# pr200 server docker-alpine

@Moises Muñoz

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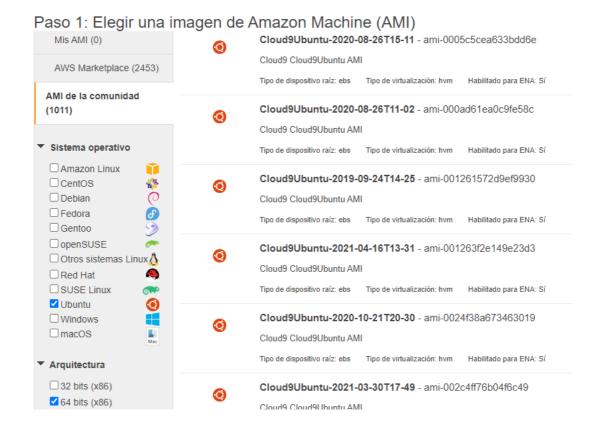
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Conseguido pr200 servidor letsencrypt

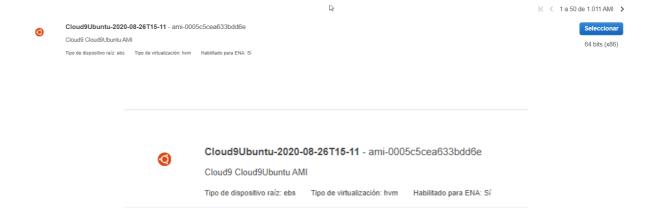
Configurar mismo entorno para local

Entramos en awslab y hacemos uso de nuestra cuenta para lanzar una instancia y probar en ella

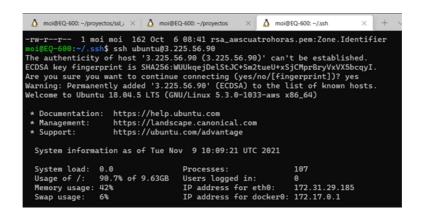
Pretendiendo configurar un apliweb con docker apache alpine y certbot y que su protocolo sea HTTPS, generando los certificados vinculados a su dominio.



• Usaremos para este caso la primera:



• Entramos al servidor mediante shh con la clave pem dada



• Actualizamos librería de paquetes y actualizamos dependencias instaladas

```
$ sudo apt-get update
$ sudo apt-get update
Hit:1 http://us-east-1.ec2.archive.ubuntu.
Hit:2 http://us-east-1.ec2.archive.ubuntu.
Hit:3 http://us-east-1.ec2.archive.ubuntu.
Hit:4 http://download.docker.com/linux/ub
Get:5 http://security.ubuntu.com/ubuntu bi
Fetched 88.7 kB in 0s (198 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
    base-files docker-ce docker-ce-cli sosreport u
The following packages will be upgraded:
    apache2 apache2-bin apache2-data apache2-utils
    cryptsetup-bin dirmngr dnsmasq-base friendly-r
    gpg-agent gpg-wks-client gpg-wks-server gpgcon
```

#### Instalar Docker en Ubuntu

#### Guía oficial:

https://docs.docker.com/engine/install/ubuntu/

#### Desinstalar versiones antiguas:

Las versiones anteriores de Docker fueron llamadas docker, docker.ioo docker-engine.

\$ sudo apt-get remove docker docker-engine docker.io containerd runc

```
:~ $ sudo apt-get remove docker docker-engine docker.io containerd runc Reading package lists... Done
Building dependency tree
Reading state information... Done
Package 'docker-engine' is not installed, so not removed
Package 'docker' is not installed, so not removed
Package 'containerd' is not installed, so not removed
Package 'docker.io' is not installed, so not removed
Package 'docker.io' is not installed, so not removed
Package 'runc' is not installed, so not removed
0 upgraded, 0 newly installed, 0 to remove and 6 not upgraded.
:~ $ |
```

Actualizar repositorio Docker en el sistema:

\$ sudo apt-get update

Agregar la clave GPG oficial de Docker:

\$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg

```
:~ $ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --de armor -o /usr/share/keyrings/docker-archive-keyring.gpg gpg: WARNING: unsafe ownership on homedir '/home/ubuntu/gnupg' File '/usr/share/keyrings/docker-archive-keyring.gpg' exists. Overwrite? (y/N) y :~ $ |
```

Comando para configurar repositorio estable

```
$ echo \
  "deb [arch=$(dpkg --print-architecture) signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/
$(lsb_release -cs) stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
```

Instalar docker engine:

Actualizar general de paquetes e instalar última versión de Docker Engine y containerd,

```
$ sudo apt-get update
$ sudo apt-get install docker-ce docker-ce-cli containerd.io
```

```
:~ $ sudo apt-get install docker-ce docker-ce-cli containerd.io -y
Reading package lists... Done
Building dependency tree
Reading state information... Done
containerd.io is already the newest version (1.4.11-1).
containerd.io set to manually installed.
The following additional packages will be installed:
docker-ce-rootless-extras docker-scan-plugin
Recommended packages:
slirp4netns
The following NEW packages will be installed:
docker-ce-rootless-extras docker-scan-plugin
The following packages will be upgraded:
docker-ce docker-ce-cli
2 upgraded, 2 newly installed, 0 to remove and 4 not upgraded.
Need to get 71.5 MB of archives.
```

Verificar que docker se encuentra instalado.

\$ docker

## Liberar espacio en nuestra distribución

Listamos los contenedores ya que nuestra distribución traía una versión de Docker más antigua y unas imágenes.. las borraremos liberando espacio

```
REPOSITORY
                                     IMAGE ID
                                                        CREATED
                                                                              SIZE
lambci/lambda
lambci/lambda
                    nodejs8.10
                                    c06eeef9103d
                                                        14 months ago
                                                                              814MB
                    python3.6
python2.7
python3.8
                                     c7e6b321f404
                                                        14 months ago
                                                                              891MB
lambci/lambda
                                     1a15b4d8e516
                                                        14 months ago
                                                                              761MB
lambci/lambda
                                     4e043154ed59
                                                        14 months ago
                                                                             520MB
lambci/lambda
lambci/lambda
lambci/lambda
                   nodejs12.x
nodejs10.x
                                    436ae53fb559
                                                        14 months ago 384MB
14 months ago 380MB
                                     7366faf17741
                    python3.7
                                     b599411b8814
ambci/lambda
                                                        15 months ago
                                                                              944MB
```

```
:~ $ docker image rm c06 c7e 1a1 4e0 436 736 b59 Untagged: lambci/lambda:nodejs8.10 Untagged: lambci/lambda@sha256:ff3b3a5f9a92785ba59a66cb26ea3f80063a1f Deleted: sha256:c06eeef9103dc20090e76048b9e252a87e0f1b
```

# Levantar Containers con Docker de un repositorio clonado

Copio clave rsa para clonar un repositorio desde git

Levanto el agente y añado la clave

Guardaré todos mis repositorios en este usuario y carpeta:

clono el repositorio ubuntu/proyectos\_cuatrohoras/ (~/proyectos\_cuatrohoras/)

```
:~/.ssh $ vim github_rsa
:~/.ssh $ chmod 400 github_rsa
:~/.ssh $ eval `ssh-agent -s`
Agent pid 21612
:~/.ssh $ ssh-add github_rsa
Identity added: github_rsa (MOI@EQ-600)
:~/.ssh $ cd -
/home/ubuntu/proyectos_cuatrohoras
:~/proyectos_cuatrohoras $ git clone git@github.com:moimu/pr200.git
Cloning into 'pr200'...
Warning: Permanently added the RSA host key for IP address '140.82.1
the list of known hosts.
remote: Enumerating objects: 42, done.
remote: Counting objects: 100% (42/42), done.
```

Dentro del proyecto intento ejecutar el docker-compose.yml

```
$ docker compose build //no se encuentra
```

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ docker compose build
docker: 'compose' is not a docker command.
See 'docker --help'
:~/proyectos_cuatrohoras/pr200 (fase1) $ docker-compose build
Command 'docker-compose' not found, but can be installed with:
sudo snap install docker  # version 19.03.11, or
sudo apt install docker-compose
```

#### Instalar docker-compose en sistemas Linux

Guía instalación oficial:

https://docs.docker.com/compose/install/

Comando para descargar la versión estable actual:

sudo curl -L "https://github.com/docker/compose/releases/download/1.29.2/docker-compose-\$(uname -s)-\$(uname -m)" -o /usr/local/bin/docker/compose-\$(uname -m) -o /usr/local/bin/docker/compose-\$(uname -m) -o /usr/local/bin/docker/compose-\$(uname -m)

Aplicar permisos ejecutables al binario:

```
$ sudo chmod +x /usr/local/bin/docker-compose
```

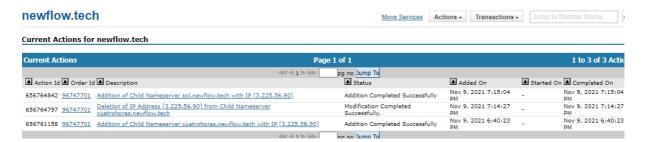
#### Verificar instalación

\$ docker-compose --version

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ docker-compose --version docker-compose version 1.29.2, build 5becea4c Ve a Configuración para activar Win :~/proyectos_cuatrohoras/pr200 (fase1) $ |
```

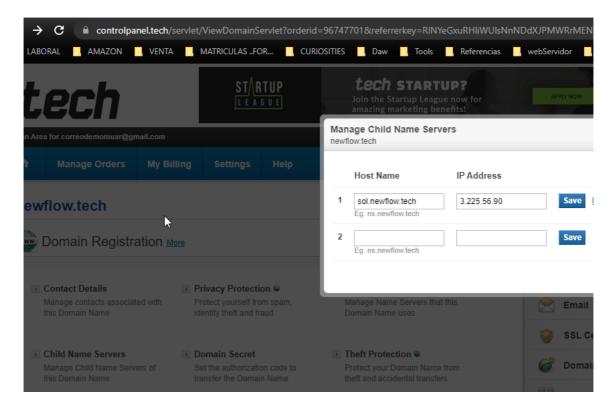
## Asignación dominio a Ip elástica del servidor

tras haber asignado un nombre de subdominio y no conseguir vincularlo

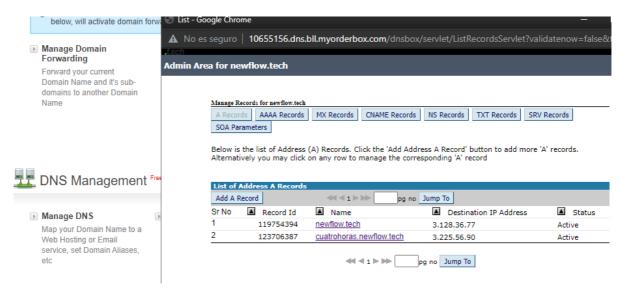


```
moi@EQ-600:~$ ping cuatrohoras.newflow.tech
ping: cuatrohoras.newflow.tech: Name or service not known
moi@EQ-600:~$ ssh ubuntu@cuatrohoras.newflow.tech
ssh: Could not resolve hostname cuatrohoras.newflow.tech: Name or service not known
```

#### Cambio a otro nombre ..



• Creo que hay que añadirlo por aqui



· Si efectivamente.

```
moi@EQ-600:~$ ping cuatrohoras.newflow.tech

PING cuatrohoras.newflow.tech (3.225.56.90) 56(84) bytes of data.

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=1 ttl=45 time=105 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=2 ttl=45 time=105 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=3 ttl=45 time=105 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=4 ttl=45 time=124 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=5 ttl=45 time=106 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=6 ttl=45 time=105 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=8 ttl=45 time=104 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=9 ttl=45 time=103 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=10 ttl=45 time=105 ms

64 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=11 ttl=45 time=105 ms

65 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=11 ttl=45 time=105 ms

66 bytes from ec2-3-225-56-90.compute-1.amazonaws.com (3.225.56.90): icmp_seq=11 ttl=45 time=105 ms
```

## Construir el proyecto

· Dentro del servidor y del proyecto

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ ls -la
total 36
drwxrwxr-x 7 ubuntu ubuntu 4096 Nov 9 11:05 .
drwxrwxr-x 3 ubuntu ubuntu 4096 Nov 9 11:05 ..
drwxrwxr-x 8 ubuntu ubuntu 4096 Nov 9 11:05 ..
drwxrwxr-x 8 ubuntu ubuntu 37 Nov 9 11:05 .git
-rw-rw-r-- 1 ubuntu ubuntu 37 Nov 9 11:05 .gitignore
drwxrwxr-x 2 ubuntu ubuntu 4096 Nov 9 11:05 apache
-rw-rw-r-- 1 ubuntu ubuntu 1022 Nov 9 11:05 docker-compose.yml
drwxrwxr-x 3 ubuntu ubuntu 4096 Nov 9 11:05 mysql
drwxrwxr-x 2 ubuntu ubuntu 4096 Nov 9 11:05 php
drwxrwxr-x 3 ubuntu ubuntu 4096 Nov 9 11:05 www
```

```
$ docker-compose build
$ docker-compose up
```

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ docker-compose build Building mysql
Sending build context to Docker daemon 4.608kB
Step 1/2: FROM mysql:8.0.27
8.0.27: Pulling from library/mysql
b380bbd43752: Pull complete
f23cbf2ecc5d: Pull complete
```

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ docker-compose up
Creating network "pr200_red-pr200" with the default driver
Creating apache-pr200 ...
Creating mysql-pr200 ...
Creating mysql-pr200 ... error

ERROR: for mysql-pr200 Cannot start service mysql: driver failed programming external connectivity on endpoint mysql-pr200 (4961714f2b1476e3d24028154c9ae08f52d8aa49447b9373b7897d89b9c2dcc5): Error starting userland proxy: listen tcp4 0.0.0.0:3306: bind: address already in use
```

Tenemos un mysql en nuestro sistema que nos da conflicto.

```
:~/proyectos_cuatrohoras/pr200 (fase1) $ mysql --version
mysql Ver 14.14 Distrib 5.7.36, for Linux (x86_64) using EditLine wrapper
:~/proyectos_cuatrohoras/pr200 (fase1) $ |
```

Clono otro repositorio sin el container mysql, y configurado para certbot. (el otro no tenia configuración de certbot)

· También me da error por puerto ocupado

```
c=/proyectos_cuatrohoras/ssl_apliweb_alpine (master) $ docker-compose up
Creating php-ssl ...
Creating apache-ssl ...
Creating php-ssl ... done
Creating php-ssl ...
Creating apache-ssl ..
```

comando para ver el proceso que esta escuchando en este puerto

```
$sudo netstat -pna | grep 80
 ~/proyectos_cuatrohoras/ssl_apliweb_alpine (master) $ sudo netstat -pna | grep 80
tcp6
                  0 :::80
                                                                       LISTEN
                                                                                    947/apache2
             [ ACC ]
                          STREAM
                                     LISTENING
                                                    36803
                                                                                    /tmp/ssh-eXaXRpALAbkK/a
unix
                                                              6873/ssh-agent
gent.6872
                                                    25875
                                                              1801/sshd: ubuntu@p
unix 3
                          STREAM
                                     CONNECTED
unix
      3
               ]
                          STREAM
                                     CONNECTED
                                                    20161
                                                              880/systemd-logind
unix
                          STREAM
                                     CONNECTED
                                                    19463
                                                              880/systemd-logind
unix
                          STREAM
                                      CONNECTED
                                                    19808
                                                              890/python3
unix
             [ ]
                          STREAM
                                     CONNECTED
                                                    19180
                                                              1/init
                                                                                    /run/systemd/journal/st
dout
             []
                          DGRAM
unix
      2
                                                    20051
                                                              880/systemd-logind
```

?? no se si funciona

Agrego reglas de entrada http y https



desinstalo apache2 preinstalado en nuestros sistema .. Es el que estaba ocupando del puerto 80

```
$ sudo service apache2 stop
$ sudo apt-get purge apache2 apache2-utils apache2.2-bin apache2-common
```

```
$ sudo apt-get autoremove
$ sudo rm -rf /etc/apache2
```

paramos el servicio de mysql si existe

```
$ sudo systemctl stop mysql
```

Tras esto si podemos levantar container al -p 80

```
:~/proyectos_cuatrohoras/ssl_apliweb_alpine (master) $ docker-compose up
Starting php-ssl ... done
Recreating apache-ssl ... done
Attaching to php-ssl, apache-ssl
php-ssl | [09-Nov-2021 20:39:51] NOTICE: fpm is running, pid 1
php-ssl | [09-Nov-2021 20:39:51] NOTICE: ready to handle connections
apache-ssl | [Tue Nov 09 20:39:51.962305 2021] [mpm_event:notice] [pid 1:tid 140429315971912] AH00489:
Apache/2.4.51 (Unix) configured -- resuming normal operations
apache-ssl | [Tue Nov 09 20:39:51.962368 2021] [core:notice] [pid 1:tid 140429315971912] AH00094: Comma
nd line: 'httpd -D FOREGROUND'
```



Hola amigo estas en ssl\_apliweb-alpine

# Configuración servidor web para SSL

Guía mozilla:

 $\underline{https://ssl-config.mozilla.org/\#server=apache\&version=2.4.41\&config=intermediate\&openssl=1.1.1k\&guideline=5.6}$ 

- A parte de esta plantilla de configuración añadiré también:
  - ServerName
  - DocumentRoot
  - o Directory

Intento de generar los certicados dentro de Container apache en el servidor cuatrohoras

```
:~/proyectos_cuatrohoras/ssl_apliweb_alpine (master) $ docker exec -ti apache-ssl sh /usr/local/apache2 # certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log
The apache plugin is not working; there may be problems with your existing configuration.
The error was: NoInstallationError('Cannot find Apache executable apache2ctl')
/usr/local/apache2 # |
```

Instalo y lo escribo como directiva RUN en el Dockerfile del container

```
/usr/local/apache2 # apk add apache2-ctl
(1/4) Installing less (581-r1)
(2/4) Installing gzip (1.10-r1)
(3/4) Installing lynx (2.8.9_p1-r2)
(4/4) Installing apache2-ctl (2.4.51-r0)
Executing busybox-1.33.1-r3.trigger
OK: 146 MiB in 101 packages
/usr/local/apache2 #
```

Sigue habiendo problemas con la configuración y no podemos expedir certificados.

```
/usr/local/apache2 # certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log
The apache plugin is not working; there may be problems with your existing configuration.
The error was: NoInstallationError('Cannot find Apache executable apache2ctl')
/usr/local/apache2 # |
```

COMO LA DISTRIBUCION ALPINE ESTA BASADA EN musl libc y busybox.

No conoce apache como apache2ctl sino como http comando para ver servicios de apache en alpine

```
$ httpd -M
```

instalo rc-service para "encontrar o conectar con apache2"

```
$ apk add openrc --no-cache
```

no sirve

```
/usr/local/apache2 # rc-service Apache2 start

* rc-service: service `Apache2' does not exist
/usr/local/apache2 # rc-service httpd start

* rc-service: service `httpd' does not exist
/usr/local/apache2 # rc-service apache2 start

* rc-service: service `apache2' does not exist
/usr/local/apache2 # certbot --apache
Saving debug log to /var/log/letsencrypt/letsencrypt.log
The apache plugin is not working; there may be problems wi
```

• Pruebo a subir de nuevo el repo actualizando la configuración de apache

```
ErrorLog /proc/self/fd/2

✓ ssl_apliweb-alpine

✓ apache

                                </VirtualHost>
 Dockerfile
                                <VirtualHost *:443>
 > php
                                    SSLEngine on
 ∨ www
 ndex.php
                                    SSLCertificateFile
                                                             /path/to/signed_cert_and_intermediate_ce
docker-compose.yml M
                                    SSLCertificateKeyFile /path/to/private_key
> ssl_apliweb-ubuntu
 webapp-daw

    ■ http.conf-ejem

                                    Protocols h2 http/1.1
                                    Header always set Strict-Transport-Security "max-age=63072000"
                                </VirtualHost>
                                # intermediate configuration
                                SSLProtocol
                                                        all -SSLv3 -TLSv1 -TLSv1.1
                                                       ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-AES1
                                SSLCipherSuite
                                SSLHonorCipherOrder off
                                SSLSessionTickets
                                                        off
                                SSLUseStapling On
                                SSLStaplingCache "shmcb:logs/ssl stapling(32768)"
```

No lo consigo

```
Recreating apache-ssl ...
Recreating apache-ssl ... done
Attaching to php-ssl, apache-ssl apache-ssl | AH00526: Syntax error on line 10 of /usr/local/apache2/conf/demo.apache.conf: apache-ssl | Invalid command 'RewriteEngine', perhaps misspelled or defined by a module not in
 the server configuration
           | [09-Nov-2021 20:27:26] NOTICE: fpm is running, pid 1
             [09-Nov-2021 20:27:26] NOTICE: ready to handle connections
 php-ssl
           [09-Nov-2021 20:31:21] NOTICE: Finishing ...
             [09-Nov-2021 20:31:21] NOTICE: exiting, bye-bye!
             [09-Nov-2021 20:39:51] NOTICE: fpm is running, pid 1
             [09-Nov-2021 20:39:51] NOTICE: ready to handle connections
             172.20.0.3 - 09/Nov/2021:20:40:58 +0000 "GET /index.php" 200
              [09-Nov-2021 20:51:07] NOTICE: Finishing ...
              [09-Nov-2021 20:51:07] NOTICE: exiting, bye-bye!
             [09-Nov-2021 20:51:18] NOTICE: fpm is running, pid 1
[09-Nov-2021 20:51:18] NOTICE: ready to handle connections
 oho-ssl
           | 172.20.0.2 - 09/Nov/2021:21:12:34 +0000 "GET /index.php" 200
 apache-ssl exited with code 1
```

# Conseguido pr200 servidor letsencrypt

asociados a ip server en aws labs para la instancia cuatrohoras LETS\_ENCRYPT\_DOMINIOS=pr200.newflow.tech,pr200clon.newflow.tech



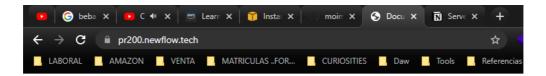
### Index of /

- LICENSE
- README.md
- composer.json
- composer.lock
- enunciado.txt • src/
- ERROR al entrar en src/ muestra directamente contenido del index.php

Esteblecer ProxyPassMatch para host vitual a I puerto 443
ProxyPassMatch ^/(.l.php(/.)?)\$ fcgi://php:9000/var/www/html/src/\$1

no lo ejecuta el contenedor de php:

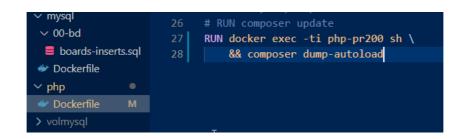
• ERROR require '../vendor/autoload.php' not found ejecutar composer dump-autolad dentro del contenedor php, donde está instalado composer para generar de nuevo el fichero vendor y las configuraciones para el proyecto fijadas en composer.json



Warning: require(../vendor/autoload.php): Failed to open stream: No such file or directory in /var/www/html/src/i

Fatal error: Uncaught Error: Failed opening required '../vendor/autoload.php' (include\_path='.:/usr/local/lib/php') it /var/www/html/src/index.php:13 Stack trace: #0 {main} thrown in /var/www/html/src/index.php on line 13

• ESTOS comado no funcionan lo haremos manualmente desde el container



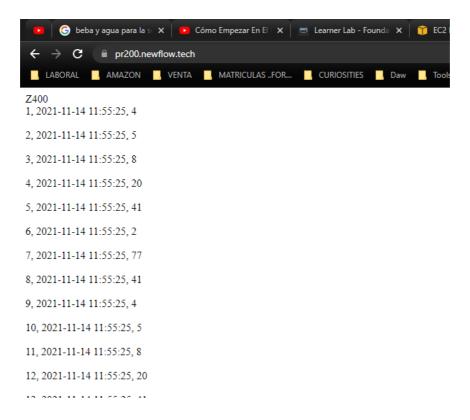
• levanto con -d bandera

```
:~/proyectos_cuatrohoras/pr200/docker (fase1) $ docker-compose up -d
Starting mysql-pr200 ... done
Starting php-pr200 ... done
Starting apache-pr200 ...
```

\$ docker exec -ti php-pr200 sh

\$ composer dump-autoload

```
:~/proyectos_cuatrohoras/pr200/docker (fase1) $ docker exec -ti php-pr200 sh
/var/www/html # pwd
/var/www/html
/var/www/html # composer dump-autoload
Generating autoload files
Generated autoload files
/var/www/html # |
```



## Configurar mismo entorno para local

Leer: pr200\README.md

ERROR COMÚN

# Forbidden You don't have permission to access / on this server.

Incluir en Directory: Require all granted

```
ProxyPassMatch ^/(.*\.php(/.*)?)$ fcgi://php:9000/var/www/html/src/$1
DocumentRoot /var/www/html/src/
<Directory /var/www/html/src/>
DirectoryIndex index.php
Options Indexes FollowSymLinks
AllowOverride All
Require all granted
</Directory>
```

• Un ERROR corregido es el uso de cabecera

Header set Access-Control-Allow-Origin "\*"

DocumentRoot /var/www/html/src

<Directory /var/www/html/src>

DirectoryIndex index.php

Options Indexes FollowSymLinks

AllowOverride All

Require all granted

</Directory>