

## Oracle Database 11g: Administer a Data Warehouse

**Duration: 4 Days**

### What you will learn

This course will help you understand the basic concepts of administering a data warehouse. You'll learn to use various Oracle Database features to improve performance and manageability in a data warehouse.

### Learn To:

Implement partitioning.

Use parallel operations to reduce response time.

Extract, transform and load data.

Create, use and refresh materialized views to improve data warehouse performance.

Use query rewrite to quickly answer business queries using materialized views.

Use SQL access advisor and PL/SQL procedures to tune materialized views for fast refresh and query rewrites.

Identify the benefits of partitioning, in addition to using parallel operations to reduce response time for data-intensive operations.

### Benefits to You

Expert instructors will also teach you how to extract, transform and load data into an Oracle database warehouse. Discover how to use SQL Access Advisor to optimize the entire workload. Use materialized views to improve data warehouse performance and learn how query rewrites can improve performance.

### Audience

Application Developers

Data Warehouse Administrator

Data Warehouse Developer

Database Administrators

Support Engineer

**EZY Intellect Pte. Ltd.,**

**#1 Changi North Street 1, Singapore – 498789. [www.ezyintellect.com](http://www.ezyintellect.com)**

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Technical Consultant

### **Related Training**

Required Prerequisites

Ability to read and understand execution plans

Good working knowledge of SQL and in data warehouse design and implementation

Data Warehouse design, implementation, and maintenance experience

### **Course Objectives**

Use parallel operations to reduce response time for data-intensive operations

Extract, Transform, and Load data in the data warehouse

Create, use, and refresh materialized views to improve the data warehouse performance

Use Query rewrite to quickly answer business queries using materialized views

Use SQL Access Advisor and PL/SQL procedures to tune materialized views for fast refresh and query rewrite

Use the features of compression and resumable sessions

Review the basic Oracle data warehousing concepts

### **Course Topics**

#### **Introduction**

Development Tools

Oracle SQL Developer

Enterprise Manager

Sample Schemas used

#### **Data Warehouse Design: Overview**

Characteristics of a Data Warehouse

Comparing OLTP and Data Warehouses

Data Warehouse Architectures

Data Warehouse Design

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Data Warehouse objects

Data Warehouse Schemas

### **Data Warehouse Tuning Considerations**

Optimizing Star Queries

Introducing Bitmap Join Indexes

Understanding Star Query Optimization and Bitmap Joined Index Optimization

### **Partitioning Basics**

Partitioned Tables and Indexes

Partitioning Methods

Partitioning Types

Partition Pruning and Star queries

### **Parallelism Concepts**

Operations That Can Be Parallelized

How Parallel Execution Works

Degree of Parallelism

Parallel execution plan

Automatic Parallelism

### **Parallel Operations in Data Warehouses**

Parallel Query

Parallel DDL

Parallel DML

Tuning Parameters for Parallel Execution

Balancing the Workload

## **ETL: Extraction and Transportation**

Extraction Methods

Capturing Data With Change Data Capture

Sources and Modes of Change Data Capture

Publish and Subscribe Model: The Publisher and the Subscriber

Synchronous and Asynchronous CDC

Asynchronous AutoLog Mode and Asynchronous HotLog Mode

Transportation in a Data Warehouse

Transportable Tablespaces

## **ETL: Loading**

Loading Mechanisms

Applications of External Tables

Defining external tables with SQL\*Loader

Populating external tables with Data Pump

Other Loading Methods

## **ETL: Transformation**

Data transformation

Transformation Mechanisms

Transformation Using SQL

Table Functions

DML error logging

## **Materialized Views**

The Need for Summary Management

Types of Materialized Views

Using Materialized Views for Summary Management

Materialized View Dictionary views

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## **Refreshing Materialized Views**

Refresh Options

Refresh Modes

Conditions That Effect Possibility of Fast Refresh

Materialized View Logs

Partition Change Tracking (PCT) Refresh

Refresh Performance Improvements

## **Working with Dimensions**

What Are Dimensions

Creating Dimensions and Hierarchies

Dimensions and Privileges

Dimension Restrictions

Verifying Relationships in a Dimension

Dimension Invalidation

## **Query Rewrite**

Query Rewrite: Overview

What Can be Rewritten

Conditions Required for Oracle to Rewrite a Query

Query Rewrite guidelines

Setting Initialization Parameters for Query Rewrite

Query Rewrite Methods

Partition Change Tracking (PCT) and Query Rewrite

Query Rewrite Enhancement to Support Queries Containing Inline Views

## **Using the SQL Access Advisor, Compression, and Resumable Sessions**

SQL Access Advisor: Usage Model



Setting Initial Options

Specifying the Workload Source

Recommendation Options

Schedule and Review

PL/SQL Procedure Flow

Tuning Materialized Views for Fast Refresh and Query Rewrite

Table Compression and Resumable Sessions

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