Oracle Database 10g: SQL Tuning

Duration: 3 Days

What you will learn

This Oracle Database 10g: SQL Tuning training is designed to give the experienced SQL Developer or DBA a firm foundation in SQL tuning techniques. You'll develop the necessary knowledge and skills to effectively tune SQL in the Oracle Database 10g Release 2.

Learn To:

Understand the benefits of the new automatic tuning mechanisms available in Oracle Database 10g.  
Compare and contrast the steps involved to tune manually as in prior releases.  
Use the automatic SQL tuning features provided in the current release.  
Use the Oracle diagnostic tools and facilities: Automatic SQL Tuning components, EXPLAIN, SQL Trace and TKPROF, SQL*Plus AUTOTRACE.  
Influence the behavior of the Optimizer by changing the physical schema and modifying SQL statement syntax.  
Understand tuning methodology, as well as proactive tuning and reactive tuning methods.

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 smooth and rapid consolidation within your Datacenter.

Explore the Oracle Optimizer

You'll also gain a thorough conceptual understanding of the Oracle Optimizer. This new knowledge will be reinforced as you participate in structured hands-on practices. This uses a series of challenge-level workshops, allowing you to "play, discover and learn" at your own level and pace.

Counts Toward Certification Hands-On Requirement

This course counts towards the hands-on course requirement for the Oracle Database 10g Administrator Certification. Only Classroom Training or Live Virtual Class formats of this course will meet the Certification Hands-on Requirement. Self-Study Courses and Knowledge Center courses DO NOT meet the hands-on requirement.

Audience

Business Intelligence Developer  
Forms Developer  
Java Developer  
PL/SQL Developer  
Reports Developer  
Technical Consultant
Course Objectives

Describe the basic steps in processing SQL statements

Describe the causes of performance problems

Understand where SQL tuning fits in an overall tuning methodology

Describe Automatic SQL Tuning

Use the diagnostic tools to gather information about SQL statement processing

Understand Optimizer behavior

Influence the optimizer behavior

Influence the physical data model so as to avoid performance problems

Course Topics

Database Architecture overview
Overview of Database architecture
Listing the SQL Statement Processing Steps
Identifying Means to Minimize Parsing
Stating the Use of Bind Variables

Following a Tuning Methodology
Describing the Causes of Performance Problems
Identifying Performance Problems
Using a Tuning Methodology

Designing Applications for performance
Oracle Methodology
Understanding Scalability
System Architecture
Application Design Principles
Deploying New Applications

Introducing the optimizer
Describe the functions of the Oracle optimizer
Identify the factors that the optimizer considers when it selects an execution plan
Set the optimizer approach at the instance and session level
Use dynamic sampling

Optimizer Operations
Execution plans
Types of Joins

Displaying Execution plans
Using the EXPLAIN PLAN Command
Interpreting EXPLAIN Output
Interpreting AUTOTRACE Statistics

Gathering Statistics
Using the DBMS_STATS Package
Identifying Table, Column, and Index Statistics
Building Histograms

Application Tracing
Statspack
End to End tracing
Invoking the SQL Trace Facility
Setting Up Appropriate Initialization Parameters
Formatting Trace Files with TKPROF
Interpreting the Output of the TKPROF Command

Identifying High Load SQL
Use different methods to identify high-load SQL
ADDM
Top SQL
Dynamic Performance views
Statspack

Automatic SQL Tuning
Query Optimizer Modes
Types of Tuning Analysis
SQL Tuning Advisor
SQL Tuning Sets
Top SQL

Introduction to Indexes
Identifying Row Access Methods
Creating B-Tree Indexes
Understanding B-Tree Index Access and Index Merging

Advanced Indexes
Using Bitmapped Indexes
Using Function-Based Key Indexes

Optimizer Hints and Plan Stability
Using Hints
Purpose and Benefits of Optimizer Plan Stability

Materialized Views and Temporary Tables
Using the CREATE MATERIALIZED VIEW Syntax
Utilizing Query Rewrites

Related Courses

Oracle Database 10g: SQL Tuning