

Chapter 9

Turning Data into Information with SQL Server Reporting Services

In This Chapter

- ▶ Configuring SQL Server Reporting Services with Reporting Services Configuration Manager
 - ▶ Designing reports
 - ▶ Publishing and viewing reports
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SQL Server Reporting Services (SSRS) is one of SQL Server 2008's advanced features. SSRS provides database administrators and developers with a built-in mechanism for designing data-driven reports and publishing them to end users. Microsoft gave SSRS a significant overhaul with the release of SQL Server 2008. Most notably, SSRS no longer requires Internet Information Server (IIS) as it did in earlier SQL Server versions. It's now a stand-alone service.

SSRS offers a wide variety of reporting functionality and is the subject of many entire books. In this chapter, I provide you with a basic introduction to SQL Server Reporting Services. I discuss how to set up and configure SSRS, create and publish a basic report, and manage SSRS reports.

Setting Up SQL Server Reporting Services

Before you can create and publish reports with SSRS, you need to configure it to meet the requirements of your business environment. You can do this using the Reporting Services Configuration Manager.



To use SQL Server Reporting Services, you must have it installed on your SQL Server instance. (I discuss installing SQL Server components in Chapters 1 and 2.) Follow these steps to set up SSRS:

1. From the All Programs menu, choose Microsoft SQL Server 2008→ Configuration Tools→Reporting Services Configuration.
2. Provide the connection details for your Report Server in the Reporting Services Configuration Connection window and click the Connect button.

If you're running the configuration tool on your SQL Server computer, the window will most likely pop up preconfigured with the correct server name and instance. If you're connecting to a remote SSRS server, you need to provide the server name. Additionally, you need to select the report server instance if more than one exists on that system.

3. Review the details on the Report Server Status screen.

The status screen, shown in Figure 9-1, provides basic information about your Report Server. You may use the Start and Stop buttons on this screen to change the status of the SSRS instance.

4. Click the Service Account button in the left pane and confirm that SSRS is running under the correct account. If you decide to make changes, click the Apply button when you're finished.

The Service Account page, shown in Figure 9-2, allows you to select the account used to run SSRS. You may choose to use a domain account (as shown in the example) or a built-in account.

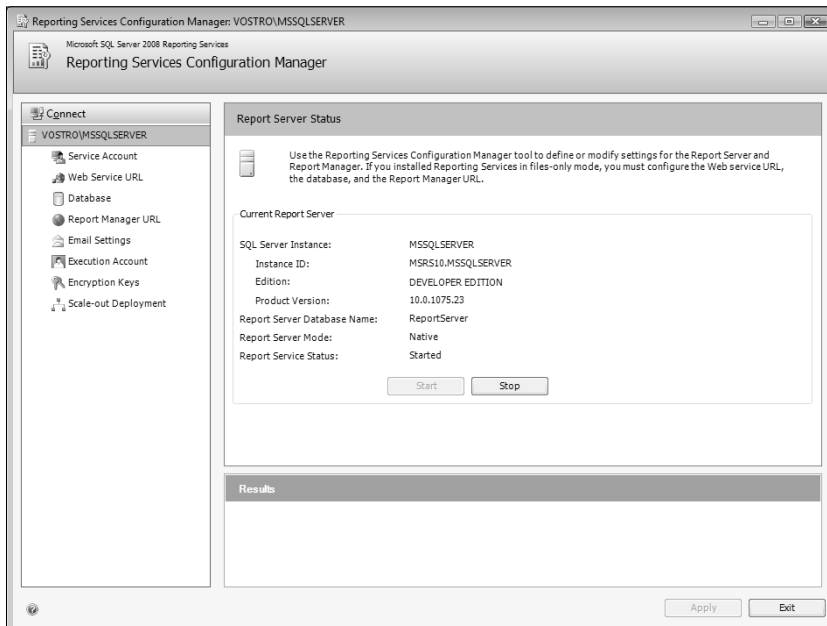


Figure 9-1:
The Report
Server
Status
screen.

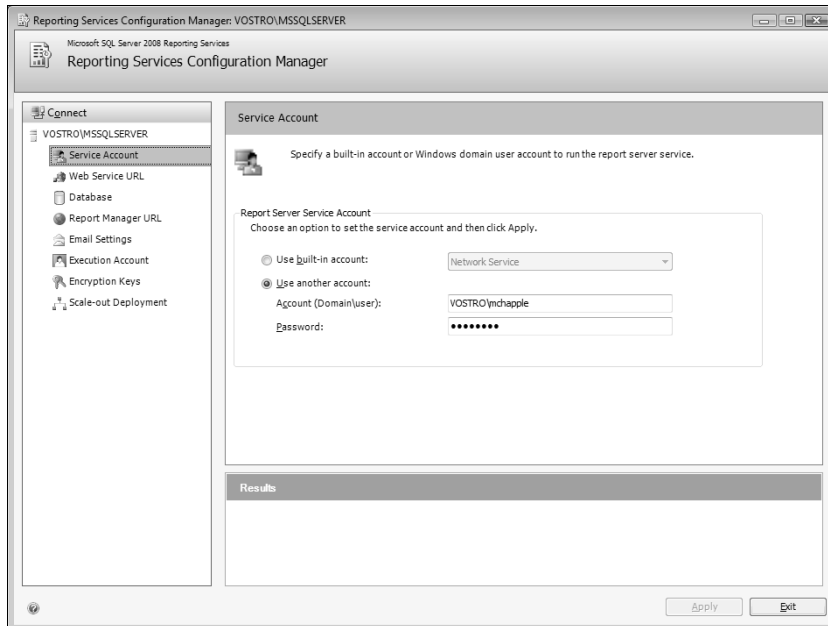


Figure 9-2:
Selecting
a service
account.

5. Click the **Web Service URL** button to review the **Web server configuration** and make any desired changes. When you finish, click the **Apply** button.

SSRS distributes reports through the use of a Web server. On the screen shown in Figure 9-3, you may modify the IP address(es) and TCP port assigned to SSRS. This is especially important if your server fills multiple roles in your organization because you may have only one server listening on the default HTTP port (80) for each IP address.

This screen also allows you to choose an SSL certificate to use if you want to provide HTTPS secure encrypted access to your reports. This protects the reports from eavesdroppers as they travel across the network from the server to the client. Your server administrator must install an SSL certificate on your server before it appears in the SSL Certificate drop-down menu.

Make note of the URL(s) shown in the Report Server Web Service URLs section of this window. You should provide these URLs to users who need to access SSRS.

6. Review the other pages in the Configuration Manager and customize any settings you want.



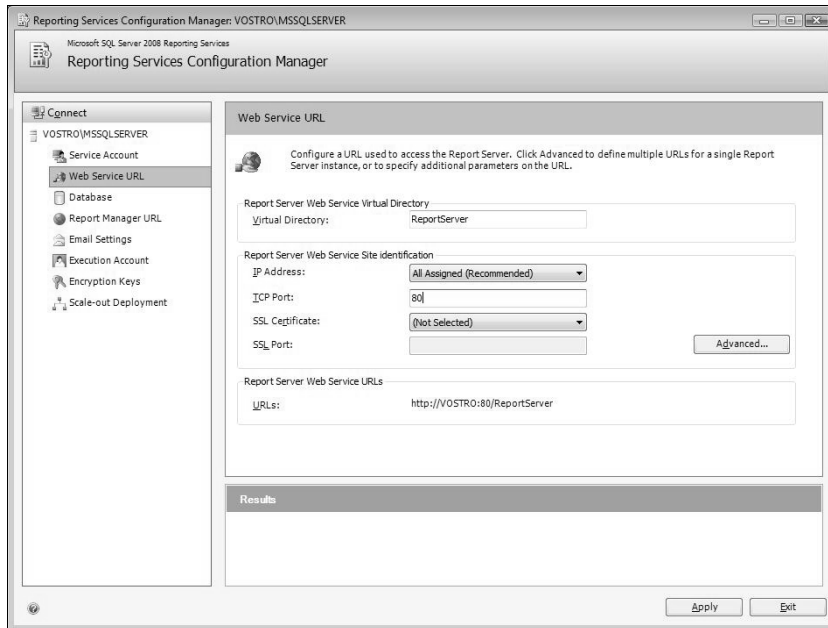


Figure 9-3:
Configuring
the SSRS
Web
Service.

I return to the Configuration Manager later in this chapter when I discuss Report Manager (see the “Working with Deployed (Published) Reports” section, later in this chapter). In the meantime, take a few minutes to familiarize yourself with the other configuration settings offered in the tool.

7. Click the Exit button to close the Reporting Services Configuration Manager.

After you’ve set your basic configuration settings with Configuration Manager, you’re ready to begin designing reports for distribution on your Report Server.

Creating an SSRS Report with Report Builder

Report Builder allows you to create reports for distribution on an SSRS server. It provides a graphical interface that allows you to visually design reports, dropping in data-driven elements as needed. Report Builder allows you to include tables, images, matrices, lists, and charts in your reports and to populate those elements with data from your SQL Server database, and a variety of other data sources.

Installing and starting Report Builder 2.0

With the release of SQL Server 2008, Microsoft planned to introduce a new stand-alone reporting tool: Report Builder 2.0. Unfortunately, they weren't able to get it finished in time to release it with SQL Server 2008. You need to download and install it separately to take advantage of the enhanced functionality. It's available for free on the Web at

```
www.microsoft.com/downloads/details.aspx?FamilyID=9f783224-9871-4eea-b1d5-f3140a253db6&displaylang=en
```

Downloading and installing Report Builder is easy: Just walk through the wizard and accept all the default options. When you've installed Report Builder, you may start it by choosing SQL Server 2008 Report Builder → Report Builder 2.0 from the All Programs menu.

Choosing a data source and data set

After you start Report Builder, it opens with a new blank report, ready for your design, as shown in Figure 9-4. To get started, you first need to configure a data source using the following process:

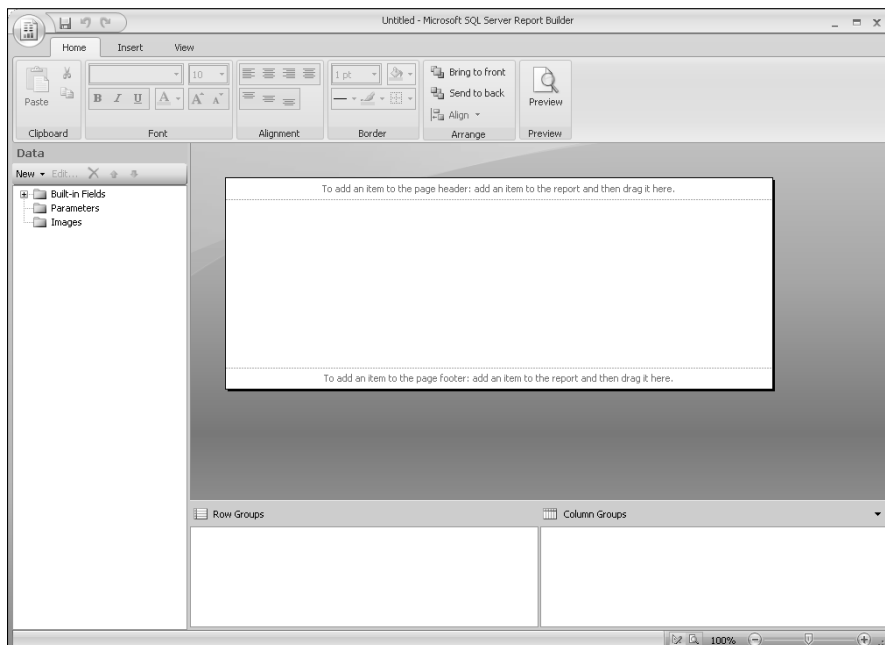


Figure 9-4:
Microsoft
Report
Builder.

1. With Report Builder open, choose **New** → **Dataset** from the drop-down list in the **Report Data** pane on the left side of the **Report Builder** window.
2. Click the **New** button next to the **Data Source** field.

Report Builder displays the **Data Source Properties** dialog box, shown in Figure 9-5.

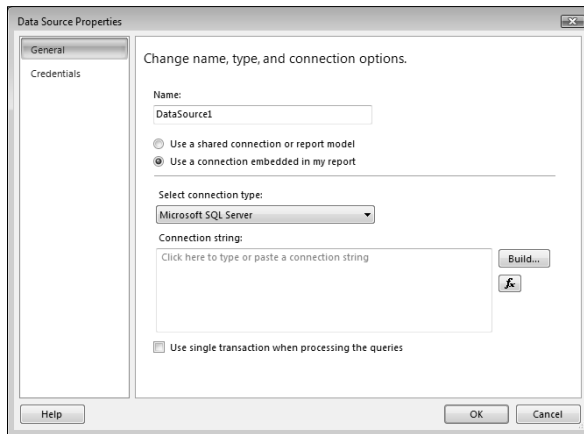


Figure 9-5:
The Data
Source
Properties
dialog box.

3. Provide a name for your data source by typing it in the **Name** text box.
4. Choose the **Use a Connection Embedded in My Report** button and select the appropriate connection type from the **Select Connection Type** drop-down menu.

If you already have a shared data source you would like to use instead, you may select the **Use Shared Data Source Reference** option instead. For SQL Server database connections, choose **Microsoft SQL Server** from the **Select Connection Type** drop-down menu.

Report Builder allows you to pull in data from non-SQL Server data sources. Some of those include

- Oracle databases
- SAP NetWeaver
- OLE DB and ODBC data sources
- XML data sources
- Hyperion Essbase



5. Click the Build button.

The Connection Properties dialog box for your selected connection type appears. Figure 9-6 shows the screen for Microsoft SQL Server connections.

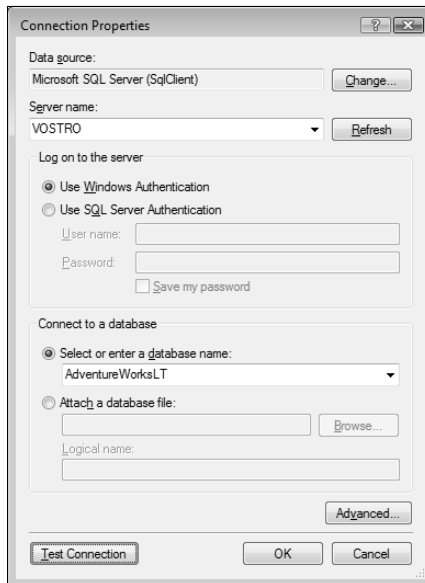


Figure 9-6:
The
Connection
Properties
dialog box.

6. Provide the connection details for your database and click the OK button to continue.

I recommend that before you click OK, you first click the Test Connection button to verify that you have provided correct connection details.

7. Click the OK button to close the Data Source Properties window.**8. Type the SQL query that you want to use for your data source in the Query text box that appears.**

You need to provide a SQL query that produces the data you want included in your report. If you don't want to enter the query manually, you may open an existing query (.sql) file or import a query from another report using the Import button.

9. Click the OK button to create your dataset.

You return to Report Builder. Note that the dataset you created now appears as an expandable folder in Report Builder's Data pane.

Laying out the report

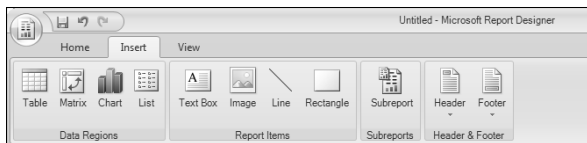
After you've added a data source for your report, you may use the various items on the Insert Ribbon of Report Builder to add elements to your report. Report Builder allows you to simply drag and drop elements where you'd like them to appear.

Adding a text box

You may add static (unchanging) text to your report using the Text Box control within Report Builder. Here's the process:

1. Ensure that you're viewing the Insert menu on the Report Builder Ribbon, as shown in Figure 9-7.

Figure 9-7:
Click Insert
on the
Ribbon.



2. Click the Text Box icon in the Report Items section of the Insert menu.
3. Drag the text box to the desired spot on your report.

For example, you may want to place the text box in the header or footer section of your report.

4. Use the mouse to click inside the text box and type the text that you would like to appear in the report.



As with any other document, be sure to save your report periodically to avoid losing your work. You can save your report by clicking the disk icon in the upper-left corner of Report Builder.

Adding a chart

Report Builder makes it easy to add a variety of charts to your SSRS reports. Available chart types include

- ✓ Pie charts
- ✓ Line graphs
- ✓ Column graphs

- ✓ Funnel charts
- ✓ Bar graphs
- ✓ Area graphs
- ✓ Range graphs
- ✓ Scatter plots

To add a chart to your report, follow these steps:

1. Click **Chart** → **Insert Chart** on the Ribbon's **Insert** menu.
2. With the mouse, select an area on the report where you want to place your chart.

Report Builder displays the **Select Chart Type** window, shown in Figure 9-8.

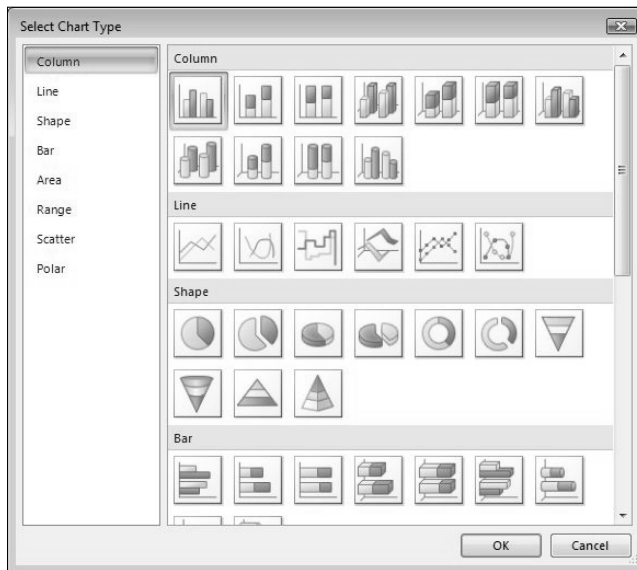


Figure 9-8: The **Select Chart Type** window in Report Builder.

3. Select the type of chart you want to include in your report and click **OK**.

Report Builder inserts a default chart of the type you selected, as shown in Figure 9-9.

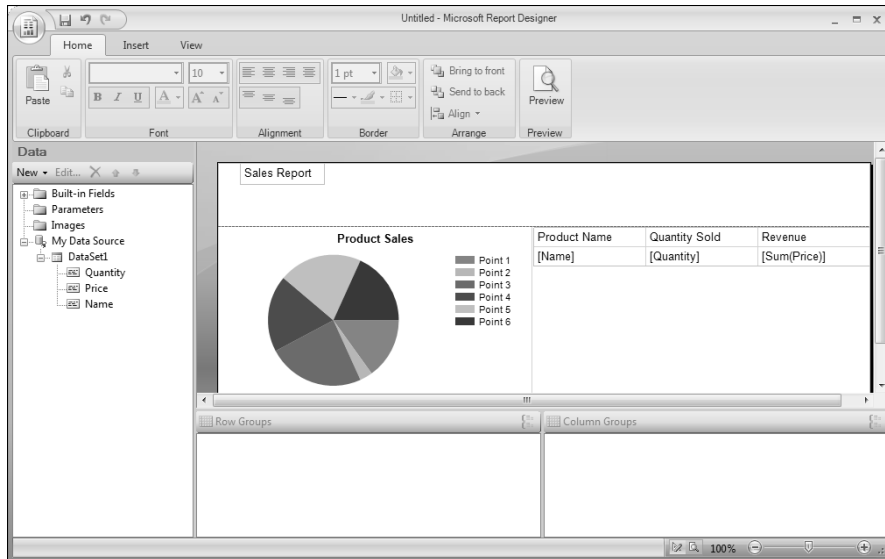


Figure 9-9:
Report
Builder with
a default pie
chart.

4. Choose the data field or fields for your chart and drag them from the Data pane onto the Drop Data Fields Here area above the sample chart.

The data fields contain the values to be plotted on your chart.

5. Choose the category field or fields for your chart and drag them from the Data pane onto the Drop Category Fields Here area above the sample chart.

The category fields contain the names corresponding to each of the data fields in your chart.

6. Click the Chart Title text box and enter the title you want to use for your chart.

Adding a table

Adding a table to your report follows a similar process:

1. Click **Table** → **Insert Table** on the Ribbon's **Insert** menu.
2. With the mouse, select an area on the report where you would like to place your chart.
3. Add or delete columns from your table as necessary by right-clicking the table and selecting the appropriate entries from the pop-up menu.
4. Click each cell in the Header row and type the text you want to appear in the table header.

5. Drag the data elements you would like to appear in each column from the Data pane to the appropriate column in the Data portion of the table.

You need to fill in only one row of the table. SSRS automatically creates the necessary number of rows when it generates your report.

Figure 9-10 shows a completed report in the Preview view of Report Builder.

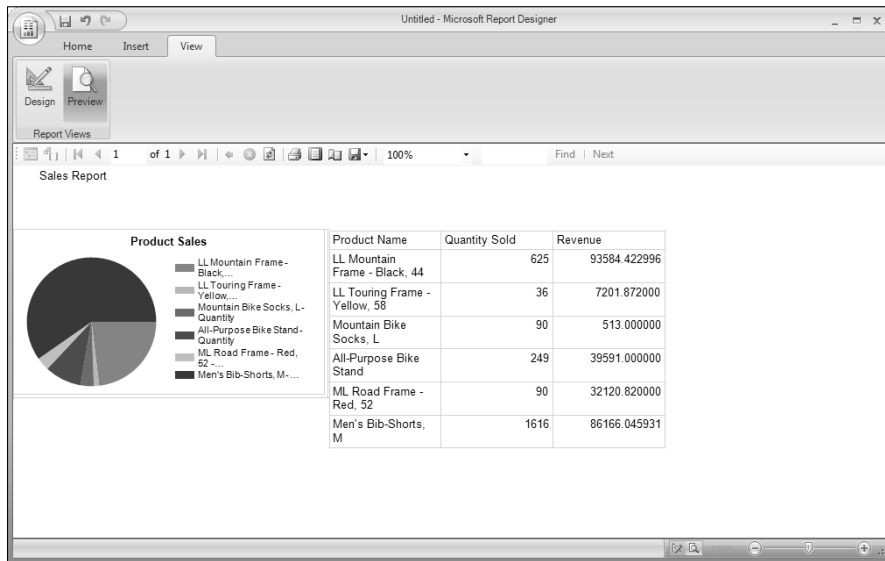


Figure 9-10:
A completed report in Preview view.

Publishing the report

After you've completed your report layout and previewed it to ensure that it meets with your satisfaction, you can publish the report to your Report Server for other users to view.

Here's how to publish a report to an SSRS server:

1. Click the round report icon in the upper-left corner of the screen to activate the Report Builder pull-down menu and then choose **Save As**.
2. Type a name for the report in the Name text box.
3. Confirm the deployment settings and click **Save**.

Confirm that the Report Server URL appears in the Look In field at the top of the Save As Report dialog box.



If you attempt to publish a report and receive an error message about improper permissions, verify that your account has membership in the Publisher role. For more information, see “Configuring report security” later in this chapter.

After you publish your report, it’s available to users accessing the reporting server with the appropriate permissions.

Working with Deployed (Published) Reports

You may access and modify your deployed reports using the URLs you provided in the Reporting Services Configuration Manager. In this section, I describe the basic concepts behind the SSRS Web interfaces.

Viewing reports

The simplest way to view SSRS reports is to use the Web Services URL you were provided in the Reporting Services Configuration Manager. Simply open a Web browser and type that URL into the address bar. SSRS prompts you for your username and password and then displays a report menu similar to the one shown in Figure 9-11.

Figure 9-11:
The SSRS
Web
Service
menu.

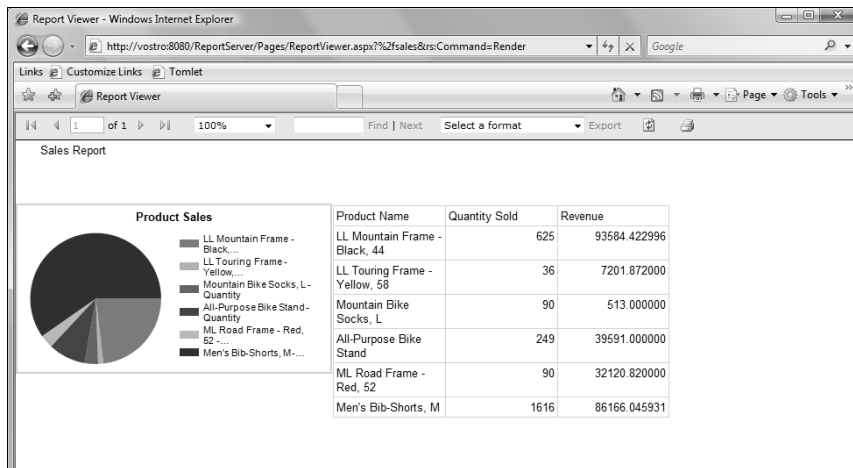
vostro/ReportServer - /

Saturday, December 08, 2007 3:55 PM 21063 sales

Microsoft SQL Server Reporting Services Version 10.0.1075.23

Click the name of the report you want to view, and SSRS generates the report dynamically and displays it in your browser window, as shown in Figure 9-12.

Figure 9-12:
The SSRS
Report
Viewer
displays
your report
in your
browser.



Configuring report security

You need to set up permissions for the users you want to be able to administer and view SSRS reports. To do this, you first need to enable SSRS Report Manager and then use it to assign SSRS roles to the appropriate users and groups.

Setting up Report Manager

Report Manager is a Web application that allows you to modify SSRS settings through your Web browser. Before you can access Report Manager, you need to enable it using the following process:

1. **Open Reporting Services Configuration Manager.**
2. **Click the Report Manager URL page.**
3. **Click the Advanced button.**
4. **Click the Add button under Multiple Identities for Report Manager.**
5. **Click OK to accept the default options.**
6. **Click OK to close the Advanced Multiple Web Site Configuration.**
7. **Click the Apply button to start Report Manager.**

Note the URL displayed in Configuration Manager. This is the URL required to access Report Manager.

Configuring site roles

Site-wide roles allow you to assign users permission to access Report Manager. By default, all users in the BUILTIN\Administrators local administrators group are Report Manager System Administrators. Here's how you can add additional users:

- 1. Using Internet Explorer, open the URL for Report Manager.**

You specified this URL when starting Report Manager in the previous section.

- 2. Click the Site Settings link.**

- 3. Click the Security page.**

- 4. Click the New Role Assignment button.**

- 5. Type the name of the user or group in the Group or User Name text box.**

- 6. Select the box or boxes corresponding to any roles you would like to assign to the user or group.**

The roles you may choose from are

- System Administrator: These role members may perform all Report Manager administrative activities.
- System User: These role members may view system properties and shared schedules only.

- 7. Click the OK button to finish.**

Setting up content roles

In addition to creating site roles to access Report Manager, you may also create content roles that grant users varying levels of permission over SSRS content. You may create these permissions at the Home level, where they inherit downward to all newly created reports. Alternatively, you may set role membership for subfolders or individual items.

To set content roles at the Home folder level, follow this process:

- 1. Click the Home link in Report Manager.**

- 2. Click the Properties tab.**

- 3. Click the New Role Assignment button.**

You see the New Role Assignment screen, shown in Figure 9-13.

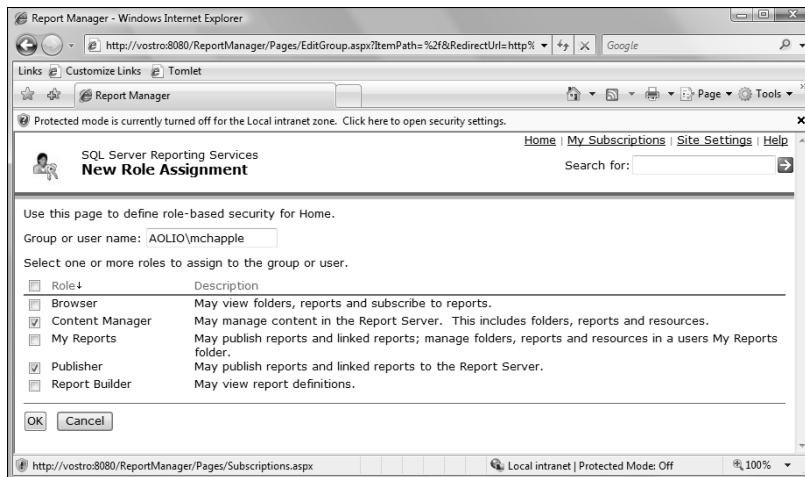


Figure 9-13:
Assigning
an SSRS
role.

4. Type the name of the user or group in the Group or User Name text box.
5. Select the box or boxes corresponding to any role you would like to assign to the user or group.

The roles you may choose from are as follows:

- **Browser:** Role members may view and subscribe to reports and folders.
- **Content Manager:** Role members may manage folders, reports, and resources.
- **My Reports:** Role members may publish reports and manage folders, reports, and resources within their own My Reports folder.
- **Publisher:** Role members may publish and update reports on the Report Server.
- **Report Builder:** Role members may view report definitions.

6. Click the OK button to finish.