Teradata Analyst Pack

Powerful tools to help optimize your queries and database design

As application environments expand to include mixed workloads for decision support and operational analytic processing, maximizing the performance of the Teradata® Database becomes more challenging. Teradata provides the Teradata Analyst Pack to enable you to analyze and tune your database queries for better performance. Teradata Analyst Pack is a set of Windows®-based applications, which includes Teradata Visual Explain, Teradata System Emulation Tool, Teradata Index Wizard, and Teradata Statistics Wizard.

The Teradata Analyst Pack simplifies your DBA and query planner's jobs by automating the steps required to analyze and optimize your Teradata Database. It measures the impact of proposed schema, index, or query changes on your system so you can be sure that you're implementing the most optimal changes.

Teradata Visual Explain

Teradata Visual Explain (VE) visually displays the query execution plan generated by the Teradata optimizer. Query planners and DBAs can immediately see where improvements can be made and can rewrite certain query sections for analysis. The Teradata VE tool allows you to visually compare two execution plans to determine if a proposed change will have the desired effect. In addition, it can help application developers and DBAs fine tune the SQL statements to ensure the Teradata Database accesses data efficiently. (See Figure 1.)

Visual Explain Features

> Interfaces with the Database Query Log.

> Monitors the SQL statement and displays the real-time execution details.

> Analyzes the query plan and provides reports on costs and cardinalities.

> Provides suggestions to improve the performance of the query or set of queries.

> Improves performance and usability through Bulk Compare feature enhancements.

> Displays the derived table, and sorts key details in the plan.

Teradata System Emulation Tool

The Teradata System Emulation Tool (SET) allows you to quickly project a production environment by emulating a larger production system in a smaller test or development environment. This reduces the cost of query plan analysis and your overall development efforts. In addition, these tools allow you to model the impact of schema changes by analyzing graphical comparisons of query plan reports showing information such as DDL, statistics, indices, and random AMP samples. This enables you to more quickly optimize queries without testing on production environments.

System Emulation Tool Features

Teradata SET features include:

> Automates collection of information needed by the Teradata optimizer to emulate a production or target environment on a test system.

> Enables what-if scenarios through customization of information collected.

> Exports the following information:
  – Statistics
  – Object definitions
  – Cost parameters
  – Random AMP samples
  – Execution plans

> Supports the Query Capture Facility (QCF) schema.

> Allows editing cost parameters before importing them onto a system. This is in line with the statistics and random AMP samples editing feature.

> Exports and imports the data demographics of tables from one Query Capture Database (QCD) to another.

> Provides library functions, referred to as the APIs, so client applications can use the functionality of Teradata SET.

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Teradata Analyst Pack

Teradata Index Wizard

Teradata Index Wizard automates the process of picking secondary indexes for a given database and workload – a natural grouping of queries – to maximize system performance. Index Wizard evaluates secondary index selection candidates and recommends the optimal indexes. In addition, it analyzes use of current secondary indexes to identify whether they are being used effectively. Index recommendations can be analyzed on a test system and validated on the production system. This means that you can identify the performance impact and the implementation cost of an index before it is created.

Teradata Statistics Wizard

Knowing which statistics to collect can be time consuming and requires in-depth application and database knowledge.

The Teradata Statistics Wizard analyzes specified workloads or databases and creates a recommended list of statistics collection operations. This list is then presented to you for review. You can then check or uncheck items in the list, and finally, schedule the collection job. Teradata Statistics Wizard:

> Recommends the collection of new statistics and the recollection of existing statistics.

> Makes recommendations based on:

– Age of collection

– Number of days since statistics were last collected

– Table growth

– Number of rows added or deleted since the last collection

Why Teradata Analyst Pack?

Teradata Analyst Pack, in conjunction with other Teradata tools and utilities, enhances your users' ability to analyze and understand the detailed steps involved in query plans along with the influences of the system configuration, data demographics, and secondary index structure. It allows you to take the crucial first step in identifying opportunities to improve Teradata system performance and test your proposed improvements without impacting your production environment.
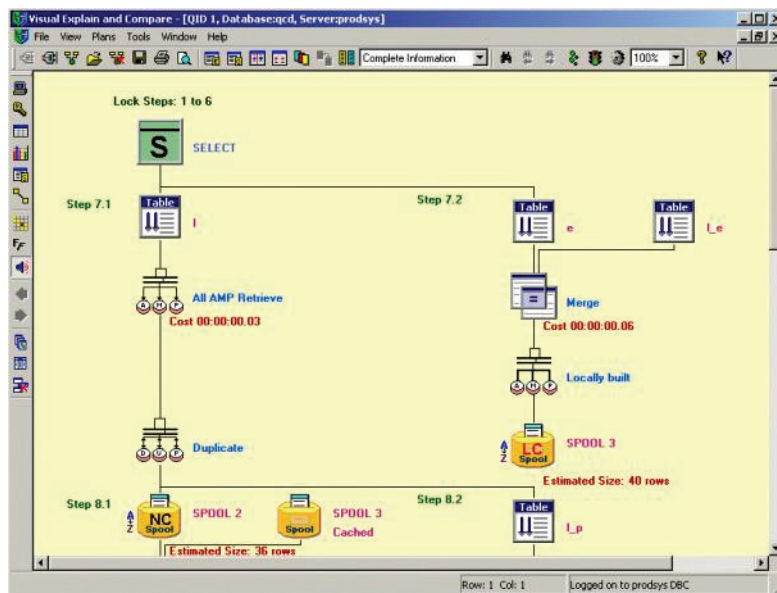

Figure 1. Teradata Visual Explain

> **Displays and compares query execution plans.**

> **Combines all information needed for plan analysis into a single user-friendly interface.**

> **Enables you to develop new queries and identify plan differences across database releases.**

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