

Kevin Hernández Catalán

Cómo crear una instancia Ubuntu en AWS:

Esta captura muestra el panel inicial del **Learner Lab**, desde donde debes abrir la consola de AWS para crear recursos.

En la parte superior del módulo del Learner Lab, haz clic en **Start Lab**.
Esto activará tus credenciales temporales.

Espera a que aparezca un mensaje indicando que el laboratorio está “running”.

Una vez que esté en verde pulsa sobre AWS para entrar en la consola de máquinas virtuales:

Una vez allí tienes que pulsar EC2 para entrar a la configuración para poder crear una estancia

The screenshot shows the AWS EC2 console dashboard. On the left, there's a sidebar with sections like Panel, Instances (selected), Images, Elastic Block Store, and Network & Security. The main area has tabs for Recursos, Lanzar la instancia, Estado del servicio, Zonas, Alarms de instancia, and Eventos programados. A sidebar on the right shows account attributes like VPC predeterminada (vpc-0d710b177e81028b0) and Configuración. At the bottom, there are links for CloudShell, Comentarios, and a footer with copyright information.

Una vez allí deves irte al panel izquierdo y buscar Instancias pulsar en ello y acto seguido pulsar en Lanzar una instancia

This screenshot shows the 'Launch instance' wizard. Step 1: Choose Image and Instance Type. It asks for a name ('mi-servidor-web') and shows a search bar for AMIs. Below are sections for 'Imagenes de aplicaciones y sistemas operativos' (Ubuntu Server 24.04 LTS (HVM), SSD Volume Type selected), 'Resumen' (1 instance), and 'Código de versión preliminar'. The footer includes links for CloudShell, Comentarios, and a footer with copyright information.

Una vez aquí seleccionas la configuración que deseas como cambiarle el nombre a la instancia o el SO que quieras usar o como también el nombre de las claves u otros parámetros:

The screenshot shows the AWS Launch Wizard interface for launching a new instance. The main form includes sections for 'Tipo de instancia' (t3.micro), 'Par de claves (inicio de sesión)', and 'Configuraciones de red'. The 'Resumen' panel on the right provides a quick overview of the selected configuration.

This screenshot continues the configuration process, focusing on the 'Crear grupo de seguridad' (Create security group) section. It shows the choice between creating a new group or selecting an existing one. Below this, other configuration options like storage and advanced settings are shown.

Una vez configurado todos los parámetros que quieras das a Lanzar Instancia

The screenshot shows the final step of the AWS EC2 Launch Instance wizard. A green success banner at the top states: "Correcto El lanzamiento de la instancia se inició correctamente (i-0c7c6b3892a590b35)". Below it, the "Registro de lanzamiento" section is visible. On the left, there's a "Pasos siguientes" sidebar with three items: "Crea alertas de uso de facturación", "Conectarse a la instancia", and "Conectar una base de datos de RDS". Each item has a "More information" link. At the bottom right, a yellow button says "Ver todas las instancias".

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Y te saldrá algo como esto si todo salió bien

The screenshot shows the AWS EC2 Instances page. The main table lists one instance: "mi-servidor-web" (i-0c7c6b3892a590b35). The instance status is "En ejecución" (Running) and its type is "t3.micro". The "Seguridad" tab is selected in the instance details panel. It shows the security group "sg-02bb81b75eb09be27 (Launch-wizard-1)" and the inbound rule "sg-02bb81b75eb09be27 (Launch-wizard-1)". The "Hora de lanzamiento" (Launch time) is listed as "Thu Nov 13 2025 14:57:39 GMT-0100 (hora estándar de Europa central)".

Despues de eso si entras en Instancias otra vez se debe ver tu instancia creada

Y si abajo pinchas en el apartado que pone Seguridad/ Grupos de seguridad(pinchando sobre el se abrirá una ventana con parámetros como la foto de abajo)

EC2 > Grupos de seguridad > sg-02bb81b73eb098e27 - launch-wizard-1

Detalles

ID del grupo de seguridad: sg-02bb81b73eb098e27

Propietario: 201473623497

Número de reglas de entrada: 1 Entrada de permiso

Número de reglas de salida: 1 Entrada de permiso

Reglas de entrada (1)

Name	ID de la regla del grupo	Versión de IP	Tipo	Protocolo	Intervalo de puertos	Origen	Descripción
sgr-005a7f4d5ef3b710e	SSH	IPv4	SSH	TCP	22	0.0.0.0/0	

Y una vez aquí si pulsas en Editar reglas de entrda podras configurar mas parametros relacionados con los puertos...

EC2 > Grupos de seguridad > sg-02bb81b73eb098e27 - launch-wizard-1 > Editar reglas de entrada

Reglas de entrada

Las reglas de entrada controlan el tráfico entrante que puede llegar a la instancia.

ID de la regla del grupo de seguridad	Tipo	Información	Protocolo	Intervalo de puertos	Origen	Información	Descripción: opcional
sgr-005a7f4d5ef3b710e	SSH		TCP	22	Personas...	0.0.0.0/0	
-	TCP personalizado		TCP	8080	Anywhere...	0.0.0.0/0	
-	TCP personalizado		TCP	8081	Anywhere...	0.0.0.0/0	
-	TCP personalizado		TCP	8082	Anywhere...	0.0.0.0/0	
-	TCP personalizado		TCP	8443	Anywhere...	0.0.0.0/0	

Agregar regla

Las reglas cuyo origen es 0.0.0.0 o ::/0 permiten a todas las direcciones IP acceder a la instancia. Recomendamos configurar reglas de grupo de seguridad para permitir el acceso únicamente desde direcciones IP conocidas.

Cancelar Previsualizar los cambios Guardar reglas

Verificamos que tengo instalado en mi pc WSL:

```
kevin@DESKTOP-BBMJAGF: ~
Windows PowerShell
Copyright (C) Microsoft Corporation. Todos los derechos reservados.

Instale la versión más reciente de PowerShell para obtener más información: https://aka.ms/PSWindows

PS C:\WINDOWS\system32> wsl --version
Versión de WSL: 2.6.1.0
Versión de kernel: 6.6.87.2-1
Versión de WSLg: 1.0.66
Versión de MSRDC: 1.2.6353
Versión de Direct3D: 1.611.1-81528511
Versión de DXCore: 10.0.26100.1-240331-1435.ge-release
Versión de Windows: 10.0.26100.2033
```

Ahora guardamos la clave (.pem) en WSL y también le asignamos sus respectivos permisos

```
kevin@DESKTOP-BBMJAGF:~$ cp /mnt/c/Users/kevin/Downloads/labsuser.pem ~/.ssh/
kevin@DESKTOP-BBMJAGF:~$ chmod 400 ~/.ssh/labsuser.pem
kevin@DESKTOP-BBMJAGF:~$ ls -la ~/.ssh/labsuser.pem
-r----- 1 kevin kevin 1678 Dec 10 18:05 /home/kevin/.ssh/labsuser.pem
kevin@DESKTOP-BBMJAGF:~$
```

Por ultimo nos conectamos en remota a la instancia en Amazon:

```
connection closed by 100.27.234.180 port 22
kevin@DESKTOP-BBMJAGF:~$ ssh -i~/ssh/labsuser.pem ubuntu@100.27.234.180
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1017-aws x86_64)

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

System information as of Wed Dec 10 17:37:40 UTC 2025

System load: 0.0          Temperature:      -273.1 °C
Usage of /:   35.3% of 6.71GB  Processes:       112
Memory usage: 25%          Users logged in:  0
Swap usage:   0%           IPv4 address for ens5: 172.31.78.20

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

Last login: Tue Nov 25 13:42:44 2025 from 88.0.30.77
ubuntu@ip-172-31-78-20:~$
```

Actualizando el sistema:

```
ubuntu@ip-172-31-78-20:~$ 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 [1665 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [308 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 [15.8 kB]
]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1501 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe Translation-en [304 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 [2386 k
B]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [546 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 [7144 B]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Packages [29.2 k
B]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe Translation-en [17.6 k
B]
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0
kB]
Get:21 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [21
6 B]
Get:22 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [21
2 B]
Get:23 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1363 kB]
Get:24 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [222 kB]
Get:25 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.6 kB]
Get:26 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [9488 B]
Get:27 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [915 kB]
Get:28 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [206 kB]
Get:29 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [71.5 kB]
Get:30 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.4 kB]
Get:31 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [2234 kB]
Get:32 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [511 kB]
Get:33 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:34 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [208 B]
Fetched 13.3 MB in 2s (5400 kB/s)
Reading package lists... Done
Building dependency tree... Done
```

```

update-initramfs: Generating /boot/initrd.img-6.14.0-1018-aws
/etc/kernel/postinst.d/zz-update-grub:
Sourcing file '/etc/default/grub'
Sourcing file '/etc/default/grub.d/40-force-partuuid.cfg'
Sourcing file '/etc/default/grub.d/50-cloudimg-settings.cfg'
Generating grub configuration file ...
GRUB_FORCE_PARTUUID is set, will attempt initrdless boot
Found linux image: /boot/vmlinuz-6.14.0-1018-aws
Found initrd image: /boot/microcode.cpio /boot/initrd.img-6.14.0-1018-aws
Found linux image: /boot/vmlinuz-6.14.0-1017-aws
Found initrd image: /boot/microcode.cpio /boot/initrd.img-6.14.0-1017-aws
Found linux image: /boot/vmlinuz-6.14.0-1016-aws
Found initrd image: /boot/microcode.cpio /boot/initrd.img-6.14.0-1016-aws
Warning: os-prober will not be executed to detect other bootable partitions.
Systems on them will not be added to the GRUB boot configuration.
Check GRUB_DISABLE_OS_PROBER documentation entry.
Adding boot menu entry for UEFI Firmware Settings ...
done
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!
Running kernel version:
  6.14.0-1017-aws
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.14.0-1018-aws.

Restarting the system to load the new kernel will not be handled automatically, so you should
consider rebooting.

Restarting services...
/etc/needrestart/restart.d/systemd-manager
systemctl restart irqbalance.service packagekit.service polkit.service udisks2.service

Service restarts being deferred:
systemctl restart ModemManager.service
/etc/needrestart/restart.d/dbus.service
systemctl restart networkd-dispatcher.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
  ubuntu @ user manager service: systemd[1083]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-78-20:~$ |

```

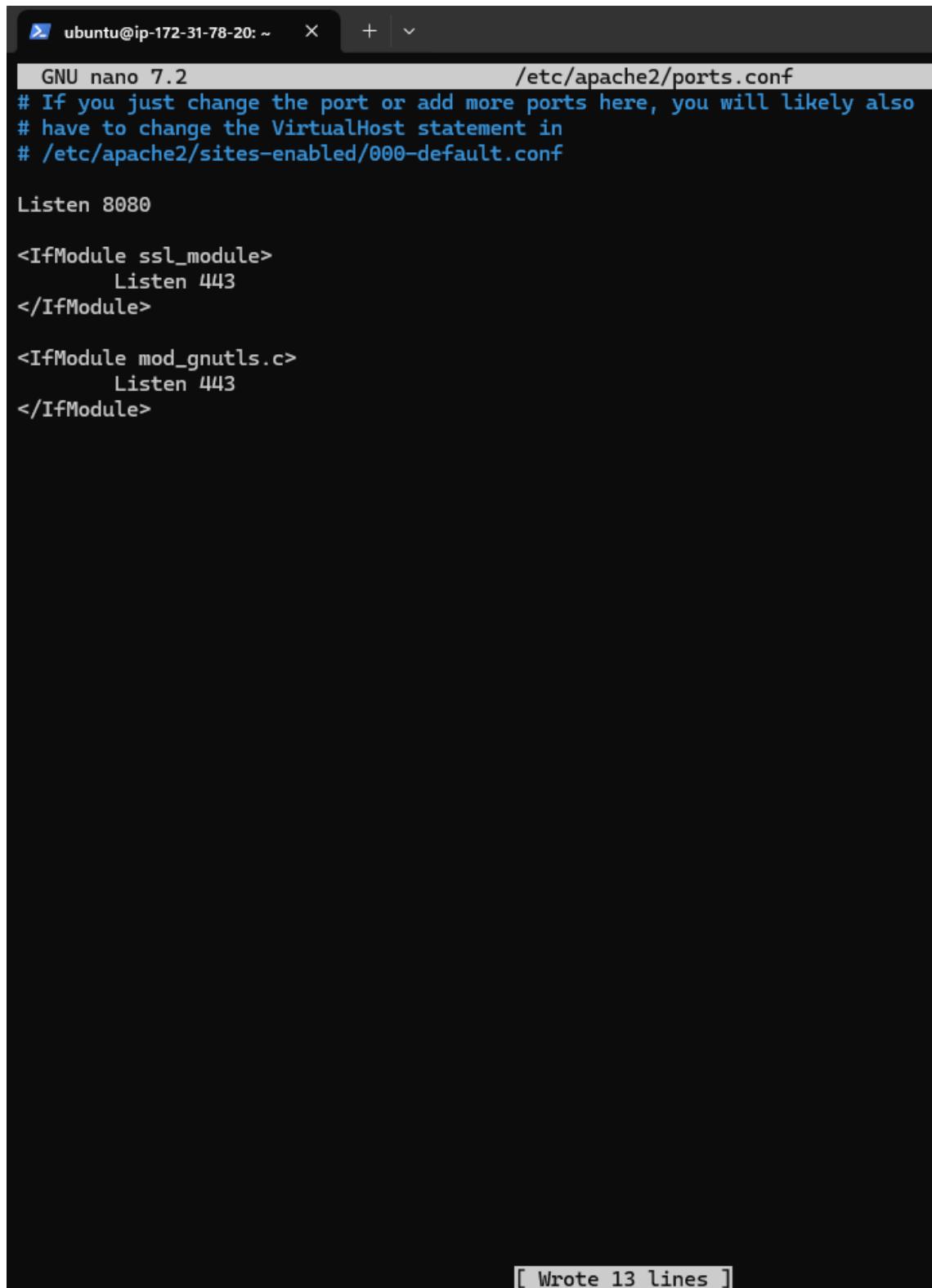
Instalando Apache2:

```

ubuntu@ip-172-31-78-20:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
apache2 is already the newest version (2.4.58-1ubuntu8.8).
The following packages were automatically installed and are no longer required:
  linux-aws-6.14-headers-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016 linux-headers-6.14.0-1016-aws
    linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws linux-tools-6.14.0-1016-aws
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
ubuntu@ip-172-31-78-20:~$ |

```

Cambiando listen 80 por 8080



```
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

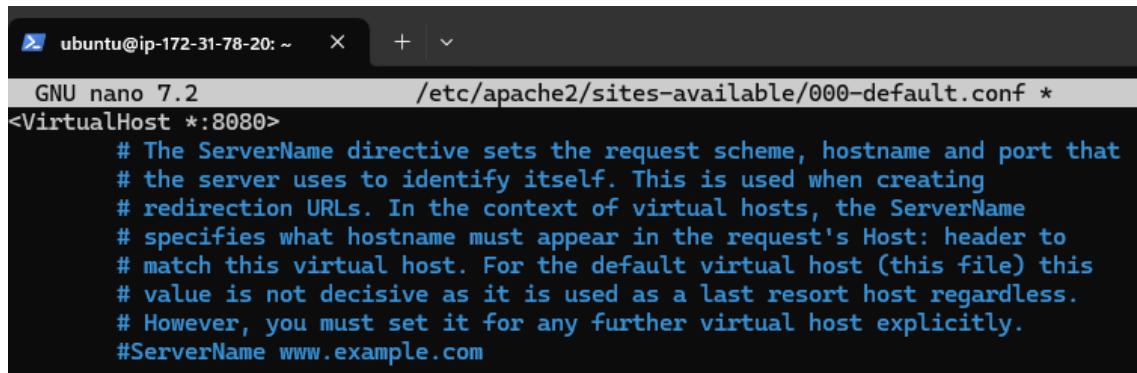
Listen 8080

<IfModule ssl_module>
    Listen 443
</IfModule>

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

[Wrote 13 lines]

Modificando el virtual Host:



```
ubuntu@ip-172-31-78-20: ~ + | 
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
```

Instalando apache 2 con su correspondiente librería:

```
ubuntu@ip-172-31-78-20:~$ sudo apt install php libapache2-mod-php -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-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016 linux-headers-6.14.0-1016-aws
  linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws linux-tools-6.14.0-1016-aws
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libapache2-mod-php8.3 php-common php8.3 php8.3-cli php8.3-common php8.3-opcache php8.3-readline
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php libapache2-mod-php8.3 php php-common php8.3 php8.3-cli php8.3-common
  php8.3-opcache php8.3-readline
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 4922 kB of archives.
After this operation, 22.4 MB of additional disk space will be used.
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble amd64 php-common all 2:93ubuntu2 [13.
9 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.3-common amd64 8.3
.6-0ubuntu0.24.04.5 [740 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.3-opcache amd64 8.
3.6-0ubuntu0.24.04.5 [371 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.3-readline amd64 8
.3.6-0ubuntu0.24.04.5 [13.5 kB]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.3-cli amd64 8.3.6-
0ubuntu0.24.04.5 [1915 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 libapache2-mod-php8.3 a
md64 8.3.6-0ubuntu0.24.04.5 [1851 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 libapache2-mod-php all 2:8.3+93
ubuntu2 [4224 B]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 php8.3 all 8.3.6-0ubunt
u0.24.04.5 [9174 B]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/main amd64 php all 2:8.3+93ubuntu2 [4076 B
]
Fetched 4922 kB in 0s (41.4 MB/s)
Selecting previously unselected package php-common.
(Reading database ... 135762 files and directories currently installed.)
Preparing to unpack .../0-php-common_2%3a93ubuntu2_all.deb ...
Unpacking php-common (2:93ubuntu2) ...
Selecting previously unselected package php8.3-common.
Preparing to unpack .../1-php8.3-common_8.3.6-0ubuntu0.24.04.5_amd64.deb ...
Unpacking php8.3-common (8.3.6-0ubuntu0.24.04.5) ...
Selecting previously unselected package php8.3-opcache.
Preparing to unpack .../2-php8.3-opcache_8.3.6-0ubuntu0.24.04.5_amd64.deb ...
Unpacking php8.3-opcache (8.3.6-0ubuntu0.24.04.5) ...
Selecting previously unselected package php8.3-readline.
Preparing to unpack .../3-php8.3-readline_8.3.6-0ubuntu0.24.04.5_amd64.deb ...
Unpacking php8.3-readline (8.3.6-0ubuntu0.24.04.5) ...
```

```
Setting up php8.3-opcache (8.3.6-0ubuntu0.24.04.5) ...

Creating config file /etc/php/8.3/mods-available/opcache.ini with new version
Setting up php8.3-cli (8.3.6-0ubuntu0.24.04.5) ...
update-alternatives: using /usr/bin/php8.3 to provide /usr/bin/php (php) in auto mode
update-alternatives: using /usr/bin/phar8.3 to provide /usr/bin/phar (phar) in auto mode
update-alternatives: using /usr/bin/phar.phar8.3 to provide /usr/bin/phar.phar (phar.phar) in auto mode

Creating config file /etc/php/8.3/cli/php.ini with new version
Setting up libapache2-mod-php8.3 (8.3.6-0ubuntu0.24.04.5) ...

Creating config file /etc/php/8.3/apache2/php.ini with new version
Module mpm_event disabled.
Enabling module mpm_prefork.
apache2_switch_mpm Switch to prefork
apache2_invoke: Enable module php8.3
Setting up php8.3 (8.3.6-0ubuntu0.24.04.5) ...
Setting up libapache2-mod-php (2:8.3+93ubuntu2) ...
Setting up php (2:8.3+93ubuntu2) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for php8.3-cli (8.3.6-0ubuntu0.24.04.5) ...
Processing triggers for libapache2-mod-php8.3 (8.3.6-0ubuntu0.24.04.5) ...
Scanning processes...
Scanning candidates...
Scanning linux images...

Pending kernel upgrade!
Running kernel version:
  6.14.0-1017-aws
Diagnostics:
  The currently running kernel version is not the expected kernel version 6.14.0-1018-aws.

Restarting the system to load the new kernel will not be handled automatically, so you should
consider rebooting.

Restarting services...

Service restarts being deferred:
/etc/needrestart/restart.d/dbus.service
systemctl restart networkd-dispatcher.service
systemctl restart unattended-upgrades.service

No containers need to be restarted.

User sessions running outdated binaries:
ubuntu @ user manager service: systemd[1083]

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-78-20:~$
```

Creando archivo de prueba:

```
ubuntu@ip-172-31-78-20:~$ echo "<?php phpinfo(); ?>" | sudo tee /var/www/html/info.php
<?php phpinfo(); ?>
ubuntu@ip-172-31-78-20:~$
```

Probando apache desde terminal...

Instalando Nginx:

```

ubuntu@ip-172-31-78-20:~$ 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-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016
  linux-headers-6.14.0-1016-aws linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws
  linux-tools-6.14.0-1016-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 1.24.0-2ubuntu7.5 [43.4 kB]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx amd64 1.24.0-2ubuntu7.5 [520 kB]
Fetched 564 kB in 0s (19.3 MB/s)
Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 135942 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/nginx.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...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-78-20:~$
```

Cambiando el listen 80 por el 8081:

```

ubuntu@ip-172-31-78-20: ~
GNU nano 7.2          /etc/nginx/sites-available/default *
# https://www.nginx.com/resources/wiki/start/topics/tutorials/config_pitfalls/
# https://wiki.debian.org/Nginx/DirectoryStructure
#
# In most cases, administrators will remove this file from sites-enabled/
# leave it as reference inside of sites-available where it will continue
# updated by the nginx packaging team.
#
# This file will automatically load configuration files provided by other
# applications, such as Drupal or Wordpress. These applications will be made
# available underneath a path with that package name, such as /drupal8.
#
# 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;
```

Creando pagina html para Nginx:

```
ubuntu@ip-172-31-78-20:~$ echo "<h1>Servidor Nginx</h1><p>Funciona en puerto 8081</p>" | sudo tee /usr/share/nginx/html/index.html
<h1>Servidor Nginx</h1><p>Funciona en puerto 8081</p>
ubuntu@ip-172-31-78-20:~$
```

Comprobando que funciona Nginx:

```
ubuntu@ip-172-31-78-20:~$ 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 Thu 2025-12-11 19:08:19 UTC; 13s ago
    Docs: man:nginx(8)
   Process: 2054 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=)
   Process: 2058 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, s>
 Main PID: 2059 (nginx)
   Tasks: 3 (limit: 1017)
  Memory: 2.4M (peak: 2.6M)
     CPU: 17ms
    CGroup: /system.slice/nginx.service
            ├─2059 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
            ├─2060 "nginx: worker process"
            └─2061 "nginx: worker process"

Dec 11 19:08:19 ip-172-31-78-20 systemd[1]: Starting nginx.service - A high performance web >
Dec 11 19:08:19 ip-172-31-78-20 systemd[1]: Started nginx.service - A high performance web s>
lines 1-17/17 (END)
```

Comprobando la escucha de los puertos para nginx:

```
ubuntu@ip-172-31-78-20:~$ sudo netstat -tulpn | grep nginx
tcp        0      0 0.0.0.0:8081          0.0.0.0:*              LISTEN      2059/nginx: m
aster
tcp6       0      0 :::8081           ::::*                  LISTEN      2059/nginx: m
aster
ubuntu@ip-172-31-78-20:~$
```

Probando Nginx:

```
ubuntu@ip-172-31-78-20:~$ curl http://localhost:8081
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
-->
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
        *
        {
            margin: 0px 0px 0px 0px;
            padding: 0px 0px 0px 0px;
        }

        body, html {
            padding: 3px 3px 3px 3px;
            background-color: #D8DBE2;

            font-family: Ubuntu, Verdana, sans-serif;
            font-size: 11pt;
            text-align: center;
        }

        div.main_page {
            position: relative;
            display: table;

            width: 800px;

            margin-bottom: 3px;
            margin-left: auto;
            margin-right: auto;
            padding: 0px 0px 0px 0px;

            border-width: 2px;
            border-color: #212738;
            border-style: solid;

            background-color: #FFFFFF;
            text-align: center;
        }

        div.page_header {
            height: 180px;
        }
    </style>
</head>
<body>
</body>

```

Instalando dependencias para Caddy:

```
ubuntu@ip-172-31-78-20:~$ 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-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016
  linux-headers-6.14.0-1016-aws linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws
  linux-tools-6.14.0-1016-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 in 0s (91.7 MB/s).
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-transport-https all 2.8.3 [3970 B]
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 debian-archive-keyring all 2023.4ubuntu1 [168 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 debian-keyring all 2023.12.24 [31.3 MB]
Fetched 31.5 MB in 0s (91.7 MB/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 135990 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 ...
Unpacking debian-archive-keyring (2023.4ubuntu1) ...
Selecting previously unselected package debian-keyring.
Preparing to unpack .../debian-keyring_2023.12.24_all.deb ...
Unpacking debian-keyring (2023.12.24) ...
Setting up apt-transport-https (2.8.3) ...
Setting up debian-archive-keyring (2023.4ubuntu1) ...
Setting up debian-keyring (2023.12.24) ...
Scanning processes...
Scanning linux images...
Running kernel seems to be up-to-date.
No services need to be restarted.
No containers need to be restarted.
No user sessions are running outdated binaries.
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-78-20:~$
```

Y agregándole su repositorio:

```
ubuntu@ip-172-31-78-20:~$ curl -sLf 'https://dl.cloudsmith.io/public/caddy/stable/gpg.key' \
| sudo gpg --dearmor -o /usr/share/keyrings/caddy-stable-archive-keyring.gpg
curl -sLf '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.cloudsmi
th.io/public/caddy/stable/deb/debian any-version main
ubuntu@ip-172-31-78-20:~$
```

Ahora instalamos Caddy:

```
ubuntu@ip-172-31-78-20:~$ sudo apt update && sudo apt install caddy -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]
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:5 https://dl.cloudsmith.io/public/caddy/stable/deb/debian any-version InRelease [14.8 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1675 kB]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [309 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.8 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages [1501 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/restricted amd64 Packages [2404 kB]
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted Translation-en [549 kB]
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7144 B]
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0 kB]
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [216 B]
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Get:20 https://dl.cloudsmith.io/public/caddy/stable/deb/debian any-version/main amd64 Packages [4329 B]
Fetched 7298 kB in 1s (5371 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
1 package can be upgraded. Run 'apt list --upgradable' to see it.
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-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016
  linux-headers-6.14.0-1016-aws linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws
  linux-tools-6.14.0-1016-aws
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  caddy
0 upgraded, 1 newly installed, 0 to remove and 1 not upgraded.
Need to get 16.0 MB of archives.
After this operation, 44.5 MB of additional disk space will be used.
Get:1 https://dl.cloudsmith.io/public/caddy/stable/deb/debian any-version/main amd64 caddy amd64 2.10.2 [16.0 MB]
Fetched 16.0 MB in 0s (87.5 MB/s)
Selecting previously unselected package caddy.
(Reading database ... 136026 files and directories currently installed.)
Preparing to unpack .../caddy_2.10.2_amd64.deb ...
Unpacking caddy (2.10.2) ...
Setting up caddy (2.10.2) ...
Created symlink /etc/systemd/system/multi-user.target.wants/caddy.service → /usr/lib/systemd/system/caddy.service.
Processing triggers for man-db (2.12.0-4build2) ...
Scanning processes...
```

```
Running kernel seems to be up-to-date.  
No services need to be restarted.  
No containers need to be restarted.  
No user sessions are running outdated binaries.  
No VM guests are running outdated hypervisor (qemu) binaries on this host.  
ubuntu@ip-172-31-78-20:~$
```

Ahora crearemos un directorio específico para Caddy:

```
ubuntu@ip-172-31-78-20:~$ sudo mkdir -p /var/www/caddy  
ubuntu@ip-172-31-78-20:~$
```

Ahora creamos un markdown de prueba:

```
ubuntu@ip-172-31-78-20:~$ echo "# Bienvenido a Caddy" | sudo tee /var/www/caddy/README.md  
echo "" | sudo tee -a /var/www/caddy/README.md  
echo "Este servidor está funcionando correctamente." | sudo tee -a /var/www/caddy/README.md  
echo "" | sudo tee -a /var/www/caddy/README.md  
echo "## Características" | sudo tee -a /var/www/caddy/README.md  
echo "- Servidor moderno" | sudo tee -a /var/www/caddy/README.md  
echo "- HTTPS automático" | sudo tee -a /var/www/caddy/README.md  
echo "- Fácil configuración" | sudo tee -a /var/www/caddy/README.md  
# Bienvenido a Caddy  
  
Este servidor está funcionando correctamente.  
  
## Características  
- Servidor moderno  
- HTTPS automático  
- Fácil configuración  
ubuntu@ip-172-31-78-20:~$
```

Y también una imagen de muestra para ver si funcionan archivos estáticos:

```
ubuntu@ip-172-31-78-20:~$ curl -o /tmp/test-image.jpg "https://www.python.org/static/apple-to  
uch-icon-144x144-precomposed.png"  
sudo mv /tmp/test-image.jpg /var/www/caddy/test.jpg  
% Total    % Received % Xferd  Average Speed   Time      Time     Current  
                                         Dload  Upload Total Spent   Left  Speed  
100  7382  100  7382    0      0  179k      0  --:--:-- --:--:-- --:--:-- 180k  
ubuntu@ip-172-31-78-20:~$
```

Creando Caddyfile personalizado:

```
ubuntu@ip-172-31-78-20: ~
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
```

Reseteamos y comprobamos que funciona:

```
ubuntu@ip-172-31-78-20:~$ sudo systemctl restart caddy
ubuntu@ip-172-31-78-20:~$ sudo systemctl status caddy
● caddy.service - Caddy
   Loaded: loaded (/usr/lib/systemd/system/caddy.service; enabled; preset: enabled)
   Active: active (running) since Thu 2025-12-11 19:45:55 UTC; 14s ago
     Docs: https://caddyserver.com/docs/
     Main PID: 3107 (caddy)
        Tasks: 7 (limit: 1017)
       Memory: 10.3M (peak: 11.0M)
          CPU: 75ms
        CGroup: /system.slice/caddy.service
                   └─3107 /usr/bin/caddy run --environ --config /etc/caddy/Caddyfile

Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.830776,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.831168,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"warn","ts":1765482355.831579,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"warn","ts":1765482355.8315911,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8315952,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.832239,"msg":"a}>
Dec 11 19:45:55 ip-172-31-78-20 systemd[1]: Started caddy.service - Caddy.
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8344584,"msg":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8383312,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.83842,"logger":>
lines 1-21/21 (END)
```

```
ubuntu@ip-172-31-78-20:~$ sudo netstat -tulpn | grep caddy
tcp        0      0 127.0.0.1:2019          0.0.0.0:*
LISTEN      3107/caddy
tcp6       0      0 :::8082                ::::*
LISTEN      3107/caddy
ubuntu@ip-172-31-78-20:~$
```

```
ubuntu@ip-172-31-78-20:~$ curl http://localhost:8082/
<!DOCTYPE html>
<html>
  <head>
    <title></title>
    <link rel="canonical" href="/" />
    <meta charset="utf-8">
    <meta name="color-scheme" content="light dark">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
<style nonce="02a76f16-201a-4391-87a3-c755e29858b8">
* { padding: 0; margin: 0; box-sizing: border-box; }

body {
  font-family: Inter, system-ui, sans-serif;
  font-size: 16px;
  text-rendering: optimizespeed;
  background-color: #f3f6f7;
  min-height: 100vh;
}

img,
svg {
  vertical-align: middle;
  z-index: 1;
}

img {
  max-width: 100%;
  max-height: 100%;
  border-radius: 5px;
}

td img {
  max-width: 1.5em;
  max-height: 2em;
  object-fit: cover;
}

body,
a,
svg,
.layout.current,
.layout.current svg,
.go-up {
  color: #333;
  text-decoration: none;
}
```

```

        if (filterElem) {
            filterElem.addEventListener("keyup", filter);
        }

        document.getElementById("layout-list").addEventListener("click", function() {
            queryParam('layout', '');
        });
        document.getElementById("layout-grid").addEventListener("click", function() {
            queryParam('layout', 'grid');
        });

        window.addEventListener("load", initPage);

        function queryParam(k, v) {
            const qs = new URLSearchParams(window.location.search);
            if (!v) {
                qs.delete(k);
            } else {
                qs.set(k, v);
            }
            const qsStr = qs.toString();
            if (qsStr) {
                window.location.search = qsStr;
            } else {
                window.location = window.location.pathname;
            }
        }

        function localizeDatetime(e, index, ar) {
            if (e.textContent === undefined) {
                return;
            }
            var d = new Date(e.getAttribute('datetime'));
            if (isNaN(d)) {
                d = new Date(e.textContent);
                if (isNaN(d)) {
                    return;
                }
            }
            e.textContent = d.toLocaleString();
        }
        var timeList = Array.prototype.slice.call(document.getElementsByTagName("time"));
        timeList.forEach(localizeDatetime);
        // @license-end
    </script>
</body>
</html>
ubuntu@ip-172-31-78-20:~$
```

ubuntu@ip-172-31-78-20:~\$ curl http://localhost:8082/README.md

Bienvenido a Caddy

Este servidor está funcionando correctamente.

Características

- Servidor moderno
- HTTPS automático
- Fácil configuración

ubuntu@ip-172-31-78-20:~\$

Verificación de los tres servidores:

```

● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enabled)
   Active: active (running) since Thu 2025-12-11 18:51:04 UTC; 1h 5min ago
     Docs: https://httpd.apache.org/docs/2.4/
 Main PID: 1659 (apache2)
    Tasks: 7 (limit: 1017)
   Memory: 12.1M (peak: 12.4M)
      CPU: 248ms
     CGroup: /system.slice/apache2.service
             └─1659 /usr/sbin/apache2 -k start
                 ├─1661 /usr/sbin/apache2 -k start
                 ├─1662 /usr/sbin/apache2 -k start
                 ├─1663 /usr/sbin/apache2 -k start
                 ├─1664 /usr/sbin/apache2 -k start
                 ├─1665 /usr/sbin/apache2 -k start
                 ├─2128 /usr/sbin/apache2 -k start

Dec 11 18:51:04 ip-172-31-78-20 systemd[1]: Starting apache2.service - The Apache HTTP Server
Dec 11 18:51:04 ip-172-31-78-20 systemd[1]: Started apache2.service - The Apache HTTP Server.
lines 1-19/19 (END)
```

```
● 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 Thu 2025-12-11 19:08:19 UTC; 49min ago
    Docs: man:nginx(8)
 Main PID: 2059 (nginx)
   Tasks: 3 (limit: 1017)
  Memory: 2.4M (peak: 2.6M)
    CPU: 18ms
   CGroup: /system.slice/nginx.service
           ├─2059 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"
           ├─2060 "nginx: worker process"
           └─2061 "nginx: worker process"

Dec 11 19:08:19 ip-172-31-78-20 systemd[1]: Starting nginx.service - A high performance web >
Dec 11 19:08:19 ip-172-31-78-20 systemd[1]: Started nginx.service - A high performance web s>
lines 1-15/15 (END)
```

```
● caddy.service - Caddy
  Loaded: loaded (/usr/lib/systemd/system/caddy.service; enabled; preset: enabled)
  Active: active (running) since Thu 2025-12-11 19:45:55 UTC; 12min ago
    Docs: https://caddyserver.com/docs/
 Main PID: 3107 (caddy)
   Tasks: 7 (limit: 1017)
  Memory: 9.7M (peak: 11.0M)
    CPU: 96ms
   CGroup: /system.slice/caddy.service
           └─3107 /usr/bin/caddy run --environ --config /etc/caddy/Caddyfile

Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.830776,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.831168,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"warn","ts":1765482355.831579,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"warn","ts":1765482355.8315911,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8315952,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.832239,"msg":>
Dec 11 19:45:55 ip-172-31-78-20 systemd[1]: Started caddy.service - Caddy.
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8344584,"msg":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.8383312,"logger":>
Dec 11 19:45:55 ip-172-31-78-20 caddy[3107]: {"level":"info","ts":1765482355.83842,"logger":>
lines 1-21/21 (END)
```

Probando los tres puertos de los servidores creados simultáneamente:

```
ubuntu@ip-172-31-78-20:~$ sudo netstat -tulpn | grep -E '8080|8081|8082|8443'
tcp      0      0 0.0.0.0:8081          0.0.0.0:*          LISTEN      2059/nginx: m
aster
tcp6     0      0 :::8080            :::*          LISTEN      1659/apache2
aster
tcp6     0      0 :::8081            :::*          LISTEN      2059/nginx: m
aster
tcp6     0      0 :::8082            :::*          LISTEN      3107/caddy

ubuntu@ip-172-31-78-20:~$
```

Comprobando los localhost de cada uno de los servicios creados:

```
ubuntu@ip-172-31-78-20:~$ curl http://localhost:8080
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
  <!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
  -->
  <head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
      *
      {
        margin: 0px 0px 0px 0px;
        padding: 0px 0px 0px 0px;
      }

      body, html {
        padding: 3px 3px 3px 3px;

        background-color: #D8DBE2;

        font-family: Ubuntu, Verdana, sans-serif;
        font-size: 11pt;
        text-align: center;
      }

      div.main_page {
        position: relative;
        display: table;

        width: 800px;

        margin-bottom: 3px;
        margin-left: auto;
        margin-right: auto;
        padding: 0px 0px 0px 0px;

        border-width: 2px;
        border-color: #212738;
        border-style: solid;

        background-color: #FFFFFF;

        text-align: center;
      }

      div.page_header {
        height: 180px;
      }
    </style>
  </head>
  <body>
    <div>
      <div>
        <div>
          <div>
            <div>
              <div>
                <div>
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              </div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </body>
</html>
```

```
ubuntu@ip-172-31-78-20:~$ curl http://localhost:8081
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<!--
  Modified from the Debian original for Ubuntu
  Last updated: 2022-03-22
  See: https://launchpad.net/bugs/1966004
-->
<head>
  <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
  <title>Apache2 Ubuntu Default Page: It works</title>
  <style type="text/css" media="screen">
    *
    {
      margin: 0px 0px 0px 0px;
      padding: 0px 0px 0px 0px;
    }

    body, html {
      padding: 3px 3px 3px 3px;

      background-color: #D8DBE2;

      font-family: Ubuntu, Verdana, sans-serif;
      font-size: 11pt;
      text-align: center;
    }

    div.main_page {
      position: relative;
      display: table;

      width: 800px;

      margin-bottom: 3px;
      margin-left: auto;
      margin-right: auto;
      padding: 0px 0px 0px 0px;

      border-width: 2px;
      border-color: #212738;
      border-style: solid;

      background-color: #FFFFFF;

      text-align: center;
    }

    div.page_header {
      height: 180px;
    }
  </style>
</head>
<body>
  <div>
    <div>
      <h1>It works</h1>
      <p>This is the default page for your web server.<br/>
         You can change the content of this page by editing<br/>
         <a href="https://help.ubuntu.com/community/Apache2/UbuntuDefaultPage">https://help.ubuntu.com/community/Apache2/UbuntuDefaultPage</a>.</p>
    </div>
  </div>
</body>

```

8081 arriva y 8082 abajo:

```
ubuntu@ip-172-31-78-20:~$ curl http://localhost:8082

<!DOCTYPE html>
<html>
    <head>
        <title>/</title>
        <link rel="canonical" href="/" />
        <meta charset="utf-8">
        <meta name="color-scheme" content="light dark">
        <meta name="viewport" content="width=device-width, initial-scale=1.0">
<style nonce="04d094c5-e46a-47bd-a33c-78344be2738d">
* { padding: 0; margin: 0; box-sizing: border-box; }

body {
    font-family: Inter, system-ui, sans-serif;
    font-size: 16px;
    text-rendering: optimizeSpeed;
    background-color: #f3f6f7;
    min-height: 100vh;
}

img,
svg {
    vertical-align: middle;
    z-index: 1;
}

img {
    max-width: 100%;
    max-height: 100%;
    border-radius: 5px;
}

td img {
    max-width: 1.5em;
    max-height: 2em;
    object-fit: cover;
}

body,
a,
svg,
.layout.current,
.layout.current svg,
.go-up {
    color: #333;
    text-decoration: none;
}
```

Instalando certbot:

```
ubuntu@ip-172-31-78-20:~$ 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-headers-6.14.0-1016 linux-aws-6.14-tools-6.14.0-1016
  linux-headers-6.14.0-1016-aws linux-image-6.14.0-1016-aws linux-modules-6.14.0-1016-aws
  linux-tools-6.14.0-1016-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 amd64 1.14.1-1build2 [166 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 libaugeas0 amd64 1.14.0-1 [22.1 kB]
Get:4 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-rfc3339 all 1.1-1 [6744 B]
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-acme all 2.9.0-1 [48.5 kB]
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-augeas all 0.5.0-1.1 [9124 B]
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-configargparse all 1.7-1 [31.7 kB]
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-parsedatetime all 2.6-3 [32.8 kB]
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-certbot all 2.9.0-1 [267 kB]
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 certbot all 2.9.0-1 [89.2 kB]
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-certbot-apache all 2.9.0-1 [128 kB]
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu noble/universe amd64 python3-icu amd64 2.12-1build2 [534 kB]
Fetched 1657 kB in 0s (21.9 MB/s)
Preconfiguring packages ...
Selecting previously unselected package augeas-lenses.
(Reading database ... 136061 files and directories currently installed.)
Preparing to unpack .../00-augeas-lenses_1.14.1-1build2_all.deb ...
Unpacking augeas-lenses (1.14.1-1build2) ...
Selecting previously unselected package libaugeas0:amd64.
Preparing to unpack .../01-libaugeas0_1.14.1-1build2_amd64.deb ...
Unpacking libaugeas0:amd64 (1.14.1-1build2) ...
Selecting previously unselected package python3-josepy.
Preparing to unpack .../02-python3-josepy_1.14.0-1_all.deb ...
Unpacking python3-josepy (1.14.0-1) ...
Selecting previously unselected package python3-rfc3339.
Preparing to unpack .../03-python3-rfc3339_1.1-4_all.deb ...
Unpacking python3-rfc3339 (1.1-4) ...
```

```
ubuntu@ip-172-31-78-20:~$ 
Selecting previously unselected package python3-augeas.
Preparing to unpack .../05-python3-augeas_0.5.0-1.1_all.deb ...
Unpacking python3-augeas (0.5.0-1.1) ...
Selecting previously unselected package python3-configargparse.
Preparing to unpack .../06-python3-configargparse_1.7-1_all.deb ...
Unpacking python3-configargparse (1.7-1) ...
Selecting previously unselected package python3-parsedatetime.
Preparing to unpack .../07-python3-parsedatetime_2.6-3_all.deb ...
Unpacking python3-parsedatetime (2.6-3) ...
Selecting previously unselected package python3-certbot.
Preparing to unpack .../08-python3-certbot_2.9.0-1_all.deb ...
Unpacking python3-certbot (2.9.0-1) ...
Selecting previously unselected package certbot.
Preparing to unpack .../09-certbot_2.9.0-1_all.deb ...
Unpacking certbot (2.9.0-1) ...
Selecting previously unselected package python3-certbot-apache.
Preparing to unpack .../10-python3-certbot-apache_2.9.0-1_all.deb ...
Unpacking python3-certbot-apache (2.9.0-1) ...
Selecting previously unselected package python3-icu.
Preparing to unpack .../11-python3-icu_2.12-1build2_amd64.deb ...
Unpacking python3-icu (2.12-1build2) ...
Setting up python3-configargparse (1.7-1) ...
Setting up python3-parsedatetime (2.6-3) ...
Setting up python3-icu (2.12-1build2) ...
Setting up augeas-lenses (1.14.1-1build2) ...
Setting up libaugeas0:amd64 (1.14.1-1build2) ...
Setting up python3-josepy (1.14.0-1) ...
Setting up python3-augeas (0.5.0-1.1) ...
Setting up python3-rfc3339 (1.1-4) ...
Setting up python3-acme (2.9.0-1) ...
Setting up python3-certbot (2.9.0-1) ...
Setting up certbot (2.9.0-1) ...
Created symlink /etc/systemd/system/timers.target.wants/certbot.timer → /usr/lib/systemd/system/certbot.timer.
Setting up python3-certbot-apache (2.9.0-1) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for libc-bin (2.39-0ubuntu8.6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-78-20:~$
```

Creando certificado de prueba:

```
ubuntu@ip-172-31-78-20:~$ sudo openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout /etc/ssl/private/apache-selfsigned.key -out /etc/ssl/certs/apache-selfsigned.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]: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 []:ejemplo@gmail.com
ubuntu@ip-172-31-78-20:~$
```

Activacion del modulo SSL:

```
ubuntu@ip-172-31-78-20:~$ 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-signed certificates.
To activate the new configuration, you need to run:
  systemctl restart apache2
ubuntu@ip-172-31-78-20:~$
```

Cambiando de puertos:

```
✉ ubuntu@ip-172-31-78-20: ~
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
    Listen 8443
</IfModule>

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

[ Wrote 14 lines ]
```

Cambiando el birtualbox de 443 a 8443:

```
ubuntu@ip-172-31-78-20: ~
GNU nano 7.2          /etc/apache2/sites-available/default-ssl.conf
<VirtualHost *:8443>
    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

    # SSL Engine Switch:
    # Enable/Disable SSL for this virtual host.

[ Wrote 101 lines ]
^G Help      ^O Write Out   ^W Where Is   ^K Cut        ^T Execute   ^C Location   M-U Undo
^X Exit      ^R Read File   ^\ Replace    ^U Paste     ^J Justify   ^/ Go To Line M-E Redo
```

Activando la configuración SSL en Apache:

```
ubuntu@ip-172-31-78-20:~$ sudo a2ensite default-ssl.conf
Enabling site default-ssl.
To activate the new configuration, you need to run:
  systemctl reload apache2
ubuntu@ip-172-31-78-20:~$
```

Comprobacion final para comprobar el certificado HTTPS:

```
ubuntu@ip-172-31-78-20:~$ curl -i -k https://localhost:8443
HTTP/1.1 200 OK
Date: Sat, 13 Dec 2025 16:25:44 GMT
Server: Apache/2.4.58 (Ubuntu)
Last-Modified: Tue, 25 Nov 2025 13:48:58 GMT
ETag: "29af-6446bb8aa49c67"
Accept-Ranges: bytes
Content-Length: 10671
Vary: Accept-Encoding
Content-Type: text/html

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<!--
    Modified from the Debian original for Ubuntu
    Last updated: 2022-03-22
    See: https://launchpad.net/bugs/1966004
-->
<head>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <title>Apache2 Ubuntu Default Page: It works</title>
    <style type="text/css" media="screen">
        * {
            margin: 0px 0px 0px;
            padding: 0px 0px 0px 0px;
        }

        body, html {
            padding: 3px 3px 3px 3px;

            background-color: #D8DBE2;

            font-family: Ubuntu, Verdana, sans-serif;
            font-size: 11pt;
            text-align: center;
        }

        div.main_page {
            position: relative;
            display: table;

            width: 800px;

            margin-bottom: 3px;
            margin-left: auto;
            margin-right: auto;
            padding: 0px 0px 0px 0px;

            border-width: 2px;
        }
    </style>
</head>
<body>
    <div class="main_page" style="border: 2px solid black; text-align: center; padding: 0px 0px 0px 0px; margin: 0px 0px 0px 0px; border-radius: 10px; background-color: white; height: 100%; width: 100%; position: relative; display: flex; align-items: center; justify-content: center; font-family: inherit; font-size: inherit; font-weight: inherit; color: inherit; z-index: 1; ">
        <div style="background-color: #D8DBE2; width: 100%; height: 100%; position: absolute; left: 0px; top: 0px; z-index: 0; "></div>
        <div style="position: relative; z-index: 2; ">
            <h1 style="font-size: 48px; margin: 0px; padding: 0px; color: white; font-weight: bold; ">It works!</h1>
            <p style="font-size: 14px; margin: 0px; padding: 0px; color: white; font-weight: bold; ">This is the default page for your web server.</p>
            <p style="font-size: 14px; margin: 0px; padding: 0px; color: white; font-weight: bold; ">You can change the content of this page by editing /var/www/html/index.html</p>
            <p style="font-size: 14px; margin: 0px; padding: 0px; color: white; font-weight: bold; ">You can test your changes by reloading this browser tab or by visiting <a href="http://127.0.0.1:8443/">http://127.0.0.1:8443/</a> again.</p>
        </div>
    </div>
</body>
</html>
```

```
</ul>
</li>
</ul>
</div>

<div class="section_header">
    <div id="docroot"></div>
        Document Roots
</div>

<div class="content_section_text">
    <p>
        By default, Ubuntu does not allow access through the web browser to
        <em>any</em> file outside of those located in <tt>/var/www</tt>,
        <a href="http://httpd.apache.org/docs/2.4/mod/mod_userdir.html" rel="nofollow">public_html</a>
        directories (when enabled) and <tt>/usr/share</tt> (for web
        applications). If your site is using a web document root
        located elsewhere (such as in <tt>/srv</tt>) you may need to whitelist your
        document root directory in <tt>/etc/apache2/apache2.conf</tt>.
    </p>
    <p>
        The default Ubuntu document root is <tt>/var/www/html</tt>. You
        can make your own virtual hosts under /var/www.
    </p>
</div>

<div class="section_header">
    <div id="bugs"></div>
        Reporting Problems
</div>
<div class="content_section_text">
    <p>
        Please use the <tt>ubuntu-bug</tt> tool to report bugs in the
        Apache2 package with Ubuntu. However, check <a
        href="https://bugs.launchpad.net/ubuntu/+source/apache2"
        rel="nofollow">existing bug reports</a> before reporting a new bug.
    </p>
    <p>
        Please report bugs specific to modules (such as PHP and others)
        to their respective packages, not to the web server itself.
    </p>
</div>
</div>
<div class="validator">
</div>
</body>
</html>
```

