

Actividad 03-10-2022

1. ¿Para qué sirven los volúmenes?

Son utilizados para persistir los datos que manejan los contenedores. Esto nos permite crear contenedores e indicarles donde tienen que persistir nuestros datos.

2. ¿Qué diferencias hay entre los volúmenes y los Bind Mount?

Los volúmenes son creados y administrados por docker, a diferencia de bind mount están aislados de nuestra pc y son administrados por docker.

3. Crea un volumen sin nombre, ¿como lo ha llamado docker?. Muestra la información detallada del volumen y explica qué significa cada línea. Haz lo mismo con un volumen creado por el sistema (lístalos primero).

```
estudiante@DAW1:~$ docker volume create
a8d035ef4d5b50b3850f9c9525fb828c195a36ea59f901458323e36b4dcf9a88
estudiante@DAW1:~$ docker volume ls
DRIVER      VOLUME NAME
local       638d00c957afaf9a35696ab93dc865a48512a5bb92fb0c556e43beb359f1e21e
local       a8d035ef4d5b50b3850f9c9525fb828c195a36ea59f901458323e36b4dcf9a88
local       b9dae3bd01af023624748c33bdc1c3ba514077a3c1d05115729865bf0829e4b1
```

4. Elimina todos los volúmenes que hayas creado.

```
estudiante@DAW1:~$ docker volume rm a8d035ef4d5b50b3850f9c9525fb828c195a36ea59f9
01458323e36b4dcf9a88
a8d035ef4d5b50b3850f9c9525fb828c195a36ea59f901458323e36b4dcf9a88
```

5. Arranca un Bind Mount usando la carpeta “web” del usuario como directorio raíz del servidor apache (Haz lo mismo con un volumen). Después obtén información del volumen y el bind mount y explica lo que se te muestra.

```
estudiante@DAW1:~$ docker run --name Fermin -v /home/usuario/web -p 80:80 httpd
Unable to find image 'httpd:latest' locally
latest: Pulling from library/httpd
31b3f1ad4ce1: Already exists
f29089ecfcbf: Pull complete
a9fcd580ef1c: Pull complete
a19138bf3164: Pull complete
5bfb2ce98078: Pull complete
Digest: sha256:71e882df50adc606c57e46e5deb3c933288e2c7775472a639326d9e4e40a47c2
Status: Downloaded newer image for httpd:latest
AH00558: httpd: Could not reliably determine the server's fully qualified domain
name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress thi
s message
AH00558: httpd: Could not reliably determine the server's fully qualified domain
name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress thi
s message
[Tue Oct 04 08:24:42.454685 2022] [mpm_event:notice] [pid 1:tid 140103572323648]
AH00489: Apache/2.4.54 (Unix) configured -- resuming normal operations
[Tue Oct 04 08:24:42.457448 2022] [core:notice] [pid 1:tid 140103572323648] AH00
094: Command line: 'httpd -D FOREGROUND'
```

6. Arranca la versión más reciente del contenedor de ubuntu y comprueba que está “up”. Después páralo, comprueba que está parado. Por último, elimina el contenedor de ubuntu.

```
estudiante@DAW1:~$ docker run ubuntu
Unable to find image 'ubuntu:latest' locally
latest: Pulling from library/ubuntu
2b55860d4c66: Pull complete
Digest: sha256:20fa2d7bb4de7723f542be5923b06c4d704370f0390e4ae9e1c833c8785644c1
Status: Downloaded newer image for ubuntu:latest
estudiante@DAW1:~$ docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS              PORTS          NAMES
907ecdde696e   ubuntu    "bash"                   6 seconds ago Exited (0) 4 seconds ago           flamboyant_euclid
c5c3d8b4b750   httpd     "httpd-foreground"      9 minutes ago Exited (0) 8 minutes ago           Fermin
6d6a601f7aed   postgres  "docker-entrypoint.s..." 7 days ago    Exited (1) 7 days ago           wonderful_bartik
750d16821afa   python    "python3"                7 days ago    Exited (0) 7 days ago           brave_wright
aa334806ded9   mysql:5.7.22 "docker-entrypoint.s..." 7 days ago    Exited (0) 7 days ago           mysql
81c32c0b17e1   hello-world "/hello"                 8 days ago    Exited (0) 8 days ago           inspiring_fermi
2817b09367fb   hello-world "/hello"                 3 months ago Exited (0) 3 months ago           wizardly_snyder
estudiante@DAW1:~$ docker rm ubuntu
Error: No such container: ubuntu
estudiante@DAW1:~$ docker rm 907ecdde696e
907ecdde696e
```

7. Ejecuta el contenedor de apache (busca en Dockerhub) poniéndole nombre “web” ¿qué IP le ha asignado?. Compruébalo.

```
estudiante@DAW1:~$ docker run --name web httpd
AH00558: httpd: Could not reliably determine the server's fully qualified domain
name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress thi
s message
AH00558: httpd: Could not reliably determine the server's fully qualified domain
name, using 172.17.0.2. Set the 'ServerName' directive globally to suppress thi
s message
[Tue Oct 04 08:49:59.281341 2022] [mpm_event:notice] [pid 1:tid 139868175347008]
AH00489: Apache/2.4.54 (Unix) configured -- resuming normal operations
[Tue Oct 04 08:49:59.281474 2022] [core:notice] [pid 1:tid 139868175347008] AH00
094: Command line: 'httpd -D FOREGROUND'
```

8. Arranca un contenedor del servicio Tomcat versión jdk11. , llamándolo “Tomcat”, redirigiendolo al puerto 9999 (tomcat usa el puerto 8080). Comprueba que está funcionando.

```
estudiante@DAW1:~$ docker run -p 9999:8080 tomcat:jdk11 --name Tomcat
Unable to find image 'tomcat:jdk11' locally
jdk11: Pulling from library/tomcat
2b55860d4c66: Already exists
2ca45fc4c4ca: Pull complete
eb243d873b24: Pull complete
d6f7a10724bf: Pull complete
86a5d5c5e194: Pull complete
bb193bee3e32: Pull complete
414689d19618: Pull complete
Digest: sha256:ce48ddcadf75a20963593973395815632252dfbc04b4cf5be2870a2bf01b84ab
Status: Downloaded newer image for tomcat:jdk11
docker: Error response from daemon: failed to create shim task: OCI runtime create failed: runc create failed: unable to start conta
iner process: exec: "--name": executable file not found in $PATH: unknown.
ERRO[0030] error waiting for container: context canceled
estudiante@DAW1:~$ docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED        STATUS              PORTS          NAMES
91b9031d4e53   tomcat:jdk11 "--name Tomcat"         31 seconds ago Created           0.0.0.0:9999->8080/tcp, :::9999->8080/tcp   elated_ganguly
```

9. Para todos los contenedores que estén funcionando y bórralos.

```
estudiante@DAW1:~$ docker container stop $(docker container list -q)
"docker container stop" requires at least 1 argument.
See 'docker container stop --help'.

Usage:  docker container stop [OPTIONS] CONTAINER [CONTAINER...]

Stop one or more running containers
estudiante@DAW1:~$ docker container rm -r $(docker container list -q)
unknown shorthand flag: 'r' in -r
See 'docker container rm --help'.
```

10. Descarga la imagen mariadb (base de datos) y crea un volumen llamado DATA donde vayamos a guardar datos de mariadb. Comprueba que está creado.

```
estudiante@DAW1:~$ docker pull mariadb
Using default tag: latest
latest: Pulling from library/mariadb
2b55860d4c66: Already exists
4bf944e49ffa: Pull complete
020ff2b6bb0b: Pull complete
977397ae9bc6: Pull complete
b361cf449d40: Pull complete
21d261950157: Pull complete
296a47dd9435: Pull complete
bbe841bf5cfe: Pull complete
758db05dd921: Pull complete
9c2c0a21c9e6: Pull complete
4bc311b9359a: Pull complete
Digest: sha256:6166b70c05a62173e9a80d26271e85077614709baa5c59f9ab3369e00c4e363d
Status: Downloaded newer image for mariadb:latest
docker.io/library/mariadb:latest
estudiante@DAW1:~$ docker run mariadb
2022-10-05 09:42:38+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.9.3+maria-ubu2204 started.
2022-10-05 09:42:38+00:00 [Note] [Entrypoint]: Switching to dedicated user 'mysql'
2022-10-05 09:42:38+00:00 [Note] [Entrypoint]: Entrypoint script for MariaDB Server 1:10.9.3+maria-ubu2204 started.
2022-10-05 09:42:38+00:00 [ERROR] [Entrypoint]: Database is uninitialized and password option is not specified
You need to specify one of MARIADB_ROOT_PASSWORD, MARIADB_ROOT_PASSWORD_HASH, MARIADB_ALLOW_EMPTY_ROOT_PASSWORD and MARIADB_
RANDOM_ROOT_PASSWORD
estudiante@DAW1:~$ docker volume create --name DATA
DATA
estudiante@DAW1:~$ docker ps -a
CONTAINER ID   IMAGE                                COMMAND                  CREATED        STATUS        PORTS
NAMES
2f0a2040f9c5   mariadb                             "docker-entrypoint.s..." 22 seconds ago Exited (1) 20 seconds ago
agitated_ganguly
91b9031d4e53   tomcat:jdk11                        "--name Tomcat"          4 minutes ago  Created                                0.0.0.0:9999->8080/tcp, :::9999-
>8080/tcp elated_ganguly
e8f8a44a8821   httpd                               "httpd-foreground"       25 hours ago  Exited (0) 25 hours ago
web
718ed11e060c   httpd                               "--name web"              25 hours ago  Created                                80/tcp
nervous_austin
7d4ee371294e   httpd                               "--name web"              25 hours ago  Created                                80/tcp
competent_hawking
6d6a601f7aed   postgres                           "docker-entrypoint.s..." 8 days ago    Exited (1) 8 days ago
wonderful_bartik
750d16821afa   python                             "python3"                 8 days ago    Exited (0) 8 days ago
brave_wright
aa334806ded9   mysql:5.7.22                       "docker-entrypoint.s..." 8 days ago    Exited (0) 8 days ago
mysql
81c32c0b17e1   hello-world                         "/hello"                  9 days ago    Exited (0) 9 days ago
inspiring_ferml
2817b09367fb   hello-world                         "/hello"                  3 months ago  Exited (0) 3 months ago
wizardly_snyder
estudiante@DAW1:~$ docker volume -ls
```

11. Arranca un contenedor con el servicio mariadb funcionando... llamado "db1" con redirección de puerto 3336:3306 y haz el montaje en el volumen DATA y destino /var/lib/mysql (carpeta del servidor)... decirle una variable de entorno -e MYSQL_ROOT_PASSWORD=root -e MYSQL_DATABASE=test mariadb

```
estudiante@DAW1:~$ docker run -p 3336:3306 mariadb --name db1 -v DATA -e MYSQL_ROOT_PASSWORD=root -e MYSQL_DATABASE=test mariadb
```

12. Comprueba que el servidor está funcionando

```
estudiante@DAW1:~$ docker ps
```

13. Busca en el repositorio de dockerhub y descarga la imagen mysql con una versión no actualizada y obtén información de la misma (explícala) . Muestra las imágenes descargadas hasta ese momento.

```
estudiante@DAW1:~$ docker pull mysql:5.7.39
5.7.39: Pulling from library/mysql
a2a00260331c: Pull complete
6d8167f2fcbe: Pull complete
32454e9854ca: Pull complete
473e2917b0d5: Pull complete
5173f8104ec8: Pull complete
32e218351f9a: Pull complete
fc9e1a82359a: Pull complete
Files ea2ce7: Pull complete
5c0009927039: Pull complete
dfb1b236c7fc: Pull complete
e2ad62bd72a7: Pull complete
Digest: sha256:94fe67a04001e9841f68f114c8e9b5231cd012e6b00d3b8ade42c0c5e239a0f
Status: Downloaded newer image for mysql:5.7.39
docker.io/library/mysql:5.7.39
estudiante@DAW1:~$ docekr inspect ID
Command 'docekr' not found, did you mean:
  command 'docker' from snap docker (20.10.14)
  command 'docker' from deb docker.io (20.10.12-0ubuntu4)
  command 'docker' from deb podman-docker (3.4.4+ds1-1ubuntu1)
See 'snap info <snapname>' for additional versions.
estudiante@DAW1:~$ docker inspect ID
[]
Error: No such object: ID
estudiante@DAW1:~$ docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS
cedd2a28ade0	mariadb	"docker-entrypoint.s..."	2 minutes ago	Exited (1) 2 minutes ago	
	focused_fernat				
2f0a2040f9c5	mariadb	"docker-entrypoint.s..."	4 minutes ago	Exited (1) 4 minutes ago	
	agitated_ganguly				
91b9031d4e53	tomcat:jdk11	"--name Tomcat"	8 minutes ago	Created	0.0.0.0:9999->8080/tcp,
080/tcp	elated_ganguly				
e8f8a44a8821	httpd	"httpd-foreground"	25 hours ago	Exited (0) 25 hours ago	
	web				
718ed11e060c	httpd	"--name web"	25 hours ago	Created	80/tcp
	nervous_austin				
7d4ee371294e	httpd	"--name web"	25 hours ago	Created	80/tcp
	competent_hawking				
6d6a601f7aed	postgres	"docker-entrypoint.s..."	8 days ago	Exited (1) 8 days ago	
	wonderful_bartik				
750d16821afa	python	"python3"	8 days ago	Exited (0) 8 days ago	
	brave_wright				
aa334806ded9	mysql:5.7.22	"docker-entrypoint.s..."	8 days ago	Exited (0) 8 days ago	
	mysql				
81c32c0b17e1	hello-world	"/hello"	9 days ago	Exited (0) 9 days ago	
	inspiring_fermi				
2817b09367fb	hello-world	"/hello"	3 months ago	Exited (0) 3 months ago	
	wizardly_snyder				

```
estudiante@DAW1:~$
```

14. Borra dos imágenes a la vez en caso de que existan.
Se utiliza docker rm mysql db1