

S Oracle GoldenGate 12c: Advanced Configuration for Oracle Ed 1

Oracle Database

DURATION

4 Days

MODULES

14 Lectures

COURSE CODE

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Course Overview

This Oracle GoldenGate 12c training covers installing and configuring advanced features of the product, including active-active replication and conflict detection/resolution. Explore in more depth topics introduced in the fundamentals course, such as Event Marker and Advanced Data Transformation techniques. Implement 3-way, Multi-Master configurations and experiment with Oracle RAC, integrating Oracle GoldenGate with Oracle clusters. Configure Oracle GoldenGate replication in a multi-tenant database supporting pluggable databases (PDBs.)

What You Will Learn

Introduction

- Course Objectives
- Target Audience
- Introductions
- Agenda: Day 1
- Agenda: Day 2
- Agenda: Day 3
- Agenda: Day 4
- Course Practices
- Classroom Guidelines
- More Information
- Related Training

Oracle GoldenGate Integrated Capture/Apply

- Objectives
- Roadmap
- Extract: Overview
- Oracle GoldenGate: Logical Architecture
- Quiz
- Roadmap

- Classic Capture
- Classic Capture: Limitations
- Integrated Capture
- Integrated Capture: Benefits
- Integrated Capture: Limitations
- Integrated Capture and Classic Capture: Working Together
- Integrated Versus Classic Capture: Summary
- New Parameter: ENABLE_GOLDENGATE_REPLICATION
- Quiz
- Roadmap
- Integrated Capture Deployment Modes
- Integrated Capture: Downstream Deployment
- Real-Time Downstream Deployment
- Deferred Downstream Deployment
- Downstream Deployment: Advantages
- Quiz
- Roadmap
- Supported Features Based on Source DB Version
- Roadmap
- Integrated Replicat/Apply Architecture
- Integrated Replicat: How It Works
- Integrated Delivery in Detail
- Streaming Protocol: Asynchronous Processing
- Summary
- Practice 2: Overview

Integrated Capture Deployment and Required Components

- Objectives
- Roadmap
- Local Deployment: New Syntax
- Local Deployment: Required Steps
- INTEGRATEDPARAMS Options
- Local Deployment: Example
- Integrated Capture: Upgrade from Classic
- Integrated Capture Upgrade: Example
- Quiz
- Roadmap
- Downstream Deployment: One or Multiple Sources
- Real-Time Versus Deferred Downstream Deployment
- Roadmap
- Downstream Mining Server
- Quiz
- Users and Privileges Required for Downstream Deployment
- Downstream Node Configuration: Preparing the Mining DB to Archive Its Redo
- Preparing the Mining Database to Archive Redo Received from the

- Source Database
- Preparing the Mining Database: Adding the Standby Redo Log Files
- Preparing the Source Database to Send Redo to the Mining Database
- Roadmap
- Deploying Integrated Capture on Downstream Node
- Summary
- Practice 3: Overview

Oracle GoldenGate with Oracle Real Application Clusters Configuration

- Objectives
- Roadmap
- Oracle Real Application Clusters (Oracle RAC)
- Oracle RAC and Business Continuity
- Oracle GoldenGate Used in Combination with Oracle RAC
- Roadmap
- Oracle Clusterware
- Oracle Clusterware Components
- Oracle Clusterware Failover
- Roadmap
- Oracle Database File System (DBFS)
- Oracle DBFS Client/Server
- Oracle DBFS Content Store
- Oracle DBFS Enhancements in Oracle 12c
- Roadmap
- Oracle GoldenGate with Oracle RAC
- Oracle GoldenGate and DBFS
- Oracle DBFS and Oracle Clusterware
- Oracle GoldenGate Bounded Recovery
- Oracle GoldenGate Target Environment
- Oracle GoldenGate Checkpoint Files
- Performance Best Practices Summary
- Summary
- Practice 4: Overview

Oracle GoldenGate Event Marker System

- Objectives
- Roadmap
- Event Marker Mechanism
- EVENTACTIONS Options
- Roadmap
- EVENTACTIONS Sequence
- EVENTACTIONS Syntax
- Event Marker Actions
- Quiz
- Roadmap

- Example 1: Avoiding the Propagation of Deletes
- Example 2: SHELL Triggering a Remote Backup
- Example 3: Stopping Replicat Upon Detection of Data Anomalies
- Example 4: Tracing a Specific Data Insertion
- Summary
- Practice 5: Overview

Data Mapping, Data Selection/Filtering, and Data Transformation

- Objectives
- Roadmap
- Column Mapping: Overview
- Column Mapping: COLMAP Syntax
- Column Mapping: COLMATCH Syntax
- Global Column Mapping
- Column Mapping: Example
- Column Mapping: Building History
- Roadmap
- Data Selection: Overview
- Data Selection: WHERE Clause
- Data Selection: WHERE Clause Examples
- Selection: FILTER Clause
- Data Selection: FILTER Clause
- Data Selection: FILTER Clause Examples
- Data Selection: RANGE Function
- Data Selection: RANGE Function Examples
- Roadmap
- Functions: Data Transformation
- Functions: Overview
- Functions: Example
- Functions: Performing Tests on Column Values
- Discussion Points: IF Function
- Functions: Working with Dates
- Discussion Points: DATE Function
- Functions: Working with Strings and Numbers
- Discussion Points: STRCAT Function
- Discussion Point: STREXT Function
- Functions: Other
- Roadmap
- SQLEXEC: Overview
- SQLEXEC: Basic Functionality
- SQLEXEC: Using with Lookup Stored Procedure
- SQLEXEC: Using with SQL Query
- SQLEXEC: Syntax in a TABLE or MAP Statement
- SQLEXEC: Syntax as a Stand-Alone Statement
- SQLEXEC: Error Handling

- SQLEXEC: Using the GETVAL Function to Get Results
- Summary
- Practice 6: Overview

Custom Behavior Through User Exits

- Objectives
- User Exits: Overview
- User Exits: Applications
- User Exits: High-Level Processing Logic
- User Exits: Parameters
- User Exits: Implementation
- User Exits: Samples
- User Exits: Calling
- Simple User Exit
- Using Callback Routines
- Oracle GoldenGate Adapters for JMS
- Summary
- Practice 7: Overview

Configuring Zero Down-Time Migration Replication

- Objectives
- Software Upgrade Issues
- When to Use Zero Down-Time Migration
- Zero Down-Time Requirements
- Seven-Step Approach to Zero Down-Time Configuration: Phase 1
- Phase 2: Preparing Fallback
- Preparing for Cutover
- Performing Cutover
- Deciding to Fall Back
- Performing Migration Fallback
- Summary
- Practice 8: Overview

Bidirectional Replication: Two-Node Configuration

- Objectives
- Roadmap
- Bidirectional Replication: Advantages
- Bidirectional Replication: Disadvantages
- Bidirectional Configuration
- Roadmap
- Bidirectional Replication Considerations
- Requirements
- Roadmap
- Data Replication Looping

- Loop Prevention
- Roadmap
- Configuring Table Truncates
- Modifying Triggers and Cascade Deletes
- Roadmap
- Bidirectional Replication and Data Conflicts
- CDR Facility
- Conflict Types
- Automatic Data Conflict Detection and Resolution
- ResolveConflict Arguments
- Conflict Resolution Methods
- Basic CDR in Action
- Roadmap
- DDL Support in Bidirectional Configurations
- DDL Propagation Lag
- Summary
- Practice 8: Overview

Conflict Detection and Resolution: Custom Techniques

- Objectives
- Roadmap
- Avoiding, Rather than Resolving, Conflicts
- Application Segmentation Through Workload Partitioning
- Conflict Avoidance Through Data Segmentation
- Insert Conflict Avoidance Through Sequence Generation
- Multi-Master Primary Key Generation
- Handling Delete Data Conflicts
- Quiz
- Roadmap
- Custom Conflict Resolution via SQLEXEC
- Classic Data Conflict Scenario That Affects Inventory Columns
- Simultaneous Transactions
- Occurrence of Data Conflict
- Quantitative Resolution
- Implementing a Quantitative Resolution by Using SQLEXEC
- SQLEXEC in Action
- Using User Exits for More Complex Logic
- Summary
- Practice 10: Overview

Multi-Master Replication Topology: Three-Node Configuration

- Objectives
- Multi-Master Configuration Diagram
- Increased Administrative Complexity
- Extract Group Configuration

- Configuring a Multi-Master Extract
- Configuring a Multi-Master Replicat
- Multi-Master Data Pumps
- Data Conflict Avoidance
- Data Conflict Management
- Conflict Resolution: Complexity Versus Flexibility
- Summary
- Practice 11: Overview

Active Data Guard and Oracle GoldenGate: How to Achieve Maximum Availability

- Objectives
- Active Data Guard and Oracle GoldenGate
- Basic Oracle Data Guard Concepts
- Data Guard FSFO
- FSFO Modes of Operation
- FSFO Issue: 1
- FSFO Issue: 2
- FSFO Issue: 3
- Role Transition Complexity: Oracle GoldenGate to the Rescue
- Oracle Bundled Agent (XAG)
- XAG: Increased Availability
- XAG: Key to Maximum Availability
- Summary
- Practice 12: Overview

Oracle Cloud

- Agenda
- What is Cloud?
- What is Cloud Computing?
- History – Cloud Evolution
- Components of Cloud Computing
- Characteristics of Cloud
- Cloud Deployment Models
- Cloud Service Models
- Industry Shifting from On-Premises to the Cloud
- Oracle IaaS Overview
- Oracle PaaS Overview
- Oracle SaaS Overview
- Summary

Oracle GoldenGate Cloud Service Overview

- Objectives
- Oracle GoldenGate: Modular Building Blocks
- Oracle GoldenGate Cloud Service
- GGCS Architecture

- GoldenGate Cloud Service Use Cases
- GGCS Use Case - New Cloud Application Development
- GGCS Use Case - Dev/Testing in Cloud
- GGCS Use Case - Migration
- GGCS Use Case - Transactional Query Offloading in Cloud
- GGCS Use Case - Live Reporting
- GGCS Use Case - Real-Time Data Warehouse/Analytics
- GoldenGate Cloud Service Value
- GoldenGate Cloud Service Feature Summary