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# Oracle 10g SQL Performance Tuning

2 days

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## Oracle 10g SQL Performance Tuning Course Overview

This course introduces the delegate to the main concepts of Oracle SQL performance tuning. It is designed to give delegates practical experience in analyzing and tuning the performance of SQL. This course is suitable for users of Oracle Database 10g and Oracle Database 11g.

## Skills Gained

The delegate will practise:

- Tuning Database Applications for Optimal Performance
- Managing Statistics
- Creating and Using Indexes
- Structuring SQL Statements for Performance
- Using the SQL Optimizers
- Examining the Execution Plan of a SQL Statement using EXPLAIN PLAN
- Examining the Efficiency of SQL Statements using SQL Trace and Autotrace
- Using Hints to Influence Execution Plan
- Identifying Unused Indexes

## Who will the Course Benefit?

This Oracle 10g SQL Performance Tuning course is designed for SQL programmers, application developers/designers and technical support professionals who are required to tune the performance of an Oracle application running under Oracle 9i, 10g or 11g.

## Course Objectives

To provide the skills needed to monitor and tune an Oracle database application.

## Requirements

A working knowledge of SQL is required. This can be obtained by attendance on the pre-requisite Oracle SQL course.

## Pre-Requisite Courses

- Oracle SQL

## Follow-On Courses

- Oracle Reports
- Oracle Forms - Part I

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# Oracle 10g SQL Performance Tuning Training Course

## Course Contents - DAY 1

### Course Introduction

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

### Session 1: INTRODUCTION TO ORACLE PERFORMANCE TUNING

- Tuning Overview
- Oracle Tuning Process
- Planning a Routine Monitoring Regime
- Setting Suitable Goals
- Tips for Avoiding Problematic Queries

### Session 2: TOOLS FOR EVALUATING SQL STATEMENTS

- Overview of SQL Statement Tuning
- Tools to Assist in SQL Tuning
- Explain Plan
- Autotrace
- SQL Trace
- The tkprof Program
- Interpreting SQL Trace

### Session 3: THE OPTIMIZER

- SQL Optimizer
- OPTIMIZER\_MODE Initialization Parameter
- Rule Based Optimizer
- Cost Based Optimizer
- The Analyze Command
- Managing Statistics with DBMS\_STATS
- Automatic Statistics Gathering

### Session 4: SORTS

- How Oracle Processes Sorts
- Temporary Disk Space Assignment
- SQL Operations that Use Sorts

### Session 5: INDEXES

- Index Overview
- B\*Tree Indexes
- Access Paths with Indexes
- Index Scans
- Conditions That Stop Indexes Being Used
- Parameters Affecting Optimizer Index Choice

## **Session 6: ADVANCED INDEXES**

- Bitmap Indexes
  - Key Compressed Indexes
  - Index Organized Tables
  - Function Based Indexes
  - Descending Indexes
  - Invisible Indexes
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# **Oracle 10g SQL Performance Tuning Training Course**

## **Course Contents - DAY 2**

### **Session 7: JOINS**

- Joining Tables
- Nested Loops Join
- Merge Join
- Cluster Join
- Hash Join
- Anti Join and Semi Join
- Outer Joins
- Star Join

### **Session 8: SEQUENCES AND VIEWS**

- Sequence Caching
- Views
- View Merging
- Inline Views

### **Session 9: USING HINTS**

- Using Hints to Influence Execution Plan
- Optimization Mode and Goals
- Access Methods
- Query Transformations
- Join Orders
- Join Operations
- Hint Examples

## **Session 10: MISCELLANEOUS**

- Syntax Considerations
  - Array Size
  - Shared Pool
  - Intelligent Cursor Sharing
  - Virtual Columns
  - Result Caching
  - Some PL/SQL Issues
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## **Pre-Requisite Courses**

- Oracle SQL
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## **Follow-On Courses**

- Oracle Reports
  - Oracle Forms - Part I
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