Oracle Database 19c: Performance Management and Tuning

Duration: 5 Days

Course Description:

In this course, Students will learn how to use Oracle Database automatic tuning features such as SQL Tuning Advisor, SQL Access Advisor, Automatic Workload Repository and Automatic Database Diagnostic Monitor, and practice these tuning methods. The course focuses on the tuning tasks expected of a DBA: reactive tuning of SQL statements, maintaining SQL statement and operation performance, and tuning the Oracle Database Instance components.

Course Objectives:

Upon completion of this course, the student should be able to:

- Use the Oracle Database tuning methodology appropriate to the available tools
- Utilize database advisors to proactively tune an Oracle Database Instance
- Use the tools based on the Automatic Workload Repository to tune the database
- Diagnose and tune common SQL related performance problems
- Diagnose and tune common Instance related performance problems
- Use Enterprise Manager performance-related pages to monitor an Oracle Database

Target Audience:

- Administrator
- Architect
- Database Administrator

Course Outlines:

- Overview
- Defining the Scope of Performance Issues
- Using the Time Model to Diagnose Performance Issues
- Using Statistics and Wait Events to Diagnose Performance Issues Using Log and Trace Files to Monitor Performance
- Using Enterprise Manager Cloud Control and SQL Developer to Monitor Performance
- Using Statspack to View Performance Data
- Using Automatic Workload Repository
- Using Metrics and Alerts
- Using Baselines
- Managing Automated Maintenance Tasks
- Using ADDM to Analyze Performance
- Using Active Session History Data for First Fault System Analysis
- Using Emergency Monitoring and Real-Time ADDM to Analyze Performance Issues
- Overview of SQL Statement Processing
- Maintaining Indexes
- Maintaining Tables
- Introduction to Query Optimizer
- Understanding Execution Plans
- Viewing Execution Plans by Using SQL Trace and TKPROF
- Managing Optimizer Statistics
- Using Automatic SQL Tuning
- Using the SQL Plan Management Feature
- Overview of the SQL Advisors
- Using the SQL Tuning Advisor
- Using the SQL Access Advisor
- Overview of Real Application Testing Components
- Using SQL Performance Analyzer to Determine the Impact of Changes
- Using Database Replay to Test System Performance
- Implementing Real-Time Database Operation Monitoring
- Using Services to Monitor Applications
- Overview of Memory Structures
- Managing Shared Pool Performance
- Managing Buffer Cache Performance
- Managing PGA and Temporary Space Performance
- Configuring the Large Pool
- Using Automatic Shared Memory Management
- Introduction to In-Memory Column Store
- Configuring the In-Memory Column Store Feature
- Using the In-Memory Column Store Feature to Improve SQL Performance
- Using In-Memory Column Store with Oracle Database Features