

# Oracle Database 12c: Dataguard Administration



F E E L IT

PARTNER

ORACLE WORKFORCE DEVELOPMENT

**Intended Audience:**DBA/Support Engineer/Technical Consultant

**Pre-Requisites:**Practical Knowledge on Database Administration/Linux Operating System Fundamentals

**Duration : 5 Days**

**Day 1:**

## Introduction to Oracle Data Guard

- What Is Oracle Data Guard?
- Types of Standby Databases
- Types of Data Guard Services
- Role Transitions: Switchover and Failover
- Oracle Data Guard Broker Framework
- Choosing an Interface for Administering a Data Guard Configuration
- Oracle Data Guard: Architecture(Overview)
- Primary Database Processes

## Networking for Oracle Data Guard

- Networking Overview
- Listener.ora Configuration
- Statics vs. Dynamic Registration
- Static Entries for Database Duplication and SQL Maintenance
- Static Entries for Broker Operations
- Oracle Network Configuration Tuning
- Tnsnames.ora Configuration

## Creating a Physical Standby Database by Using SQL and RMAN Commands

- Steps to Create a Physical Standby Database
- Preparing the Primary Database
- FORCE LOGGING Mode
- Configuring Standby Redo Logs
- Creating Standby Redo Logs
- Using SQL to Create Standby Redo Logs
- Viewing Standby Redo Log Information
- Setting Initialization Parameters on the Primary Database to Control Redo Transport

## **Oracle Data Guard Broker: Overview**

- Oracle Data Guard Broker: Features
- Data Guard Broker: Components
- Data Guard Broker: Configurations
- Data Guard Broker: Management Model
- Data Guard Broker: Architecture
- Data Guard Monitor: DMON Process
- Benefits of Using the Data Guard Broker
- Comparing Configuration Management With and Without the Data Guard Broker

## **Creating a Data Guard Broker Configuration**

- Data Guard Broker: Requirements
- Data Guard Broker and the SPFILE
- Data Guard Monitor: Configuration File
- Data Guard Broker: Log Files
- Creating a Broker Configuration
- Defining the Broker Configuration and the Primary Database Profile
- Adding a Standby Database to the Configuration
- Enabling the Configuration

## **Day 2:**

### **Creating a Physical Standby Database by Using Enterprise Manager Cloud Control**

- Using Oracle Enterprise Manager to Create a Broker Configuration
- Creating a Configuration
- Creating a New Configuration
- Adding a Standby Database to an Existing Configuration
- Using the Add Standby Database Wizard
- Standby Database Creation: Processing
- Standby Database Creation: Progress
- Verifying a Data Guard Configuration

### **Creating a Logical Standby Database**

- Benefits of Implementing a Logical Standby Database
- Logical Standby Database: SQL Apply Architecture
- SQL Apply Process: Architecture
- Preparing to Create a Logical Standby Database
- Unsupported Objects
- Unsupported Data Types

- Checking for Unsupported Tables
- Checking for Tables with Unsupported Data Types

### **Creating and Managing a Snapshot Standby Database**

- Snapshot Standby Databases: Overview
- Snapshot Standby Database: Architecture
- Converting a Physical Standby Database to a Snapshot Standby Database
- Activating a Snapshot Standby Database: Issues and Cautions
- Snapshot Standby Database: Target Restrictions
- Viewing Snapshot Standby Database Information
- Using DGMGRL to View Snapshot Standby Database Information
- Converting a Snapshot Standby Database to a Physical Standby Database

### **Using Oracle Active Data Guard**

- Oracle Active Data Guard
- Using Real-Time Query
- Checking the Standby's Open Mode
- Understanding Lag in an Active Data Guard Configuration
- Monitoring Apply Lag: V\$DATAGUARD\_STATS
- Monitoring Apply Lag: V\$STANDBY\_EVENT\_HISTOGRAM
- Setting a Predetermined Service Level for Currency of Standby Queries
- Configuring Zero Lag Between the Primary and Standby Databases

### **Day 3:**

#### **Configuring Data Protection Modes**

- Data Protection Modes and Redo Transport Modes
- Maximum Protection Mode
- Maximum Availability Mode
- Maximum Performance Mode
- Comparing Data Protection Modes
- Setting the Data Protection Mode by Using DGMGRL
- Setting the Data Protection Mode

#### **Performing Role Transitions**

- Role Management Services
- Role Transitions: Switchover and Failover
- Switchover
- Preparing for a Switchover
- Performing a Switchover by Using DGMGRL

- Performing a Switchover by Using Enterprise Manager
- Considerations When Performing a Switch over to a Logical Standby Database
- Situations That Prevent a Switchover

### **Using Flashback Database in a Data Guard Configuration**

- Using Flashback Database in a Data Guard Configuration
- Overview of Flashback Database
- Configuring Flashback Database
- Configuring Flashback Database by Using Enterprise Manager
- Using Flashback Database Instead of Apply Delay
- Using Flashback Database and Real-Time Apply
- Using Flashback Database After RESETLOGS
- Flashback Through Standby Database Role Transitions

### **Day 4:**

#### **Enabling Fast-Start Failover**

- Fast-Start Failover: Overview
- When Does Fast-Start Failover Occur?
- Installing the Observer Software
- Fast-Start Failover Prerequisites
- Configuring Fast-Start Failover
- Setting the Lag-Time Limit
- Configuring the Primary Database to Shut Down Automatically
- Automatic Reinstatement After Fast-Start Failover

#### **Managing Client Connectivity**

- Understanding Client Connectivity in a Data Guard Configuration
- Understanding Client Connectivity: Using Local Naming
- Preventing Clients from Connecting to the Wrong Database
- Managing Services
- Understanding Client Connectivity: Using a Database Service
- Creating Services for the Data Guard Configuration Databases
- Configuring Role-Based Services
- Adding Standby Databases to Oracle Restart Configuration

### **Day 5:**

#### **Backup and Recovery Considerations in an Oracle Data Guard Configuration**

- Using RMAN to Back Up and Restore Files in a Data Guard Configuration

- Offloading Backups to a Physical Standby
- Restrictions and Usage Notes
- Backup and Recovery of a Logical Standby Database
- Using the RMAN Recovery Catalog in a Data Guard Configuration
- Creating the Recovery Catalog
- Registering a Database in the Recovery Catalog
- Setting Persistent Configuration Settings

### **Patching and Upgrading Databases in a Data Guard Configuration**

- Upgrading an Oracle Data Guard Broker Configuration
- Upgrading Oracle Database in a Data Guard Configuration with a Physical Standby Database
- Upgrading Oracle Database in a Data Guard Configuration with a Logical Standby Database
- Using DBMS\_ROLLING to Upgrade the Oracle Database
- Requirements for Using DBMS\_ROLLING to Perform a Rolling Upgrade
- Leading Group Databases and Leading Group Master
- Trailing Group Databases and Trailing Group Master
- Performing a Rolling Upgrade by Using DBMS\_ROLLING

### **Monitoring a Data Guard Broker Configuration**

- Monitoring the Data Guard Configuration by Using Enterprise Manager Cloud Control
- Viewing the Data Guard Configuration Status
- Monitoring Data Guard Performance
- Viewing Log File Details
- Enterprise Manager Metrics and Alerts
- Data Guard Metrics
- Managing Data Guard Metrics
- Viewing Metric Value History

### **Optimizing a Data Guard Configuration**

- Monitoring Configuration Performance by Using Enterprise Manager Cloud Control
- Optimizing Redo Transport Services
- Setting the ReopenSecs Database Property
- Setting the NetTimeout Database Property
- Optimizing Redo Transmission by Setting MaxConnections
- Setting the MaxConnections Database Property
- Compressing Redo Data by Setting the RedoCompression Property
- Delaying the Application of Redo