Oracle Database 19c: Data Guard Administration Workshop

Duration: 5 Days

Course Description:

This course teaches you how to use Oracle Data Guard. Expert Oracle University instructors will demonstrate how this solution protects your Oracle database against planned and unplanned downtimes.

Course Objectives:

Upon completion of this course, the student will be able to:

- 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
- Standby Database Processes

Course Outlines:

Introduction to Oracle Data Guard

- Introduction to Oracle Data Guard
- Oracle Data Guard: Architecture (Overview)
- Practice 1-1: Discovering the Practice Environment

Oracle Net Services in a Data Guard Environment

- Oracle Net Services in a Data Guard Environment
- Practice 2-1: Configuring the tnsnames.ora File
- Practice 2-2: Configuring the listener.ora File

Creating a Physical Standby Database by Using SQL and RMAN Commands

- Creating a Physical Standby Database by Using SQL and RMAN Commands
- Combinations for VALID_FOR
- Example: Setting Initialization Parameters on the Primary Database
- Creating a Physical Standby Database by Using Enterprise Manager
- Practice 3-1: Prepare the Primary Database to Support Data Guard
- Practice 3-2: Prepare Host and Create Physical Standby Database
- Practice 3-3: Start Redo Transport and Verify Operation

Managing Physical Standby Files After Structural Changes on the Primary Database

- Managing Physical Standby Files After Structural Changes on the Primary Database
- Scenario 6: Resetting the TDE Master Encryption Key
- Practice 4-1: Refreshing the Password File
- Practice 4-2: Controlling PDB Replication
- Practice 4-3: Automating Instantiation of a PDB

Using Oracle Active Data Guard: Supported Workloads in Read-Only Standby

- Using Oracle Active Data Guard: Supported Workloads in Read-Only Standby
- Creating an AFTER-LOGON Trigger for Synchronization
- DDL on Global Temporary Tables
- DML Operations on Active Data Guard Standby Databases
- Practice 5-1: Enable Active Data Guard Real-Time Query
- Practice 5-2: Performing DDL/DML on Global Temporary Table
- Practice 5-3: Managing Private Temporary Table for DDL/DML
- Practice 5-4: Configuring Automatic Redirection of DML operations

Using Oracle Active Data Guard: Far Sync and Real-Time Cascading

- Using Oracle Active Data Guard: Far Sync and Real-Time Cascading
- Far Sync: Alternate Design
- Practice 6-1: Add Far Sync to the Data Guard Environment
- Practice 6-2: Add 2nd Far Sync to the Data Guard Environment

Creating and Managing a Snapshot Standby Database

- Creating and Managing a Snapshot Standby Database
- Practice 7-1: Convert Physical Standby to a Snapshot Standby
- Practice 7-2: Convert Snapshot Standby Back to Physical Standby

Creating a Logical Standby Database

- Creating a Logical Standby Database
- Creating a Logical Standby Database by Using SQL Commands
- Practice 8-1: Identify Unsupported Objects for Logical Standbys
- Practice 8-2: Create a Logical Standby (Temporarily a Physical)
- Practice 8-3: Start Redo Transport and Verify Operation
- Practice 8-4: Convert Physical Standby to Logical Standby

Oracle Data Guard Broker: Overview

- Oracle Data Guard Broker: Overview

COURSE OUTLINE

Creating a Data Guard Broker Configuration

- Creating a Data Guard Broker Configuration
- Changing Database Properties and States
- Practice 10-1: Establishing Local and Remote Connections with DGMGRL
- Practice 10-2: Create and Enable a Data Guard Broker Configuration
- Practice 10-3: Verify and Examine the Data Guard Environment

Monitoring a Data Guard Broker Configuration

- Monitoring a Data Guard Broker Configuration
- Viewing Data Guard Diagnostic Information
- Practice 11-1: Monitoring the Physical Standby Database
- Practice 11-2: Examining Data Guard Log and Trace Files
- Practice 11-3: Using the VALIDATE commands

Configuring Data Protection Modes

- Configuring Data Protection Modes
- Maximum Availability Mode
- Practice 12-1: Examining the Maximum Availability Protection Mode
- Practice 12-2: Examining the Maximum Protection Mode

Optimizing and Tuning a Data Guard Configuration

- Optimizing and Tuning a Data Guard Configuration
- New
- Tuning Automatic Outage Resolution
- Practice 13-1: Configuring Network Compression of Redo Data
- Practice 13-2: Generating AWR Report for an Active Data Guard Instance
- Practice 13-3: Using ADDM for an Active Data Guard Instance
- Practice 13-4: Using SQL Tuning Advisor for an Active Data Guard Instance

Performing Role Transitions

- Performing Role Transitions
- Validating Databases for Switchover by Using DGMGRL
- Practice 14-1: Performing Switchover
- Practice 14-2: Keeping Physical Standby Session Connected During Role Transition

Using Flashback Database in a Data Guard Configuration

- Using Flashback Database in a Data Guard Configuration
- Practice 15-1: Configuring Flashback Database on the Primary Database
- Practice 15-2: Configuring Flashback Database on the Physical Standby Database
- Practice 15-3: Configuring Flashback Database on the Logical Standby Database
- Practice 15-4: Testing Automatic Flashback of Standby Database
- Practice 15-5: Performing Flashback of the Logical Standby Database

Enabling Fast-Start Failover

- Enabling Fast-Start Failover
- Configuring Automatic Reinstatement of the Primary Database
- Using Enterprise Manager to Enable Fast-Start Failover
- Practice 16-1: Configuring Fast-Start Failover in Observer-Only Mode
- Practice 16-2: Enabling Fast-Start Failover
- Practice 16-3: Testing Fast-Start Failover
- Practice 16-4: Switchover to Reinstated Database

Backup and Recovery Considerations in an Oracle Data Guard Configuration

- Backup and Recovery Considerations in an Oracle Data Guard Configuration
- Backup and Recovery of a Logical Standby Database
- Recovering from the Loss of a Data File on the Primary Database
- Practice 17-1: Enable Change Tracking on the Physical Standby Database
- Practice 17-2: Creating a Recovery Manager Catalog
- Practice 17-3: Registering Your Database in the Recovery Catalog
- Practice 17-4: Configuring RMAN Parameters
- Practice 17-5: Recovering a Data File on Your Primary Database Over the Network
- Practice 17-6: Rolling Forward a Standby Database with One Command

Enhanced Client Connectivity in a Data Guard Environment

- Enhanced Client Connectivity in a Data Guard Environment
- Data Guard Broker and Fast Application Notification (FAN)
- Practice 18-1: Creating and Testing Primary Database Services
- Practice 18-2: Modifying the Primary Database Service for Application Continuity

Patching and Upgrading Databases in a Data Guard Configuration

- Patching and Upgrading Databases in a Data Guard Configuration
- Performing a Rolling Upgrade by Using a Physical Standby Database
- Rolling Upgrades Using DBMS_ROLLING and Active Data Guard