



# Oracle SQL Performance Tuning Tips & Techniques (3-days)

## 3-Day Workshop

Give your technical staff that competitive edge with this local Oracle Workshop.

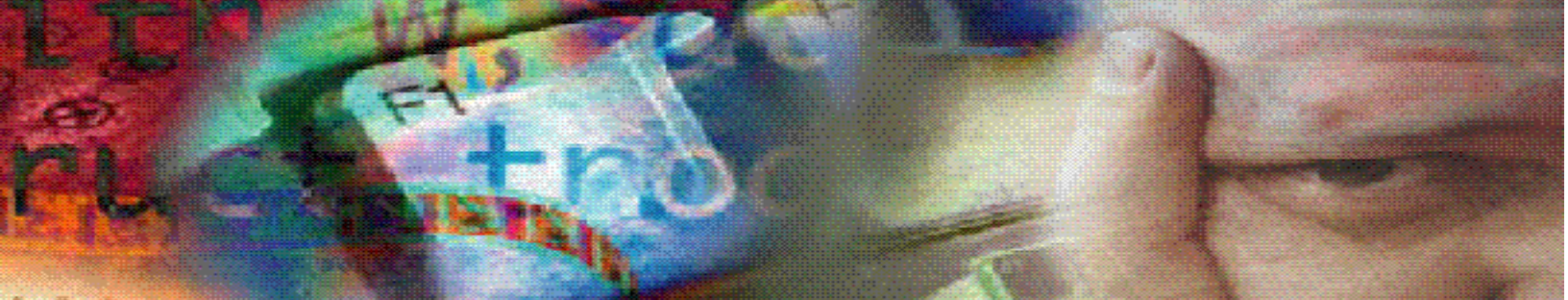
The focus of this tuning course is to illustrate coding techniques that insure a consistent response time between instances and releases of the Oracle database. This course works closely with performance tuning of actual SQL statements as well as covering a variety of Oracle Server tuning topics.

The course starts out with a complete overview of the Oracle architecture so students can get an understanding how their SQL and applications can take advantage of the computing environment. This course includes a discussion on the differences of the various Explain Plan steps such as Merge-Join and Nested-Loop, and when is it best to use each. Dan goes into considerable detail, with SQL examples, on how the optimizers (both rule and cost) make their decisions. Students will work with a variety of SQL statements, reviewing explain plans and making changes to make these SQL statements perform better. Students will also experience how to monitor their application environment, their indexes, and see how to find problem SQL in their applications. This course takes a close look at indexes: how Oracle selects them, why they are sometimes not used, and how to tell if indexes are being used/not being used.

The focus this course is tuning SQL via coding style. The instructor finds that tuning in this fashion maintains the performance of the SQL when migrating to other Oracle environments (upgrades to newer releases). Students will also experience how to monitor their application environment, their indexes, and see how to find problem SQL in their applications using Stats Pack and the V\$ dictionary tables.

This course covers hints, index utilization, as well as a variety of useful tools such as Oracle Trace, PL/SQL Profiler, StatsPack and Advanced Workload Repository.

This course is perfect for developers who need to know more on how Oracle works and how to get their SQL to perform better. This course is also good for those who are light on SQL tuning or perhaps are new to the Oracle RDBMS.



The course utilizes a variety of current tools. Students will have the opportunity to learn more about TOAD, SQL Developer, TextPAD, as well as the Oracle tools like SQL\*Plus, TKProf, and Stats Pack.

**Workshop Prerequisites:**

A working knowledge of the SQL language. Knowledge of SQL Explain Plans is helpful but not necessary.

**Topics covered:**

- How Oracle arrives at an Execution Plan
- Index Review/Index Statistics/How Oracle Selects Indexes
- Advanced problem-solving topics using V\$ Table information
- In-depth look at Explain Plans
- SQL Trace/Stats Pack/AWR
- PL/SQL Tuning/Profiling
- SQL Troubleshooting/problem solving
- Setting up/using Result Cache

Lectures and topics are enhanced with live illustrations and hands-on exercises

**Attendees Receive:**

- Study guide with presentations and relevant white papers
- Diskette full of tuning and problem discovery scripts
- Opportunity to ask the tough Oracle questions
- A hands-on opportunity to learn more about Oracle, SQL Developer, and TOAD

**Course Outline:**

- Day 1: SQL Statement Tuning
  - Oracle RDBMS Architecture overview
  - Understanding/Reading/Interpreting Explain Plans
  - Understanding the Rule-based Optimizer
  - Understanding the Cost-based Optimizer
  - Working with Hints
- Day 2: SQL Troubleshooting Tips and Techniques
  - Index Review/Tips & Techniques
  - A close look at sub-query coding techniques
  - Tuning Tool Review: Statspack, Events, Tracing/Tkprof
  - Profiling and tuning PL/SQL

- Day 3: Advanced SQL Troubleshooting Tips and Techniques
  - Review SGA Memory Structures including:
    - Buffer Cache
    - Result Cache
  - Library Cache Trace File Analysis
    - Using SQL TXPlan (new free Oracle SQL analysis tool), TOAD
  - A close look at other useful Oracle Traces
    - 10053 CBO Trace
    - 10030 & 31 Sort Traces
    - 10104 Hash Join Traces
  - Oracle Internals: How Oracle writes
    - Various Space Management Issues discussed
    - Monitoring Sorting
    - Why does my Oracle10g run slower than my Oracle9i
  - Finding Problem SQL using v\$ information
  - Using Automated Workload Repository
  - Review the SQL Tuning Advisor

### **About Dan Hotka:**

Dan Hotka is a Training Specialist who has over 31 years in the computer industry and over 26 years of experience with Oracle products. He is an internationally recognized Oracle expert with Oracle experience dating back to the Oracle V4.0 days. Dan's latest book is the [TOAD Handbook](#) by Pearson. He is also the author of [SQL Developer Handbook](#) by Oracle Press, [SQL Developer Handbook](#) by Oracle Press, [Oracle9i Development By Example](#), and [Oracle8i from Scratch](#) by Que and has co-authored 7 other popular books including the [Database Oracle10g Linux Administration](#) by Oracle Press. He is frequently published in Oracle trade journals, and regularly speaks at Oracle conferences and user groups around the world. Visit his website at [www.DanHotka.com](http://www.DanHotka.com). Dan can be reached at [dhotka@earthlink.net](mailto:dhotka@earthlink.net) .

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