

DB2 FOR z/OS SQL OPTIMIZATION, PERFORMANCE & TUNING

DESCRIPTION:

This class is designed to break down SQL statements in detail so the students understand in depth what the DB2 optimizer goes through in fulfilling an SQL request. Time will especially be spent breaking down SQL Joins and Subqueries in order to understand the fundamental issues associated with performance.

The class will address performance-related issues in relationship to database design, indexing, efficient and effective SQL queries, and the gathering of accurate statistical information for optimization. Students will come out of this class having a much better understanding of why certain optimizations are chosen, and what can be done to get DB2 to choose differently.

Much of the class will be in workshops where the students will write queries, execute DB2 Explains, and perform analysis on the information. Many of the workshops have the students rewrite and/or apply tuning statements to existing queries in order to get them to perform more efficiently.

Students will know exactly what steps to take in getting poor performing SQL queries to execute more efficiently.

DURATION:

Five (5) Days.

AUDIENCE:

This class is designed for application developers, DBAs, and anyone with some SQL knowledge that has an interest in DB2 performance related issues.

PREREQUISITES:

A working knowledge of SQL

TOPICS OUTLINE:

I. Inner and Outer Joins

This chapter goes through the differences between inner and outer joins. It will show how to code the different joins, and the steps DB2 goes through in executing them.

II. Subqueries

This chapter goes through the differences between Correlated, Non Correlated, and Quota subqueries. It will show how to code each of them, the differences between them, and the steps DB2 goes through in executing each one.

III. Basic Tuning Tools

This chapter introduces the DB2 Explain tool and the Plan Table. It will help the students understand what optimization is all about, and the different paths that DB2 can choose in fulfilling an SQL request.

IV. Predicate Types and Performance

This chapter introduces Stage 1 versus Stage 2 predicates, indexable versus non-indexable predicates, and all the other types of predicates in SQL. It will also review 'Before Join' predicates, 'After Join' predicates, and 'During Join' predicates, along with their impacts on performance.

V. Basic Access Paths and Performance

This chapter goes into DB2 Explain detail. It reviews Tablespace scans, Index Scans, Multiple Index access, Index Only access, Sorting, and all the other areas of information the DB2 Explain tool has to offer in evaluating SQL queries.

VI. Multi Table Access Paths

This chapter breaks down all the different join methods that DB2 can go through in executing a query. It will show how each work along with the good and bad of each.

VII. The DB2 Catalog and Access Paths

This chapter shows some of the DB2 catalog tables and their impact on performance and optimization. It will explain why keeping the catalog statistics up to date is important on performance and access path choices.

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VIII. Advanced Query Tuning

This chapter reviews some of the most common tuning tricks and techniques. It will show how these techniques work in getting DB2 to choose different join methods, different indexes, different order of tables, etc.