

Oracle Performance Tuning Course Content

- **Introduction**
 - Cause of Performance Problems
 - Setting Performance Goals
 - The Tuning Cycle
 - ORACLE Architecture
 - Logical Storage Structures
 - Physical Structures
 - Memory Structures
 - The Shared Pool
 - Processes
 - Some Administration Terminology
- **Design**
 - Data Design Phase
 - Data Model Design
 - Online Transaction Processing
 - Decision Support Systems
 - Multi-purpose Applications
- **Optimizing SQL**
 - Physical Retrieval of Data

- Full Table Scan versus Index Reads
- Performance Diagnostic Tools
- Explain Plan
- SQL Trace Facility
- TKPROF
- Autotrace
- Join Methods
- Sort/Merge Joins
- Nested Loops
- Hash Joins
- Hash Join Example Data Access Methods
- **Indexes**
 - Basic Indexes
 - B-Tree Indexes
 - Bitmap Index
 - Comparing B-Tree and Bitmap Indexes
 - Reverse Key Index
 - Index-Organised Tables
 - Invisible index
 - Creating Monitoring and Maintaining Indexes
- **Automatic SQL Tuning**

- Query Optimizer Modes Types of Tuning Analysis
- Automatic workload repository SQL Tuning Advisor SQL Tuning Sets Top SQL
- Identify high - load SQL Dynamic Performance views
- **SQL Performance Analyzer**
 - Describe SQL Performance Analyzer process and benefits
 - Use SQL Performance Analyzer
- **The Optimizer**
 - The ORACLE Optimizer
 - SQL statement parsing
 - Initialisation parameters
 - Rule Based Optimizer
 - Cost Based Optimizer
 - Rule / Cost Comparisons
 - Choosing an Approach
 - Multiple WHERE Clauses
 - Using Indexes for Sorts
 - Multiple Table Joins
 - Disabling Indexes
 - Sharing SQL Statements
 - Sharing Cursors
 - Sharing SQL Statements

- Sharing Cursors
- Adaptive Cursors Sharing
- Other SQL Tuning Tips
- **Gathering Statistics**
 - Analyzing Statistics
 - DBMS_STATS
 - Automatic Optimizer Statistics Collection
 - Histograms
 - How to Generate Histograms Statistics
- **SQL Plan Management**
 - SQL outlines
 - SQL profiles
 - SQL Access Advisor
 - Set up and use SQL plan baseline
- **Advanced Tuning**
 - Star Queries
 - Materialized Views
 - Refreshing Views
 - Materialized View Logs
 - SQL Result Cache
 - Temporary Tables

- **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 Statspack**
 - Create and manage AWR snapshots
 - Generate AWR reports
 - Create snapshot sets and compare periods
 - Generate ADDM reports

- Generate ASH reports