Redes Docker

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Trabajar con redes Docker

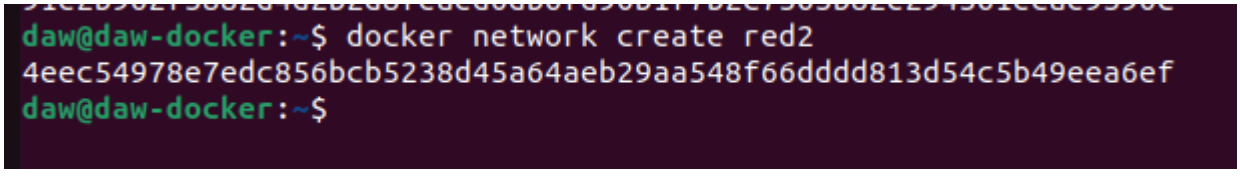
Ejercicio 1

Vamos a crear dos redes de ese tipo (BRIDGE) con los siguientes datos:
Red1
Nombre: red1
Dirección de red: 172.28.0.0
Máscara de red: 255.255.0.0
Gateway: 172.28.0.1
Red2
Nombre: red2
Es resto de los datos será proporcionados automáticamente por Docker.

Creación de red1

```
daw@daw-docker:~$ docker network create -d bridge --subnet 172.28.0.0/16 --gateway 172.28.0.1 red1
91e2b962f3882d4d2b2d8feaed0db6fd90b1f7b2c7363b82e294361ecae9390c
daw@daw-docker:~$
```

Creación de red2



Ejercicio 2

Poner en ejecución un contenedor de la imagen ubuntu:20.04 que tenga como hostname host1 , como IP 172.28.0.10 y que esté conectado a la red1. Lo llamaremos u1 .

Comando:

```
docker run -it --name contenedor1 --network red1 --ip 172.28.0.10 --hostname
host1 ubuntu:20.04
```

```
daw@daw-docker:~$ docker run -it --name contenedor1 --network red1  --ip 172.28.0.10  --hostname host1  ubuntu:20.04
Unable to find image 'ubuntu:20.04' locally
20.04: Pulling from library/ubuntu
846c0b181fff: Pull complete
Digest: sha256:0e0402cd13f68137edb0266e1d2c682f217814420f2d43d300ed8f65479b14fb
Status: Downloaded newer image for ubuntu:20.04
root@host1:/#
```

Comprobaciones

```
root@host1:/# cat /etc/hostname
host1
```

Ejercicio 3

Entrar en ese contenedor e instalar la aplicación ping (apt update && apt install inetutils-ping).

Instalación

```
root@host1:/# apt update
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:7 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:8 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Packages [1879 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [2916 kB]
Get:11 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [1288 kB]
Get:12 http://archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [2003 kB]
Get:13 http://archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 Packages [31.2 kB]
Get:14 http://archive.ubuntu.com/ubuntu focal-backports/main amd64 Packages [55.2 kB]
Get:15 http://archive.ubuntu.com/ubuntu focal-backports/universe amd64 Packages [28.6 kB]
Get:16 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [2437 kB]
Get:17 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages [984 kB]
```

```
root@host1:/# apt install inetutils-ping
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libidn11 netbase
The following NEW packages will be installed:
  inetutils-ping libidn11 netbase
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 120 kB of archives.
After this operation, 657 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu focal/main amd64 netbase all 6.1 [13.1 kB]
Get:2 http://archive.ubuntu.com/ubuntu focal/main amd64 libidn11 amd64 1.33-2.2ubuntu2 [46.2 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates/universe amd64 inetutils-ping amd64 2:1.9.4-11ubuntu0.1 [60.7 kB]
Fetched 120 kB in 1s (140 kB/s)
```

Ejercicio 4

Poner en ejecución un contenedor de la imagen ubuntu:20.04 que tenga como hostname host2 y que esté conectado a la red2. En este caso será docker el que le de una IP correspondiente
a esa red. Lo llamaremos u2 .

```
docker run -it --name u2 --network red2 --hostname host2 ubuntu:20.04
```

```
daw@daw-docker:~$ docker run -it --name u2 --network red2 --hostname host2 ubun
tu:20.04
root@host2:/#
```

Comprobación

```
root@host2:/# cat /etc/hostname
host2
root@host2:/#
```

Ejercicio 5

Entrar en ese contenedor e instalar la aplicación ping (apt update && apt install inetutils-ping).

Instalación:

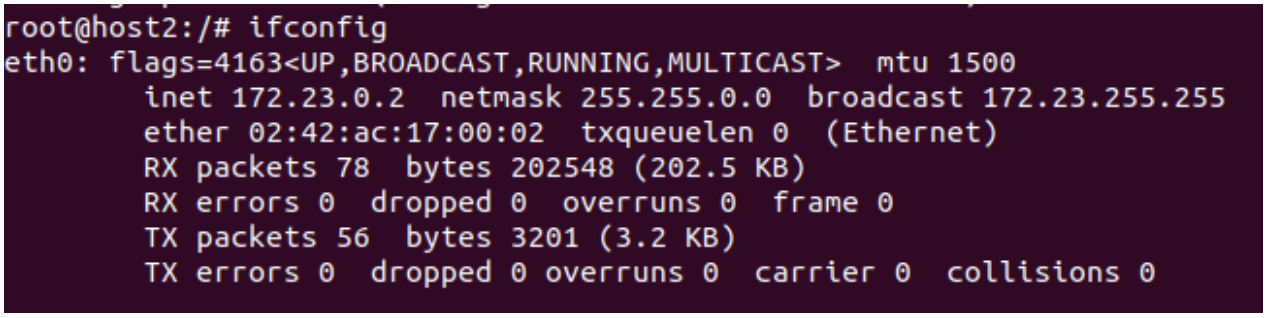
```
root@host2:/# apt update
Get:1 http://archive.ubuntu.com/ubuntu focal InRelease [265 kB]
Get:2 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:3 http://archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:4 http://archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:5 http://archive.ubuntu.com/ubuntu focal/multiverse amd64 Packages [177 kB]
Get:6 http://archive.ubuntu.com/ubuntu focal/restricted amd64 Packages [33.4 kB
]
Get:7 http://archive.ubuntu.com/ubuntu focal/universe amd64 Packages [11.3 MB]
Get:8 http://security.ubuntu.com/ubuntu focal-security/restricted amd64 Package
s [1879 kB]
Get:9 http://security.ubuntu.com/ubuntu focal-security/main amd64 Packages [243
7 kB]
Get:10 http://archive.ubuntu.com/ubuntu focal/main amd64 Packages [1275 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security/universe amd64 Packages
 [984 kB]
Get:12 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 Packag
```

```
root@host2:/# apt install inetutils-ping
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libidn11 netbase
The following NEW packages will be installed:
  inetutils-ping libidn11 netbase
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 120 kB of archives.
After this operation, 657 kB of additional disk space will be used.
Do you want to continue? [Y/n]
```

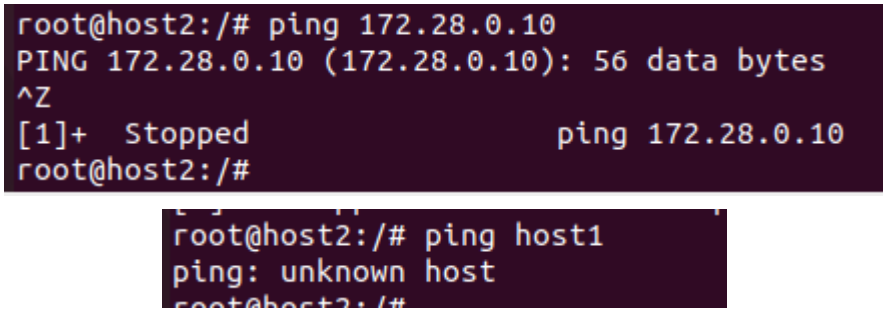
Comprobaciones

Contenedor 1:

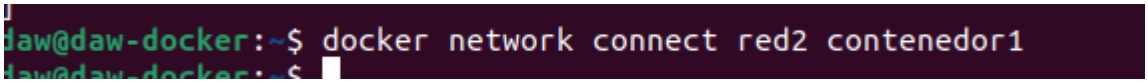
Contenedor 2:



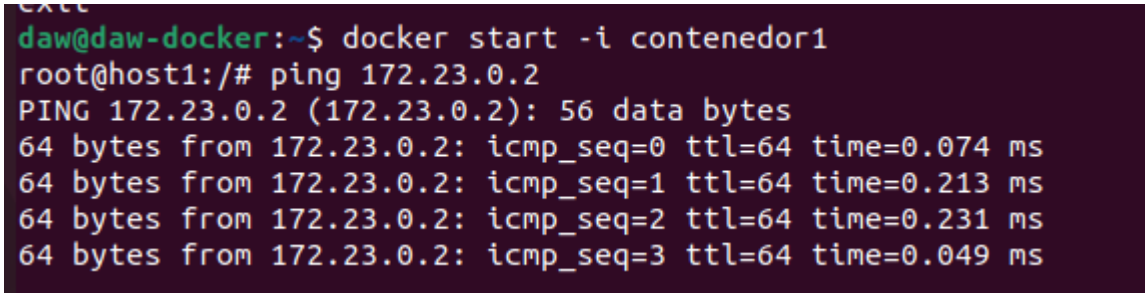
Ping entre contenedores:



Cambio la red del contenedor1:



Ahora mismo estan en la misma red los dos contenedores, y hago ping :



Se ven, pruebo haciendo Ping con el nombre del host

```
root@host1:/# ping host1
PING host1 (172.28.0.10): 56 data bytes
64 bytes from 172.28.0.10: icmp_seq=0 ttl=64 time=0.064 ms
64 bytes from 172.28.0.10: icmp_seq=1 ttl=64 time=0.273 ms
64 bytes from 172.28.0.10: icmp_seq=2 ttl=64 time=0.322 ms
64 bytes from 172.28.0.10: icmp_seq=3 ttl=64 time=0.117 ms
64 bytes from 172.28.0.10: icmp_seq=4 ttl=64 time=0.072 ms
64 bytes from 172.28.0.10: icmp_seq=5 ttl=64 time=0.123 ms
64 bytes from 172.28.0.10: icmp_seq=6 ttl=64 time=0.266 ms
64 bytes from 172.28.0.10: icmp_seq=7 ttl=64 time=0.091 ms
64 bytes from 172.28.0.10: icmp_seq=8 ttl=64 time=0.263 ms
```

Despliegue de Nextcloud + mariadb

Ejercicio 1

Crea una red de tipo bridge.

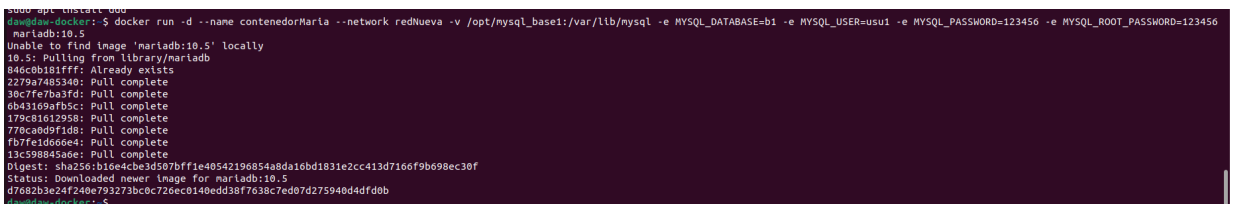
```
docker network create redNueva
```

```
daw@daw-docker:~$ docker network create redNueva
59e27ceec94363e3c6e80520c79b0fd2a653ccea1543a34d11b312e9da6d7a6e
daw@daw-docker:~$
```

Ejercicio 2

Crea el contenedor de la base de datos conectado a la ed que has creado. La base de datos se debe
configurar para crear una base de dato y un usuario. Además el contenedor debe utilizar almacenamiento (volúmenes o bind mount) para guardar la información. Puedes seguir la documentación de mariadb o la de PostgreSQL .

```
docker run -d --name contenedorMaria --network redNueva -v
/opt/mysql_base1:/var/lib/mysql -e MYSQL_DATEBASE=b1 -e MYSQL_USER=usu1 -e
MYSQL_PASSWORD=123456 -e MYSQL_ROOT_PASSWORD=123456  mariadb:10.5
```



Ejercicio 3

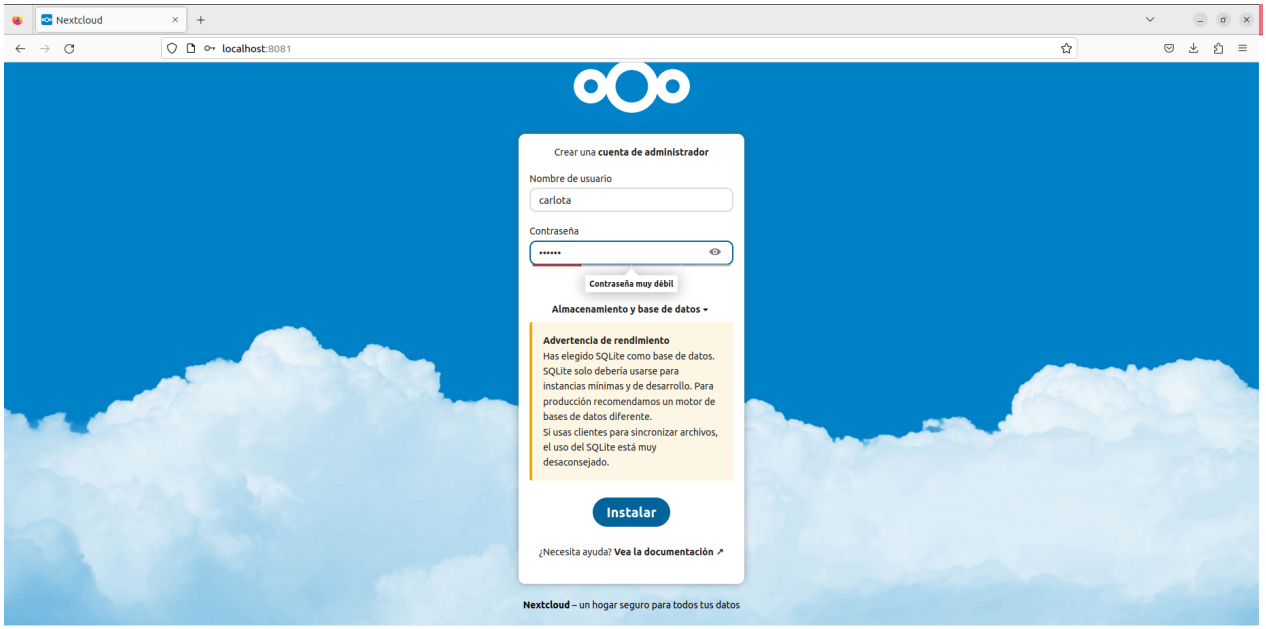
A continuación, siguiendo la documentación de la imagen nextcloud , crea un contenedor conectado a
la misma red, e indica las variables adecuadas para que se configure de forma adecuada y realice la
conexión a la base de datos. El contenedor también debe ser persistente usando almacenamiento.

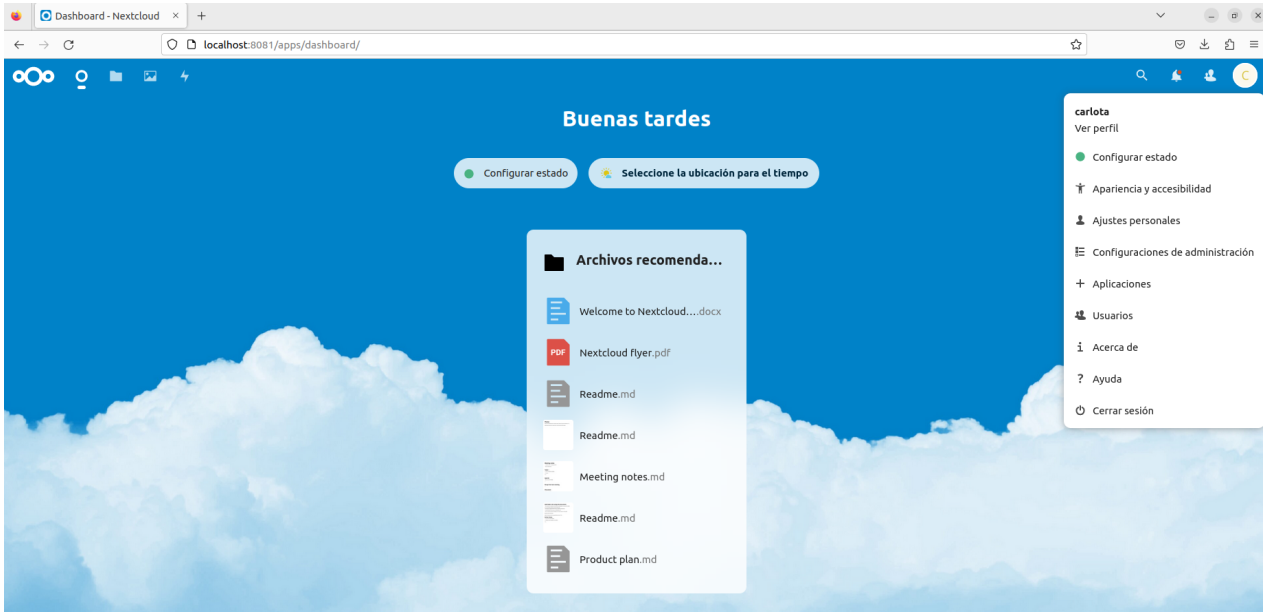
```
docker run -d -p 8081:80 --name contenedorMaria2 --network redNueva --link
contenedorMaria -v nextcloud:/var/www/html nextcloud
```

```
daw@daw-docker:~$ docker run -d -p 8080:80 --name contenedorMaria2 --network redNueva --link contenedorMaria -v nextcloud:/var/www/html nextcloud
e7e8ba01aa4ecdb4f2d08970cc092b3490d1afd7c61010d1aa7e54b69be5d727
```

Ejercicio 4

Accede a la aplicación usando un navegador web.





A tener en cuenta:

Id de todos los contenedores q tenga `docker ps -a -q`

`docker rm -f $(docker ps -a -q)` - Borra todos los contenedores existentes.

`docker start -i contenedor`