

Oracle Database: SQL Tuning for Developers Ed 2

Duration: 3 Days

What you will learn

In this application development-centric course, students learn about Oracle SQL statement tuning and how to write well-tuned SQL statements appropriate for the Oracle database. Students learn to interpret execution plans and the different ways in which data can be accessed. Students are shown how to decipher, decide and then apply tuning to their SQL code. Various tuning techniques are demonstrated. For example, taking advantage of bind variables, trace files, and using the different types of indexes.

Learn To:

- Use Oracle tools to identify inefficient SQL statements.
- Use Automatic SQL Tuning.
- Use Real Time SQL monitoring.
- Write more efficient SQL statements.
- Monitor and trace high load SQL statements.
- Manage optimizer statistics on database objects.
- Understand the optimizer process steps and operators.
- Interpret execution plans.
- Perform application tracing.

Benefits To You:

Benefit from gaining a deeper understanding of Oracle SQL statement tuning and how to write well-tuned SQL statements appropriate for the Oracle database in this application development-centric course. You will learn how to decipher, decide and then apply tuning to your SQL code. Various tuning techniques are demonstrated.

Audience

- Application Developers
- Data Warehouse Developer
- Developer
- PL/SQL Developer
- Support Engineer

Related Training

Required Prerequisites

Familiarity with database architecture

Knowledge of SQL and PL/SQL

Oracle Database: Introduction to SQL Ed 2

Suggested Prerequisites

Oracle Database: SQL Workshop I

Oracle Database: SQL Workshop I Ed 2

Course Objectives

Modifying a SQL statement to perform at its best

Identifying poorly performing SQL

Tracing an application through its different levels of the application architecture

Understanding how the Query Optimizer makes decisions about how to access data

Defining how optimizer statistics affect the performance of SQL

Listing the possible methods of accessing data, including different join methods

Course Topics

Introduction

Course Objectives, Course Agenda and Appendixes Used in this Course

Audience and Prerequisites

Sample Schemas Used in the Course

Class Account Information

SQL Environments Available in the Course

Workshops, Demo Scripts, and Code Example Scripts

Appendices in the Course

Introduction to SQL Tuning

SQL Tuning Session

SQL Tuning Strategies

Development Environments: Overview

SQLTXPLAIN (SQLT) Diagnostic Tool

Using Application Tracing Tools

Using the SQL Trace Facility: Overview

Steps Needed Before Tracing

Available Tracing Tools: Overview

The trcsess Utility

Formatting SQL Trace Files: Overview

Understanding Basic Tuning Techniques

Developing Efficient SQL statement

Scripts Used in This Lesson

Table Design

Index Usage

Transformed Index

Data Type Mismatch

NULL usage

Tune the ORDER BY Clause

Optimizer Fundamentals

SQL Statement Representation

SQL Statement Processing

Why Do You Need an Optimizer?

Components of the Optimizer

Query Transformer

Cost-Based Optimizer

Adaptive Query Optimization

Optimizer Features and Oracle Database Releases

Generating and Displaying Execution Plans

Execution Plan?

The EXPLAIN PLAN Command

Plan Table

AUTOTRACE

V\$SQL_PLAN View

Automatic Workload Repository

SQL Monitoring

DBML_SQL_MONITOR

Interpreting Execution Plans and Enhancements

Interpreting a Serial Execution Plan

Adaptive Optimizations

Optimizer: Table and Index Access Paths

Row Source Operations

Main Structures and Access Paths

Full Table Scan

Indexes

Common Observations

Optimizer Join Operations

Join Methods

Join Types

Other Optimizer Operators

SQL operators

Other N-Array Operations

Result Cache operators

Introduction to Optimizer Statistics Concepts

Optimizer Statistics

Types of Optimizer Statistics

Gather and Manage Optimizer Statistics: Overview

Using Bind Variables

Cursor Sharing and Different Literal Values

Cursor Sharing and Bind Variables

SQL Plan Management

Maintaining SQL Performance

SQL Plan Management

Workshops

Workshop 1

Workshop 2

Workshop 3

Workshop 4

Workshop 5

Workshop 6 & 7

Workshop 8

Workshop 9