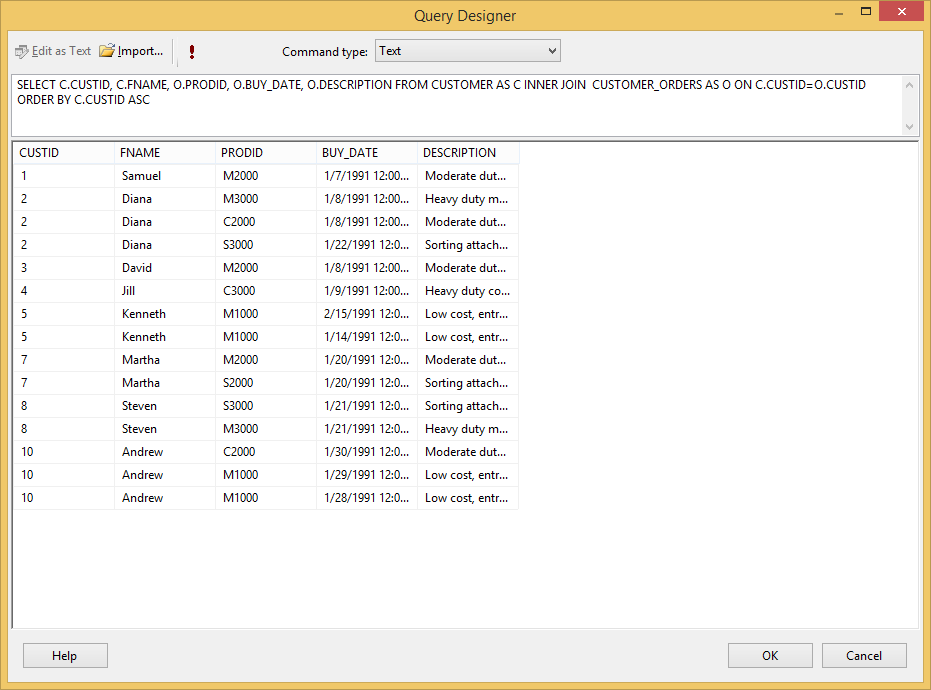
**To define a query for report data**

1. In the Report Data pane, click New, and then click Dataset…. The Dataset Properties dialog box opens.
2. In the Name box, type CustomerDataset.
3. Click Use a dataset embedded in my report.
4. Make sure the name of your data source, CustomerDS, is in the Data source text box, and that the Query type is Text.
5. Type, or copy and paste, the following query into the Query box.

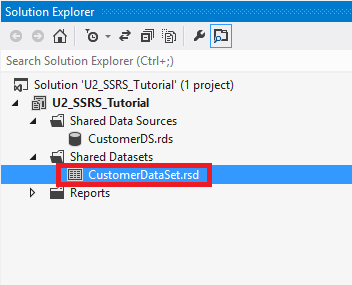
**SELECT C.CUSTID, C.FNAME, O.PRODID, O.BUY\_DATE, O.DESCRIPTION FROM CUSTOMER AS C INNER JOIN CUSTOMER\_ORDERS AS O ON C.CUSTID=O.CUSTID ORDER BY C.CUSTID ASC**

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1. Test query. Click Query Designer…. Click Run.



1. Click OK to exit the Dataset Properties dialog box.

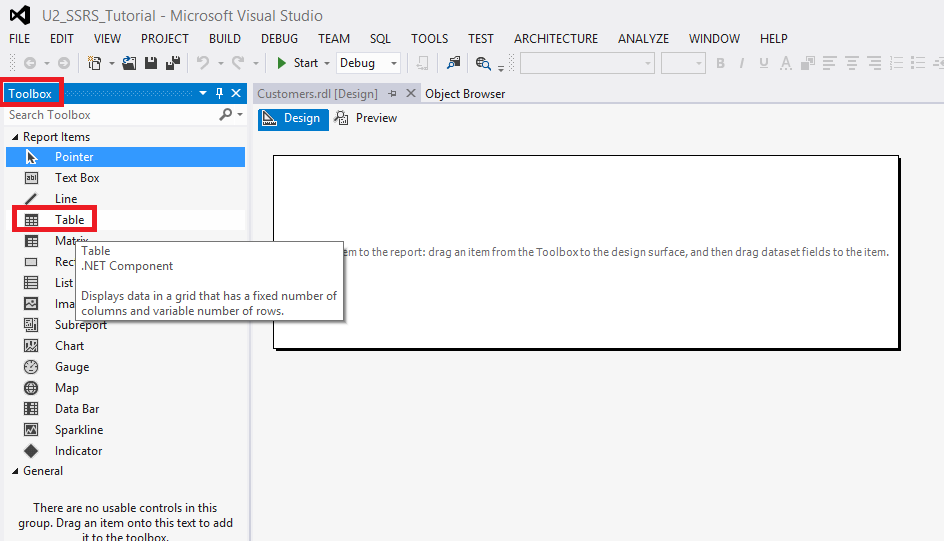


## Step 4: Adding a Table to the Report

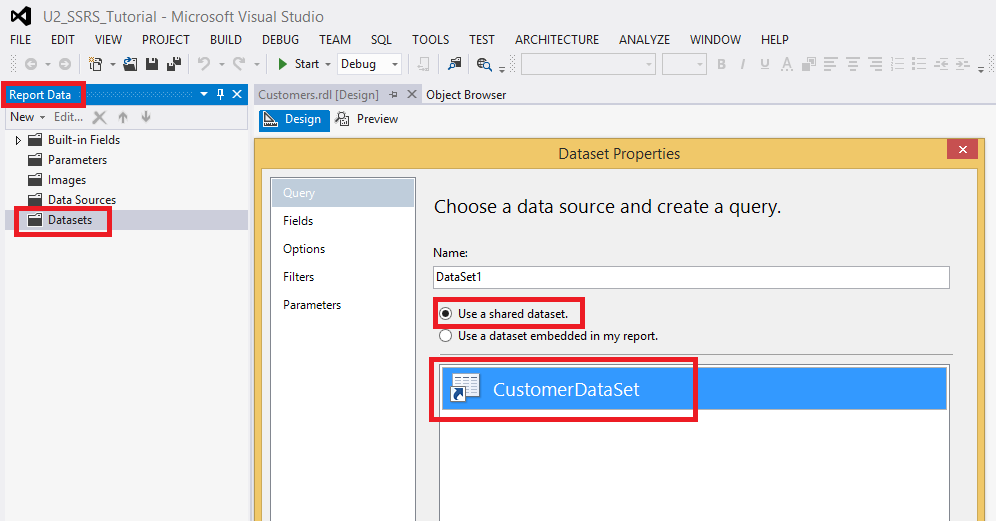
After the dataset is defined, you can start designing the report. You create a report layout by dragging and dropping data regions, text boxes, images, and other items that you want to include in your report to the design surface. Items that contain repeated rows of data from underlying datasets are called data regions.

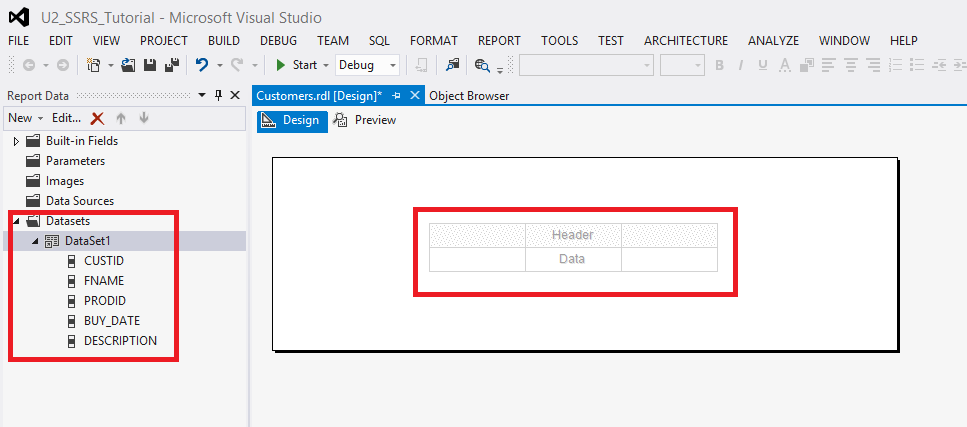
**To add a Table data region and fields to a report layout**

1. In the Toolbox, click Table, and then click on the design surface and drag the mouse. Report Designer draws a table data region with three columns in the center of the design surface.

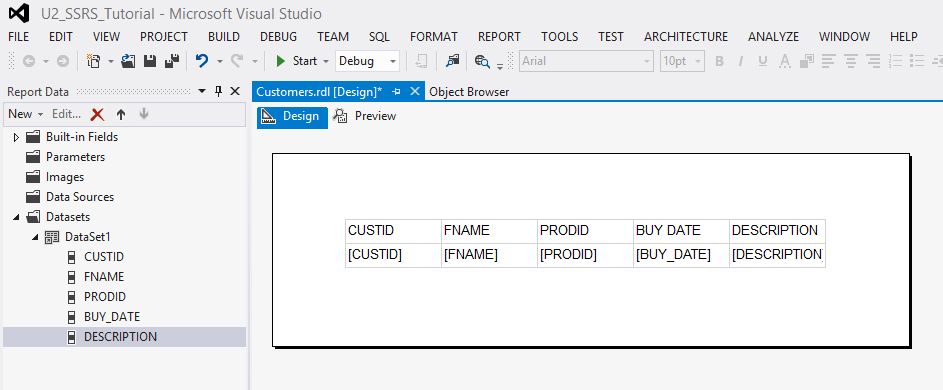


1. In the Report Data pane, expand the CustomerDataset dataset to display the fields.





1. Drag the Date field from the Report Data pane to the first column in the table.



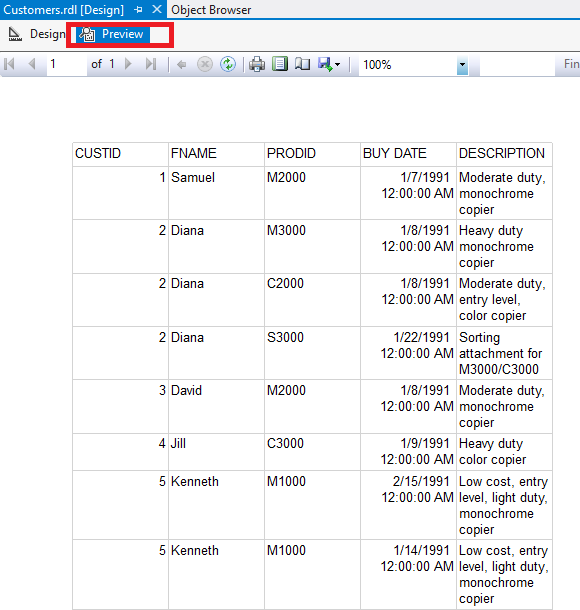
Step 5: Preview Your Report

Previewing a report enables you to view the rendered report without having to first publish it to a report server.

To preview a report

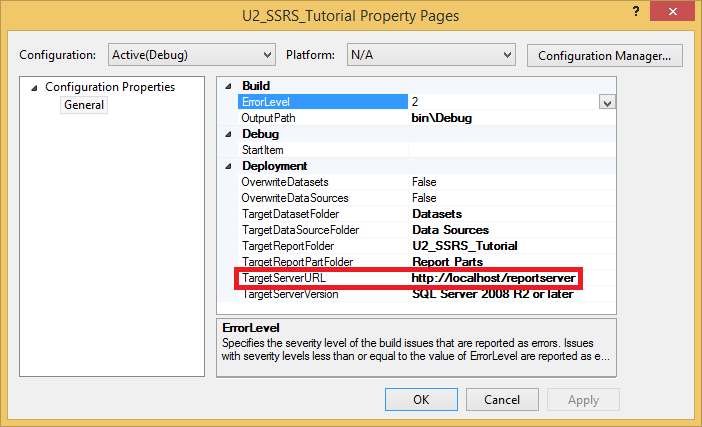
* Click the Preview tab. Report Designer runs the report and displays it in Preview view.

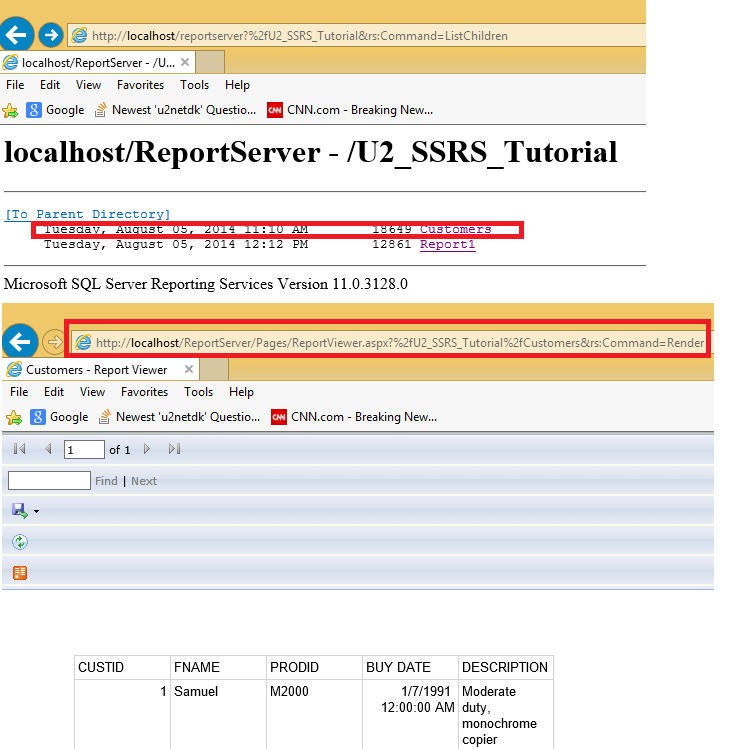
The following diagram shows part of the report in Preview view.



Step 6: To Publish the Report to the Report Server (Optional)

1. An optional step is to publish the completed report to the native mode report server so you can view the report from Report Manager.
2. On the toolbar click Project and then click ‘U2\_SSRS\_tutorial’ Properties...
3. In the TargetServerURL type the name of the name of your report server, for example http://<servername>/reportserver (for example : <http://localhost/reportserver>
4. 4.Click OK
5. On the toolbar click Build and then click Deploy tutorial.
6. Start Report Manager with administrator privileges, for example, right-click the icon for Internet Explorer and click Run as administrator. Browse to the Report Manager URL, for example: http://<server name>/reports.
7. Browse to the folder that contains the report and click the name of the report Sales Orders to view the rendered report in the browser.





# Appendix A

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| C:\Program Files\Microsoft SQL Server\MSRS11.MSSQLSERVER\Reporting Services\ReportServer\ rsreportserver.config | <Data>  <Extension Name="SQL" Type="Microsoft.ReportingServices.DataExtensions.SqlConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SQLAZURE" Type="Microsoft.ReportingServices.DataExtensions.SqlAzureConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SQLPDW" Type="Microsoft.ReportingServices.DataExtensions.SqlDwConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="OLEDB" Type="Microsoft.ReportingServices.DataExtensions.OleDbConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="OLEDB-MD" Type="Microsoft.ReportingServices.DataExtensions.AdoMdConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="ORACLE" Type="Microsoft.ReportingServices.DataExtensions.OracleClientConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="ODBC" Type="Microsoft.ReportingServices.DataExtensions.OdbcConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="XML" Type="Microsoft.ReportingServices.DataExtensions.XmlDPConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SHAREPOINTLIST" Type="Microsoft.ReportingServices.DataExtensions.SharePointList.SPListConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SAPBW" Type="Microsoft.ReportingServices.DataExtensions.SapBw.SapBwConnection,Microsoft.ReportingServices.DataExtensions.SapBw"/>  <Extension Name="ESSBASE" Type="Microsoft.ReportingServices.DataExtensions.Essbase.EssbaseConnection,Microsoft.ReportingServices.DataExtensions.Essbase"/>  <Extension Name="TERADATA" Type="Microsoft.ReportingServices.DataExtensions.TeradataConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="U2" Type="U2.Data.Client.U2Connection,U2.Data.Client, Version=2.1.0.0, Culture=neutral , PublicKeyToken=7afaaf959fd491a0"/>  </Data> |

# Appendix B

|  |  |
| --- | --- |
| C:\Program Files\Microsoft SQL Server\MSRS11.MSSQLSERVER\Reporting Services\ReportServer\ rssrvpolicy.config | <CodeGroup  class="UnionCodeGroup"  version="1"  PermissionSetName="FullTrust"  Name="U2 Toolkit for .NET Provider"  Description=".Net Framework Data Provider for U2 Data Server">  <IMembershipCondition class="UrlMembershipCondition"  version="1"  Url="C:\Program Files (x86)\Rocket Software\U2 Toolkit for .NET\U2 Database Provider\bin\.NETFramework\v4.0\U2.Data.Client.dll"/>  </CodeGroup> |

# Appendix C

|  |  |
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| C:\Program Files (x86)\Microsoft Visual Studio 11.0\Common7\IDE\PrivateAssemblies\ RSReportDesigner | <Data>  <Extension Name="SQL" Type="Microsoft.ReportingServices.DataExtensions.SqlConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />  <Extension Name="SQLAZURE" Type="Microsoft.ReportingServices.DataExtensions.SqlAzureConnectionWrapper,Microsoft.ReportingServices.DataExtensions" />  <Extension Name="SQLPDW" Type="Microsoft.ReportingServices.DataExtensions.SqlDwConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="OLEDB" Type="Microsoft.ReportingServices.DataExtensions.OleDbConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="OLEDB-MD" Type="Microsoft.ReportingServices.DataExtensions.AdoMdConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="ORACLE" Type="Microsoft.ReportingServices.DataExtensions.OracleClientConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="ODBC" Type="Microsoft.ReportingServices.DataExtensions.OdbcConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="XML" Type="Microsoft.ReportingServices.DataExtensions.XmlDPConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="RS" Type="Microsoft.ReportingServices.DataExtensions.RSDPConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SHAREPOINTLIST" Type="Microsoft.ReportingServices.DataExtensions.SharePointList.SPRemoteConnection,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="SAPBW" Type="Microsoft.ReportingServices.DataExtensions.SapBw.SapBwConnection,Microsoft.ReportingServices.DataExtensions.SapBw"/>  <Extension Name="ESSBASE" Type="Microsoft.ReportingServices.DataExtensions.Essbase.EssbaseConnection,Microsoft.ReportingServices.DataExtensions.Essbase"/>  <Extension Name="TERADATA" Type="Microsoft.ReportingServices.DataExtensions.TeradataConnectionWrapper,Microsoft.ReportingServices.DataExtensions"/>  <Extension Name="U2" Type="U2.Data.Client.U2Connection,U2.Data.Client, Version=2.1.0.0, Culture=neutral , PublicKeyToken=9ab9148678f4f448"/>  </Data> |

# Appendix D

|  |  |
| --- | --- |
| C:\Program Files (x86)\Microsoft Visual Studio 11.0\Common7\IDE\PrivateAssemblies\ RSPreviewPolicy.config | <CodeGroup  class="UnionCodeGroup"  version="1"  PermissionSetName="FullTrust"  Name="U2 Toolkit for .NET Provider"  Description=".Net Framework Data Provider for U2 Data Server">  <IMembershipCondition class="UrlMembershipCondition"  version="1"  Url="C:\Program Files (x86)\Rocket Software\U2 Toolkit for .NET\U2 Database Provider\bin\.NETFramework\v4.0\U2.Data.Client.dll"/>  </CodeGroup> |

# Resources

* [Create a Basic Table Report (SSRS Tutorial)](http://msdn.microsoft.com/en-us/library/ms167305.aspx)

# Source Code

* [See Github Rocket U2 Server Lab](https://github.com/RocketSoftware/u2-servers-lab/tree/master/U2-Toolkit)