ORACLE DATABASE 11G: PERFORMANCE TUNING DBA RELEASE 2

DURATION: 5 DAYS

COURSE OVERVIEW

The course starts with an unknown database that requires tuning. The lessons will proceed through the steps a DBA will
perform to acquire the information needed to identify problem areas, to diagnose common problems, and remedy those
problems. The methodology used in the practices is primarily reactive. After configuring monitoring tools, and reviewing
the available reports, the student will be presented with the Oracle architecture based on the SQL statement processing
of SELECT and DML.
The SQL tuning section assumes that the DBA has little or no ability to change the code. The DBA will influence the
SQL performance with available tools. The DBA will be introduced to various methods of identifying the SQL statements
that require tuning, and the diagnostic tools needed to find ways to change the performance. This will include the use of
statistics, outlines, and profiles to influence the optimizer, adding and rebuilding indexes, and using the SQL Advisors. A
major task of DBA's is to maintain SQL performance across changes. This course introduces the DB Replay, and SQL
Performance Analyzer tools to help the DBA test and minimize the impact of change.
Instance tuning uses the same general method of observing a problem, diagnosing the problem, and implementing a
solution. The instance tuning lessons cover the details of major tunable components and describe how you can
influence the instance behavior. For each lesson, we will examine the relevant components of the architecture.
The class only discusses the architecture to the level required to understand the symptoms and solutions. More detailed
explanations are left to other courses, reference material, and the Oracle documentation.
The last lesson of this course is a recap of the best practices discovered in the previous lessons, and miscellaneous
recommendations. The goal is to finish the course with a best practices list for students to take away.
Learn To:
Describe Oracle tuning methodology
Use Oracle supplied tools for monitoring, and diagnosing SQL and Instance tuning issues
Use database advisors to correct performance problems proactively
Identify problem SQL statements & tune SQL performance problems

Monitor the Instance Performance using Enterprise Manager
Tune instance components, primarily using Instance parameters

TARGET AUDIENCE

1. Database Administrators
2. Support Engineer
3. Technical Consultant

COURSE OBJECTIVES

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

COURSE CONTENT

1. Introduction
2. Basic Tuning Tools
3. Using Automatic Workload Repository
4. Defining Problems
5. Using Metrics and Alerts
6. Using Baselines
7. Using AWR Based Tools
8. Monitoring an Application
9. Identifying Problem SQL Statements
10. SQL Statement Processing Phases & Role of the Oracle Optimizer
11. Influencing the Optimizer
12. Using SQL Performance Analyzer
13. SQL Performance Management
14. Using Database Replay
15. Tuning the Shared Pool
16. Tuning the Buffer Cache
17. Tuning PGA and Temporary Space
18. Automatic Memory Management

19. Tuning Segment Space Usage

20. Tuning I/O

21. Performance Tuning Summary

22. Appendix B: Using Statspack

COURSE PREREQUISITES

Suggested Prerequisites

1. Oracle Database 11g: Administration Workshop I DBA Release

2. Oracle Database: SQL and PL/SQL Fundamentals

3. Oracle Database 11g: Administration Workshop II DBA Release 2