

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.

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 12c: Introduction to SQL Ed 1.1

Suggested Prerequisites

Oracle Database: SQL Workshop I

Oracle Database: SQL Workshop I Ed 2 NEW

Course Objectives

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