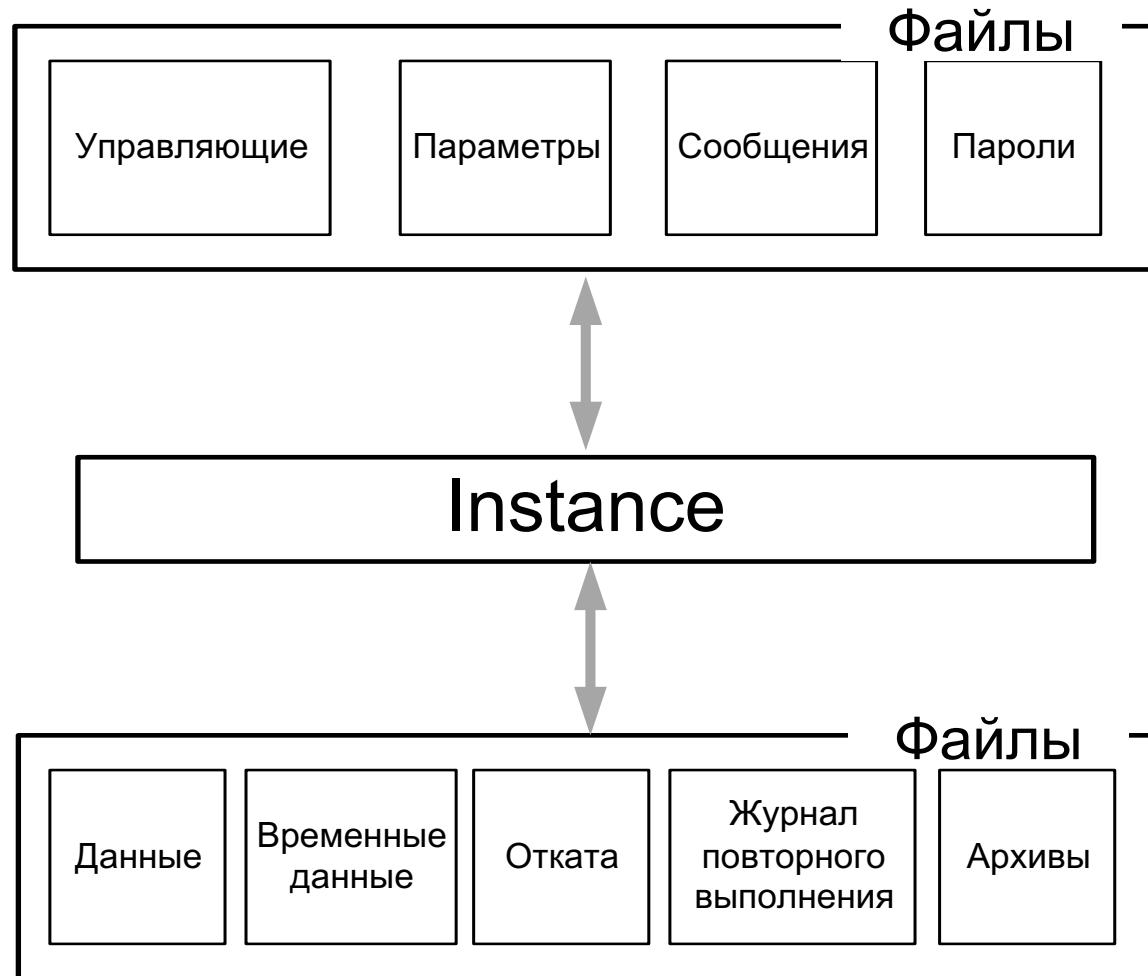


# **Администрирование баз данных и приложений**

**Архитектура ORACLE: Файлы БД и  
сервера**

**Лекция 4**

# Архитектура внешней памяти



# Файл параметров

- ▶ Файл параметров предназначен для хранения параметров экземпляра

```
connect system
SELECT name, DESCRIPTION FROM V$PARAMETER;
```

Script Output X Query Result X

SQL | Fetched 50 rows in 0,031 seconds

| NAME                        | DESCRIPTION   |
|-----------------------------|---|
| 1 lock_name_space           | lock name space used for generating lock names for standby/clone database |
| 2 processes                 | user processes  |
| 3 sessions                  | user and system sessions  |
| 4 timed_statistics          | maintain internal timing statistics                                       |
| 5 timed_os_statistics       | internal os statistic gathering interval in seconds                       |
| 6 resource_limit            | master switch for resource limit  |
| 7 license_max_sessions      | maximum number of non-system user sessions allowed                        |
| 8 license_sessions_warning  | warning level for number of non-system user sessions                      |
| 9 cpu_count                 | number of CPUs for this instance  |
| 10 instance_groups          | list of instance group names  |
| 11 event                    | debug event control - default null string                                 |
| 12 sga_max_size             | max total SGA size  |
| 13 use_large_pages          | Use large pages if available (TRUE/FALSE/ONLY)                            |
| 14 pre_page_sga             | pre-page sga for process  |
| 15 shared_memory_address    | SGA starting address (low order 32-bits on 64-bit platforms)              |
| 16 hi shared memory address | SGA starting address (high order 32-bits on 64-bit platforms)             |

# Файл параметров

Наименование параметра – значение параметра

connect system

| SELECT name, value, description FROM v\$parameter; |            |  |
|--|------------|--|
| NAME   | VALUE      | DESCRIPTION  |
| 1 lock_name_space                                  | (null)     | lock name space used for generating lock names for standby/clone |
| 2 processes  | 300        | user processes   |
| 3 sessions   | 472        | user and system sessions   |
| 4 timed_statistics                                 | TRUE       | maintain internal timing statistics                              |
| 5 timed_os_statistics                              | 0          | internal os statistic gathering interval in seconds              |
| 6 resource_limit                                   | FALSE      | master switch for resource limit                                 |
| 7 license_max_sessions                             | 0          | maximum number of non-system user sessions allowed               |
| 8 license_sessions_warning                         | 0          | warning level for number of non-system user sessions             |
| 9 cpu_count  | 1          | number of CPUs for this instance                                 |
| 10 instance_groups                                 | (null)     | list of instance group names                                     |
| 11 event   | (null)     | debug event control - default null string                        |
| 12 sga_max_size                                    | 1677721600 | max total SGA size   |
| 13 use_large_pages                                 | TRUE       | Use large pages if available (TRUE/FALSE/ONLY)                   |
| 14 pre_page_sga                                    | TRUE       | pre-page sga for process   |
| 15 shared_memory_address                           | 0          | SGA starting address (low order 32-bits on 64-bit platforms)     |
| 16 hi_shared_memory_address                        | 0          | SGA starting address (high order 32-bits on 64-bit platforms)    |
| 17 use indirect data buffers                       | FALSE      | Enable indirect data buffers (very large SGA on 32-bit platform) |

# Файл параметров

- ▶ Месторасположение файла параметров по умолчанию

| Platform       | Default Location            |
|----------------|-----------------------------|
| UNIX and Linux | <i>ORACLE_HOME/dbs</i>      |
| Windows        | <i>ORACLE_HOME\database</i> |



# Файл параметров

| File                      | Edit          | View  | Favorites | Help |
|---------------------------|---------------|---|-----------|------|
| Name                      | Type          | Data  |           |      |
| Computer                  |               |   |           |      |
| HKEY_CLASSES_ROOT         |               |   |           |      |
| HKEY_CURRENT_USER         |               |   |           |      |
| HKEY_LOCAL_MACHINE        |               |   |           |      |
| BCD00000000               |               |   |           |      |
| HARDWARE                  |               |   |           |      |
| SAM                       |               |   |           |      |
| SECURITY                  |               |   |           |      |
| SOFTWARE                  |               |   |           |      |
| Classes                   |               |   |           |      |
| Clients                   |               |   |           |      |
| Microsoft                 |               |   |           |      |
| ODBC                      |               |   |           |      |
| ORACLE                    |               |   |           |      |
| KEY_OraDB12Home1          |               |   |           |      |
| ODE                       |               |   |           |      |
| OLEDB                     |               |   |           |      |
| ODP.NET                   |               |   |           |      |
| OracleMTSRecoveryServices |               |   |           |      |
| Policies                  |               |   |           |      |
| RegisteredApplications    |               |   |           |      |
| Wow6432Node               |               |   |           |      |
| SYSTEM                    |               |   |           |      |
| HKEY_USERS                |               |   |           |      |
|                           |               |   |           |      |
| (Default)                 | REG_SZ        | (value not set)   |           |      |
| MSHELP_TOOLS              | REG_SZ        | C:\app\ora_install_user\product\12.1.0\dbhome_1\MSHELP        |           |      |
| NLS_LANG                  | REG_SZ        | AMERICAN_AMERICA.WE8MSWIN1252                                 |           |      |
| OLEDB                     | REG_EXPAND_SZ | C:\app\ora_install_user\product\12.1.0\dbhome_1\oledb\mesg    |           |      |
| OMTSRECO_PORT             | REG_EXPAND_SZ | 2030  |           |      |
| ORA_ORCL_AUTOSTART        | REG_EXPAND_SZ | TRUE  |           |      |
| ORA_ORCL_SHUTDOWN         | REG_EXPAND_SZ | TRUE  |           |      |
| ORA_ORCL_SHUTDOWN_TIMEOUT | REG_EXPAND_SZ | 90  |           |      |
| ORA_ORCL_SHUTDOWNTYPE     | REG_EXPAND_SZ | immediate   |           |      |
| ORACLE_BASE               | REG_SZ        | C:\app\ora_install_user                                       |           |      |
| ORACLE_BUNDLE_NAME        | REG_SZ        | Enterprise  |           |      |
| ORACLE_GROUP_NAME         | REG_SZ        | Oracle - OraDB12Home1   |           |      |
| ORACLE_HOME               | REG_SZ        | C:\app\ora_install_user\product\12.1.0\dbhome_1               |           |      |
| ORACLE_HOME_KEY           | REG_SZ        | SOFTWARE\ORACLE\KEY_OraDB12Home1                              |           |      |
| ORACLE_HOME_NAME          | REG_SZ        | OraDB12Home1  |           |      |
| ORACLE_HOME_TYPE          | REG_SZ        | 1   |           |      |
| ORACLE_SID                | REG_SZ        | orcl  |           |      |
| ORACLE_SVCUSER            | REG_SZ        | ora_install_user  |           |      |
| ORACLE_SVCUSER_PWDREQ     | REG_SZ        | 1   |           |      |
| RDBMS_ARCHIVE             | REG_SZ        | C:\app\ora_install_user\product\12.1.0\dbhome_1\DATABASE\AR.. |           |      |
| RDBMS_CONTROL             | REG_SZ        | C:\app\ora_install_user\product\12.1.0\dbhome_1\DATABASE      |           |      |
| SOLPATH                   | REG_SZ        | C:\app\ora_install_user\product\12.1.0\dbhome_1\ dbs          |           |      |

# Файл параметров

| product > 12.1.0 > dbhome_1 > database |                  |
|--|------------------|
| Name                                   | Date modified    |
| archive                                | 29.08.2016 5:27  |
| hc_orcl.dat                            | 29.08.2016 5:30  |
| oradba                                 | 22.12.2005 4:07  |
| oradim                                 | 26.09.2016 4:47  |
| PWDorcl                                | 29.08.2016 5:57  |
| SPFILEORCL                             | 26.09.2016 22:00 |

| Name                  | Date modified    | Type             | Size | Folder path  |
|-----------------------|------------------|------------------|------|--|
| init.ora.729201654015 | 29.08.2016 5:30  | 729201654015 ... | 2 KB | C:\app\ora_install_user\admin\orcl\pfile                   |
| initdg4odbc           | 28.06.2013 1:09  | ORA File         | 1 KB | C:\app\ora_install_user\product\12.1.0\dbhome_1\hs\admin   |
| init                  | 03.02.2012 10:24 | ORA File         | 3 KB | C:\app\ora_install_user\product\12.1.0\dbhome_1\ dbs       |
| init                  | 25.07.2001 20:04 | ORA File         | 8 KB | C:\app\ora_install_user\product\12.1.0\dbhome_1\srvm\admin |

# Файл параметров

init.ora.729201654015 - Notepad

```
File Edit Format View Help

#####
# Copyright (c) 1991, 2013 by Oracle Corporation
#####

#####
# Cache and I/O
#####
db_block_size=8192

#####
# Cursors and Library Cache
#####
open_cursors=300

#####
# Database Identification
#####
db_domain=be.by
db_name="orcl"

#####
# File Configuration
#####
control_files=("C:\app\ora_install_user\oradata\orcl\control01.ctl", "C:\app\ora_install_user\oradata\orcl\control02.ctl")
db_recovery_file_dest="C:\app\ora_install_user\fast_recovery_area"
db_recovery_file_dest_size=6930m

#####
# Miscellaneous
#####
compatible=12.1.0.0.0
diagnostic_dest=C:\app\ora_install_user
enable_pluggable_database=true
memory_target=1600m

#####
# Processes and Sessions
#####
```

# Файл параметров

- ▶ SPFILE - файл параметров сервера в двоичном виде
- ▶ Может изменяться командой ALTER SYSTEM ...  
SCOPE=SPFILE
- ▶ Изменение параметров сохраняется в SPFILE и будет применяться при следующем старте Oracle

The screenshot shows the Oracle SQL Developer interface with two tabs: 'Script Output' and 'Query Result'. In the 'Query Result' tab, a query is run:

```
SELECT name, value FROM V$PARAMETER where name = 'open_cursors';
```

The result shows one row:

| NAME           | VALUE |
|----------------|-------|
| 1 open_cursors | 300   |

Below this, another query is run:

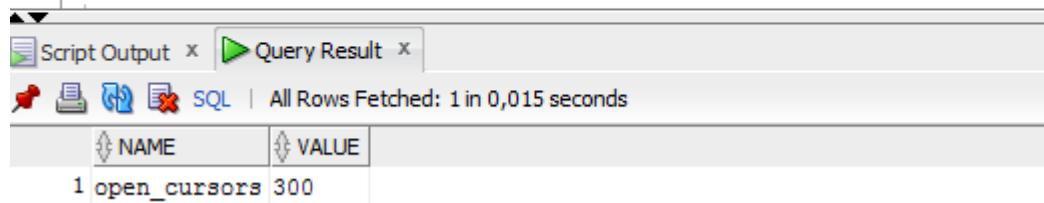
```
ALTER SYSTEM SET OPEN_CURSORS=350 SCOPE=SPFILE;
```

The 'Script Output' tab shows the response:

```
system SET altered.
```

# Файл параметров

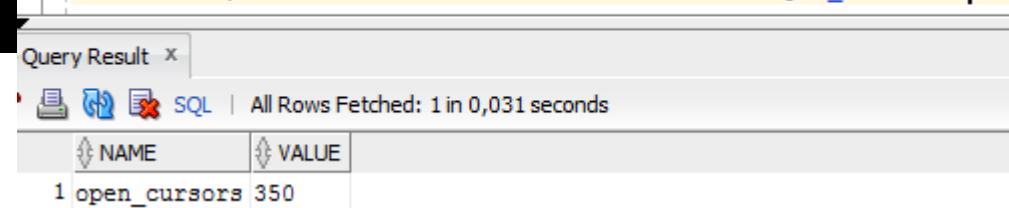
```
SELECT name, value FROM V$PARAMETER where name = 'open_cursors';  
  
ALTER SYSTEM SET OPEN_CURSORS=350 SCOPE=SPFILE;
```



| NAME           | VALUE |
|----------------|-------|
| 1 open_cursors | 300   |

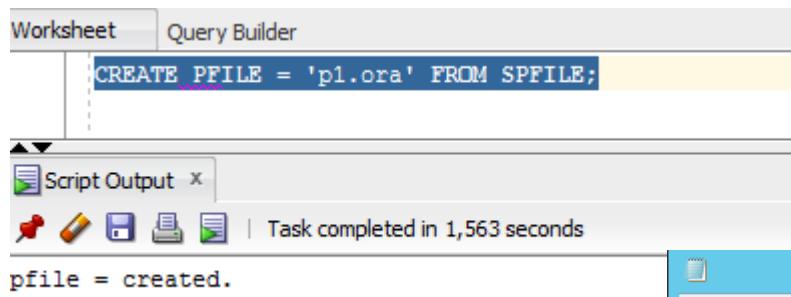
```
SQL> connect /as sysdba;  
Connected.  
SQL> shutdown immediate;  
Database closed.  
Database dismounted.  
ORACLE instance shut down.  
SQL> startup open;  
ORACLE instance started.  
  
Total System Global Area 1670221824 bytes  
Fixed Size          2403352 bytes  
Variable Size       1006633960 bytes  
Database Buffers    654311424 bytes  
Redo Buffers        6873088 bytes  
Database mounted.  
Database opened.  
SQL> -
```

```
SELECT name, value FROM V$PARAMETER where name = 'open_cursors';
```



| NAME           | VALUE |
|----------------|-------|
| 1 open_cursors | 350   |

# Файл параметров



Создание текстового файла  
параметров PFILE из бинарного  
файла SPFILE.

The screenshot shows a Notepad window titled "p1 - Notepad" containing the following Oracle database parameter settings:

```
orcl._data_transfer_cache_size=0
orcl._db_cache_size=771751936
orcl._java_pool_size=16777216
orcl._large_pool_size=33554432
orcl._oracle_base='C:\app\ora_install_user'#ORACLE_BASE set from environment
orcl._pga_aggregate_target=587202560
orcl._sga_target=1090519040
orcl._shared_io_pool_size=0
orcl._shared_pool_size=251658240
orcl._streams_pool_size=0
*.audit_file_dest='C:\app\ora_install_user\admin\orcl\adump'
*.audit_trail='db'
*.compatible='12.1.0.0.0'
*.control_files='C:\app\ora_install_user\oradata\orcl\control01.ctl','C:\app\ora_in
*.db_block_size=8192
*.db_domain='be.be'
*.db_name='orcl'
*.db_recovery_file_dest='C:\app\ora_install_user\fast_recovery_area'
*.db_recovery_file_dest_size=6930m
*.diagnostic_dest='C:\app\ora_install_user'
*.dispatchers='(PROTOCOL=TCP) (SERVICE=orclXDB)'
*.enable_pluggable_database=true
*.memory_target=1600m
*.open_cursors=350
*.processes=300
*.remote_login_passwordfile='EXCLUSIVE'
*.undo_tablespace='UNDOTBS1'
```

# Файл параметров

This PC ▶ Local Disk (C:) ▶ app ▶ ora\_install\_user ▶ product ▶ 12.1.0 ▶ dbhome\_1 ▶ database

| Name        | Date modified   | Type          | Size  |
|-------------|-----------------|---------------|-------|
| archive     | 29.08.2016 5:27 | File folder   |       |
| hc_orcl.dat | 29.08.2016 5:30 | DAT File      | 2 KB  |
| oradba      | 22.12.2005 4:07 | Application   | 31 KB |
| oradim      | 26.09.2016 4:47 | Text Document | 1 KB  |
| p1          | 27.09.2016 6:00 | ORA File      | 2 KB  |
| PWDorcl     | 29.08.2016 5:57 | ORA File      | 8 KB  |
| SPFILEORCL  | 27.09.2016 6:02 | ORA File      | 4 KB  |



# Файл параметров

- ▶ Сформировать бинарный файл SPFILE параметров из текстового файла PFILE

```
*.db_block_size=8192
*.db_domain='be.by'
*.db_name='orcl'
*.db_recovery_file_dest='C:\app\ora_install_user\fast_recovery_a
*.db_recovery_file_dest_size=6930m
*.diagnostic_dest='C:\app\ora_install_user'
*.dispatchers='(PROTOCOL=TCP) (SERVICE=orclXDB)'
*.enable_pluggable_database=true
*memory_target=1600m
*open_cursors=300
*processes=300
*.remote_login_passwordfile='EXCLUSIVE'
*.undo_tablespace='UNDOTBS1'
```

The screenshot shows the Oracle SQL Developer interface. On the left, there is a code editor window containing the PFILE configuration parameters. A red box highlights the memory, open cursor, and processes settings. To the right, the SQL worksheet shows the command to create an SPFILE from the PFILE, followed by the output message "spfile = created." and a note about the task completion time.

```
CREATE SPFILE = 'SPFILEORCL1.ora' FROM PFILE='p1.ora';
```

Script Output

Task completed in 0,25 seconds

spfile = created.

The screenshot shows the Oracle SQL Developer interface with a query result window. The query "SELECT name, value FROM V\$PARAMETER where name = 'open\_cursors';" is run, and the result shows a single row with the NAME 'open\_cursors' and VALUE '300'.

| NAME           | VALUE |
|----------------|-------|
| 1 open_cursors | 300   |



# Файл параметров

## Порядок поиска имен

1. `spfileORACLE_SID.ora`
2. `spfile.ora`
3. `initORACLE_SID.ora`

## Переименован spfileorcl.ora

```
SQL> startup open;
ORA-01078: failure in processing system parameters
LRM-00109: could not open parameter file 'C:\APP\ORA_INSTALL_USER\PRODUCT\12.1.0
\DBHOME_1\DATABASE\INITORCL.ORA'
```

## Переименован p1.ora в initorcl.ora

```
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.

SQL> startup open;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size          2403352 bytes
Variable Size       1006633960 bytes
Database Buffers   654311424 bytes
Redo Buffers        6873088 bytes
Database mounted.
Database opened.

SQL> show parameter spfile;

NAME                      TYPE            VALUE
-----                    -----
spfile                     string
```



# Файл параметров

Переименован spfileorcl\_0.ora

```
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup open;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size          2403352 bytes
Variable Size       1006633960 bytes
Database Buffers   654311424 bytes
Redo Buffers        6873088 bytes

Database mounted.
Database opened.
SQL> show parameter spfile;

NAME                           TYPE        VALUE
spfile                         string      C:\APP\ORA_INSTALL_USER\PRODUC
                                T\12.1.0\DBHOME_1\DATABASE\SPF
                                ILEORCL.ORA

SQL>
```

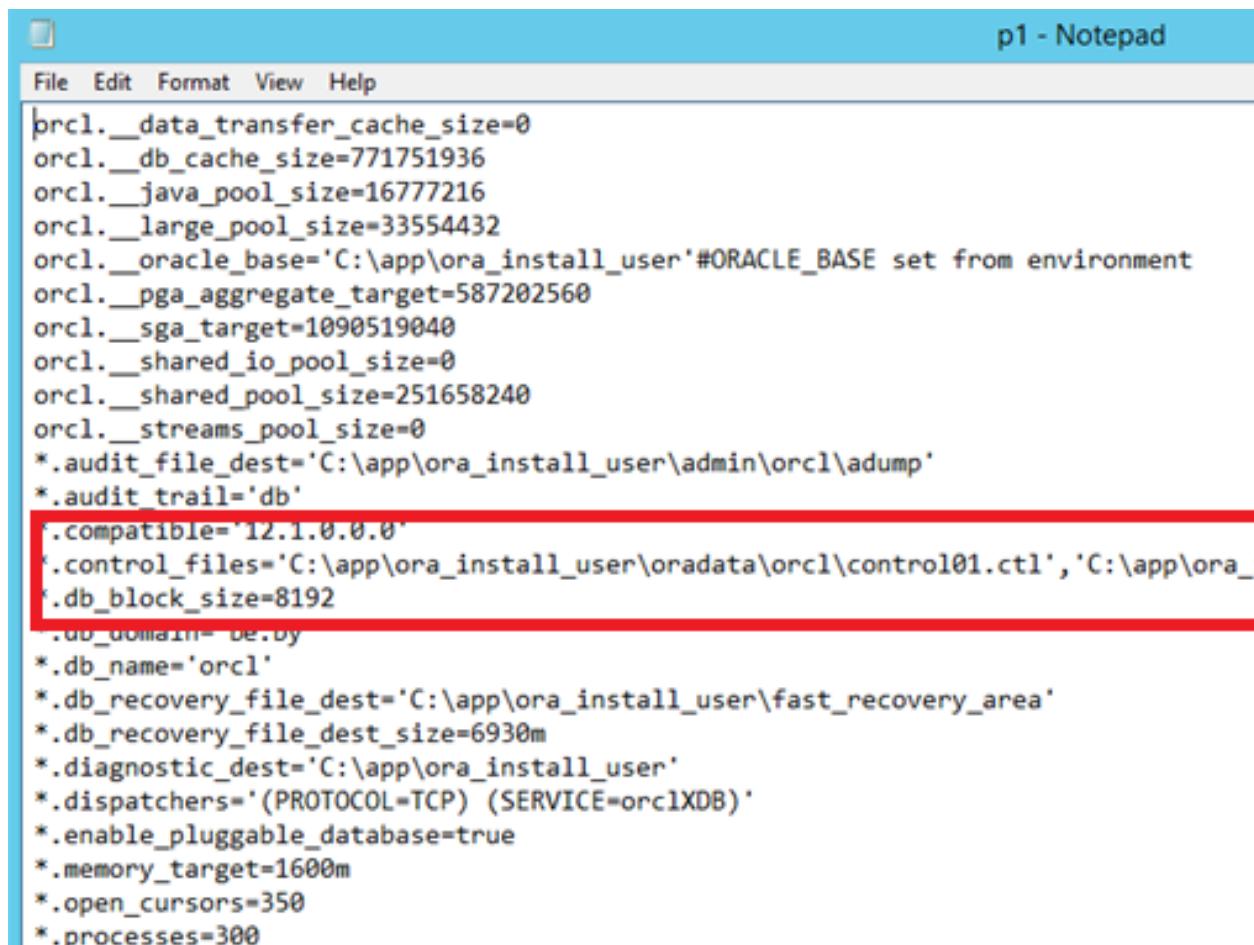
# Управляющие файлы

---

- ▶ **Control files** – файлы, содержащие имена (местоположение) основных физических файлов базы данных и некоторых параметров
- ▶ Используются для поиска других файлов операционной системы;
- ▶ Местоположение управляющих файлов экземпляр получает из файла параметров.
- ▶ По умолчанию для надежности создается 2 управляющих файла. Можно создать больше. Обычно их размещают на разных дисковых носителях (для надежности).



# Управляющие файлы



Notepad window titled "p1 - Notepad" displaying Oracle database initialization parameters (spfile).

```
File Edit Format View Help
prcl._data_transfer_cache_size=0
orcl._db_cache_size=771751936
orcl._java_pool_size=16777216
orcl._large_pool_size=33554432
orcl._oracle_base='C:\app\ora_install_user'#ORACLE_BASE set from environment
orcl._pga_aggregate_target=587202560
orcl._sga_target=1090519040
orcl._shared_io_pool_size=0
orcl._shared_pool_size=251658240
orcl._streams_pool_size=0
*.audit_file_dest='C:\app\ora_install_user\admin\orcl\adump'
*.audit_trail='db'
*.compatible='12.1.0.0.0'
*.control_files='C:\app\ora_install_user\oradata\orcl\control01.ctl','C:\app\ora_i
*.db_block_size=8192
*.db_domain='be.by'
*.db_name='orcl'
*.db_recovery_file_dest='C:\app\ora_install_user\fast_recovery_area'
*.db_recovery_file_dest_size=6930m
*.diagnostic_dest='C:\app\ora_install_user'
*.dispatchers='(PROTOCOL=TCP) (SERVICE=orclXDB)'
*.enable_pluggable_database=true
*.memory_target=1600m
*.open_cursors=350
*.processes=300
```

# Управляющие файлы

```
SHOW PARAMETER CONTROL;
```

Script Output X | Task completed in 0,265 seconds

| NAME                           | TYPE    | VALUE  |
|--------------------------------|---------|--|
| control_file_record_keep_time  | integer | 7  |
| control_files                  | string  | C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL01.CTL, C: |
| control_management_pack_access | string  | DIAGNOSTIC+TUNING                                      |

```
SELECT NAME FROM V$CONTROLFILE;
```

Script Output X | Query Result X | All Rows Fetched: 2 in 0,078 seconds

| NAME  |
|---|
| 1 C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL01.CTL            |
| 2 C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\CONTROL02.CTL |

# Управляющие файлы

```
SELECT TYPE, RECORD_SIZE, RECORDS_TOTAL FROM V$CONTROLFILE_RECORD_SECTION;
```

Script Output x Query Result x

SQL | All Rows Fetched: 41 in 0,015 seconds

| TYPE                 | RECORD_SIZE | RECORDS_TOTAL |
|----------------------|-------------|---------------|
| 1 DATABASE           | 316         | 1             |
| 2 CKPT PROGRESS      | 8180        | 11            |
| 3 REDO THREAD        | 256         | 8             |
| 4 REDO LOG           | 72          | 16            |
| 5 DATAFILE           | 520         | 1024          |
| 6 FILENAME           | 524         | 4146          |
| 7 TABLESPACE         | 68          | 1024          |
| 8 TEMPORARY FILENAME | 56          | 1024          |
| 9 RMAN CONFIGURATION | 1108        | 50            |
| 10 LOG HISTORY       | 56          | 292           |
| 11 OFFLINE RANGE     | 200         | 1063          |
| 12 ARCHIVED LOG      | 584         | 28            |
| 13 BACKUP SET        | 96          | 1022          |
| 14 BACKUP PIECE      | 780         | 1006          |
| 15 BACKUP DATAFILE   | 200         | 1063          |
| 16 BACKUP REDOLOG    | 76          | 215           |
| 17 DATAFILE COPY     | 736         | 1000          |
| 18 BACKUP CORRUPTION | 44          | 1115          |
| 19 COPY CORRUPTION   | 40          | 1227          |
| 20 DELETED OBJECT    | 20          | 818           |

# Управляющие файлы – изменение

---

- ▶ Остановить Oracle (shutdown transactional или immediate);
- ▶ Скопировать один из управляющих файлов;
- ▶ Изменить параметр CONTROL\_FILES в файле параметров;
- ▶ Стартовать Oracle (startup open).



# Управляющие файлы – изменение

```
SQL> startup open;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size          2403352 bytes
Variable Size       1006633960 bytes
Database Buffers    654311424 bytes
Redo Buffers        6873088 bytes
ORA-00214: control file 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL01.CTL'
version 20509 inconsistent with file
'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL03.CTL' version 20491

SQL> select name from v$controlfile;
no rows selected

SQL> show parameter control;

NAME                           TYPE        VALUE
control_file_record_keep_time integer     7
control_files                  string      C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL01.CTL, C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\CONTROL02.CTL, C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\CONTROL03.CTL
control_management_pack_access string      DIAGNOSTIC+TUNING
SQL> -
```

# Управляющие файлы – изменение

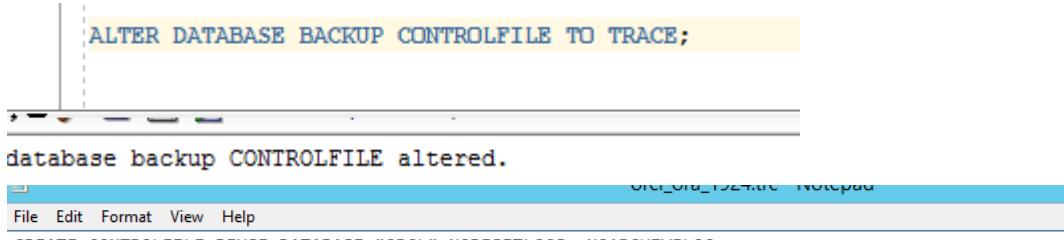
- ▶ Старт Oracle без одного из управляющих файлов;

```
SQL> startup open;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size          2403352 bytes
Variable Size       1006633960 bytes
Database Buffers    654311424 bytes
Redo Buffers        6873088 bytes
ORA-00205: error in identifying control file, check alert log for more info
```

# Управляющие файлы – изменение

- Если надо изменить управляющий файл, то следует создать сценарий, откорректировать его и



The screenshot shows a window from Oracle SQL Developer. At the top, there is a code editor with a yellow highlight over the command `ALTER DATABASE BACKUP CONTROLFILE TO TRACE;`. Below the code editor is a message window with the text `database backup CONTROLFILE altered.`. The main area is a script editor containing the following SQL code:

```
CREATE CONTROLFILE REUSE DATABASE "ORCL" NORESETLOGS NOARCHIVELOG
  MAXLOGFILES 16
  MAXLOGMEMBERS 3
  MAXDATAFILES 1024
  MAXINSTANCES 8
  MAXLOGHISTORY 292
LOGFILE
  GROUP 1 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED001.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 2 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED002.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 3 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED003.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 4 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED004.LOG'  SIZE 50M BLOCKSIZE 512
-- STANDBY LOGFILE
DATAFILE
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBSEED\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\SYSAUDIT01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBSEED\SYSAUDIT01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\UNDOTBS01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\USERS01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBORCL\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBORCL\SYSAUDIT01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBORCL\SAMPLE_SCHEMA_USERS01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBORCL\EXAMPLE01.DBF',
  'C:\APP\TABLESPACES\TS_LEC.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDB_A\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDB_A\SYSAUDIT01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDB_A\USERS01.DBF'
```

# Файл паролей

- ▶ Предназначен для аутентификации администраторов базы данных

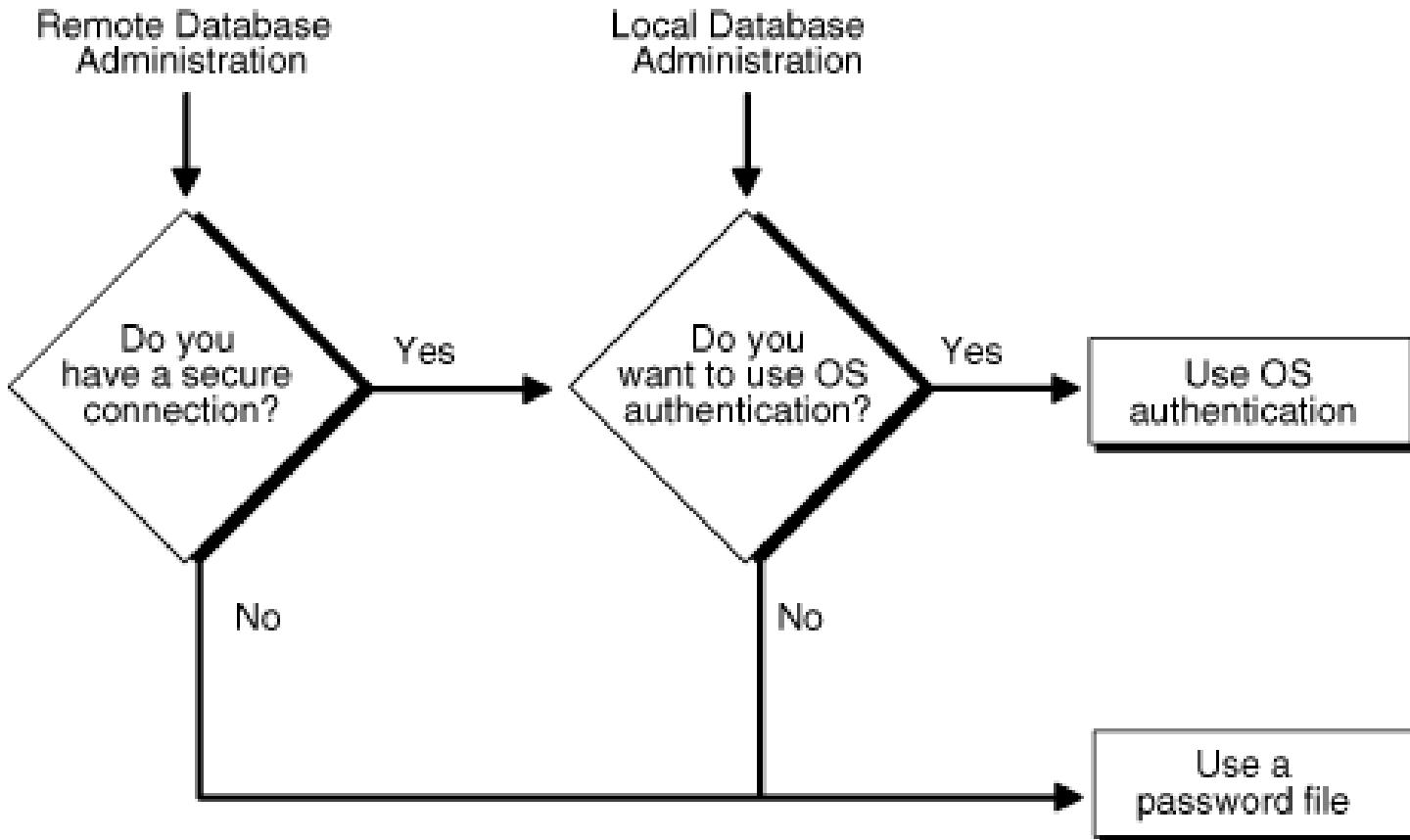
```
warning: You are no longer connected
SQL> connect /as sysdba;
Connected to an idle instance.
SQL>
```

- ▶ Можно создавать, пересоздавать и изменять

| Platform       | Required Name     | Required Location    |
|----------------|-------------------|----------------------|
| UNIX and Linux | orapwORACLE_SID   | ORACLE_HOME/dbs      |
| Windows        | PWDORACLE_SID.ora | ORACLE_HOME\database |



# Аутентификация администраторов



# Файл паролей

- ▶ Просмотр пользователей в файле паролей

| SELECT * FROM V\$PFILE_USERS; |           |        |         |        |           |       |       |        |
|-------------------------------|-----------|--------|---------|--------|-----------|-------|-------|--------|
|                               | USERNAME  | SYSDBA | SYSOPER | SYSASM | SYSBACKUP | SYSDG | SYSKM | CON_ID |
| 1                             | SYS       | TRUE   | TRUE    | FALSE  | FALSE     | FALSE | FALSE | 0      |
| 2                             | SYSDG     | FALSE  | FALSE   | FALSE  | FALSE     | TRUE  | FALSE | 1      |
| 3                             | SYSBACKUP | FALSE  | FALSE   | FALSE  | TRUE      | FALSE | FALSE | 1      |
| 4                             | SYSKM     | FALSE  | FALSE   | FALSE  | FALSE     | FALSE | TRUE  | 1      |



# Файл паролей

Параметр использования файла пароля:

EXCLUSIVE

SHARED

NONE

```
| show parameter remote_login_passwordfile;
```

| NAME                      | TYPE   | VALUE     |
|---------------------------|--------|-----------|
| remote_login_passwordfile | string | EXCLUSIVE |



# Файлы сообщений

- ▶ Протоколы работы
- ▶ Трассировки
- ▶ Дампы

```
SELECT * FROM V$DIAG_INFO;
```

Query Result X

SQL | All Rows Fetched: 11 in 0,094 seconds

| INST_ID | NAME                    | VALUE   | CON_ID |
|---------|-------------------------|---|--------|
| 1       | 1 Diag Enabled          | TRUE  | 0      |
| 2       | 1 ADR Base              | C:\APP\ORA_INSTALL_USER   | 0      |
| 3       | 1 ADR Home              | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl                        | 0      |
| 4       | 1 Diag Trace            | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl\trace                  | 0      |
| 5       | 1 Diag Alert            | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl\alert                  | 0      |
| 6       | 1 Diag Incident         | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl\incident               | 0      |
| 7       | 1 Diag Cdump            | C:\app\ora_install_user\diag\rdbms\orcl\orcl\cdump                  | 0      |
| 8       | 1 Health Monitor        | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl\hm                     | 0      |
| 9       | 1 Default Trace File    | C:\APP\ORA_INSTALL_USER\diag\rdbms\orcl\orcl\trace\orcl_ora_144.trc | 0      |
| 10      | 1 Active Problem Count  | 0   | 0      |
| 11      | 1 Active Incident Count | 0   | 0      |

# Файлы сообщений

## ▶ Журнал ...\\ALERT\\LOG.XML

```
<msg time='2016-09-27T05:30:04.193-07:00' org_id='oracle'
comp_id='rdbms'
msg_id='opixe:3293:2802784106' type='NOTIFICATION'
group='admin_ddl'
level='16' host_id='BOR' host_addr='fe80::cbf:3c5a:ab5a:dcfb%12'
module='SQL Developer' pid='1596'>
<txt>Completed: alter database add logfile group 4 &apos;C:\APP
\ORA_INSTALL_USER\ORADATA\ORCL\REDO04.LOG&apos;
size 50m blocksize 512
</txt>
</msg>
<msg time='2016-09-27T05:30:04.193-07:00' org_id='oracle'
comp_id='rdbms'
type='UNKNOWN' level='16' host_id='BOR'
host_addr='fe80::cbf:3c5a:ab5a:dcfb%12' module='SQL Developer'
pid='1596'>
<txt>ALTER SYSTEM SET open_cursors=350 SCOPE=SPFILE;
</txt>
</msg>
<msg time='2016-09-27T05:30:25.244-07:00' org_id='oracle'
comp_id='rdbms'
type='UNKNOWN' level='16' host_id='BOR'
host_addr='fe80::cbf:3c5a:ab5a:dcfb%12' module='SQL Developer'
pid='1596'>
<txt>ALTER SYSTEM SET open_cursors=350 SCOPE=SPFILE;
</txt>
</msg>
<msg time='2016-09-27T05:34:15.265-07:00' org_id='oracle'
comp_id='rdbms'
msg_id='opistp_real:1927:1141351617' type='NOTIFICATION'
group='shutdown'
```

# Журналы повтора

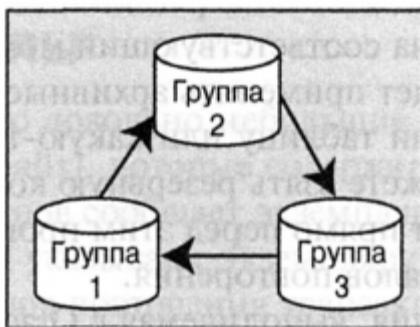
---

- ▶ **Журналы повторного выполнения** - дисковые ресурсы, в которых фиксируются изменения вносимых пользователями в базу данных;
- ▶ журнал представляет собой файл операционной системы;
- ▶ как минимум должно быть два файла;
- ▶ журналы применяются при восстановлении базы данных.



# Журналы повтора

- ▶ файлы журналов используются циклически (сначала запись идет в 1й файл, после заполнения во 2й, 3й..., затем снова в 1й)

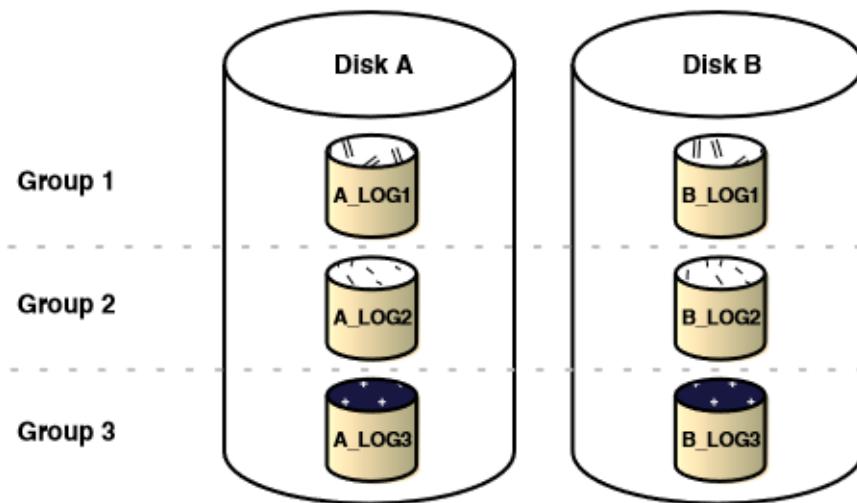


```
SELECT * FROM V$LOGFILE;
```

| GROUP# | STATUS   | TYPE   | MEMBER  | IS_RECOVERY_I |
|--------|----------|--------|---|---------------|
| 1      | 3 (null) | ONLINE | C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO03.LOG | NO            |
| 2      | 2 (null) | ONLINE | C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO02.LOG | NO            |
| 3      | 1 (null) | ONLINE | C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO01.LOG | NO            |

# Журналы повтора

- ▶ Мультиплексирование журналов повтора – поддержка нескольких копий каждого журнала



```
SELECT GROUP#, STATUS, MEMBERS FROM V$LOG;
```

| GROUP# | STATUS     | MEMBERS |
|--------|------------|---------|
| 1      | 1 CURRENT  | 1       |
| 2      | 2 INACTIVE | 1       |
| 3      | 3 INACTIVE | 1       |

# Журналы повтора

- ▶ SCN – System change number – системный номер изменений в базе данных

SELECT \* FROM V\$LOG;

Query Result x

SQL | All Rows Fetched: 4 in 0,062 seconds

| GROUP# | THREAD# | SEQUENCE# | BYTES        | BLOCKSIZE | MEMBERS | ARCHIVED | STATUS   | FIRST_CHANGE# | FIRST_TIME |
|--------|---------|-----------|--------------|-----------|---------|----------|----------|---------------|------------|
| 1      | 1       | 1         | 121 52428800 | 512       | 1 NO    |          | CURRENT  | 3832638       | 26.09.16 2 |
| 2      | 2       | 1         | 119 52428800 | 512       | 1 NO    |          | INACTIVE | 3797754       | 26.09.16   |
| 3      | 3       | 1         | 120 52428800 | 512       | 1 NO    |          | INACTIVE | 3818813       | 26.09.16   |

# Журналы повтора - добавление новой группы

```
ALTER DATABASE ADD LOGFILE GROUP 4 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO04.LOG'
SIZE 50m BLOCKSIZE 512;

select group#,
       sequence#,
       bytes,
       members,
       status,
       FIRST_CHANGE#
  from v$log;
```

Query Result x

SQL | All Rows Fetched: 4 in 0,046 seconds

| GROUP# | SEQUENCE# | BYTES        | MEMBERS | STATUS   | FIRST_CHANGE# |
|--------|-----------|--------------|---------|----------|---------------|
| 1      | 1         | 121 52428800 | 1       | CURRENT  | 3832638       |
| 2      | 2         | 119 52428800 | 1       | INACTIVE | 3797754       |
| 3      | 3         | 120 52428800 | 1       | INACTIVE | 3818813       |
| 4      | 4         | 0 52428800   | 1       | UNUSED   | 0             |

# Журналы повтора - добавление файла в группу

```
ALTER DATABASE ADD LOGFILE MEMBER'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO041.LOG' TO GROUP 4 ;  
  
select group#,  
       sequence#,  
       bytes,  
       members,  
       status,  
       FIRST_CHANGE#  
  from v$log;
```

Script Output X    Query Result X

SQL | All Rows Fetched: 4 in 0,046 seconds

| GROUP# | SEQUENCE# | BYTES        | MEMBERS | STATUS   | FIRST_CHANGE# |
|--------|-----------|--------------|---------|----------|---------------|
| 1      | 1         | 121 52428800 | 1       | CURRENT  | 3832638       |
| 2      | 2         | 119 52428800 | 1       | INACTIVE | 3797754       |
| 3      | 3         | 120 52428800 | 1       | INACTIVE | 3818813       |
| 4      | 4         | 0 52428800   | 2       | UNUSED   | 0             |

# Журналы повтора - переключение журналов

```
ALTER SYSTEM SWITCH LOGFILE;

SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

Script Output x Query Result x

SQL | All Rows Fetched: 4 in 0,062 seconds

| GROUP# | SEQUENCE# | BYTES | MEMBERS  | STATUS     | FIRST_CHANGE# |
|--------|-----------|-------|----------|------------|---------------|
| 1      | 1         | 121   | 52428800 | 1 ACTIVE   | 3832638       |
| 2      | 2         | 119   | 52428800 | 1 INACTIVE | 3797754       |
| 3      | 3         | 120   | 52428800 | 1 INACTIVE | 3818813       |
| 4      | 4         | 122   | 52428800 | 2 CURRENT  | 3864321       |

```
ALTER SYSTEM SWITCH LOGFILE;

SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

Script Output x Query Result x

SQL | All Rows Fetched: 4 in 0,078 seconds

| GROUP# | SEQUENCE# | BYTES | MEMBERS  | STATUS     | FIRST_CHANGE# |
|--------|-----------|-------|----------|------------|---------------|
| 1      | 1         | 121   | 52428800 | 1 ACTIVE   | 3832638       |
| 2      | 2         | 123   | 52428800 | 1 CURRENT  | 3864363       |
| 3      | 3         | 120   | 52428800 | 1 INACTIVE | 3818813       |
| 4      | 4         | 122   | 52428800 | 2 ACTIVE   | 3864321       |

# Журналы повтора - переключение журналов

```
ALTER SYSTEM SWITCH LOGFILE;

SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

Script Output x Query Result x

SQL | All Rows Fetched: 4 in 0,047 seconds

| GROUP# | SEQUENCE# | BYTES    | MEMBERS | STATUS  | FIRST_CHANGE# |
|--------|-----------|----------|---------|---------|---------------|
| 1      | 1         | 52428800 | 1       | ACTIVE  | 3832638       |
| 2      | 2         | 52428800 | 1       | ACTIVE  | 3864363       |
| 3      | 3         | 52428800 | 1       | CURRENT | 3864438       |
| 4      | 4         | 52428800 | 2       | ACTIVE  | 3864321       |

```
ALTER SYSTEM SWITCH LOGFILE;

SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

Script Output x Query Result x

SQL | All Rows Fetched: 4 in 0,047 seconds

| GROUP# | SEQUENCE# | BYTES    | MEMBERS | STATUS  | FIRST_CHANGE# |
|--------|-----------|----------|---------|---------|---------------|
| 1      | 1         | 52428800 | 1       | CURRENT | 3864455       |
| 2      | 2         | 52428800 | 1       | ACTIVE  | 3864363       |
| 3      | 3         | 52428800 | 1       | ACTIVE  | 3864438       |
| 4      | 4         | 52428800 | 2       | ACTIVE  | 3864321       |

# Журналы повтора – удаление файла

- ▶ Группа должна быть не CURRENT
- ▶ Файл ОС не удаляется)

The screenshot shows the Oracle SQL Developer interface. At the top, there are two tabs: 'Script Output' and 'Query Result'. The 'Query Result' tab is active, showing the output of the following SQL statements:

```
ALTER DATABASE DROP LOGFILE MEMBER 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\REDO041.LOG';
SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

Below the tabs, it says 'SQL | All Rows Fetched: 4 in 0,047 seconds'. The results are displayed in a table:

| GROUP# | SEQUENCE# | BYTES | MEMBERS  | STATUS     | FIRST_CHANGE# |
|--------|-----------|-------|----------|------------|---------------|
| 1      | 1         | 125   | 52428800 | 1 CURRENT  | 3864455       |
| 2      | 2         | 123   | 52428800 | 1 ACTIVE   | 3864363       |
| 3      | 3         | 124   | 52428800 | 1 ACTIVE   | 3864438       |
| 4      | 4         | 122   | 52428800 | 1 INACTIVE | 3864321       |

# Журналы повтора – удаление группы

```
ALTER DATABASE DROP LOGFILE GROUP 4;
SELECT GROUP#, SEQUENCE#,BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

The screenshot shows the Oracle SQL Developer interface. In the top-left pane, there is a script editor containing the following SQL code:

```
ALTER DATABASE DROP LOGFILE GROUP 4;
SELECT GROUP#, SEQUENCE#,BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
```

In the bottom-right pane, the "Query Result" tab is selected, showing the results of the query. The results are displayed in a table with the following columns:

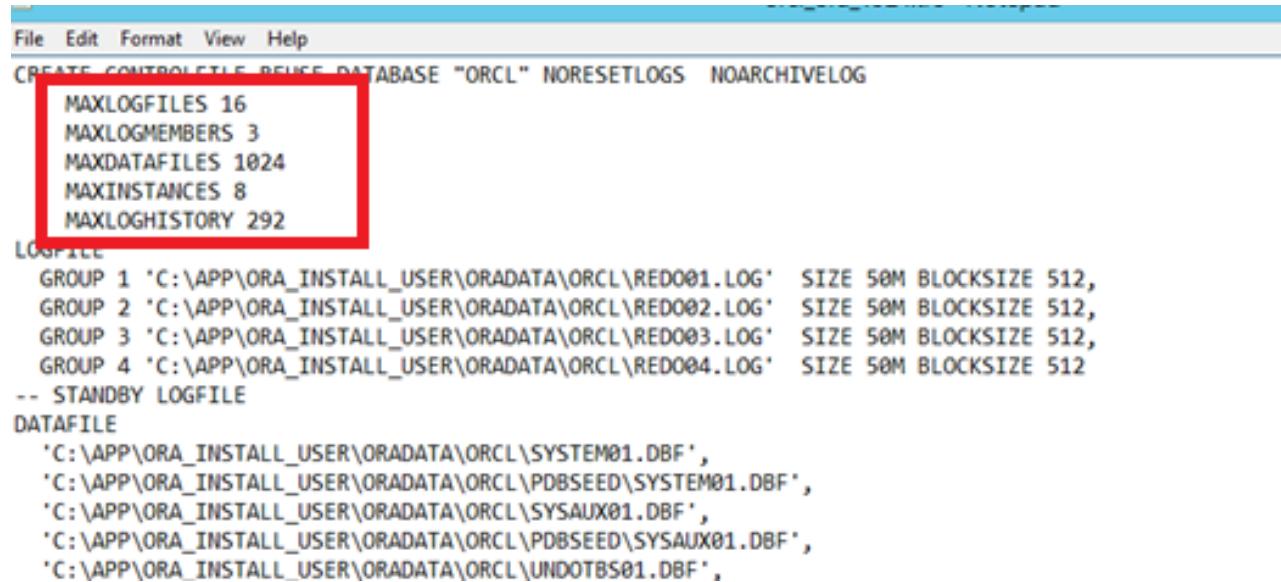
|   | GROUP# | SEQUENCE# | BYTES    | MEMBERS | STATUS   | FIRST_CHANGE# |
|---|--------|-----------|----------|---------|----------|---------------|
| 1 | 1      | 125       | 52428800 | 1       | CURRENT  | 3864455       |
| 2 | 2      | 123       | 52428800 | 1       | INACTIVE | 3864363       |
| 3 | 3      | 124       | 52428800 | 1       | INACTIVE | 3864438       |

The status column indicates that group 1 is current, while groups 2 and 3 are inactive.

# Журналы повтора - параметры

Указывается в управляющих файлах:

- ▶ MAXLOGFILES - максимальное количество групп журналов повтора
- ▶ MAXLOGMEMBERS - максимальное количество файлов в группе



```
File Edit Format View Help
CREATE CONTROLFILE REUSE DATABASE "ORCL" NORESETLOGS NOARCHIVELOG
  MAXLOGFILES 16
  MAXLOGMEMBERS 3
  MAXDATAFILES 1024
  MAXINSTANCES 8
  MAXLOGHISTORY 292
LOGFILE
  GROUP 1 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED001.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 2 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED002.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 3 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED003.LOG'  SIZE 50M BLOCKSIZE 512,
  GROUP 4 'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\RED004.LOG'  SIZE 50M BLOCKSIZE 512
-- STANDBY LOGFILE
DATAFILE
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBSEED\SYSTEM01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\SYSAUX01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\PDBSEED\SYSAUX01.DBF',
  'C:\APP\ORA_INSTALL_USER\ORADATA\ORCL\UNDOTBS01.DBF',
```

# Архивы журналов повтора

- ▶ Режимы работы экземпляра:
  - ▶ ARCHIEVELOG
  - ▶ NOARCHIEVELOG

```
SELECT NAME, LOG_MODE FROM V$DATABASE;
```

Script Output x Query Result x

SQL | All Rows Fetched: 1 in 0,032 seconds

| NAME   | LOG_MODE      |
|--------|---------------|
| 1 ORCL | NOARCHIEVELOG |

```
SELECT INSTANCE_NAME, ARCHIVER, ACTIVE_STATE FROM V$instance;
```

Script Output x Query Result x

SQL | All Rows Fetched: 1 in 0,016 seconds

| INSTANCE_NAME | ARCHIVER | ACTIVE_STATE |
|---------------|----------|--------------|
| 1 orcl        | STOPPED  | NORMAL       |



# Архивы

- ▶ Включить процесс архивирования
- ▶ Архивный файл появляется после переключения оперативного журнала.

```
SQL> shutdown immediate;
Database closed.
Database dismounted.
ORACLE instance shut down.
SQL> startup mount;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size          2403352 bytes
Variable Size       1006633960 bytes
Database Buffers   654311424 bytes
Redo Buffers        6873088 bytes

Database mounted.
SQL> alter database archivelog;

Database altered.

SQL> alter database open;

Database altered.

SQL> _
```

# Архивы

```
SELECT NAME, LOG_MODE FROM V$DATABASE;
```

Script Output x | Query Result x  
SQL | All Rows Fetched: 1 in 0,031 seconds

| NAME   | LOG_MODE   |
|--------|------------|
| 1 ORCL | ARCHIVELOG |

```
SELECT INSTANCE_NAME, ARCHIVER, ACTIVE_STATE FROM V$instance;
```

Script Output x | Query Result x | Query Result 1 x  
SQL | All Rows Fetched: 1 in 0,016 seconds

| INSTANCE_NAME | ARCHIVER | ACTIVE_STATE |
|---------------|----------|--------------|
| 1 orcl        | STARTED  | NORMAL       |

# Архивы

```
SELECT * FROM V$LOG;
```

Script Output x | Query Result x | Query Result 1 x

SQL | All Rows Fetched: 3 in 0,063 seconds

| GROUP# | THREAD# | SEQUENCE# | BYTES | BLOCKSIZE | MEMBERS | ARCHIVED | STATUS   | FIRST_CHANGE# | FIRST_TIME | NEXT  |
|--------|---------|-----------|-------|-----------|---------|----------|----------|---------------|------------|-------|
| 1      | 1       | 1         | 125   | 52428800  | 512     | 1 NO     | CURRENT  | 3864455       | 27.09.16   | 28147 |
| 2      | 2       | 1         | 123   | 52428800  | 512     | 1 YES    | INACTIVE | 3864363       | 27.09.16   |       |
| 3      | 3       | 1         | 124   | 52428800  | 512     | 1 YES    | INACTIVE | 3864438       | 27.09.16   |       |

# Архивы журналов повтора

## ▶ После переключения журнала

```
ALTER SYSTEM SWITCH LOGFILE;
SELECT * FROM V$ARCHIVED_LOG;
```

Script Output x | Query Result x | Query Result 1 x

SQL | All Rows Fetched: 1 in 0,063 seconds

| RECID | STAMP     | NAME  |
|-------|-----------|---|
| 1     | 923650337 | C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_125_CY07RKCR_.ARC |

```
ALTER SYSTEM SWITCH LOGFILE;
SELECT * FROM V$ARCHIVED_LOG;
```

Script Output x | Query Result x | Query Result 1 x

SQL | All Rows Fetched: 2 in 0 seconds

| RECID | STAMP     | NAME  |
|-------|-----------|---|
| 1     | 923650337 | C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_125_CY07RKCR_.ARC |
| 2     | 923650483 | C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_126_CY07X3M6_.ARC |

# Архивы

```
ALTER SYSTEM SWITCH LOGFILE;
SELECT GROUP#, SEQUENCE#, BYTES, MEMBERS, STATUS, FIRST_CHANGE# FROM V$LOG;
SELECT Name, FIRST_CHANGE#, NEXT_CHANGE# FROM V$ARCHIVED_LOG;
```

| GROUP # | SEQUENCE # | BYTES | MEMBERS  | STATUS     | FIRST_CHANGE # |
|---------|------------|-------|----------|------------|----------------|
| 1       | 1          | 128   | 52428800 | 1 CURRENT  | 3866172        |
| 2       | 2          | 126   | 52428800 | 1 INACTIVE | 3866094        |
| 3       | 3          | 127   | 52428800 | 1 ACTIVE   | 3866147        |

| NAME  | FIRST_CHANGE # | NEXT_CHANGE # |
|---|----------------|---------------|
| 1 C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_125_CY07RKCR_.ARC | 3864455        | 3866094       |
| 2 C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_126_CY07X3M6_.ARC | 3866094        | 3866147       |
| 3 C:\APP\ORA_INSTALL_USER\FAST_RECOVERY_AREA\ORCL\ARCHIVELOG\2016_09_27\01_MF_1_127_CY07YBDJ_.ARC | 3866147        | 3866172       |

# Архивы

```
Worksheet | Query Builder

ARCHIVE LOG LIST;

Script Output X
| Task completed in 0,109 seconds

Database log mode           Archive log Mode
Automatic archival          Enabled
Archive destination          USE_DB_RECOVERY_FILE_DEST
Oldest online log sequence   126
Next log sequence to archive 128
Current log sequence         128

SHOW PARAMETER DB_RECOVERY;

NAME                      TYPE      VALUE
db_recovery_file_dest       string    C:\app\ora_install_user\fast_recovery_area
db_recovery_file_dest_size  big integer 6930M
```

PC ▶ Local Disk (C:) ▶ app ▶ ora\_install\_user ▶ fast\_recovery\_area ▶ orcl ▶ ARCHIVELOG ▶ 2016\_09\_27

| Name                      | Date modified   | Type     | Size   |
|---------------------------|-----------------|----------|--------|
| 01_MF_1_125_CYO7RKCR_.ARC | 27.09.2016 9:32 | ARC File | 849 KB |
| 01_MF_1_126_CYO7X3M6_.ARC | 27.09.2016 9:34 | ARC File | 7 KB   |
| 01_MF_1_127_CYO7YBDJ_.ARC | 27.09.2016 9:35 | ARC File | 13 KB  |

# Архивы

## Отключение процесса архивирования

```
SQL> startup mount;
ORACLE instance started.

Total System Global Area 1670221824 bytes
Fixed Size                  2403352 bytes
Variable Size              1006633960 bytes
Database Buffers           654311424 bytes
Redo Buffers                6873088 bytes
Database mounted.

SQL> alter database noarchivelog;

Database altered.
```

```
SQL> select name, log_mode from v$database;
NAME      LOG_MODE
----- -----
ORCL      NOARCHIELOG
```

The screenshot shows the Oracle SQL Developer interface. A query is being run:

```
SELECT INSTANCE_NAME, ARCHIVER, ACTIVE_STATE FROM V$instance;
```

The results are displayed in the "Query Result" tab:

| INSTANCE_NAME | ARCHIVER | ACTIVE_STATE |
|---------------|----------|--------------|
| 1 orcl        | STOPPED  | NORMAL       |

Below the table, status icons are shown: a red person icon, a blue document icon, a green circular arrow icon, and a red X icon. The text "SQL | All Rows Fetched: 1 in 0,016 seconds" is also visible.

# Вопросы?

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