ORACLE

Processes

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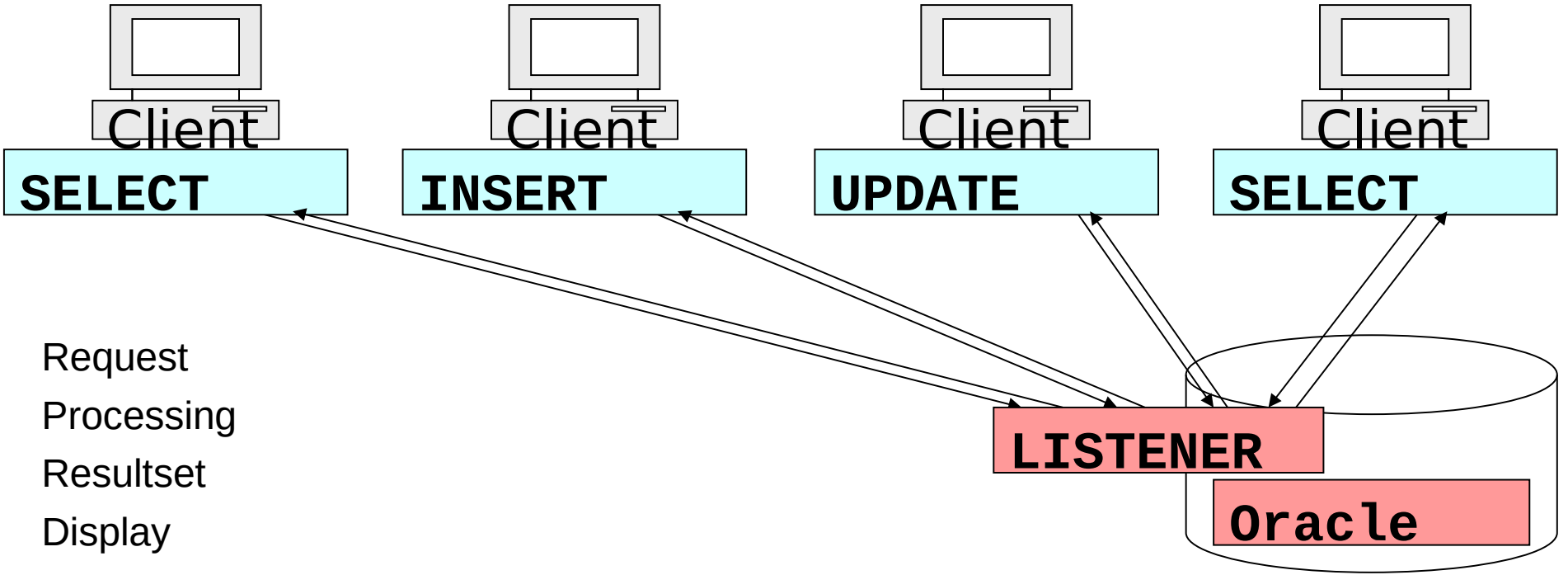
- The client application connects to an Oracle Database to send or retrieve data.



- Request
- Processing
- Resultset
- Display

Logs Inspect Bind mounts **Terminal** Files Stats

lsnrctl

```
sh-4.4$ lsnrctl status

LSNRCTL for Linux: Version 21.0.0.0.0 - Production on 05-OCT-2023 16:34:21

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Connecting to (DESCRIPTION=(ADDRESS=(PROTOCOL=IPC)(KEY=EXTPROC_FOR_XE)))
STATUS of the LISTENER
------------------------
Alias                     LISTENER
Version                   TNSLSNR for Linux: Version 21.0.0.0.0 - Production
Start Date                05-OCT-2023 16:33:32
Uptime                    0 days 0 hr. 0 min. 48 sec
Trace Level               off
Security                  ON: Local OS Authentication
SNMP                      OFF
Default Service           XE
Listener Parameter File   /opt/oracle/homes/OraDBHome21cXE/network/admin/listener.ora
Listener Log File         /opt/oracle/diag/tnslsnr/ecda68130a8b/listener/alert/log.xml
```
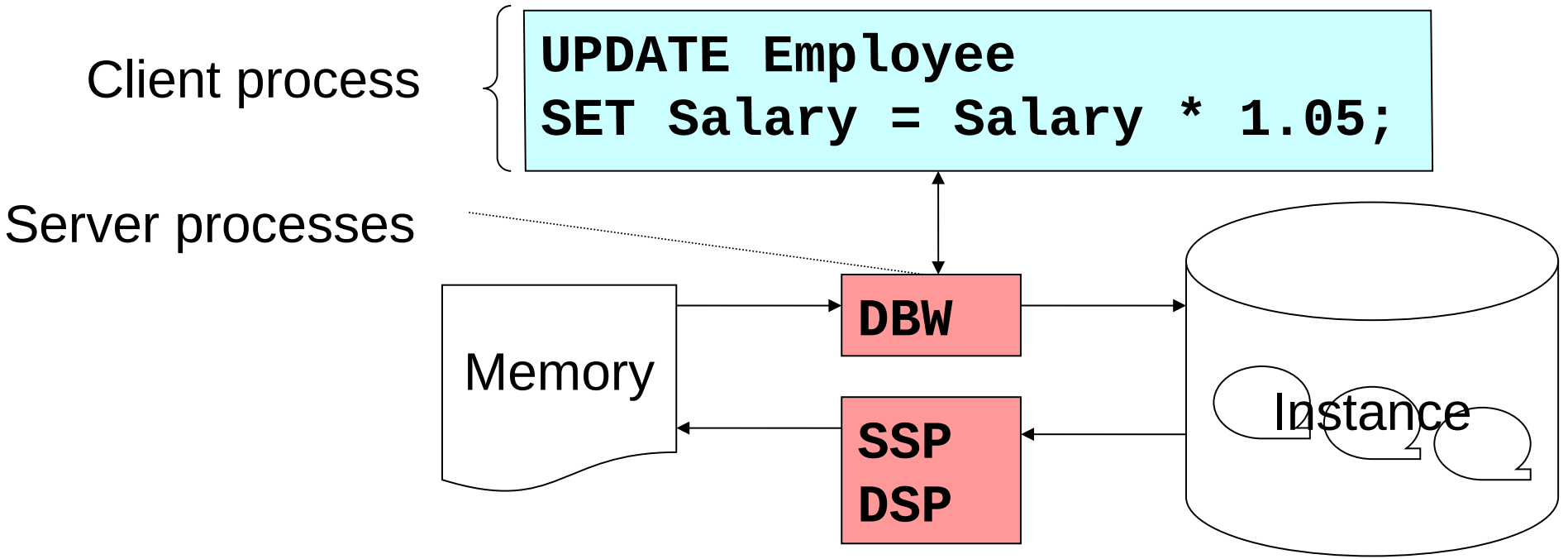
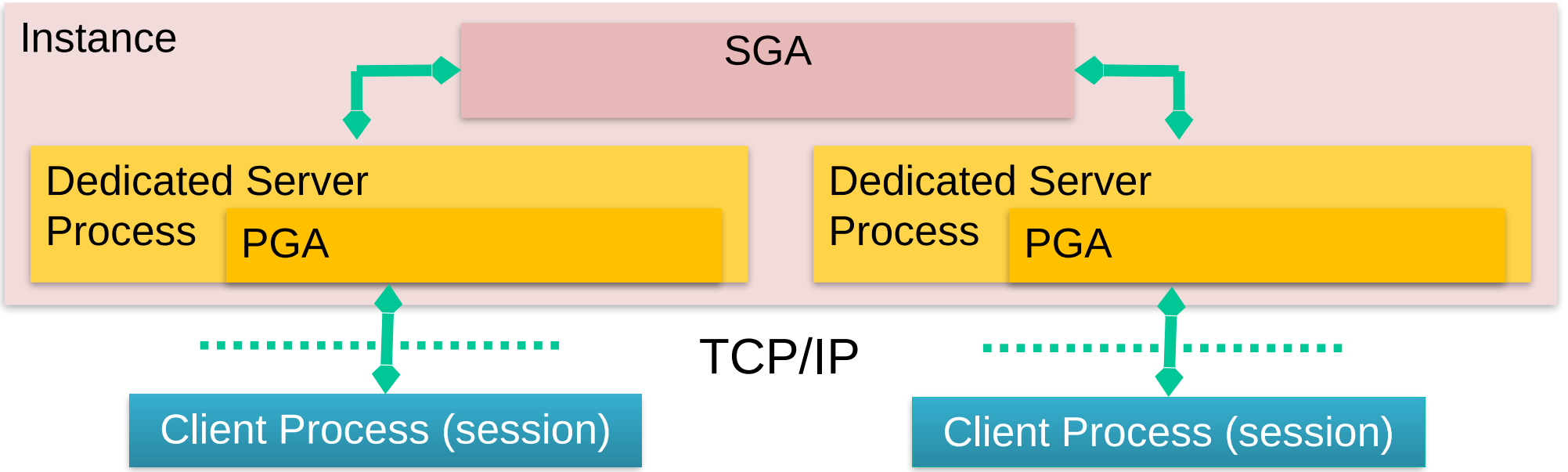

- Background processes manages the memory structures of an instance.
- These processes are performing asynchronously I/O to different files on a disk.



dedicated server process

- Each client connection is associated with one server process.
- This server process is dedicated to its client process for the duration of the session.

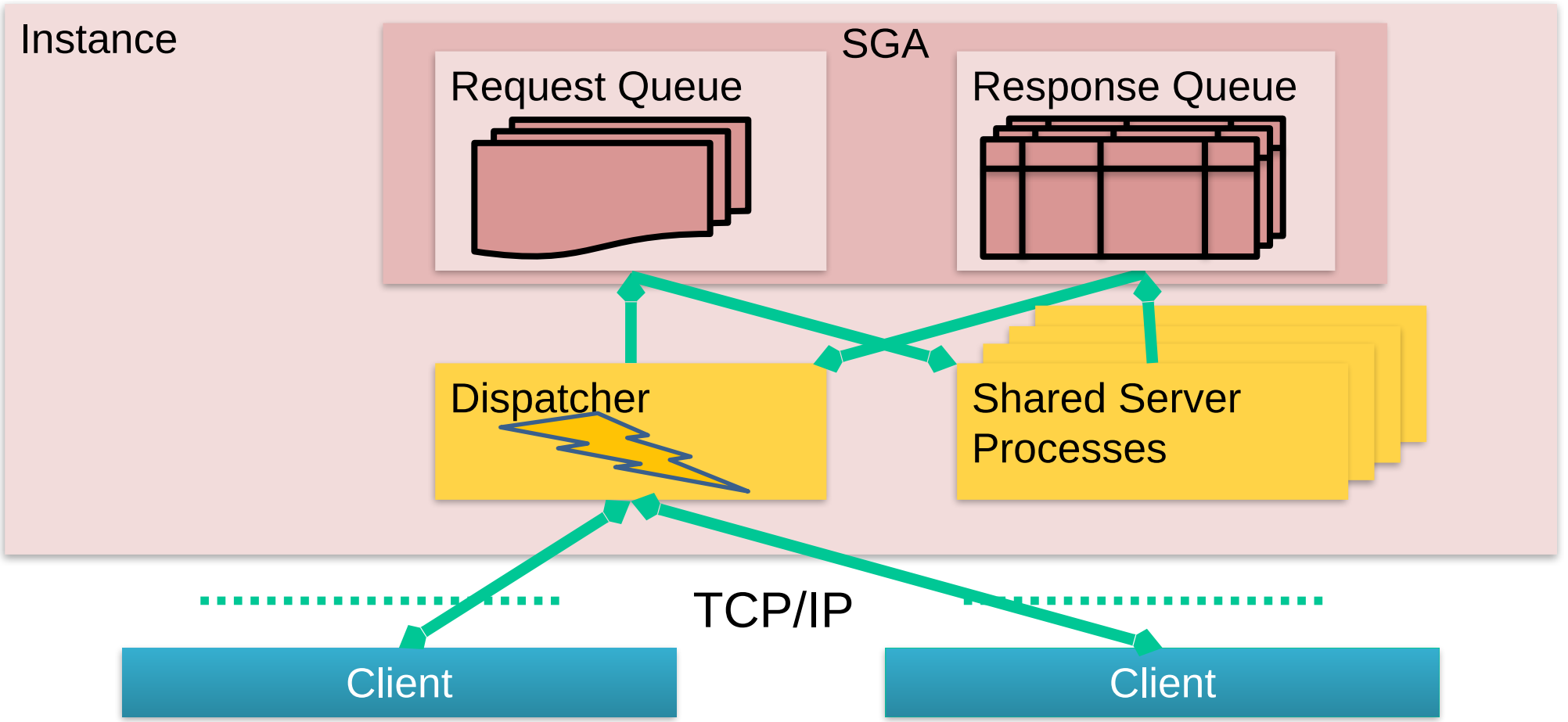


shared server process

- Each client (applications) connects over a network to a dispatcher process.
- The dispatcher process puts the received requests into a request queue.
- The first available shared server process takes the request, processes it and place the result into the dispatcher response queue.
- The dispatcher process monitors this queue and transmits the result to the client.

https://docs.oracle.com/database/121/CNCPT/transact.htm#CNCPT117 (13.9.2015)

shared server process



process monitor (PMON)

- The process monitor (PMON) monitors the other background processes and performs process recovery when a server or dispatcher process terminates abnormally.
- PMON is responsible for cleaning up the database buffer cache and freeing resources that the client process was using.
- For example, PMON resets the status of the active transaction table, releases locks that are no longer required, and removes the process ID from the list of active processes.

https://docs.oracle.com/cd/E11882_01/server.112/e40540/process.htm#CNCPT008 (8.9.2019)

system monitor (SMON)

- The system monitor process (SMON) is in charge of a variety of system-level cleanup duties.
- The duties assigned to SMON include:
  - Performing instance recovery, if necessary, at instance startup.
  - Recovering terminated transactions that were skipped during instance recovery because of file-read or tablespace offline errors.
  - SMON recovers the transactions when the tablespace or file is brought back online.
  - Cleaning up unused temporary segments.

https://docs.oracle.com/cd/E11882_01/server.112/e40540/process.htm#CNCPT008 (8.9.2019)

database writer(DBWn)

- The database writer process (DBWn) writes modiefied blocks from the database buffer cache to the disk.
- The DBWn process writes dirty buffers to disk under the following conditions:
  - When a server process cannot find a clean reusable buffer, it signals DBWn to write. DBWn writes dirty buffers to disk asynchronously if possible while performing other processing.
  - DBWn periodically writes buffers to advance the checkpoint, which is the position in the redo thread from which instance recovery begins.

https://docs.oracle.com/cd/E11882_01/server.112/e40540/process.htm#CNCPT008 (8.9.2019)

log writer(LGWR)

- The log writer process (LGWR) writes one contiguous portion of the redo log to the online redo log.
- LGWR writes all redo entries:
  - A user commits a transaction.
  - An online redo log switch occurs.
  - Three seconds have passed since LGWR last wrote.
  - The redo log buffer is one-third full.
  - DBWn must write modified buffers to disk.
  - Before DBWn can write a dirty buffer, redo records associated with changes to the buffer must be written to disk (the write-ahead protocol).

https://docs.oracle.com/cd/E11882_01/server.112/e40540/process.htm#CNCPT008 (8.9.2019)

archiver (ARCn)

- The archiver processes (ARCn) copy online redo log files to offline storage after a redo log switch occurs.
- ARCn processes exist only when the database is in ARCHIVELOG mode and automatic archiving is enabled.

https://docs.oracle.com/cd/E11882_01/server.112/e40540/process.htm#CNCPT008 (8.9.2019)

processes

*<system> Script-1 ×

```
SELECT PID as ORA_PID,
       SPID as LNX_PID,
       PNAME,
       USERNAME
FROM   V$PROCESS
WHERE  PNAME IS NOT NULL
ORDER BY PNAME;
```

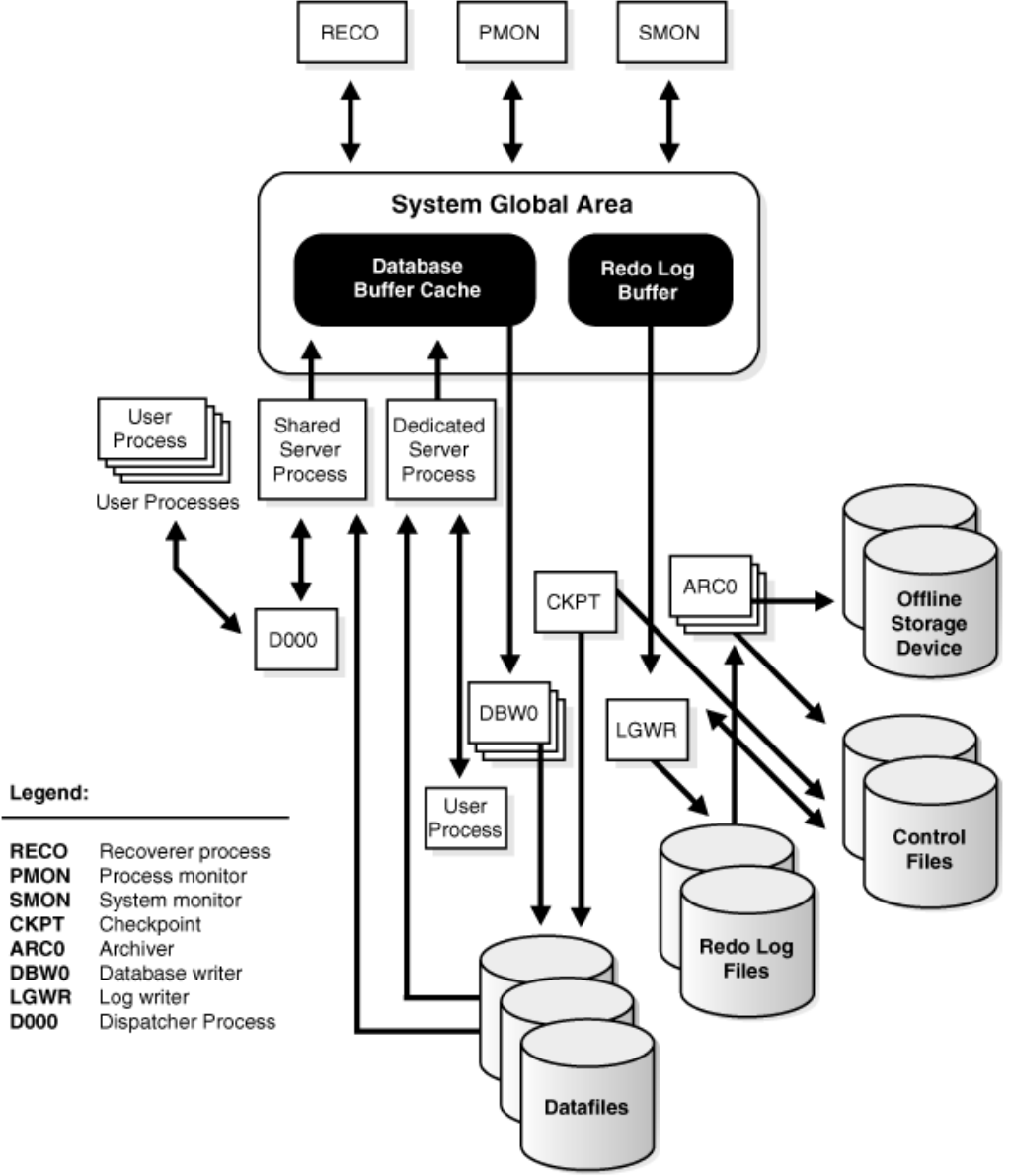
Results 1 ×

SELECT PID as ORA_PID, SPID as LNX_PID, PNAME, | Enter a SQL expression to filter results (u

Grid | Text

	ORA_PID	LNX_PID	PNAME	USERNAME
1	55	168	AQPC	oracle
2	48	152	ARC0	oracle
3	50	156	ARC1	oracle
4	51	158	ARC2	oracle

DBW0
LGWR
PMON
RECO
SMON



https://docs.oracle.com/cd/B19306_01/server.102/b14220/process.htm
(7.10.2023)

kill

*<system> Script-1 × *<thomas> Script-2 *<griesma

```
SELECT SID,
       SERIAL#,
       STATUS,
       USERNAME
FROM   V$SESSION
WHERE  USERNAME = 'GRIESMAYER'
```

Results 1 ×

SELECT SID, SERIAL#, STATUS, USERNAME FROM \ Enter a SQL expression to filter res

Grid Text

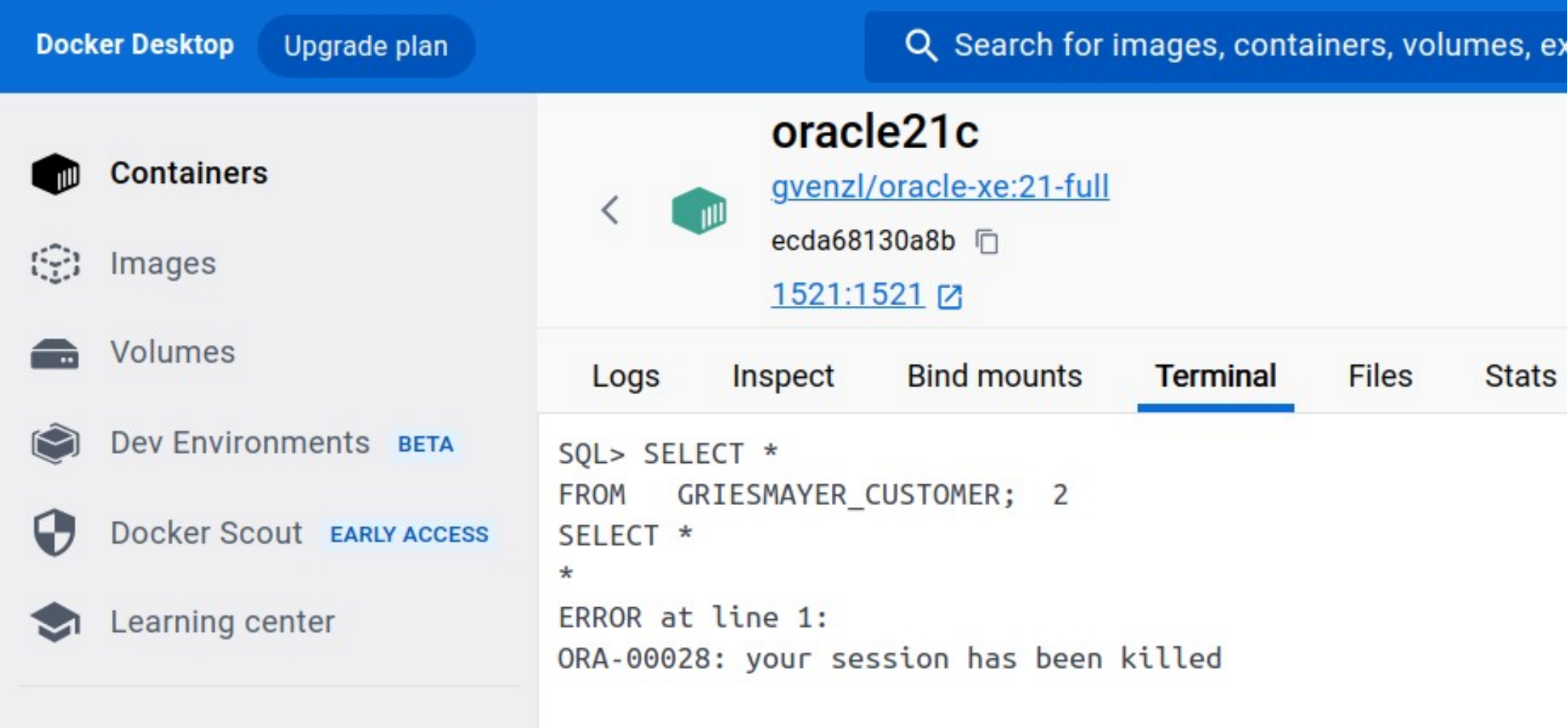
	SID	SERIAL#	STATUS	USERNAME
1	54	14,628	INACTIVE	GRIESMAYER
2	58	36,677	INACTIVE	GRIESMAYER
3	297	16,326	INACTIVE	GRIESMAYER

*<system> Script-1 × *<thomas> Script-2 *<griesmayer> Script

```
ALTER SYSTEM KILL SESSION '54,14628';
ALTER SYSTEM KILL SESSION '58,36677';
ALTER SYSTEM KILL SESSION '297,16326';
```

Statistics 1 ×

Name	Value
Queries	3
Updated Rows	0
Execute time (ms)	13
Fetch time (ms)	0
Total time (ms)	13
Start time	2023-10-05 19:03:22.257
Finish time	2023-10-05 19:03:22.274


Docker Desktop
Upgrade plan
Search for images, containers, volumes, ex
Containers
Images
Volumes
Dev Environments BETA
Docker Scout EARLY ACCESS
Learning center
oracle21c
gvenzl/oracle-xe:21-full
ecda68130a8b
1521:1521
Logs
Inspect
Bind mounts
Terminal
Files
Stats
SQL> SELECT *
FROM GRIESMAYER_CUSTOMER; 2
SELECT *
*
ERROR at line 1:
ORA-00028: your session has been killed