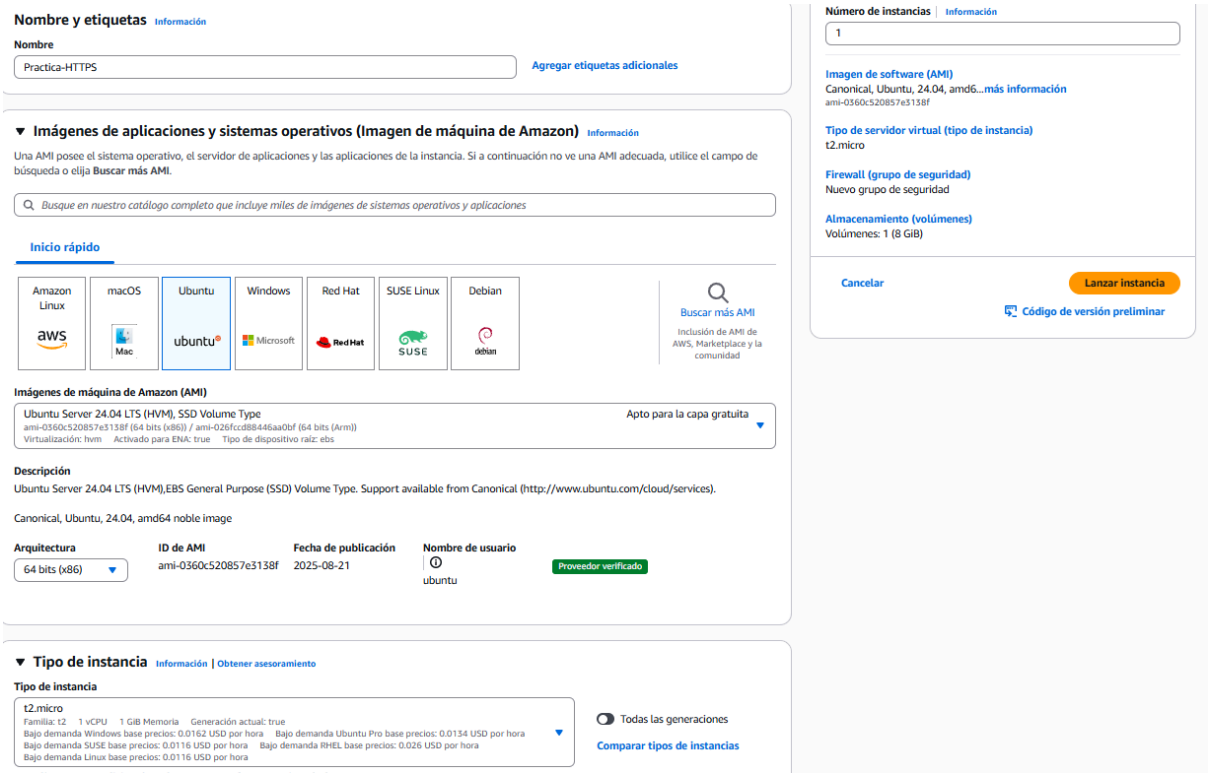
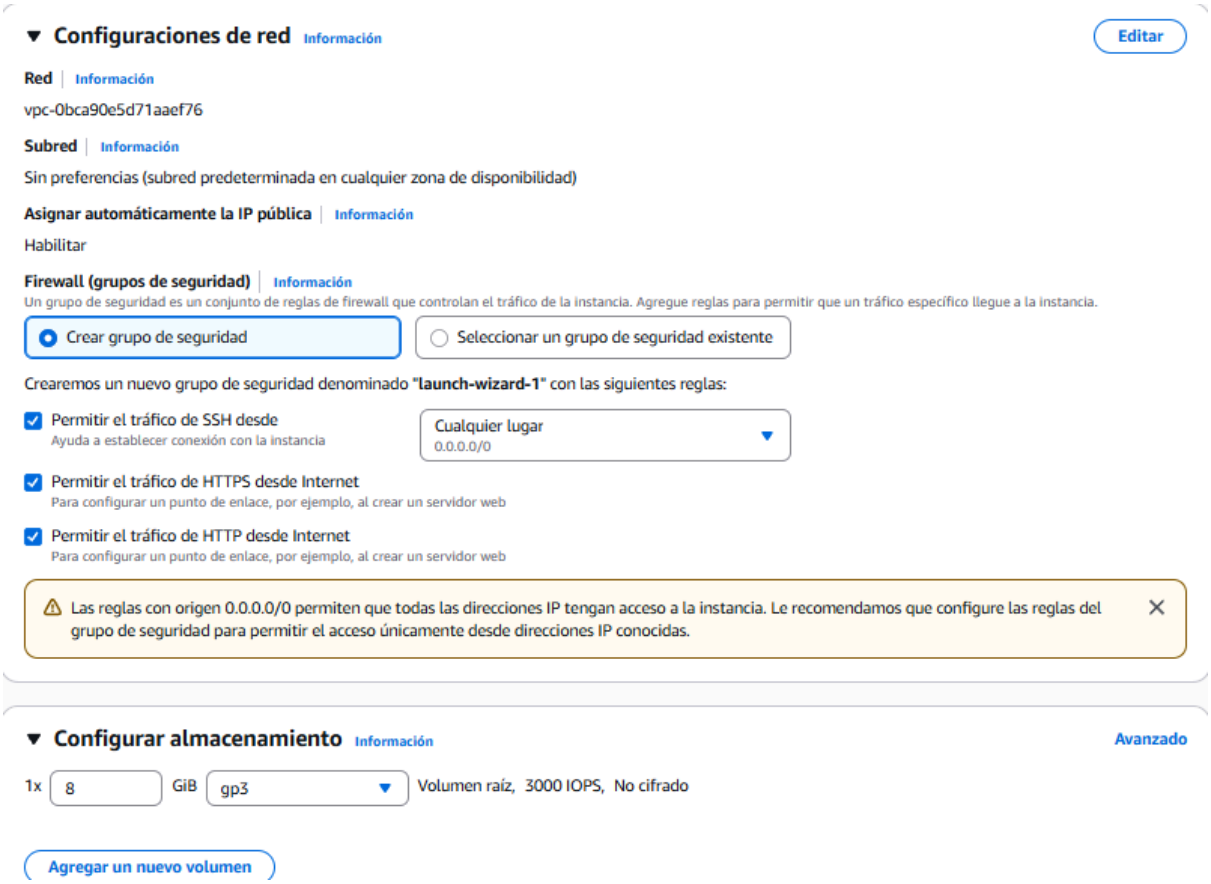
Paso 1 — Crear una instancia EC2

Creamos una instancia y la configuramos de la siguiente manera:ç

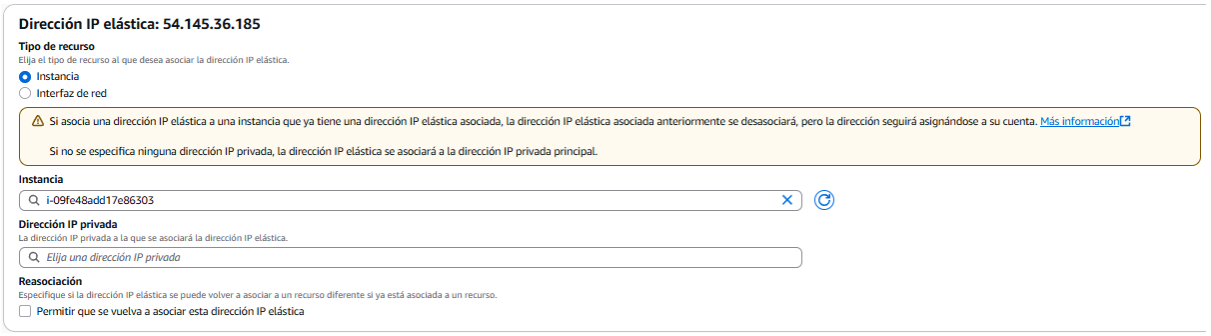


En la configuración de red activamos el trafico ssh, https y http



Paso 2 — Asignar IP elástica

Despues de crear la istancia, creamos una IP elastica y la asociamos con la instancia.



Paso 3 — Actualizar repositorios e instalar Apache

```
ubuntu@ip-172-31-24-108:~$ sudo apt update
sudo apt install apache2 -y
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1270 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [8328 B]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1545 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [294 kB]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1498 kB]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [303 kB]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [378 kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4 kB]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2175 kB]
Get:23 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [490 kB]
Get:24 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:25 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 c-n-f Metadata [516 B]
Get:26 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Packages [30.3 kB]
Get:27 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse Translation-en [5564 B]
Get:28 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:29 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 c-n-f Metadata [484 B]
Get:30 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Packages [40.4 kB]
```

Comprobamos que apache esta instalado y funcionando entrando en la ip elastica que he asociado antes

Paso 4 — Habilitar el módulo SSL de Apache

```
ubuntu@ip-172-31-24-108:~$ sudo a2enmod ssl
sudo systemctl restart apache2
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Enabling module socache_shmcb.
Enabling module ssl.
See /usr/share/doc/apache2/README.Debian.gz on how to configure SSL and create self-signed certificates.
To activate the new configuration, you need to run:
  systemctl restart apache2
```

```
ubuntu@ip-172-31-24-108:~$ sudo systemctl restart apache2
```

Paso 5 — Crear un certificado SSL autofirmado

```
ubuntu@ip-172-31-24-108:~$ sudo mkdir /etc/apache2/ssl
sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/apache2/ssl/apache.key -out /etc/apache2/ssl/apache.crt
-----
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:ES
State or Province Name (full name) [Some-State]:Valencia
Locality Name (eg, city) []:Valencia
Organization Name (eg, company) [Internet Widgits Pty Ltd]:IES El Grao
Organizational Unit Name (eg, section) []:DAW
Common Name (e.g. server FQDN or YOUR name) []:
54.145.36.185Email Address []:hugcorcor@alu.edu.gva.es
```

Captura con zoom:

```
Country Name (2 letter code) [AU]:ES
State or Province Name (full name) [Some-State]:Valencia
Locality Name (eg, city) []:Valenica
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Ies el grao
Organizational Unit Name (eg, section) []:DAW
Common Name (e.g. server FQDN or YOUR name) []:Hugo
Email Address []:hugcorcor@alu.edu.gva.es
```

Paso 6 — Crear un nuevo sitio HTTPS en Apache

Creamos el archivo de configuracion:

```
ubuntu@ip-172-31-24-108:~$ sudo nano /etc/apache2/sites-available/default-ssl.conf
```

Lo dejamos con el siguiente contenido:

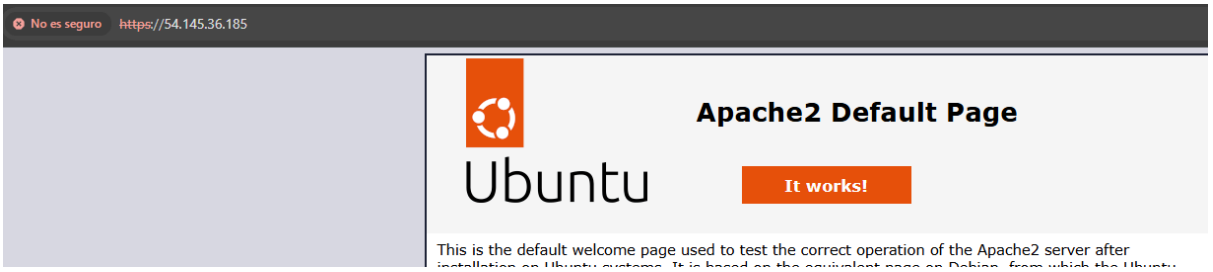
```
<VirtualHost *:443>
    #ServerName practica-https.local
    DocumentRoot /var/www/html
    DirectoryIndex index.php index.html

    SSLEngine on
    SSLCertificateFile /etc/ssl/certs/apache-selfsigned.crt
    SSLCertificateKeyFile /etc/ssl/private/apache-selfsigned.key
</VirtualHost>
```

Paso 7 — Habilitar el sitio SSL y reiniciar Apache

```
ubuntu@ip-172-31-24-108:~$ sudo a2ensite default-ssl.conf
sudo systemctl reload apache2
Site default-ssl already enabled
```

Al entrar al navegador nos sale una alerta, que si ignoramos no deja entrar y ver el contenido



Paso 8 — Crear todo lo necesario para entregar la practica

Creamos la estructura de todas las carpeta y copiamos los archivos de configuracion de Apache, tambien creamos el archivo .env con las variables

```
ubuntu@ip-172-31-24-108:~$ cd ~
mkdir -p practica-https/conf
mkdir -p practica-https/scripts
ubuntu@ip-172-31-24-108:~$ cp /etc/apache2/sites-available/000-default.conf ~/practica-https/conf/
cp /etc/apache2/sites-available/default-ssl.conf ~/practica-https/conf/
ubuntu@ip-172-31-24-108:~$ nano ~/practica-https/scripts/.env
```

```
OPENSSL_COUNTRY="ES"
OPENSSL_PROVINCE="Valencia"
OPENSSL_LOCALITY="Valenica"
OPENSSL_ORGANIZATION="Ies el grao"
OPENSSL_ORGUNIT="DAW"
OPENSSL_COMMON_NAME="Hugo"
OPENSSL_EMAIL="hugcorcor@alu.edu.gva.es"

SSL_CERT_FILE="/etc/ssl/certs/apache-selfsigned.crt"
SSL_KEY_FILE="/etc/ssl/private/apache-selfsigned.key"
```

Creamos el script install_lamp.sh

```
#!/bin/bash
set -e

sudo apt update
sudo apt install apache2 mysql-server php libapache2-mod-php php-mysql -y

sudo systemctl enable apache2
sudo systemctl enable mysql
sudo systemctl start apache2
sudo systemctl start mysql

echo "LAMP instalado y servicios iniciados correctamente"
```

```
ubuntu@ip-172-31-24-108:~$ nano ~/practica-https/scripts/install_lamp.sh
ubuntu@ip-172-31-24-108:~$ chmod +x ~/practica-https/scripts/install_lamp.sh
```

Creamos el script setup_selfsigned_certificate.sh

```
ubuntu@ip-172-31-24-108:~$ nano ~/practica-https/scripts/setup_selfsigned_certificate.sh
ubuntu@ip-172-31-24-108:~$ chmod +x ~/practica-https/scripts/setup_selfsigned_certificate.sh
```

```
sudo openssl req -x509 -nodes -days 365 \
  -newkey rsa:2048 \
  -keyout $SSL_KEY_FILE \
  -out $SSL_CERT_FILE \
  -subj "/C=$OPENSSL_COUNTRY/ST=$OPENSSL_PROVINCE/L=$OPENSSL_LOCALITY/O=$OPENSSL_ORGANIZATION/OU=$OPENSSL_ORGUNIT/CN=$O

sudo a2enmod ssl
sudo a2ensite default-ssl.conf
sudo systemctl reload apache2

echo "Certificado SSL creado y Apache recargado correctamente"
```