

TALLERES UD3

1.LEMP

Instalamos NGINX

```
joaquin@IAW-UB:~$ sudo apt-get install nginx
[sudo] password for joaquin:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
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 212 not upgraded.
Need to get 564 kB of archives.
After this operation, 1,596 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx-common all 1.24.0-2ubuntu7.5 [43.4 kB]
Get:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 nginx amd64 1.24.0-2ubuntu7.5 [520 kB]
Fetched 564 kB in 1s (936 kB/s)
Preconfiguring packages ...
Selecting previously unselected package nginx-common.
(Reading database ... 200883 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) ...
```

Uno de los errores principales que me aparece a la hora de instalar el NGINX, es el uso del puerto 80 ya que este esta siendo usado por apache2

```
joaquin@IAW-UB:~$ 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: failed (Result: exit-code) since Fri 2025-10-31 10:24:10 UTC; 11s ago
     Docs: man:nginx(8)
  Process: 5646 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)
  Process: 5647 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=1/FAILURE)
    CPU: 16ms

Oct 31 10:24:08 IAW-UB nginx[5647]: nginx: [emerg] bind() to 0.0.0.0:80 failed (98: Address already in use)
Oct 31 10:24:08 IAW-UB nginx[5647]: nginx: [emerg] bind() to [::]:80 failed (98: Address already in use)
Oct 31 10:24:09 IAW-UB nginx[5647]: nginx: [emerg] bind() to 0.0.0.0:80 failed (98: Address already in use)
Oct 31 10:24:09 IAW-UB nginx[5647]: nginx: [emerg] bind() to [::]:80 failed (98: Address already in use)
Oct 31 10:24:09 IAW-UB nginx[5647]: nginx: [emerg] bind() to 0.0.0.0:80 failed (98: Address already in use)
Oct 31 10:24:09 IAW-UB nginx[5647]: nginx: [emerg] bind() to [::]:80 failed (98: Address already in use)
Oct 31 10:24:10 IAW-UB nginx[5647]: nginx: [emerg] still could not bind()
Oct 31 10:24:10 IAW-UB systemd[1]: nginx.service: Control process exited, code=exited, status=1/FAILURE
Oct 31 10:24:10 IAW-UB systemd[1]: nginx.service: Failed with result 'exit-code'.
Oct 31 10:24:10 IAW-UB systemd[1]: Failed to start nginx.service - A high performance web server and a reverse proxy se
```

Acá podemos ver, que apache2 esta utilizando el puerto

```
joaquin@IAW-UB:~$ sudo lsof -i :80
COMMAND PID USER FD TYPE DEVICE SIZE/OFF NODE NAME
apache2 1336 root 4u IPv6 14155 0t0 TCP *:http (LISTEN)
apache2 1338 www-data 4u IPv6 14155 0t0 TCP *:http (LISTEN)
apache2 1339 www-data 4u IPv6 14155 0t0 TCP *:http (LISTEN)
apache2 1340 www-data 4u IPv6 14155 0t0 TCP *:http (LISTEN)
apache2 1341 www-data 4u IPv6 14155 0t0 TCP *:http (LISTEN)
apache2 1342 www-data 4u IPv6 14155 0t0 TCP *:http (LISTEN)
```

Entonces, cambiamos el puerto 80 al 8080 en la configuración de apache2

```
joaquin@IAW-UB: ~  
GNU nano 7.2  
# If you just change the port  
# have to change the VirtualHost  
# /etc/apache2/sites-enabled/000-  
listen 8080  
listen 8081  
listen 8082
```

Hecho eso, nos permitirá ejecutar perfectamente NGNIX

```
joaquin@IAW-UB:~$ 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 Fri 2025-10-31 10:38:06 UTC; 4s ago  
     Docs: man:nginx(8)  
  Process: 5788 ExecStartPre=/usr/sbin/nginx -t -q -g daemon on; master_process on; (code=exited, status=0/SUCCESS)  
  Process: 5790 ExecStart=/usr/sbin/nginx -g daemon on; master_process on; (code=exited, status=0/SUCCESS)  
 Main PID: 5791 (nginx)  
    Tasks: 5 (limit: 4603)  
  Memory: 3.7M (peak: 4.0M)  
     CPU: 21ms  
   CGroup: /system.slice/nginx.service  
           └─5791 "nginx: master process /usr/sbin/nginx -g daemon on; master_process on;"  
             └─5792 "nginx: worker process"  
               └─5793 "nginx: worker process"  
                 └─5794 "nginx: worker process"  
                   └─5795 "nginx: worker process"  
  
Oct 31 10:38:06 IAW-UB systemd[1]: Starting nginx.service - A high performance web server and a reverse proxy server...  
Oct 31 10:38:06 IAW-UB systemd[1]: Started nginx.service - A high performance web server and a reverse proxy server.  
joaquin@IAW-UB:~$
```

INSTALAR MYSQL

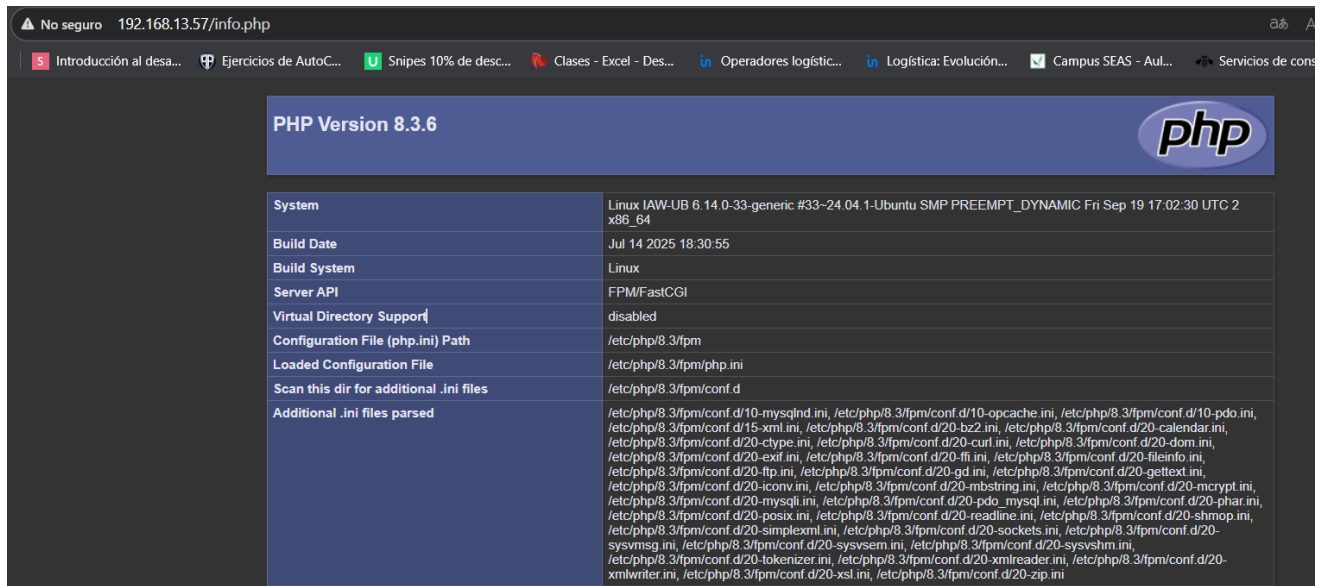
Anteriormente instalamos mysql en este servidor, para la biblioteca php, por lo que la utilizaremos.

INSTALAR PHP

Lo mismo pasa con php, por lo que solo instalaremos los modulos necesarias

PROBAR PHP

A continuación creamos el archivo (info.php) donde nos muestra la siguiente información.

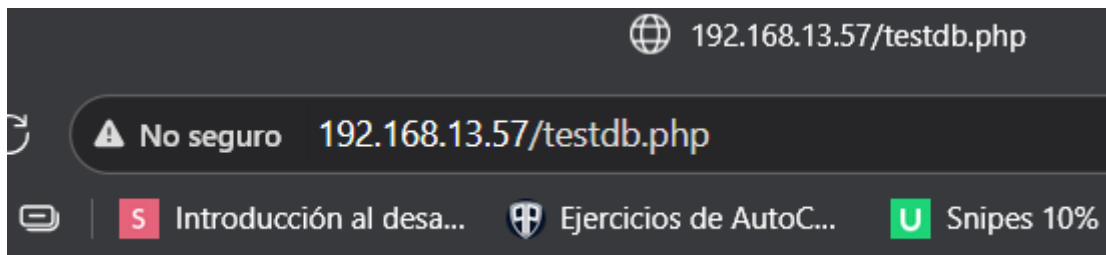


System	Linux IAW-UB 6.14.0-33-generic #33~24.04.1-Ubuntu SMP PREEMPT_DYNAMIC Fri Sep 19 17:02:30 UTC 2025 x86_64
Build Date	Jul 14 2025 18:30:55
Build System	Linux
Server API	FPM/FastCGI
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/etc/php/8.3/fpm
Loaded Configuration File	/etc/php/8.3/fpm/php.ini
Scan this dir for additional .ini files	/etc/php/8.3/fpm/conf.d
Additional .ini files parsed	/etc/php/8.3/fpm/conf.d/10-mysqlnd.ini, /etc/php/8.3/fpm/conf.d/10-opcache.ini, /etc/php/8.3/fpm/conf.d/10-pdo.ini, /etc/php/8.3/fpm/conf.d/15-xml.ini, /etc/php/8.3/fpm/conf.d/20-bz2.ini, /etc/php/8.3/fpm/conf.d/20-calendar.ini, /etc/php/8.3/fpm/conf.d/20-ctype.ini, /etc/php/8.3/fpm/conf.d/20-curl.ini, /etc/php/8.3/fpm/conf.d/20-dom.ini, /etc/php/8.3/fpm/conf.d/20-exif.ini, /etc/php/8.3/fpm/conf.d/20-ffi.ini, /etc/php/8.3/fpm/conf.d/20-fileinfo.ini, /etc/php/8.3/fpm/conf.d/20-ftp.ini, /etc/php/8.3/fpm/conf.d/20-gd.ini, /etc/php/8.3/fpm/conf.d/20-gettext.ini, /etc/php/8.3/fpm/conf.d/20-iconv.ini, /etc/php/8.3/fpm/conf.d/20-mbstring.ini, /etc/php/8.3/fpm/conf.d/20-mcrypt.ini, /etc/php/8.3/fpm/conf.d/20-mysql.ini, /etc/php/8.3/fpm/conf.d/20-pdo_mysql.ini, /etc/php/8.3/fpm/conf.d/20-phar.ini, /etc/php/8.3/fpm/conf.d/20-posix.ini, /etc/php/8.3/fpm/conf.d/20-readline.ini, /etc/php/8.3/fpm/conf.d/20-shmop.ini, /etc/php/8.3/fpm/conf.d/20-simplexml.ini, /etc/php/8.3/fpm/conf.d/20-sockets.ini, /etc/php/8.3/fpm/conf.d/20-sysvmsg.ini, /etc/php/8.3/fpm/conf.d/20-sysvsem.ini, /etc/php/8.3/fpm/conf.d/20-sysvshm.ini, /etc/php/8.3/fpm/conf.d/20-tokenizer.ini, /etc/php/8.3/fpm/conf.d/20-xmlreader.ini, /etc/php/8.3/fpm/conf.d/20-xmlwriter.ini, /etc/php/8.3/fpm/conf.d/20-xsl.ini, /etc/php/8.3/fpm/conf.d/20-zip.ini

PROBAR CONEXIÓN CON MYSQL

Creemos un fichero en /var/www/html, llamado testdb.php

Donde introducimos el contenido brindado.(En mi caso tuve que modificar el usuario en mysql para poder conectarme)



192.168.13.57/testdb.php

No seguro 192.168.13.57/testdb.php

Introducción al desa... Ejercicios de AutoC... Snipes 10% c

Conexión correcta a MySQL!

Conexión correcta a MySQL!

Finalmente borraremos los archivos, tal cual nos indica el enunciado.

```
joaquin@IAW-UB:~$ sudo rm /var/www/html/info.php
joaquin@IAW-UB:~$ sudo rm /var/www/html/testdb.php
joaquin@IAW-UB:~$
```

2.Preparar el LEMP para una aplicación PHP

Comprobamos que todo va bien

```
joaquin@IAW-UB:~$ sudo systemctl status php8.3-fpm.service
[sudo] password for joaquin:
● php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager
   Loaded: loaded (/usr/lib/systemd/system/php8.3-fpm.service; enabled; preset: enabled)
   Active: active (running) since Mon 2025-11-03 19:12:19 UTC; 3min 34s ago
     Docs: man:php-fpm8.3(8)
   Process: 1250 ExecStartPost=/usr/lib/php/php-fpm-socket-helper install /run/php/php-fpm.sock /etc/php/8.3/fpm
   Main PID: 1181 (php-fpm8.3)
    Status: "Processes active: 0, idle: 2, Requests: 0, slow: 0, Traffic: 0req/sec"
     Tasks: 3 (limit: 4601)
    Memory: 26.4M (peak: 27.1M)
       CPU: 227ms
    CGroup: /system.slice/php8.3-fpm.service
            └─1181 "php-fpm: master process (/etc/php/8.3/fpm/php-fpm.conf)"
              └─1248 "php-fpm: pool www"
                └─1249 "php-fpm: pool www"

Nov 03 19:12:10 IAW-UB systemd[1]: Starting php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager...
Nov 03 19:12:19 IAW-UB systemd[1]: Started php8.3-fpm.service - The PHP 8.3 FastCGI Process Manager.
lines 1-17/17 (END)
```

Vamos a crear un sitio de prueba, donde colocamos el siguiente texto

```
joaquin@IAW-UB: ~
GNU nano 7.2 /etc/nginx/sites-available/prueba.conf
server {
    listen 80;
    server_name prueba.local;
    root /var/www/prueba;

    index index.php index.html;

    location / {
        try_files $uri $uri/ =404;
    }

    location ~ \.php$ {
        include snippets/fastcgi-php.conf;
        fastcgi_pass unix:/var/run/php/php8.3-fpm.sock;
    }
}
```

Creamos las carpetas del sitio creado anteriormente, y le damos los permisos necesarios al usuario para poder escribir en ella

```
joaquin@IAW-UB:~$ sudo mkdir -p /var/www/prueba
joaquin@IAW-UB:~$ sudo chown -R $USER:$USER /var/www/prueba
```

Ahora activaremos el sitio, creando un enlace simbólico

```
joaquin@IAW-UB:~$ sudo ln -s /etc/nginx/sites-available/prueba.conf /etc/nginx/sites-enabled/
```

Una vez activado, modificaremos el fichero /etc/hosts para poder conectarnos por el navegador

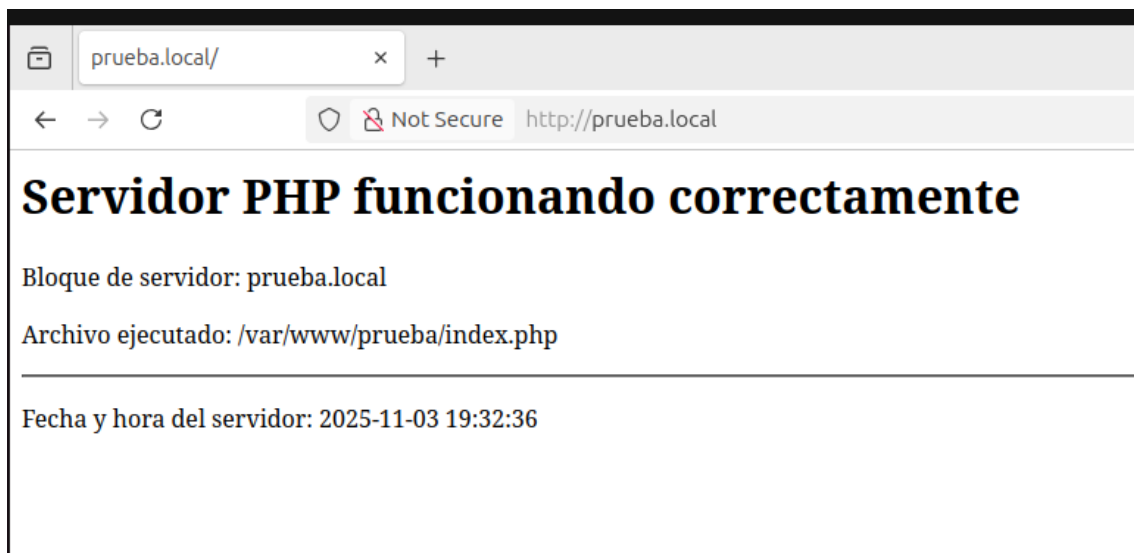
```
GNU nano 7.2 /etc/hosts
192.168.13.57 www.simadept.org
192.168.13.57 www.iessimarro.org
127.0.0.1 localhost
127.0.1.1 IAW-UB
127.0.0.1 prueba.local

# 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
```

Creamos el fichero de prueba index.php dentro de /var/www/prueba

```
GNU nano 7.2 /var/www/prueba/index.php *
<?php
echo "<h1>Servidor PHP funcionando correctamente</h1>";
echo "<p>Bloque de servidor: " . $_SERVER['SERVER_NAME'] . "</p>";
echo "<p>Archivo ejecutado: " . $_SERVER['SCRIPT_FILENAME'] . "</p>";
echo "<hr>";
echo "<p>Fecha y hora del servidor: " . date('Y-m-d H:i:s') . "</p>";
?>
```

Finalmente, podemos ver que todo funciona de manera correcta



3.Crear un segundo bloque de servicio (VirtualHost en Nginx)

Lo primero que hacemos es crear la carpeta del nuevo sitio web, y le daremos permisos también.

```
joaquin@IAW-UB: ~  
joaquin@IAW-UB:~$ sudo mkdir -p /var/www/prueba2  
joaquin@IAW-UB:~$ sudo chown -R $USER:$USER /var/www/prueba2  
joaquin@IAW-UB:~$ sudo chmod -R 755 /var/www/prueba2  
joaquin@IAW-UB:~$
```

A continuación, crearemos el archivo de prueba donde colocaremos el contenido mostrado.

```
GNU nano 7.2 /var/www/prueba2/test.php  
<?php  
echo "<h2>Prueba avanzada de ejecución PHP-FPM</h2>";  
  
$php_version = phpversion();  
echo "<p>Versión de PHP: <strong>$php_version</strong></p>";  
  
if (function_exists('mysqli_connect')) {  
    echo "<p>Extensión MySQLi: disponible ✓</p>";  
} else {  
    echo "<p>Extensión MySQLi: no disponible ✗</p>";  
}  
  
echo "<p>Usuario actual del proceso PHP: <strong>" . get_current_user() . "</strong></p>";  
  
echo "<hr><h3>Variables del entorno:</h3>";  
foreach ($_SERVER as $key => $value) {  
    echo "<strong>$key</strong>: $value<br>";  
}  
?>
```

Ahora crearemos el bloque de servidor para prueba2.local

```
GNU nano 7.2 /etc/nginx/sites-available/prueba2.conf  
server {  
    listen 80;  
    server_name prueba2.local;  
    root /var/www/prueba2;  
  
    index index.php index.html;  
  
    location / {  
        try_files $uri $uri/ =404;  
    }  
  
    location ~ \.php$ {  
        include snippets/fastcgi-php.conf;  
        fastcgi_pass unix:/var/run/php/php8.3-fpm.sock;  
    }  
}
```

Crearemos un enlace simbólico para activar el sitio

```
joaquin@IAW-UB:~$ sudo ln -s /etc/nginx/sites-available/prueba2.conf /etc/nginx/sites-enabled/  
joaquin@IAW-UB:~$
```

Agregaremos el sitio al archivo /etc/hosts

```
joaquin@IAW-UB: ~  
GNU nano 7.2 /etc/hosts  
192.168.13.57 www.simadept.org  
192.168.13.57 www.iessimarro.org  
127.0.0.1 localhost  
127.0.1.1 IAW-UB  
127.0.0.1 prueba.local  
127.0.0.1 prueba2.local
```

Finalmente, podemos verificar que todo se creo con éxito

prueba2.local/test.php

← → ↻

Not Secure http://prueba2.local/test.php

☆

Sign in

Prueba avanzada de ejecución PHP-FPM

Versión de PHP: 8.3.6

Extensión MySQLi: disponible ✓

Usuario actual del proceso PHP: root

Variables del entorno:

USER: www-data
HOME: /var/www
HTTP_PRIORITY: u=0, i
HTTP_UPGRADE_INSECURE_REQUESTS: 1
HTTP_CONNECTION: keep-alive
HTTP_ACCEPT_ENCODING: gzip, deflate
HTTP_ACCEPT_LANGUAGE: en-US,en;q=0.5
HTTP_ACCEPT: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
HTTP_USER_AGENT: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:144.0) Gecko/20100101 Firefox/144.0
HTTP_HOST: prueba2.local
REDIRECT_STATUS: 200
SERVER_NAME: prueba2.local
SERVER_PORT: 80
SERVER_ADDR: 127.0.0.1
REMOTE_USER:
REMOTE_PORT: 58244
REMOTE_ADDR: 127.0.0.1
SERVER_SOFTWARE: nginx/1.24.0
GATEWAY_INTERFACE: CGI/1.1

```
joaquin@IAW-UB: ~  
joaquin@IAW-UB:~$ ip -br a  
lo                UNKNOWN      127.0.0.1/8  ::1/128  
enp0s3            UP           192.168.1.62/24  fe80::a00:27ff:fe89:ffee/64  
joaquin@IAW-UB:~$ nano /etc/h  
hdparm.conf  hostname  hosts.allow  hp/  
host.conf    hosts     hosts.deny  
joaquin@IAW-UB:~$ nano /etc/host  
joaquin@IAW-UB:~$ nano /etc/hosts
```