Oracle AI Database : Backup and Recovery

Prix : 3 555 € HT

Durée : 5 jours

Code de Référence : D1107714

Catalogue Database

Cette formation détaille l'architecture et les concepts de sauvegarde et de restauration. Vous apprendrez également à mettre en œuvre divers scénarios de sauvegarde, de panne et de restauration, y compris la duplication de données à l'aide de l'interface de ligne de commande de Recovery Manager (RMAN). Grâce à des exercices pratiques, vous pourrez exploiter vos connaissances pour effectuer des tâches de sauvegarde et de restauration.

Objectifs de la formation

A l'issue de cette formation Oracle, vous serez capable de :

- Réaliser des opérations de sauvegarde et de restauration efficaces sur les déploiements Oracle Database 26ai au sein de votre organisation ou pour vos clients
- Développer des procédures de sauvegarde et de restauration adaptées aux besoins de votre entreprise
- Mettre en œuvre des paramètres de sauvegarde et de restauration
- Diagnostiquer et réparer les pannes de données et de garantir la disponibilité de votre base de données Oracle

Public

Cette formation Oracle Database Backup and Recovery Workshop s'adresse aux administrateurs de base de données et de data warehouse, concepteurs de base de données, ingénieurs support et administrateurs techniques.

Prérequis

Avoir suivi le cours Oracle AI Database : Administration Workshop ou disposer de connaissances et compétences équivalentes. Compréhension de l'anglais et du vocabulaire anglais spécifique IT.

Vous souhaitez faire vérifier vos prérequis ? Contactez-nous pour l'organisation d'un entretien téléphonique avec un de nos consultants formateurs.

Programme de la formation

Backup and Recovery: Overview

- DBA Responsibilities
- Separation of DBA Duties
- Assessing Your Recovery Requirements
- Categories of Failure
- Statement Failure
- User Process Failure
- Network Failure
- User Error
- Instance Failure
- Media Failure
- Data Failures
- Instance Recovery
- The Checkpoint (CKPT) Process
- The Redo Log Files and the Log Writer (LGWR) Process
- Database Log Mode
- Automatic Instance Recovery or Crash Recovery
- Phases of Instance Recovery
- Tuning Instance Recovery
- Using the MTTR Advisor
- Restoring and Recovering
- Comparing Complete and Incomplete Recovery
- The Complete Recovery Process
- The Point-in-Time Recovery Process
- Oracle Data Protection Solutions
- Flashback Technology

Backup and Recovery Configuration

- Configuring for Recoverability
- Configuring the Fast Recovery Area
- Monitoring the Fast Recovery Area
- Multiplexing controlfiles
- Redo Log Files
- Multiplexing the Redo Log
- Creating Archived Redo Log Files
- Archiver (ARCn) Process
- Archived Redo Log Files: Naming and Destinations
- Configuring ARCHIVELOG Mode

Using Recovery Manager (RMAN)

- Integrated Oracle Recovery Manager (RMAN)
- Connecting to RMAN and a Target Database
- Using SQL in RMAN
- Types of RMAN Commands
- Job Commands: Example
- Configuring Persistent Settings for RMAN
- Viewing Persistent Settings
- Managing Persistent Settings
- Specifying a Retention Policy

- Recovery Window Retention Policy: Example

Backup Strategies

- Understanding Types of Backups
- Backup Terminology
- Understanding Types of Backups
- RMAN Backup Types
- Backup Solutions: Overview
- Balancing Backup and Restore Requirements
- Comparing Backup Strategies
- Option 1: Full and Incremental Backups
- Option 2: Incrementally Updated Disk Backups
- Option 3: Offloading Backups Physical Standby Database in Data Guard Environment
- Backing Up Read-Only Tablespaces: Considerations
- Data Warehouse Backup and Recovery: Best Practices

Creating Database Backups

- Using RMAN Commands to Create Backups
- Syntax and Clauses in RMAN
- Creating Backup Sets
- Creating Image Copies
- Creating a Whole Database Backup
- CDB Backup: Whole CDB Backup
- CDB Backup: Partial CDB Backup
- PDB Backup: Partial PDB Backup
- Review: RMAN Backup Types
- Incrementally Updated Backups
- Fast Incremental Backup
- Maintaining the Block Change Tracking File
- Monitoring Block Change Tracking
- Automatic Disk-to-Disk Backup and Recovery
- Oracle-Suggested Backup
- Backing Up the controlfile to a Trace File
- Cataloging Additional Backup Files
- Reporting on Backups
- Using Dynamic Views

Using Optional Backup Features

- Saving Backup Space with Unused Block Compression
- Compressing Backups
- Using RMAN Backup Compression
- Using a Media Manager
- Configuring Backup and Restore for Very Large Files
- Backing Up and Restoring Very Large Files
- Creating RMAN Multisection Backups
- Creating Proxy Copies
- Creating Duplexed Backup Sets Using BACKUP COPIES
- Creating Backups of Backup Sets
- Archival Backups: Concepts

- Creating Archival Backups with RMAN
- Managing Archival Database Backups
- Backing Up Recovery Files

Tuning RMAN Backup Performance

- Is there a problem?
- Diagnosing Performance Bottlenecks
- Diagnosing Performance Bottlenecks: Read Phase
- Is there a “write” problem?
- Diagnosing Performance Bottlenecks: Write or Copy Phase
- Using Dynamic Views to Diagnose RMAN Performance
- Monitoring RMAN Job Progress
- Identifying Backup and Restore Bottlenecks
- Asynchronous I/O Bottlenecks
- Synchronous I/O Bottlenecks
- Tuning RMAN Backup Performance
- Parallelization of Backup Sets
- RMAN Multiplexing

Recovery Catalog Overview

- RMAN Repository Data Storage: Comparison of Options
- Storing Information in the Recovery Catalog
- Reasons to Use a Recovery Catalog

Creating a Recovery Catalog

- Creating a Recovery Catalog: Three Steps
    - 1. Configuring the Recovery Catalog Database
    - 2. Creating the Recovery Catalog Owner
    - 3. Creating the Recovery Catalog

Managing Target Database Records

- Managing Target Database Records in the Recovery Catalog
- Registering a Database in the Recovery Catalog
- Unregistering a Target Database from the Recovery Catalog
- Recovery Catalog Resynchronization: Concepts
- Manually Resynchronizing the Recovery Catalog

Using Stored Scripts

- Using RMAN Stored Scripts
- Executing RMAN Stored Scripts
- Maintaining RMAN Stored Scripts

Creating and Using Virtual Private Catalogs

- Creating and Using Virtual Private Catalogs
- Managing Virtual Private Catalogs
- Upgrading Catalog
- Upgrading Virtual Private Catalogs

Restore and Recovery Concepts

- File Loss
- Data Repair Techniques
- Restoring and Recovering
- Using RMAN RESTORE and RECOVER Commands
- Instance Failure
- Instance Recovery
- Phases of Instance Recovery
- Media Failure
- Comparing Complete and Incomplete Recovery
- Complete Recovery Process
- Point-in-Time Recovery Process
- Recovery with the RESETLOGS Option
- Restore and Recovery Performance: Best Practices

Diagnosing Failures

- Reducing Problem Diagnosis Time
- Automatic Diagnostic Workflow
- Automatic Diagnostic Repository
- ADR Command-Line Tool (ADRCI)
- V$DIAG_INFO View
- Data Failure: Examples

Performing Complete Recovery

- Ensuring Backups Are Available
- Restoring in NOARCHIVELOG Mode
- Recovery with Incremental Backups in NOARCHIVELOG Mode
- Performing Complete Recovery
- Review: Recovering Image Copies
- Recovering Image Copies: Example
- Performing a Fast Switch to Image Copies
- Using SET NEWNAME for Switching Files
- Using Restore Points
- PDB Temp File Recovery
- PDB SYSTEM or UNDO Tablespace Recovery
- PDB Non-SYSTEM Tablespace Recovery

Performing Point-in-Time Recovery

- Point-in-Time Recovery
- PITR Terminology
- Performing Point-in-Time Recovery
- When to Use TSPITR
- Tablespace Point-in-Time Recovery: Architecture
- Preparing for TSPITR
- Determining the Correct Target Time
- Determining the Tablespaces for the Recovery Set
- Identifying Objects That Will Be Lost
- Performing RMAN TSPITR

- Performing Fully Automated TSPITR
- Improving TSPITR Performance
- Performing RMAN TSPITR with an RMAN-Managed Auxiliary Instance
- Performing RMAN TSPITR Using Your Own Auxiliary Instance
- Troubleshooting RMAN TSPITR
- PITR of PDBs
- Recovering Tables from Backups
- Table Recovery: Graphical Overview
- Prerequisites and Limitations
- Specifying the Recovery Point in Time
- Process Steps of Table Recovery

Performing Block Media Recovery

- What is block corruption?
- Block Corruption Symptoms: ORA-01578
- How to Handle Corruption
- Setting Parameters to Detect Corruption
- Block Media Recovery
- Prerequisites for Block Media Recovery
- Recovering Individual Blocks
- Best Practice: Proactive Checks
- Checking for Block Corruption

Performing Additional Recovery Operations

- Recovery from the Loss of the Server Parameter File
- Restoring the Server Parameter File from the controlfile Autobackup
- Loss of a controlfile
- Recovering from the Loss of All controlfile Copies: Overview
- Restoring the controlfile from Autobackup
- Restoring the SPFILE and the controlfile
- Recovering NOLOGGING Database Objects
- Loss of a Redo Log File
- Log Group Status: Review
- Recovering from the Loss of a Redo Log Group
- Clearing a Log File
- Re-creating a Password Authentication File

Oracle Flashback Technology: Overview

- Configuring Database Flashback Technologies
- Flashback Technologies: Error Detection and Correction
- Review: Transactions and Undo
- Flashback Technology

Using Logical Flashback Features

- Using Flashback Technologies to Query Data
- Flashback Query
- Flashback Version Query
- Flashback Table: Overview

- Flashback Table
- Flashback Table: Considerations
- Flashback Transaction Query
- Flashback Transaction Query: Considerations
- Flashback Transaction Backout
- Flashback Transaction Backout Options
- Flashing Back a Transaction
- Best Practices: Undo-Based Flashback Query, Flashback Table
- Flashback Drop and the Recycle Bin
- Recycle Bin
- Bypassing the Recycle Bin
- Using Flashback Time Travel
- Creating and Enabling Flashback Time Travel
- How the Flashback Data Archive Works
- Transparent Schema Evolution
- Full Schema Evolution

Using Flashback Database

- Preparing Your Database for Flashback
- Guaranteeing Undo Retention
- Undo Retention
- Flashback Database: Continuous Data Protection
- Flashback Database
- Flashback Database Architecture
- Configuring Flashback Database
- Configuring Flashback Database Overview
- Configuring Flashback Database Parameters
- Configuring Flashback Database Log Management
- Flashback Database: Examples
- CDB and PDB Flashback
- Flashback Database Considerations
- Monitoring Flashback Database Information
- Flashback Database and Guaranteed Restore Points
- Guaranteed Restore Points
- PDB Flashback and Clean Restore Point

Transport Using Recovery Catalog

- Methods of Transporting with Recovery Catalog
- Prerequisites: Generic
- Prerequisites: Specific
- Recovery Catalog Methods for PDBs
- Quickly Transport a PDB with Recovery Catalog
- Transport a PDB Using a Preexisting Backup with Recovery Catalog
- Transport a PDB Using Multiple Incremental Backups with Recovery Catalog
- Recovery Catalog Methods for Tablespaces
- Quickly Transport a Tablespace with Recovery Catalog
- Transport a Tablespace Using a Preexisting Backup with Recovery Catalog
- Transport a Tablespace Using Multiple Incremental Backups with
- Recovery Catalog

- Transport a PDB Using Multiple Incremental Backups with Recovery Catalog

Transport Using NOCATALOG

- Methods of Transporting in NOCATALOG Mode
- Prerequisites: Generic and Specific
- NOCATALOG Mode for PDBs
- Quickly Transport a PDB in NOCATALOG Mode
- Transport a PDB Using a Preexisting Backup in NOCATALOG Mode
- Transport a PDB Using Multiple Incremental Backups in NOCATALOG Mode
- NOCATALOG Mode for Tablespaces
- Quickly Transport a Tablespace in NOCATALOG Mode
- Transport a Tablespace Using a Preexisting Backup in NOCATALOG Mode
- Transport a Tablespace Using Multiple Incremental Backups in
- NOCATALOG Mode

Transport Using Network Link

- Methods of Transporting Over Network Link
- Prerequisites: Generic
- Methods of Transporting PDBs Over Network Link
- Transporting PDBs Over Network Link
- Quickly Transport a PDB Over Network Link
- Transport PDBs by Restoring Backups Incrementally Over the Network
- Methods of Transporting Tablespaces Over Network Link
- Transport Tablespaces Over Network Link
- Quickly Transport a Tablespace Over Network Link
- Transport Tablespaces by Restoring Backups Incrementally Over the Network

Using PDB Snapshots

- PDB Snapshot Carousel
- Creating PDB Snapshots
- Creating PDBs Using PDB Snapshots
- PDB Snapshots Basics
- PDB Snapshots Views
- Dropping PDB Snapshots
- Flashing Back PDBs Using PDB Snapshots

Database Duplication Overview

- Using a Duplicate Database
- Choosing Database Duplication Techniques
- Duplicating an Active Database with “Push”
- Comparing the “Push” and “Pull” Methods of Duplication
- Duplicating a Database with a Target Connection
- Duplicating a Database with a Recovery Catalog
- Duplicating a Database Without a Recovery Catalog or Target Connection

Creating a Backup-Based Duplicate Database

- Creating a Backup-Based Duplicate Database

- Creating an Initialization Parameter File for the Auxiliary Instance
- Specifying New Names for Your Destination
- Using the SET NEWNAME Clauses
- Substitution Variables for SET NEWNAME
- Specifying Parameters for File Naming
- Starting the Instance in NOMOUNT Mode
- Ensuring Backups and Archived Redo Log Files Are Available
- Allocating Auxiliary Channels
- Understanding the RMAN Duplication Operation
- Specifying Options for the DUPLICATE Command
- Using Additional DUPLICATE Command Options
- Duplicating Selected PDBs in a CDB
- Cloning an Active PDB into an Existing CDB
- Example: Duplicating PDB1 from CDB1 to CDB2 as PDB1
- Example: Duplicating PDB1 from CDB1 to CDB2 as PDB2

Méthodes pédagogiques

Alternance d'apports théoriques et d'exercices avec un vaste choix d'exercices pratiques et de scénarios d'atelier permettent de mettre en œuvre les connaissances acquises.

La dernière version du support en anglais est accessible en ligne. Vous aurez à votre disposition un accès contenant tous les matériels de cours de votre formation, ainsi qu'un accès à 5 h de visionnage d'une autre formation de votre choix dans la même thématique. L'ensemble sera disponible pendant 90 jours.

Méthodes d'évaluation des acquis

Afin d'évaluer l'acquisition de vos connaissances et compétences, il vous sera envoyé un formulaire d'auto-évaluation, qui sera à compléter en amont et à l'issue de la formation.
Un certificat de réalisation de fin de formation est remis au stagiaire lui permettant de faire valoir le suivi de la formation.