

## Oracle GoldenGate 12c: Fundamentals for Oracle Ed 2 (40 hrs.)

This Oracle GoldenGate 12c: Fundamentals for Oracle training focuses on Oracle-to-Oracle database replication. Expert Oracle University instructors will deep dive into the Oracle GoldenGate product suite, walking you through various product features. Oracle GoldenGate 12.3 for Oracle introduces the Microservices architecture, which allows for browser-based, REST interaction with Oracle GoldenGate. Both Classic and Microservices architectures are covered by the course, which starts by explaining replication concepts using the familiar, Classic architecture. After solid replication foundations and concepts are explained and explored, the course delves into Microservices, and students are made quickly familiar with the new architecture. Hands-on practices help solidify the theoretical knowledge acquired during the lessons. Students will implement end-to-end replication environments using both architectures, testing the established replication channels with real data, to verify that replication is taking place.

### Learn How To

- Install Oracle GoldenGate on Linux and Windows platforms
- Issue GGSCI commands
- Configure, start, stop and monitor Change Capture and Delivery processes
- Manage Extract trails and files using Data Pump and logdump
- Create parameter files to transform data
- Manage multiple Oracle GoldenGate instances
- Create, configure, manage and monitor replication environments using the Microservices Architecture

### Benefits to You

- Integrate your organization's disparate data across heterogeneous databases to facilitate sophisticated analysis and faster decision-making
- Become more efficient at configuring and implementing Oracle GoldenGate. You'll learn to install both Classic and Microservices Oracle GoldenGate architectures and prepare the source and target environments.
- Enrolling in this course teaches you how to use the Oracle GoldenGate command line interface (GGSCI) efficiently, as well as the new browser-based interface.
- You'll learn GoldenGate configuration processes.
- You'll also develop the knowledge and skills to configure Change Capture (Extract), Change Delivery (Replicat) and Initial Load. You'll learn how to extract trails and files using Extract Pump, create parameter files and manage Oracle GoldenGate instances.
- Advantages and limitations of the newly introduced Microservices architecture will be analyzed in detail.
- Special consideration will be given to unidirectional replication and capture/apply of both DML and DDL
- Explore New Features in 12.3
- Features new to 12c, such as Parallel Replicat, and support for Database Sharding are highlighted along the way. This course is based on Oracle GoldenGate version 12.3.0.1. Please note that the labs are done in Linux.

### Audience

- Configuration Consultant
- Data Warehouse Administrator
- Data Warehouse Analyst
- Data Warehouse Developer
- Database Administrators
- Database Designers
- System Integrator
- Technical Consultant

## Required Prerequisites

Familiarity with Oracle Database and basic SQL using SQL\*Plus  
Familiarity with editing Linux text files using gedit or vi

## Suggested Prerequisites

Familiarity with basic encryption techniques

## Course Objectives

Configure, start, stop, and monitor Change Capture (Extract), Change Delivery (Replicat), and Initial Load using the Classic architecture  
Configure, start, stop, and monitor Change Capture (Extract), and Change Delivery (Replicat) using the Microservices architecture  
Filter, map, transform and encrypt in-transit data  
Design replication solutions using Oracle GoldenGate products and environments  
Install Oracle GoldenGate and prepare the source and target database for replication (assumes an Oracle-to-Oracle environment)  
Learn and make use of GGSCI commands  
Use the browser-based interface to configure and manage replication occurring within a Microservices architecture  
Manage Extract trails and files using utilities such as logdump

## Course Topics:

### Technology Overview

- Creating Oracle GoldenGate Topologies
- Reviewing Oracle GoldenGate Use Cases
- Assembling Building Blocks
- Listing Supported OS
- Listing Supported Databases
- Listing the Oracle GoldenGate Product Line
- Describing GUI Management Options
- Listing Non-Database Sources and Targets

### Oracle GoldenGate Architecture

- Describing Oracle GoldenGate Process Groups
- Explaining Change Capture and Delivery (with and without a Data Pump)
- Explaining Initial Data Load
- Contrasting Batch and Online Operation
- Explaining Oracle GoldenGate Checkpointing
- Describing Commit Sequence Numbers (CSN)
- Describing Oracle GoldenGate Files and Directories

### Installing Oracle GoldenGate

- Listing System Requirements
- Performing Installation
- Configuring Environment Variables
- Using GGSCI
- Running Oracle GoldenGate from the OS shell.

### Configuration Overview and Preparing the Environment

- Reviewing Configuration Overview
- Configuring Manager Process
- Creating Source Definitions
- Preparing the Source Database

- Assigning Oracle Database Roles/Privileges Required
- Using DBMS\_GOLDENGATE\_AUTH Package

#### **Configuring Change Capture (Extract)**

- Reviewing Extract Overview
- Accessing Logs on Oracle ASM
- Accessing Logs Remotely
- Configuring Extract Tasks
- Adding Extract Group
- Editing Extract Parameters
- Extracting Use of Archived Transaction Logs
- Adding Trails

#### **Configuring Change Delivery (Replicat)**

- Reviewing Replicat overview
- Configuring Replicat Tasks
- Configuring a Sample Environment
- Configuring New Integrated Replicat

#### **Configuring Extract Trails and Files (Data Pump)**

- Reviewing Extract Trails and Files overview
- Describing Trail Formats
- Using Logdump for Viewing Trails
- Reversing the Trail Sequence
- Configuring and Using Data Pumps

#### **Performing Initial Load**

- oracle GoldenGate Methods
- Listing Database-specific Methods
- Describing Resource Limitations
- Listing Advantages of oracle GoldenGate Methods
- Configuring File Load Methods
- Configuring Direct Load Methods
- Handling Collisions with Initial Load

#### **Editing Configuration Parameters**

- Editing Parameter Files
- Contrasting GLOBALS versus Process Parameters
- Configuring GLOBALS Parameters
- Configuring Manager Parameters
- Configuring Extract Parameters
- Configuring Replicat Parameters

#### **Filtering and Data Selection**

- Filtering and Data Selection
- Mapping Columns Between Different Schemas
- Using Built-in "@"(at) Functions
- Using SQLEXEC to Interact Directly with a Database
- Configuring New Coordinated Replicat

#### **Additional Transformation Concepts**

- Configuring and Using Macros
- Configuring and Using User Tokens

- Configuring and Using User Exits
- Configuring and Using Oracle Sequences

#### **Configuration options**

- Configuring and Using BATCHSQL
- Configuring and Using Compression
- Configuring and Using Encryption
- Configuring and Using Event Actions
- Configuring New Wallet Security

#### **Bidirectional Replication**

- Reviewing Bidirectional Considerations
- Detecting Loops
- Avoiding Conflicts
- Configuring and Using Conflict Detection and Resolution
- Describing Identity Types Issues

#### **DDL Replication**

- Reviewing Data Description Language Replication overview
- Configuring and Using options for DDL Replication
- Configuring and Using String Substitution in DDL