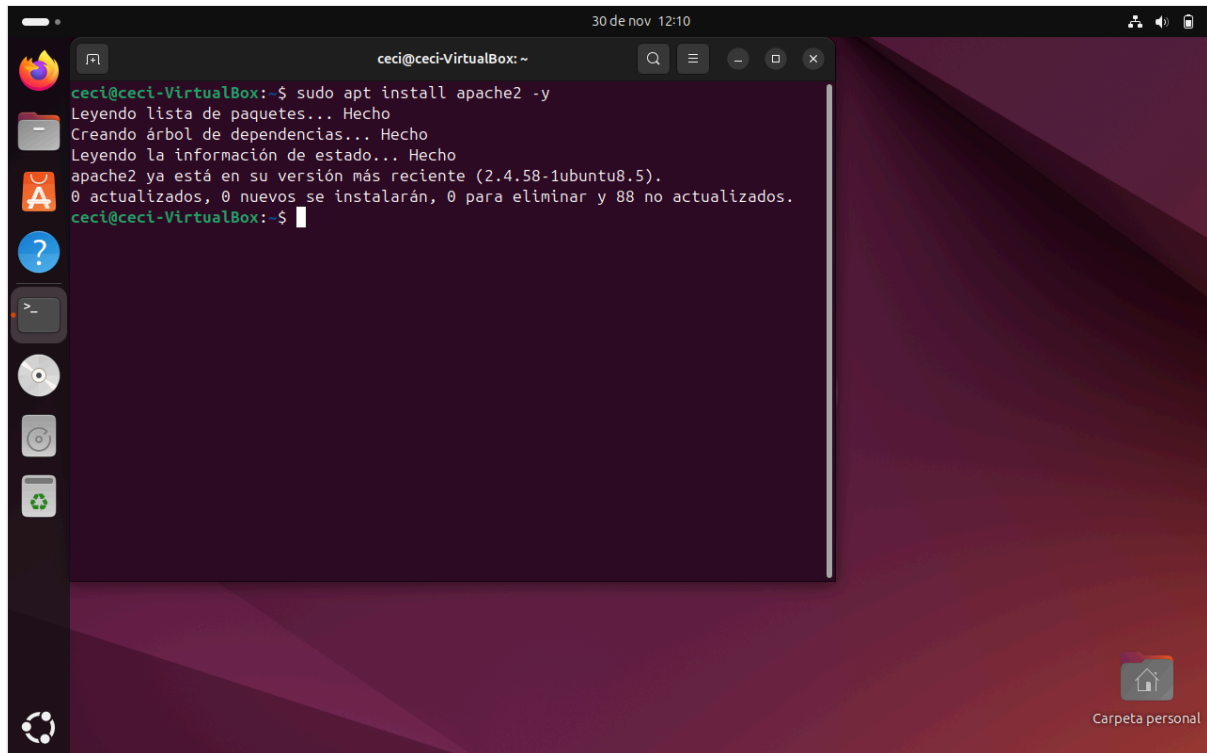


UT1 - Ejercicio 4 - Configuración de un servidor web en Ubuntu

1. Instalación y puesta en marcha del servidor web Apache

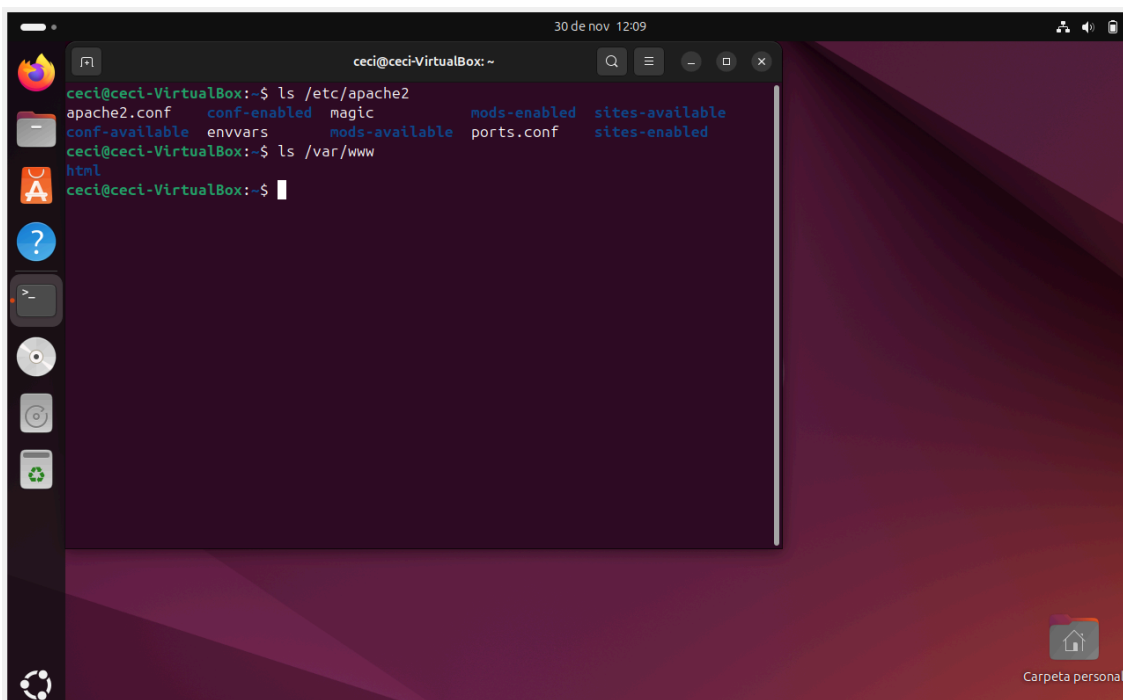
1. Instalación de Apache



A terminal window titled 'ceci@ceci-VirtualBox: ~' with a search bar and window controls. The terminal output shows the command 'sudo apt install apache2 -y' being executed. The system responds with status messages: 'Leyendo lista de paquetes... Hecho', 'Creando árbol de dependencias... Hecho', and 'Leyendo la información de estado... Hecho'. It then states 'apache2 ya está en su versión más reciente (2.4.58-1ubuntu8.5)' and '0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 88 no actualizados.' The prompt returns to 'ceci@ceci-VirtualBox:~\$'.

```
ceci@ceci-VirtualBox:~$ sudo apt install apache2 -y
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
apache2 ya está en su versión más reciente (2.4.58-1ubuntu8.5).
0 actualizados, 0 nuevos se instalarán, 0 para eliminar y 88 no actualizados.
ceci@ceci-VirtualBox:~$
```

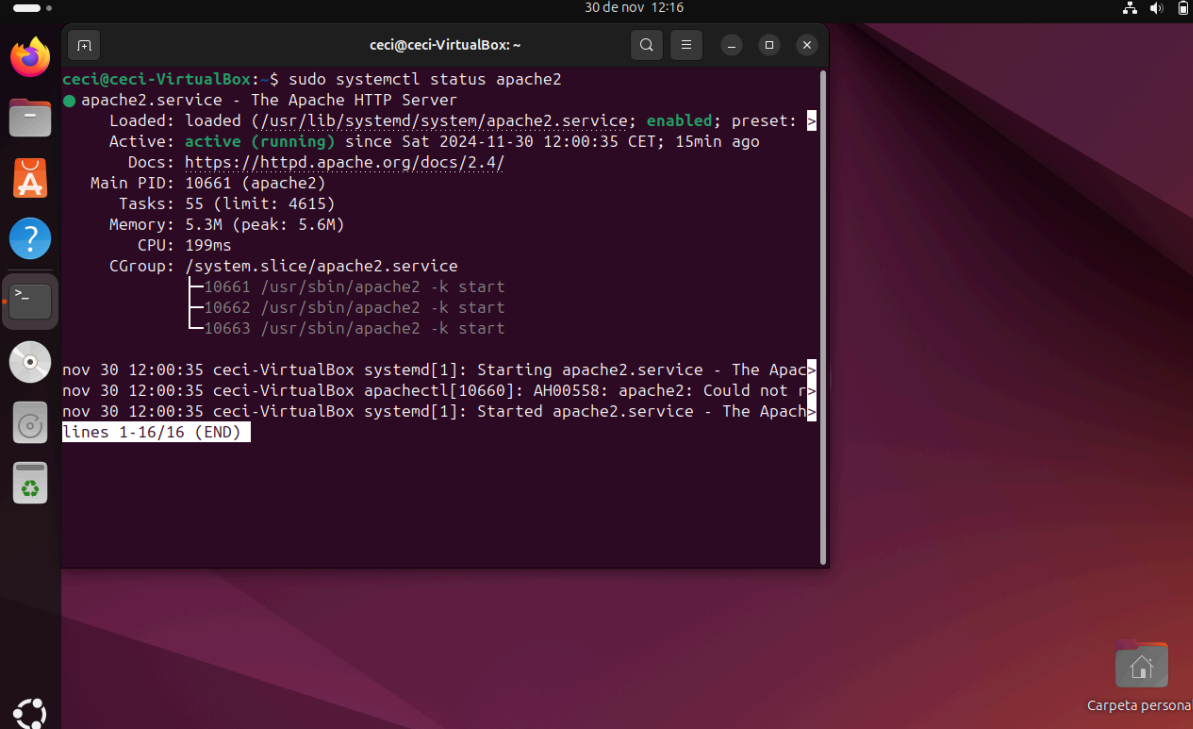
2. Comprobando carpetas



A terminal window titled 'ceci@ceci-VirtualBox: ~' with a search bar and window controls. The terminal shows two directory listing commands. The first is 'ls /etc/apache2', which lists 'apache2.conf', 'conf-enabled', 'magic', 'mods-enabled', 'sites-available', 'conf-available', 'envvars', 'mods-available', 'ports.conf', and 'sites-enabled'. The second is 'ls /var/www', which lists 'html'. The prompt returns to 'ceci@ceci-VirtualBox:~\$'.

```
ceci@ceci-VirtualBox:~$ ls /etc/apache2
apache2.conf  conf-enabled  magic          mods-enabled  sites-available
conf-available  envvars      mods-available ports.conf    sites-enabled
ceci@ceci-VirtualBox:~$ ls /var/www
html
ceci@ceci-VirtualBox:~$
```

3. Arrancar el servicio

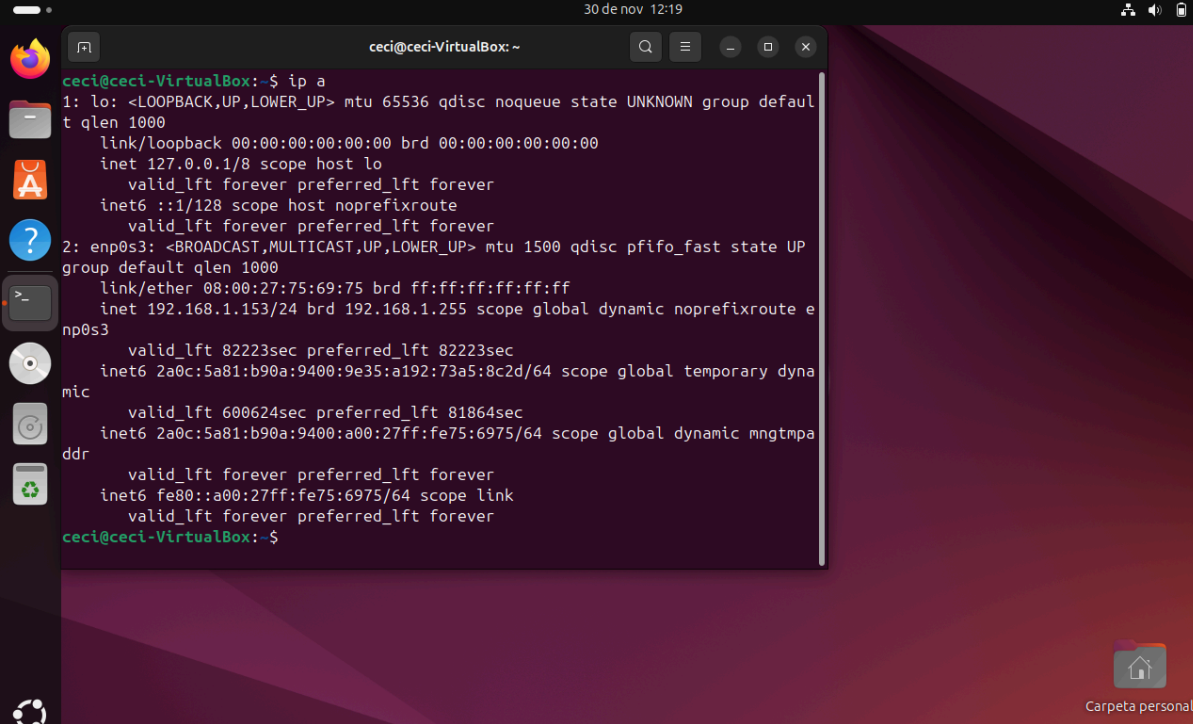


A terminal window titled 'ceci@ceci-VirtualBox: ~' showing the output of the command 'sudo systemctl status apache2'. The output indicates that the 'apache2.service' is loaded, enabled, and active (running) since Saturday, 2024-11-30 at 12:00:35 CET. It lists the main PID as 10661 and shows three child processes (10662, 10663) running '/usr/sbin/apache2 -k start'. The terminal also shows system logs for the service starting.

```
ceci@ceci-VirtualBox:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset:
   Active: active (running) since Sat 2024-11-30 12:00:35 CET; 15min ago
     Docs: https://httpd.apache.org/docs/2.4/
    Main PID: 10661 (apache2)
       Tasks: 55 (limit: 4615)
      Memory: 5.3M (peak: 5.6M)
         CPU: 199ms
        CGroup: /system.slice/apache2.service
               └─10661 /usr/sbin/apache2 -k start
                 └─10662 /usr/sbin/apache2 -k start
                   └─10663 /usr/sbin/apache2 -k start

nov 30 12:00:35 ceci-VirtualBox systemd[1]: Starting apache2.service - The Apac
nov 30 12:00:35 ceci-VirtualBox apachectl[10660]: AH00558: apache2: Could not r
nov 30 12:00:35 ceci-VirtualBox systemd[1]: Started apache2.service - The Apach
lines 1-16/16 (END)
```

4. Comprobación de funcionamiento a través del navegador



A terminal window titled 'ceci@ceci-VirtualBox: ~' showing the output of the command 'ip a'. It displays detailed network information for the loopback interface 'lo' (127.0.0.1) and the ethernet interface 'enp0s3' (192.168.1.153). The output includes MTU, queue discipline, state, and various flags for each interface.

```
ceci@ceci-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
   inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
   inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP
   group default qlen 1000
   link/ether 08:00:27:75:69:75 brd ff:ff:ff:ff:ff:ff
   inet 192.168.1.153/24 brd 192.168.1.255 scope global dynamic noprefixroute e
       valid_lft 82223sec preferred_lft 82223sec
   inet6 2a0c:5a81:b90a:9400:9e35:a192:73a5:8c2d/64 scope global temporary dyna
       valid_lft 600624sec preferred_lft 81864sec
   inet6 2a0c:5a81:b90a:9400:a00:27ff:fe75:6975/64 scope global dynamic mngtma
       valid_lft forever preferred_lft forever
   inet6 fe80::a00:27ff:fe75:6975/64 scope link
       valid_lft forever preferred_lft forever
ceci@ceci-VirtualBox:~$
```



Ubuntu

Apache2 Default Page

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in `/usr/share/doc/apache2/README.Debian.gz`**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|   |-- ports.conf
|   |-- mods-enabled
|       |-- *.load
|       |-- *.conf
|   |-- conf-enabled
|       |-- *.conf
|   |-- sites-enabled
|       |-- *.conf
```

2. Servidor con una única tarjeta de red que ofrece un sitio web por cada puerto.

1. Configuración de Apache para escuchar en los puertos 3000 y 5000

```
ceci@ceci-VirtualBox: ~
ceci@ceci-VirtualBox:~$ sudo cat /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 80
Listen 3000
Listen 5000
<IfModule ssl_module>
    Listen 443
</IfModule>

<IfModule mod_gnutls.c>
    Listen 443
</IfModule>
ceci@ceci-VirtualBox:~$
```

2.Crear los archivos de configuración para los sitios web

```
cecilia@cecilia-VirtualBox: ~  
<VirtualHost *:3000>  
# 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/sitio_3000  
  
# 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
```

```
1 de dic  
cecilia@cecilia-VirtualBox: ~  
cecilia@cecilia-VirtualBox:~$ cat /etc/apache2/sites-available/sitio_5000.conf  
<VirtualHost *:5000>  
# 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/sitio_5000  
  
# 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 confiuration files from conf-available/. which are
```

3. activación de los sitios con a2ensite

```
cecilia@cecilia-VirtualBox: ~  
cecilia@cecilia-VirtualBox:~$ sudo a2ensite sitio_3000.conf  
Site sitio_3000 already enabled  
cecilia@cecilia-VirtualBox:~$ sudo a2ensite sitio_5000.conf  
Site sitio_5000 already enabled  
cecilia@cecilia-VirtualBox:~$
```

4. Captura de las carpetas de los sitios web en /var/www

```
cecilia@cecilia-VirtualBox:~$ ls /var/www  
html  sitio_3000  sitio_5000  
cecilia@cecilia-VirtualBox:~$
```

5. Captura de las carpetas de los archivos html

```
cecilia@cecilia-VirtualBox:~$ cat /var/www/sitio_3000/index.html  
<html>  
<head>  
<title>Sitio 3000</title>  
</head>  
<body>  
<h1>Bienvenido al puerto 3000</h1>  
</body>  
</html>  
cecilia@cecilia-VirtualBox:~$
```

```
cecilia@cecilia-VirtualBox:~$ cat /var/www/sitio_3000/index.html
<html>
<head>
<title>Sitio 3000</title>
</head>
<body>
<h1>Bienvenido al puerto 3000</h1>
</body>
</html>
cecilia@cecilia-VirtualBox:~$
```

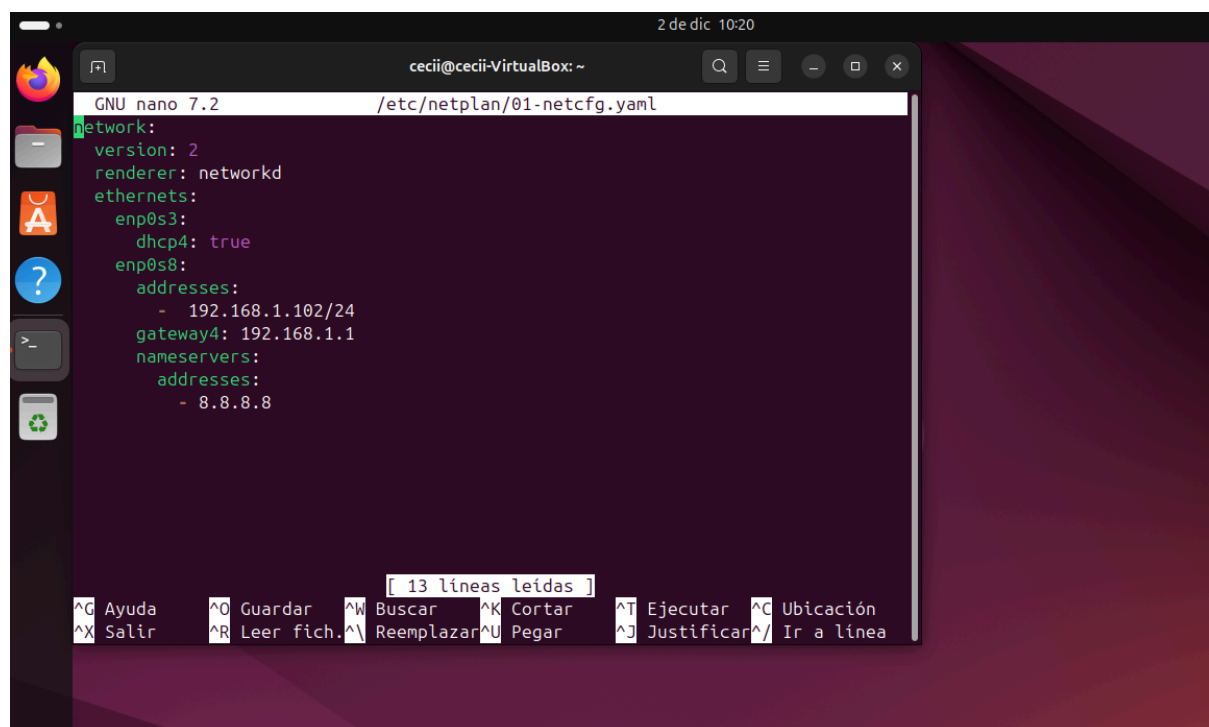
6. Captura de la prueba de los sitios web en los puertos 3000 y 5000



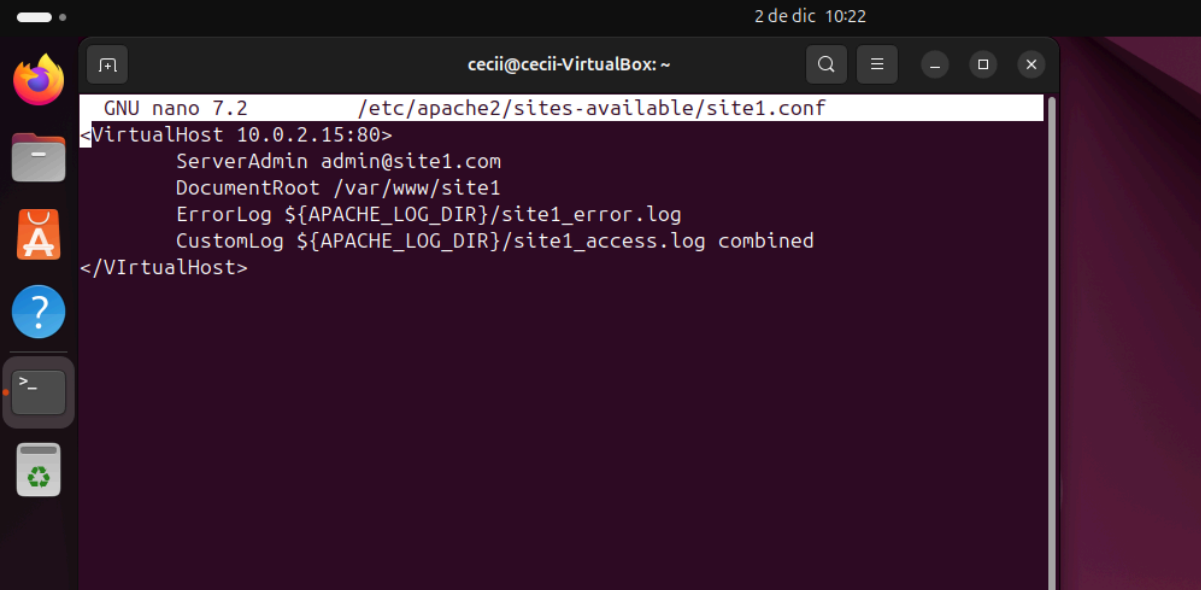


3. Servidor con dos tarjetas de red diferentes.

1. Configuración de la red

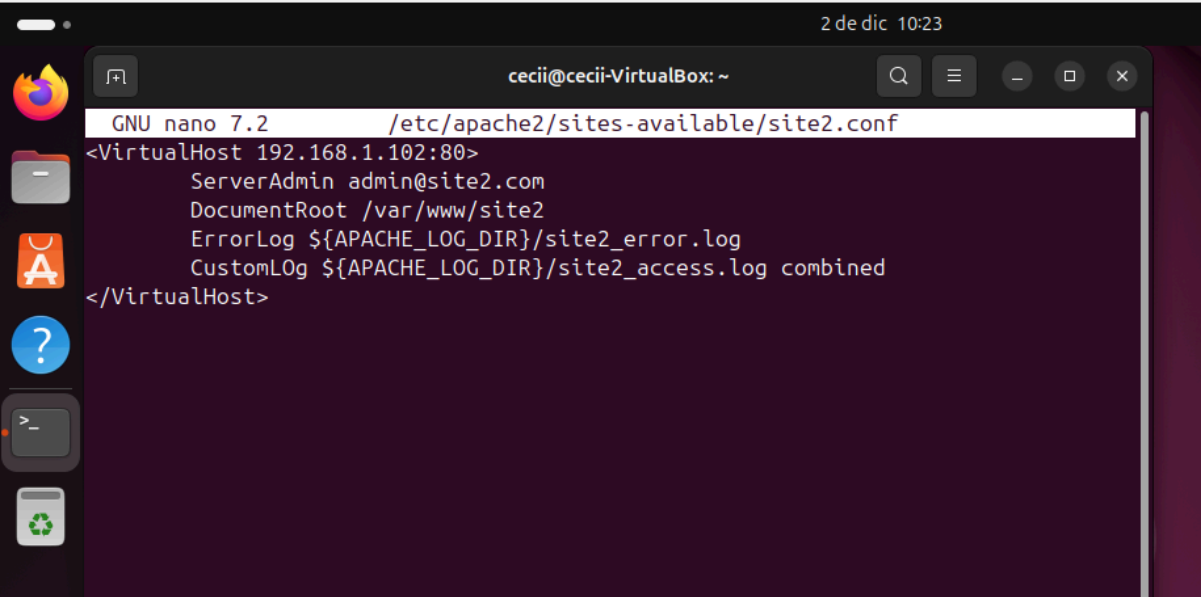


2. Configuración de los VirtualHost de apache



A screenshot of a terminal window titled "cecii@cecii-VirtualBox: ~" with a timestamp of "2 de dic 10:22". The terminal shows the GNU nano 7.2 editor editing the file "/etc/apache2/sites-available/site1.conf". The configuration content is as follows:

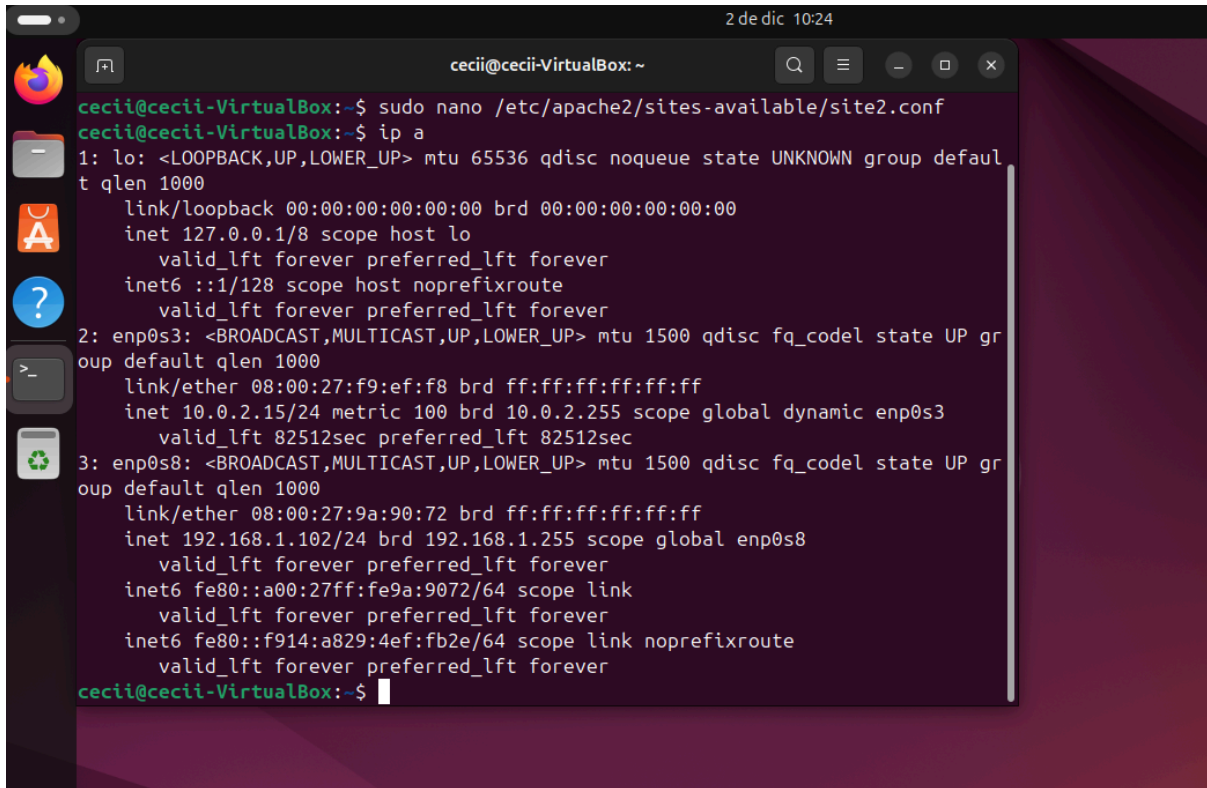
```
<VirtualHost 10.0.2.15:80>
    ServerAdmin admin@site1.com
    DocumentRoot /var/www/site1
    ErrorLog ${APACHE_LOG_DIR}/site1_error.log
    CustomLog ${APACHE_LOG_DIR}/site1_access.log combined
</VirtualHost>
```



A screenshot of a terminal window titled "cecii@cecii-VirtualBox: ~" with a timestamp of "2 de dic 10:23". The terminal shows the GNU nano 7.2 editor editing the file "/etc/apache2/sites-available/site2.conf". The configuration content is as follows:

```
<VirtualHost 192.168.1.102:80>
    ServerAdmin admin@site2.com
    DocumentRoot /var/www/site2
    ErrorLog ${APACHE_LOG_DIR}/site2_error.log
    CustomLog ${APACHE_LOG_DIR}/site2_access.log combined
</VirtualHost>
```


3. ip a



A terminal window titled "cecii@cecii-VirtualBox: ~" with a search bar and window controls. The user has executed the command "ip a". The output shows three network interfaces: "lo" (loopback), "enp0s3" (ethernet), and "enp0s8" (ethernet). Each interface displays its link layer details, IP address, and various flags.

```
cecii@cecii-VirtualBox:~$ sudo nano /etc/apache2/sites-available/site2.conf
cecii@cecii-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:f9:ef:f8 brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 metric 100 brd 10.0.2.255 scope global dynamic enp0s3
        valid_lft 82512sec preferred_lft 82512sec
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:9a:90:72 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.102/24 brd 192.168.1.255 scope global enp0s8
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe9a:9072/64 scope link
        valid_lft forever preferred_lft forever
    inet6 fe80::f914:a829:4ef:fb2e/64 scope link noprefixroute
        valid_lft forever preferred_lft forever
cecii@cecii-VirtualBox:~$
```

4. <http://10.0.2.15> <http://192.168.1.102>



