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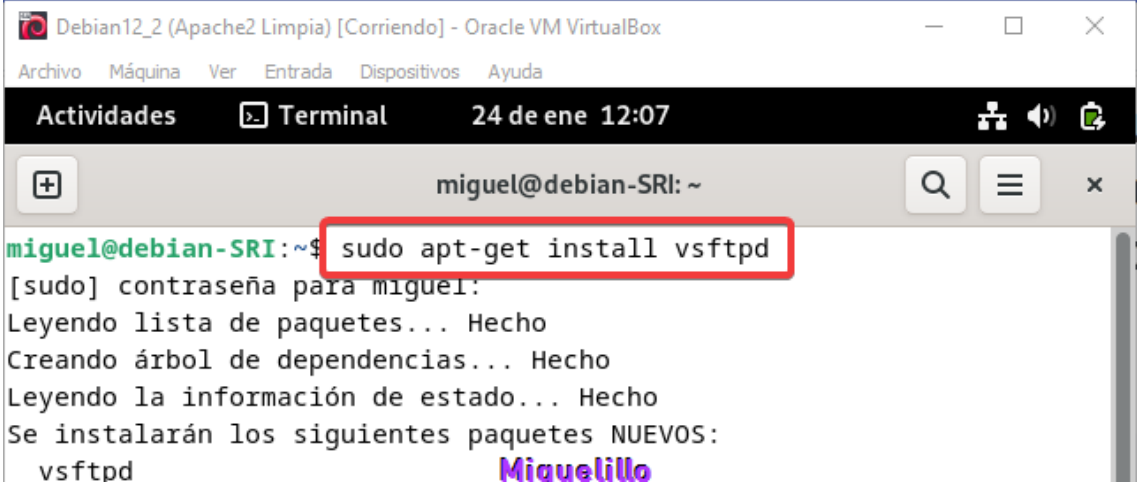
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Ejercicio 1

a) Instalación y configuración de un servidor FTP (vsftpd) en Linux

Solución:

Instalamos el paquete



The screenshot shows a terminal window titled "Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox". The terminal prompt is "miguel@debian-SRI: ~". The command "sudo apt-get install vsftpd" is entered and highlighted with a red box. The output shows the password prompt, package list reading, dependency tree creation, and state information reading, all completed. It lists "vsftpd" as a new package to be installed. The signature "Miguelillo" is at the bottom.

```
miguel@debian-SRI:~$ sudo apt-get install vsftpd
[sudo] contraseña para miguel:
Leyendo lista de paquetes... Hecho
Creando árbol de dependencias... Hecho
Leyendo la información de estado... Hecho
Se instalarán los siguientes paquetes NUEVOS:
vsftpd
Miguelillo
```

Vamos al archivo de configuración que se encuentra en `/etc/vsftpd.conf` y activamos el acceso a los usuarios anónimos y los usuarios locales. También damos permisos de escritura.



The screenshot shows the nano text editor editing the file "/etc/vsftpd.conf". The prompt is "GNU nano 7.2". The configuration lines "anonymous_enable=YES", "local_enable=YES", and "write_enable=YES" are highlighted with red boxes. The signature "Miguelillo" is at the bottom.

```
GNU nano 7.2 /etc/vsftpd.conf *
# Allow anonymous FTP? (Disabled by default).
anonymous_enable=YES
#
# Uncomment this to allow local users to log in.
local_enable=YES
#
# Uncomment this to enable any form of FTP write command.
write_enable=YES
#
Miguelillo
```

Para permitir la subida ftp con un usuario anonimo, para permitir la creacion de directorios y para mostrar mensajes a los usuarios remotos acerca de la creacion de nuevos directorios.

```

GNU nano 7.2 /etc/vsftpd.conf *
# obviously need to create a directory writable by the FTP user.
anon_upload_enable=YES
#
# Uncomment this if you want the anonymous FTP user to be able to cr>
# new directories.
anon_mkdir_write_enable=YES
#
# Activate directory messages - messages given to remote users when >
# go into a certain directory.
dirmessage_enable=YES
#

```

Miguelillo

Para personalizar un baner a la hora de indicar sesión el servidor FTP

```

GNU nano 7.2 /etc/vsftpd.conf *
# You may fully customise the login banner string:
ftpd_banner= Servidor FTP de Miguel.
#

```

Miguelillo

Añadimos una línea al final para configurar el directorio para el usuario anónimo

```

GNU nano 7.2 /etc/vsftpd.conf *
# Uncomment this to indicate that vsftpd use a utf8 filesystem.
#utf8 filesystem=YES
anon_root=/var/ftp

```

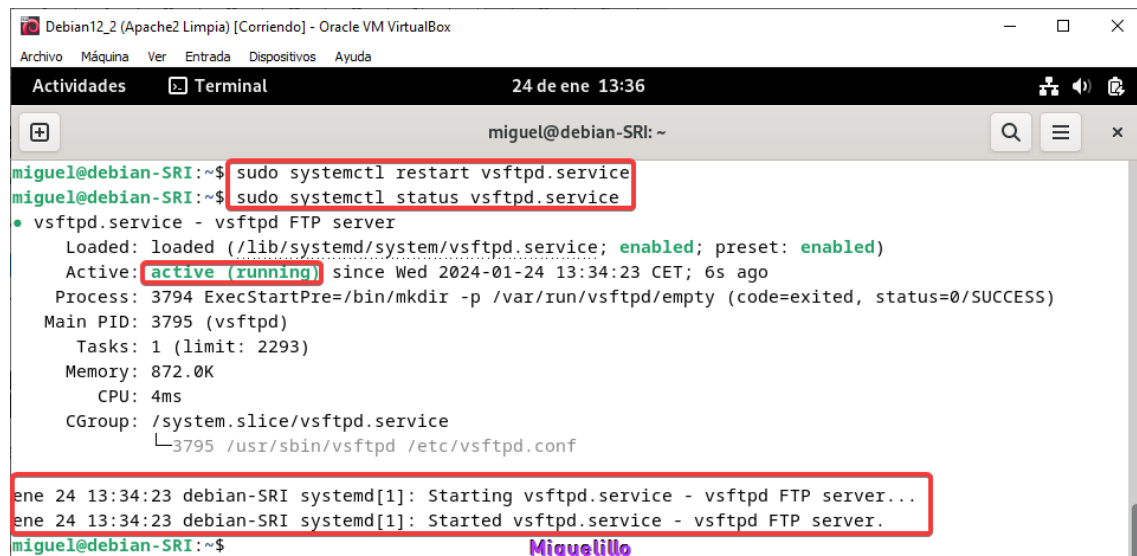
Miguelillo

Creamos el directorio



The screenshot shows a terminal window titled "Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox". The terminal prompt is "miguel@debian-SRI: ~". The user has entered the command "sudo mkdir /var/ftp". The output of the command is "Miguelillo".

Reiniciamos y miramos el status del ftp



The screenshot shows a terminal window titled "Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox". The terminal prompt is "miguel@debian-SRI: ~". The user has entered the command "sudo systemctl restart vsftpd.service". The output of the command is "Miguelillo".

The user then enters the command "sudo systemctl status vsftpd.service". The output of the command is:

```
• vsftpd.service - vsftpd FTP server
  Loaded: loaded (/lib/systemd/system/vsftpd.service; enabled; preset: enabled)
  Active: active (running) since Wed 2024-01-24 13:34:23 CET; 6s ago
  Process: 3794 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited, status=0/SUCCESS)
  Main PID: 3795 (vsftpd)
  Tasks: 1 (limit: 2293)
  Memory: 872.0K
  CPU: 4ms
  CGroup: /system.slice/vsftpd.service
          └─3795 /usr/sbin/vsftpd /etc/vsftpd.conf
```

The user then enters the command "systemctl status vsftpd.service". The output of the command is:

```
ene 24 13:34:23 debian-SRI systemd[1]: Starting vsftpd.service - vsftpd FTP server...
ene 24 13:34:23 debian-SRI systemd[1]: Started vsftpd.service - vsftpd FTP server.
```

The user then enters the command "systemctl status vsftpd.service". The output of the command is:

```
ene 24 13:34:23 debian-SRI systemd[1]: Starting vsftpd.service - vsftpd FTP server...
ene 24 13:34:23 debian-SRI systemd[1]: Started vsftpd.service - vsftpd FTP server.
```

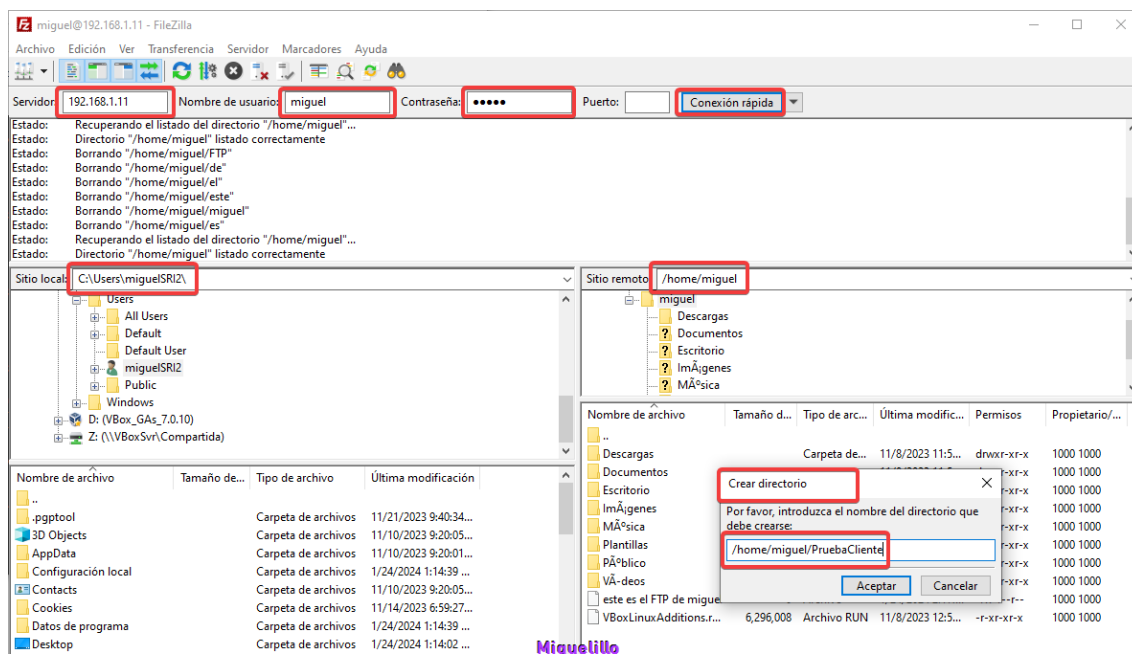
The user then enters the command "systemctl status vsftpd.service". The output of the command is:

```
ene 24 13:34:23 debian-SRI systemd[1]: Starting vsftpd.service - vsftpd FTP server...
ene 24 13:34:23 debian-SRI systemd[1]: Started vsftpd.service - vsftpd FTP server.
```

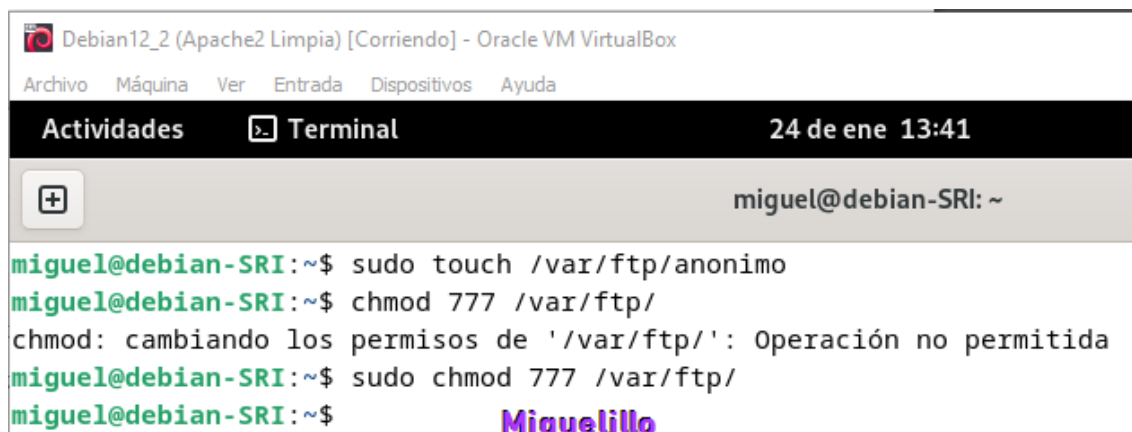
b) Acceso mediante autenticación (anónimo y autorizado) con cliente gráfico FTP y navegador

Solución:

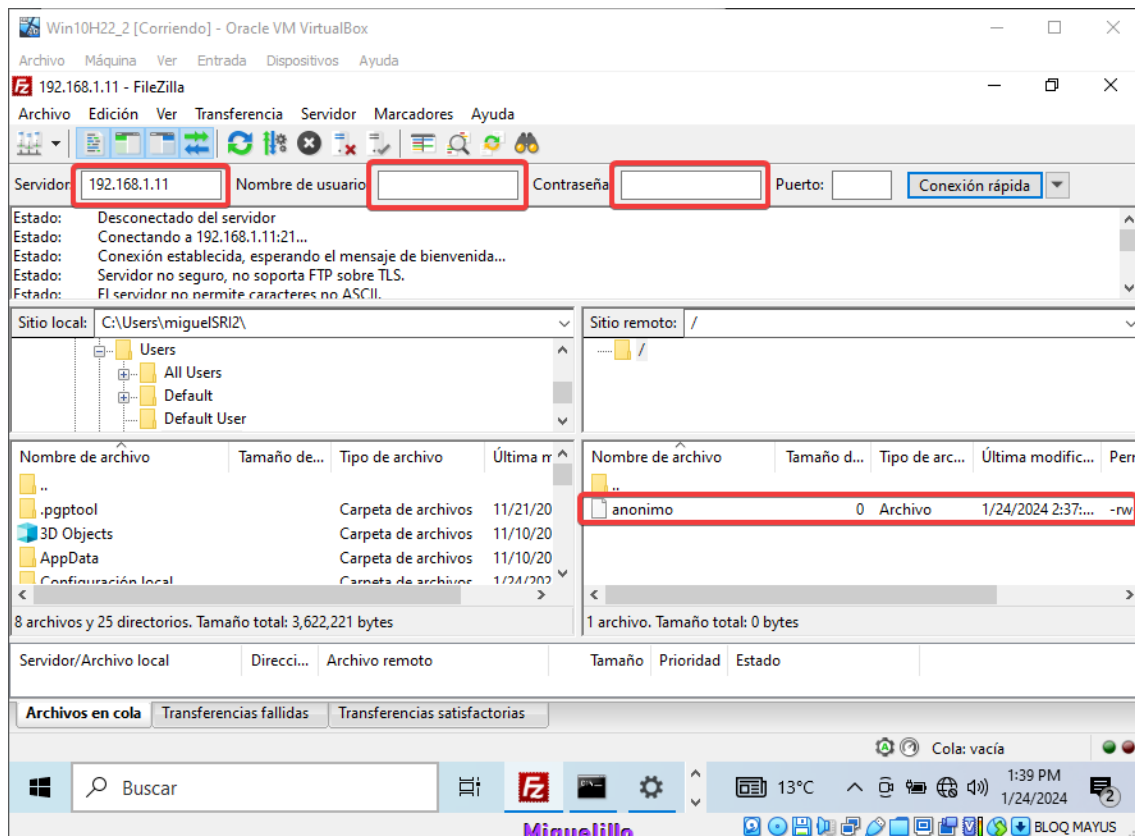
Voy a utilizar FileZilla pruebo a acceder con un usuario Local al servidor y subir un archivo y borrar otros archivo y me deja correctamente



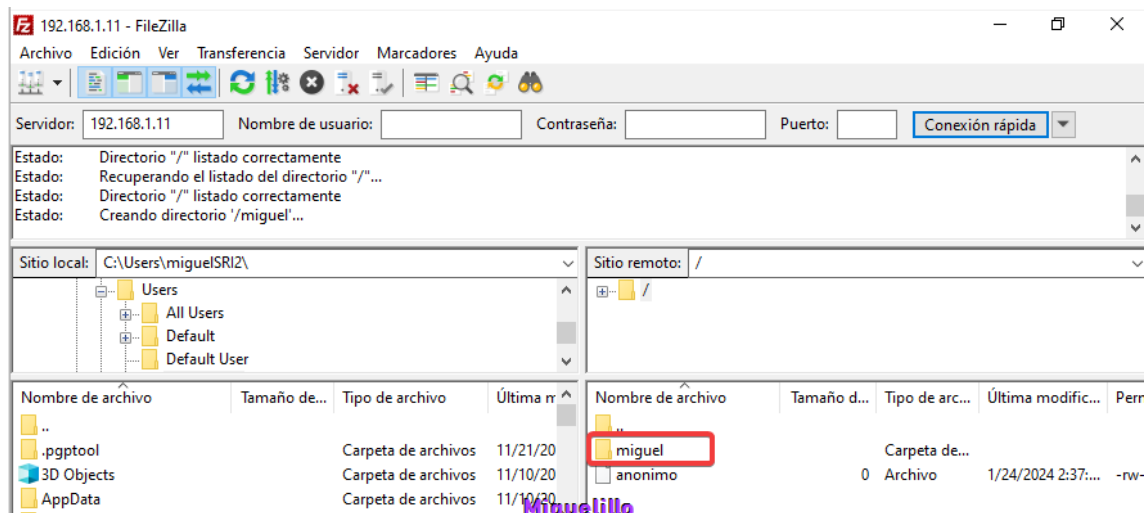
He creado archivos dentro del directorio del usuario anónimo y le he dado permisos ya que por defecto los permisos heredados de esta carpeta serán 633



Pruebo con un usuario anónimo a acceder en FileZilla



Pruebo a crear una carpeta dentro puedo crearla correctamente



Vemos los permisos desde Linux que se le han asignado a la carpeta en este caso son 700 y vemos que el usuario que la ha creado ha sido ftp

```

Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

Actividades  Terminal  24 de ene 13:47

miguel@debian-SRI: ~

miguel@debian-SRI:~$ ls -l /var/ftp/
total 4
-rw-r--r-- 1 root root 0 ene 24 13:37 anonimo
drwx----- 2 ftp ftp 4096 ene 24 13:44 miguel
miguel@debian-SRI:~$

```

Miguelillo

La carpeta que hemos creado con el usuario local tiene permisos 700 y ha sido creada por el usuario miguel.

```

Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox
Archivo  Máquina  Ver  Entrada  Dispositivos  Ayuda

Actividades  Terminal  24 de ene 13:49

miguel@debian-SRI: ~

miguel@debian-SRI:~$ ls -l
total 6188
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Descargas
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Documentos
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Escritorio
-rw-r--r-- 1 miguel miguel 0 ene 24 13:17 'este es el FTP de miguel'
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Imágenes
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Música
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Plantillas
drwx----- 2 miguel miguel 4096 ene 24 13:23 PruebaCliente
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Público
-r-xr-xr-x 1 miguel miguel 6296008 nov 8 11:57 VBoxLinuxAdditions.run
drwxr-xr-x 2 miguel miguel 4096 nov 8 10:54 Videos
miguel@debian-SRI:~$

```

Miguelillo

Para conectarme a través del navegador web he tenido que usar una versión obsoleta de Firefox de 2018

Internet Archive: archive.org/details/firefox_setup

Firefox ISO by Firefox Browser

Publication date: 2018

Topics: Firefox ISO, Firefox, Firefox Portable

Language: english-handwritten

setup

Add date: 2021-11-28 03:46:58

Identifier: firefox_setup

Scanner: Internet Archive HTML5 Uploader 1.6.4

3,337 Views

6 Favorites

WINDOWS EXECUTABLE FILES

BACK

crashreporter.exe 123.5K

firefox.exe 903.5K

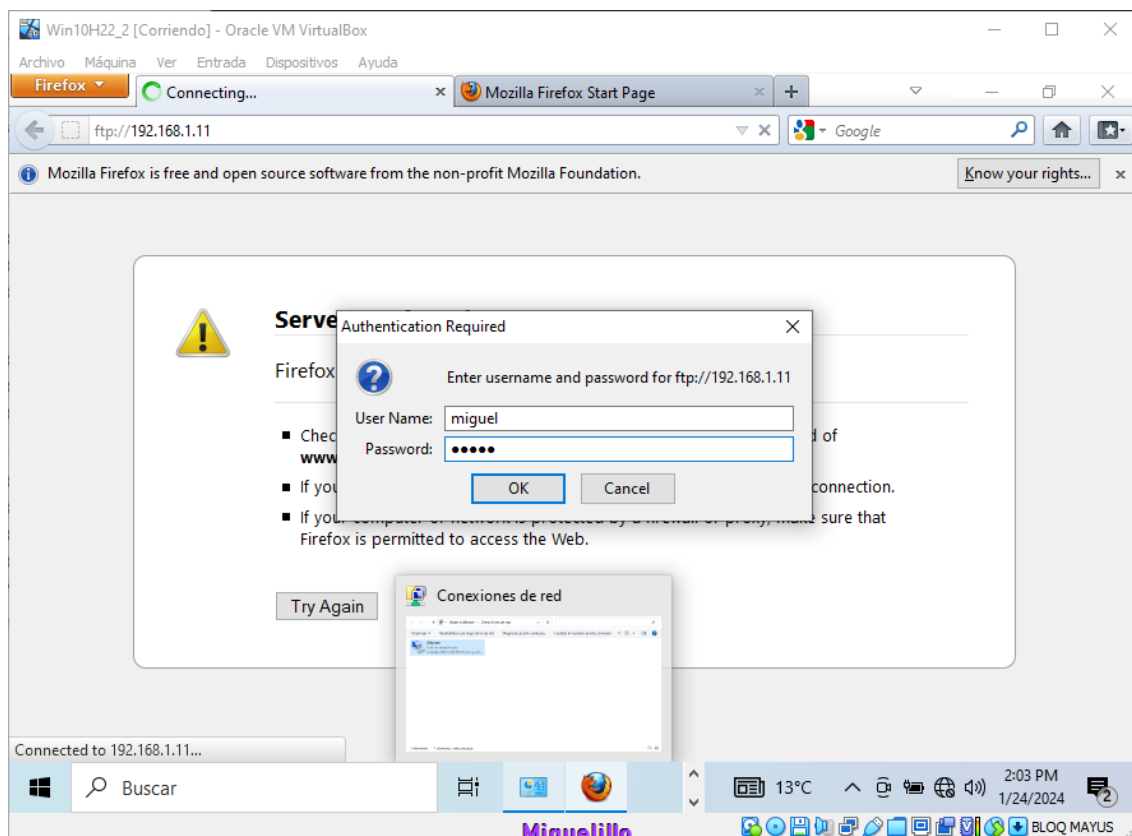
firefox_setup.exe 15.1M

Reviews

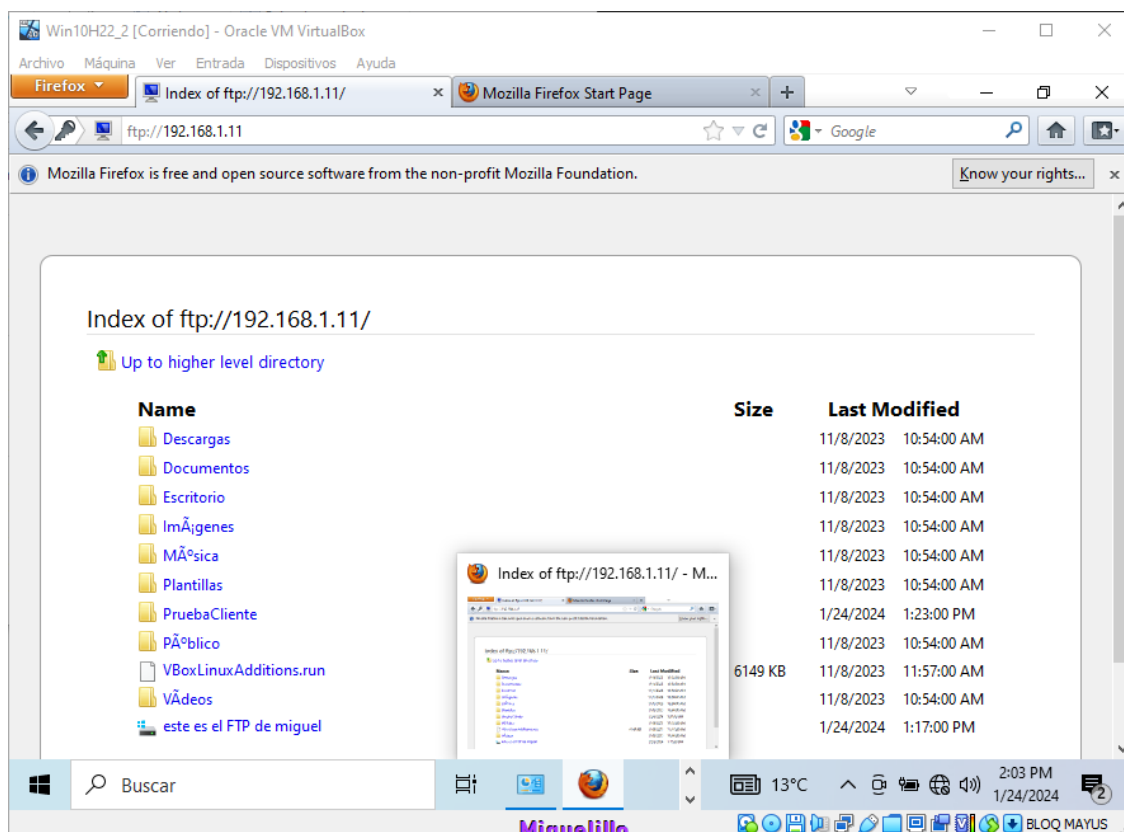
There are no reviews yet. Be the first one to write!

Miguelillo

Probamos a conectarnos poniendo ftp:// la ip del servidor /



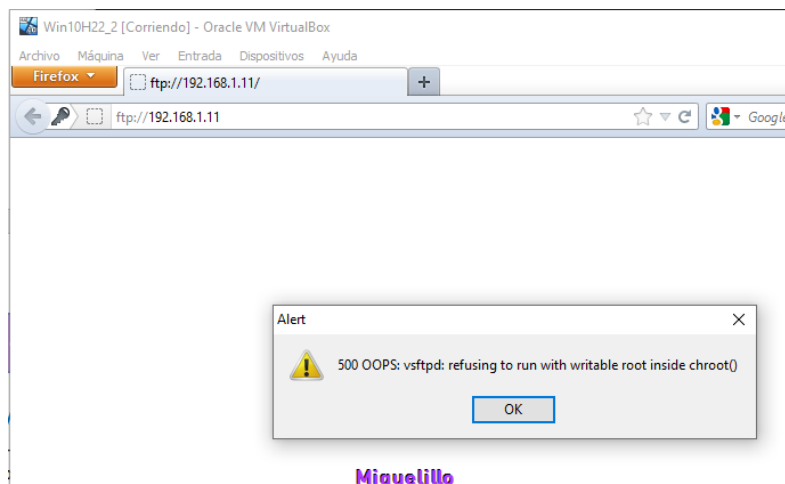
Nos muestra el contenido permitiéndonos navegar por él



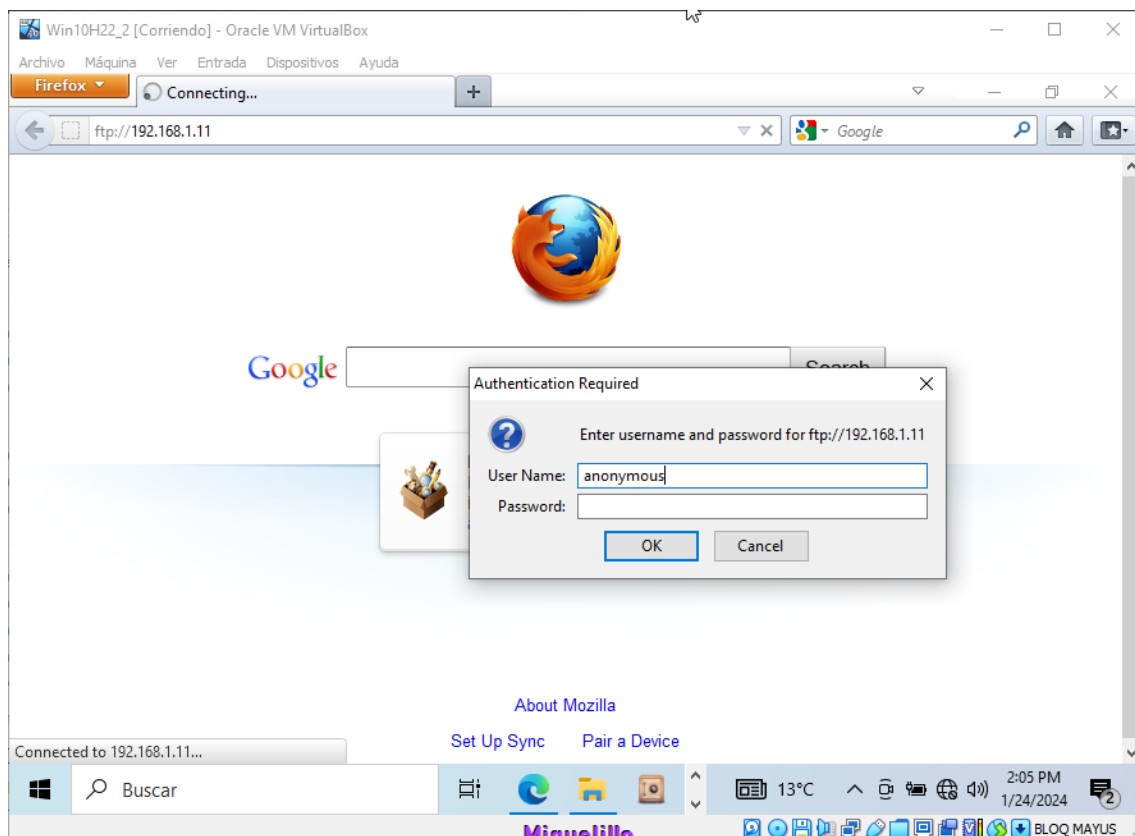
Para acceder he tenido que volver a cambiar los permisos

```
Debian12_2 (Apache2 Limpia) [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
Actividades Terminal 24 de ene 14:21
miguel@debian-SRI: ~
miguel@debian-SRI:~$ sudo chmod a-w /var/ftp/
miguel@debian-SRI:~$
```

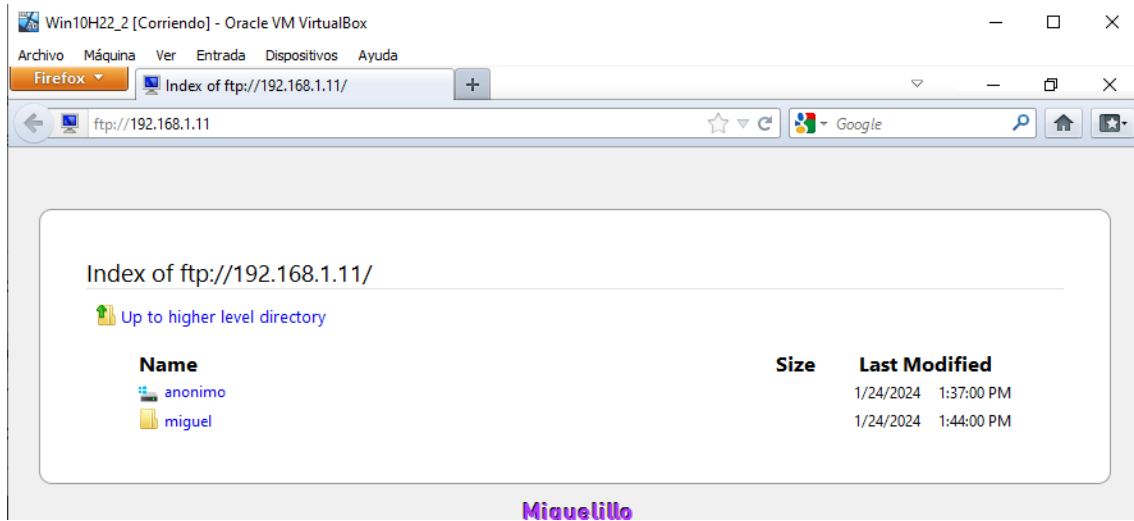
Si no con los permisos 777 que tenía anteriormente aparece este error



Probamos a acceder

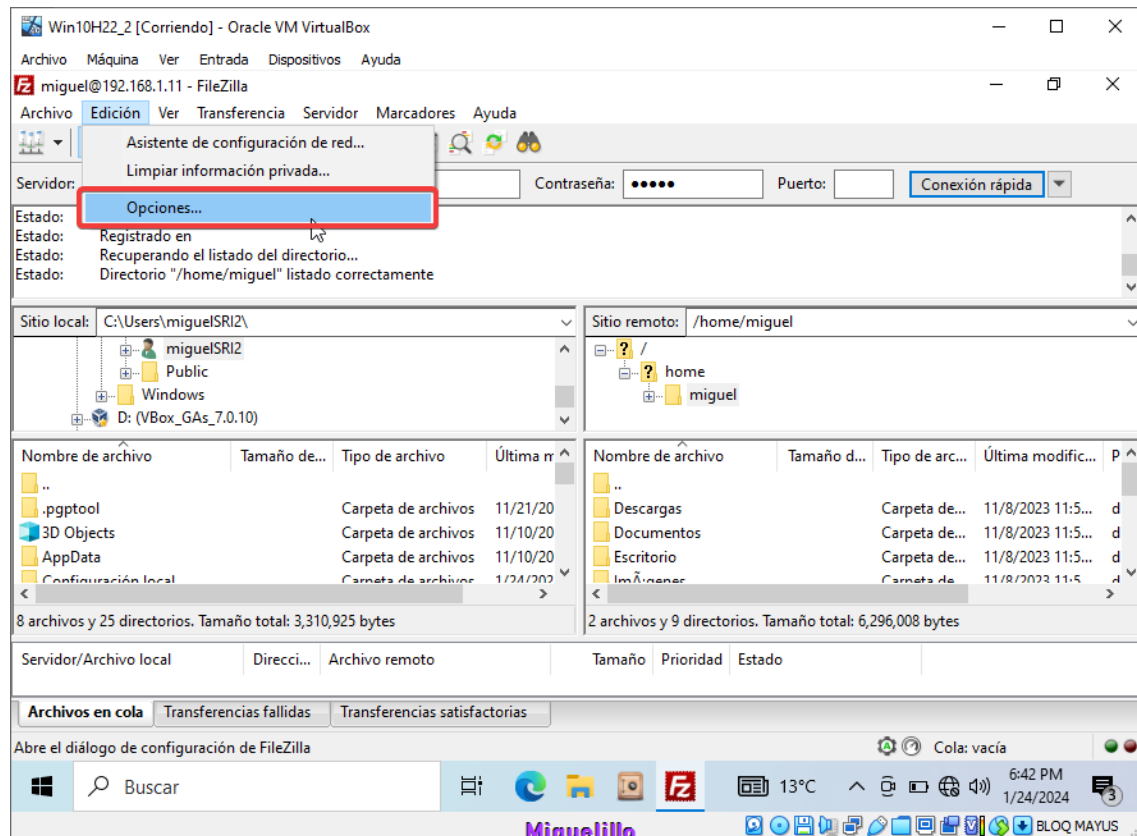
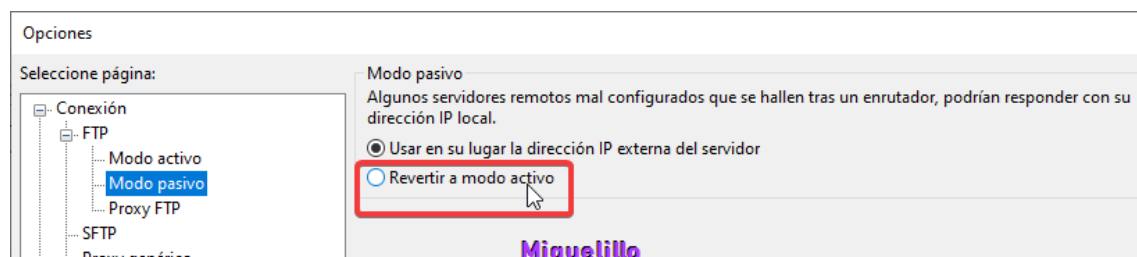


Nos deja acceder

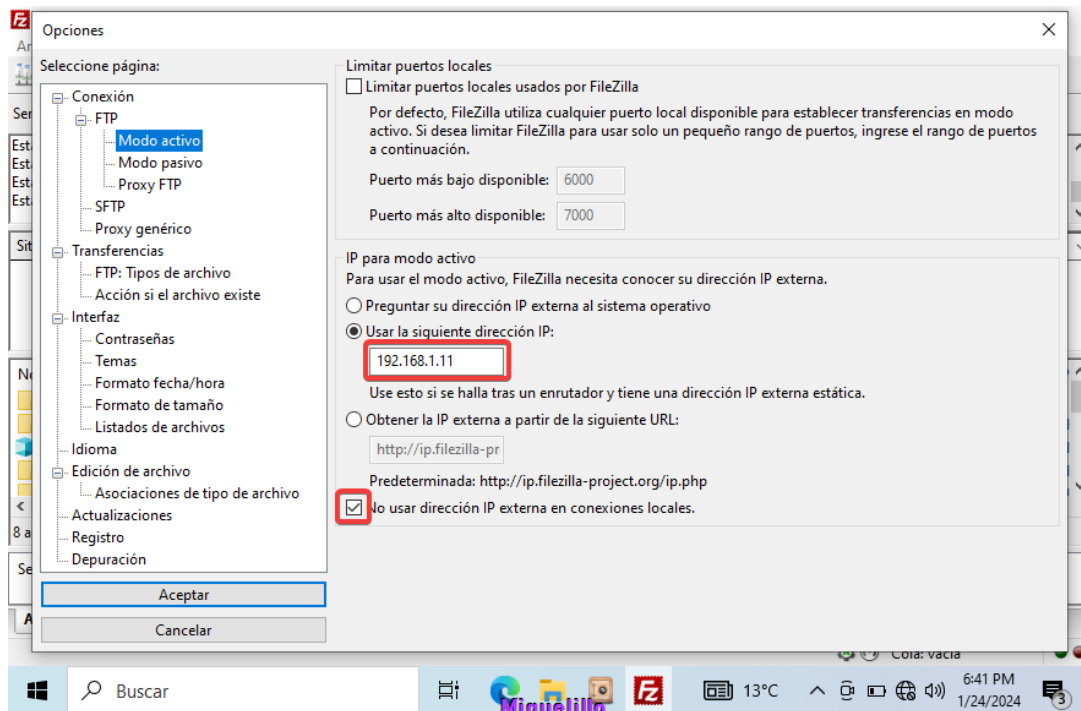


c) Uso de FTP en modo activo.

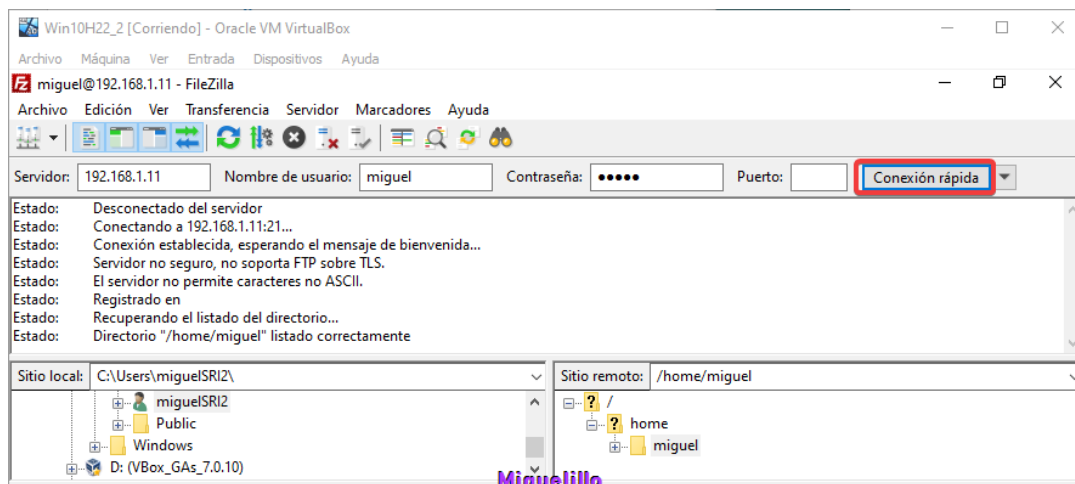
Solución:

Vamos a **Opciones..**Seleccionamos **Revertir modo activo**

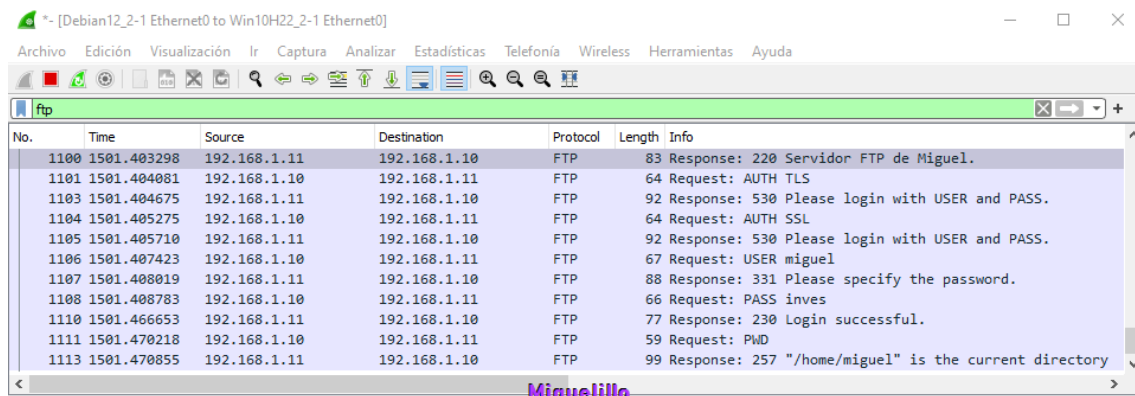
Configuramos la IP en el modo activo y clicamos en el **checkbox**



Nos conectamos



Vamos que no aparece el modo pasivo



d) Uso de sniffer.

Solución:

Probamos a conectarnos

Hace conexión con el servidor

Wireshark capture showing an FTP connection. The packet list shows a response from the server (220) and a request for authentication (AUTH TLS). The packet details pane shows the response code and argument.

No.	Time	Source	Destination	Protocol	Length	Info
44	35.107563	PcsCompu_9e:b4:ba	PcsCompu_bb:2e:1a	ARP	60	192.168.1.11 is at 08:00:27:9e:b4:ba
45	35.108070	192.168.1.10	192.168.1.11	TCP	66	60860 → 21 [SYN] Seq=0 Win=64240 Len=0 MSS=1460 WS=
46	35.108471	192.168.1.11	192.168.1.10	TCP	66	21 → 60860 [SYN, ACK] Seq=0 Ack=1 Win=64240 Len=0 M
47	35.109016	192.168.1.10	192.168.1.11	TCP	54	60860 → 21 [ACK] Seq=1 Ack=1 Win=262656 Len=0
48	35.113506	192.168.1.11	192.168.1.10	FTP	83	Response: 220 Servidor FTP de Miguel.
49	35.114924	192.168.1.10	192.168.1.11	FTP	64	Request: AUTH TLS

Frame 48: 83 bytes on wire (664 bits), 83 bytes captured (664 bits) on interface 0
 Ethernet II, Src: PcsCompu_9e:b4:ba (08:00:27:9e:b4:ba), Dst: PcsCompu_bb:2e:1a (08:00:27:bb:2e:1a)
 Internet Protocol Version 4, Src: 192.168.1.11, Dst: 192.168.1.10
 Transmission Control Protocol, Src Port: 21, Dst Port: 60860, Seq: 0, Win: 0, Len: 0
 File Transfer Protocol (FTP)
 220 Servidor FTP de Miguel.\r\n
 Response code: Service ready for new user (220)
 Response arg: Servidor FTP de Miguel.
 [Current working directory:]

Miguelillo

Nos requiere autenticación

Wireshark capture showing an FTP connection. The packet list shows a request for authentication (AUTH TLS). The packet details pane shows the request command and argument.

No.	Time	Source	Destination	Protocol	Length	Info
48	35.113506	192.168.1.11	192.168.1.10	FTP	83	Response: 220 Servidor
49	35.114924	192.168.1.10	192.168.1.11	FTP	64	Request: AUTH TLS
50	35.115276	192.168.1.11	192.168.1.10	TCP	60	21 → 60860 [ACK] Seq=

Frame 49: 64 bytes on wire (512 bits), 64 bytes captured (512 bits) on interface 0
 Ethernet II, Src: PcsCompu_bb:2e:1a (08:00:27:bb:2e:1a), Dst: PcsCompu_9e:b4:ba (08:00:27:9e:b4:ba)
 Internet Protocol Version 4, Src: 192.168.1.10, Dst: 192.168.1.11
 Transmission Control Protocol, Src Port: 60860, Dst Port: 21, Seq: 1, Win: 0, Len: 0
 File Transfer Protocol (FTP)
 AUTH TLS\r\n
 Request command: AUTH
 Request arg: TLS
 [Current working directory:]

Miguelillo

Nos pide que introduzcamos usuario y contraseña

Wireshark packet capture showing an FTP login attempt. The packet list shows three packets: 50 (TCP ACK), 51 (FTP Response), and 52 (FTP Request). Packet 51 is highlighted, showing a response from the server: "530 Please login with USER and PASS." The packet details pane shows the FTP response code and arguments.

No.	Time	Source	Destination	Protocol	Length	Info
50	35.115276	192.168.1.11	192.168.1.10	TCP	60	21 → 60860 [ACK] Seq=30 Ack=11 Win=64256 Len=0
51	35.115466	192.168.1.11	192.168.1.10	FTP	92	Response: 530 Please login with USER and PASS.
52	35.115968	192.168.1.10	192.168.1.11	FTP	64	Request: AUTH SSL

File Transfer Protocol (FTP)
 530 Please login with USER and PASS.\r\n
 Response code: Not logged in (530)
 Response arg: Please login with USER and PASS.
 [Current working directory:]

Miguelillo

El usuario y contraseña se transmiten en texto plano

Wireshark packet capture showing an FTP login attempt. The packet list shows three packets: 57 (FTP Request), 58 (FTP Response), and 59 (FTP Request). Packet 57 is highlighted, showing a request from the client: "USER miguel\r\n". The packet details pane shows the request command and argument.

No.	Time	Source	Destination	Protocol	Length	Info
57	37.273865	192.168.1.10	192.168.1.11	FTP	67	Request: USER miguel
58	37.274356	192.168.1.11	192.168.1.10	FTP	88	Response: 331 Please spe
59	37.275916	192.168.1.10	192.168.1.11	FTP	66	Request: PASS inves

File Transfer Protocol (FTP)
 USER miguel\r\n
 Request command: USER
 Request arg: miguel
 [Current working directory:]

Miguelillo

Se transmite la contraseña

Wireshark packet capture showing an FTP login attempt. The packet list shows three packets: 57 (FTP Request), 58 (FTP Response), and 59 (FTP Request). Packet 59 is highlighted, showing a request from the client: "PASS inves\r\n". The packet details pane shows the request command and argument.

No.	Time	Source	Destination	Protocol	Length	Info
57	37.273865	192.168.1.10	192.168.1.11	FTP	67	Request: USER miguel
58	37.274356	192.168.1.11	192.168.1.10	FTP	88	Response: 331 Please spe
59	37.275916	192.168.1.10	192.168.1.11	FTP	66	Request: PASS inves

File Transfer Protocol (FTP)
 PASS inves\r\n
 Request command: PASS
 Request arg: inves
 [Current working directory:]

Miguelillo

Se autentica correctamente

Wireshark capture showing network traffic between Debian12_2-1 Ethernet0 and Win10H22_2-1 Ethernet0. The capture is filtered by 'Aplique un filtro de visualización ... <Ctrl-/>'. The packet list shows three packets:

No.	Time	Source	Destination	Protocol	Length	Info
60	37.317306	192.168.1.11	192.168.1.10	TCP	60	21 → 60860 [ACK] Seq=140 Ack=46
61	37.341427	192.168.1.11	192.168.1.10	FTP	77	Response: 230 Login successful.
62	37.342160	192.168.1.10	192.168.1.11	FTP	60	Request: SYST

The packet details for packet 61 show:

- Frame 61: 77 bytes on wire (616 bits), 77 bytes captured (616 bits) on interface 0
- Ethernet II, Src: PcsCompu_9e:b4:ba (08:00:27:9e:b4:ba), Dst: PcsCompu_bb:2e:1a (08:00:27:bb:2e:1a)
- Internet Protocol Version 4, Src: 192.168.1.11, Dst: 192.168.1.10
- Transmission Control Protocol, Src Port: 21, Dst Port: 60860, Seq: 140, Len: 77
- File Transfer Protocol (FTP)
 - 230 Login successful.\r\n
 - Response code: User logged in, proceed (230)
 - Response arg: Login successful.

[Current working directory:]

Miguelillo

Vemos que nos conectamos através de modo pasivo

Wireshark capture showing network traffic between Debian12_2-1 Ethernet0 and Win10H22_2-1 Ethernet0. The capture is filtered by 'Aplique un filtro de visualización ... <Ctrl-/>'. The packet list shows three packets:

No.	Time	Source	Destination	Protocol	Length	Info
66	37.343797	192.168.1.11	192.168.1.10	FTP	69	Response: 211-Features:
67	37.343876	192.168.1.11	192.168.1.10	FTP	75	Response: EPRT
68	37.343989	192.168.1.11	192.168.1.10	FTP	98	Response: PASV

The packet details for packet 68 show:

- Frame 68: 98 bytes on wire (784 bits), 98 bytes captured (784 bits) on interface 0
- Ethernet II, Src: PcsCompu_9e:b4:ba (08:00:27:9e:b4:ba), Dst: PcsCompu_bb:2e:1a (08:00:27:bb:2e:1a)
- Internet Protocol Version 4, Src: 192.168.1.11, Dst: 192.168.1.10
- Transmission Control Protocol, Src Port: 21, Dst Port: 60860, Seq: 140, Len: 98
- File Transfer Protocol (FTP)
 - PASV\r\n
 - Response arg: PASV
 - REST STREAM\r\n
 - SIZE\r\n
 - TVFS\r\n
 - 211 End\r\n

[Current working directory:]

Miguelillo

El servidor hace un pwd para saber en que directorio se encuentra y mostrarlo

Wireshark capture showing network traffic between Debian12_2-1 Ethernet0 and Win10H22_2-1 Ethernet0. The capture is filtered by 'Aplique un filtro de visualización ... <Ctrl-/>'. The packet list shows three packets:

No.	Time	Source	Destination	Protocol	Length	Info
70	37.354595	192.168.1.10	192.168.1.11	FTP	59	Request: PWD
71	37.355101	192.168.1.11	192.168.1.10	FTP	99	Response: 257 "/home/miguel" is the current directory
72	37.362058	192.168.1.10	192.168.1.11	FTP	62	Request: TYPE I

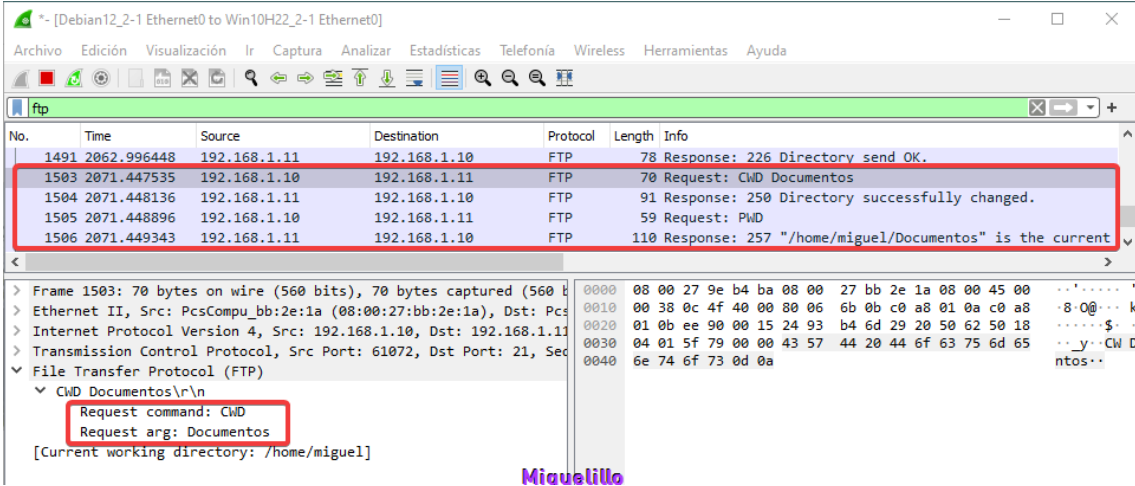
The packet details for packet 70 show:

- Frame 70: 59 bytes on wire (472 bits), 59 bytes captured (472 bits) on interface 0
- Ethernet II, Src: PcsCompu_bb:2e:1a (08:00:27:bb:2e:1a), Dst: PcsCompu_9e:b4:ba (08:00:27:9e:b4:ba)
- Internet Protocol Version 4, Src: 192.168.1.10, Dst: 192.168.1.11
- Transmission Control Protocol, Src Port: 60860, Dst Port: 21, Seq: 140, Len: 59
- File Transfer Protocol (FTP)
 - PWD\r\n
 - Request command: PWD

[Current working directory:]

Miguelillo

Podemos ver como al cambiar de carpeta ejecuta la sentencia CWD

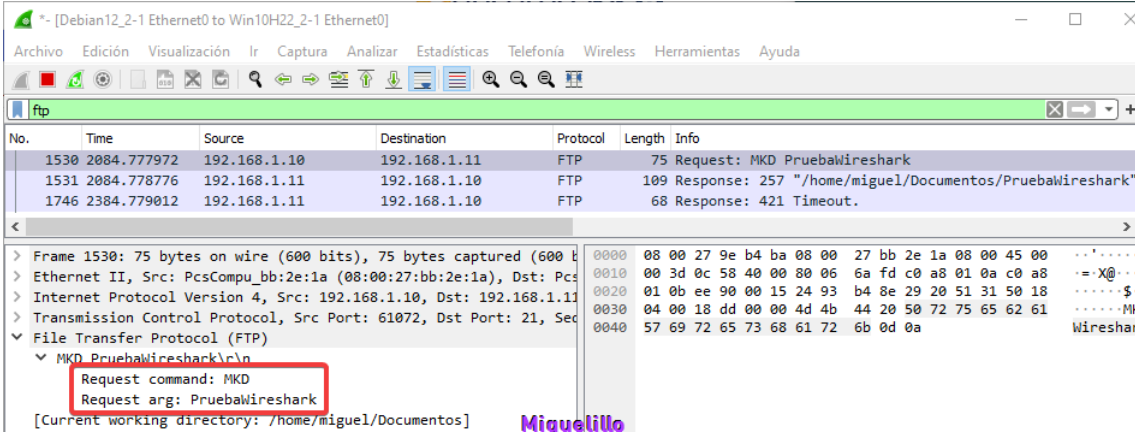


The screenshot shows a Wireshark capture of an FTP session. The packet list pane highlights packet 1503, which is an FTP Request: CWD Documentos. The packet details pane shows the File Transfer Protocol (FTP) section with the request command: CWD and request arg: Documentos. The current working directory is shown as /home/miguel. The packet bytes pane shows the raw data of the request.

No.	Time	Source	Destination	Protocol	Length	Info
1491	2062.996448	192.168.1.11	192.168.1.10	FTP	78	Response: 226 Directory send OK.
1503	2071.447535	192.168.1.10	192.168.1.11	FTP	70	Request: CWD Documentos
1504	2071.448136	192.168.1.11	192.168.1.10	FTP	91	Response: 250 Directory successfully changed.
1505	2071.448896	192.168.1.10	192.168.1.11	FTP	59	Request: PWD
1506	2071.449343	192.168.1.11	192.168.1.10	FTP	110	Response: 257 "/home/miguel/Documentos" is the current

Request command: CWD
Request arg: Documentos
[Current working directory: /home/miguel]

Al crear un directorio se ejecuta MKD que es la abreviatura de mkdir para crear una carpeta



The screenshot shows a Wireshark capture of an FTP session. The packet list pane highlights packet 1530, which is an FTP Request: MKD PruebaWireshark. The packet details pane shows the File Transfer Protocol (FTP) section with the request command: MKD and request arg: PruebaWireshark. The current working directory is shown as /home/miguel/Documentos. The packet bytes pane shows the raw data of the request.

No.	Time	Source	Destination	Protocol	Length	Info
1530	2084.777972	192.168.1.10	192.168.1.11	FTP	75	Request: MKD PruebaWireshark
1531	2084.778776	192.168.1.11	192.168.1.10	FTP	109	Response: 257 "/home/miguel/Documentos/PruebaWireshark"
1746	2384.779012	192.168.1.11	192.168.1.10	FTP	68	Response: 421 Timeout.

Request command: MKD
Request arg: PruebaWireshark
[Current working directory: /home/miguel/Documentos]