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# Oracle Database 11g Data Guard

**3 days**

## Oracle Database 11g Data Guard Course Overview

This course introduces the delegate to the main architectural concepts of Data Guard. Delegates will learn how to use Oracle Data Guard to protect Oracle Databases against planned and unplanned downtime. They will also learn how to create and manage physical and logical standby databases.

The Oracle Database 11g Data Guard course is suitable for users of Oracle Database 10g and Oracle Database 11g.

## Skills Gained

The delegate will practise:

- Preparing a Primary Database for a Data Guard Configuration
- Monitoring a Standby Database Configuration
- Managing a Data Guard Configuration
- Creating a Physical Standby Database
- Creating a Logical Standby Database
- Troubleshooting Standby Database Configurations

## Who will the Course Benefit?

This Oracle Database 11g Data Guard course is designed for database administrators and technical support staff who are required to plan and implement Oracle Data Guard configurations.

## Course Objectives

To provide the skills needed to plan, implement, manage and troubleshoot Oracle Data Guard standby database configurations.

## Requirements

A working knowledge of Oracle Database Administration is required. This can be obtained by attendance on the pre-requisite courses.

## Pre-Requisite Courses

- Oracle Database 11g DBA - Part I
- Oracle Database 10g DBA - Part I

## **Follow-On Courses**

- Oracle Database 11g DBA Backup & Recovery with RMAN
  - Oracle Database 11g DBA Performance & Tuning
  - Oracle 10g Application Server Administration
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# **Oracle Database 11g Data Guard Training Course**

## **Course Contents - DAY 1**

### **Course Introduction**

- Administration and Course Materials
- Course Structure and Agenda
- Delegate and Trainer Introductions

### **Session 1: DATA GUARD OVERVIEW**

- Requirements for Maintaining a Standby Database
- Data Guard Terminology
- Levels of Protection
- Data Guard Monitor
- Physical and Logical Standby Databases
- Role Management Services
- Failover and Switchover
- Data Guard Interfaces
- Standby Database Creation
- Data Guard Installation

### **Session 2: DATA GUARD ARCHITECTURE**

- Data Guard Configurations
- Data Guard Architecture
- Log Transport Services
- Log Apply Services
- Processes Active in Standby Configurations
- Data Guard Architecture and Initialization Processes

### **Session 3: CREATE A PHYSICAL STANDBY DATABASE WITH SQL COMMANDS**

- Prepare the Primary Database
- Datafile and Controlfile Duplication
- Initialization Parameters for a Standby Database
- Create the Standby Instance
- Networking Issues
- Verify Primary and Standby Databases are Working
- Archive Log Loss

- Database Switchover
- Run the Data Guard Configuration
- Shut Down and Start Up the Data Guard Environment
- Monitor the Primary and Standby Databases

#### **Session 4: REDO TRANSPORT SERVICES**

- How Data Guard Sends Redo Data
  - Control when Redo Data is Sent
  - Handle Transmission Errors
  - Manage Archive Gaps
  - Levels of Protection
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## **Oracle Database 11g Data Guard Training Course**

### **Course Contents - DAY 2**

#### **Session 5: REDO APPLY SERVICES**

- Apply Services Configuration Options
- Terminate Redo Apply Services

#### **Session 6: ROLE TRANSITION USING SQL COMMANDS**

- Preparing the Primary Database
- Preparing the Standby Database
- Switchover
- Failover
- The Failed Primary

#### **Session 7: CHANGE MANAGEMENT**

- Adding Datafiles or Tablespaces
- Dropping Datafiles or Tablespaces
- Transportable Tablespaces
- Renaming Datafiles
- Adding or Dropping Redo Log Files
- Nologging Operations

#### **Session 8: CREATE A STANDBY DATABASE WITH RECOVERY MANAGER**

- Create a Suitable Backup with RMAN
- Standby Path and File Names
- Build the Standby Instance
- Build the Standby Database with RMAN

## **Session 9: CREATING A LOGICAL STANDBY USING SQL COMMANDS**

- Preparing the Primary
- Convert Physical Standby to Logical Standby
- Rebuild the Password File
- Start the Standby Instance
- Verify Primary and Standby Databases are Working
- Real Time Apply
- Useful Dictionary Views
- Monitoring SQL Apply Progress

## **Session 10: MANAGING A LOGICAL STANDBY DATABASE**

- SQL Apply Architecture
  - Transaction Size Considerations
  - DML and DDL Apply Considerations
  - Intercept DDL Statements
  - Skip DML and DDL on the Standby
  - Modify a Logical Standby Database
  - Materialized Views
  - Table Instantiation
  - Restart SQL Apply
  - Customize DBA\_LOGSTDBY\_EVENTS
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# **Oracle Database 11g Data Guard Training Course**

## **Course Contents - DAY 3**

### **Session 11: TUNING A STANDBY DATABASE**

- Overview of Tuning a Standby Database
- Tables without Primary Keys
- Statistics on the Logical Standby
- Transaction Consistency
- Adjusting the Number of Applier Processes
- Adjusting the Number of Preparer Processes
- Tuning the Memory for the LCR Cache

### **Session 12: BACKUP AND RECOVERY CONSIDERATIONS**

- Backup and Recovery Strategy
- Backup the Primary Database with a Physical Standby Database
- Backup a Logical Standby Database
- Recovery from Loss of Datafiles
- Recovery from Loss of Control Files
- Loss of Online Redo Logs
- Flashback Database Features in a Data Guard Configuration

## **Session 13: DATA GUARD BROKER OVERVIEW**

- Oracle Enterprise Manager
- Command Line Interface
- Data Guard Monitor
- Installing Data Guard
- Using the Data Guard Broker
- Starting up the Data Guard Broker

## **Session 14: BUILD A CONFIGURATION USING THE BROKER**

- Preparation
- Configuring the Primary System
- Configuring the Standby System
- Enable and Disable the Configuration

## **Session 15: MANAGE A CONFIGURATION USING THE BROKER**

- Database Properties
- Set the Configuration Protection Mode
- Configure Fast Start Failover
- Execute a Switchover
- Execute a Failover
- Alter the state of a Database
- Monitor the Configuration

## **Session 16: DATA GUARD AND ORACLE ENTERPRISE MANAGER**

- Access the Data Guard User Interface
- Configure fast Start Failover
- Execute a Switchover
- Execute a Failover
- Alter the state of a Database
- Monitor the Configuration

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## **Pre-Requisite Courses**

- Oracle Database 11g DBA - Part I
- Oracle Database 10g DBA - Part I

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## **Follow-On Courses**

- Oracle Database 11g DBA Backup & Recovery with RMAN
- Oracle Database 11g DBA Performance & Tuning
- Oracle 10g Application Server Administration