

# Oracle Database 11g SQL Tuning

## Course information

Days : 3

Total lessons : 15

Suggested Prerequisites :

- Oracle Database 11g: SQL Fundamentals I
- Oracle Database 11g: Administrator Workshop I

Training includes :

- Experienced trainer(s)
- Pre-test and Post-test
- Practices and solutions

Public price :

- 15,000 baht(THB) : 1 person

In-house price :

- 45,000 baht(THB) : Small Class : 1 - 5 people
- 67,000 baht(THB) : Small Class : 6 - 10 people
- 79,000 baht(THB) : Medium Class : 11 - 15 people

*All prices exclude VAT 7 %*

## Course details

### Day 1

Lesson 1 : Exploring the Oracle Database Architecture

Lesson 2 : Introduction to SQL Tuning

Lesson 3 : Introduction to the Optimizer

Lesson 4 : Interpreting Execution Plans

Lesson 5 : Application Tracing

### Day 2

Lesson 6 : Optimizer Operators

Lesson 7 : Optimizer: Join Operators

Lesson 8 : Other Optimizer Operators

Lesson 9 : Case Study: Star Transformation

Lesson 10 : Optimizer Statistics

### Day 3

Lesson 11 : Using Bind Variables

Lesson 12 : SQL Tuning Advisor

Lesson 13 : SQL Access Advisor

Lesson 14 : Automating SQL Tuning

Lesson 15 : SQL Plan Management

## Lesson details

### Lesson 1 : Exploring the Oracle Database Architecture

- List the major architectural components of the Oracle Database server
- Explain memory structures
- Describe background processes
- Correlate logical and physical storage structures

### Lesson 2 : Introduction to SQL Tuning

- Describe what attributes of a SQL statement can make it perform poorly
- List the Oracle tools that can be used to tune SQL
- List the tuning tasks



### **Lesson 3 : Introduction to the Optimizer**

- Describe the execution steps of a SQL statement
- Discuss the need for an optimizer
- Explain the various phases of optimization
- Control the behavior of the optimizer

### **Lesson 4 : Interpreting Execution Plans**

- Gather execution plans
- Display execution plans
- Interpret execution plans

### **Lesson 5 : Application Tracing**

- Configure the SQL Trace facility to collect session statistics
- Use the TRCSESS utility to consolidate SQL trace files
- Format trace files using the tkprof utility
- Interpret the output of the tkprof command

### **Lesson 6 : Optimizer Operations**

- Describe most of the SQL operators
- List the possible access paths
- Explain how join operations are performed

### **Lesson 7 : Optimizer: Join Operators**

- Describe the SQL operators for joins
- List the possible access paths

### **Lesson 8 : Other Optimizer Operators**

- Describe SQL operators for:
  - Clusters
  - In-List
  - Sorts
  - Filters
  - Set Operations
- Result Cache operators

### **Lesson 9 : Case Study: Star Transformation**

- Define a star schema
- Show a star query plan without transformation
- Define the star transformation requirements
- Show a star query plan after transformation

### **Lesson 10 : Optimizer Statistics**

- Gather optimizer statistics
- Gather system statistics
- Set statistic preferences
- Use dynamic sampling
- Manipulate optimizer statistics

### **Lesson 11 : Using Bind Variables**

- List the benefits of using bind variables
- Use bind peeking
- Use adaptive cursor sharing



**Lesson 12 : SQL Tuning Advisor**

- Describe statement profiling
- Use SQL Tuning Advisor

**Lesson 13 : SQL Access Advisor**

- Use SQL Access Advisor

**Lesson 14 : Automating SQL Tuning**

- Use Automatic SQL Tuning

**Lesson 15 : SQL Plan Management**

- Manage SQL performance through changes
- Set up SQL Plan Management
- Set up various SQL Plan Management scenarios

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