
TEMA 2 - INSTALACIÓN, CONFIGURACIÓN Y DOCUMENTACIÓN DEL ENTORNO DE DESARROLLO Y DEL ENTORNO DE EXPLOTACIÓN

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EJERCICIOS

1. Instalación y configuración del entorno de desarrollo para la asignatura de Desarrollo web del lado servidor sobre dos máquinas virtuales XXX-USED y XXX-WXED. Documentando la configuración elegida y los aspectos más importantes del proceso de instalación. Documentar el proceso de monitorización del correcto funcionamiento de los servicios. Mantener actualizada esta documentación durante todo el curso.

BNR-USED

1. Configuración inicial.

➤ Configuración ip.

```
miadmin@bnr-used:~$ 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 1000
    link/ether 08:00:27:c8:02:d2 brd ff:ff:ff:ff:ff:ff
    inet 192.168.3.207/24 brd 192.168.3.255 scope global enp0s3
        valid_lft forever preferred_lft forever
    inet6 fe80::a00:27ff:fec8:2d2/64 scope link
        valid_lft forever preferred_lft forever
miadmin@bnr-used:~$ netstat -r -n
Kernel IP routing table
Destination      Gateway          Genmask         Flags   MSS Window  irtt Iface
0.0.0.0          192.168.3.1     0.0.0.0         UG      0 0        0 enp0s3
192.168.3.0      0.0.0.0         255.255.255.0   U       0 0        0 enp0s3
```

```
# This is the network config written by 'subiquity'
network:
  ethernets:
    enp0s3:
      addresses:
        - 192.168.3.207/24
      dhcp4: false
      routes:
        - to: default
          via: 192.168.3.1
      nameservers:
        addresses:
          - 8.8.8.8
          - 8.8.4.4
  version: 2
```

➤ Conectividad a Internet.

```
miadmin@bnr-used:~$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=114 time=12.9 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=114 time=23.5 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=114 time=13.3 ms
^C
--- 8.8.8.8 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2289ms
rtt min/avg/max/mdev = 12.915/16.554/23.497/4.911 ms
miadmin@bnr-used:~$ ping www.google.es
PING www.google.es (142.250.200.131) 56(84) bytes of data.
64 bytes from mad41s14-in-f3.1e100.net (142.250.200.131): icmp_seq=1 ttl=114 time=10.8 ms
64 bytes from mad41s14-in-f3.1e100.net (142.250.200.131): icmp_seq=2 ttl=114 time=11.2 ms
64 bytes from mad41s14-in-f3.1e100.net (142.250.200.131): icmp_seq=3 ttl=114 time=11.0 ms
^C
--- www.google.es ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2104ms
rtt min/avg/max/mdev = 10.759/10.960/11.150/0.159 ms
```

➤ Nombre de la máquina.

```
miadmin@bnr-used:~$ hostnamectl
Static hostname: bnr-used
Icon name: computer-vm
Chassis: vm
Machine ID: 796959f77c9145d78e5389ed2dcc4291
Boot ID: 0eacbf4bf6ae448ba2d420de51d188d6
Virtualization: oracle
Operating System: Ubuntu 22.04.3 LTS
Kernel: Linux 5.15.0-84-generic
Architecture: x86-64
Hardware Vendor: innotek GmbH
Hardware Model: VirtualBox
```

➤ Usuario inicial miadmin.

```
miadmin@bnr-used:~$ cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
_apt:x:100:65534::/nonexistent:/usr/sbin/nologin
systemd-network:x:101:102:systemd Network Management,,,:/run/systemd:/usr/sbin/nologin
systemd-resolve:x:102:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologin
messagebus:x:103:104::/nonexistent:/usr/sbin/nologin
systemd-timesync:x:104:105:systemd Time Synchronization,,,:/run/systemd:/usr/sbin/nologin
pollinate:x:105:1::/var/cache/pollinate:/bin/false
sshd:x:106:65534::/run/sshd:/usr/sbin/nologin
syslog:x:107:113::/home/syslog:/usr/sbin/nologin
uuid:x:108:114::/run/uuid:/usr/sbin/nologin
tcpdump:x:109:115::/nonexistent:/usr/sbin/nologin
tss:x:110:116:TPM software stack,,,:/var/lib/tpm:/bin/false
landscape:x:111:117::/var/lib/landscape:/usr/sbin/nologin
fwupd-refresh:x:112:118:fwupd-refresh user,,,:/run/systemd:/usr/sbin/nologin
usbmux:x:113:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
miadmin:x:1000:1000:bn-used:/home/miadmin:/bin/bash
lxd:x:999:100::/var/snap/lxd/common/lxd:/bin/false
```

➤ Activar el cortafuegos y abrir el puerto 22 para la conexión por ssh.

```
miadmin@bnr-used:~$ sudo ufw enable
Command may disrupt existing ssh connections. Proceed with operation (y|n)? y
Firewall is active and enabled on system startup
miadmin@bnr-used:~$ sudo ufw allow 22
Rule updated
Rule updated (v6)
miadmin@bnr-used:~$ sudo ufw status
Status: active
```

To	Action	From
--	-----	----
22	ALLOW	Anywhere
22 (v6)	ALLOW	Anywhere (v6)

2. Apache

➤ Instalación del servicio apache.

```
miadmin@bnr-used:~$ sudo apt-get update
[sudo] password for miadmin:
Obj:1 http://es.archive.ubuntu.com/ubuntu jammy InRelease
Obj:2 http://es.archive.ubuntu.com/ubuntu jammy-updates InRelease
Obj:3 http://es.archive.ubuntu.com/ubuntu jammy-backports InRelease
Obj:4 http://es.archive.ubuntu.com/ubuntu jammy-security InRelease
Leyendo lista de paquetes... Hecho
miadmin@bnr-used:~$ sudo apt install apache2
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes adicionales:
```

➤ Comprobar el servicio.

```
miadmin@bnr-used:~$ sudo service apache2 status
● apache2.service - The Apache HTTP Server
   Loaded: loaded (/lib/systemd/system/apache2.service; enabled; vendor preset: enabled)
   Active: active (running) since Wed 2023-10-04 08:10:53 UTC; 1min 30s ago
     Docs: https://httpd.apache.org/docs/2.4/
  Main PID: 2062 (apache2)
    Tasks: 55 (limit: 2220)
   Memory: 5.0M
      CPU: 35ms
   CGroup: /system.slice/apache2.service
           └─2062 /usr/sbin/apache2 -k start
             └─2064 /usr/sbin/apache2 -k start
               └─2065 /usr/sbin/apache2 -k start

oct 04 08:10:53 bnr-used systemd[1]: Starting The Apache HTTP Server...
oct 04 08:10:53 bnr-used apachectl[2061]: AH00558: apache2: Could not reliably determine the server's
oct 04 08:10:53 bnr-used systemd[1]: Started The Apache HTTP Server.
lines 1-16/16 (END)
```

➤ Abrimos el puerto de apache en el cortafuegos.

```
miadmin@bnr-used:~$ sudo ufw allow Apache
[sudo] password for miadmin:
Rule added
Rule added (v6)
miadmin@bnr-used:~$ sudo ufw status
Status: active
```

To	Action	From
--	-----	----
22	ALLOW	Anywhere
Apache	ALLOW	Anywhere
22 (v6)	ALLOW	Anywhere (v6)
Apache (v6)	ALLOW	Anywhere (v6)

- Creamos el usuario con su contraseña y directorio y lo metemos en el grupo www-data.

```
miadmin@bnr-used:~$ sudo useradd -d /var/www/html/ operadorweb
miadmin@bnr-used:~$ sudo passwd operadorweb
New password:
Retype new password:
passwd: password updated successfully
miadmin@bnr-used:~$ sudo usermod -G www-data operadorweb
miadmin@bnr-used:~$ cat /etc/passwd | grep operadorweb
operadorweb:x:1001:1001::/var/www/html/:/bin/sh
miadmin@bnr-used:~$ cat /etc/group
group    group-
miadmin@bnr-used:~$ cat /etc/group | grep www-data
www-data:x:33:operadorweb
```

- Ponemos que el usuario operador web sea el propietario del directorio y cambiamos los permisos del mismo.

```
miadmin@bnr-used:~$ sudo chown --recursive operadorweb:www-data /var/www/html
miadmin@bnr-used:~$ sudo chmod -R 2775 /var/www/html
miadmin@bnr-used:~$ ls -l /var/www
total 4
drwxrwsr-x 2 operadorweb www-data 4096 oct  4 08:10 html
```

- Cambiamos esa directiva en el fichero de configuración de apache para el .htaccess.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/apache2/apache2.conf *
<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 All
    Require all granted
</Directory>
```

- Entramos en el usuario operador web y dentro del directorio de este usuario(/var/www/html) creamos un. htaccess y escribimos lo que se ve en la captura.

```
miadmin@bnr-used:/var/www/html$ su operadorweb
Password:
GNU nano 6.2
DirectoryIndex index.php index.html
```

Configurar sites-availables

- Creamos un archivo como este en /etc/apache2/sites-availables y ponemos las siguientes líneas de texto.

```
miadmin@DAW-USED: /etc/apache2/sites-available
GNU nano 6.2 DAW207.conf
<VirtualHost *:80>
    ServerName daw207.isauces.local
    ServerAdmin webmaster@localhost
    DocumentRoot /var/www/DAW207/public_html
</VirtualHost>
```

- Comprobamos la sintaxis

```
miadmin@DAW-USED:/etc/apache2/sites-available$ sudo apache2ctl configtest
AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName'
Syntax OK
```

- Reiniciamos el servicio


```
miadmin@DAW-USED:/etc/apache2/sites-available$ sudo service apache2 restart
```

- Y activamos el sitio

```
miadmin@DAW-USED:/etc/apache2/sites-available$ sudo a2ensite DAW207.conf
Enabling site DAW207.
```

To activate the new configuration, you need to run:

```
systemctl reload apache2
```

```
miadmin@DAW-USED:/etc/apache2/sites-available$ sudo apache2ctl -S
```

3.Enjaular usuarios

- Creamos el grupo donde van a encontrarse los usuarios enjaulados.

```
miadmin@bnr-used:~$ miadmin@bnr-used:~$ sudo groupadd ftpusers
```

- Creamos el usuario que queremos enjaular.

```
miadmin@bnr-used:~$ sudo useradd -g www-data -G ftpusers -m -d /var/www/DAW201 DAW201
```

```
miadmin@bnr-used:~$ cat /etc/passwd | grep DAW201
```

```
DAW201:x:1002:33:./var/www/DAW201:/bin/sh
```

```
miadmin@bnr-used:~$ ls /var/www/
```

```
DAW201  html
```

```
miadmin@bnr-used:~$ sudo passwd DAW201
```

```
New password:
```

```
Retype new password:
```

```
passwd: password updated successfully
```

- Ponemos los permisos requeridos y el propietario a la carpeta del usuario creado.

```
miadmin@bnr-used:~$ sudo chown root:root /var/www/DAW201/
```

```
miadmin@bnr-used:~$ sudo chmod 555 /var/www/DAW201/
```

- Creamos la carpeta public_html y le damos permisos y propietario.

```
miadmin@bnr-used:~$ sudo mkdir /var/www/DAW201/public_html
```

```
miadmin@bnr-used:~$ sudo chmod 2775 -R /var/www/
```

```
DAW201/ html/
```

```
miadmin@bnr-used:~$ ls /var/www/DAW201/
```

```
ls: cannot open directory '/var/www/DAW201/': Permission denied
```

```
miadmin@bnr-used:~$ sudo su root
```

```
root@bnr-used:/home/miadmin# ls /var/www/DAW201/
```

```
public_html
```

```
root@bnr-used:/home/miadmin# sudo chmod 2775 -R /var/www/DAW201/public_html/
```

```
root@bnr-used:/home/miadmin# sudo chown DAW201:www-data -R /var/www/DAW201/public_html/
```

- Modificamos el fichero sshd.config.

```

miadmin@DAW-USED: ~
GNU nano 6.2 /etc/ssh/sshd_config
# and KbdInteractiveAuthentication to 'no'.
UsePAM yes

#AllowAgentForwarding yes
#AllowTcpForwarding yes
#GatewayPorts no
X11Forwarding yes
#X11DisplayOffset 10
#X11UseLocalhost yes
#PermitTTY yes
PrintMotd no
#PrintLastLog yes
#TCPKeepAlive yes
#PermitUserEnvironment no
#Compression delayed
#ClientAliveInterval 0
#ClientAliveCountMax 3
#UseDNS no
#PidFile /run/sshd.pid
#MaxStartups 10:30:100
#PermitTunnel no
#ChrootDirectory none
#VersionAddendum none

# no default banner path
#Banner none

# Allow client to pass locale environment variables
AcceptEnv LANG LC_*

# override default of no subsystems
#Subsystem sftp /usr/lib/openssh/sftp-server
Subsystem sftp internal-sftp
# Example of overriding settings on a per-user basis
#Match User anoncvs
#    X11Forwarding no
#    AllowTcpForwarding no
#    PermitTTY no
#    ForceCommand cvs server
Match Group ftpusers
ChrootDirectory %h
ForceCommand internal-sftp -u 2
AllowTcpForwarding yes
PermitTunnel no
X11Forwarding no

```

4. PHP

- Actualizamos los repositorios y instalamos la versión 8.1 de php.

```
miadmin@bmr-used:~$ sudo apt update
```

```
miadmin@bmr-used:~$ sudo apt -y install php8.1
```

- Instalamos la siguiente librería para php.

```
miadmin@bmr-used:~$ sudo apt install libapache2-mod-php
```

- Instalamos los mods siguientes:

```
miadmin@bmr-used:~$ sudo apt install -y php8.1-xml
```

```
miadmin@bmr-used:~$ sudo apt install -y php8.1-soap
```

- Editamos el fichero php.ini.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/php/8.1/apache2/php.ini *
;
; of PHP
; E_USER_DEPRECATED - user-generated deprecation warnings
;
; Common Values:
; E_ALL (Show all errors, warnings and notices including coding standards.)
; E_ALL & ~E_NOTICE (Show all errors, except for notices)
; E_ALL & ~E_NOTICE & ~E_STRICT (Show all errors, except for notices and coding standards warnings.)
; E_COMPILE_ERROR|E_RECOVERABLE_ERROR|E_ERROR|E_CORE_ERROR (Show only errors)
; Default Value: E_ALL
; Development Value: E_ALL
; Production Value: E_ALL & ~E_DEPRECATED & ~E_STRICT
; https://php.net/error-reporting
error_reporting = E_ALL & ~E_DEPRECATED & ~E_STRICT

; This directive controls whether or not and where PHP will output errors,
; notices and warnings too. Error output is very useful during development, but
; it could be very dangerous in production environments. Depending on the code
; which is triggering the error, sensitive information could potentially leak
; out of your application such as database usernames and passwords or worse.
; For production environments, we recommend logging errors rather than
; sending them to STDOUT.
; Possible Values:
; Off = Do not display any errors
; stderr = Display errors to STDERR (affects only CGI/CLI binaries!)
; On or stdout = Display errors to STDOUT
; Default Value: On
; Development Value: On
; Production Value: Off
; https://php.net/display-errors
display_errors = On
```

➤ Reiniciamos servicio.

```
miadmin@bnr-used:~$ sudo service apache2 restart
```

➤ Ponemos el límite de memoria en 256MB.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/php/8.1/apache2/php.ini
; https://php.net/max-execution-time
; Note: This directive is hardcoded to 0 for the CLI SAPI
max_execution_time = 30

; Maximum amount of time each script may spend parsing request data. It's a good
; idea to limit this time on productions servers in order to eliminate unexpectedly
; long running scripts.
; Note: This directive is hardcoded to -1 for the CLI SAPI
; Default Value: -1 (Unlimited)
; Development Value: 60 (60 seconds)
; Production Value: 60 (60 seconds)
; https://php.net/max-input-time
max_input_time = 60

; Maximum input variable nesting level
; https://php.net/max-input-nesting-level
max_input_nesting_level = 64

; How many GET/POST/COOKIE input variables may be accepted
max_input_vars = 1000

; Maximum amount of memory a script may consume
; https://php.net/memory-limit
memory_limit = 256M
```

- Reiniciamos el servicio otra vez.

```
miadmin@bmr-used:~$ sudo service apache2 restart
```

5.Xdebug.

- Comprobamos que está activo el módulo xdebug.

```
miadmin@bnr-used:~$ php -m | grep xdebug
miadmin@bnr-used:~$ php -m xdebug
[PHP Modules]
calendar
Core
ctype
date
dom
exif
FFI
fileinfo
filter
ftp
gettext
hash
iconv
json
libxml
openssl
pcntl
pcre
PDO
Phar
posix
readline
Reflection
session
shmop
SimpleXML
soap
sockets
sodium
SPL
standard
sysvmsg
sysvsem
sysvshm
tokenizer
xml
xmlreader
xmlwriter
xsl
Zend OPcache
zlib

[Zend Modules]
Zend OPcache
```

- Actualizamos los repositorios e instalamos el lo que se ve en la siguiente captura.

```
miadmin@bnr-used:~$ sudo apt update
Obj:1 http://es.archive.ubuntu.com/ubuntu jammy InRelease
Des:2 http://es.archive.ubuntu.com/ubuntu jammy-updates InRelease [119 kB]
Des:3 http://es.archive.ubuntu.com/ubuntu jammy-backports InRelease [109 kB]
Des:4 http://es.archive.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
Des:5 http://es.archive.ubuntu.com/ubuntu jammy-updates/main amd64 Packages [1.057 kB]
Des:6 http://es.archive.ubuntu.com/ubuntu jammy-updates/main Translation-en [232 kB]
Des:7 http://es.archive.ubuntu.com/ubuntu jammy-updates/main amd64 c-n-f Metadata [15,6 kB]
Des:8 http://es.archive.ubuntu.com/ubuntu jammy-updates/restricted amd64 Packages [969 kB]
Des:9 http://es.archive.ubuntu.com/ubuntu jammy-updates/restricted Translation-en [156 kB]
Des:10 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 Packages [989 kB]
Des:11 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe Translation-en [216 kB]
Des:12 http://es.archive.ubuntu.com/ubuntu jammy-updates/universe amd64 c-n-f Metadata [21,9 kB]
Des:13 http://es.archive.ubuntu.com/ubuntu jammy-security/main amd64 Packages [856 kB]
Des:14 http://es.archive.ubuntu.com/ubuntu jammy-security/main Translation-en [175 kB]
Des:15 http://es.archive.ubuntu.com/ubuntu jammy-security/main amd64 c-n-f Metadata [11,4 kB]
Des:16 http://es.archive.ubuntu.com/ubuntu jammy-security/restricted amd64 Packages [953 kB]
Des:17 http://es.archive.ubuntu.com/ubuntu jammy-security/restricted Translation-en [154 kB]
Des:18 http://es.archive.ubuntu.com/ubuntu jammy-security/universe amd64 Packages [788 kB]
Des:19 http://es.archive.ubuntu.com/ubuntu jammy-security/universe Translation-en [144 kB]
Des:20 http://es.archive.ubuntu.com/ubuntu jammy-security/universe amd64 c-n-f Metadata [16,7 kB]
Descargados 7.093 kB en 2s (4.230 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Se pueden actualizar 34 paquetes. Ejecute «apt list --upgradable» para verlos.
miadmin@bnr-used:~$ sudo apt install php8.1-xdebug
```

- Ponemos la siguiente directiva en el fichero de configuración de xdebug.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/php/8.1/apache2/conf.d/20-xdebug.ini *
zend_extension=xdebug.so
xdebug.mode=debug
xdebug.client.host=localhost
xdebug.client.port=9003
xdebug.jdekey="netbeans-debug"
```

- Reiniciamos el servicio apache y abrimos el puerto 9003.

```
miadmin@bnr-used:~$ sudo service apache2 restart
miadmin@bnr-used: ~
miadmin@bnr-used:~$ sudo ufw allow 9003
Rule added
Rule added (v6)
```

6.MySQL

- Instalar MySQL server.

```
miadmin@bnr-used:~$ sudo apt install mysql-server
```

- Configurar las siguientes directivas en el archivo de configuración de mysql.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/mysql/mysql.conf.d/mysqld.cnf *
#
# The MySQL database server configuration file.
#
# One can use all long options that the program supports.
# Run program with --help to get a list of available options and with
# --print-defaults to see which it would actually understand and use.
#
# For explanations see
# http://dev.mysql.com/doc/mysql/en/server-system-variables.html
#
# Here is entries for some specific programs
# The following values assume you have at least 32M ram

[mysqld]
#
# * Basic Settings
#
user                = mysql
# pid-file           = /var/run/mysqld/mysqld.pid
# socket             = /var/run/mysqld/mysqld.sock
# port               = 3306
# datadir            = /var/lib/mysql

# If MySQL is running as a replication slave, this should be
# changed. Ref https://dev.mysql.com/doc/refman/8.0/en/server-system-variables.html#sysvar_tmpdir
# tmpdir             = /tmp
#
# Instead of skip-networking the default is now to listen only on
# localhost which is more compatible and is not less secure.
#bind-address        = 127.0.0.1
#mysqlx-bind-address = 127.0.0.1
```

- Reiniciar el servicio.

```
miadmin@bnr-used:~$ sudo service mysql restart
```

- Comprobamos que esta escuchando por el puerto 3306 y lo abrimos.

```
miadmin@bnr-used:~$ ss -punta
Netid      State      Recv-Q     Send-Q     Local Address:Port      Peer Address:Port
udp        UNCONN     0           0           127.0.0.53%lo:53        0.0.0.0:*
tcp        LISTEN     0           4096        127.0.0.53%lo:53        0.0.0.0:*
tcp        LISTEN     0           128        0.0.0.0:22              0.0.0.0:*
tcp        ESTAB      0           52         192.168.3.207:22        192.168.3.7:53893
tcp        LISTEN     0           511        *:80                    *:80
tcp        LISTEN     0           128        [::]:22                 [::]:*
tcp        LISTEN     0           70         *:33060                  *:33060
tcp        LISTEN     0           151        *:3306                   *:3306

miadmin@bnr-used:~$ sudo ufw allow 3306
Rule added
Rule added (v6)
```

- Ejecutamos el siguiente script. Cuando nos aparezcan diferentes opciones le damos a todo que si y ponemos 0 en una opción de ellas.

```
miadmin@bmr-used:~$ sudo mysql_secure_installation
```

- Instalamos lo siguiente.

```
miadmin@bmr-used:~$ sudo apt install libapache2-mod-php8.1 php8.1-mysql
```

- Creamos este usuario.

```
mysql> CREATE USER 'admindb'@'%' IDENTIFIED BY 'P@ssw0rd';  
Query OK, 0 rows affected (0,04 sec)
```

- Le damos todos los privilegios.

```
mysql> GRANT ALL PRIVILEGES ON *.* TO 'admindb'@'%' WITH GRANT OPTION;  
Query OK, 0 rows affected (0,01 sec)
```

- Comprobamos conexión con l usuario.

```
miadmin@bmr-used:~$ mysql -u admindb -p  
Enter password:  
Welcome to the MySQL monitor. Commands end with ; or \g.  
Your MySQL connection id is 14  
Server version: 8.0.34-0ubuntu0.22.04.1 (Ubuntu)
```

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- Comprobamos posibles errores.

```
miadmin@bmr-used:~$ tail -n200 /var/log/mysql/error.log | grep ERROR
```

- Con este comando limpiamos el archivo de errores

```
miadmin@bmr-used:~$ mysqladmin -u admindb -p flush-logs error
```

- Cambiamos los requisitos de la contraseña para poder poner de contraseña paso en vez de P@sw0rd.


```
mysql> SHOW VARIABLES LIKE 'validate_password%';
```

Variable_name	Value
validate_password.changed_characters_percentage	0
validate_password.check_user_name	ON
validate_password.dictionary_file	
validate_password.length	8
validate_password.mixed_case_count	1
validate_password.number_count	1
validate_password.policy	MEDIUM
validate_password.special_char_count	1

```
8 rows in set (0,02 sec)
```

```
mysql> SET GLOBAL validate_password.length = 4;
Query OK, 0 rows affected (0,00 sec)
```

```
mysql> SET GLOBAL validate_password.policy = LOW;
Query OK, 0 rows affected (0,00 sec)
```

➤ Creamos el usuario siguiendo la guía de mysql.

```
mysql> CREATE USER 'adminsql'@'%' IDENTIFIED BY 'paso';
Query OK, 0 rows affected (0,06 sec)

mysql> GRANT ALL PRIVILEGES ON *.* TO 'adminsql'@'%' WITH GRANT OPTION;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual
t line 1
mysql> GRANT ALL PRIVILEGES ON *.* TO 'adminsql'@'%' WITH GRANT OPTION;
Query OK, 0 rows affected (0,00 sec)
```

➤ Comprobamos que esta instalado entrono al php.

```
miadmin@bmr-used:~$ dpkg --get-selections | grep -i php
libapache2-mod-php      install
libapache2-mod-php8.1   install
php-common               install
php8.1                  install
php8.1-cli              install
php8.1-common           install
php8.1-mysql            install
php8.1-opcache          install
php8.1-readline         install
php8.1-soap             install
php8.1-xdebug           install
php8.1-xml              install
```

- Instalar los siguientes módulos y luego seleccionas apache con el space y en la segunda pantalla le das que si pones paso como contraseña y luego te da error y le das a interrumpir.

```
miadmin@bmr-used:~$ sudo apt install phpmyadmin php-mbstring php-zip php-gd php-json php-curl
```

- Desinstalamos ese componente.

```
mysql> UNINSTALL COMPONENT "file://component_validate_password";
Query OK, 0 rows affected (0,01 sec)
```

- Instalamos phpMyAdmin.

```
miadmin@bmr-used:~$ sudo apt install phpmyadmin
```

- Volvemos a instalar el componente previamente desinstalado, activamos el módulo mbstring y reiniciamos servicio

```
mysql> INSTALL COMPONENT "file://component_validate_password";
Query OK, 0 rows affected (0,03 sec)
```

```
mysql> EXIT
```

```
Bye
```

```
miadmin@bmr-used:~$ sudo phpenmod mbstring
```

```
miadmin@bmr-used:~$ sudo systemctl restart apache2
```

7.DNS

1.Zona directa.

- Instalación del bind9.

```
miadmin@bmr-used:/etc/bind$ sudo apt install bind9
```

- Abrimos el puerto 53

```
miadmin@bmr-used:~$ sudo ufw allow 53
```

- Configuramos el fichero de red para poner nuestro dominio dns.

```
miadmin@bmr-used:/etc/bind
GNU nano 6.2 /etc/netplan/00-installer-config.yaml
# This is the network config written by 'subiquity'
network:
  ethernets:
    enp0s3:
      addresses:
        - 192.168.3.207/24
      dhcp4: false
      routes:
        - to: default
          via: 192.168.3.1
      nameservers:
        addresses:
          - 192.168.3.207
        search: [borja.local]
  version: 2
```

- Configuramos el archivo named.conf.local para poner nuestra zona.

```
miadmin@bmr-used:/etc/bind
GNU nano 6.2 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";

"/etc/bind/named.conf.local"

zone "borja.local"
{
    type master;
    file "/etc/bind/db.borja.local";
};
```

- Comprobamos que esta bien la sintaxis del fichero previamente editado.

```
miadmin@bmr-used:/etc/bind$ sudo named-checkconf
```

- Copiamos el fichero db.local y le ponemos ese nombre a la copia cada uno con el dominio que vaya utilizar en mi caso es nombre.local.

```
miadmin@bmr-used:/etc/bind$ sudo cp db.local db.borja.local
```

- Configuramos el archivo previamente copiado poniendo los parámetros que se ven en la siguiente captura.

```

miadmin@bmr-used: /etc/bind
GNU nano 6.2 db.borja.local
;
; BIND data file for borja.local
;
$TTL 604800
@ IN SOA bmr-used.borja.local. borja.nunref.educa.jcyl.es. (
    1          ; Serial
    604800     ; Refresh
    86400      ; Retry
    2419200    ; Expire
    3600 )     ; Negative Cache TTL
;
@ IN NS bmr-used.borja.local.
; Registros Host
@ IN A 192.168.3.207
bmr-used IN IN A 192.168.3.207
; Registros Alias
daw201 IN CNAME bmr-used.borja.local.
daw202 IN CNAME bmr-used.borja.local.

```

- Reiniciamos el servicio bind.

```
miadmin@bmr-used:/etc/bind$ sudo service bind9 restart
```

- Comprobamos que nos funciona poniendo los alias que hemos puesto en el fichero db.tunombre.local.

```

miadmin@bmr-used:/etc/bind$ host borja.local
borja.local has address 192.168.3.207
miadmin@bmr-used:/etc/bind$ host daw201
daw201.borja.local is an alias for bmr-used.borja.local.
bmr-used.borja.local has address 192.168.3.207
miadmin@bmr-used:/etc/bind$ host daw202
daw202.borja.local is an alias for bmr-used.borja.local.
bmr-used.borja.local has address 192.168.3.207

```

2.Zona inversa.

- Configuramos el fichero named.conf.local.

```

miadmin@bnr-used: /etc/bind
GNU nano 6.2                                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 "borja.local" {
    type master;
    file "/etc/bind/db.borja.local";
};

zone "3.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.3.168.192in-addr.arpa";
};

```

- Comprobamos que esta bien la sintaxis de el archivo previamente configurado.

```

miadmin@bnr-used:/etc/bind$ sudo named-checkconf

```

- Comprobamos que va lo que acabamos de configurar.

```

miadmin@bnr-used:~$ host 192.168.3.207
207.3.168.192.in-addr.arpa domain name pointer bnr-used.
207.3.168.192.in-addr.arpa domain name pointer bnr-used.local.
miadmin@bnr-used:~$ resolvectl
Global
    Protocols: -LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
resolv.conf mode: stub

Link 2 (enp0s3)
    Current Scopes: DNS
        Protocols: +DefaultRoute +LLMNR -mDNS -DNSOverTLS DNSSEC=no/unsupported
Current DNS Server: 192.168.3.207
DNS Servers: 192.168.3.207
DNS Domain: borja.local

```

3.Reenviador.

- Añadimos lo siguiente en el archivo named.conf.options.

```
miadmin@bnr-used: ~  
GNU nano 6.2 /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;  
        8.8.4.4;  
    };  
};
```

- Comprobamos que está bien la sintaxis del archivo.

```
miadmin@bnr-used:~$ sudo named-checkconf
```

8.HTTPS

- Creamos la clase privada

```
miadmin@bmr-used:~$ openssl genrsa 2048 > claveprivada.key
```

- Creamos el certificado como se ve en la captura

```
miadmin@bmr-used:~$ openssl req -new -key claveprivada.key > certificado.csr
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]:Zamora
Locality Name (eg, city) []:Castrogonzalo
Organization Name (eg, company) [Internet Widgits Pty Ltd]:IES Los Sauces
Organizational Unit Name (eg, section) []:Informatica
Common Name (e.g. server FQDN or YOUR name) []:daw207.borja.local
Email Address []:
```

Please enter the following 'extra' attributes
to be sent with your certificate request

A challenge password []:

An optional company name []:

- Y ponemos la firma de la clave

```
miadmin@bmr-used:~$ openssl x509 -req -days 365 -in certificado.csr -signkey claveprivada.key > firma.crt
Certificate request self-signature ok
subject=C = ES, ST = Zamora, L = Castrogonzalo, O = IES Los Sauces, OU = Informatica, CN = daw207.borja.local
miadmin@bmr-used:~$ ls
certificado.csr  claveprivada.key  doc  firma.crt
```

- Se activa el módulo SSL.

```
miadmin@bmr-used:~$ sudo a2enmod ssl
```

- Movemos la clave privada y le damos permisos y dueño

```
miadmin@bmr-used:~$ sudo mv claveprivada.key /etc/ssl/private/
miadmin@bmr-used:~$ sudo chown root:ssl-cert /etc/ssl/private/claveprivada.key
miadmin@bmr-used:~$ sudo chmod 640 /etc/ssl/private/claveprivada.key
```

- Se mueve ahora la firma y se le da el dueño.

```
miadmin@bmr-used:~$ sudo mv firma.crt /etc/ssl/certs/
miadmin@bmr-used:~$ sudo chown root:root /etc/ssl/certs/firma.crt
```

- Copiamos este archivo que es el archivo para la configuración de https de apache y lo configuramos como se ve en la captura

```
miadmin@bmr-used:/etc/apache2/sites-available$ sudo cp default-ssl.conf borja-ssl.conf
```

```
borja-ssl.conf *
# 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/ssl/certs/firma.crt
SSLCertificateKeyFile /etc/ssl/private/claveprivada.key

miadmin@bmr-used: ~
GNU nano 6.2 /etc/apache2/sites-available/borja-ssl.conf
<IfModule mod_ssl.c>
<VirtualHost *:443>
    ServerAdmin webmaster@localhost
    ServerName daw207.borja.local

    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}/errorordaw207.log
    CustomLog ${APACHE_LOG_DIR}/accessdaw207.log combined
```

Se comprueba la sintaxis, se activa el sitio y se reinicia el servicio.


```
miadmin@bnr-used:/etc/apache2/sites-available$ sudo apache2ctl configtest
Syntax OK
miadmin@bnr-used:/etc/apache2/sites-available$ sudo a2ensite borja-ssl.conf
Enabling site borja-ssl.
To activate the new configuration, you need to run:
    systemctl reload apache2
miadmin@bnr-used:/etc/apache2/sites-available$ sudo service apache2 restart
```

➤ Se abre el puerto de https

```
miadmin@bnr-used:/etc/apache2/sites-available$ sudo ufw allow 443
Rule added
Rule added (v6)
```

9. Métodos de autenticación.

Autenticación con digest.

- Activamos el modulo “auth-digest”.

```
miadmin@bnr-used:~$ sudo a2enmod auth_digest
[sudo] password for miadmin:
Considering dependency authn_core for auth_digest:
Module authn_core already enabled
Enabling module auth_digest.
To activate the new configuration, you need to run:
    systemctl restart apache2
miadmin@bnr-used:~$ systemctl restart apache2
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ===
Authentication is required to restart 'apache2.service'.
Authenticating as: miadmin
Password:
==== AUTHENTICATION COMPLETE ====
```

- Generamos un htdigest para tener un usuario.

htdigest Generator Tool Online



Generate the contents of a .htdigest file for your [web server](#) to perform [HTTP Digest Authentication](#). This tool encrypts the password entered here so that it is secure and usable in a .htdigest file. One major advantage of digest authentication over basic([httpasswd](#)) authentication is that the former(.htdigest) transfers the password from the user's computer to the server in an encrypted form. Type your desired username, realm and password and click generate.

Username:

Realm:

Password:

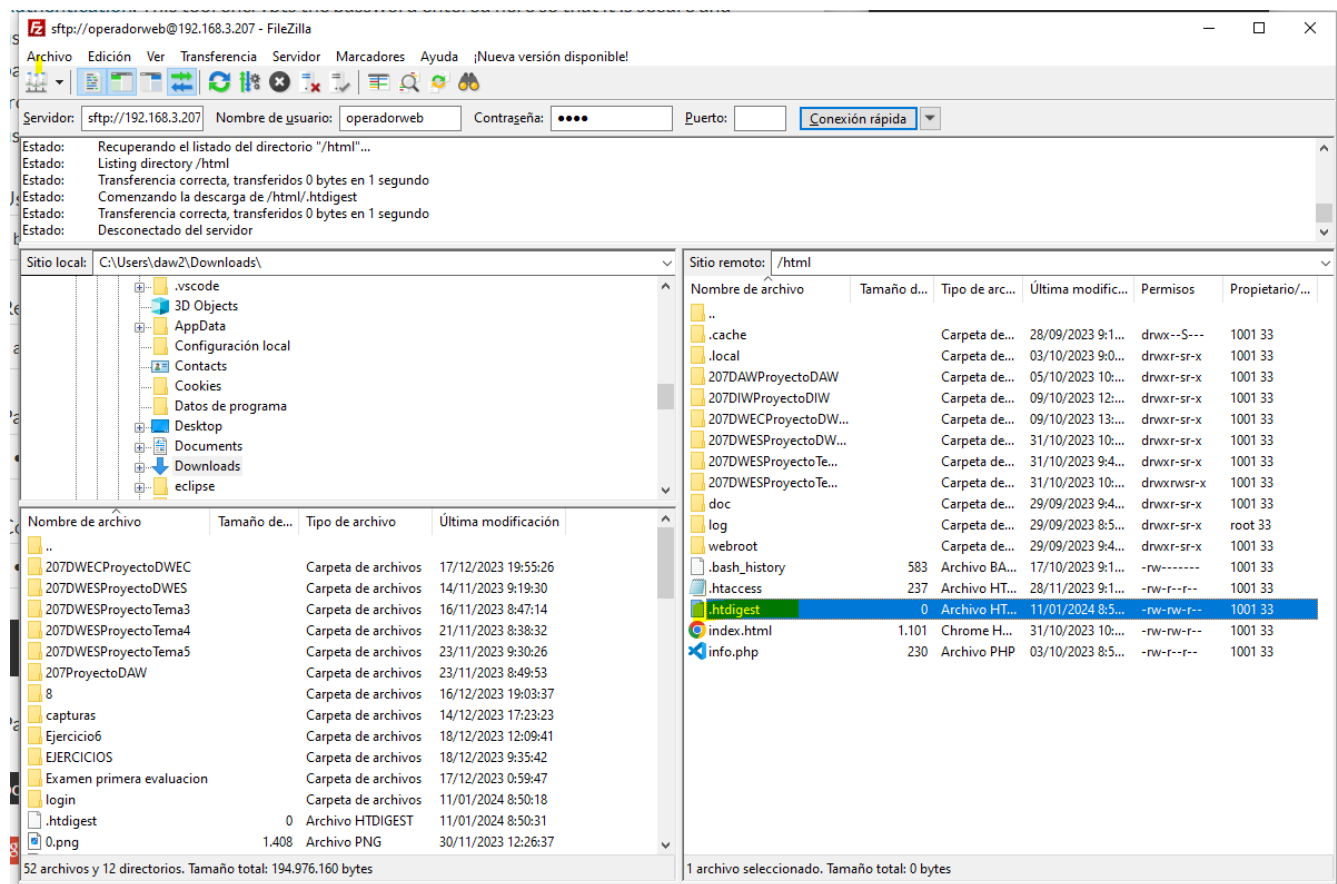
Confirm Password:

GENERATE

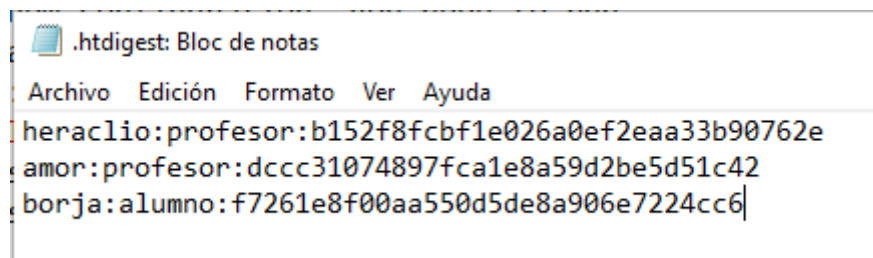
Paste the following line into your .htdigest file

heraclio:profesor:b152f8fcbf1e026a0ef2eaa33b90762e

➤ Creamos el archivo htdigest en la carpeta /html.



➤ Metemos los usuarios generados anteriormente en el archivo htigest.



- Creamos un htaccess donde queramos limitar la entrada a nuestra página web y lo configuramos para limitar el acceso.

FileZilla interface showing the local site (C:\Users\daw2\Downloads\) and the remote site (/html/207DWESProyectoTema4/scriptDB). The local site contains various files and folders, including .vscode, 3D Objects, AppData, Configuración local, Contacts, Cookies, Datos de programa, Desktop, Documents, Downloads, and eclipse. The remote site contains a single file named .htaccess.

Nombre de archivo	Tamaño de...	Tipo de archivo	Última modificación
207ProyectoDAW		Carpeta de archivos	23/11/2023 8:49:53
8		Carpeta de archivos	16/12/2023 19:03:37
capturas		Carpeta de archivos	14/12/2023 17:23:23
Ejercicio6		Carpeta de archivos	18/12/2023 12:09:41
EJERCICIOS		Carpeta de archivos	18/12/2023 9:35:42
Examen primera evaluacion		Carpeta de archivos	17/12/2023 0:59:47
login		Carpeta de archivos	11/01/2024 8:50:18
.htdigest	0	Archivo HTDIGEST	11/01/2024 8:50:31
0.png	1.408	Archivo PNG	30/11/2023 12:26:37
1 (1).png	712	Archivo PNG	30/11/2023 12:08:49
1 (2).png	661	Archivo PNG	30/11/2023 12:09:18
1.PNG	4.362	Archivo PNG	24/11/2023 12:18:55
2-9-4.PNG	370.455	Archivo PNG	01/12/2023 12:40:00
2-9-5.PNG	15.446	Archivo PNG	30/11/2023 13:42:46
2-9-6.PNG	30.992	Archivo PNG	04/12/2023 9:51:02

archivo seleccionado. Tamaño total: 0 bytes

1 archivo. Tamaño total: 0 bytes

```
miadmin@bnr-used: ~
GNU nano 6.2
Options Indexes FollowSymLinks
AuthType Digest
AuthName "profesor"
AuthDigestProvider file
AuthUserFile /var/www/html/.htdigest
Require valid-user
207DWESProyectoTema4/scriptDB/.htaccess
```

Autenticacion con mod_auth_group

- Activamos el módulo correspondiente.

```
niadmin@bnr-used:/var/www$ sudo a2enmod mod_auth_groupfile
ERROR: Module mod_auth_groupfile does not exist!
niadmin@bnr-used:/var/www$ sudo a2enmod authz_groupfile
Considering dependency authz_core for authz_groupfile:
Module authz_core already enabled
Enabling module authz_groupfile.
To activate the new configuration, you need to run:
    systemctl restart apache2
niadmin@bnr-used:/var/www$ sudo systemctl restart apache2
```

- Creamos los grupos y los metemos en ese archivo que se encuentra en la carpeta /html.

FileZilla interface showing the local site C:\ and the remote site /html. The local site shows various system folders like D:\, SRECYCLE.BIN, and ISOS. The remote site shows a directory listing of /html with files like .cache, .local, .htgroupfile, index.html, and info.php. A context menu is open over the .htgroupfile, showing its content: 'jefe: heraclio' and 'currito: amor borja'.

Nombre de archivo	Tamaño de...	Tipo de archivo	Última modificación	Permisos	Propietario/...
..		Carpeta de...	28/09/2023 9:1...	drwx--S---	1001 33
.cache		Carpeta de...	03/10/2023 9:0...	drwxr-sr-x	1001 33
.local		Carpeta de...	05/10/2023 10:...	drwxr-sr-x	1001 33
207DAWProyectoDAW		Carpeta de...	09/10/2023 12:...	drwxr-sr-x	1001 33
207DIWProyectoDIW		Carpeta de...	09/10/2023 13:...	drwxr-sr-x	1001 33
207DWEProyectoDW...		Carpeta de...	31/10/2023 10:...	drwxr-sr-x	1001 33
207DWEProyectoDW...		Carpeta de...	31/10/2023 9:4...	drwxr-sr-x	1001 33
207DWEProyectoTe...		Carpeta de...	11/01/2024 9:3...	drwxrwsr-x	1001 33
207DWEProyectoTe...		Carpeta de...	29/09/2023 9:4...	drwxr-sr-x	1001 33
doc		Carpeta de...	29/09/2023 8:5...	drwxr-sr-x	root 33
log		Carpeta de...	29/09/2023 9:4...	drwxr-sr-x	1001 33
webroot		Carpeta de...	17/10/2023 9:1...	-rw-----	1001 33
.bash_history	583	Archivo BA...	28/11/2023 9:1...	-rw-r--r--	1001 33
.htaccess	237	Archivo HT...	11/01/2024 8:5...	-rw-rw-r--	1001 33
.htdigest	145	Archivo HT...	11/01/2024 9:5...	-rw-rw-r--	1001 33
.htgroupfile	0	Archivo HT...	31/10/2023 10:...	-rw-rw-r--	1001 33
index.html	1,101	Chrome H...	03/10/2023 8:5...	-rw-r--r--	1001 33
info.php	230	Archivo PHP			

Context menu for *.htgroupfile: Bloc de notas

Archivo Edición Formato Ver Ayuda

jefe: heraclio

currito: amor borja

- Se vuelve a configurar el archivo htaccess.



.htaccess: Bloc de notas

Archivo Edición Formato Ver Ayuda

Options Indexes FollowSymLinks

AuthType Digest

AuthName profesor

AuthDigestProvider file

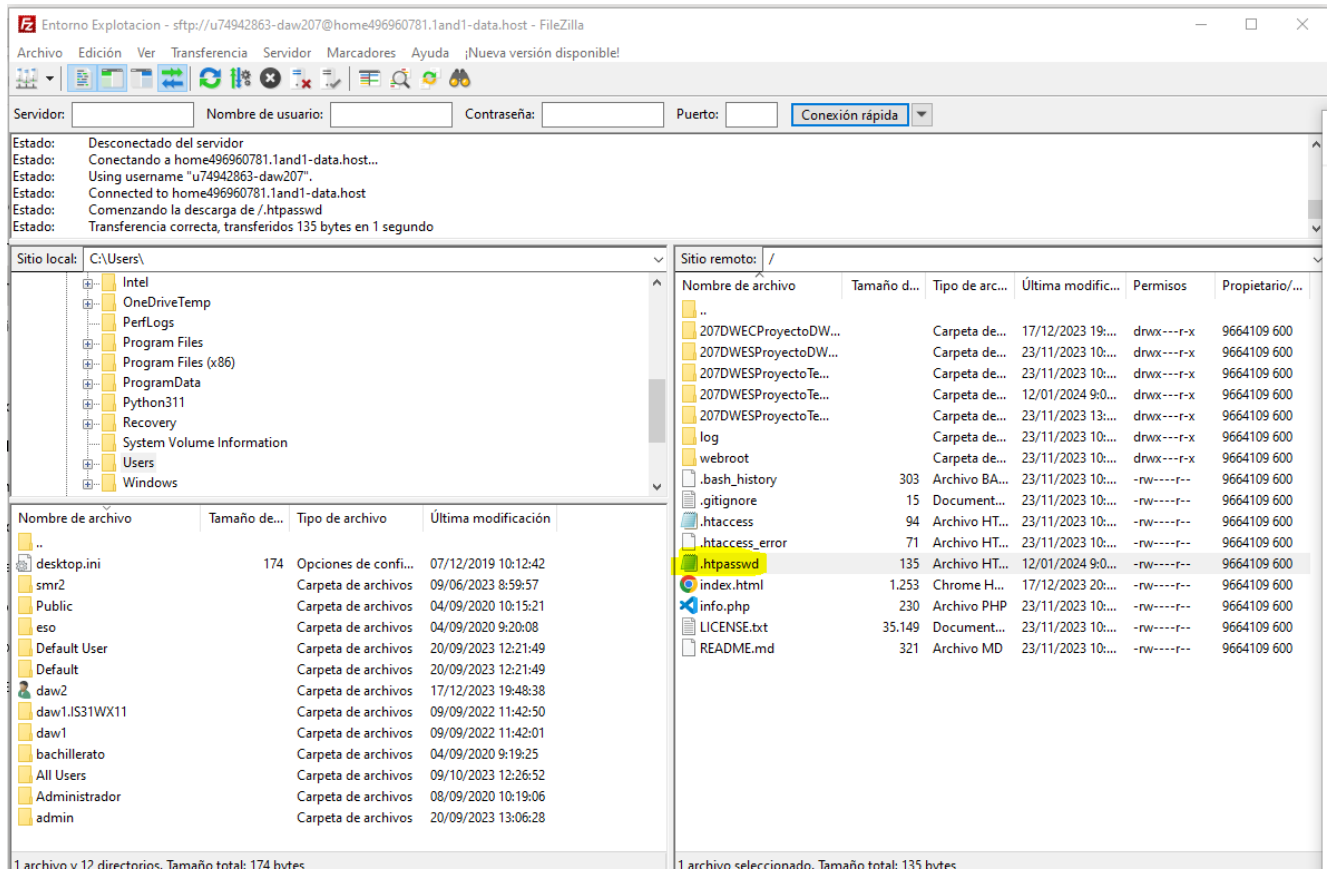
AuthUserFile /var/www/html/.htdigest

AuthGroupFile /var/www/html/.htgroup

Require group jefe

Autenticación con auth_basic.

➤ Creamos el archivo htpasswd.



➤ Se generan los usuarios.

WEB20GENERATORS

Home

HTML-BASED TOOLS

HTML Encoder / Decoder

TEXT-RELATED TOOLS

Lorem Ipsum Generator

Write Upside Down

GRAPHISM TOOLS

CSS Sprite Creator

APACHE TOOLS

HTPasswd Generator

MORE...

Free Help Authoring Tool

Free Screen Capture Tool

Contact us

HTPasswd Generator

create password credentials for htaccess and htpasswd files

Home > Apache related tools > HTPasswd Generator

INPUT enter a username and password Clear

Username

borja

Password

paso Random

Generate .htpasswd file

OUTPUT copy the entry below into your .htpasswd file

borja:\$apr1\$5s3jwv01\$W8cLzfEM9i8LgjqXVad4e1

➤ Se introducen los usuarios previamente creados en el archivo passwd.

.htpasswd: Bloc de notas

Archivo Edición Formato Ver Ayuda

heraclio:\$apr1\$qxyubfn\$R0KcwnORmDka/gcGjyI2c/
amor:\$apr1\$qpjico9g\$w3vr8W582kxfQk6EGzdW/
borja:\$apr1\$5s3jwv01\$W8cLzfEM9i8LgjqXVad4e1

10.PHAR.

- Descargamos el archivo y ejecutamos estos sencillos comando y ya lo tendríamos terminado.

```
miadmin@bmr-used:~$ wget https://phpdoc.org/phpDocumentor.phar
```

```
miadmin@bmr-used:~$ sudo mv phpDocumentor.phar /usr/local/bin/phpdoc
```

```
miadmin@bmr-used:~$ sudo chmod +x /usr/local/bin/phpdoc
```

11.Tomcat

Instalación.

- Instalamos el jdk de java.

```
miadmin@bmr-used:~$ sudo apt install default-jdk
```

- Comprobamos que versión de java hemos instalado.

```
miadmin@bmr-used:~$ java -version
openjdk version "11.0.21" 2023-10-17
OpenJDK Runtime Environment (build 11.0.21+9-post-Ubuntu-0ubuntu122.04)
OpenJDK 64-Bit Server VM (build 11.0.21+9-post-Ubuntu-0ubuntu122.04, mixed mode, sharing)
```

- Ubicación de la instalación.

```
miadmin@bmr-used:~$ sudo update-java-alternatives -l
java-1.11.0-openjdk-amd64      1111      /usr/lib/jvm/java-1.11.0-openjdk-amd64
```

- Creamos un grupo llamado tomcat.

```
miadmin@bmr-used:~$ sudo groupadd tomcat
```

- Creamos el usuario administrador de tomcat y le ponemos contraseña.

```
miadmin@bmr-used:~$ sudo useradd -s /bin/false -g tomcat -d /opt/tomcat tomcat
miadmin@bmr-used:~$
```

```
miadmin@bmr-used:~$ sudo passwd tomcat
```

- Creamos un directorio llamado tomcat.

```
miadmin@bmr-used:~$ sudo mkdir /opt/tomcat
```

- Y descargamos el tomcat a través de un enlace.

```
miadmin@bmr-used:/tmp$ wget https://dlcdn.apache.org/tomcat/tomcat-9/v9.0.85/bin/apache-tomcat-9.0.85.tar.gz
```

- Descomprimos el archivo previamente descargado.

```
miadmin@bmr-used:/tmp$ sudo tar -xvzf apache-tomcat-9.0.85.tar.gz -C /opt/tomcat --strip-components=1
```

- Comprobamos que archivos se encuentran en lo que acabamos de instalar.

```
miadmin@bmr-used:~$ ll /opt/tomcat/
total 156
drwxr-xr-x 9 root root 4096 ene 18 08:59 ./
drwxr-xr-x 3 root root 4096 ene 18 08:53 ../
drwxr-x--- 2 root root 4096 ene 18 08:59 bin/
-rw-r----- 1 root root 20307 ene  5 09:28 BUILDING.txt
drwx----- 2 root root 4096 ene  5 09:28 conf/
-rw-r----- 1 root root 6210 ene  5 09:28 CONTRIBUTING.md
drwxr-x--- 2 root root 4096 ene 18 08:59 lib/
-rw-r----- 1 root root 57092 ene  5 09:28 LICENSE
drwxr-x--- 2 root root 4096 ene  5 09:28 logs/
-rw-r----- 1 root root 2333 ene  5 09:28 NOTICE
-rw-r----- 1 root root 3398 ene  5 09:28 README.md
-rw-r----- 1 root root 6901 ene  5 09:28 RELEASE-NOTES
-rw-r----- 1 root root 16505 ene  5 09:28 RUNNING.txt
drwxr-x--- 2 root root 4096 ene 18 08:59 temp/
drwxr-x--- 7 root root 4096 ene  5 09:28 webapps/
drwxr-x--- 2 root root 4096 ene  5 09:28 work/
```

- Damos permisos al usuario tomcat para que pueda acceder a las carpetas de tomcat.

```
miadmin@bmr-used:~$ sudo chgrp -R tomcat /opt/tomcat
```

- Damos permisos para el grupo en escritura y lectura de esos archivos

```
miadmin@bmr-used:~$ sudo chmod -R g+r /opt/tomcat/conf/
miadmin@bmr-used:~$ sudo chmod -R u+x /opt/tomcat/bin/
```

- Hacemos propietario al usuario tomcat de estos archivos.

```
miadmin@bmr-used:~$ sudo chown -R tomcat /opt/tomcat
```

- Creamos este archivo.

```
miadmin@bnnr-used:~$ sudo nano /etc/systemd/system/tomcat.service
```

- Y lo configuramos.

```
GNU nano 6.2 /etc/systemd/system/tomcat.service *
[Unit]
Description=Apache Tomcat Web Application Container
After=network.target
[Service]
Type=forking
Environment="JAVA_HOME=/usr/lib/jvm/java-1.11.0-openjdk-amd64"
Environment="CATALINA_PID=/opt/tomcat/temp/tomcat.pid"
Environment="CATALINA_HOME=/opt/tomcat"
Environment="CATALINA_BASE=/opt/tomcat"
Environment="CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UseParallelGC"
Environment="JAVA_OPTS=-Djava.awt.headless=true -Djava.security.egd=file:/dev/urandom"
ExecStart=/opt/tomcat/bin/startup.sh
ExecStop=/opt/tomcat/bin/shutdown.sh
User=tomcat
Group=tomcat
UMask=0007
RestartSec=10
Restart=always
[Install]
WantedBy=multi-user.target
```

- Volvemos a cargar el demon.

```
miadmin@bnnr-used:~$ sudo systemctl daemon-reload
miadmin@bnnr-used:~$
```

- Iniciamos el servicio de tomcat.

```
miadmin@bnnr-used:~$ sudo systemctl start tomcat
miadmin@bnnr-used:~$ sudo systemctl status tomcat
● tomcat.service - Apache Tomcat Web Application Container
   Loaded: loaded (/etc/systemd/system/tomcat.service; disabled; vendor preset: enabled)
   Active: active (running) since Thu 2024-01-18 09:09:40 CET; 22s ago
     Process: 38614 ExecStart=/opt/tomcat/bin/startup.sh (code=exited, status=0/SUCCESS)
    Main PID: 38621 (java)
       Tasks: 30 (limit: 2220)
      Memory: 137.1M
         CPU: 14.433s
    CGroup: /system.slice/tomcat.service
            └─38621 /usr/lib/jvm/java-1.11.0-openjdk-amd64/bin/java -Djava.util.logging.config.file=/opt/tomcat/conf/logging.properties -Djava.util.logging.manager=org.apache.juli.ClassLoaderLogManager -Djava.

ene 18 09:09:40 bnnr-used systemd[1]: Starting Apache Tomcat Web Application Container...
ene 18 09:09:40 bnnr-used startup.sh[38614]: Tomcat started.
ene 18 09:09:40 bnnr-used systemd[1]: Started Apache Tomcat Web Application Container.
lines 1-14/14 (END)
```

- Ponemos este comando para que se me inicie el servicio tomcat una vez que arranque la máquina.

```
miadmin@bmr-used:~$ sudo systemctl enable tomcat
```

- Comprobamos que el servidor este iniciado y escuchando las peticiones en el puerto 8080

```
miadmin@bmr-used:~$ ps -ef | grep tomcat
```

```
miadmin@bmr-used:~$ ss -ltn
```

- Abrimos el puerto 8080.

```
miadmin@bmr-used:~$ sudo ufw allow 8080
```

```
Rule added
```

```
Rule added (v6)
```


- Comprobamos que ya vaya el tomcat poniendo nuestra ip:8080.

192.168.3.207:8080

[Home](#) [Documentation](#) [Configuration](#) [Examples](#) [Wiki](#) [Mailing Lists](#) [Find Help](#)

Apache Tomcat/9.0.85

If you're seeing this, you've successfully installed Tomcat. Congratulations!



Recommended Reading:
[Security Considerations How-To](#)
[Manager Application How-To](#)
[Clustering/Session Replication How-To](#)

[Server Status](#)
[Manager App](#)
[Host Manager](#)

Developer Quick Start
[Tomcat Setup](#) [Realms & AAA](#) [Examples](#) [Servlet Specifications](#)
[First Web Application](#) [JDBC DataSources](#) [Tomcat Versions](#)

Managing Tomcat
For security, access to the `manager webapp` is restricted. Users are defined in:
`$CATALINA_HOME/conf/tomcat-users.xml`
In Tomcat 9.0 access to the manager application is split between different users.
[Read more...](#)
[Release Notes](#)
[Changelog](#)
[Migration Guide](#)
[Security Notices](#)

Documentation
[Tomcat 9.0 Documentation](#)
[Tomcat 9.0 Configuration](#)
[Tomcat Wiki](#)
Find additional important configuration information in:
`$CATALINA_HOME/RUNNING.txt`
Developers may be interested in:
[Tomcat 9.0 Bug Database](#)
[Tomcat 9.0 JavaDocs](#)
[Tomcat 9.0 Git Repository at GitHub](#)

Getting Help
FAQ and Mailing Lists
The following mailing lists are available:
[tomcat-announce](#)
Important announcements, releases, security vulnerability notifications. (Low volume).
[tomcat-users](#)
User support and discussion
[tomcat-dev](#)
User support and discussion for [Apache Tomcat](#)
[tomcat-dev](#)
Development mailing list, including commit messages

- Ahora entramos en este archivo.

```
miadmin@bnr-used:~$ sudo nano /opt/tomcat/conf/tomcat-users.xml
```

- Le damos el rol a ese usuario para la autenticación de la pagina.

```
<role rolename="manager-gui" />
<role rolename="admin-gui" />
<user username="tomcat" password="paso" roles="manager-gui,admin-gui" />
</tomcat-users>
```

- Ahora entramos en este archivo.

```
miadmin@bnr-used:~$ sudo nano /opt/tomcat/webapps/manager/META-INF/context.xml
```

- Eliminamos la restricción al apartado manager de la página de tomcat.

```
GNU nano 6.2 /opt/tomcat/webapps/manager/META-INF/context.xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
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contributor license agreements. See the NOTICE file distributed with
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The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
-->
<Context antiResourceLocking="false" privileged="true" >
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\.\d+\.\d+\.\d+:::1|0:0:0:0:0:0:1" /> -->
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number|string)|org\.apache\.catalina\.filters\.CsrfPreventionFilter|$LruCache(?:\s1)?|java\.util\.(?:Linked)?HashMap"/>
</Context>
```

- Entramos en este archivo.

```
miadmin@bnr-used:~$ sudo nano /opt/tomcat/webapps/host-manager/META-INF/context.xml
```

- Eliminamos la restricción al apartado hostmanager de la página de tomcat.

```
GNU nano 6.2 /opt/tomcat/webapps/host-manager/META-INF/context.xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
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contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
-->
<Context antiResourceLocking="false" privileged="true" >
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\.\d+\.\d+\.\d+:::1|0:0:0:0:0:0:1" /> -->
  <Manager sessionAttributeValueClassNameFilter="java\.lang\.(?:Boolean|Integer|Long|Number|string)|org\.apache\.catalina\.filters\.CsrfPreventionFilter|$LruCache(?:\s1)?|java\.util\.(?:Linked)?HashMap"/>
</Context>
```

- Entramos en este archivo y quitamos la restricción al apartado examples.

```
miadmin@bmr-used:~$ sudo nano /opt/tomcat/webapps/examples/META-INF/context.xml
```

```
miadmin@bmr-used: ~
GNU nano 6.2 /opt/tomcat/webapps/examples/META-INF/context.xml
<?xml version="1.0" encoding="UTF-8"?>
<!--
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contributor license agreements. See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
(the "License"); you may not use this file except in compliance with
the License. You may obtain a copy of the License at

    http://www.apache.org/licenses/LICENSE-2.0

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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
-->
<Context>
  <CookieProcessor className="org.apache.tomcat.util.http.Rfc6265CookieProcessor"
    sameSiteCookies="strict" />
  <!-- <Valve className="org.apache.catalina.valves.RemoteAddrValve"
    allow="127\.\d+\.\d+\.\d+|::1|0:0:0:0:0:0:0:1" /> -->
</Context>
```

Configuración de usuario para despliegue de aplicaciones.

- Modificamos el usuario operadorweb para que pertenezca al grupo tomcat.

```
miadmin@bnr-used:~$ sudo usermod -aG tomcat operadorweb
[sudo] password for miadmin:
miadmin@bnr-used:~$ id operadorweb
uid=1001(operadorweb) gid=33(www-data) groups=33(www-data),1001(ftpusers),1002(tomcat)
```

- Creamos el directorio tomcat en la carpeta html/.

```
operadorweb@bnr-used:~/html$ mkdir webapps
```

- Montamos el archivo que se ve en la ruta en el directorio webapps de html.

```
miadmin@bnr-used:~$ sudo mount --bind /opt/tomcat/webapps /var/www/html/webapps
```

- Modificamos este archivo y ponemos lo que este subrayado.

```
miadmin@bnr-used: ~
GNU nano 6.2 /etc/fstab
# /etc/fstab: static file system information.
#
# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
# <file system> <mount point> <type> <options> <dump> <pass>
# / was on /dev/sda2 during curtin installation
/dev/disk/by-uuid/6fa34266-9a96-4ba4-85a2-23ec2b5978dd / ext4 defaults 0 1
# /var was on /dev/sda3 during curtin installation
/dev/disk/by-uuid/af0cc11c-49b0-4b65-ad97-fdea1b04b2b4 /var ext4 defaults 0 1
/swap.img none swap sw 0 0
/opt/tomcat/webapps /var/www/html/web none defaults,bind 0 0
```

- Reiniciamos.

```
miadmin@bnr-used:~$ sudo reboot
```


Redirigir tomcat.

- Creamos el directorio miapp en la tura que se muestra y le damos propietario a tomcat.

```
miadmin@bnr-used:~$ sudo mkdir /opt/tomcat/miapp
mkdir: cannot create directory '/opt/tomcat/miapp': File exists
miadmin@bnr-used:~$ sudo chown tomcat:tomcat /opt/tomcat/miapp
```

- En el fichero server.xml ponemos lo que esta marcado con un círculo en la siguiente captura.

```
miadmin@bnr-used: ~
GNU nano 6.2 /opt/tomcat/conf/server.xml

/docs/cluster-howto.html (simple how to)
/docs/config/cluster.html (reference documentation) -->
<!--
<Cluster className="org.apache.catalina.ha.tcp.SimpleTcpCluster"/>
-->

<!-- Use the LockOutRealm to prevent attempts to guess user passwords
via a brute-force attack -->
<Realm className="org.apache.catalina.realm.LockOutRealm">
  <!-- This Realm uses the UserDatabase configured in the global JNDI
resources under the key "UserDatabase". Any edits
that are performed against this UserDatabase are immediately
available for use by the Realm. -->
  <Realm className="org.apache.catalina.realm.UserDatabaseRealm"
resourceName="UserDatabase"/>
</Realm>

<Host name="localhost" appBase="webapps"
unpackWARs="true" autoDeploy="true">

  <!-- SingleSignOn valve, share authentication between web applications
Documentation at: /docs/config/valve.html -->
  <!--
  <Valve className="org.apache.catalina.authenticator.SingleSignOn" />
  -->

  <!-- Access log processes all example.
Documentation at: /docs/config/valve.html
Note: The pattern used is equivalent to using pattern="common" -->
  <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
prefix="localhost_access_log" suffix=".txt"
pattern="%h %l %u %t &quot;%r&quot; %s %b" />

</Host>
<Host name="borja.local" appBase="miapp"
unpackWARs="true" autoDeploy="true">

  <Valve className="org.apache.catalina.valves.AccessLogValve" directory="logs"
prefix="miapp_access_log" suffix=".txt"
pattern="%h %l %u %t &quot;%r&quot; %s %b" />


```

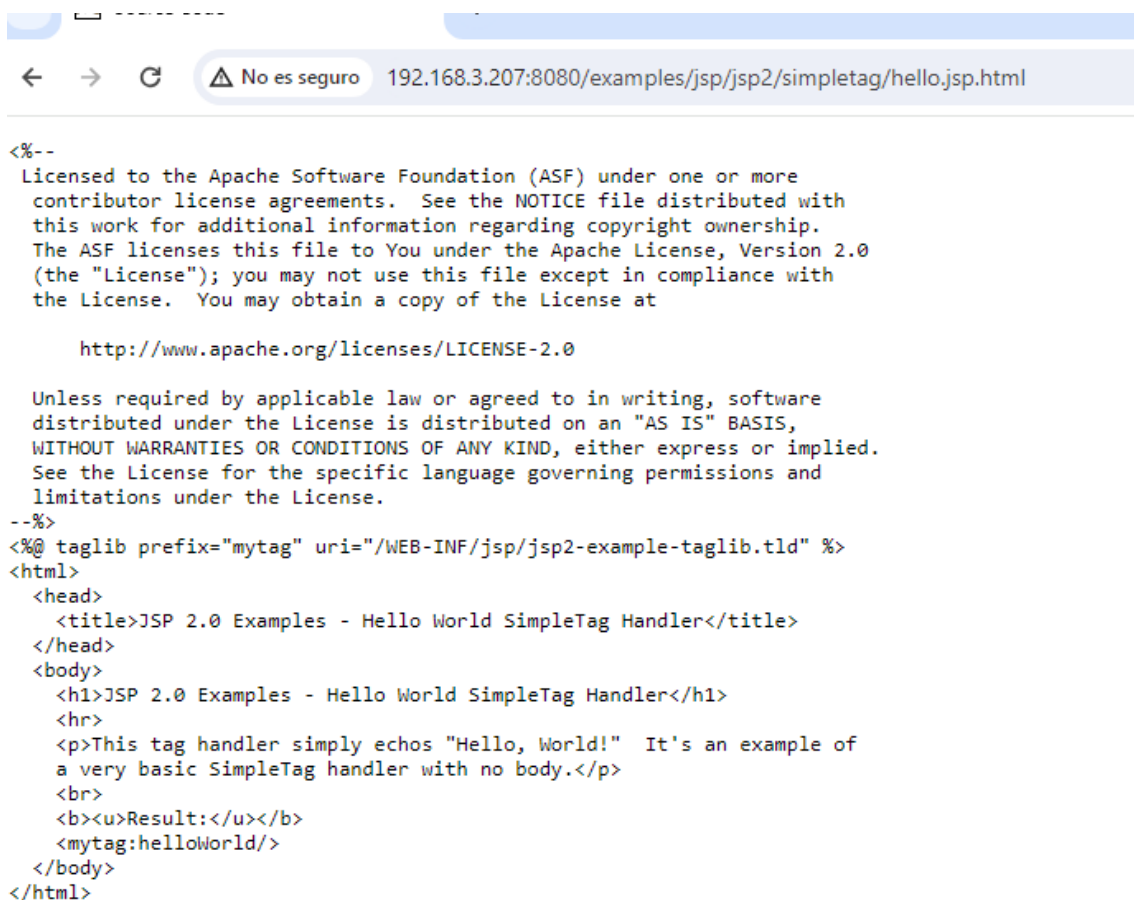
- Montamos el archivo que se ve en la captura en el archivo miapp de la carpeta html.

```
miadmin@bnr-used: ~  
miadmin@bnr-used:~$ sudo mount --bind /opt/tomcat/miapp /var/www/html/miapp
```

- Damos permisos a esta carpeta.

```
miadmin@bnr-used:~$ sudo chmod 775 /opt/tomcat/miapp/
```

- Cogemos un ejemplo cualquiera para el jsp que se mostrara al principio al buscar mi página web en tomcat.



```
<%--  
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contributor license agreements. See the NOTICE file distributed with  
this work for additional information regarding copyright ownership.  
The ASF licenses this file to You under the Apache License, Version 2.0  
(the "License"); you may not use this file except in compliance with  
the License. You may obtain a copy of the License at  
  
http://www.apache.org/licenses/LICENSE-2.0  
  
Unless required by applicable law or agreed to in writing, software  
distributed under the License is distributed on an "AS IS" BASIS,  
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.  
See the License for the specific language governing permissions and  
limitations under the License.  
--%>  
<%@ taglib prefix="mytag" uri="/WEB-INF/jsp/jsp2-example-taglib.tld" %>  
<html>  
  <head>  
    <title>JSP 2.0 Examples - Hello World SimpleTag Handler</title>  
  </head>  
  <body>  
    <h1>JSP 2.0 Examples - Hello World SimpleTag Handler</h1>  
    <hr>  
    <p>This tag handler simply echos "Hello, World!" It's an example of  
    a very basic SimpleTag handler with no body.</p>  
    <br>  
    <b><u>Result:</u></b>  
    <mytag:helloWorld/>  
  </body>  
</html>
```

➤ Lo copiamos.

```
<%--
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contributor license agreements.  See the NOTICE file distributed with
this work for additional information regarding copyright ownership.
The ASF licenses this file to You under the Apache License, Version 2.0
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distributed under the License is distributed on an "AS IS" BASIS,
WITHOUT WARRANTIES OR CONDITIONS OF ANY KIND, either express or implied.
See the License for the specific language governing permissions and
limitations under the License.
--%>
<%@ taglib prefix="mytag" uri="/WEB-INF/jsp/jsp2-example-taglib.tld" %>
<html>
<head>
<title>JSP 2.0 Examples - Hello World SimpleTag Handler</title>
</head>
<body>
<h1>JSP 2.0 Examples - Hello World SimpleTag Handler</h1>
<hr>
<p>This tag handler simply echos "Hello, World!"  It's an example of
a very basic SimpleTag handler with no body.</p>
<br>
<b><u>Result:</u></b>
<mytag:helloWorld/>
</body>
</html>
```

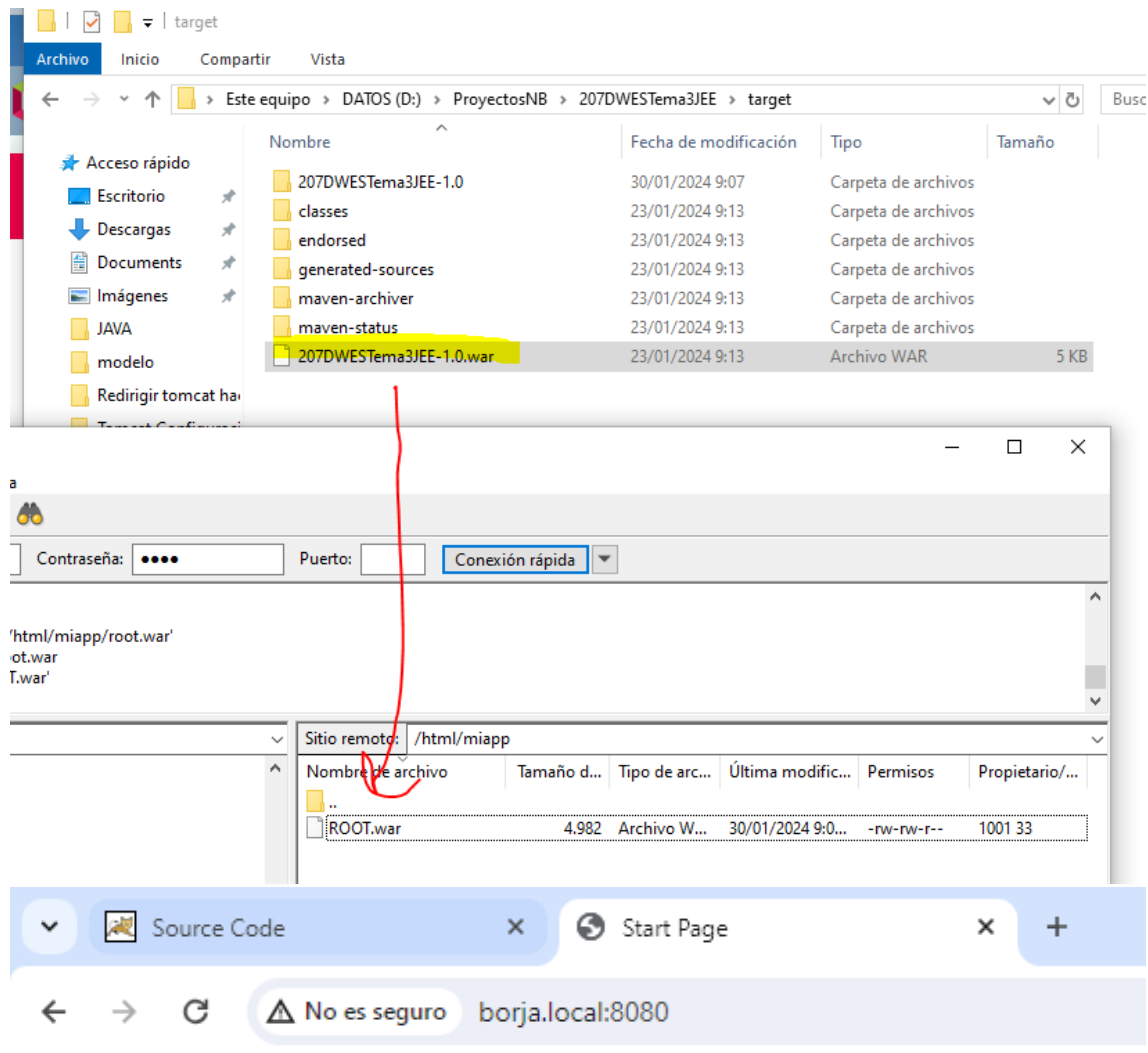
- Linkeamos para que se muestre ese jsp.

```

<!DOCTYPE html>
<html>
  <head>
    <title>Start Page</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
  </head>
  <body>
    <h1>Hello World!</h1>
    <a href="./hola.jsp">link</a>
  </body>
</html>

```

- Copiamos el archivo war y cambiamos su nombre y luego comprobamos que haya funcionado.



Hello World!

Tomcat seguro con https.

- Ponemos esto siendo root y estando en ese directorio

```
root@bnr-used:/opt/tomcat/conf# root@bnr-used:/opt/tomcat/conf# keytool -genkey -keyalg RSA -alias server -keystore miapp.jks -validity 365 -keysize 2048
Introduzca la contraseña del almacén de claves:
Volver a escribir la contraseña nueva:
¿Cuáles son su nombre y su apellido?
[Unknown]: borja
¿Cuál es el nombre de su unidad de organización?
[Unknown]: informatica
¿Cuál es el nombre de su organización?
[Unknown]: ies los sauces
¿Cuál es el nombre de su ciudad o localidad?
[Unknown]: benavente
¿Cuál es el nombre de su estado o provincia?
[Unknown]: zamora
¿Cuál es el código de país de dos letras de la unidad?
[Unknown]: es
¿Es correcto CN=borja, OU=informatica, O=ies los sauces, L=benavente, ST=zamora, C=es?
[no]: si
```

- Damos los permisos necesarios

```
root@bnr-used:/opt/tomcat/conf# chown tomcat:tomcat miapp.jks
root@bnr-used:/opt/tomcat/conf#
```

- Editamos el archivo server.xml

```
GNU nano 6.2 /opt/tomcat/conf/server.xml *
This connector uses the NIO implementation. The default
SSLImplementation will depend on the presence of the APR/native
library and the useOpenSSL attribute of the AprLifecycleListener.
Either JSSE or OpenSSL style configuration may be used regardless of
the SSLImplementation selected. JSSE style configuration is used below.
-->

<Connector port="8443" protocol="org.apache.coyote.http11.Http11NioProtocol"
    maxThreads="150" SSLEnabled="true"
    maxParameterCount="1000"
    >
  <SSLHostConfig>
    <Certificate certificateKeystoreFile="conf/miapp.jks" certificateKeystorePassword="paso1234"
      type="RSA" />
  </SSLHostConfig>
</Connector>
```

- Y para finalizar abrimos el puerto 8443.

```
miadmin@bnr-used:/opt/tomcat/conf$ sudo ufw allow 8443
Rule added
Rule added (v6)
```

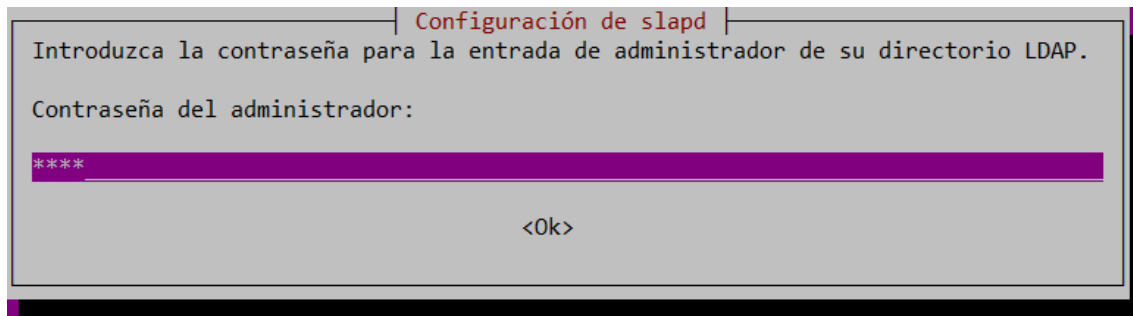
12.LDAP

Instalación.

- Instalamos ldap-utils.

```
miadmin@bnr-ldap:~$ sudo apt install slapd ldap-utils
```

- Ponemos la contraseña.



Configuración de slapd

Introduzca la contraseña para la entrada de administrador de su directorio LDAP.

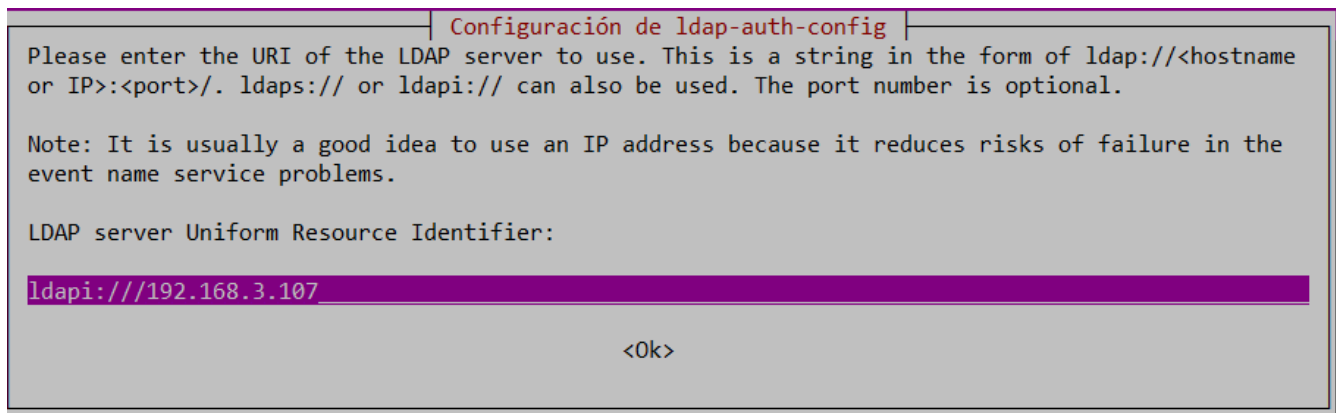
Contraseña del administrador:

<Ok>

- Instalamos las librerías de ldap.

```
miadmin@bnr-ldap:~$ sudo apt install libnss-ldap
```

- Ponemos nuestra ip.



Configuración de ldap-auth-config

Please enter the URI of the LDAP server to use. This is a string in the form of ldap://<hostname or IP>:<port>/. ldaps:// or ldapi:// can also be used. The port number is optional.

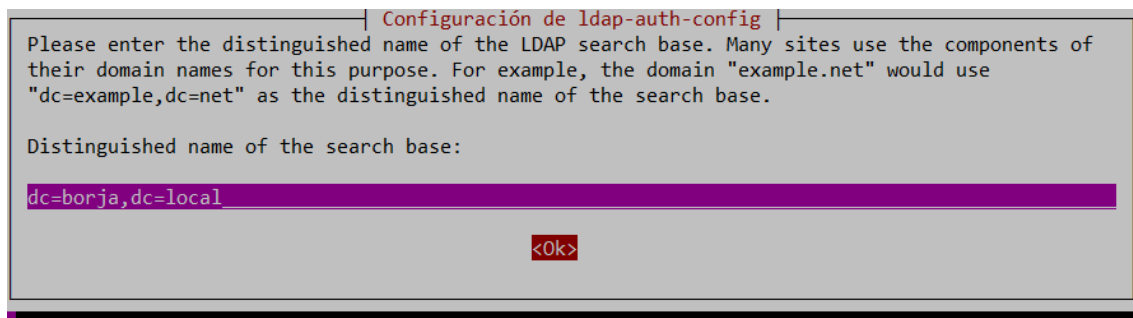
Note: It is usually a good idea to use an IP address because it reduces risks of failure in the event name service problems.

LDAP server Uniform Resource Identifier:

ldapi:///192.168.3.107

<Ok>

- Aquí ponemos nuestro nombre y local.



Configuración de ldap-auth-config

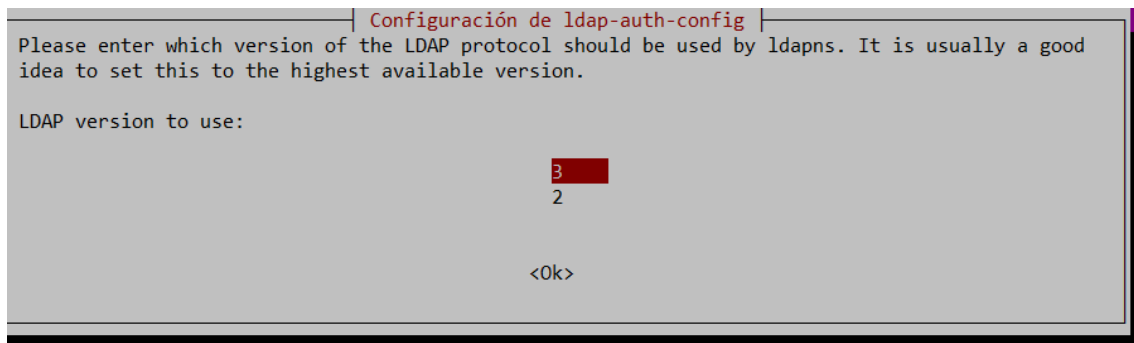
Please enter the distinguished name of the LDAP search base. Many sites use the components of their domain names for this purpose. For example, the domain "example.net" would use "dc=example,dc=net" as the distinguished name of the search base.

Distinguished name of the search base:

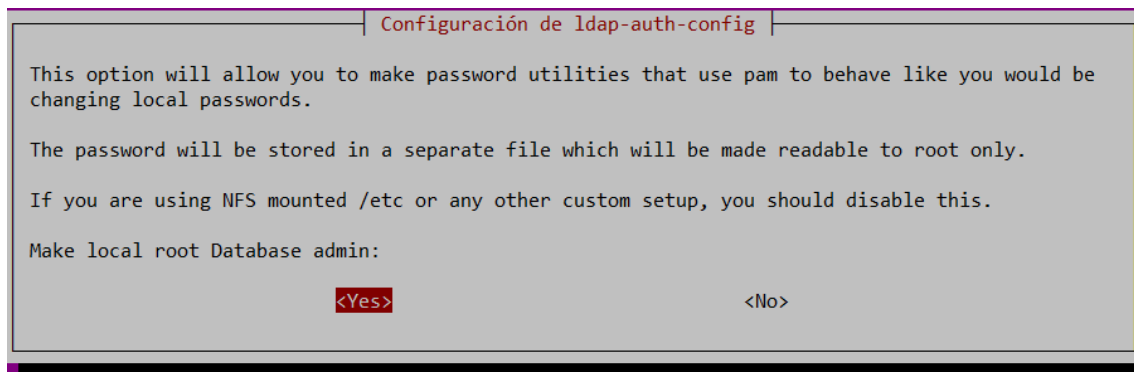
dc=borja,dc=local

<Ok>

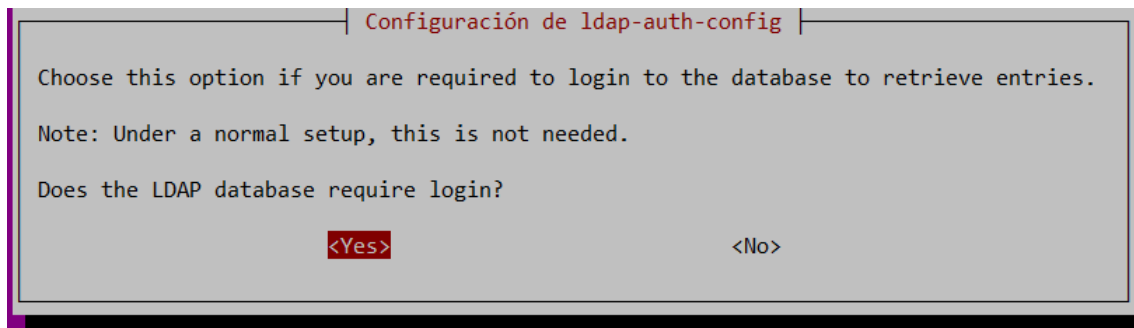
➤ Seleccionamos versión 3.



➤ Aquí le damos a yes.



➤ Aquí también seleccionamos yes.



- Aquí ponemos admin, nuestro nombre y local.

Configuración de ldap-auth-config

This account will be used when root changes a password.

Note: This account has to be a privileged account.

LDAP account for root:

cn=admin,dc=borja,dc=local

<Ok>

- Ponemos la contraseña de root.

Configuración de ldap-auth-config

Please enter the password to use when ldap-auth-config tries to login to the LDAP directory using the LDAP account for root.

The password will be stored in a separate file /etc/ldap.secret which will be made readable to root only.

Entering an empty password will re-use the old password.

LDAP root account password:

<Ok>

- Ponemos nuestro nombre y local y ponemos contraseña a la base de datos.

Configuración de ldap-auth-config

Please enter the name of the account that will be used to log in to the LDAP database.

Warning: DO NOT use privileged accounts for logging in, the configuration file has to be world readable.

Unprivileged database user:

cn=proxyuser,dc=borja,dc=local

<Ok>

Configuración de ldap-auth-config

Please enter the password that will be used to log in to the LDAP database.

Password for database login account:

<Ok>

Configuración del demonio slapd.

- Ponemos este comando y hacemos lo que se muestra en las siguientes capturas.

```
miadmin@bnr-ldap:~$ sudo dpkg-reconfigure slapd
```

Configuración de slapd

No se creará la configuración ni la base de datos inicial si habilita esta opción.
¿Desea omitir la configuración del servidor OpenLDAP?

<Yes>

<No>

Configuración de slapd

El nombre de dominio DNS se utiliza para construir el DN base del directorio LDAP. Por ejemplo, si introduce «foo.example.org» el directorio se creará con un DN base de «dc=foo, dc=example, dc=org».
Introduzca el nombre de dominio DNS:

borja.local

<Ok>

Configuración de slapd

Introduzca el nombre de la organización a utilizar en el DN base del directorio LDAP.
Nombre de la organización:

borja

<Ok>

Configuración de slapd

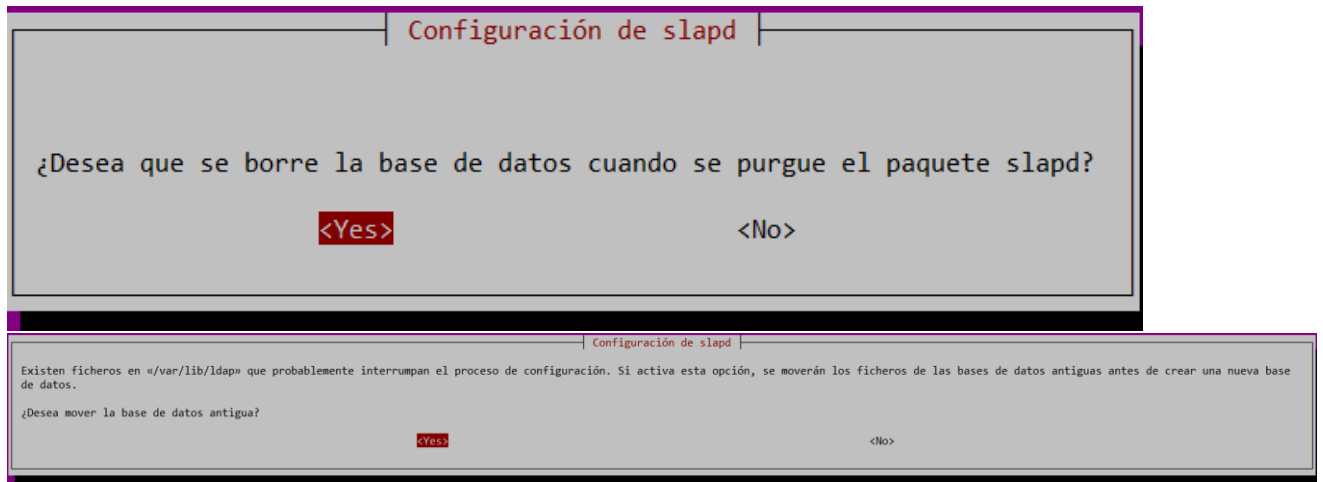
Introduzca la contraseña para la entrada de administrador de su directorio LDAP.
Contraseña del administrador:

<Ok>

Configuración de slapd

Introduzca de nuevo la misma contraseña de administrador para su directorio LDAP para verificar que la introdujo correctamente.
Confirme la contraseña:

<Ok>

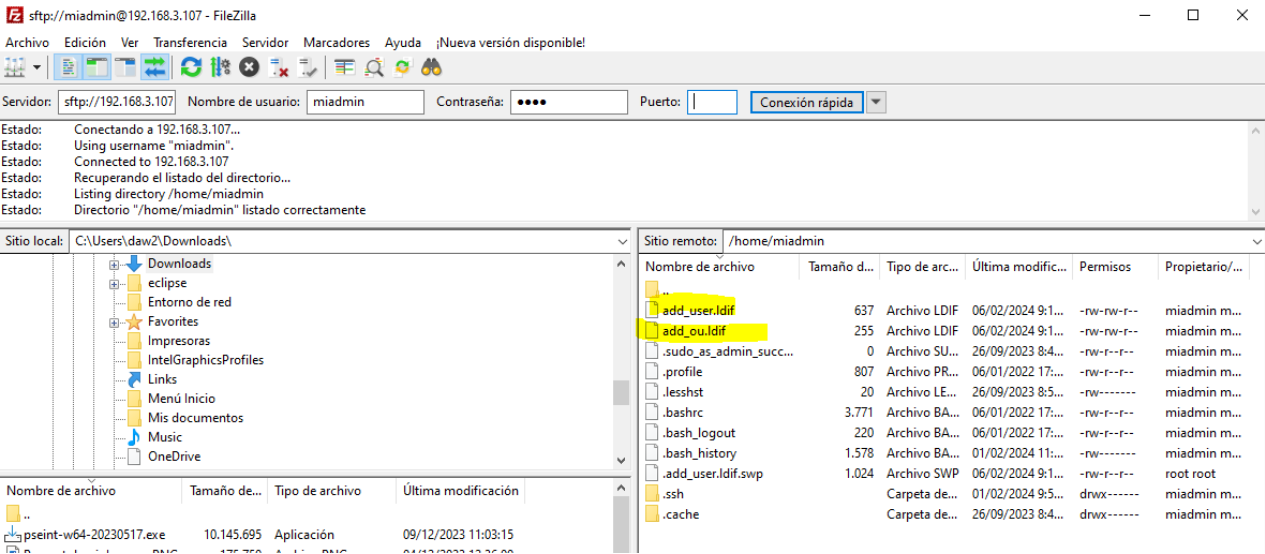


➤ Comprobamos que todo haya ido bien con el comando de la captura.

```
miadmin@bmr-ldap:~$ sudo ldapsearch -xLLL -b dc=borja,dc=local
dn: dc=borja,dc=local
objectClass: top
objectClass: dcObject
objectClass: organization
o: borja
dc: borja
```

Crear usuarios y grupos.

➤ Metemos los archivos en el home de mi admin



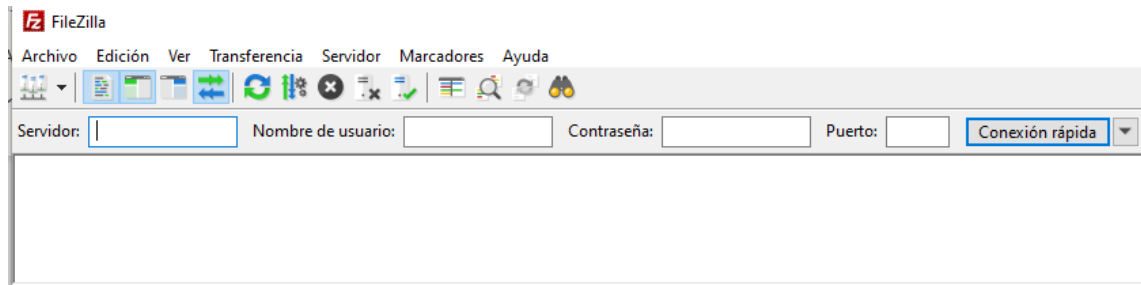
➤ Editamos los archivos para crear grupos y usuarios de ldap.

```
miadmin@bnr-ldap: ~  
GNU nano 6.2 add_ou.ldif *  
#####  
###  
###  
### Alta de Unidad Organizativas  
###  
#####  
dn: ou=superior,dc=borja,dc=local  
objectClass: organizationalUnit  
ou: superior  
  
dn: ou=medio,dc=borja,dc=local  
objectClass: organizationalUnit  
ou: medio  
  
miadmin@bnr-ldap: ~  
GNU nano 6.2 add_user.ldif  
#####  
###  
###  
### Alta de usuarios  
###  
#####  
# Usuarios Borja de la unidad organizativa usuarios  
dn: uid=borja,ou=superior,dc=borja,dc=local  
objectClass: inetOrgPerson  
objectClass: organizationalPerson  
objectClass: person  
objectClass: top  
uid: borja  
sn: nuñez  
cn: borja  
mail: borja@borja.localhost  
userPassword: paso  
  
# Usuarios Amor de la unidad organizativa usuarios  
dn: uid=amor,ou=superior,dc=borja,dc=local  
objectClass: inetOrgPerson  
objectClass: organizationalPerson  
objectClass: person  
objectClass: top  
uid: amor  
sn: rodriguez  
cn: amor  
mail: amor@borja.localhost  
userPassword: paso
```

BNR-WXED

1.FileZilla

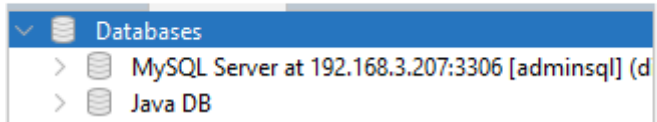
- Para conectarse a un servidor a través de ftp o sftp en FileZilla solo tendríamos que en el servidor poner nuestra IP, en el nombre de usuario el nombre del usuario con el que queremos conectarlo, en contraseña la contraseña del usuario y en el puerto el puerto por el que queremos conectarnos como el 22 para la conexión sftp.



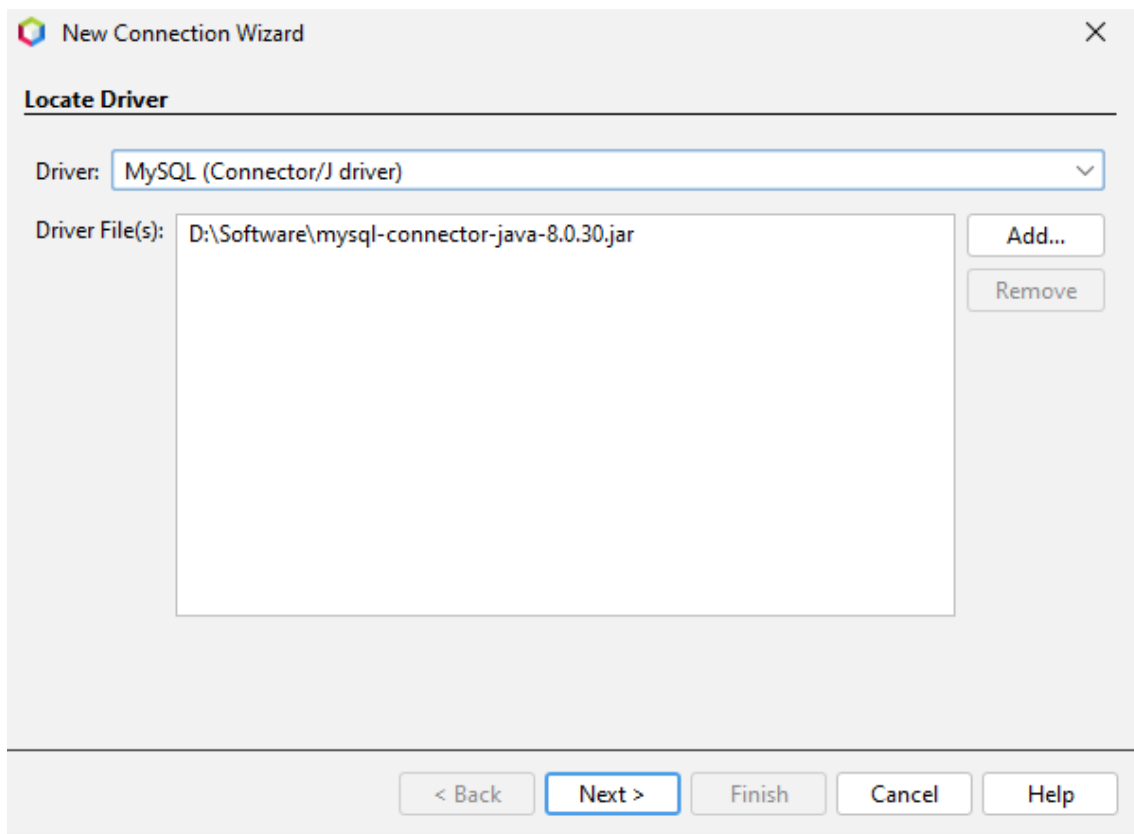
2.NetBeans

Conexión a una base de datos.

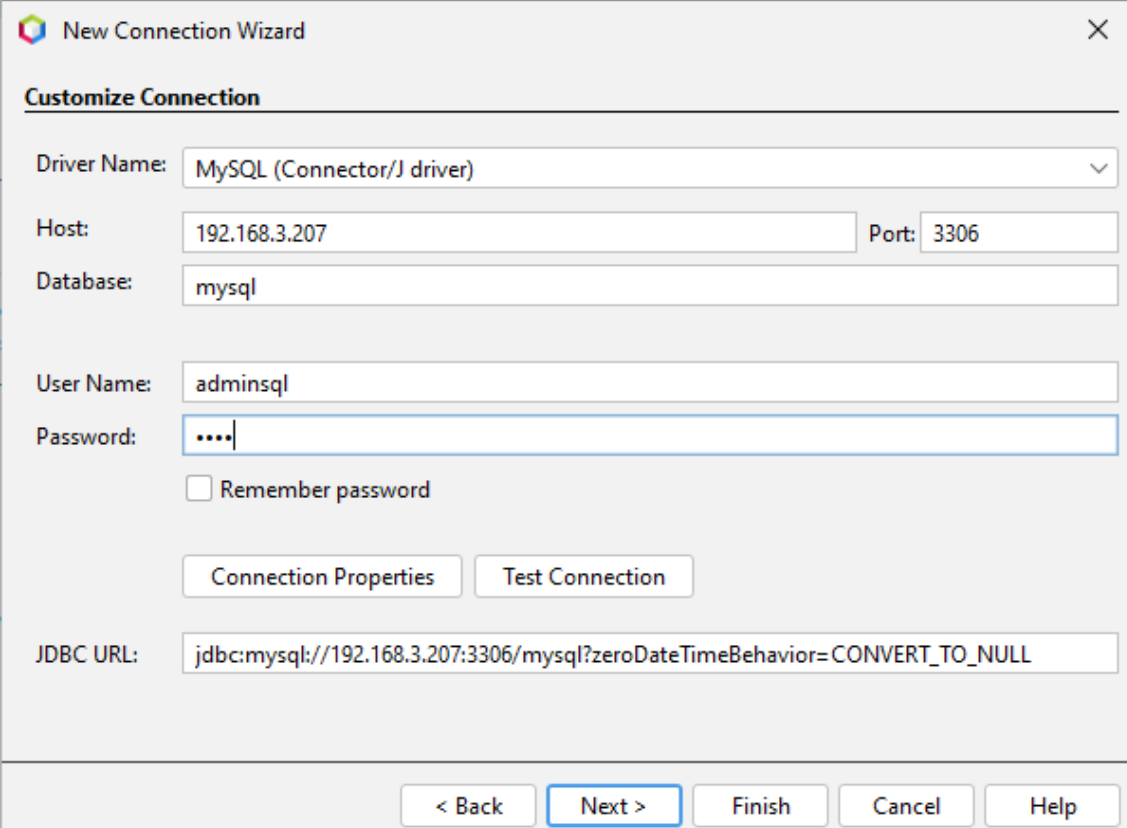
- Le damos click derecho y seleccionamos la opción “New connection...”.



- Seleccionamos el driver de conexión de java como se muestra en la captura.



- Configuramos la conexión tanto a el host que queremos conectarnos como la base de datos y el usuario.

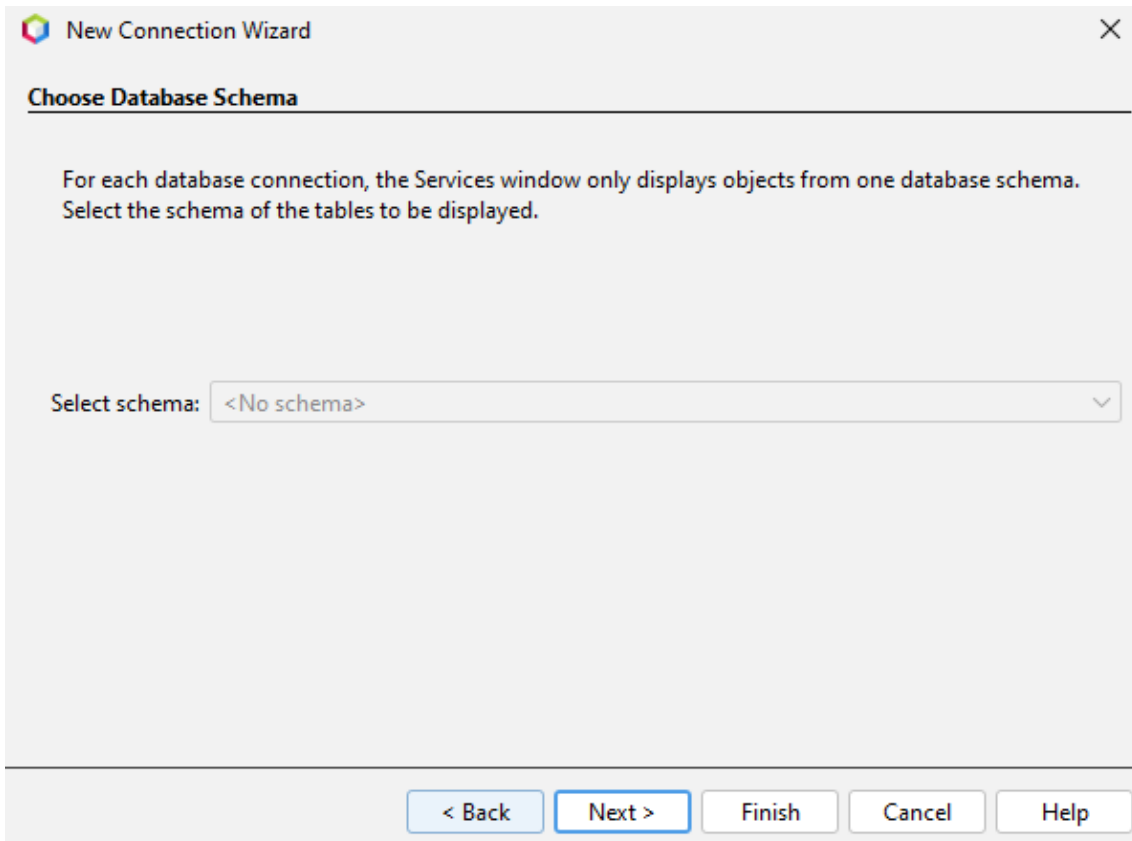


The image shows a 'New Connection Wizard' window with a close button (X) in the top right corner. The title bar says 'New Connection Wizard'. The main section is titled 'Customize Connection'. It contains several input fields and buttons:

- Driver Name:** A dropdown menu showing 'MySQL (Connector/J driver)' with a downward arrow.
- Host:** A text box containing '192.168.3.207'.
- Port:** A text box containing '3306'.
- Database:** A text box containing 'mysql'.
- User Name:** A text box containing 'adminsqli'.
- Password:** A text box containing '....'.
- ☐ Remember password
- Connection Properties** button
- Test Connection** button
- JDBC URL:** A text box containing 'jdbc:mysql://192.168.3.207:3306/mysql?zeroDateTimeBehavior=CONVERT_TO_NULL'.

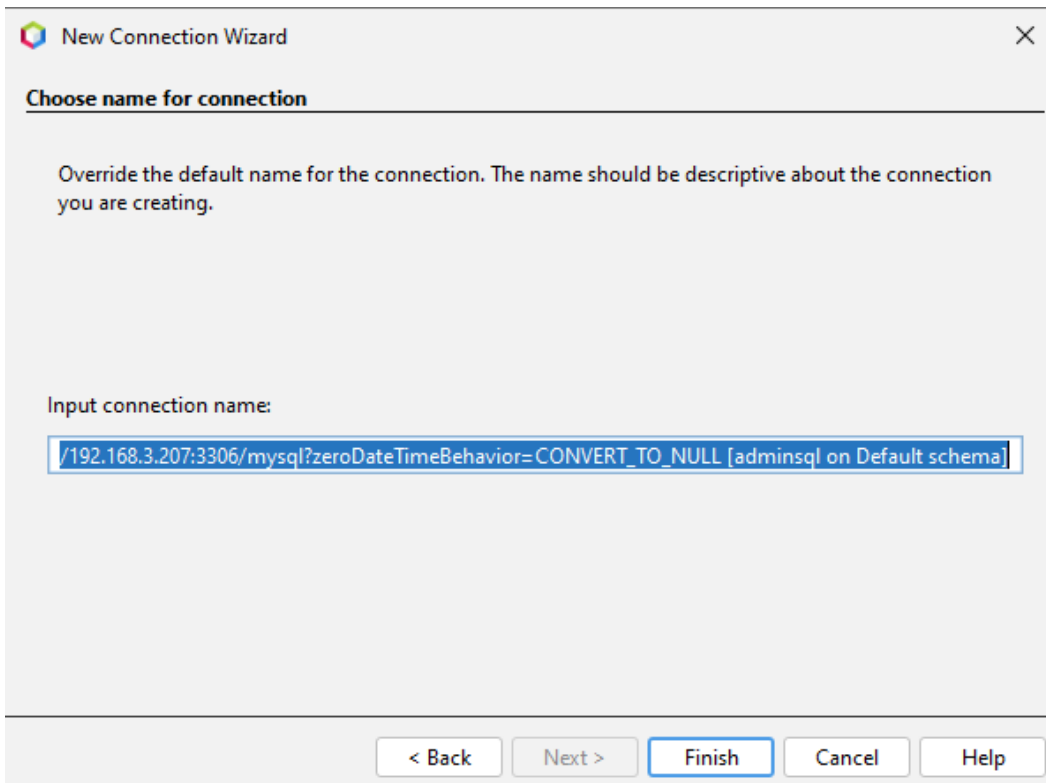
At the bottom, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a blue border.

➤ Le damos a siguiente.



The screenshot shows the 'New Connection Wizard' dialog box with the title 'New Connection Wizard' and a close button (X) in the top right corner. The main heading is 'Choose Database Schema'. Below the heading, there is a text block: 'For each database connection, the Services window only displays objects from one database schema. Select the schema of the tables to be displayed.' Below this text is a dropdown menu labeled 'Select schema:' with the current selection being '<No schema>'. At the bottom of the dialog, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Next >' button is highlighted with a blue border.

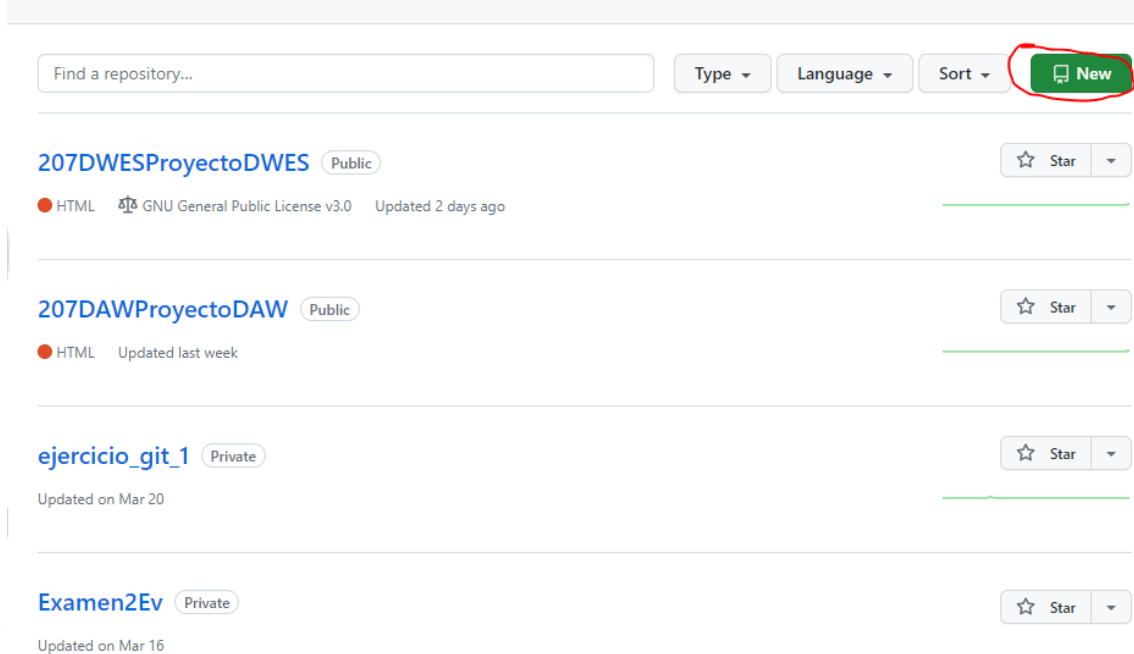
➤ Aquí le damos a siguiente o ponemos el nombre de la conexión que queramos.



The screenshot shows the 'New Connection Wizard' dialog box with the title 'New Connection Wizard' and a close button (X) in the top right corner. The main heading is 'Choose name for connection'. Below the heading, there is a text block: 'Override the default name for the connection. The name should be descriptive about the connection you are creating.' Below this text is a text input field labeled 'Input connection name:'. The input field contains the text: '/192.168.3.207:3306/mysql?zeroDateTimeBehavior=CONVERT_TO_NULL [adminsql on Default schema]'. At the bottom of the dialog, there are five buttons: '< Back', 'Next >', 'Finish', 'Cancel', and 'Help'. The 'Finish' button is highlighted with a blue border.

Proyectos GitHub.

- Creamos un nuevo proyecto en GitHub con cualquier nombre lo recomendable es que lo llamemos igual al que queremos subir para menos confusión.




- Configuramos la creación del archivo con las opciones que se muestran por pantalla.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner *

 BorjaNR ▾

Repository name *

/ 207DWESProyectoTema3

✔ 207DWESProyectoTema3 is available.

Great repository names are short and memorable. Need inspiration? How about [legendary-adventure](#) ?

Description (optional)

☒  **Public**

Anyone on the internet can see this repository. You choose who can commit.

☐  **Private**

You choose who can see and commit to this repository.

Initialize this repository with:

☐ **Add a README file**

This is where you can write a long description for your project. [Learn more about READMEs.](#)

Add .gitignore

.gitignore template: None ▾

Choose which files not to track from a list of templates. [Learn more about ignoring files.](#)

Choose a license

License: None ▾

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

 You are creating a public repository in your personal account.

Create repository


- Creamos un nuevo repositorio en GitHub que se llamara licencia para proporcionarnos un archivo licencia para el repositorio que creamos antes.

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Required fields are marked with an asterisk (*).

Owner *

 BorjaNR ▾

Repository name *

Licencia

✔ Licencia is available.

License

Filter...

Apache License 2.0

GNU General Public License
v3.0

MIT License

BSD 2-Clause "Simplified"
License

BSD 3-Clause "New" or
"Revised" License

Boost Software License 1.0

Creative Commons Zero v1.0
Universal

Eclipse Public License 2.0

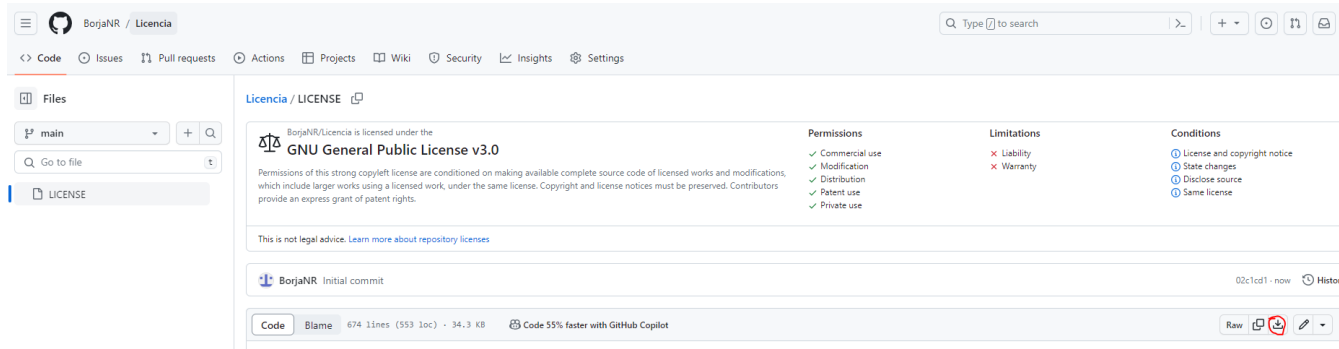
License: None ▾

A license tells others what they can and can't do with your code. [Learn more about licenses.](#)

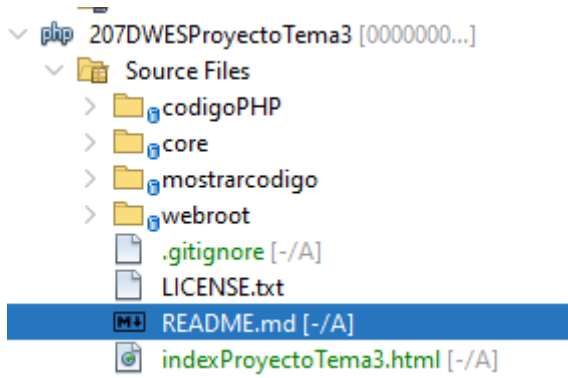
 You are creating a public repository in your personal account.

Create repository

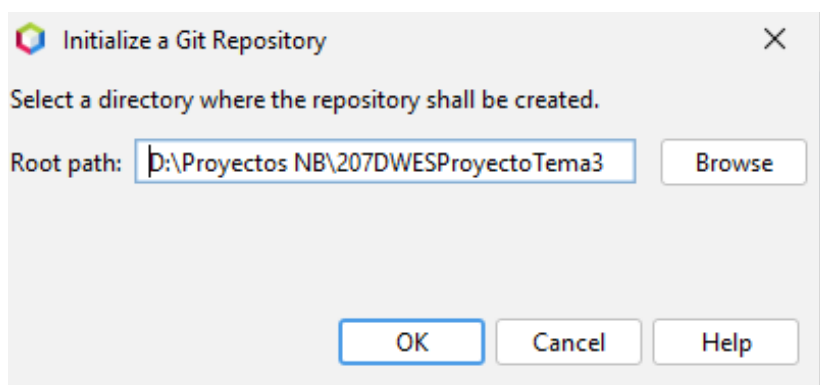
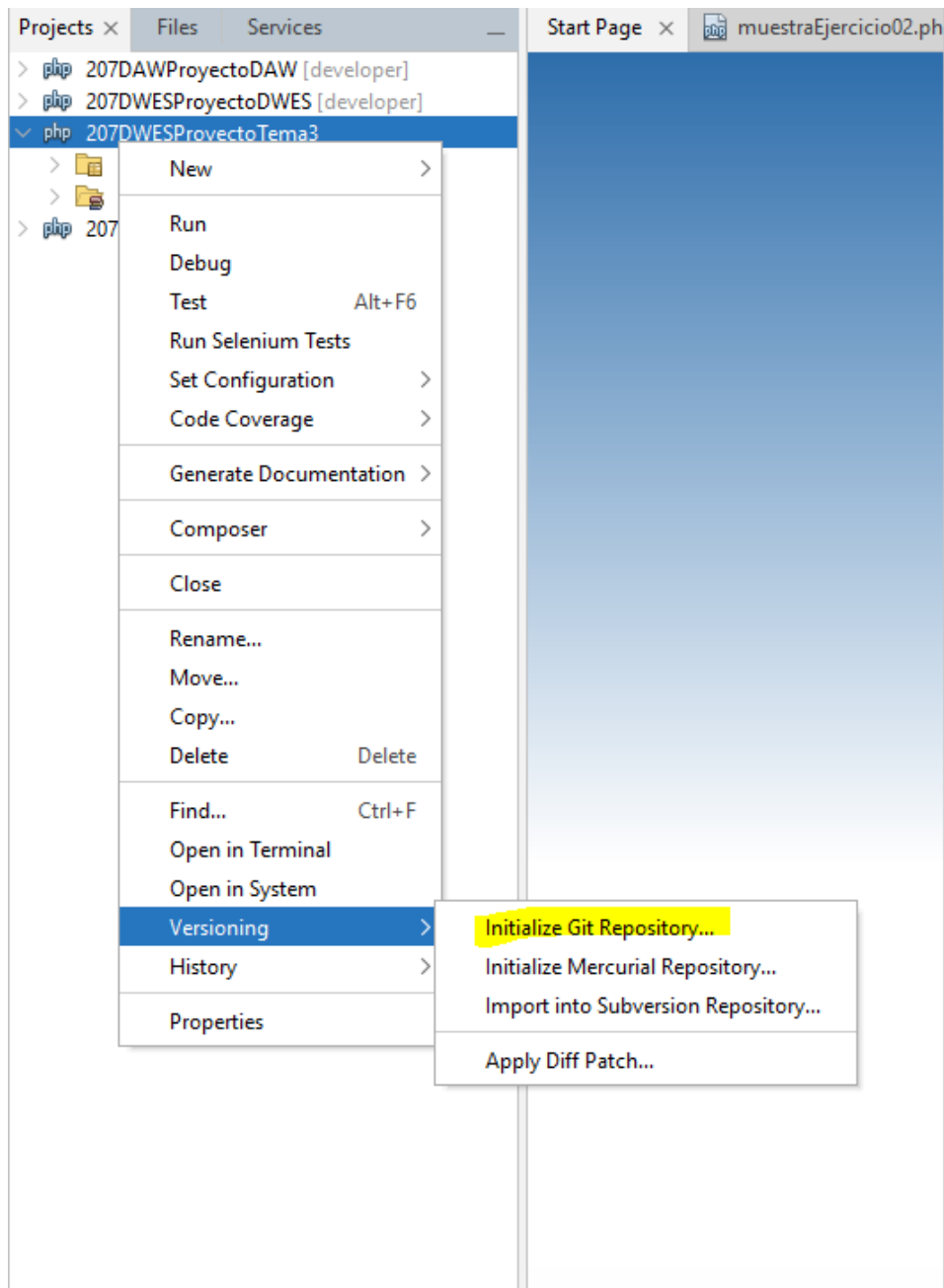
- Ahora descargamos el archivo de licencia del repositorio licencia previamente creado.



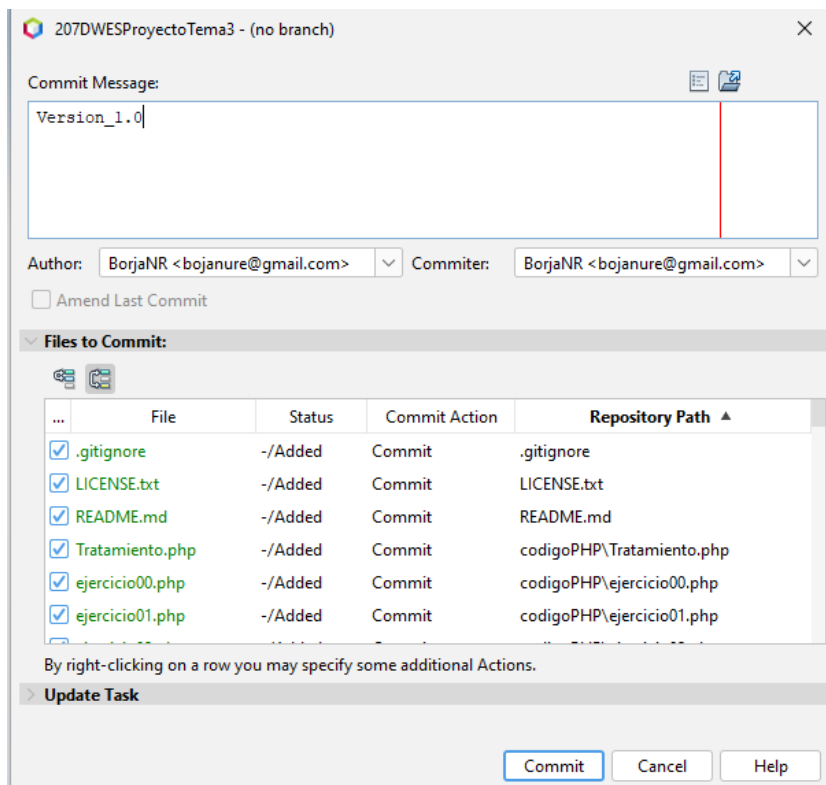
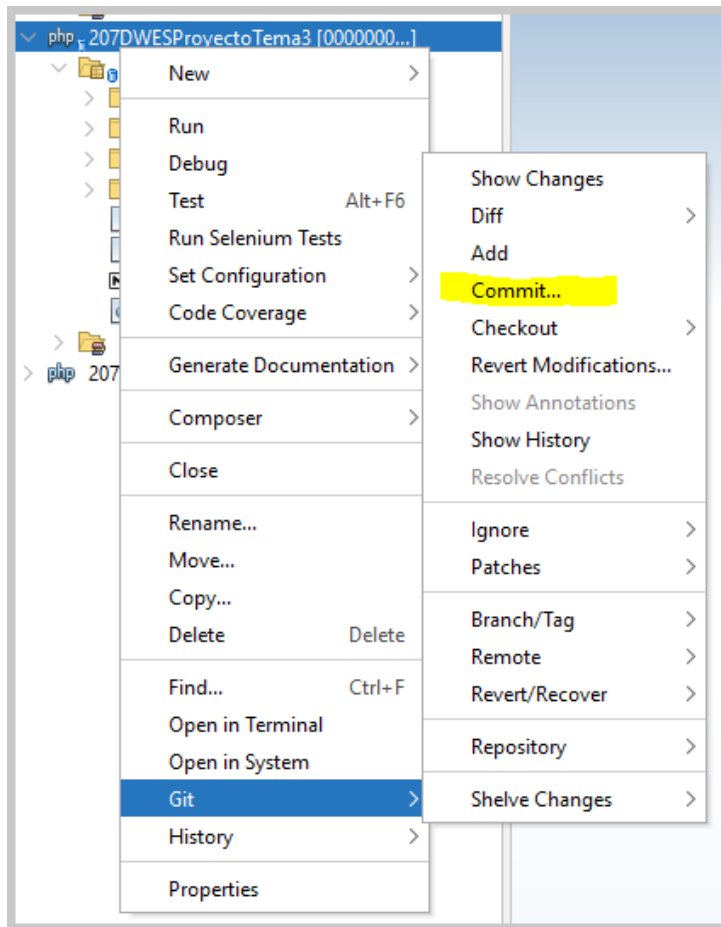
- Ahora en el proyecto que queremos subir meteremos los archivos .gitignore, readme y license y si no tenemos ni el .gitignore ni el raedme lo creamos.



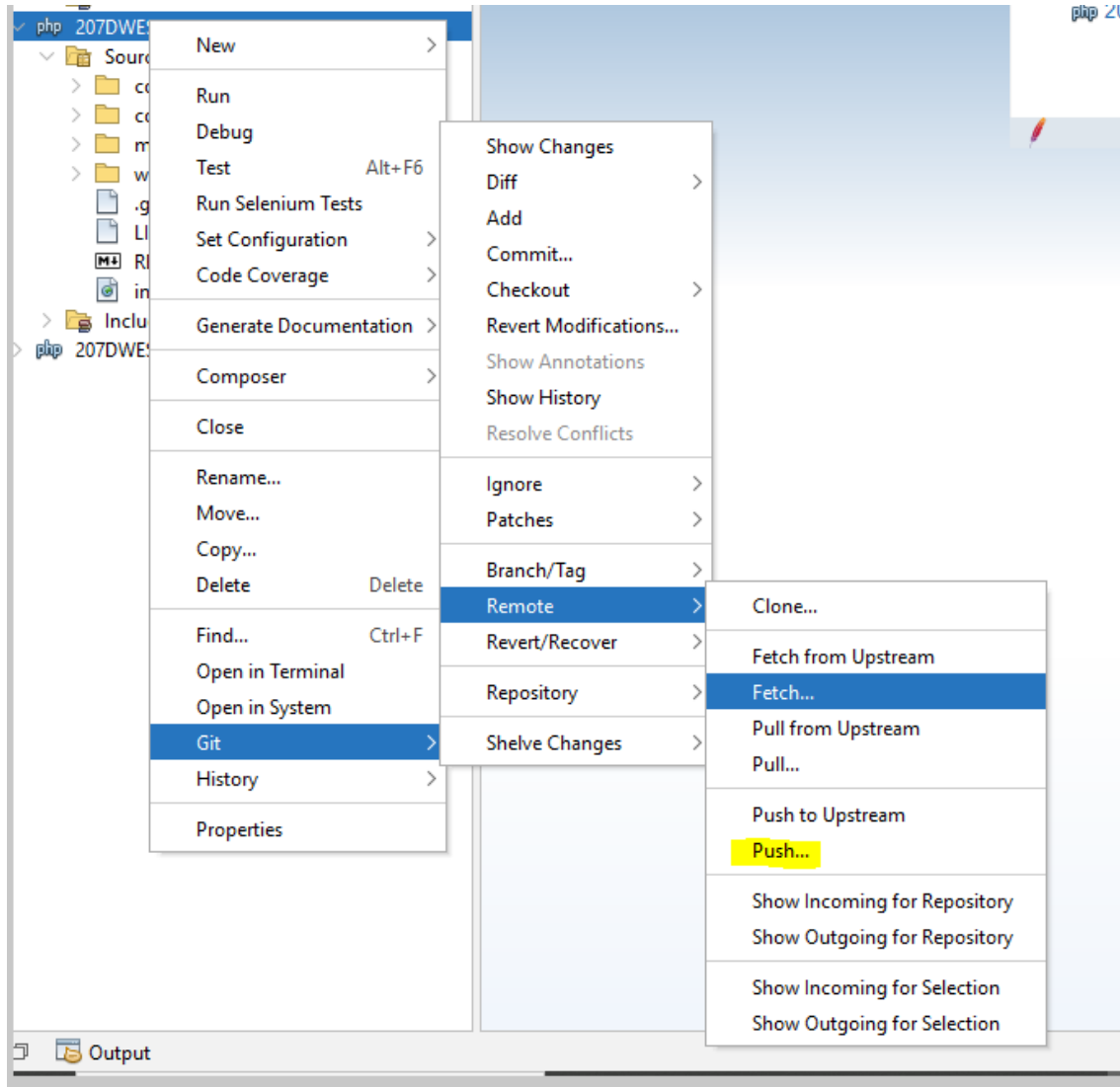
- Ahora inicializamos el repositorio que queramos con git y seleccionamos la ruta local del proyecto.



- Hacemos un commit del proyecto y ponemos el mensaje de commit que queramos.



- Hacemos un push del proyecto y rellenamos lo siguiente que nos salga con la url del repositorio el nombre de perfil de GitHub y con el token que creamos en el apartado GitHub->crear token y luego seleccionamos la rama donde queremos que se suba.



Push to Remote Repository

Steps

1. **Remote Repository**
2. Select Local Branches
3. Update Local References

Remote Repository

☐ Select Configured Git Repository Location:

☒ Specify Git Repository Location:

Remote Name: ☒ Persist Remote

Repository URL:
http[s]://host.xz[:port]/path/to/repo.git/

User: (leave blank for anonymous access)

Password: ☒ Save Password

[Proxy Configuration...](#)

< Back **Next >** Finish Cancel Help

Push to Remote Repository

Steps

1. Remote Repository
2. **Select Local Branches**
3. Update Local References

Select Local Branches

Local Branches

<input checked="" type="checkbox"/> master -> master [A]
--

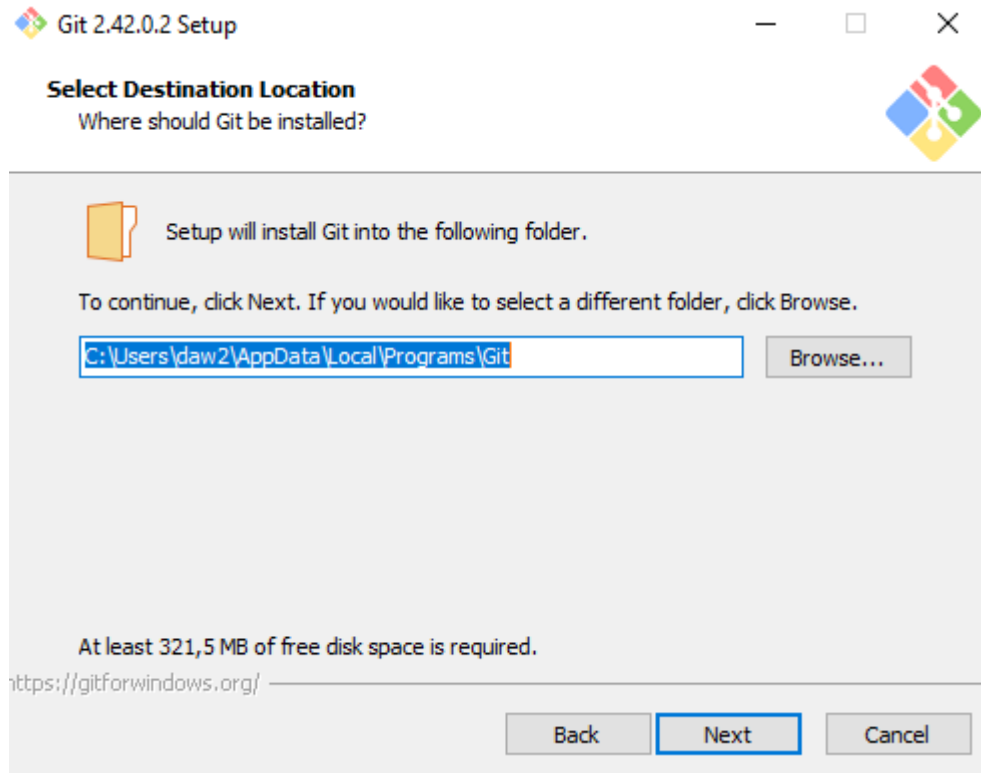
Select All Select None

< Back **Next >** Finish Cancel Help

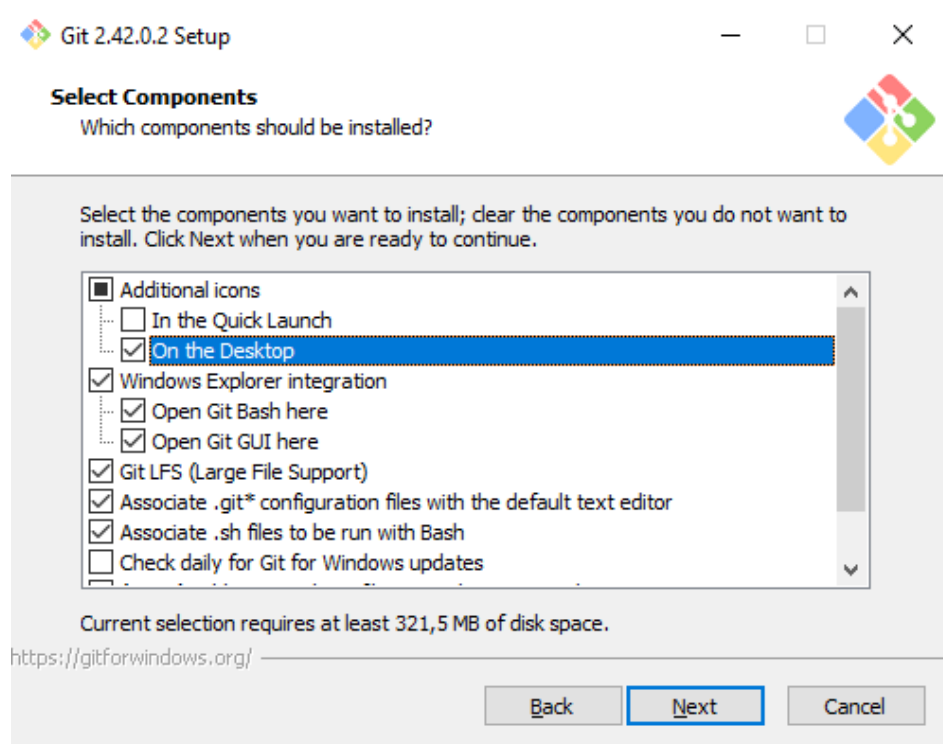
3. GitHub

Instalación de GitHub en Windows.

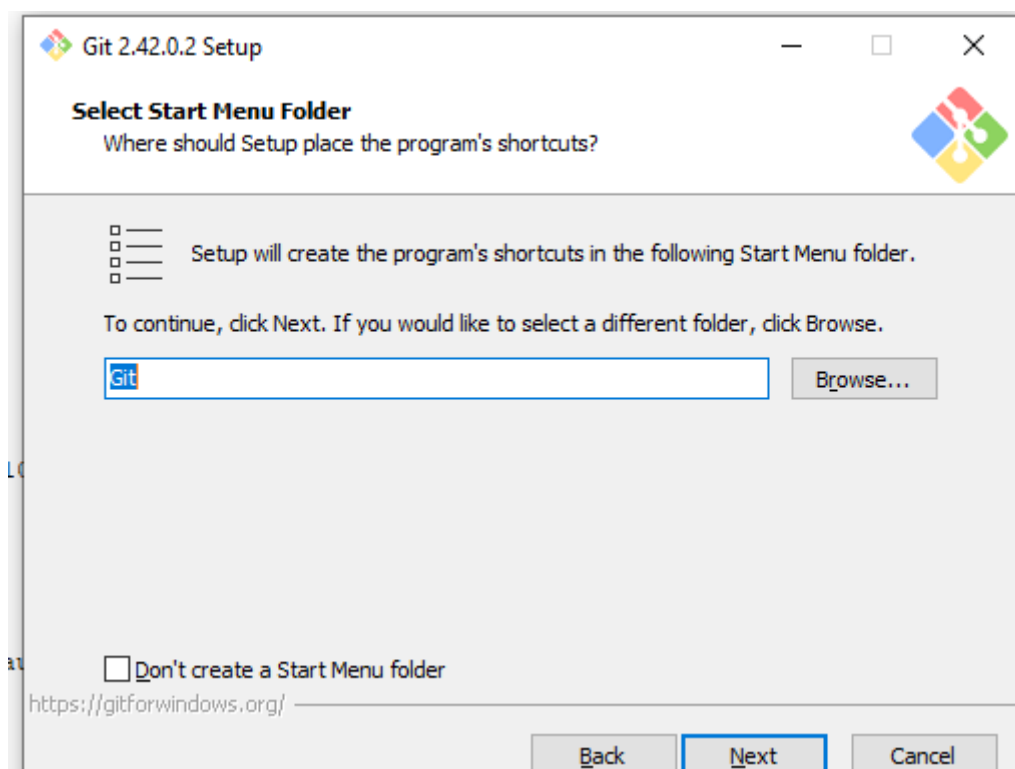
- Ejecutamos el instalador y dejamos la ruta de instalación por defecto.



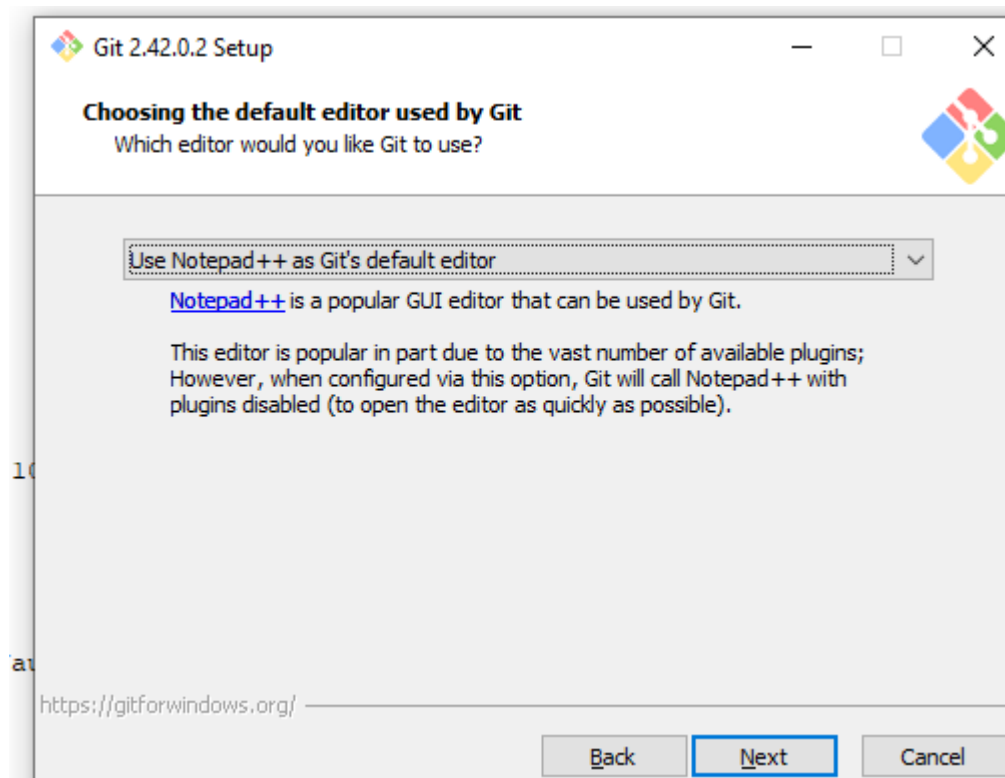
- Dejamos todo por defecto y marcamos la casilla on the desktop te puedes guiar por la siguiente captura



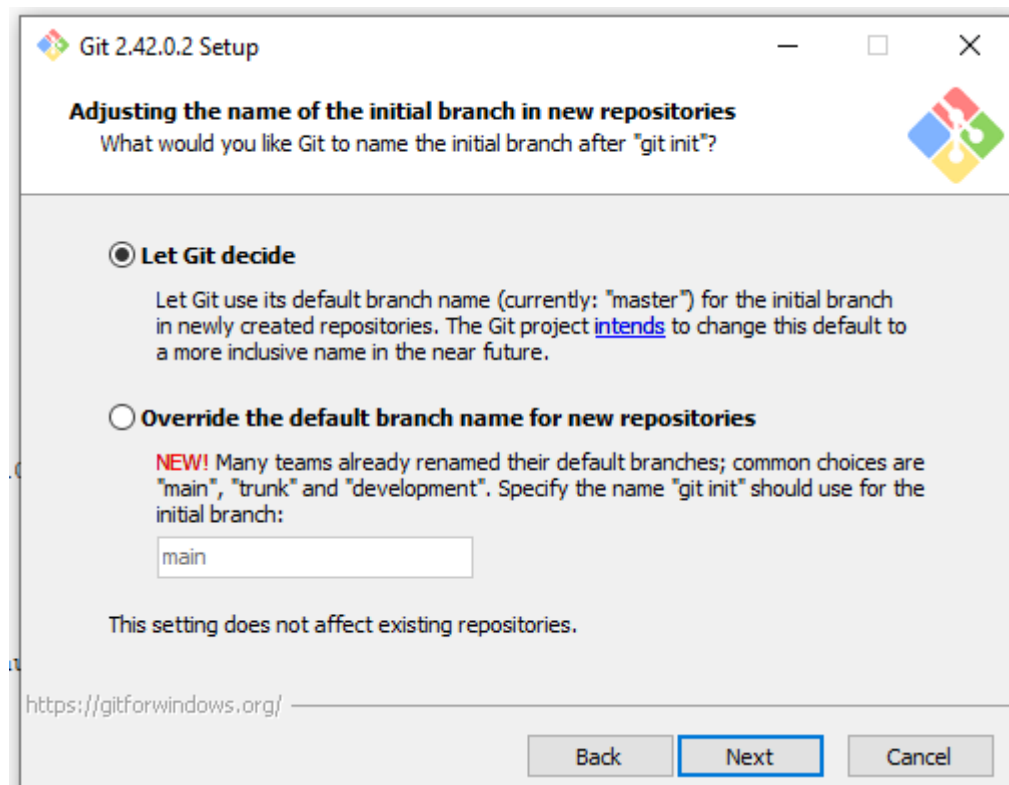
➤ Esto lo dejamos como esta.



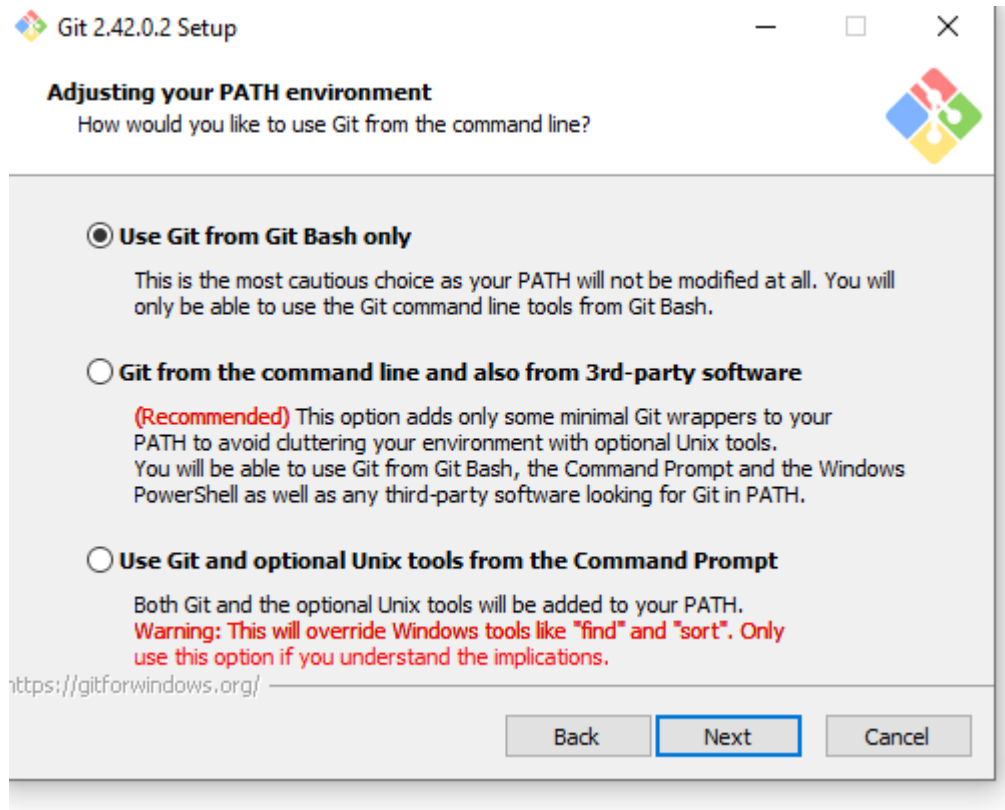
➤ Aquí seleccionamos que el editor por defecto sea Notepad.



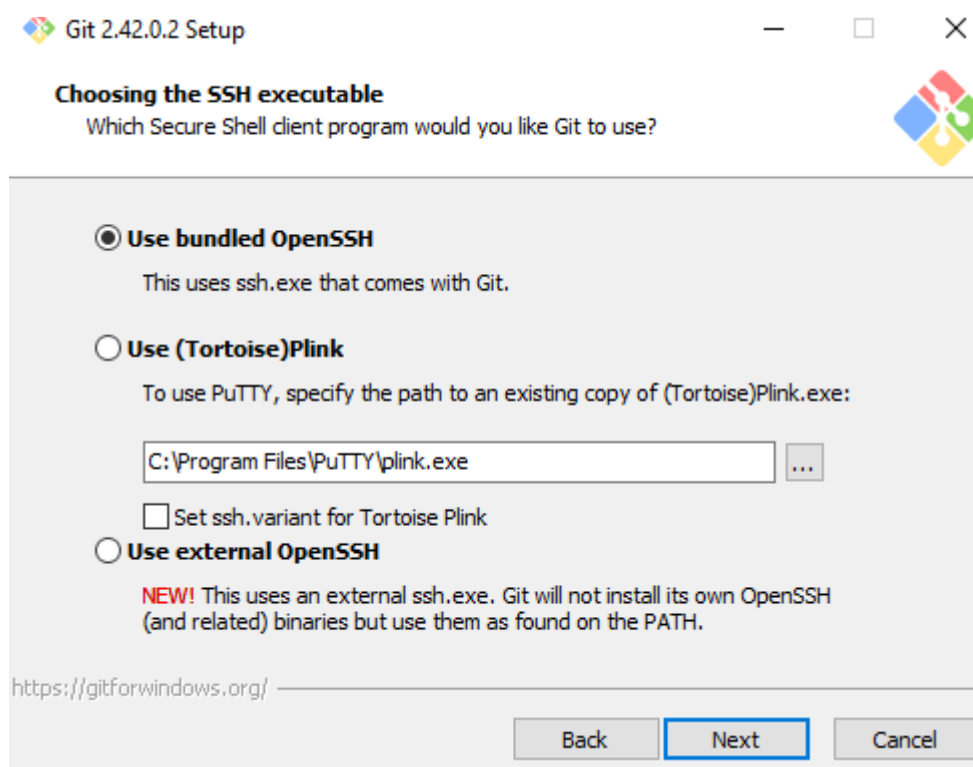
- Aquí seleccionamos la opción que se ve en la captura.



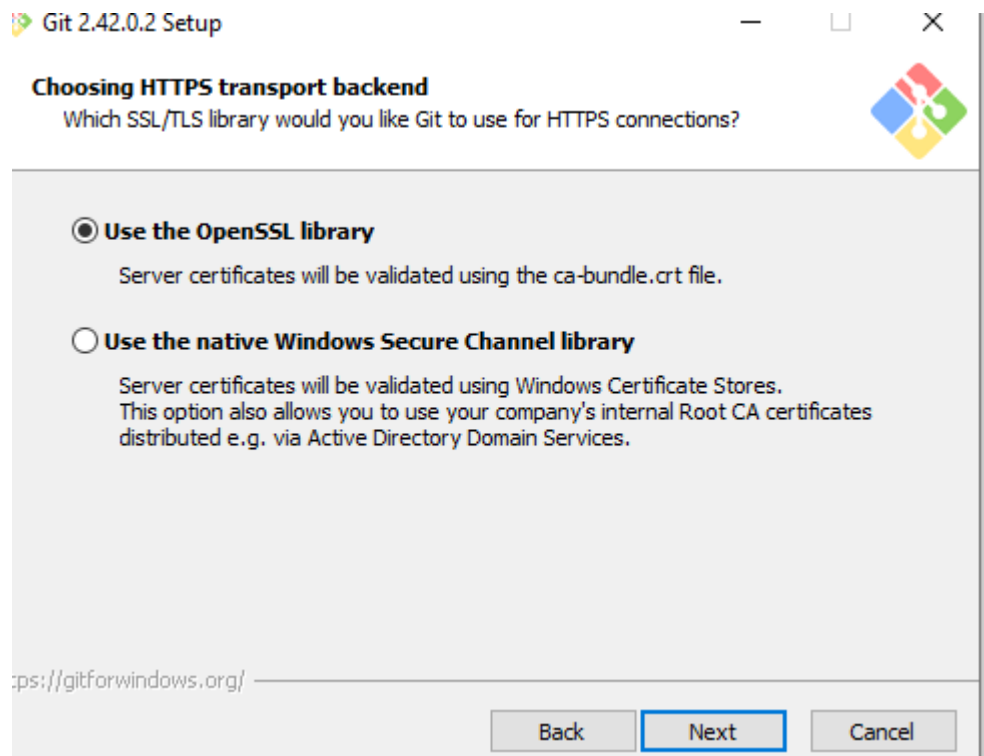
- Seleccionamos la opción que se ve en la captura.



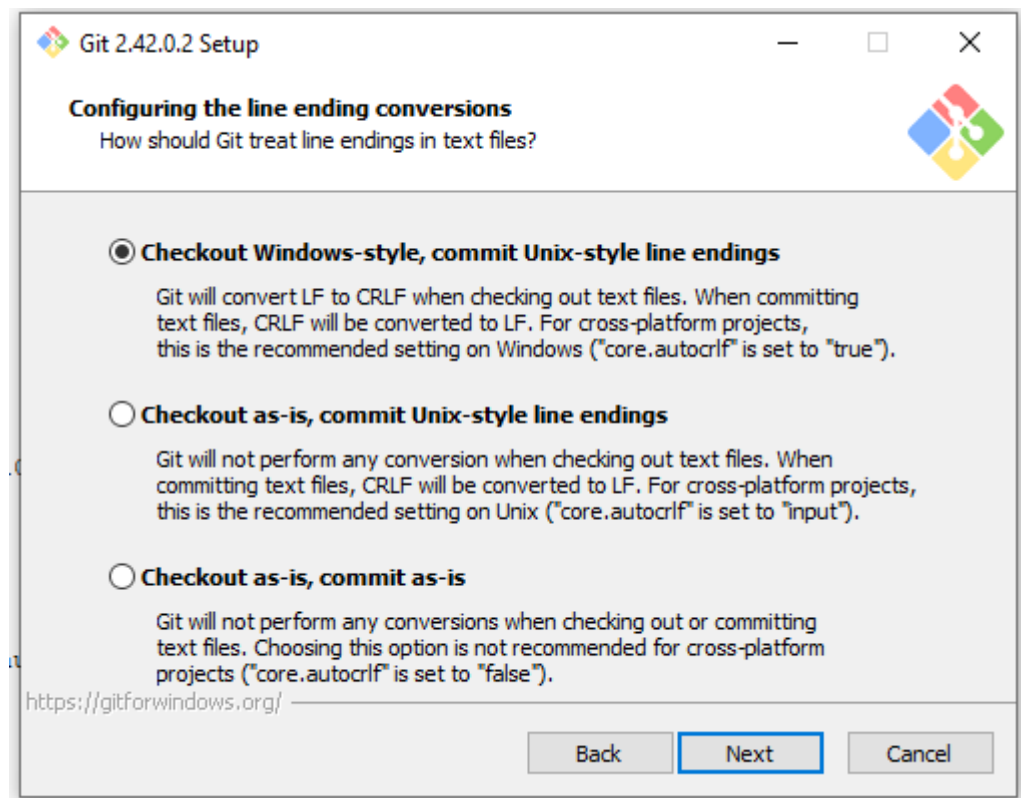
➤ Seleccionamos esta opción.



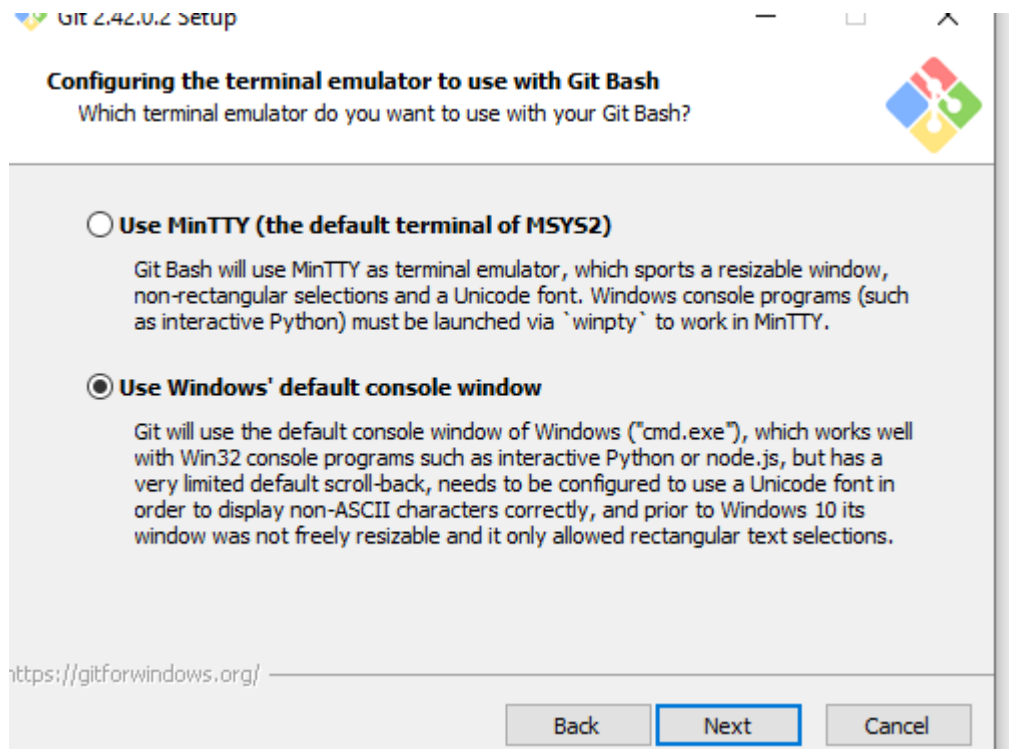
➤ Aquí seleccionamos la opción que se muestra en la captura.



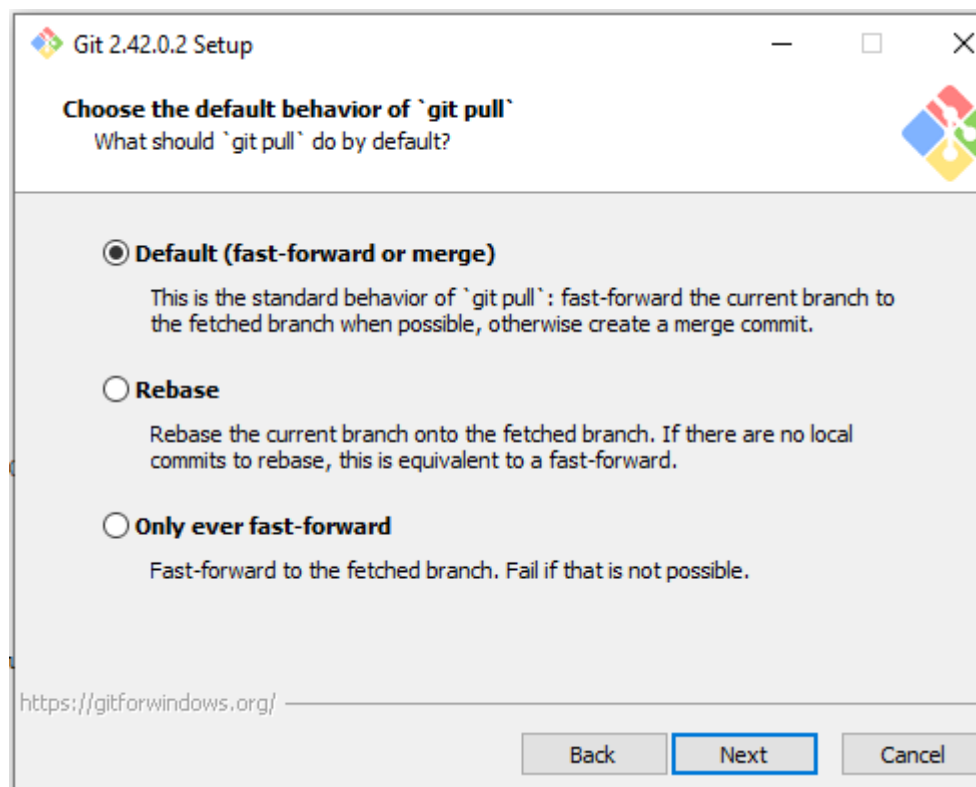
- Seleccionamos la opción que se muestra en la captura.



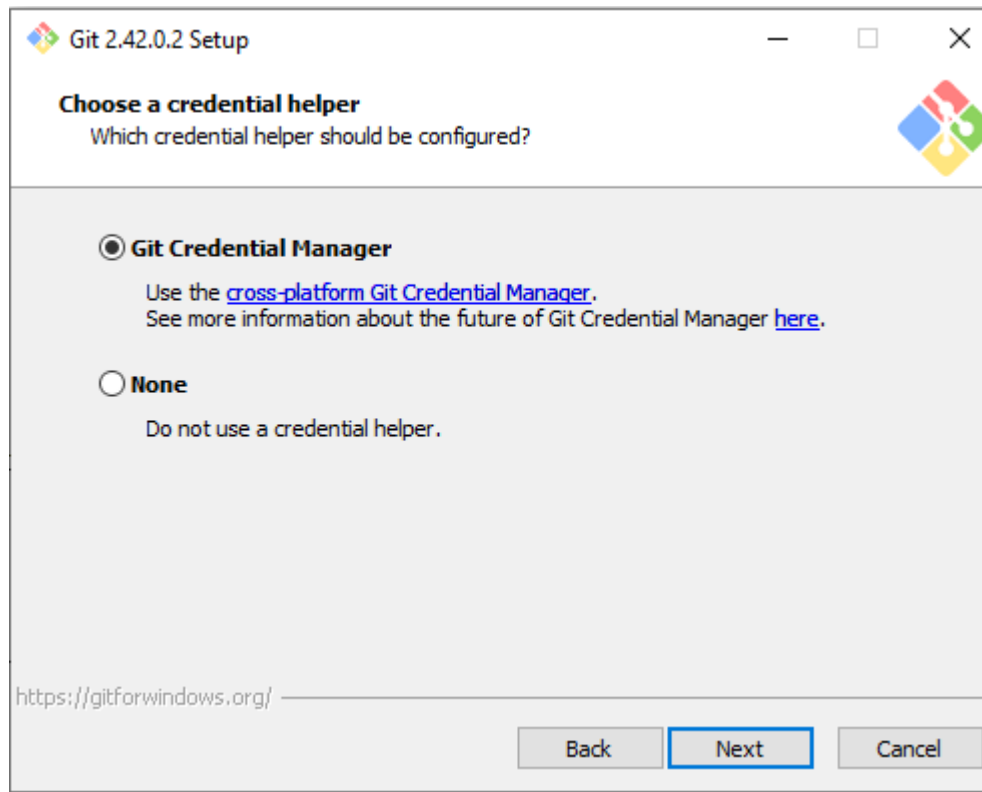
- Seleccionamos la consola de Windows por defecto.



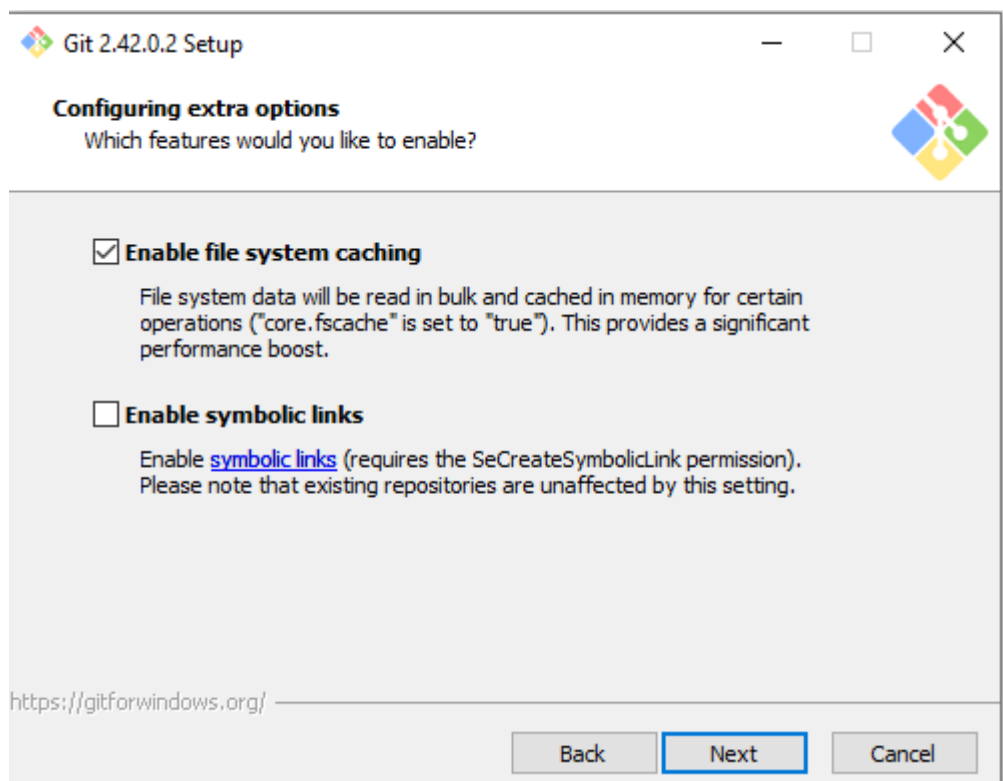
➤ Seleccionamos lo siguiente que se muestra en la captura.



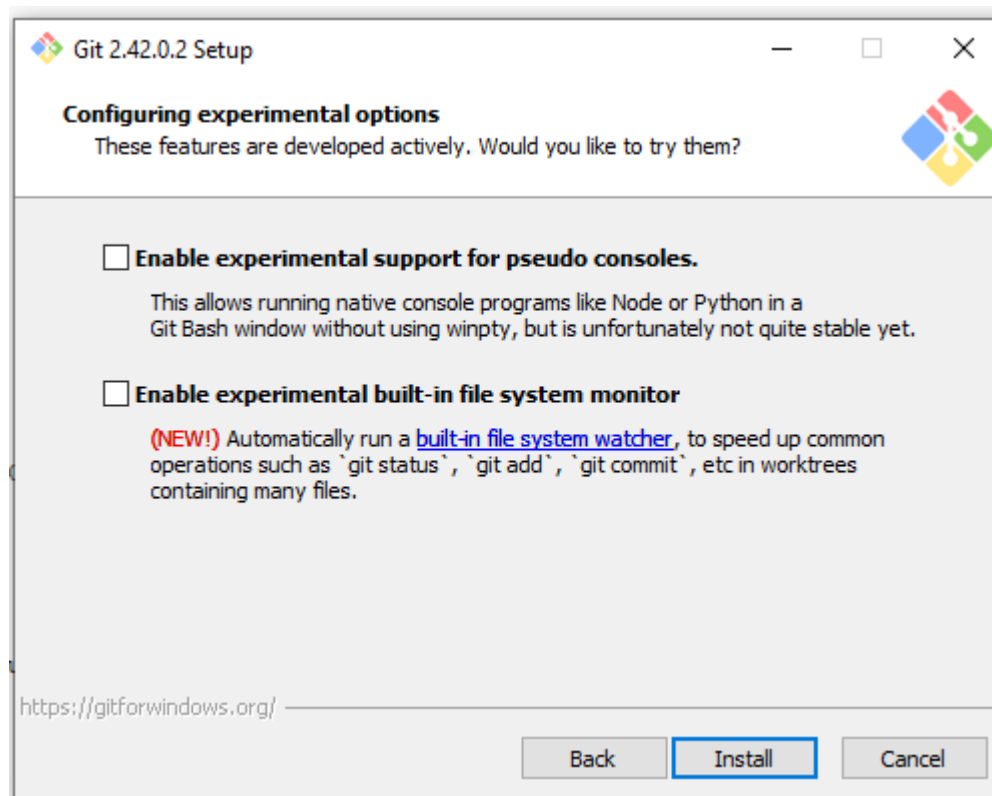
➤ Seleccionamos lo siguiente.



➤ Ponemos lo que se muestra en la captura.



➤ No activamos nada y le damos a instalar.



- Ponemos los siguientes comandos para configurar el gitconfig.

```
daw2@IS32WX07 MINGW64 ~  
$ git config --global user.email "bojanure@gmail.com"  
  
daw2@IS32WX07 MINGW64 ~  
$ git config --global user.name "BorjaNR"
```

- Comprobamos que los cambios se han realizado correctamente.

```
$ git config --list  
diff.astextplain.textconv=astextplain  
filter.lfs.clean=git-lfs clean -- %f  
filter.lfs.smudge=git-lfs smudge -- %f  
filter.lfs.process=git-lfs filter-process  
filter.lfs.required=true  
http.sslbackend=openssl  
http.sslcainfo=C:/Users/daw2/AppData/Local/Programs/Git/mingw64/etc/ssl/certs/ca-bundle.crt  
core.autocrlf=true  
core.fscache=true  
core.symlinks=false  
core.editor="C:\\Program Files\\Notepad++\\notepad++.exe" -multiInst -notabbar -nosession -noPlugin  
pull.rebase=false  
credential.helper=manager  
credential.https://dev.azure.com.usehttppath=true  
init.defaultbranch=master  
user.name=BorjaNR  
user.email=bojanure@gmail.com
```


Creación del token.

- Creamos el token con las opciones que veras en las siguientes capturas.

New personal access token (classic)

Personal access tokens (classic) function like ordinary OAuth access tokens. They can be used instead of a password for Git over HTTPS, or can be used to [authenticate to the API over Basic Authentication](#).

Note

Token DAW2

What's this token for?

Expiration *

No expiration The token will never expire!

GitHub strongly recommends that you set an expiration date for your token to help keep your information secure. [Learn more](#)

Select scopes

Scopes define the access for personal tokens. [Read more about OAuth scopes.](#)

<input checked="" type="checkbox"/> repo	Full control of private repositories
<input checked="" type="checkbox"/> repo:status	Access commit status
<input checked="" type="checkbox"/> repo_deployment	Access deployment status
<input checked="" type="checkbox"/> public_repo	Access public repositories
<input checked="" type="checkbox"/> repo:invite	Access repository invitations
<input checked="" type="checkbox"/> security_events	Read and write security events
<input type="checkbox"/> workflow	Update GitHub Action workflows
<input checked="" type="checkbox"/> write:packages	Upload packages to GitHub Package Registry
<input checked="" type="checkbox"/> read:packages	Download packages from GitHub Package Registry
<input checked="" type="checkbox"/> delete:packages	Delete packages from GitHub Package Registry
<input type="checkbox"/> admin:org	Full control of orgs and teams, read and write org projects
<input type="checkbox"/> write:org	Read and write org and team membership, read and write org projects
<input type="checkbox"/> read:org	Read org and team membership, read org projects
<input type="checkbox"/> manage_packages	Manage org packages and package groups

<input type="checkbox"/> write:org	Read and write org and team membership, read and write org projects
<input type="checkbox"/> read:org	Read org and team membership, read org projects
<input type="checkbox"/> manage_runners:org	Manage org runners and runner groups
<input checked="" type="checkbox"/> admin:public_key	Full control of user public keys
<input checked="" type="checkbox"/> write:public_key	Write user public keys
<input checked="" type="checkbox"/> read:public_key	Read user public keys
<input checked="" type="checkbox"/> admin:repo_hook	Full control of repository hooks
<input checked="" type="checkbox"/> write:repo_hook	Write repository hooks
<input checked="" type="checkbox"/> read:repo_hook	Read repository hooks
<input type="checkbox"/> admin:org_hook	Full control of organization hooks
<input type="checkbox"/> gist	Create gists
<input type="checkbox"/> notifications	Access notifications
<input type="checkbox"/> user	Update ALL user data
<input type="checkbox"/> read:user	Read ALL user profile data
<input type="checkbox"/> user:email	Access user email addresses (read-only)
<input type="checkbox"/> user:follow	Follow and unfollow users
<input checked="" type="checkbox"/> delete_repo	Delete repositories
<input checked="" type="checkbox"/> write:discussion	Read and write team discussions
<input checked="" type="checkbox"/> read:discussion	Read team discussions
<input type="checkbox"/> admin:enterprise	Full control of enterprises
<input type="checkbox"/> manage_runners:enterprise	Manage enterprise runners and runner groups
<input type="checkbox"/> manage_billing:enterprise	Read and write enterprise billing data
<input type="checkbox"/> read:enterprise	Read enterprise profile data
<input type="checkbox"/> audit_log	Full control of audit log
<input type="checkbox"/> read:audit_log	Read access of audit log
<input type="checkbox"/> codespace	Full control of codespaces
<input type="checkbox"/> codespace:secrets	Ability to create, read, update, and delete codespace secrets
<input type="checkbox"/> copilot	Full control of GitHub Copilot settings and seat assignments
<input type="checkbox"/> manage_billing:copilot	View and edit Copilot for Business seat assignments
<input type="checkbox"/> project	Full control of projects

<input type="checkbox"/> user:email	Access user email addresses (read-only)
<input type="checkbox"/> user:follow	Follow and unfollow users
<input checked="" type="checkbox"/> delete_repo	Delete repositories
<input checked="" type="checkbox"/> write:discussion	Read and write team discussions
<input checked="" type="checkbox"/> read:discussion	Read team discussions
<input type="checkbox"/> admin:enterprise	Full control of enterprises
<input type="checkbox"/> manage_runners:enterprise	Manage enterprise runners and runner groups
<input type="checkbox"/> manage_billing:enterprise	Read and write enterprise billing data
<input type="checkbox"/> read:enterprise	Read enterprise profile data
<input type="checkbox"/> audit_log	Full control of audit log
<input type="checkbox"/> read:audit_log	Read access of audit log
<input type="checkbox"/> codespace	Full control of codespaces
<input type="checkbox"/> codespace:secrets	Ability to create, read, update, and delete codespace secrets
<input type="checkbox"/> copilot	Full control of GitHub Copilot settings and seat assignments
<input type="checkbox"/> manage_billing:copilot	View and edit Copilot for Business seat assignments
<input type="checkbox"/> project	Full control of projects
<input type="checkbox"/> read:project	Read access of projects
<input type="checkbox"/> admin:pgp_key	Full control of public user GPG keys
<input type="checkbox"/> write:pgp_key	Write public user GPG keys
<input type="checkbox"/> read:pgp_key	Read public user GPG keys
<input checked="" type="checkbox"/> admin:ssh_signing_key	Full control of public user SSH signing keys
<input checked="" type="checkbox"/> write:ssh_signing_key	Write public user SSH signing keys
<input checked="" type="checkbox"/> read:ssh_signing_key	Read public user SSH signing keys

Generate token

Cancel

4.00webhost

- Creamos el sitio web y lo subimos.

Crear un sitio web

Nombre del sitio web (autogenerado ...)

bnrlginlgof

.000webhostapp.com

Contraseña

.....

👁

✓ One number

✓ One symbol

✓ One lowercase letter

✓ One uppercase letter

✓ Use 8-50 characters

✓ Only Latin letters

Repetir contraseña

.....

👁

✓ Passwords match

Crear

¿Cómo prefieres abordar la creación de sitios web?

RECOMENDADO

🌐

Instalar WordPress

Usa la plataforma CMS más popular para crear tu sitio web

Seleccionar

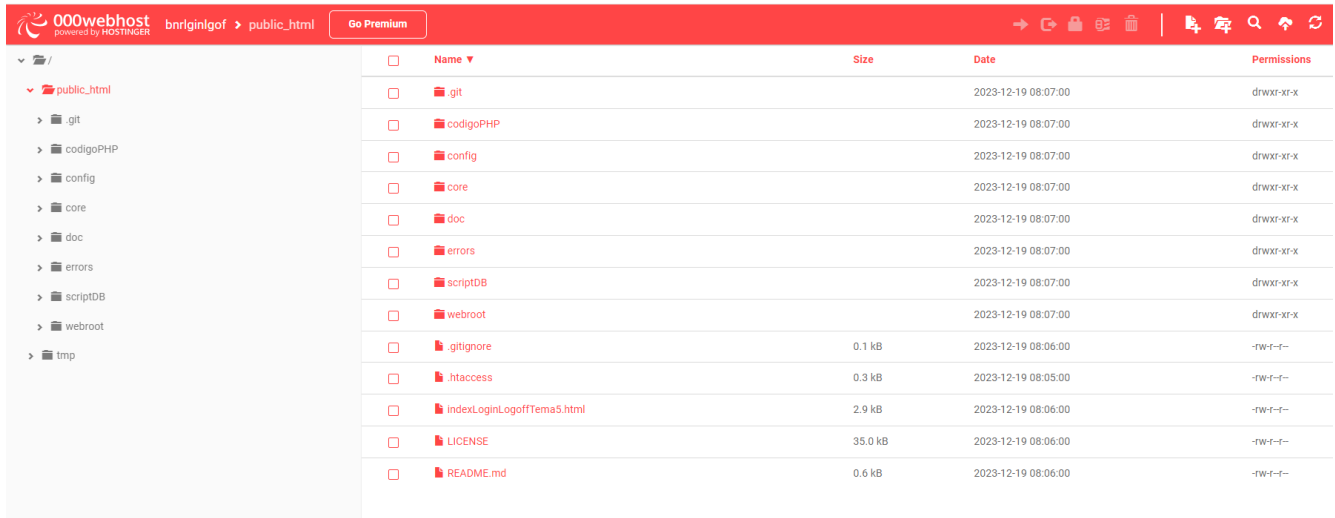
📁

Subir sitio

Transfiere tu sitio web existente a tu cuenta de hosting

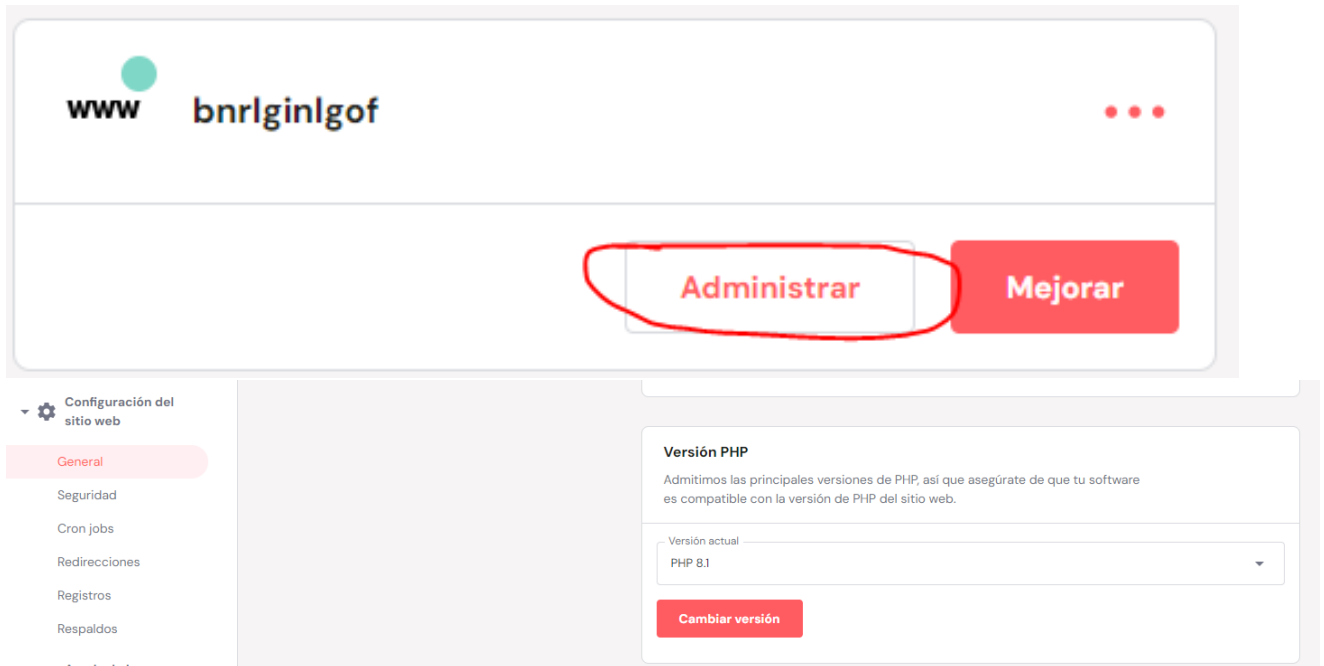
Seleccionar

➤ Metemos todos los archivos de la página web.



	Name ▼	Size	Date	Permissions
public_html				
git			2023-12-19 08:07:00	drwxr-xr-x
codigoPHP			2023-12-19 08:07:00	drwxr-xr-x
config			2023-12-19 08:07:00	drwxr-xr-x
core			2023-12-19 08:07:00	drwxr-xr-x
doc			2023-12-19 08:07:00	drwxr-xr-x
errors			2023-12-19 08:07:00	drwxr-xr-x
scriptDB			2023-12-19 08:07:00	drwxr-xr-x
webroot			2023-12-19 08:07:00	drwxr-xr-x
gitignore		0.1 kB	2023-12-19 08:06:00	-rw-r--r--
.htaccess		0.3 kB	2023-12-19 08:05:00	-rw-r--r--
indexLoginLogoutTema5.html		2.9 kB	2023-12-19 08:06:00	-rw-r--r--
LICENSE		35.0 kB	2023-12-19 08:06:00	-rw-r--r--
README.md		0.6 kB	2023-12-19 08:06:00	-rw-r--r--

➤ Le damos ha administrar y cambiamos la versión de php.



www.bnrlginlgo

Administrar Mejorar

Configuración del sitio web

General

Seguridad

Cron jobs

Redirecciones

Registros

Respaldos

Ayuda de la

Versión PHP

Admitimos las principales versiones de PHP, así que asegúrate de que tu software es compatible con la versión de PHP del sitio web.

Versión actual

PHP 8.1

Cambiar versión

5.Tomcat

- Descargamos el archivo tomcat en zip.

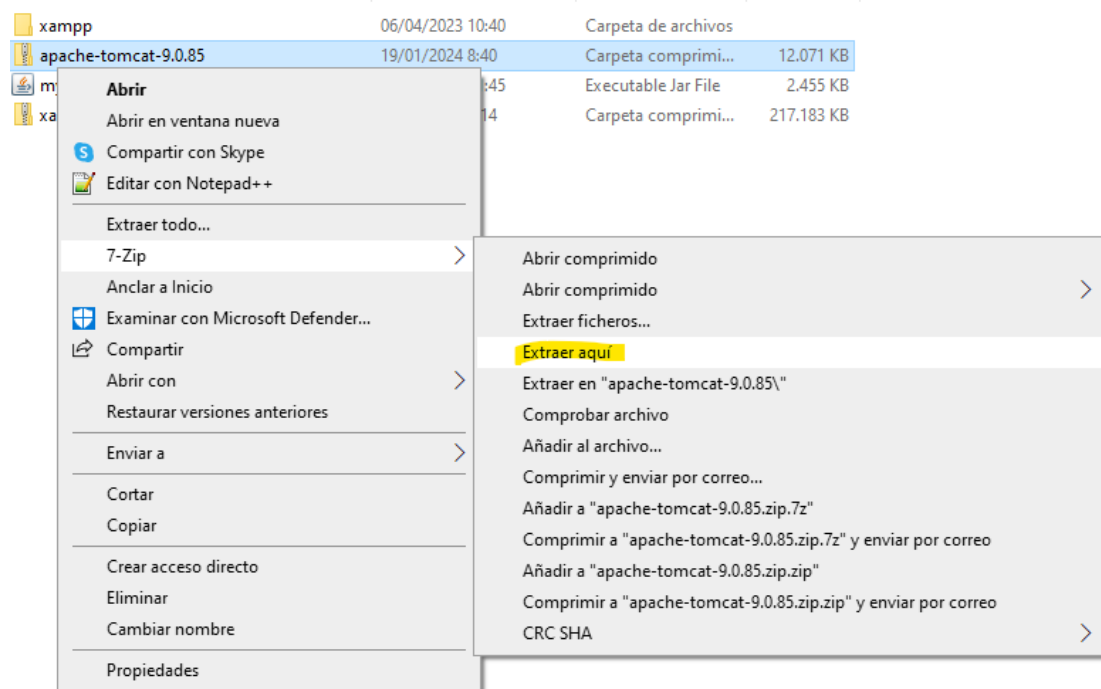
9.0.85

Please see the [README](#) file for packaging information. It explains what eve

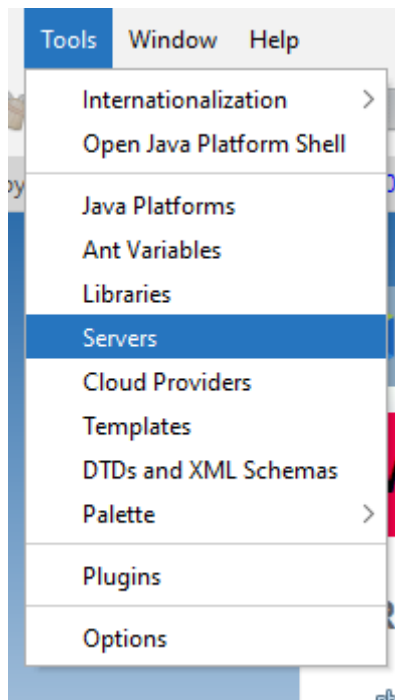
Binary Distributions

- Core:
 - [zip \(pgp, sha512\)](#)
 - [tar.gz \(pgp, sha512\)](#)
 - [32-bit Windows zip \(pgp, sha512\)](#)
 - [64-bit Windows zip \(pgp, sha512\)](#)
 - [32-bit/64-bit Windows Service Installer \(pgp, sha512\)](#)

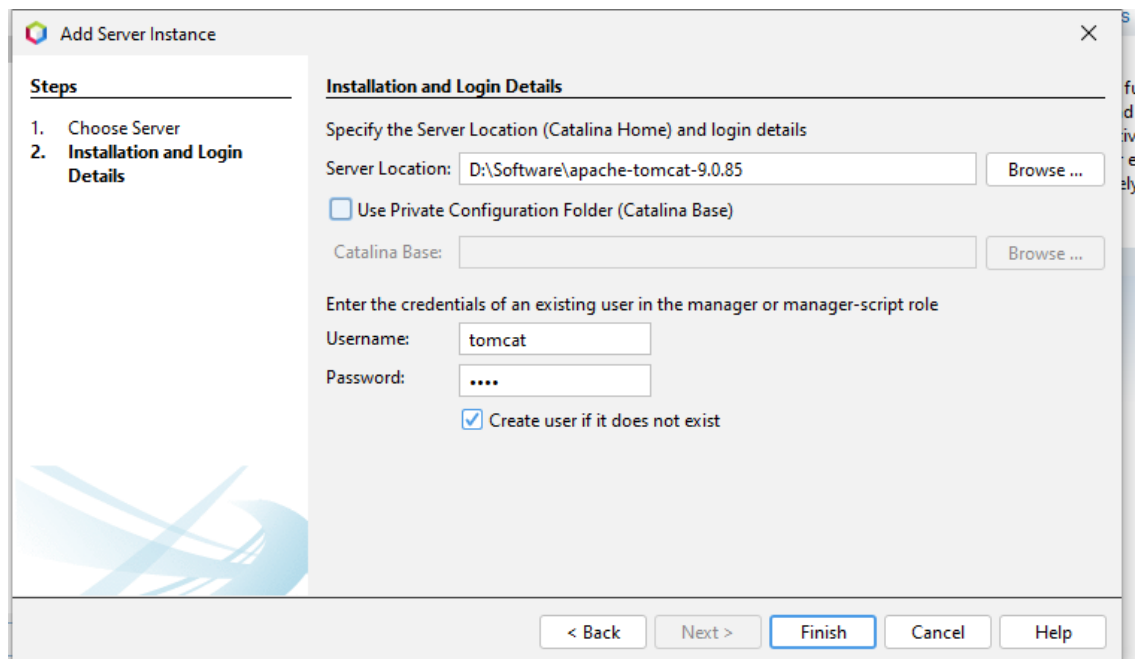
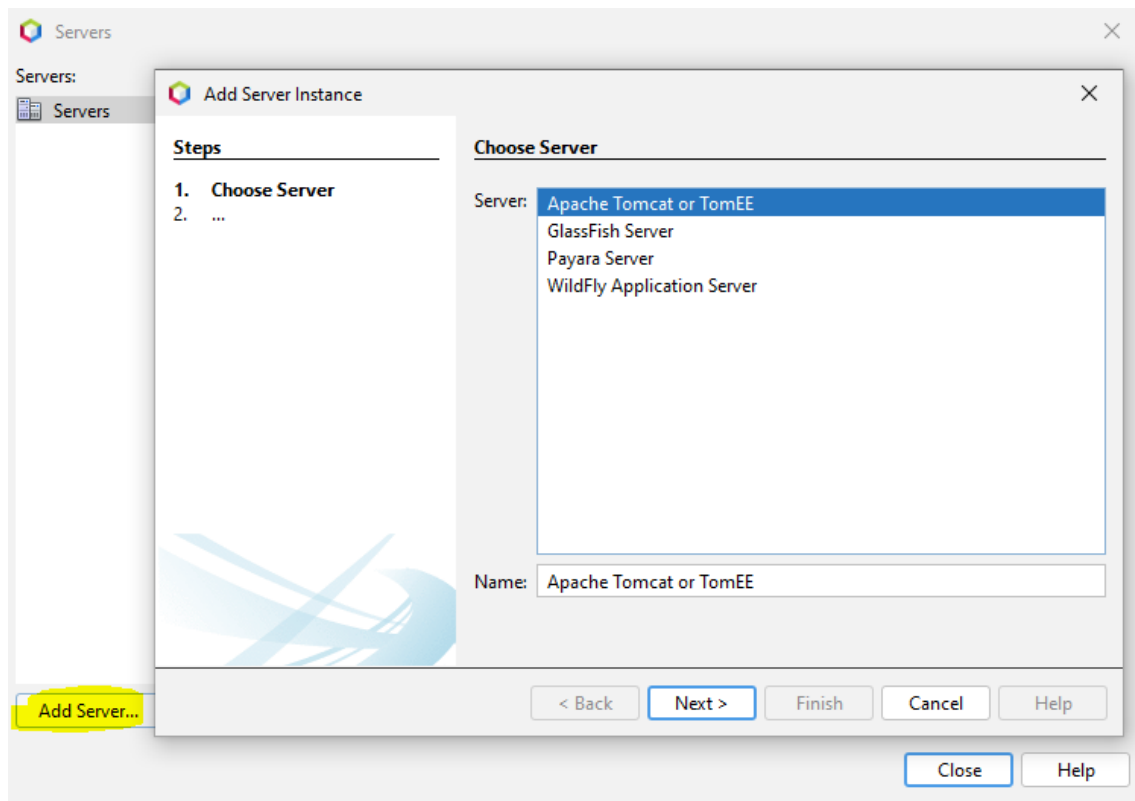
- Extraemos el archivo.



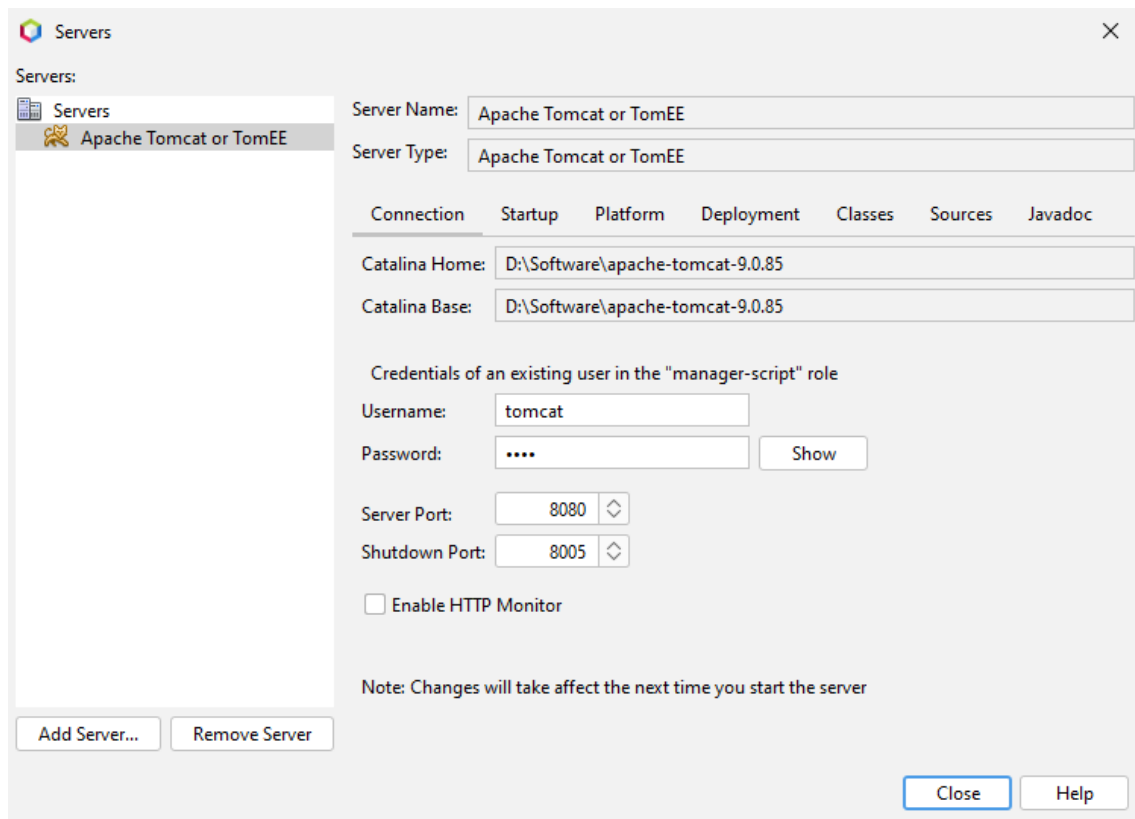
➤ Vamos a tools y server en netbeans.



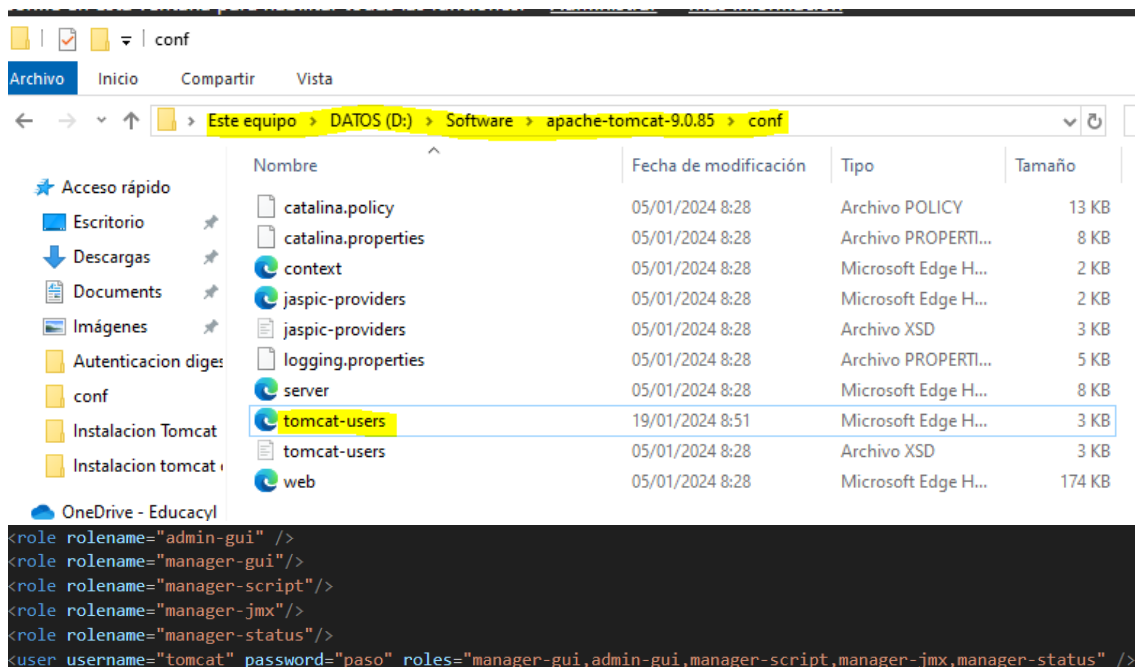
➤ Añadimos nuevo server y seleccionamos tomcat.



➤ Comprobamos la configuración del servidor.

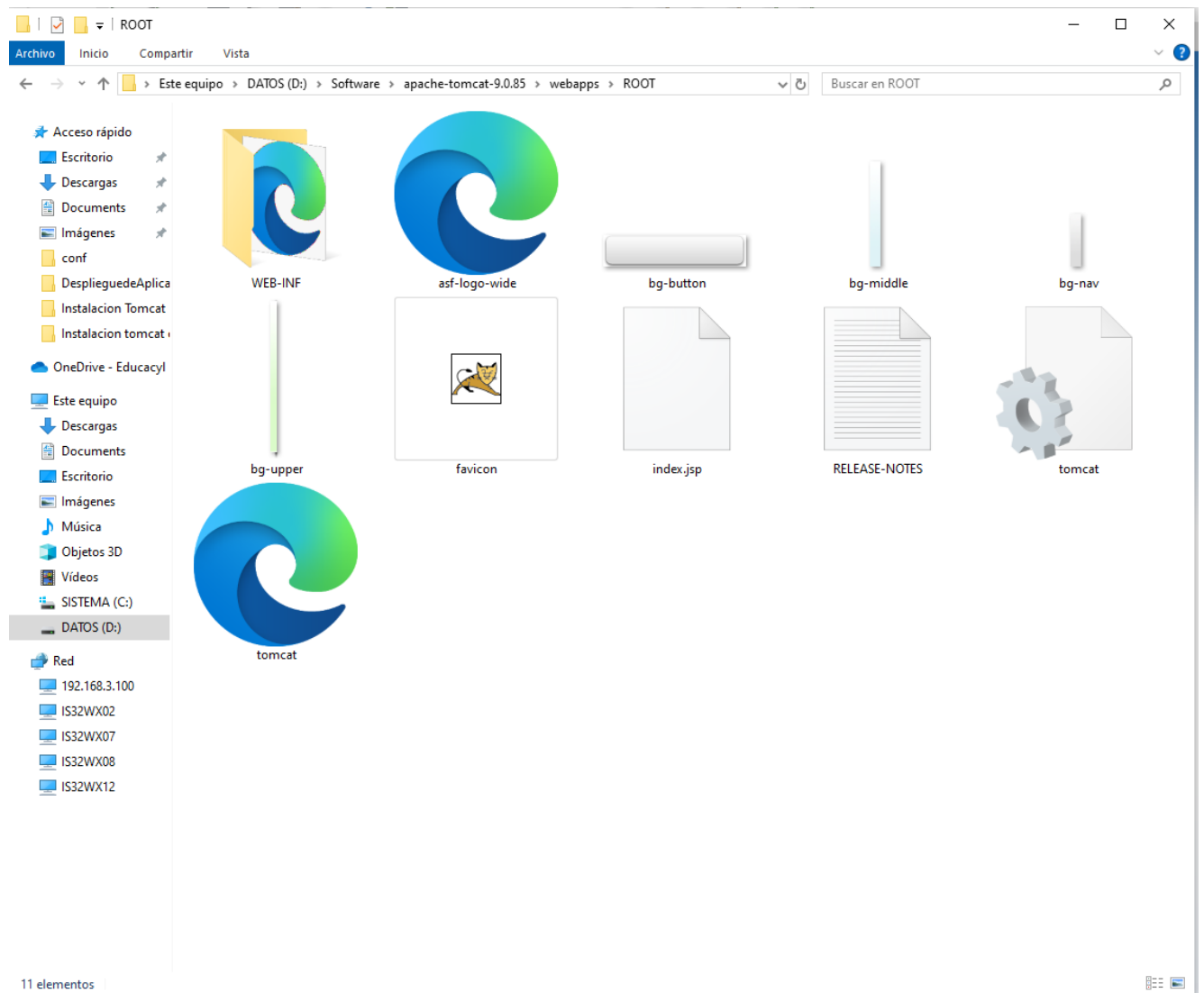


➤ Entramos en este fichero que esta subrayado y lo editamos.

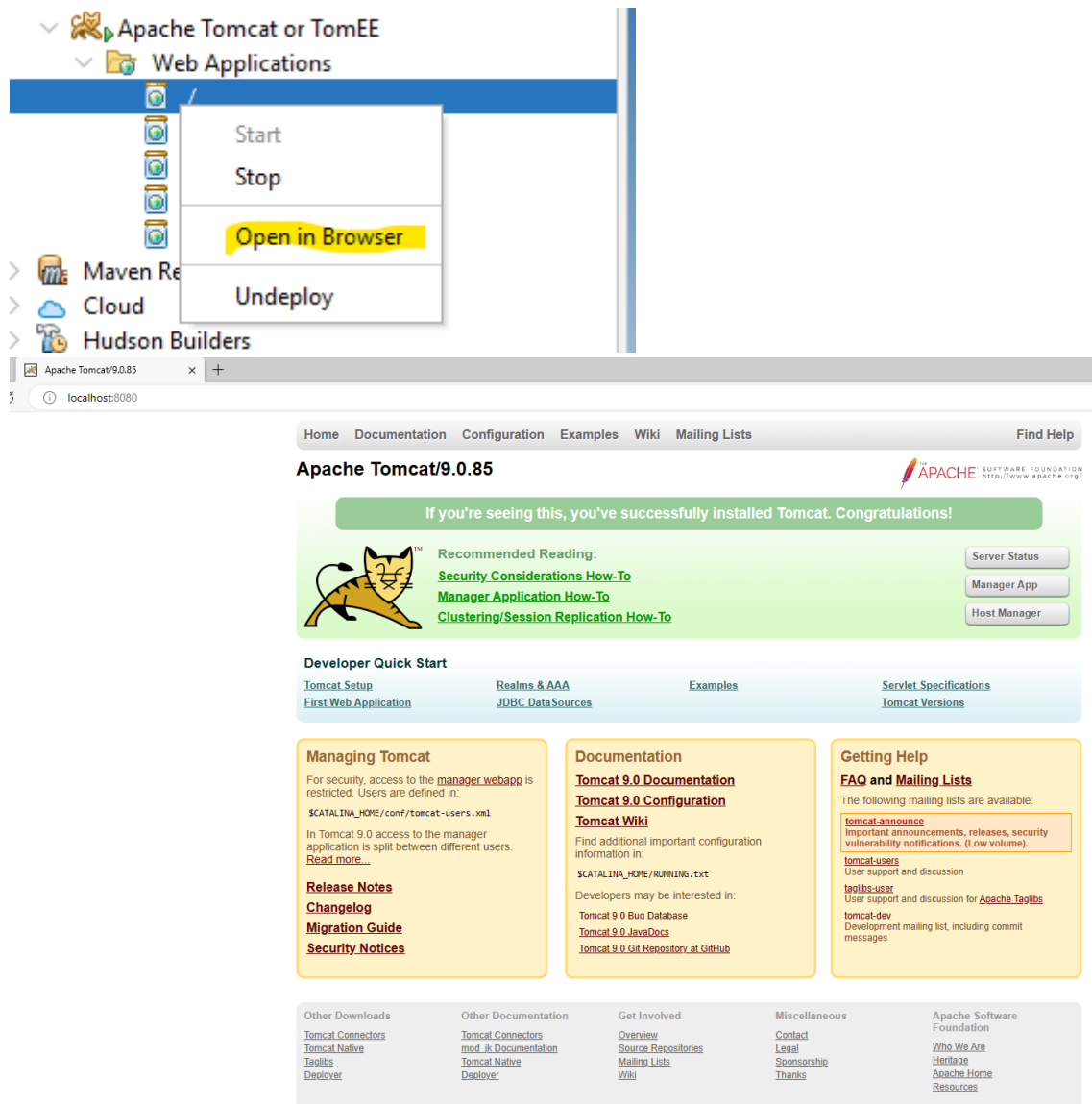


Comprobamos que este escuchando y también el directorio ROOT.

```
C:\WINDOWS\system32>netstat -a -p TCP -n | findstr 8080
```



- Comprobamos que vaya correctamente en el navegador.



The screenshot shows an IDE interface with a project named 'Apache Tomcat or TomEE'. Under 'Web Applications', a context menu is open with options: 'Start', 'Stop', 'Open in Browser' (highlighted in yellow), and 'Undeploy'. Below the IDE, a browser window displays the Apache Tomcat 9.0.85 management page at localhost:8080. The page includes navigation links (Home, Documentation, Configuration, Examples, Wiki, Mailing Lists, Find Help), a success message 'If you're seeing this, you've successfully installed Tomcat. Congratulations!', and sections for 'Recommended Reading' (Security Considerations How-To, Manager Application How-To, Clustering/Session Replication How-To), 'Developer Quick Start' (Tomcat Setup, Realms & AAA, Examples, Servlet Specifications), 'Managing Tomcat' (Release Notes, Changelog, Migration Guide, Security Notices), 'Documentation' (Tomcat 9.0 Documentation, Tomcat 9.0 Configuration, Tomcat Wiki), and 'Getting Help' (FAQ and Mailing Lists). A footer section contains links for 'Other Downloads', 'Other Documentation', 'Get Involved', 'Miscellaneous', and 'Apache Software Foundation'.

➤ Añadimos las variables de entorno.

