

Oracle Database 19c: Performance Management and Tuning

Duration: 40 Hours (5 Days)

Overview

The Oracle Database 19c: Performance Management and Tuning course is designed to educate learners on how to diagnose and resolve performance issues in Oracle Database 19c. Through a series of modules, participants will learn about Performance tuning methodology, how to use Diagnostic tools like Automatic Workload Repository (AWR), Active Session History (ASH), and Automatic Database Diagnostic Monitor (ADDM), as well as how to manage optimizer statistics, SQL tuning, and Memory and space performance. Learners will gain practical skills in handling real-time performance problems, using Oracle Enterprise Manager Cloud Control, SQL Developer, and advanced features like In-Memory Column Store. The course places emphasis on oracle 19c performance tuning and oracle database 19c performance management and tuning, ensuring that students are equipped with the knowledge to maintain optimal database performance. The comprehensive curriculum caters to both beginners and experienced professionals looking to enhance their database administration expertise.

Audience Profile

The Oracle Database 19c: Performance Management and Tuning course is designed for IT professionals focused on database optimization and efficiency.

- Target audience for the course includes:
- Database Administrators
- Performance Analysts
- Database Architects
- IT Managers overseeing database environments
- Technical Consultants specializing in Oracle solutions
- System Analysts and Designers
- Data Warehouse Administrators
- Oracle Developers seeking performance tuning skills
- Support Engineers working with Oracle Database systems
- Database Designers concerned with system performance

Course Syllabus

Lesson 02: Defining the Scope of Performance Issues

- Defining the Scope of Performance Issues Objectives
- Tuning Life Cycle Phases

Lesson 03: Using the Time Model to Diagnose Performance Issues

Lesson 04: Using Statistics and Wait Events to Diagnose Performance Issues

- Using Statistics and Wait Events to Diagnose Performance Issues
- Instance Activity and Wait Event Statistics

Lesson 05: Using Log and Trace Files to Monitor Performance

Lesson 06: Using Enterprise Manager Cloud Control and SQL Developer to Monitor

- Performance

Lesson 07: Using Statspack to View Performance Data

Lesson 08: Using Automatic Workload Repository

- Using Automatic Workload Repository
- Managing AWR Data in a Multitenant Environment

Lesson 09: Using Metrics and Alerts

Lesson 10: Using Baselines

Lesson 11: Managing Automated Maintenance Tasks

Lesson 12: Using ADDM to Analyze Performance

- Using ADDM to Analyze Performance
- Compare Periods ADDM: Analysis

Lesson 13: Using Active Session History Data for First Fault System Analysis

Lesson 14: Using Emergency Monitoring and Real-Time ADDM to Analyze Performance

- Issues

Lesson 15: Overview of SQL Statement Processing

- Overview
- Processing a DML Statement

Lesson 16: Maintaining Indexes

- Maintaining Indexes
- Automatic Indexing Task

Lesson 17: Maintaining Tables

- Maintaining Tables
- Block Space Management with Free Lists
- Shrinking Segments: Overview
- Advanced Index Compression

Lesson 18: Introduction to Query Optimizer

- Introduction
- Using Initialization Parameters to Control Optimizer Behavior

Lesson 19: Understanding Execution Plans

- Understanding Execution Plans
- SQL*Plus AUTOTRACE

Lesson 20: Viewing Execution Plans by Using SQL Trace and TKPROF

Lesson 21: Managing Optimizer Statistics

- Managing Optimizer Statistics
- Extended Statistics

Lesson 22: Using Automatic SQL Tuning

Lesson 23: Using the SQL Plan Management Feature

Lesson 24: Overview of the SQL Advisors

Lesson 25: Using the SQL Tuning Advisor

Lesson 26: Using the SQL Access Advisor

Lesson 27: Overview of Real Application Testing Components

Lesson 28: Using SQL Performance Analyzer to Determine the Impact of Changes

Lesson 29: Using Database Replay to Test System Performance

- Using Database Replay to Test System Performance
- Database Replay Packages

Lesson 30: Implementing Real-Time Database Operation Monitoring

Lesson 31: Using Services to Monitor Applications

- Using Services to Monitor Applications
- Creating Services
- Service Aggregation Configuration

Lesson 32: Overview of Memory Structures

Lesson 33: Managing Shared Pool Performance

- Managing Shared Pool Performance
- Avoid Hard Parses
- Sizing the Shared Pool

Lesson 34: Managing Buffer Cache Performance

- Managing Buffer Cache Performance
- Buffer Cache Hit Ratio
- Caching Tables
- Multiple Block Sizes

Lesson 35: Managing PGA and Temporary Space Performance

- Managing PGA and Temporary Space Performance
- Monitoring SQL Memory Usage

Lesson 36: Configuring the Large Pool

Lesson 37: Using Automatic Shared Memory Management

- Using Automatic Shared Memory Management
- Using the V\$SYSTEM_PARAMETER View

Lesson 38: Introduction to In-Memory Column Store

Lesson 39: Configuring the In-Memory Column Store Feature

Lesson 40: Using In-Memory Column Store with Oracle Database Features