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Backup and Recovery: Configuration

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Objectives

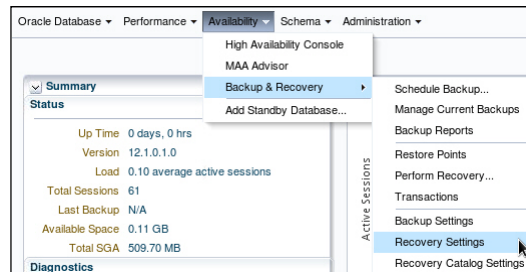After completing this lesson, you should be able to:
- Configure the fast recovery area
- Multiplex the control file
- Multiplex redo log files
- Configure ARCHIVELOG mode

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Configuring for Recoverability

To configure your database for maximum recoverability, you must:

- Schedule regular backups
- Multiplex control files
- Multiplex redo log groups
- Retain archived copies of redo logs

Oracle Database ▾ Performance ▾ **Availability** ▾ Schema ▾ Administration ▾	
	High Availability Console
▾ **Summary**	MAA Advisor
Status	Backup & Recovery ▶
	Add Standby Database...

Backup & Recovery ▶ submenu:
- Schedule Backup...
- Manage Current Backups
- Backup Reports
- Restore Points
- Perform Recovery...
- Transactions
- Backup Settings
- Recovery Settings
- Recovery Catalog Settings

Status:
- Up Time 0 days, 0 hrs
- Version 12.1.0.1.0
- Load 0.10 average active sessions
- Total Sessions 61
- Last Backup N/A
- Available Space 0.11 GB
- Total SGA 509.70 MB
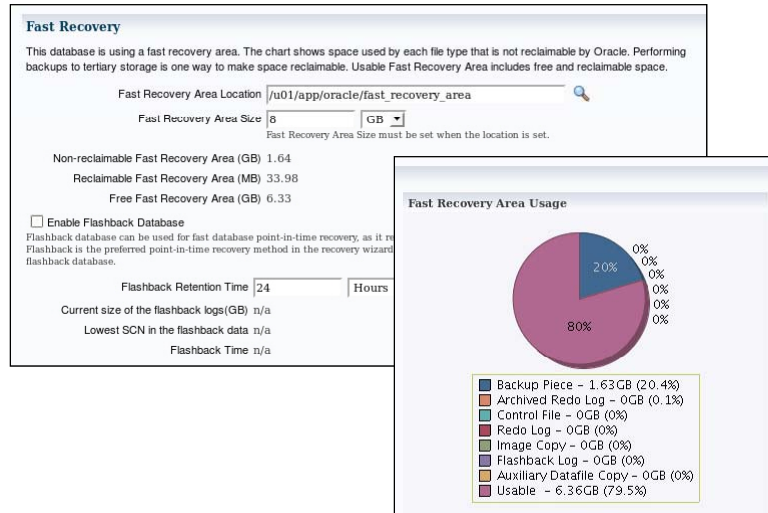
Diagnostics

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Configuring the Fast Recovery Area

- Fast recovery area:
  - Strongly recommended for simplified backup storage management
  - Storage space (separate from working database files)
  - Location specified by the `DB_RECOVERY_FILE_DEST` parameter
  - Size specified by the `DB_RECOVERY_FILE_DEST_SIZE` parameter
  - Large enough for backups, archived logs, flashback logs, multiplexed control files, and multiplexed redo logs
  - Automatically managed according to your retention policy
- Configuration of the fast recovery area includes specifying the location, size, and retention policy.

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Monitoring the Fast Recovery Area

Fast Recovery

This database is using a fast recovery area. The chart shows space used by each file type that is not reclaimable by Oracle. Performing backups to tertiary storage is one way to make space reclaimable. Usable Fast Recovery Area includes free and reclaimable space.

Fast Recovery Area Location /u01/app/oracle/fast_recovery_area

Fast Recovery Area Size 8 GB

Fast Recovery Area Size must be set when the location is set.

Non-reclaimable Fast Recovery Area (GB) 1.64
Reclaimable Fast Recovery Area (MB) 33.98
Free Fast Recovery Area (GB) 6.33

☐ Enable Flashback Database
Flashback database can be used for fast database point-in-time recovery, as it re
Flashback is the preferred point-in-time recovery method in the recovery wizard
flashback database.

Flashback Retention Time 24 Hours
Current size of the flashback logs(GB) n/a
Lowest SCN in the flashback data n/a
Flashback Time n/a

Fast Recovery Area Usage

- Backup Piece – 1.63GB (20.4%)
- Archived Redo Log – 0GB (0.1%)
- Control File – 0GB (0%)
- Redo Log – 0GB (0%)
- Image Copy – 0GB (0%)
- Flashback Log – 0GB (0%)
- Auxiliary Datafile Copy – 0GB (0%)
- Usable – 6.36GB (79.5%)

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Multiplexing Control Files

To protect against database failure, your database should have multiple copies of the control file.

|	**ASM Storage**	**File System Storage**
Best Practice	One copy on each disk group (such as +DATA and +FRA)	At least two copies, each on separate disk (at least one on separate disk controller)
Steps to create additional control files	No additional control file copies required	1. Alter the SPFILE with the `ALTER SYSTEM SET control_files` command. 2. Shut down the database. 3. Copy control file to a new location. 4. Open the database and verify the addition of the new control file.

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Redo Log Files

Multiplex redo log groups to protect against media failure and loss of data. This increases database I/O. It is suggested that redo log groups have:

- At least two members (files) per group
- Each member:
  - On a separate disk or controller if using file system storage
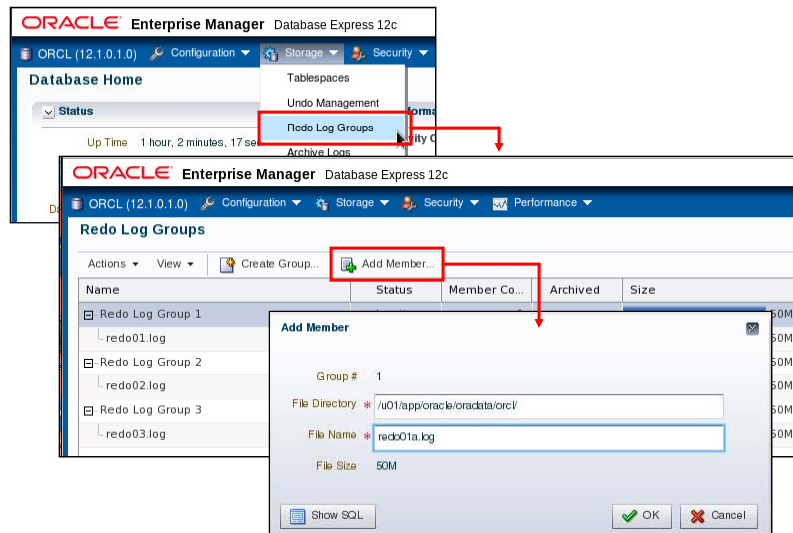 - In a separate disk group (such as +DATA and +FRA) if using ASM

+DATA

+FRA

Member a	Member a	Member a
Member b	Member b	Member b
Group 1	Group 2	Group 3
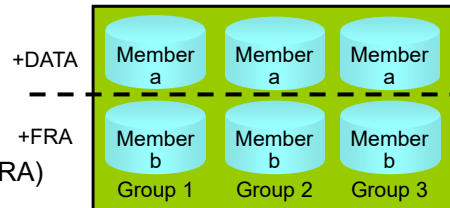
Note: Multiplexing redo logs may impact overall database performance.
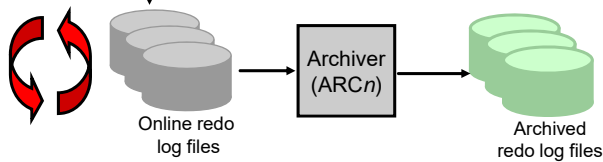
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Multiplexing the Redo Log

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Creating Archived Redo Log Files
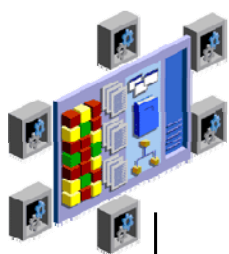
To preserve redo information, create archived copies of redo log files by performing the following steps:

1. Specify archived redo log file-naming convention.
2. Specify one or more archived redo log file locations.
3. Place the database in `ARCHIVELOG` mode.

Archiver (ARC*n*)

Online redo log files

Archived redo log files

Configuring `ARCHIVELOG` Mode

To place the database in `ARCHIVELOG` mode, perform the following steps:

- Using Enterprise Manager Cloud Control:
  1. On the Recovery Settings page, select "ARCHIVELOG Mode" and click Apply. The database can be set to `ARCHIVELOG` mode only from the `MOUNT` state.
  2. Restart the database instance by clicking "Yes" when prompted.
- Using SQL commands:
  - Mount the database.
  - Issue the `ALTER DATABASE ARCHIVELOG` command.
  - Open the database.

Summary

In this lesson, you should have learned how to:
- Configure the fast recovery area
- Multiplex the control file
- Multiplex redo log files
- Configure `ARCHIVELOG` mode

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