

Oracle Database 10g: Implement and Administer a Data Warehouse

What you will learn:

This course is intended for database administrators, system administrators, and database application developers who design, maintain, and use data warehouses. Before attending this course, you should be familiar with relational database concepts, basic data warehouse theory, Oracle server concepts including application and server tuning, and the operating system environment under which you are running the Oracle Database Server.

Audience:

Data Warehouse Administrator
Database Administrators
Database Designers

Prerequisites:

Required Prerequisites:

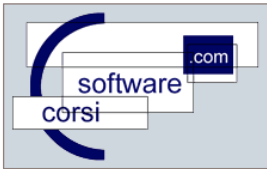
Knowledge of Database Administration
[Oracle Database 10g: Administration Workshop I Release 2](#)
[Oracle Database 10g: SQL Tuning Workshop](#)
[Oracle Database 10g: Administration Workshop II Rel 2 **New**](#)
[Oracle Database 10g: 2 Day DBA Release 2 **NEW**](#)

Suggested Prerequisites:

[Oracle Database 10g: New Features for Administrators Release 2](#)

Course Objectives:

Understand and describe the features inherent in an Oracle 10g Data Warehouse
Demonstrate how to implement parallel operations
Demonstrate extraction, transformation, and loading processes
Describe and demonstrate effective usage of Materialized Views in a data warehouse
Describe star, snowflake and 3NF schemas
Implement an effective partitioning schema for your data warehouse tables
Develop an effective backup and recovery strategy
Describe security challenges in a data warehouse



Course Topics:

Data Warehouse Design

Logical Versus Physical Design in Data Warehouses
Data Warehousing Schemas
Data Warehousing Objects
Physical Design in Data Warehouses
Hardware and I/O Considerations

Data Warehousing Schemas

Star Schema Model
Snowflake Schema Model
Tuning Star Queries
Star Transformation Hints
Star Transformation Hints
Static Partition Pruning And Star Query
Dynamic Partition Pruning And Star Query
Dynamic Partition Pruning Determination

Partitioning Basics

Supported partition types
Rolling window operations
Partition pruning
Partitioning Using a Template

Extraction, Transportation, and Loading (Extraction and Transportation)

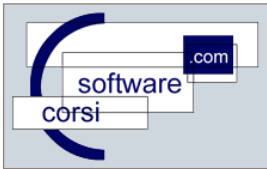
ETL Tools
Extraction Methods
Logical Extraction Methods
Physical Extraction Methods
Change Data Capture
Transportation Using Transportable Tablespaces
Loading Mechanisms

ETL-Loading

Load a formatted flat file into an existing table with SQL*Loader
Performing basic transformations while loading with SQL*Loader
External tables using oracle_loader driver
External tables using oracle_datapump driver
Loading data with OCI and Direct-path APIs

ETL-Transformation

Transformation Using SQL
Transformation Using PL/SQL
Transformation Using Table Functions
Error Logging and Handling Mechanisms



Parallelism Concepts

- Parallel Operations
- Degree Of Parallelism
- Parallel Execution Plan
- Operations That Can Be Parallelized
- The PARALLEL Clause
- Parallel Query
- Parallel DDL
- Performance Benefits of Parallel DML

Parallel Operations in Data Warehouses

- Automated Parallel Query Tuning
- Data Distribution And V\$PQ_TQSTAT
- Object Statistics And V\$PQ_TQSTAT

Materialized Views

- Materialized Views Overview
- Types Of Materialized Views
- Nested Materialized Views
- Partitioned Materialized Views
- Refresh Methods and Modes
- Altering/Dropping Materialized Views
- Dimensions and Hierarchies
- Dimensions and the Data Dictionary

Dimensions

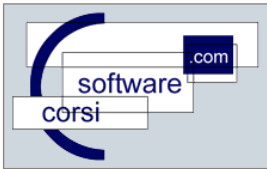
- Creating dimensions
- Validate dimensions data
- View dimension definition information
- Distinguish between dimensions and constraints

Materialized Views Refresh

- Refresh Methods and Modes
- Identifying Dependent MVs
- Conditions For Complete/Fast Refreshes
- Materialized View Logs
- Parallel Refreshes

Query Rewrite

- What Can Be Rewritten?
- Enabling Query Rewrite
- Join Compatibility Checks
- Common Joins
- PCT and Query Rewrite
- Query Rewrite using Multiple MVs



Index Materialized Views

SQL Access Advisor

DBMS_OLAP Advisory Procedures
Workload Management and Sources
Recommendations
Workload Filters and Attribute Types
Tuning of Manually Created Materialized Views
Fast-Refreshable Materialized Views
RECOMMEND_MVIEW_STRATEGY procedure

Data Warehousing System Management

Statistics Collection
Resumable Sessions
Backup and Recovery
Table Compression
Security