1 - PERSISTENCIA Y DOCKER COMPOSE

Migración de persistencia en base de datos

Instalar un contenedor de la imagen 'postgres', con un volumen con nombre 'db-persistance', usando la versión 9.6.1 de Postgres. Tras ello, eliminar el contenedor y levantar un nuevo postgres, pero con versión 9.6.2 usando el volumen anteriormente creado.

La entrega de este ejercicio debe ser un pdf compuesto por las capturas de:

- *Instalación de ambos postgres con log*
- *Salida de 'docker volume inspect db-persistance'*
- *Logs de ambos postgres indicando que se ha iniciado correctamente, con 'docker logs*

<container>

Creación de Volume 'db-persistance'

```
[ 3:55PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker volume create db-persistance
db-persistance
```

```
Run 'docker volume COMMAND --help' for mor
[ 4:11PM ]  [ andresmaldonado@MacBook-Pro
 $ docker volume ls
DRIVER     VOLUME NAME
local      0a928c96c1df2ad4a0e33cf730a37f4d
local      1d6a4b9c82894c3d7ba5a60e6e9bfd7b
local      3d13a7bb053eddab5dc75645e6e5e401
local      4fc1f96ae8c90a16eb392672d7e35aa8
local      5a9ea6d4507f9212e4bf7da5c10fc64d
local      5e611147d0daeaaecf7c20d2ebc1d17
local      7ead26fa685e29b2cf2175e8c11bd609
local      8ef43b7a0191b81a72e78962271ce22d
local      9db207b45c8a94929f3ed6bdc3136575
local      27fe8611ecfcad4dab2546c3835fd59b
local      28c3147ccbe218b8cb20d036f7e1657e
local      38e84ebd32f91e9b1c0e569288d8883
local      753e5420715f86a75f68954147304d56
local      981207f9bae8e28574bc6476047b9104
local      55418258de9b2abec675a330ca48e1bd
local      81355596551e1dea5d6b0943a9886b80
local      b7b8cfbd4750e10e7cd001d43303d74b
local      c48e61a9f734a28060260cb7eea869ee
local      ce1894727f1b1ed617ef4234df28c5ea
local      d91951f2d1780c91470dd738b0f3bf75
local      dadc6705da29e94f3090c2a4d4b01559
local      db-persistance
local      dc5b4b26160267555c38eed6ae963der
```

Se crea postgres 9.6.1 usando como volumen para la base de datos el anterior creado:

```
[  4:20PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker run -p 5432:5432 -d -e POSTGRES_PASSWORD=pgpass -e POSTGRES_USER=pguser -e
POSTGRES_DB=exercicedb -v db-persistance:/var/lib/postgresql/data postgres:9.6.1
Unable to find image 'postgres:9.6.1' locally
9.6.1: Pulling from library/postgres
5040bd298390: Pull complete
f08454c3c700: Pull complete
4db038cdfe03: Pull complete
e1d9ba315f03: Pull complete
25e0ee93170e: Pull complete
3f28084c3f51: Pull complete
78c91f0aedcd: Pull complete
93ab52dbcbb8: Pull complete
27ec75825613: Pull complete
```

Se adjunta captura con contenedor corriendo

```
[  4:23PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker container ps
CONTAINER ID   IMAGE              COMMAND                CREATED         STATUS          PORTS                                        NAMES
77883cc297b9   postgres:9.6.1     "/docker-entrypoint..."  2 minutes ago   Up 2 minutes    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp    zen_cartwright
```

Ejecuto "docker volume inspect db-persistance"

```
PostgreSQL init process complete, ready for start up.
[  4:26PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker volume inspect db-persistance
[
    {
        "CreatedAt": "2022-03-04T19:21:11Z",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/db-persistance/_data",
        "Name": "db-persistance",
        "Options": {},
        "Scope": "local"
    }
]
```

El container tiene id "77883cc297b9". Ejecuto "docker logs 77883cc297b9" para pintar el log:

```
[ 4:29PM ] [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker logs  77883cc297b9
The files belonging to this database system will be owned by user "postgres".
This user must also own the server process.

The database cluster will be initialized with locale "en_US.utf8".
The default database encoding has accordingly been set to "UTF8".
The default text search configuration will be set to "english".

Data page checksums are disabled.

fixing permissions on existing directory /var/lib/postgresql/data ... ok
creating subdirectories ... ok
selecting default max_connections ... 100
selecting default shared_buffers ... 128MB
selecting dynamic shared memory implementation ... posix
creating configuration files ... ok
running bootstrap script ... ok
performing post-bootstrap initialization ... ok

WARNING: enabling "trust" authentication for local connections
You can change this by editing pg_hba.conf or using the option -A, or
syncing data to disk ... ok

Success. You can now start the database server using:

    pg_ctl -D /var/lib/postgresql/data -l logfile start

--auth-local and --auth-host, the next time you run initdb.
waiting for server to start....LOG:  could not bind IPv6 socket: Cannot assign requested address
HINT:  Is another postmaster already running on port 5432? If not, wait a few seconds and retry.
LOG:  database system was shut down at 2022-03-04 19:21:09 UTC
LOG:  MultiXact member wraparound protections are now enabled
LOG:  autovacuum launcher started
LOG:  database system is ready to accept connections
 done
server started
CREATE DATABASE

CREATE ROLE


/docker-entrypoint.sh: ignoring /docker-entrypoint-initdb.d/*

waiting for server to shut down...LOG:  received fast shutdown request
LOG:  aborting any active transactions
.LOG:  autovacuum launcher shutting down
LOG:  shutting down
LOG:  database system is shut down
 done
server stopped

PostgreSQL init process complete; ready for start up.

LOG:  database system was shut down at 2022-03-04 19:21:10 UTC
LOG:  MultiXact member wraparound protections are now enabled
LOG:  autovacuum launcher started
LOG:  database system is ready to accept connections
```

Como solicitado, elimino el contenedor

```
.0.0.0.5000->5000/tcp, ...5000->5000/tcp
[ 4:33PM ]  [ andresmaldonado@MacBook-Pro-
 $ docker kill 77883cc297b9
77883cc297b9
```

Ejecuto el comando anterior, cambiando esta vez la versión de postgres a 9.6.2

```
[ 4:34PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker run -p 5432:5432 -d -e POSTGRES_PASSWORD=pgpass -e POSTGRES_USER=pguser -e POSTGRES_DB=exercicedb
-v db-persistance:/var/lib/postgresql/data postgres:9.6.2
Unable to find image 'postgres:9.6.2' locally
9.6.2: Pulling from library/postgres
10a267c67f42: Pull complete
e9a920522e33: Pull complete
6888e696bd71: Pull complete
798096eed143: Pull complete
fb58419959b5: Pull complete
97f9ec09cb68: Pull complete
d58678d9d3ab: Pull complete
ece2bc4a78f4: Pull complete
eadac36b8440: Pull complete
4da13987a6ca: Pull complete
bd2eab93fc5a: Pull complete
2efd8a94a8d7: Pull complete
cd1f07c4ebbe: Pull complete
Digest: sha256:5284ba74a1065e34cf1bfccd64caf8c497c8dc623d6207b060b5ebd369427d34
Status: Downloaded newer image for postgres:9.6.2
d3bda8aca606c603df5efa61e4d566fcc7b6e8019d9239b46186137faec6f1b4
```

Adjunto captura del nuevo contenedor corriendo

```
[ 4:35PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker container ps
CONTAINER ID   IMAGE           COMMAND                CREATED           STATUS           PORTS                                    NAMES
d3bda8aca606   postgres:9.6.2  "docker-entrypoint.s…" About a minute ago Up About a minute 0.0.0.0:5432->5432/tcp, :::5432->5432/tcp busy_torvalds
```

Adjunto "docker volume inspect"

```
[ 4:36PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker volume inspect db-persistance
[
    {
        "CreatedAt": "2022-03-04T19:35:25Z",
        "Driver": "local",
        "Labels": {},
        "Mountpoint": "/var/lib/docker/volumes/db-persistance/_data",
        "Name": "db-persistance",
        "Options": {},
        "Scope": "local"
```

El container tiene id "d3bda8aca606". Ejecuto "docker logs d3bda8aca606" para pintar el log:

```
[  4:39PM ]  [ andresmaldonado@MacBook-Pro-de-Andres:~ ]
 $ docker logs d3bda8aca606
LOG:   database system was interrupted; last known up at 2022-03-04 19:21:11 UTC
LOG:   database system was not properly shut down; automatic recovery in progress
LOG:   invalid record length at 0/14EEB48: wanted 24, got 0
LOG:   redo is not required
LOG:   MultiXact member wraparound protections are now enabled
LOG:   database system is ready to accept connections
LOG:   autovacuum launcher started
```

Vemos que esta vez no me imprime el log de creación porque dicho proceso ocurrió en la instancia anterior. Considerando que el log de creación aparece únicamente cuando la base de datos es creada, se deduce que aceptó el volume "db-persistance" de la instancia anterior.