DB2 Operations

Course Summary

Summary

This course introduces students to the concepts of relational databases and the strengths of DB2. It covers the major components of DB2 and their fit into the OS/390 environment.

Objectives

At the completion of this course, the student will be able to:

- Code SQL statements to access DB2 tables and the DB2 Catalog.
- Execute SQL statements in both batch and on-line environments.
- Create and execute application plans.
- Authorize users to access DB2 tables and plans.
- Execute DB2 utilities in batch and on-line environments.
- Execute DB2 commands.
- Understand how the DB2 Log can be used to diagnose problems.

Topics

- Constructs and Concepts
- How DB2 fits into the MVS environment
- Batch and On-line Execution
- Application SQL
- DB2 Catalog, Indexes, Optimizer and Security
- Batch and On-line Utilities
- Reliability in the Production Environment
- Performance Monitoring, Reporting and Tuning

Audience

The course is designed for operation personnel who need to gain a better understanding of DB2 and its environment.

Prerequisites

Students should have a basic understanding of DB2 terminology and concepts.

Duration

Two days

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Course Outline

I. The Big Picture- DB2 Overview
- A. General Relational Database Concepts
- B. The SQL Standard
- C. Database Administration and DB2
- D. The DB2 Catalog
- E. DB2 Example Tables

II. The Internals- DB2 Infrastructure and Environment
- A. DB2 Subsystems and Other OS/390 System Software
- B. Address Space Utilization
- C. On-line and Batch Environments
- D. DB2 Catalog Tables
- E. Buffer Pools
- F. Lock Manager
- G. Data Compression

III. DB2 Execution
- A. SPUFI and QMF on-line execution
- B. Batch Execution of TSO
- C. DB2 utilities
- D. DB2 Commands

IV. DB2 in Applications
- A. Program Preparation (binds, plans, and packages)
- B. Efficient SQL
- C. Plans and Packages
- D. Explain Tables and the DB2 Optimizer
- E. Embedded SQL
- F. Static vs. Dynamic SQL

V. DBA and System Support
- A. Physical Design
- B. Index Planning Creation, and Usage
- C. DB2 Security
  - a. Levels of Access
  - b. RACF and Secondary Auth Ids

VI. DB2 Utilities
- A. Referential Integrity and Loading Data
- B. Image Copies
- C. QUIESCE points
- D. Table and Index Reorganization
- E. RUNSTATS, STOSPACE, and Performance
- F. Minimizing the Outage Window
- G. Parallel Processing for Large Objects
- H. REPAIR Utility
- I. START Command w/Access Force

VII. DB2 Backup and Recovery
- A. Recovery Planning and Design
- B. Backup Frequency and Type
- C. QUIESCE Points and Referential Integrity
- D. Recovery Granularity
- E. Full and Partial Recovery
- F. Disaster Recovery

VIII. DB2 Performance
- A. Batch and On-line Performance Monitors
- B. The DB2 Log
- C. Locking Granularity and Lock Escalation
- D. Space Mgt. Via DB2 Catalog
- E. Storage Groups and SMS
- F. RUNSTATS AND STOSPACE
- G. VTOC and I/O Balancing
- H. Freespace

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