

Oracle Database 19c: SQL Tuning Workshop

Duration:
3 days

This Oracle SQL Tuning for Developers Workshop will help you explore Oracle SQL statement tuning. Learn how to write well-tuned SQL statements appropriate for the Oracle database.

Course Objectives

Upon completion of this course, the student should be able to:

- Interpret execution plans and the different ways in which data can be accessed.
- Decipher, decide and then apply tuning to SQL code.
- Use various tuning techniques.
- Take advantage of bind variables, trace files and use the different types of indexes.
- Use different access paths for better optimization.

Benefits To You

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling consolidation onto database clouds.

Audience

- Architect
- Developer

Course Topics

1. Course Introduction

- Workshop 1: Enhancing the Performance of a SQL Query Statement

2. Introduction to SQL Tuning

- Quick Solution Strategy
- Workshop 2: Reviewing the Execution Steps of the SQL Statement
- Practice 2-1: Using SQL Developer

3. Using Application Tracing Tools

- trcstress Utility
- Workshop 3: Learn to Tune Sort Operation Using an Index in the ORDER BY Clauses
- Practice 3-1: Tracing Applications (Part 01)
- Practice 3-1: Tracing Applications (Part 02)

4. Optimizer Fundamentals

- Query Estimator: Selectivity and Cardinality
- Plan Generator
- Workshop 4: Identifying and Tuning a Poorly Written SQL Statement
- Practice 4-1: Understanding Optimizer Decisions (Optional)

5. Generating and Displaying Execution Plans

- AUTOTRACE
- Automatic Workload Repository
- Workshop 5: Effects of Changing the Column Order in a Composite Index
- Practice 5-1: Extracting an Execution Plan by Using SQL Developer

- Practice 5-2: Extracting Execution Plans

6. Interpreting Execution Plans and Enhancements

- Workshop-6: Using Information in the 10053 File to Tune a SQL Statement
- Practice 6-1: Using Dynamic Plans

7. Optimizer: Table and Index Access Paths

- Indexes: Overview
- Bitmap Indexes
- Common Observations
- Workshop 7: Understanding the Optimizer's Decision
- Practice 7-1: Using Different Access Paths (Part 01)
- Practice 7-1: Using Different Access Paths (Part 02)
- Practice 7-1: Using Different Access Paths (Part 03)
- Practice 7-1: Using Different Access Paths (Part 04)

8. Optimizer: Join Operators

- Workshop 8: Tuning Strategy
- Practice 8: Using Join Paths

9. Other Optimizer Operators

- Workshop 9: Using SQL Plan Baseline to Manage a Better Execution Plan
- Practice 9-1: Using the Result Cache
- Practice 9-2: Using Other Access Paths (Optional)

10. Introduction to Optimizer Statistics Concepts

- Column Statistics: Histograms
- Session-Specific Statistics for Global Temporary Tables
- Practice 10-1: Index Clustering Factor
- Practice 10-2: Creating Expression Statistics
- Practice 10-3: Enabling Automatic Statistics Gathering Optional (Part 01)
- Practice 10-3: Enabling Automatic Statistics Gathering Optional (Part 02)
- Practice 10-4: Using System Statistics (Optional)

11. Using Bind Variables

- Cursor Sharing Enhancements
- Practice 11-1: Using Adaptive Cursor Sharing
- Practice 11-2: Using CURSOR_SHARING (Optional)

12. SQL Plan Management

- Configuring SQL Plan Management
- Possible SQL Plan Manageability Scenarios
- Practice 12-1: Using SQL Plan Management SPM (Part 01)
- Practice 12-1: Using SQL Plan Management SPM (Part 02)

13. Workshops