

## Visual Explain

As promised in my last column, we are continuing with a variety of topics surrounding SQL and the iSeries. This month we are looking at the Visual Explain capability found within iSeries Navigator and Operations Navigator.

This topic is of major importance to anyone involved with database or query performance tuning. The most common method for analyzing queries in the past has been to put a job in debug mode and analyze the query optimizer messages generated in the joblog. You can also run the Database Monitor that will capture query execution statistics and write them to a database file for further analysis. For embedded SQL you also have the PRTSQLINF command to extract optimizer access method information.

With the advent of V4R5, IBM introduced Visual Explain as part of Operations Navigator. Visual Explain graphically shows you how the optimizer implemented a query. You get the information from both the joblog messages and the database monitor messages in one place. All the information analyzed by the optimizer to make its decisions is available to you. Visual Explain takes the individual components of a query request and represents them graphically along with the pertinent database information.

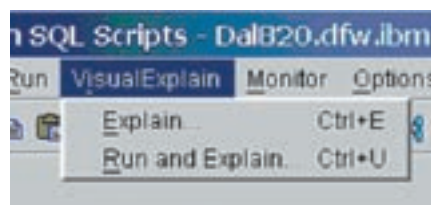
One surprising fact to many people is that you do not actually need to execute a very long running query to be able to use Visual Explain. Visual Explain's modeling option allows you to analyze what is predicted to happen during the

query and then do some what-if analysis by creating recommended new indexes and then rerunning the model.

You can type in an SQL statement and have Visual Explain run and analyze your statement. You can also have Visual Explain analyze queries traced by performance monitor or database monitor runs.




To get to the Visual Explain window you need to start the SQL Script Centre. To access the SQL Script Centre you must right click on either the database option or the system name below the database option in Operations Navigator. Visual Explain can be found on the toolbar and in the icons in the SQL Script Centre. You have the option to either Explain an SQL statement or Run and Explain an SQL statement. Explain only is the modeling option that will not run the query. Run and Explain will execute the query, show you the results and then present the Visual Explain graphical analysis display.



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To use Visual Explain with the SQL performance monitor data you must choose the **detailed** monitor not the summary monitor. From Operations Navigator look at the available performance monitor datasets, right click on the file you are interested in and select **List Explainable Statements**. Select the statement that you wish to analyze and then choose **Run Visual Explain**. The Visual Explain display has two sections, the left side is the graphical portion and the right side changes based on the icon highlighted on the left. The right side gives you a variety of information used by the query optimizer. Query/400, OPNQRYF and the Create Query API are not supported by Visual Explain.

There is an excellent redbook and lab available for you to download from IBM's internet site. Chapter 10 of the "Advanced Functions and Administration on DB2 Universal Database for iSeries" redbook SG24-4249-03 covers Visual Explain in detail. The Visual Explain Basic and Advanced labs can be downloaded from [www.iseries.ibm.com/developer](http://www.iseries.ibm.com/developer). 

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