



IBM DB2 Visual Explain

Technical Summary

IBM DB2® Visual Explain lets you graphically analyze the access paths DB2 chooses for your SQL queries or statements. The graph of the access path is displayed on an IBM OS/2® or Microsoft® Windows NT® workstation, eliminating the need to interpret the plan table output manually.



DB2 Visual Explain offers suggestions for improving the performance of your SQL queries or statements. You can change an SQL statement and dynamically explain it to see if the access path is improved by the change. You can also use DB2 Visual Explain to browse the current values of the subsystem parameters.

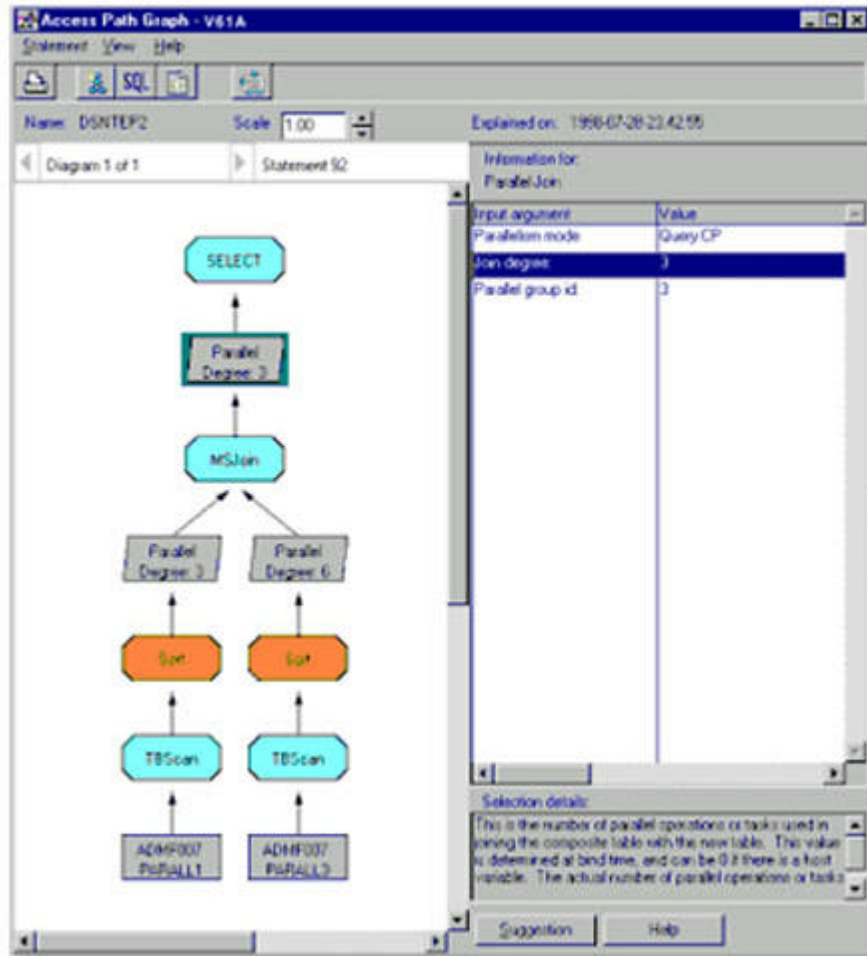
DB2 Visual Explain makes Distributed Relational Database Architecture™ (DRDA®) queries through a DB2 client on the workstation to get the information it needs. The subsystem parameter values are retrieved by calling a stored procedure on the host, which makes an IFI call to the appropriate DB2 trace record and returns them to the workstation.

DB2 Visual Explain helps database administrators and application developers:

- *See the access path for a given SQL statement*
- *Tune SQL statements for better performance*
- *View the current values for subsystem parameters.*

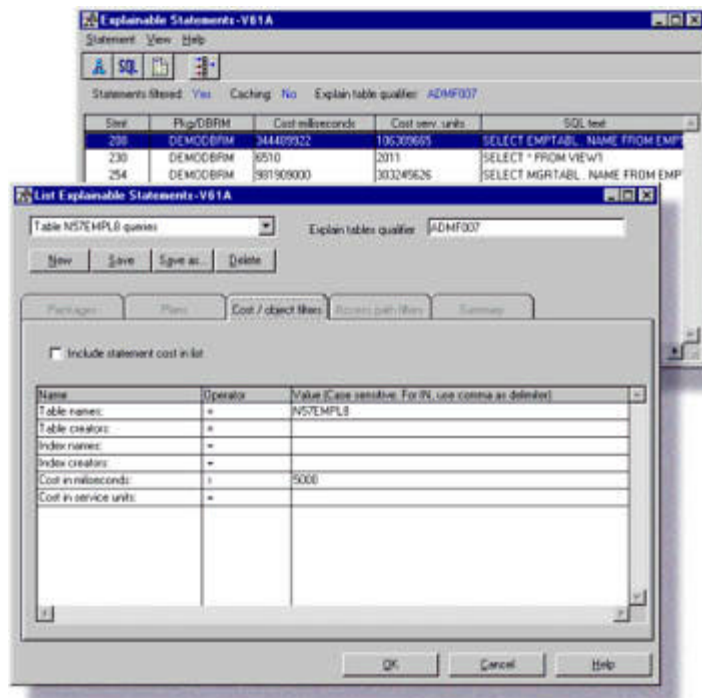
No more plan table confusion

Results from EXPLAIN are saved in the plan table, but interpreting these can be difficult and time consuming. In DB2 Visual Explain, a graph clearly shows the access path of your statements, eliminating the need to look up values in plan table columns. Of course, if you prefer to view the plan table itself, you can also do that.



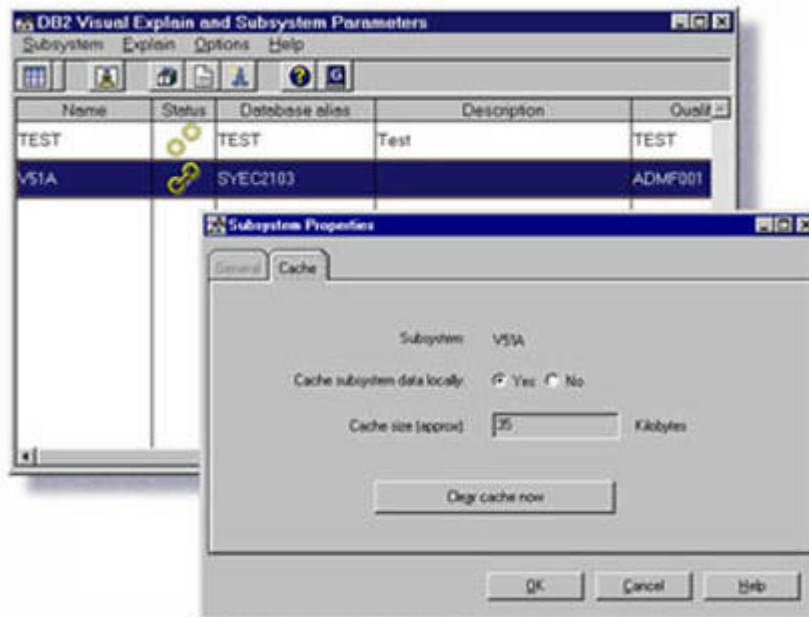
Filtering statements saves you time

Using the filter in DB2 Visual Explain you can limit the number of explainable statements shown by specifying various parameters such as table space scans, sorts, tables accessed or a particular statement cost. Filtering statements saves time, allowing you to focus only on statements that need your attention.



Use DB2 Visual Explain offline

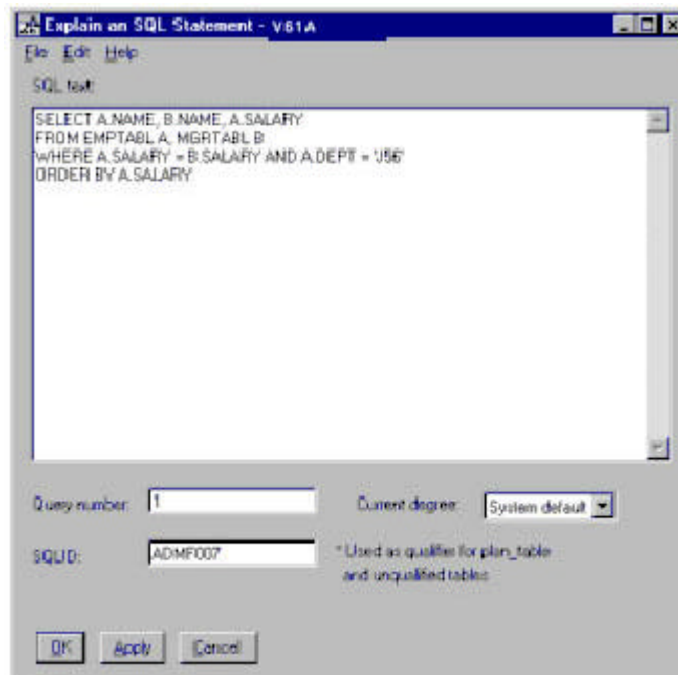
You can cache the data DB2 Visual Explain gets from DB2 databases, so you can use it later without connecting to the DB2 subsystem. DB2 Visual Explain also provides sample data, which enables you to evaluate the tool without connecting to your own DB2 subsystem.



EXPLAIN from your workstation

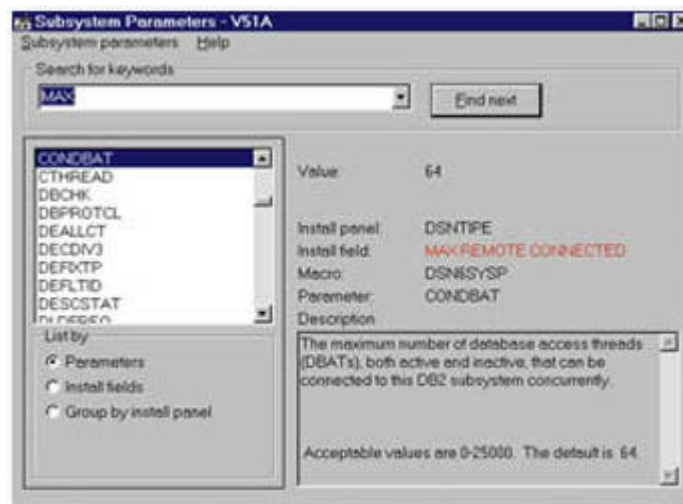
DB2 Visual Explain lets you dynamically explain SQL statements. You can quickly see if the

access path changes by modifying and re-explaining your SQL statement. Simply compare the access paths of the two graphs.



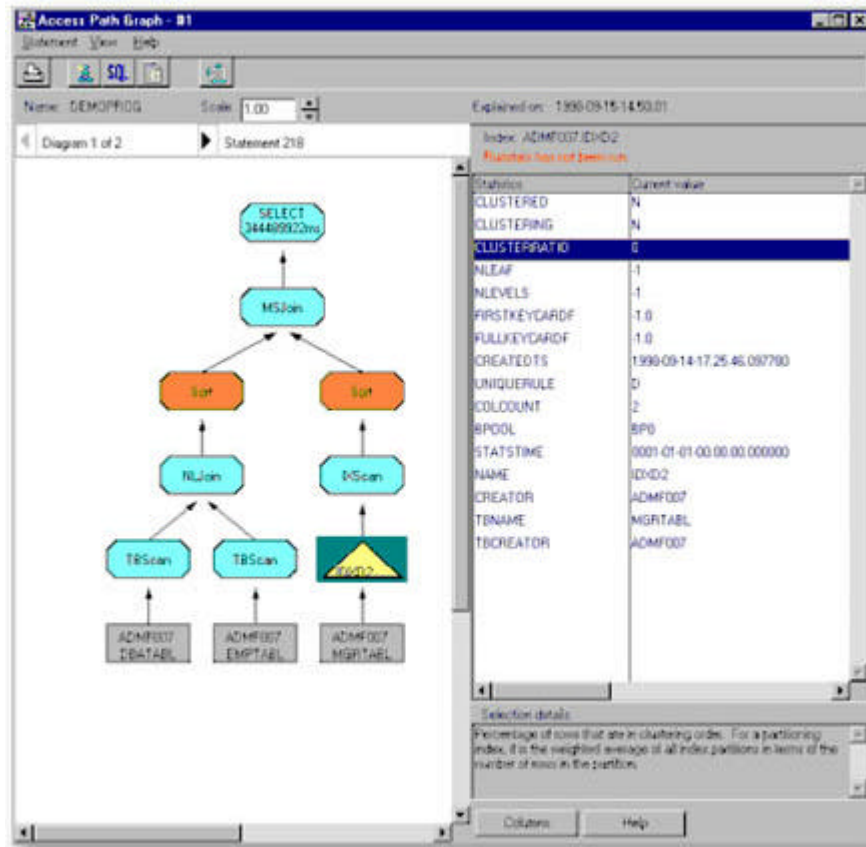
One-step parameter viewing

The subsystem parameter viewer shows the current values of the subsystem parameters and explains the meaning of each value. It also shows the installation panel and field used to update the values. You can easily place information from parameters that interest you in a report, which you can print or e-mail.



View catalog statistics

DB2 Visual Explain can show you catalog statistics for the tables and indexes shown in the access path graph. DB2 uses these catalog statistics at bind time to calculate the best access path. Viewing these statistics can help you understand why DB2 chooses a particular access path.



Usability enhancements in Version 6

- *Quickly generate custom reports.* The report wizard lets you quickly create customized reports on one or more explainable statements. You can determine how much detail to include in the report--the statement cost, a description of the access path, catalog statistics on the indexes or tables and more. You can print the report or save it as a text file.
- *List or filter explainable SQL statements from multiple plans and packages.* DB2 Visual Explain lets you include many plans and packages in one filter definition to save time.
- *Filter explainable SQL statements.* You can filter statements from multiple plans and packages by using cost and access path criteria and table and index references. For example, you can list all the explainable statements in PLAN1 and PACK2 that access EMPTABL, include a sort, and have an estimated cost greater than 500 milliseconds. You can save filter settings to reuse or modify later.
- *Filter explain table rows.* You can limit the rows from the plan table, statement table or function table by filtering on multiple criteria. For example, you can list all the rows in a plan table with plan name PLAN1 and PLAN2 or program name PROG5 and a timestamp greater than 1998-08-15 00:00:0000.
- *Specify your own qualifier for catalog tables.* You can avoid using your DB2 catalog for DB2 Visual Explain queries by copying the catalog tables. Then you can specify your own qualifier to access the copied tables when DB2 Visual Explain retrieves DB2 catalog information.
- *Specify your own qualifier for explain tables.* You can specify your own qualifier for explain tables (plan, statement or function table) independent of the user ID of the package or plan owner. This capability lets you use copies of explain tables after you bind your packages or plans.
- *Enable or disable query parallelism.* Specify the value you want to use for the current degree special register for dynamically explained SQL statements.

- *View application programming defaults (DSNHDECP parameters) in the parameter browser.* In addition to subsystem parameters in DSNZPARM, you can also view the current values and descriptions in the data-only load module, DSNHDECP.

Functional enhancements in Version 6

- *View statement cost in milliseconds and service units.* The graph of the access path includes the DB2 estimated cost. You can include the cost when viewing explainable statements, then either sort your statements by cost or filter out statements based on their cost. You can also include the cost in a DB2 Visual Explain report.
- *View the statement table and function table.* View the entire statement table and function table (DSN_STATEMNT_TABLE and DSN_FUNCTION_TABLE) for plans and packages.
- *Use DB2 Visual Explain on Version 5 or Version 6.* DB2 Visual Explain works with both Version 5 and Version 6 subsystems. You can use plan tables from either version.
- *View new and updated subsystem parameters.* DB2 Visual Explain includes all the new subsystem parameters and updated descriptions.

Program Requirements

You need approximately 12 MB of hard disk space to install and run DB2 Visual Explain.

The minimum software requirements include the following:

To run the tool in Windows®:

- Microsoft Windows NT 4.0
- DB2 for OS/390® Version 5
- Either DB2 Connect™ Personal Edition Version 5 or DB2 Client Application Enabler (CAE) with a DB2 Connect Enterprise Edition Version 5 gateway
- Either TCP/IP or SNA communications using a product such as Communication Server 5.0, SNA Server Version 4.0, or the integrated SNA support in DB2 Universal Database™ Personal Edition.

To run the tool in OS/2:

- OS/2 Version 4
- DB2 for OS/390 Version 5
- Either DB2 Connect Personal Edition Version 5 or DB2 Client Application Enabler (CAE) with a DB2 Connect Enterprise Edition Version 5 gateway
- Either TCP/IP or SNA communications using a product such as Communication Sever 5.0 or the integrated SNA support in DB2 Universal Database Personal Edition.

DB2 Visual Explain includes a browser to view current values of subsystem parameters. To use the browser, your system must also meet these requirements:

- Stored procedures capability on the DB2 subsystem
- DSNWZP stored procedure enabled.

Obtaining DB2 Visual Explain

DB2 Visual Explain is one of several features and tools offered with DB2 Universal Database Server for OS/390 Version 6:

- [DB2 Administration Tool](#)
- [DB2 Buffer Pool Tool](#)

- [DB2 DataPropagator™](#)
- [DB2 Extenders™](#)
- DB2 Management Tools Package
 - [DB2 Control Center](#)
 - [DB2 Estimator](#)
 - [DB2 Installer](#)
 - DB2 Visual Explain
- [DB2 Performance Monitor](#)
- [DB2 Utilities](#)
- [Net.Data®](#)
- [QMF Family](#)
- [QMF for Windows](#)
- [QMF High Performance Option](#)

Connecting to DB2

[IBM DB2 Connect™](#) enables remote access to data stored in DB2 Universal Database for OS/390 from UNIX®, Windows and OS/2 applications.

To find out more

If you'd like to learn more about DB2 Visual Explain, contact your IBM marketing representative or visit our Web site at www.ibm.com/software/db2os390/.

To download DB2 Visual Explain, visit www.ibm.com/software/db2os390/db2ve/.



© International Business Machines Corporation 1999

*IBM Corporation
Santa Teresa Laboratory
555 Bailey Avenue
San Jose, CA 95141*

*Produced in the United States of America
7-99
All Rights Reserved*

DataPropagator, DB2, DB2 Connect, DB2 Extenders, DB2 Universal Database, Distributed Relational Database Architecture, DRDA, IBM, Net.Data, OS/2, OS/390 and QMF are trademarks of International Business Machines Corporation in the United States, other countries or both.

Microsoft, Windows and Windows NT are trademarks of Microsoft Corporation in United States, other countries or both.

UNIX is a registered trademark of The Open Group.

Other company, product or service names may be trademarks or service marks of others.

References in this publication to IBM products or service do not imply that IBM intends to make them available in all countries in which IBM operates.