

Despliegue de aplicaciones Web

Práctica 5 – Aplicación Web

Resumen LAMP

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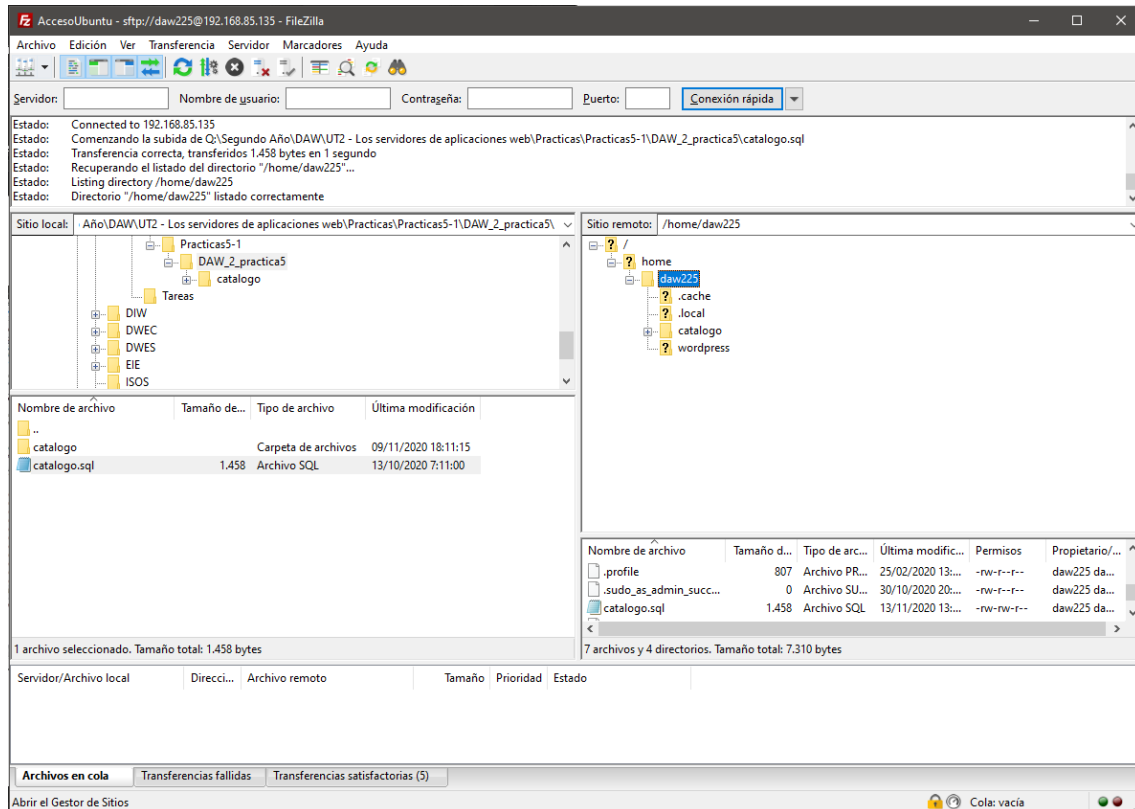
**Grado Superior en Desarrollo de
Aplicaciones Web**

Segundo Curso

Ejercicio 1- Despliegue de la aplicación web

Subir la aplicación catalogo al servidor Ubuntu

Luego de establecer la conexión, se transfieren los ficheros que componen la aplicación catalogo al directorio del usuario.



Se mueve la aplicación del directorio usuario, al directorio de publicación web.

```
root@daw225: /var/www/html
root@daw225:/home/daw225# ls -l
total 16
drwxrwxr-x 3 daw225 daw225 4096 Nov 13 12:00 catalogo
-rw-rw-r-- 1 daw225 daw225 1458 Nov 13 12:05 catalogo.sql
-rw-r--r-- 1 root   root    960 Nov  9 23:03 certificados.txt
drwxrwxr-x 5 daw225 daw225 4096 Oct 30 19:59 wordpress
root@daw225:/home/daw225# mv catalogo /var/www/html/
root@daw225:/home/daw225# mv catalogo.sql /var/www/html/
root@daw225:/home/daw225# cd /var/www/html/
root@daw225:/var/www/html# ls -l
total 28
-rw-r--r-- 1 root    root      142 Nov  9 22:37 404.html
drwxrwxr-x 3 daw225  daw225   4096 Nov 13 12:00 catalogo
-rw-rw-r-- 1 daw225  daw225   1458 Nov 13 12:05 catalogo.sql
-rw-r--r-- 1 root    root   10918 Oct 30 19:48 index.html
drwxr-xr-x 5 www-data www-data 4096 Oct 30 21:05 wordpress
root@daw225:/var/www/html#
```

Se creará una carpeta para tener los archivos públicos de la aplicación.

```
root@daw225:/var/www/html# cd catalogo
root@daw225:/var/www/html/catalogo# mkdir public_html
```

Se mueve el archivo .sql a la carpeta de catálogo.

```
root@daw225:/var/www/html# cd catalogo
root@daw225:/var/www/html/catalogo# ls -l
total 12
-rw-rw-r-- 1 daw225 daw225 545 Nov 13 12:00 index.html
drwxrwxr-x 2 daw225 daw225 4096 Nov 13 12:00 php
drwxr-xr-x 2 root root 4096 Nov 13 12:25 public_html
root@daw225:/var/www/html/catalogo# mv index.html public_html/
root@daw225:/var/www/html/catalogo# mv php public_html/
root@daw225:/var/www/html/catalogo# cd ..
root@daw225:/var/www/html# ls -l
total 28
-rw-r--r-- 1 root root 142 Nov 9 22:37 404.html
drwxrwxr-x 3 daw225 daw225 4096 Nov 13 12:27 catalogo
-rw-rw-r-- 1 daw225 daw225 1458 Nov 13 12:05 catalogo.sql
-rw-r--r-- 1 root root 10918 Oct 30 19:48 index.html
drwxr-xr-x 5 www-data www-data 4096 Oct 30 21:05 wordpress
root@daw225:/var/www/html# mv catalogo.sql catalogo
root@daw225:/var/www/html#
```

El directorio anterior es propiedad del usuario daw225. Necesitamos cambiar la propiedad al usuario de apache `${APACHE_RUN_USER}` y al grupo de apache `${APACHE_RUN_GROUP}`, el valor de ambas variables se encuentran en el fichero `envvars` con `www-data`

Para hacerlo, ejecuta:

\$ sudo chown -R www-data:www-data /var/www/html/catalogo

```
root@daw225: /var/www/html
root@daw225:/var/www/html# ls -l
total 24
-rw-r--r-- 1 root root 142 Nov 9 22:37 404.html
drwxrwxr-x 3 daw225 daw225 4096 Nov 13 12:28 catalogo
-rw-r--r-- 1 root root 10918 Oct 30 19:48 index.html
drwxr-xr-x 5 www-data www-data 4096 Oct 30 21:05 wordpress

root@daw225:/var/www/html# chown -R www-data:www-data /var/www/html/catalogo/
root@daw225:/var/www/html# ls -l
total 24
-rw-r--r-- 1 root root 142 Nov 9 22:37 404.html
drwxrwxr-x 3 www-data www-data 4096 Nov 13 12:28 catalogo
-rw-r--r-- 1 root root 10918 Oct 30 19:48 index.html
drwxr-xr-x 5 www-data www-data 4096 Oct 30 21:05 wordpress
root@daw225:/var/www/html#
```

A continuación, se establecen los permisos de lectura en el directorio raíz de Apache `/var/www/html`, pero en este caso ya se le han dado antes.

```
root@daw225:/var/www# ls -l
total 4
drwxr-xr-x 4 root root 4096 Nov 13 12:28 html
```

Configuración de la base de datos

El script “catalogo.sql” tiene los comandos para crear la base de datos de mysql, así como una tabla sobre esa base de datos, y el ingreso de 3 filas (productos) a dicha tabla. Por lo tanto, se ejecutará el script dentro de mysql.

```
mysql> source /var/www/html/catalogo/catalogo.sql;
Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected, 1 warning (0.00 sec)

Query OK, 1 row affected (0.01 sec)

Database changed
Query OK, 0 rows affected, 2 warnings (0.02 sec)

Query OK, 3 rows affected (0.03 sec)
Records: 3  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql> exit
```

Se crea un usuario para esta base de datos denominado “catalogo” y password “catalogo” y que tenga todos los permisos para la base de datos “catalogo”.

```
root@daw225: /var/www/html/catalogo/public_html/php
root@daw225:/var/www/html/catalogo/public_html/php# nano conectar.php
root@daw225:/var/www/html/catalogo/public_html/php# mysql
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 8
Server version: 8.0.22-0ubuntu0.20.04.2 (Ubuntu)

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affiliates. Other names may be trademarks of their respective
owners.

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

mysql> create user catalogo@localhost identified by 'catalogo';
mysql> grant all privileges on catalogo.* to catalogo@localhost;
```

Se modifica el fichero que servirá para conectar con la base de datos, con el fin de que el usuario y la contraseña utilizada correspondan con lo creado anteriormente.

```
root@daw225: /var/www/html/catalogo/public_html/php
GNU nano 4.8                                conectar.php
?php
    $host="localhost";
    $user="catalogo";
    $pass="catalogo";
    $bd="catalogo";
    $con = mysqli_connect($host, $user, $pass, $bd);
        if (!$con) {
            die ("aiuda Error de conexion " . mysqli_connect_errno());
        }
        else {echo "Conectado a la base de datos <br>";}
?>
```

Creación de los archivos para el sitio catalogo y un directorio para los ficheros de log.

La ruta de configuración de apache donde debemos tener los archivos de configuración de nuestros sitios virtuales es /etc/apache2/sites-available.

Para crear el archivo podemos partir del fichero 000-default.conf, por lo que copiaremos este archivo y crearemos en nuestro caso catalogo.es.conf

```
root@daw225: /etc/apache2/sites-available
root@daw225:/var/www# cd /etc/apache2/sites-available/
root@daw225:/etc/apache2/sites-available# ls -l
total 24
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov 9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available# cp 000-default.conf catalogo.es.conf
root@daw225:/etc/apache2/sites-available# ls -l
total 28
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 1452 Nov 13 12:52 catalogo.es.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov 9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available#
```

Crear un sitio para los ficheros de log:

Situarse en /var/log/apache2 que es el valor que tiene la variable
\${APACHE_LOG_DIR}

En la carpeta de sitios se crea el directorio: mkdir catalogo.es

```
root@daw225: /var/log/apache2/sitios

root@daw225:/etc/apache2/sites-available# cd /var/log/apache2/
root@daw225:/var/log/apache2# ls -l
total 28
-rw-r----- 1 root adm      0 Nov 13 11:31 access.log
-rw-r----- 1 root adm  3828 Nov 12 23:34 access.log.1
-rw-r----- 1 root adm  5935 Nov  9 22:52 access.log.2.gz
-rw-r----- 1 root adm  1595 Nov 13 11:52 error.log
-rw-r----- 1 root adm  1577 Nov 13 11:31 error.log.1
-rw-r----- 1 root adm  1144 Nov  9 23:05 error.log.2.gz
-rw-r----- 1 root adm      0 Oct 30 19:48 other_vhosts_access.log
drwxr-xr-x  3 root root 4096 Oct 30 21:27 sitios
root@daw225:/var/log/apache2# cd sitios
root@daw225:/var/log/apache2/sitios# mkdir catalogo.es
root@daw225:/var/log/apache2/sitios# ls -l
total 8
drwxr-xr-x  2 root root 4096 Nov 13 12:55 catalogo.es
drwxr-xr-x  2 root root 4096 Oct 30 21:39 daw225.com
root@daw225:/var/log/apache2/sitios#
```

Configurar el archivo para el host virtual.

Es importante que la extensión del archivo sea **.conf**

Editamos el archivo creado.

En el archivo `/etc/apache2/sites-available/catalogo.es.conf` escribiremos los parámetros necesarios:

```
root@daw225: /etc/apache2/sites-available

root@daw225:/var/log/apache2/sitios# cd /etc/apache2/sites-available
root@daw225:/etc/apache2/sites-available# ls -l
total 28
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 1452 Nov 13 12:52 catalogo.es.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov  9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available# nano catalogo.es.conf
```

```
root@daw225: /etc/apache2/sites-available
GNU nano 4.8 catalogo.es.conf Modified
# 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 catalogo.es
ServerAlias www.catalogo.es
DocumentRoot /var/www/html/catalogo/public_html
# Available loglevels: trace8, ..., tracel, 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}/sitios/catalogo.es/error.log
CustomLog ${APACHE_LOG_DIR}/sitios/catalogo.es/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>

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

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

<VirtualHost *:80>

ServerAdmin admin@localhost

ServerName **catalogo.es**

ServerAlias **www. catalogo.es**

DocumentRoot **/var/www/html/ catalogo.es/public_html**

ErrorLog \${APACHE_LOG_DIR}/sitios/catalogo.es/error.log

CustomLog \${APACHE_LOG_DIR}/sitios/catalogo.es /access.log combined

</VirtualHost>

Podemos probar la configuración para detectar errores de sintaxis con:

sudo apachectl configtest

```
root@daw225:/etc/apache2/sites-available# apachectl configtest
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message
Syntax OK
root@daw225:/etc/apache2/sites-available#
```

Activamos el host creado con **a2ensite catalogo.es.conf**, previamente asegurándonos de tener abiertos los puertos correspondientes con **ufw status**


```
root@daw225: /etc/apache2/sites-available
root@daw225:/etc/apache2/sites-available# a2ensite catalogo.es.conf
Enabling site catalogo.es.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@daw225:/etc/apache2/sites-available# systemctl reload apache2
apache2.service is not active, cannot reload.
root@daw225:/etc/apache2/sites-available# ufw status
Status: inactive
root@daw225:/etc/apache2/sites-available# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y/n)? y
Firewall is active and enabled on system startup
root@daw225:/etc/apache2/sites-available# ufw status
Status: active

To Action From
--
Apache ALLOW Anywhere
Apache Full ALLOW Anywhere
Apache Secure ALLOW Anywhere
Apache (v6) ALLOW Anywhere (v6)
Apache Full (v6) ALLOW Anywhere (v6)
Apache Secure (v6) ALLOW Anywhere (v6)

root@daw225:/etc/apache2/sites-available# systemctl reload apache2
apache2.service is not active, cannot reload.
root@daw225:/etc/apache2/sites-available# systemctl start apache2
Enter passphrase for SSL/TLS keys for 127.0.1.1:443 (RSA): *****
root@daw225:/etc/apache2/sites-available# systemctl status apache2
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor prese
   Active: active (running) since Fri 2020-11-13 13:08:05 UTC; 9s ago
     Docs: https://httpd.apache.org/docs/2.4/
   Process: 4410 ExecStart=/usr/sbin/apachectl start (code=exited, status=0/SU
 Main PID: 4434 (apache2)
    Tasks: 6 (limit: 4587)
   Memory: 13.2M
   CGroup: /system.slice/apache2.service
           └─4434 /usr/sbin/apache2 -k start
             └─4435 /usr/sbin/apache2 -k start
               └─4436 /usr/sbin/apache2 -k start
                 └─4437 /usr/sbin/apache2 -k start
                   └─4438 /usr/sbin/apache2 -k start
                     └─4439 /usr/sbin/apache2 -k start
```

Antes de finalizar, se realiza la configuración del servidor de catalogo tanto la versión segura como la no segura, para que muestre un mensaje de error para cuando retorne del código de error 404.


```

Ubuntu_20_04 - VMware Workstation 15 Player (Non-commercial use only)
Player | | | | |
GNU nano 4.8 catalogo.es.conf
<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 catalogo.es
ServerAlias www.catalogo.es
DocumentRoot /var/www/html/catalogo/public_html
ErrorDocument 404 "Este sitio no existe en la versión no segura de catálogos"
#
Redirect permanent / https://catalogo.es
# 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}/sitios/catalogo.es/error.log
CustomLog ${APACHE_LOG_DIR}/sitios/catalogo.es/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>

root@daw225:/etc/apache2/sites-available#

```

```

Ubuntu_20_04 - VMware Workstation 15 Player (Non-commercial use only)
Player | | | | |
GNU nano 4.8 catalogo-ssl.conf
<IfModule mod_ssl.c>
  <VirtualHost _default_:443>
    ServerAdmin webmaster@localhost

    DocumentRoot /var/www/html/catalogo/public_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}/sitios/catalogo.es/error.log
    CustomLog ${APACHE_LOG_DIR}/sitios/catalogo.es/access.log combined
    ErrorDocument 404 /404.html
    # 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

    #
    # SSL Engine Switch:
    # Enable/Disable SSL for this virtual host.
    SSLEngine on

    #
    # A self-signed (snakeoil) certificate can be created by installing
    # 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 file, only the
    # SSLCertificateFile directive is needed.
    SSLCertificateFile /etc/apache2/ssl/catalogo.crt
    SSLCertificateKeyFile /etc/apache2/ssl/catalogo.key
    [ Read 134 lines ]
  </VirtualHost>
</IfModule>
^G Get Help ^O Write Out ^W Where Is ^K Cut Text ^J Justify ^C Cur Pos ^M-U Undo
^X Exit ^R Read File ^N Replace ^U Paste Text ^T To Spell ^G Go To Line ^M-E Redo

```

Comprobar el sitio virtual:

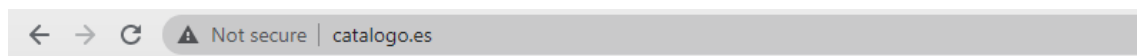
En el **fichero host** de la máquina donde se va a abrir el navegador, se añade:
IPservidor catalogo.es

```
*hosts: Bloc de notas
Archivo Edición Formato Ver Ayuda
# Copyright (c) 1993-2009 Microsoft Corp.
#
# This is a sample HOSTS file used by Microsoft TCP/IP for Windows.
#
# This file contains the mappings of IP addresses to host names. Each
# entry should be kept on an individual line. The IP address should
# be placed in the first column followed by the corresponding host name
# The IP address and the host name should be separated by at least one
# space.
#
# Additionally, comments (such as these) may be inserted on individual
# lines or following the machine name denoted by a '#' symbol.
#
# For example:
#
#       102.54.94.97       rhino.acme.com          # source server
#       38.25.63.10      x.acme.com              # x client host
#
# localhost name resolution is handled within DNS itself.
#       127.0.0.1         localhost
#       ::1              localhost
#127.0.0.1 miproyecto.local.com
192.168.85.133 empleados.es
192.168.85.133 peliculas.com
192.168.85.135 daw225.com
192.168.85.135 catalogo.es|
```

Se abre un navegador web y se pone prueba <http://catologo.es>

Nota: para poder probar desde la máquina virtual Windows, como los nombres de los virtual host no son unos DNS auténticos, se edita con permiso de administrador el fichero de Windows **hosts**, que se encuentra C:\Windows\System32\drivers\etc.

Luego se prueba en un navegador.



Realiza una búsqueda por código de producto:

Código del producto:

Obtén el listado de todos los productos del catálogo:

[Listado de productos](#)

Ejercicio 2- Aplicación del certificado de Seguridad

Una vez se tiene activo el SSL en el servidor, se crea un directorio SSL en /etc/apache2 , que será la ubicación donde se guardarán los certificados a crear.

 daw225@daw225: /etc/apache2/ssl

```
daw225@daw225:/etc/apache2$ ls -l
total 84
-rw-r--r-- 1 root root 7224 Aug 12 19:46 apache2.conf
drwxr-xr-x 2 root root 4096 Oct 30 19:48 conf-available
drwxr-xr-x 2 root root 4096 Oct 30 19:48 conf-enabled
-rw-r--r-- 1 root root 1782 Apr 13 2020 envvars
-rw-r--r-- 1 root root 31063 Apr 13 2020 magic
drwxr-xr-x 2 root root 12288 Oct 30 19:55 mods-available
drwxr-xr-x 2 root root 4096 Nov 9 20:52 mods-enabled
-rw-r--r-- 1 root root 320 Apr 13 2020 ports.conf
drwxr-xr-x 2 root root 4096 Nov 13 13:04 sites-available
drwxr-xr-x 2 root root 4096 Nov 13 13:06 sites-enabled
drwxr-xr-x 2 root root 4096 Nov 12 22:17 ssl
daw225@daw225:/etc/apache2$ cd ssl
daw225@daw225:/etc/apache2/ssl$ ls -l
total 20
-rw-r--r-- 1 root root 1334 Nov 9 22:07 server.crt
-rw-r--r-- 1 root root 1062 Nov 9 21:58 server.csr
-rw----- 1 root root 1751 Nov 9 21:48 server.key
-rw-r--r-- 1 root root 1472 Nov 12 22:17 wordpress.crt
-rw----- 1 root root 1708 Nov 12 22:14 wordpress.key
```

Una vez se está en este directorio, se procede a la creación del certificado en un solo paso mediante el comando que se puede observar en la captura, sus características son.

Generar una clave RSA que tenga una longitud de 2048 bits : **rsa:2048**

Establece como período de tiempo para el certificado de 365 días: **-days 365**

Que omita la opción de asegurar nuestro certificado con una frase de contraseña: **-nodes**

El nombre del fichero para guardar la clave privada: **catalogo.key**

El nombre del fichero para guardar el certificado: **catalogo.crt**

Una vez se ha generado, se añaden sus características, como el país, ciudad, etc.

```
root@daw225: /etc/apache2/ssl
root@daw225:/etc/apache2/ssl# openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout catalogo.key -out catalogo.crt
Generating a RSA private key
.....+++++
.....+++++
writing new private key to 'catalogo.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]:Cantabria
Locality Name (eg, city) []:Santander
Organization Name (eg, company) [Internet Widgits Pty Ltd]:IES AGL
Organizational Unit Name (eg, section) []:daw
Common Name (e.g. server FQDN or YOUR name) []:serverubuntu
Email Address []:ezelayal01@educantabria.es
root@daw225:/etc/apache2/ssl#
```

Se copia el archivo por defecto, y al copiado se le agrega el nombre del sitio: catalogo-ssl.conf

```
root@daw225: /etc/apache2/sites-available
root@daw225:/etc/apache2/ssl# cd /etc/apache2/sites-available/
root@daw225:/etc/apache2/sites-available# ls -l
total 28
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 1443 Nov 13 13:04 catalogo.es.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov 9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available# cp default-ssl.conf catalogo-ssl.conf
root@daw225:/etc/apache2/sites-available#
```

Una vez ya creado, se modifica el archivo para incluir el certificado en Apache.

```
root@daw225: /etc/apache2/sites-available
root@daw225:/etc/apache2/sites-available# ls -l
total 36
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 6347 Nov 13 13:54 catalogo-ssl.conf
-rw-r--r-- 1 root root 1443 Nov 13 13:04 catalogo.es.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov 9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available# nano catalogo-ssl.conf
```

Se reemplaza la configuración del certificado.

```
root@daw225: /etc/apache2/sites-available
GNU nano 4.8          catalogo-ssl.conf          Modified
<IfModule mod_ssl.c>
    <VirtualHost _default_:443>
        ServerAdmin webmaster@localhost

        DocumentRoot /var/www/html/catalogo/public_html

        # Available loglevels: trace8, ..., tracel, debug, info, notice
        # 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}/sitios/catalogo.es/error.log
        CustomLog ${APACHE_LOG_DIR}/sitios/catalogo.es/access.log combi
        ErrorDocument 404 /404.html
        # 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 exam
        # following line enables the CGI configuration for this host on
        # after it has been globally disabled with "a2disconf".
        #Include conf-available/serve-cgi-bin.conf

        #   SSL Engine Switch:
        #   Enable/Disable SSL for this virtual host.
        SSLEngine on

        #   A self-signed (snakeoil) certificate can be created by inst
        #   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 file, on
        #   SSLCertificateFile directive is needed.
        SSLCertificateFile      /etc/apache2/ssl/catalogo.crt
        SSLCertificateKeyFile   /etc/apache2/ssl/catalogo.key

        #   Server Certificate Chain:

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

Vemos si está activo el firewall, si no lo está se activa, y verificar que también está abierto el puerto 443.

```
root@daw225: /etc/apache2/sites-available
root@daw225:/etc/apache2/sites-available# ufw status
Status: inactive
root@daw225:/etc/apache2/sites-available# ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
root@daw225:/etc/apache2/sites-available# ufw status
Status: active

To Action From
--
Apache ALLOW Anywhere
Apache Full ALLOW Anywhere
Apache Secure ALLOW Anywhere
Apache (v6) ALLOW Anywhere (v6)
Apache Full (v6) ALLOW Anywhere (v6)
Apache Secure (v6) ALLOW Anywhere (v6)

root@daw225:/etc/apache2/sites-available#
```

Se comprueba que se tenga la carpeta donde estarán los archivos de Log.

```
root@daw225: /var/log/apache2/sitios/catalogo.es

root@daw225:/etc/apache2/sites-available# cd /var/log/apache2/
root@daw225:/var/log/apache2# ls -l
total 32
-rw-r----- 1 root adm 128 Nov 13 13:17 access.log
-rw-r----- 1 root adm 3828 Nov 12 23:34 access.log.1
-rw-r----- 1 root adm 5935 Nov 9 22:52 access.log.2.gz
-rw-r----- 1 root adm 2157 Nov 13 13:08 error.log
-rw-r----- 1 root adm 1577 Nov 13 11:31 error.log.1
-rw-r----- 1 root adm 1144 Nov 9 23:05 error.log.2.gz
-rw-r----- 1 root adm 0 Oct 30 19:48 other_vhosts_access.log
drwxr-xr-x 4 root root 4096 Nov 13 12:55 sitios
root@daw225:/var/log/apache2# cd sitios
root@daw225:/var/log/apache2/sitios# ls -l
total 8
drwxr-xr-x 2 root root 4096 Nov 13 13:07 catalogo.es
drwxr-xr-x 2 root root 4096 Oct 30 21:39 daw225.com
root@daw225:/var/log/apache2/sitios# cd catalogo.es/
root@daw225:/var/log/apache2/sitios/catalogo.es# ls -l
total 4
-rw-r--r-- 1 root root 415 Nov 13 13:16 access.log
-rw-r--r-- 1 root root 0 Nov 13 13:07 error.log
root@daw225:/var/log/apache2/sitios/catalogo.es#
```

El sitio normal ya está activo, ahora se pondrá activo el sitio seguro.

```
root@daw225: /etc/apache2/sites-available

root@daw225:/var/log/apache2/sitios/catalogo.es# cd /etc/apache2/sites-available
root@daw225:/etc/apache2/sites-available# ls -l
total 36
-rw-r--r-- 1 root root 1452 Nov 12 21:25 000-default.conf
-rw-r--r-- 1 root root 6410 Nov 13 13:58 catalogo-ssl.conf
-rw-r--r-- 1 root root 1443 Nov 13 13:04 catalogo.es.conf
-rw-r--r-- 1 root root 6399 Nov 12 23:26 daw225-ssl.conf
-rw-r--r-- 1 root root 1429 Oct 30 21:37 daw225.com.conf
-rw-r--r-- 1 root root 6347 Nov 9 22:39 default-ssl.conf
root@daw225:/etc/apache2/sites-available# a2ensite catalogo-ssl.conf
Enabling site catalogo-ssl.
To activate the new configuration, you need to run:
    systemctl reload apache2
root@daw225:/etc/apache2/sites-available# systemctl start apache2
Enter passphrase for SSL/TLS keys for 127.0.1.1:443 (RSA): *****
root@daw225:/etc/apache2/sites-available#
```

Sitio con http

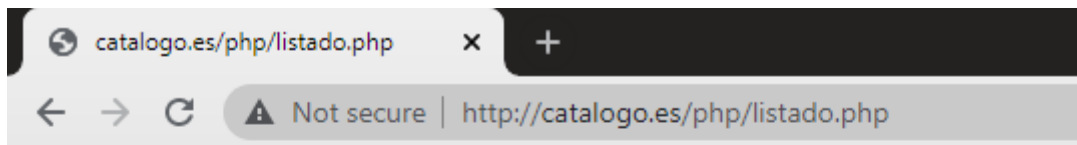


Realiza una búsqueda por código de producto:

Codigo del producto:

Obtén el listado de todos los productos del catálogo:

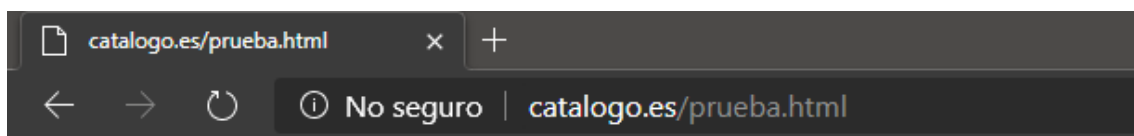
[Listado de productos](#)



Conectado a la base de datos

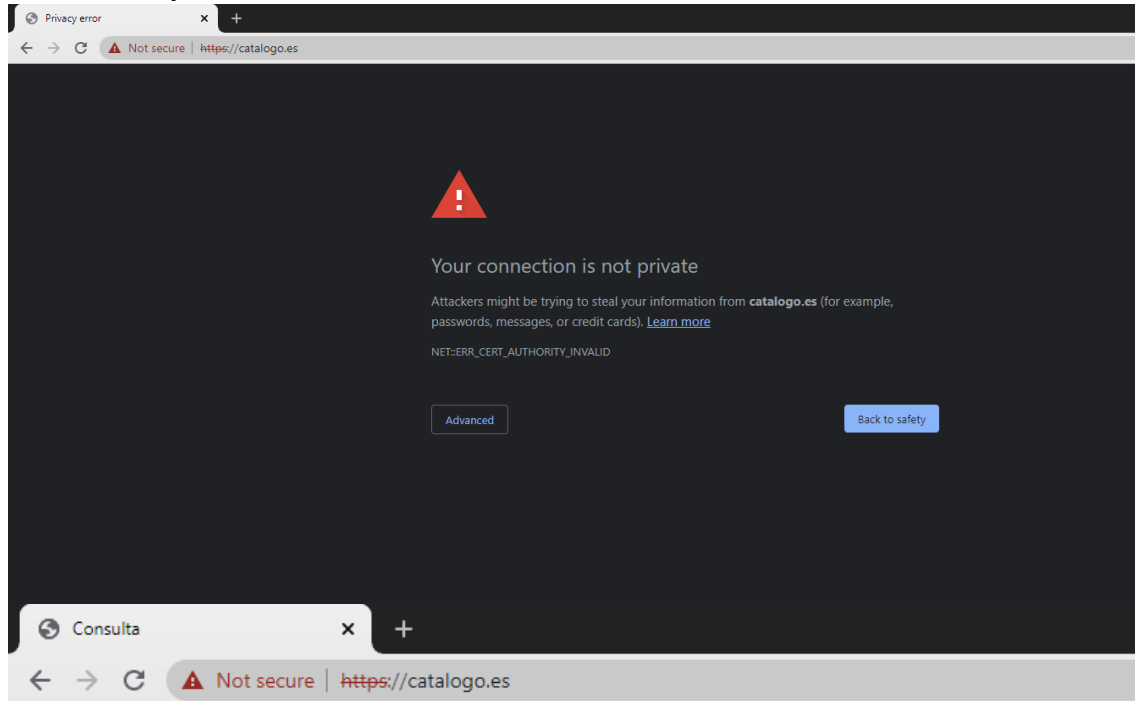
Identificador	Nombre	Precio	Existencia
1111	Producto 1	20	20
2222	Producto2	25	40
3333	Producto 3	20	20

Caso de error 404 en sitio no seguro



Pagina web no existe

Sitio con https

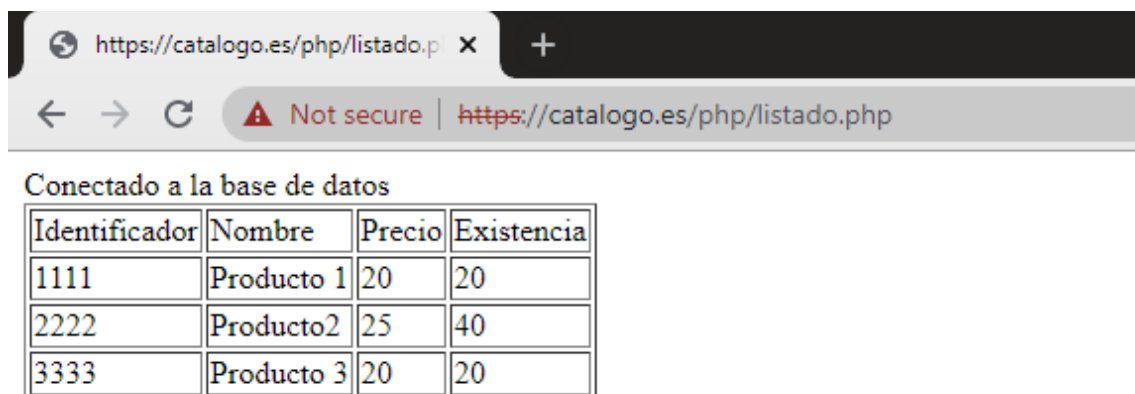


Realiza una búsqueda por código de producto:

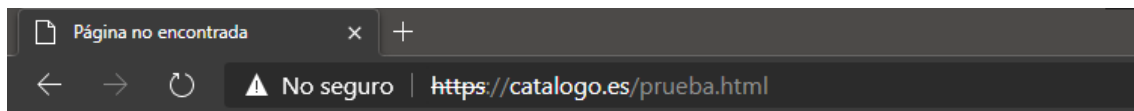
Código del producto:

Obtén el listado de todos los productos del catálogo:

[Listado de productos](#)



Caso de error 404 en sitio seguro



Página no encontrada en el sitio seguro de catálogos.

Estela Rosinda Zelaya Lazo

El certificado generado.

