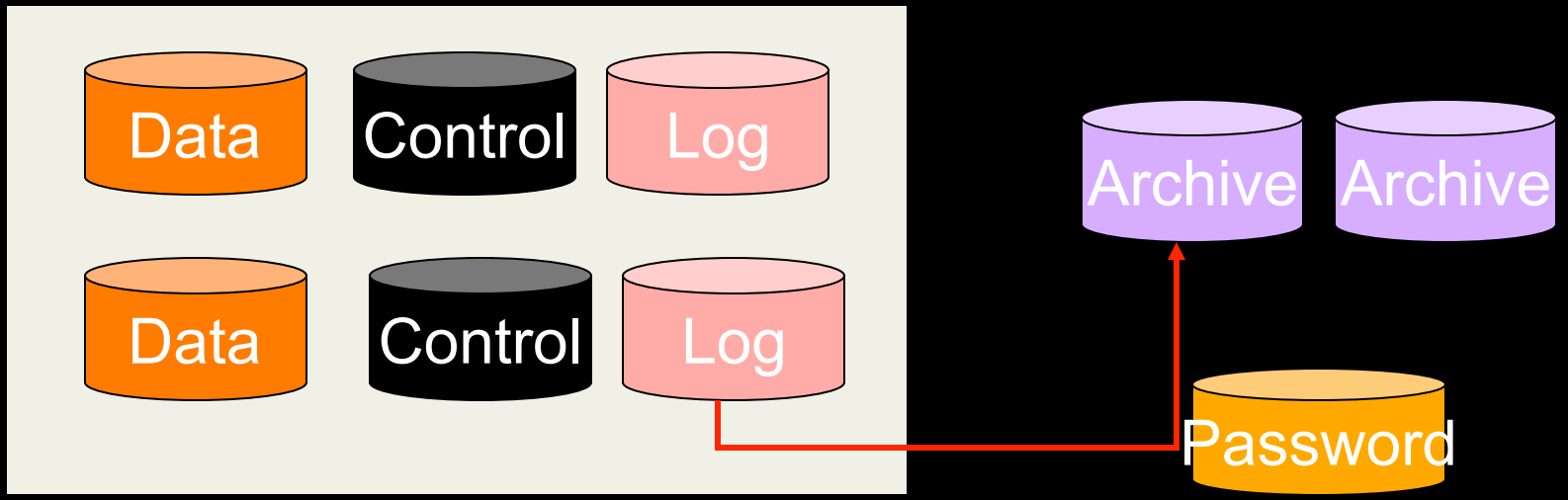
# *Database Storage*

# *Control files*

# *Oracle Database*

- *Is a collection of data that is treated as a unit*
- *Consists of three file types*

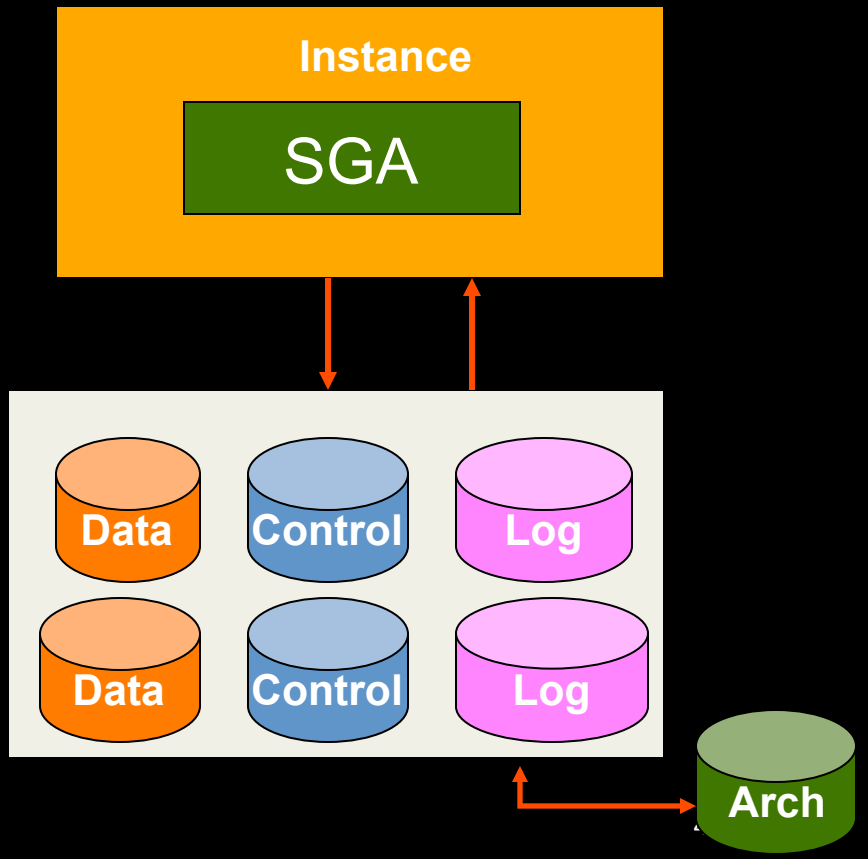


# *Control files*

*A small binary file*

*Defines current state of physical database*

*Maintains integrity of database*



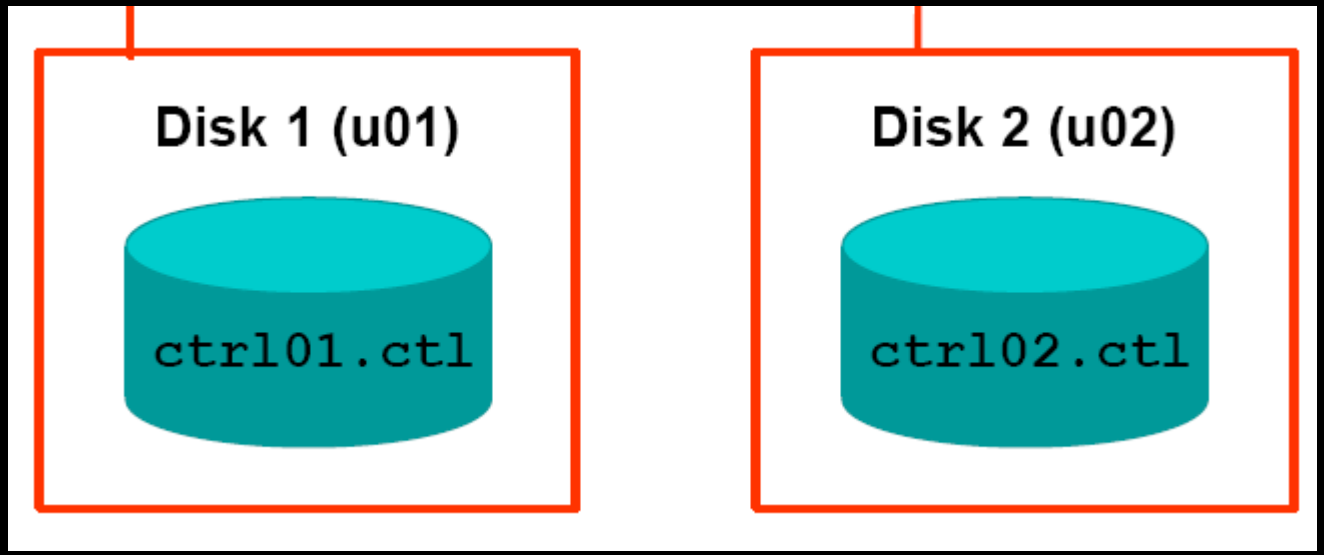
# Control File Contents

*Database name and identifier*
*Time stamp of database creation*
*Tablespace names*
*Names and locations of datafiles and redo log files*
*Current redo log file sequence number*
*Checkpoint information*
*Begin and end of undo segments*
*Redo log archive information*
*Backup information*

# Control files

## Multiplexing Control File

Control_files= $HOME/oradata/u01/ctrl01.ctl,
$HOME/oradata/u02/ctrl02.ctl




Keep the copies in different Disks

# Control files

## Multiplexing Control File When Using PFILE

1. Shutdown immediate
2. cp /u01/ctrl01.ctl /u02/ctrl02.ctl
3. Control_files = /u01/ctrl01.ctl /u02/ctrl02.ctl
4. Startup

# Control files

## Multiplexing Control File When Using SPFILE

1. Alter system set control_files ='u01/ctrl01.ctl','/u02/ctrl02.ctl' scope =spfile;

2. shutdown immediate

3. cp $HOME/oradata/u01/ctrl01.ctl $HOME/oradata/u02/ctrl02.ctl

4. Startup

# Control files

## Managing Control Files with OMF

OMF created if the CONTROL_FILES parameter is not specified

- Locations are defined by DB_CREATE_ONLINE_LOG_DEST_n
- Names are uniquely generated and displayed in the alertSID.log

# Control files

## Obtaining Control File Information

- V$CONTROLFILE
- V$CONTROLFILE_RECORD_SECTION
- SHOW PARAMETER CONTROL_FILES

# *Redo Log Files*

*Physical files ---They are not segments*

# *Segments*

*Data segment*

*Index segment*

*Temporary segment*

*Undo segment*

# *How Redo Log Files Work*

*Record all changes made to data*

*Used for recovery*

*Minimum 2 Redo log files are required*

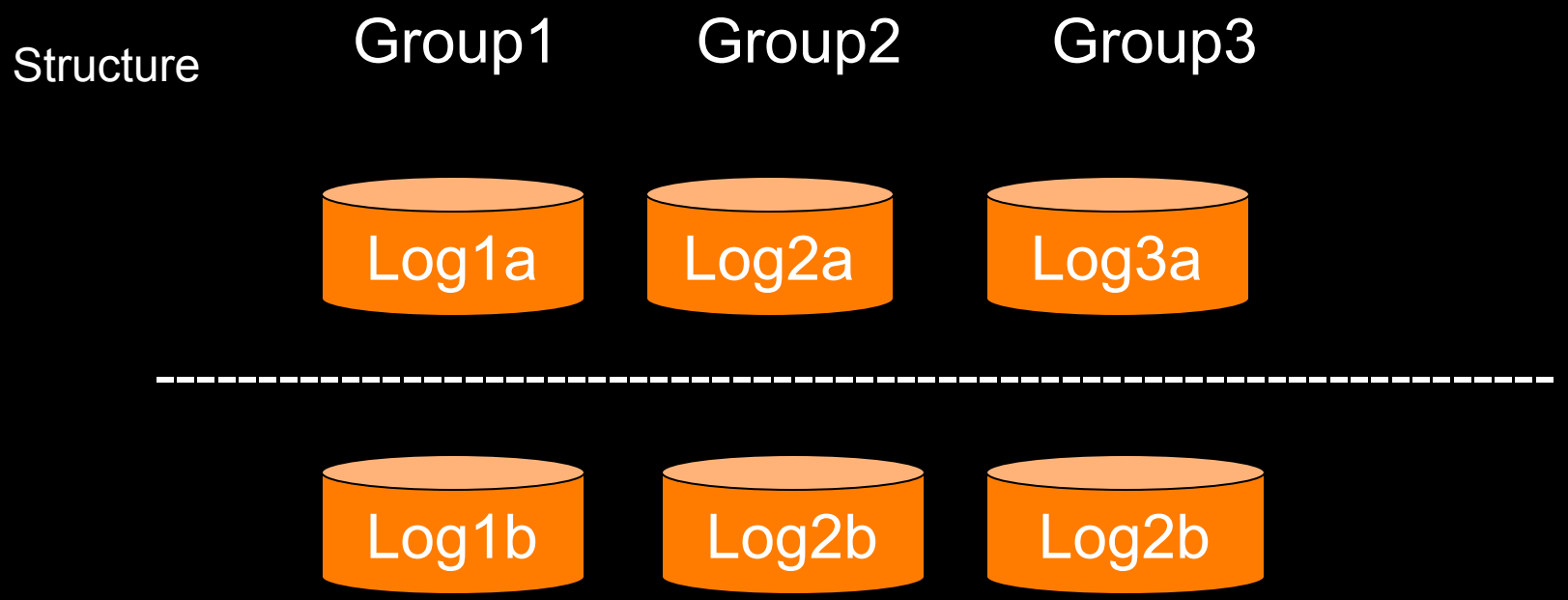
*Redo log files are used in a cyclic fashion.*

# *How Redo Log Files Work*

*When a redo log file is full, LGWR will move to the next log group ,called a log switch*

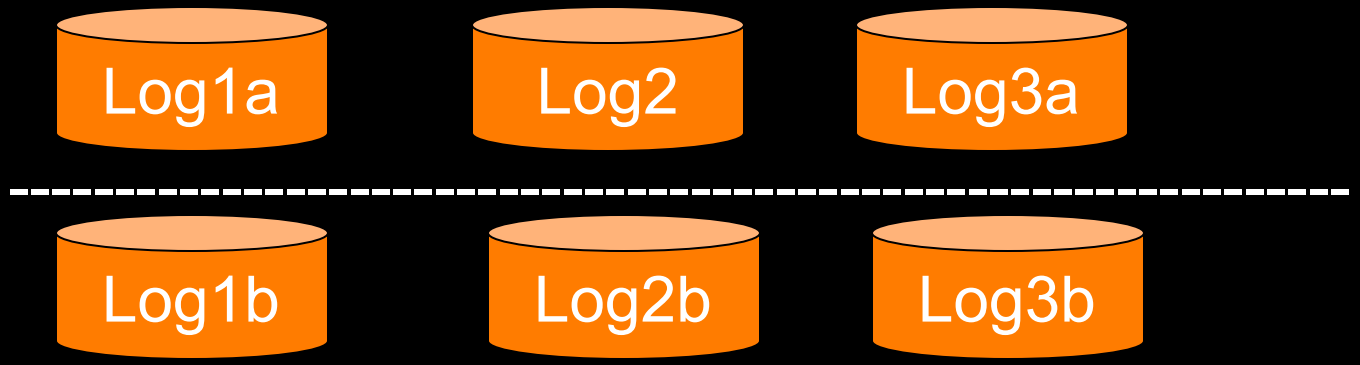
*Checkpoint operation  occurs and Information written to the control file*

# *Redo Log Files*



# Redo Log Files

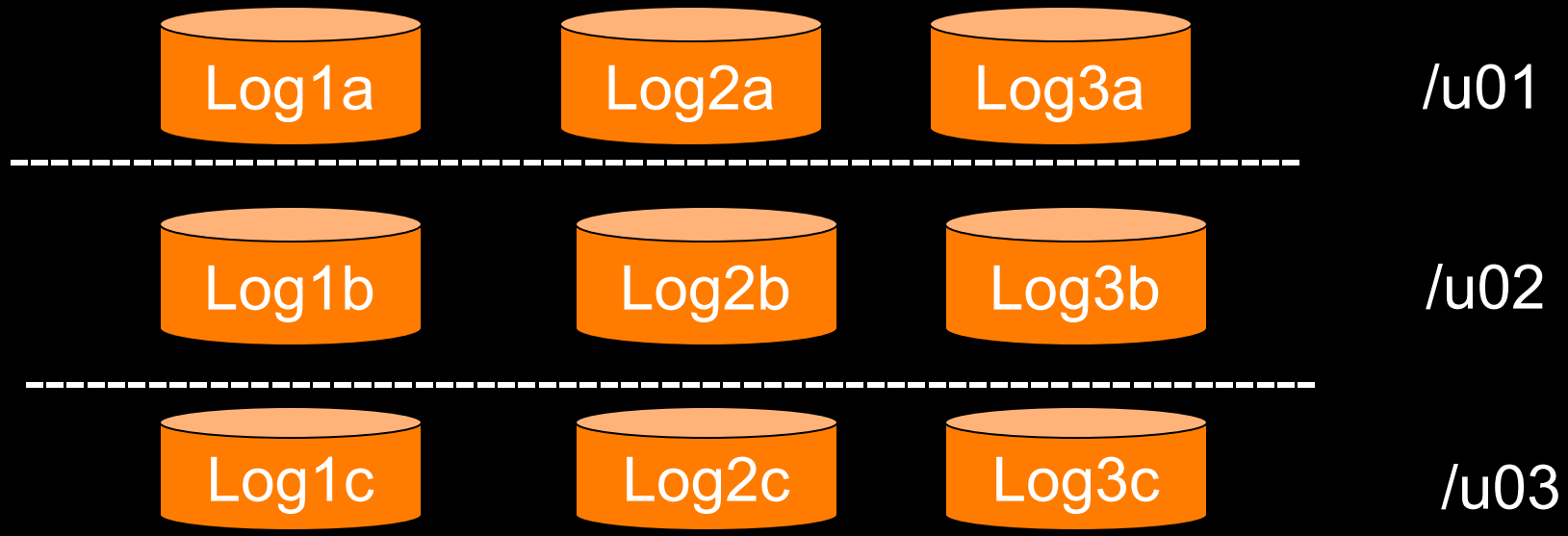
## Adding new log group




```
Alter database add logfile  GROUP 3
 ('$HOME/oradata/u01/log3a.rdo',
'$HOME/oradata/u02/log3b.rdo')  SIZE  1M;
```

# Redo Log Files

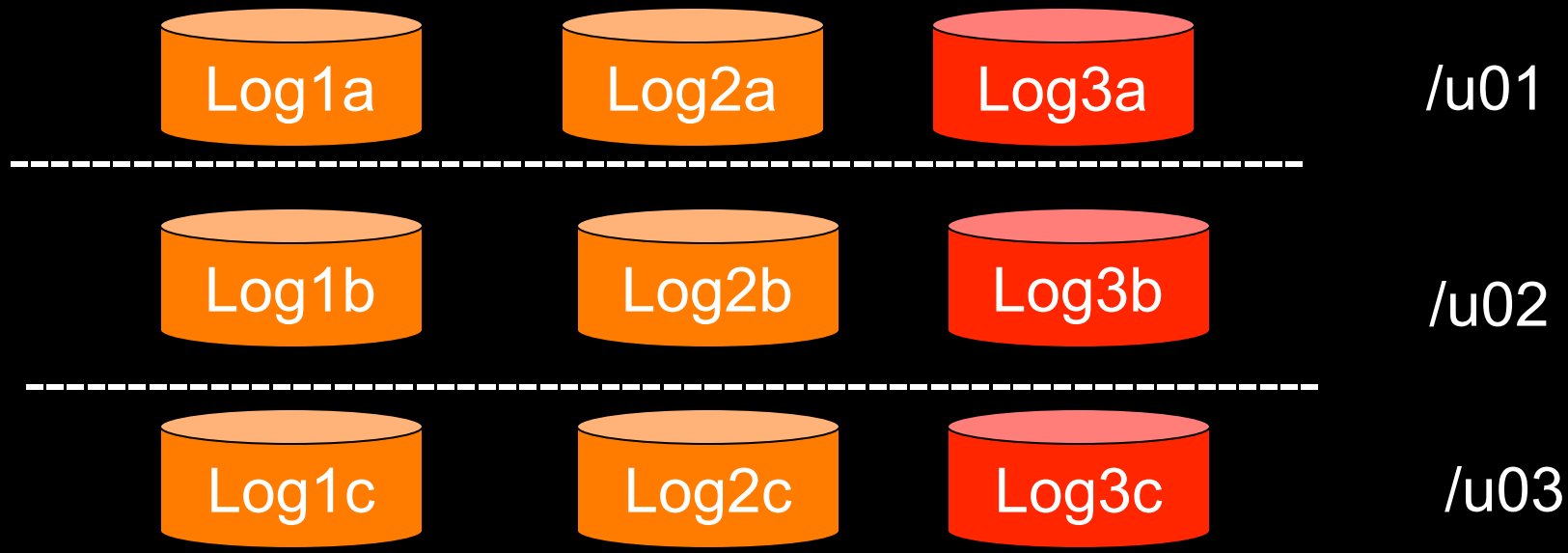
## Adding Online Redo Log File Members




```
ALTER DATABASE ADD LOGFILE MEMBER
'$HOME/oradata/u03/log1c.rdo' TO GROUP 1,
'$HOME/oradata/u03/log2c.rdo' TO GROUP 2,
'$HOME/oradata/u03/log3c.rdo' TO GROUP 3;
```

# Redo Log Files

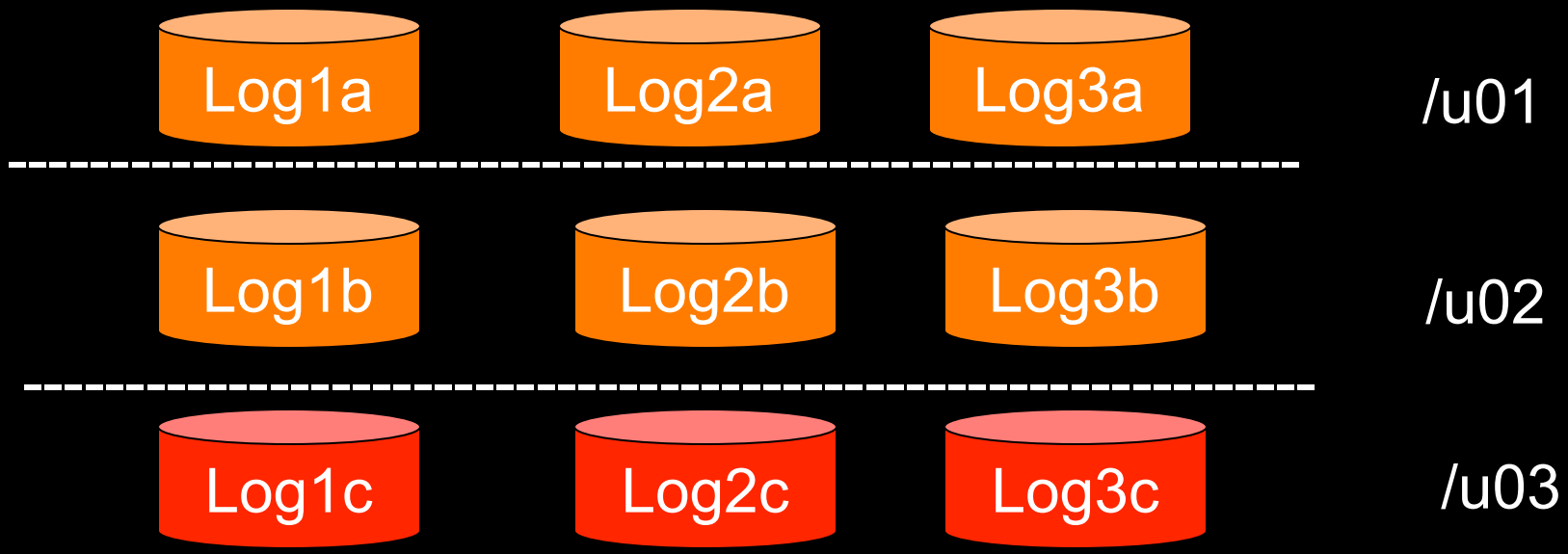
## Dropping Online Redo Log File Groups




```
ALTER DATABASE DROP LOGFILE GROUP 3;
```

# Redo Log Files

## Dropping Online Redo Log File Members




ALTER DATABASE DROP LOGFILE MEMBER 'path';

# Redo Log Files

## OMF

DB_CREATE_ONLINE_LOG_DEST_1

DB_CREATE_ONLINE_LOG_DEST_2

```
ALTER DATABASE ADD LOGFILE;
ALTER DATABASE DROP LOGFILE GROUP 3;
```

# Redo Log Files

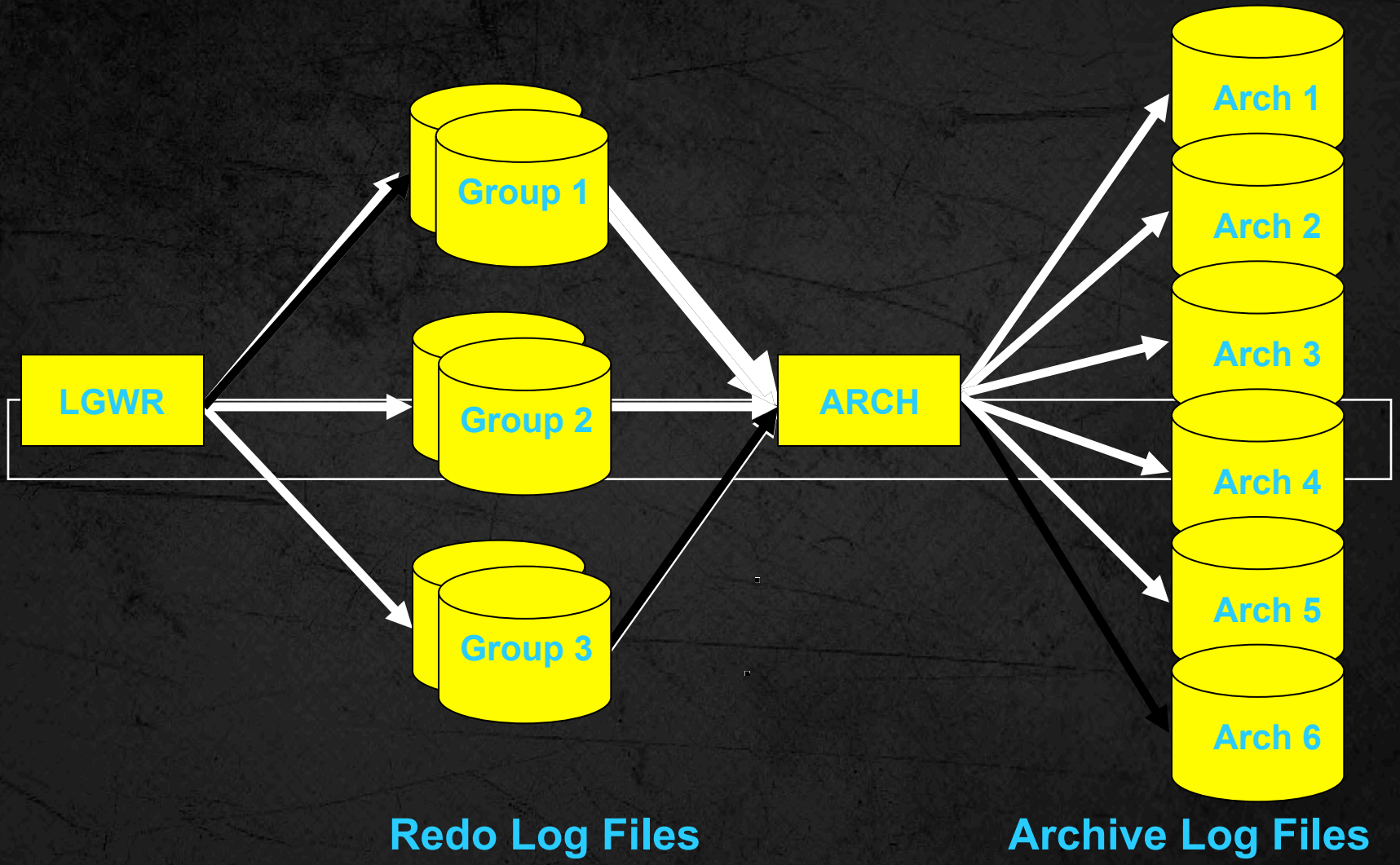
## Obtaining log File Information

- V$log
- V$logfile

# *Archive files*

*Archive files are copy of Log files*

# Log files---Archive files



# *Archive Log Files*

*Filled online redo log files can be archived.*

*A database backup together with online and archived redo log files can guarantee recovery of all committed transactions.*

# *Archive Log Files*

*Backup can be performed while the database is open*

*Archiver manages this process*

***Can be multiplexed***

| ARCHIVELOG | NOARCHIVELOG |
| --- | --- |
| Maintains Redo History | No redo history |
| Complete /Incomplete recovery | Incomplete recovery |
| Online & offline backup | Offline backup |
| Recover online | No recovery |

# Archive Log Files

*Enabling Archive log*

*Shutdown immediate*

*Define the location where archive log files should be stored*

*Startup mount*

*Alter database archivelog*

*Alter database open*

# *How to check whether my database in Archive LOG*

*Archive log list*