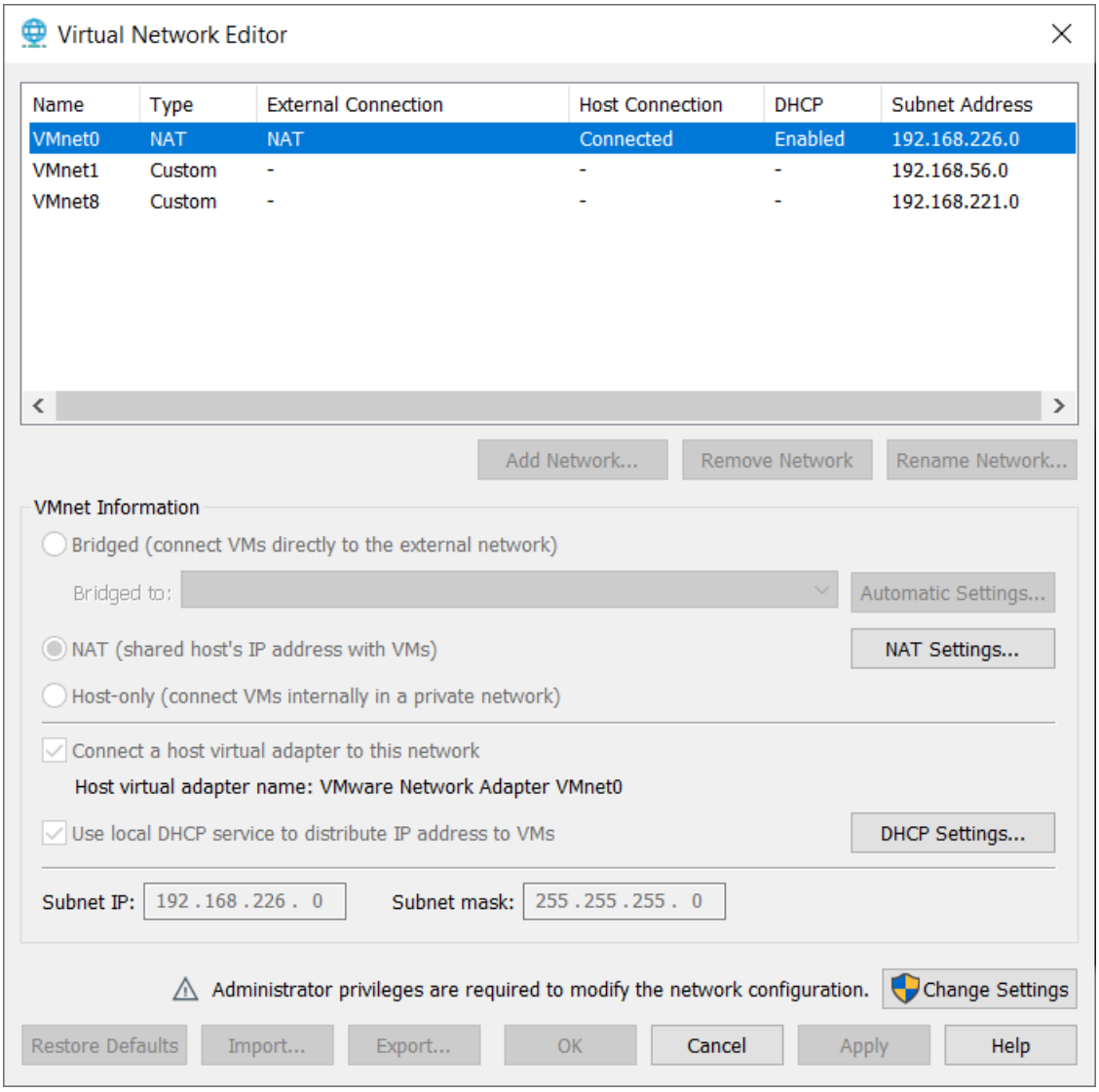
Procédure Installation pfSense

# CONFIGURATION PF_SENSE SUR RESEAU LAN

# SOMMAIRE

# 1. Configuration du réseau de VMWare

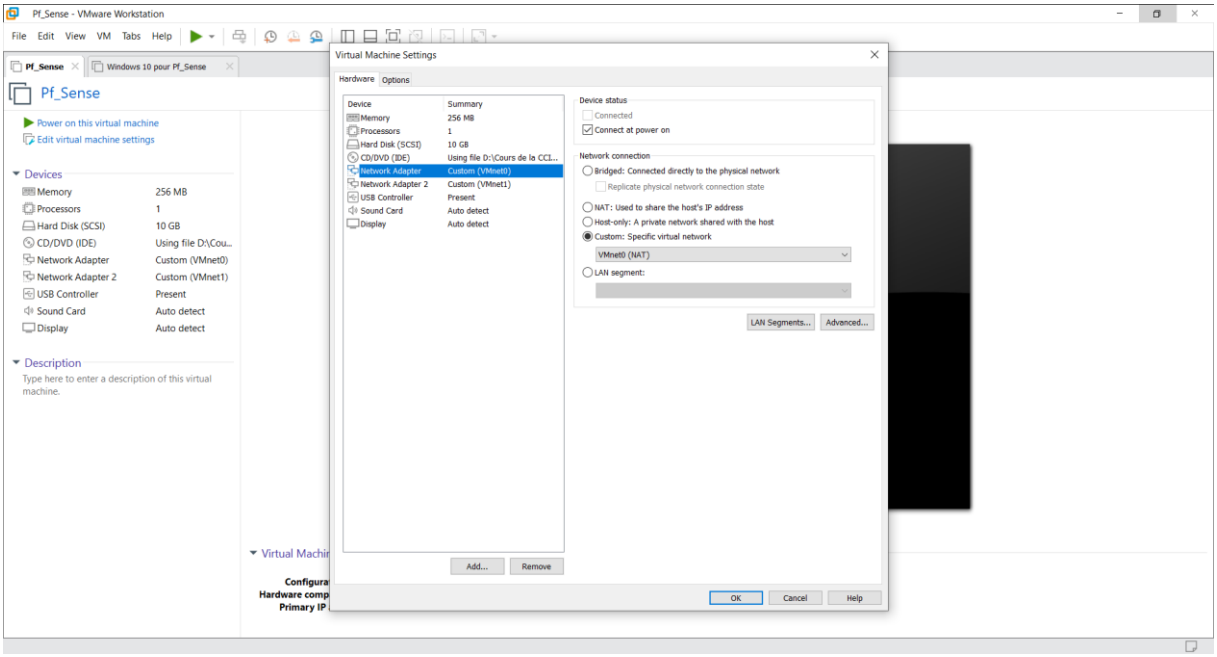
Nous allons tout d'abord configurer les cartes réseaux de notre paramétrage sur l'outil de virtualisation, dans notre cas VMWare.




Nous allons configurer une carte réseau **VMnet0** en **NAT**, on connecte l'Host et habilitons le DHCP.

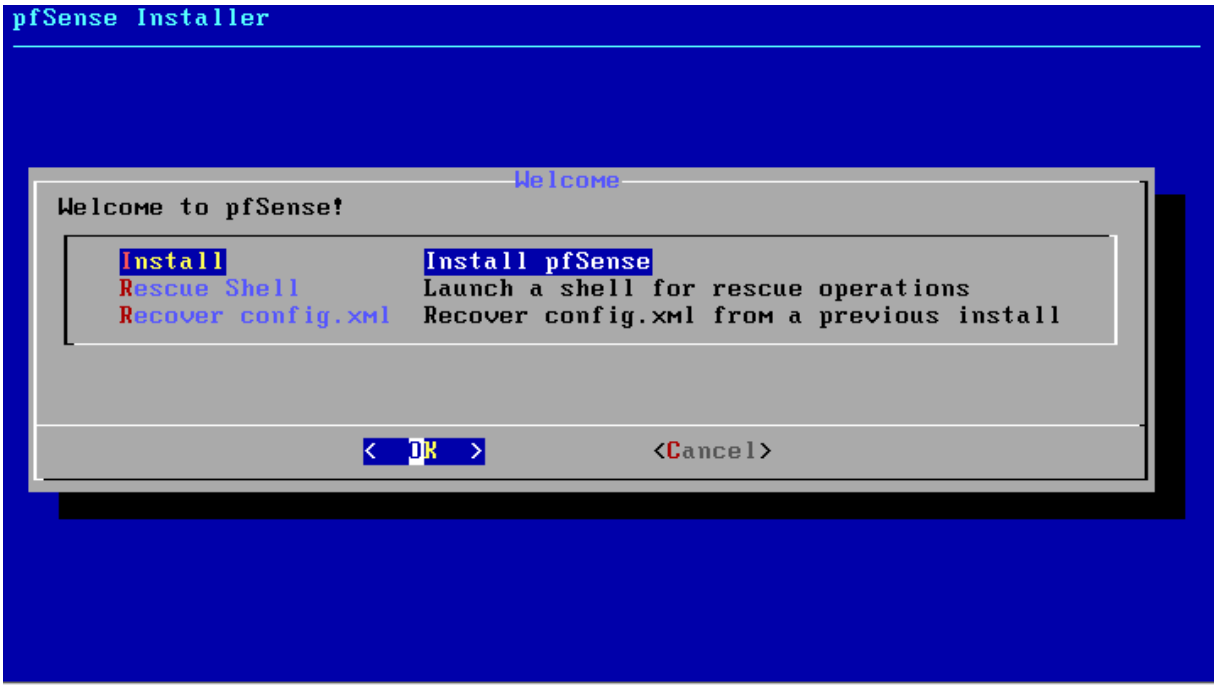
L'autre carte réseau **VMnat1** en **Custom** et nous allons bloquer l'accès internet ainsi que le DHCP.

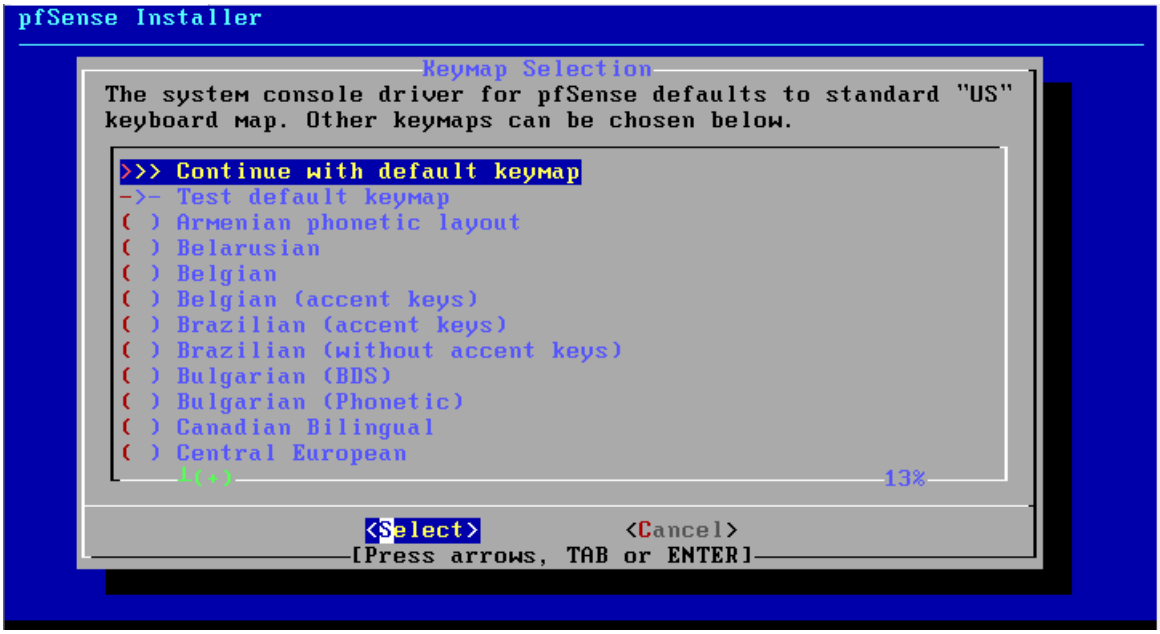
Nous allons ensuite créer deux cartes réseau sur notre VM et nous allons configurer les deux en **Custom**

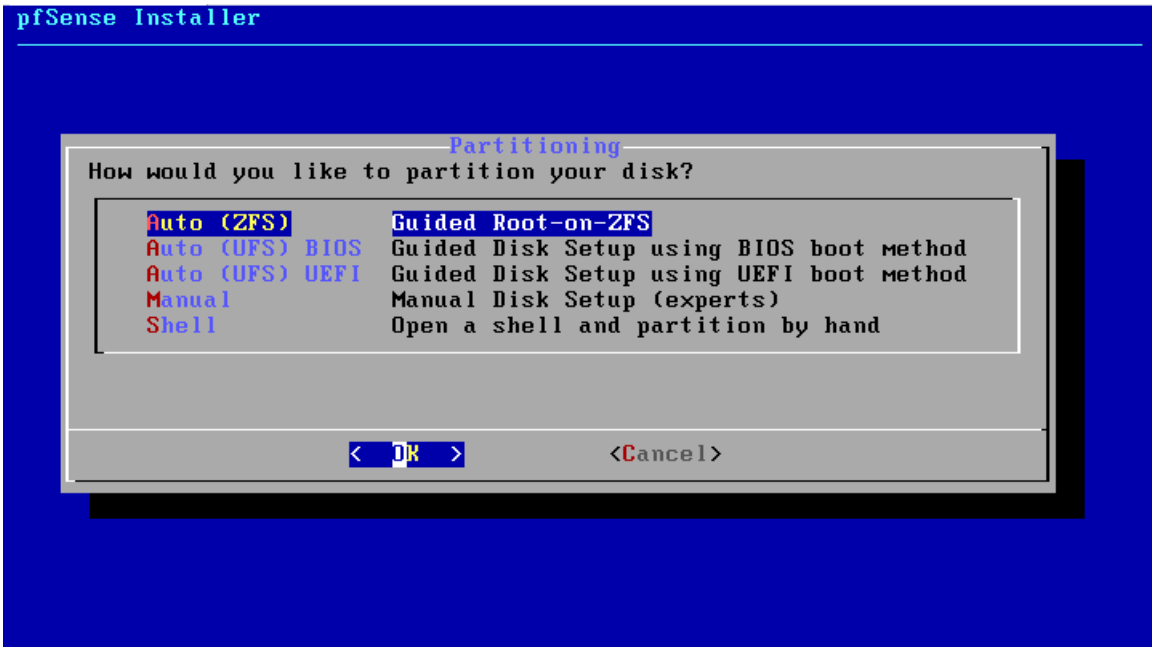


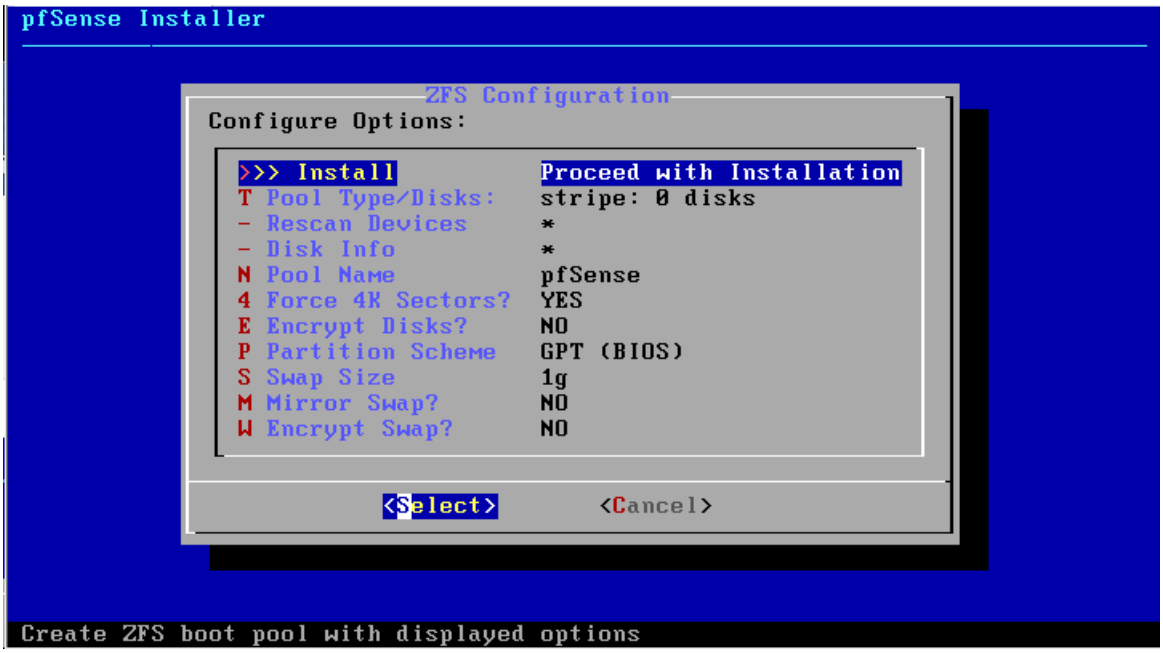

Une fois que cette action est réalisée nous allons lancer une machine virtuelle à partir de l'image ISO *pfSense-CE-2.6.0-RELEASE-amd64*

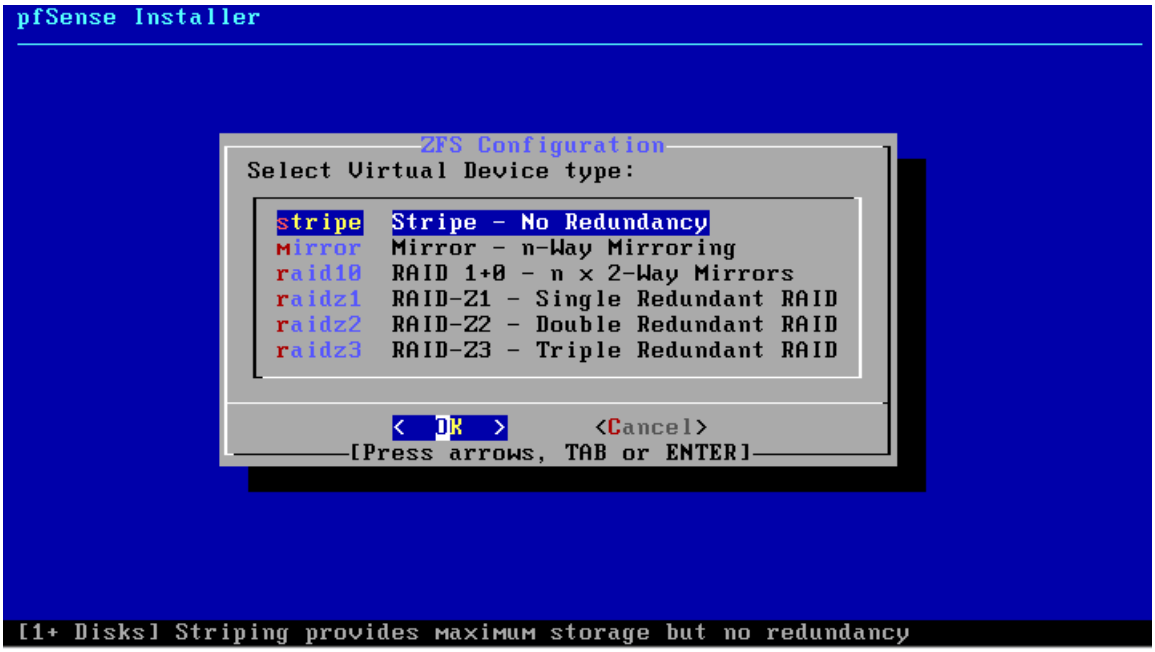
## 2. Installation et configuration du serveur Pf_Sense

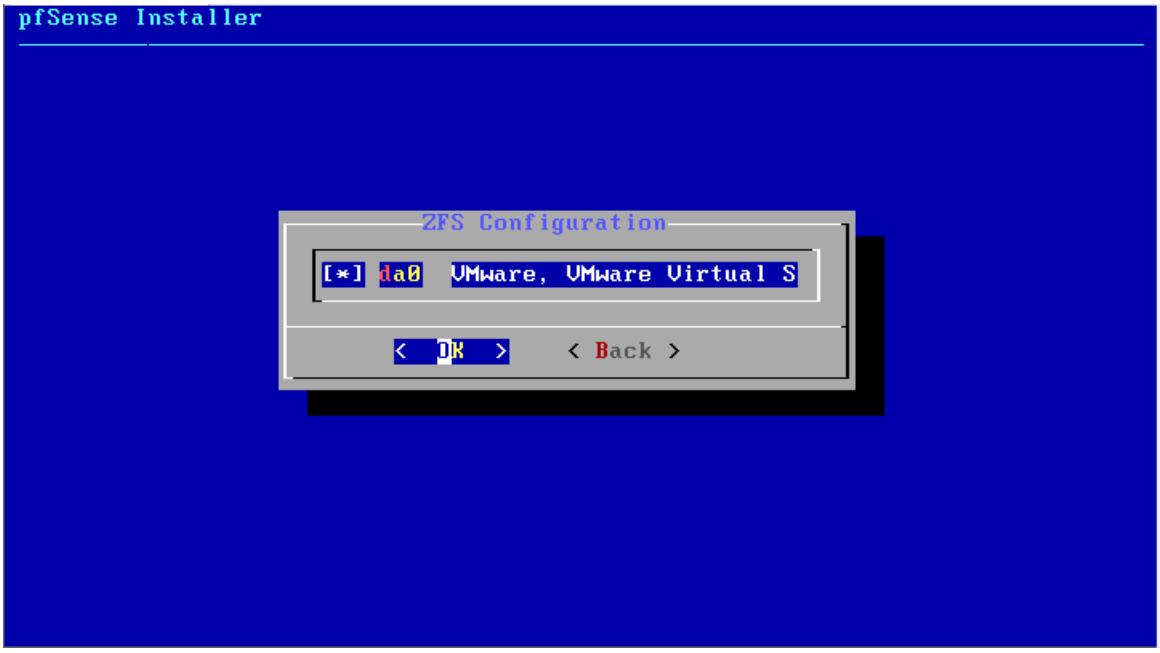



pfSense Installer
Keymap Selection
The system console driver for pfSense defaults to standard "US"
keyboard map. Other keymaps can be chosen below.
>>> Continue with default keymap
->- Test default keymap
( ) Armenian phonetic layout
( ) Belarusian
( ) Belgian
( ) Belgian (accent keys)
( ) Brazilian (accent keys)
( ) Brazilian (without accent keys)
( ) Bulgarian (BDS)
( ) Bulgarian (Phonetic)
( ) Canadian Bilingual
( ) Central European
13%
<Select>
<Cancel>
[Press arrows, TAB or ENTER]

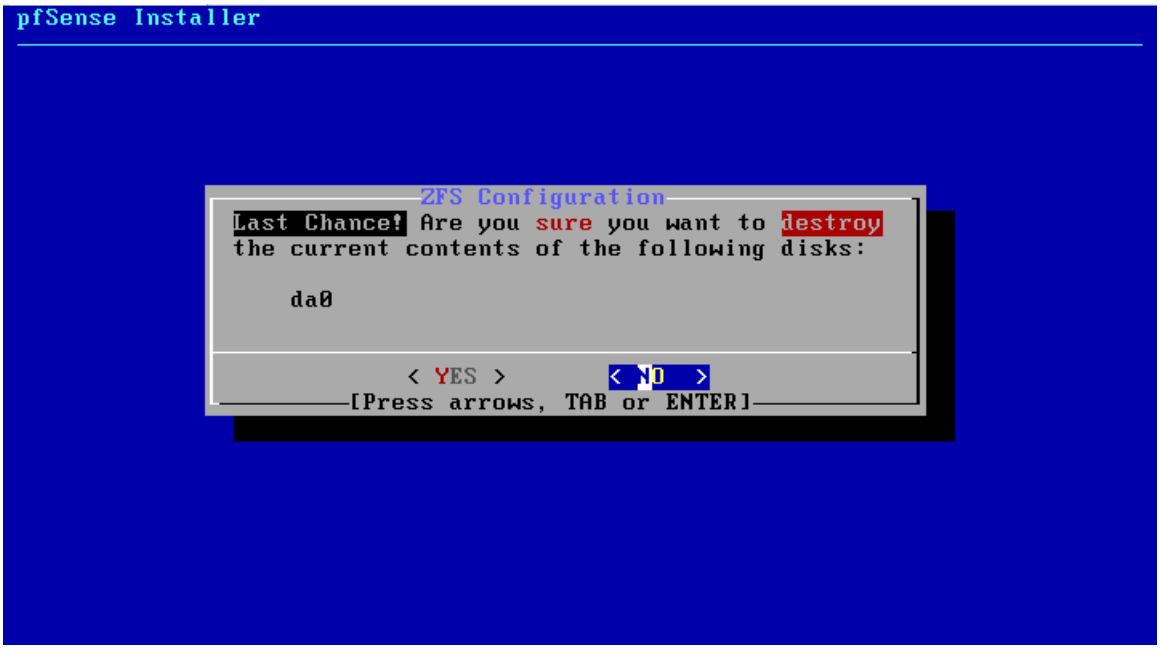

pfSense Installer
Partitioning
How would you like to partition your disk?
Auto (ZFS) Guided Root-on-ZFS
Auto (UFS) BIOS Guided Disk Setup using BIOS boot method
Auto (UFS) UEFI Guided Disk Setup using UEFI boot method
Manual Manual Disk Setup (experts)
Shell Open a shell and partition by hand
< OK >
<Cancel>

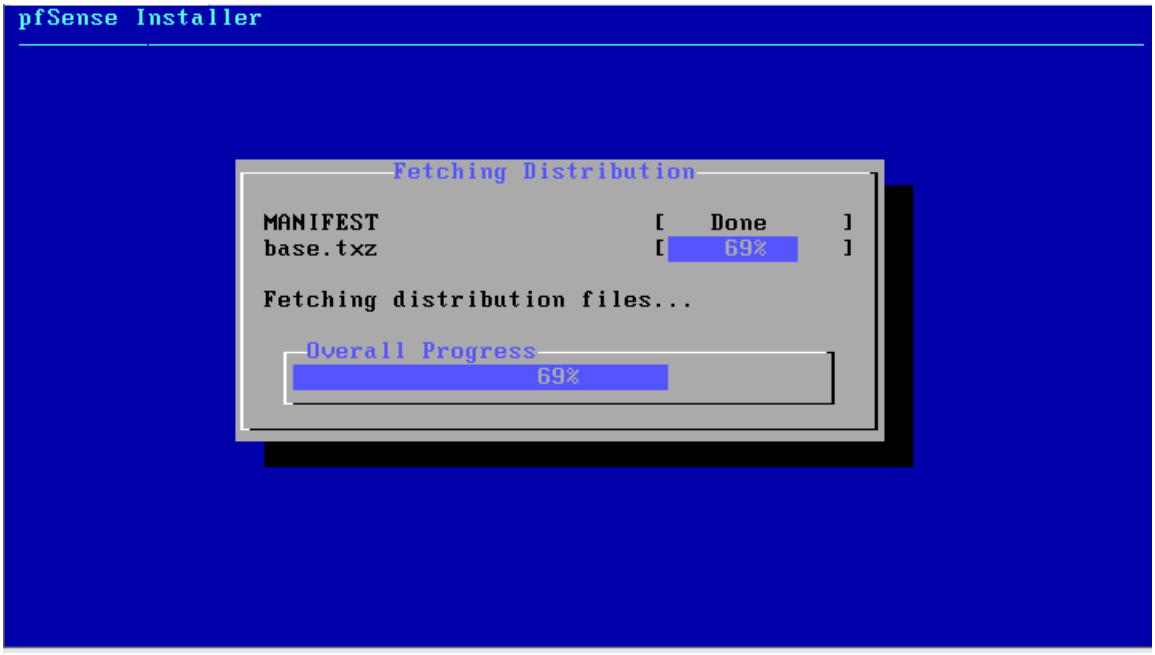

pfSense Installer
ZFS Configuration
Configure Options:
>>> Install Proceed with Installation
T Pool Type/Disks: stripe: 0 disks
- Rescan Devices *
- Disk Info *
N Pool Name pfSense
4 Force 4K Sectors? YES
E Encrypt Disks? NO
P Partition Scheme GPT (BIOS)
S Swap Size 1g
M Mirror Swap? NO
W Encrypt Swap? NO
<Select> <Cancel>
Create ZFS boot pool with displayed options

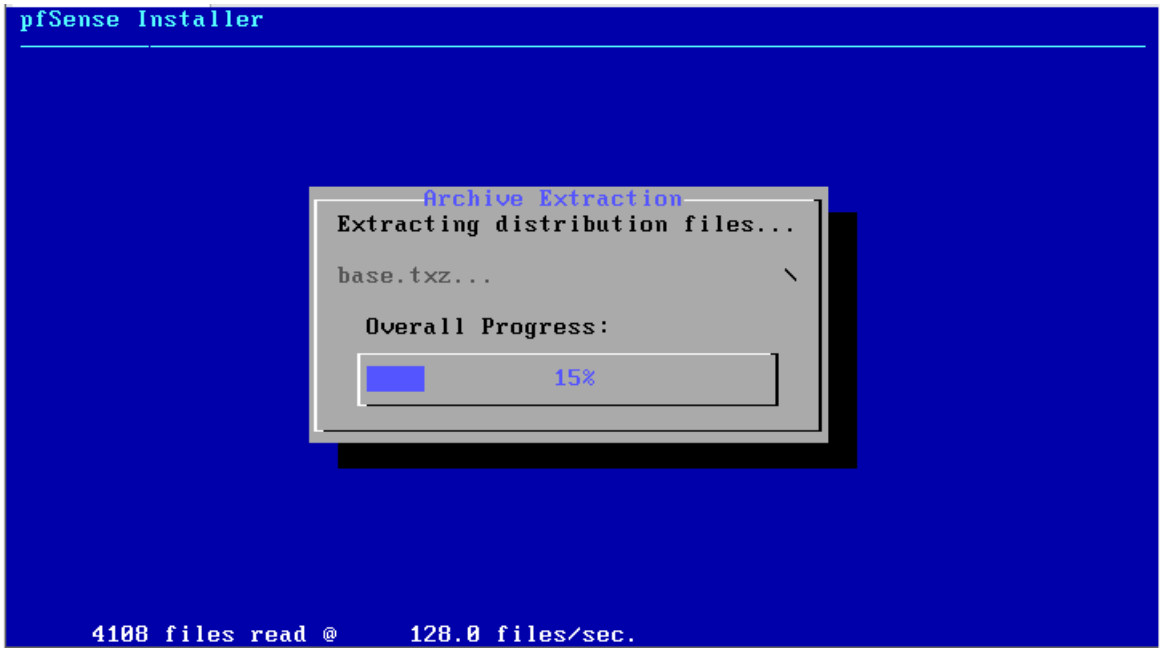

pfSense Installer
ZFS Configuration
Select Virtual Device type:
stripe Stripe - No Redundancy
mirror Mirror - n-Way Mirroring
raid10 RAID 1+0 - n x 2-Way Mirrors
raidz1 RAID-Z1 - Single Redundant RAID
raidz2 RAID-Z2 - Double Redundant RAID
raidz3 RAID-Z3 - Triple Redundant RAID
< OK > <Cancel>
[Press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

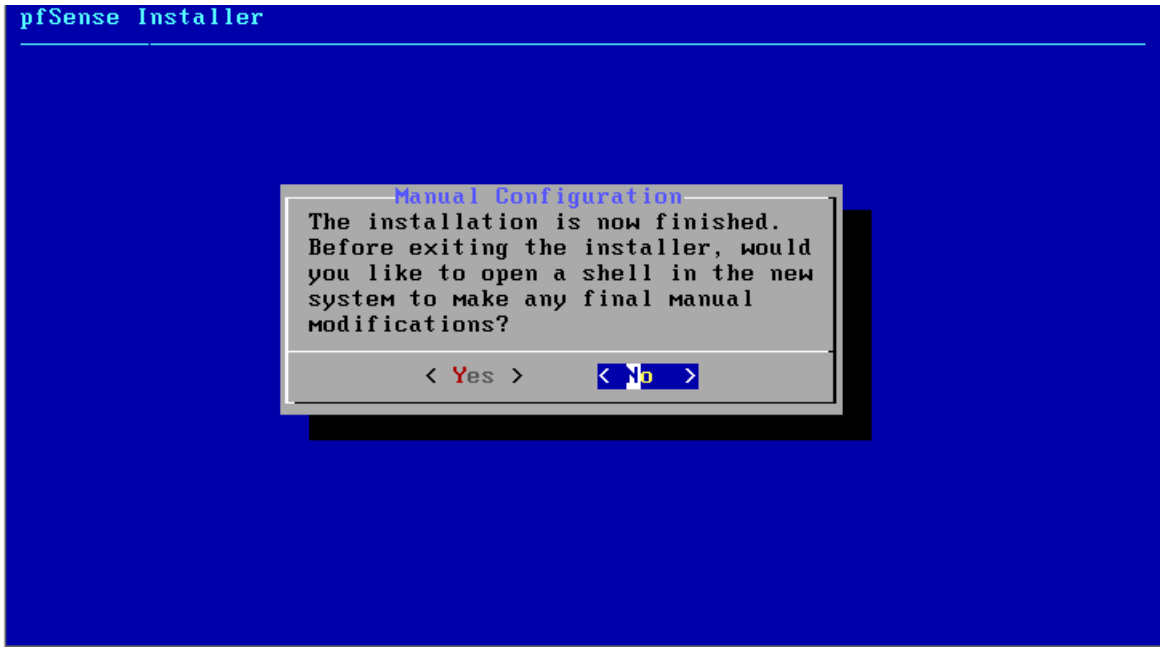


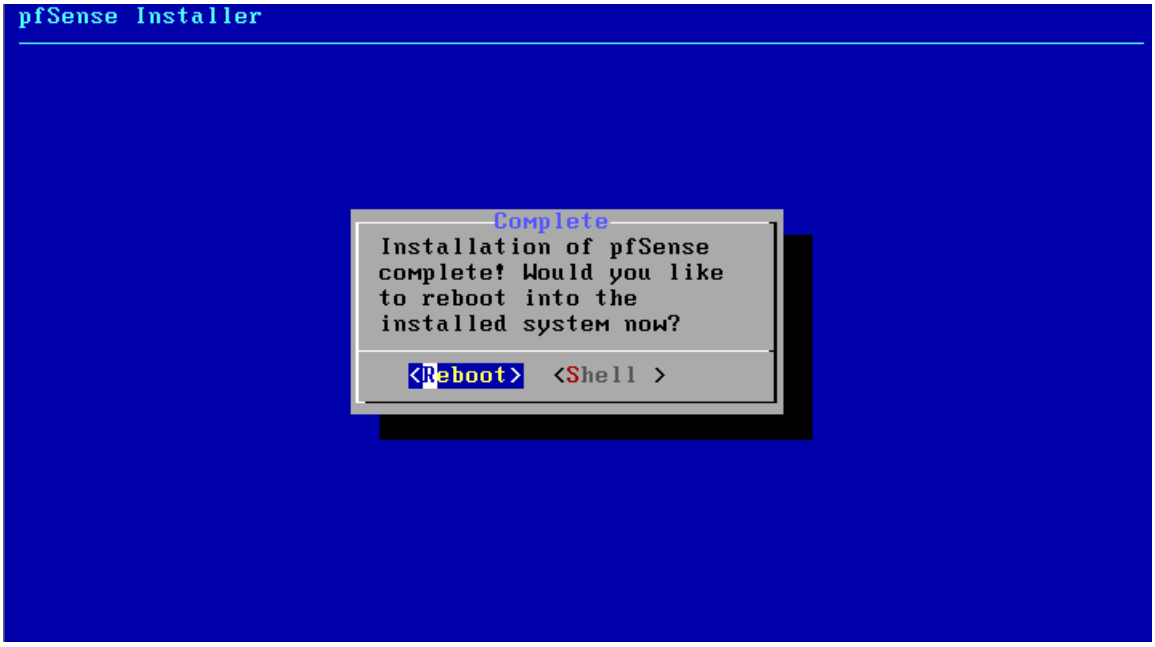

Appuyer sur espace pour cocher le disque




pfSense Installer
Fetching Distribution
MANIFEST [ Done ]
base.txz [ 69% ]
Fetching distribution files...
Overall Progress
69%


pfSense Installer
Archive Extraction
Extracting distribution files...
base.txz...
Overall Progress:
15%
4108 files read @ 128.0 files/sec.


pfSense Installer
Manual Configuration
The installation is now finished.
Before exiting the installer, would
you like to open a shell in the new
system to make any final manual
modifications?
< Yes >
< No >


pfSense Installer
Complete
Installation of pfSense
complete! Would you like
to reboot into the
installed system now?
<Reboot> <Shell >

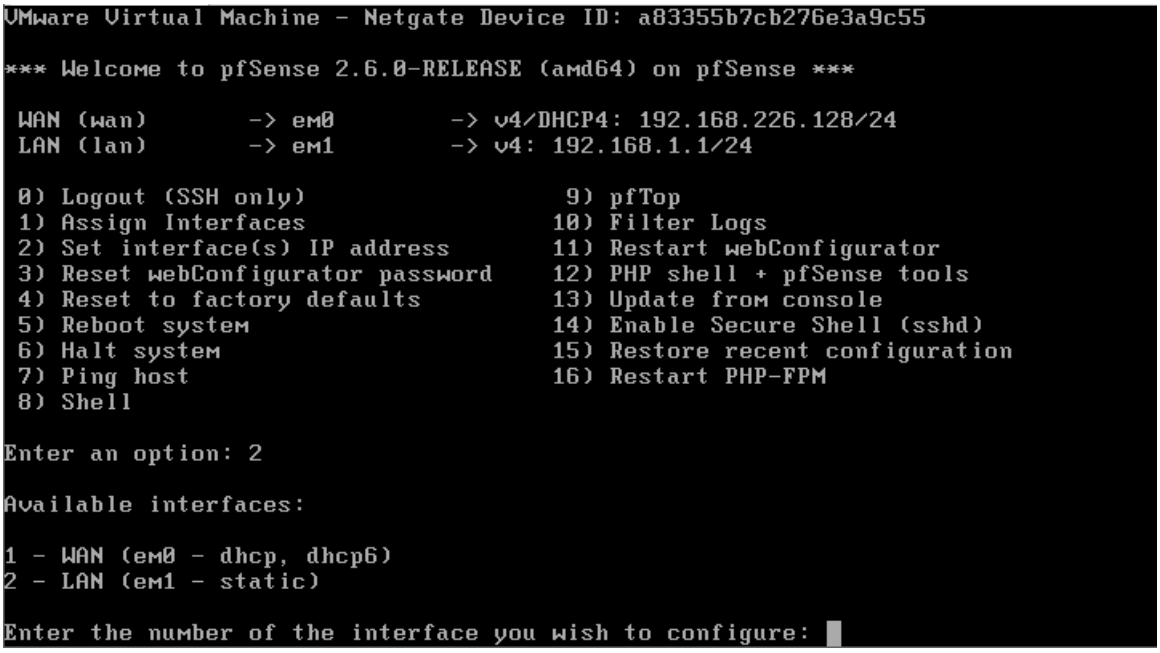
La VM Reboot

```
atapci0: <Intel PIIX4 UDMA33 controller> port 0x1f0-0x1f7,0x3f6,0x170-0x177,0x37
6,0x1060-0x106f at device 7.1 on pci0
ata0: <ATA channel> at channel 0 on atapci0
ata1: <ATA channel> at channel 1 on atapci0
pci0: <bridge> at device 7.3 (no driver attached)
vgapci0: <VGA-compatible display> port 0x1070-0x107f mem 0xe8000000-0xefffffff,0
xfe000000-0xfe7fffff irq 16 at device 15.0 on pci0
vgapci0: Boot video device
mpt0: <LSILogic 1030 Ultra4 Adapter> port 0x1400-0x14ff mem 0xfeba0000-0xfebbfff
f,0xfebc0000-0xfebdffff irq 17 at device 16.0 on pci0
mpt0: MPI Version=1.2.0.0
pcib2: <ACPI PCI-PCI bridge> at device 17.0 on pci0
pci2: <ACPI PCI bus> on pcib2
uhci0: <UHCI (generic) USB controller> port 0x20c0-0x20df irq 18 at device 0.0 o
n pci2
usbus0 on uhci0
em0: <Intel(R) Legacy PRO/1000 MT 82545EM (Copper)> port 0x2000-0x203f mem 0xfd5
c0000-0xfd5dffff,0xfdff0000-0xfdffffff irq 19 at device 1.0 on pci2
em0: EEPROM V15.255-15
em0: Using 1024 TX descriptors and 1024 RX descriptors
em0: Ethernet address: 00:0c:29:6d:fc:12
em0: netmap queues/slots: TX 1/1024, RX 1/1024
em1: <Intel(R) Legacy PRO/1000 MT 82545EM (Copper)> port 0x2040-0x207f mem 0xfd5
a0000-0xfd5bffff,0xfdfe0000-0xfdfeffff irq 16 at device 2.0 on pci2
```

```
Starting syslog...done.
Starting CRON... done.
pfSense 2.6.0-RELEASE amd64 Mon Jan 31 19:57:53 UTC 2022
Bootup complete

FreeBSD/amd64 (pfSense.home.arpa) (ttyv0)

VMware Virtual Machine - Netgate Device ID: a83355b7cb276e3a9c55

*** Welcome to pfSense 2.6.0-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> em0        -> v4/DHCP4: 192.168.226.128/24
 LAN (lan)       -> em1        -> v4: 192.168.1.1/24

 0) Logout (SSH only)                  9) pfTop
 1) Assign Interfaces                 10) Filter Logs
 2) Set interface(s) IP address       11) Restart webConfigurator
 3) Reset webConfigurator password    12) PHP shell + pfSense tools
 4) Reset to factory defaults         13) Update from console
 5) Reboot system                     14) Enable Secure Shell (sshd)
 6) Halt system                       15) Restore recent configuration
 7) Ping host                         16) Restart PHP-FPM
 8) Shell

Enter an option:
```

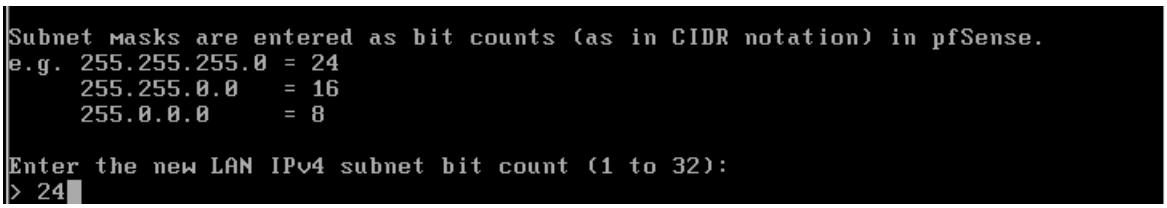
Ici nous sommes dans l'interface de config.

Nous allons faire le choix 2 pour configurer l'interface de l'adresse IP

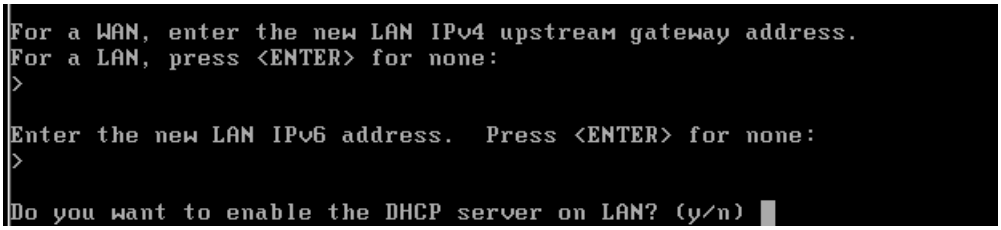



Ensuite nous allons choisir le réseau LAN choix 2 et définissons notre LAN en **192.168.10.254**


Il nous demande ensuite de choisir le masque de sous réseau on met 24

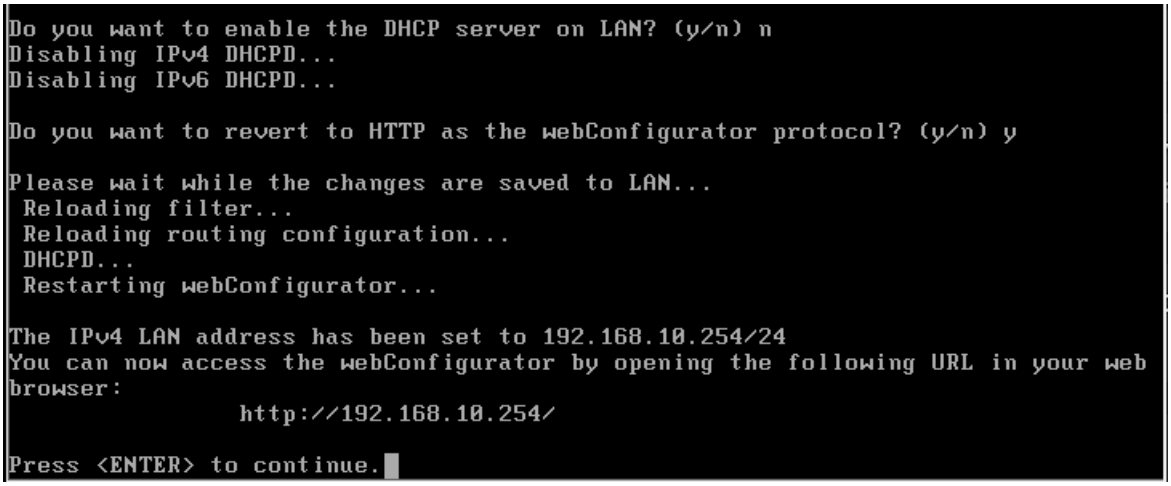



Nous tapons sur Entrée deux fois pour sauter l'étape de l'IPv4 t IPv6




On sélectionne **n** pour déshabiliter le DHCP server dans le LAN.

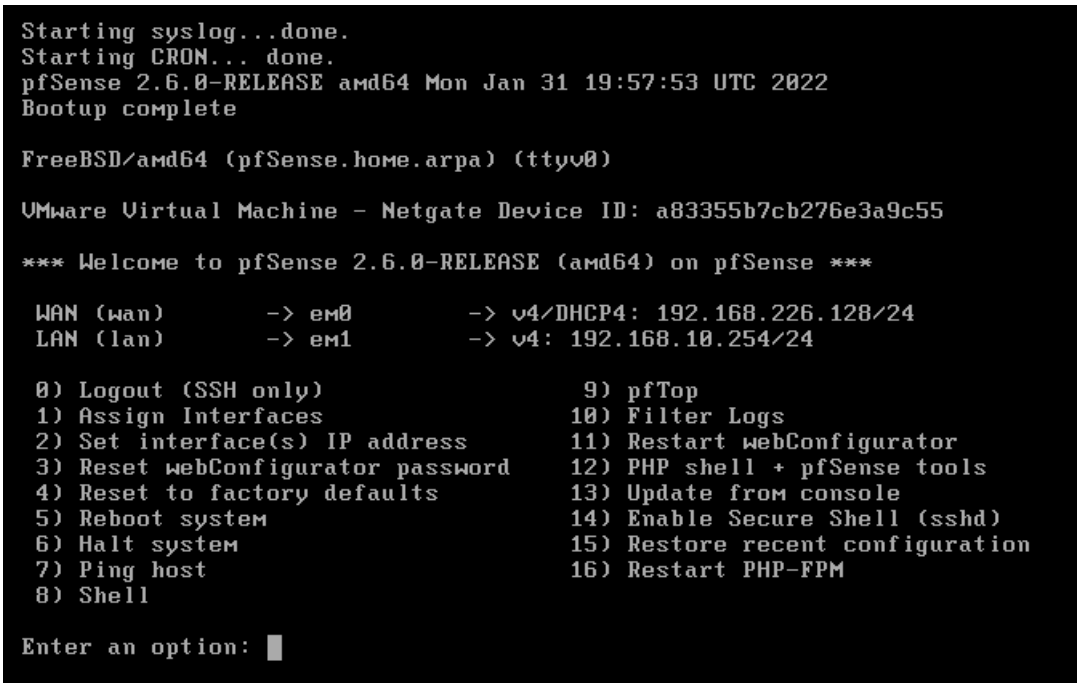
Puis **y** pour le **webConfigurator protocol**.




Nous pouvons voir l'adresse IP modifiée

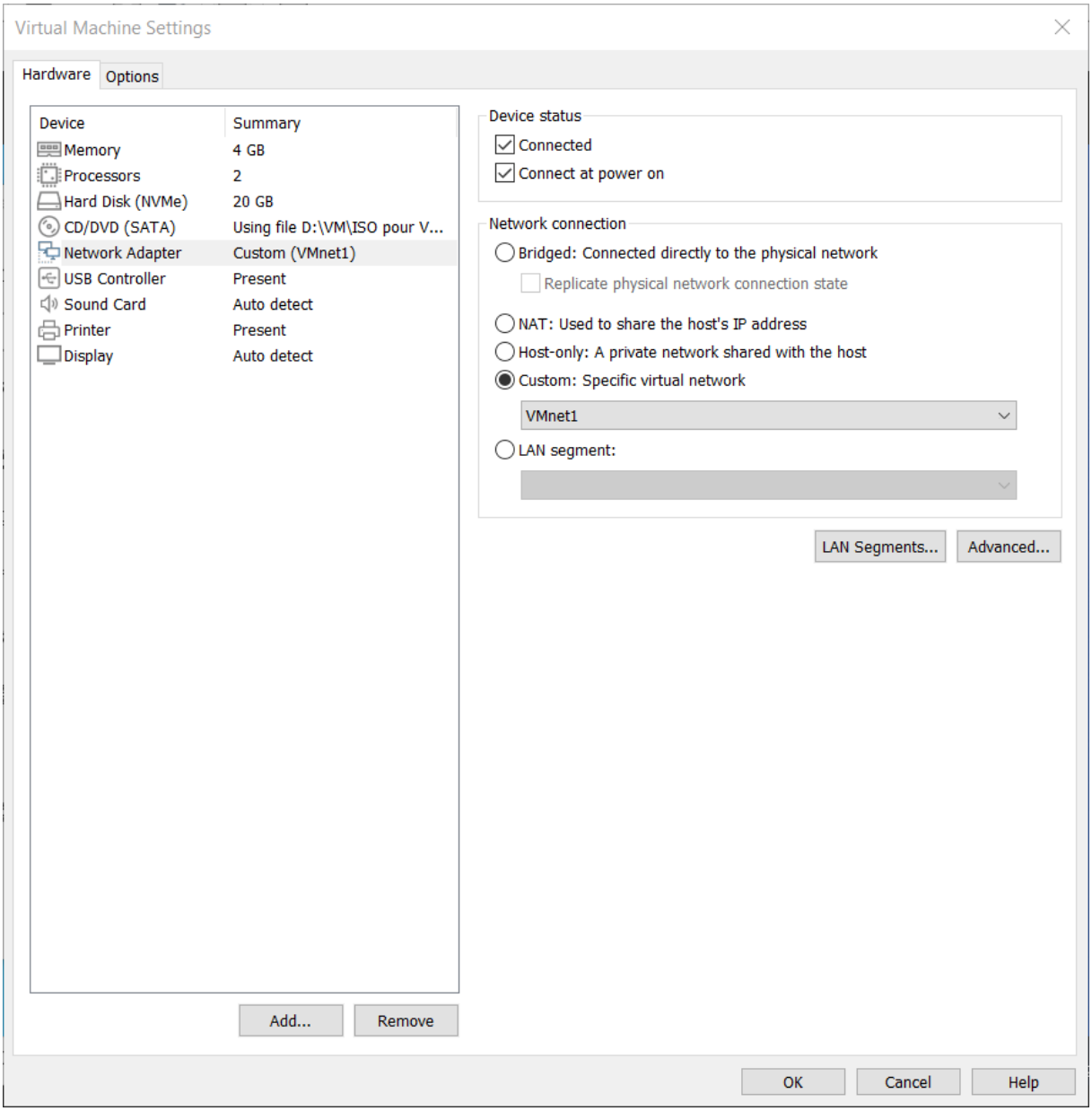
Ensuite nous cliquons Entrée.

Ici nous atterrissons dans l'interface graphique de base.



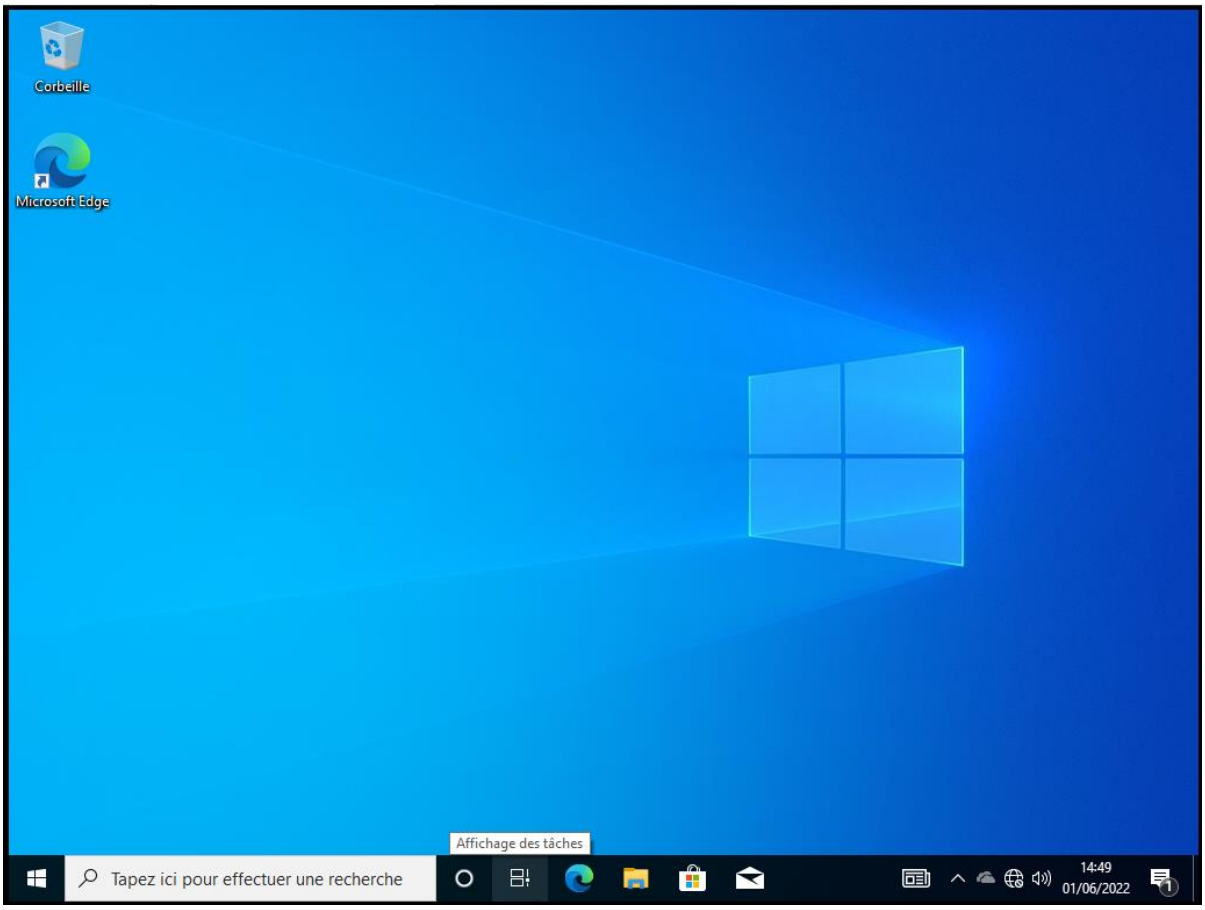
Nous allons ensuite créer une autre VM Windows 10 Professionnel

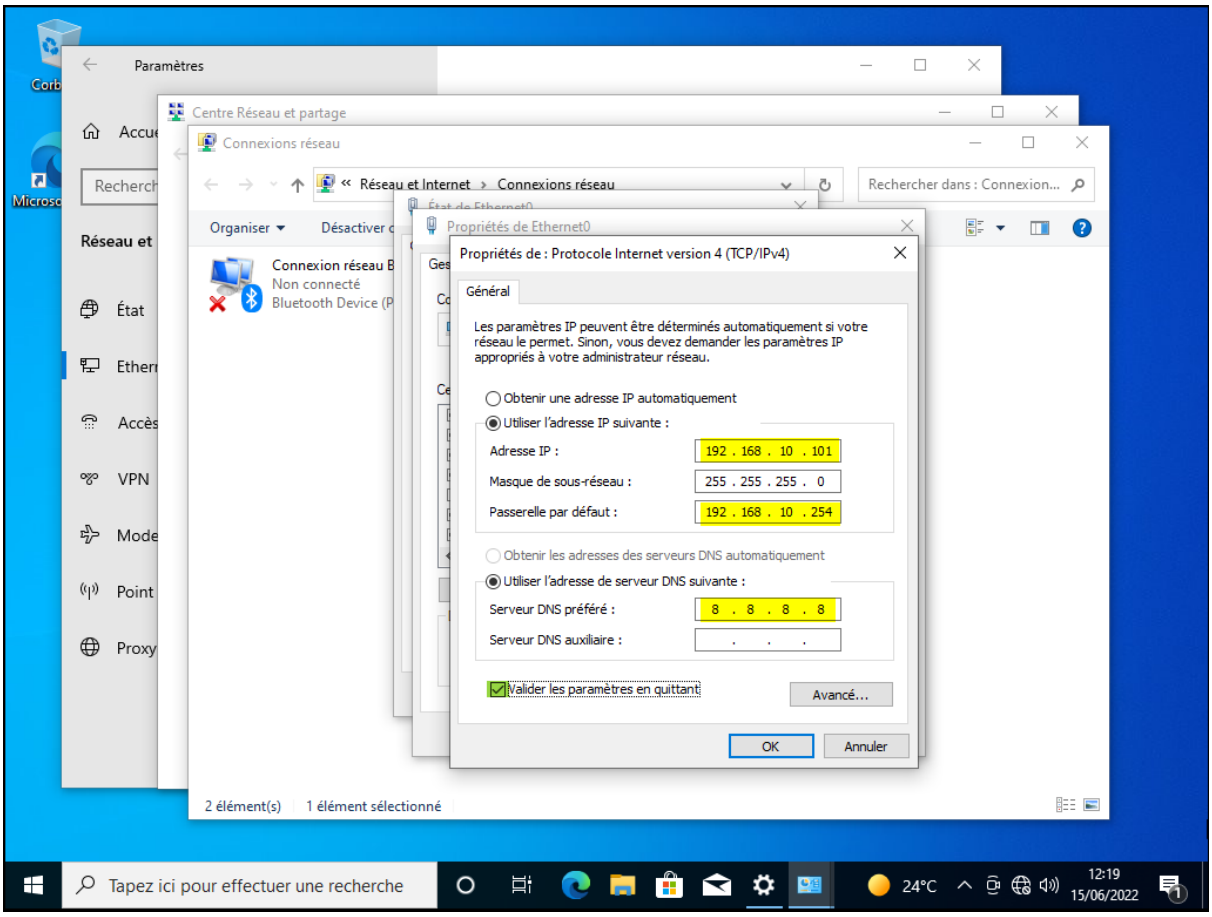
Nous allons parametrer la carte réseau de notre VM en la mettant en **Custom** et avec la **VMnet1**



## 2.1Vérification internet sur client Windows

Une fois que nous avons installé notre VM Windows nous allons configurer le réseau de notre VM Windows en modifiant l'adresse IPv4





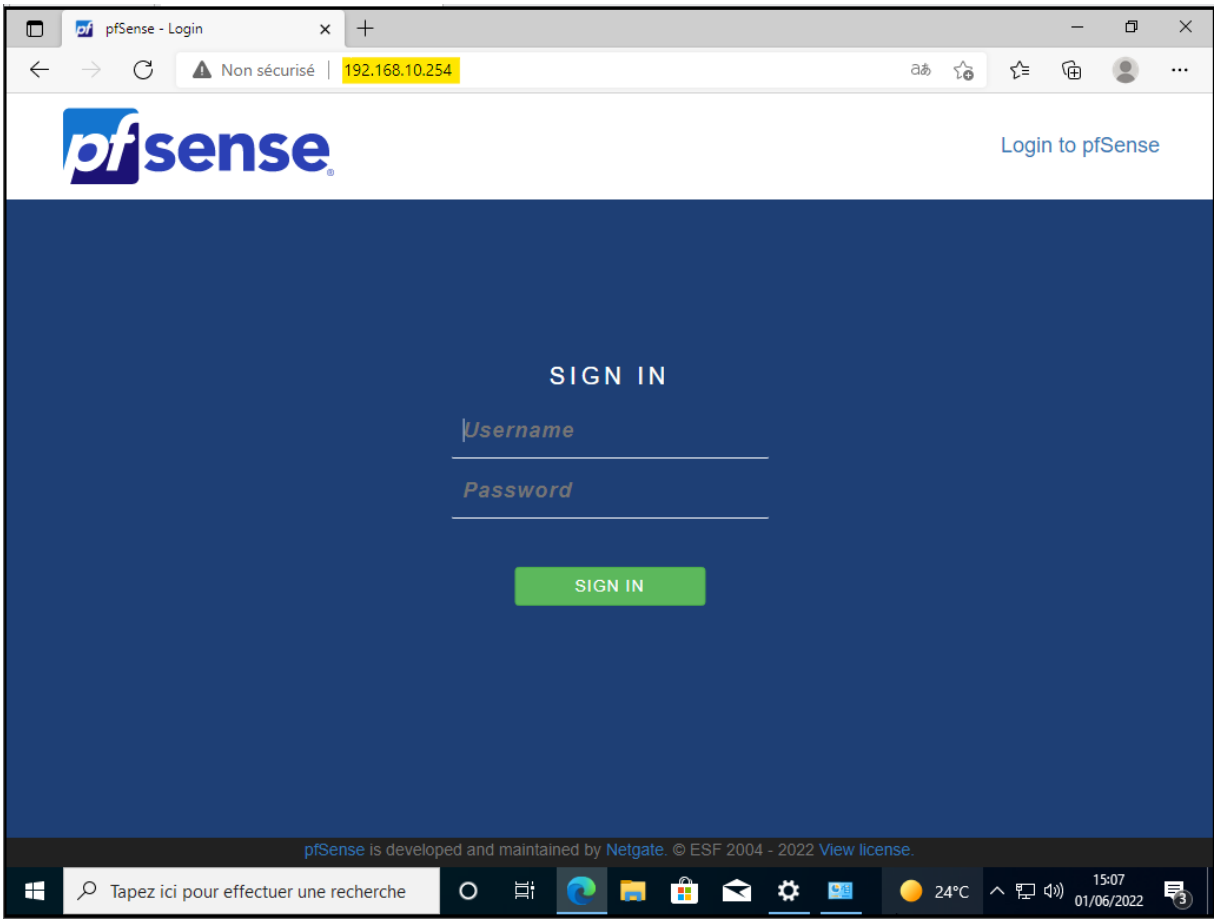

Ici nous définissons une adresse ip statique et l'adresse ip de notre serveur Pf_Sense

Pour avoir accès à internet nous devons configurer le DNS et allons configurer celui de Google 8.8.8.8

Ensuite nous ouvrons un navigateur et saisissons l'adresse IP de notre serveur

## 2.2Connexion au server

Nous allons nous connecter au serveur par un navigateur et l'adresse de la passerelle

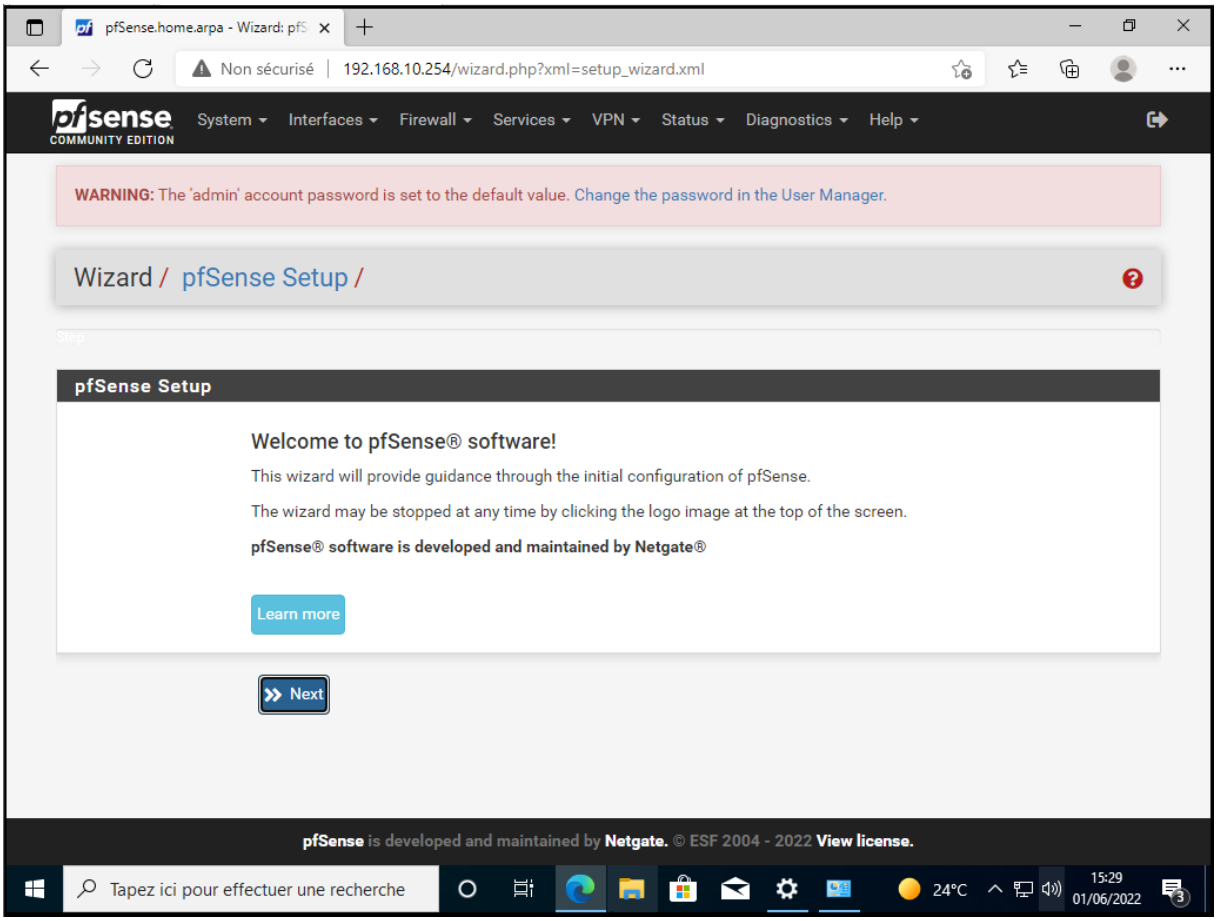


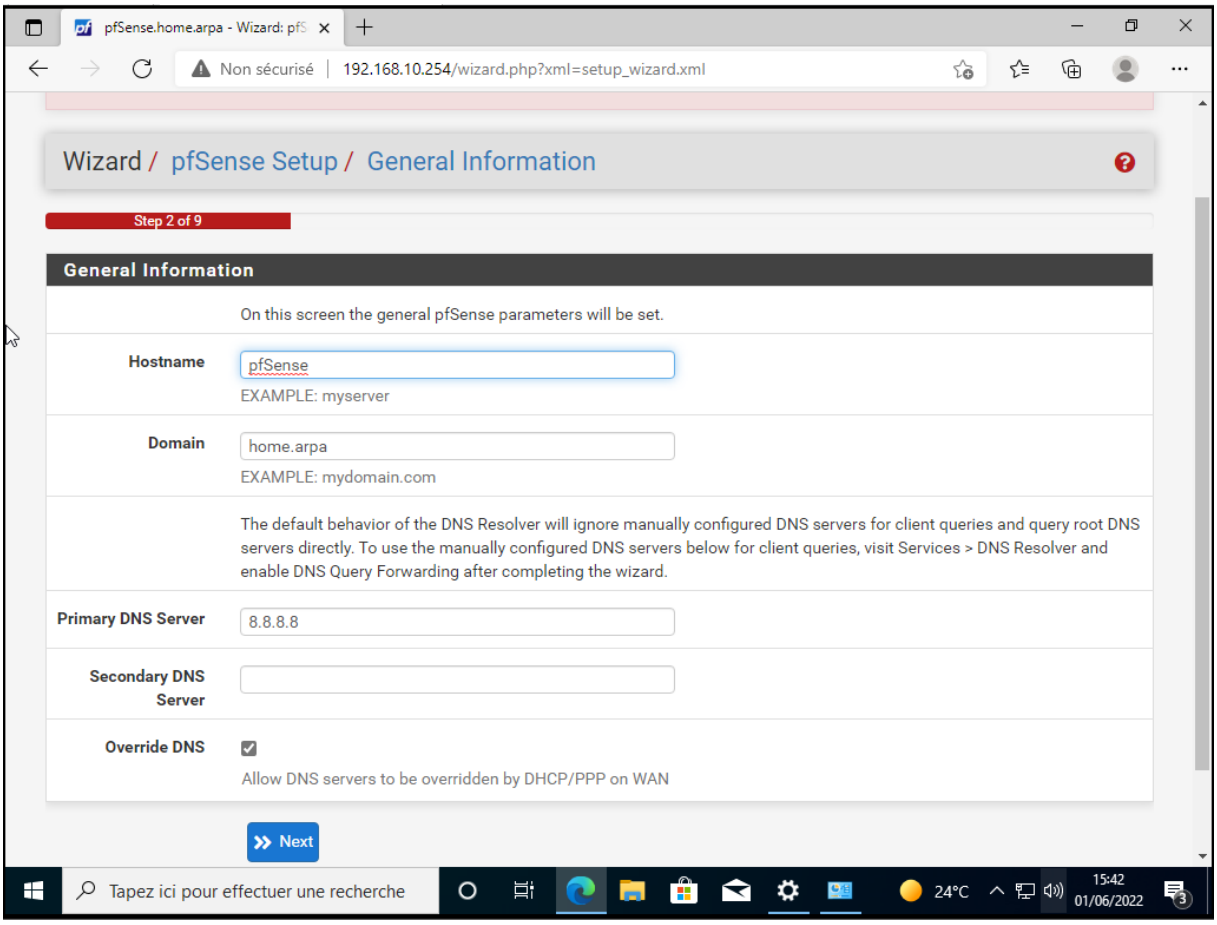

Pour le log in

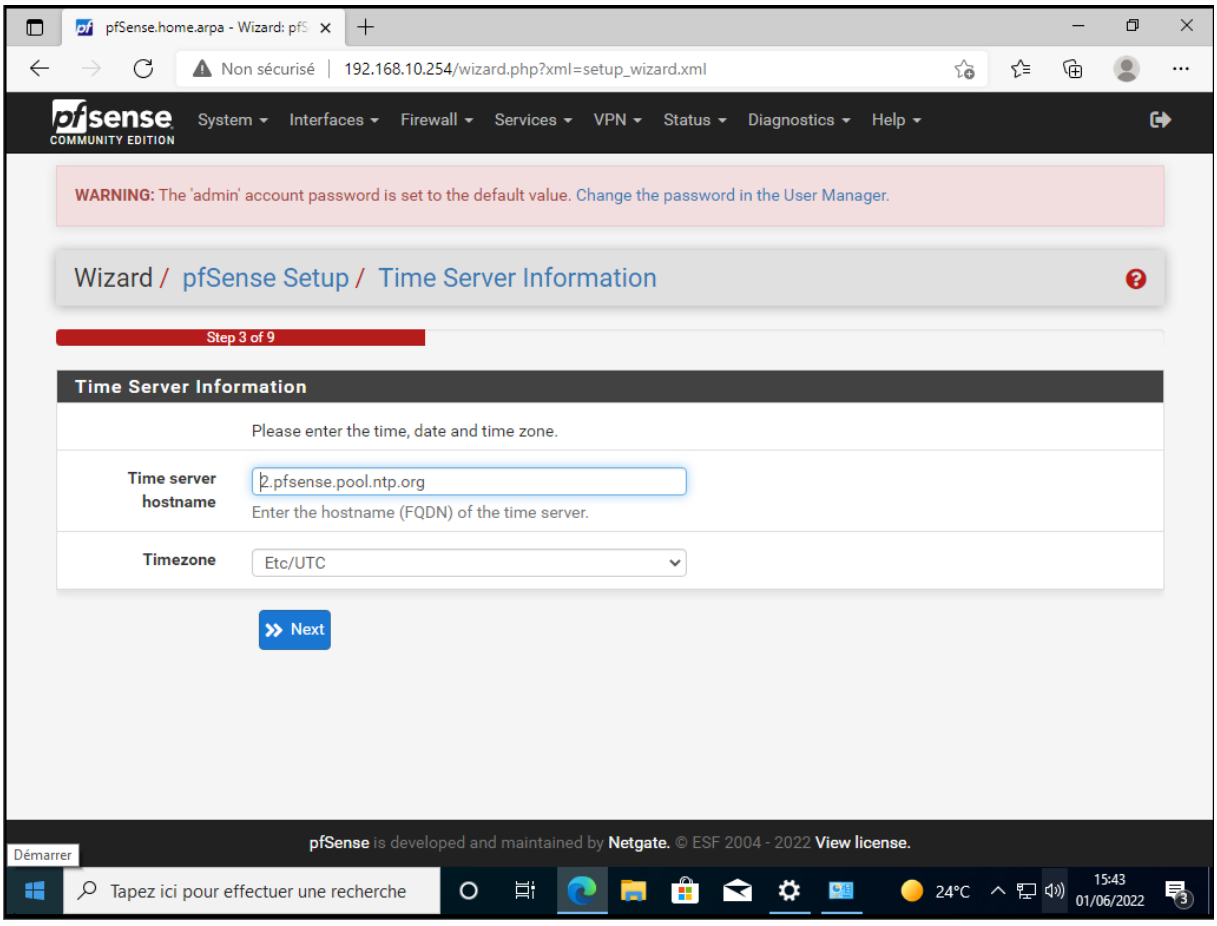
id: admin

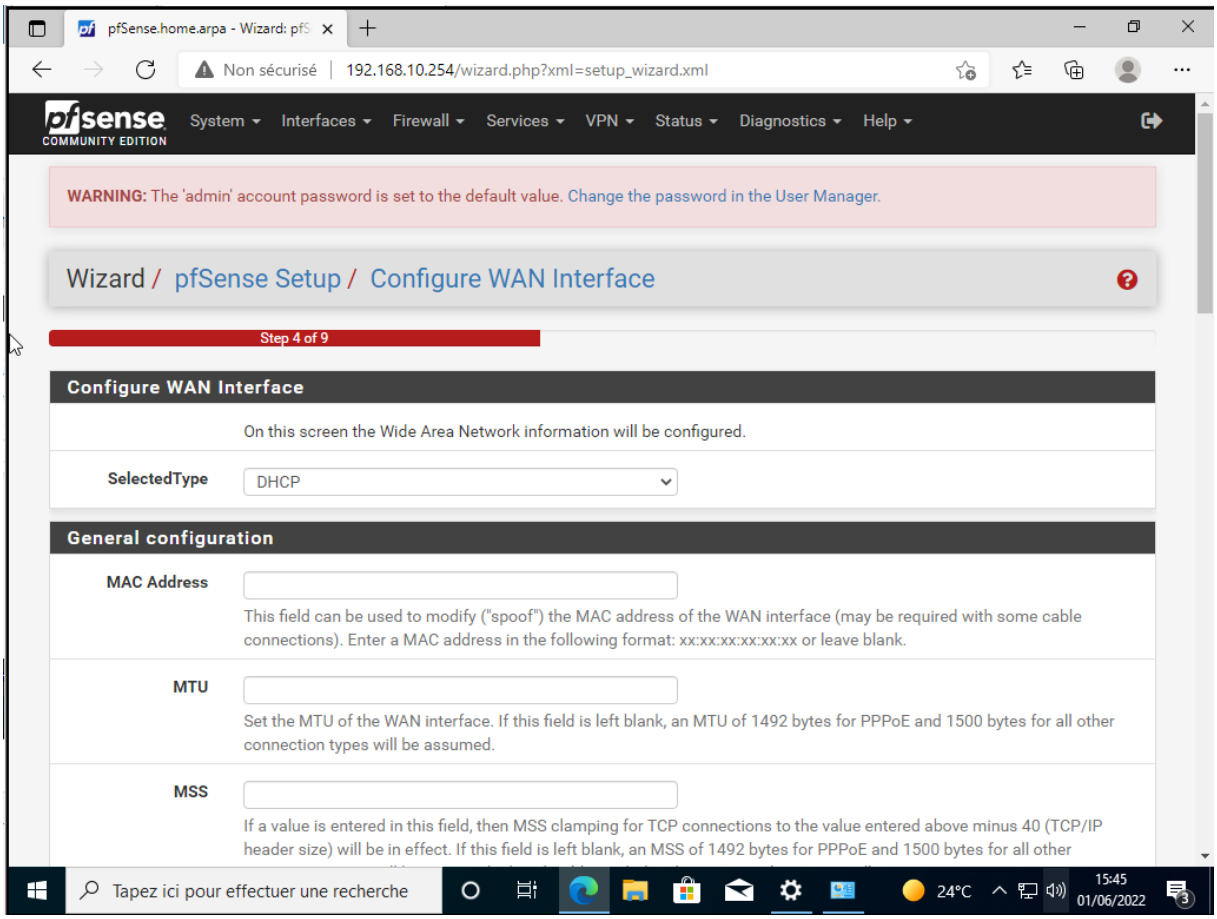
mdp: pfsense

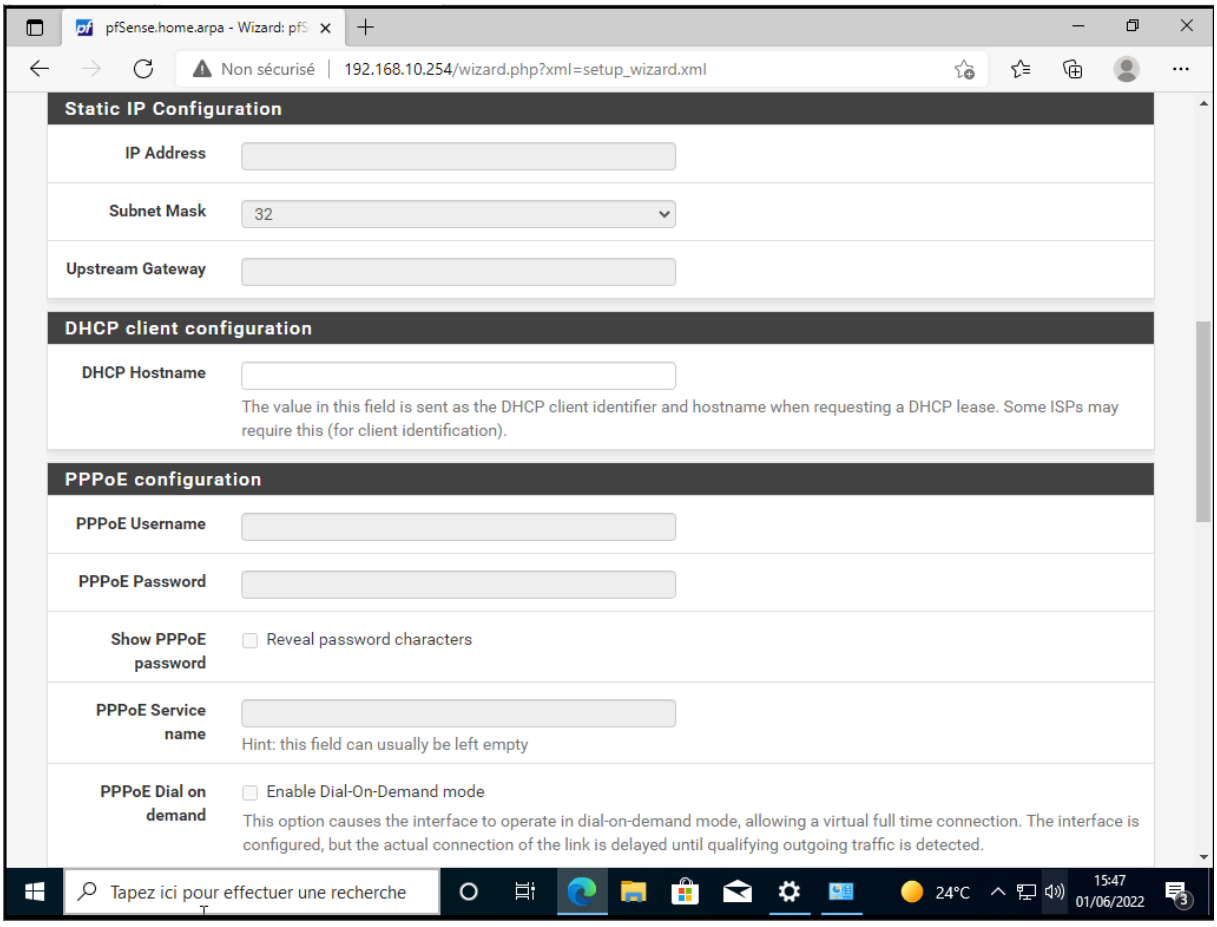
# 3. Configuration du firewall Pf_Sense depuis Windows

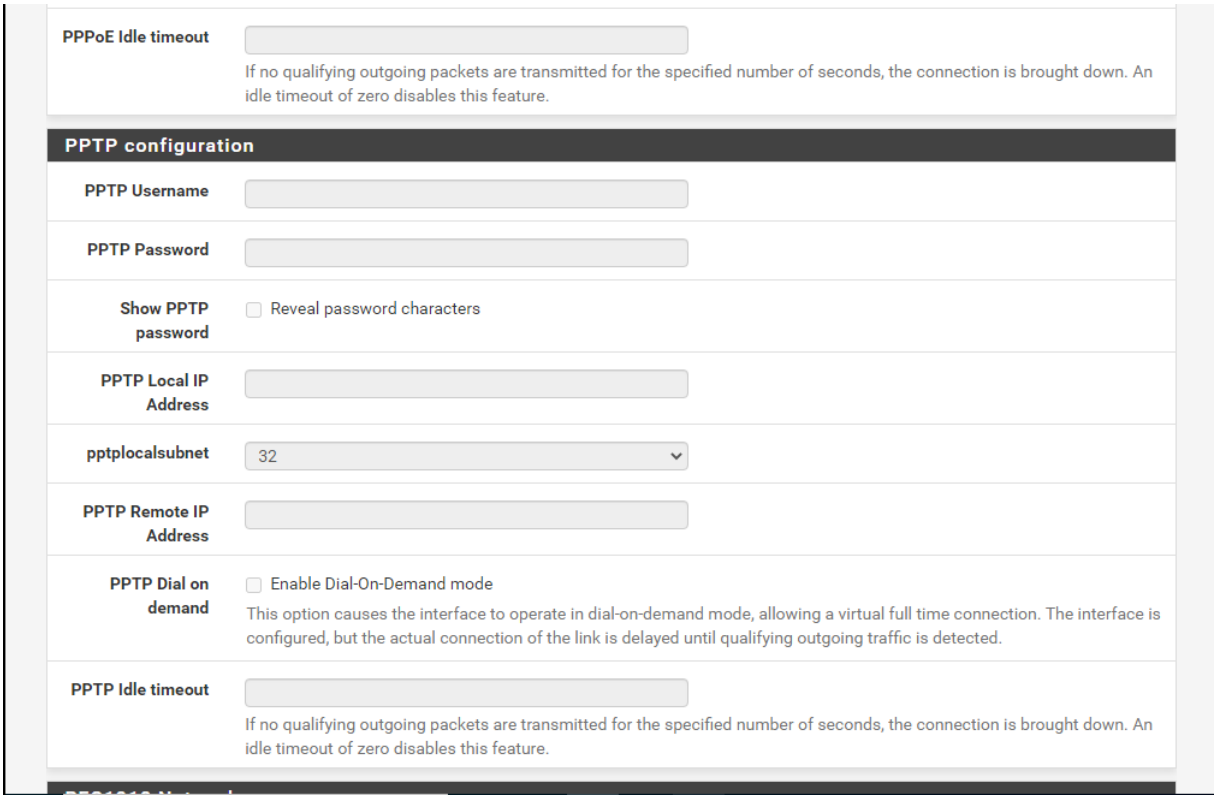


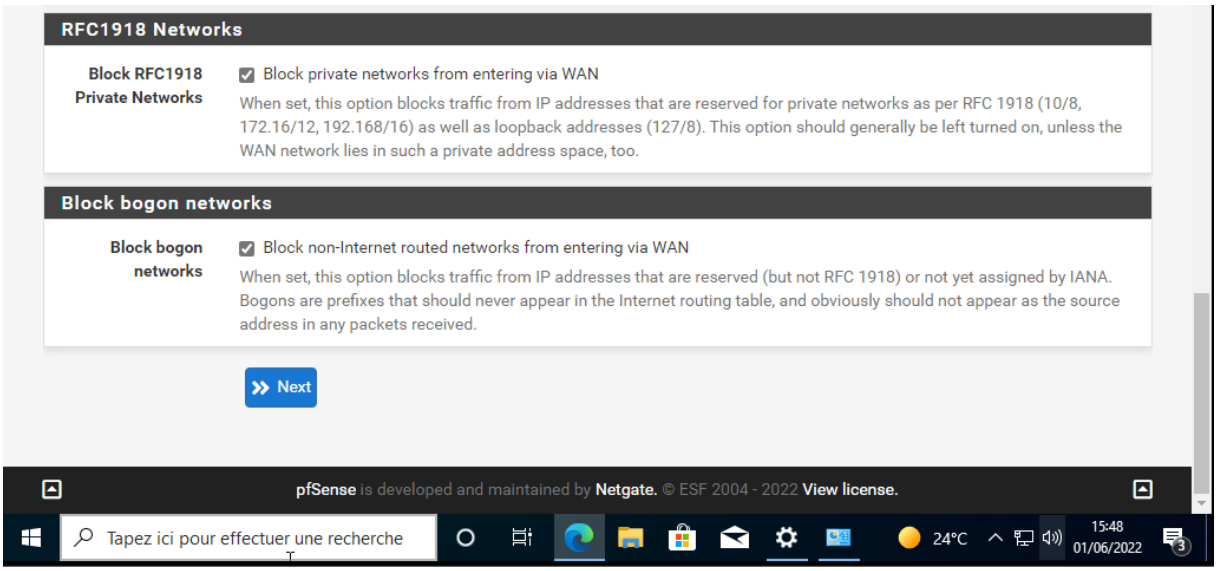

pfSense.home.arpa - Wizard: pfS
Non sécurisé | 192.168.10.254/wizard.php?xml=setup_wizard.xml
Wizard / pfSense Setup / General Information
Step 2 of 9
General Information
On this screen the general pfSense parameters will be set.
Hostname
pfSense
EXAMPLE: myserver
Domain
home.arpa
EXAMPLE: mydomain.com
The default behavior of the DNS Resolver will ignore manually configured DNS servers for client queries and query root DNS servers directly. To use the manually configured DNS servers below for client queries, visit Services > DNS Resolver and enable DNS Query Forwarding after completing the wizard.
Primary DNS Server
8.8.8.8
Secondary DNS Server
Override DNS
Allow DNS servers to be overridden by DHCP/PPP on WAN
Next
Tapez ici pour effectuer une recherche
24°C
15:42
01/06/2022

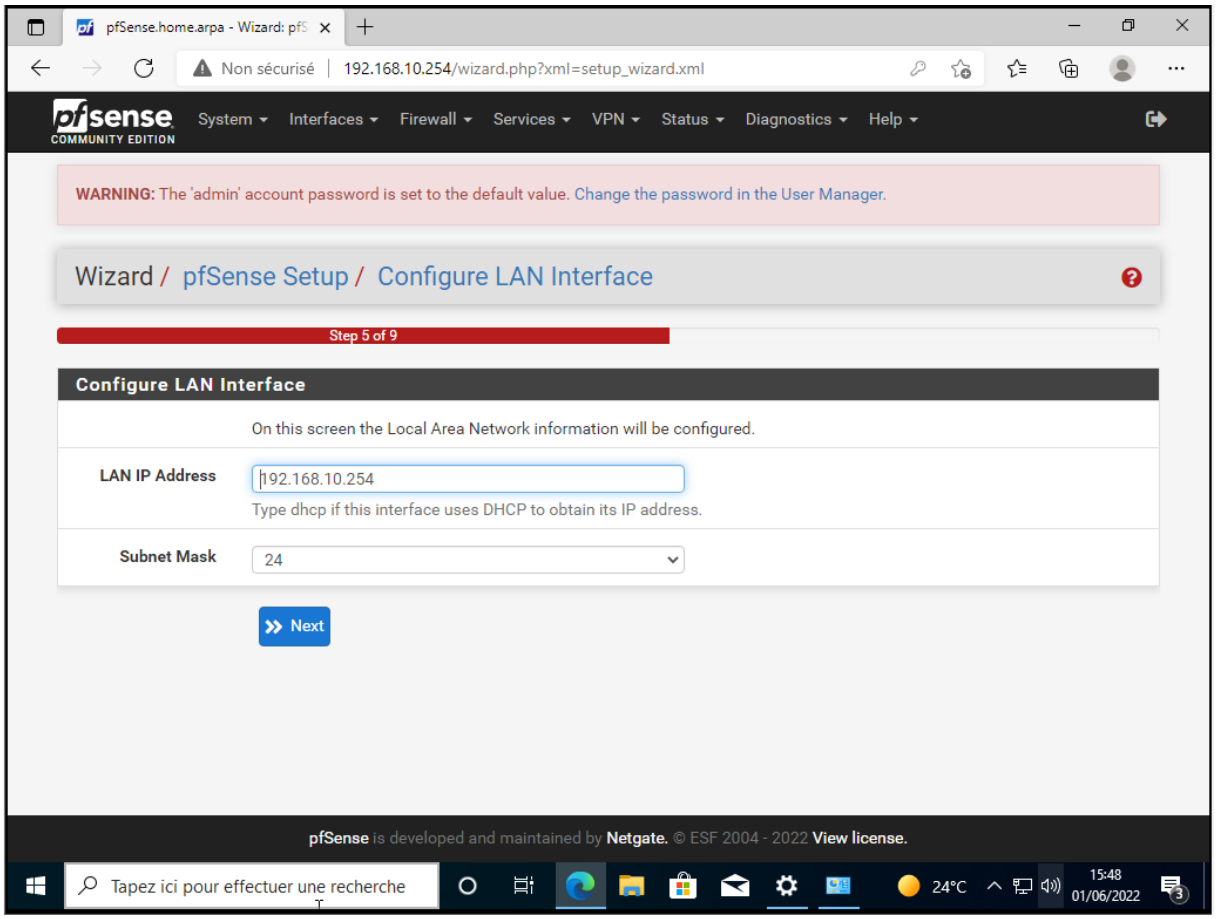

pfSense.home.arpa - Wizard: pfS
Non sécurisé | 192.168.10.254/wizard.php?xml=setup_wizard.xml
pfsense COMMUNITY EDITION
System
Interfaces
Firewall
Services
VPN
Status
Diagnostics
Help
WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager.
Wizard / pfSense Setup / Time Server Information
Step 3 of 9
Time Server Information
Please enter the time, date and time zone.
Time server hostname
2.pfsense.pool.ntp.org
Enter the hostname (FQDN) of the time server.
Timezone
Etc/UTC
Next
pfSense is developed and maintained by Netgate. © ESF 2004 - 2022 View license.
Démarrer
Tapez ici pour effectuer une recherche
24°C
15:43
01/06/2022


pfSense.home.arpa - Wizard: pfS
Non sécurisé | 192.168.10.254/wizard.php?xml=setup_wizard.xml
pfsense COMMUNITY EDITION
System Interfaces Firewall Services VPN Status Diagnostics Help
WARNING: The 'admin' account password is set to the default value. Change the password in the User Manager.
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
Tapez ici pour effectuer une recherche
24°C
15:45
01/06/2022

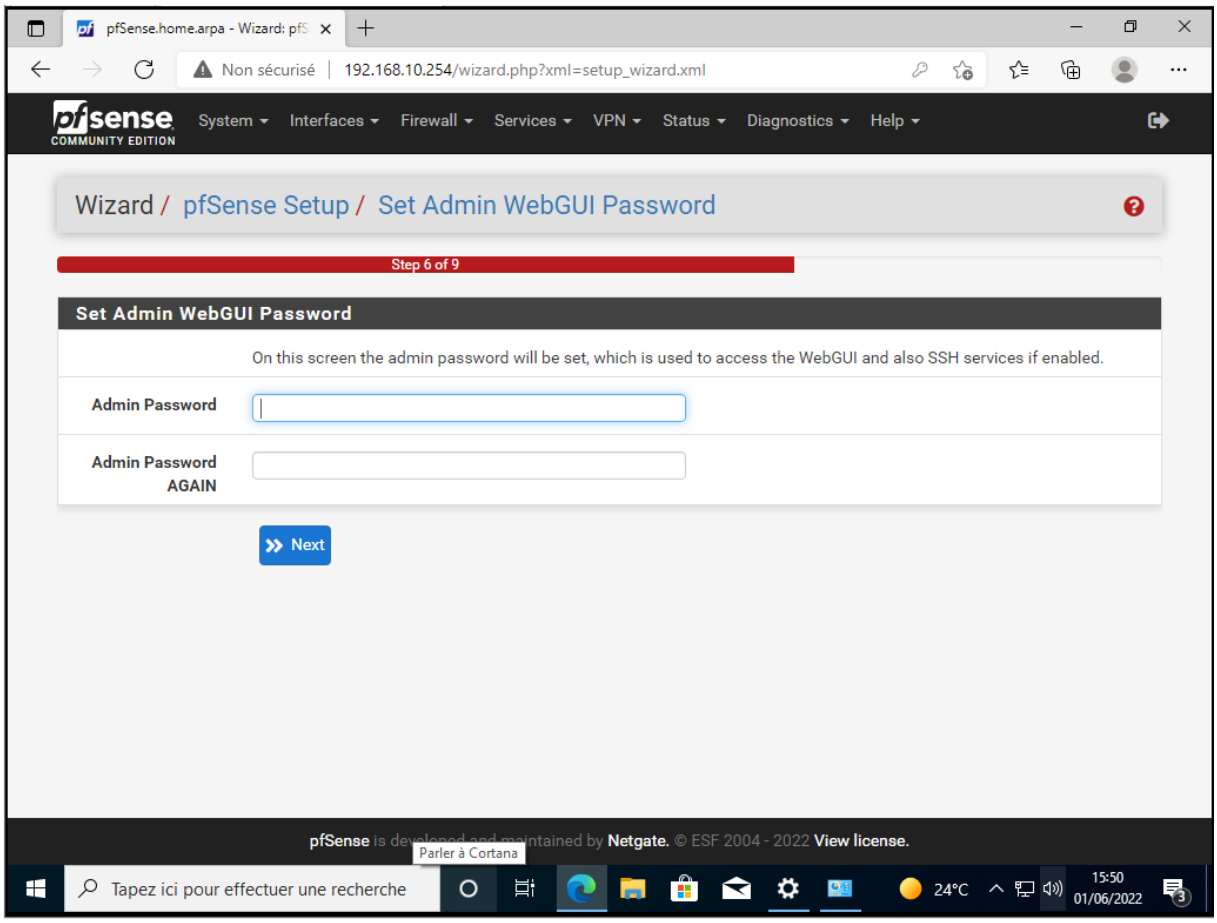

pfSense.home.arpa - Wizard: pfS
Non sécurisé | 192.168.10.254/wizard.php?xml=setup_wizard.xml
Static IP Configuration
IP Address
Subnet Mask
32
Upstream Gateway
DHCP client configuration
DHCP Hostname
The value in this field is sent as the DHCP client identifier and hostname when requesting a DHCP lease. Some ISPs may require this (for client identification).
PPPoE configuration
PPPoE Username
PPPoE Password
Show PPPoE password
Reveal password characters
PPPoE Service name
Hint: this field can usually be left empty
PPPoE Dial on demand
Enable Dial-On-Demand mode
This option causes the interface to operate in dial-on-demand mode, allowing a virtual full time connection. The interface is configured, but the actual connection of the link is delayed until qualifying outgoing traffic is detected.
Tapez ici pour effectuer une recherche
24°C
15:47
01/06/2022


PPPoE Idle timeout
If no qualifying outgoing packets are transmitted for the specified number of seconds, the connection is brought down. An idle timeout of zero disables this feature.
PPTP configuration
PPTP Username
PPTP Password
Show PPTP password
Reveal password characters
PPTP Local IP Address
pptplocalsubnet
32
PPTP Remote IP Address
PPTP Dial on demand
Enable Dial-On-Demand mode
This option causes the interface to operate in dial-on-demand mode, allowing a virtual full time connection. The interface is configured, but the actual connection of the link is delayed until qualifying outgoing traffic is detected.
PPTP Idle timeout
If no qualifying outgoing packets are transmitted for the specified number of seconds, the connection is brought down. An idle timeout of zero disables this feature.

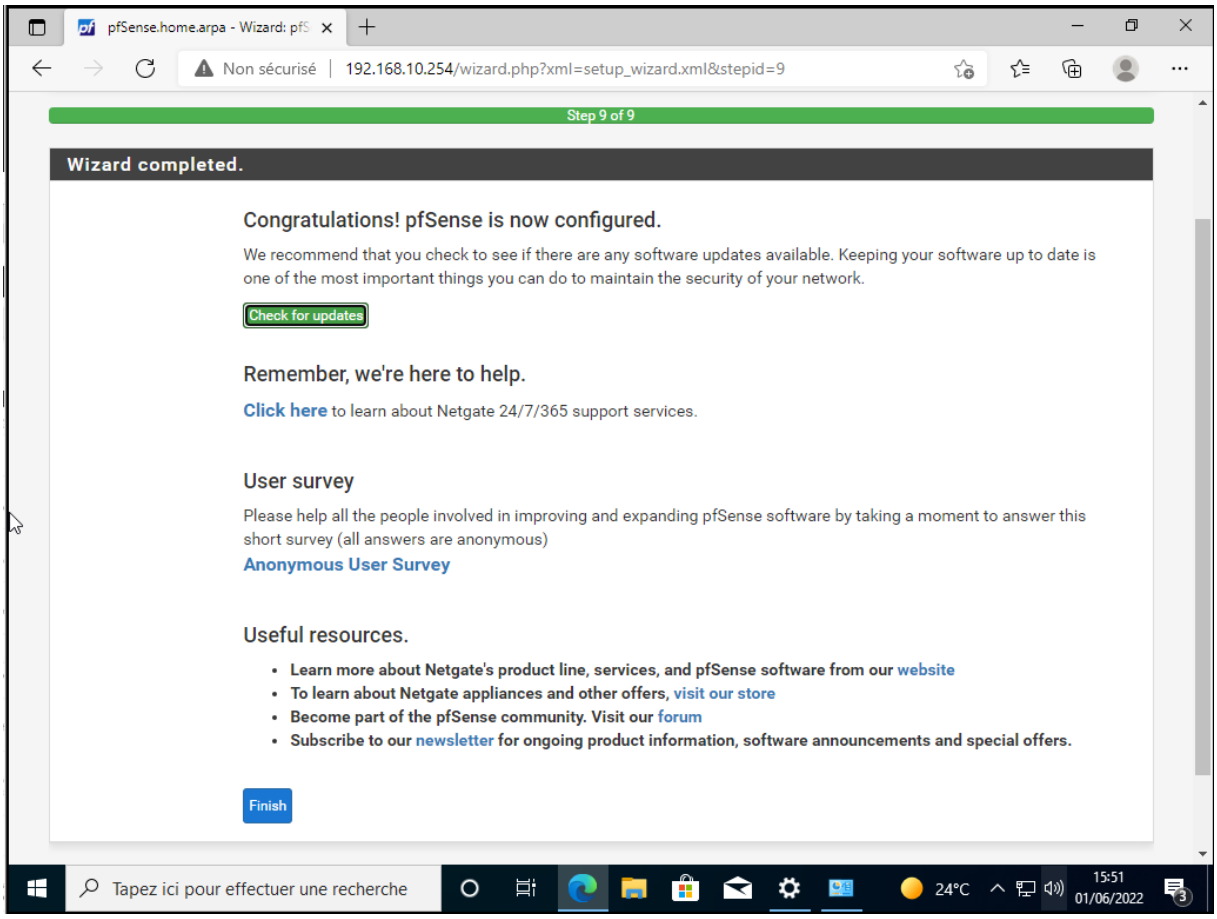

RFC1918 Networks
Block RFC1918 Private Networks
Block private networks from entering via WAN
When set, this option blocks traffic from IP addresses that are reserved for private networks as per RFC 1918 (10/8, 172.16/12, 192.168/16) as well as loopback addresses (127/8). This option should generally 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.
Next
pfSense is developed and maintained by Netgate. © ESF 2004 - 2022 View license.
Tapez ici pour effectuer une recherche
24°C
15:48
01/06/2022




Ici nous avons déjà configuré le LAN donc on laisse par défaut

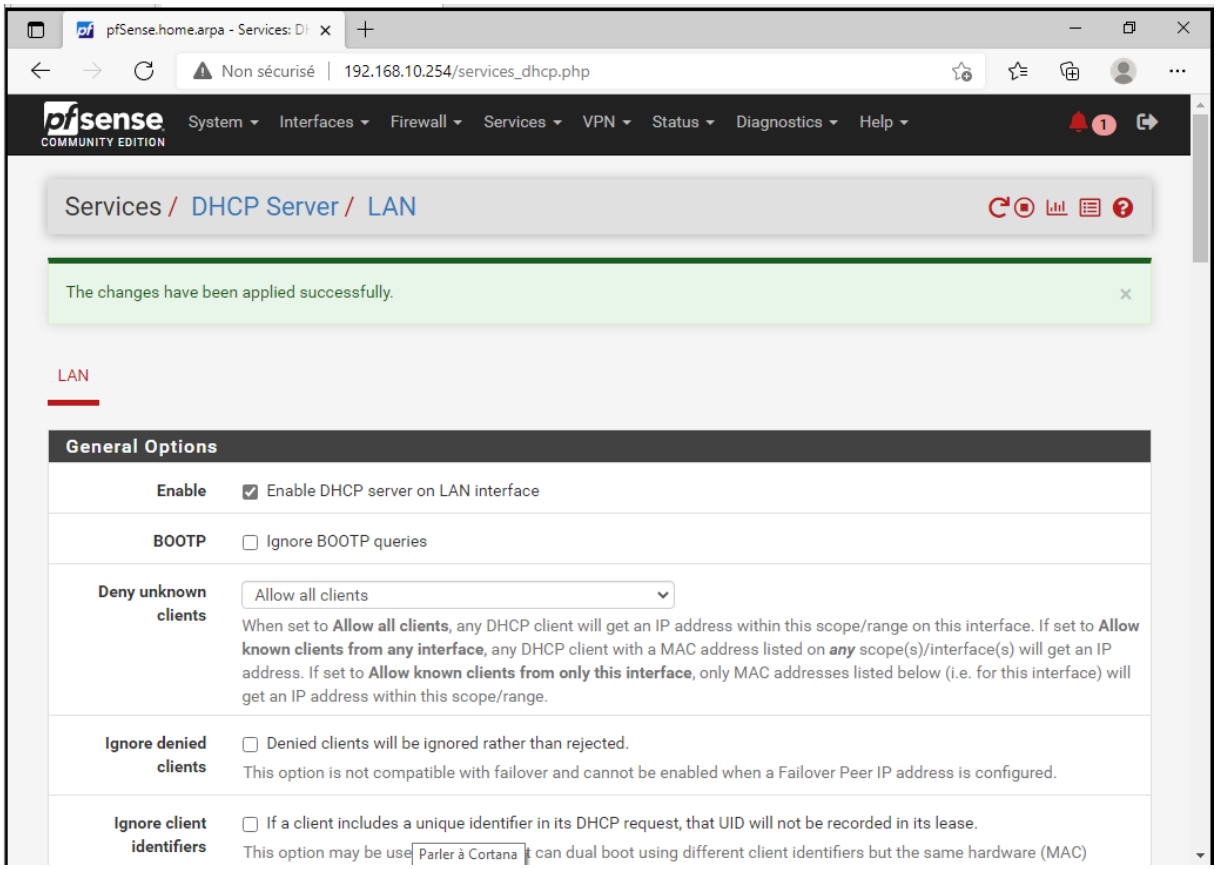



Nous allons changer le mot de passe



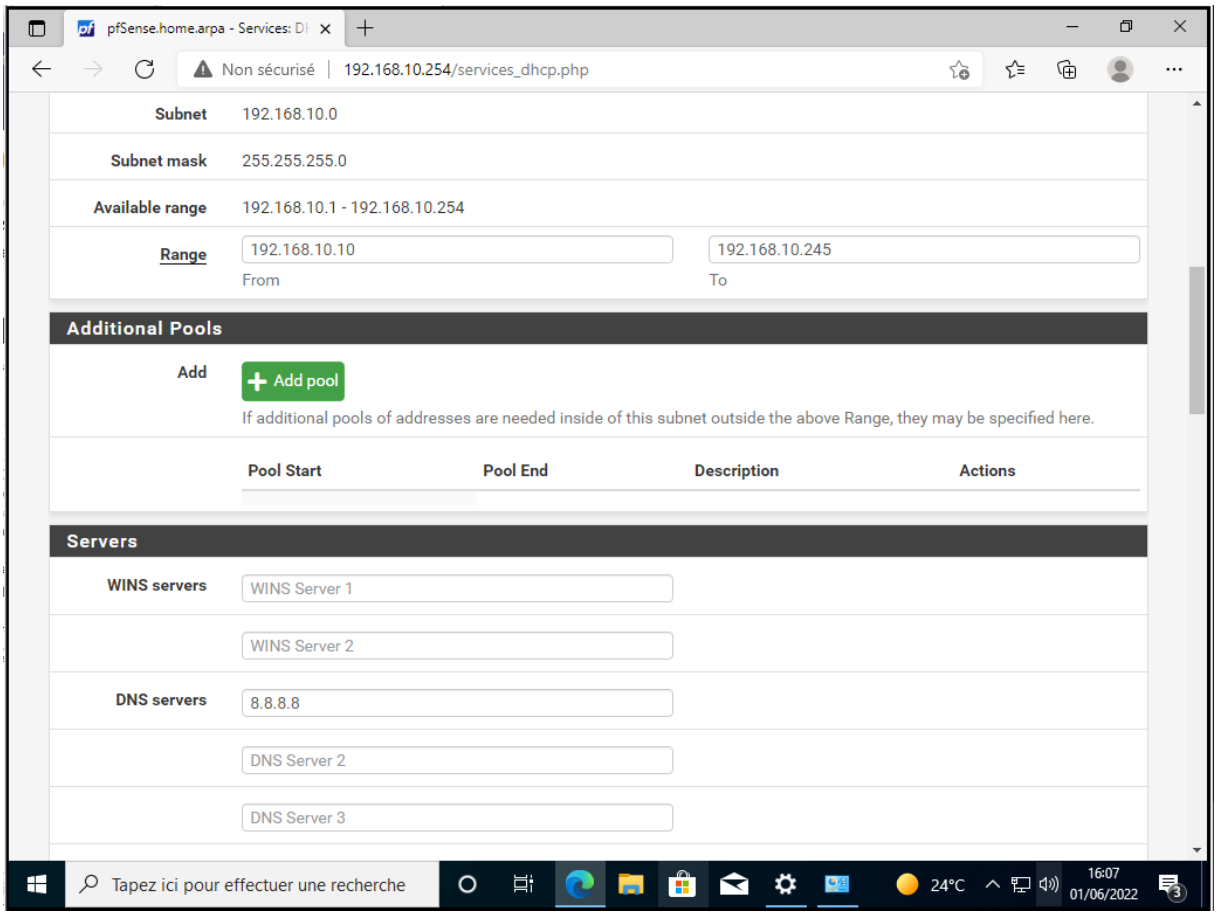

La configuration est terminée

Nous allons nous intéresser à la config du service DHCP

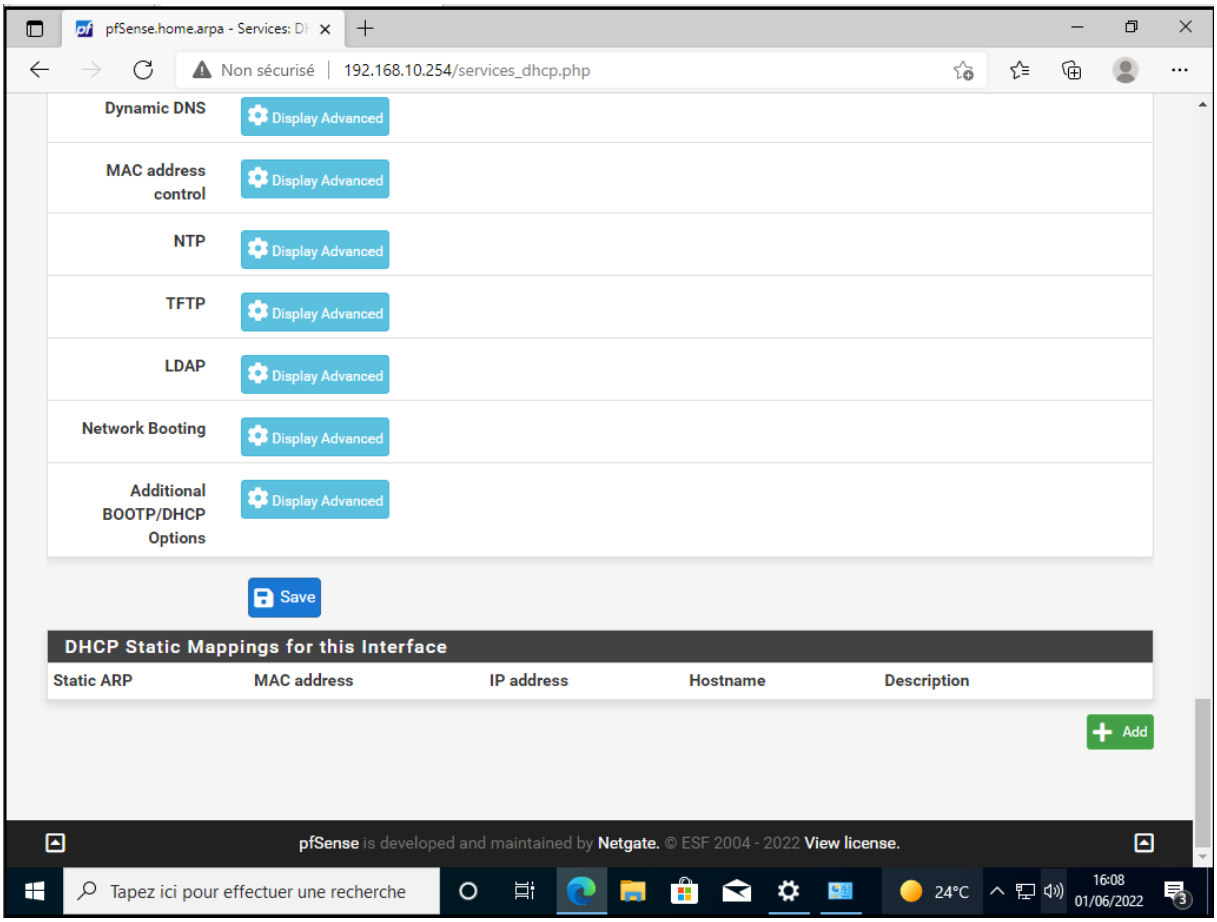



On coche la case **Enable**

Nous sélectionnons **Allow all clients**

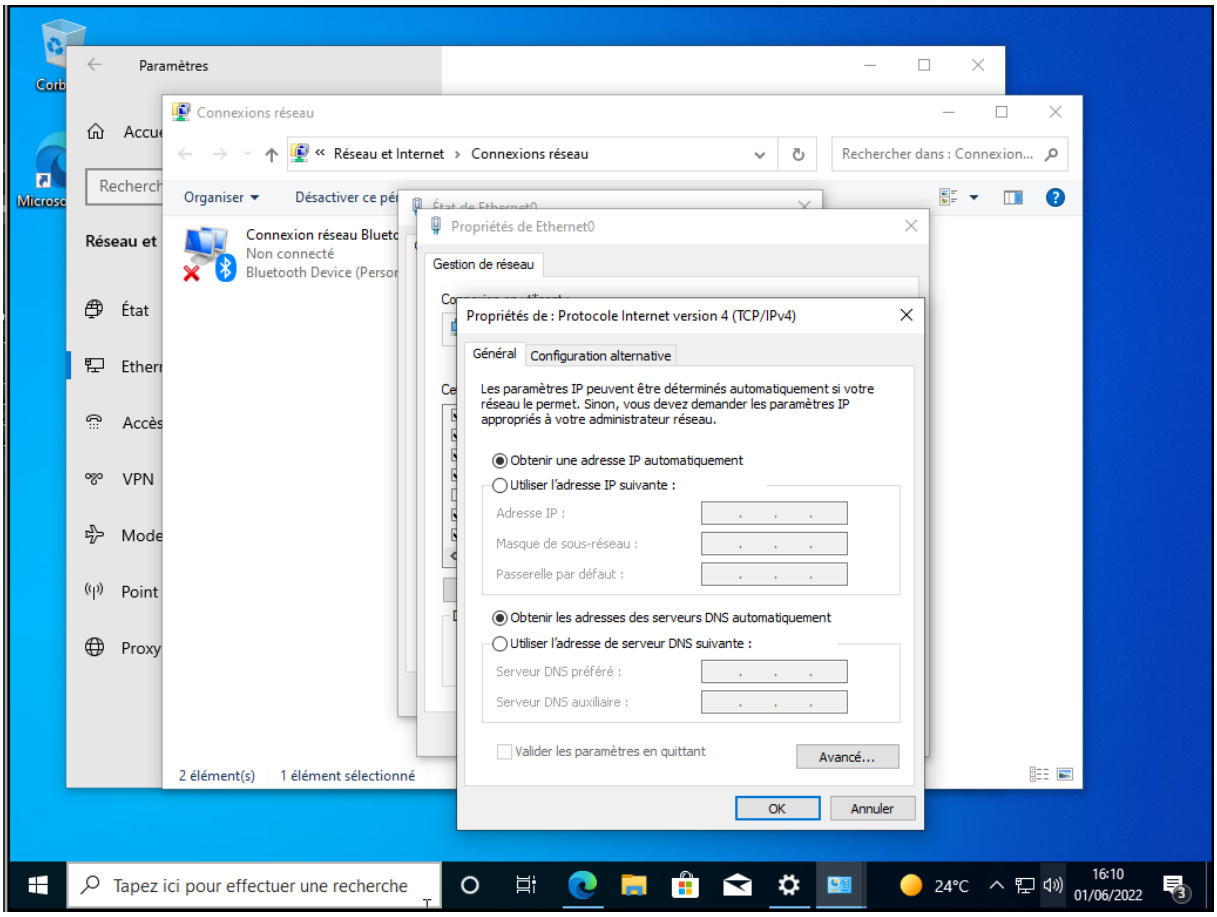


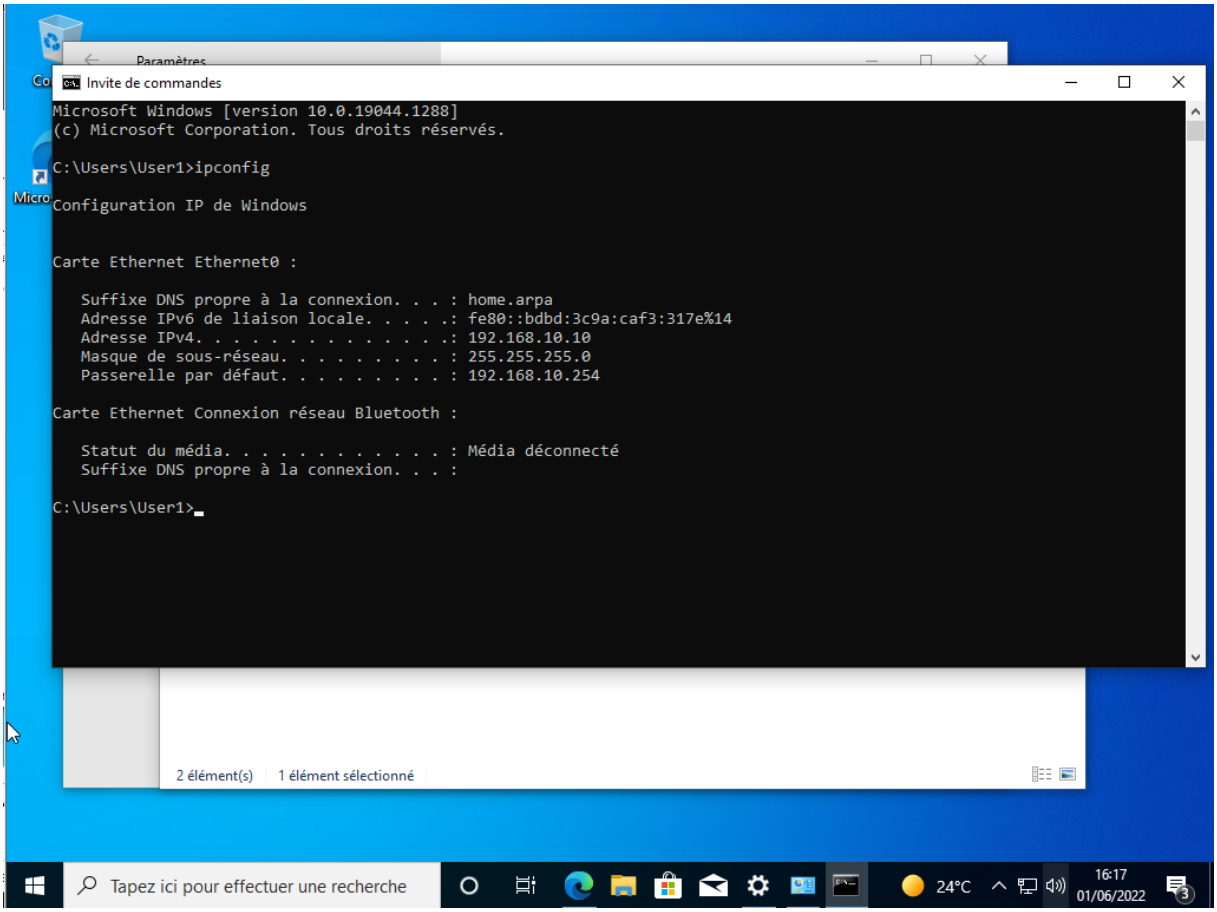

Le DNS serveur va être celui de Google



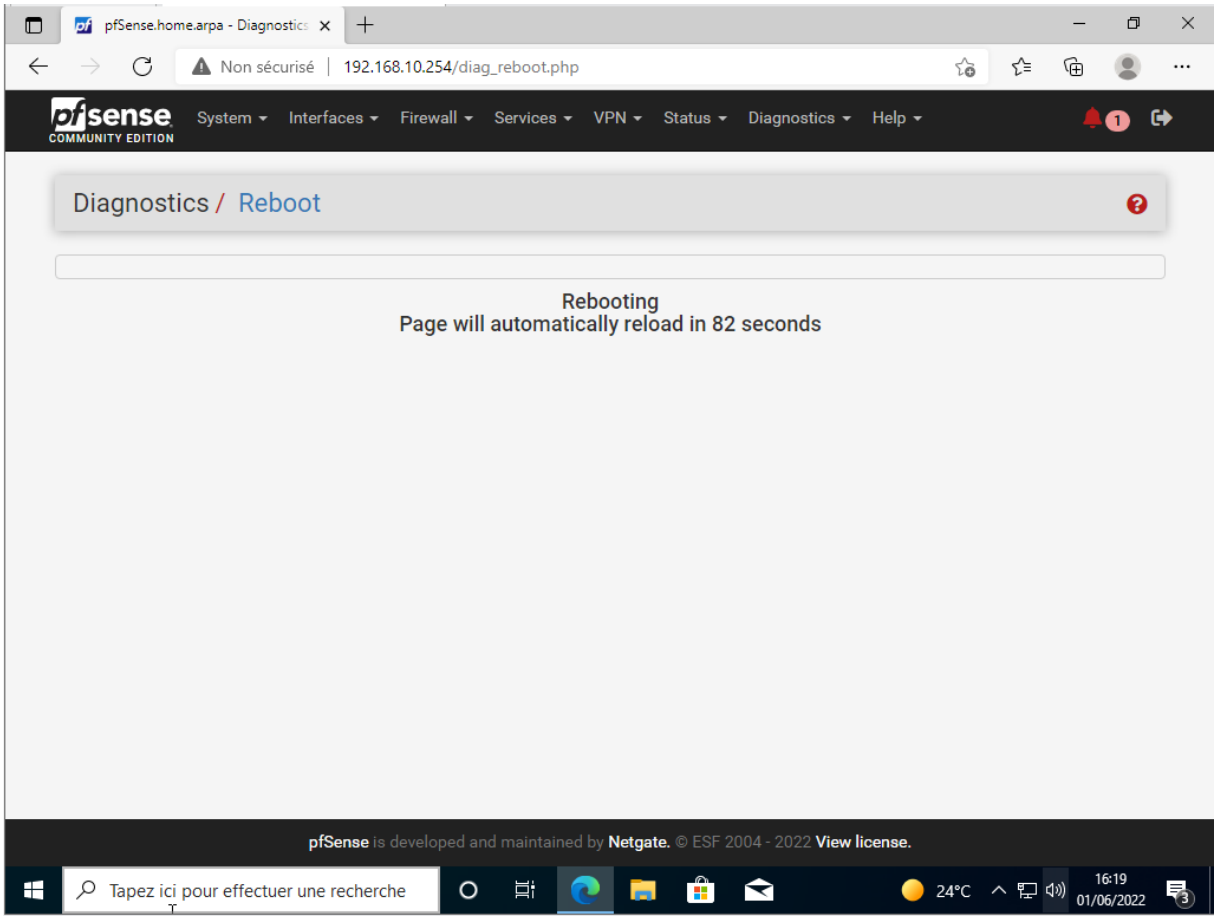

Nous allons ensuite sauvegarder nos modifications

Ensuite nous allons modifier à nouveau notre carte réseau du client Windows et définissons une adresse IP et un DNS automatiquement


Paramètres
Connexions réseau
« Réseau et Internet › Connexions réseau
Rechercher dans : Connexion...
Organiser
Désactiver ce pé
Connexion réseau Bluetc
Non connecté
Bluetooth Device (Persor
Propriétés de Ethernet0
Gestion de réseau
Propriétés de : Protocole Internet version 4 (TCP/IPv4)
Général
Configuration alternative
Les paramètres IP peuvent être déterminés automatiquement si votre réseau le permet. Sinon, vous devez demander les paramètres IP appropriés à votre administrateur réseau.
Obtenir une adresse IP automatiquement
Utiliser l'adresse IP suivante :
Adresse IP :
Masque de sous-réseau :
Passerelle par défaut :
Obtenir les adresses des serveurs DNS automatiquement
Utiliser l'adresse de serveur DNS suivante :
Serveur DNS préféré :
Serveur DNS auxiliaire :
Valider les paramètres en quittant
Avancé...
OK
Annuler
2 élément(s)
1 élément sélectionné
Tapez ici pour effectuer une recherche
24°C
16:10
01/06/2022

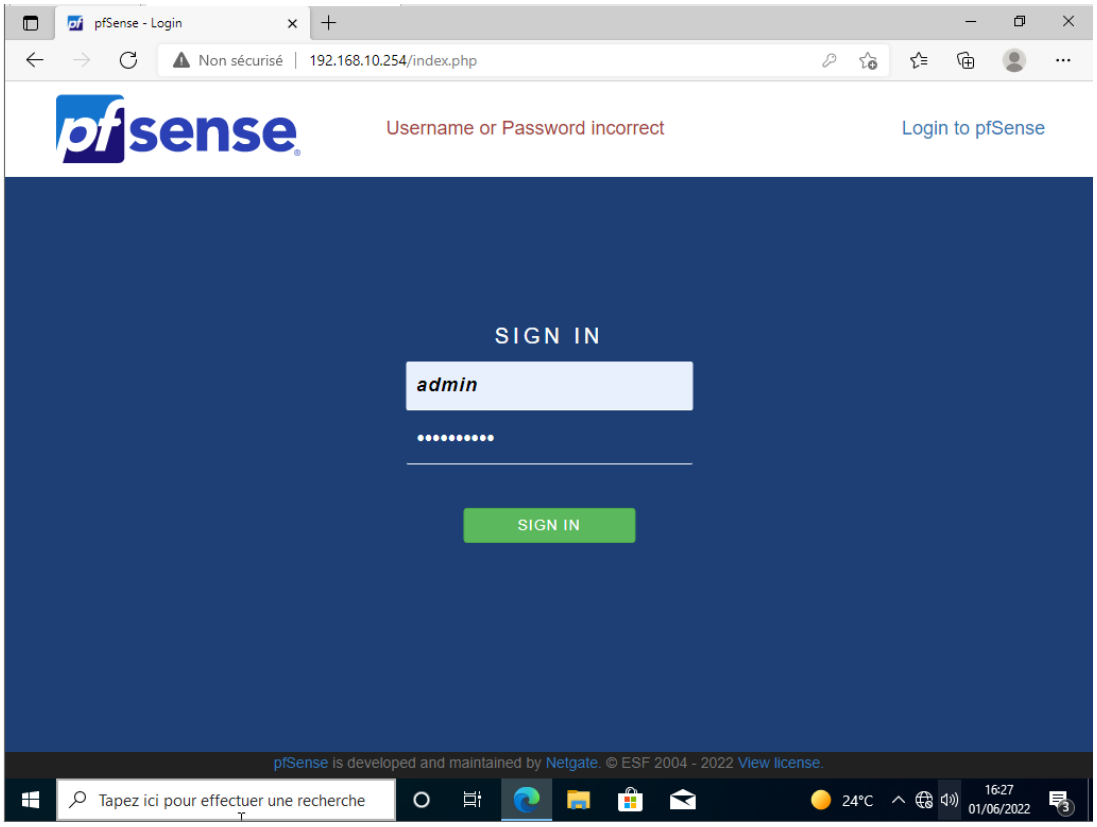

Invite de commandes
Microsoft Windows [version 10.0.19044.1288]
(c) Microsoft Corporation. Tous droits réservés.
C:\Users\User1>ipconfig
Configuration IP de Windows
Carte Ethernet Ethernet0 :
Suffixe DNS propre à la connexion. . . : home.arpa
Adresse IPv6 de liaison locale. . . . .: fe80::bdbd:3c9a:caf3:317e%14
Adresse IPv4. . . . . .: 192.168.10.10
Masque de sous-réseau. . . . . : 255.255.255.0
Passerelle par défaut. . . . . : 192.168.10.254
Carte Ethernet Connexion réseau Bluetooth :
Statut du média. . . . . : Média déconnecté
Suffixe DNS propre à la connexion. . . :
C:\Users\User1>
2 élément(s)
1 élément sélectionné
Tapez ici pour effectuer une recherche
24°C
16:17
01/06/2022

L’adresse IP de notre client Windows est bien dans la plage définie dans le Pf Sense. Nous allons donc redémarrer le Pf Sense

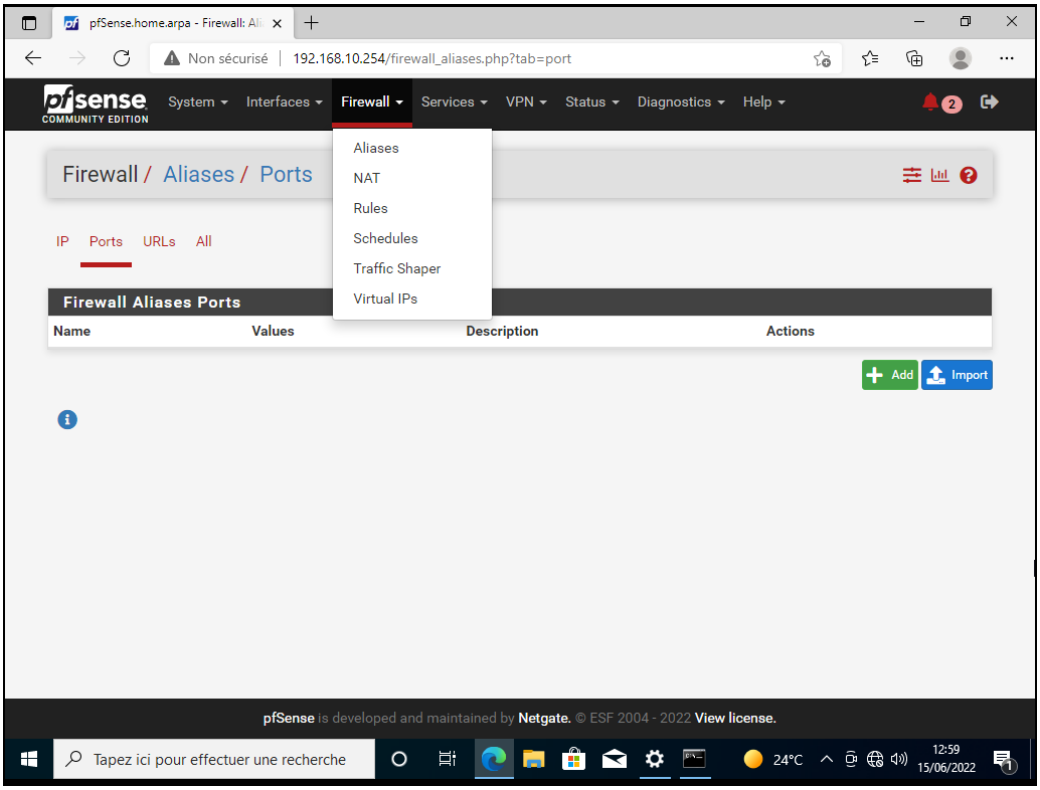


## 3.1Alias pour les ports en LAN

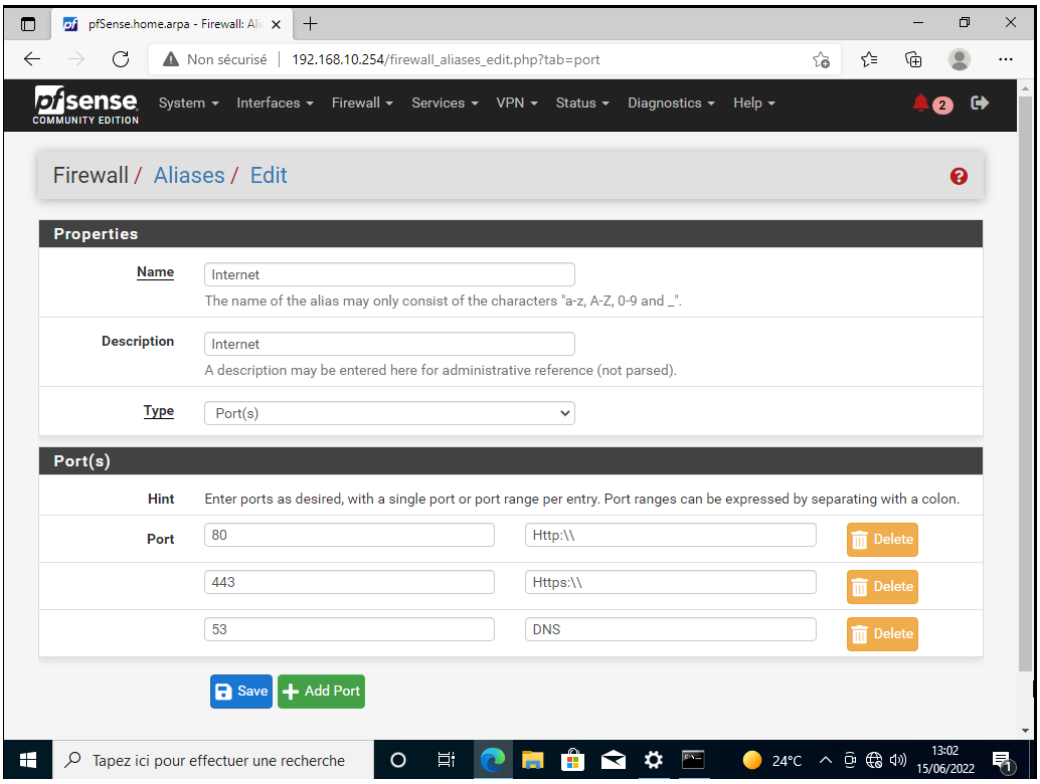
Nous allons nous reconnecter à Pf_Sense



Ici nous nous rendons dans l'onglet **Firewall – Aliases -Ports**




Création d'un alias avec les ports désirés



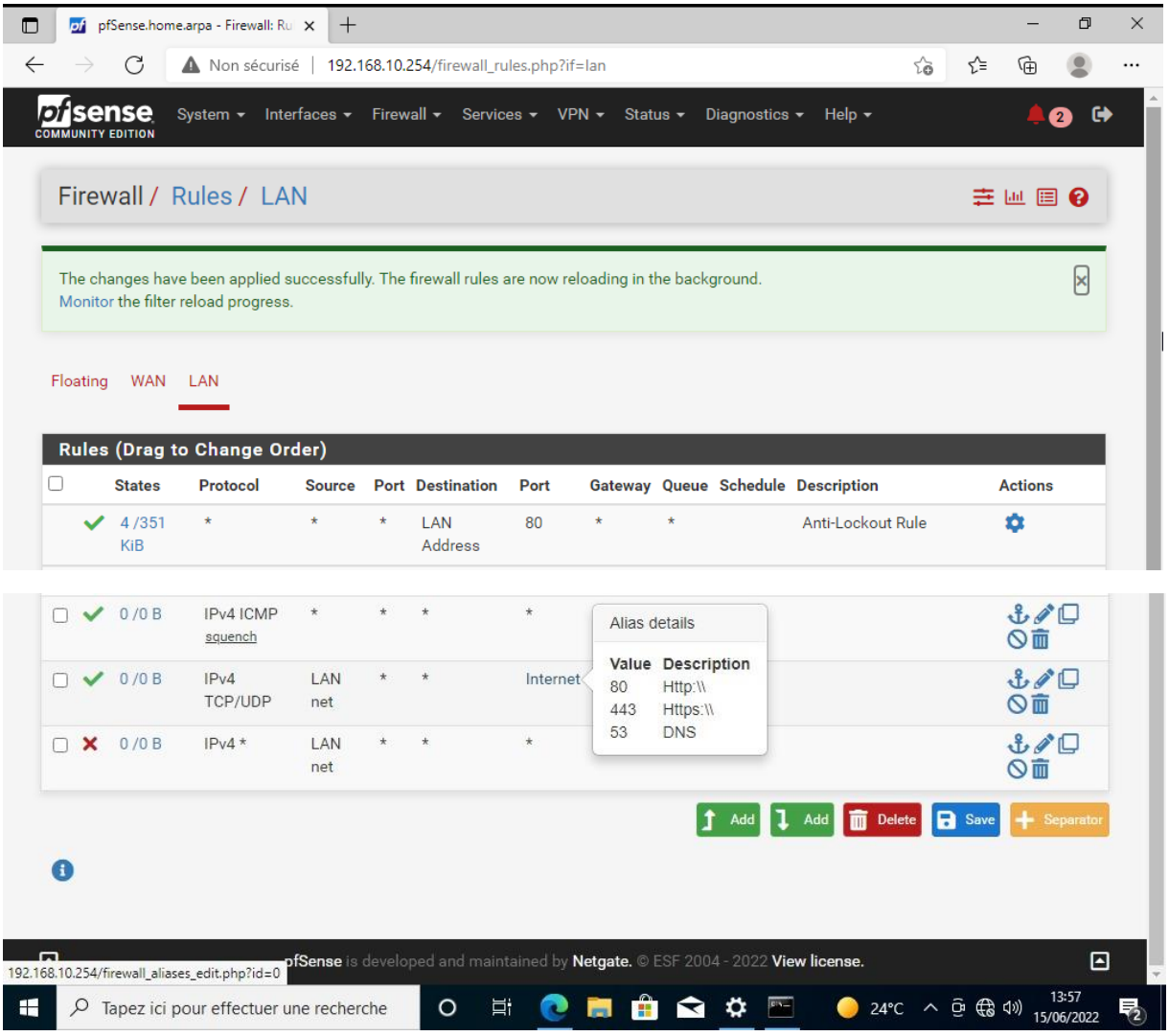

**Firewall Aliases Ports**

| Name | Values | Description | Actions |
|---|---|---|---|
| Internet | 80, 443, 53 | Internet | |

## 3.2Restriction du flux internet grâce aux règles

Ensuite nous créons des règles dans **Firewall – Rules - LAN**

- ✔ Ipv4$_{(icmp)}$ * * * * * *(il sert à faire un ping)*
- ✔ Ipv4$_{(tcp/udp)}$ LANnet * * 53 443 80 * *(c'est l'alias qui permet l'ouverture aux ports)*
- ✘ Ipv4 LANnet * * * * *(bloque tout accès internet)*




L'ordre des règles est important car Pf_Sense prend en compte la règle de restriction pour pouvoir après interpréter la 1ère règles pour le ping et la 2ème pour les ports internet

Nous pouvons observer que le ping google fonctionne correctement