Oracle Database 11g: Performance Tuning – Exam Study Guide

The Oracle Database 11g: Performance Tuning Exam Study Guide is designed to provide students with the information that can help them learn more to pass the Oracle Database 11g Performance Tuning (1Z0-054) Exam.

The exam audience is represented by database administrators, support engineers, and technical consultants who can demonstrate their knowledge and skills using Oracle Database 11g automatic tuning features, including SQL Tuning Advisor, SQL Access Advisor, Automatic Workload Repository and Automatic Database Diagnostic Monitor.

For each exam topic there have been identified alternative training options that are available at Oracle. Please note that some of the training recommended can cover multiple exam topics.

The exam covers 19 topics.

Topic 1: Basic Tuning Tools

Objectives
- Diagnose performance issues using top wait events and the time model
- Use dynamic performance views to view statistics and wait events
- Use Enterprise Manager Monitoring
- Identify the key tuning components of the alert logs

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 2: Using Automatic Workload Repository

Objectives
- Create and manage AWR snapshots
- Generate and read AWR reports, analyze Compare Periods reports

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 3: Defining Problems

Objectives
- Identify performance issues & set tuning priorities
Interpret tuning diagnostics
Tune for life cycle phase

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 4: Using Metrics and Alerts

Objectives
Interpret metric views and alerts

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 5: Baseline

Objectives
Create and manage AWR baselines
Create AWR baselines for future time periods
Monitor performance and enable adaptive thresholds

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 6: Using AWR-Based Tools

Objectives
Tune automatic maintenance tasks
Analyze ADDM reports
Analyze Active Session History (ASH) reports

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 7: Monitoring an Application

Objectives
Configure and manage services
Use services with client applications, Database Resource Manager and Scheduler
Configure services aggregation, tracing, and set performance-metric thresholds

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 8: Identifying Problem SQL Statements

Objectives
- Describe SQL statement processing
- View the SQL statement statistics to identify the SQL statements that perform poorly
- Describe and use methods for Viewing Execution Plans

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 9: Influencing the Optimizer

Objectives
- Describe the optimizer's behavior
- Adjust parameters to influence the optimizer
- Influence the optimizer (access methods, join techniques and adjust data structures)

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 10: SQL Performance Management

Objectives
- Manage optimizer statistics
- Configure automatic SQL tuning and SQL profiling
- Set up and use SQL plan baseline

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 11: Using SQL Performance Analyzer
Objectives

- Describe SQL Performance Analyzer process and benefits
- Use SQL Performance Analyzer

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 12: Using Database Replay

Objectives

- Identify when and how to use Database Replay
- Use Enterprise Manager to record and replay workloads

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 13: Tuning the Shared Pool

Objectives

- Describe Latches and Mutexes
- Diagnose and change cursor sharing
- Diagnose and resolve shared pool fragmentation
- Manage the results cache and tune the large pool
- Tune the data dictionary cache

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 14: Tuning the Buffer Cache

Objectives

- Describe the buffer cache architecture
- Explain the symptoms that indicate a buffer cache problem
- Tune the buffer cache for performance issues

Training Options

- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 15: Tuning PGA and Temporary Space
Objectives
Diagnose PGA memory issues and size the PGA
Diagnose temporary space issues
Specify temporary tablespace parameters for efficient operation

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 16: Automatic Memory Management

Objectives
Implement Automatic Shared Memory Management (ASMM)
Implement Automatic Memory Management (AMM)

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 17: Tuning Segment Space Usage

Objectives
Tune segment space management
Use Automatic Segment Space Management
Diagnose row migration and chaining
Use segment shrinking and table compression

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning

Topic 18: Tuning I/O

Objectives
Diagnose database I/O issues
Describe the Stripe and Mirror Everything (SAME) concept
Set filesystemio_options and choose appropriate I/O solutions
Tune Automatic Storage Management (ASM)

Training Options
- Instructor Led Training (delivered by Oracle University)
  - Oracle Database 11g: Performance Tuning
Topic 19: Appendix B Using Statspack

Objectives
Using Statspack

Training Options

- Instructor Led Training (delivered by Oracle University)
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