

Data Integration and ETL with Oracle Warehouse Builder: Part 1

Duration: 3 Days

What you will learn

Participants learn to load data by executing the mappings or the process flows, 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. Integration of Warehouse Builder with OBI EE, along with the Warehouse Builder architecture and configuration are discussed.

Participants learn to retrieve data from different types of sources such as flat files or relational schemas and also to use the different transformation operators to design an ETL task.

Note:

This course serves as the prerequisite for the 2-day instructor-led course, Data Integration and ETL with Oracle Warehouse Builder: Part 2. The Part 2 course covers advanced Warehouse Builder functionality such as slowly changing dimension loading, heterogeneous connectivity, fast bulk data loads, change data capture, and real-time data integration.

Learn To:

Load data by executing the mappings or the process flows

Use OWB features to manage metadata changes, debug mappings, backup metadata, manage security, and tune the ETL mappings for better performance

Integrate Warehouse Builder with OBI EE

Explain the Warehouse Builder architecture and configuration

Retrieve data from different types of sources such as flat files or relational schemas

Use the different transformation operators to design an ETL task

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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

Define a process flow for a set of simple mappings

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

Load tables and view the resulting data

Use the Mapping Debugger to debug mappings

Apply performance enhancement methods in the mappings

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

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

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 Globals 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

Appendix B: Creating Experts

- Harnessing OWB Power and Complexity for New Users
- OWB “Experts” : Directed Guidance and Knowledge Management
- Creating an Expert
- Starting an Expert
- Creating Your Own Custom Dialog
- Scenario: ROLAP to MOLAP in Five Easy Steps
- Scenario: Expert for Creating External Table

Appendix C: Using Diagnosis and Debugging Techniques

- Collecting Information Before Contacting Oracle Support
- Sequence Used by Oracle Support Representatives to Process Calls
- Activating Debugging and Logging for Full Java Debug Trace
- Activating Tracing
- Using the Service_Doctor.sql Script
- Troubleshooting and Diagnosing Errors in Control Center Agent (CCA)
- Run-Time Views and Utilities
- Online Warehouse Builder Resources