**KNOWLEDGE**

**POWER**

Performance Tuning Overview

Performance Improvement Methods

Configuring a Database for Performance

Automatic Performance Statistics

Automatic Performance Diagnostics

Configuring and Using Memory

I/O Configuration and Design

# ORACLE 11g Database Tuning

Managing Operating System Resources

Instance Tuning Using Performance Views

The Query Optimizer

Using EXPLAIN PLAN

Managing Optimizer Statistics

Using Indexes and Clusters

Using SQL Plan Management

SQL Tuning Overview

Automatic SQL Tuning

SQL Access Advisor

Using Optimizer Hints

Using Plan Stability

Using Application Tracing Tools

# Data Softech Inc

# ORACLE 11g Database Tuning

The Database Tuning class covers methods that reveal detail about how the Oracle database can be tune to achieve maximum performance.

## Lesson Plan

### Performance Tuning Overview

**DAY 1**

- Introduction to Performance Tuning
- Introduction to Performance Tuning Features and Tools
- Oracle Methodology
- Understanding Investment Options
- Understanding Scalability
- System Architecture
- Application Design Principles
- Workload Testing, Modeling, and Implementation
- Deploying New Applications

### Performance Improvement Methods

- The Oracle Performance Improvement Method
- Emergency Performance Methods

### Configuring a Database for Performance

- Performance Considerations for Initial Instance Configuration
- Creating and Maintaining Tables for Optimal Performance
- Performance Considerations for Shared Servers

### Automatic Performance Statistics

- Overview of the Automatic Workload Repository
- Managing the Automatic Workload Repository

### Automatic Performance Diagnostics

- Overview of the Automatic Database Diagnostic Monitor
- Setting Up ADDM
- Diagnosing Database Performance Problems with ADDM
- Views with ADDM Information

# ORACLE 11g Database Tuning

## Trainers

*Our database training experts come from various IT backgrounds and possess market-specific IT qualifications. These specialists have worked on various data management fields with leading database industries in Information Technology.*

## Tutorials

*DSI custom designed tutorials and live training on key projects helps the learners gain a quality and accountable experience with various projects.*

### Configuring and Using Memory

- Understanding Memory Allocation Issues
- Configuring and Using the Buffer Cache
- Configuring and Using the Shared Pool and Large Pool
- Configuring and Using the Redo Log Buffer
- PGA Memory Management
- Managing the Server and Client Result Caches

**DAY 2**

### I/O Configuration and Design

- About I/O
- I/O Calibration and Configuration

### Managing Operating System Resources

- Understanding Operating System Performance Issues
- Resolving Operating System Issues
- Understanding CPU

### Instance Tuning Using Performance Views

- Instance Tuning Steps
- Interpreting Oracle Database Statistics
- Wait Events Statistics
- Real-Time SQL Monitoring
- Tuning Instance Recovery Performance: Fast-Start Fault Recovery

### The Query Optimizer

- Optimizer Operations
- Choosing an Optimizer Goal
- Enabling and Controlling Query Optimizer Features
- Understanding the Query Optimizer
- Understanding Access Paths for the Query Optimizer
- Understanding Joins

# ORACLE 11g Database Tuning

## Training Benefits

*Our certified and highly experienced trainers will help you equip with the IT knowledge and database management solutions that helps you independently assess and utilize the updated technology skills in any business-IT firm. We provide state-of-art infrastructure to incorporate our training practices.*

## Affordable Training

*DSI custom designs the training addressing the clients, their staff or learners needs thus maximizing the benefit they gain from their training investment.*

### Using EXPLAIN PLAN

- Understanding EXPLAIN PLAN
- The PLAN_TABLE Output Table
- Running EXPLAIN PLAN
- Displaying PLAN_TABLE Output
- Reading EXPLAIN PLAN Output
- Viewing Parallel Execution with EXPLAIN PLAN
- Viewing Bitmap Indexes with EXPLAIN PLAN
- Viewing Result Cache with EXPLAIN PLAN
- Viewing Partitioned Objects with EXPLAIN PLAN

### Managing Optimizer Statistics

- Overview of Optimizer Statistics
- Managing Automatic Optimizer Statistics Collection
- Gathering Statistics Manually
- System Statistics
- Managing and Viewing Statistics

**DAY 3**

### Using Indexes and Clusters

- Understanding Index Performance
- Using Function-based Indexes for Performance
- Using Partitioned Indexes for Performance
- Using Index-Organized Tables for Performance
- Using Bitmap Indexes for Performance
- Using Bitmap Join Indexes for Performance
- Using Domain Indexes for Performance
- Using Table Clusters for Performance
- Using Hash Clusters for Performance

# ORACLE 11g Database Tuning

## Training Courses

*Oracle 11g New features*

*Oracle 11g R2 RAC Administration*

*Oracle 11g R2 Administration I*

*Oracle 11g R2 Administration II*

*Oracle 11g R1 RAC Administration*

*Oracle 11g/10g Performance tuning*

*Oracle 11g/10g Streams*

*Oracle 11g/10g Data Guard*

*Oracle 11g/10g Backup*

*Oracle 11g/10g Recovery using RMAN*

*Oracle Application server Administration I*

*Oracle Application server Administration II*

*Oracle 10g Sql Tuning*

*Oracle Apps 11i System Administration*

*Installations*

### Using SQL Plan Management
- Overview of SQL Plan Baselines
- Managing SQL Plan Baselines
- Using SQL Plan Baselines with the SQL Tuning Advisor
- Using Fixed SQL Plan Baselines
- Displaying SQL Plan Baselines
- SQL Management Base
- Importing and Exporting SQL Plan Baselines
- Migrating Stored Outlines to SQL Plan Baselines

### SQL Tuning Overview
- Introduction to SQL Tuning
- Goals for Tuning
- Identifying High-Load SQL
- Automatic SQL Tuning Features
- Developing Efficient SQL Statements
- Building SQL Test Cases

### Automatic SQL Tuning
- Overview of the Automatic Tuning Optimizer
- Managing the Automatic SQL Tuning Advisor
- Tuning Reactively with SQL Tuning Advisor
- Managing SQL Tuning Sets and SQL Profiles
- SQL Tuning Views

### SQL Access Advisor
- Overview of the SQL Access Advisor
- Using the SQL Access Advisor
- Tuning Materialized Views for Fast Refresh and Query Rewrite

### Using Optimizer Hints
- Overview of Optimizer Hints
- Specifying Hints
- Using Hints with Views

# ORACLE 11g Database Tuning

## DSI Activities

Database Management
Database Monitoring
Database Administration
Performance Tuning
Database Backup
Recovery Procedures
Quality Assessment
System Analysis
Database Upgrades
Database Patching
Cloning and Refresh
Instance Management
Security Administration
Schema Maintenance
Application  Development
Server Hosting
Web Development
Domain Registration
E-business solutions
Business Process Outsourcing
Database Migration
Strategic IT Planning
Consultation and Advices

## Using Plan Stability

- Using Plan Stability to Preserve Execution Plans
- Using Plan Stability with Query Optimizer Upgrades

## Using Application Tracing Tools

- End to End Application Tracing
- Using the trcsess Utility
- Understanding SQL Trace and TKPROF
- Using the SQL Trace Facility and TKPROF
- Avoiding Pitfalls in TKPROF Interpretation
- Sample TKPROF Output