Oracle Database 10g: Performance Tuning

Duration: 4 Days

What you will learn

This Oracle Database 10g: Performance Tuning training will help you get the most out of your 10g Database by learning performance tuning methods that maximize the utility of the database. You'll learn how to benefit from Oracle Database 10g automatic tuning features.

Learn To:

Practice the manual tuning methods using the statspack tool.
Tune an Oracle Database by practicing through a series of workshops.
Understand the various methodologies one can use to tune an Oracle Database.
Work with various tunable components of an Oracle Database.

Benefits to You

Ensure fast, reliable, secure and easy to manage performance. Optimize database workloads, lower IT costs and deliver a higher quality of service by enabling smooth and rapid consolidation within your Datacenter.

Counts Toward Hands-On Course Requirement

This course counts towards the Hands-on course requirement for the Oracle Database 10g 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 are excellent study and reference tools but DO NOT meet the Hands-on Requirement for certification.

Audience

Database Administrators
Support Engineer
Technical Consultant

Related Training

Required Prerequisites

Knowledge of Database Administration

Oracle Database 10g: Administration Workshop I Release 2

Oracle Database 10g: Administration Workshop II Release 2

Course Objectives

Use the Oracle Database tuning methodology appropriate to the available tool

Utilize database advisors to proactively tune an Oracle database

Use the tools based on the Automatic Workload Repository to tune the database

Use Statspack reports to tune the database

Diagnose and tune common database performance problems

Use Enterprise Manager performance-related pages to monitor an Oracle database

Course Topics

Performance Tuning Overview
Write appropriate tuning goals
Apply the tuning methodology
Balance performance and safety trade-offs
Identify common tuning problems
Log a performance Service Request with Oracle Support

Statistics and Wait Events
Identify dynamic performance views useful in tuning
Identify key tuning components of the alert log file
Identify key tuning components of user trace files
Use dynamic performance views to view statistics and wait events

Metrics, Alerts, and Baselines
View metrics using the metrics history views
Create metric thresholds
View alerts
Create metric baselines
Enable adaptive thresholds

Using Statspack
Install Statspack
Create Statspack snapshots
Generate Statspack reports
Identify the major sections of the Statspack report

Using AWR
Create and manage AWR snapshots
Generate AWR reports
Create snapshot sets and compare periods
Generate ADDM reports
Generate ASH reports

Reactive Tuning
Use Enterprise Manager pages to identify symptoms

Eliminate operating system issues

Tuning the Shared Pool
Diagnose shared pool problems
Size the shared pool
Size the reserved area
Keep objects in the shared pool

Tuning the Buffer Cache
Describe the buffer cache architecture
Size the buffer cache
Resolve common performance issues related to the buffer cache
Use common diagnostic indicators to suggest a possible solution

Automatic Shared Memory
Enable Automatic Shared Memory
Set auto-tuned memory parameters
Set the manually tuned SGA parameters
Use the SGA advisor to set SGA target

Checkpoint and Redo Tuning
Diagnose checkpoint and redo issues
Implement Fast Start MTTR target
Monitor performance impact of Fast Start MTTR target
Implement multiple database writers
Tune the redo chain
Size the redo log file
Size the redo log buffer

Tuning I/O
Diagnose database I/O issues
Describe the Stripe and Mirror Everything (SAME) concept
Explain the benefits of asynchronous I/O
Choose appropriate I/O solutions

Tuning PGA and Temporary Space
Diagnose PGA memory issues
Size the PGA memory
Diagnose temporary space issues
Specify temporary tablespace parameters for efficient operation

Tuning Block Space Usage
Tune segment space management
Convert from dictionary managed tablespaces
Convert to automatic segment space management
Tune block space management
Diagnose and correct row chaining
Diagnose table fragmentation
Compare characteristics of bigfile and smallfile tablespaces

Initial Configuration
List best practices identified throughout the course