

Data Integration and ETL with Oracle Warehouse Builder

Duration: 5 Days

What you will learn

This Data Integration and ETL with Oracle Warehouse Builder training teaches you how to load data by executing the mappings or the process flows. You'll learn how to use Oracle Warehouse Builder 11g, Release 2 features to manage metadata changes, debug mappings, backup metadata, manage security and tune the ETL mappings for better performance.

Learn To:

Retrieve data from different types of sources, like flat files or relational schemas.

Use the different transformation operators to design an ETL task.

Load data by executing the mappings or the process flows.

Integrate Warehouse Builder with OBI EE Warehouse.

Explain the Warehouse Builder architecture and configuration.

Extract data from non-Oracle sources using code templates.

Integrate Warehouse Builder with OBI EE, along with the Warehouse Builder architecture and configuration.

Benefits to You

The usage of Warehouse Builder to define both relational dimensional models and multidimensional models, to deploy a single logical model to multiple physical targets and how to handle slowly changing dimensions are also covered.

Please Note:

This course is a combination of Data Integration and ETL with Oracle Warehouse Builder: Part 1 and Data Integration and ETL with Oracle Warehouse Builder: Part 2 courses.

Audience

Business Intelligence Developer
Data Warehouse Administrator
Data Warehouse Analyst
Data Warehouse Developer
Developer
Support Engineer

Related Training

Required Prerequisites

Experience in basic use of Oracle RDBMS, including SQL DDL and DML, and PL/SQL;

Suggested Prerequisites

Introduction to Business Intelligence Products (eStudy)

Oracle BI Warehouse Builder 11g R2: Getting Started (OBE)

Oracle Database 11g: Data Warehousing Fundamentals

Course Objectives

Backup the OWB Projects using the MDL Export/Import and create snapshots to manage metadata changes

Load tables and view the resulting data

Use the Mapping Debugger to debug mappings

Apply performance enhancement methods in the mappings

Report on the ETL Jobs using the Repository Browser

Describe the OBI EE integration

Use OWB to define, deploy, and execute basic source to relational target ETL programs

Describe the Name and Address cleansing and Match-merging

Define metadata representing flat file and relational sources, and relational table targets

Create simple mappings from flat file and relational sources to relational targets

Explain the use of different Mapping Editor operators

Define a process flow for a set of simple mappings

Use OWB tools to deploy tables, mappings, and related objects

Course Topics

Installing and Setting Up the Warehouse Builder Environment

What Is Oracle Warehouse Builder?

Basic Process Flow of Design and Deployment

Oracle Warehouse Builder Licensing and Connectivity Options

Installing Oracle Warehouse Builder 11.2

OWBSYS Schema

Using OWB 11.2 with Database 10g R2

Using the Repository Assistant to Manage Workspaces

Supported operating systems (OS), sources, targets, and optional components

Getting Started with Warehouse Builder

Logging In to OWB Design Center

- Overview of the Design Center
- OWB Projects
- Overview of Objects within a Project
- Overview of Objects within an Oracle Module
- Organizing Metadata Using Foldering
- Locations Navigator and Global Navigator panels
- Setting Projects Preferences: Recent Logons

Understanding the Warehouse Builder Architecture

- Warehouse Builder Development Cycle
- Overview of the Architecture for Design, Deployment, Execution
- Overview of Configurations, Control Centers, and Locations
- Creating Target Schemas
- Registering DB User as an OWB User
- Roles and Privileges of Warehouse Builder Users
- Registering an Oracle Workflow User

Defining Source Metadata

- Data warehouse implementation: Typical steps
- Difference Between Obtaining Relational and Flat File Source Metadata
- Creating Flat File Module
- Sampling Simple Delimited File
- Sampling Multi-record Flat File
- Creating an Oracle Module
- Selecting the Tables for Import

Defining ETL Mappings for Staging Data

- Purpose of a Staging Area
- Define OWB Mappings
- Mapping Editor Interface: Grouping, Ungrouping, and Spotlighting
- Creating External Tables
- Create and Bind process
- Levels of Synchronizing Changes
- Using the Automapper in the Mapping Editor
- Set loading type and target load ordering

Using the Data Transformation Operators

- Component Palette
- Using a Joiner
- Lookup Operator: Handling Multiple Match Rows
- Using the Subquery Filter Operator
- Using the Set, Sequence, and Splitter Operators
- Pivot and Unpivot Operators
- Using the Aggregator, Constant, Transformation, and Pre/Post Mapping Operators
- Deploying and Executing in Projects Navigator Panel

Cleansing and Match-Merging Name and Address Data

- Integrating Data Quality into ETL
- Name and Address Data Cleansing
- Name and Address Server
- Name and Address Software Providers
- Settings in the Name and Address Operator

Reviewing a Name and Address Mapping
Consolidating Data Using the Match Merge Operator
Using the Match Merge Operator in a Mapping

Using Process Flows

Process Flow Concepts
Creating a Process Flow Module, a Process Flow Package and a Process Flow
Types of Activities: Fork, And, Mapping, End Activity
Creating Transitions Between Activities
Some More Activities: Manual, SQLPLUS, Email
Generating the Process Flow Package

Deploying and Reporting on ETL Jobs

Logical Versus Physical Implementation
Setting Object Configuration
Deployment Concepts
Invoking the Control Center Manager
Deploy Options and Preferences
Repository Browser
Starting OWB Browser Listener and the Repository Browser
Browsing Design Center and Control Center Reports

Using the Mapping Debugger

Overview of the Mapping Debugger
Initializing a Mapping Debugging Session
Preparing the testing environment and test data
Setting breakpoints and watch points
Evaluating the flow of data to detect mapping errors

Enhancing ETL Performance

Performance Tuning at Various Levels
Performance-Related Parameters in ETL Design
Configuring Mappings for Operating Modes, DML Error Logging, Commit Control, and Default Audit Levels
Enabling Partition Exchange Loading (PEL) for Targets
Performance-Related Parameters in Schema Design
Configuring Indexes, Partitions, Constraints
Enabling Parallelism and Parallel DML
Setting Tablespace Properties and Gathering Schema Statistics

Managing Backups, Development Changes, and Security

Overview of Metadata Loader Utilities (MDL)
Managing Metadata Changes by Using Snapshots
Using Change Manager
Version Management of Design Objects
Graphical UI for Security Management
Object-Level Security
Setting Security Parameters

Integrating with Oracle Business Intelligence Enterprise Edition (OBI EE)

Business Justification: Tools Integration
Integrating with OBI EE and OBI SE
Transferring BI Metadata to OBI EE Server

- Setting Up the UDML File Location
- Deriving the BI Metadata (OBI EE)
- Deploying the BI Module
- Converting the UDML File for OBI EE
- Oracle BI Admin and Answers Tool

Administrative Tasks in Warehouse Builder

- Enterprise ETL License Extends Core In-Database ETL
- Multiple Named Configurations: Why and How
- Using Multiple Named Configurations
- Using Configuration Templates
- Steps for Setting Up OWB in a RAC Environment
- Creating an OWB Schedule

Managing Metadata

- Using Lineage and Impact Analysis Diagrams
- Invoking Lineage and Impact Analysis
- Using the Change Propagation Dialog
- User-Defined Properties, Icons, and Objects
- Using Pluggable Mappings
- Advanced Activity Types in Process Flows
- Native Relational Object Support
- Heterogeneous Predefined SQL Transformations

Accessing Non-Oracle Sources

- Extensible Framework of OWB 11g Release 2
- Benefits of Extensible Code Templates
- Location of Seeded Code Templates
- Creating New Code Templates
- Defining New Integration Platforms in OWB

Designing Mappings with the Oracle Data Integration Enterprise Edition License

- Traditional Versus Code Template (CT) Mappings
- Execution Units in a CT Mapping
- Execution View Versus Logical View
- Assigning a Code Template to an Execution Unit
- Convert a Classic Mapping to a CT Mapping That Utilizes Data Pump
- CT Mappings Deploy to Control Center Agents

Right-Time Data Warehousing with OWB

- What Is Meant by Real-Time Data Warehousing
- What Refresh Frequency Does OWB Support
- Building a Trickle Feed Mapping
- Using Advanced Queues in Trickle Feed Mappings
- Using CDC Code Templates in Mappings for Change Data Capture
- Starting CDC Capture Process

Defining Relational Models

- Defining Dimensions Using Wizards and Editors
- Defining Dimension Attributes, Levels, and Hierarchies
- Binding Dimension Attributes to the Implementation Table
- Using the Create Time Dimension Wizard

Defining a Cube
Specifying a Cube's Attributes and Measures
Designing Mappings Using Relational Dimensions and Cubes

More Relational Dimensional Modeling

Initial Versus Incremental Data Warehouse Loads
Updating Data and Metadata
Capturing Changed Data for Refresh
Setting Loading Properties
Choosing the DML Load Type
How OWB Manages Orphans
Support for Cube-Organized Materialized Views
Creating a Type 2 Slowly Changing Dimension

Modeling Multidimensional OLAP Dimensions and Cubes

What Is OLAP
Multidimensional Data Types
Analytic Workspace
Dimensional Modeling Using OWB
OWB Calculated Measures
OWB Calculated Measures