Ejercicios Tema 01

5) Investiga en la web para qué se utiliza la herramienta curl (puedes ejecutar man curl para obtener ayuda). Indica que es lo que hacen los siguientes comandos:

- **curl www.google.es:** Realiza una petición GET a la url de google, obteniendo los datos(mayormente el HTML y las cabeceras).
- **curl --request GET www.google.es**: Realiza la misma petición GET que el anterior, porque request es para HTTP, que es por defecto lo que hace la anterior.
- **curl -X GET www.google.es**: Tiene el mismo resultado que las anteriores. El -X se utiliza para establecer el método HTTP que se usará.
- **curl -X GET -I www.google.es**: Este solo hace petición de los datos de la cabecera, ya que el -I es equivalente a --head.
- **curl -X GET -i www.google.es**: Igual que los primeros, pero este incluye la cabecera por el -i

6) Dispones de máquinas que cuentan con el sistema operativo Ubuntu Server y Windows, tienen el entorno de red configurado y disponen de conexión a Internet. Además, se tiene acceso a la cuenta del usuario root o Administrador en cada caso. Indicar los pasos y comandos implicados para conseguir hacer lo siguiente (documentar el proceso de instalación y configuración).

Paso 1:

> Instalación Apache.

```
Desempaquetando apache2-bin (2.4.52-1ubuntu4.6) ...
Seleccionando el paquete apache2-data previamente no seleccionado.
Preparando para desempaquetar .../06-apache2-data_2.4.52-1ubuntu4.6_all.deb ...
Desempaquetando apache2-data (2.4.52-1ubuntu4.6) ...
Seleccionando el paquete apache2-utils previamente no seleccionado.
Preparando para desempaquetar .../07-apache2-utils_2.4.52-1ubuntu4.6_amd64.deb ...
Desempaquetando apache2-utils (2.4.52-1ubuntu4.6) ...
Seleccionando el paquete mailcap previamente no seleccionado.
Preparando para desempaquetar .../08-mailcap_3.70+nmu1ubuntu1_all.deb ...
Desempaquetando mailcap (3.70+nmu1ubuntu1) ...
Seleccionando el paquete mime-support previamente no seleccionado.
Preparando para desempaquetar .../09-mime-support_3.66_all.deb ...
Desempaquetando mime-support (3.66) ...
Seleccionando el paquete apache2 previamente no seleccionado.
Preparando para desempaquetar .../10-apache2_2.4.52-1ubuntu4.6_amd64.deb ...
Desempaquetando apache2 (2.4.52-1ubuntu4.6) ...
Seleccionando el paquete bzip2 previamente no seleccionado.
Preparando para desempaquetar .../11-bzip2_1.0.8-5build1_amd64.deb ...
Desempaquetando bzip2 (1.0.8-5build1) ...
Seleccionando el paquete ssl-cert previamente no seleccionado.
Preparando para desempaquetar .../12-ssl-cert_1.1.2_all.deb ...
Desempaquetando ssl-cert (1.1.2) ...
Configurando libapr1:amd64 (1.7.0-8ubuntu0.22.04.1) ...
Configurando bzip2 (1.0.8-5build1) ...
Configurando ssl-cert (1.1.2) ...
Configurando liblua5.3-0:amd64 (5.3.6-1build1) ...
Configurando apache2-data (2.4.52-1ubuntu4.6) ...
Configurando mailcap (3.70+nmu1ubuntu1) ...
Configurando libaprutil1:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Configurando mime-support (3.66) ...
Configurando libaprutil1-ldap:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Configurando libaprutil1-dbd-sqlite3:amd64 (1.6.1-5ubuntu4.22.04.2) ...
Configurando apache2-utils (2.4.52-1ubuntu4.6) ...
Configurando apache2-bin (2.4.52-1ubuntu4.6) ...
Configurando apache2 (2.4.52-1ubuntu4.6) ...

Progreso: [ 94%] [#################################################################################.....]
```

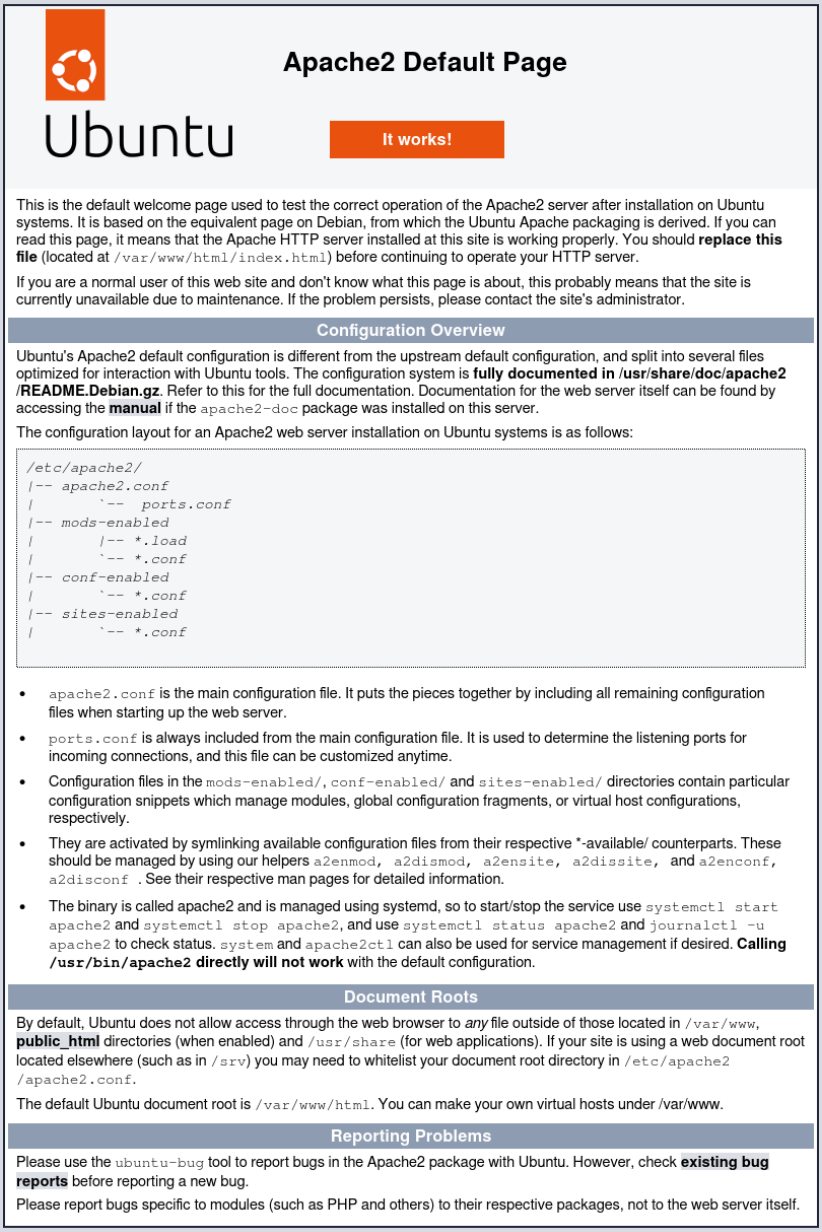
Paso 2:

> Comprobamos que el estado de apache esta OK.

```
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/ap
ache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/syste
md/system/apache-htcacheclean.service.
Procesando disparadores para ufw (0.36.1-4ubuntu0.1) ...
Procesando disparadores para man-db (2.10.2-1) ...
Procesando disparadores para libc-bin (2.35-0ubuntu3.3) ...
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.
rsc@ubuntuserver:~$ systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
     Active: active (running) since Mon 2023-09-25 08:31:32 UTC; 28s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 2494 (apache2)
      Tasks: 55 (limit: 2221)
     Memory: 4.9M
        CPU: 38ms
     CGroup: /system.slice/apache2.service
             ├─2494 /usr/sbin/apache2 -k start
             ├─2496 /usr/sbin/apache2 -k start
             └─2497 /usr/sbin/apache2 -k start

sep 25 08:31:32 ubuntuserver systemd[1]: Starting The Apache HTTP Server...
sep 25 08:31:32 ubuntuserver apachectl[2493]: AH00558: apache2: Could not reliably determine the se>
sep 25 08:31:32 ubuntuserver systemd[1]: Started The Apache HTTP Server.
rsc@ubuntuserver:~$ sudo apt install net-tools _
```

Paso 3:

> Comprobamos desde nuestra máquina si esta levantado el servidor, introduciendo nuestra ip del servidor ubuntu.



Apache2 Default Page

Ubuntu

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
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.
- They are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using our helpers `a2enmod`, `a2dismod`, `a2ensite`, `a2dissite`, and `a2enconf`, `a2disconf` . See their respective man pages for detailed information.
- The binary is called apache2 and is managed using systemd, so to start/stop the service use `systemctl start apache2` and `systemctl stop apache2`, and use `systemctl status apache2` and `journalctl -u apache2` to check status. `system` and `apache2ctl` can also be used for service management if desired. **Calling `/usr/bin/apache2` directly will not work** with the default configuration.

Document Roots

By default, Ubuntu does not allow access through the web browser to *any* file outside of those located in `/var/www`, **public_html** directories (when enabled) and `/usr/share` (for web applications). If your site is using a web document root located elsewhere (such as in `/srv`) you may need to whitelist your document root directory in `/etc/apache2 /apache2.conf`.

The default Ubuntu document root is `/var/www/html`. You can make your own virtual hosts under /var/www.

Reporting Problems

Please use the `ubuntu-bug` tool to report bugs in the Apache2 package with Ubuntu. However, check **existing bug reports** before reporting a new bug.

Please report bugs specific to modules (such as PHP and others) to their respective packages, not to the web server itself.

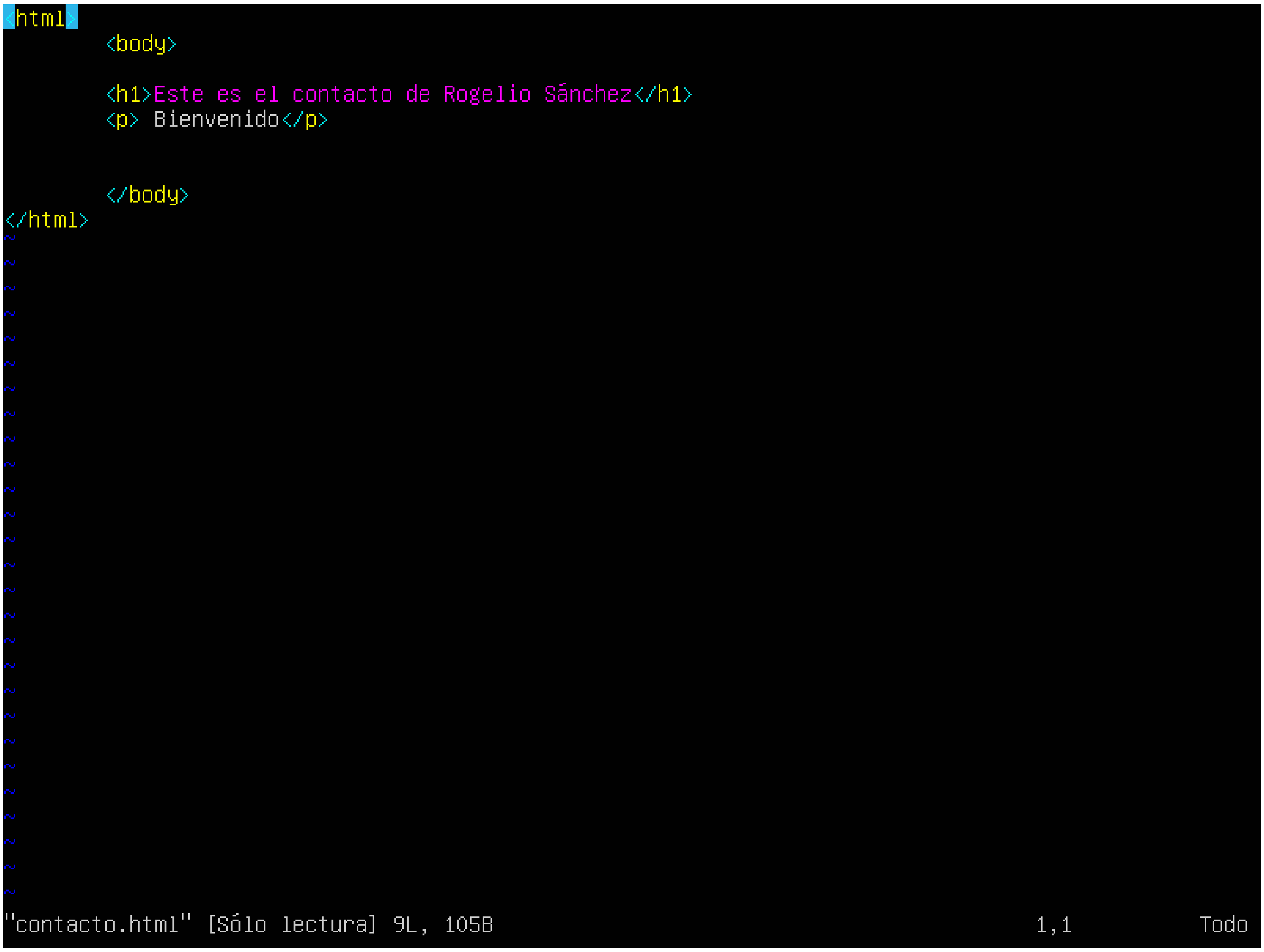
Paso 4:

> Concedemos permisos para no tener que estar usando sudo.

```
Desempaquetando net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Configurando net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Procesando disparadores para man-db (2.10.2-1) ...
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.
rsc@ubuntuserver:~$ 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
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 100
0
    link/ether 08:00:27:7b:83:f3 brd ff:ff:ff:ff:ff:ff
    inet 192.168.70.131/24 metric 100 brd 192.168.70.255 scope global dynamic enp0s3
       valid_lft 536sec preferred_lft 536sec
    inet6 fe80::a00:27ff:fe7b:83f3/64 scope link
       valid_lft forever preferred_lft forever
rsc@ubuntuserver:~$ cd /var/www/html/
rsc@ubuntuserver:/var/www/html$ ls
index.html
rsc@ubuntuserver:/var/www/html$ cd
rsc@ubuntuserver:~$ sudo chown -R www-data:www-data /var/www/html/
rsc@ubuntuserver:~$ sudo chmod -R 775 /var/www/html/
rsc@ubuntuserver:~$ sudo usermod -a -G www-data rsc
rsc@ubuntuserver:~$ _
```

Paso 5:

> Creamos una web para probar el servidor.



Paso 6:

> Probamos la web desde nuestra máquina con la dirección ip del servidor.

Paso 7:

> Instalamos MariaDB, comprobamos que este OK

```
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.
rsc@ubuntuserver:~$ systemctl status mariadb
● mariadb.service - MariaDB 10.6.12 database server
     Loaded: loaded (/lib/systemd/system/mariadb.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2023-09-28 06:35:20 UTC; 30s ago
       Docs: man:mariadbd(8)
             https://mariadb.com/kb/en/library/systemd/
    Process: 2105 ExecStartPre=/usr/bin/install -m 755 -o mysql -g root -d /var/run/mysqld (code=ex>
    Process: 2106 ExecStartPre=/bin/sh -c systemctl unset-environment _WSREP_START_POSITION (code=e>
    Process: 2108 ExecStartPre=/bin/sh -c [ ! -e /usr/bin/galera_recovery ] && VAR= ||   VAR=`cd /u>
    Process: 2146 ExecStartPost=/bin/sh -c systemctl unset-environment _WSREP_START_POSITION (code=>
    Process: 2148 ExecStartPost=/etc/mysql/debian-start (code=exited, status=0/SUCCESS)
   Main PID: 2137 (mariadbd)
     Status: "Taking your SQL requests now..."
      Tasks: 10 (limit: 2221)
     Memory: 61.0M
        CPU: 510ms
     CGroup: /system.slice/mariadb.service
             └─2137 /usr/sbin/mariadbd

sep 28 06:35:20 ubuntuserver mariadbd[2137]: Version: '10.6.12-MariaDB-0ubuntu0.22.04.1'  socket: '>
sep 28 06:35:20 ubuntuserver systemd[1]: Started MariaDB 10.6.12 database server.
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2150]: Upgrading MySQL tables if necessary.
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2153]: Looking for 'mariadb' as: /usr/bin/mari>
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2153]: Looking for 'mariadb-check' as: /usr/bi>
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2153]: This installation of MariaDB is already>
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2153]: There is no need to run mysql_upgrade a>
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2153]: You can use --force if you still want t>
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2161]: Checking for insecure root accounts.
sep 28 06:35:20 ubuntuserver /etc/mysql/debian-start[2165]: Triggering myisam-recover for all MyISA>
rsc@ubuntuserver:~$ _
```

Paso 8:

> Instalamos php y comprobamos si esta instalad.

```
  -d foo[=bar]     Define INI entry foo with value 'bar'
  -e               Generate extended information for debugger/profiler
  -f <file>        Parse and execute <file>.
  -h               This help
  -i               PHP information
  -l               Syntax check only (lint)
  -m               Show compiled in modules
  -r <code>        Run PHP <code> without using script tags <?..?>
  -B <begin_code>  Run PHP <begin_code> before processing input lines
  -R <code>        Run PHP <code> for every input line
  -F <file>        Parse and execute <file> for every input line
  -E <end_code>    Run PHP <end_code> after processing all input lines
  -H               Hide any passed arguments from external tools.
  -S <addr>:<port> Run with built-in web server.
  -t <docroot>     Specify document root <docroot> for built-in web server.
  -s               Output HTML syntax highlighted source.
  -v               Version number
  -w               Output source with stripped comments and whitespace.
  -z <file>        Load Zend extension <file>.

  args...          Arguments passed to script. Use -- args when first argument
                   starts with - or script is read from stdin

  --ini            Show configuration file names

  --rf <name>      Show information about function <name>.
  --rc <name>      Show information about class <name>.
  --re <name>      Show information about extension <name>.
  --rz <name>      Show information about Zend extension <name>.
  --ri <name>      Show configuration for extension <name>.

rsc@ubuntuserver:~$ php -v
PHP 8.1.2-1ubuntu2.14 (cli) (built: Aug 18 2023 11:41:11) (NTS)
Copyright (c) The PHP Group
Zend Engine v4.1.2, Copyright (c) Zend Technologies
    with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies
rsc@ubuntuserver:~$ _
```

Paso 9:

> Creamos un script info.php y accedemos a el desde nuestro navegador

PHP Version 8.1.2-1ubuntu2.14

System	Linux ubuntuserver 5.15.0-84-generic #93-Ubuntu SMP Tue Sep 5 17:16:10 UTC 2023 x86_64
Build Date	Aug 18 2023 11:41:11
Build System	Linux
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.1/apache2
Loaded Configuration File	/etc/php/8.1/apache2/php.ini
Scan this dir for additional .ini files	/etc/php/8.1/apache2/conf.d
Additional .ini files parsed	/etc/php/8.1/apache2/conf.d/10-mysqlnd.ini, /etc/php/8.1/apache2/conf.d/10-opcache.ini, /etc/php/8.1/apache2/conf.d/10-pdo.ini, /etc/php/8.1/apache2/conf.d/20-calendar.ini, /etc/php/8.1/apache2/conf.d/20-ctype.ini, /etc/php/8.1/apache2/conf.d/20-exif.ini, /etc/php/8.1/apache2/conf.d/20-ffi.ini, /etc/php/8.1/apache2/conf.d/20-fileinfo.ini, /etc/php/8.1/apache2/conf.d/20-ftp.ini, /etc/php/8.1/apache2/conf.d/20-gettext.ini, /etc/php/8.1/apache2/conf.d/20-iconv.ini, /etc/php/8.1/apache2/conf.d/20-mysqli.ini, /etc/php/8.1/apache2/conf.d/20-pdo_mysql.ini, /etc/php/8.1/apache2/conf.d/20-phar.ini, /etc/php/8.1/apache2/conf.d/20-posix.ini, /etc/php/8.1/apache2/conf.d/20-readline.ini, /etc/php/8.1/apache2/conf.d/20-shmop.ini, /etc/php/8.1/apache2/conf.d/20-sockets.ini, /etc/php/8.1/apache2/conf.d/20-sysvmsg.ini, /etc/php/8.1/apache2/conf.d/20-sysvsem.ini, /etc/php/8.1/apache2/conf.d/20-sysvshm.ini, /etc/php/8.1/apache2/conf.d/20-tokenizer.ini
PHP API	20210902
PHP Extension	20210902
Zend Extension	420210902
Zend Extension Build	API420210902,NTS
PHP Extension Build	API20210902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	disabled
IPv6 Support	enabled
DTrace Support	available, disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2, tlsv1.3
Registered Stream Filters	zlib.*, string.rot13, string.toupper, string.tolower, convert.*, consumed, dechunk, convert.iconv.*

This program makes use of the Zend Scripting Language Engine:
Zend Engine v4.1.2, Copyright (c) Zend Technologies
with Zend OPcache v8.1.2-1ubuntu2.14, Copyright (c), by Zend Technologies

Configuration

apache2handler

Apache Version	Apache/2.4.52 (Ubuntu)
Apache API Version	20120211
Server Administrator	webmaster@localhost
Hostname:Port	127.0.1.1:80
User/Group	www-data(33)/33
Max Requests	Per Child: 0 - Keep Alive: on - Max Per Connection: 100
Timeouts	Connection: 300 - Keep-Alive: 5
Virtual Server	Yes
Server Root	/etc/apache2
Loaded Modules	core mod_so mod_watchdog http_core mod_log_config mod_logio mod_version mod_unixd mod_access_compat mod_alias mod_auth_basic mod_authn_core mod_authn_file mod_authz_core mod_authz_host mod_authz_user mod_autoindex mod_deflate mod_dir mod_env mod_filter mod_mime prefork mod_negotiation mod_php mod_reqtimeout mod_setenvif mod_status

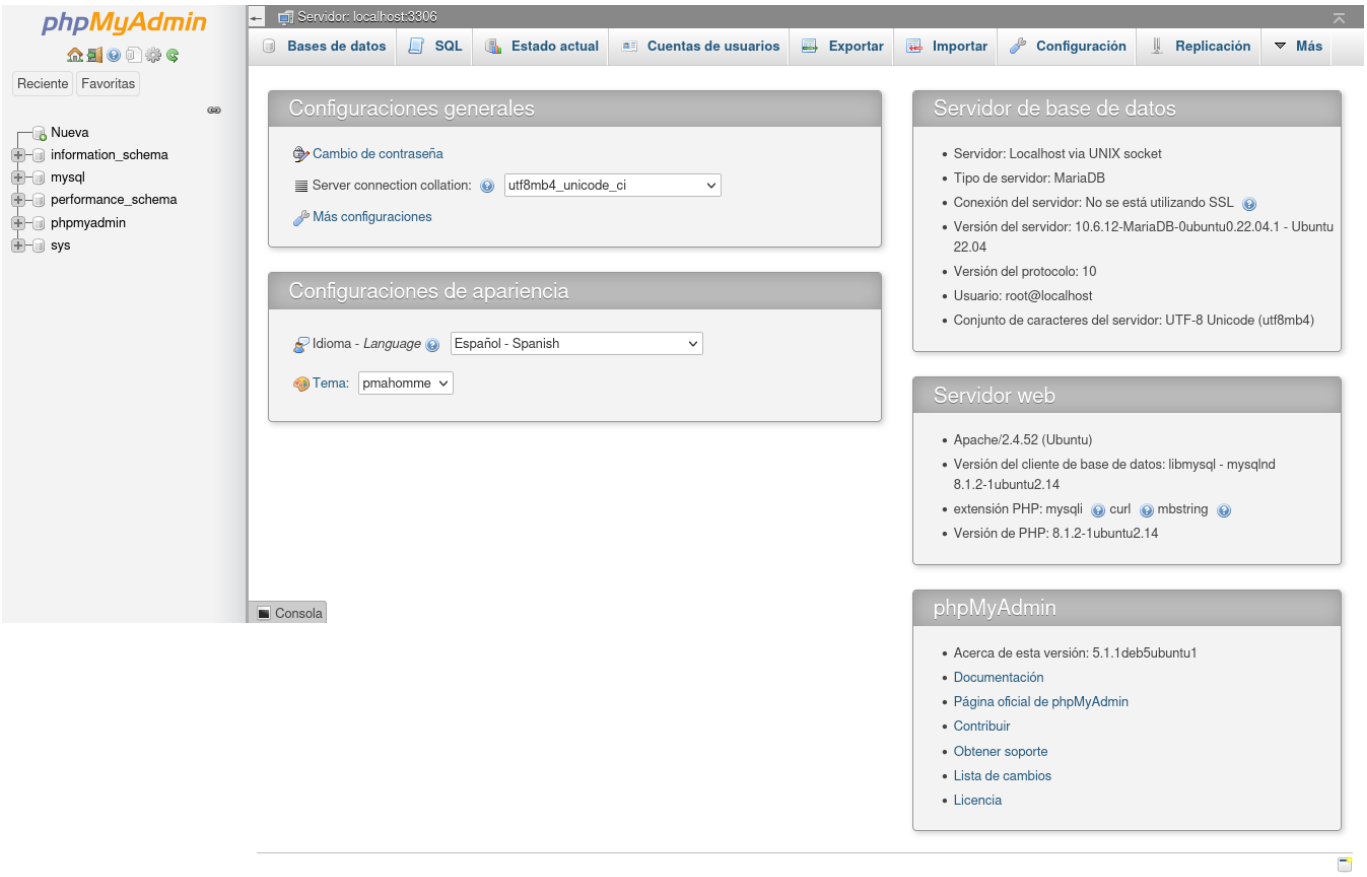
Directive	Local Value	Master Value
engine	On	On
last_modified	Off	Off
xbithack	Off	Off

Apache Environment

Variable	Value
HTTP_HOST	192.168.70.130
HTTP_USER_AGENT	Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/118.0
HTTP_ACCEPT	text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
HTTP_ACCEPT_LANGUAGE	es-ES,es;q=0.8,en-US;q=0.5,en;q=0.3
HTTP_ACCEPT_ENCODING	gzip, deflate
HTTP_CONNECTION	keep-alive
HTTP_UPGRADE_INSECURE_REQUESTS	1
PATH	/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/snap/bin
SERVER_SIGNATURE	<address>Apache/2.4.52 (Ubuntu) Server at 192.168.70.130 Port 80</address>
SERVER_SOFTWARE	Apache/2.4.52 (Ubuntu)
SERVER_NAME	192.168.70.130
SERVER_ADDR	192.168.70.130
SERVER_PORT	80
REMOTE_ADDR	192.168.70.96
DOCUMENT_ROOT	/var/www/html
REQUEST_SCHEME	http
CONTEXT_PREFIX	*no value*
CONTEXT_DOCUMENT_ROOT	/var/www/html
SERVER_ADMIN	webmaster@localhost
SCRIPT_FILENAME	/var/www/html/info.php
REMOTE_PORT	56538
GATEWAY_INTERFACE	CGI/1.1
SERVER_PROTOCOL	HTTP/1.1
REQUEST_METHOD	GET
QUERY_STRING	*no value*
REQUEST_URI	/info.php
SCRIPT_NAME	/info.php

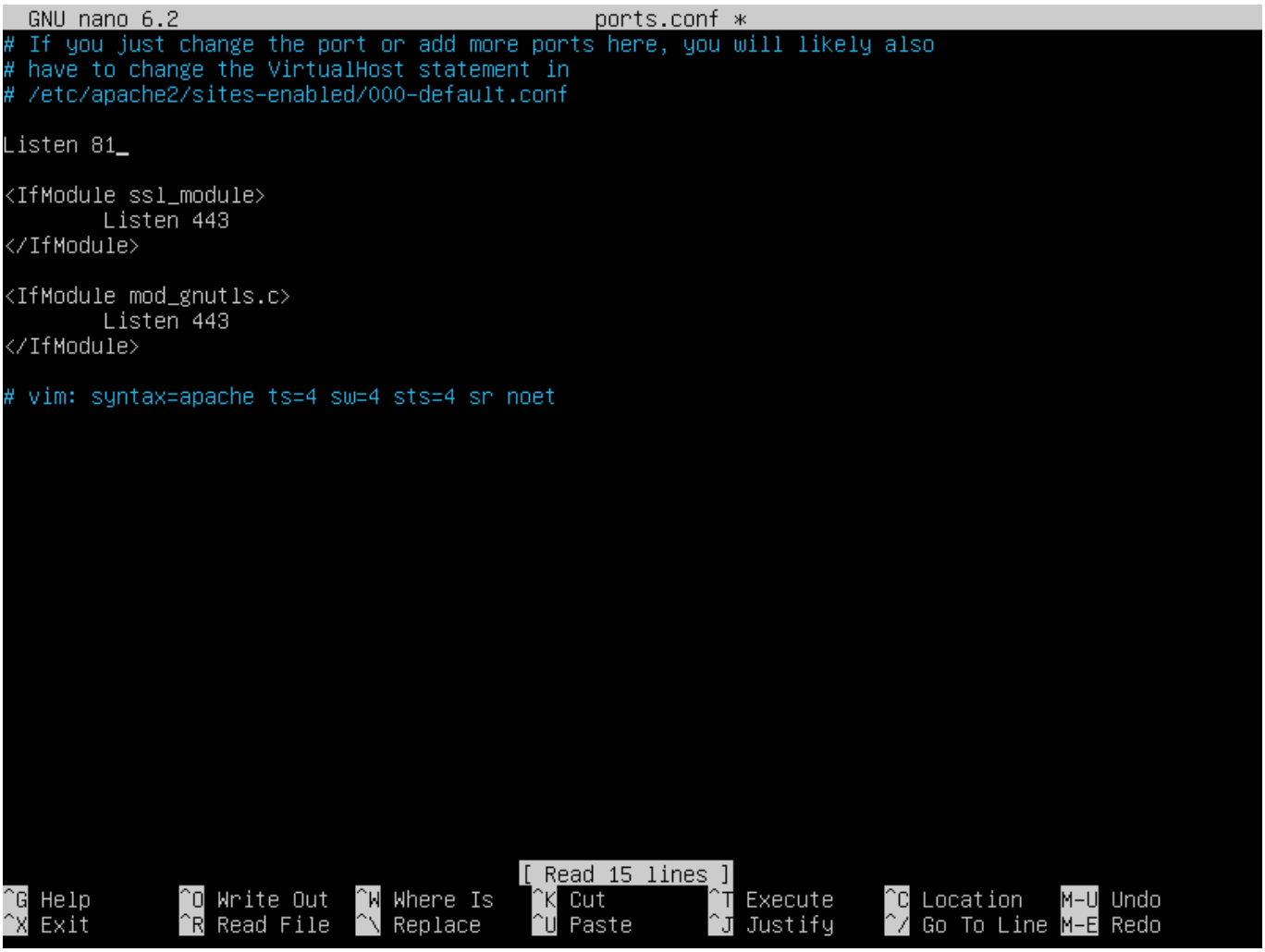
Paso 10:

> Instalamos phpadmin siguiendo los pasos y accedemos a el desde la dirección ip mas /phpmyadmin



Paso 11:

> Cambiamos el puerto del 80 al 81 para probar los puertos.


GNU nano 6.2 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 81
<IfModule ssl_module>
Listen 443
</IfModule>
<IfModule mod_gnutls.c>
Listen 443
</IfModule>
vim: syntax=apache ts=4 sw=4 sts=4 sr noet
[Read 15 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