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Sauvegardes de base de données

Objectifs

A la fin de ce chapitre, vous pourrez :

- **créer des sauvegardes de base de données cohérentes**
- **sauvegarder la base de données sans l'arrêter**
- **créer des sauvegardes incrémentielles**
- **automatiser les sauvegardes de base de données**
- **surveiller la zone de récupération rapide**

Terminologie

- **La stratégie de sauvegarde peut inclure :**
 - La base de données entière (sauvegarde totale)
 - Une partie de la base de données (sauvegarde partielle)
- **Le type de sauvegarde peut être :**
 - Toutes les informations de tous les fichiers de données (sauvegarde complète)
 - Seules les informations modifiées depuis une précédente sauvegarde (sauvegarde incrémentielle)
- **Le mode de sauvegarde peut être :**
 - Base fermée (sauvegarde cohérente, à froid)
 - Base ouverte (sauvegarde incohérente, à chaud)

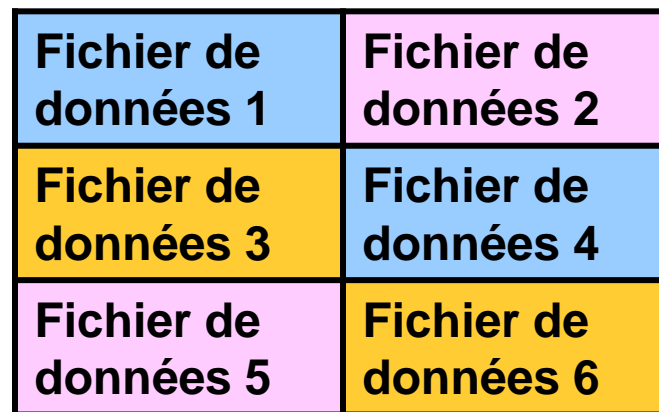


Terminologie

- Les sauvegardes peuvent être stockées sous forme de :
 - Copies d'image
 - Jeux de sauvegarde



Copies d'image



Jeu de sauvegarde

Recovery Manager (RMAN)

Enterprise Manager utilise RMAN (Recovery Manager) pour effectuer les opérations de sauvegarde et de récupération.

- **Client en mode ligne de commande pour les fonctions avancées**
- **Langage puissant de contrôle et de génération de script**
- **API publiée permettant l'interaction avec la plupart des logiciels de sauvegarde les plus populaires**
- **Sauvegarde des fichiers de données, des fichiers de contrôle, des fichiers de journalisation archivés et des fichiers de paramètres serveur (SPFILE)**
- **Sauvegarde des fichiers sur disque ou sur bande**

Configurer les paramètres de sauvegarde

Configure Backup Settings

Device [Backup Set](#) [Policy](#)

Disk Settings

Parallelism Test Disk Backup

Concurrent streams to disk drives

Disk Backup Location

An existing directory or diskgroup name where database files will be backed up. If you do not specify a location, database files will be backed up to the flash recovery area location.

Disk Backup Type Backup Set
An Oracle proprietary format which has to be restored before use.

Compressed Backup Set
An Oracle proprietary format in compressed format which has to be restored before use.

Image Copy
A bit-by-bit copy of database files that can be used as-is to perform recovery.

Host Credentials

To save the backup settings, supply operating system login credentials.

* Username

* Password

Save as Preferred Credential

Configurer les paramètres de sauvegarde

Backup Policy

Automatically backup the control file and server parameter file (SPFILE) with every backup and database structural change

Autobackup Disk Location

An existing directory or diskgroup name where the control file and server parameter file will be backed up. If you do not specify a location, the files will be backed up to the flash recovery area location.

Optimize the whole database backup by skipping unchanged files such as read-only and offline datafiles that have been backed up

Enable block change tracking for faster incremental backups

Block Change Tracking File

Specify a location and file, otherwise an Oracle managed file will be created in the database area.

Tablespaces Excluded From Whole Database Backup

Populate this table with the tablespaces you want to exclude from a whole database backup. Use the Add button to add tablespaces to this table.

Add

Select	Tablespace Name	Tablespace Number	Status	Contents
	No Items Selected			

TIP These tablespaces can be backed up separately using tablespace backup.

Retention Policy

Retain All Backups

You must manually delete any backups

Retain backups that are necessary for a recovery to any time within the specified number of days (point-in-time recovery)

Days

Recovery Window

Retain at least the specified number of full backups for each datafile

Backups

Redundancy

Planifier des sauvegardes : stratégie

Choisissez une sauvegarde totale ou partielle.

Schedule Backup: Strategy

Based on your disk and/or tape configuration, Oracle provides an automated backup strategy, or you can develop your own backup strategy with customized options.

Backup Strategy

Object Type

Whole Database

Tablespaces

Datafiles

Archivelogs

All Recovery Files on Disk

These files include all archivelogs and disk backups that are not already backed up to tape

Host Credentials

To perform a backup, supply operating system login credentials.

* Username

* Password

Save as Preferred Credential

Backup Strategies

Oracle-suggested:

- Provides an out-of-the-box backup strategy based on the backup destination. Options may vary based on the database version.
- Sets up recovery window for backup management
- Automates backup management
- Schedules recurring backups

Customized:

- Specify the objects to be backed up
- Choose a disk or tape backup destination
- Override the default backup settings
- Schedule the backup

Planifier des sauvegardes : options

Backup Strategy	Customized
Object Type	Whole Database

Backup Type

Full Backup

Use as the base of an incremental backup strategy

Incremental Backup (Level 1)
Level 1 incremental backup includes all the changed blocks since the most recent level 0 backup (cumulative).

Refresh the latest datafile copy on disk to the current time using the incremental backup

Backup Mode

Online Backup
The backup can be performed when the database is OPEN.

Offline Backup
If the database is OPEN at the time of backup, the database will be shut down and mounted before the backup. The database will be opened after the backup.

Advanced

Back up all archived logs on disk

Delete all archived logs from disk after they are successfully backed up

Use proxy copy supported by media management software to perform a backup
If proxy copy of the selected files is not supported, Recovery Manager will perform a conventional backup.

Delete obsolete backups
Delete backups that are no longer needed to satisfy the retention policy.

Maximum Files per Backup Set

The maximum number of input files in each backup set.

Planifier des sauvegardes : paramètres

The screenshot shows the 'Settings' step of a four-step wizard. The steps are 'Options', 'Settings', 'Schedule', and 'Review'. The 'Settings' step is currently active. The configuration details are as follows:

Database	orcl
Backup Strategy	Customized
Object Type	Whole Database

Here are the settings for your current backup job. You can select your backup destination directly from this page. You can also view the default settings or override the settings by clicking the buttons below.

Disk
Flash Recovery Area /oracle/flash_recovery_area/

Tape
Media Management Vendor(MMV) Library Parameters **not specified**

[View Default Settings](#) [Override Current Settings](#)

Changed settings will only apply to the current backup.

Navigation buttons: Cancel, Back, Step 2 of 4, Next.

Pour remplacer les paramètres persistants de configuration pour cette sauvegarde, cliquez sur **Override Current Settings.**

Planifier des sauvegardes : planning

Schedule Backup: Schedule

Cancel Back Step 3 of 4 Next

Database **orcl.oracle.com**
Backup Strategy **Customized**
Object Type **Whole Database**

Job


* Job Name
Job Description

Schedule

Time Zone

Start

Immediately
 Later

Date 
(example: Feb 16, 2004)

Time AM PM

Repeat


One Time Only
 Interval

Frequency

Monthly
 Yearly

Repeat Until

Indefinite
 Custom

Date 
(example: Feb 16, 2004)

Time AM PM
(Ignored except when repeating by minutes or hours.)

Planifier des sauvegardes : récapitulatif

Schedule Backup: Review

Cancel Edit RMAN Script Back Step 4 of 4 Submit Job

Database	orcl
Backup Strategy	Customized
Object Type	Whole Database
Backup Type	Full Backup
Backup Mode	Online Backup

[Settings](#)

Flash Recovery Area /oracle/flash_recovery_area/

Review: Edit RMAN Script

Cancel Submit Job

You can modify the RMAN script before submitting it. However, you will not be able to go back to previous wizard pages if you modify the script.

```
backup device type disk tag '%TAG' database include current controlfile;  
backup device type disk tag '%TAG' archivelog all;
```

Cliquez sur Edit RMAN Script afin de revoir les commandes RMAN.

Sauvegarde des fichiers de contrôle dans un fichier trace

Les fichiers de contrôle offrent une option de sauvegarde supplémentaire.

Controlfiles

General [Advanced](#) [Record Section](#)

Backup To Trace

Controlfile Mirror Images

Oracle strongly recommends that your database has a minimum of two control files and that they are located on separate disks. If a control file is damaged due to a disk failure, it could be restored using the intact copy of the control file from the other disk. You can specify their location in the database's initialization parameter file.

Valid	File Name	File Directory
VALID	control01.ctl	/oracle/oradata/orcl/
VALID	control02.ctl	/oracle/oradata/orcl/
VALID	control03.ctl	/oracle/oradata/orcl/

Des sauvegardes des fichiers de contrôle dans un fichier trace peuvent être utilisées à des fins de récupération en cas de perte de tous les fichiers de contrôle.

Gérer les sauvegardes

Manage Current Backups

[Catalog Additional Files](#) [Crosscheck All](#) [Delete All Obsolete](#) [Delete All Expired](#)

This backup data was retrieved from the database control file.

Backup Sets [Image Copies](#)

Search

Status:

Contents: Datafile Archived Redo Log SPFILE Control File

Completion Time: [GO](#)

Results

[Crosscheck](#) [Change to Unavailable](#) [Delete](#)

[Select All](#) | [Select None](#)

Select	Key	Tag	Completion Time	Contents	Device Type	Status	Obsolete	Keep	Pieces
<input type="checkbox"/>	3	BACKUP_ORCL_000006_120303103223	Dec 3, 2003 10:48:48 AM	ARCHIVED LOG	DISK	AVAILABLE	NO	NO	1
<input type="checkbox"/>	2	BACKUP_ORCL_000006_120303103223	Dec 3, 2003 10:41:41 AM	DATAFILE, SPFILE, CONTROLFILE	DISK	AVAILABLE	NO	NO	1

Cliquez sur Edit RMAN Script afin de revoir les commandes RMAN.

Zone de récupération rapide

Surveiller la zone de récupération rapide :

- Configurer la journalisation flashback
- Dimensionner la zone de récupération
- Surveiller la consommation actuelle d'espace

Flash Recovery Area

It is highly recommended that you use flash recovery area to automate your disk backup management.

Flash Recovery Area Location

Flash Recovery Area Size

Flash Recovery Area Size must be set when the location is set

Used Flash Recovery Area Size (GB) **1.75**

Enable flashback logging for fast database point-in-time recovery*

The flash recovery area must be set to enable flashback logging. When using flashback logs, you may recover your entire database to a prior point-in-time without restoring files. Flashback is the preferred point-in-time recovery method in the recovery wizard when appropriate.

Specify how far back you wish to flash the database in the future

Flashback Retention Time

Synthèse

Ce chapitre vous a permis d'apprendre à :

- **créer des sauvegardes de base de données cohérentes**
- **sauvegarder la base de données sans l'arrêter**
- **créer des sauvegardes incrémentielles**
- **automatiser les sauvegardes de base de données**
- **surveiller la zone de récupération rapide**

Exercice 19 :

Sauvegardes de base de données

Cet exercice porte sur les points suivants :

- **configurer la base de données pour les sauvegardes**
- **sauvegarder la base de données pendant qu'elle est ouverte pour les utilisateurs**
- **planifier des sauvegardes incrémentielles automatiques de la base de données pendant la nuit**