Oracle Data Integrator 12c: Integration and Administration Training

Duration: **5 Day**

BİLGİNÇ IT Academy
info@bilginc.com
+44 20 3807 0925
+90 212 282 7700

Overview

Oracle Data Integrator is a comprehensive data integration platform that covers all data integration requirements from high-volume, high-performance batch loads, to event-driven integration processes and SOA-enabled data services. Oracle Data Integrator's Extract, Load, Transform (E-LT) architecture leverages disparate RDBMS engines to process and transform the data - the approach that optimizes performance, scalability and lowers overall solution costs.

Learn To:

- Use Oracle Data Integrator to perform transformation of data among various platforms.
- Design ODI mappings, procedures, and packages to perform ELT data transformations.
- Administer ODI resources and set up security with ODI.
- Perform data integration and transformation among various platforms.
- Use the ODI graphical interface to define procedures, packages, and ELT jobs.
- Set up and maintain a secure, multi-user ODI environment.
- Implement changed data capture with ODI.
- Use ODI Web services and perform integration of ODI with SOA.

Benefits to You

Taking this course will teach you how to improve performance and reduce integration costs across your organization's heterogeneous systems. You'll be able to centralize data across databases using your new skills to perform data integration, design ODI Mappings, and set up ODI security. In addition, Oracle Data Integrator can interact with the various tools of the Hadoop ecosystem (such as Hive, Hbase, HDFS, Oozie, etc), allowing administrators and data scientists to farm out map-reduce operations from established relational databases to Hadoop. They can also read back into the relational world the results of complex Big Data analysis for further processing.

Implement High-Performance Movement and Transformation

Expert Oracle University instructors will teach you how to use Oracle Data Integrator (ODI) 12c to implement high-performance movement and transformation of data among various platforms. This course covers using ODI graphical user interfaces that enable users to access different ODI components and resources that form ODI infrastructure.

ODI Repositories

Using the graphical interfaces, you'll develop the knowledge to create and manage ODI repositories, which store configuration information about the IT infrastructure, the metadata for all applications, projects, models and other ODI artifacts.

ODI Topology, Models, Mappings, and Other Objects

Furthermore, you'll develop the ability to create the ODI Topology, organize ODI models and design ODI Mappings, procedures, packages and other objects. This course is based on Oracle Data Integrator 12c (12.2.1).

Please Note

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The latest release of Oracle Data Integrator supports storing ODI artifacts into source code management systems (such as Subversion.) This course teaches you how to integrate ODI with Subversion.

Audience

- Database Administrators
- Business Analysts
- Technical Consultant
- Data Modelers
- SOA Architect
- Data Scientist
- Data Warehouse Administrator

Prerequisites

- Basic knowledge of ELT data processing

What You Will Learn

- Administer ODI resources and setup security with ODI
- Apply ODI Topology concepts for data integration
- Describe ODI Model concepts
- Describe architecture of Oracle Data Integrator 12c
- Design ODI Mappings, Procedures, Packages, and Load Plans to perform ELT data transformations
- Explore, audit data, and enforce data quality with ODI
- Implement Changed Data Capture with ODI
- Integrate ODI with Version Control Systems (Subversion)
- Extend ODI to include the Big Data Hadoop ecosystem

Outline

Introduction

- Identifying the Course Units
- Why Oracle Data Integrator?
- Overview of ODI Architecture
- Overview of ODI Components
- About Graphical Modules
- Types of ODI Agents
- Overview of Oracle Data Integrator Repositories

Administering ODI Repositories and Agents

- Administrating the ODI Repositories
- Creating Repository Storage Spaces

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- Creating and Connecting to the Master Repository
- Creating and Connecting to the Work Repository
- Creating a Wallet to Securely Store Credentials
- Managing ODI Agents
- Creating a Physical Agent
- Launching a Listener, Scheduler and Web Agent

ODI Topology Concepts

- Overview of ODI Topology
- About Data Servers and Physical Schemas
- Defining the Physical Architecture
- Defining the Logical Architecture
- Mapping Logical and Physical Resources
- Defining Agents
- Defining a Topology
- Planning the Topology

Describing the Physical and Logical Architecture

- Overview of Topology Navigator
- Creating Physical Architecture
- Creating a Data Server
- Testing a Data Server Connection
- Creating a Physical Schema
- Creating Logical Architecture
- Overview of Logical Architecture and Context Views
- Linking the Logical and Physical Architecture

Setting Up a New ODI Project

- Overview of ODI Projects
- Creating a New Project
- Creating and Maintaining Folders
- Organizing Projects and Folders
- Understanding Knowledge Modules
- Exchanging ODI Objects and Sharing Global Objects
- Exporting and Importing Objects
- Creating and Labeling with Markers

Oracle Data Integrator Model Concepts

- What is a Model?
- Understanding Metadata in ODI
- Understanding Reverse Engineering
- Creating Models
- Organizing Models
- Creating Data stores
- Configuring Constraints in ODI
- Creating Keys and References

Organizing ODI Models and Creating Data stores

- What is a Mapping?

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- Business Rules for Mappings
- Creating a Basic Mapping
- What is a Join?
- What is a Filter?
- What is a Constraint?
- What is a Staging Area?

ODI Mapping Concepts

- What is a Mapping?
- Business Rules for Mapping
- What is a Mapping, a Filter, a Join?
- Overview of Integration Process
- What is a Staging Area?
- Execution Location
- Mapping with Knowledge Modules (KM)
- Creating an Intermediate Mapping

Designing Mappings

- Designing a Mapping
- Multiple Source Data stores
- Creating Joins
- Filtering Data
- Disabling Transformations
- Overview of the Flow
- Specifying the Staging Area
- Selecting Knowledge Modules

Mapping: Monitoring and Debugging

- Monitoring Mappings
- Creating Objects with Operator
- Viewing Sessions and Tasks
- How to Monitor Execution of a Mapping
- How to Troubleshoot a Session
- Keys to Reviewing the Generated Code
- Working with Errors
- Tips for Preventing Errors

Designing Mappings: Advanced Topics 1

- Mapping with Business Rules
- Overview of Business Rule Elements
- Creating and Tracking Variables
- Creating User Functions
- Mapping Substitution Methods
- Modifying a KM
- Showing Variable Values in Log
- Customizing Reverse Engineering Using RKM

Designing Mappings: Advanced Topics 2

- Using Partitioning in a Mapping

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- Reusable Mappings
- Derived Select (Subselect) for Reusable Mappings
- Using User Functions
- Creating a User Function
- Using Substitution Methods
- Developing Your Own Knowledge Module

Creating and Running ODI procedures

- What is a Procedure?
- Examples of Procedures
- Creating Procedures
- Adding Commands
- Adding Options
- Running a Procedure
- Viewing Results with Operator

Using ODI Packages

- What is a Package?
- Creating a Package
- Executing a Package
- Creating Advanced Packages
- Error Handling
- Controlling an Execution Path
- Creating a Loop
- Using the Advanced tab

Step-by-Step Debugger

- Starting a Session in Debug mode
- Specifying Debug Properties
- Control Execution Flow
- Screen Step Numbering

Managing ODI Scenarios and Versions

- What is a Scenario?
- Managing Scenarios with Load Plans
- Preparing Scenarios for Deployment
- Automating Scenario Management
- Scheduling the ODI Scenario
- Overview of ODI version management
- Handling concurrent changes

Using Load Plans

- What Are Load Plans?
- Load Plan Editor
- Load Plan Steps
- Defining the Restart Behavior
- Benefits of Using Load Plans
- Handling Failed Load Plans

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Enforcing Data Quality and Auditing Data with ODI

- Why Data Quality?
- When to Enforce Data Quality?
- Data Quality in Source Applications
- Data Quality Control in the Integration Process
- Data Quality in the Target Applications
- Enforcing Data Quality
- Exploring Your Data
- Auditing Data Quality

Working with Changed Data Capture

- Overview of ODI version management
- Techniques of Changed Data Capture
- Changed Data Capture in ODI
- CDC Strategies and Infrastructure
- CDC Consistency
- Creating Change Data Capture (CDC)
- Viewing Data/Changed data
- Journalizing

Advanced ODI Administration

- Introduction to ODI Security Navigator
- Security Concepts: Overview, Defining Security Policies
- Creating Profiles, Creating Users, Assigning a Profile to a User, Assigning an Authorization by Profile or User
- Defining Password Policies, Implementing External Authentication
- Generating Topology Reports
- Integration of ODI with Enterprise Manager
- Java EE Agent and Enterprise Manager Configuration with WebLogic Domain
- Using ODI Console

Integrating ODI with Subversion

- ODI: VCS Integration
- ODI: Selecting the Required VCS
- SVN Connections
- Configuring the Subversion Repository with ODI
- Adding a Single Non-Versioned Object to SVN, Adding Multiple Non-Versioned Objects to SVN
- Creating a New Version for an Object
- Creating Full or Partial Tags in the Subversion Repository
- Performing a Branch Merge

Integrating Big Data with ODI

- Big Data Concepts
- Emergence of Apache Hadoop
- Hadoop Ecosystem
- Apache HBase, Apache Hive, Apache Pig
- Apache Spark, Apache Sqoop, Apache Oozie
- Hadoop Data Integration: Overview

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- Big Data Knowledge Modules Matrix
- ODI: Hadoop Integration Process