

# Answering the Call

---

## Two new DB2 Web Query options expand Microsoft integration

As printed in the September 2009 edition of the IBM Systems Magazine

Written by Robert Andrews – robert.andrews@us.ibm.com



End-user requests usually spur the enhancements IBM makes to DB2 Web Query for i. It's IBM's goal to make this product practical and efficient. One of the most common requests is tighter integration with Microsoft products, especially Excel. You asked and IBM listened.

With the recent release of two new options for Web Query, IBM has tightened its integration with Microsoft products. The first, the DB2 Web Query Spreadsheet Client, meets the needs of users wanting to pull data directly from Excel. The second, the DB2 Web Query Adapter for Microsoft SQL Server, lets Web Query remotely access data stored in a Microsoft SQL Server. This eliminates the need for data replication to IBM i and enables end users to report on all of their data from Web Query, regardless of the storage location. In this article, I'll review how each of these two new features operates.

### DB2 Web Query Spreadsheet Client

"Excel! Just give me the data in Microsoft Excel!" This is a cry the IT department often hears from business analysts. Web Query for i has always been able to push data from the Web into Microsoft Excel. However, end users often request the capability to simply pull the data directly from Excel without going into the Web.

Previously, Web Query's tight integration with Excel—with items like drill downs, conditional styling and formatting, and formula support—required users first go into the Web interface. From there, they could

run their reports and open the output in Excel. The new DB2 Web Query Spreadsheet Client lets analysts pull the data from within Excel.

## Setup

Purchasing and installing the new feature makes an Excel add-in available in the IFS, much like how the Developer Workbench is provided. Copy the wqsclient.xla file from /QIBM/ProdData/WebQuery/ibi/webfocus76/utilities to the Microsoft Office Add-in directory on your PC. For Windows\* XP, the directory is C:\Documents and Settings\userid\Application Data\Microsoft\AddIns\ and for Windows Vista, it's C:\Users\userid\AppData\Roaming\Microsoft\AddIns\ where userid is the same as how you're logged into your PC.

Once the XLA file is in the correct directory, launch Excel and go to the Add-ins Manager. In versions below 2007, this is off of the Tools>Add-ins menu. In Excel 2007, click the "Office" button and choose Excel Options>Add-ins. Make sure the Web Query Spreadsheet Client option is checked. This completes the setup and you can move on to usage.

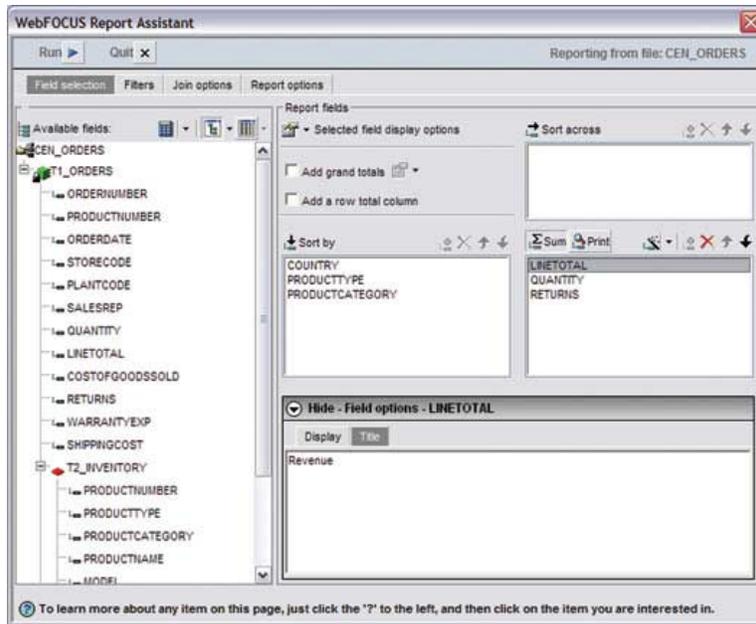
## Modes

To pull data into Excel, right-click on the first cell you want to import data into or select the cell and use the Web Query menu item or ribbon. Select "Create Query." The first dialog box asks for your server's name. The next dialog asks you to sign in with your user ID and password. At this point, you'll get one of two options, depending on your licensing.

Web Query provides two modes for using the spreadsheet client. The first is called Report Assistant mode. In this mode, you'll see a dialog box that provides almost all of the same functionality you see in the Report Assistant inside the Web version of Web Query. The only items not shown are those such as headers or footers that you can add directly in Excel. The purpose of the add-in is to simply pull the data set into Excel. This lets you define your report on the fly. Because you have these designer/developer capabilities, users of this mode must be explicitly licensed.

The second mode is known as Structured Ad-hoc Forms (SAF). SAF mode is similar to an HTML launch page. Here, the developer precreates an HTML form that provides the various drop downs and options to select. The end users aren't actually creating new reports; they're just running reports already created by a developer. Because of this limitation, a SAF end user may have an explicit license or be a member of a runtime enablement group using 5733QU2 Option 4.

If your profile doesn't have an explicit license, you won't be given this choice, as you can only use the SAF mode. However, if you have a license allocated to your profile, you can choose which mode to use. If you go the Report Assistant route, you'll be presented with the Report Assistant form (Figure 1). From here, you can select the measures you want reported on as well as the grouping and ordering. The selection criteria are also set at this point. You must provide the value inside the Report Assistant interface. It won't prompt the user with a form when run like a parameter.



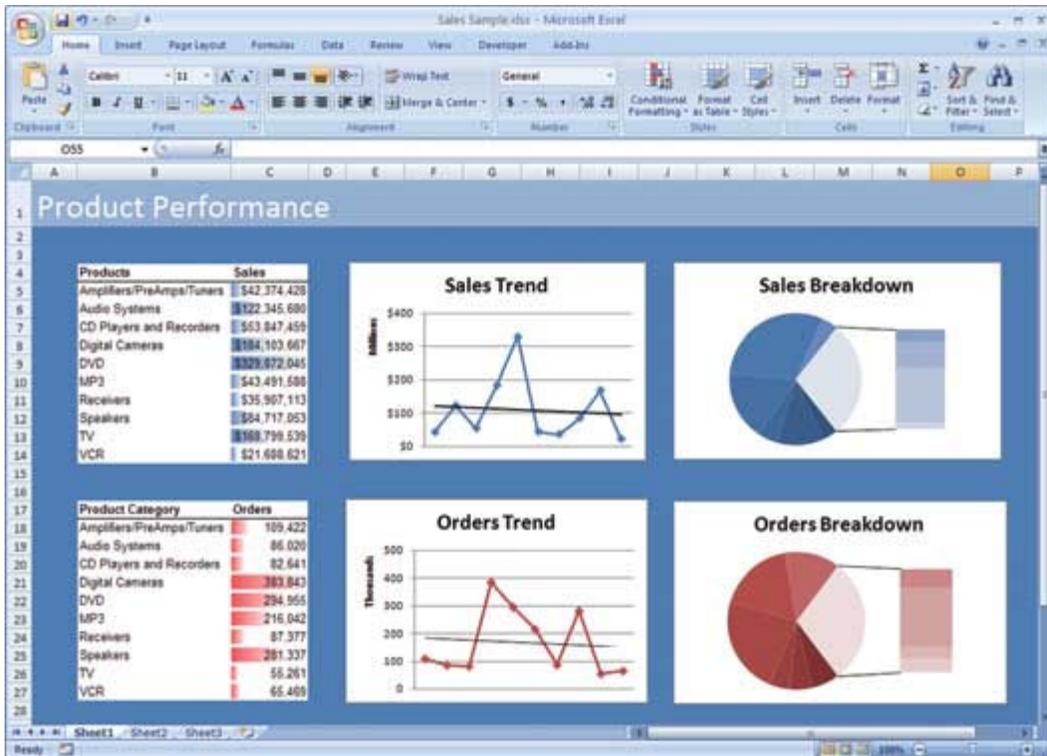
In the SAF route, the developer builds an HTML form and attaches it to an existing report. When you select this method, you'll be prompted with a list of available forms. Select the form and fill in the selection criteria. This lets end users determine what values will be used for the selection portion of the report. However, no other attributes of the report can be changed at this level. Additionally, once the parameters are set and the report run, refreshing the report will use the same set values. You won't be reprompted to allow for the values to be changed.

## Usage

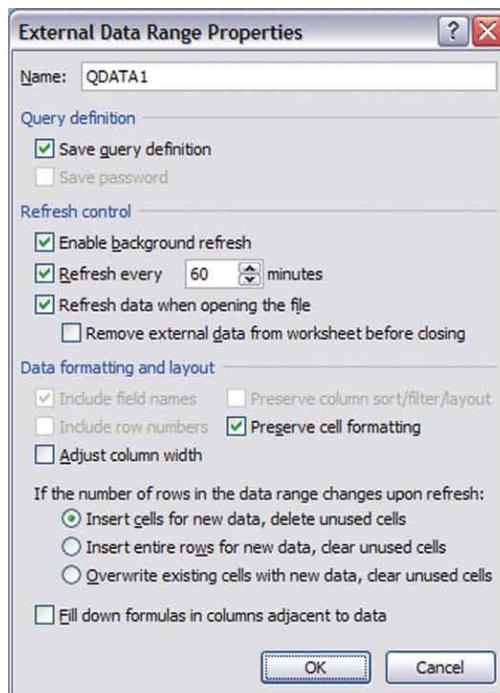
Once the data is returned into Excel, you can do what you want with it. To make integration into Excel templates easier, Web Query automatically names the data ranges. This allows for access to various regions of the report without knowing the exact size. So if your data set contains five rows or 500 rows in the Sales column, you can refer to them all simply as QDATA1\_\_Sales.

Several new features in Excel 2007 make it more powerful than ever for data analysis. Check out features such as themes for building dashboards with consistent formatting. Look to the data-bar feature of conditional styling to quickly pull out visual values for numbers. And of course, don't forget the increased limits on rows and columns—from 65,536 rows by 256 columns (about 16.7 million cells) to 1,048,576 rows by 16,384 columns (about 17.2 billion cells).

With the Web Query Add-in, you can pull over data only, not graphs. This is because Excel has always had excellent graphing capabilities. And with Excel 2007, Microsoft has made it even easier via the ribbon interface. So when you think about creating composite dashboards (Figure 2), you should think about first pulling in one or more data regions and then creating graphics in Excel based on that pulled data. This way you simply update the data in the sheet and Excel will update the images.



Once you have the data in Excel, you can set several options. Access these options by right-clicking in the report data and selecting Data Range properties (Figure 3). Here you can set features such as refreshing the data when the worksheet is opened and automatic background refresh. If you're using a template, check the option to preserve cell formatting. This way, when data is added or updated, it'll take on the formatting in the template and not reset to the default format.



## DB2 Web Query Adapter for Microsoft SQL Server

The second new product feature IBM released is the DB2 Web Query Adapter for Microsoft SQL Server. This lets Web Query access not only the data on any IBM i DB2 system, but also the data in any Microsoft SQL Server. Web Query's architecture makes it extremely easy to add data sources. For you as a developer, this means the tools operate exactly the same, regardless of the data source.

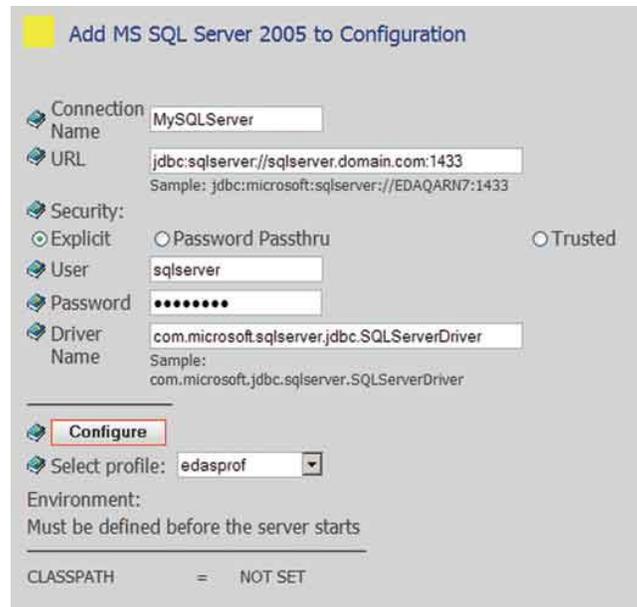
### Setup

The first step is to acquire the Microsoft SQL Server 2005 JDBC\* Driver version 1.2. This version is designed for SQL Server 2005 but will work back to 2000 or forward to 2008. Due to licensing limitations, IBM isn't allowed to ship this code but you can use your favorite search engine to locate the download from Microsoft's site. Choose the UNIX\* version of the driver. This is a universal type 4 JDBC driver.

At release, IBM officially supports Microsoft SQL Server 2000 and 2005 and is working on making 2008 official. With that said, Microsoft SQL Server 2008 will still work, but you won't be able to take advantage of any of the new features in SQL Server 2008. To make 2008 work, treat it as a SQL Server 2005 version using the 2005 JDBC driver. Support for 2008 has been delayed because Microsoft just recently finalized the SQL Server 2008 JDBC driver that was in Community Technology Preview for an extended time.

Once the compressed file is downloaded, open it and extract the sqljdbc.jar file. FTP or copy it over to the IFS into the /QIBM/UserData/Java400/ext folder. Log in to Web Query as an administrator or developer. First, expand a domain and then "Reports," right-click on a folder and select "Metadata." Click "New Adapter," expand the SQL folder, select the MS SQL Server option and select "2005."

Choose a name for your server. Build the JDBC connect string as jdbc:sqlserver://yourserver:1433, replacing yourserver with your Microsoft SQL Server's DNS name or IP address and 1433, Microsoft's default SQL Server port, with the port number your server is listening on (Figure 4). For the SQL Server, you must use explicit security. This requires you to enter the user name and password that's sent to the SQL Server to connect as, and that profile must have the authority to the files that you'll access on this system. The driver name for the 2005 driver must be com.microsoft.sqlserver.jdbc.SQLServerDriver. Click "Configure" and restart Web Query.



## Create metadata

At this point your connection is defined and you're set to create your metadata. Right-click on the server name under the SQL Server folder and select "Create Synonym." Select the database on the SQL Server that you want to access. Then select the tables you want, along with any prefix or suffix.

IBM best practices recommend using the schema and an underscore as the prefix and a suffix that shows the object type, such as `_mssql`. Hence, my table `Orders` in `ProdData` would show as `ProdData_Orders_mssql`. This way, all of my items from the same schema appear together and the suffix reminds me where the data is coming from. Also, you may want to create a separate application to hold your metadata from the SQL Server. Remember that applications are the mechanism for segmenting your metadata in Web Query.

Clicking "Create" finishes the process. That's the final piece that's different. Web Query now has access to that data. This means you can use all of the same tools to build reports, graphs and dashboards. You can mix and match data from any source inside your reports. You can even join data from your IBM i and SQL Server. Keep in mind that with the communications layer and join processing, you may see some performance degradation when joining heterogeneous data sources. However, this pushes Web Query into the role of a federated database server.

## Constantly Evolving

IBM DB2 Web Query for i is constantly evolving to meet customers' needs. With this latest round of enhancements, IBM focused on more tightly integrating Web Query with Microsoft Excel and Microsoft SQL Server. This allows a direct route to the data from within Excel as well as the capability to use Web Query as your one-stop reporting server for all of your data needs.

IBM is answering the call of end users to create enhancements that increase your DB2 Web Query productivity and end-user satisfaction. The Web Query team always bases future direction on input from you. If you want a feature, let IBM know via e-mail to [qu2@us.ibm.com](mailto:qu2@us.ibm.com).