IBM Db2 12.1: Advanced Performance and Tuning Optimization for Relational DBAs

Duration: 2 Days Course Code: CLA95G

Overview:

This course provides a comprehensive exploration of Db2 12.1 performance tuning and optimization, giving relational DBAs the skills needed to manage and improve workload efficiency.

Learners begin by reviewing core optimization concepts, examining how Db2 evaluates access paths, uses statistics, and determines efficient execution strategies. They then progress into more advanced topics, including statistical views, optimization classes, query rewrite behavior, registry variables, and the integration of AI-driven optimizer enhancements.

The curriculum also covers essential physical design considerations- such as logging strategies, clustering methods, table partitioning, MDC, and MQT design- to help DBAs create structures that support scalable, high-performance query execution. In addition, learners gain hands-on experience with modern monitoring and diagnostic tools, including db2batch, db2mon, db2caem, the Db2 Data Management Console, and core troubleshooting utilities.

Throughout the course, participants reinforce their skills through practical exercises that involve analyzing access plans, applying statistical techniques, tuning queries, benchmarking SQL workloads, and diagnosing performance issues using Db2's monitoring and diagnostic capabilities.

Target Audience:

This course is recommended for experienced Db2 DBAs, system administrators, and performance engineers responsible for tuning, maintaining, or troubleshooting Db2 databases.

Objectives:

- **After this course participants should be able to:**
- Implement effective index design strategies that enhance performance
- Interpret EXPLAIN output and access plans using tools such as db2exfmt, db2expln, and the DMC Explain tool
- Create and enable statistical views to improve optimizer accuracy in query evaluation
- Diagnose and validate the use of statistical views through the Explain Diagnostic facility
- Apply query optimization registry variables
- Use optimization profiles and embedded guidelines to influence table access methods, join strategies, and plan selection
- Apply appropriate indexing strategies for ITC and RTC tables
- Identify when to use volatile tables and how their optimizer behavior differs from standard base tables
- Collect and analyze activity metrics and explain data using db2caem
- Investigate errors and performance problems using diagnostic tools such as db2diag, FODC utilities, and db2support

Prerequisites:

Participants should have the following:

- Completion of CLA94G/2LA94G: Db2 v12.1 Performance Tuning and Optimization Fundamentals
- a solid understanding of Db2 fundamentals, including SQL, basic database administration, and core monitoring concepts
- Prior experience with Db2 commands, configuration parameters, and performance tuning tools
- Familiarity with relational database concepts and operating system command-line environments is strongly recommended

Testing and Certification

None

Follow-on-Courses:

None

Content:

Unit 1: Optimization and Tuning Recap

- Db2 Indexing for Performance Review
- Db2 EXPLAIN Review

Unit 2: More about Statistics

- Using Statistical Views

Unit 3: Working with the Db2 Optimizer

- Optimization Classes
- Adjusting Configurations to Modify Db2 Optimizer Behavior
- Hinting Db2 (Optimization Profiles and Embedded Optimization Guidelines)
- Statement Concentration, Reoptimization, and Access and Plan Reuse
- The New Db2 AI Optimizer
- Db2 Workload Management Support

Unit 4: Physical Design

- Minimizing Db2 Logging
- RCT, ITC, and Volatile Tables
- Using Materialized Query Tables
- Table Partitioning and Performance
- Table Clustering

Unit 5: More about Monitoring

- Using db2batch for benchmarking
- Using db2mon and db2caem
- Db2 Data Management Console additional topics
- Db2 Troubleshooting

Further Information:

For More information, or to book your course, please call us on 00 20 (0) 2 2269 1982 or 16142

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