

PROTOCOLE HTTP (Sous Linux)

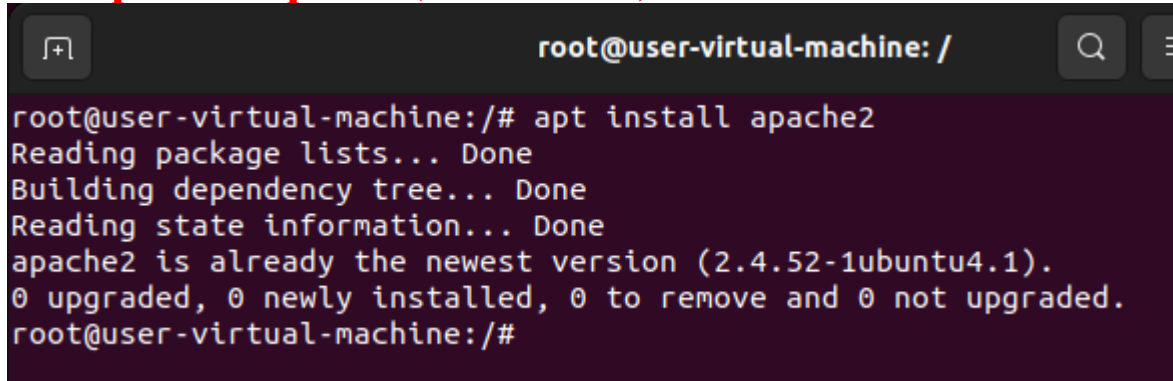
Système d'exploitation 2

Les commandes utilisées pour la réalisation du projet

- Encadré par : Mehdi Moukhafi
- Présenté par : Taha Souhail Manna & othman Benmalek

Étape 1 — Installation d'Apache :

- **sudo apt install apache2 (en mode root)**



```
root@user-virtual-machine: /  
root@user-virtual-machine:/# apt install apache2  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
apache2 is already the newest version (2.4.52-1ubuntu4.1).  
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.  
root@user-virtual-machine:/#
```

Étape 2 — Réglage du pare-feu :

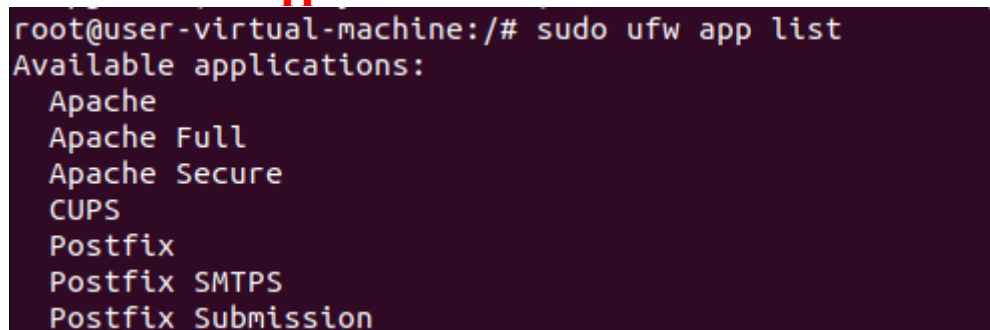
Avant de tester Apache, il est nécessaire de modifier les paramètres du pare-feu pour permettre à l'extérieur d'accéder aux ports web par défaut.

En supposant que vous ayez suivi les instructions des conditions préalables,

vous devriez avoir un pare-feu UFW configuré pour restreindre l'accès à votre serveur.

Listez les profils d'application ufw en tapant :

- **sudo ufw app list**



```
root@user-virtual-machine:/# sudo ufw app list  
Available applications:  
Apache  
Apache Full  
Apache Secure  
CUPS  
Postfix  
Postfix SMTPS  
Postfix Submission
```

Vous recevrez une liste des profils d'application.

Comme le montre la sortie, il existe trois profils pour Apache :

Apache : ce profil n'ouvre que le port 80 (trafic web normal, non crypté).

Apache Full : ce profil ouvre à la fois le port 80 (trafic web normal, non crypté) et le port 443 (trafic crypté TLS/SSL).

Apache Secure : ce profil n'ouvre que le port 443 (trafic crypté TLS/SSL).

Nous vous recommandons d'activer le profil le plus restrictif qui autorisera tout de même le trafic que vous avez configuré.

Comme nous n'avons pas encore configuré le SSL pour notre serveur dans ce guide,

Nous devons seulement autoriser le trafic sur le port 80 :

- **sudo ufw allow 'Apache'**

```
root@user-virtual-machine:/# ufw allow Apache
Skipping adding existing rule
Skipping adding existing rule (v6)
```

Vous pouvez vérifier le changement en saisissant :

- **sudo ufw status**

```
root@user-virtual-machine:/# ufw status
Status: active

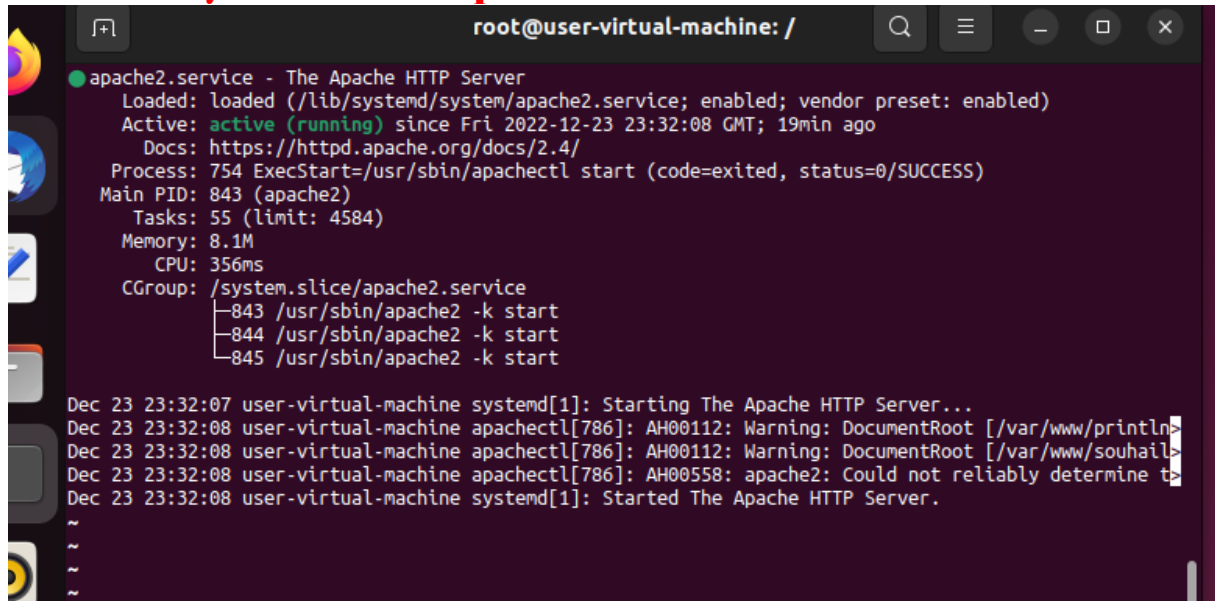
To Action From
--
80 ALLOW Anywhere
Apache ALLOW Anywhere
80 (v6) ALLOW Anywhere (v6)
Apache (v6) ALLOW Anywhere (v6)

root@user-virtual-machine:/#
```

Concernant la commande pour l'installation du server Apache2 :

Étape 3 - Vérification de votre serveur Web :

- **sudo systemctl status apache2**



```

root@user-virtual-machine: /
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Fri 2022-12-23 23:32:08 GMT; 19min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 754 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
   Main PID: 843 (apache2)
    Tasks: 55 (limit: 4584)
   Memory: 8.1M
      CPU: 356ms
   CGroup: /system.slice/apache2.service
           └─843 /usr/sbin/apache2 -k start
             └─844 /usr/sbin/apache2 -k start
               └─845 /usr/sbin/apache2 -k start

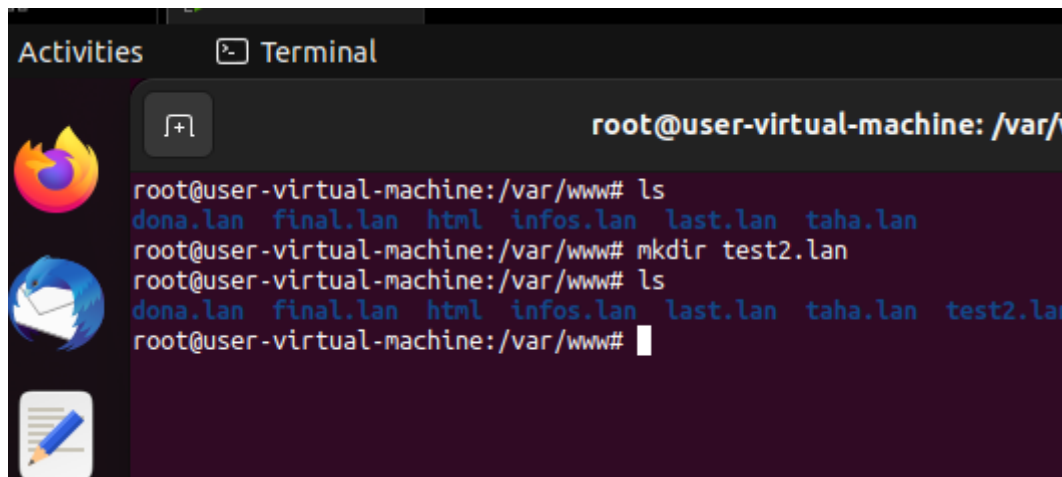
Dec 23 23:32:07 user-virtual-machine systemd[1]: Starting The Apache HTTP Server...
Dec 23 23:32:08 user-virtual-machine apachectl[786]: AH00112: Warning: DocumentRoot [/var/www/println>
Dec 23 23:32:08 user-virtual-machine apachectl[786]: AH00112: Warning: DocumentRoot [/var/www/souhail>
Dec 23 23:32:08 user-virtual-machine apachectl[786]: AH00558: apache2: Could not reliably determine t>
Dec 23 23:32:08 user-virtual-machine systemd[1]: Started The Apache HTTP Server.
~
~
~

```

Étape 4 — Configuration des hôtes virtuels

- **mkdir -p var/www/test2.lan**

-> La création de la racine de notre arborescence



```

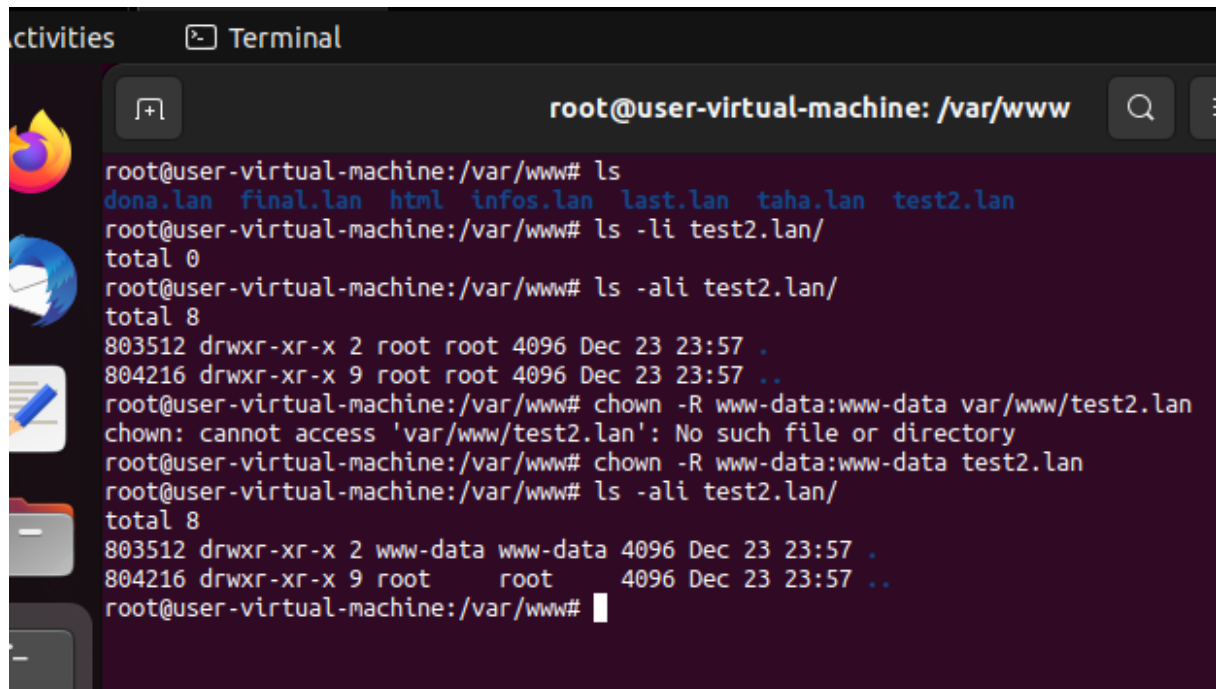
Activities Terminal
root@user-virtual-machine: /var/

root@user-virtual-machine:/var/www# ls
dona.lan  final.lan  html  infos.lan  last.lan  taha.lan
root@user-virtual-machine:/var/www# mkdir test2.lan
root@user-virtual-machine:/var/www# ls
dona.lan  final.lan  html  infos.lan  last.lan  taha.lan  test2.lan
root@user-virtual-machine:/var/www#

```

- **chown -R www-data:www-data var/www/test2.lan**

-> Changer la propriété du répertoire en utilisateur actuel



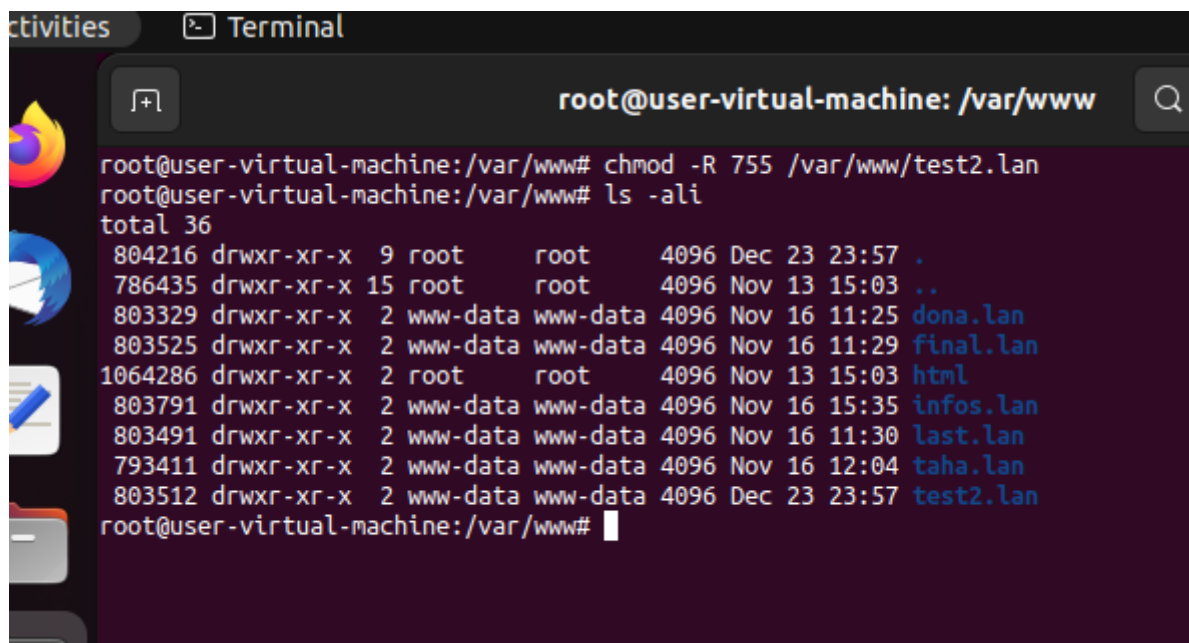
```

root@user-virtual-machine: /var/www
root@user-virtual-machine:/var/www# ls
dona.lan final.lan html infos.lan last.lan taha.lan test2.lan
root@user-virtual-machine:/var/www# ls -li test2.lan/
total 0
root@user-virtual-machine:/var/www# ls -ali test2.lan/
total 8
803512 drwxr-xr-x 2 root root 4096 Dec 23 23:57 .
804216 drwxr-xr-x 9 root root 4096 Dec 23 23:57 ..
root@user-virtual-machine:/var/www# chown -R www-data:www-data var/www/test2.lan
chown: cannot access 'var/www/test2.lan': No such file or directory
root@user-virtual-machine:/var/www# chown -R www-data:www-data test2.lan
root@user-virtual-machine:/var/www# ls -ali test2.lan/
total 8
803512 drwxr-xr-x 2 www-data www-data 4096 Dec 23 23:57 .
804216 drwxr-xr-x 9 root root 4096 Dec 23 23:57 ..
root@user-virtual-machine:/var/www#

```

- **chmod -R 755 var/www/test2.lan**

-> Attribuer les autorisations nécessaires



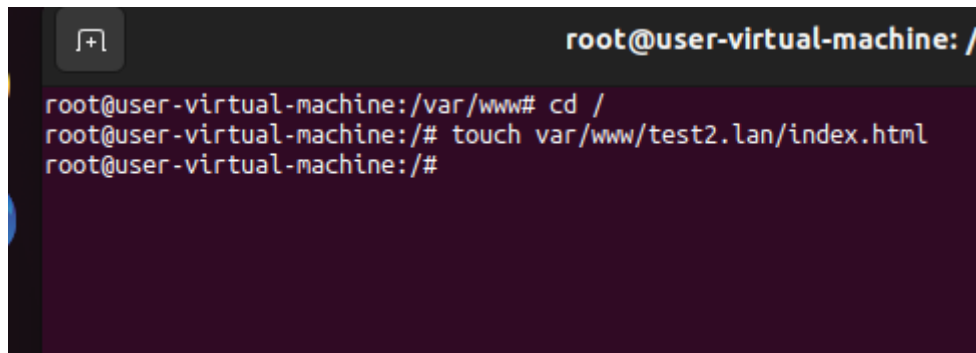
```

root@user-virtual-machine: /var/www
root@user-virtual-machine:/var/www# chmod -R 755 /var/www/test2.lan
root@user-virtual-machine:/var/www# ls -ali
total 36
804216 drwxr-xr-x 9 root root 4096 Dec 23 23:57 .
786435 drwxr-xr-x 15 root root 4096 Nov 13 15:03 ..
803329 drwxr-xr-x 2 www-data www-data 4096 Nov 16 11:25 dona.lan
803525 drwxr-xr-x 2 www-data www-data 4096 Nov 16 11:29 final.lan
1064286 drwxr-xr-x 2 root root 4096 Nov 13 15:03 html
803791 drwxr-xr-x 2 www-data www-data 4096 Nov 16 15:35 infos.lan
803491 drwxr-xr-x 2 www-data www-data 4096 Nov 16 11:30 last.lan
793411 drwxr-xr-x 2 www-data www-data 4096 Nov 16 12:04 taha.lan
803512 drwxr-xr-x 2 www-data www-data 4096 Dec 23 23:57 test2.lan
root@user-virtual-machine:/var/www#

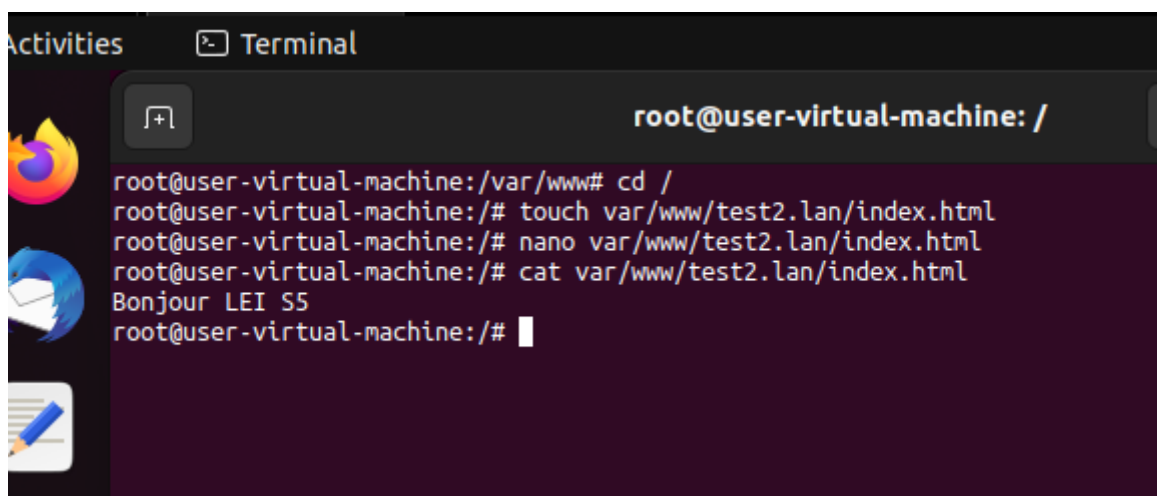
```

- **touch var/www/test2.lan/index.html**

-> On écrit un code HTML



```
root@user-virtual-machine: /  
root@user-virtual-machine:/var/www# cd /  
root@user-virtual-machine:/# touch var/www/test2.lan/index.html  
root@user-virtual-machine:/#
```



```
Activities Terminal  
root@user-virtual-machine: /  
root@user-virtual-machine:/var/www# cd /  
root@user-virtual-machine:/# touch var/www/test2.lan/index.html  
root@user-virtual-machine:/# nano var/www/test2.lan/index.html  
root@user-virtual-machine:/# cat var/www/test2.lan/index.html  
Bonjour LEI S5  
root@user-virtual-machine:/#
```

- **cd etc/apache2/sites-available**

sites-available contient les configurations des différents sites

- **cp etc/apache2/sites-available/alreadythere.lan.conf test2.lan.conf**

-> Pour réserver la même configuration, on va juste changer le nom du server et serverAlias

The image shows a terminal window with two screenshots. The top screenshot shows the nano 6.2 editor editing the file `test2.lan.conf`. The configuration for the `<VirtualHost *:80>` block is as follows:

```
<VirtualHost *:80>
    # 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
    ServerName test2.lan
    ServerAlias www.test2.lan
    DocumentRoot /var/www/test2.lan

    # 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
```

The bottom screenshot shows the terminal after the file has been copied. The command `cp /etc/apache2/sites-available/infos.lan.conf test2.lan.conf` has been executed. Then, the command `ls` is run in the directory `/etc/apache2/sites-available`, showing the following files:

```
000-default.conf  dona.lan.conf  last.lan.conf  souhail.lan.conf  xx
default-ssl.conf  infos.lan.conf  println.lan.conf  taha.lan.conf
```

- **a2ensite souhail3.lan.conf**

-> Activer le siteweb

```
root@user-virtual-machine:/etc/apache2/sites-available# a2ensite test2.lan.conf
Enabling site test2.lan.
To activate the new configuration, you need to run:
  systemctl reload apache2
root@user-virtual-machine:/etc/apache2/sites-available#
```

- **systemctl restart apache2**

->Recharger maintenant la configuration d'Apache pour prendre en compte vos modifications


```
root@user-virtu
GNU nano 6.2 etc/h
127.0.0.1    localhost
127.0.1.1    user-virtual-machine
#192.168.1.10  taha.lan www.taha.lan
#192.168.1.10  info.lan www.info.lan
#192.168.1.10  manna.lan www.manna.lan
#192.168.1.10  data.lan www.data.lan
#192.168.1.10  test3.lan www.test3.lan
#192.168.1.10  wow.lan www.wow.lan
#192.168.0.45  taha.lan www.taha.lan
#192.168.0.46  infos.lan www.google.lan
192.168.1.12  test2.lan www.test2.lan
#192.168.1.10  souhail.lan www.souhail.lan
# The following lines are desirable for IPv6 capable hosts
::1          ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

Save modified buffer?
Y Yes
N No      ^C Cancel
```

```
root@user-virtual-machine: /etc/apache2/sites-available
root@user-virtual-machine:/etc/apache2/sites-available# systemctl restart apache2
root@user-virtual-machine:/etc/apache2/sites-available# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Sat 2022-12-24 00:09:18 GMT; 8s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 4098 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
  Main PID: 4103 (apache2)
    Tasks: 55 (limit: 4584)
   Memory: 5.0M
      CPU: 80ms
   CGroup: /system.slice/apache2.service
           └─4103 /usr/sbin/apache2 -k start
             └─4104 /usr/sbin/apache2 -k start
               └─4105 /usr/sbin/apache2 -k start

Dec 24 00:09:18 user-virtual-machine systemd[1]: Starting The Apache HTTP Server...
Dec 24 00:09:18 user-virtual-machine apachectl[4102]: AH00112: Warning: DocumentRoot [/var/www/println.lan] does not exist
Dec 24 00:09:18 user-virtual-machine apachectl[4102]: AH00112: Warning: DocumentRoot [/var/www/souhail.lan] does not exist
Dec 24 00:09:18 user-virtual-machine apachectl[4102]: AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 1
Dec 24 00:09:18 user-virtual-machine systemd[1]: Started The Apache HTTP Server.
lines 1-19/19 (END)
```

- **nano etc/hosts**

« 192.168.1.10 » www.test2.lan test2.lan

-> on ajoute IP avec le DNS .

- **Sortie :**

