
ORACLE8i PERFORMANCE and TUNING for DBA's

Duration: 3 days

Develop the advanced skills of performance and tuning to effectively administer an Oracle Server Database

Course Description:

This course provides students with the knowledge and hands-on experience of SQL tuning, database tuning and advanced performance design.

Participants will learn to...

- Understand the role of the DBA in performance tuning
- Design and build appropriate index and other storage structures for optimal performance
- Use a variety of tools to analyze the performance of SQL statements
- Generate statistics for and use the cost-based optimizer
- Use a variety of database analysis and tuning tools
- Configure a database for optimal performance
- Tune database memory
- Tune database sorts
- Tune database file I/O
- Tune contention

Who Needs to Attend:

Application Developers and Designers, Managers, Database Administrators, Systems Administrators, Network Managers and Technical Support Personnel

Prerequisites:

Oracle Foundation Classes, Oracle DBA I or equivalent experience

Course Content:

PERFORMANCE AND TUNING DUTIES OF THE DBA

- DBA's Performance Tuning Duties
- Steps for Tuning
- A Tuning Methodology
- The Performance Tuning Team
- Tuning Tools

TUNE THE LOGICAL STRUCTURES OF THE DATABASE

- Overview
- Indexes
- Clusters

TUNE DATABASE OPERATIONS

- Objectives
- SQL Parsing and Execution
- Shared SQL Statements
- Contents of the SQL Area
- Understanding SQL Statement Transformation
- Using SQL Syntax

SQL TUNING TOOLS

- Rules-based Optimization
- Rankings of RBS Access Paths
- Cost-based Optimization
- Table and Index Statistics
- Execution Plans
- SQL*Plus and Autotrace
- SQL_TRACE and TKPROF
- Using Hints

DBA TUNING TOOLS

- Initialization Parameter File
- V\$ Views
- UTLBSTAT.SQL and UTLESTAT.SQL
- Statspack

TUNING MEMORY

- Memory Tuning Goals
- Tune OS Memory
- Tune the Redo Log Buffer
- Tune Private SQL and PL/SQL Areas
- Tune the Shared Pool
- Tune the Database Buffer Cache
- Segregating Buffer Activity: Multiple Buffer Pools
- Tuning the Java Pool
- Tuning Sorts

TUNE I/O AND PHYSICAL STRUCTURES

- Tune File I/O
- RAID
- Oracle File I/O

TUNE RESOURCE CONTENTION AND UNDERSTANDING THE RESOURCE MANAGER

- Tune Contention
- Understanding the Resource Manager

PL/SQL PACKAGES FOR THE TUNER

- DBMS Packages

PERFORMANCE TUNING CHECKLIST AND WORKSHOP

- Oracle8i Performance Tuning Checklist

PERFORMANCE TUNING WORKSHOP

Course Labs:

1. Indexes and Clusters
2. SQL statement processing
3. Statistics and Execution Plans
4. SQL_TRACE and TKPROF, Using Hints
5. Tuning Tools
6. Tuning Memory
7. Tuning I/O
8. Tuning Contention
9. Performance Tuning Workshop