Db2 12 for z/OS SQL Performance and Tuning (CV964G)

ID CV964G **Prix** CHF 2 400,– (Hors Taxe) **Durée** 3 jours

A qui s'adresse cette formation

This course is for Db2 12 for z/OS application developers, Db2 12 for z/OS DBAs, and anyone else with a responsibility for SQL performance and tuning in a Db2 12 for z/OS environment.

Pré-requis

- Familiarity with SQL
- Familiarity with Db2 12 for z/OS
- Familiarity with Db2 12 for z/OS application programming

Objectifs

After completing this course, students will be able to:

- Understand and design better indexes
- Determine how to work with the optimizer (avoid pitfalls, provide guidence)
- Optimize multi-table access
- Work with subqueries
- Avoid locking problems
- Use accounting traces and other tools to locate performance problems in existing SQL
- and more

Contenu

Introduction to SQL performance and tuning

- Performance issues
- Simple example
- Visualizing the problem
- Summary

Performance analysis tools

- Components of response time
- Time estimates with VQUBE3
- SQL EXPLAIN
- The accounting trace
- The bubble chart
- Performance thresholds

Index basics

- Indexes
- Index structure
- Estimating index I/Os
- Clustering index
- Index page splits

Access paths

- Classification
- Matching versus Screening
- Variations
- Hash access
- Prefetch
- Caveat

More on indexes

- Include index
- Index on expression
- Tandom index
- Partitioned and partitioning, NPSI and DPSI
- Page range screening
- Features and limitations

Tuning methodology and index cost

- Methodology
- Index cost: Disk space
- Index cost: Maintenance
- Utilities and indexes
- Modifying and creating indexes
- Avoiding sorts

Index design

- Approach
- Designing indexes

Advanced access paths

- Prefetch

- List prefetch
- Multiple index access
- Runtime adaptive index

Multiple table access

- Join methods
- Join types
- Designing indexes for joins
- Predicting table order

Subqueries

- Correlated subqueries
- Non-correlated subqueries
- ORDER BY and FETCH FIRST with subqueries
- Global query optimization
- Virtual tables
- Explain for subqueries

Set operations (optional)

- UNION, EXCEPT, and INTERSECT
- Rules
- More about the set operators
- UNION ALL performance improvements

Table design (optional)

- Number of tables
- Clustering sequence
- Denormalization
- Materialized query tables (MQTs)
- Temporal tables
- Archive enabled tables

Working with the optimizer

- Indexable versus non-indexable predicates
- Boolean versus non-Boolean predicates
- Stage 1 versus stage 2
- Filter factors
- Helping the optimizer
- Pagination

Locking issues

- The ACID test
- Reasons for serialization
- Serialization mechanisms
- Transaction locking
- Lock promotion, escalation, and avoidance

More locking issues (optional)

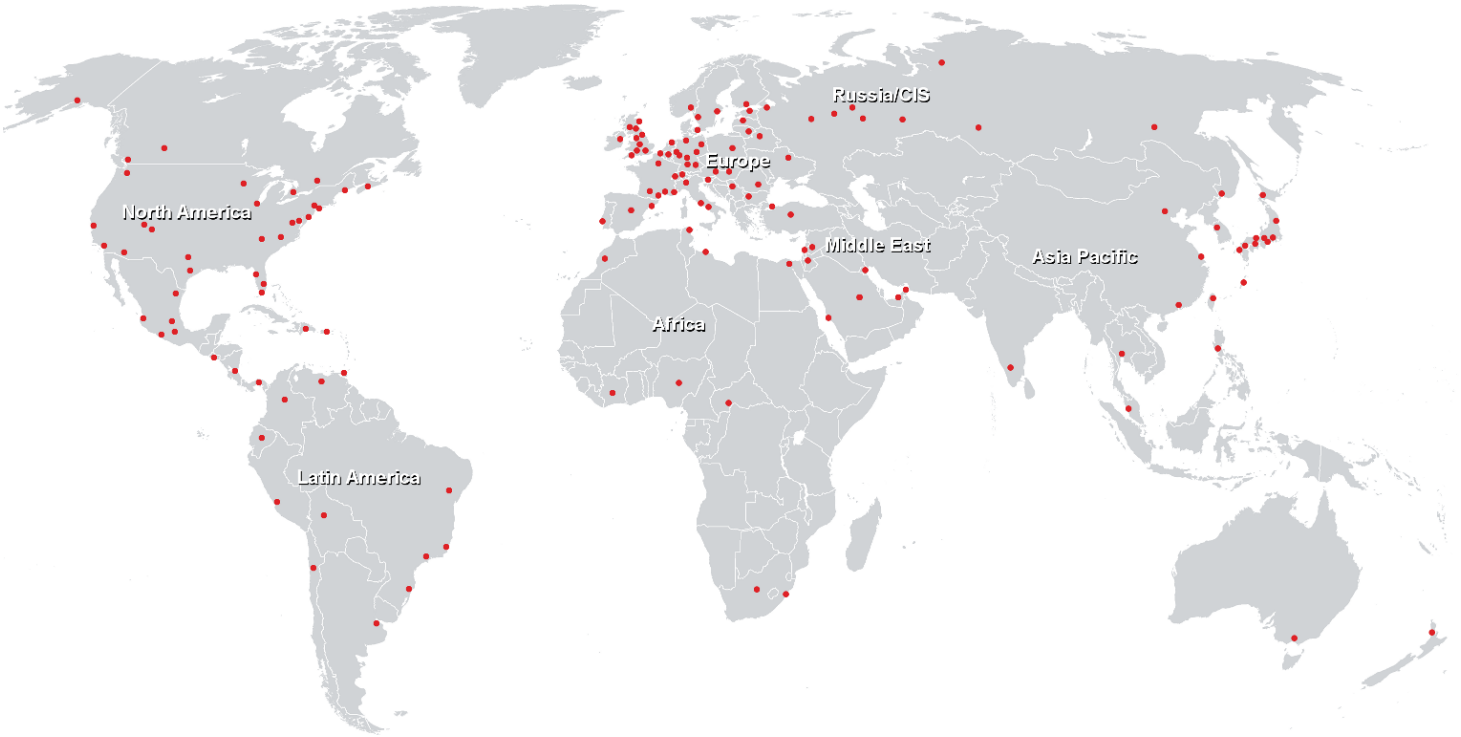
- Skip locked data
- Currently committed data
- Optimistic locking
- Hot spots
- Application design
- Analyzing lock waits

Massive batch (optional)

- Batch performance issues
- Buffer pool operations
- Improving performance
- Benefit analysis
- Massive deletes

Db2 12 for z/OS SQL Performance and Tuning (CV964G)

Centres de formation dans le monde entier



Fast Lane Institute for Knowledge Transfer (Switzerland) AG

Husacherstrasse 3
CH-8304 Wallisellen
Tel. +41 44 832 50 80

info@flane.ch, https://www.flane.ch