

SQL Server Training: Performance Tuning & Optimization (SQLPTO, 4 jours)

Description

The course Performance Tuning & Optimization (SQL Server Training) explores SQL Server performance. The training includes a general discussion of SQL Server architecture & configuration as it related to tuning activities. The course covers clustered & non-clustered indexes, SQL execution plans, join strategies & data storage considerations. Further, the training includes a discussion of the relative performance characteristics of stored procedures, joins, sub-queries, correlated sub-queries, covering indexes & more in a SQL Server environment.

Tarifs

- Tarification: \$3,750/person
- Rabais de 10% lorsque vous inscrivez 3 personnes.

Plan de cours

SQL Server Storage Architecture

Understanding Pages and Extents
How SQL Server Allocates Pages and Extents
Exploring Data and Index Placement with Filegroups
About Data Types, Row Size and Page Usage
Determining the Space Requirements of a Table
Working with Standard Data Types
Working with Text Data: Unicode and Non-Unicode
Working with Image Data
About Fragmentation: Data and Indexes
Using TSQL to Display Table and Index Space Usage
Using TSQL to Display Table and Index Fragmentation

Tuning SQL Statements

Understanding Query Parsing and Compilation
Using and Understanding Statistics Time and Statistics IO
Displaying and Understanding Graphical Execution Plans
How SQL Server uses Table Scans
How SQL Server Processes Range and Point Queries
Understanding SQL Server Join Strategies
Using Execution Plans to Write Good SQL Statements
Using the Query Optimizer
Implementing the Query Optimizer's Recommendations

Indexes and SQL

About Indexes: Clustered and Non-Clustered
Understanding Index Architecture and Storage
The Essential Role of Covering Indexes
Understanding the Role of Fill Factor and Pad Index
About Indexes and Data
About Indexes and Insert/Update Operations
About Indexes and Delete Operations
About Indexes and Views
About Indexes and Indexed Views

Implementing Sparse Indexes

Creating Indexes: Guidelines and Usage

Matching Indexes with Queries: Point and Range Queries

Creating Indexes to Support Point Queries

Creating Indexes to Support Range Queries

Creating Indexes to Support Join Operations

Creating Indexes to Support Ordering Operations

Creating Indexes to Support Aggregate Calculations

Maintaining Indexes

How SQL Server uses Statistics

How to Update Statistics

Displaying Fragmentation Statistics

Rebuilding Indexes

Altering Indexes

Automated Index Maintenance

SQL Server Memory Management

Understanding the SQL Server Memory Architecture

Understanding the Buffer Pool and the Buffer Manager

The Importance of the Buffer Cache Hit Ratio

Understanding Log Operations

Working with and Tuning for Checkpoints and the Lazy Writer

Working with Log Writer

Managing Transactions

About Lock Granularity: Table, Page, Extent and Row

SQL Server Lock Types and their Compatibility: Shared, Exclusive and More

Understanding Lock Types in the Context of Transaction Isolation

Common Locking Conditions: Deadlocks, Livelocks and More

Detecting and Avoiding Deadlocks

Detecting and Avoiding Livelocks

Common Mistakes and How to Avoid Them

When Nothing Else Works: De-normalization and Other Strategies

Comparing OLTP and OLAP Databases

Separating Query Data from Transactional Data

The Need for De-Normalization

Implementing Redundant Data: Triggers and Functions

Implementing Surrogate Keys

Implementing Partitioned Tables

Implementing Partitioned Views