

## Oracle Database 11g: Performance Tuning

**Duração:** 5 Dias

### Objetivos do Curso

Students learn how to use Oracle Database 11g 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 performance, and tuning the Oracle Database Instance components. Throughout the course, students practice the art of tuning an Oracle Instance through a series of workshops. The methodology is practiced in the workshops rather than taught.

This course does not address partition tuning, materialized views, or RAC specific issues as they are covered in courses specifically for these products. This course makes use of many features that require the Enterprise Edition and optional Packs.

This course counts towards the Hands-on course requirement for the Oracle Database 11g Administrator Certification. Only instructor-led inclass or instructor-led online formats of this course will meet the Certification Hands-on Requirement. Self Study CD-Rom and Knowledge Center courses DO NOT meet the Hands-on Requirement.

Learn 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

### Público

Administrador de Banco de Dados  
Consultor Técnico  
Database Administrators  
Support Engineer  
Technical Consultant

### Pré-requisitos

*Pré-requisitos Obrigatórios*

Oracle Database 11g: Administration Workshop II

Oracle Database 11g: Administration Workshop I

### Objetivos do Curso

Use Database Statistics and Metrics to identify a performance problem  
Interpret Tuning diagnostics  
Identify and eliminate performance issues

Set tuning priorities and strategies  
Identify problem SQL statements  
Influence the optimizer

## **Tópicos do Curso**

### **Introduction**

Tuning Questions  
Who tunes  
What to tune  
How to tune

### **Monitoring With Basic Tools**

Monitoring tools overview  
Enterprise Manager  
V\$ views, Statistics and Metrics  
Wait Events  
Time Model: Overview

### **Using Automatic Workload Repository**

Automatic Workload Repository: Overview  
Automatic Workload Repository Data  
Database Control and AWR  
Generating AWR Reports in SQL\*Plus

### **Identifying the Problem**

Tuning Life Cycle Phases  
Identify a Tuning Issue  
Remedy one problem

### **Identifying Problem SQL Statements**

Characteristics of a bad SQL statement  
Role of the Optimizer  
Generate explain plan  
Access Paths Choices  
Trace the execution

### **Influencing the Optimizer**

Manage Optimizer Statistics  
Calibrate I/O  
Optimizer Cost  
Changing Optimizer Behavior

### **SQL Plan Management**

Automatic Maintenance Tasks  
SQL Profiles  
SQL Access Advisor  
SQL Outlines  
SQL Plan Baselines

### **Change Management**

Types of changes  
SQL Performance Analyzer  
DB Replay  
Server-Generated Alerts

### **Using Metrics and Alerts**

Benefits of Metrics  
Database Control Usage Model  
User-Defined SQL Metrics

### **Using AWR Based Tools**

Automatic Maintenance Tasks  
Using ADDM  
Using Active Session History  
Historical Data View

### **Monitoring an Application (Using Services)**

Service Overview  
Managing Service  
Service Aggregation and Tracing  
Tracing Your Session

### **Baselines**

Working with Metric Baselines  
Setting Adaptive Alert Thresholds  
Configuring Normalization Metrics

### **Tuning the Shared Pool**

Shared Pool Operation  
Mutex  
Statspack/AWR Indicators  
Library Cache Activity  
Diagnostic Tools  
UGA and Oracle Shared Server  
Large Pool

### **Tuning the Buffer Cache**

Architecture  
Tuning Goals and Techniques  
Symptoms  
Solutions

### **Tuning PGA and Temporary Space**

Monitoring SQL Memory Usage  
Temporary Tablespace Management

### **Automatic Memory Management**

Automatic Memory Management Architecture  
Dynamic SGA Feature  
Managing Automatic Memory Management

### **Tuning Block Space Usage**

- Space Management
- Extent Management
- Anatomy of a Database Block
- Block Space Management

### **Tuning I/O**

- I/O Architecture
- Striping and Mirroring
- Using RAID
- I/O Diagnostics
- Using Automatic Storage Management

### **: Performance Tuning: Summary**

- Important Initialization Parameters with Performance Impact
- Database High Availability: Best Practices
- Tablespace: Best Practices
- Statistics Gathering

### **Using Statspack**

- Introduction to Statspack
- Capturing Statspack Snapshots
- Reporting with Statspack
- Statspack considerations
- Statspack and AWR