DAW – Despliegue Logrocho en Ubuntu Server

Grado Superior DAM+DAW Dual 3º

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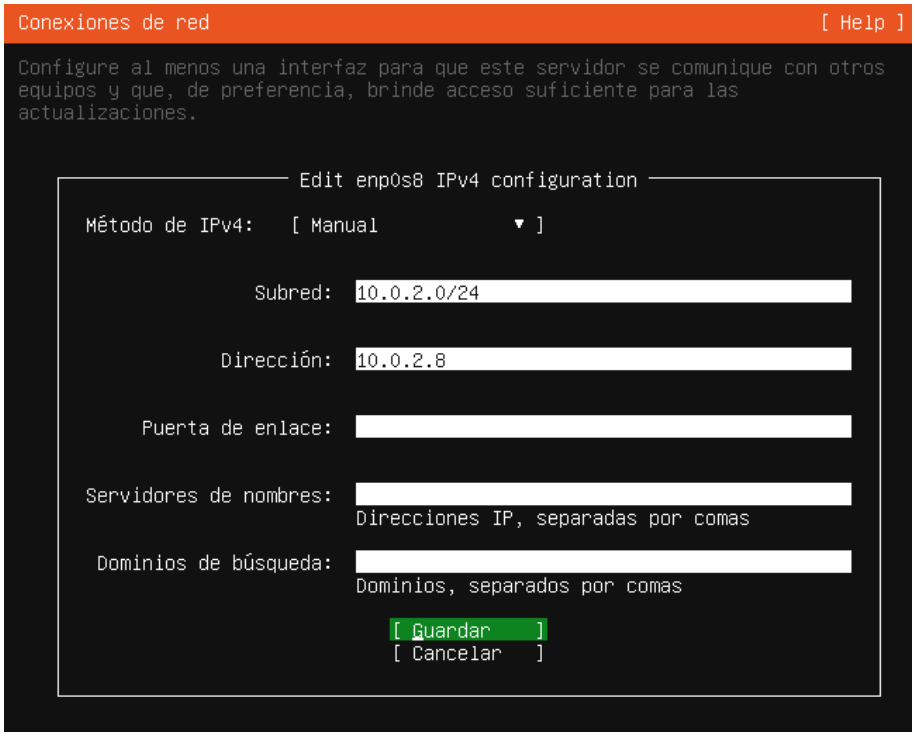
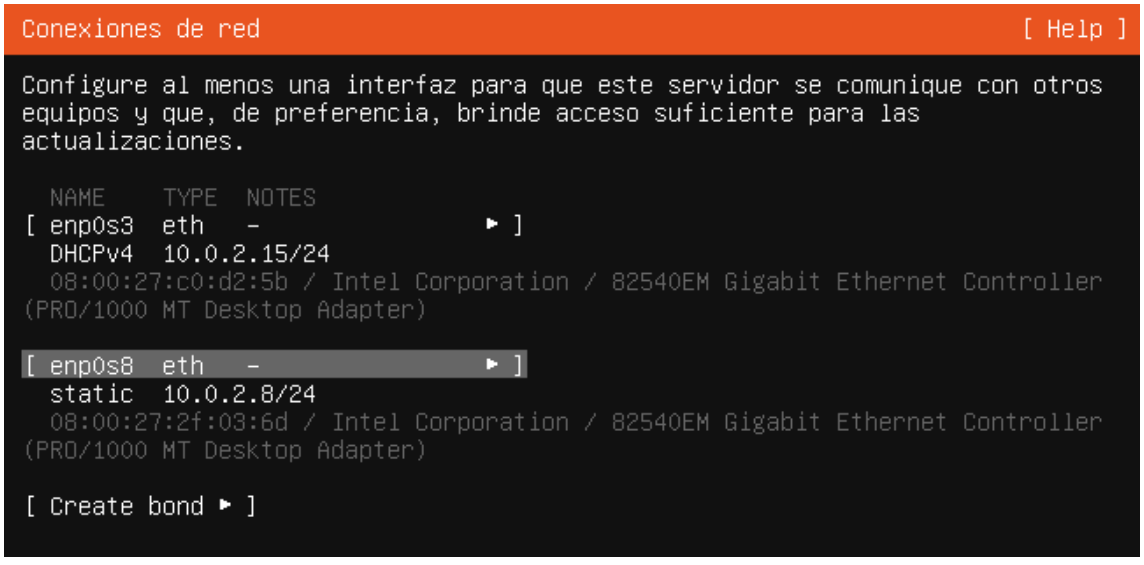
Instalación de Ubuntu

Durante la instalación del servido, editamos la segunda tarjeta de red para que tenga una IP fija.



El resultado sería el siguiente



Una vez instalado Ubuntu server veremos que la IP se ha configurado correctamente y es fija para la segunda tarjeta de red (enp0s8)

```
server_logrocho@serverlogrocho:~$ 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
0
    link/ether 08:00:27:c0:d2:5b brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.15/24 brd 10.0.2.255 scope global dynamic enp0s3
       valid_lft 86301sec preferred_lft 86301sec
    inet6 fe80::a00:27ff:fec0:d25b/64 scope link
       valid_lft forever preferred_lft forever
3: enp0s8: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default
0
    link/ether 08:00:27:2f:03:6d brd ff:ff:ff:ff:ff:ff
    inet 10.0.2.8/24 brd 10.0.2.255 scope global enp0s8
       valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fe2f:36d/64 scope link
       valid_lft forever preferred_lft forever
server_logrocho@serverlogrocho:~$
```

DNS

Instalamos el paquete de bind

```
server_logrocho@serverlogrocho:~$ sudo apt install bind9 bind9utils_
```

Iniciamos el servicio

```
server_logrocho@serverlogrocho:~$ sudo service bind9 start
server_logrocho@serverlogrocho:~$ sudo service bind9 status
● named.service - BIND Domain Name Server
     Loaded: loaded (/lib/systemd/system/named.service; enabl
     Active: active (running) since Fri 2022-03-04 16:46:31 U
       Docs: man:named(8)
```

Instalamos el paquete de resolvconf

```
server_logrocho@serverlogrocho:~$ sudo apt install resolvconf
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
```

Habilitamos e iniciamos el servicio.

```
server_logrocho@serverlogrocho:~$ sudo systemctl enable resolvconf.service
Synchronizing state of resolvconf.service with SysV service script with /lib/
stall.
Executing: /lib/systemd/systemd-sysv-install enable resolvconf
server_logrocho@serverlogrocho:~$ sudo systemctl status resolvconf.service
● resolvconf.service - Nameserver information manager
     Loaded: loaded (/lib/systemd/system/resolvconf.service; enabled; vendor
     Active: active (exited) since Fri 2022-03-04 16:48:09 UTC; 1min 12s ago
       Docs: man:resolvconf(8)
```

Configuramos el fichero de resolvconf

```
  GNU nano 4.8                        /etc/resolvconf/resolv.conf.d/head
# Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolv
#     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
# 127.0.0.53 is the systemd-resolved stub resolver.
# run "systemd-resolve --status" to see details about the actual nameser

nameserver 10.0.2.8
search logrocho.local
domain logrocho.local_
```

Aplicamos los cambios

```
server_logrocho@serverlogrocho:~$ sudo resolvconf --enable-updates
server_logrocho@serverlogrocho:~$ sudo resolvconf -u
server_logrocho@serverlogrocho:~$
```

Veremos que se han guardado los cambios.

```
server_logrocho@serverlogrocho:~$ batcat /etc/resolv.conf
       File: /etc/resolv.conf
   1   # Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
   2   #     DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
   3   # 127.0.0.53 is the systemd-resolved stub resolver.
   4   # run "systemd-resolve --status" to see details about the actual nameservers.
   5
   6   nameserver 10.0.2.8
   7   search logrocho.local
   8   domain logrocho.local
   9   nameserver 127.0.0.53
  10   search home
  11   options edns0 trust-ad
```

Editamos la configuración de bind para hacer el forwarding.

```
  GNU nano 4.8                        /etc/bind/named.conf.options
options {
        directory "/var/cache/bind";

        // If there is a firewall between you and nameservers you want
        // to talk to, you may need to fix the firewall to allow multiple
        // ports to talk.  See http://www.kb.cert.org/vuls/id/800113

        // If your ISP provided one or more IP addresses for stable
        // nameservers, you probably want to use them as forwarders.
        // Uncomment the following block, and insert the addresses replacing
        // the all-0's placeholder.

        forwarders {
                8.8.8.8;
        };

        //========================================================================
        // If BIND logs error messages about the root key being expired,
        // you will need to update your keys.  See https://www.isc.org/bind-keys
        //========================================================================
        dnssec-validation auto;

        listen-on-v6 { any; };
};
```

Configuramos la zona directa e indirecta

```
  GNU nano 4.8                                    named.conf.local
//
// Do any local configuration here
//

// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";

zone "sergiobarrio.local" {
        type master;
        file "/etc/bind/sergiobarrio.local";
};

zone "10.0.2.8.in-addr.arpa"{
        type master;
        file "/etc/bind/sergiobarrio.local.10.0.2.8";
};
```

Comprobamos que la configuración es correcta.

```
server_logrocho@serverlogrocho:/etc/bind$ sudo named-checkconf
```

Configuramos la zona directa

```
  GNU nano 4.8                                  sergiobarrio.local
;
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     sergiobarrio.local. root.sergiobarrio.local. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      sergiobarrio.local.
@       IN      A       127.0.0.1
@       IN      AAAA    ::1
logrocho        IN      A       10.0.2.8
```

Comprobamos la configuración

```
server_logrocho@serverlogrocho:/etc/bind$ sudo named-checkzone sergiobarrio.local sergiobarrio.local

zone sergiobarrio.local/IN: loaded serial 2
OK
server_logrocho@serverlogrocho:/etc/bind$ _
```

Creamos y configuramos la zona indirecta

```
  GNU nano 4.8                              sergiobarrio.10.0.2.8
;
; BIND reverse data file for local loopback interface
;
$TTL    604800
@       IN      SOA     sergiobarrio.local. root.sergiobarrio.local. (
                              1         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      sergiobarrio.local.
1.0.0   IN      PTR     sergiobarrio.local.
10.0.2.8        IN      PTR     logrocho.sergiobarrio.local.
```

Comprobamos que hemos creado bien la zona indirecta

```
server_logrocho@serverlogrocho:/etc/bind$ sudo named-checkzone sergiobarrio.10.0.2.8 sergiobarrio.10
.0.2.8
zone sergiobarrio.10.0.2.8/IN: loaded serial 1
OK
server_logrocho@serverlogrocho:/etc/bind$
```

Reiniciamos el servicio de bind.

```
server_logrocho@serverlogrocho:/etc/bind$ sudo service bind9 restart
server_logrocho@serverlogrocho:/etc/bind$ sudo service bind9 status
● named.service - BIND Domain Name Server
     Loaded: loaded (/lib/systemd/system/named.service; enabled; vend
     Active: active (running) since Fri 2022-03-04 17:14:39 UTC; 3s a
       Docs: man:named(8)
```

Con un nslookup veremos que resuelve correctamente desde el servidor

```
server_logrocho@serverlogrocho:/etc/bind$ nslookup logrocho.sergiobarrio.local
Server:         10.0.2.8
Address:        10.0.2.8#53

Name:   logrocho.sergiobarrio.local
Address: 10.0.2.8

server_logrocho@serverlogrocho:/etc/bind$ _
```

En el cliente, configuramos el fichero resolv conf

```
  GNU nano 4.8                    /etc/resolv.conf
# This file is managed by man:systemd-resolved(8)
#
# This is a dynamic resolv.conf file for connecti
# internal DNS stub resolver of systemd-resolved.
# configured search domains.
#
# Run "resolvectl status" to see details about th
# currently in use.
#
# Third party programs must not access this file
# symlink at /etc/resolv.conf. To manage man:reso
# replace this symlink by a static file or a diff
#
# See man:systemd-resolved.service(8) for details
# operation for /etc/resolv.conf.

nameserver 10.0.2.8
domain sergiobarrio.local
search sergiobarrio.local
```

Veremos que el cliente resuelve la dirección del servidor

```
cliente_logrocho@clientelogrocho:~$ nslookup logrocho.sergiobarrio.local
Server:         10.0.2.8
Address:        10.0.2.8#53

Name:   logrocho.sergiobarrio.local
Address: 10.0.2.8

cliente_logrocho@clientelogrocho:~$
```

Si vemos que no resuelve, es porque hay conflicto entre las 2 tarjetas de red, ya que ambas tienen IPs del rango 10.0.2.X. Yo he tenido que lanzar este comando para cambiar la IP que le asigna VBox para la tarjeta NAT (no confundir con Red NAT).

```
PS C:\Program Files\Oracle\VirtualBox> .\VBoxManage.exe modifyvm "Logrocho server" --natnet1 "192.168/16"
PS C:\Program Files\Oracle\VirtualBox> .\VBoxManage.exe modifyvm "Logrocho cliente" --natnet1 "192.168/16"
```

LAMP

Instalamos apache

```
server_logrocho@serverlogrocho:~$ sudo apt install apache2
```

Iniciamos y comprobamos el estado del servicio de apache

```
server_logrocho@serverlogrocho:~$ sudo service apache2 start
server_logrocho@serverlogrocho:~$ sudo service apache2 status
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/lib/systemd/system/apache2.service; enab
     Active: active (running) since Fri 2022-03-04 17:57:52 UT
```

Instalamos mysql

```
server_logrocho@serverlogrocho:~$ sudo apt install mysql-server
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
```

Comprobamos que funciona

```
server_logrocho@serverlogrocho:~$ sudo mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.28-0ubuntu0.20.04.3 (Ubuntu)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current

mysql>
```

Instalamos apache

```
server_logrocho@serverlogrocho:~$ sudo apt install php libapache2-mod-php php-mysql
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes adicionales:
  libapache2-mod-php7.4 php-common php7.4 php7.4-cli php7.4-common php7.4-json php7
  php7.4-opcache php7.4-readline
Paquetes sugeridos:
  php-pear
```

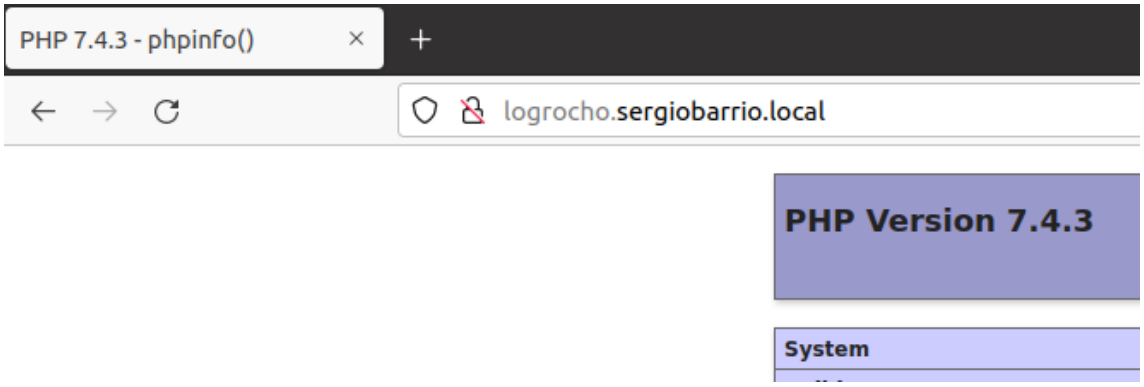
Añadimos la siguiente configuración en el fichero de apache2.conf

```
  GNU nano 4.8                                /etc/apache2/apache2.conf
# Include of directories ignores editors' and dpkg's backup files,
# see README.Debian for details.

# Include generic snippets of statements
IncludeOptional conf-enabled/*.conf

# Include the virtual host configurations:
IncludeOptional sites-enabled/*.conf

# vim: syntax=apache ts=4 sw=4 sts=4 sr noet
<IfModule php7_module>
        AddType application/x-httpd-php .php
        AddType application/x-httpd-php-source .phps
        <IfModule dir_module>
                DirectoryIndex index.html index.php_
        </IfModule>
</IfModule>
```

Reiniciamos apache

```
server_logrocho@serverlogrocho:~$ sudo service apache2 restart
server_logrocho@serverlogrocho:~$
```

Desde el cliente podemos comprobar cómo además de resolver bien la dirección desde el navegador, php funciona correctamente.



SSL

Activamos SSL para apache

```
server_logrocho@serverlogrocho:/etc/bind$ sudo a2enmod ssl
Considering dependency setenvif for ssl:
Module setenvif already enabled
Considering dependency mime for ssl:
Module mime already enabled
Considering dependency socache_shmcb for ssl:
Enabling module socache_shmcb.
Enabling module ssl.
See /usr/share/doc/apache2/README.Debian.gz on how to configure SSL and
tes.
To activate the new configuration, you need to run:
  systemctl restart apache2
server_logrocho@serverlogrocho:/etc/bind$ sudo service apache2 restart
server_logrocho@serverlogrocho:/etc/bind$
```

En /etc/apache2 creamos una carpeta para los certificados

```
server_logrocho@serverlogrocho:/etc/apache2$ sudo mkdir certs
server_logrocho@serverlogrocho:/etc/apache2$ cd certs/
server_logrocho@serverlogrocho:/etc/apache2/certs$ _
```

Generamos el certificado

```
server_logrocho@serverlogrocho:/etc/apache2/certs$ sudo openssl genrsa -des3 -out key 2048
Generating RSA private key, 2048 bit long modulus (2 primes)
...........................+++++
.....+++++
e is 65537 (0x010001)
Enter pass phrase for key:
Verifying - Enter pass phrase for key:
server_logrocho@serverlogrocho:/etc/apache2/certs$
```

Generamos el certificado CSR

```
server_logrocho@serverlogrocho:/etc/apache2/certs$ sudo openssl req -new -key key -out logrocho.csr
Enter pass phrase for key:
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
-----
Country Name (2 letter code) [AU]:ES
State or Province Name (full name) [Some-State]:La Rioja
Locality Name (eg, city) []:Logroño
Organization Name (eg, company) [Internet Widgits Pty Ltd]:Local
Organizational Unit Name (eg, section) []:Local
Common Name (e.g. server FQDN or YOUR name) []:Sergio
Email Address []:sergiobarriodelavega@gmail.com

Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
server_logrocho@serverlogrocho:/etc/apache2/certs$ _
```

Generamos el certificado web.

```
server_logrocho@serverlogrocho:/etc/apache2/certs$ sudo openssl x509 -req -sha256 -days 365 -in logr
ocho.csr -signkey key -out logrocho.csr
Signature ok
subject=C = ES, ST = La Rioja, L = Logro\C3\83\C2\B1o, O = Local, OU = Local, CN = Sergio, emailAddr
ess = sergiobarriodelavega@gmail.com
Getting Private key
Enter pass phrase for key:
server_logrocho@serverlogrocho:/etc/apache2/certs$
```

Creamos un nuevo virtualhost basado en el de por defecto de SSL

```
server_logrocho@serverlogrocho:/etc/apache2/sites-available$ sudo cp default-ssl.conf logrocho.conf
server_logrocho@serverlogrocho:/etc/apache2/sites-available$ sudo nano logrocho.conf _
```

Definimos el server name

```
 GNU nano 4.8                                    logrocho.conf
<IfModule mod_ssl.c>
        <VirtualHost _default_:443>
                ServerAdmin webmaster@localhost

                DocumentRoot /var/www/html
                ServerName logrocho.sergiobarrio.local_
```

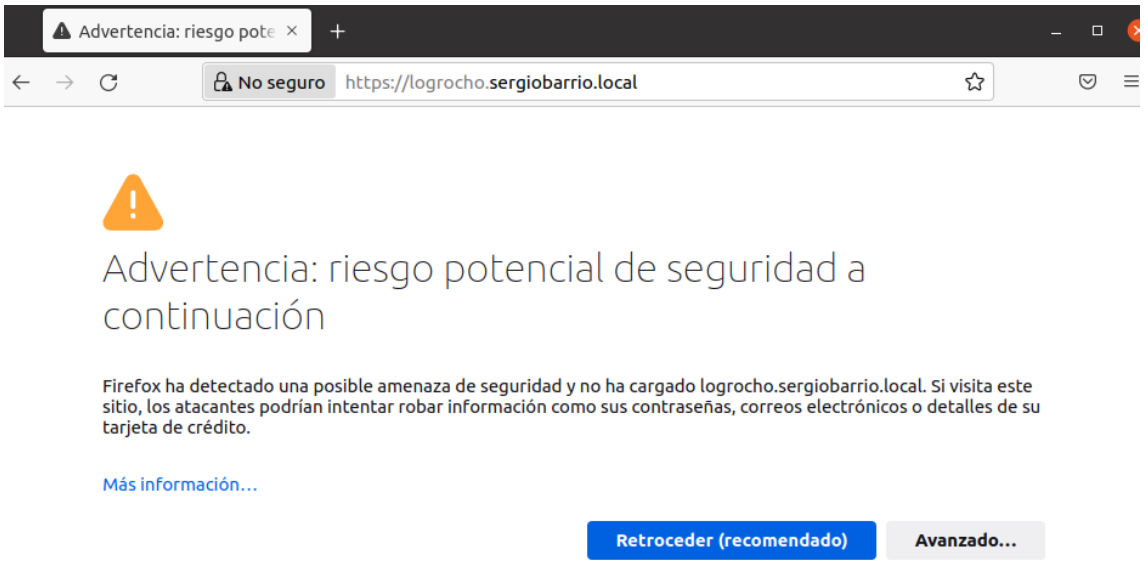
Especificamos los certificados para nuestra web

```
SSLEngine on

#   A self-signed (snakeoil) certificate can be created by
#   the ssl-cert package. See
#   /usr/share/doc/apache2/README.Debian.gz for more info.
#   If both key and certificate are stored in the same fil
#   SSLCertificateFile directive is needed.
SSLCertificateFile      /etc/apache2/certs/logrocho.csr
SSLCertificateKeyFile /etc/apache2/certs/key_
```

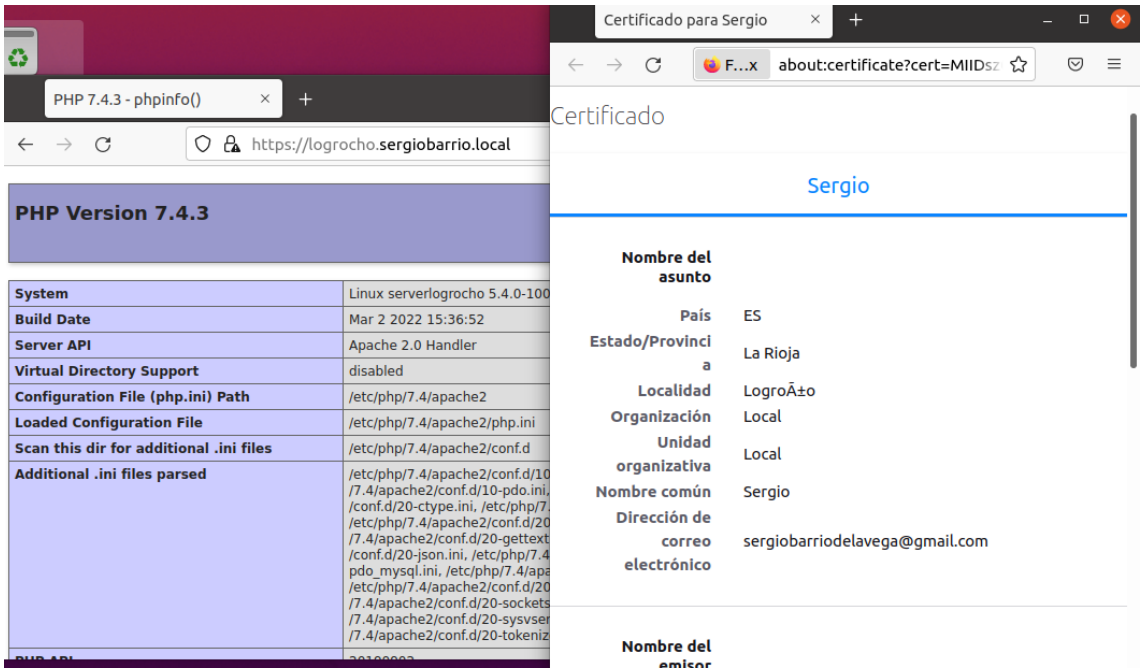
Habilitamos el sitio y reiniciamos apache

```
server_logrocho@serverlogrocho:/etc/apache2/sites-available$ sudo a2ensite logrocho.conf
Enabling site logrocho.
To activate the new configuration, you need to run:
  systemctl reload apache2
server_logrocho@serverlogrocho:/etc/apache2/sites-available$ sudo service apache2 restart
Enter passphrase for SSL/TLS keys for logrocho.sergiobarrio.local:443 (RSA): (press TAB for no echo)
********
server_logrocho@serverlogrocho:/etc/apache2/sites-available$
```

Si accedemos desde el cliente, veremos que nos avisa de que el certificado no es seguro



Aceptamos el certificado y veremos que carga la web correctamente.



Lanzando el script

Borraremos todo lo que pueda haber dentro de nuestro directorio del virtual host.

```
server_logrocho@serverlogrocho:/var/www/html$ ll
total 8
drwxr-xr-x 2 root root 4096 mar  5 12:46 ./
drwxr-xr-x 3 root root 4096 mar  4 17:57 ../
server_logrocho@serverlogrocho:/var/www/html$ _
```

Creamos manualmente el usuario y le damos privilegios.

```
mysql> CREATE USER 'logrocho'@'localhost' IDENTIFIED BY 'logrocho';
Query OK, 0 rows affected (0,05 sec)
```

```
mysql> GRANT ALL PRIVILEGES ON * . * TO 'logrocho'@'localhost';
Query OK, 0 rows affected (0,01 sec)

mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0,02 sec)

mysql>
```

Lanzamos el script.

```
server_logrocho@serverlogrocho:~$ ls -l logrocho.*
-rwxrwxr-x 1 server_logrocho server_logrocho      145 mar  5 12:44 logrocho.sh
-rw-rw-r-- 1 server_logrocho server_logrocho    14981 mar  5 12:44 logrocho.sql
-rw-rw-rw- 1 server_logrocho server_logrocho 17510695 mar  5 11:55 logrocho.zip
server_logrocho@serverlogrocho:~$ _
```

Necesitaremos de sudo para poder copiar los ficheros a /var/www/html

```
server_logrocho@serverlogrocho:~$ sudo ./logrocho.sh
```

El script nos sacara por pantalla la salida del comando unzip y de la importación del fichero sql

```
  inflating: /var/www/html/view/Pincho/templates/card-slider.php
  inflating: /var/www/html/view/Pincho/templates/card.php
   creating: /var/www/html/view/Review/
  inflating: /var/www/html/view/Review/edit.php
  inflating: /var/www/html/view/Review/list.php
   creating: /var/www/html/view/Review/templates/
  inflating: /var/www/html/view/Review/templates/card-backoffice-related.php
  inflating: /var/www/html/view/Review/templates/card-detailed.php
  inflating: /var/www/html/view/Review/templates/card-interact.php
  inflating: /var/www/html/view/Review/templates/card-slider.php
  inflating: /var/www/html/view/Review/templates/card.php
  inflating: /var/www/html/view/side_bar_admin.php
   creating: /var/www/html/view/User/
  inflating: /var/www/html/view/User/edit.php
  inflating: /var/www/html/view/User/list.php
  inflating: /var/www/html/view/User/login.php
  inflating: /var/www/html/view/User/profile.php
  inflating: /var/www/html/view/User/recuperar.html
  inflating: /var/www/html/view/User/recuperar_ok.html
  inflating: /var/www/html/view/User/register.php
  inflating: /var/www/html/view/User/success.php
mysql: [Warning] Using a password on the command line interface can be insecure.
server_logrocho@serverlogrocho:~$
```

Podemos comprobar que el script ha funcionado

```
server_logrocho@serverlogrocho:/var/www/html$ ll
total 68
drwxr-xr-x 9 root root 4096 mar  5 12:49 ./
drwxr-xr-x 3 root root 4096 mar  4 17:57 ../
-rw-r--r-- 1 root root  807 mar  1 17:57 404.php
-rw-r--r-- 1 root root  816 mar  1 17:57 500.php
-rw-r--r-- 1 root root 3866 mar  1 17:04 contact.php
drwxr-xr-x 2 root root 4096 mar  4 17:14 controller/
drwxr-xr-x 7 root root 4096 mar  4 17:14 css/
-rw-r--r-- 1 root root  484 mar  4 17:14 db.php
-rw-r--r-- 1 root root 2347 mar  2 18:34 functions.php
drwxr-xr-x 5 root root 4096 mar  1 18:19 img/
-rw-r--r-- 1 root root 4320 mar  4 17:14 index.php
drwxr-xr-x 8 root root 4096 mar  4 17:14 js/
drwxr-xr-x 2 root root 4096 mar  2 18:34 model/
drwxr-xr-x 2 root root 4096 mar  4 17:14 repository/
-rw-r--r-- 1 root root  562 mar  2 18:34 templates.php
drwxr-xr-x 6 root root 4096 mar  4 17:14 view/
server_logrocho@serverlogrocho:/var/www/html$ _
```

```
mysql> use logrocho;
Reading table information fo
You can turn off this featur

Database changed
mysql> SHOW TABLES;
+--------------------+
| Tables_in_logrocho |
+--------------------+
| allergen           |
| bar                |
| multimediaBar      |
| multimediaPincho   |
| pincho             |
| pincho_allergen    |
| review             |
| review_user_likes  |
| user               |
+--------------------+
9 rows in set (0,00 sec)

mysql> _
```

Desde un cliente veremos que podemos acceder a la web, y cargara las páginas y datos de la base de datos correctamente.