

Oracle Database 10g: Performance Tuning

What you will learn:

Get the most out of your 10g Database by learning performance tuning methods that maximize the utility of the database. Students learn how to benefit from Oracle Database 10g automatic tuning features, as well as practicing the manual tuning methods using the statspack tool. After clearly defining the various methodologies one can use to tune an Oracle Database, the course covers the various tunable components of an Oracle Database. Throughout the course, students experience hands-on the tuning of an Oracle Database by practicing through a series of workshops.

This course counts towards the [Hands-on course requirement](#) for the Oracle Database 10g Administrator certification.

Audience:

Database Administrators
Support Engineer
Technical Consultant

Prerequisites:

Required Prerequisites:

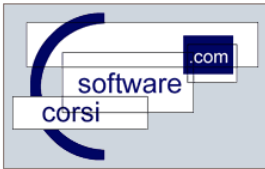
Knowledge of Database Administration
[Oracle Database 10g: Administration Workshop I Release 2](#)
[Oracle Database 10g: Administration Workshop II Rel 2 **New**](#)
[Oracle Database 10g: New Features for Administrators Release 2](#)

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

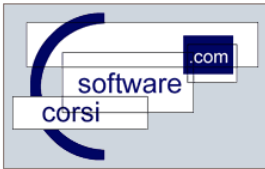
Use Enterprise Manager pages to identify symptoms
Eliminate operating system issues

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

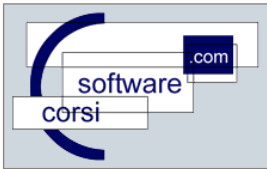
Tuning Block Space Usage

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

Suggested Next Courses:



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Pag.4 di 4

[Oracle Enterprise Manager 10g Grid Control](#)
[Oracle Enterprise Manager 10g Grid Control Release 2 **NEW**](#)
[Oracle Database 10g: SQL Tuning Workshop](#)
[Oracle Database 10g: Administering Real Application Clusters](#)
[Oracle Database 10g: Real Application Clusters](#)