

Ejercicio 03 Docker MySQL

Abrir una consola y ejecutar el siguiente comando

Extraer la imagen de mysql

```
root@tona-HVY-WXX9: /home/tona
tona@tona-HVY-WXX9:~$ sudo su
[sudo] contraseña para tona:
root@tona-HVY-WXX9:/home/tona# docker pull mysql:latest
latest: Pulling from library/mysql
e2c03c89dcad: Pull complete
68eb43837bf8: Pull complete
796892ddf5ac: Pull complete
6bca45eb31e1: Pull complete
ebb53bc0dcca: Pull complete
2e2c6bdc7a40: Pull complete
6f27b5c76970: Pull complete
438533a24810: Pull complete
e5bdf19985e0: Pull complete
667fa148337b: Pull complete
5baa702110e4: Pull complete
Digest: sha256:232936eb036d444045da2b87a90d48241c60b68b376caf509051cb6cfea6fdc
Status: Downloaded newer image for mysql:latest
docker.io/library/mysql:latest
root@tona-HVY-WXX9:/home/tona#
```

Ejecutar el siguiente comando donde creará automáticamente la imagen con una contraseña y el volumen para almacenar la información

```
root@tona-HVY-WXX9:/home/tona# docker run --name mysql-demo -e MYSQL_ROOT_PASSWORD=demo -d -v mysql-demo:/var/lib/mysql mysql:latest
d9e32d08d14c96731448404fd26e4c1c96ab3813a617a20c5cc03f5de6a742cc
root@tona-HVY-WXX9:/home/tona# docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                    NAMES
d9e32d08d14c   mysql:latest   "docker-entrypoint.s..." 11 seconds ago Up 10 seconds 3306/tcp, 33060/tcp      mysql-demo
root@tona-HVY-WXX9:/home/tona#
```

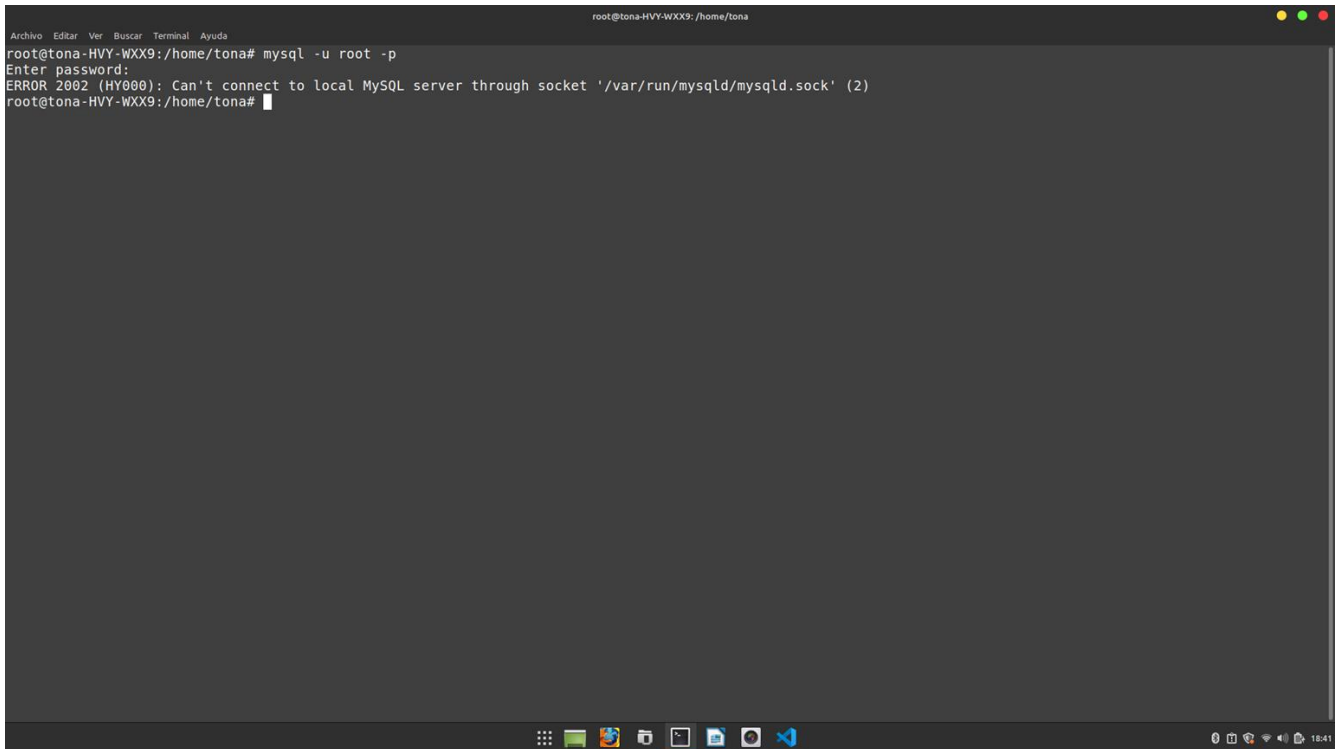
Instalar cliente de MySQL

```
root@tona-HVY-WXX9: /home/tona
Archivo Editar Ver Buscar Terminal Ayuda
root@tona-HVY-WXX9:/home/tona# sudo apt install mysql-client -y
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes adicionales:
  mysql-client-8.0 mysql-client-core-8.0
Se instalarán los siguientes paquetes NUEVOS:
  mysql-client mysql-client-8.0 mysql-client-core-8.0
0 actualizados, 3 nuevos se instalarán, 0 para eliminar y 320 no actualizados.
Se necesita descargar 5 205 kB de archivos.
Se utilizarán 75.6 MB de espacio de disco adicional después de esta operación.
Des:1 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-core-8.0 amd64 8.0.33-0ubuntu0.20.04.2 [5 173 kB]
Des:2 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client-8.0 amd64 8.0.33-0ubuntu0.20.04.2 [22.0 kB]
Des:3 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 mysql-client all 8.0.33-0ubuntu0.20.04.2 [9 360 B]
Descargados 5 205 kB en 3s (1 641 kB/s)
Seleccionando el paquete mysql-client-core-8.0 previamente no seleccionado.
(Leyendo la base de datos ... 321053 ficheros o directorios instalados actualmente.)
Preparando para desempaquetar .../mysql-client-core-8.0 8.0.33-0ubuntu0.20.04.2_amd64.deb ...
Desempaquetando mysql-client-core-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Seleccionando el paquete mysql-client-8.0 previamente no seleccionado.
Preparando para desempaquetar .../mysql-client-8.0 8.0.33-0ubuntu0.20.04.2_amd64.deb ...
Desempaquetando mysql-client-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Seleccionando el paquete mysql-client previamente no seleccionado.
Preparando para desempaquetar .../mysql-client 8.0.33-0ubuntu0.20.04.2_all.deb ...
Desempaquetando mysql-client (8.0.33-0ubuntu0.20.04.2) ...
Configurando mysql-client-core-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Configurando mysql-client-8.0 (8.0.33-0ubuntu0.20.04.2) ...
Configurando mysql-client (8.0.33-0ubuntu0.20.04.2) ...
Procesando disparadores para man-db (2.9.1-1) ...
root@tona-HVY-WXX9:/home/tona#
```

Habilitar la extracción de instalación y versión de MySQL

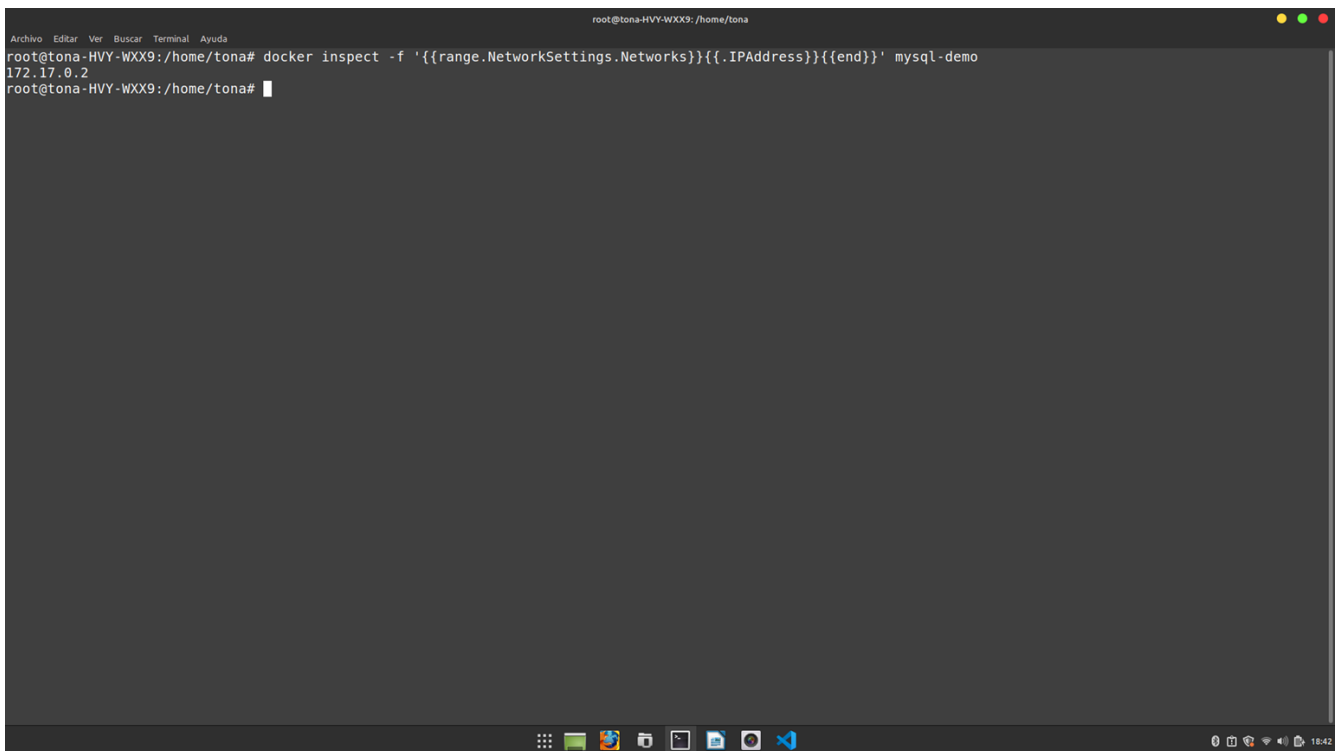
```
root@tona-HVY-WXX9: /home/tona
Archivo Editar Ver Buscar Terminal Ayuda
root@tona-HVY-WXX9:/home/tona# which mysql
/usr/bin/mysql
root@tona-HVY-WXX9:/home/tona# mysql --version
mysql Ver 8.0.33-0ubuntu0.20.04.2 for Linux on x86_64 ((Ubuntu))
root@tona-HVY-WXX9:/home/tona#
```

Establecer comunicación

A terminal window titled 'root@tona-HVY-WXX9: /home/tona' with a menu bar (Archivo, Editar, Ver, Buscar, Terminal, Ayuda). The user runs 'mysql -u root -p', enters a password, and receives an error: 'ERROR 2002 (HY000): Can't connect to local MySQL server through socket '/var/run/mysqld/mysqld.sock' (2)'. The terminal has a dark background and a light-colored cursor. The bottom of the window shows a taskbar with various application icons and system status icons on the right.

```
root@tona-HVY-WXX9: /home/tona# mysql -u root -p
Enter password:
ERROR 2002 (HY000): Can't connect to local MySQL server through socket '/var/run/mysqld/mysqld.sock' (2)
root@tona-HVY-WXX9: /home/tona#
```

El comando de inspección ayuda a asignar una dirección IP a la instancia del servidor MySQL:

A terminal window titled 'root@tona-HVY-WXX9: /home/tona' with a menu bar (Archivo, Editar, Ver, Buscar, Terminal, Ayuda). The user runs 'docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo', which outputs '172.17.0.2'. The terminal has a dark background and a light-colored cursor. The bottom of the window shows a taskbar with various application icons and system status icons on the right.

```
root@tona-HVY-WXX9: /home/tona# docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo
172.17.0.2
root@tona-HVY-WXX9: /home/tona#
```

Proporcionar la dirección IP anterior en la opción de host del cliente, con el número de puerto predeterminado y el tipo de protocolo como TCP:

```
root@tona-HVY-WXX9:/home/tona# docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo
172.17.0.2
root@tona-HVY-WXX9:/home/tona# mysql -h 172.17.0.2 -P 3306 --protocol=tcp -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.33 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

Ingresar el siguiente comando para mostrar las base de datos
show databases;

```
root@tona-HVY-WXX9:/home/tona# docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo
172.17.0.2
root@tona-HVY-WXX9:/home/tona# mysql -h 172.17.0.2 -P 3306 --protocol=tcp -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.33 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.00 sec)

mysql>
```

Crear una base de datos

create database automatiza;

Cambiarse a la base de datos

use automatiza;

Crear una tabla llamada usuarios con los siguientes campos

Campo	Tipo de datos	Indices
username	varchar(30) PK	
password	varchar(20)	
email	varchar(80)	UNIQUE
telefono	varchar(10)	UNIQUE

```
root@tona-HVY-WXX9:/home/tona# docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo
172.17.0.2
root@tona-HVY-WXX9:/home/tona# mysql -h 172.17.0.2 -P 3306 --protocol=tcp -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.33 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.00 sec)

mysql> create database automatiza;
Query OK, 1 row affected (0.00 sec)

mysql> use automatiza;
Database changed
mysql> CREATE TABLE usuarios(username VARCHAR(30) PRIMARY KEY, password VARCHAR(20),email VARCHAR(80) UNIQUE,telefono VARCHAR(10) UNIQUE);
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM usuarios;
Empty set (0.01 sec)

mysql>
```

Ejecutar comando quit para salir de cliente mysql

```
root@tona-HVY-WXX9: /home/tona
root@tona-HVY-WXX9:/home/tona# docker inspect -f '{{range.NetworkSettings.Networks}}{{.IPAddress}}{{end}}' mysql-demo
172.17.0.2
root@tona-HVY-WXX9:/home/tona# mysql -h 172.17.0.2 -P 3306 --protocol=tcp -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.33 MySQL Community Server - GPL

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Oracle is a registered trademark of Oracle Corporation and/or its
affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.00 sec)

mysql> create database automatiza;
Query OK, 1 row affected (0.00 sec)

mysql> use automatiza;
Database changed
mysql> CREATE TABLE usuarios(username VARCHAR(30) PRIMARY KEY, password VARCHAR(20),email VARCHAR(80) UNIQUE,telefono VARCHAR(10) UNIQUE);
Query OK, 0 rows affected (0.03 sec)

mysql> SELECT * FROM usuarios;
Empty set (0.01 sec)

mysql> quit
Bye
root@tona-HVY-WXX9:/home/tona#
```

Para el contenedor y Eliminar el contenedor

```
root@tona-HVY-WXX9:/home/tona# docker ps
CONTAINER ID   IMAGE      COMMAND                  CREATED    STATUS    PORTS                               NAMES
d9e32d08d14c   mysql:latest "docker-entrypoint.s..." 26 minutes ago Up 26 minutes 3306/tcp, 33060/tcp   mysql-demo

root@tona-HVY-WXX9:/home/tona# docker stop d9e32d08d14c
d9e32d08d14c

root@tona-HVY-WXX9:/home/tona# docker rm d9e32d08d14c
d9e32d08d14c

root@tona-HVY-WXX9:/home/tona# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
mysql         latest    041315a16183   10 days ago    565MB
hello-world   latest    9c7a54a9a43c   2 months ago   13.3kB

root@tona-HVY-WXX9:/home/tona# docker rmi 041315a16183
Untagged: mysql:latest
Untagged: mysql@sha256:232936eb036d444045da2b87a90d48241c60b68b376caf509051cb6cfea6f6dc
Deleted: sha256:041315a161837f8bb87361e13390abda7159b98aeedee5e6152a0bb7a9b45f27
Deleted: sha256:4d222d577c60c4154dd0e945d5d97349f19c52a618e37ba413911308e07479f7
Deleted: sha256:d74342057fb00aebc56a56f9d283647ef687da27cfdeed7d9482a735c3fe3a1f
Deleted: sha256:d192ea49fee3e6a5dfff8056b8ded4daaff46c33a131d10e279487d5fc017781
Deleted: sha256:1cb4f07a721499af1000ee8ea0ea0c172d03c85e56016e928f9e0387207de4dc
Deleted: sha256:99138cf43643346108617ac92eea05484cc855b87443735abd637aab26bf00d1
Deleted: sha256:064eadeb289d6807c4690a65644d9a31b7b241278255bc22ac1ff922112b3d50
Deleted: sha256:ab3a39736ad49cdf4ebf9a6b1f6adab728c02ba43fde9c654b2aleaded41cc64
Deleted: sha256:ba3042daa9dae4a1fb065d56f0804f9fa2e76ba27676ca16d6a807023a1f361c
Deleted: sha256:0c88078a197be5923b1ee6a0a67177f2213e7ec6954dfe965cac6a3808f4e50
Deleted: sha256:15347aa2dbcda969c458820aa891f8a0f329454e029ad3a6c63496cb5c5d55be
Deleted: sha256:a8b6e91c3a08dd702018c7b56a93dae42d1ccd58443c838bcbad47b1afddcf91

root@tona-HVY-WXX9:/home/tona#
```

Creando un contenedor de red

Modificar comando para crear contenedor y su referencia de red

`docker run --name network-mysql -e MYSQL_ROOT_PASSWORD=demo -d -v mysql-demo:/var/lib/mysql mysql:latest --network network-mysql \`

```
root@tona-HVY-WXX9: /home/tona
root@tona-HVY-WXX9:/home/tona# docker run --name network-mysql -e MYSQL_ROOT_PASSWORD=demo -d -v mysql-demo:/var/lib/mysql mysql:latest --network network-mysq
l \
>
Unable to find image 'mysql:latest' locally
latest: Pulling from library/mysql
e2c03c89dcad: Pull complete
68eb43837bf8: Pull complete
796892ddf5ac: Pull complete
6bca45eb31e1: Pull complete
ebb53bc0dcca: Pull complete
2e2c6bdc7a40: Pull complete
6f27b5c76970: Pull complete
438533a24810: Pull complete
e5bdf19985e0: Pull complete
667fa148337b: Pull complete
5baa702110e4: Pull complete
Digest: sha256:232936eb036d444045da2b87a90d48241c60b68b376caf509051cb6cffe66fdc
Status: Downloaded newer image for mysql:latest
8cd3257665a94318b55481d578703a0c5acd3efc16ca43e384390bed230d9dea
root@tona-HVY-WXX9:/home/tona#
```

