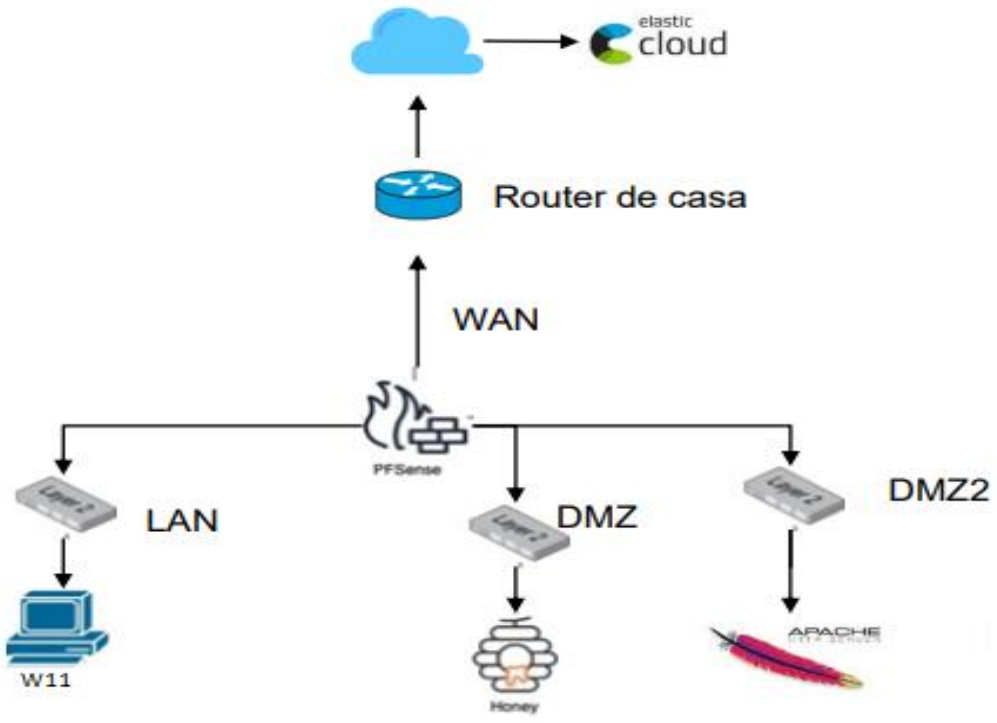
David Fernández Domingo

Practica modulo: Blue team Keepcoding

Índice

Esquema de red y lo que se quiere implementar



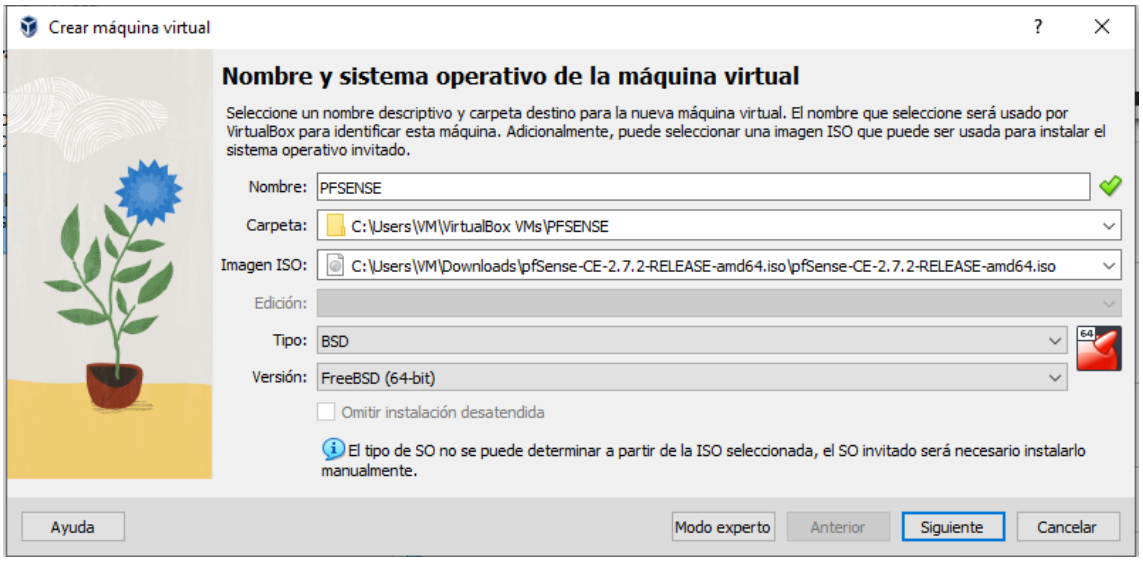
Se van a crear tres redes

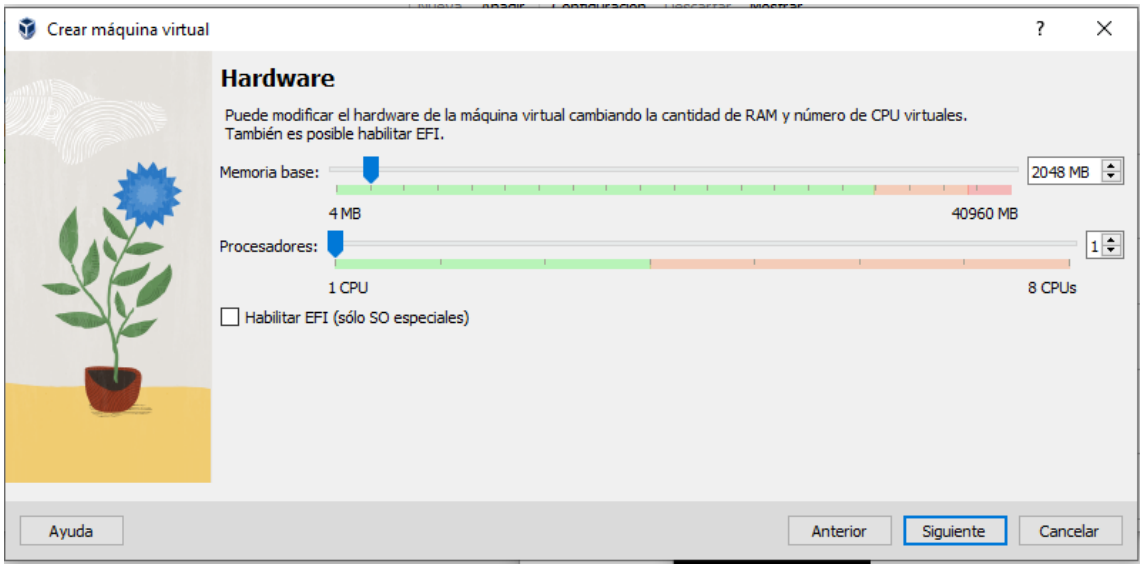
LAN, con el sistema Windows 11
DMZ, con un honeypot (Crownie) servidor ssh
DMZ_2, con un servidor apache web

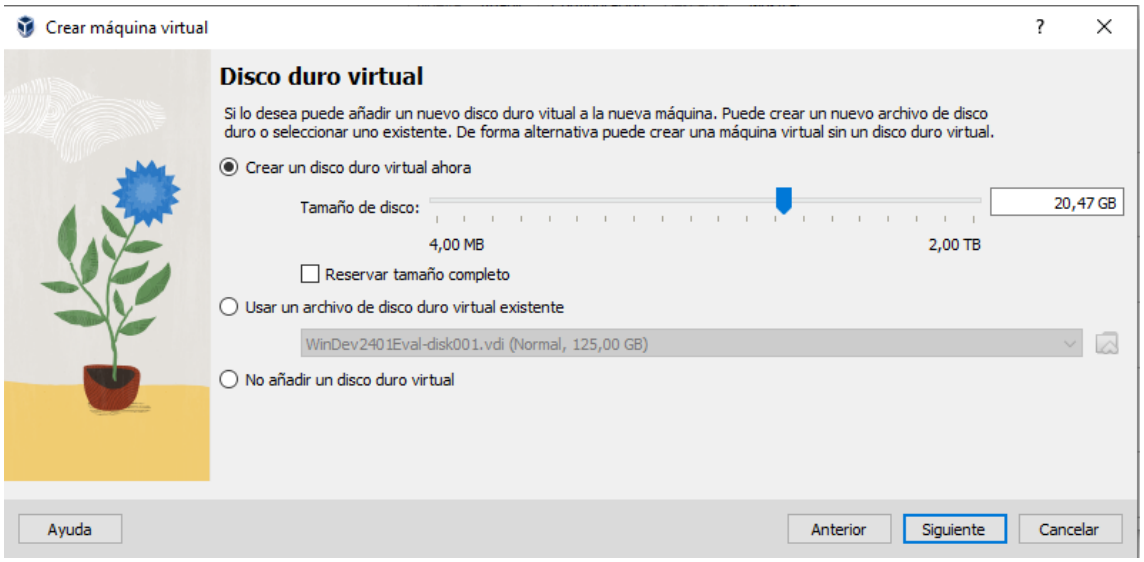
La red DMZ no puede ver al resto de subredes, pero si tendrá acceso bidireccional a la WAN

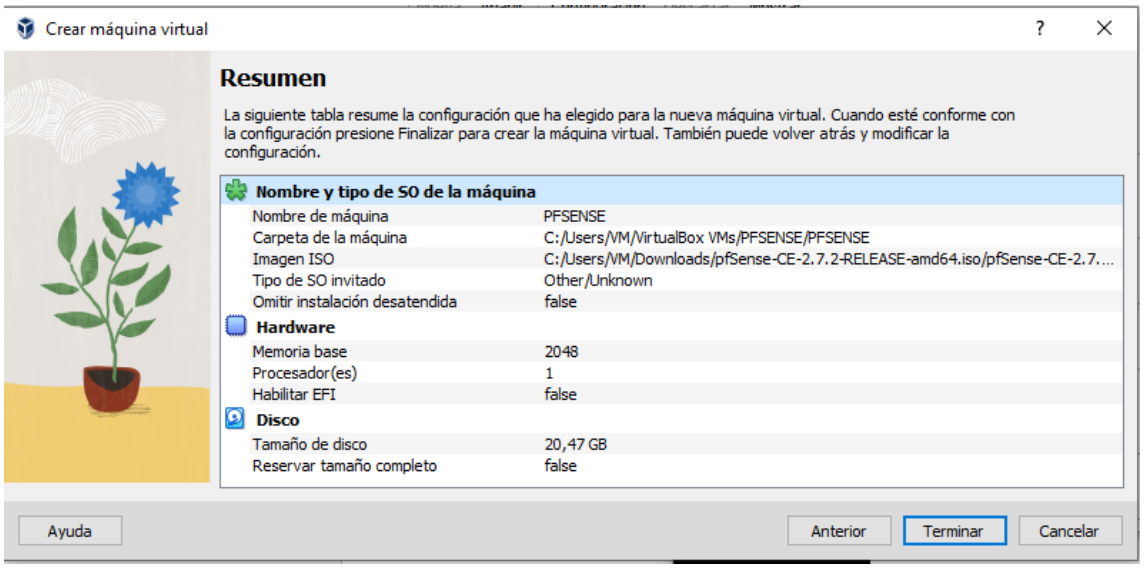
Las tres redes estarán con un agente de elastic cloud el cual enviara los logs de sistema

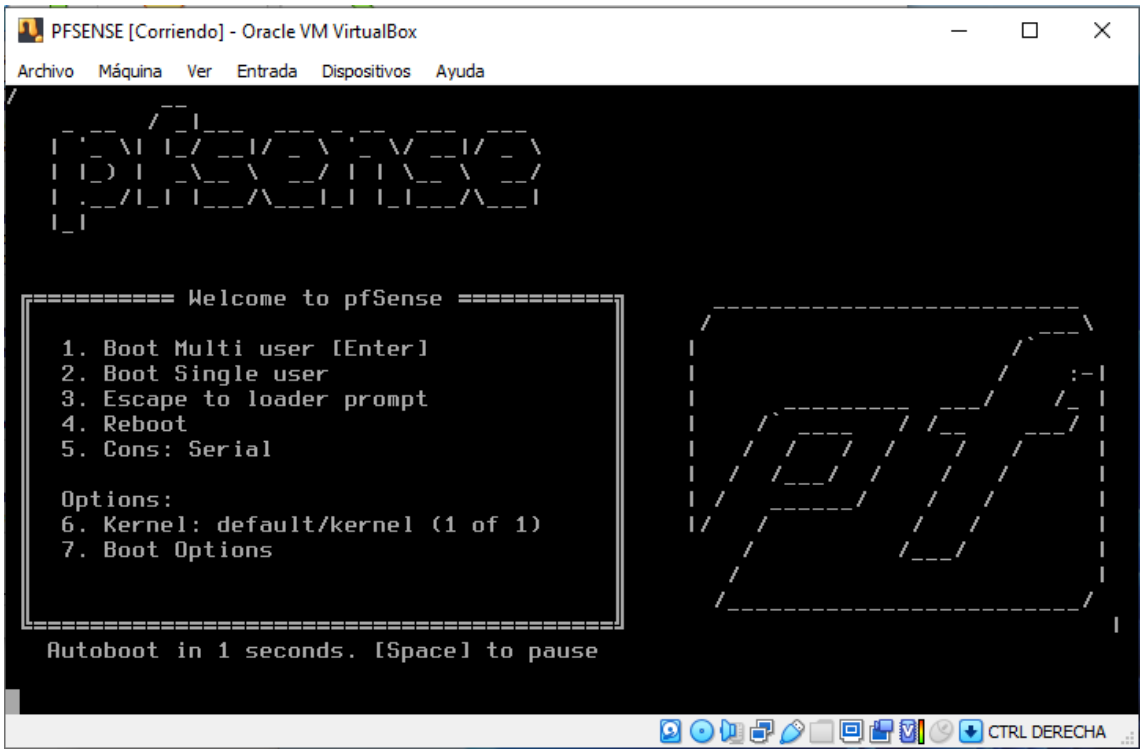
Configuración PFSENSE

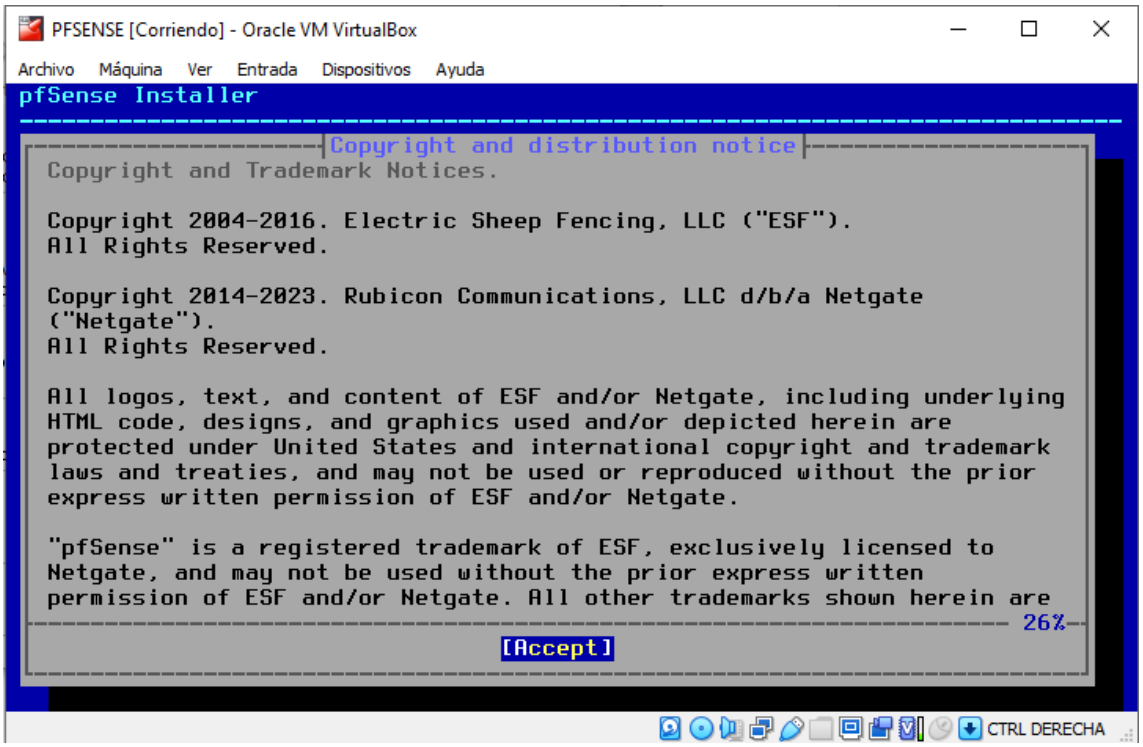


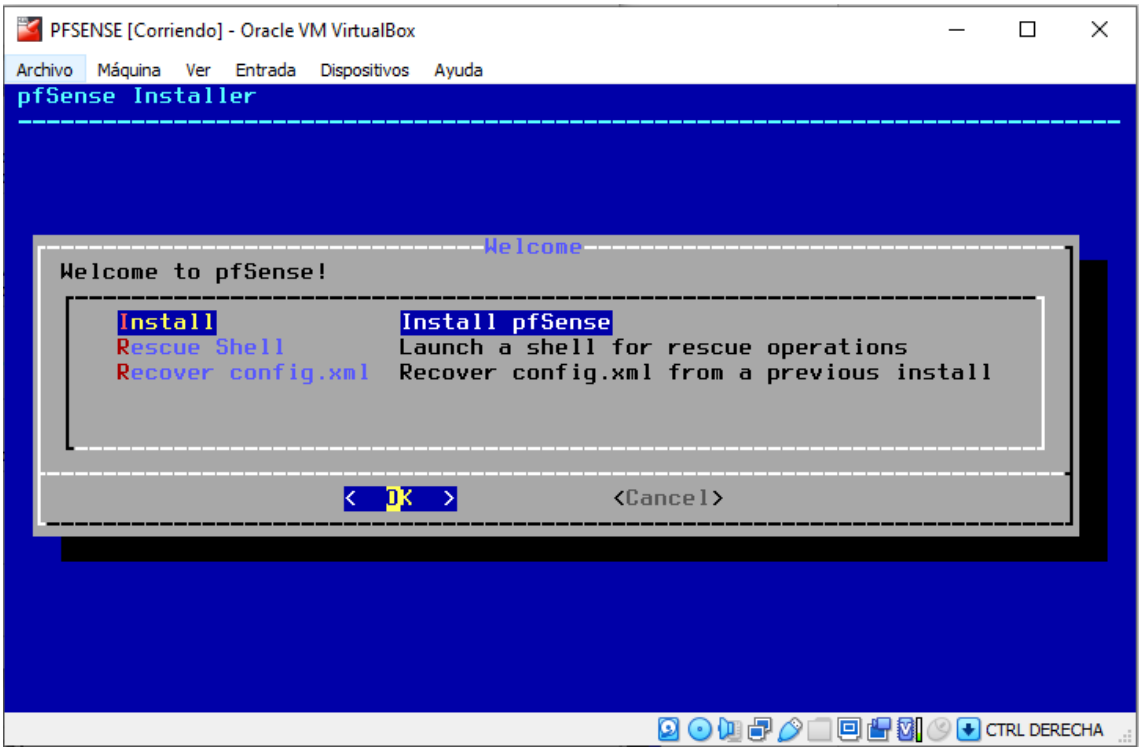


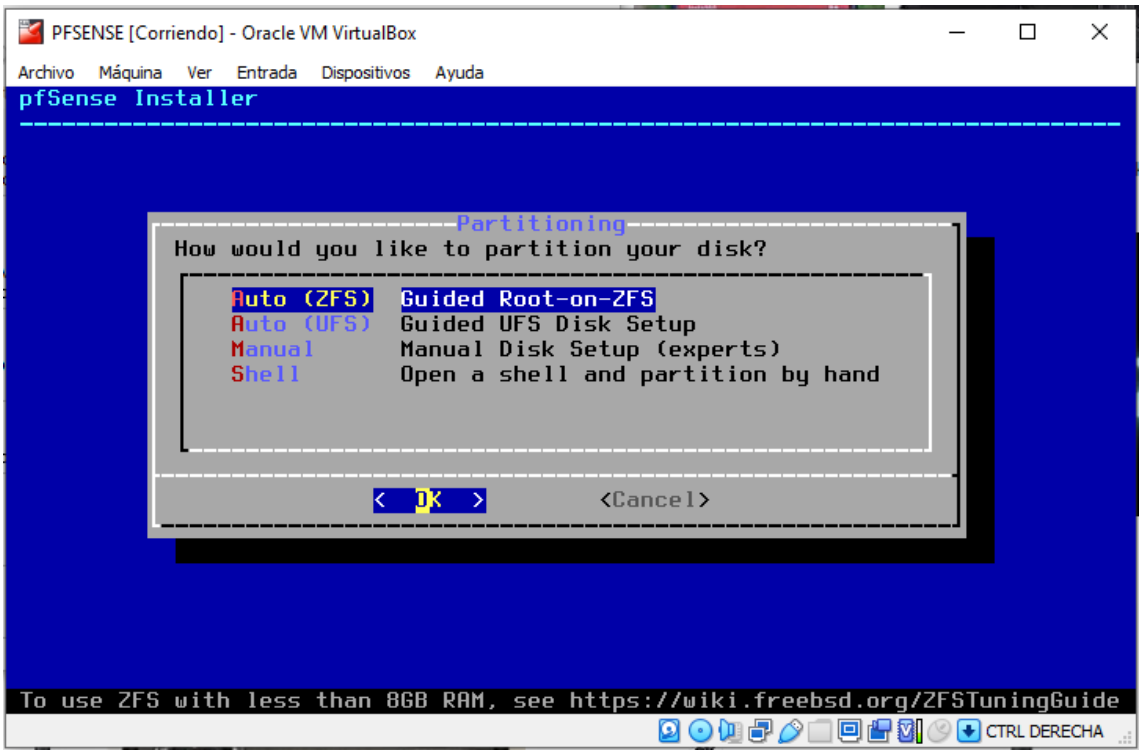


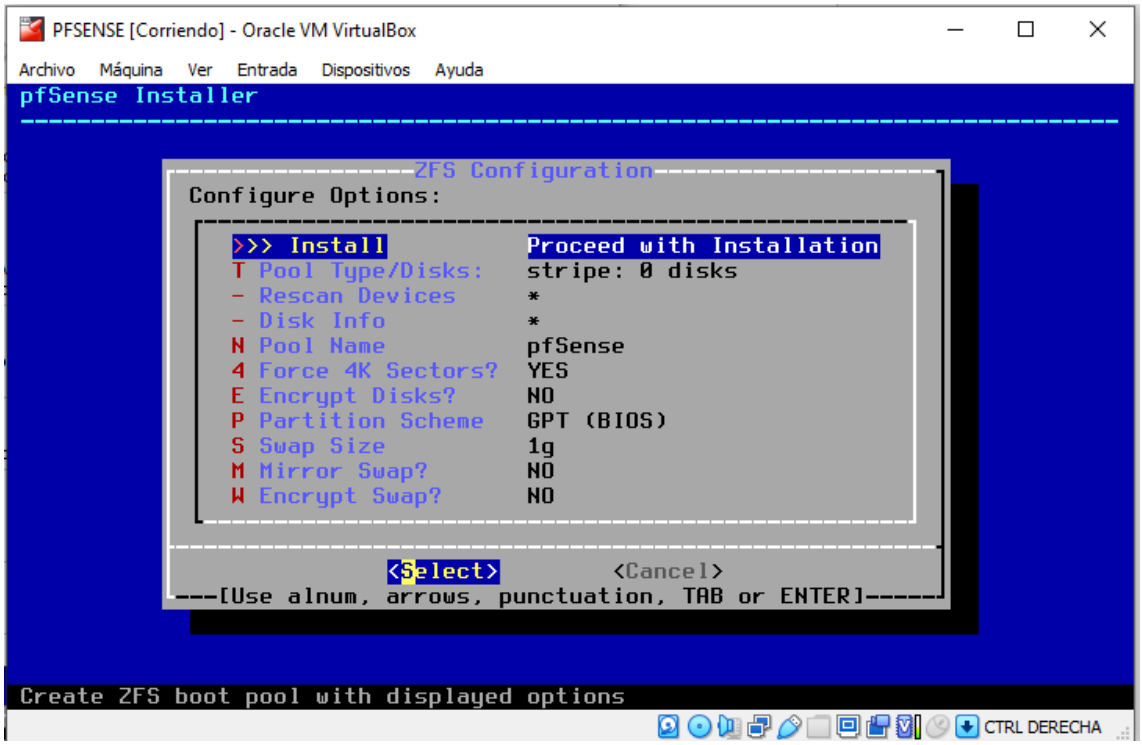

Crear máquina virtual
Resumen
La siguiente tabla resume la configuración que ha elegido para la nueva máquina virtual. Cuando esté conforme con la configuración presione Finalizar para crear la máquina virtual. También puede volver atrás y modificar la configuración.
Nombre y tipo de SO de la máquina
Nombre de máquina PFSENSE
Carpeta de la máquina C:/Users/VM/VirtualBox VMs/PFSENSE/PFSENSE
Imagen ISO C:/Users/VM/Downloads/pfSense-CE-2.7.2-RELEASE-amd64.iso/pfSense-CE-2.7....
Tipo de SO invitado Other/Unknown
Omitir instalación desatendida false
Hardware
Memoria base 2048
Procesador(es) 1
Habilitar EFI false
Disco
Tamaño de disco 20,47 GB
Reservar tamaño completo false
Ayuda
Anterior
Terminar
Cancelar

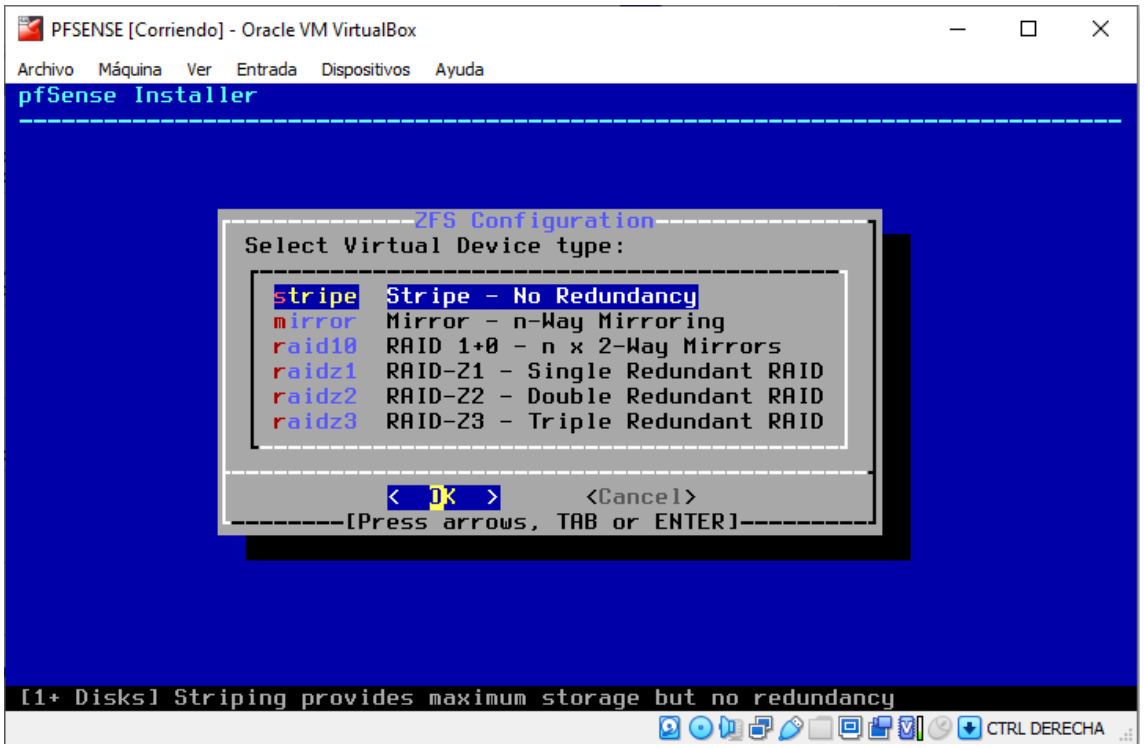

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
Welcome to pfSense
1. Boot Multi user [Enter]
2. Boot Single user
3. Escape to loader prompt
4. Reboot
5. Cons: Serial
Options:
6. Kernel: default/kernel (1 of 1)
7. Boot Options
Autoboot in 1 seconds. [Space] to pause
CTRL DERECHA

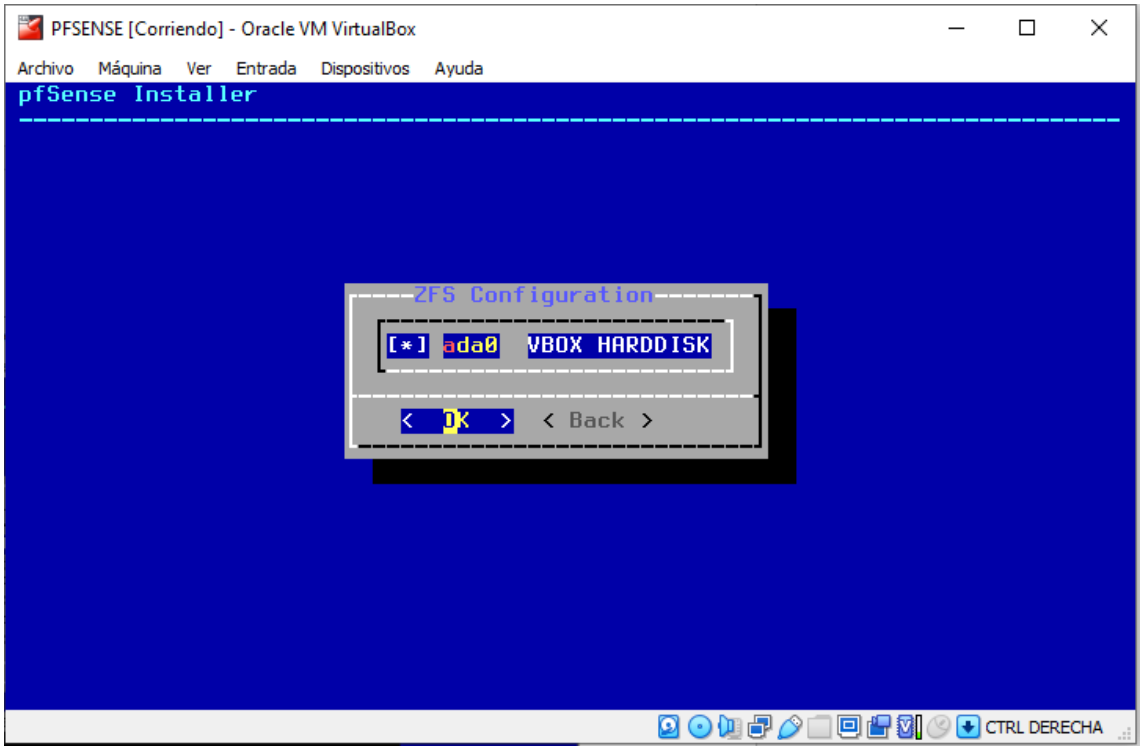

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
Copyright and distribution notice
Copyright and Trademark Notices.
Copyright 2004-2016. Electric Sheep Fencing, LLC ("ESF").
All Rights Reserved.
Copyright 2014-2023. Rubicon Communications, LLC d/b/a Netgate
("Netgate").
All Rights Reserved.
All logos, text, and content of ESF and/or Netgate, including underlying
HTML code, designs, and graphics used and/or depicted herein are
protected under United States and international copyright and trademark
laws and treaties, and may not be used or reproduced without the prior
express written permission of ESF and/or Netgate.
"pfSense" is a registered trademark of ESF, exclusively licensed to
Netgate, and may not be used without the prior express written
permission of ESF and/or Netgate. All other trademarks shown herein are
26%
[Accept]
CTRL DERECHA

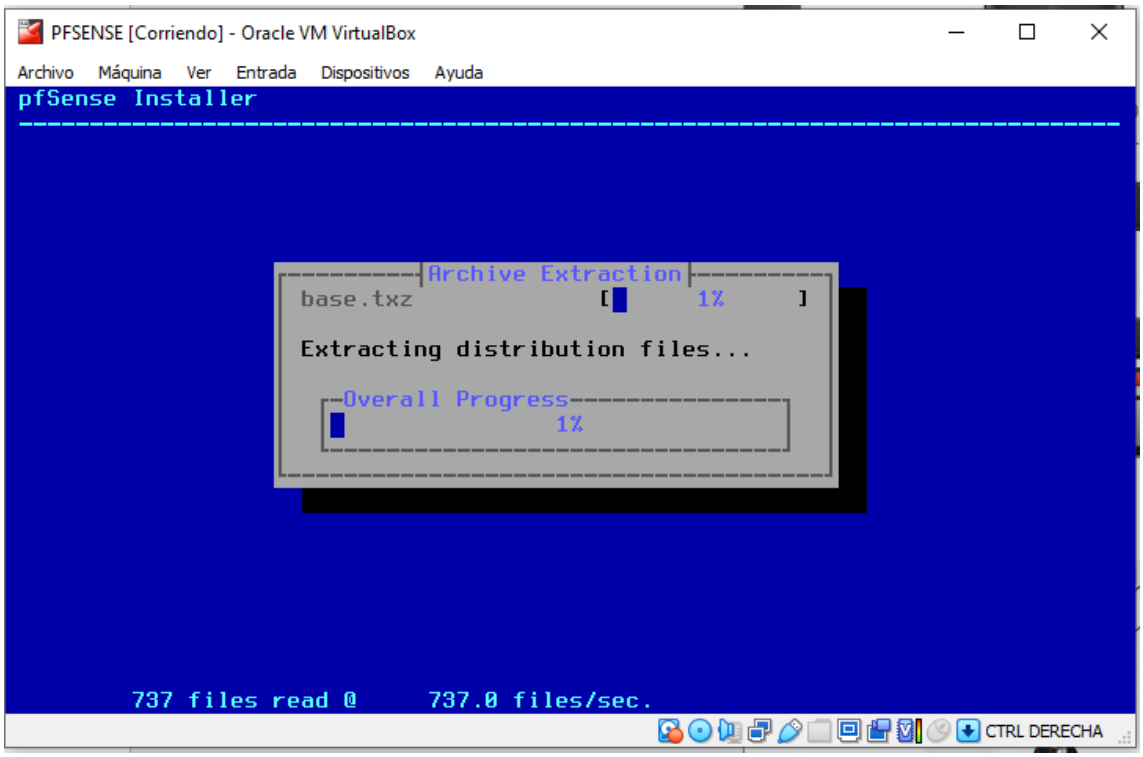

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
Welcome
Welcome to pfSense!
Install Install pfSense
Rescue Shell Launch a shell for rescue operations
Recover config.xml Recover config.xml from a previous install
< OK >
<Cancel>
CTRL DERECHA

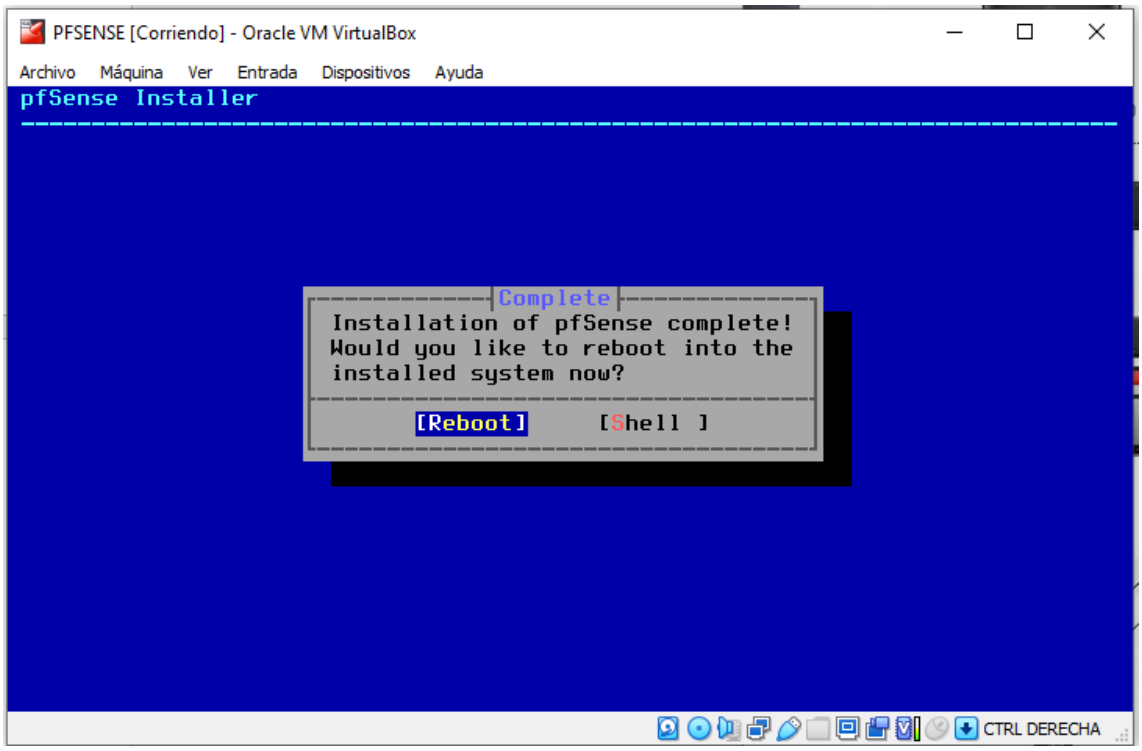

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
Partitioning
How would you like to partition your disk?
Auto (ZFS) Guided Root-on-ZFS
Auto (UFS) Guided UFS Disk Setup
Manual Manual Disk Setup (experts)
Shell Open a shell and partition by hand
< OK >
<Cancel>
To use ZFS with less than 8GB RAM, see https://wiki.freebsd.org/ZFSTuningGuide
CTRL DERECHA


PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
ZFS Configuration
Configure Options:
>>> Install Proceed with Installation
T Pool Type/Disks: stripe: 0 disks
- Rescan Devices *
- Disk Info *
N Pool Name pfSense
4 Force 4K Sectors? YES
E Encrypt Disks? NO
P Partition Scheme GPT (BIOS)
S Swap Size 1g
M Mirror Swap? NO
W Encrypt Swap? NO
<Select> <Cancel>
[Use alnum, arrows, punctuation, TAB or ENTER]
Create ZFS boot pool with displayed options
CTRL DERECHA

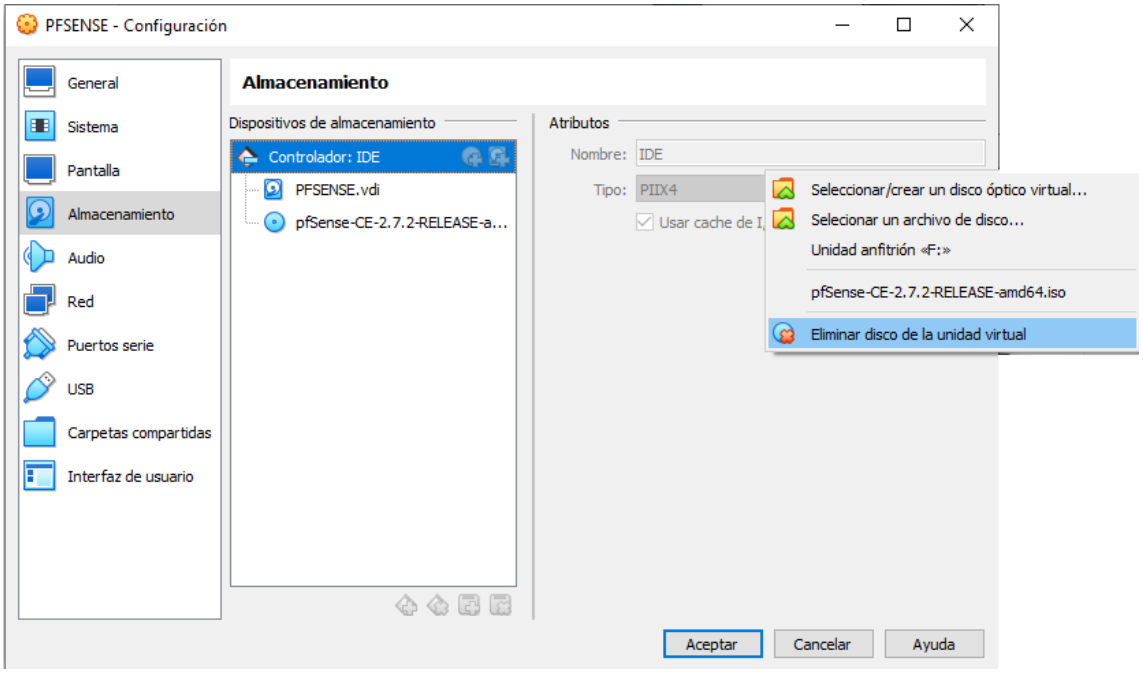

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
ZFS Configuration
Select Virtual Device type:
stripe Stripe - No Redundancy
mirror Mirror - n-Way Mirroring
raid10 RAID 1+0 - n x 2-Way Mirrors
raidz1 RAID-Z1 - Single Redundant RAID
raidz2 RAID-Z2 - Double Redundant RAID
raidz3 RAID-Z3 - Triple Redundant RAID
< OK > <Cancel>
[Press arrows, TAB or ENTER]
[1+ Disks] Striping provides maximum storage but no redundancy
CTRL DERECHA


PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
ZFS Configuration
[*] ada0 VBOX HARDDISK
< OK > < Back >
CTRL DERECHA

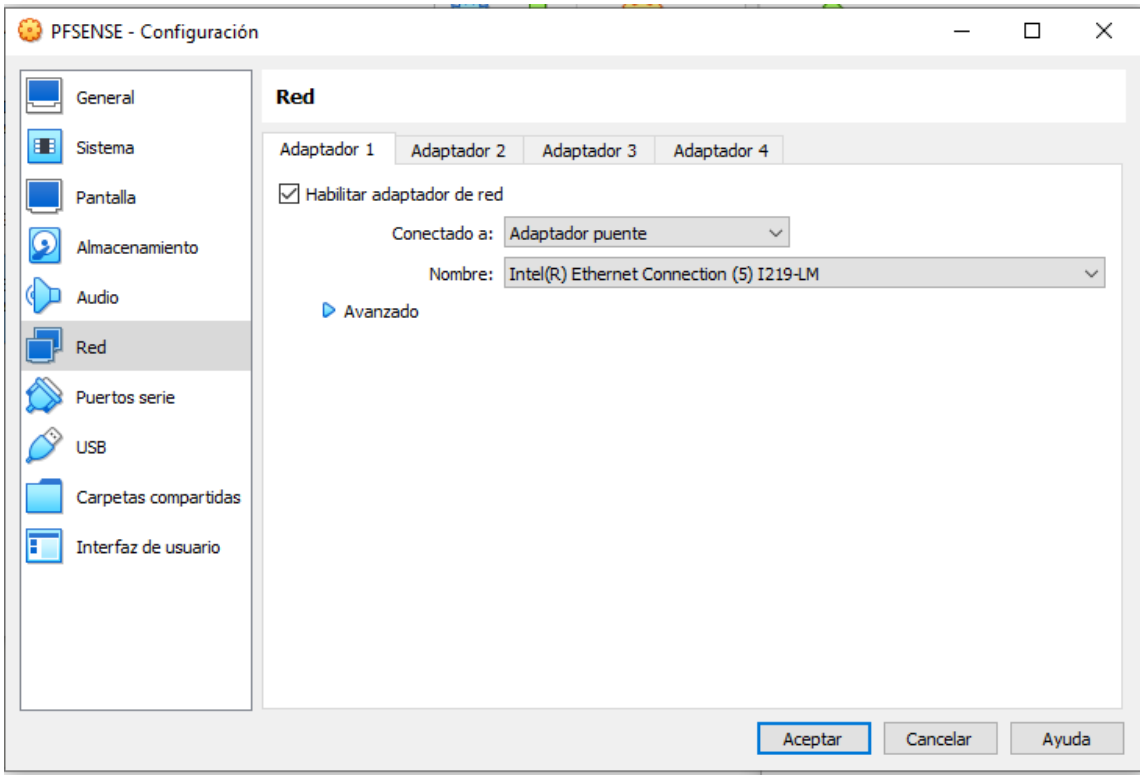

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
Archive Extraction
base.txz [1%]
Extracting distribution files...
Overall Progress
1%
737 files read @ 737.0 files/sec.
CTRL DERECHA

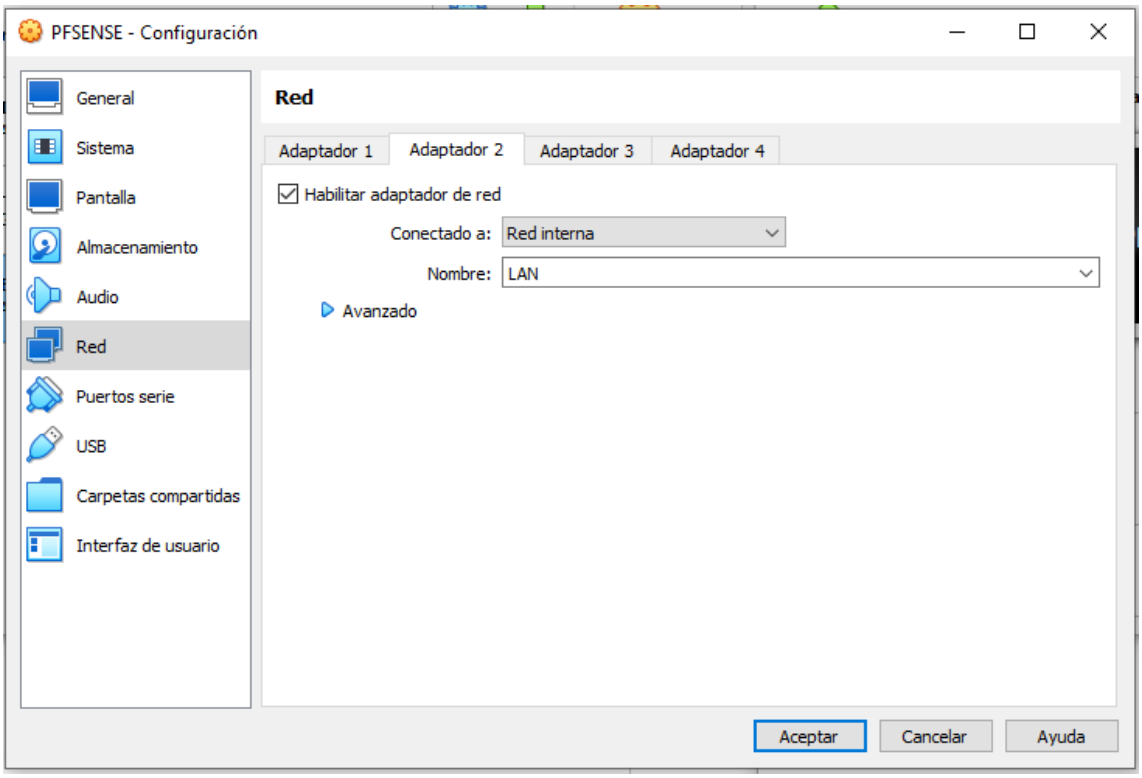

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo Máquina Ver Entrada Dispositivos Ayuda
pfSense Installer
Complete
Installation of pfSense complete!
Would you like to reboot into the
installed system now?
[Reboot] [Shell]
CTRL DERECHA

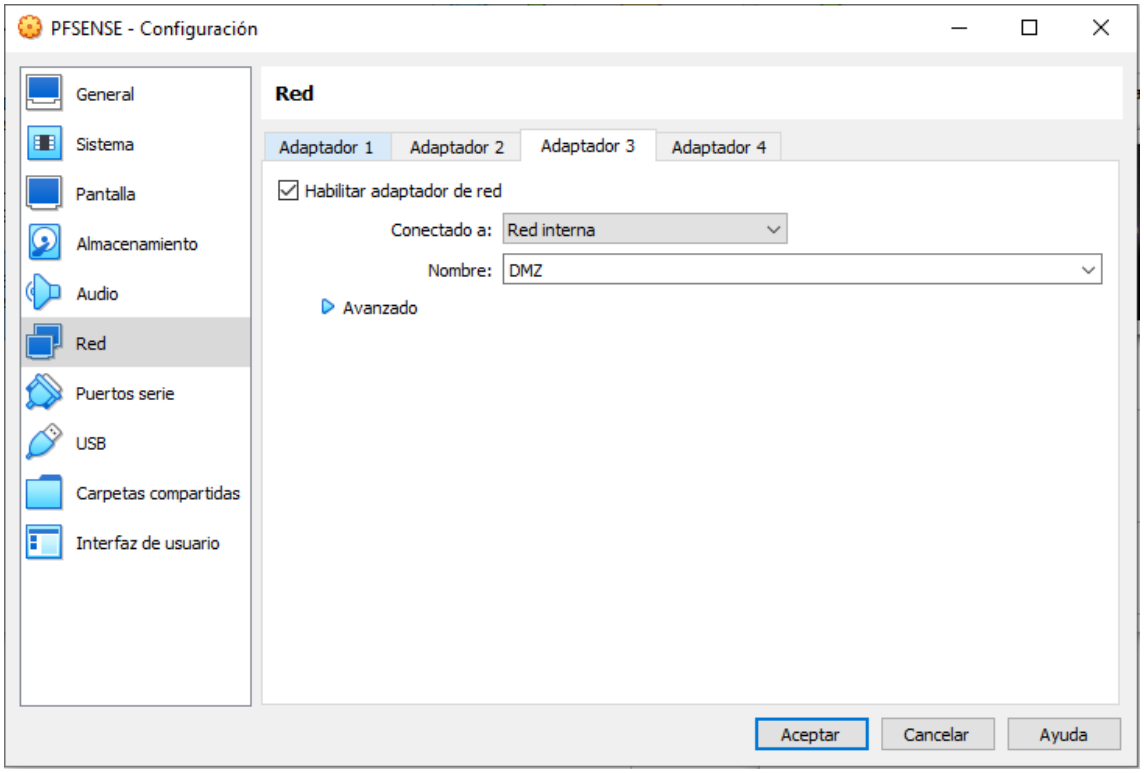
Importante eliminar el disco virtual para que no vuelva a reinstalar el Pfsense

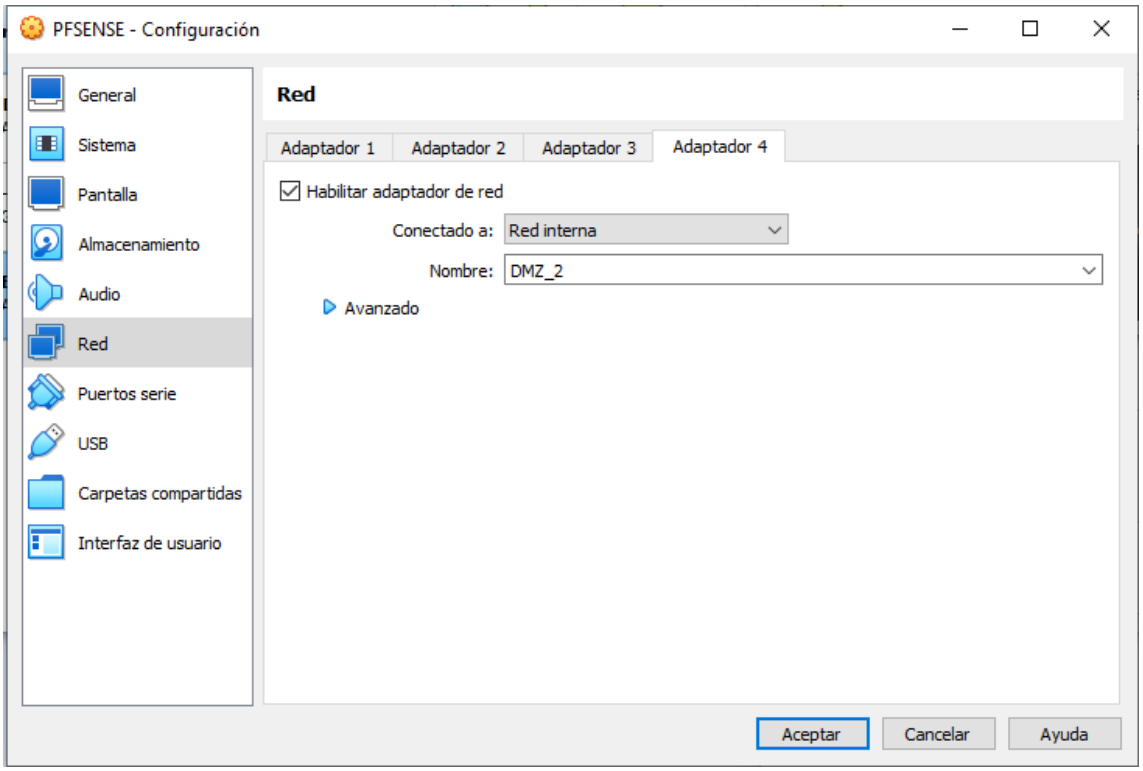


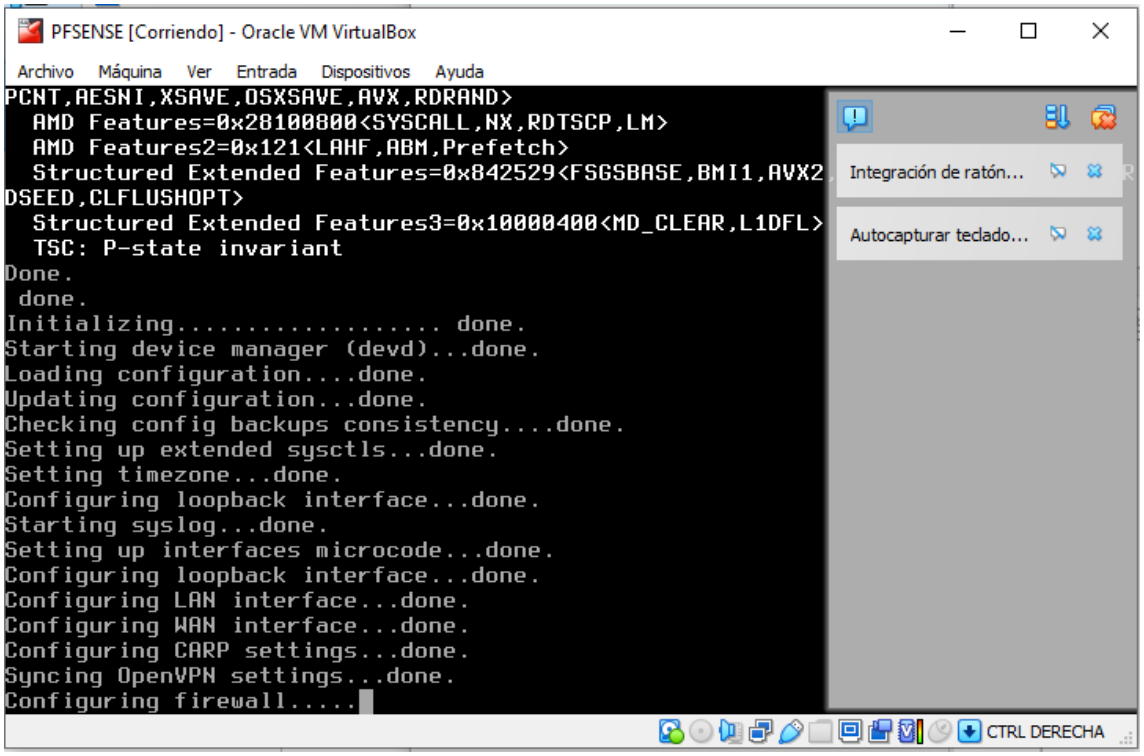
Configuro las tarjetas de red tal y como se requiere para implementar la estructura de red

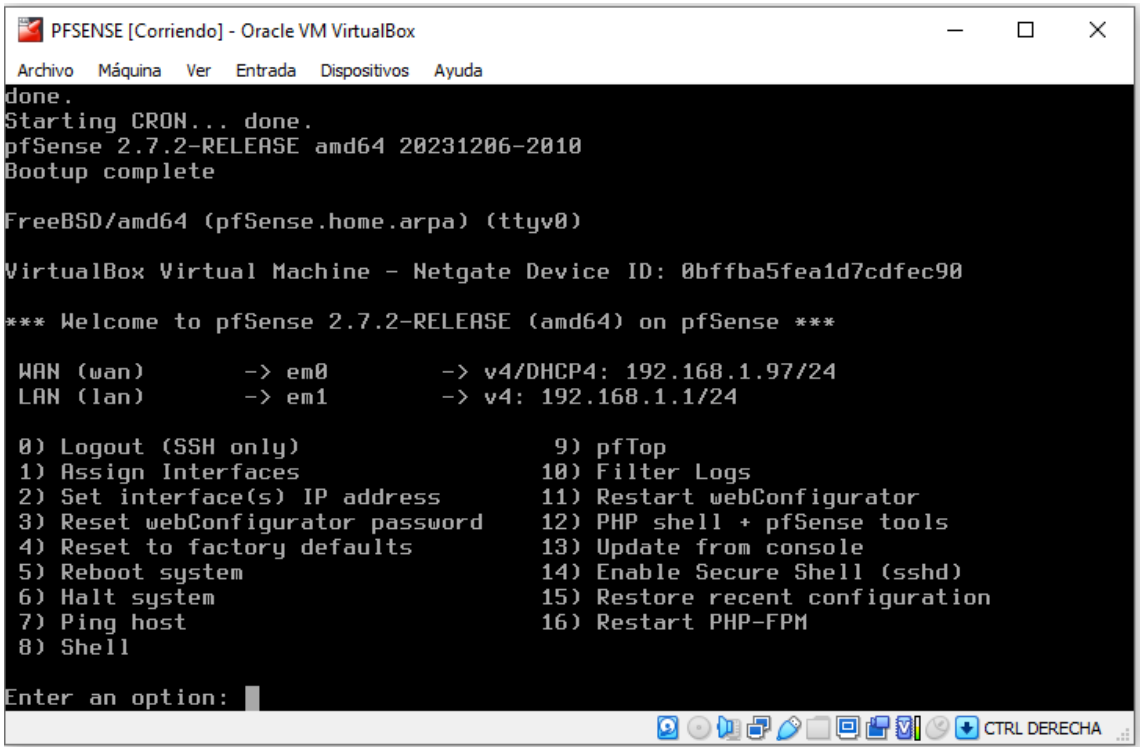



PFSENSE - Configuración
General
Sistema
Pantalla
Almacenamiento
Audio
Red
Puertos serie
USB
Carpetas compartidas
Interfaz de usuario
Red
Adaptador 1
Adaptador 2
Adaptador 3
Adaptador 4
Habilitar adaptador de red
Conectado a:
Red interna
Nombre:
LAN
Avanzado
Aceptar
Cancelar
Ayuda

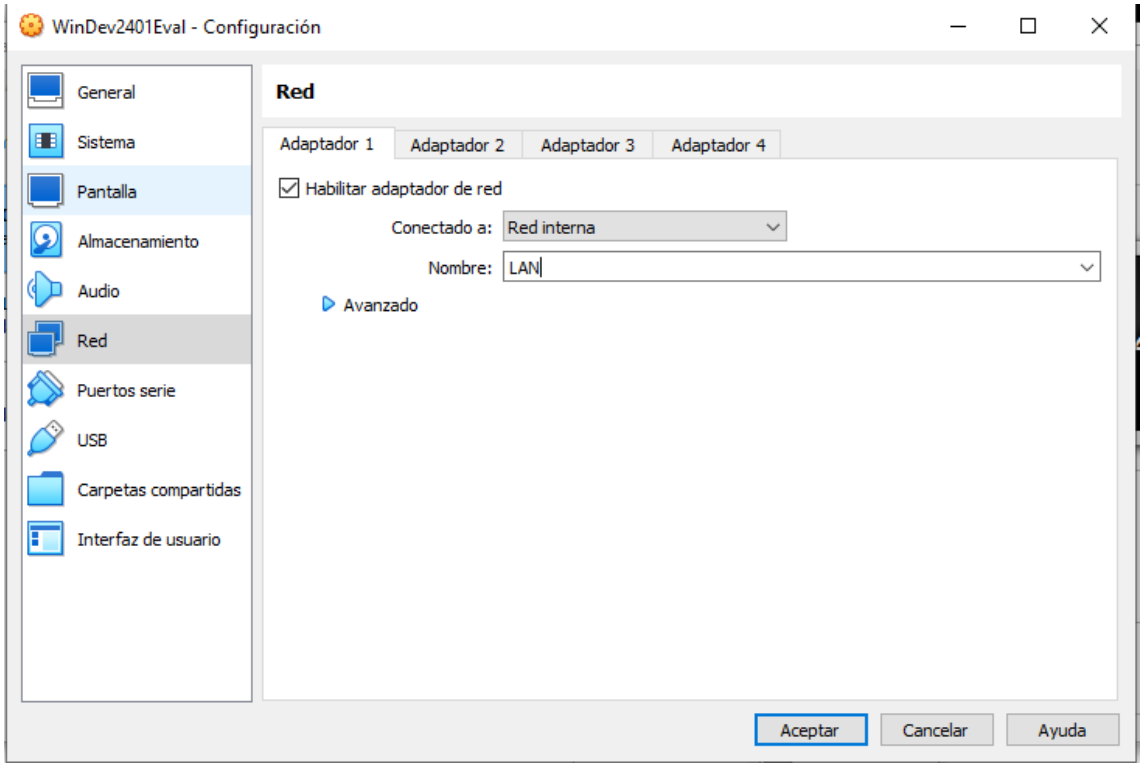

PFSENSE - Configuración
General
Sistema
Pantalla
Almacenamiento
Audio
Red
Puertos serie
USB
Carpetas compartidas
Interfaz de usuario
Red
Adaptador 1
Adaptador 2
Adaptador 3
Adaptador 4
Habilitar adaptador de red
Conectado a:
Red interna
Nombre:
DMZ
Avanzado
Aceptar
Cancelar
Ayuda


PFSENSE - Configuración
General
Sistema
Pantalla
Almacenamiento
Audio
Red
Puertos serie
USB
Carpetas compartidas
Interfaz de usuario
Red
Adaptador 1
Adaptador 2
Adaptador 3
Adaptador 4
Habilitar adaptador de red
Conectado a:
Red interna
Nombre:
DMZ_2
Avanzado
Aceptar
Cancelar
Ayuda

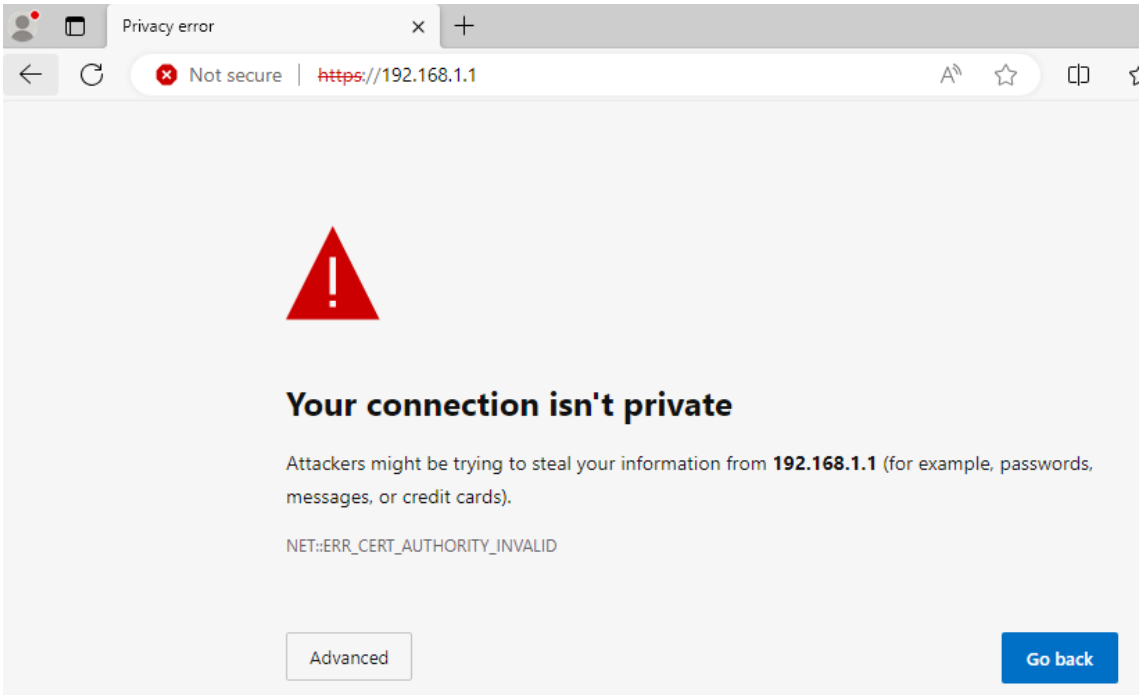

PFSENSE [Corriendo] - Oracle VM VirtualBox
Archivo
Máquina
Ver
Entrada
Dispositivos
Ayuda
PCNT,AESNI,XSAVE,OSXSAVE,AVX,RDRAND>
AMD Features=0x28100800<SYSCALL,NX,RDTSCP,LM>
AMD Features2=0x121<LAHF,ABM,Prefetch>
Structured Extended Features=0x842529<FSGSBASE,BMI1,AVX2,
DSEED,CLFLUSHOPT>
Structured Extended Features3=0x10000400<MD_CLEAR,L1DFL>
TSC: P-state invariant
Done.
done.
Initializing..... done.
Starting device manager (devd)...done.
Loading configuration....done.
Updating configuration...done.
Checking config backups consistency....done.
Setting up extended sysctls...done.
Setting timezone...done.
Configuring loopback interface...done.
Starting syslog...done.
Setting up interfaces microcode...done.
Configuring loopback interface...done.
Configuring LAN interface...done.
Configuring WAN interface...done.
Configuring CARP settings...done.
Syncing OpenVPN settings...done.
Configuring firewall.....
Integración de ratón...
Autocapturar teclado...
CTRL DERECHA

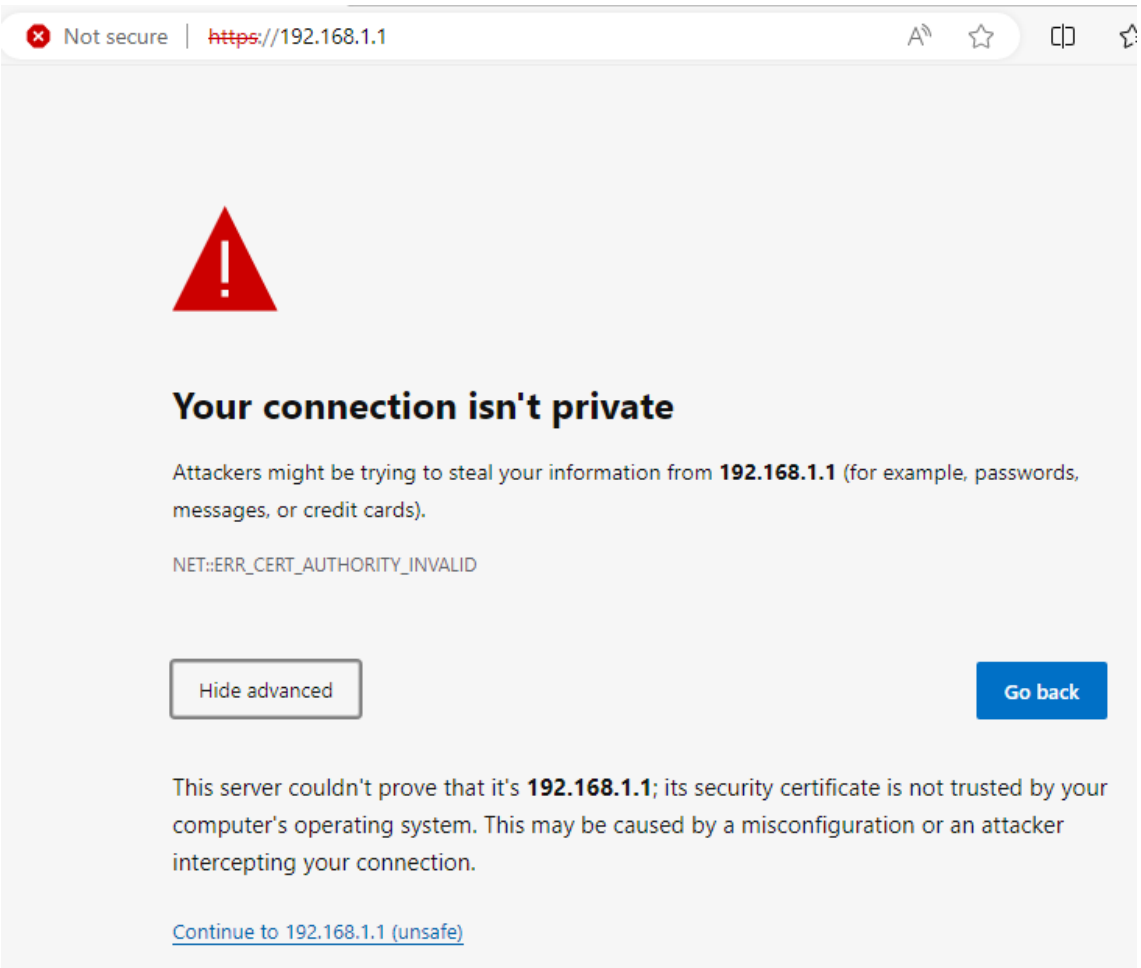


Una vez tenemos el PFSENSE iniciado, pondré Windows 11 para que se encuentre en la red LAN para poder configurar el PFSENSE

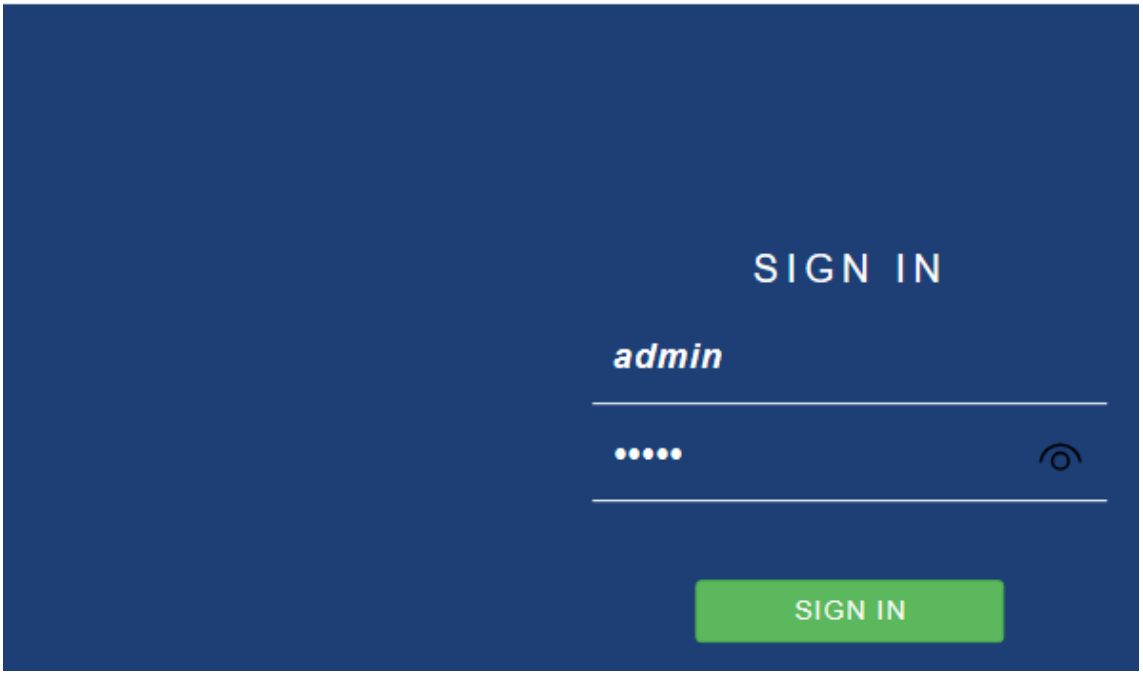


Para poder acceder al PFSENSE coloco la IP de LAN que nos da: 192.168.1.1, ya que esta actuando como router

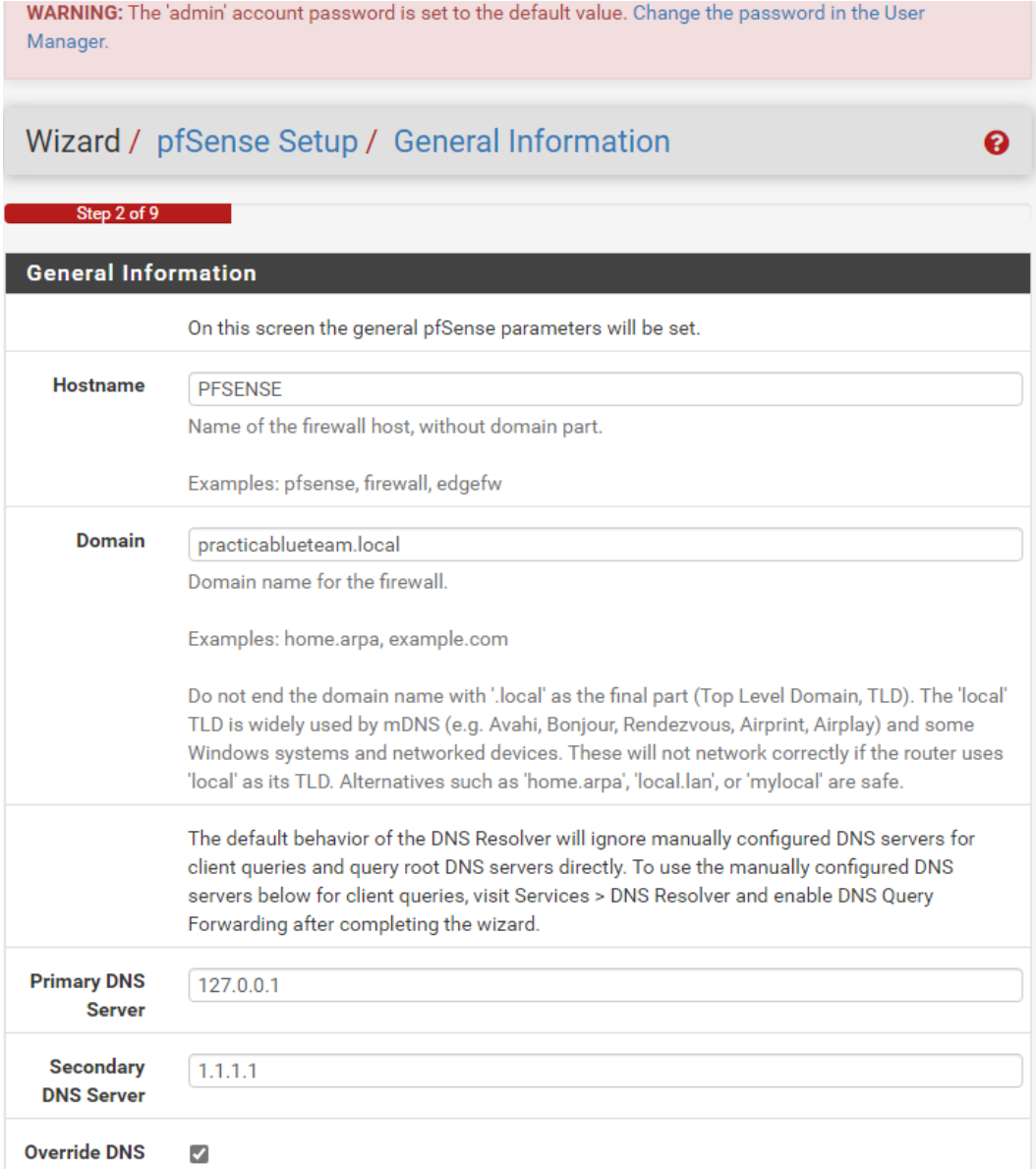




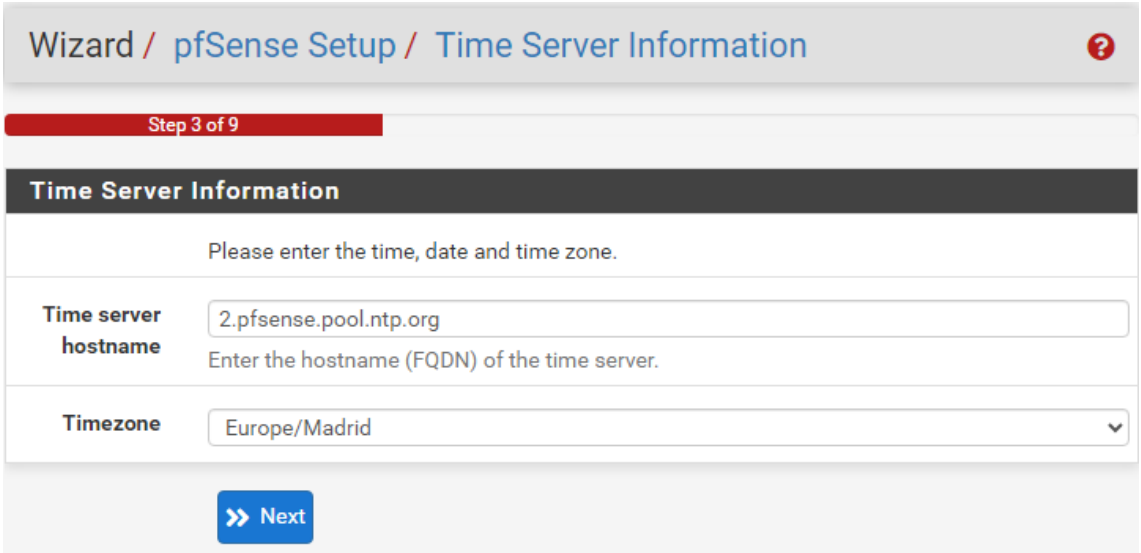
Este aviso aparece porque los datos van por HTTP y no van encriptados, en advanced le damos a Continue, introducimos admin/pfsense



Una vez dentro, le doy a siguiente hasta llegar al paso 2



Configuro hostname y dominio, tambien el DNS primario y uno secundario el 1.1.1.1 (cloudflare)



Wizard / pfSense Setup / Configure WAN Interface

Step 4 of 9

Configure WAN Interface

On this screen the Wide Area Network information will be configured.

SelectedType DHCP

General configuration

MAC Address

This field can be used to modify ("spoof") the MAC address of the WAN interface (may be required with some cable connections). Enter a MAC address in the following format: xx:xx:xx:xx:xx:xx or leave blank.

MTU

Set the MTU of the WAN interface. If this field is left blank, an MTU of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be assumed.

MSS

If a value is entered in this field, then MSS clamping for TCP connections to the value entered above minus 40 (TCP/IP header size) will be in effect. If this field is left blank, an MSS of 1492 bytes for PPPoE and 1500 bytes for all other connection types will be assumed. This should match the above MTU value in most all cases.

Static IP Configuration

IP Address

Subnet Mask 32

Upstream Gateway

Configuro para que nos bloquee las ip internas

RFC1918 Networks

Block RFC1918 Private Networks

☐ Block private networks from entering via WAN

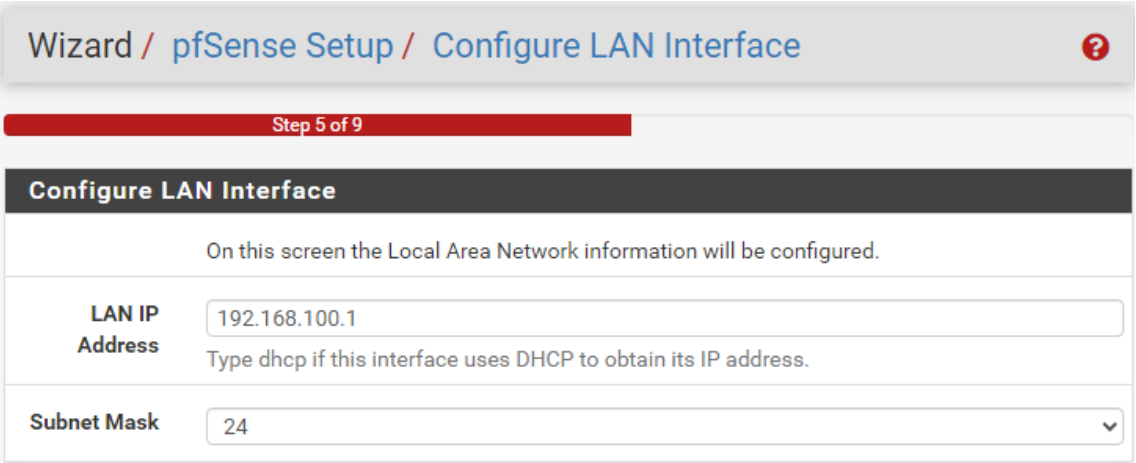
When set, this option blocks traffic from IP addresses that are reserved for private networks as per RFC 1918 (10/8, 172.16/12, 192.168/16) as well as loopback addresses (127/8). This option should generally be left turned on, unless the WAN network lies in such a private address space, too.

Block bogon networks

Block bogon networks

☐ Block non-Internet routed networks from entering via WAN

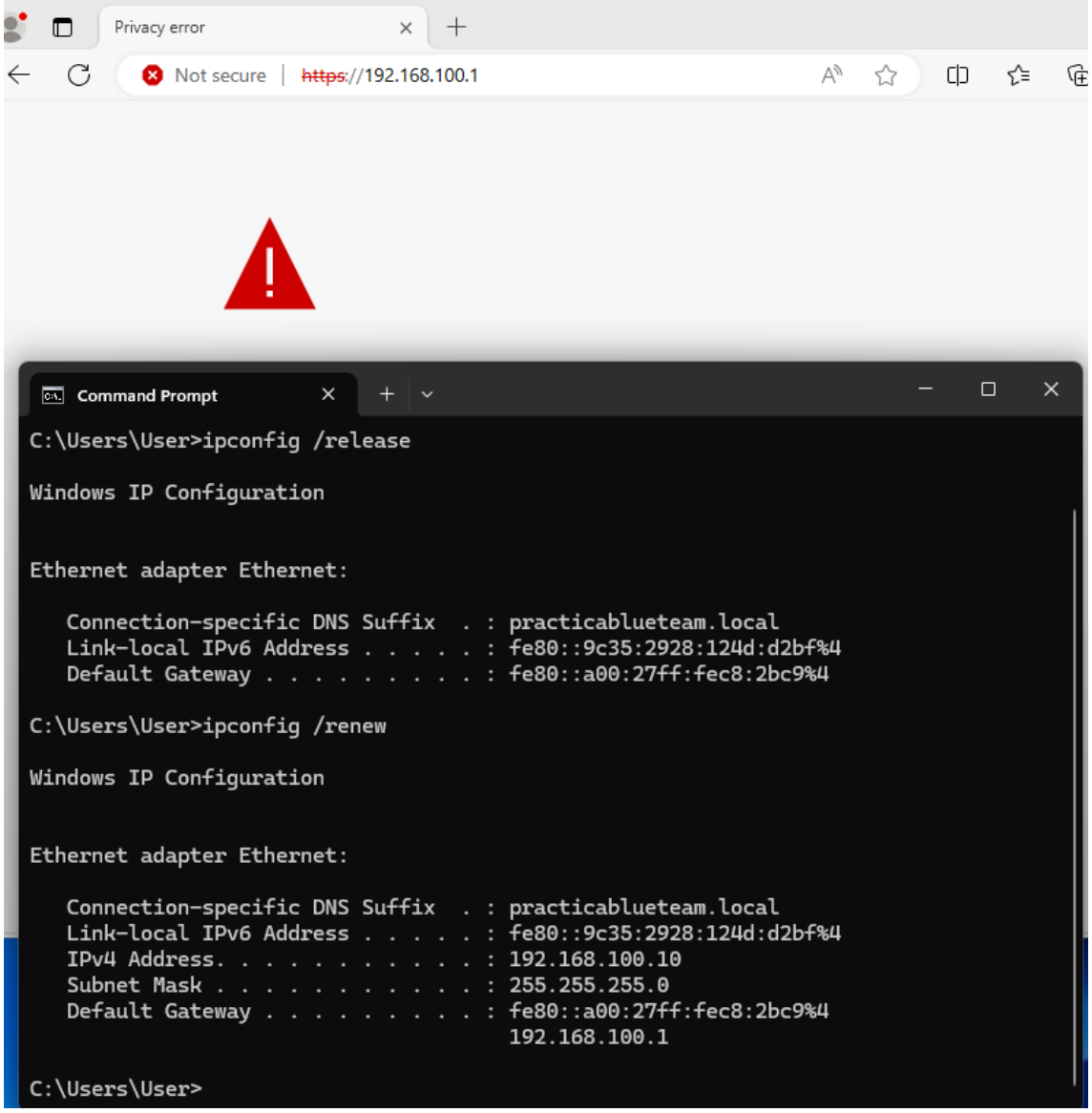
When set, this option blocks traffic from IP addresses that are reserved (but not RFC 1918) or not yet assigned by IANA. Bogons are prefixes that should never appear in the Internet routing table, and obviously should not appear as the source address in any packets received.



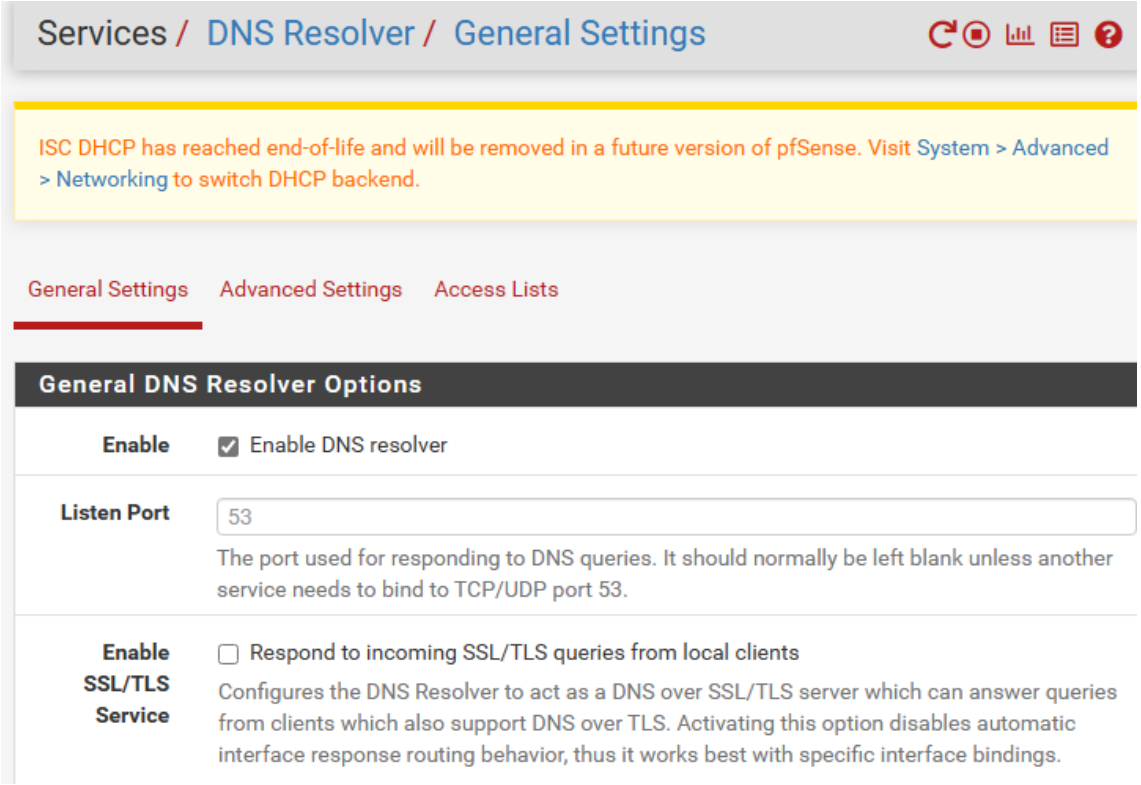
Se configura la subred a la que quiero que pertenezca, 192.168.100.1 y se cambia de contraseña

Al darle reload, se reinica el Pfsense

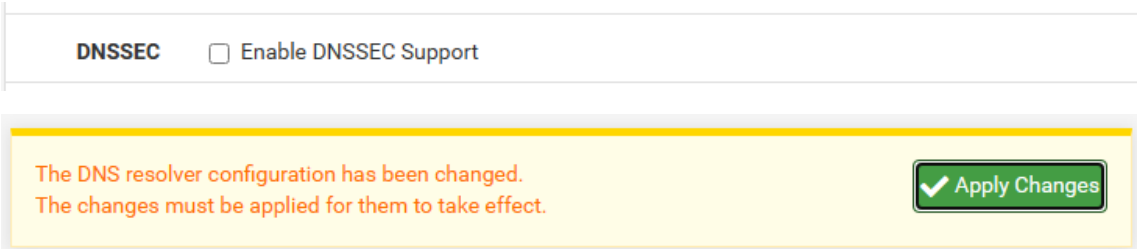
Entramos con la nueva dirección, 192.168.100.1



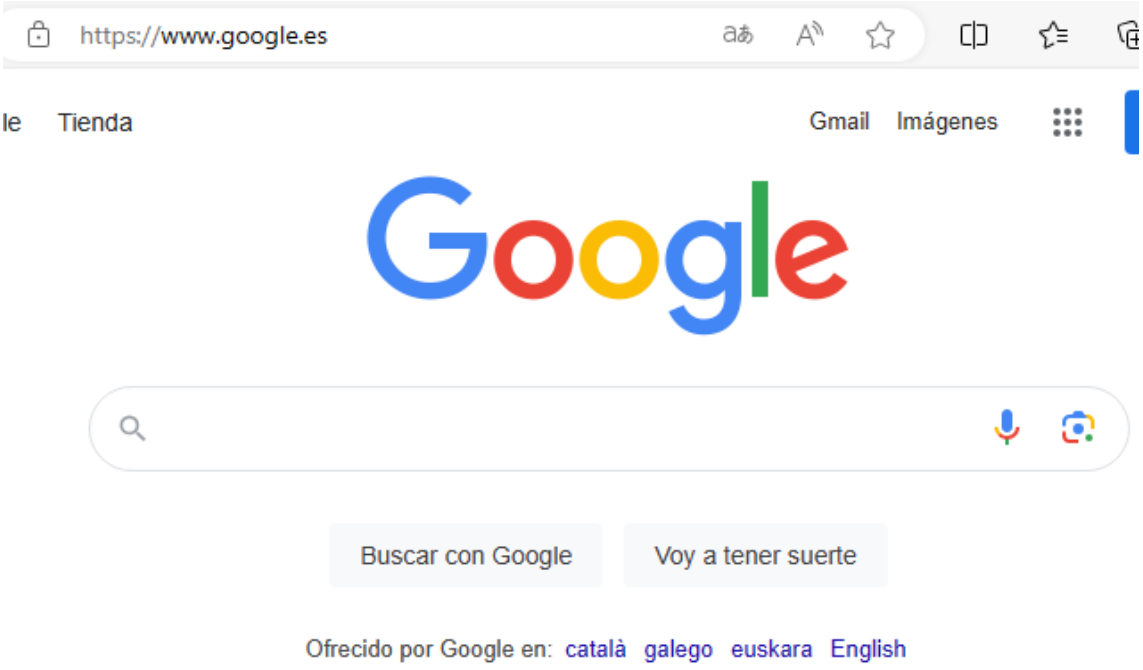
Compruebo y configuro para la resolución de nombres

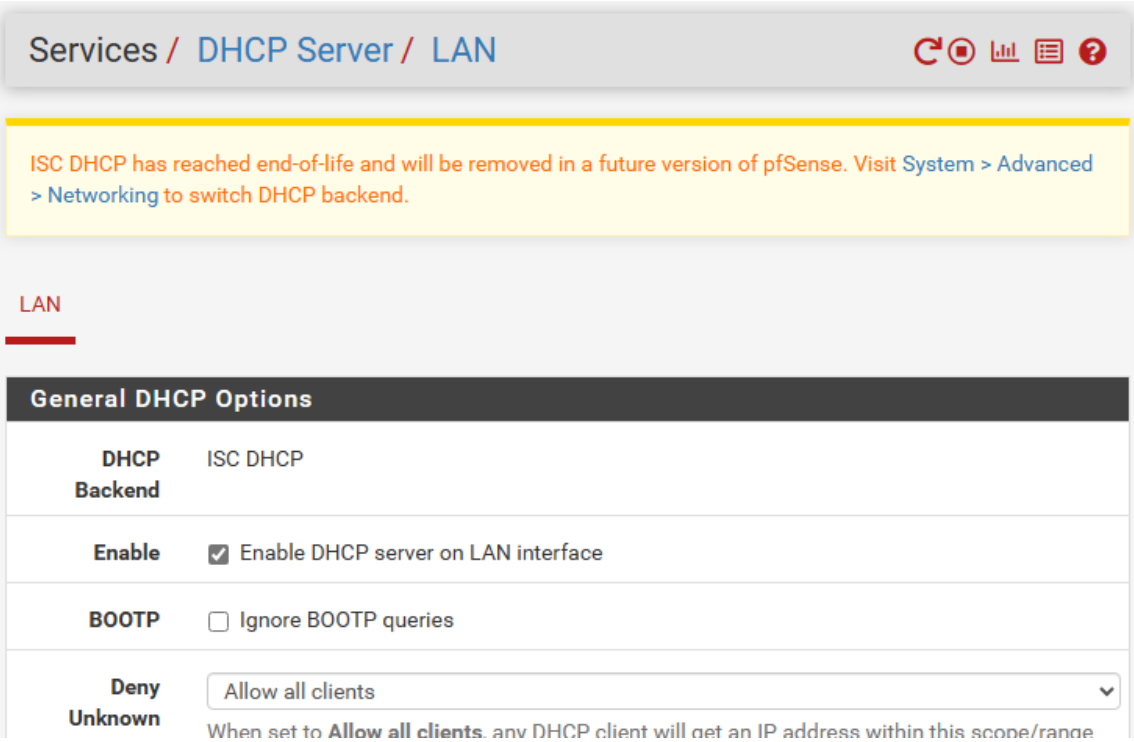


Deshabilito la opción para que nos devuelva la DNS



Ahora compruebo si hay acceso a Google y veo que esta bien correctamente:


https://www.google.es
le
Tienda
Gmail
Imágenes
Google
Buscar con Google
Voy a tener suerte
Ofrecido por Google en: català galego euskara English


Services / DHCP Server / LAN
ISC DHCP has reached end-of-life and will be removed in a future version of pfSense. Visit System > Advanced > Networking to switch DHCP backend.
LAN
General DHCP Options
DHCP Backend
ISC DHCP
Enable
Enable DHCP server on LAN interface
BOOTP
Ignore BOOTP queries
Deny Unknown
Allow all clients
When set to Allow all clients, any DHCP client will get an IP address within this scope/range

Primary Address Pool

Subnet	192.168.100.0/24
Subnet Range	192.168.100.1 - 192.168.100.254
Address Pool Range	192.168.100.100 (From) — 192.168.100.200 (To) The specified range for this pool must not be within the range configured on any other address pool for this interface.
Additional Pools	+ Add Address Pool If additional pools of addresses are needed inside of this subnet outside the above range, they may be specified here.

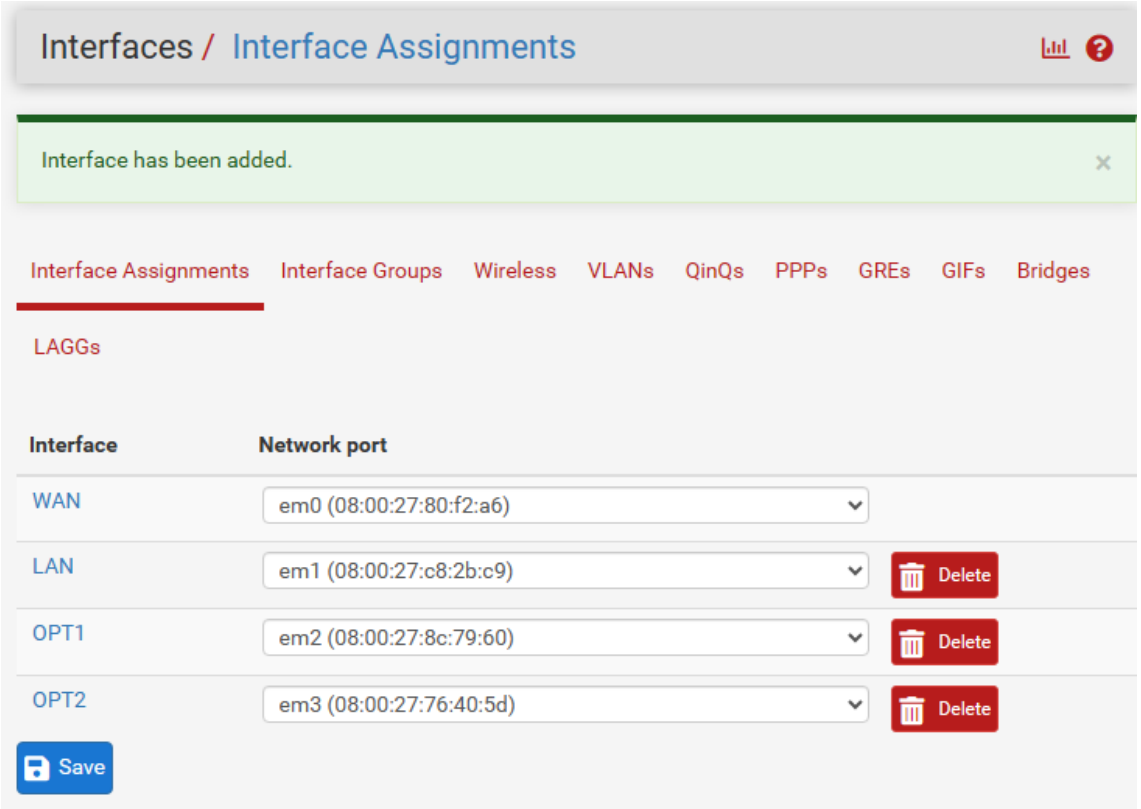
Server Options

WINS Servers	WINS Server 1
	WINS Server 2
DNS Servers	192.168.100.1
	1.1.1.1
	8.8.8.8
	DNS Server 4

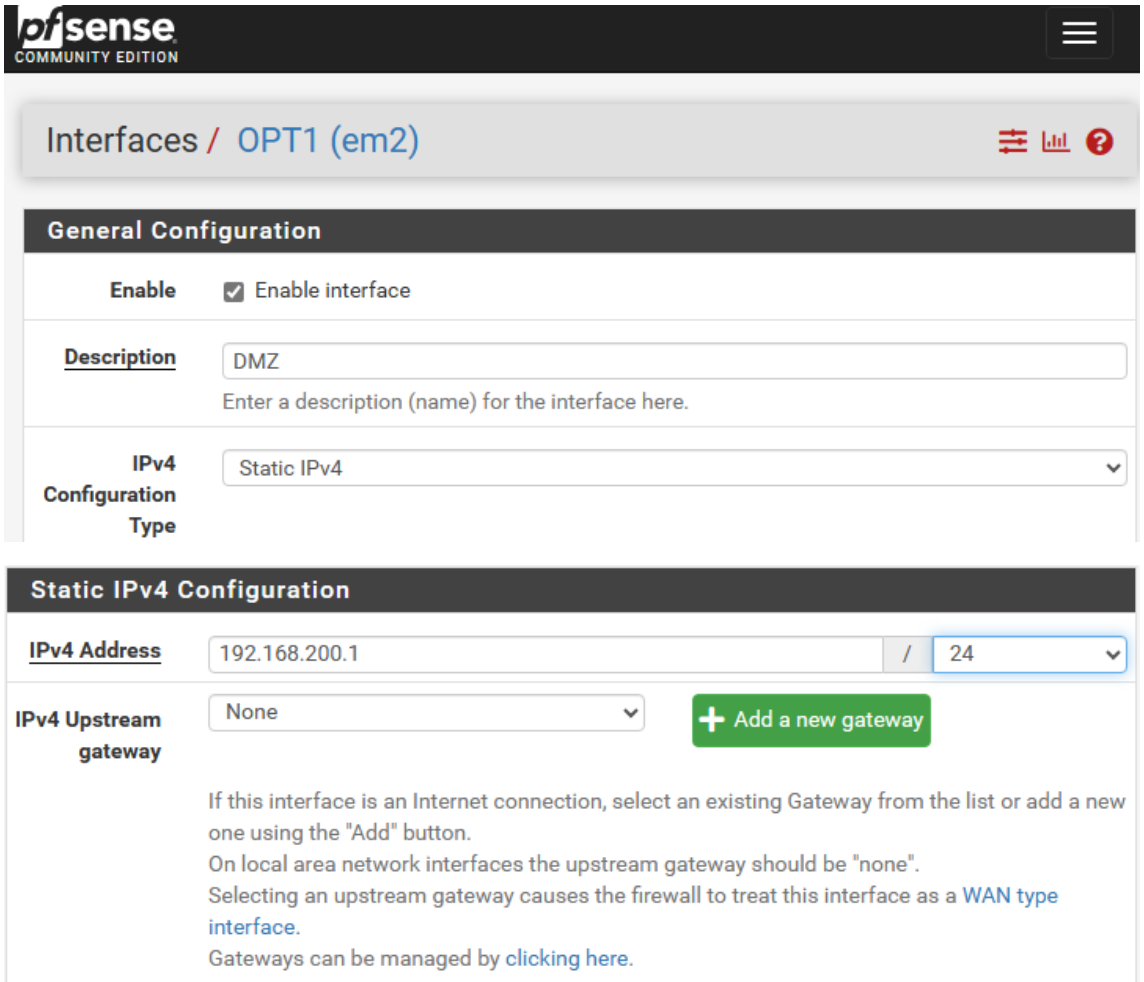
Salvamos y aplicamos cambios

```
Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . : practicablueteam.local
   Link-local IPv6 Address . . . . . : fe80::9c35:2928:124d:d2bf%4
   Default Gateway . . . . . . . . . : fe80::a00:27ff:fec8:2bc9%4

C:\Users\User>ipconfig /renew

Windows IP Configuration


Ethernet adapter Ethernet:

   Connection-specific DNS Suffix  . : practicablueteam.local
   Link-local IPv6 Address . . . . . : fe80::9c35:2928:124d:d2bf%4
   IPv4 Address. . . . . . . . . . . : 192.168.100.100
   Subnet Mask . . . . . . . . . . . : 255.255.255.0
   Default Gateway . . . . . . . . . : fe80::a00:27ff:fec8:2bc9%4
                                       192.168.100.1
```

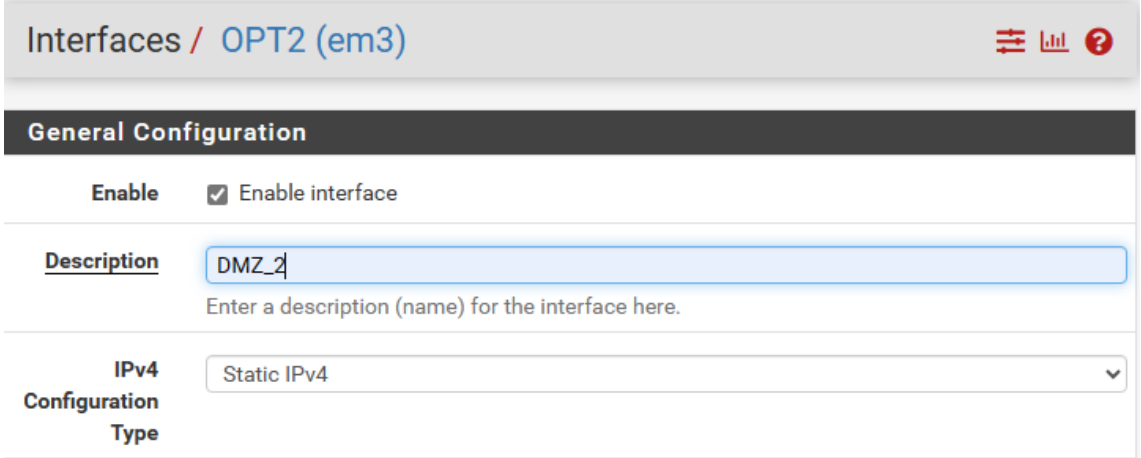
Como anteriormente se crearon 4 adapatadores, dos de ellos ya están configurados pero se necesitan configurar para las subred DMZ (OPT1) y DMZ_2 (OPT2)

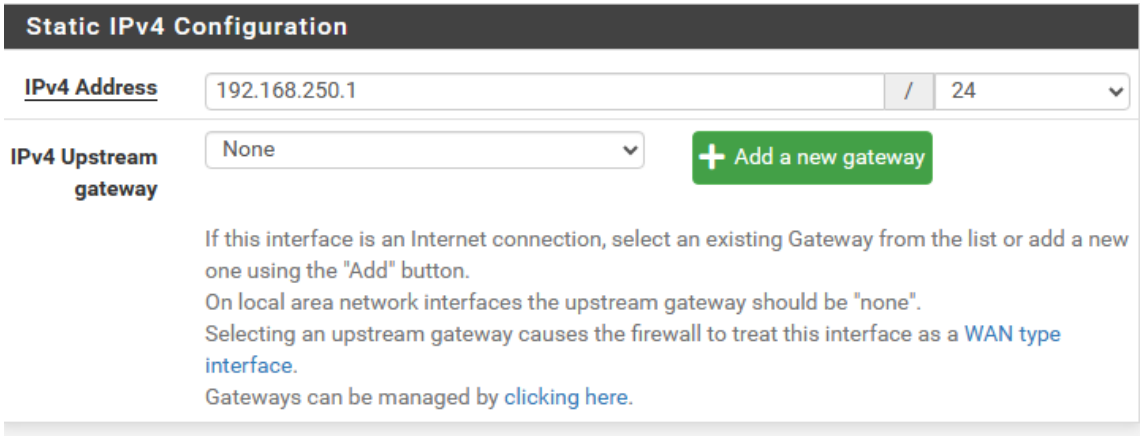


Configuro la interfaz DMZ con la subred 192.168.200.1

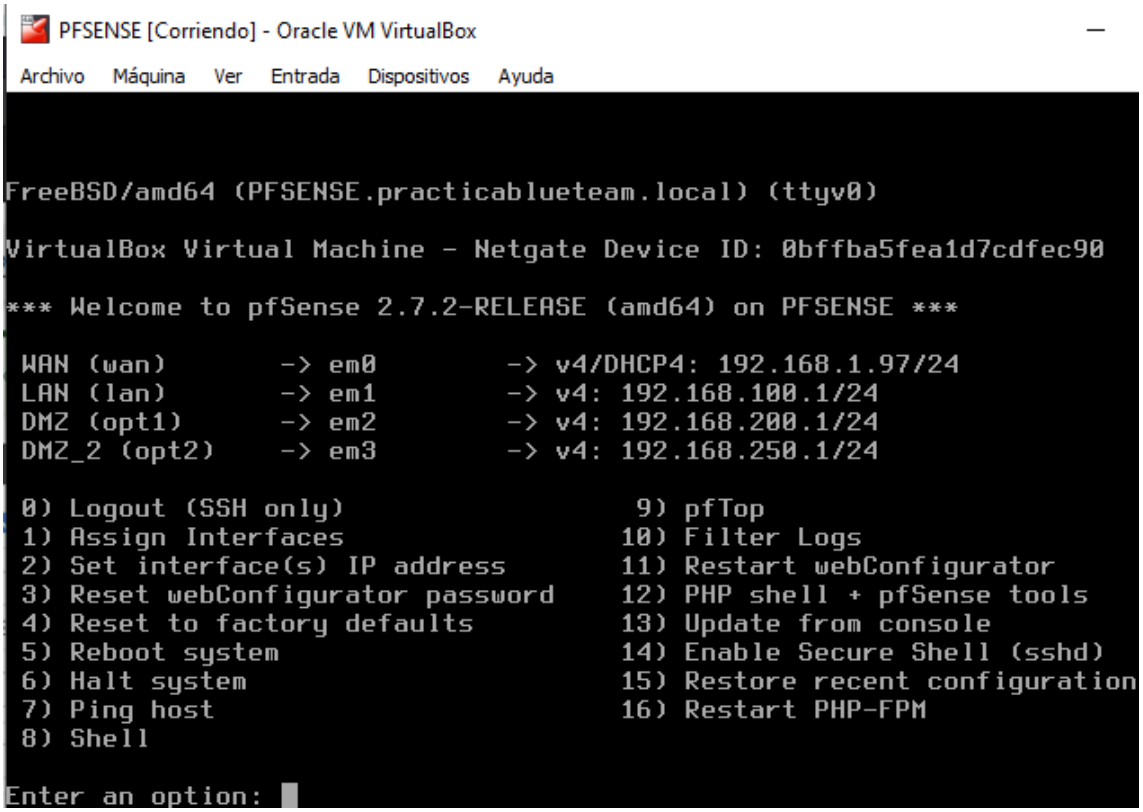


Configuro la interfaz DMZ_2 con la subred 192.168.250.1





Compruebo los cambios en Pfsense



Configuración DHCP server para la red DMZ

Services / DHCP Server / DMZ

ISC DHCP has reached end-of-life and will be removed in a future version of pfSense. Visit System > Advanced > Networking to switch DHCP backend.

LAN DMZ DMZ_2

General DHCP Options

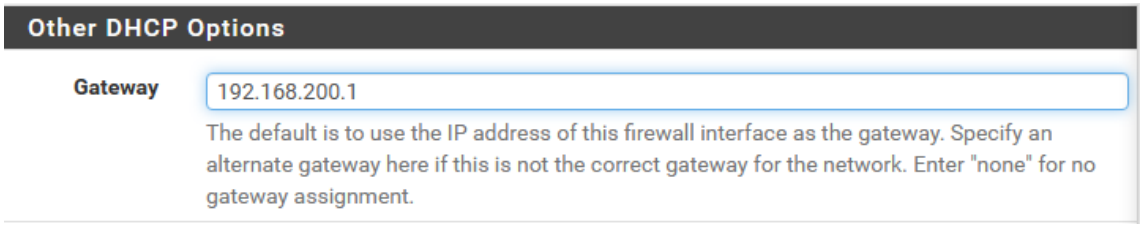
DHCP Backend	ISC DHCP
Enable	☐ Enable DHCP server on DMZ interface

Primary Address Pool

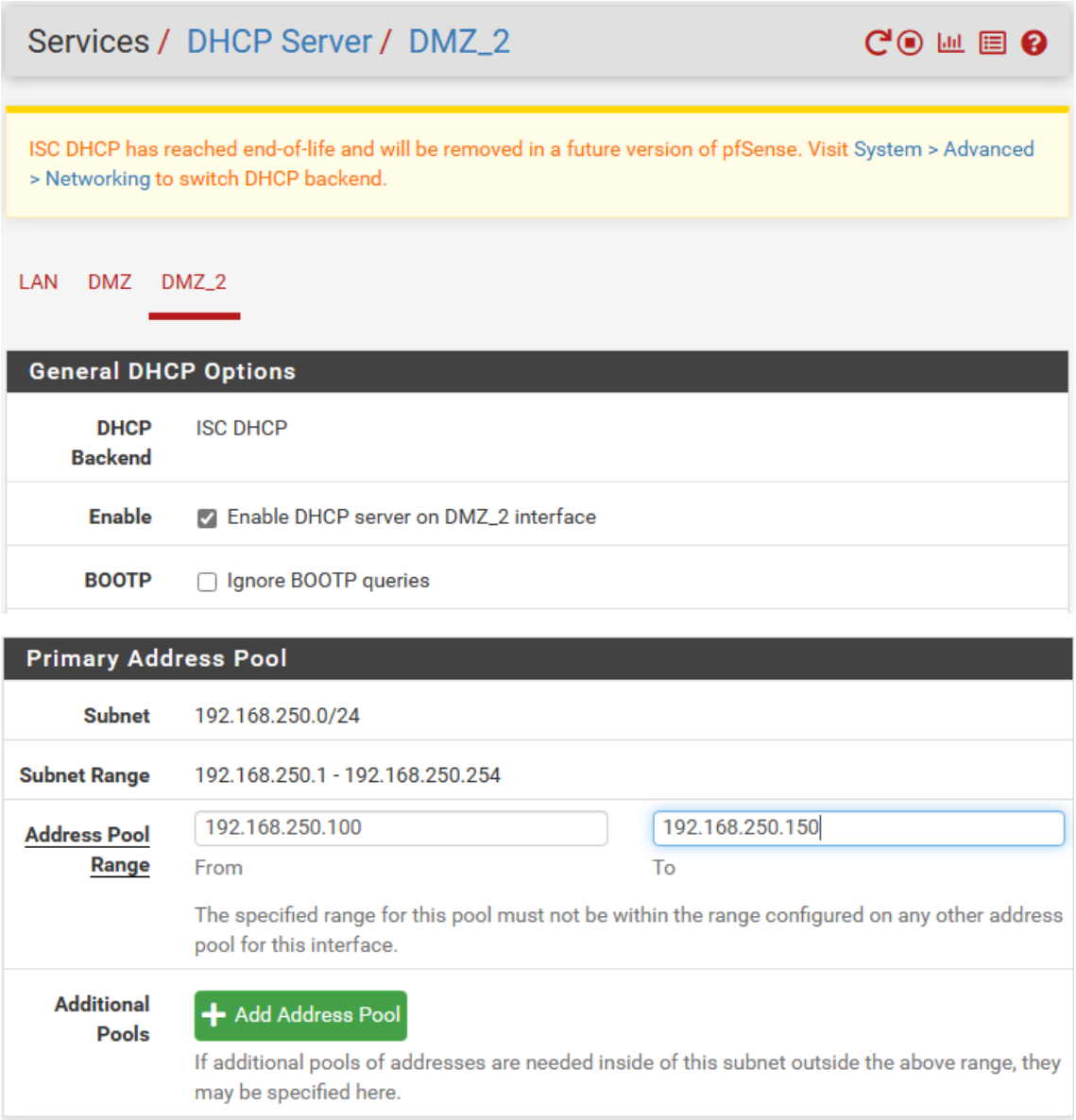
Subnet	192.168.200.0/24
Subnet Range	192.168.200.1 - 192.168.200.254
Address Pool Range	192.168.200.100 (From) — 192.168.200.150 (To) The specified range for this pool must not be within the range configured on any other address pool for this interface.
Additional Pools	+ Add Address Pool If additional pools of addresses are needed inside of this subnet outside the above range, they may be specified here.

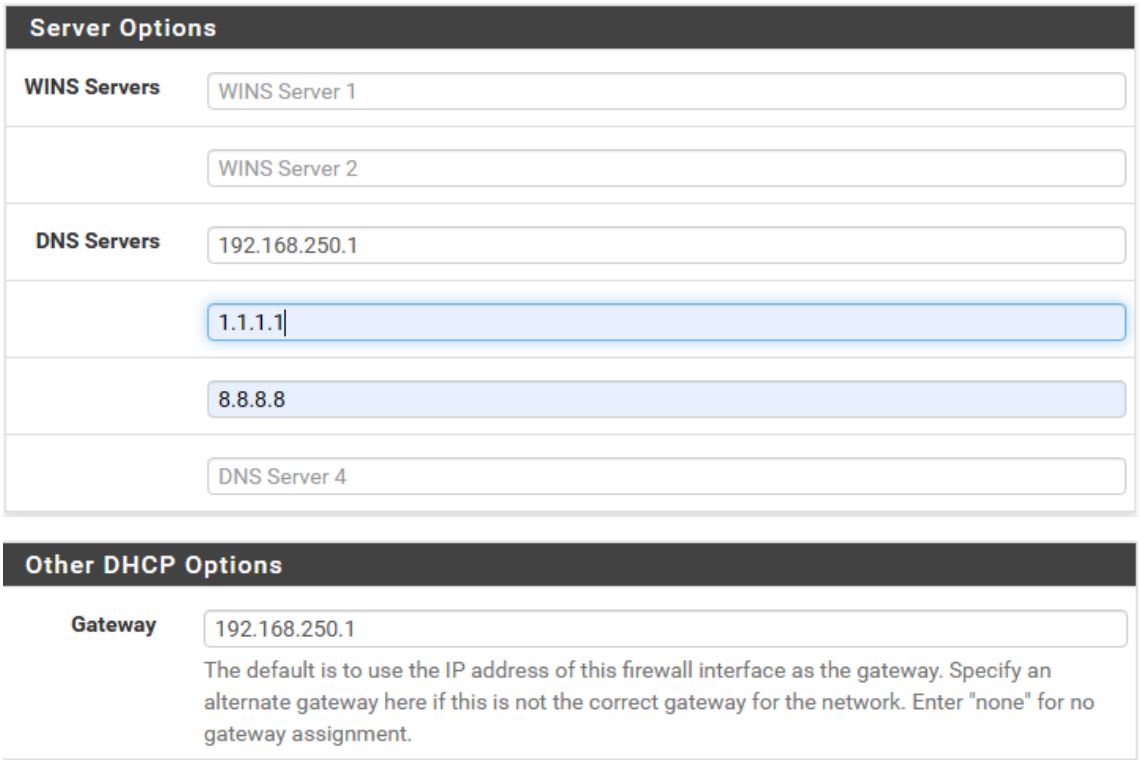
Server Options

WINS Servers	WINS Server 1
	WINS Server 2
DNS Servers	192.168.200.1
	1.1.1.1
	8.8.8.8
	DNS Server 4



Configuración DHCP server DMZ_2

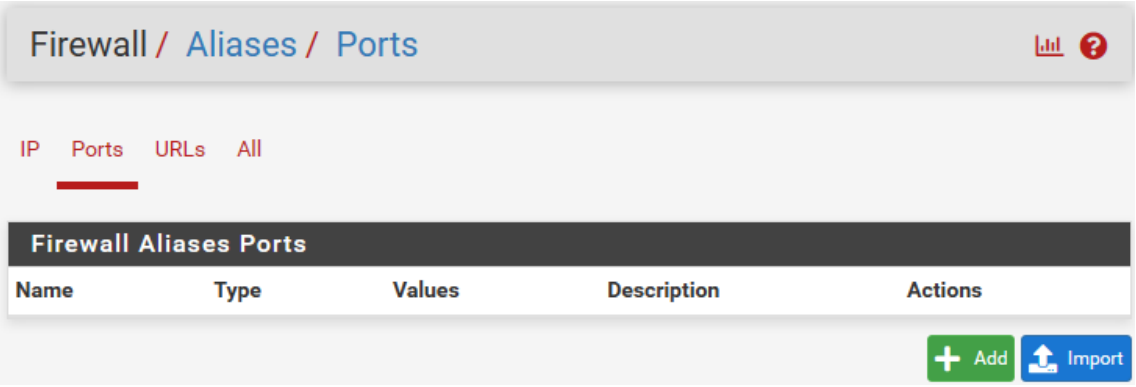




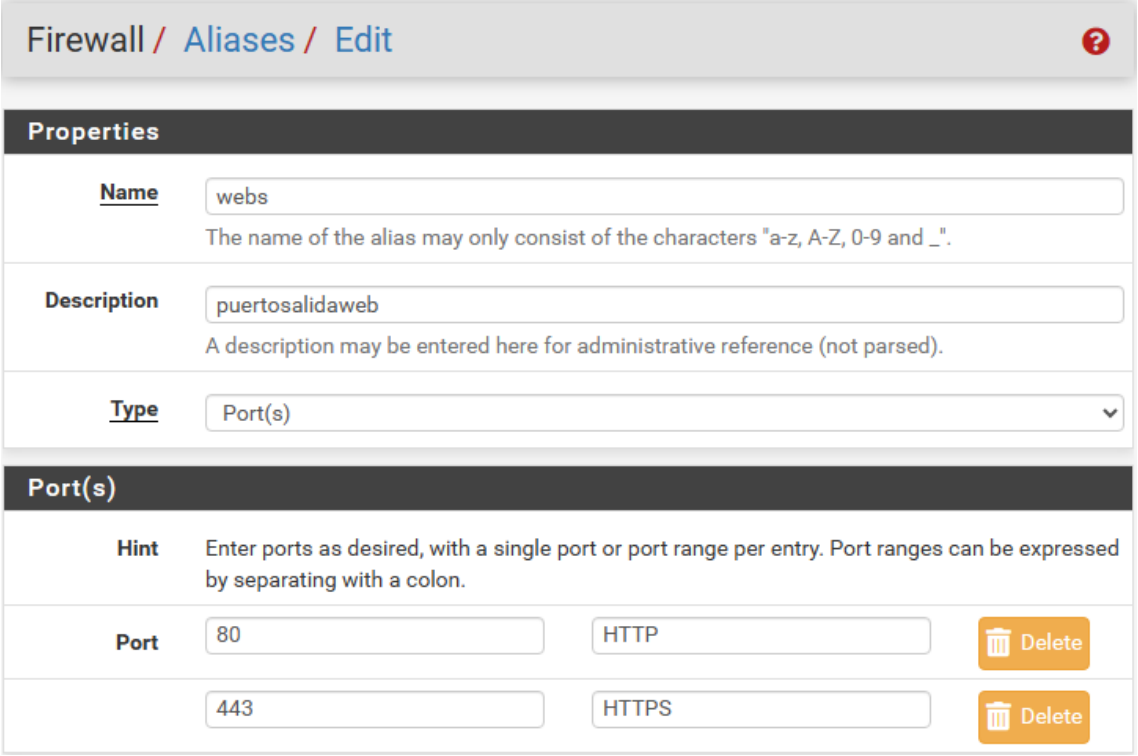
Guardo y aplico cambios

Configuración del Firewall para los accesos a la red externa

Creando un aliase para la comodidad a la hora de crear después una regla al firewall



Habilito los puertos que dan salida a los protocolos HTTP (80) y HTTPS (443)

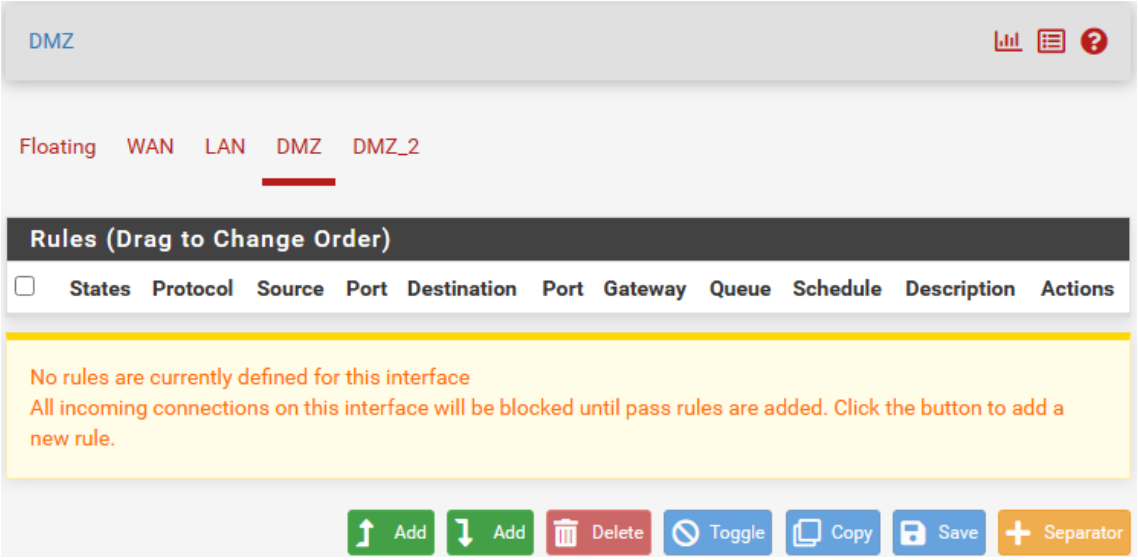


Guardo y aplico cambios

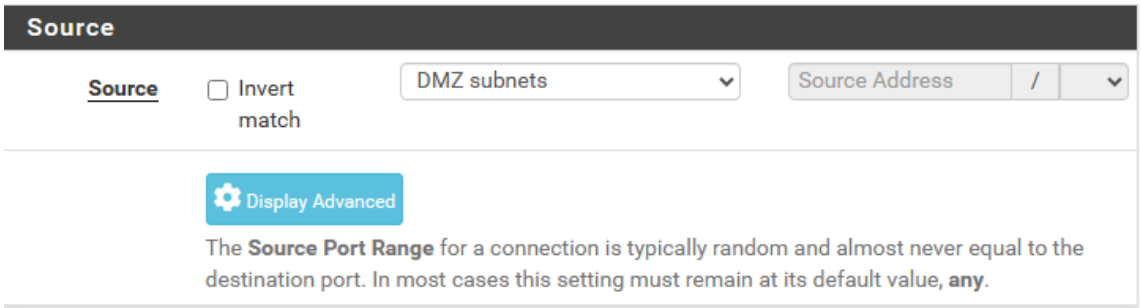
Configuración de las reglas en el firewall

Para la red LAN de manera predeterminada ya tiene los accesos puestos en Pfsense

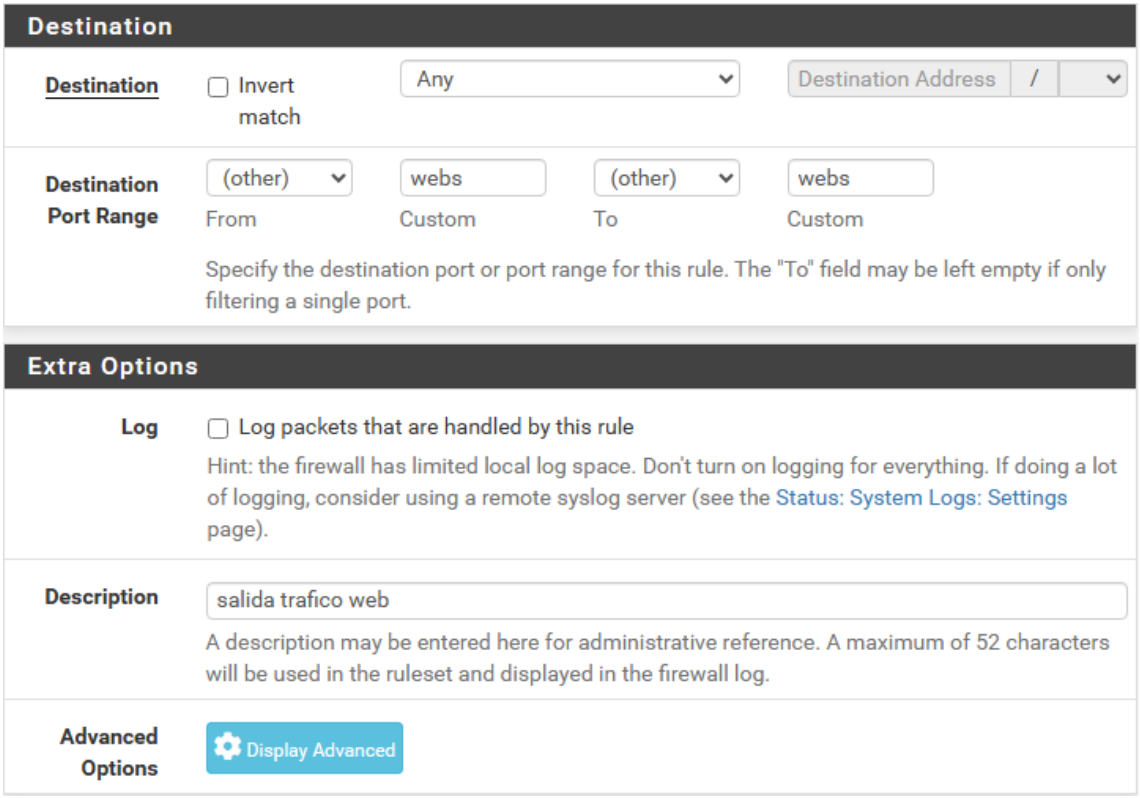
Configuración firewall para la red DMZ



Por seguridad se configura que la regla en DMZ subnets para que solo las subredes que pertenecen a la DMZ tengan acceso



Configuro el rango de puertos que es denominado como “webs” (creado anteriormente en aliases)



Guardar y aplicar cambios

Con esto estará establecido la salida para el trafico web pero no nos va a resolver los nombres de dominio por tanto, creo la regla para el protocolo DNS (puerto 53)

Firewall / Rules / Edit

Edit Firewall Rule

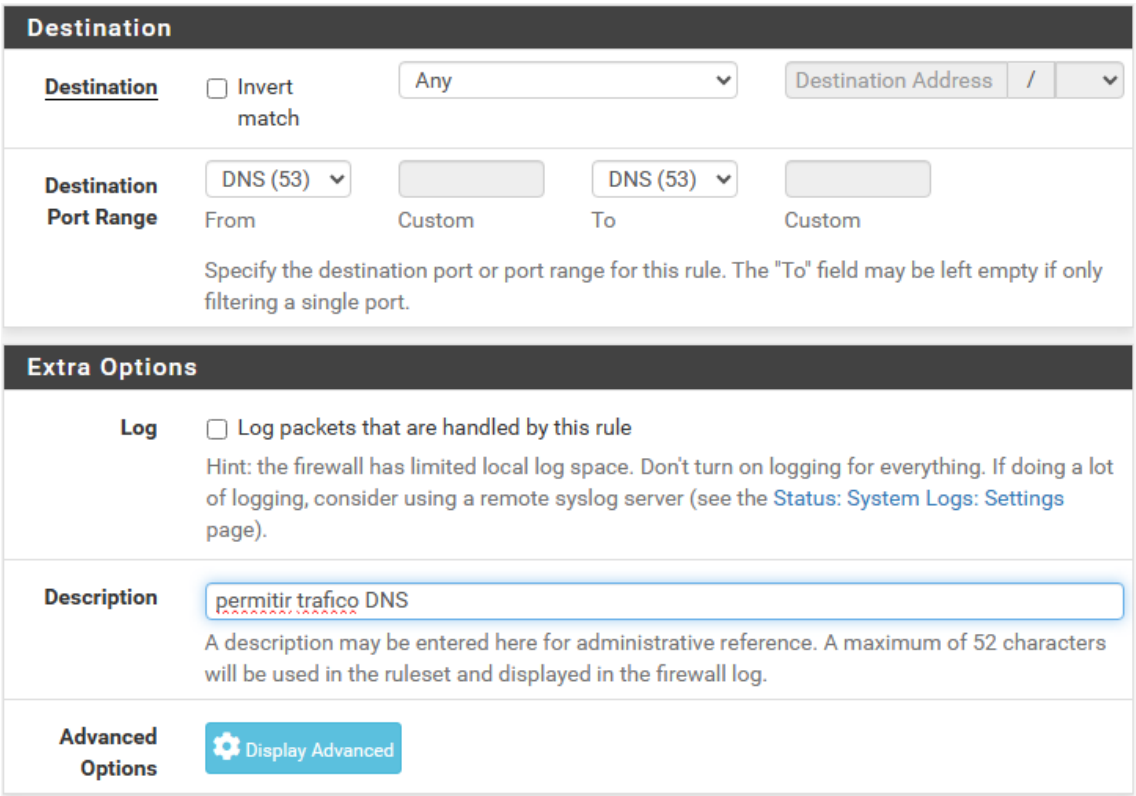
Action	Pass Choose what to do with packets that match the criteria specified below. Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.
Disabled	☐ Disable this rule Set this option to disable this rule without removing it from the list.
Interface	DMZ Choose the interface from which packets must come to match this rule.
Address Family	IPv4 Select the Internet Protocol version this rule applies to.
Protocol	UDP Choose which IP protocol this rule should match.

Source

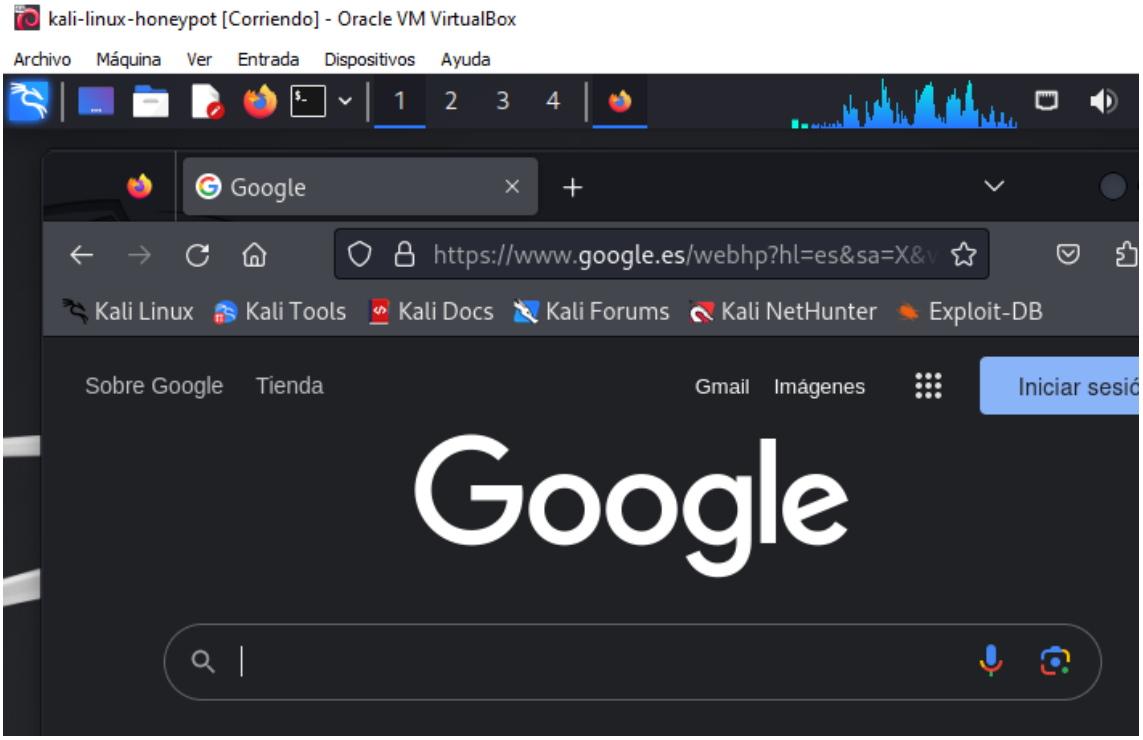
Source	☐ Invert match	DMZ subnets	Source Address /

Display Advanced

The **Source Port Range** for a connection is typically random and almost never equal to the destination port. In most cases this setting must remain at its default value, **any**.



Compruebo que tiene acceso al exterior



Configuración regla firewall para evitar que la DMZ tenga acceso a otras subredes

Para bloquear el acceso a la red LAN

Edit Firewall Rule

Action: Block

Choose what to do with packets that match the criteria specified below.
Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.

Disabled: ☐ Disable this rule

Set this option to disable this rule without removing it from the list.

Interface: DMZ

Choose the interface from which packets must come to match this rule.

Address Family: IPv4

Select the Internet Protocol version this rule applies to.

Protocol: Any

Choose which IP protocol this rule should match.

Source

Source: ☐ Invert match | DMZ subnets | Source Address | /

Destination

Destination: ☐ Invert match | LAN subnets | Destination Address | /

Extra Options

Log: ☐ Log packets that are handled by this rule

Hint: the firewall has limited local log space. Don't turn on logging for everything. If doing a lot of logging, consider using a remote syslog server (see the Status: System Logs: Settings page).

Description: bloqueo para subnet LAN

Para bloquear el acceso a la red DMZ_2

Edit Firewall Rule

Action Block

Choose what to do with packets that match the criteria specified below.
Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.

Disabled ☐ Disable this rule

Set this option to disable this rule without removing it from the list.

Interface DMZ

Choose the interface from which packets must come to match this rule.

Address Family IPv4

Select the Internet Protocol version this rule applies to.

Protocol Any

Choose which IP protocol this rule should match.

Source

Source ☐ Invert match | DMZ subnets | Source Address | /

Destination

Destination ☐ Invert match | DMZ_2 subnets | Destination Address | /

Extra Options

Log ☐ Log packets that are handled by this rule

Hint: the firewall has limited local log space. Don't turn on logging for everything. If doing a lot of logging, consider using a remote syslog server (see the Status: System Logs: Settings page).

Description bloqueo para subnet DMZ_2

Visión global de como quedan las reglas configuradas

Floating WAN LAN DMZ DMZ_2

Rules (Drag to Change Order)

	States	Protocol	Source	Port	Destination	Port	Gateway	Queue	Schedule	Description	Actions
✗	0/0 B	IPv4 *	DMZ subnets	*	LAN subnets	*	*	none		bloqueo para subnet LAN	
✗	0/0 B	IPv4 *	DMZ subnets	*	DMZ_2 subnets	*	*	none		bloqueo para subnet DMZ_2	
✓	0/3 KiB	IPv4 ICMP any	*	*	*	*	*	none		ping	
✓	0/22 KiB	IPv4 UDP	DMZ subnets	*	*	53 (DNS)	*	none		permitir trafico DNS	
✓	2/2.83 MiB	IPv4 TCP	DMZ subnets	*	*	webs	*	none		salida trafico web	

Añado la regla de ping para comprobar si tiene acceso a las otras subredes

Compruebo para puerta enlace y subred LAN, no tiene acceso

```
┌──(kali㉿kali)-[~]
└─$ ping 192.168.100.1
PING 192.168.100.1 (192.168.100.1) 56(84) bytes of data.
^C
--- 192.168.100.1 ping statistics ---
3 packets transmitted, 0 received, 100% packet loss, time 2076ms

┌──(kali㉿kali)-[~]
└─$ ping 192.168.100.100
PING 192.168.100.100 (192.168.100.100) 56(84) bytes of data.
^C
--- 192.168.100.100 ping statistics ---
2 packets transmitted, 0 received, 100% packet loss, time 1032ms
```

Compruebo para puerta enlace y subred DMZ_2, no tiene acceso

```
┌──(kali㉿kali)-[~]
└─$ ping 192.168.250.1
PING 192.168.250.1 (192.168.250.1) 56(84) bytes of data.
^C
--- 192.168.250.1 ping statistics ---
2 packets transmitted, 0 received, 100% packet loss, time 1027ms

┌──(kali㉿kali)-[~]
└─$ ping 192.168.250.100
PING 192.168.250.100 (192.168.250.100) 56(84) bytes of data.
^C
--- 192.168.250.100 ping statistics ---
3 packets transmitted, 0 received, 100% packet loss, time 2039ms
```

Configuración firewall para la red DMZ_2

Edit Firewall Rule

Action: Pass

Choose what to do with packets that match the criteria specified below.
Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.

Disabled: ☐ Disable this rule

Set this option to disable this rule without removing it from the list.

Interface: DMZ_2

Choose the interface from which packets must come to match this rule.

Address Family: IPv4

Select the Internet Protocol version this rule applies to.

Protocol: TCP

Choose which IP protocol this rule should match.

Source

Source: ☐ Invert match | DMZ_2 subnets | Source Address | /

Destination

Destination: ☐ Invert match | Any | Destination Address | /

Destination Port Range: (other) From | webs Custom | (other) To | webs Custom

Specify the destination port or port range for this rule. The "To" field may be left empty if only filtering a single port.

Extra Options

Log: ☐ Log packets that are handled by this rule

Hint: the firewall has limited local log space. Don't turn on logging for everything. If doing a lot of logging, consider using a remote syslog server (see the Status: System Logs: Settings page).

Description: salida trafico web

A description may be entered here for administrative reference. A maximum of 52 characters will be used in the ruleset and displayed in the firewall log.

Guardo y aplico cambios

Al igual que hice para la DMZ voy a permitir la resolución de nombres para el protoco DNS (puerto 53) en la red DMZ_2

Edit Firewall Rule

Action	Pass Choose what to do with packets that match the criteria specified below. Hint: the difference between block and reject is that with reject, a packet (TCP RST or ICMP port unreachable for UDP) is returned to the sender, whereas with block the packet is dropped silently. In either case, the original packet is discarded.
Disabled	☐ Disable this rule Set this option to disable this rule without removing it from the list.
Interface	DMZ_2 Choose the interface from which packets must come to match this rule.
Address Family	IPv4 Select the Internet Protocol version this rule applies to.
Protocol	UDP Choose which IP protocol this rule should match.

Source

Source	☐ Invert match	DMZ_2 subnets	Source Address /

Display Advanced

The **Source Port Range** for a connection is typically random and almost never equal to the destination port. In most cases this setting must remain at its default value, **any**.

Destination

Destination	☐ Invert match	Any	Destination Address /

Destination Port Range	DNS (53)		DNS (53)	
	From	Custom	To	Custom

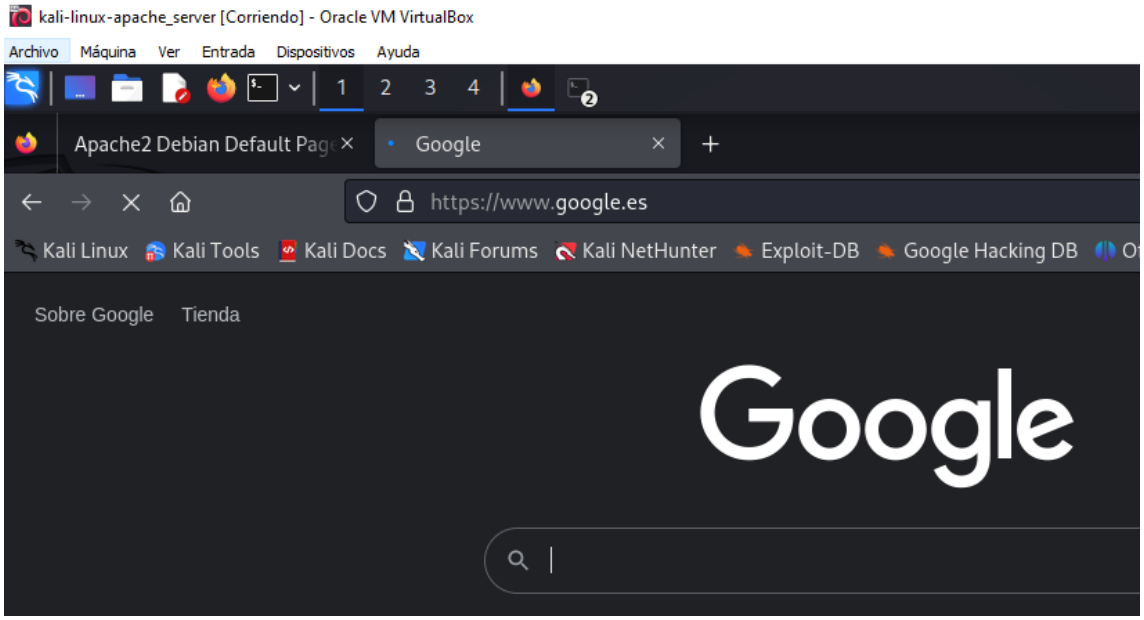
Specify the destination port or port range for this rule. The "To" field may be left empty if only filtering a single port.

Extra Options

Log	☐ Log packets that are handled by this rule Hint: the firewall has limited local log space. Don't turn on logging for everything. If doing a lot of logging, consider using a remote syslog server (see the Status: System Logs: Settings page).
Description	permitir trafico DNS

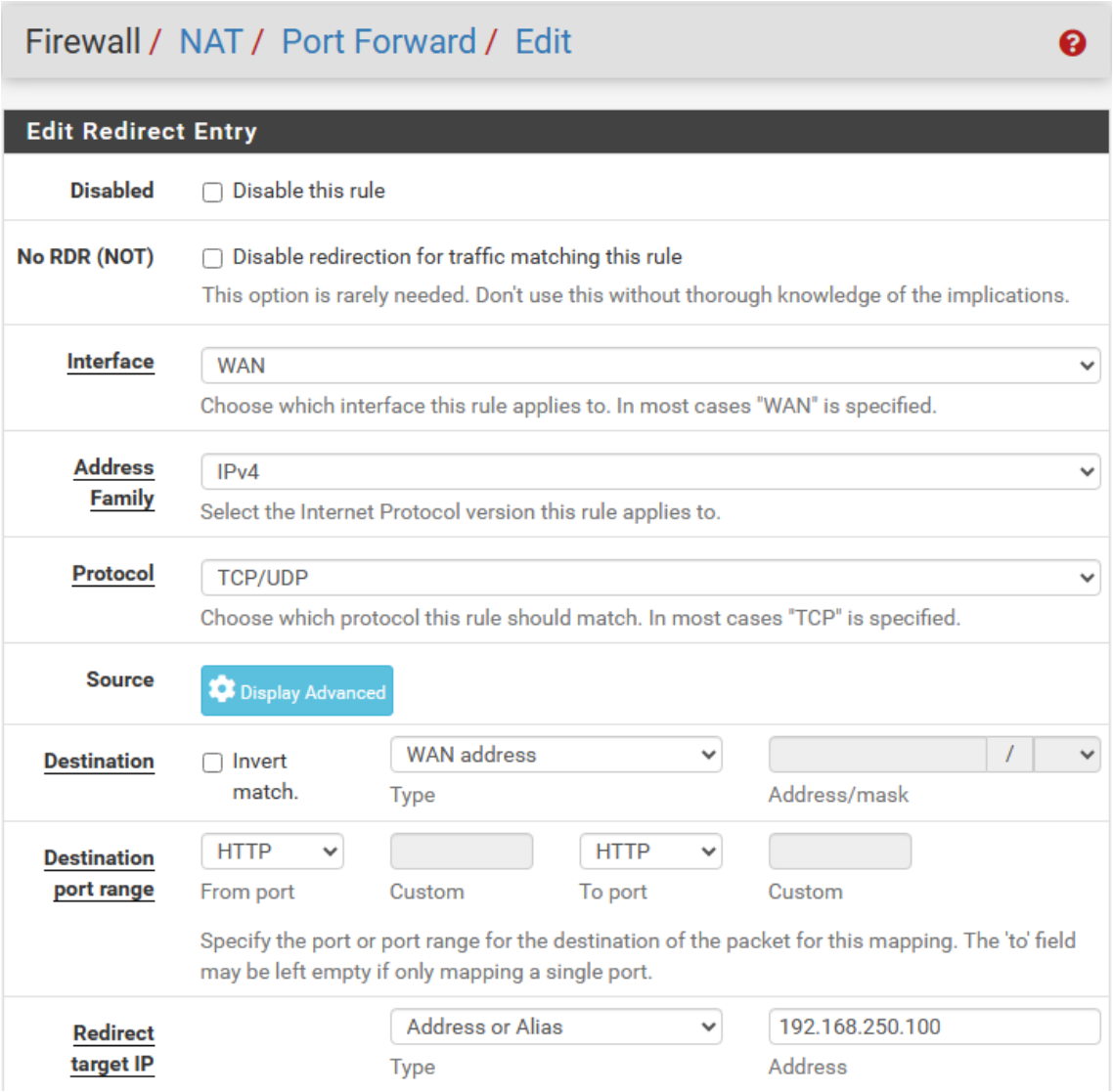
Guardo y aplico cambios

Compruebo que tenga salida y trafico web



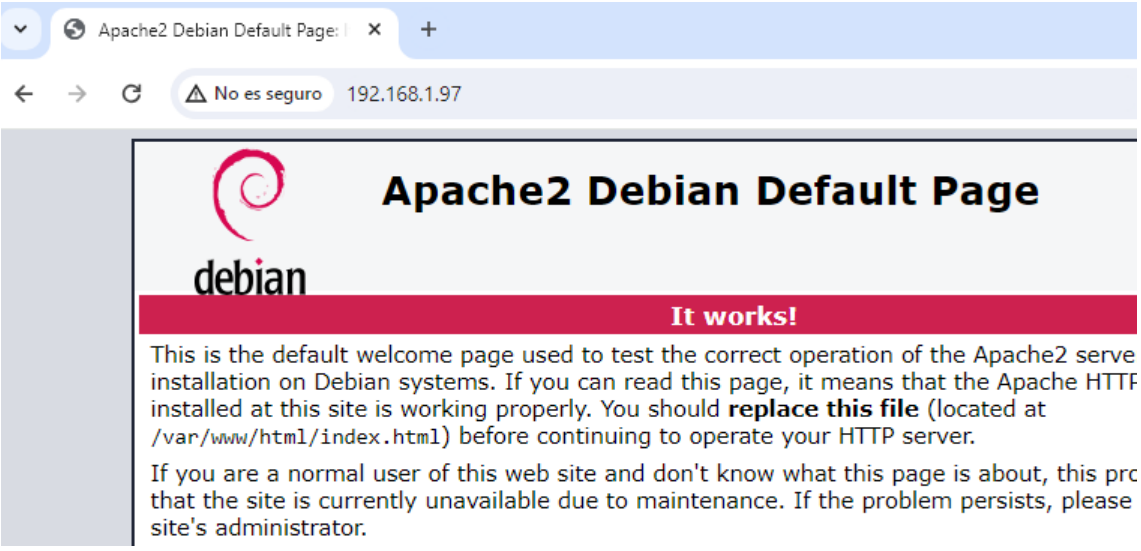
Configuración NAT

Configuración para DMZ_2 servidor apache



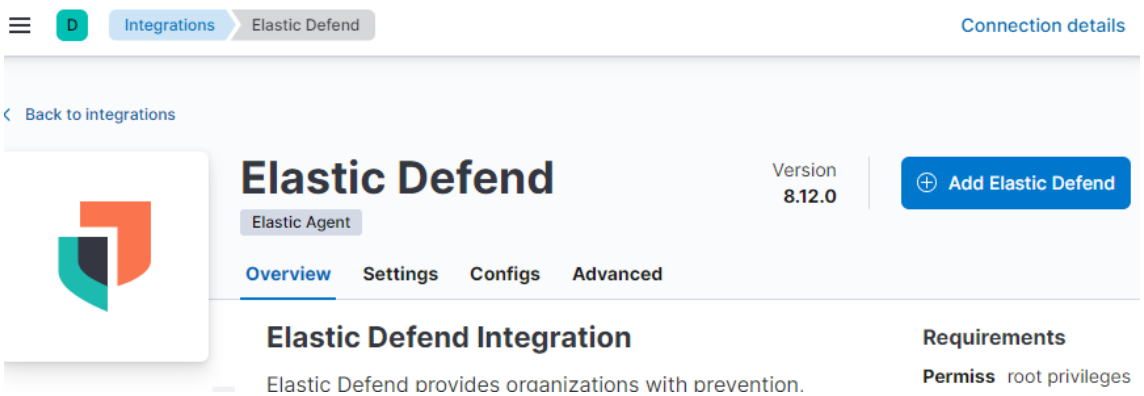
192.168.250.100 es donde se encuentra el servidor apache

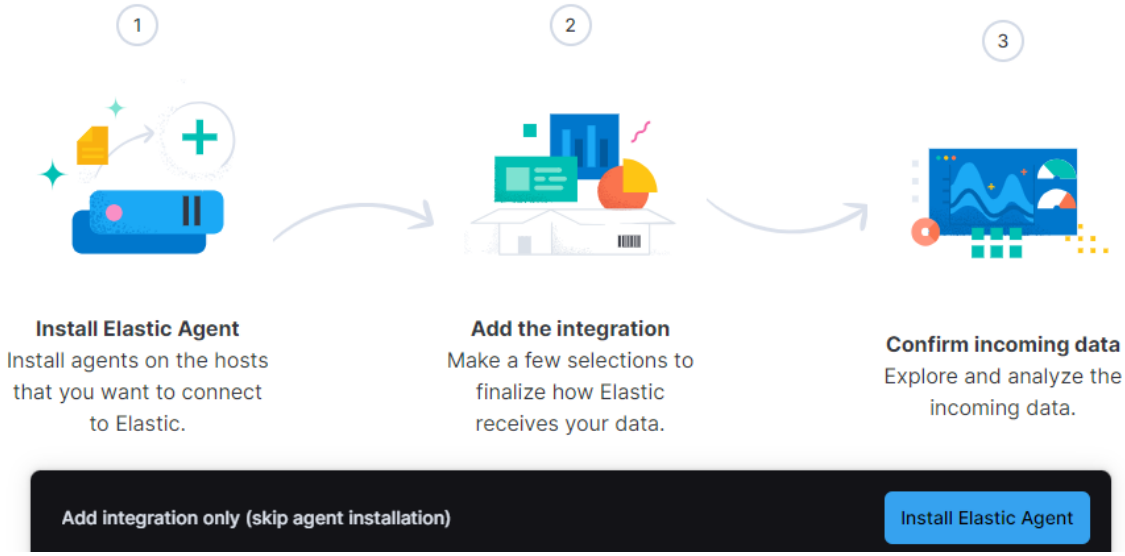
Compruebo que se tiene acceso desde fuera



Configuración de elastic cloud

Me registro y añado el elastic defend





Integración del agente en el Windows 11

1 Install Elastic Agent on your host

Select the appropriate platform and run commands to install, enroll, and start Elastic Agent. Reuse commands to set up agents on more than one host. For aarch64, see our downloads page. This guidance is for AMD but you can adapt it to your device architecture. For additional guidance, see our installation docs.

Linux Tar | Mac | **Windows** | RPM | DEB | Kubernetes

```
$ProgressPreference = 'SilentlyContinue'
Invoke-WebRequest -Uri https://artifacts.elastic.co/downloads/beats/elastic-agent/elastic
Expand-Archive .\elastic-agent-8.12.2-windows-x86_64.zip -DestinationPath .
cd elastic-agent-8.12.2-windows-x86_64
.\elastic-agent.exe install --url=https://9257bce4db4c4dae890eca50cdabd24c.fleet.us-centr
```

Copy to clipboard

Ejecutamos powershell como administrador y instalamos el agente

Administrator: Windows PowerShell

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\Windows\system32> $ProgressPreference = 'SilentlyContinue'
PS C:\Windows\system32> Invoke-WebRequest -Uri https://artifacts.elastic.co/downloads/beats/elastic-agen
t/elastic-agent-8.12.2-windows-x86_64.zip -OutFile elastic-agent-8.12.2-windows-x86_64.zip
PS C:\Windows\system32> Expand-Archive .\elastic-agent-8.12.2-windows-x86_64.zip -DestinationPath .
PS C:\Windows\system32> cd elastic-agent-8.12.2-windows-x86_64
PS C:\Windows\system32\elastic-agent-8.12.2-windows-x86_64> .\elastic-agent.exe install --url=https://92
57bce4db4c4dae890eca50cdabd24c.fleet.us-central1.gcp.cloud.es.io:443 --enrollment-token=WWdzck00NEJKSWZO
YkxPRFJBWkk6eTRVLUR0UDhSMnFUR0M1akc0M3Fvdw==
Elastic Agent will be installed at C:\Program Files\Elastic\Agent and will run as a service. Do you want
 to continue? [Y/n]:Y
[     ] Service Started  [19s] Elastic Agent successfully installed, starting enrollment.
[  ==] Waiting For Enroll...  [20s] {"log.level":"info","@timestamp":"2024-03-16T16:54:42.963-0700","log
.origin":{"file.name":"cmd/enroll_cmd.go","file.line":496},"message":"Starting enrollment to URL: https:
//9257bce4db4c4dae890eca50cdabd24c.fleet.us-central1.gcp.cloud.es.io:443/","ecs.version":"1.6.0"}
[     ] Waiting For Enroll...  [37s] {"log.level":"info","@timestamp":"2024-03-16T16:55:00.300-0700","log
.origin":{"file.name":"cmd/enroll_cmd.go","file.line":461},"message":"Restarting agent daemon, attempt 0
","ecs.version":"1.6.0"}
{"log.level":"info","@timestamp":"2024-03-16T16:55:00.304-0700","log.origin":{"file.name":"cmd/enroll_cm
d.go","file.line":285},"message":"Successfully triggered restart on running Elastic Agent.","ecs.version
":"1.6.0"}
Successfully enrolled the Elastic Agent.
[     ] Done  [37s]
Elastic Agent has been successfully installed.
PS C:\Windows\system32\elastic-agent-8.12.2-windows-x86_64>
PS C:\Windows\system32\elastic-agent-8.12.2-windows-x86_64>
```

Integración del agente en el honeypot y en el servidor apache (mismo procedimiento)

Linux Tar | Mac | Windows | RPM | DEB | Kubernetes

```
curl -L -O https://artifacts.elastic.co/downloads/beats/elastic-agent/elastic-agent-8.12.
tar xzvf elastic-agent-8.12.2-linux-x86_64.tar.gz
cd elastic-agent-8.12.2-linux-x86_64
sudo ./elastic-agent install --url=https://9257bce4db4c4dae890eca50cdabd24c.fleet.us-cent
```

```
┌──(kali㉿kali)-[~]
└─$ curl -L -O https://artifacts.elastic.co/downloads/beats/elastic-agent/elastic-agent-8.12.2-linux-x86_64.ta
tar xzvf elastic-agent-8.12.2-linux-x86_64.tar.gz
cd elastic-agent-8.12.2-linux-x86_64
sudo ./elastic-agent install --url=https://9257bce4db4c4dae890eca50cdabd24c.fleet.us-central1.gcp.cloud.es.io:
Wkk6eTRVLUR0UDhSMnFUR0M1akc0M3Fvdw==
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  552M  100  552M    0     0  9668k      0  0:00:58  0:00:58 --:--:-- 10.8M
elastic-agent-8.12.2-linux-x86_64/README.md
elastic-agent-8.12.2-linux-x86_64/elastic-agent.reference.yml
elastic-agent-8.12.2-linux-x86_64/elastic-agent.yml
elastic-agent-8.12.2-linux-x86_64/LICENSE.txt
elastic-agent-8.12.2-linux-x86_64/NOTICE.txt
elastic-agent-8.12.2-linux-x86_64/.build_hash.txt
elastic-agent-8.12.2-linux-x86_64/data/elastic-agent-de80b0/components/
elastic-agent-8.12.2-linux-x86_64/data/elastic-agent-de80b0/components/.build_hash.txt
elastic-agent-8.12.2-linux-x86_64/data/elastic-agent-de80b0/components/LICENSE.txt
elastic-agent-8.12.2-linux-x86_64/data/elastic-agent-de80b0/components/NOTICE.pf-elastic-collector.txt
elastic-agent-8.12.2-linux-x86_64/data/elastic-agent-de80b0/components/NOTICE.pf-elastic-symbolizer.txt
```

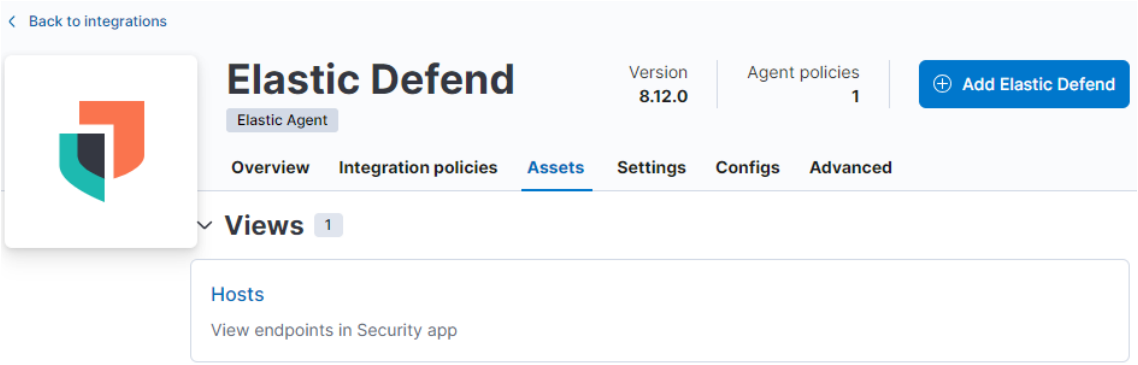
```
Elastic Agent will be installed at /opt/Elastic/Agent and will run as a service. Do you want to continue? [Y/n]:Y
[ ==] Service Started  [13s] Elastic Agent successfully installed, starting enrollment.
[=  ] Waiting For Enroll...  [13s] {"log.level":"info","@timestamp":"2024-03-16T20:05:43.470-0400","log.origin":{"file.name":"cmd/enroll_cmd.go","file.line"
:496},"message":"Starting enrollment to URL: https://9257bce4db4c4dae890eca50cdabd24c.fleet.us-central1.gcp.cloud.es.io:443/","ecs.version":"1.6.0"}
[  =] Waiting For Enroll...  [20s] {"log.level":"info","@timestamp":"2024-03-16T20:05:50.192-0400","log.origin":{"file.name":"cmd/enroll_cmd.go","file.line"
:461},"message":"Restarting agent daemon, attempt 0","ecs.version":"1.6.0"}
{"log.level":"info","@timestamp":"2024-03-16T20:05:50.196-0400","log.origin":{"file.name":"cmd/enroll_cmd.go","file.line":285},"message":"Successfully trigge
red restart on running Elastic Agent.","ecs.version":"1.6.0"}
Successfully enrolled the Elastic Agent.
[   =] Done  [20s]
Elastic Agent has been successfully installed.
```

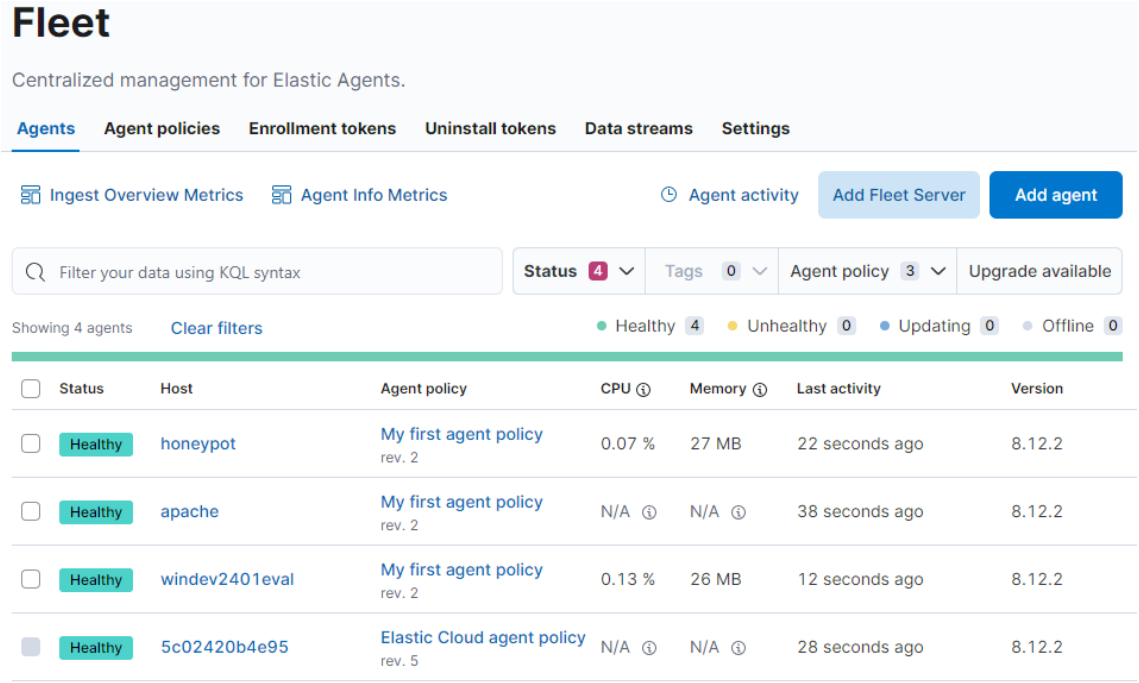
We'll save your integration with our recommended defaults.

✓ Windows, macOS, and Linux event collection

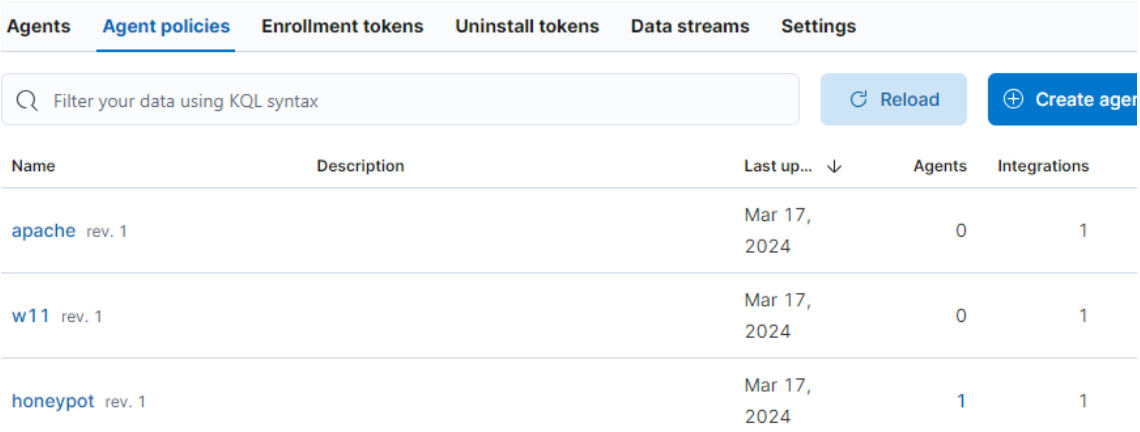
You can edit these settings later in the Elastic Defend integration policy. Learn more

Go back | Confirm incoming data





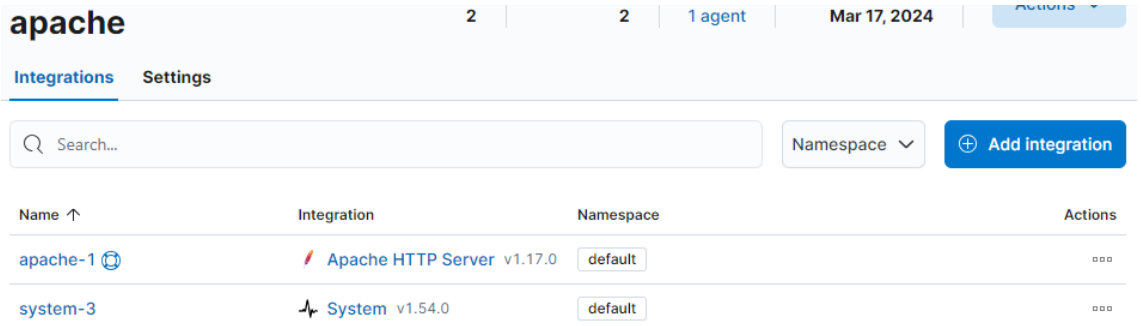
Se crean las politicas para el honeypot, apache y w11 para recoger los logs del sistema



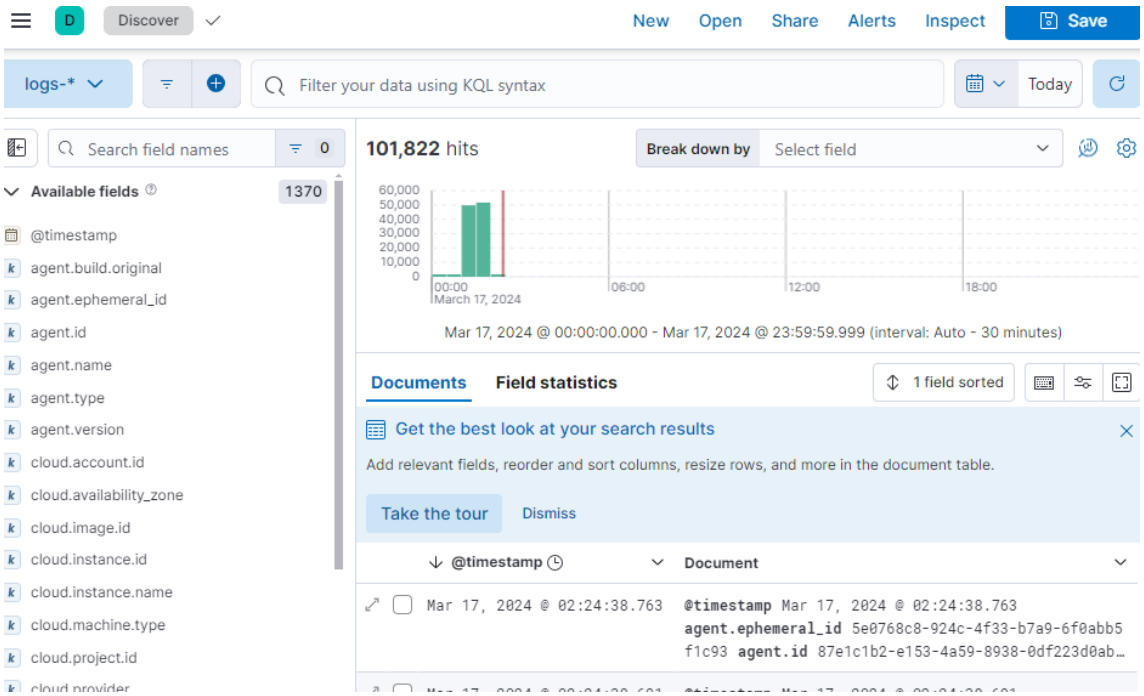
Y se asignan respectivamente

☐	Healthy	honeypot	honeypot rev. 1	1.49 %	145 MB	25 seconds ago	8.12.2
☐	Healthy	apache	apache rev. 1	N/A	N/A	13 seconds ago	8.12.2
☑	Healthy	windev2401eval	w11 rev. 1	0.12 %	26 MB	27 seconds ago	8.12.2

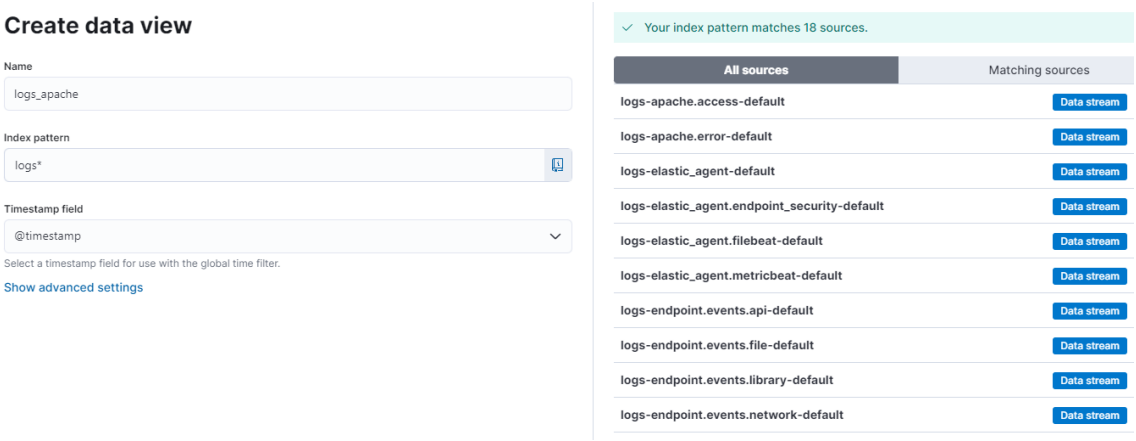
En la política de apache añado la integración para los logs de apache HTTP server



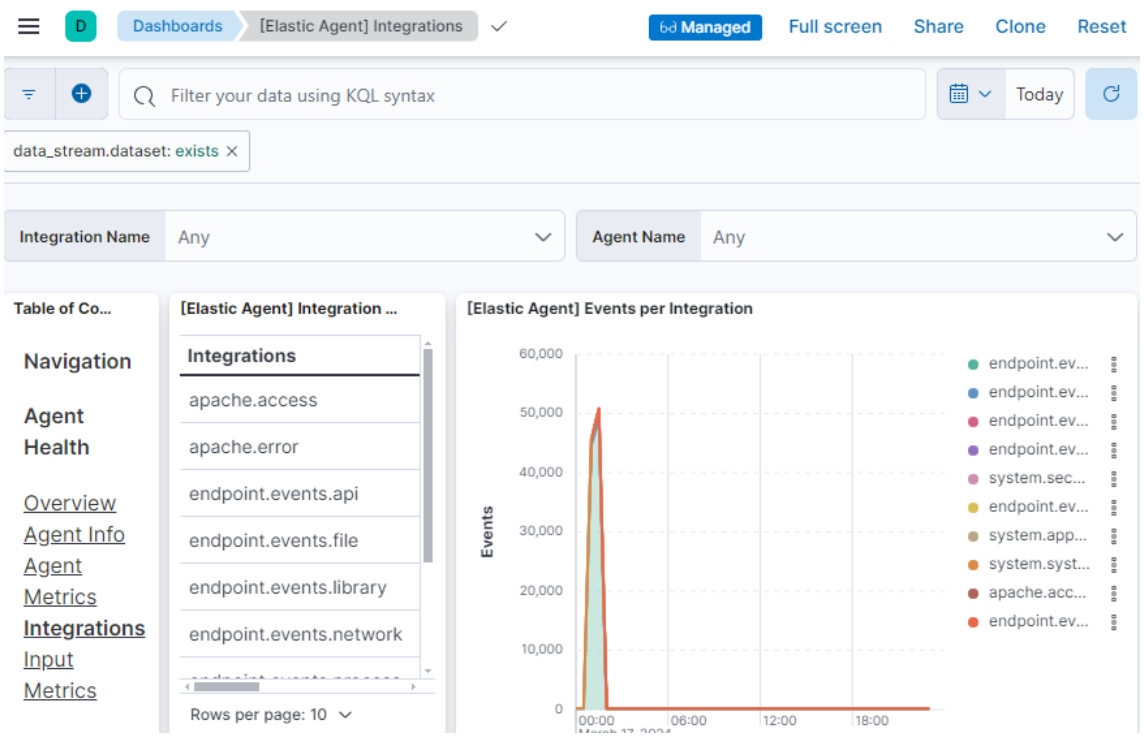
Compruebo en discover los logs que va generando



Creo un data view con para los logs de apache

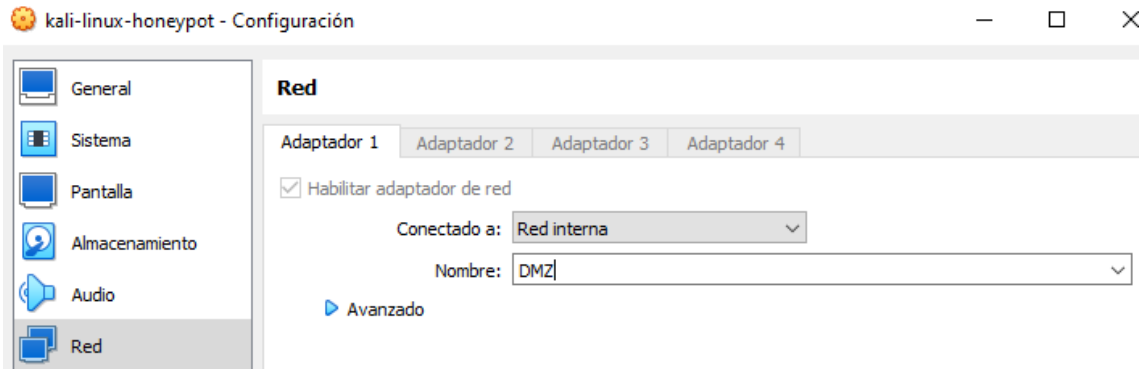


Reviso en dashboards los logs que va generando el servidor apache



Configuración de un honeypot en la red DMZ

La finalidad del honeypot es conseguir despistar al atacante y hacer que pierda el tiempo creyendo que está en un equipo perteneciente a la empresa con datos sensibles.



Compruebo que la Kali que quiero utilizar como honeypot esta en la red es la correcta

```
┌──(kali㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.200.100  netmask 255.255.255.0  broadcast 192.168.200.255
        inet6 fe80::25bf:7849:de60:ae6e  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:1e:36:4a  txqueuelen 1000  (Ethernet)
        RX packets 272587  bytes 290592678 (277.1 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 117362  bytes 24554446 (23.4 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Instalación del honeypot

Se usa Docker, no esta instalado por defecto, por tanto se instala

sudo apt install -y docker.io

```
┌──(kali㉿kali)-[~]
└─$ sudo apt install -y docker.io
```

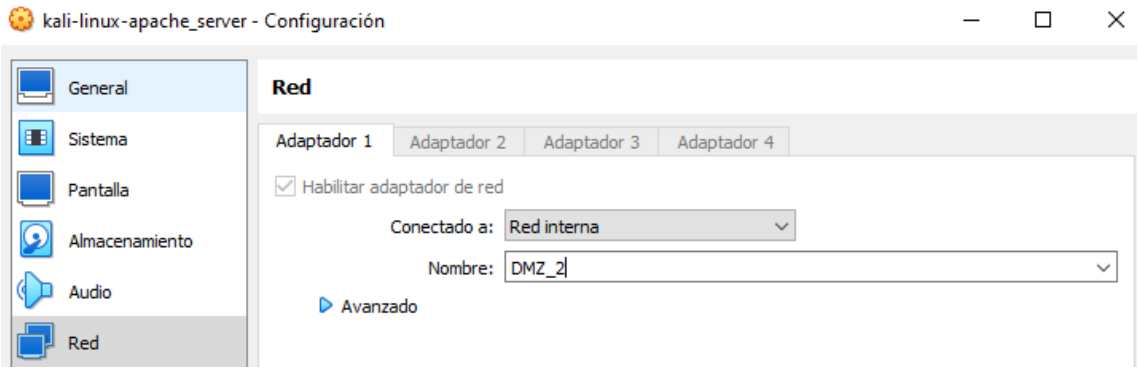
sudo docker run -p 2222:2222 cowrie/cowrie

```
┌──(kali㉿kali)-[~]
└─$ sudo docker run -p 2222:2222 cowrie/cowrie
Unable to find image 'cowrie/cowrie:latest' locally
latest: Pulling from cowrie/cowrie
```

```
  b"blowfish-ctr": (algorithms.Blowfish, 16, modes.CTR),
/cowrie/cowrie-env/lib/python3.11/site-packages/twisted/conch/ssh/transport.py:116: CryptographyDeprecationW
arning: CAST5 has been deprecated
  b"cast128-ctr": (algorithms.CAST5, 16, modes.CTR),
2024-03-16T23:29:51+0000 [-] Python Version 3.11.2 (main, Mar 13 2023, 12:18:29) [GCC 12.2.0]
2024-03-16T23:29:51+0000 [-] Twisted Version 23.10.0
2024-03-16T23:29:51+0000 [-] Cowrie Version 2.5.0
2024-03-16T23:29:51+0000 [-] Loaded output engine: jsonlog
2024-03-16T23:29:51+0000 [twisted.scripts._twistd_unix.UnixAppLogger#info] twistd 23.10.0 (/cowrie/cowrie-en
v/bin/python3 3.11.2) starting up.
2024-03-16T23:29:51+0000 [twisted.scripts._twistd_unix.UnixAppLogger#info] reactor class: twisted.internet.e
pollreactor.EPollReactor.
2024-03-16T23:29:51+0000 [-] CowrieSSHFactory starting on 2222
2024-03-16T23:29:51+0000 [cowrie.ssh.factory.CowrieSSHFactory#info] Starting factory <cowrie.ssh.factory.Cow
rieSSHFactory object at 0x7f2421bc4510>
2024-03-16T23:29:51+0000 [-] Generating new RSA keypair ...
2024-03-16T23:29:52+0000 [-] Generating new ECDSA keypair ...
2024-03-16T23:29:52+0000 [-] Generating new ed25519 keypair ...
2024-03-16T23:29:52+0000 [-] Ready to accept SSH connections
```

Es un servidor SSH el cual puedan entrar y nosotros podremos ver que movimientos y comandos realiza el atacante

Configuración de Apache web server en DMZ_2



Compruebo que la maquina se encuentre en la red correcta

```
┌──(kali㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 192.168.250.100  netmask 255.255.255.0  broadcast 192.168.250.255
        inet6 fe80::25bf:7849:de60:ae6e  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:1e:36:4a  txqueuelen 1000  (Ethernet)
        RX packets 272587  bytes 290592678 (277.1 MiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 117283  bytes 24536043 (23.3 MiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

Inicio el servicio de apache
service apache2 start

```
┌──(kali㉿kali)-[~]
└─$ service apache2 start
```