Oracle Database: SQL Tuning for Developers

Duration: 3 Days

What you will learn

In the Oracle Database: SQL Tuning for Developers course, you learn about Oracle SQL tuning and how to apply tuning techniques to your SQL code. Learn the different ways in which data can be accessed efficiently. In this course, you will be introduced to Oracle Database Exadata Express Cloud Service.

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.

Gain an understanding of the Oracle Database Exadata Express Cloud Service.

Benefits To You:

Benefit from gaining a deeper understanding of Oracle SQL statement tuning and how 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.

Related Training

Required Prerequisites

Familiarity with database architecture

Knowledge of SQL and PL/SQL

Suggested Prerequisites
Oracle Database 12c R2: SQL Workshop

Oracle Database 12c R2: SQL Workshop I Ed 3

Modify a SQL statement to perform at its best

Identify poorly performing SQL

Trace an application through its different levels of the application architecture

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

Define how optimizer statistics affect the performance of SQL

List the possible methods of accessing data

including different join methods

Gain an understanding of the Oracle Database Exadata Express Cloud Service

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

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

Oracle Cloud Overview
Introduction to Oracle Cloud & Oracle Cloud Services
Cloud Deployment Models
Evolving from On-premises to Exadata Express
What is in Exadata Express?
Exadata Express for Users & Developers
Oracle Exadata Express Cloud Service
Getting Started with Exadata Express
Service Console & Web Access through Service Console