

Oracle Database 11g: Data Guard Administration - LVC Release 2

Duration: 4 Days

What you will learn

In this course, students learn how to use Oracle Data Guard to help protect their Oracle database against planned and unplanned downtimes. They also learn how Data Guard standby databases can be used to support production functions such as reporting, querying, and testing, while in a standby role.

The course includes Data Guard architecture, the configuration of physical and logical standby databases, and role transitions. Oracle Data Guard 11g features, including Oracle Active Data Guard and snapshot standby databases are outlined. In addition, management of a Data Guard configuration and troubleshooting are discussed.

Learn To:

Offload business processing needs to another system

Offload backup needs to another system

Build highly available systems

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Audience

Database Administrators

Support Engineer

Technical Consultant

Prerequisites

Suggested Prerequisites

Oracle Enterprise Manager 10g Grid Control

Oracle Database 11g: Administration Workshop II Release 2

Oracle Database 11g: Administration Workshop I Release 2

Course Objectives

Use Data Guard standby databases to support production functions such as reporting, querying, testing, and performing backups

Create and manage physical and logical standby databases

Use Enterprise Manager Grid Control and the Data Guard command-line interface (DGMGRL) to maintain a Data Guard configuration

Use Data Guard to achieve a highly available Oracle database

Course Topics

Introduction to Oracle Data Guard

Causes of Data Loss

Oracle Data Guard Architecture

Types of Standby Databases (benefits of each type)

Using the Data Guard Broker

Differentiating Between Standby Databases and Data Guard Broker Configuration

Data Protection Modes

Performing Role Transitions

Creating a Physical Standby Database by Using SQL and RMAN Commands

Preparing the Primary Database

Creating the Physical Standby Database

Oracle Data Guard Broker: Overview

Oracle Data Guard Broker Features

Oracle Data Guard Broker Configurations

Data Guard Monitor Process

Data Guard Monitor Configuration Files

Benefits of Using the Data Guard Broker

Comparing Configuration Management With and Without the Broker

Using DGMGRL

Creating a Data Guard Broker Configuration

Defining a Data Guard Configuration (overview)

Setting up the Broker Configuration Files

Setting the DG_BROKER_START Initialization Parameter to TRUE to start the Data Guard Broker

Creating the Broker Configuration

Adding the Standby Database to the Configuration

Creating a Physical Standby Database by Using Enterprise Manager Grid Control

Using Enterprise Manager Grid Control to Create a Physical Standby Database

Using the Add Standby Database Wizard

Verifying a Configuration

Editing Standby database properties

Viewing the Data Guard Configuration Status

Creating a Logical Standby Database

Monitoring the Data Guard Configuration by Using Enterprise Manager Grid Control

Verifying the Configuration

Viewing Log Using Enterprise Manager Data Guard Metrics

Using the DGMGRL SHOW CONFIGURATION Command to Monitor the Configuration

Viewing Standby Redo Log Information

Monitoring Redo Apply

Creating and Managing a Snapshot Standby Database

Snapshot Standby Database: Architecture

Converting a Physical Standby Database to a Snapshot Standby Database
Activating a Snapshot Standby Database: Issues and Cautions
Viewing Snapshot Standby Database Information
Converting a Snapshot Standby Database to a Physical Standby Database

Using Oracle Active Data Guard

Using Real-Time Query
Enabling and Disabling Real-Time Query
Enabling Block Change Tracking on a Physical Standby Database
Creating Fast Incremental Backups
Monitoring Block Change Tracking

Configuring Data Protection Modes

Preparing to Create a Logical Standby Database
Checking for Unsupported Objects , Data Types, and Tables
Ensuring Unique Row Identifiers
Creating the Logical Standby Using SQL Commands and Grid Control
Securing your Logical Standby Database

Performing Role Transitions

Contrast switchover vs. failover
Preparing for a Switchover
Performing a Switchover using DGMGRL and Enterprise Manager
Types of Failovers
Re-enabling Disabled Databases

Using Flashback Database in a Data Guard Configuration

Overview of Flashback Database
Configuring Flashback Database
Using Flashback Database Instead of Apply Delay
Using Flashback Database and Real Time Apply
Flashback Through Standby Database Role Transitions
Using Flashback Database After Failover

Enabling Fast-Start Failover

Installing the Observer Software
Configuring Fast-Start Failover
Configuring Automatic Reinstatement of the Primary Database
Initiating Fast-Start Failover from an Application
Disabling Fast-Start Failover
Starting and Stopping the Observer
Moving the Observer to a new Host

Managing Client Connectivity

Understanding Client Connectivity in a Data Guard Configuration
Preventing Clients from Connecting to the Wrong Database
Creating Services for the Data Guard Configuration Databases
Automating Client Failover in a Data Guard Configuration
Automating Failover for OCI Clients
Automating Failover for OLE DB Clients
Configuring JDBC Clients for Failover

Performing Backup and Recovery Considerations in an Oracle Data Guard Configuration

- 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
- Configuring Daily Incremental Backups
- Using a Backup to Recover a Data File on the Primary Database
- Recovering a Data File on the Standby Database

Patching and Upgrading Databases in a Data Guard Configuration

- Upgrading an Oracle Data Guard Broker Configuration
- Using SQL Apply to Upgrade the Oracle Database
- Performing a Rolling Upgrade by Using SQL Apply
- Performing a Rolling Upgrade by Using an Existing Logical Standby Database
- Performing a Rolling Upgrade by Creating a New Logical Standby Database
- Performing a Rolling Upgrade by Using a Physical Standby Database

Monitoring a Data Guard Configuration

- Monitoring the Data Guard Configuration by Using Enterprise Manager Grid Control
- Verifying the Configuration
- Viewing Log
- Using Enterprise Manager Data Guard Metrics
- Using the DGMGRL SHOW CONFIGURATION Command to Monitor the Configuration
- Viewing Standby Redo Log Information
- Monitoring Redo Apply

Optimizing a Data Guard Configuration

- Using Enterprise Manager Grid Control to monitor configuration performance
- Setting the ReopenSecs and NetTimeout database properties
- Compressing Redo Data
- Delaying the Application of Redo Data
- Optimizing SQL Apply
- Adjusting the Number of APPLIER and PREPARER processes