

Pràctica servidor HTTP bàsica

1. Creeu un usuari personalitzat (aquest pas ja està fet si utilitzes la màquina de la pràctica anterior)
2. Configura la interfície amb una IP fixa. (aquest pas ja està fet si utilitzes la màquina de la pràctica anterior)

3. Instal·lació del programari Apache (apache2).

Primer instal·la els paquets del repositori

```
Last login: Wed Nov 20 17:05:27 2024 from 192.168.56.1
eric@server22:~$ sudo apt update
[sudo] password for eric:
Hit:1 http://es.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://es.archive.ubuntu.com/ubuntu jammy-updates InRelease [128 kB]
Get:3 http://es.archive.ubuntu.com/ubuntu jammy-backports InRelease [127 kB]
Get:4 http://es.archive.ubuntu.com/ubuntu jammy-security InRelease [129 kB]
Get:5 http://es.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [2180 kB]
Get:6 http://es.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [372 kB]
Get:7 http://es.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [17.9 kB]
Get:8 http://es.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [2680 kB]
Get:9 http://es.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [466 kB]
Get:10 http://es.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 c-n-f Metadata [612 B]
Get:11 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [1177 kB]
Get:12 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [287 kB]
Get:13 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [26.4 kB]
Get:14 http://es.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 Packages [43.6 kB]
Get:15 http://es.archive.ubuntu.com/ubuntu jammy-updates/multiverse Translation-en [11.5 kB]
Get:16 http://es.archive.ubuntu.com/ubuntu jammy-updates/multiverse amd64 c-n-f Metadata [440 B]
Get:17 http://es.archive.ubuntu.com/ubuntu jammy-backports/main amd64 Packages [67.7 kB]
Get:18 http://es.archive.ubuntu.com/ubuntu jammy-backports/main amd64 c-n-f Metadata [388 B]
Get:19 http://es.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 Packages [28.9 kB]
Get:20 http://es.archive.ubuntu.com/ubuntu jammy-backports/universe Translation-en [16.5 kB]
Get:21 http://es.archive.ubuntu.com/ubuntu jammy-backports/universe amd64 c-n-f Metadata [672 B]
Get:22 http://es.archive.ubuntu.com/ubuntu jammy-security/main amd64 Packages [1956 kB]
Get:23 http://es.archive.ubuntu.com/ubuntu jammy-security/main Translation-en [313 kB]
Get:24 http://es.archive.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [13.3 kB]
Get:25 http://es.archive.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [2611 kB]
Get:26 http://es.archive.ubuntu.com/ubuntu jammy-security/restricted Translation-en [453 kB]
Get:27 http://es.archive.ubuntu.com/ubuntu jammy-security/restricted amd64 c-n-f Metadata [580 B]
Get:28 http://es.archive.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [957 kB]
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2024-12-04 16:55:54 UTC; 54min ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 964 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SUCCESS)
  Main PID: 1079 (apache2)
    Tasks: 6 (limit: 1011)
   Memory: 10.0M
      CPU: 365ms
   CGroup: /system.slice/apache2.service
           └─1079 /usr/sbin/apache2 -k start
```

Consulteu el procés que proporciona el servei:

```
eric@server22:~$ ps -aux | grep "apache2"
root      1079  0.0  1.0 229268 10620 ?        Ss   16:55   0:00 /usr/sbin/apache2 -k start
www-data  1161  0.0  0.4 229828  4120 ?        S    16:55   0:00 /usr/sbin/apache2 -k start
www-data  1162  0.0  0.4 229828  4140 ?        S    16:55   0:00 /usr/sbin/apache2 -k start
www-data  1163  0.0  0.4 229828  4140 ?        S    16:55   0:00 /usr/sbin/apache2 -k start
www-data  1164  0.0  0.4 229828  4140 ?        S    16:55   0:00 /usr/sbin/apache2 -k start
www-data  1165  0.0  0.4 229828  4120 ?        S    16:55   0:00 /usr/sbin/apache2 -k start
eric      2413  0.0  0.2   7008   2088 pts/0    S+   17:54   0:00 grep --color=auto apache2
eric@server22:~$
```

Consulteu el port on escolta el servei (primer cal instal·lar el programari nmap):

```
eric@server22:~$ sudo apt install nmap
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  libflashrom1 libftdi1-2 libllvm13 libvulkan1 mesa-vulkan-drivers
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  liblinear4 lua-lpeg nmap nmap-common
Suggested packages:
  liblinear-tools liblinear-dev ncat ndiff zenmap
The following NEW packages will be installed:
  liblinear4 lua-lpeg nmap nmap-common
0 upgraded, 4 newly installed, 0 to remove and 101 not upgraded.
Need to get 5744 kB of archives.
After this operation, 25.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://es.archive.ubuntu.com/ubuntu jammy/universe amd64 liblinear4 amd64 2.3.0+dfsg-5 [4
1.4 kB]
Get:2 http://es.archive.ubuntu.com/ubuntu jammy/universe amd64 lua-lpeg amd64 1.0.2-1 [31.4 kB]
Get:3 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 nmap-common all 7.91+dfs
g1+really7.80+dfsg1-2ubuntu0.1 [3940 kB]
Get:4 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 nmap amd64 7.91+dfsg1+re
ally7.80+dfsg1-2ubuntu0.1 [1731 kB]
Fetched 5744 kB in 7s (857 kB/s)
Selecting previously unselected package liblinear4:amd64.
(Reading database ... 180429 files and directories currently installed.)
Preparing to unpack .../liblinear4_2.3.0+dfsg-5_amd64.deb ...
Unpacking liblinear4:amd64 (2.3.0+dfsg-5) ...
Selecting previously unselected package lua-lpeg:amd64.
Preparing to unpack .../lua-lpeg_1.0.2-1_amd64.deb ...
Unpacking lua-lpeg:amd64 (1.0.2-1) ...
Selecting previously unselected package nmap-common.
Preparing to unpack .../nmap-common_7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1_all.deb ...
Unpacking nmap-common (7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1) ...
Selecting previously unselected package nmap.
Preparing to unpack .../nmap_7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1_amd64.deb ...
Unpacking nmap (7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1) ...
Setting up lua-lpeg:amd64 (1.0.2-1) ...
Setting up liblinear4:amd64 (2.3.0+dfsg-5) ...
Setting up nmap-common (7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1) ...
Setting up nmap (7.91+dfsg1+really7.80+dfsg1-2ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.8) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.
```



4. Configuració d'un lloc web virtual en el port 80 i 8080.

Crea un directori en /web/sitio1

```
eric@server22:~$ sudo mkdir web
eric@server22:~$ cd web
eric@server22:~/web$ ls
eric@server22:~/web$ sudo mkdir sitio1
eric@server22:~/web$ ls -ls
total 4
4 drwxr-xr-x 2 root root 4096 Dec  4 18:05 sitio1
eric@server22:~/web$
```

Completa el fitxer `/etc/apache2.conf` amb les línies requerides.

```
GNU nano 6.2 /etc/apache2/apache2.conf *
# not allow access to the root filesystem outside of /usr/share and /var/www.
# The former is used by web applications packaged in Debian,
# the latter may be used for local directories served by the web server. If
# your system is serving content from a sub-directory in /srv you must allow
# access here, or in any related virtual host.
<Directory />
    Options FollowSymLinks
    AllowOverride None
    Require all denied
</Directory>

<Directory /usr/share>
    AllowOverride None
    Require all granted
</Directory>

<Directory /var/www/>
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>

<Directory /web/sitio1>
    Options Indexes FollowSymLinks
    AllowOverride None
    Require all granted
</Directory>

#<Directory /srv/>
#     Options Indexes FollowSymLinks
#     AllowOverride None
#     Require all granted
#</Directory>

# AccessFileName: The name of the file to look for in each directory
# for additional configuration directives. See also the AllowOverride
# directive.
#
AccessFileName .htaccess

#
# The following lines prevent .htaccess and .htpasswd files from being
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

Crea una copia perquè siga més fàcil escriure la configuració del lloc virtual:

```
eric@server22:/etc/apache2/sites-available$ sudo cp 000-default.conf sitio1.conf
eric@server22:/etc/apache2/sites-available$ ls -la
total 24
drwxr-xr-x 2 root root 4096 Dec  4 18:16 .
drwxr-xr-x 8 root root 4096 Dec  4 18:12 ..
-rw-r--r-- 1 root root 1332 Sep  8 2022 000-default.conf
-rw-r--r-- 1 root root 6338 Sep 30 2022 default-ssl.conf
-rw-r--r-- 1 root root 1332 Dec  4 18:16 sitio1.conf
eric@server22:/etc/apache2/sites-available$ sudo nano sitio1.conf
eric@server22:/etc/apache2/sites-available$ sudo a2dissite 000-default.conf
Site 000-default already disabled
eric@server22:/etc/apache2/sites-available$ sudo a2ensite sitio1.conf
Enabling site sitio1.
To activate the new configuration, you need to run:
    systemctl reload apache2
eric@server22:/etc/apache2/sites-available$
```


habilitar el lloc web:

```
eric@server22:/etc/apache2/sites-available$ sudo cp 000-default.conf sitio1.conf
eric@server22:/etc/apache2/sites-available$ ls -la
total 24
drwxr-xr-x 2 root root 4096 Dec  4 18:16 .
drwxr-xr-x 8 root root 4096 Dec  4 18:12 ..
-rw-r--r-- 1 root root 1332 Sep  8 2022 000-default.conf
-rw-r--r-- 1 root root 6338 Sep 30 2022 default-ssl.conf
-rw-r--r-- 1 root root 1332 Dec  4 18:16 sitio1.conf
eric@server22:/etc/apache2/sites-available$ sudo nano sitio1.conf
eric@server22:/etc/apache2/sites-available$ sudo a2dissite 000-default.conf
Site 000-default already disabled
eric@server22:/etc/apache2/sites-available$ sudo a2ensite sitio1.conf
Enabling site sitio1.
To activate the new configuration, you need to run:
systemctl reload apache2
eric@server22:/etc/apache2/sites-available$ sudo mkdir web
eric@server22:/etc/apache2/sites-available$ cd /etc/apache2
eric@server22:/etc/apache2$ ls -la
total 100
drwxr-xr-x  8 root root  4096 Dec  4 18:12 .
drwxr-xr-x 125 root root 12288 Dec  4 18:10 ..
-rw-r--r--  1 root root  7337 Dec  4 18:12 apache2.conf
drwxr-xr-x  2 root root  4096 Sep  9 09:48 conf-available
drwxr-xr-x  2 root root  4096 Sep  9 09:48 conf-enabled
-rw-r--r--  1 root root  1782 Sep  8 2022 envvars
-rw-r--r--  1 root root 31063 Sep  8 2022 magic
drwxr-xr-x  2 root root 16384 Sep  9 08:19 mods-available
drwxr-xr-x  2 root root  4096 Sep  9 09:48 mods-enabled
-rw-r--r--  1 root root   320 Sep  8 2022 ports.conf
drwxr-xr-x  3 root root  4096 Dec  4 18:19 sites-available
drwxr-xr-x  2 root root  4096 Dec  4 18:18 sites-enabled
eric@server22:/etc/apache2$ cd sites-enabled/
eric@server22:/etc/apache2/sites-enabled$ la -la
total 8
drwxr-xr-x 2 root root 4096 Dec  4 18:18 .
drwxr-xr-x 8 root root 4096 Dec  4 18:12 ..
lrwxrwxrwx 1 root root   30 Dec  4 18:18 sitio1.conf -> ../sites-available/sitio1.conf
eric@server22:/etc/apache2/sites-enabled$ sudo systemctl restart apache2
eric@server22:/etc/apache2/sites-enabled$ █
```

Ara edita el numero de port on escolta el servidor web.

```
eric@server22:/etc/apache2$ ls -ls
total 84
 8 -rw-r--r-- 1 root root  7337 Dec  4 18:12 apache2.conf
 4 drwxr-xr-x 2 root root  4096 Sep  9 09:48 conf-available
 4 drwxr-xr-x 2 root root  4096 Sep  9 09:48 conf-enabled
 4 -rw-r--r-- 1 root root  1782 Sep  8 2022 envvars
32 -rw-r--r-- 1 root root 31063 Sep  8 2022 magic
16 drwxr-xr-x 2 root root 16384 Sep  9 08:19 mods-available
 4 drwxr-xr-x 2 root root  4096 Sep  9 09:48 mods-enabled
 4 -rw-r--r-- 1 root root   332 Dec  9 18:50 ports.conf
 4 drwxr-xr-x 3 root root  4096 Dec  4 18:19 sites-available
 4 drwxr-xr-x 2 root root  4096 Dec  4 18:18 sites-enabled
eric@server22:/etc/apache2$ sudo nano ports.conf
eric@server22:/etc/apache2$ cd sites-available/
eric@server22:/etc/apache2/sites-available$ █
```

Edita el fitxer:

```
GNU nano 6.2 /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 80
Listen 8080

<IfModule ssl_module>
    Listen 443
</IfModule>

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

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
```

Ara torna al fitxer /etc/apache2/sites-available/sitio1.conf

```
eric@server22:/etc/apache2/sites-available$ ls -la
total 28
drwxr-xr-x 3 root root 4096 Dec  4 18:19 .
drwxr-xr-x 8 root root 4096 Dec  9 18:55 ..
-rw-r--r-- 1 root root 1332 Sep  8  2022 000-default.conf
-rw-r--r-- 1 root root 6338 Sep 30  2022 default-ssl.conf
```

Edita: `sudo nano /etc/apache2/sites-available/sitio1.conf`

```
GNU nano 6.2 /etc/apache2/sites-available/sitio1.conf *
# 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>
<VirtualHost *:8080>
    ServerAdmin webmaster@localhost
    DocumentRoot /web/sitio1
    ErrorLog ${APACHE_LOG_DIR}/error.log
    CustomLog ${APACHE_LOG_DIR}/access.log combined
</VirtualHost>

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
█

^G Help      ^O Write Out  ^W Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```

Reinicia el servei:

```
eric@server22:/etc/apache2/sites-available$ sudo nano /etc/apache2/sites-available/sitio1.conf
eric@server22:/etc/apache2/sites-available$ sudo service apache2 restart
eric@server22:/etc/apache2/sites-available$ █
```


Comprova el servidor virtual

```
eric@server22:~$ sudo mkdir web
mkdir: cannot create directory 'web': File exists
eric@server22:~$ cd web
eric@server22:~/web$ ls -la
total 12
drwxr-xr-x 3 root root 4096 Dec  4 18:05 .
drwxr-x--- 4 eric eric 4096 Dec  4 18:05 ..
drwxr-xr-x 3 root root 4096 Dec  9 19:18 sitio1
eric@server22:~/web$ cd sitio1/
eric@server22:~/web/sitio1$ ls -la
total 16
drwxr-xr-x 3 root root 4096 Dec  9 19:18 .
drwxr-xr-x 3 root root 4096 Dec  4 18:05 ..
-rw-r--r-- 1 root root  219 Dec  9 19:18 index.html
drwxr-xr-x 2 root root 4096 Dec  4 18:15 web
eric@server22:~/web/sitio1$ cat index.html
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  Hola soy Eric
</body>
</html>
eric@server22:~/web/sitio1$
```