PARTE 1:

1. Descargar clave PEM

```
juan@juan-VirtualBox:~/Descargas$ cp ~/Descargas/labsuser.pem ~/.ssh/
```

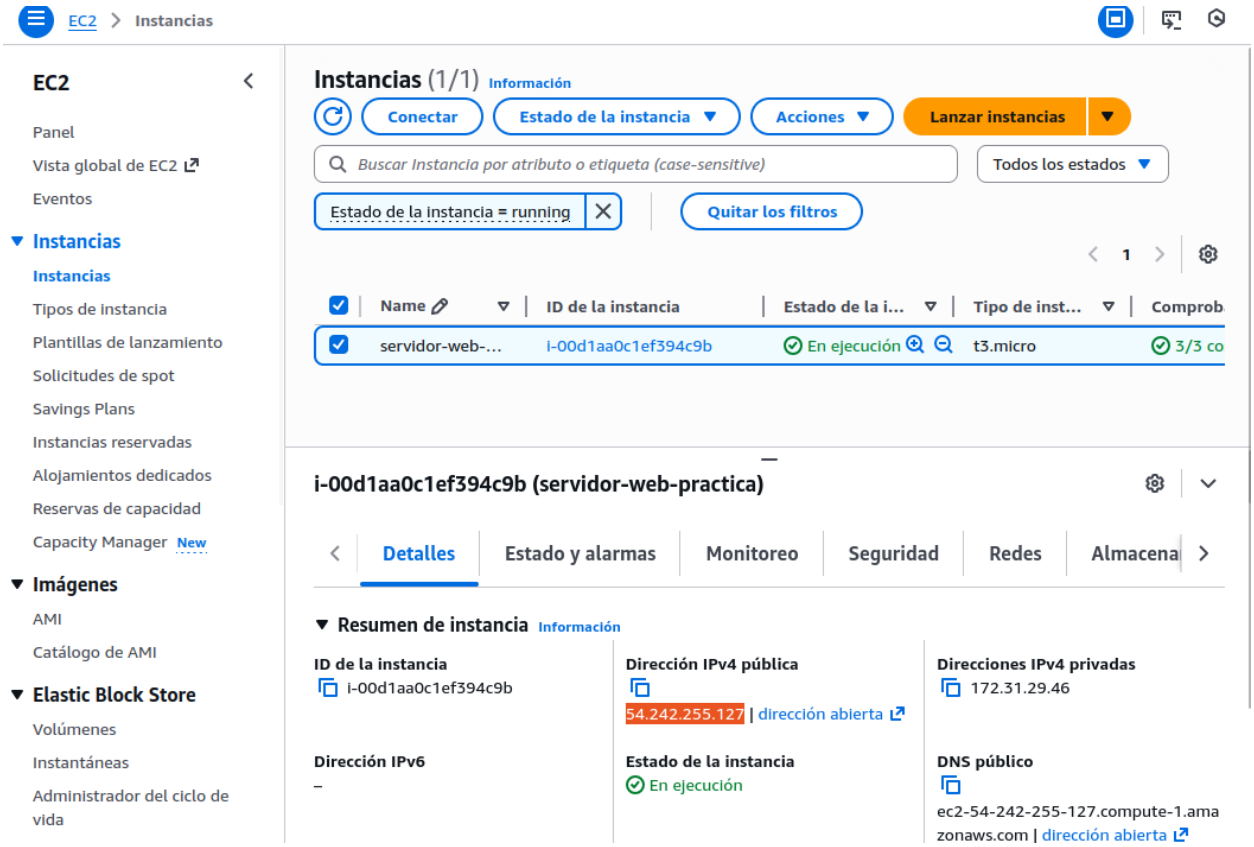
2. Configurar permisos

```
juan@juan-VirtualBox:~/Descargas$ chmod 400~/.ssh/labsuser.pem
```

```
juan@juan-VirtualBox:~/Descargas$ ls -la ~/.ssh/labsuser.pem
-r-------- 1 juan juan 1678 oct 31 10:17 /home/juan/.ssh/labsuser.pem
```

PARTE 2:

1. Obtener IP



2, Conectar por SSH

```
juan@juan-VirtualBox:~/Descargas$ ssh -i ~/.ssh/labsuser.pem ubuntu@54.242.25
The authenticity of host '54.242.255.127 (54.242.255.127)' can't be establish
ED25519 key fingerprint is SHA256:cl1/u7zdSoyjgifQpJFROoadolelk7RDexJBPGufKvI
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.242.255.127' (ED25519) to the list of known ho
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1015-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Fri Oct 31 09:27:46 UTC 2025

  System load:  0.0               Temperature:           -273.1 C
  Usage of /:   32.7% of 6.71GB   Processes:             111
  Memory usage: 23%               Users logged in:       0
  Swap usage:   0%                IPv4 address for ens5: 172.31.29.46

 * Ubuntu Pro delivers the most comprehensive open source security and
   compliance features.

   https://ubuntu.com/aws/pro

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Fri Oct 24 07:06:08 2025 from 18.206.107.27
```

PARTE 3:

Segunda Practica;

1.Update y Upgrade

```
See "snap info <snapname>" for additional versions.
ubuntu@ip-172-31-29-46:~$ sudo apt update && sudo apt upgrade -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-updates/main amd64 Packages [1573 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [297 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1498 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [303 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [378 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 c-n-f Metadata [31.4
kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Packages [2226 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [505 kB]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7140 B]
```

2. Instalación apache2

```
ubuntu@ip-172-31-29-46:~$ sudo apt install apache2  -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011 linux-headers-6.14.0-1011-aws
  linux-image-6.14.0-1011-aws linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap
  libaprutil1t64 liblua5.4-0 ssl-cert
0 upgraded, 10 newly installed, 0 to remove and 0 not upgraded.
Need to get 2086 kB of archives.
After this operation, 8090 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libapr1t64 amd64 1.7.2-3.1
ubuntu0.1 [108 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1t64 amd64 1.6.3-1.1ubun
tu7 [91.9 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.
```

3. Configuración puerto Apache2

```
  GNU nano 7.2                                  /etc/apache2/ports.conf
# If you just change the port or add more ports here, you will likely also
# have to change the VirtualHost statement in
# /etc/apache2/sites-enabled/000-default.conf

Listen 8080

<IfModule ssl_module>
        Listen 443
</IfModule>

<IfModule mod_gnutls.c>
        Listen 443
</IfModule>
```

4. Modificación VirtualHost

```
  GNU nano 7.2                  /etc/apache2/sites-available/000-default.conf
<VirtualHost *:8080>
        # The ServerName directive sets the request scheme, hostname and port that
        # the server uses to identify itself. This is used when creating
        # redirection URLs. In the context of virtual hosts, the ServerName
        # specifies what hostname must appear in the request's Host: header to
        # match this virtual host. For the default virtual host (this file) this
        # value is not decisive as it is used as a last resort host regardless.
        # However, you must set it for any further virtual host explicitly.
        #ServerName www.example.com

        ServerAdmin webmaster@localhost
        DocumentRoot /var/www/html

        # Available loglevels: trace8, ..., trace1, debug, info, notice, warn,
        # error, crit, alert, emerg.
        # It is also possible to configure the loglevel for particular
        # modules, e.g.
        #LogLevel info ssl:warn

        ErrorLog ${APACHE_LOG_DIR}/error.log
        CustomLog ${APACHE_LOG_DIR}/access.log combined

        # For most configuration files from conf-available/, which are
        # enabled or disabled at a global level, it is possible to
        # include a line for only one particular virtual host. For example the
        # following line enables the CGI configuration for this host only
        # after it has been globally disabled with "a2disconf".
        #Include conf-available/serve-cgi-bin.conf
</VirtualHost>
```

5. Instalar PHP

```
o VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-29-46:~$ sudo apt install php libapache2-mod-php -y
eading package lists... Done
uilding dependency tree... Done
eading state information... Done
hp is already the newest version (2:8.3+93ubuntu2).
ibapache2-mod-php is already the newest version (2:8.3+93ubuntu2).
he following packages were automatically installed and are no longer required:
 linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011 linux-headers-6.14.0-1011-aws
 linux-image-6.14.0-1011-aws linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
se 'sudo apt autoremove' to remove them.
 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
```

6. Reiniciar Apache

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl restart apache2
```

7. Verificar estado apache

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-31 09:39:06 UTC; 29s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 13609 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 13612 (apache2)
      Tasks: 6 (limit: 1017)
     Memory: 10.6M (peak: 11.1M)
        CPU: 49ms
     CGroup: /system.slice/apache2.service
             ├─13612 /usr/sbin/apache2 -k start
             ├─13614 /usr/sbin/apache2 -k start
             ├─13615 /usr/sbin/apache2 -k start
             ├─13616 /usr/sbin/apache2 -k start
             ├─13617 /usr/sbin/apache2 -k start
             └─13618 /usr/sbin/apache2 -k start

Oct 31 09:39:06 ip-172-31-29-46 systemd[1]: Starting apache2.service - The Apache HTTP Server...
Oct 31 09:39:06 ip-172-31-29-46 systemd[1]: Started apache2.service - The Apache HTTP Server.
```

```
ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep apache2
tcp6       0      0 :::8080                 :::*                    LISTEN      13612/apache2
```

8. Archivo PHP

```
ubuntu@ip-172-31-29-46:~$ echo "<?php phpinfo(); ?>" | sudo tee /var/www/html/info.php
<?php phpinfo(); ?>
```

9. Prueba apache

```
ubuntu@ip-172-31-29-46:~$ curl http://localhost:8080/info.php
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"><head>
<style type="text/css">
body {background-color: #fff; color: #222; font-family: sans-serif;}
pre {margin: 0; font-family: monospace;}
a:link {color: #009; text-decoration: none; background-color: #fff;}
a:hover {text-decoration: underline;}
table {border-collapse: collapse; border: 0; width: 934px; box-shadow: 1px 2px 3px rgba(0, 0, 0, 0.2);}
.center {text-align: center;}
.center table {margin: 1em auto; text-align: left;}
.center th {text-align: center !important;}
td, th {border: 1px solid #666; font-size: 75%; vertical-align: baseline; padding: 4px 5px;}
th {position: sticky; top: 0; background: inherit;}
h1 {font-size: 150%;}
h2 {font-size: 125%;}
h2 a:link, h2 a:visited{color: inherit; background: inherit;}
.p {text-align: left;}
.e {background-color: #ccf; width: 300px; font-weight: bold;}
.h {background-color: #99c; font-weight: bold;}
.v {background-color: #ddd; max-width: 300px; overflow-x: auto; word-wrap: break-word;}
.v i {color: #999;}
img {float: right; border: 0;}
hr {width: 934px; background-color: #ccc; border: 0; height: 1px;}
:root {--php-dark-grey: #333; --php-dark-blue: #4F5B93; --php-medium-blue: #8892BF; --php-light-blue: #E
2E4EF; --php-accent-purple: #793862}@media (prefers-color-scheme: dark) {
  body {background: var(--php-dark-grey); color: var(--php-light-blue)}
  .h td, td.e, th {border-color: #606A90}
  td {border-color: #505153}
  .e {background-color: #404A77}
  .h {background-color: var(--php-dark-blue)}
  .v {background-color: var(--php-dark-grey)}
  hr {background-color: #505153}
}
</style>
<title>PHP 8.3.6 - phpinfo()</title><meta name="ROBOTS" content="NOINDEX,NOFOLLOW,NOARCHIVE" /></head>
<body><div class="center">
```

PARTE 2:

1.Instalar Nginx

```
ubuntu@ip-172-31-29-46:~$ sudo apt install nginx -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011 linux-headers-6.14.0-1011-aws
  linux-image-6.14.0-1011-aws linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  nginx-common
Suggested packages:
  fcgiwrap nginx-doc
The following NEW packages will be installed:
  nginx nginx-common
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 564 kB of archives.
After this operation, 1596 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx-common all 1.24.0-2u
buntu7.5 [43.4 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx amd64 1.24.0-2ubuntu
7.5 [520 kB]
Fetched 564 kB in 0s (24.6 MB/s)
Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 135912 files and directories currently installed.)
Preparing to unpack .../nginx-common_1.24.0-2ubuntu7.5_all.deb ...
Unpacking nginx-common (1.24.0-2ubuntu7.5) ...
Selecting previously unselected package nginx.
Preparing to unpack .../nginx_1.24.0-2ubuntu7.5_amd64.deb ...
Unpacking nginx (1.24.0-2ubuntu7.5) ...
Setting up nginx-common (1.24.0-2ubuntu7.5) ...
Created symlink /etc/systemd/system/multi-user.target.wants/nginx.service → /usr/lib/systemd/system/ngin
x.service.
Setting up nginx (1.24.0-2ubuntu7.5) ...
 * Upgrading binary nginx                                                                    [ OK ]
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for ufw (0.36.2-6) ...
Scanning processes...
Scanning linux images...
```

2. Configurar nginx

```
  GNU nano 7.2                        /etc/nginx/sites-available/default
# Please see /usr/share/doc/nginx-doc/examples/ for more detailed examples.
##

# Default server configuration
#
server {
        listen 8081 default_server;
        listen [::]:8081 default_server;

        # SSL configuration
        #
        # listen 443 ssl default_server;
        # listen [::]:443 ssl default_server;
        #
        # Note: You should disable gzip for SSL traffic.
        # See: https://bugs.debian.org/773332
        #
        # Read up on ssl_ciphers to ensure a secure configuration.
        # See: https://bugs.debian.org/765782
        #
        # Self signed certs generated by the ssl-cert package
        # Don't use them in a production server!
        #
        # include snippets/snakeoil.conf;

        root /var/www/html;

        # Add index.php to the list if you are using PHP
        index index.html index.htm index.nginx-debian.html;

        server_name _;

        location / {
                # First attempt to serve request as file, then
                # as directory, then fall back to displaying a 404.
                                              [ Wrote 91 lines ]
```

3. Pagina HTML

```
ubuntu@ip-172-31-29-46:~$ echo "<h1>Servidor Nginx</h1><p>Funcionando en puerto 8081</p>" | sudo tee /var/www/html/index.html
<h1>Servidor Nginx</h1><p>Funcionando en puerto 8081</p>
```

4. Reiniciar nginx

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl restart nginx
```

5. Estado nginx

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-31 09:53:21 UTC; 2min 57s ago
       Docs: man:nginx(8)
    Process: 14103 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on;>
    Process: 14105 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=ex>
   Main PID: 14106 (nginx)
      Tasks: 3 (limit: 1017)
     Memory: 2.3M (peak: 2.5M)
        CPU: 16ms
     CGroup: /system.slice/nginx.service
             ├─14106 "nginx: master process /usr/sbin/nginx -g daemon on; master_proce>
             ├─14107 "nginx: worker process"
             └─14108 "nginx: worker process"

Oct 31 09:53:21 ip-172-31-29-46 systemd[1]: Starting nginx.service - A high performanc>
Oct 31 09:53:21 ip-172-31-29-46 systemd[1]: Started nginx.service - A high performance>
```

```
ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep nginx
tcp        0      0 0.0.0.0:8081            0.0.0.0:*               LISTEN      14106/n
ginx: master
tcp6       0      0 :::8081                 :::*                    LISTEN      14106/n
ginx: master
```

6. Prueba nginx

```
ubuntu@ip-172-31-29-46:~$ curl http://localhost:8081
<h1>Servidor Nginx</h1><p>Funcionando en puerto 8081</p>
```

PARTE 3:

1. Instalar dependencias necesarias

```
ubuntu@ip-172-31-29-46:~$ sudo apt install -y debian-keyring debian-archive-keyring apt
-transport-https curl
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
curl is already the newest version (8.5.0-2ubuntu10.6).
curl set to manually installed.
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011
  linux-headers-6.14.0-1011-aws linux-image-6.14.0-1011-aws
  linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  apt-transport-https debian-archive-keyring debian-keyring
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 31.5 MB of archives.
After this operation, 33.4 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 apt-t
ransport-https all 2.8.3 [3970 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 debian-archiv
e-keyring all 2023.4ubuntu1 [168 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 debian-keyrin
g all 2023.12.24 [31.3 MB]
Fetched 31.5 MB in 0s (83.9 MB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 135960 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.8.3_all.deb ...
Unpacking apt-transport-https (2.8.3) ...
Selecting previously unselected package debian-archive-keyring.
Preparing to unpack .../debian-archive-keyring_2023.4ubuntu1_all.deb ...
```

2. Agregar repositorio caddy

```
ubuntu@ip-172-31-29-46:~$ curl -1sLf 'https://dl.cloudsmith.io/public/caddy/stable/gpg.key' | sudo gpg --dearmor -o /usr/share/keyrings/caddy-stable-archive-keyring.gpg
ubuntu@ip-172-31-29-46:~$
```

```
ubuntu@ip-172-31-29-46:~$ curl -1sLf 'https://dl.cloudsmith.io/public/caddy/stable/debian.deb.txt' | sudo tee /etc/apt/sources.list.d/caddy-stable.list
# Source: Caddy
# Site: https://github.com/caddyserver/caddy
# Repository: Caddy / stable
# Description: Fast, multi-platform web server with automatic HTTPS


deb [signed-by=/usr/share/keyrings/caddy-stable-archive-keyring.gpg] https://dl.cloudsmith.io/public/caddy/stable/deb/debian any-version main

deb-src [signed-by=/usr/share/keyrings/caddy-stable-archive-keyring.gpg] https://dl.cloudsmith.io/public/caddy/stable/deb/debian any-version main
ubuntu@ip-172-31-29-46:~$
```

3. Actualizar e instalar caddy

```
ubuntu@ip-172-31-29-46:~$ sudo apt install caddy -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011 linux-headers-6.14.0-1011-aws
  linux-image-6.14.0-1011-aws linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libnss3-tools
The following NEW packages will be installed:
  caddy libnss3-tools
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 11.2 MB of archives.
After this operation, 41.2 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libnss3-tools amd64 2:3.98-1build1 [615 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 caddy amd64 2.6.2-6ubuntu0.24.04.3 [10
```

4. Directorio para caddy

```
ubuntu@ip-172-31-29-46:~$ sudo mkdir -p /var/www/caddy
```

5. Archivo de prueba

```
ubuntu@ip-172-31-29-46:~$ echo "# Bienvenido a Caddy" | sudo tee /var/www/caddy/README.md
# Bienvenido a Caddy
ubuntu@ip-172-31-29-46:~$ echo "" | sudo tee -a /var/www/caddy/README.md

ubuntu@ip-172-31-29-46:~$ echo "" | sudo tee -a /var/www/caddy/README.md

ubuntu@ip-172-31-29-46:~$ echo "Este servidor está funcionando correctamente." | sudo tee -a /var/www/caddy/README.md
Este servidor está funcionando correctamente.
ubuntu@ip-172-31-29-46:~$ echo "" | sudo tee -a /var/www/caddy/README.md

ubuntu@ip-172-31-29-46:~$ echo "## Caracteristicas" | sudo tee -a /var/www/caddy/README.md
## Características
ubuntu@ip-172-31-29-46:~$ echo "- Servidor moderno" | sudo tee -a /var/www/caddy/README.md
- Servidor moderno
ubuntu@ip-172-31-29-46:~$ echo "- HTTPS automático" | sudo tee -a /var/www/caddy/README.md
- HTTPS automático
ubuntu@ip-172-31-29-46:~$ echo "- Fácil configuración" | sudo tee -a /var/www/caddy/README.md
- Fácil configuración
```

6. Crear imagen de prueba

```
ubuntu@ip-172-31-29-46:~$ curl -o /tmp/test-image.jpg "https://www.python.org/static/apple-touch-icon-144x144-
precomposed.png"
curl: (3) URL rejected: Malformed input to a URL function
```

```
ubuntu@ip-172-31-29-46:~$ curl -o /tmp/test-image.jpg "https://www.python.org/static/apple-touch-icon-144x144-precomposed.png"
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  7382  100  7382    0     0   180k      0 --:--:-- --:--:-- --:--:--  184k
ubuntu@ip-172-31-29-46:~$ sudo mv /tmp/test-image.jpg /var/www/caddy/test.jpg
```

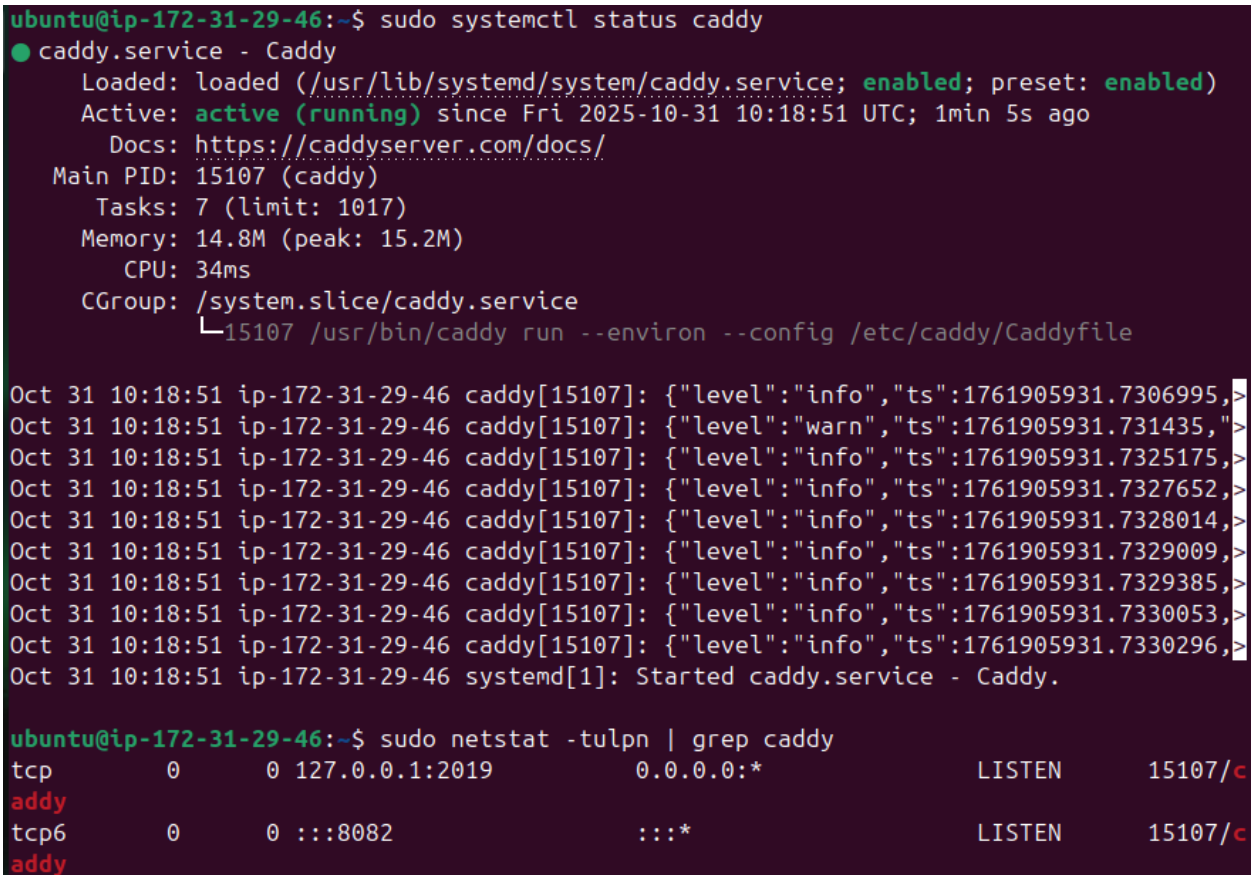
7. Crear caddyfile

```
  GNU nano 7.2                        /etc/caddy/Caddyfile
# The Caddyfile is an easy way to configure your Caddy web server.
#
# Unless the file starts with a global options block, the first
# uncommented line is always the address of your site.
#
# To use your own domain name (with automatic HTTPS), first make
# sure your domain's A/AAAA DNS records are properly pointed to
# this machine's public IP, then replace ":80" below with your
# domain name.

:8082 {
        # Set this path to your site's directory.
        root * /var/www/caddy

        # Enable the static file server.
        file_server browse
        @markdown path *.md
        header @markdown Content-Type text/plain

        # Another common task is to set up a reverse proxy:
        # reverse_proxy localhost:8080

        # Or serve a PHP site through php-fpm:
        # php_fastcgi localhost:9000
}

# Refer to the Caddy docs for more information:
# https://caddyserver.com/docs/caddyfile
```

8. Reiniciar caddy

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl restart caddy
```

9. Estado caddy



10. Prueba caddy

```
ubuntu@ip-172-31-29-46:~$ curl http://localhost:8082/
<!DOCTYPE html>
<html>

<head>
    <title>/</title>
    <meta charset="utf-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <style>
        * {
            padding: 0;
            margin: 0;
        }

        body {
            font-family: sans-serif;
            text-rendering: optimizespeed;
            background-color: #ffffff;
        }

        a {
            color: #006ed3;
            text-decoration: none;
        }

        a:hover,
        h1 a:hover {
            color: #319cff;
        }
```

11. Prueba archivo markdown

```
ubuntu@ip-172-31-29-46:~$ curl http://localhost:8082/README.md
# Bienvenido a Caddy


Este servidor está funcionando correctamente.

## Características
- Servidor moderno
- HTTPS automático
- Fácil configuración
ubuntu@ip-172-31-29-46:~$
```

PARTE 4:

1. Instalar certbot y plugin de apache

```
ubuntu@ip-172-31-29-46:~$ sudo apt install certbot python3-certbot-apache -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1011 linux-aws-6.14-tools-6.14.0-1011
  linux-headers-6.14.0-1011-aws linux-image-6.14.0-1011-aws
  linux-modules-6.14.0-1011-aws linux-tools-6.14.0-1011-aws
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  augeas-lenses libaugeas0 python3-acme python3-augeas python3-certbot
  python3-configargparse python3-icu python3-josepy python3-parsedatetime
  python3-rfc3339
Suggested packages:
  augeas-doc python-certbot-doc python3-certbot-nginx augeas-tools python-acme-doc
  python-certbot-apache-doc
The following NEW packages will be installed:
  augeas-lenses certbot libaugeas0 python3-acme python3-augeas python3-certbot
  python3-certbot-apache python3-configargparse python3-icu python3-josepy
  python3-parsedatetime python3-rfc3339
0 upgraded, 12 newly installed, 0 to remove and 1 not upgraded.
Need to get 1657 kB of archives.
After this operation, 8599 kB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 augeas-lenses
 all 1.14.1-1build2 [323 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 libaugeas0 am
d64 1.14.1-1build2 [166 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-josep
```

2. Verificar dominio

```
ubuntu@ip-172-31-29-46:~$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/ssl/private/apache-selfsigned.key -out /etc/ssl/certs/apache-selfsigned.crt
[illegible]
-----
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]:Madrid
Locality Name (eg, city) []:Madrid
Organization Name (eg, company) [Internet Widgits Pty Ltd]:
Organizational Unit Name (eg, section) []:
Common Name (e.g. server FQDN or YOUR name) []:localhost
Email Address []:holamundo@gmail.com
```

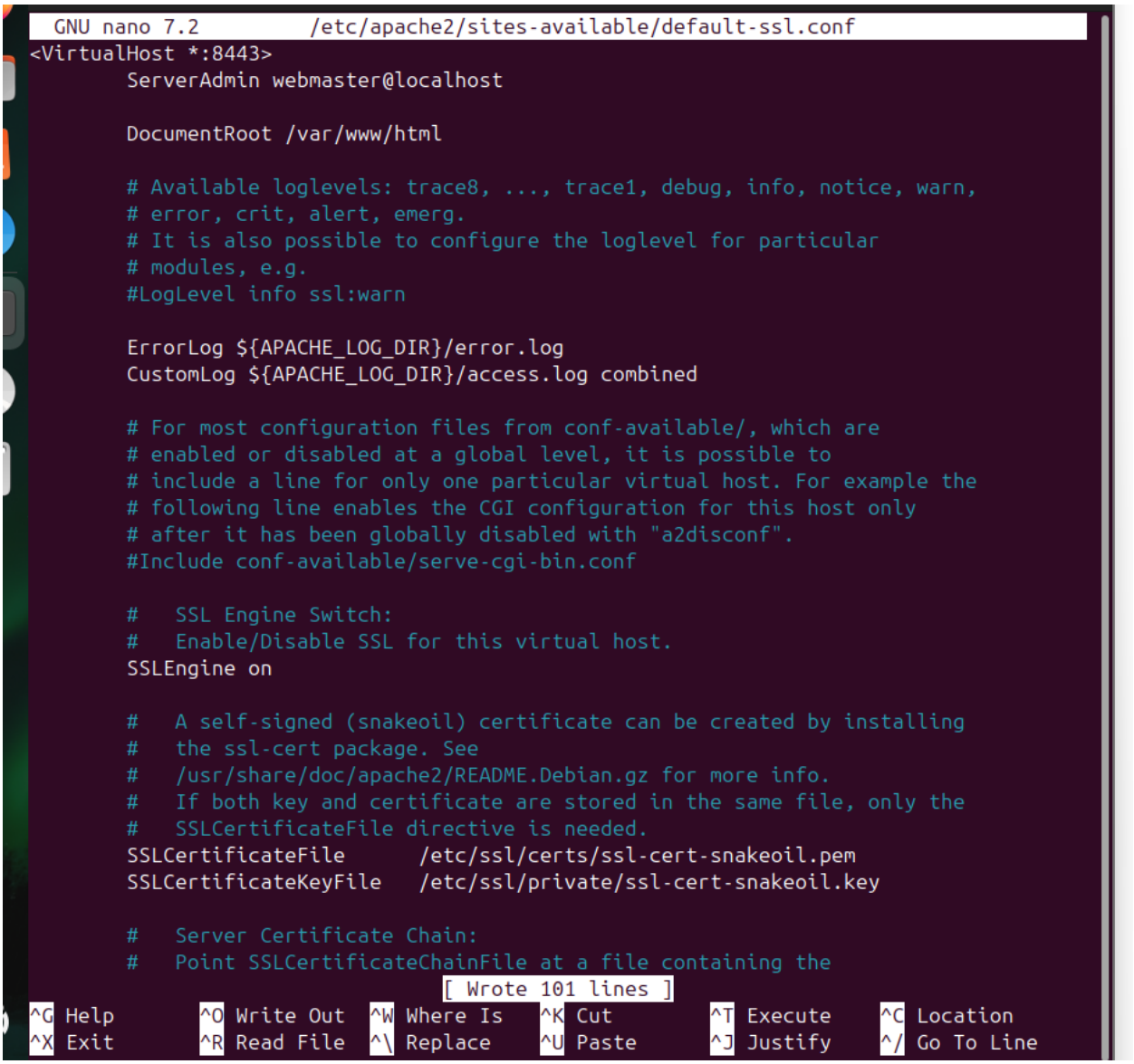
3. Habilitar SSH

```
ubuntu@ip-172-31-29-46:~$ sudo a2enmod ssl
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-sig
ned certificates.
To activate the new configuration, you need to run:
  systemctl restart apache2
ubuntu@ip-172-31-29-46:~$
```

4. Cambiar puerto SSL

```
  GNU nano 7.2                    /etc/apache2/ports.conf
# If you just change the port or add more ports here, you will likely also
# have to change the VirtualHost statement in
# /etc/apache2/sites-enabled/000-default.conf

Listen 8080
Listen 8443
<IfModule ssl_module>
        Listen 443
</IfModule>

<IfModule mod_gnutls.c>
        Listen 443
</IfModule>
```

5. Modificar virtualhost SSL



6. Habilitar sitio SSL

```
ubuntu@ip-172-31-29-46:~$ sudo a2ensite default-ssl.conf
Enabling site default-ssl.
To activate the new configuration, you need to run:
  systemctl reload apache2
ubuntu@ip-172-31-29-46:~$
```

7. Reiniciar apache

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl restart apache2
```

8. Verificar HTTPS

```
ubuntu@ip-172-31-29-46:~$ curl -i -k https://localhost:8443
HTTP/1.1 200 OK
Date: Fri, 31 Oct 2025 10:31:20 GMT
Server: Apache/2.4.58 (Ubuntu)
Last-Modified: Fri, 31 Oct 2025 09:55:41 GMT
ETag: "39-642715e539c2d"
Accept-Ranges: bytes
Content-Length: 57
Content-Type: text/html

<h1>Servidor Nginx</h1><p>Funcionando en puerto 8081</p>
ubuntu@ip-172-31-29-46:~$
```

PARTE 5:

1. Verificar servicios

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-31 10:30:24 UTC; 1min 47s ago
       Docs: https://httpd.apache.org/docs/2.4/
    Process: 15543 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 15547 (apache2)
      Tasks: 6 (limit: 1017)
     Memory: 12.4M (peak: 12.9M)
        CPU: 68ms
     CGroup: /system.slice/apache2.service
             ├─15547 /usr/sbin/apache2 -k start
             ├─15549 /usr/sbin/apache2 -k start
             ├─15550 /usr/sbin/apache2 -k start
             ├─15551 /usr/sbin/apache2 -k start
             ├─15552 /usr/sbin/apache2 -k start
             └─15553 /usr/sbin/apache2 -k start

Oct 31 10:30:24 ip-172-31-29-46 systemd[1]: Starting apache2.service - The Apache HTTP>
Oct 31 10:30:24 ip-172-31-29-46 systemd[1]: Started apache2.service - The Apache HTTP >
```

```
ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep apache2
tcp6       0      0 :::443                  :::*                    LISTEN      15547/a
pache2
tcp6       0      0 :::8080                 :::*                    LISTEN      15547/a
pache2
tcp6       0      0 :::8443                 :::*                    LISTEN      15547/a
pache2
ubuntu@ip-172-31-29-46:~$
```

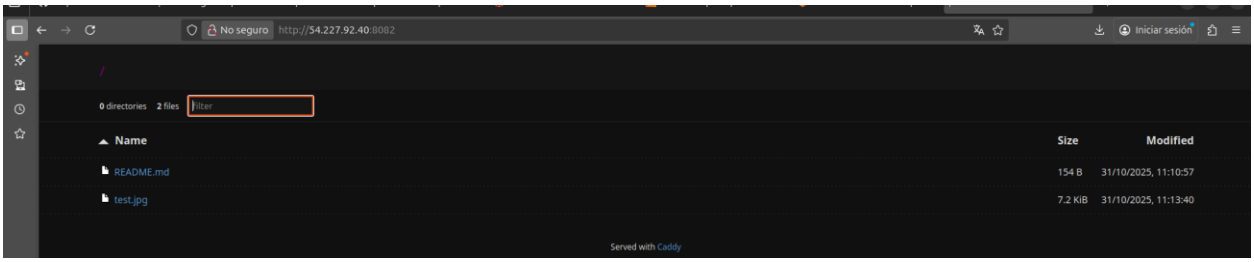
```
ubuntu@ip-172-31-29-46:~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-31 09:53:21 UTC; 1h 7min ago
       Docs: man:nginx(8)
   Main PID: 14106 (nginx)
      Tasks: 3 (limit: 1017)
     Memory: 2.4M (peak: 2.9M)
        CPU: 17ms
     CGroup: /system.slice/nginx.service
             ├─14106 "nginx: master process /usr/sbin/nginx -g daemon on; master_proce>
             ├─14107 "nginx: worker process"
             └─14108 "nginx: worker process"

Oct 31 09:53:21 ip-172-31-29-46 systemd[1]: Starting nginx.service - A high performanc>
Oct 31 09:53:21 ip-172-31-29-46 systemd[1]: Started nginx.service - A high performance>

ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep nginx
tcp        0      0 0.0.0.0:8081            0.0.0.0:*               LISTEN      14106/n
ginx: master
tcp6       0      0 :::8081                 :::*                    LISTEN      14106/n
ginx: master
```

```
ubuntu@ip-172-31-29-46:~$ sudo systemctl status caddy
● caddy.service - Caddy
     Loaded: loaded (/usr/lib/systemd/system/caddy.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-31 10:18:51 UTC; 43min ago
       Docs: https://caddyserver.com/docs/
   Main PID: 15107 (caddy)
      Tasks: 7 (limit: 1017)
     Memory: 15.6M (peak: 16.7M)
        CPU: 85ms
     CGroup: /system.slice/caddy.service
             └─15107 /usr/bin/caddy run --environ --config /etc/caddy/Caddyfile

Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7306995,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"warn","ts":1761905931.731435,">
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7325175,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7327652,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7328014,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7329009,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7329385,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7330053,>
Oct 31 10:18:51 ip-172-31-29-46 caddy[15107]: {"level":"info","ts":1761905931.7330296,>
Oct 31 10:18:51 ip-172-31-29-46 systemd[1]: Started caddy.service - Caddy.

ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep caddy
tcp        0      0 127.0.0.1:2019          0.0.0.0:*               LISTEN      15107/c
addy
tcp6       0      0 :::8082                 :::*                    LISTEN      15107/c
addy
```

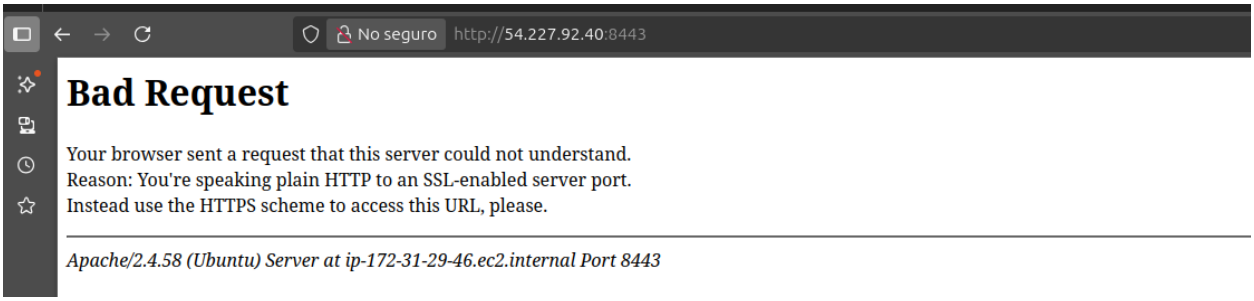
2.

```
ubuntu@ip-172-31-29-46:~$ sudo netstat -tulpn | grep -E '8080|8081|8082|8443'
tcp        0      0 0.0.0.0:8081            0.0.0.0:*               LISTEN      632/nginx: master p
tcp6       0      0 :::8080                 :::*                    LISTEN      561/apache2
tcp6       0      0 :::8081                 :::*                    LISTEN      632/nginx: master p
tcp6       0      0 :::8082                 :::*                    LISTEN      2860/caddy
tcp6       0      0 :::8443                 :::*                    LISTEN      561/apache2
```

3.




No seguro
http://54.227.92.40:8082/README.md
Iniciar sesión
Bienvenido a Caddy
Este servidor estÃ¡ funcionando correctamente.
CaracterÃsticas
- Servidor moderno
- HTTPS automÃ¡tico
- FÃ¡cil configuraciÃ³n


No seguro
http://54.227.92.40:8443
Bad Request
Your browser sent a request that this server could not understand.
Reason: You're speaking plain HTTP to an SSL-enabled server port.
Instead use the HTTPS scheme to access this URL, please.
Apache/2.4.58 (Ubuntu) Server at ip-172-31-29-46.ec2.internal Port 8443