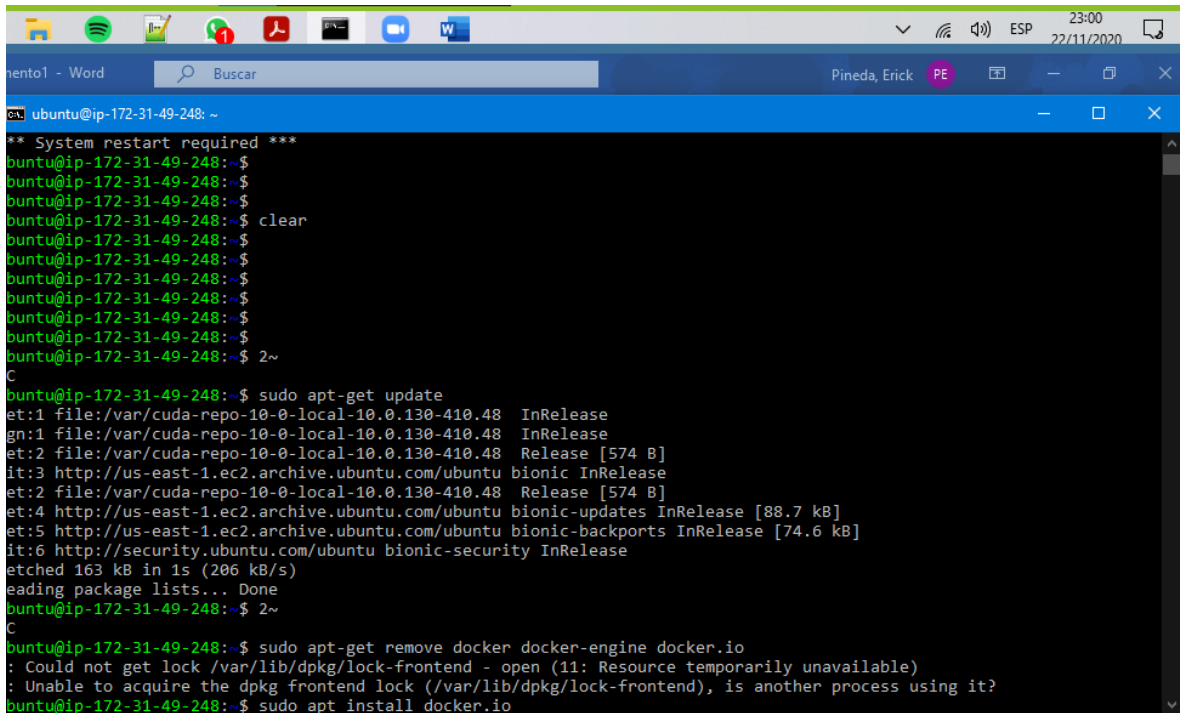


Estudiantes:

Ariel Chitay	19002065
Erick Pineda	17012140

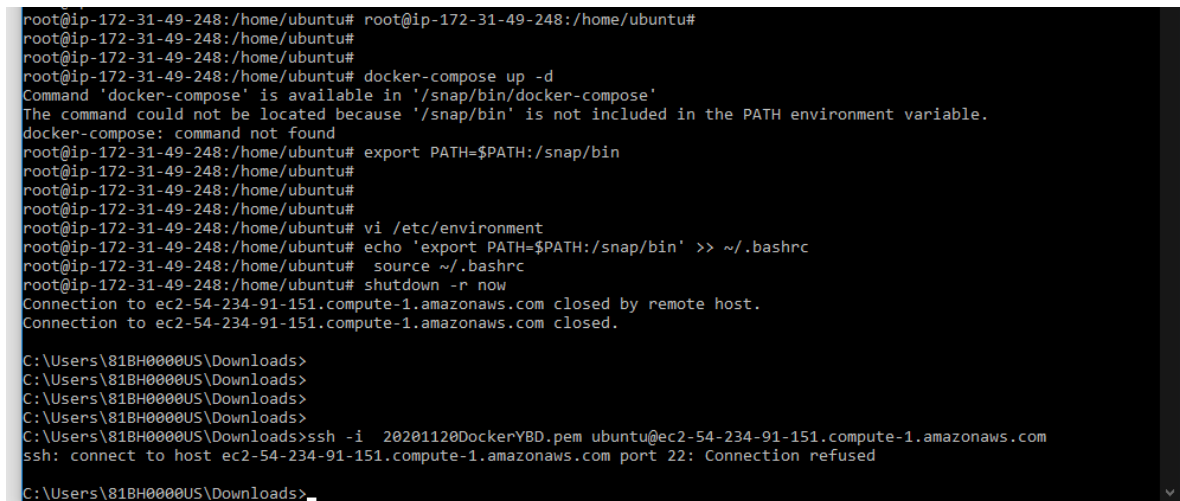
Parcial parte 1

Instalando Docker



```
ubuntu@ip-172-31-49-248: ~  
** System restart required ***  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$ clear  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$  
ubuntu@ip-172-31-49-248:~$ 2~  
C  
ubuntu@ip-172-31-49-248:~$ sudo apt-get update  
Get:1 file:/var/cuda-repo-10-0-local-10.0.130-410.48 InRelease  
Get:2 file:/var/cuda-repo-10-0-local-10.0.130-410.48 InRelease  
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic InRelease  
Get:4 file:/var/cuda-repo-10-0-local-10.0.130-410.48 Release [574 B]  
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]  
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]  
Get:7 http://security.ubuntu.com/ubuntu bionic-security InRelease  
Fetched 163 kB in 1s (206 kB/s)  
Reading package lists... Done  
ubuntu@ip-172-31-49-248:~$ 2~  
C  
ubuntu@ip-172-31-49-248:~$ sudo apt-get remove docker docker-engine docker.io  
dpkg-query: Warnings: The package docker-engine is not installed and its package file is  
: Could not get lock /var/lib/dpkg/lock-frontent - open (11: Resource temporarily unavailable)  
: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontent), is another process using it?  
ubuntu@ip-172-31-49-248:~$ sudo apt install docker.io
```

Algunos errores encontrados



```
root@ip-172-31-49-248:/home/ubuntu# root@ip-172-31-49-248:/home/ubuntu#  
root@ip-172-31-49-248:/home/ubuntu#  
root@ip-172-31-49-248:/home/ubuntu#  
root@ip-172-31-49-248:/home/ubuntu# docker-compose up -d  
Command 'docker-compose' is available in '/snap/bin/docker-compose'  
The command could not be located because '/snap/bin' is not included in the PATH environment variable.  
docker-compose: command not found  
root@ip-172-31-49-248:/home/ubuntu# export PATH=$PATH:/snap/bin  
root@ip-172-31-49-248:/home/ubuntu#  
root@ip-172-31-49-248:/home/ubuntu#  
root@ip-172-31-49-248:/home/ubuntu# vi /etc/environment  
root@ip-172-31-49-248:/home/ubuntu# echo 'export PATH=$PATH:/snap/bin' >> ~/.bashrc  
root@ip-172-31-49-248:/home/ubuntu# source ~/.bashrc  
root@ip-172-31-49-248:/home/ubuntu# shutdown -r now  
Connection to ec2-54-234-91-151.compute-1.amazonaws.com closed by remote host.  
Connection to ec2-54-234-91-151.compute-1.amazonaws.com closed.  
  
C:\Users\81BH0000US\Downloads>  
C:\Users\81BH0000US\Downloads>  
C:\Users\81BH0000US\Downloads>  
C:\Users\81BH0000US\Downloads>  
C:\Users\81BH0000US\Downloads>  
C:\Users\81BH0000US\Downloads>ssh -i 20201120DockerYBD.pem ubuntu@ec2-54-234-91-151.compute-1.amazonaws.com  
ssh: connect to host ec2-54-234-91-151.compute-1.amazonaws.com port 22: Connection refused  
  
C:\Users\81BH0000US\Downloads>
```

```

ubuntu@ip-172-31-49-248:~$ ^C
ubuntu@ip-172-31-49-248:~$ docker-compose up -d
ERROR:
Can't find a suitable configuration file in this directory or any
parent. Are you in the right directory?

Supported filenames: docker-compose.yml, docker-compose.yaml

ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$

```

Comprobación que está corriendo Docker

```

ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$ sudo docker ps
CONTAINER ID        IMAGE               COMMAND             CREATED             STATUS              PORTS              NAMES
ubuntu@ip-172-31-49-248:~$ date
Mon Nov 23 05:25:02 UTC 2020
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$ ifconfig -a
docker0: flags=4099<UP,BROADCAST,MULTICAST> mtu 1500
    inet 172.17.0.1 netmask 255.255.0.0 broadcast 172.17.255.255
    ether 02:42:e5:d2:35:c0 txqueuelen 0 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 9001
    inet 172.31.49.248 netmask 255.255.240.0 broadcast 172.31.63.255
    inet6 fe80::497:64ff:fe5:a183 prefixlen 64 scopeid 0x20<link>
    ether 06:97:64:f5:a1:83 txqueuelen 1000 (Ethernet)
    RX packets 666 bytes 70120 (70.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 734 bytes 92671 (92.6 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 128 bytes 10020 (10.0 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 128 bytes 10020 (10.0 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

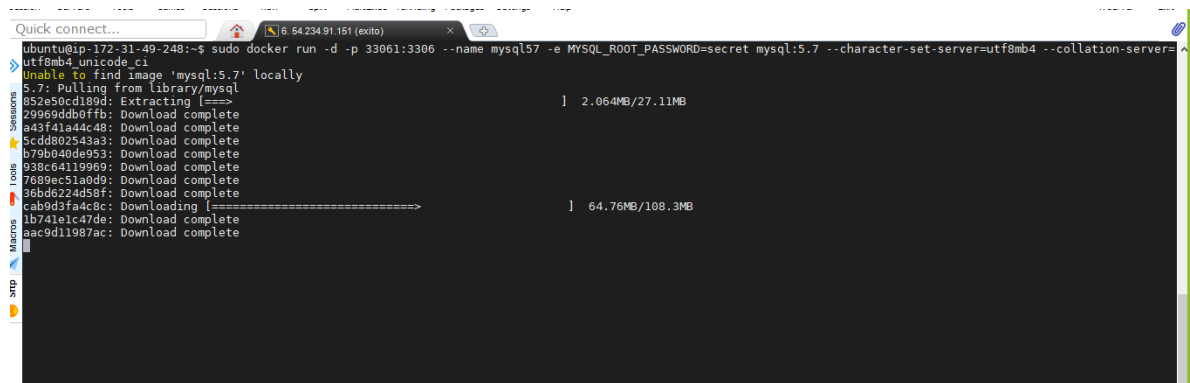
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$

```

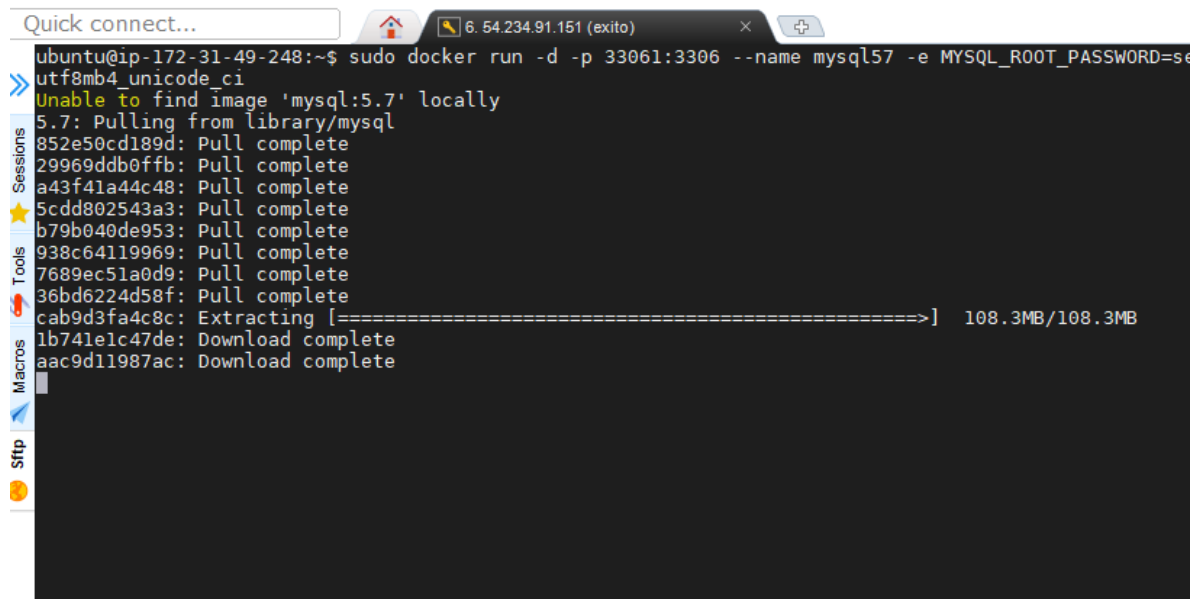
1. Haciendo uso de lo aprendido con docker, configure una base de datos de su preferencia, puede ser mysql, postgresql, o cualquier otra que le facilite su trabajo.

Intalando Mysql en Docker

```
$ docker run -d -p 33061:3306 --name mysql57 -e MYSQL_ROOT_PASSWORD=secret mysql:5.7 --character-set-server=utf8mb4 --collation-server=utf8mb4_unicode_ci
```

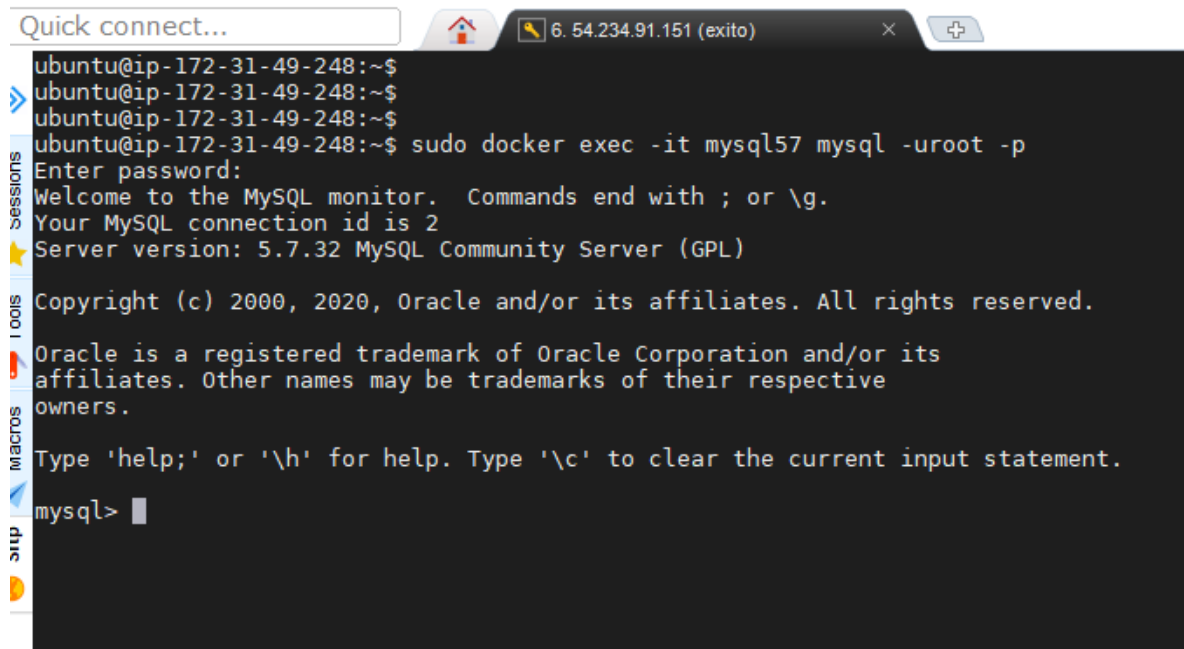


```
Quick connect... 6.54.234.91.151 (exit)
ubuntu@ip-172-31-49-248:~$ sudo docker run -d -p 33061:3306 --name mysql57 -e MYSQL_ROOT_PASSWORD=secret mysql:5.7 --character-set-server=utf8mb4 --collation-server=utf8mb4_unicode_ci
Unable to find image 'mysql:5.7' locally
5.7: Pulling from library/mysql
852e50cd189d: Extracting [====>] 2.064MB/27.11MB
29969ddb0ffb: Download complete
a43f41a44c48: Download complete
5cdd802543a3: Download complete
b79b040de953: Download complete
938c64119969: Download complete
7689ec51a0d9: Download complete
36bd6224d58f: Download complete
cab9d3fa4c8c: Downloading [=====] 64.76MB/108.3MB
1b741e1c47de: Download complete
aac9d11987ac: Download complete
```



```
Quick connect... 6.54.234.91.151 (exit)
ubuntu@ip-172-31-49-248:~$ sudo docker run -d -p 33061:3306 --name mysql57 -e MYSQL_ROOT_PASSWORD=secret mysql:5.7 --character-set-server=utf8mb4 --collation-server=utf8mb4_unicode_ci
Unable to find image 'mysql:5.7' locally
5.7: Pulling from library/mysql
852e50cd189d: Pull complete
29969ddb0ffb: Pull complete
a43f41a44c48: Pull complete
5cdd802543a3: Pull complete
b79b040de953: Pull complete
938c64119969: Pull complete
7689ec51a0d9: Pull complete
36bd6224d58f: Pull complete
cab9d3fa4c8c: Extracting [=====] 108.3MB/108.3MB
1b741e1c47de: Download complete
aac9d11987ac: Download complete
```

Acceso a la consola de Mysql desde Docker



```
Quick connect... 6. 54.234.91.151 (exito)
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$ sudo docker exec -it mysql57 mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.32 MySQL Community Server (GPL)

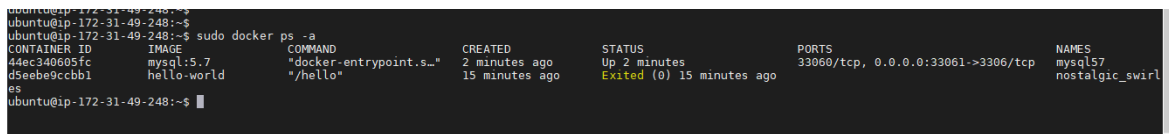
Copyright (c) 2000, 2020, Oracle and/or its affiliates. All rights reserved.

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.

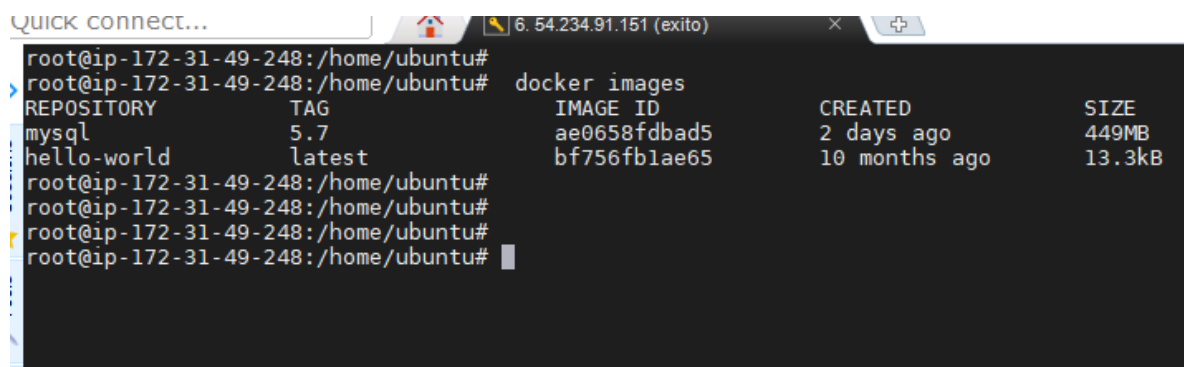
mysql>
```

Procesos Docker



```
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$ sudo docker ps -a
CONTAINER ID   IMAGE     COMMAND                  CREATED    STATUS    PORTS                               NAMES
44ec340605fc   mysql:5.7 "docker-entrypoint.s..." 2 minutes ago    Exited (0) 15 minutes ago    mysql57
d5eebe9ccbb1   hello-world "/hello"                  15 minutes ago    Exited (0) 15 minutes ago    nostalgic_swirl
```

Imágenes actuales de Docker:



```
Quick connect... 6. 54.234.91.151 (exito)
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker images
REPOSITORY    TAG       IMAGE ID       CREATED        SIZE
mysql         5.7       ae0658fdbad5   2 days ago    449MB
hello-world   latest    bf756fb1ae65   10 months ago 13.3kB
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
```

2. Instale y configure RStudio en su versión server, en un contenedor de docker, el cual debe tener conexión con la base de datos que acaba de instalar.

Instalando R studio:

\$ docker pull rocker/tidyverse

```
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker pull rocker/tidyverse
Using default tag: latest
latest: Pulling from rocker/tidyverse
a4a2a29f9ba4: Pull complete
127c9761dcba: Extracting [=====>] 32.32kB/32.32kB
d13bf203e905: Download complete
4039240d2e0b: Download complete
3c152e313525: Download complete
742ac31d6184: Downloading [=====>] 248.6MB/292MB
d0724624a7d0: Downloading [=====>] 187.8MB/236.4MB
baeef85a2aa1: Download complete
eelf9b8d6cdc: Download complete
```

Lista de contenedores:

```
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker container ls --all
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
4c261dbc50af   rocker/tidyverse "/init"                 5 minutes ago Created                               rstudio
44ec340605fc   mysql:5.7      "docker-entrypoint.s..." 41 minutes ago Up 41 minutes 33060/tcp, 0.0.0.0:33061->3306/tcp mysql57
d5eebe9ccbb1   hello-world    "/hello"                 54 minutes ago Exited (0) 54 minutes ago nostalgic_swirl
```

Lista de contenedores	
4c261dbc50af	rstudio
44ec340605fc	mysql57

Creación de red de contenedores

```
root@ip-172-31-49-248:/home/ubuntu# docker network create --driver bridge red_contenedores
85ac1eef20ec128382626a37d0c6d5cb47a3ca244728b59f8f165404d2e62426
root@ip-172-31-49-248:/home/ubuntu# docker network ls
NETWORK ID     NAME          DRIVER          SCOPE
89f4c5deb604   bridge       bridge         local
56320033fccb   host         host           local
fa93a94d1219   null         null           local
b7cb48d1f2b4   partial_network bridge         local
85ac1eef20ec   red_contenedores bridge         local
root@ip-172-31-49-248:/home/ubuntu#
```


Volumen para el almacenamiento de base de datos:

```
$ docker volume create vol_bd_mysql
```

```
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker volume create vol_bd_mysql
vol_bd_mysql
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker volume ls
DRIVER          VOLUME NAME
local          781962b9b4a3705c210caadec95fdbd65cfe1e9eff6b3bc0befe5d209f8b6d3d
local          vol_bd_mysql
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
```

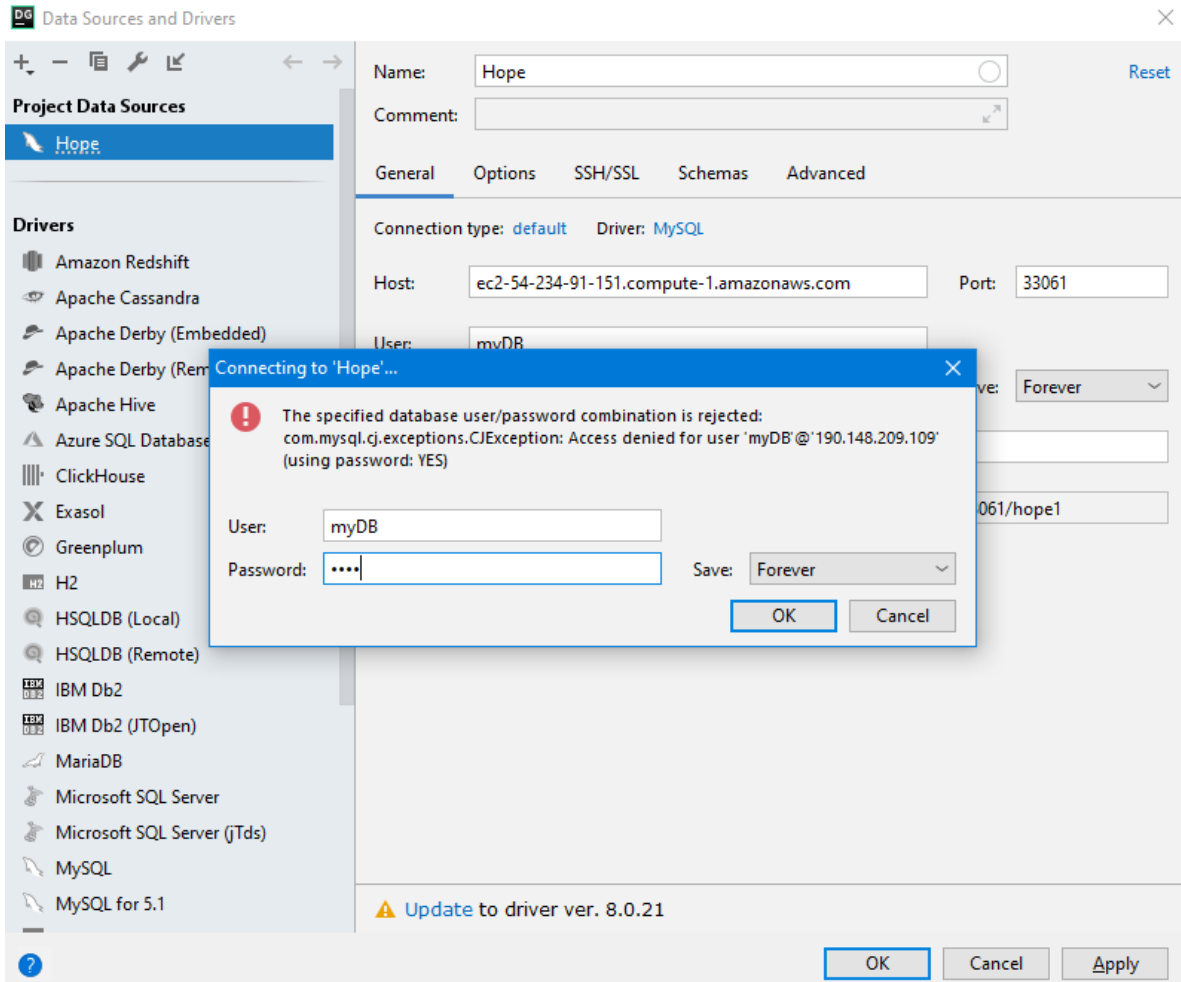
Verificando si el puerto esta disponible. Como estaba corriendo, fue necesario detener el servicio de R local.

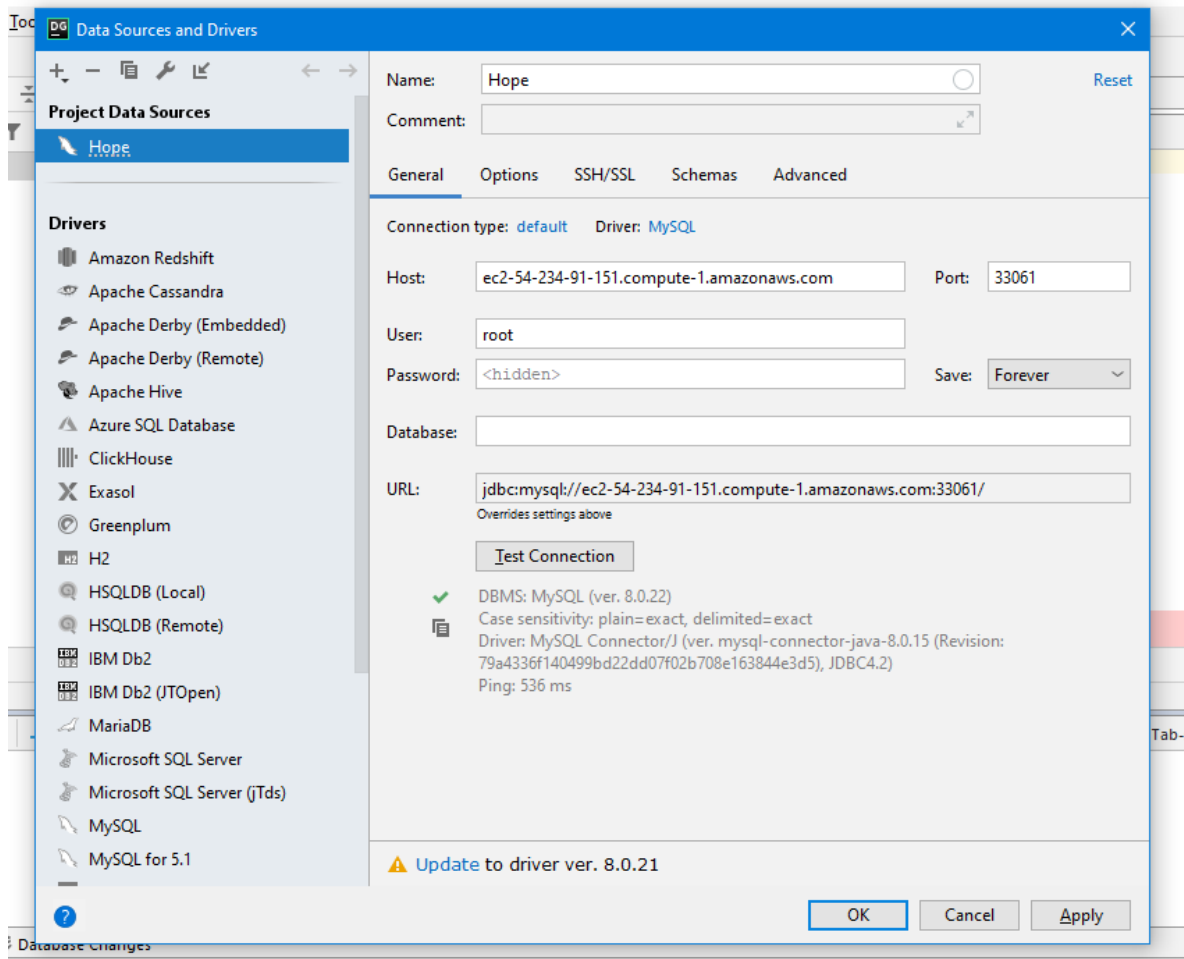
```
root@ip-172-31-49-248:/home/ubuntu#
: command not found
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# netstat -an| grep 8787
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu#
root@ip-172-31-49-248:/home/ubuntu# docker run --network red_contenedores -p 8787:8787 -e USER=1234 -e PASSWORD=1234 rocker/tidyverse
[s6-init] making user provided files available at /var/run/s6/etc...exited 0.
[s6-init] ensuring user provided files have correct perms...exited 0.
[fix-attrs.d] applying ownership & permissions fixes...
[fix-attrs.d] done.
[cont-init.d] executing container initialization scripts...
[cont-init.d] userconf: executing...
USER is now 1234
[cont-init.d] userconf: exited 0.
[cont-init.d] done.
[services.d] starting services
[services.d] done.
```

Ambos nodos funcionando

```
ubuntu@ip-172-31-49-248:~$ sudo docker ps
CONTAINER ID   IMAGE          COMMAND                  CREATED        STATUS        PORTS                               NAMES
fccf31528be2   rocker/tidyverse  "/init"                  28 seconds ago Up 25 seconds 0.0.0.0:1919->1919/tcp, 8787/tcp    exciting_jones
7fae59d225e3   mysql          "docker-entrypoint.s..." 3 minutes ago  Up 3 minutes  33060/tcp, 0.0.0.0:33061->3306/tcp  myDB
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
ubuntu@ip-172-31-49-248:~$
```

Conexión desde internet:





Creación de base de datos:

