

ORACLE 19c SQL Performance Tuning 2 Day Course

Overview

This Oracle 19c SQL Performance Tuning course introduces the delegate to the main concepts of Oracle SQL performance tuning. It is designed to give delegates practical experience in analysing and tuning the performance of SQL.

Delegates will practice:

- Selecting an Appropriate SQL Tuning Approach
- Tuning Database Applications for Optimal Performance
- Managing Statistics
- Creating and Using Indexes
- Structuring SQL Statements for Performance
- Examining and Interpreting the Execution Plan of a SQL Statement using EXPLAIN PLAN
- Examining the Efficiency of SQL Statements using SQL Trace and Autotrace
- Using the SQL Tuning Advisor
- Identifying SQL Statements that Perform Badly
- Using Hints to Influence Execution Plan
- Identifying Unused Indexes

Audience

SQL programmers, application developers, designers and technical support professionals.

Course Objectives

On completion of this course delegates will have the knowledge to monitor and tune an Oracle database application.

Prerequisites

Attendance of the Oracle SQL course or equivalent knowledge.

Course Contents (2 days)

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| <ul style="list-style-type: none">• INTRODUCTION TO ORACLE PERFORMANCE TUNING<ul style="list-style-type: none">○ Overview of Oracle Database Tuning○ Application Developer Tuning Responsibilities○ Oracle DBA Tuning Responsibilities○ Oracle Tuning Process○ Plan a Routine Monitoring Regime○ Setting Suitable Goals○ Syntax Considerations• TOOLS FOR EVALUATING SQL STATEMENTS<ul style="list-style-type: none">○ Overview of SQL Statement Tuning○ Tools to Assist in SQL Tuning○ Use Explain Plan, Autotrace and SQL Trace to Examine the Execution of a SQL Statement○ Interpreting a SQL Trace | <ul style="list-style-type: none">• THE SQL OPTIMIZER<ul style="list-style-type: none">○ The SQL Optimizer○ Statement Transformation○ The Optimizer_Mode Initialization Parameter○ Cost Based Optimizer○ Managing Statistics with DBMS_STATS○ Correlated Column Issues○ Automatic Statistics Gathering○ Optimizer Adaptive Parameters○ Dynamic Statistics○ Online Statistics Gathering for Bulk Loads• SORTS<ul style="list-style-type: none">○ How Oracle Processes Sorts○ Temporary Disk Space Assignment○ SQL Operations that Use Sorts |
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- **INDEXES**
 - Index Overview
 - Selecting Suitable Columns for an Index
 - B*Tree Indexes
 - Rebuild an Index
 - Create Multiple Indexes on the Same Column
 - Composite Indexes
 - Descending Indexes
 - Access Paths with Indexes
 - Index Scans
 - Conditions That Stop Indexes Being Used
 - Parameters that Affect Optimizer Index Choice
- **ADVANCED INDEXES**
 - Bitmap Indexes
 - Key Compressed Indexes
 - Index Organized Tables
 - Function Based Indexes
 - Invisible Indexes
 - Table Partitioning
 - Serial Direct Path Reads
 - Advanced Index Compression
- **JOIN OPERATIONS**
 - Understand Access Paths
 - Joining Tables
 - Nested Loops Join
 - Merge Join
 - Cluster Join
 - Hash Join
 - Anti Join and Semi Join
- Outer Joins
- Star Join
- Improve Optimization with Different Access Paths
- **SQL TUNING ADVISOR USING SQL DEVELOPER**
 - Overview of the DBMS_SQL_TUNE Package
 - Using the SQL Tuning Advisor with SQL Developer
- **SEQUENCES AND VIEWS**
 - Sequence Caching
 - Views
 - View Merging
 - Inline Views
- **USING HINTS**
 - Using Hints to Influence Execution Plan
 - Optimization Mode and Goals
 - Access Methods
 - Query Transformations
 - Join Orders
 - Join Operations
 - Hint Examples
- **MISCELLANEOUS**
 - Tips for Avoiding Problematic Queries
 - SQL Performance Settings Options
 - Array Size
 - The Shared Pool
 - The WITH Clause
 - Bind Variable Usage
 - Result Caching
 - Approximate Query Processing
 - Some PL/SQL Performance Issues

Course Materials

Enliten IT will provide each delegate with a workbook and other useful reference materials where applicable.