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## Backup Database

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ORACLE®

# Tujuan

**Setelah menyelesaikan bab ini, anda seharusnya dapat melakukan hal-hal berikut:**

- Membuat backup database secara konsisten
- Membuat backup database anda tanpa harus memamatikannya
- Membuat incremental backup
- Mengotomatiskan pembuatan backup database
- Memonitor flash recovery area

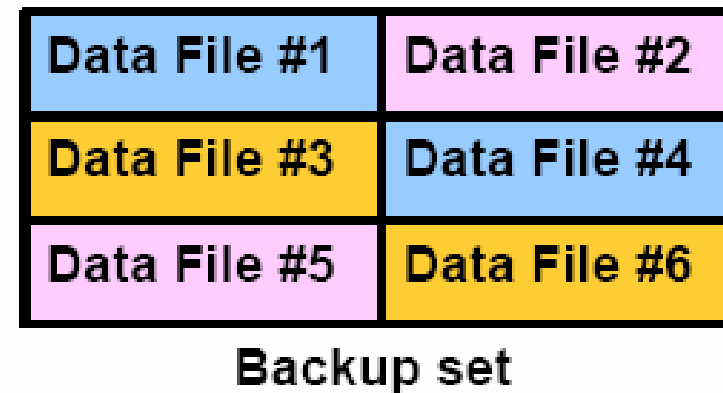
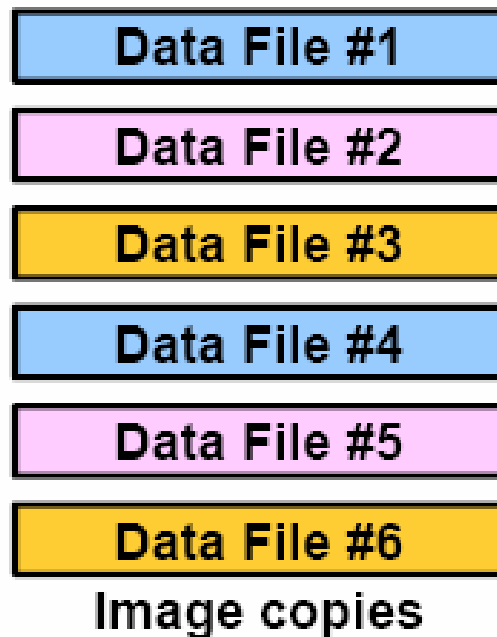
# Terminologi

- Backup strategy boleh mengikuti :
  - Keseluruhan database (whole)
  - Bagian dari database (partial)
- Backup type boleh berupa :
  - Segala informasi dari seluruh data files (full)
  - Hanya informasi yang telah berubah sejak pembuatan backup sebelumnya (incremental)
- Backup mode boleh berupa :
  - Offline (consistent, cold)
  - Online (inconsistent, hot)

# Terminologi

Backup bisa disimpan sebagai :

- Image Copies
- Backup Sets



# Recovery Manager (RMAN)

Enterprise Manager menggunakan Recovery Manager (RMAN) untuk melaksanakan operasi-operasi backup dan recovery.

- Baris perintah client untuk fungsi-fungsi advanced
- Kontrol yang sangat kuat dan bahasa scripting
- Mempublikasi API yang memungkinkan antar muka dengan software backup yang paling populer
- Backs up data, kontrol, archived log, dan file-file server parameter
- Backs up file-file ke dalam disk atau tape.

# Mengkonfigurasi Setting Backup

## 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

# Mengkonfigurasi Setting Backup

## 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.

Select	Tablespace Name	Tablespace Number	Status	Contents
<input type="checkbox"/>	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

# Menjadwal Backup: Strategi

Memilih keseluruhan atau sebagian untuk backup database

## 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 Customized

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

Cancel

Continue

### 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



# Menjadwal Backup: Option

Backup Strategy	Customized
Object Type	Whole Database

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## 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

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## 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.

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## 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.

# Menjadwal Backup: Setting

The screenshot shows the 'Schedule Backup: Settings' page of the Oracle Backup Configuration Wizard. At the top, a progress bar indicates four steps: Options, Settings (current), Schedule, and Review. The 'Settings' section displays the following configuration: Database: orcl, Backup Strategy: Customized, and Object Type: Whole Database. Below this, a message states: '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.' Two radio buttons are present: 'Disk' (selected) and 'Tape'. Under the 'Disk' option, the 'Flash Recovery Area' is set to '/oracle/flash\_recovery\_area/'. Under the 'Tape' option, the 'Media Management Vendor(MMV) Library Parameters' are listed as 'not specified'. At the bottom, there are two buttons: 'View Default Settings' and 'Override Current Settings'. A note at the very bottom states: 'Changed settings will only apply to the current backup.'

Options Settings Schedule Review

## Schedule Backup: Settings

Cancel Back Step 2 of 4 Next

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.

**Setting konfigurasi persistent backup sebelumnya, dapat ditimpa dengan untuk backup saat ini dengan meng-klik Override Current Settings.**

# Menjadwal Backup: Jadwal

**Schedule Backup: Schedule**

CancelBackStep 3 of 4Next

Databaseorcl.oracle.com  
Backup StrategyCustomized  
Object TypeWhole Database

**Job**

\* Job NameBACKUP\_ORCL.Oracle.COM\_000  
Job DescriptionWhole Database Backup

**Schedule**

Time ZoneGMT -7:00

**Start**

☒ Immediately  
☐ Later  
DateFeb 16, 2004  
(example: Feb 16, 2004)  
Time2:00AMPM

**Repeat**

☒ One Time Only  
☐ Interval  
Frequency1Minutes  
☐ Monthly  
☐ Yearly

**Repeat Until**

☒ Indefinite  
☐ Custom  
DateFeb 16, 2004  
(example: Feb 16, 2004)  
Time8:15AMPM  
(Ignored except when repeating by minutes or hours.)

# Menjadwal Backup: Review

**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

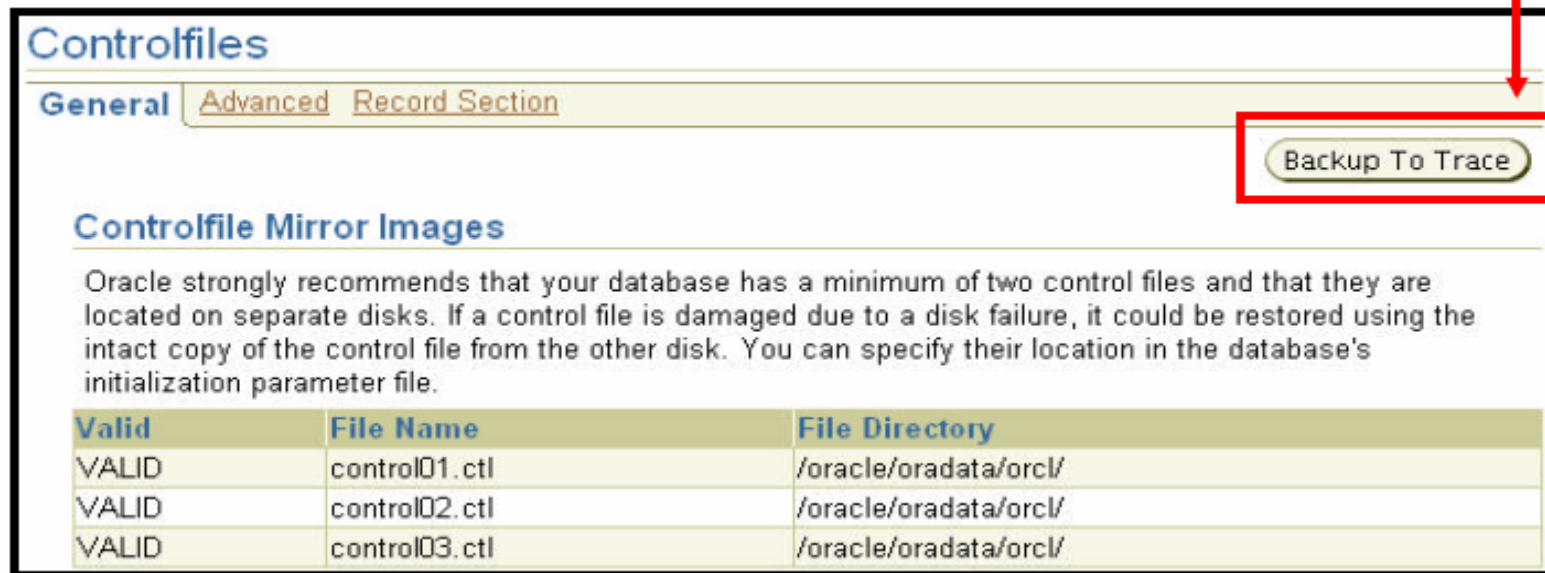
You can modify the RMAN script before submitting it. However, you will not be able to go back to previous wizard pages if you modify the script.

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

**Klik Edit RMAN Script untuk mereview perintah2 RMAN**

# Mem-backup Control File ke Trace

Control file mempunyai opsi tambahan untuk melakukan backup



**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/

Backup control file ke trace dapat digunakan untuk recovery bila terjadi kehilangan semua control file



# Mem-backup Control File ke Trace

```
CREATE CONTROLFILE REUSE DATABASE ORCL NORESETLOGS ARCHIVELOG
  MAXLOGFILES 16
  MAXLOGMEMBERS 3
  MAXDATAFILES 100
  MAXINSTANCES 8
  MAXLOGHISTORY 226
LOGFILE
  GROUP 1 '/oracle/oradata/orcl/redo01.log' SIZE 10M,
  GROUP 2 '/oracle/oradata/orcl/redo02.log' SIZE 10M,
  GROUP 3 '/oracle/oradata/orcl/redo03.log' SIZE 10M
DATAFILE
  '/oracle/oradata/orcl/system01.dbf',
  '/oracle/oradata/orcl/undotbs01.dbf',
  '/oracle/oradata/orcl/sysaux01.dbf',
  '/oracle/oradata/orcl/users01.dbf',
  '/oracle/oradata/orcl/example01.dbf'
CHARACTER SET WE8ISO8859P1;
-- Commands to re-create incarnation table
-- Below log names MUST be changed to existing filenames on
-- disk. Any one log file from each branch can be used to
-- re-create incarnation records.
-- ALTER DATABASE REGISTER LOGFILE
--   '/oracle/flash_recovery_area/ORCL/archivelog/2003_12_05/o1_mf_1_
--   1_%u_.arc';
-- ALTER DATABASE REGISTER LOGFILE
--   '/oracle/flash_recovery_area/ORCL/archivelog/2003_12_05/o1_mf_1_
--   1_%u_.arc';
-- Recovery is required if any of the datafiles are restored
-- backups,
-- or if the last shutdown was not normal or immediate.
RECOVER DATABASE
-- All logs need archiving and a log switch is needed.
ALTER SYSTEM ARCHIVE LOG ALL;
-- Database can now be opened normally.
ALTER DATABASE OPEN;
-- Commands to add tempfiles to temporary tablespaces.
-- Online tempfiles have complete space information.
-- Other tempfiles may require adjustment.
ALTER TABLESPACE TEMP ADD TEMPFILE
  '/oracle/oradata/orcl/temp01.dbf'
  SIZE 20971520 REUSE AUTOEXTEND ON NEXT 655360 MAXSIZE
  32767M;
```

# Mengelola Backup

## Manage Current Backups

Catalog Additional FilesCrosscheck AllDelete All ObsoleteDelete All Expired

This backup data was retrieved from the database control file.

**Backup Sets**Image Copies

**Search**

StatusAvailable

Contents☒ Datafile☒ Archived Redo Log☒ SPFILE☒ Control File

Completion TimeWithin a monthGo

**Results**

CrosscheckChange to UnavailableDelete

Select AllSelect 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

**Klik Edit RMAN Script untuk mereview perintah2 RMAN**

# Flash Recovery Area

## Monitor Flash Recovery Area

- Mengatur flashback logging
- Ukuran recovery area
- Monitor kebutuhan space yang digunakan

### 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  GB ▼

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  Hours ▼



# Ringkasan

Pada bab ini, anda seharusnya telah mempelajari bagaimana cara untuk:

- Membuat database backup secara konsisten
- Membuat backup database anda tanpa harus memamatikannya
- Membuat incremental backup
- Mengotomatiskan pembuatan database backup
- Memonitor flash recovery area