

Z09

A Guide to using Visual Explain V8

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Sept. 12-16, 2005

Orlando, FL

Agenda

- **Up and Running**
- **Query graphing facilities**
 - Tune SQL
 - List Static SQL
 - View external explain tables
 - List cache statements
- **Supporting functions**
 - Reporting
 - Statistics Advisor
- **Miscellaneous functions**
 - Service SQL
 - Display DSNZPARMs

Up and Running

Up and Running

- Client considerations
- Stored procedures used by Visual Explain
- Connection
- Set properties
- User configuration
 - USERID explain tables
 - Shared explain tables

Client considerations

- **Where to obtain the code?**

- <http://www.ibm.com/software/data/db2/zos/osc/ve/>

- **Fixpack 7 NOW AVAILABLE!**

- **Key prerequisites**

- Windows NT Version 4.0, Windows 2000, or Windows XP

- 150 MB of hard disk space

- 256 MB of RAM

- Pentium III equivalent or above

- Either DB2 Connect TMPersonal Edition Version 7 (or later), or DB2 Client Application Enabler TM(CAE) with a DB2 Connect Enterprise Edition Version 7 (or later) gateway installed

- A TCP/IP connection to a DB2 for z/OS Version 7 or Version 8 host system

- A java-enabled browser to view HTML files

Stored procedures used by Visual Explain

•Stored procedures

–Not mandatory, but certain (obvious) functions won't work without them.

–DSN8EXP

•Explain with stored procedure

•PQ90022 / PQ95959

–DSNWZP

•Display of DSNZPARMS

–Java Universal Driver

•Provide detailed error message text

–DSNUTILS

•Execution of RUNSTATS from Statistics Advisor

•Note: Statistics Advisor requires connection to DB2 for z/OS V8.

List databases

Already configured databases

Database Alias	Status	Database Name	Comment	User ID	SQLID
BRIANEC	✓	STLEC1	...		
UTEC492A	✓	STLEC1	...		
UTEC780A	✓	STLEC1	...	ADMFO01	ADMFO01
TUTORIAL	✓	DSNVEDEMO	Visual Explain T...	ADMFO07	ADMFO07

Connect / disconnect

Catalog / uncatalog databases

Catalog...

Database Properties

Database Name: DSNVEDEMO Protocol: tcpip
Host name: TUTORIAL
Node name: TUTORIAL Port number: 446

Connect...
Disconnect
Refresh
Update...
Catalog...
Uncatalog
Help

Catalog a new database

The screenshot shows a dialog box titled "Catalog a Database" with the following fields and settings:

- Host name:** (empty text box)
- Port number:** 446
- Database Name:** (empty text box)
- Database Alias:** (empty text box)
- Comment: (empty text box)

Below the fields is a section for "Default Settings":

Protocol:	TCP/IP
Operating System:	z/OS
Database Type:	Remote

At the bottom are three buttons: "Catalog", "Cancel", and "Help".

Annotations with red arrows point to the following fields:

- "Port" points to the "Port number:**" field.
- "Connection alias" points to the "Database Alias:**" field.
- "Hostname (domain)" points to the "Host name:**" field.
- "Database name (location)" points to the "Database Name:**" field.

Visual Explain properties

General properties

- Maximum rows to retrieve
- Alternate catalog qualifier
- Explain stored procedure name
- Access plan graph default
- Visual Explain trace
 - Enable / disable
 - Clear

Visual Explain properties

The screenshot shows the Visual Explain application window. The 'List Databases' window is open, displaying a table of database aliases and their status. The 'Database Properties' window is also open, showing details for the selected database 'STLEC1'.

Database Alias	Status	...
BRIANEC	✓	STL...
UTEC492A	✓	STLEC...
UTEC780A	⚡	STLEC1
TUTORIAL	✓	DSNVEDE

Database Properties:

Database Name: STLEC1 Protocol: tcpip
Host name: v7ec022.svl.ibm.com
Node name: UTEC780A Port number: 446

Callout box content:

- Properties
- Windows
- Help
- Subsystem Settings

Visual Explain properties

Subsystem Properties

Maximum row number

Maximum number of table rows to be displayed

Catalog qualifier

High-level qualifier for catalog tables

EXPLAIN Stored Procedure

Schema Name Procedure Name

Access plan graph default view

Graph only view Graph and detail view

Enable tracing

Always save filter in the Static SQL Filtering window

Manually invoke infopop on access plan graph

Properties zoom 1

Maximum row number

Maximum number of table rows to be displayed

Catalog qualifier

High-level qualifier for catalog tables

Properties zoom 2

EXPLAIN Stored Procedure

Schema Name Procedure Name

Access plan graph default view

Graph only view Graph and detail view

Properties zoom 3

Enable tracing

Always save filter in the Static SQL Filtering window

Manually invoke infopop on access plan graph

Clear Trace

OK Cancel Reset Help

User configuration

◆ Enable Visual Explain

-Creates internal explain tables used by Visual Explain

◆ Next steps:

-Navigation to enable Visual Explain

-Sample common create explain table scenarios

Slides updated to reflect improved VE Fixpack V7!

DBA creates for own userid

-ADMFO01 creates for self

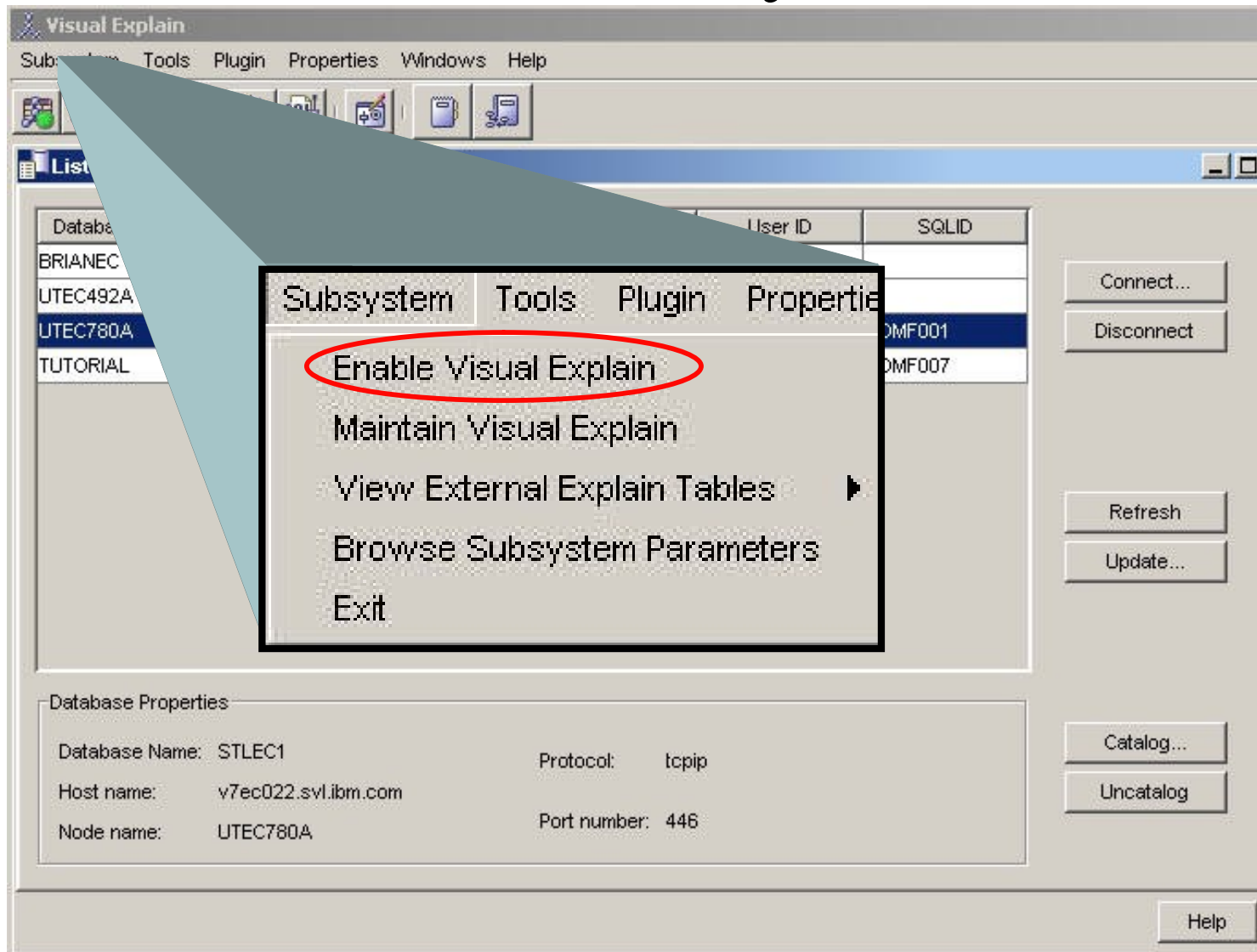
DBA creates for other userid

-DB2DBA creates for DEVTED

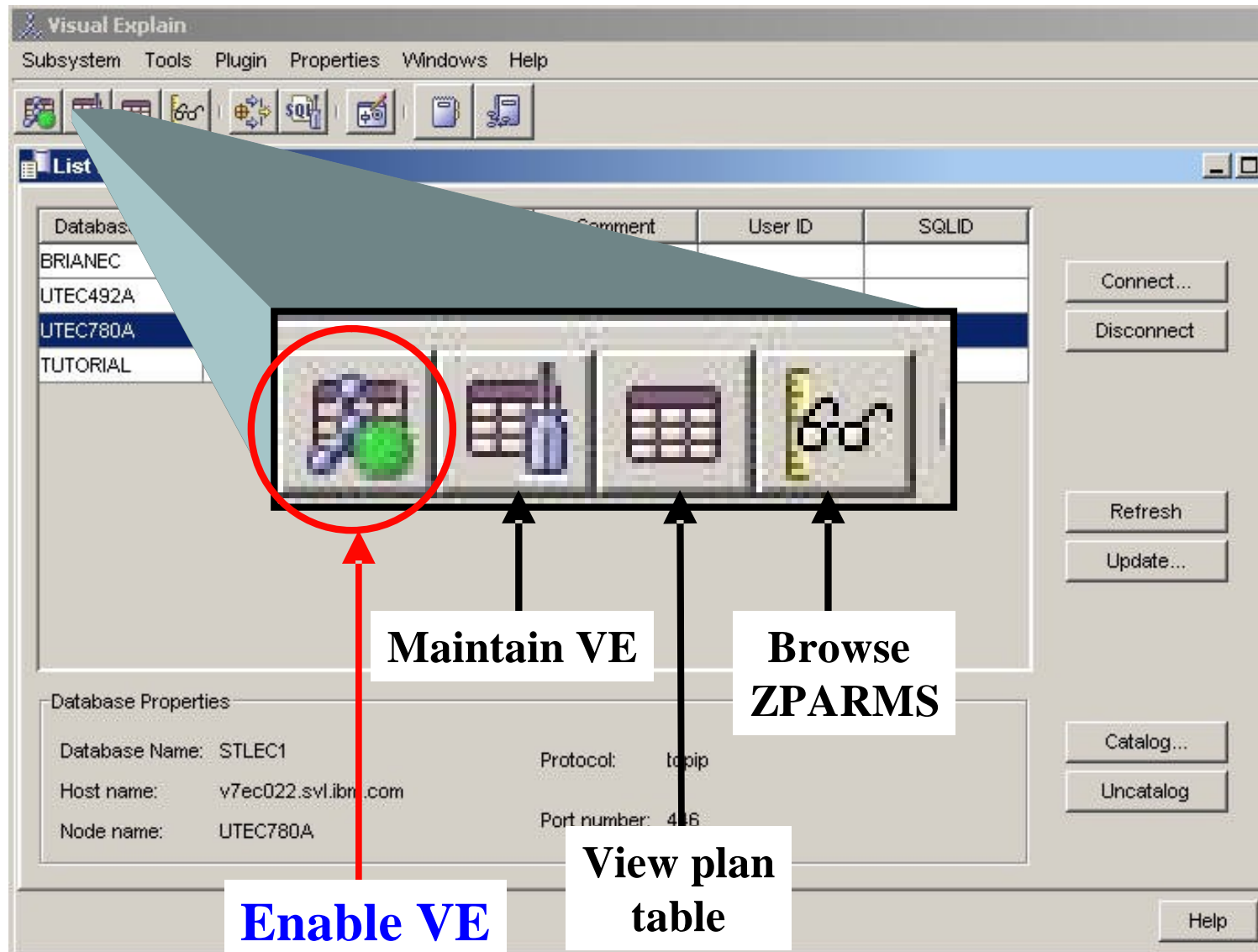
DBA creates for shared SQLID

-DB2DBA creates for PROD authorization id

Enable VE - Subsystem menu



Enable VE menu icon



User ADMF001 creating for self

Enable Visual Explain - UTEC492A

This action checks the validity of the explain tables that are used by the Visual Explain product, and creates any needed explain tables that do not yet exist. These tables are created under the qualifier ADMF001 if no qualifier name is specified.

Database name: DSNEXPLN

Table space name: EXPTS

Sqliid: ADMF001

Qualifier: ADMF001

Create DSN_FUNCTION_TABLE

Database name: DSNEXPLN

Table space name: FXNTS

BUFFERPOOL: (8K) BP8K1

Use the default value for database name and table space name

OK Cancel Help

Create authority
Explain table
Qualifier

Authid DB2DBA create for user

Enable Visual Explain - UTEC492A

This action checks the validity of the explain tables that are used by the Visual Explain product, and creates any needed explain tables that do not yet exist. These tables are created under the qualifier ADMF001 if no qualifier name is specified.

Database name: DSNEXPLN

Table space name: EXPTS

Sqlid: DB2DBA

Qualifier: DEVTEd

Create DSN_FUNCTION_TABLE

Database name: DSNEXPLN

Table space name: FXNTS

BUFFERPOOL: (8K) BP8K1

Use the default value for database name and table space name

OK Cancel Help

Create authority
Explain table
Qualifier

DB2DBA Authid create for PROD authid

Enable Visual Explain - UTEC492A

This action checks the validity of the explain tables that are used by the Visual Explain product, and creates any needed explain tables that do not yet exist. These tables are created under the qualifier ADMF001 if no qualifier name is specified.

Database name: DSNEXP LN

Table space name: EXPTS

Sqldid: DB2DBA

Qualifier: PROD

Create DSN_FUNCTION_TABLE

Database name: DSNEXP LN

Table space name: FXNTS

BUFFERPOOL: (8K) BP8K1

Use the default value for database name and table space name

OK Cancel Help

Create authority
Explain table
Qualifier

Query graphing facilities

Query graphing facilities

-Tune SQL

-List Static SQL

-View external explain tables

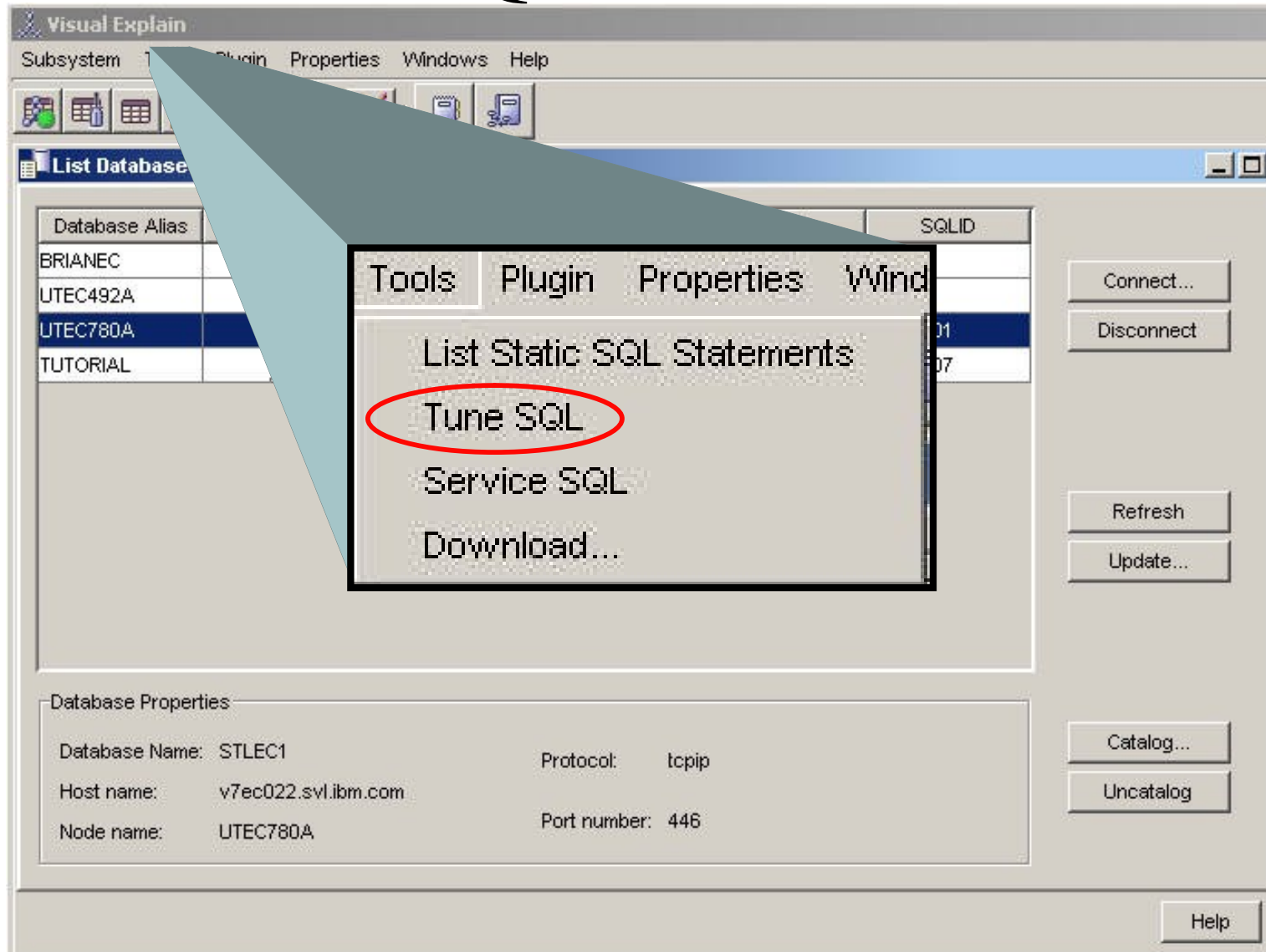
-List cache statements

Overview of Tune SQL

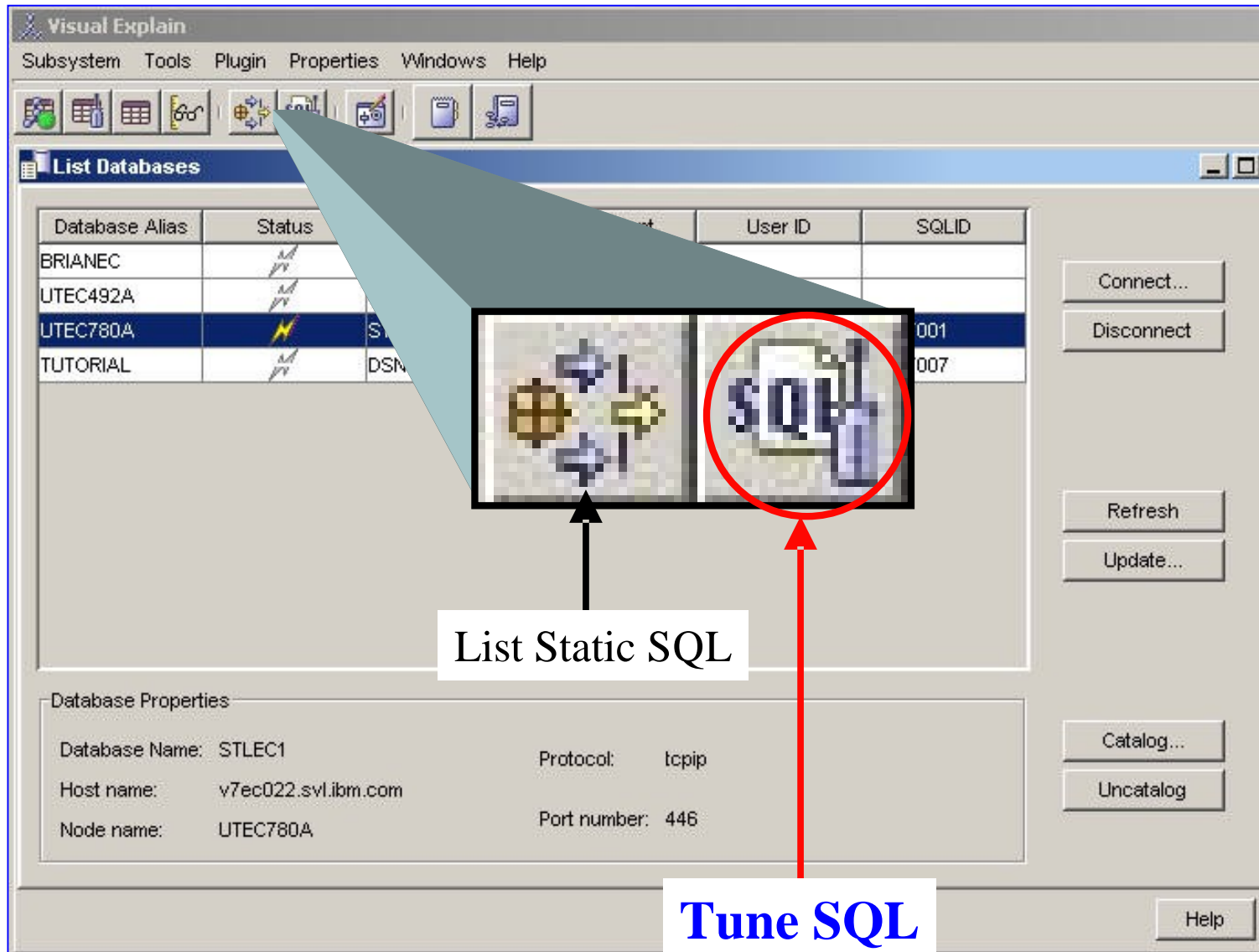
•Tune SQL

- Dynamically explain SQL
- Input, save, organize SQL
- Query graph and detail facilities
- Reporting facilities (detail provided later)

Tune SQL tools menu



Tune SQL menu icon



Tune SQL

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

QueryNo: 2 SQLID: ADMF001

Command history

Command history category: TPCD30G

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Current degree: System default

Current refresh age: 0

Current maintained table types: None

Table qualifier for EXPLAIN stored procedure:

Input an SQL statement or select one from command history:

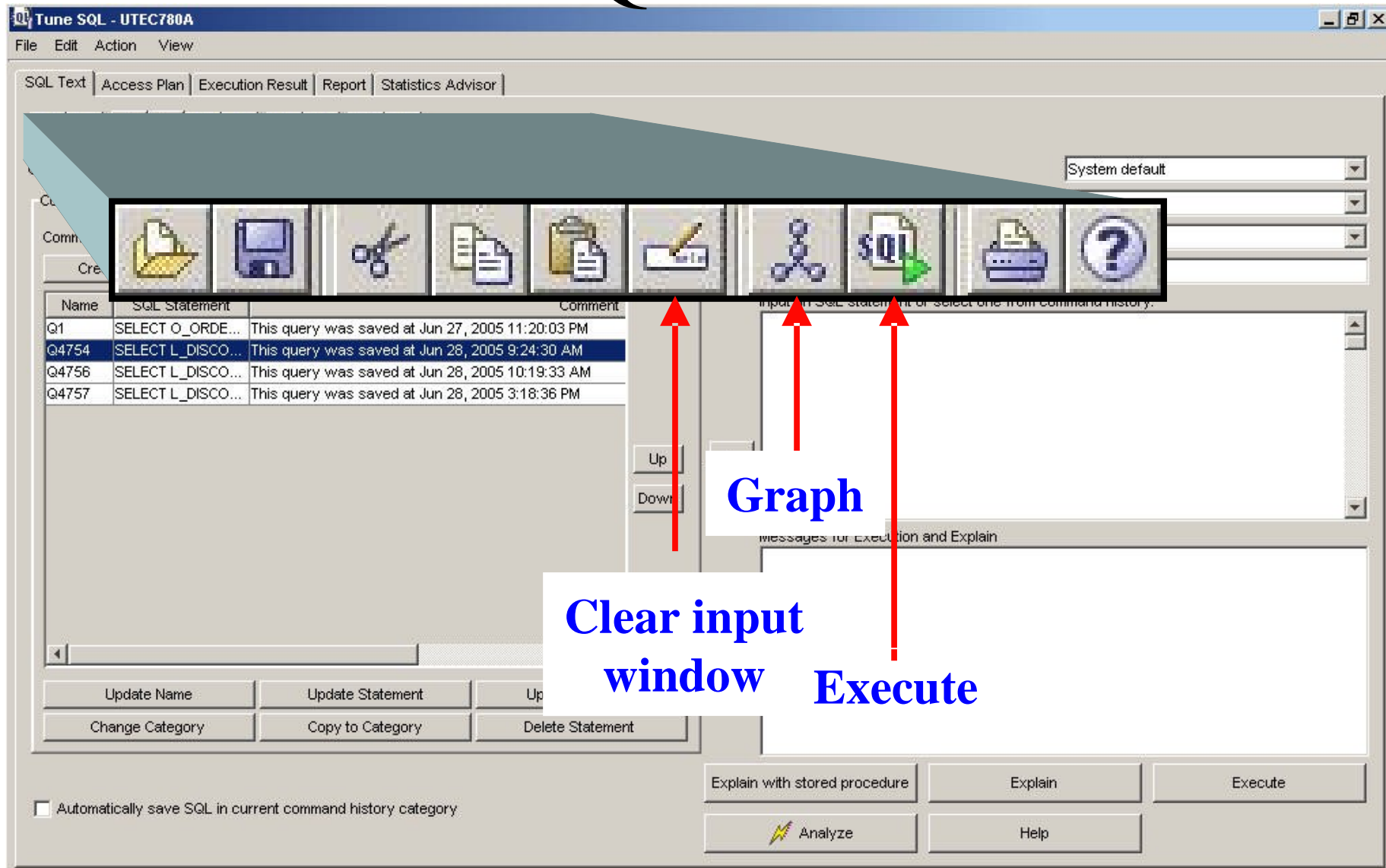
Messages for Execution and Explain

Explain with stored procedure Explain Execute

Analyze Help

Automatically save SQL in current command history category

Tune SQL text icons



Special register area

The screenshot shows the 'Tune SQL - UTEC780A' window. The 'Special register area' is highlighted with a callout box. The area contains the following controls:

- Current degree: System default
- Current refresh age: 0
- Current maintained table types: None
- Table qualifier for EXPLAIN stored procedure: (empty text field)

Below the callout box, the main interface shows a table of command history:

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:11:11 AM
Q4754	SELECT L_DISCO...	This query was saved at Jun 27, 2005 11:11:11 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 27, 2005 11:11:11 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 27, 2005 11:11:11 AM

At the bottom of the window, there are buttons for 'Explain with stored procedure', 'Explain', 'Execute', 'Analyze', and 'Help'. A checkbox labeled 'Automatically save SQL in current command history category' is also present.

SQL input / messages

The screenshot shows the IBM Tune SQL - UTEC780A application window. The title bar reads "Tune SQL - UTEC780A". The menu bar includes "File", "Edit", "Action", and "View". Below the menu bar are tabs for "SQL Text", "Access Plan", "Execution Result", "Report", and "Statistics Advisor". A toolbar contains icons for file operations and SQL-related functions. The main interface is divided into several sections:

- Query Information:** "QueryNo: 2" and "SQLID: ADMF001".
- Command History:** A dropdown menu set to "TPCD30G" with buttons for "Create New Category", "Rename Category", and "Delete Category". Below is a table of command history entries.
- Configuration:** "Current degree: System default", "Current refresh age: 0", "Current maintained table types: None", and "Table qualifier for EXPLAIN stored procedure:".
- Input Area:** A large text area for entering an SQL statement or selecting from command history, highlighted with a red border.
- Messages:** A section for "Messages for Execution and Explain" with a scrollable area.
- Buttons:** "Up", "Down", "Update Name", "Update Statement", "Update Comment", "Change Category", "Copy to Category", "Delete Statement", "Explain with stored procedure", "Explain", "Execute", "Analyze", and "Help".
- Options:** A checkbox for "Automatically save SQL in current command history category" which is currently unchecked.

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Command history

QueryNo: 2 SQLID: ADMF001

Command history category: TPCD30G

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Up Down

Update Name Update Statement Update Comment

Change Category Copy to Category Delete Statement

Current degree: System default

Current refresh age: 0

Current maintained table types: None

Table qualifier for EXPLAIN stored procedure:

Input an SQL statement or select one from command history:

Messages for Execution and Explain

Explain with stored procedure Explain Execute

Analyze Help

Automatically save SQL in current command history category

Command history zoom

Manage categories

SQL history

Manage SQL

Command history category: TPCD30G

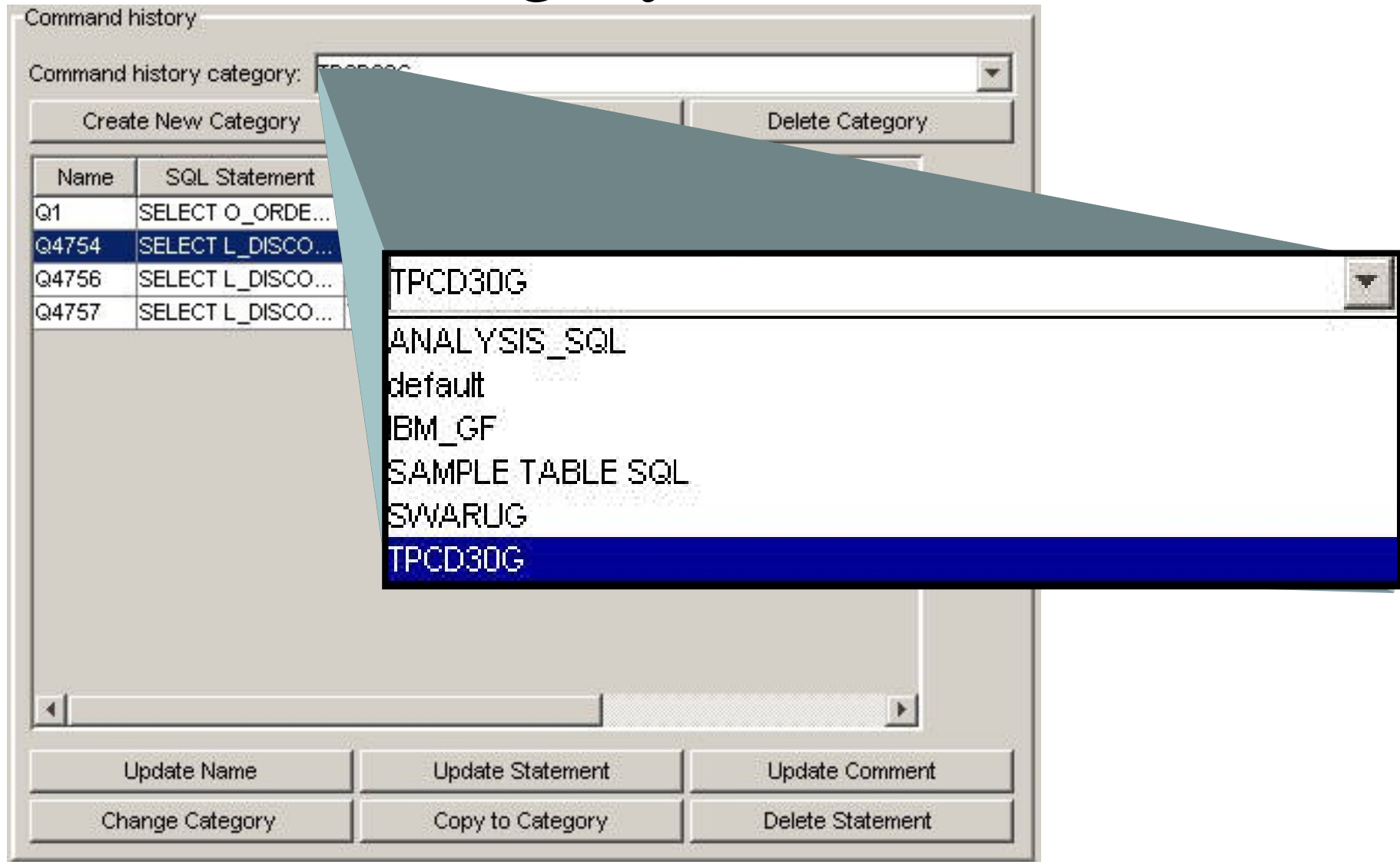
Create New Category Rename Category Delete Category

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Up
Down

Update Name Update Statement Update Comment
Change Category Copy to Category Delete Statement

Category list zoom



Tune SQL - actions

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

QueryNo: 2 SQLID: ADMF001

Command history category: TPCD30G

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Up Down

Update Name Update Statement Update Comment

Change Category Copy to Category Delete Statement

Current degree: System default

Current refresh age: 0

Current maintained table types: None

Table qualifier for EXPLAIN stored procedure:

Input an SQL statement or select one from command history:

Messages for Execution and Explain

Automatically save SQL in current command history category

Explain with stored procedure Explain Execute

Analyze Help

Tune SQL actions zoom

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

QueryNo: 2 SQLID: ADMF001

Command history category: TPCD30G

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Current degree: System default

Current refresh age: 0

Current maintained table types: None

Table qualifier for EXPLAIN stored procedure:

Input an SQL statement or select one from command history:

Messages for Execution and Explain

Explain with stored procedure | Explain | Execute

Analyze | Help

Automatically save SQL in current command history...

Tune SQL actions

- **Explain with stored procedure**
 - Dynamically explain the SQL statement in the SQL input window
 - Display the access plan graph in the Access Plan tab
 - Allow developers that do not have authority to execute queries against certain tables to explain queries against those tables.
 - Eg. `SELECT SALARY FROM PAYROLL_TABLE;`
- **Explain**
 - Dynamically explain the SQL statement in the SQL input window
 - Display the access plan graph in the Access Plan tab
- **Execute**
 - Execute the SQL statement in the input window
 - Display results in Execution Result tab
- **Analyze**
 - Explain the SQL statement in the SQL input window
 - Execute Statistics Advisor against the SQL statement

Graph SQL

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

DB2 Platform: Z/OS DB2 Version: v8 Explain Time: 2005-07-13 10:03:22.42

query

Show attribute explanation Views: Cost estimation

Name	Value
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Attribute explanation:
Type: Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UPDCUR)

Save As... Print... Suggestions Help Query

```

graph TD
    QUERY((@QUERY)) --> QB1((@QB1  
1.1059))
    QB1 --> NLJOIN{{@NLJOIN  
1.1059}}
    NLJOIN --> FETCH{{@FETCH  
2733.0342}}
    NLJOIN --> IXSCAN1{{@IXSCAN  
0.001}}
    FETCH --> IXSCAN2{{@IXSCAN  
3333}}
    IXSCAN2 --> PXL{{@PXL@OKSDRFSKEPDC  
179998372}}
    IXSCAN1 --> LINEITEM{{@LINEITEM  
179998372}}
    IXSCAN1 --> PXPS{{@PXPS@PKSKSC  
24000000}}
  
```

Graph SQL

SQL Text Access Plan Execution Result Report Statistics Advisor

DB2 Platform: Z/OS DB2 Version: v8 Explain Time: 2005-07-13 10:03:22.42

query

Show attribute explanation Views: Cost estimation

Name	Value
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Attribute explanation:
Type: Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UP

Save As... Print... Suggestions

Graph area

Descriptor / details area

```

graph TD
    QUERY((@QUERY)) --> QB1((@QB1  
1.1059))
    QB1 --> NLJOIN{{@NLJOIN  
1.1059}}
    NLJOIN --> FETCH{{@FETCH  
2733.0342}}
    NLJOIN --> IXSCAN1{{@IXSCAN  
0.001}}
    FETCH --> IXSCAN2{{@IXSCAN  
3333}}
    IXSCAN2 --> PXL{{@PXL@OKSDRFSKEPDC  
179998372}}
    IXSCAN1 --> LINEITEM{{@LINEITEM  
179998372}}
    IXSCAN1 --> PXP{{@PXP@PKSKSC  
24000000}}
  
```

Access plan icons

The screenshot displays the IBM DB2 Access Plan tool interface. The top menu bar includes 'SQL Text', 'Access Plan', 'Execution Result', 'Report', and 'Statistics Advisor'. Below the menu is a toolbar with various icons. A large blue arrow points from the toolbar to a set of four icons: a folder, a floppy disk, a document with '\$QL', and a circular arrow. Red arrows point from these icons to callout boxes: 'Open XML file' (folder icon), 'Save XML file' (floppy disk icon), 'Show SQL text' (document icon), and 'Re-explain' (circular arrow icon). The main area shows an execution plan diagram with nodes like 'QUERY', 'QRB1', 'NLJOIN', 'FETCH', 'IXSCAN', 'LINEITEM', and 'PKS@PKSKSC'. A table on the left shows query statistics.

Name	
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Attribute explanation:
Type: Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UPD)

Menu bars and icons

Icon / menu bar options and context dependent on tab

SQL text tab, the icons and menu bars are focused on the SQL text

Save / open options affect saving / opening SQL text files

Clear SQL input area is SQL text specific icon

Access Plan tab

Save / open options affect saving / opening xml files

Many new menu / icon options for navigating the graph

Graph viewing icons

The screenshot shows the DB2 Performance Center interface. At the top, there are tabs for 'SQL Text', 'Access Plan', 'Execution Result', 'Report', and 'Statistics Advisor'. Below the tabs is a toolbar with various icons. The main area displays a query execution plan for a 'query'. On the left, there is a table with the following data:

Name	Value
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Below the table is an 'Attribute explanation' section. The execution plan itself shows several nodes: 'PXSCAN 3333', 'PXSCAN 2733.034', 'PXSCAN 0.001', 'LINEITEM 179998372', 'PKS@PKSKSC 34000000', and 'NLJOIN 1.1059'. Red arrows point from five callout boxes to specific icons in the toolbar:

- Graph only**: Points to the first icon (a simple graph structure).
- Graph + Descriptor**: Points to the second icon (a graph with a descriptor box).
- Graph fullscreen**: Points to the third icon (a graph on a monitor screen).
- Graph overview**: Points to the fourth icon (a graph with a zoomed-in view).
- Query Block overview**: Points to the fifth icon (a graph with a highlighted block).

More graph viewing icons

The screenshot displays the DB2 Performance Center interface. At the top, there are tabs for 'SQL Text', 'Access Plan', 'Execution Result', 'Report', and 'Statistics Advisor'. Below the tabs is a toolbar with various icons. The main area shows an execution plan graph with nodes like 'QUERY', 'QOB1', 'NLJOIN', 'FETCH', 'XSCAN', 'LINEITEM', and 'XPS@PKSKSC'. A table on the left shows details for a query, including 'Cost Category', 'Reason', and 'Timestamp'. A toolbar below the table contains six icons: a document, a 3D cube, a network graph, a magnifying glass with a plus sign, a magnifying glass with a minus sign, and a magnifying glass with a square. Red arrows point from callout boxes to these icons and the graph.

Cost Category	A
Reason	
Timestamp	2005-07-13 0:03:22.42

Show descriptor

Graph 3D shading

Show infopops

Zoom

Fit graph to screen

Settings and print options

The screenshot shows the IBM DB2 Performance Center interface. At the top, there are tabs for 'SQL Text', 'Access Plan', 'Execution Result', 'Report', and 'Statistics Advisor'. Below the tabs is a toolbar with various icons. The main window displays a query execution plan for a 'query'. The plan includes nodes such as 'FETCH', 'XSCAN', 'XSCAN', 'LINEITEM', 'XPS@PKSKSC', and 'X@OKSDRFSKEPDC'. A table on the left shows query statistics:

Name	
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Below the table, there is an 'Attribute explanation' section. At the bottom of the interface, there are buttons for 'Save As...', 'Print...', 'Suggestions', and 'Help'. A red box highlights a set of icons: a printer, a document, a printer with a document, and a question mark. Red arrows point from callout boxes to these icons:

- Change graph settings** (points to the printer icon)
- Query report** (points to the document icon)
- Print options** (points to the printer with document icon)

Descriptor area

SQL Text Access Plan Execution Result Report Statistics Advisor

DB2 Platform: Z/OS DB2 Version: v8 Explain Time: 2005-07-13 10:03:22.42

query

Show attribute explanation Views: Cost estimation

Name	Value
Type	SELECT
CPU Cost (ms)	893
CPU Cost (su)	2319
Cost Category	A
Reason	
Timestamp	2005-07-13 10:03:22.42

Attribute explanation:
Type: Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UPDCUR)

Save As... Print... Suggestions Help

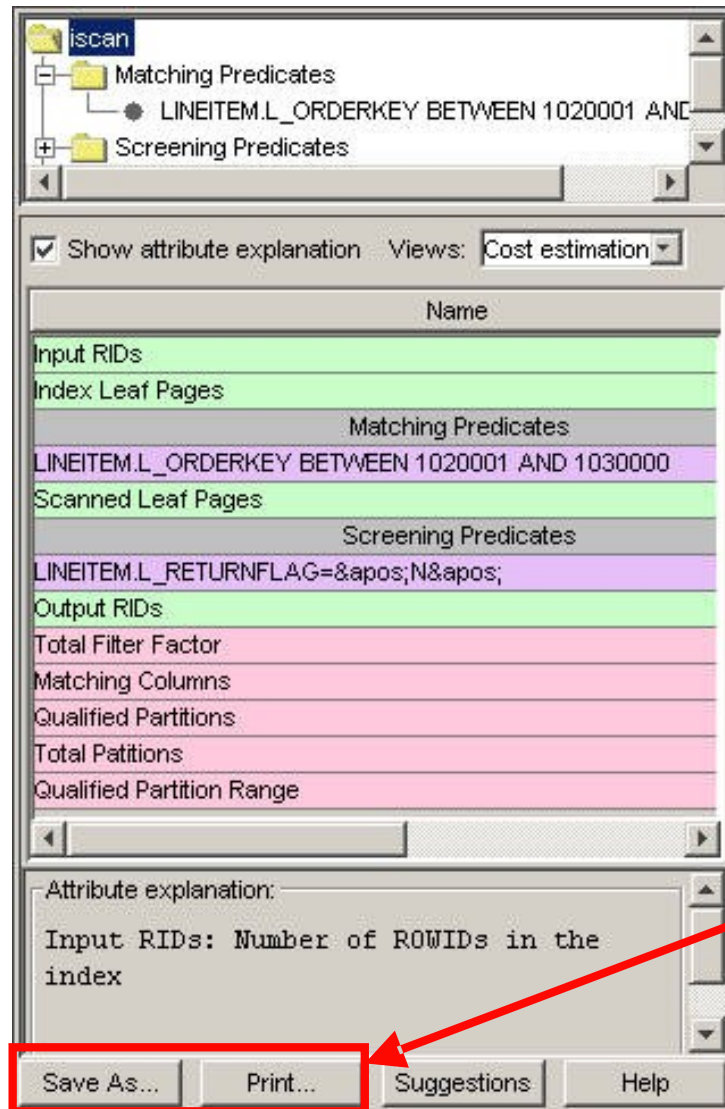
Query

Descriptor / detail area

```

graph TD
    QUERY((@QUERY)) --> QB1((@QB1  
1.1059))
    QB1 --> NLJOIN{{@NLJOIN  
1.1059}}
    NLJOIN --> FETCH{{@FETCH  
2733.0342}}
    NLJOIN --> IXSCAN1{{@IXSCAN  
0.001}}
    FETCH --> IXSCAN2{{@IXSCAN  
3333}}
    IXSCAN2 --> PXL{{@PXL@OKSDRFSKEPDC  
179998372}}
    IXSCAN1 --> LINEITEM{{@LINEITEM  
179998372}}
    IXSCAN1 --> PXPS{{@PXPS@PKSKSC  
24000000}}
  
```

Descriptor area



Folder area

Predicates, indexes, etc.

Details area information changes as:

- **Different nodes in graph are selected**
- **Elements from folder area are chosen**

Save and print in descriptor area are specific to descriptor information!

Use icon / menu to save xml / graph

Explain graph

SQL Text Access Plan Execution Result Report Statistics Advisor

DB2 Platform: Z/OS DB2 Version: v8 Explain Time: 2005-07-13 10:03:22.42

query

Show attribute explanation Views: Cost estimation

Name	Value
	03:22.42

Attribute explanation:
Type: Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UPDCUR)

Save As... Print... Suggestions Help

Query

```

graph TD
    QUERY([@QUERY]) --> QB1((@QB1  
1.1059))
    QB1 --> NLJOIN{{@NLJOIN  
1.1059}}
    NLJOIN --> FETCH{{@FETCH  
2733.0342}}
    NLJOIN --> IXSCAN1{{@IXSCAN  
0.001}}
    FETCH --> IXSCAN2{{@IXSCAN  
3333}}
    FETCH --> LINEITEM[@LINEITEM  
179998372]
    IXSCAN2 --> PXL{{@PXL@OKSDRFSKEPDC  
179998372}}
    IXSCAN1 --> PXPS{{@PXPS@PKSKSC  
24000000}}
  
```

Reading the query graph

Explain graph is read bottom left to right

-Index scan connected to table via fetch node.

-Join node connects inner and outer tables

-Index node reflects index FULLKEYCARDF

-Table node reflects table CARDF

-Access nodes reflect estimated rows

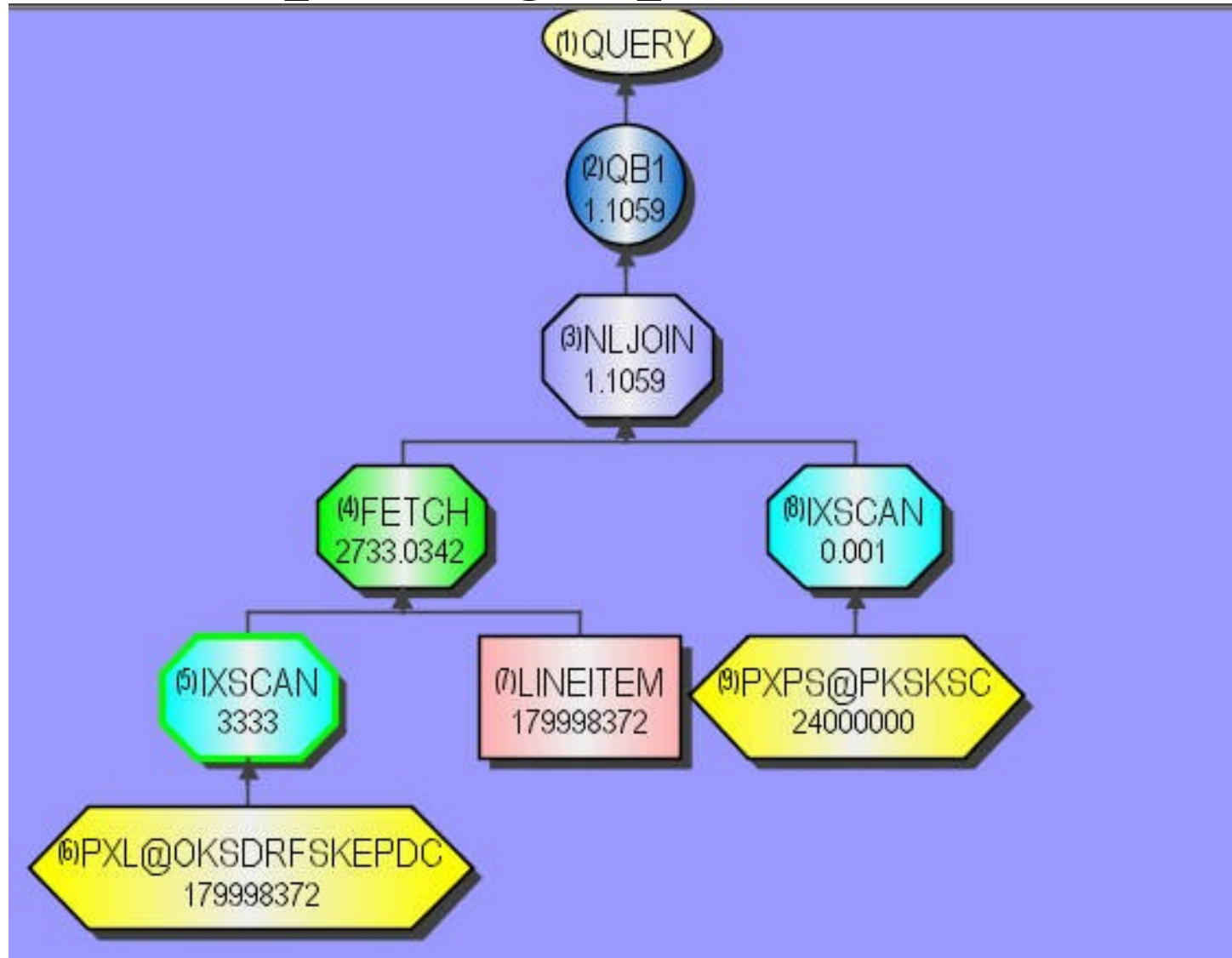
IXSCAN

FETCH

JOIN

-As the access nodes are selected, the descriptor contains detailed information

Explain graph zoom



List static SQL

- **Interface to find explain records for programs with static SQL bound with EXPLAIN (YES)**
 - When graph is selected, explain is graphed within Tune SQL
- **Robust filtering to find statements you're interested in**
 - Plan
 - Package
 - Cost
 - Access path
- **Walk through**
 - Filter options
 - Generating SQL report

Overview of List Static SQL

List Static SQL

-Plan / package based search facilities

-Robust sorting options

- Specified plan / package filters

- Object filters

 - Table, index used

- Estimated cost filters

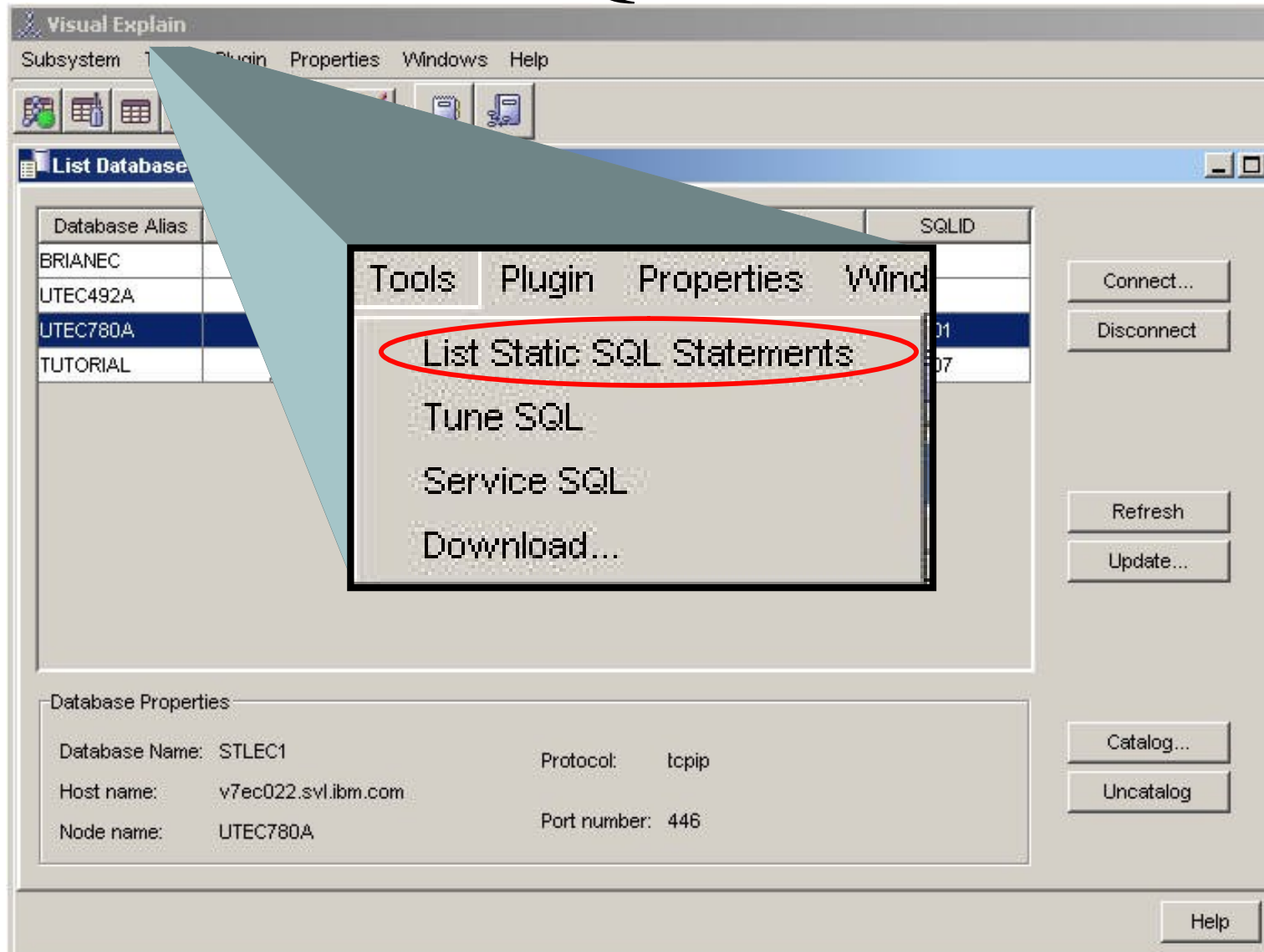
- Access method filters

-EXPLAIN(YES) for packages / plans required

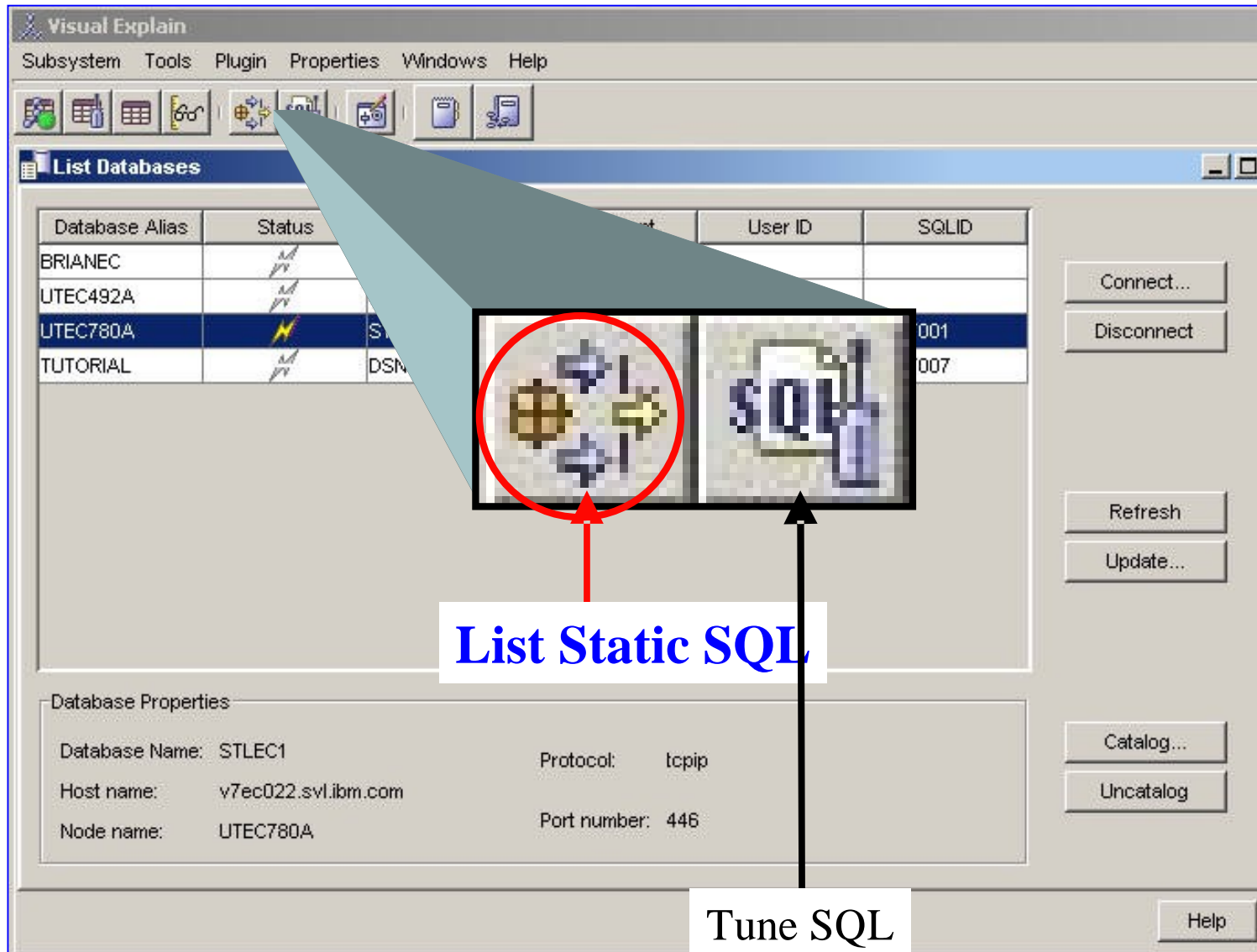
-Visual Explain enabled for package / plan owner

Show query reporting facilities

List Static SQL - tools menu



List Static SQL icon



List static SQL

Static SQL Filtering - UTEC780A

Filter name

DB2TC_2005

Only list explainable statements List all static statements

New Save Save As ... Delete

Packages Plans Cost/object Filters Access Path Filters Summary

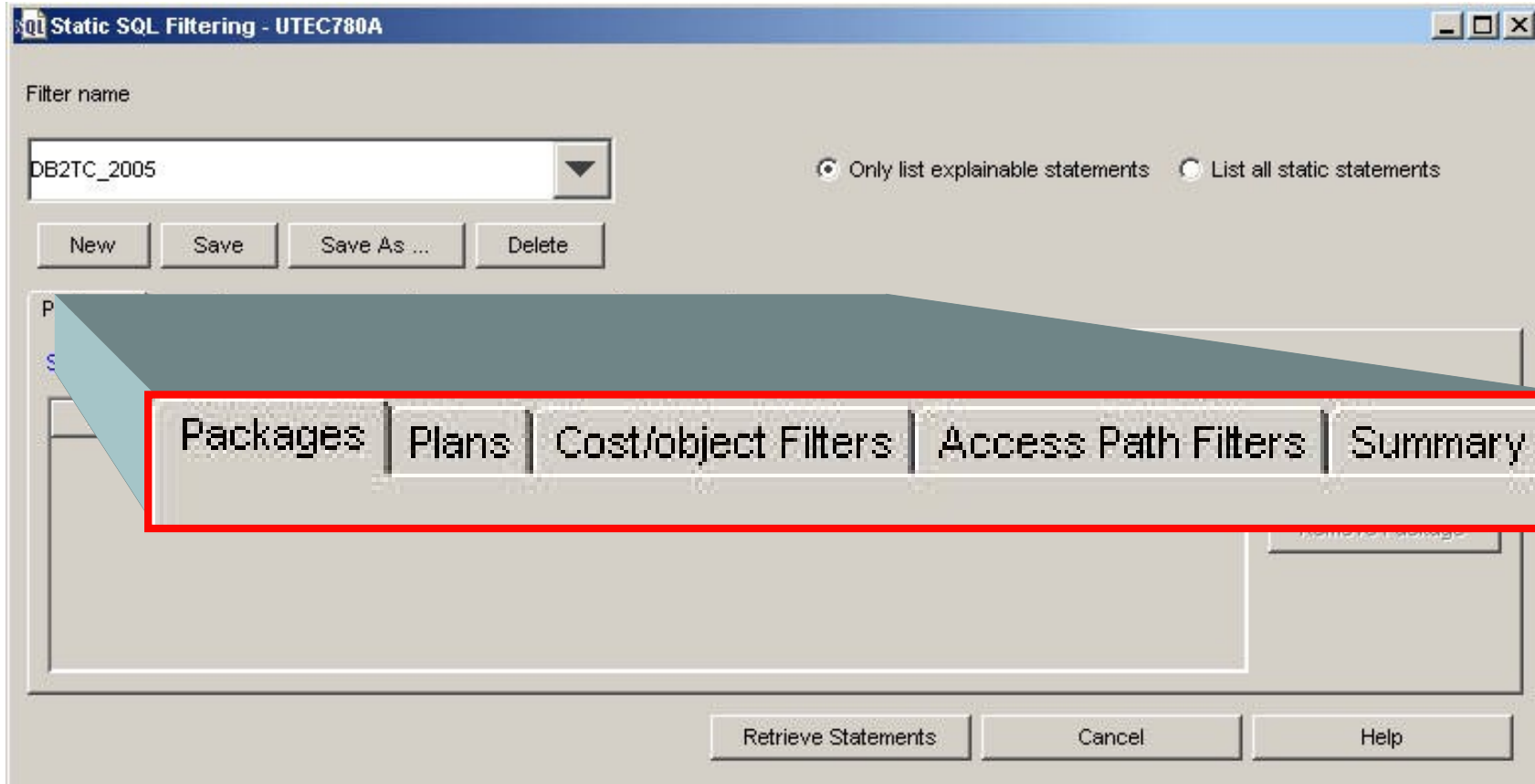
Select packages that contain static SQL statements that you want to list

Package Owner	Package Name	Collection ID	Version	Plan Name
---------------	--------------	---------------	---------	-----------

Add Package
Change Package
Remove Package

Retrieve Statements Cancel Help

List Static SQL filter option zoom



Package / Plan filters

Add a Package - UTEC780A [X]

Enter package information (For IN, use comma as ... **Sort** **List all**

Package Owner :	= ▼	<input type="text"/>	No Sort ▼	List all ...
Package Name(DBRM):	= ▼	<input type="text"/>	No Sort ▼	List all ...
Collection ID :	= ▼	<input type="text"/>	No Sort ▼	List all ...
Version :	= ▼	<input type="text"/>	No Sort ▼	List all ...

Add a Plan - UTEC780A [X]

Enter plan information (For IN, use co... **Sort** **List all**

Plan Owner	= ▼	<input type="text"/>	No Sort ▼	List all ...
Plan Name	= ▼	<input type="text"/>	No Sort ▼	List all ...

Cost filters

[Packages](#) | [Plans](#) | [Cost/object Filters](#) | [Access Path Filters](#) | [Summary](#)

Use cost filter (Which requires that the DSN_STATEMNT_TABLE have the corresponding records)

Use object filter (Which requires that the plan_table have the corresponding records)

Select the cost and object criteria for the static SQL statements that you want to list

Name	Operator	Value(For IN, use comma as delimi...
Table names	=	
Table creators	=	
Index names	=	
Index creators	=	
Cost in milliseconds	=	
Cost in service units	=	

Meet any filter condition Meet all filter conditions


Access Path filters

Packages	Plans	Cost/object Filters	Access Path Filters	Summary
<input type="checkbox"/> Use access path filter(Which requires that the plan_table have the corresponding records)				
Select the access path criteria for the static SQL statements that you want to list				
<input checked="" type="checkbox"/> Sorts	<input checked="" type="checkbox"/> Non-matching index...	<input checked="" type="checkbox"/> Merge scan join	<input type="button" value="Select all"/> <input type="button" value="Clear all"/>	
<input checked="" type="checkbox"/> Table space scans	<input checked="" type="checkbox"/> Matching index acc...	<input checked="" type="checkbox"/> Nested loop join		
<input checked="" type="checkbox"/> List prefetch	<input checked="" type="checkbox"/> Non-index only acc...	<input checked="" type="checkbox"/> Hybrid join		
<input checked="" type="checkbox"/> Sequential prefetch	<input checked="" type="checkbox"/> Multiple index access	<input checked="" type="checkbox"/> Full Outer Join		
<input checked="" type="checkbox"/> CP parallelism	<input checked="" type="checkbox"/> In-list index access	<input checked="" type="checkbox"/> Left Outer Join		
<input checked="" type="checkbox"/> I/O parallelism	<input checked="" type="checkbox"/> One-fetch access	<input checked="" type="checkbox"/> Star Join		
<input checked="" type="checkbox"/> Sysplex query paral...	<input checked="" type="checkbox"/> Index only access	<input checked="" type="checkbox"/> Inner Join		
<input checked="" type="checkbox"/> Parallelism determined at run time				

Select qualified static SQL

List Static SQL Statements-UTEC780A

Statement View Help



List of static SQL statements

Stmt	Queryno	Pkg/DBRM	Cost milliseconds	Cost service units	
679	679	DSN8HC3	1	1	DECLARE CURDEPTLOC CURSOR FOR SELECT LOCATION FROM
686	686	DSN8HC3	1	1	DECLARE DEPTLOC CURSOR FOR SELECT LOCATION FROM VHC
692	692	DSN8HC3	3	8	DECLARE LOCS CURSOR FOR SELECT DISTINCT LOCATION FRO
700	700	DSN8HC3	1	2	DECLARE SUBDEPTS CURSOR FOR SELECT DEPTNO FROM VHDI
707	707	DSN8HC3	2	5	DECLARE DEPT1 CURSOR FOR SELECT DEPTNO , DEPTNAME , M
721	721	DSN8HC3	3	6	DECLARE ALLDEPT1 CURSOR FOR SELECT DEPTNO , DEPTNAME
735	735	DSN8HC3	3	6	DECLARE ALLDEPT2 CURSOR FOR SELECT DEPTNO , DEPTNAME

List static SQL options

The screenshot shows a window titled "List Static SQL Statements-UTEC780A" with a menu bar (Statement, View, Help) and a toolbar. The toolbar contains five icons: a graph, a document with "SQL", a clipboard (circled in red), a filter icon, and a question mark. Below the toolbar is a table of SQL statements. Red arrows point from the labels below to the corresponding icons and table columns.

Statement	View	Help
679		
686		
692	692	DSN8HC3
700	700	DSN8HC3
707	707	DSN8HC3
721	721	DSN8HC3
735	735	DSN8HC3

SQL text

Back to filters

Graph SQL SQL report

SQL report

- **Report (available for any graphed query)**

- Shows a large filter list
- Most cases, click “generate report”
- Shows SQL report in browser

- **Summaries**

- Query summary
- Table summary (only section graphically shown here)
 - Table statistics
 - Qualified row estimates (is optimizer accurately estimating filtering?)
- Predicate summary
 - Predicate filter factors
 - Stage 1 or Stage 2

SQL Report

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

Specify options to include in the report

Table

- Columns
- Table space
- Multicolumn statistics
- Indexes
- Table partitions
- Multicolumn distribution

Index

- Index keys
- Table

Column

- Column distribution

Operator node

- Stage1 predicates
- Matching predicates
- Join predicates
- Stage2 predicates
- Screening predicates
- Afterjoin predicates

Sort

- Sort keys

Parallel partition

- Parallel tasks

Parallel tasks

- Parallel task multikeys

Include explanation of attributes [Select report view](#)

Include summary of tables

Include summary of predicates

Select from following query block

- Query

Generate report

Report options

Select All | Clear All | Generate Report | Help

Query summary

(DSN_STATEMNT_TABLE)

Database Alias: UTEC780A Explain Time : 2005-07-13 14:12:02.187803

DB2 Platform : Z/OS DB2 Version: v8

SQL Statement DECLARE DEPTLOC CURSOR FOR SELECT LOCATION FROM VHDEPT WHERE
: DEPTNO = : H

Attribute	Value	Explanation
Type	SELECT	Query type (SELECT, INSERT, UPDATE, DELETE, SELUPD, DELCUR, UPDCUR)
CPU Cost (ms)	1	Estimated CPU cost (in milliseconds)
CPU Cost (su)	1	Estimated CPU cost (in service units)
Cost Category	A	Cost estimation category (A=statistics; B=default)
Reason		Reason when the cost estimation category is B (HOST VARIABLES, TABLE CARDINALITY, UDF, TRIGGERS, REFERENTIAL CONSTRAINTS)

Table summary

Table Summary

Table Creator	Table Name	Correlation Name	Rows	Pages	Qualified Rows
DSN8810	DEPT		14	1	13.44

Report options



Estimated rows



Predicate summary

Predicate Summary								
Predicate Number	Left-hand Side	Left-hand Side Column Cardinality	Predicate Type	Right-hand Side	Right-hand Side Column Cardinality	Filter Factor	Is Sargable	Is Join Predicate
1	DEPTNO	14	EQUAL	VALUE		0.0714		N



Left column



Right side

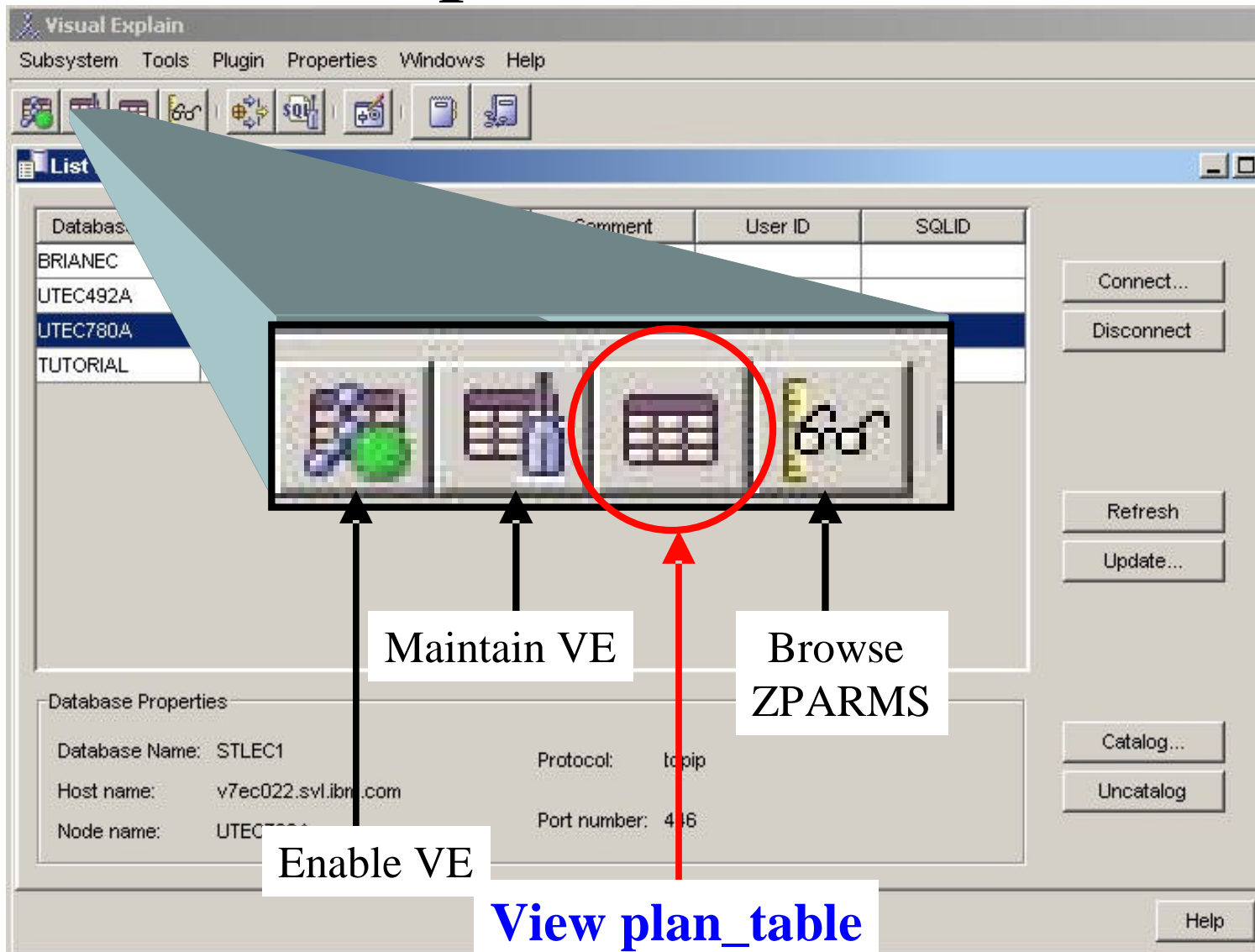


Filter factor ...

View external explain tables

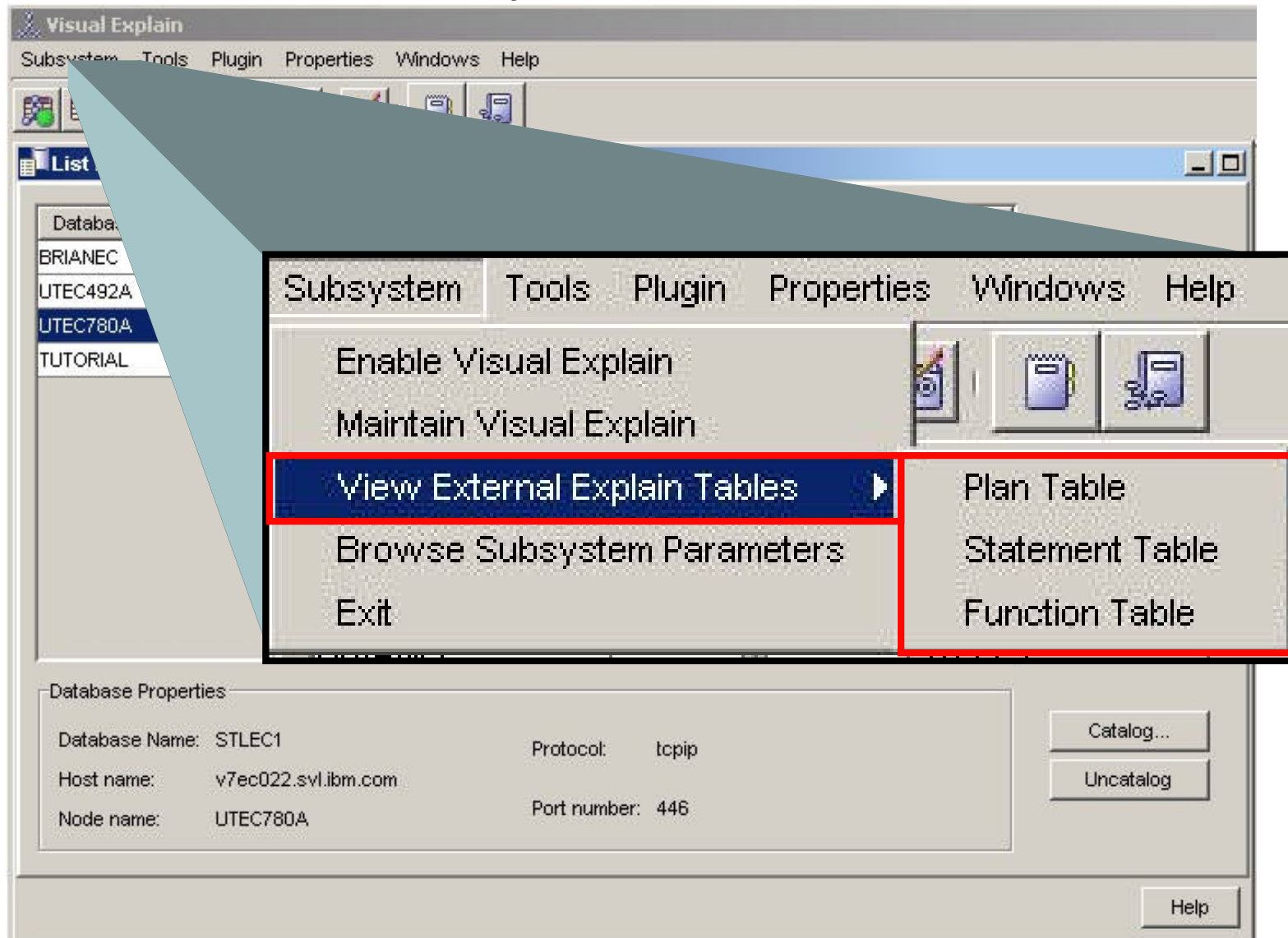
- **Used to find / graph already explained SQL**
 - Alternative to SQL for current static access paths
 - Useful to graph historical static access path
 - Can also graph explain for dynamic SQL
 - VE cannot correlated explain with dynamic SQL here
- **Walk through plan_table example**

View plan_table - icon



View external explain tables

Subsystem Menu



PLAN_TABLE filter criteria

Plan Table Filtering-UTEC780A

Table qualifier: ADMF001

Name	Column Name	Operator	Value(for IN,use ...	Logical Operator
Statement number	queryno	=		AND
Collection ID	collid	=		AND
Plan name	applname	=		AND
Program name	progrname	LIKE	DSN8%	AND
Version	version	=		AND
Timestamp	timestamp	=		AND

Timestamp format: yyyyymmddhhmmssnn

OK Clear Cancel Help

Qualified PLAN_TABLE rows

Statement View

All the rows are displayed. The number of rows is 63.

QUERY...	QBLOCKNO	APPLNAME	PROGNAME	PLANNO	METHOD	CREATOR	TNA...	TAB...	ACCESSTYPE	MATCHCOL
707	1		DSN8HC3	1	3			0		0
707	2		DSN8HC3	1	0	DSN8810	DEPT	1		1
707	2		DSN8HC3	2	1	DSN8810	EMP	2		1
707	3		DSN8HC3	1	0	DSN8810	DEPT	3		1
721	1		DSN8HC3	1	3			0		0
721	2		DSN8HC3	1	0	DSN8810	DEPT	1		1
721	2		DSN8HC3	2	1	DSN8810	EMP	2		1
721	3		DSN8HC3	1	0	DSN8810	DEPT	3		1
735	1		DSN8HC3	1	3			0		0
735	2		DSN8HC3	1	0	DSN8810	DEPT	1		0
735	2		DSN8HC3	2	1	DSN8810	EMP	2		1
735	3		DSN8HC3	1	0	DSN8810	DEPT	3		1
749	1		DSN8HC3	1	3			0		0
749	2		DSN8HC3	1	0	DSN8810	DEPT	1		1
749	2		DSN8HC3	2	1	DSN8810	EMP	2		1
749	3		DSN8HC3	1	0	DSN8810	DEPT	3		1
763	1		DSN8HC3	1	0	DSN8810	DEPT	1		0
763	1		DSN8HC3	2	1	DSN8810	EMP	2		1

External explain options

The screenshot shows the 'Show Plan Table-UTEC780A' window. A callout box highlights a toolbar with five icons: a network diagram (Graph), a document with 'SQL' (SQL text), a floppy disk (Save), a printer (Print rows), and a question mark (Help). Red arrows point from these icons to their respective labels below the window. The background shows a table with columns: QUERY..., CREATOR, TNA..., TAB..., ACESSTYPE, and MATCHCOL. The table contains rows of query plan data.

QUERY...	CREATOR	TNA...	TAB...	ACESSTYPE	MATCHCOL		
707					0		
707					1		
707					1		
707					1		
721					0		
721					1		
721					1		
721	DSN8HC3	2	1	DSN8810	EMP	2	1
721	DSN8HC3	1	0	DSN8810	DEPT	3	1
735	DSN8HC3	1	3				0
735	DSN8HC3	1	0	DSN8810	DEPT	1	0
735	DSN8HC3	2	1	DSN8810	EMP	2	1
735	DSN8HC3	1	0	DSN8810	DEPT	3	1
749	DSN8HC3	1	3				0
749	DSN8HC3	1	0	DSN8810			1
749	DSN8HC3	2	1	DSN8810			1
749	DSN8HC3	3	0	DSN8810			1
763	DSN8HC3	1	0	DSN8810			0
763	DSN8HC3	4	1	DSN8810			4

Graph **SQL text** **Save** **Print rows**

Sort / display options

The screenshot shows the 'Show Plan Table-UTEC780A' window. The table below is a simplified representation of the data shown in the screenshot.

QUERY...	QBLOC...	ACCESSSTYPE	MATCHCOL
707	1		0
707	2		1
707	2		1
707	3		1
721	1		0
721	2		1
721	2		1
721	3		1
735	1		0
735	2		0
735	2		1
735	3		1
749	1		0
749	2		1
749	2		1
749	3		1
763	1		0
763	1		1

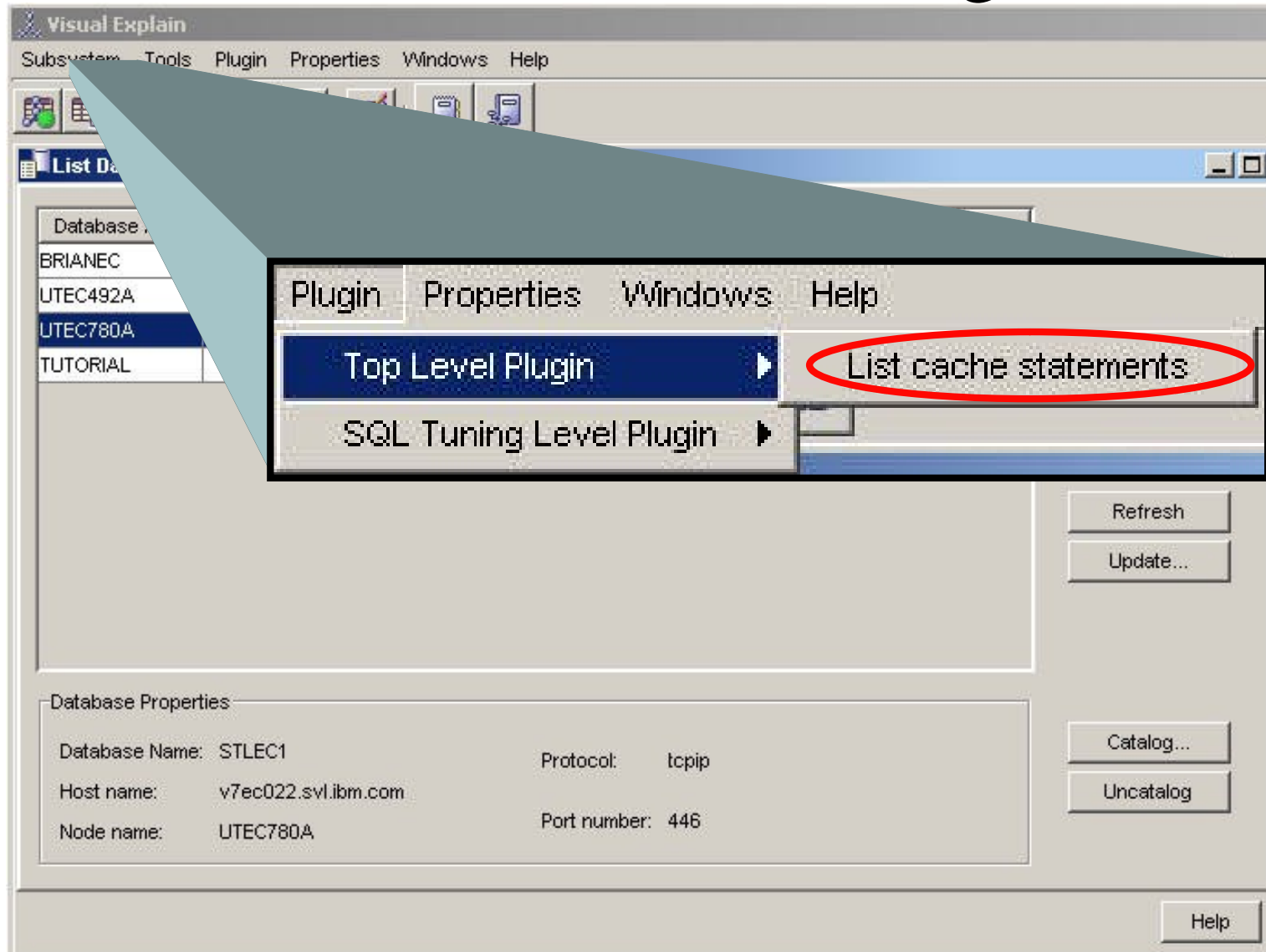
The context menu overlaid on the table contains the following options:

- View
- Sort
- Select columns ...

List cache statements

- **Requires DB2 for z/OS V8 in New Function Mode**
- **Look at currently cached SQL**
 - Requires cache enabled
 - IFCID 316, 317, 318 provide runtime statistics
 - Very powerful search / sort of cached statements
- **Walk through an example**
 - Display all cached statements sorted by accumulated CPU time descending
 - Can explain statement, graph access path, generate query report, etc.

List cache statements - Plugin menu



List cache statements filter / sort criteria

71

Statement Cache Filter: _____ Table qualifier: ADMFO01

Name	Oper...	Value(For ...	Sort
Accumulated elapsed time	=		No Sort
Accumulated CPU time	=		1st Desc
Synchronous I/O Wait Time	=		No Sort
Lock and latch req wait ti...	=		No Sort
synch execution unit swit...	=		No Sort
Global locks wait time	=		No Sort
Wait time caused by othe...	=		No Sort
Wait time cause by other...	=		No Sort
Times RID exceeds limit	=		No Sort
Rid Storage unavailabile	=		No Sort

Field Explanation:
DSN_STATEMENT_CACHE_TABLE.S
Number of tablespace scans : Number of tablespace scans performed for statement

Ok Clear Cancel

Cached statement output

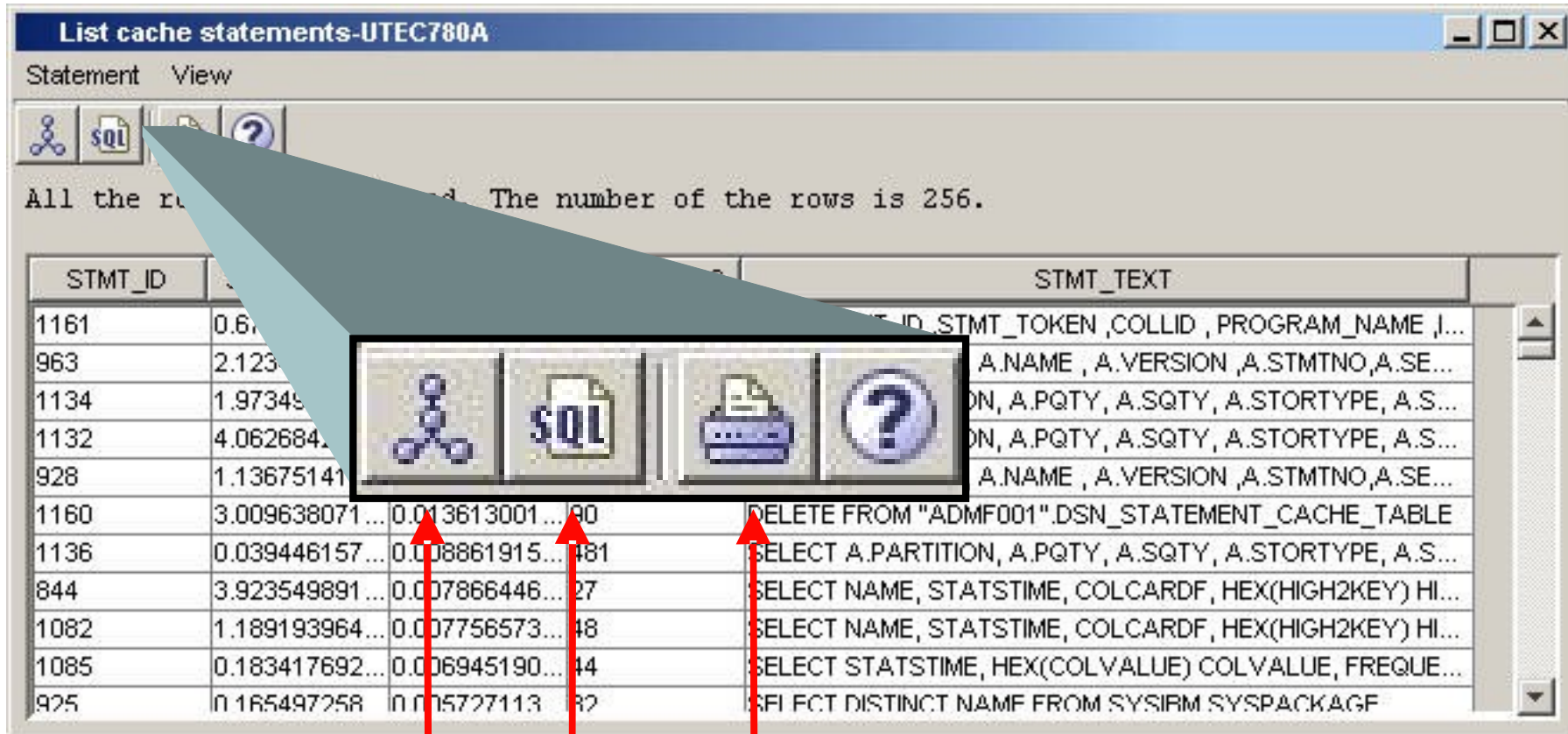
List cache statements-UTEC780A

Statement View

All the rows are displayed. The number of the rows is 256.

STMT_ID	STAT_ELAP	STAT_CPU	STAT_GPAG	STMT_TEXT
1161	0.673790589...	0.046385933...	662	select STMT_ID ,STMT_TOKEN ,COLLID , PROGRAM_NAME ,J...
963	2.123405695...	0.038180169...	150	SELECT A.COLLID , A.NAME , A.VERSION ,A.STMTNO,A.SE...
1134	1.973498583...	0.021695931...	481	SELECT A.PARTITION, A.PQTY, A.SQTY, A.STORTYPE, A.S...
1132	4.062684298...	0.020172287...	481	SELECT A.PARTITION, A.PQTY, A.SQTY, A.STORTYPE, A.S...
928	1.136751414...	0.013802249...	61	SELECT A.COLLID , A.NAME , A.VERSION ,A.STMTNO,A.SE...
1160	3.009638071...	0.013613001...	90	DELETE FROM "ADMFO01".DSN_STATEMENT_CACHE_TABLE
1136	0.039446157...	0.008861915...	481	SELECT A.PARTITION, A.PQTY, A.SQTY, A.STORTYPE, A.S...
844	3.923549891...	0.007866446...	27	SELECT NAME, STATSTIME, COLCARDF, HEX(HIGH2KEY) HI...
1082	1.189193964...	0.007756573...	48	SELECT NAME, STATSTIME, COLCARDF, HEX(HIGH2KEY) HI...
1085	0.183417692...	0.006945190...	44	SELECT STATSTIME, HEX(COLVALUE) COLVALUE, FREQUE...
925	0.165497258	0.005727113	32	SFI FCT DISTINCT NAME FROM SYSIRM SYSPACKAGE

Cached statement output



Graph

**SQL
text**

Print

Cached statement output

List cache statements-UTEC780A

Statement

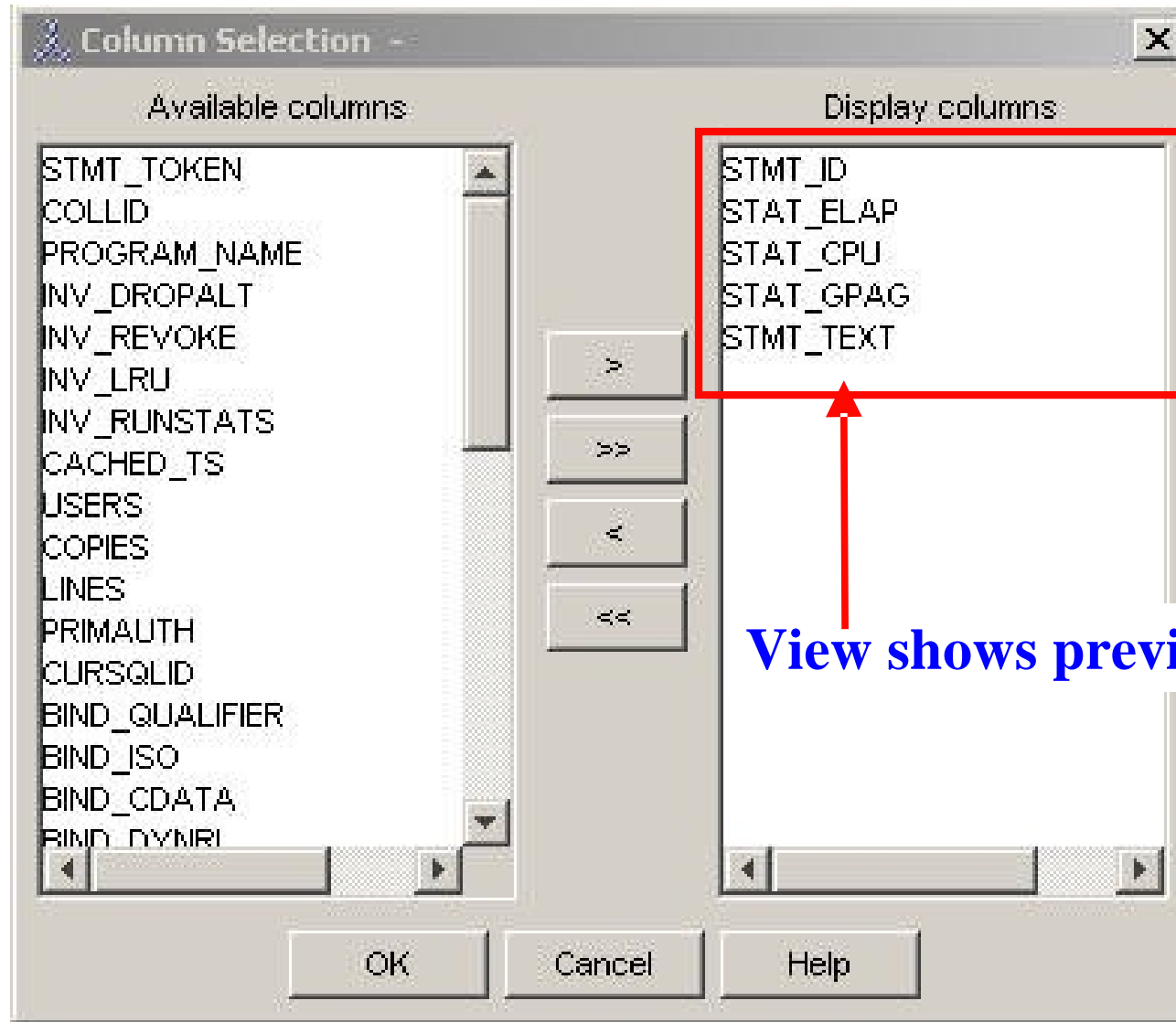
All the rows of the rows is 256.

STMT_ID	STA	STMT_TEXT
1161	0.67379	_TOKEN ,COLLID , PROGRAM_NAME ,J...
963	2.123405	NAME , A.VERSION ,A.STMTNO,A.SE...
1134	1.9734985	A.PQTY, A.SQTY, A.STORTYPE, A.S...
1132	4.062684296	A.PQTY, A.SQTY, A.STORTYPE, A.S...
928	1.136751414	NAME , A.VERSION ,A.STMTNO,A.SE...
1160	3.009638071 ...	DELETE FROM "ADMF001".DSN_STATEMENT_CACHE_TABLE
1136	0.039446157 ...	SELECT A.PARTITION, A.PQTY, A.SQTY, A.STORTYPE, A.S...
844	3.923549891 ...	SELECT NAME, STATSTIME, COLCARDF, HEX(HIGH2KEY) HI...
1082	1.189193964 ...	SELECT NAME, STATSTIME, COLCARDF, HEX(HIGH2KEY) HI...
1085	0.183417692 ...	SELECT STATSTIME, HEX(COLVALUE) COLVALUE, FREQUE...
925	0.165497258	SEI FCT DISTINCT NAME FROM SYSIRM SYSPACKAGE

View

Select columns...

Statement cache display columns



Statistics Advisor (SA)

- **Statistics Advisor requires a connection with DB2 for z/OS V8**
 - Works in compatibility and new function mode.
- **Input SQL statement**
- **Click on Analyze**
- **Obtain targeted RUNSTATS suggestions**
 - SA analyzes predicates in SQL statement
 - Identifies
 - Default
 - Conflicting
 - Probably correlation / skew
 - Configurable

Tune SQL actions zoom

SQL Text | Access Plan | Execution Result | Report | Statistics Advisor

QueryNo: 2 SQLID: ADMF001

Command history category: TPCD30G

Name	SQL Statement	Comment
Q1	SELECT O_ORDE...	This query was saved at Jun 27, 2005 11:20:03 PM
Q4754	SELECT L_DISCO...	This query was saved at Jun 28, 2005 9:24:30 AM
Q4756	SELECT L_DISCO...	This query was saved at Jun 28, 2005 10:19:33 AM
Q4757	SELECT L_DISCO...	This query was saved at Jun 28, 2005 3:18:36 PM

Current degree: System default

Current refresh age: 0

Current maintained table types: None

Table qualifier for EXPLAIN stored procedure:

Input an SQL statement or select one from command history:

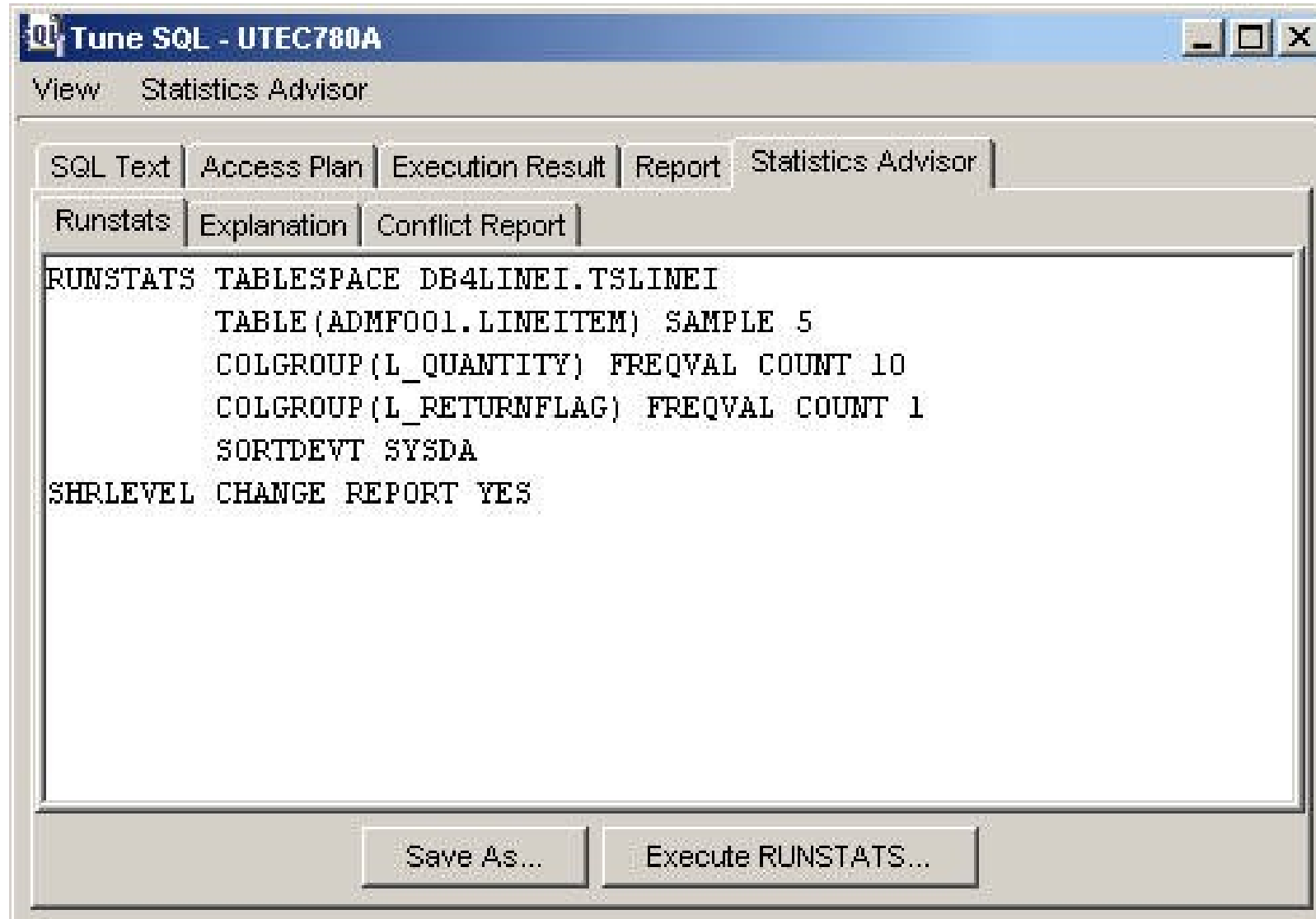
Messages for Execution and Explain

Explain with stored procedure Explain Execute

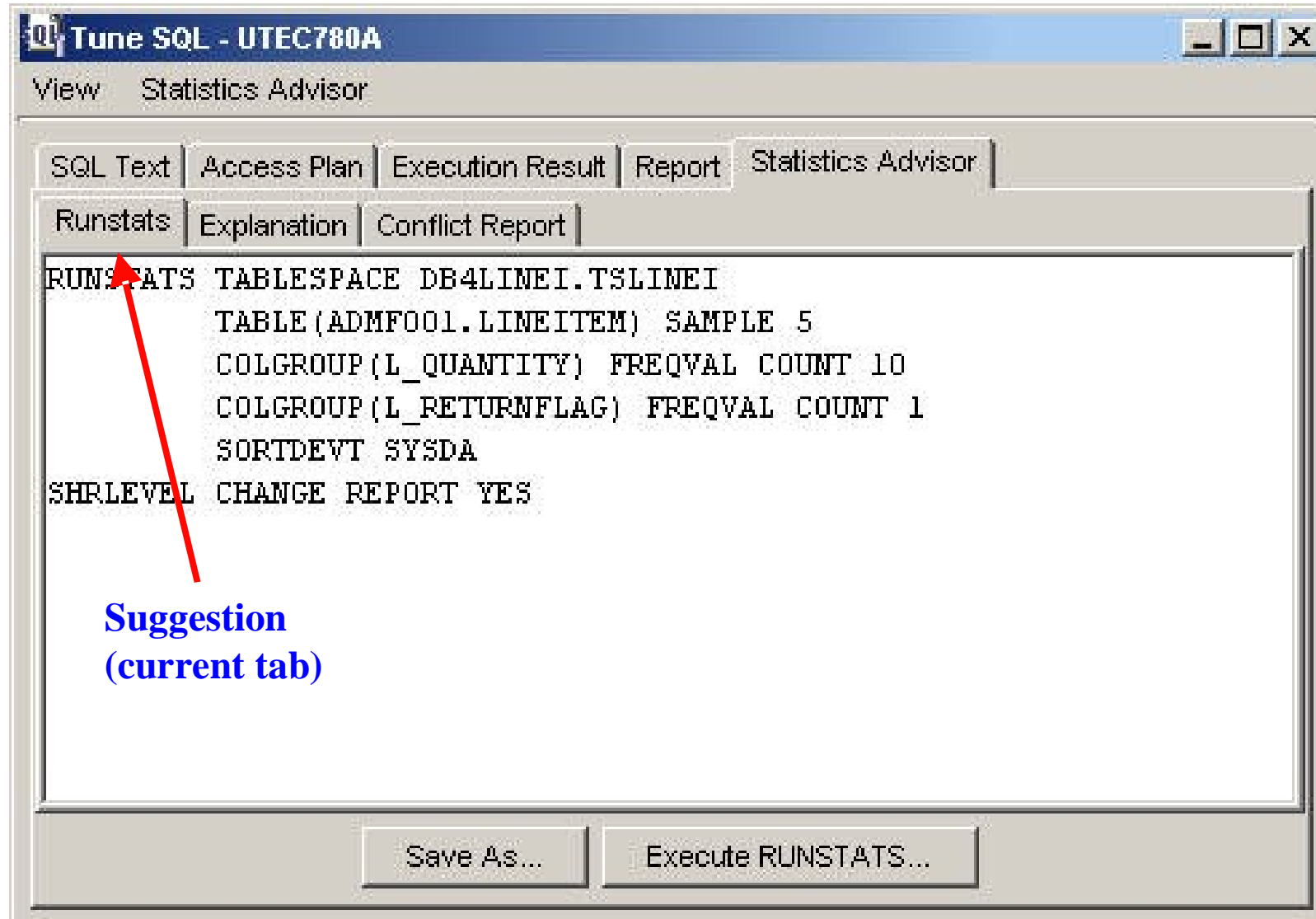
Analyze Help

Automatically save SQL in current command history

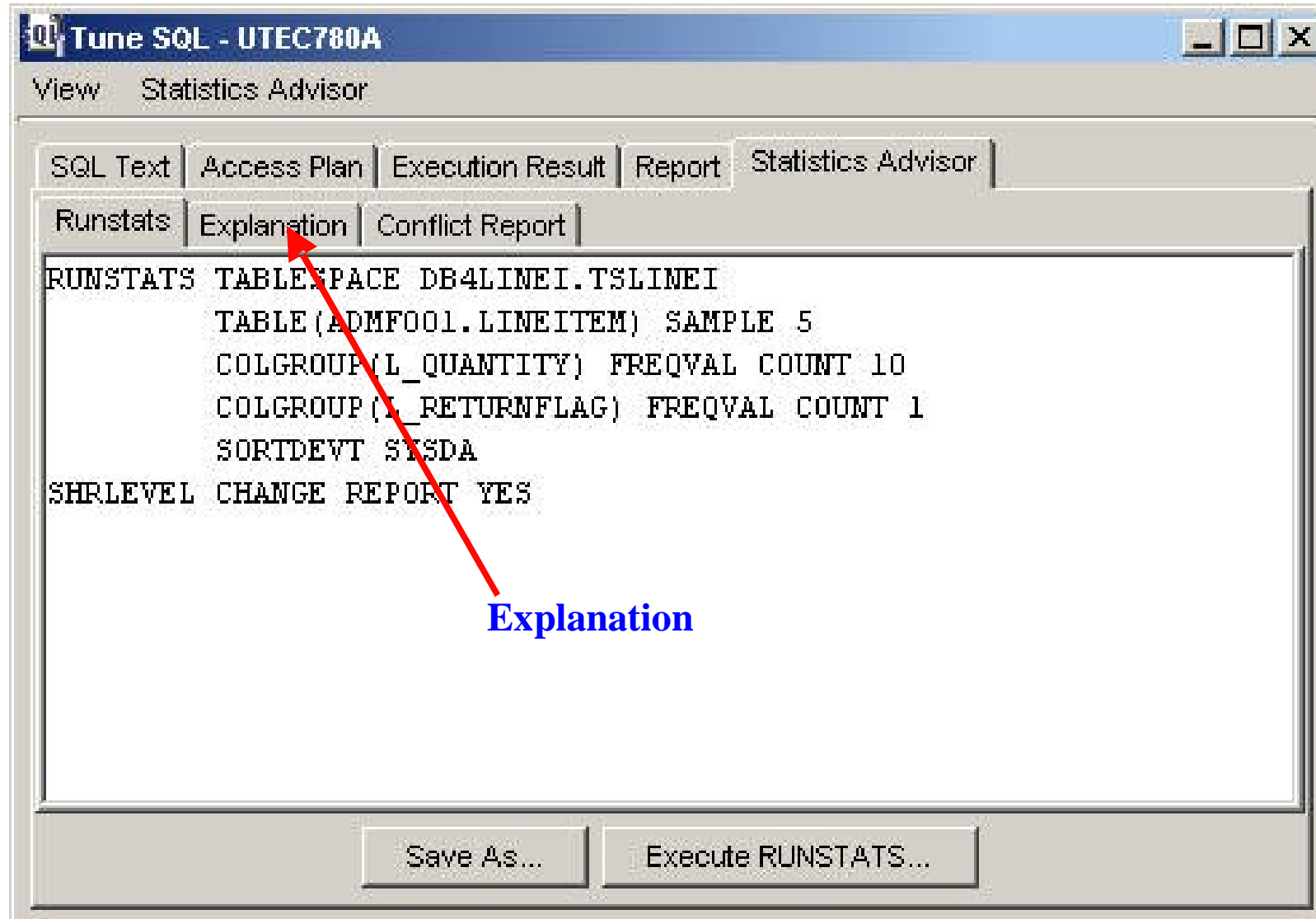
SA Suggestions



Statistics Advisor (SA)



Statistics Advisor (SA)



SA Explanation

The screenshot shows the 'SQL Tune SQL - UTEC780A' window with the 'Statistics Advisor' tab selected. The 'Explanation' sub-tab is active, displaying the following information:

```
Interesting Columns =>

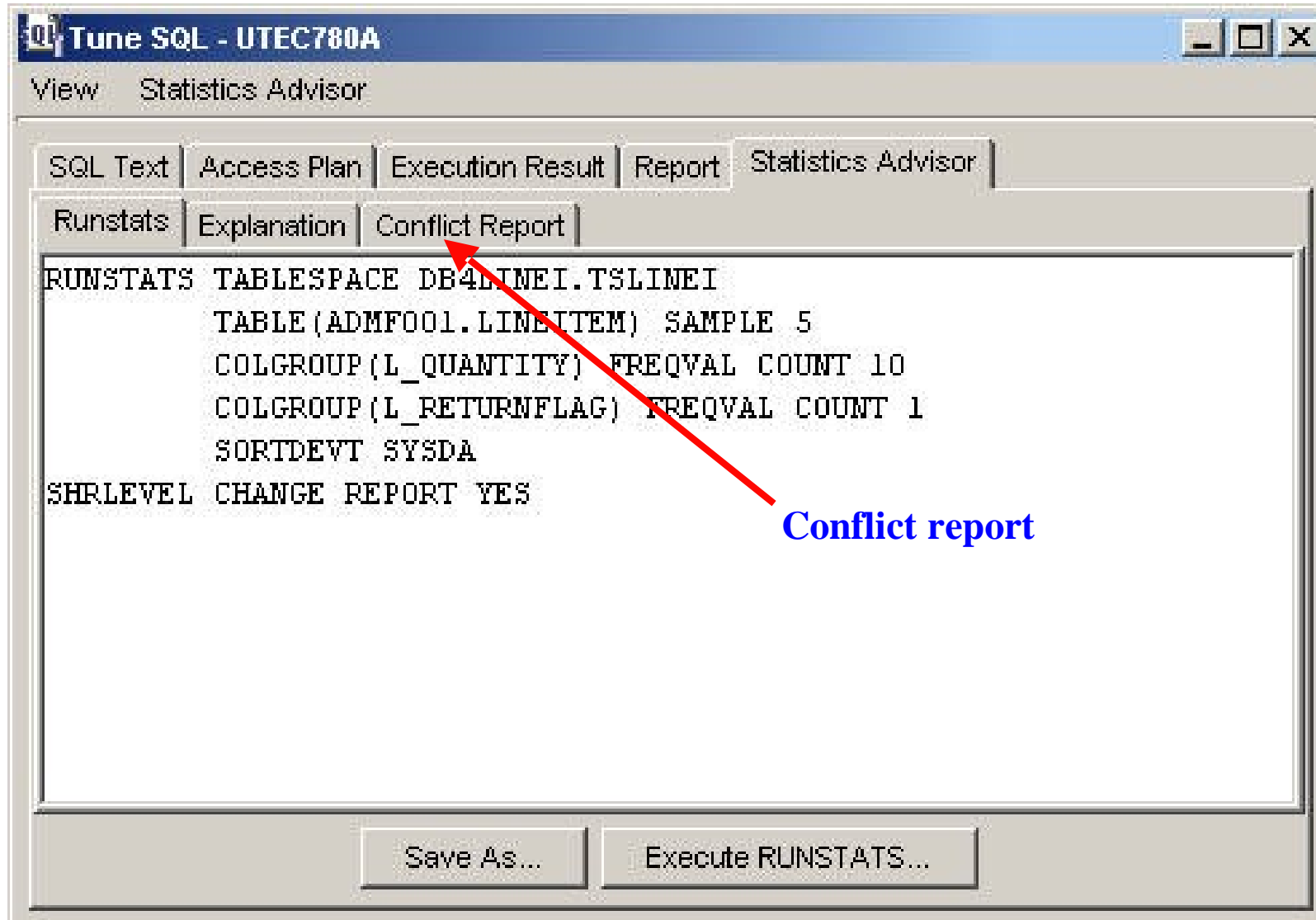
L_QUANTITY      Local
  Cardinality:           50.0
  Collection Time:       2005-06-28 08:30:10.232572
  Uniform Statistics Status: OK
  Non-uniform Statistics Status: missing
  Possibly Skewed:       YES

L_RETURNFLAG     Local
  Cardinality:           3.0
  Collection Time:       2005-06-28 08:30:10.232572
  Uniform Statistics Status: OK
  Non-uniform Statistics Status: missing
  Possibly Skewed:       YES

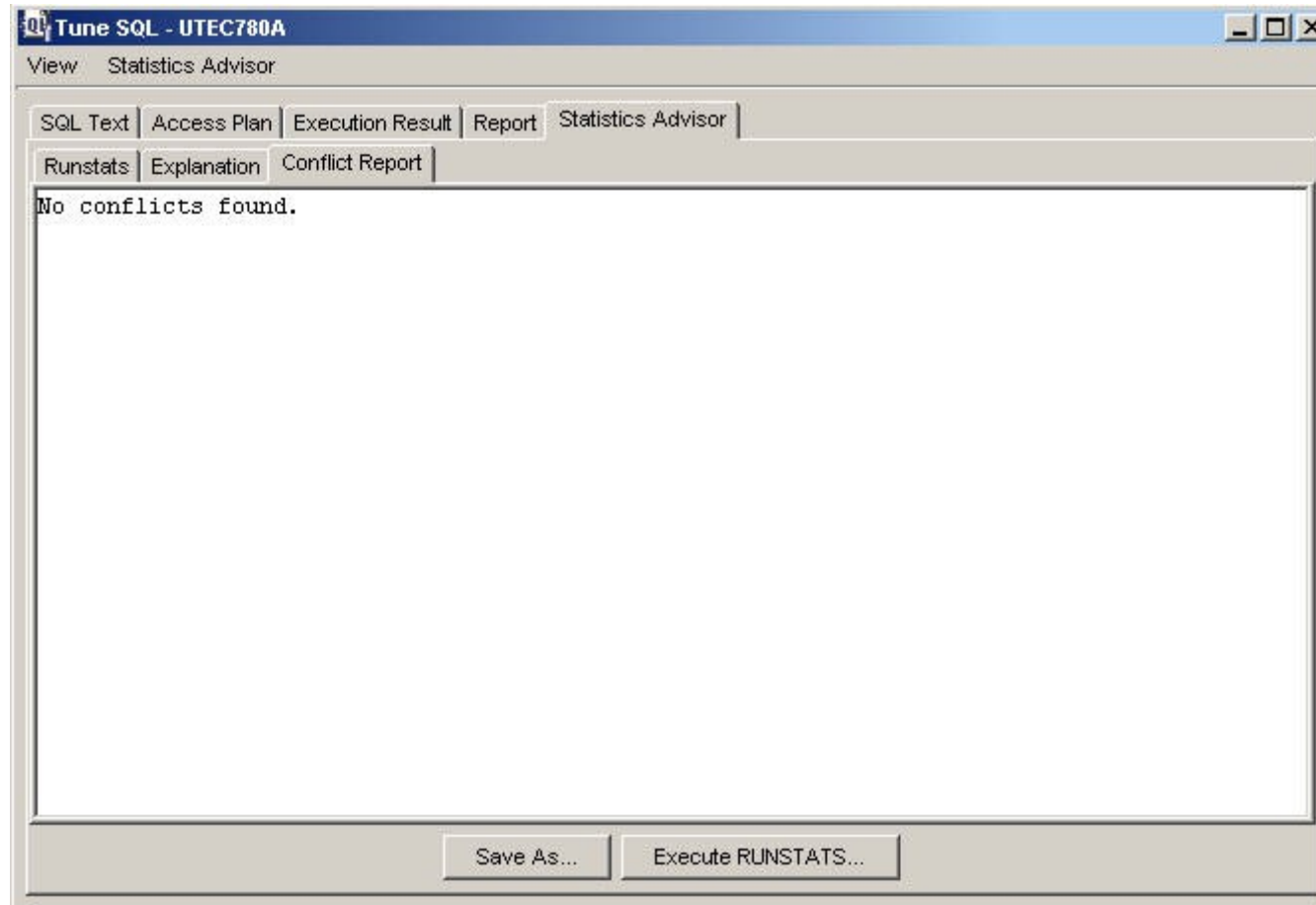
L_ORDERKEY       Local
  Cardinality:           4.5E7
  Collection Time:       2005-06-28 08:30:10.232572
  Uniform Statistics Status: OK
  Non-uniform Statistics Status: OK
  Possibly Skewed:       YES
```

At the bottom of the window, there are two buttons: 'Save As...' and 'Execute RUNSTATS...'. The footer of the window contains the text: '© IBM Corporation 2005 IBM DB2 Information Management Technical Conference'.

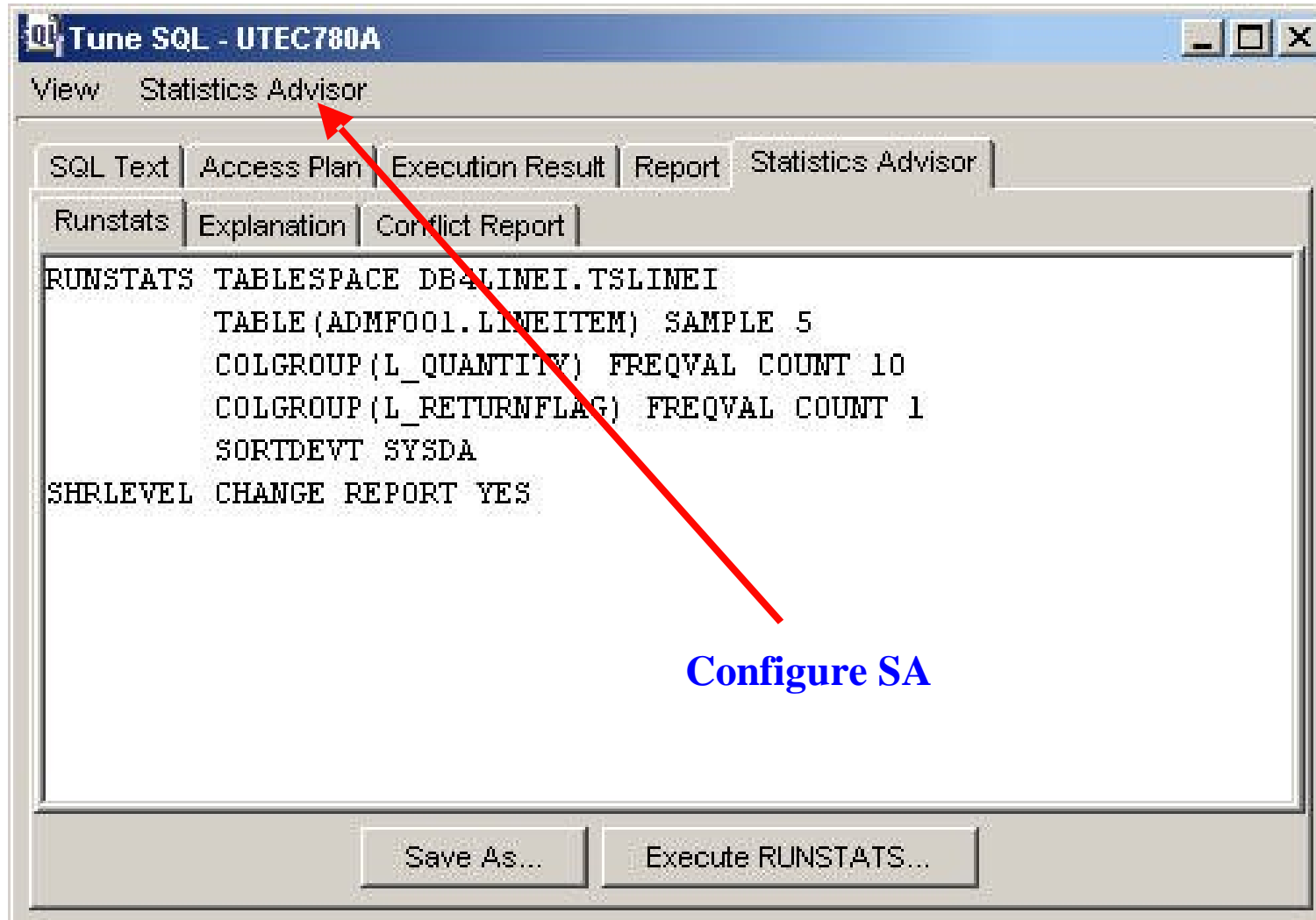
Statistics Advisor (SA)



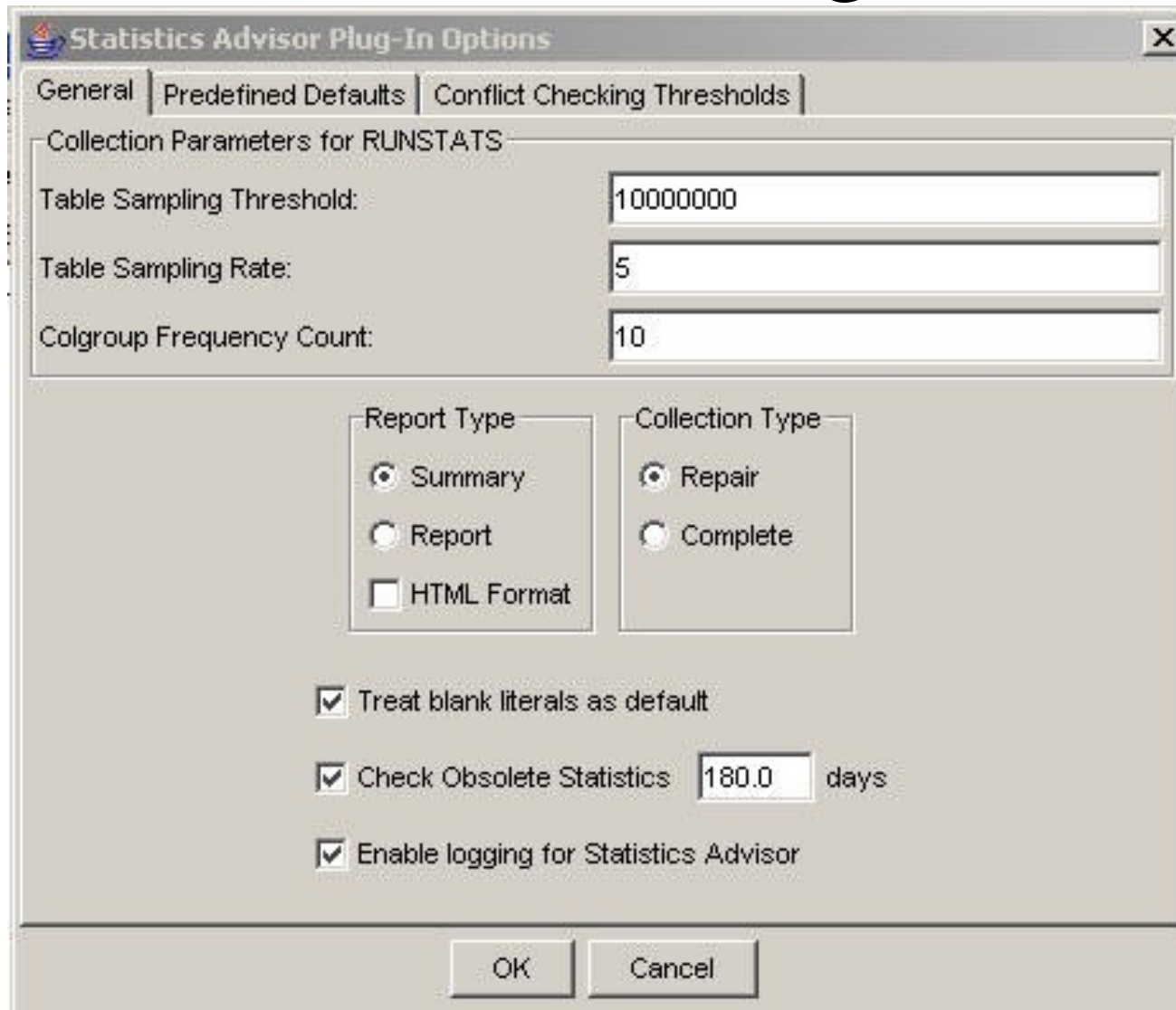
SA Conflicts



Statistics Advisor (SA)



SA General Configuration

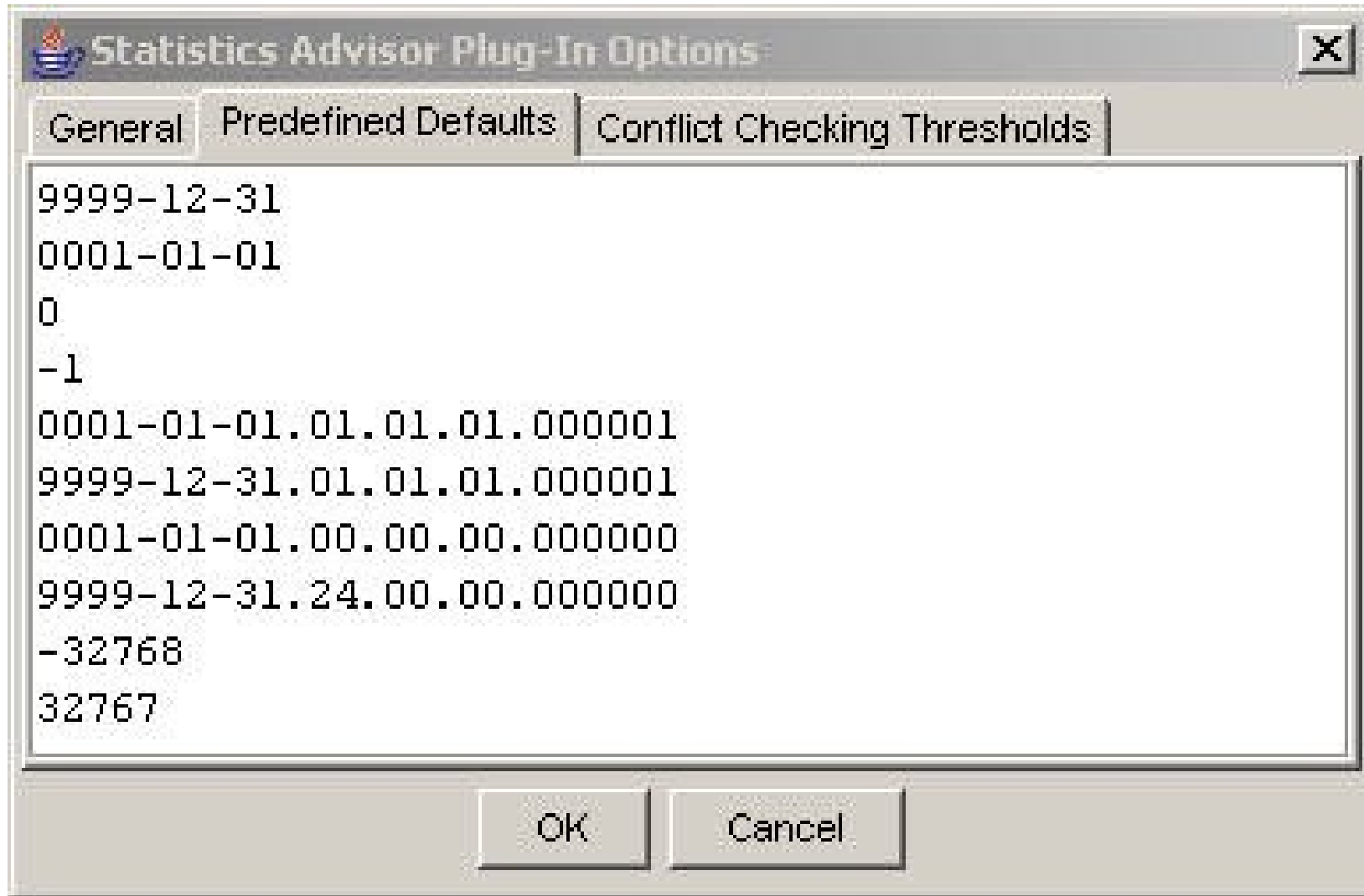


The screenshot shows the "Statistics Advisor Plug-In Options" dialog box with the "General" tab selected. The dialog has three tabs: "General", "Predefined Defaults", and "Conflict Checking Thresholds". The "General" tab contains the following settings:

- Collection Parameters for RUNSTATS:**
 - Table Sampling Threshold: 10000000
 - Table Sampling Rate: 5
 - Colgroup Frequency Count: 10
- Report Type:**
 - Summary
 - Report
 - HTML Format
- Collection Type:**
 - Repair
 - Complete
- Treat blank literals as default
- Check Obsolete Statistics: 180.0 days
- Enable logging for Statistics Advisor

At the bottom of the dialog are "OK" and "Cancel" buttons.

SA Configure typical defaults



Configure conflict thresholds

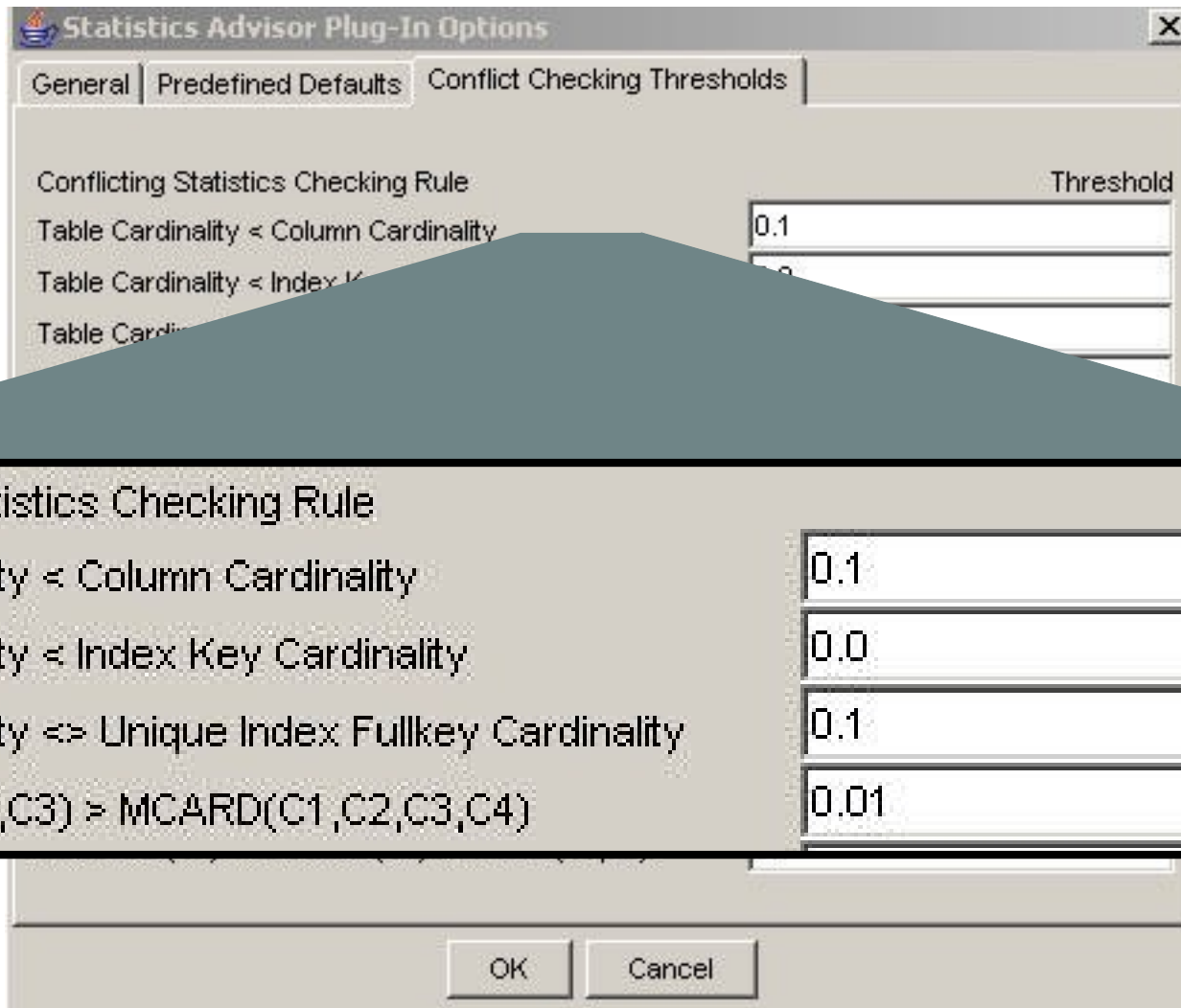
Statistics Advisor Plug-In Options

General | Predefined Defaults | Conflict Checking Thresholds

Conflicting Statistics Checking Rule	Threshold
Table Cardinality < Column Cardinality	0.1
Table Cardinality < Index Key Cardinality	0.0
Table Cardinality <=> Unique Index Fullkey Cardinality	0.1
MCARD(C1,C2,C3) > MCARD(C1,C2,C3,C4)	0.01
MCARD(C1,C2,C3) > Table Cardinality	0.1
Index Fullkey Cardinality < Index Firstkey Cardinality	0.0
1-col Index Firstkey Cardinality <=> Fullkey Cardinality	0.0
Sum of Frequencies > 1	0.01
Frequency > 1 or Frequency < 0	0.01
Different Index Fullkey cardinalities for the same colgroup	0.1
MCARD(C1,C2,C3) <=> Index Fullkey Cardinality	0.01
MCARD(C1,C2,C3) < Number of Frequency Records	0.01
COLCARD(C1) * COLCARD(C2) < MCARD(C1,C2)	0.1

OK Cancel

Conflict threshold zoom

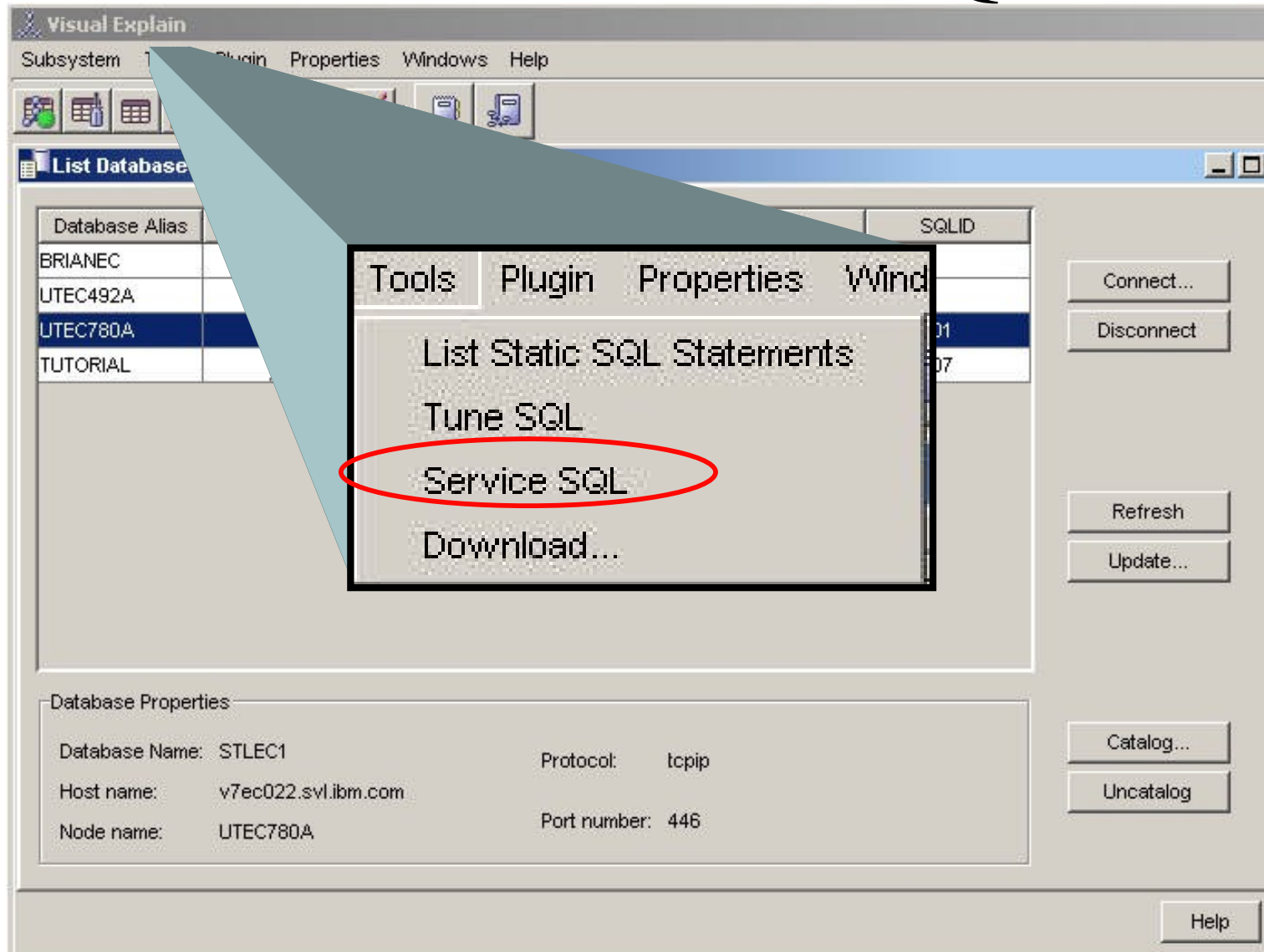


Service SQL

- **Easy to use tool to provide service with problem recreation information**

- Uses SQL statement or PLAN_TABLE as input
- SQL statement (if SQL used as input)
- DDL
- Catalog statistics
- Zparms (if DSNWZP stored procedure available)
- Environment specific information
 - CPU speed
 - Bufferpool, ridpool, sortpool sizes
 - Number of processors

Launch Service SQL



Service SQL main screen

Service SQL function collects the DDL and statistics information for given table and view .To get ddl creation and update catalog statistics statements , add the table or view you want to work on and select from the options below

Table / View / Materialized Query Table Creator	Table / View / Materialized Query Table Name

Buttons: Add..., Insert from Plan_Table..., Input SQL Statement..., Remove All

Options

Convert To Version: No Conversion V8 New Function Mode V8 Compatibility Mode V7 V6

DDL Only Stats Only Parallelism Edited

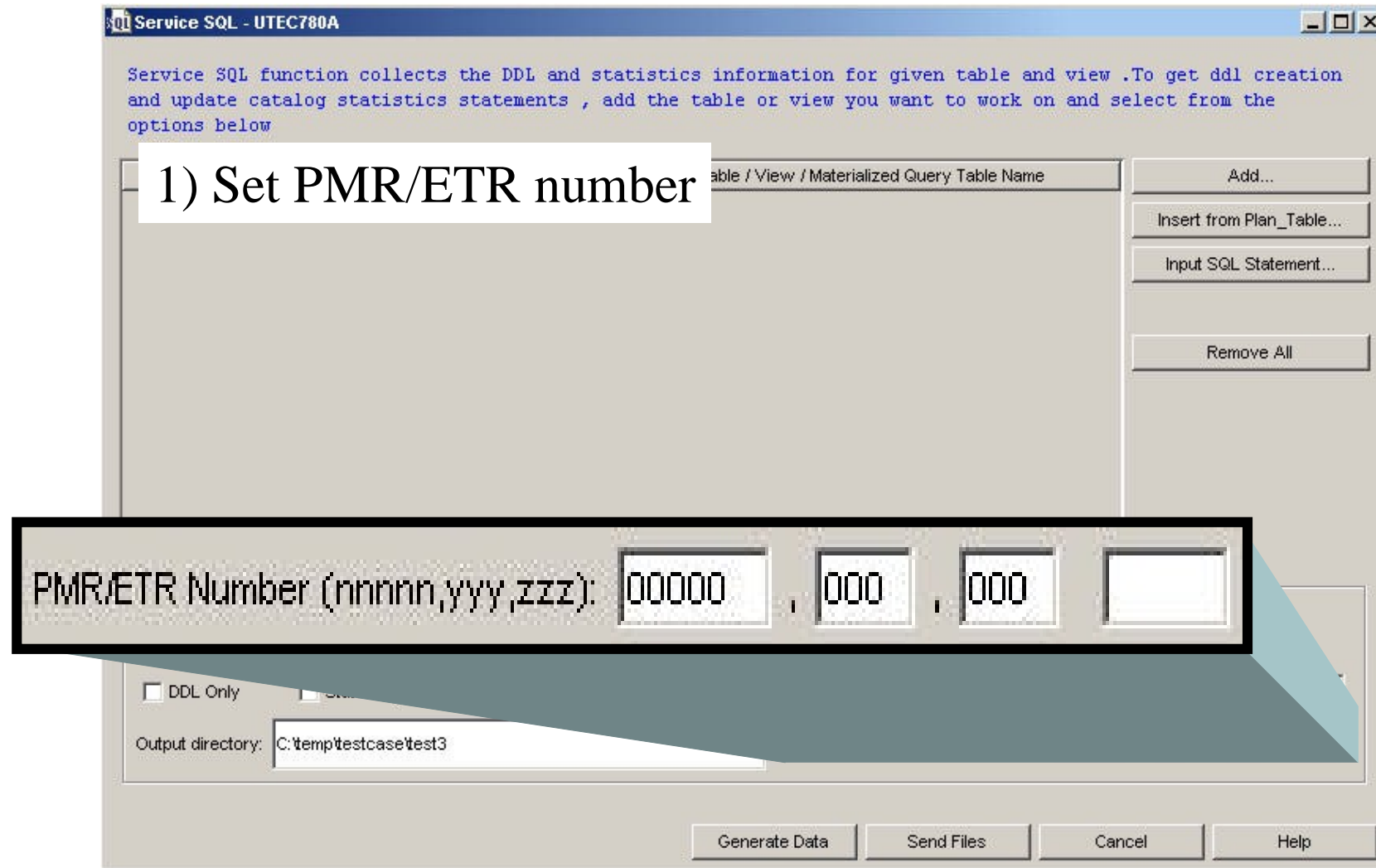
SQLID: ADMF001

Output directory: C:\temp\testcase\test3

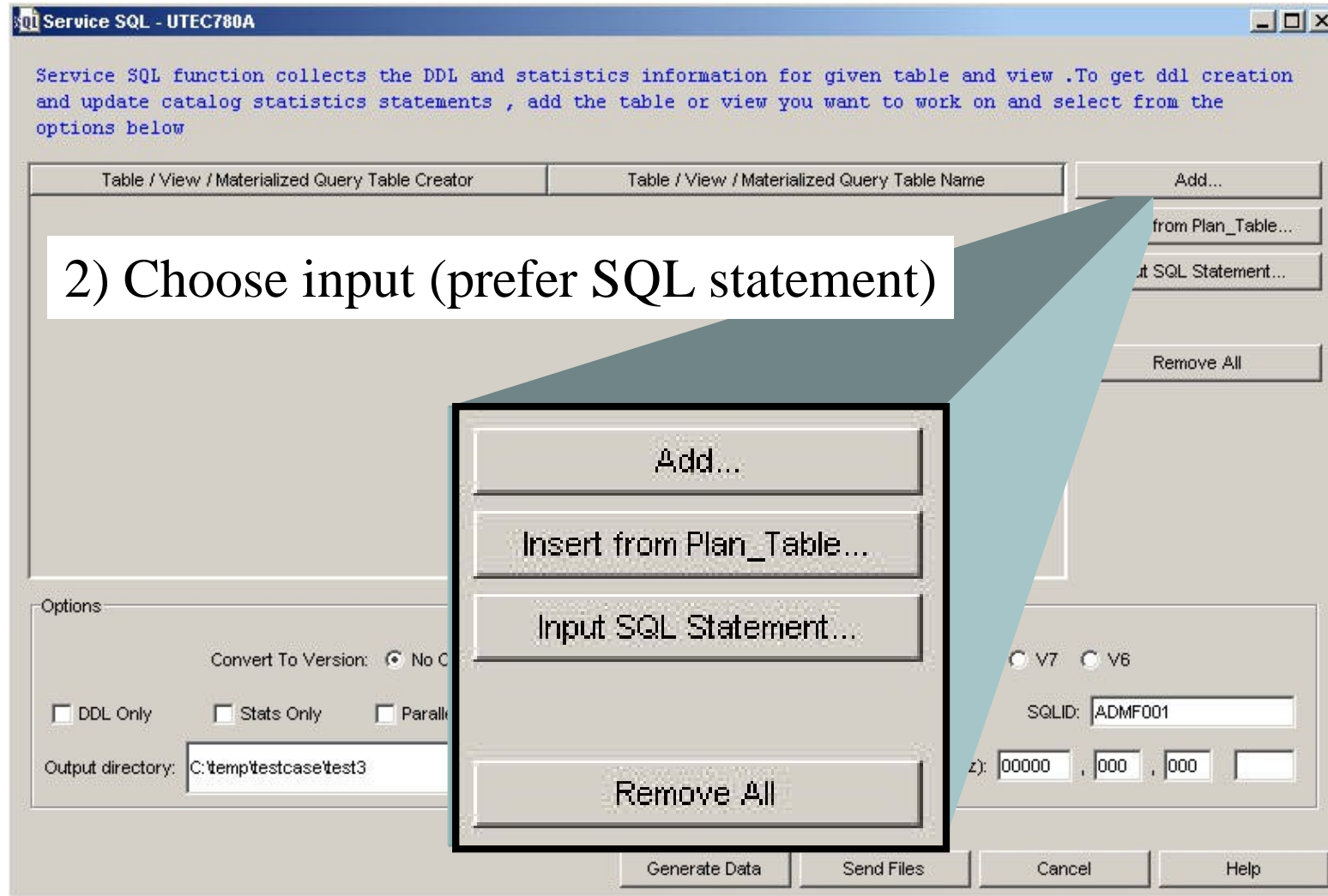
PMR/ETR Number (nnnnn,yyy,zzz): 00000 , 000 , 000

Buttons: Generate Data, Send Files, Cancel, Help

Set pmr/etr number



Choose input



Specify documentation

Service SQL - UTEC780A

Service SQL function collects the DDL and statistics information for given table and view .To get ddl creation and update catalog statistics statements , add the table or view you want to work on and select from the options below

3) Change settings (at direction of L2)

DDL Only
 Stats Only
 Parallelism
 Edited

Output directory: C:\temp\testcase\test3

Options

Conversion Function Mode
 V8 Compatibility Mode
 V7
 V6

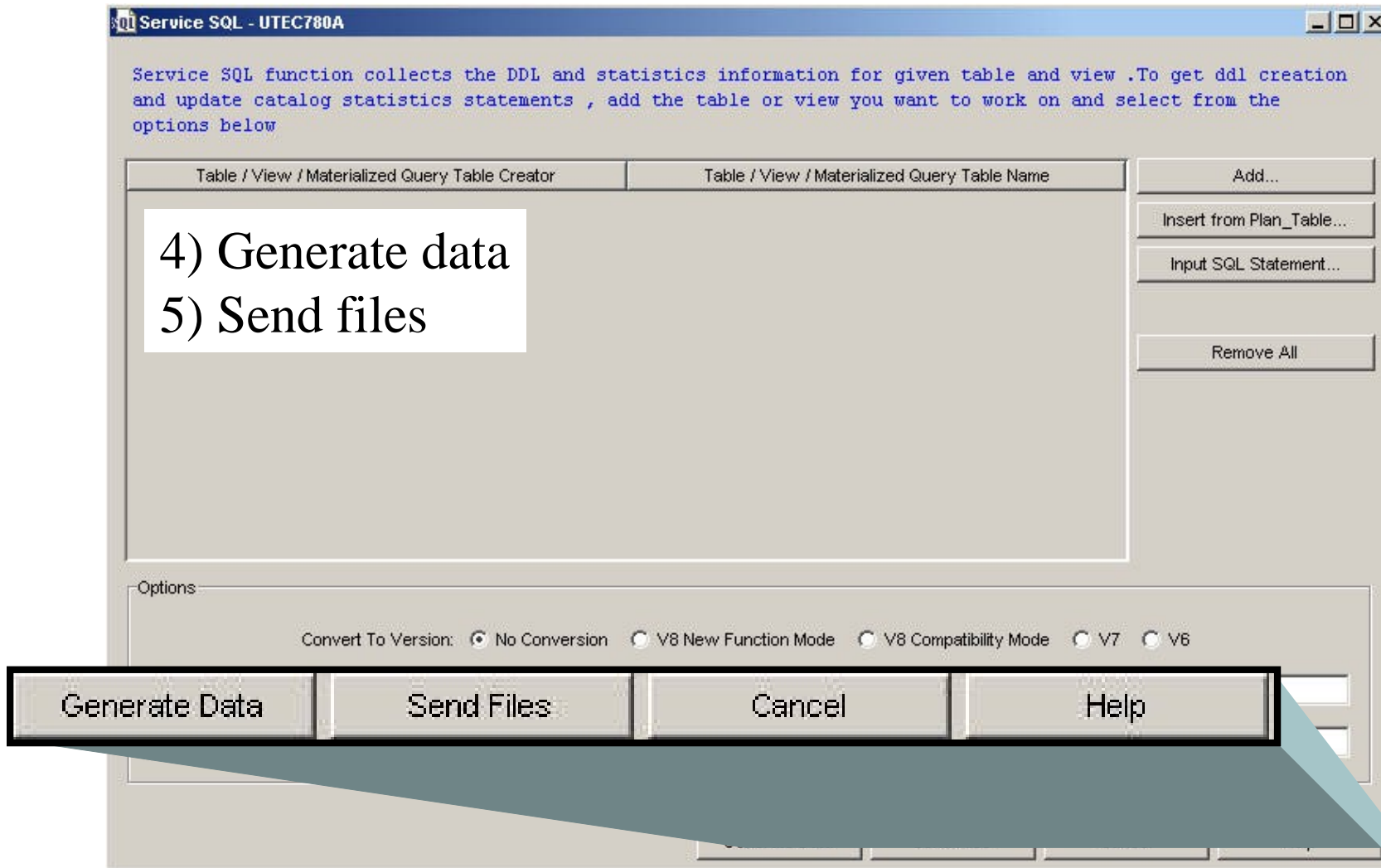
DDL Only
 Stats Only
 Parallelism
 Edited

Output directory: C:\temp\testcase\test3
PMR/ETR Number (nnnnn,yyy,zzz): 00000 , 000 , 000

SQLID: ADMF001

Generate Data Send Files Cancel Help

Generate / send data



Send files screen

FTP info



Send Files

FTP Server Information

Server Name: testcase.software.ibm.com

Directory: s390/toibm/db2

Logon ID: anonymous

Password: customer@company.com

Transfer Type ASCII Binary

Reset

File Information

The files listed below will be ftped to ibm testcase server. You can add or remove files from this list.

C:\temp\testcase\test3\PM000000.log

C:\temp\testcase\test3\PM000000.parm

C:\temp\testcase\test3\PM000000.sql

C:\temp\testcase\test3\PM000000.ddl

C:\temp\testcase\test3\PM000000.stats

Add...

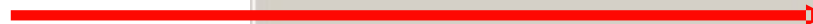
Remove

Send Cancel Help

Files



Send em



Service SQL summary

Improve serviceability for SQL performance problems

Make doc collection for SQL problems

Fast & easy

Complete

Provide more usable doc to SVL

Documentation almost ready to use

Recreate process much shorter for L2

Service SQL works with DB2 V6, V7, V8

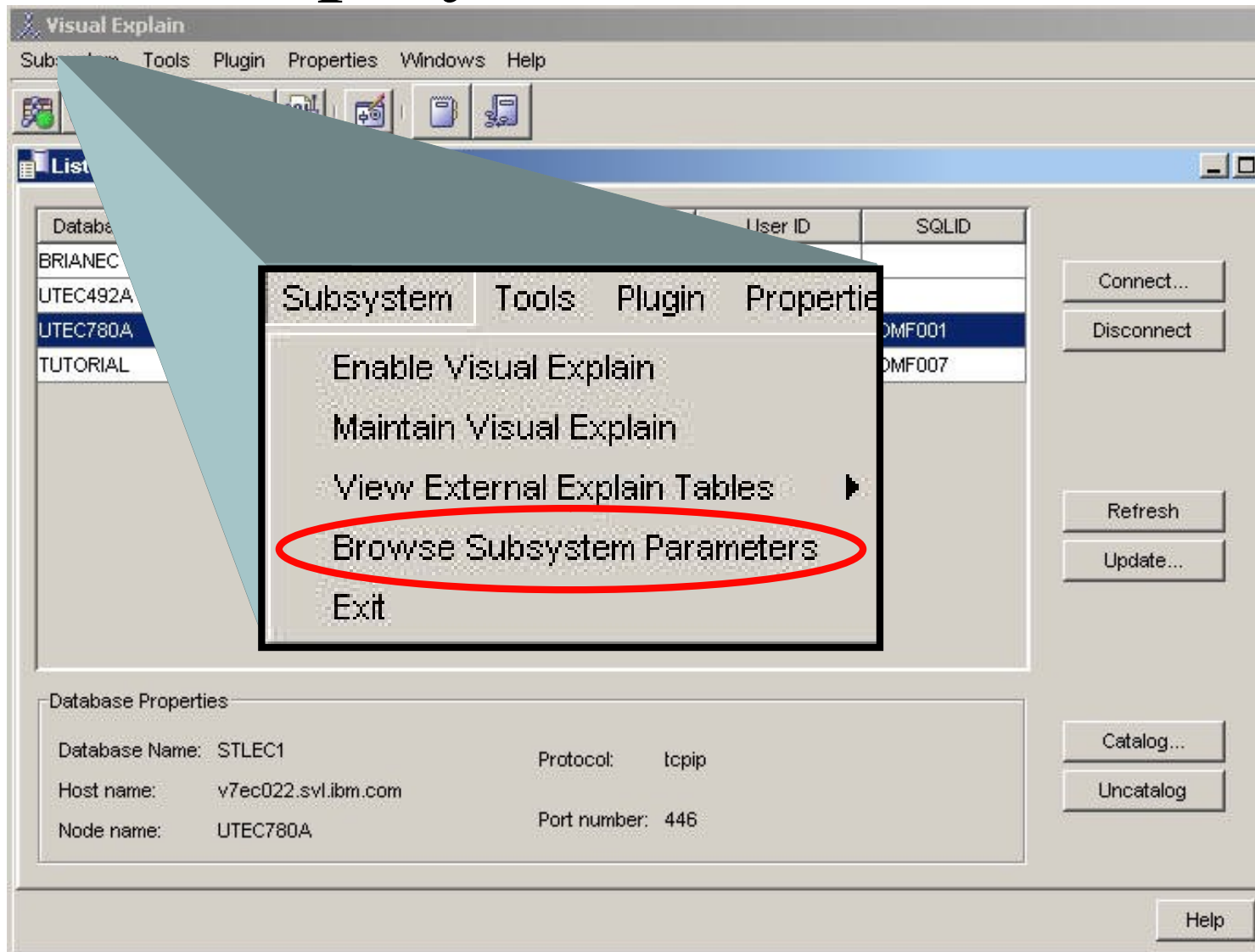
Display DSNZPARMs

- **Display DSNZPARMS**

- Uses DSNWZP stored procedure

- Display / search for DSNZPARMS from within Visual Explain

Display DSNZPARMS



Browse DSNZPARMS

Visual Explain

Subsystem Tools Plugin Properties Windows Help

List

Databas	Comment	User ID	SQLID
BRIANEC			
UTEC492A			
UTEC780A			
TUTORIAL			

Connect...
Disconnect

Refresh
Update...

Catalog...
Uncatalog

Help

Database Properties

Database Name: STLEC1
Host name: v7ec022.svl.ibm.com
Node name: UTEC...

Protocol: tcpip
Port number: 446

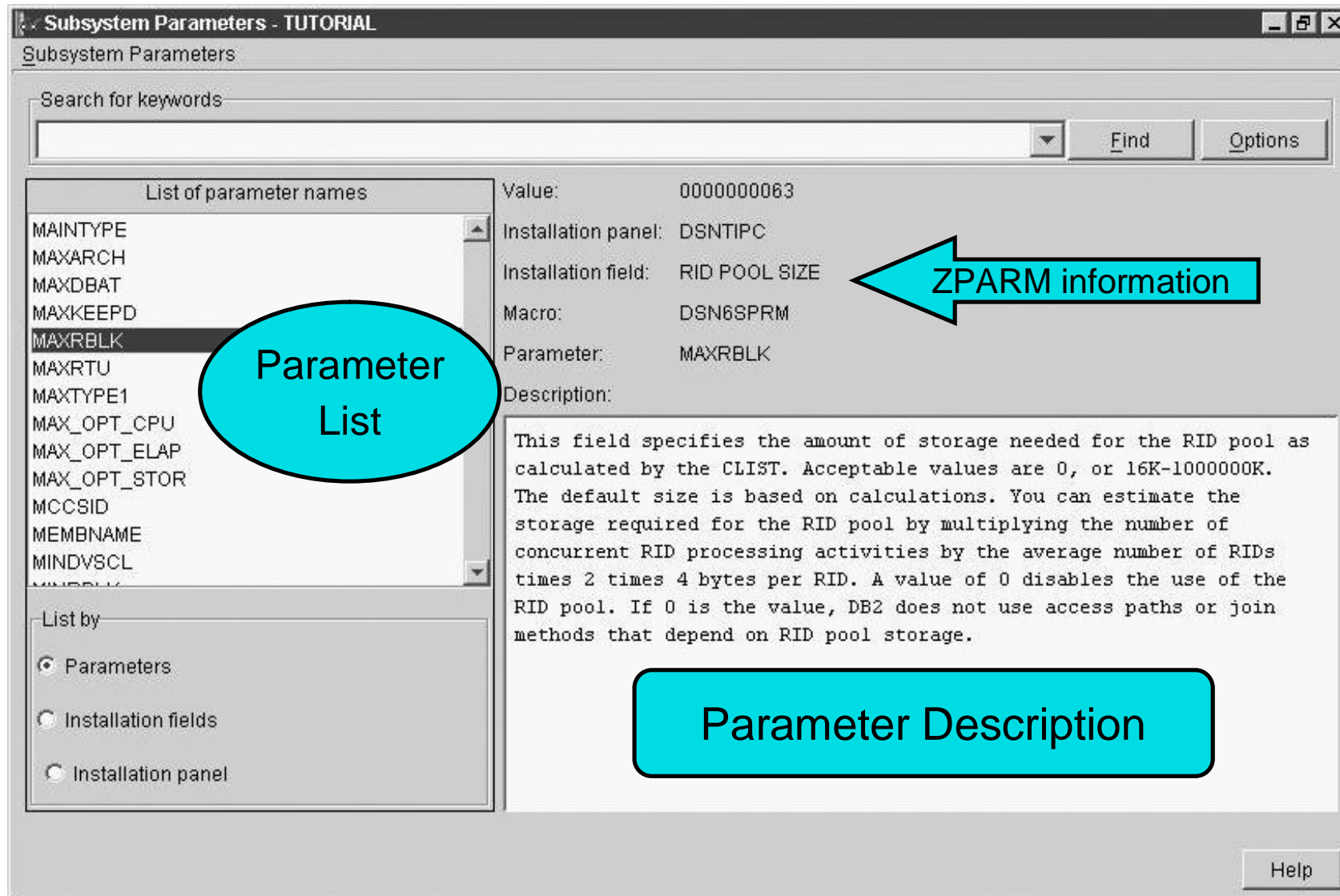
Enable VE

Maintain VE

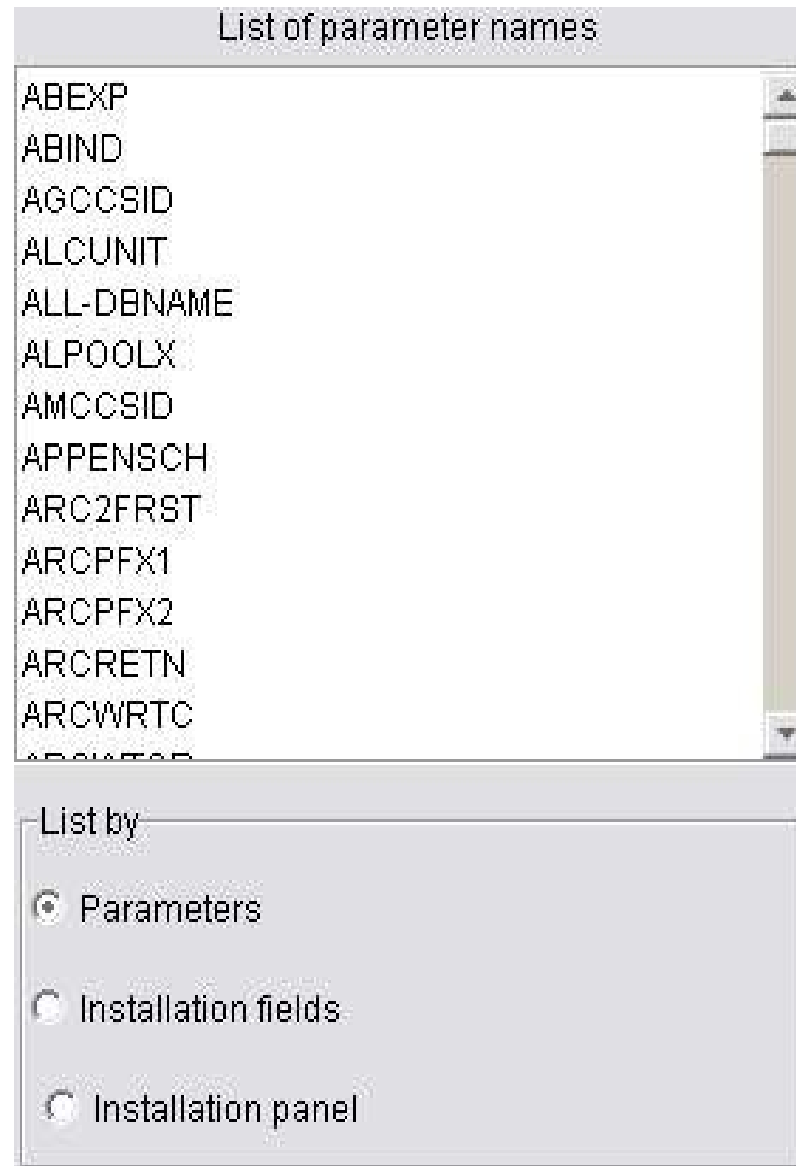
View plan_table

Browse ZPARMS

Browse ZPARAMs



Parameter list close-up



Parameter setting close-up

Value:	SYSADM
Installation panel:	DSNTIPP
Installation field:	SYSTEM ADMIN 1
Macro:	DSN6SPRM
Parameter:	SYSADM
Description:	

Summary

- **Describe how to get Visual Explain up and running**
- **Show the various methods to locate, graph, and analyze SQL**
 - Tune SQL
 - List Static SQL
 - View external explain tables
 - List cache statements
- **Show supporting functions**
 - Reporting
 - Statistics Advisor
- **Show miscellaneous functions**
 - Service SQL
 - Display DSNZPARMs
- **Visual Explain download / query graph detailed information:**
 - <http://www.ibm.com/software/data/db2/zos/osc/ve/>
 - <ftp://ftp.software.ibm.com/software/data/db2zos/Z32.pdf>

Z09

A Guide to using Visual Explain V8

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Sept. 12-16, 2005

Orlando, FL