

The background features three glowing, translucent rings with a metallic, iridescent finish. One ring is positioned in the upper right, another in the lower right, and a larger one in the upper left. They are set against a dark blue gradient background.

# pfSense

Presentation

Par FANDI Mehdi

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# qu est ce que pfSense

pfSense est un système d'exploitation open source ayant pour but la mise en place de routeur/pare-feu basé sur le système d'exploitation FreeBSD il nous fournit un niveau élevé de sécurité informatique et de fiabilité. la distribution pfSense permet le déploiement d'un pare-feu, d'un routeur, ainsi que d'un portail captif complet et adaptés aux professionnels.

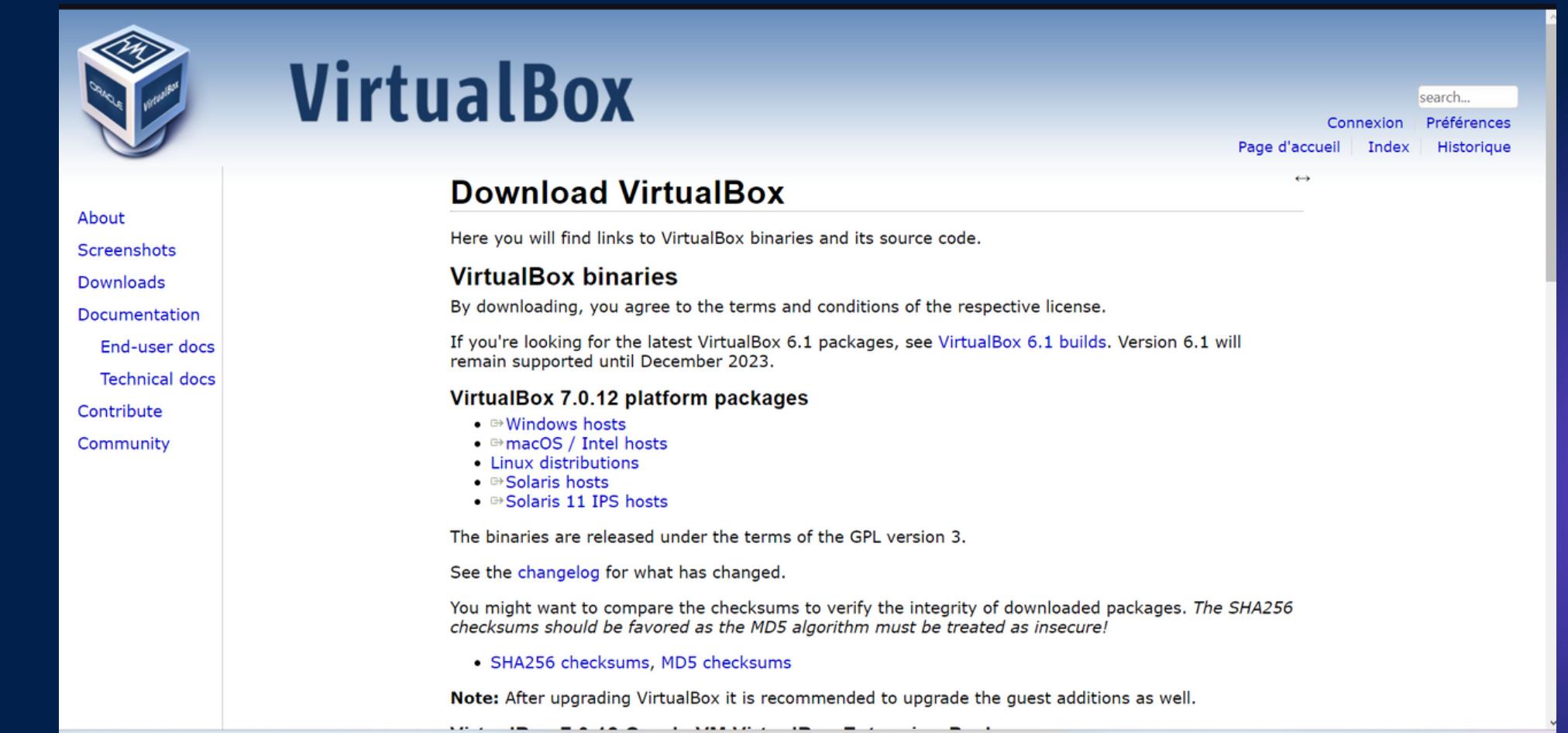


# presrequis

pour installer pfSense on a  
besoin d'un **Logiciel de  
virtualisation** , **Image ISO de  
pfSense** , **Configuration  
matérielle minimale**  
**, Configuration du réseau, et l  
Assignment d'adresses IP**

# installation

pour installer pfSense il faut un Logiciel de virtualisation tel que VMware ou VirtualBox donc c'est la première étape à faire



The screenshot shows the official Oracle VM VirtualBox website. The header features the VirtualBox logo (a blue cube with 'ORACLE' and 'VirtualBox' on it) and navigation links for 'Connexion', 'Préférences', 'Page d'accueil', 'Index', and 'Historique'. A search bar is also present. The main content area is titled 'VirtualBox' and 'Download VirtualBox'. It explains that users will find links to binaries and source code. A section for 'VirtualBox binaries' is shown, stating that by downloading, users agree to the terms and conditions of the respective license. It mentions that the latest VirtualBox 6.1 packages are available, supported until December 2023. Below this is a list of 'VirtualBox 7.0.12 platform packages' for various host operating systems: Windows hosts, macOS / Intel hosts, Linux distributions, Solaris hosts, and Solaris 11 IPS hosts. It notes that the binaries are released under the terms of the GPL version 3. A 'changelog' link is provided for changes. A note cautions against using MD5 checksums for integrity verification, favoring SHA256 instead. A note at the bottom advises upgrading guest additions after an upgrade.

# installation

apres l'installation du workstation il faut installer l'image ISO la plus récente de pfSense à partir du site officiel (<https://www.pfsense.org/download/>).

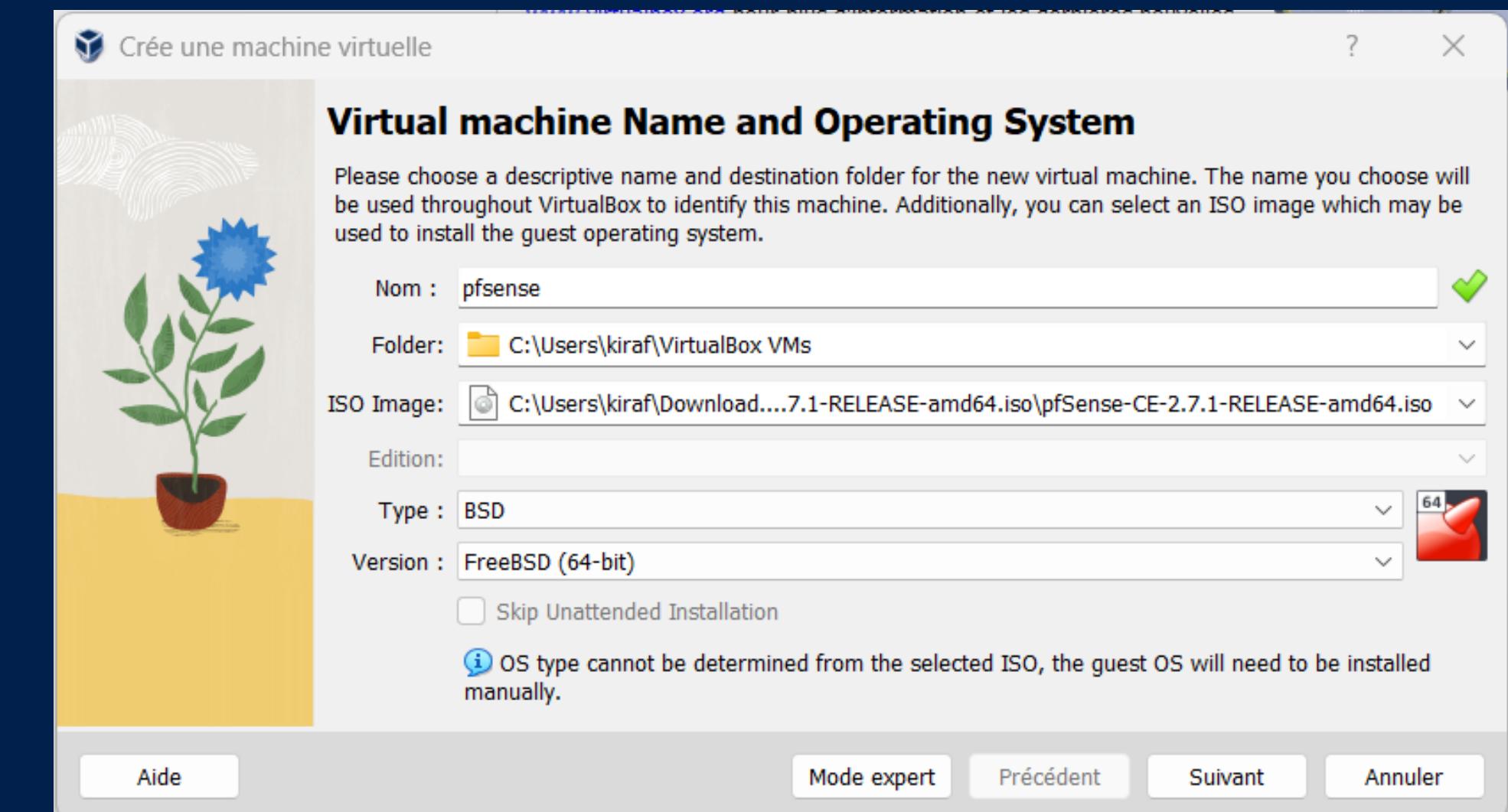
The screenshot shows the pfSense download page. At the top, there are social media icons and navigation links: Buy Cloud, Buy Appliance, Support, and Blog. Below that is the pfSense logo and a menu with Get Started, Cloud, Products, Services, Support, Training, Community, and Download.

In the center, there are two buttons: RELEASE NOTES and SOURCE CODE. Below them is a section titled "Select Image To Download". It shows the Version as 2.7.1, the Architecture dropdown set to "Select", and the Mirror dropdown set to "Austin, TX USA". A blue "DOWNLOAD" button is available. The "netgate" logo is present, supported by Netgate.

To the right, there is a sidebar for "Subscribe To The Netgate Newsletter". It includes a note about product information and software announcements, a "Email\*" input field, a checkbox for accepting the newsletter terms, and a "Subscribe" button. There is also a link to the privacy policy.

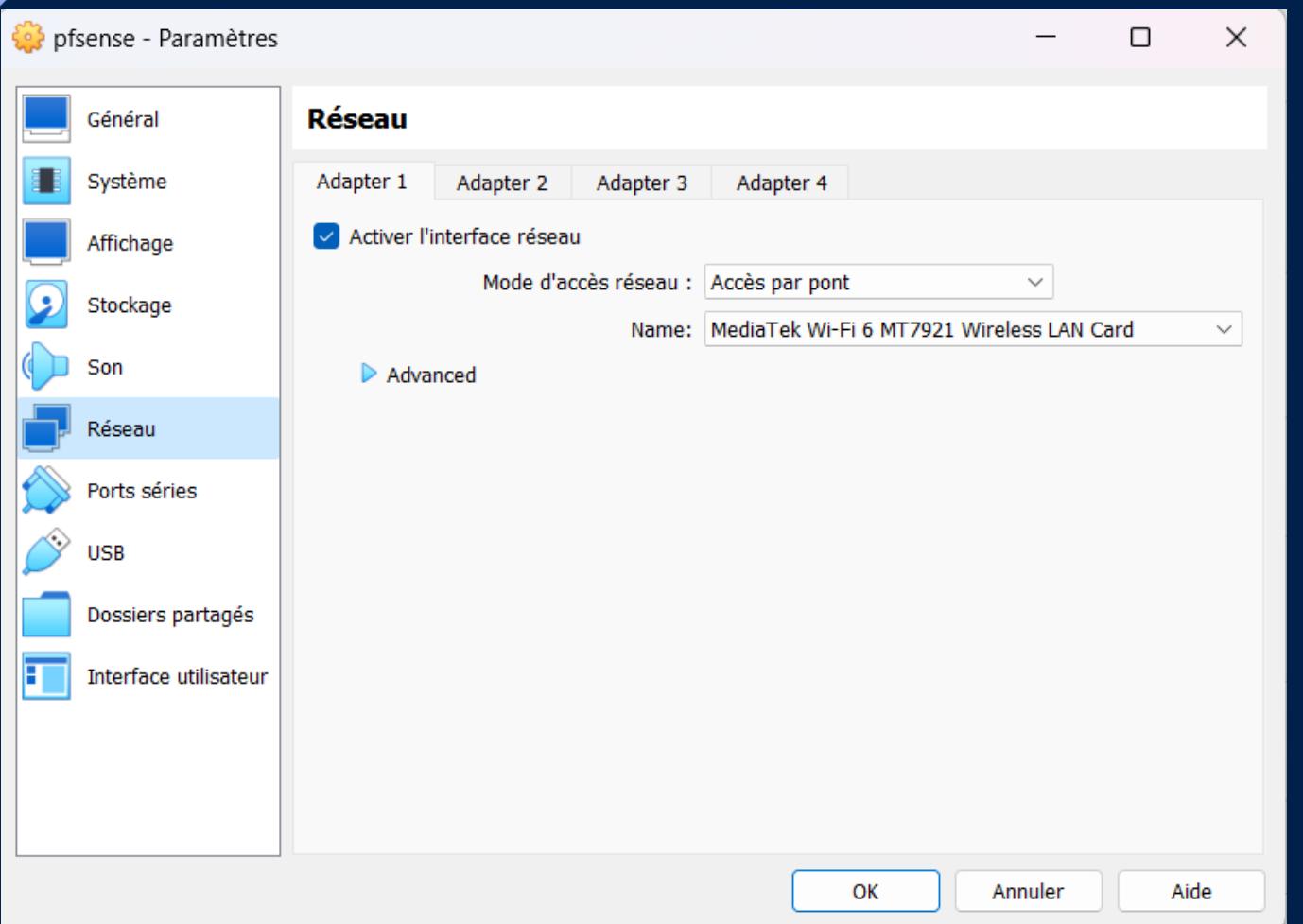
# installation

**apres l installion de l iso de pfSense  
on passe a la creation d une machine  
virtuelle en utilisant l iso de pfSense  
et la configuration de la taille qu il  
vas prendre sur notre disque**

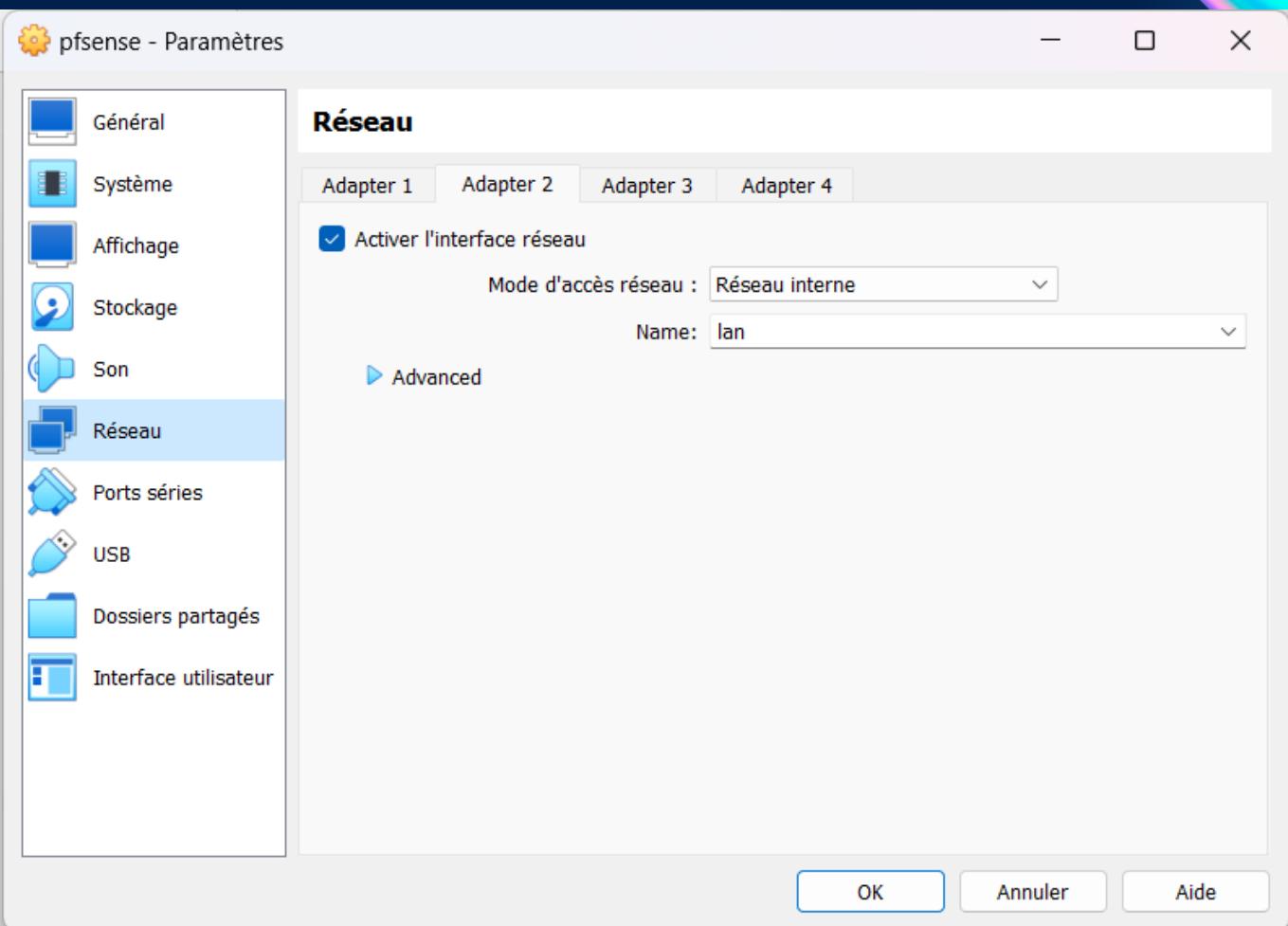


# Configuration

Apres l'installation de l'iso et avant lancer le pfSense il faut configurer deux cartes réseaux



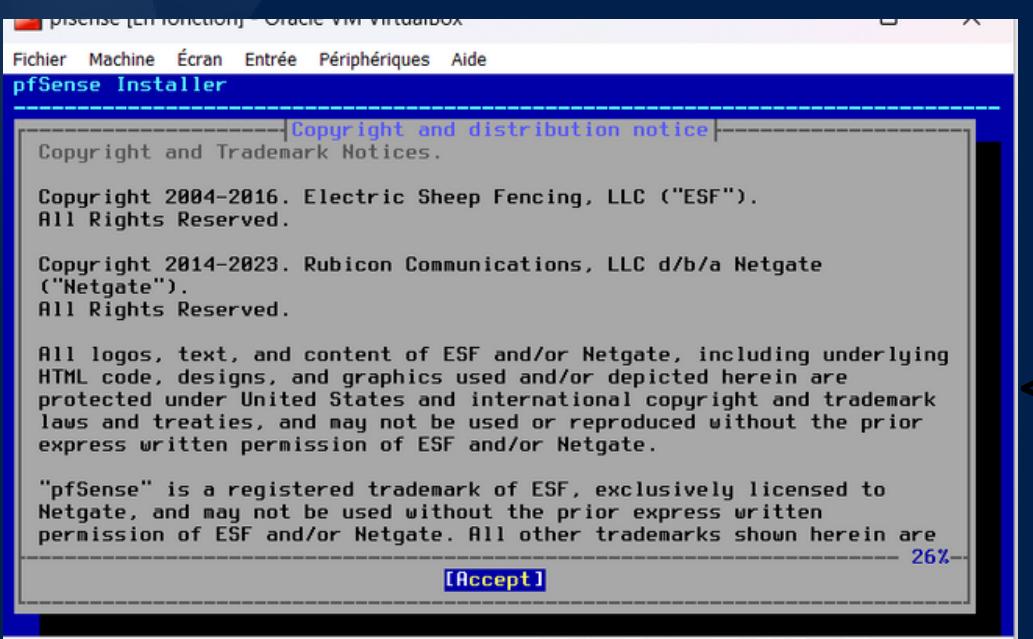
la première va être en accès par pont , cela permettra à pfSense d'être directement connecté au réseau physique de l'ordinateur hôte(mon ordi)



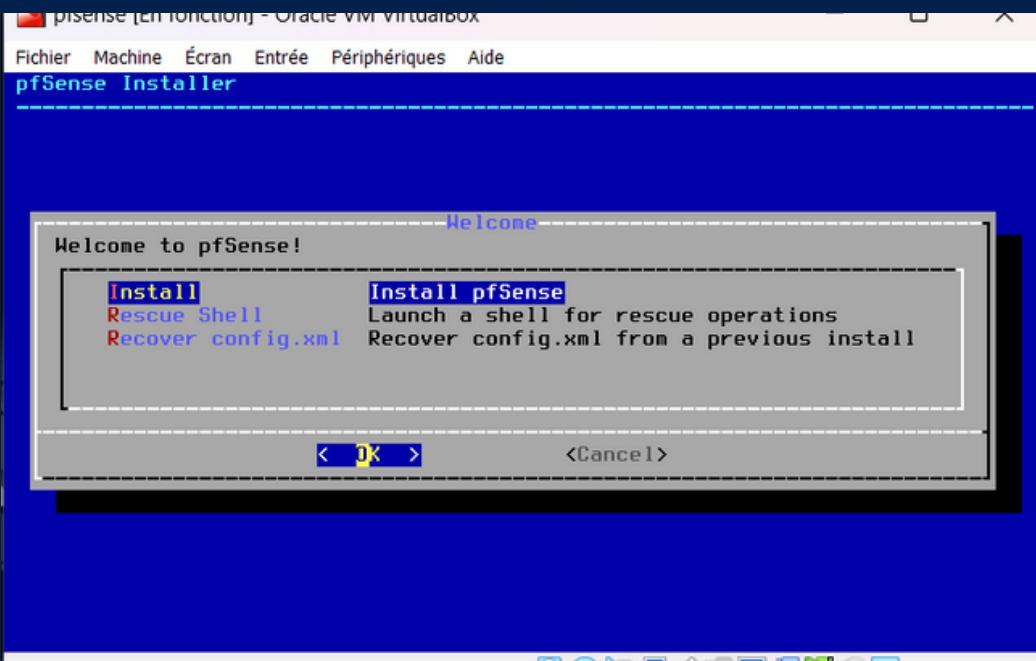
et la deuxième va être en réseau interne qui va nous permettre de communiquer avec notre machine ubuntu .

# Configuration

Apres la configuratin des cartes reseaux on passe a l  
installation de l interface



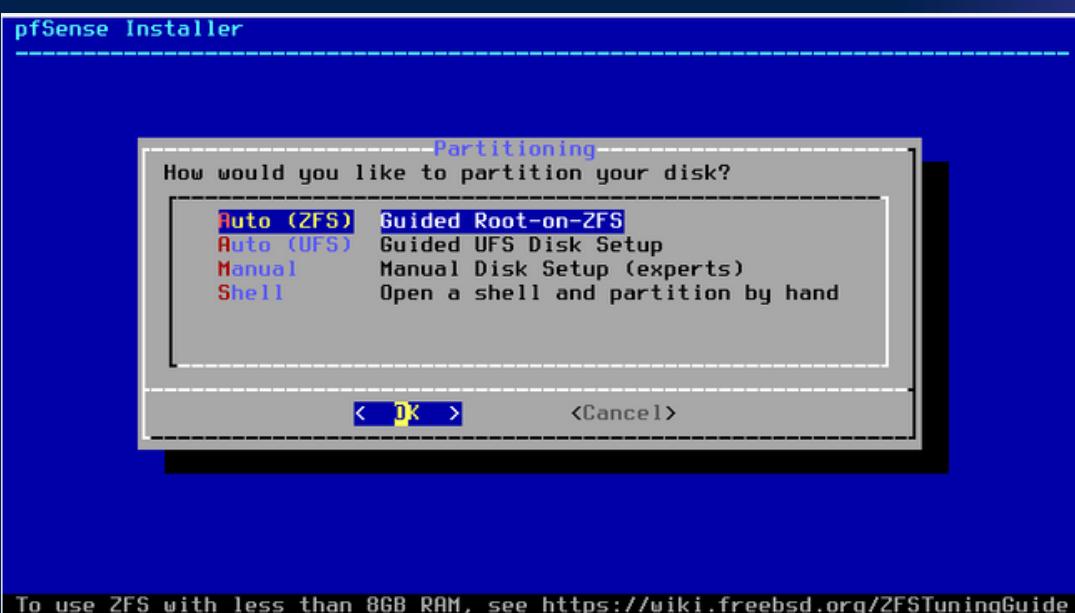
<=accept



ok=>



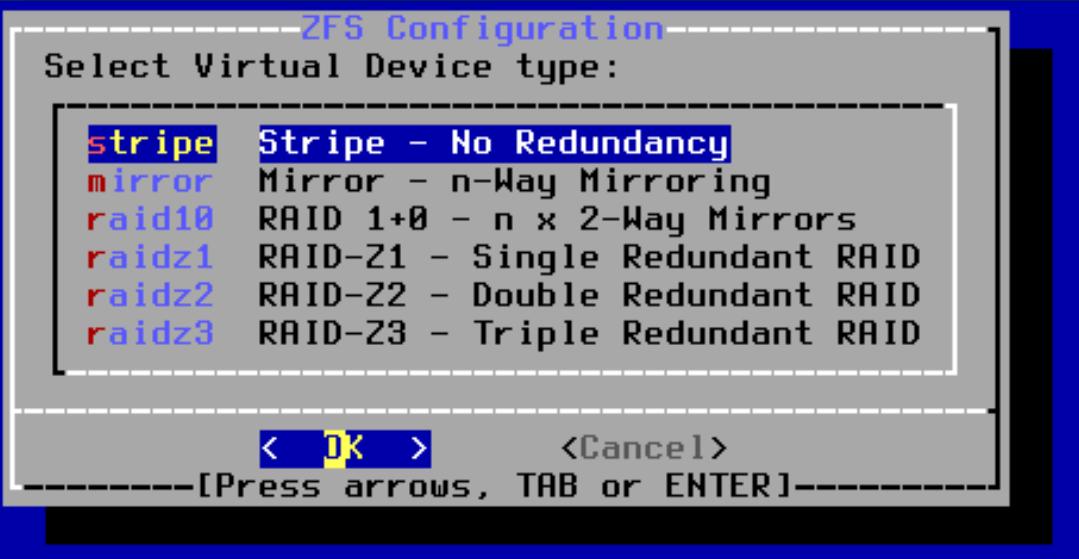
<=select  
install =>



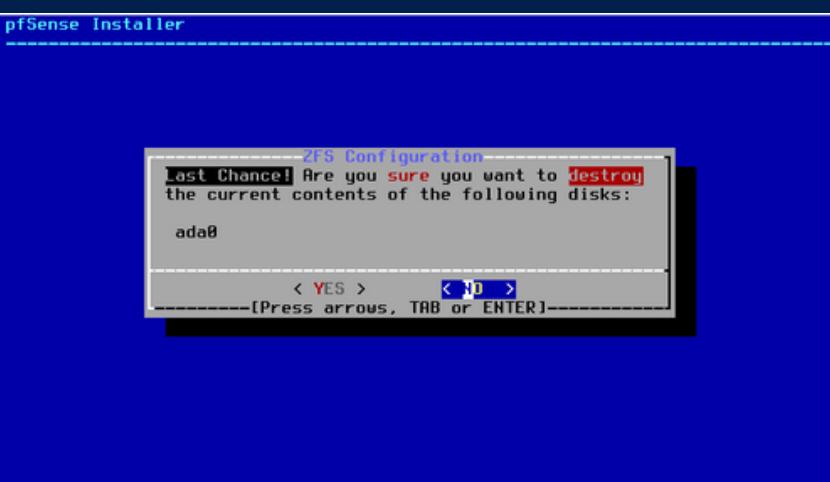
# Configuration

Apres la configuratin des cartes reseaux on passe a l  
installation de l interface

ok=>

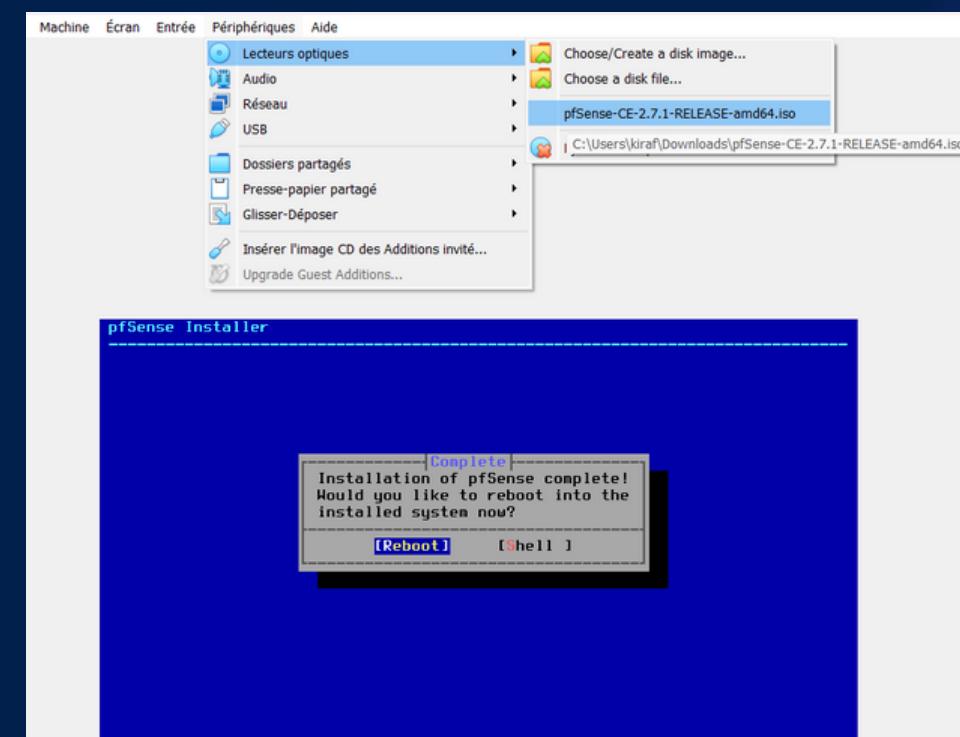


<=ok



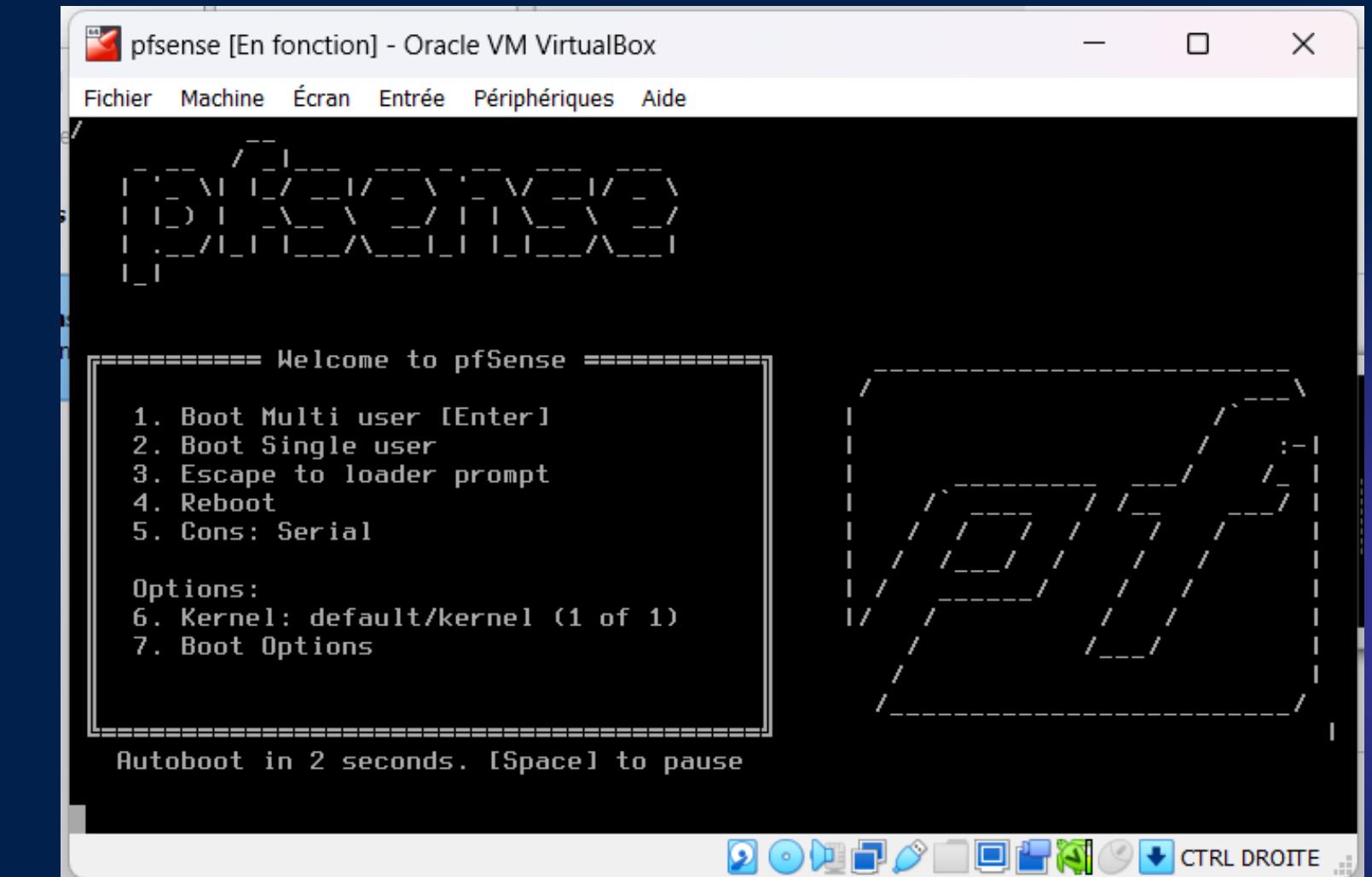
<=select oui  
tout est en  
place

remove le disk  
afin d evite le  
cycle  
d'installation  
sans fin =>



# configuration

a la fin de la configuration on vas avoir une interface comme cela pour nous indiquer que l installation a été effectué avec succès .



# configuration

si toute l installation se passe bien on vas avoir ce menu qu on vas utiliser pour configurer l interface de notre adresse ip

```
VirtualBox Virtual Machine - Netgate Device ID: 9bbef985dcad9604291f

*** Welcome to pfSense 2.7.1-RELEASE (amd64) on pfSense ***

WAN (wan)      -> em0      -> v4/DHCP4: 192.168.1.171/24
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: 2
```

# configuration

pour commencer on vas choisir qu on veut changer l interface de notre adresse et on vas indiquer la quel , on vas commencer par le wan donc on vas cliquer sur 1 ,mais iici on veut rien changer dedans donc on vas remettre l adresse ip initiale avec le meme mask et on vas indiquer qu on veut pas configurer notre adresse wan via dhcp

```
6) Halt system          15) Restore recent configuration
7) Ping host            16) Restart PHP-FPM
8) Shell

Enter an option: 2

Available interfaces:

1 - WAN (em0 - dhcp, dhcp6)
2 - LAN (em1 - static)

Enter the number of the interface you wish to configure: 1

Configure IPv4 address WAN interface via DHCP? (y/n) n

Enter the new WAN IPv4 address. Press <ENTER> for none:
> 192.168.1.171

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0      = 16
     255.0.0.0        = 8

Enter the new WAN IPv4 subnet bit count (1 to 32):
> 24
```

# configuration

maintenant on vas passer a la configuration de notre adresse lan , et pour faire cela on vas sélectionner 2 a la place de 1 et reindiquer qu on veut pas l installer via dhcp en entrant n et en donne une adresse que notre ubuntu vas pouvoir communiquer avec et vas nous cervire comme gateway apres et un mask egalement en /24.

```
Enter an option: 2
Available interfaces:
1 - WAN (em0 - static)
2 - LAN (em1 - static)

Enter the number of the interface you wish to configure: 2
Configure IPv4 address LAN interface via DHCP? (y/n) n
Enter the new LAN IPv4 address. Press <ENTER> for none:
> 192.168.2.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
      255.255.0.0   = 16
      255.0.0.0     = 8

Enter the new LAN IPv4 subnet bit count (1 to 32):
> 24

For a WAN, enter the new LAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> |
```

# configuration

maintenant on vas passer a la configuration de notre adresse lan , et pour faire ca on vas selectionner 2 a la place de 1 et reindisuer qu on veut pas l installer via dhcp en entrant n et en donne une adresse que notre ubuntu vas pouvoir communiquer avec et vas nous cervire comme gateway apres et un mask egalement en /24.  
lorsqu on vas terminer d adresser les nouvelles adresses ip ils vont nous demander si on veut configurer le lan via dhcp ou une nouvelle adresse ipv6 ou activer le dhcp on vas dire non

```
Enter an option: 2
Available interfaces:
1 - WAN (em0 - static)
2 - LAN (em1 - static)

Enter the number of the interface you wish to configure: 2
Configure IPv4 address LAN interface via DHCP? (y/n) n
Enter the new LAN IPv4 address. Press <ENTER> for none:
> 192.168.2.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new LAN IPv4 subnet bit count (1 to 32):
> 24

For a WAN, enter the new LAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
> 
```

```
Enter the new LAN IPv4 address. Press <ENTER> for none:
> 192.168.2.1

Subnet masks are entered as bit counts (as in CIDR notation) in pfSense.
e.g. 255.255.255.0 = 24
     255.255.0.0   = 16
     255.0.0.0     = 8

Enter the new LAN IPv4 subnet bit count (1 to 32):
> 24

For a WAN, enter the new LAN IPv4 upstream gateway address.
For a LAN, press <ENTER> for none:
>

Configure IPv6 address LAN interface via DHCP6? (y/n) n
Enter the new LAN IPv6 address. Press <ENTER> for none:
> n

Enter the new LAN IPv6 address. Press <ENTER> for none:
>

Do you want to enable the DHCP server on LAN? (y/n) 
```

# configuration

la quand toute la configue se passe bien  
on vas remarquer que les ip qu on avait  
adressé sont bien affiché et on peux  
passer a la configuration de ubuntu .

```
The IPv4 LAN address has been set to 192.168.2.1/24
You can now access the webConfigurator by opening the following URL in your web
browser:
https://192.168.2.1/

Press <ENTER> to continue.
VirtualBox Virtual Machine - Netgate Device ID: 9bbef985dcad9604291f

*** Welcome to pfSense 2.7.1-RELEASE (amd64) on pfSense ***

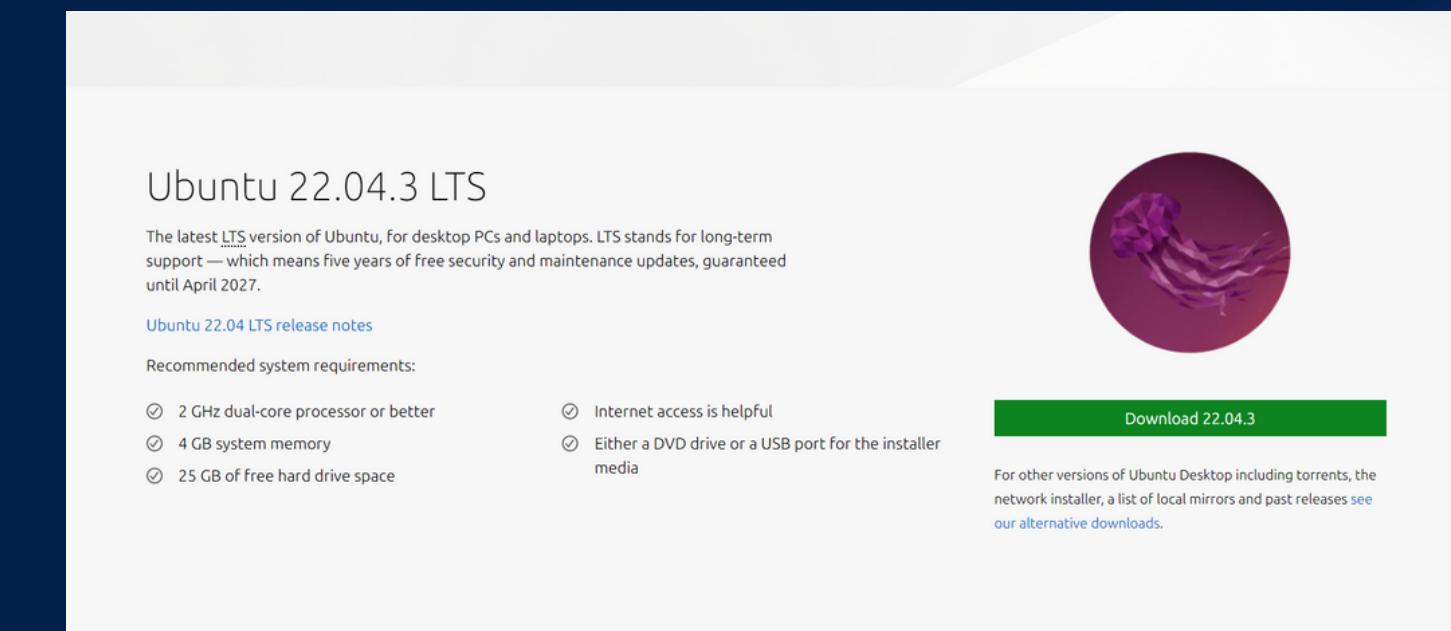
WAN (wan)      -> em0      -> v4: 192.168.1.171/24
LAN (lan)      -> em1      -> v4: 192.168.2.1/24

0) Logout (SSH only)          9) pfTop
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6) Halt system                 15) Restore recent configuration
7) Ping host                   16) Restart PHP-FPM
8) Shell

Enter an option: █
```

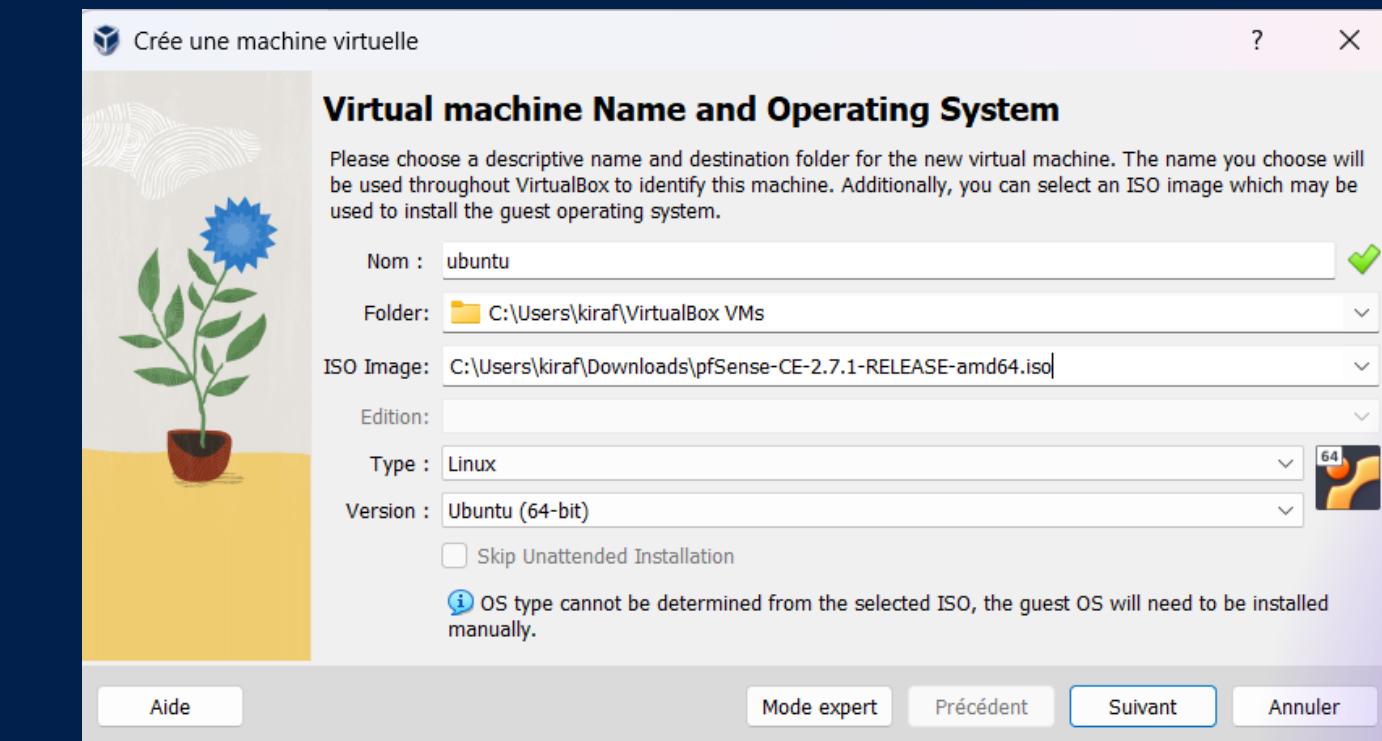
# installation ubuntu

et comme pour l installation de pfSense  
on vas telecharger l iso et l installer sur  
notre virtual box



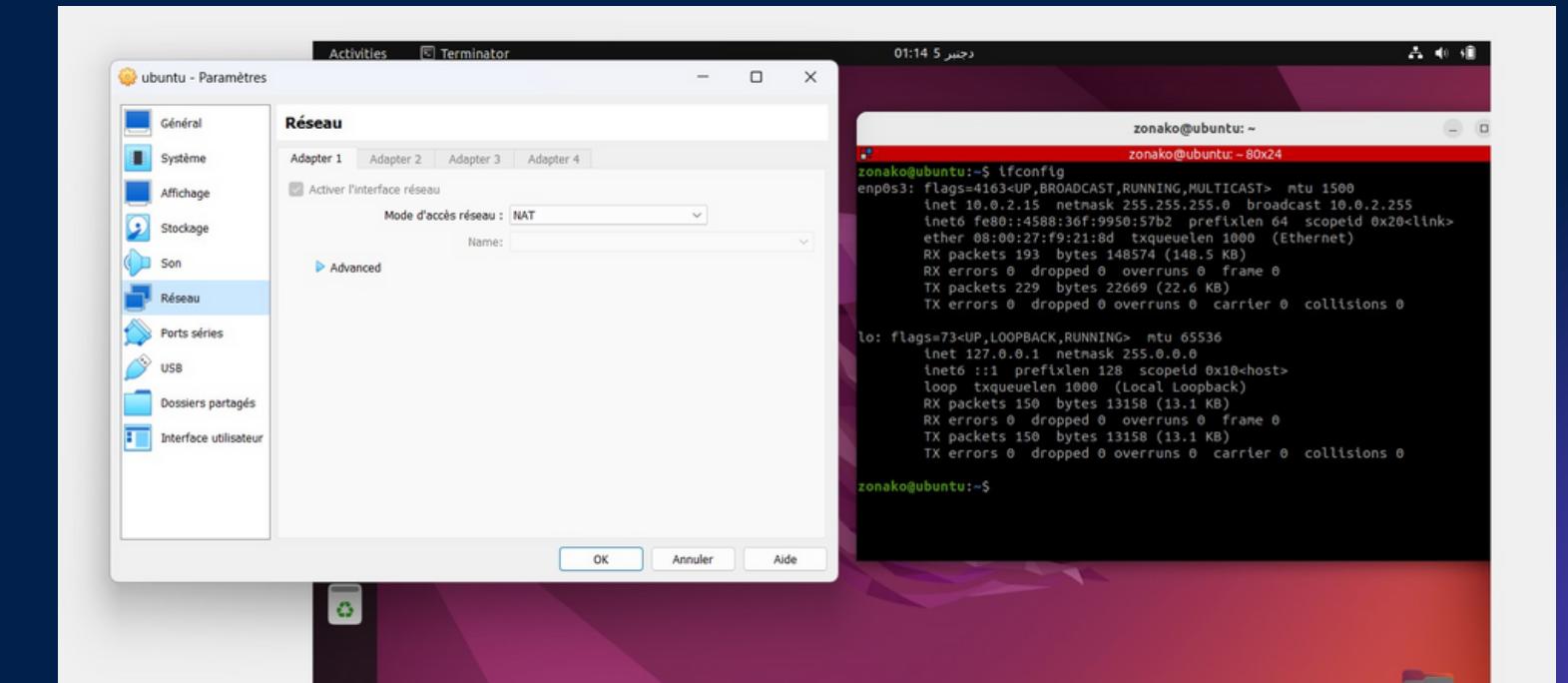
# installation ubuntu

donc on vas preciser le nom de la machine et entrer l iso et suivre l installation de ubuntu



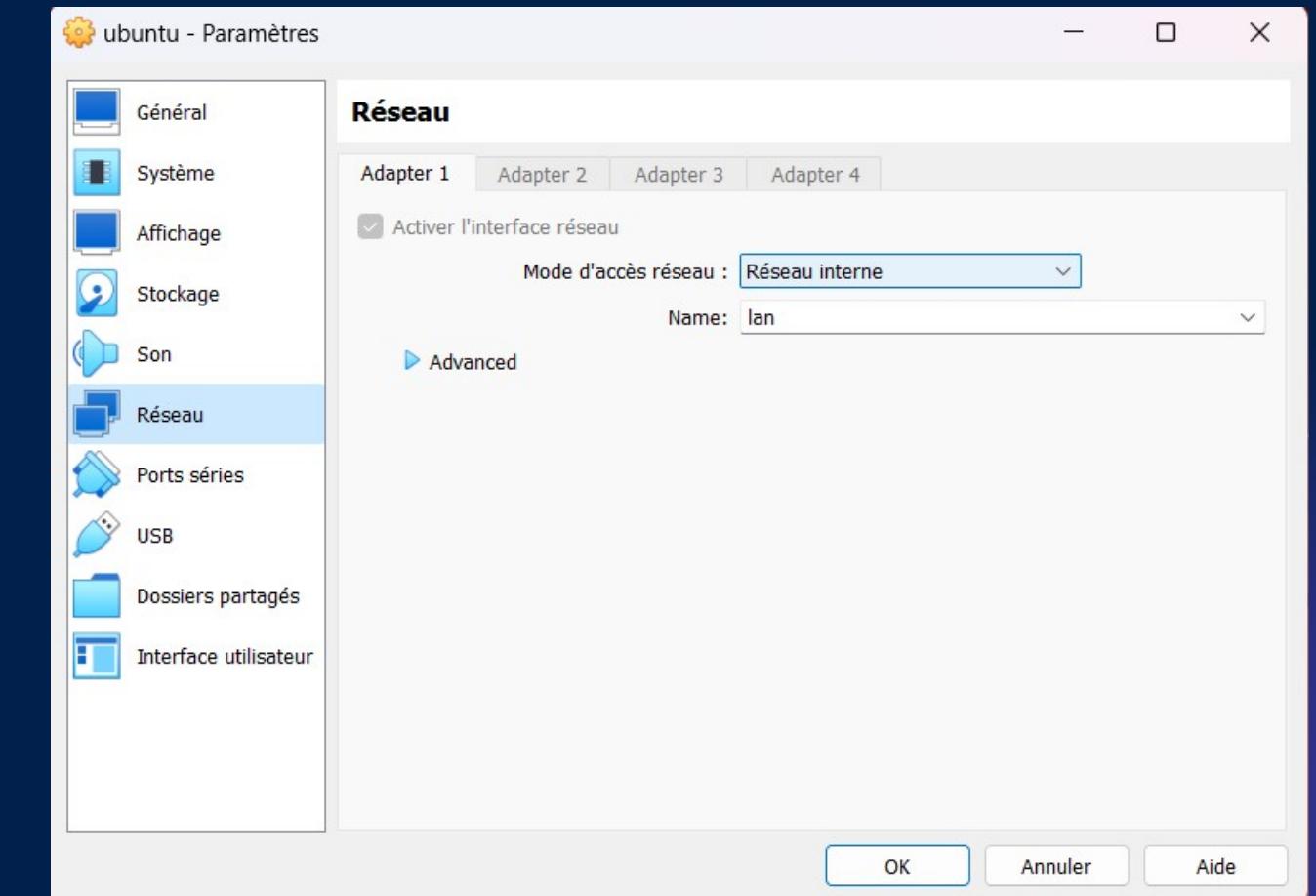
# configuration ubuntu

on peut voir si on check l'adresse ip de notre machine qu'elle a une adresse ip attribué par la machine virtuelle et elle est en nat



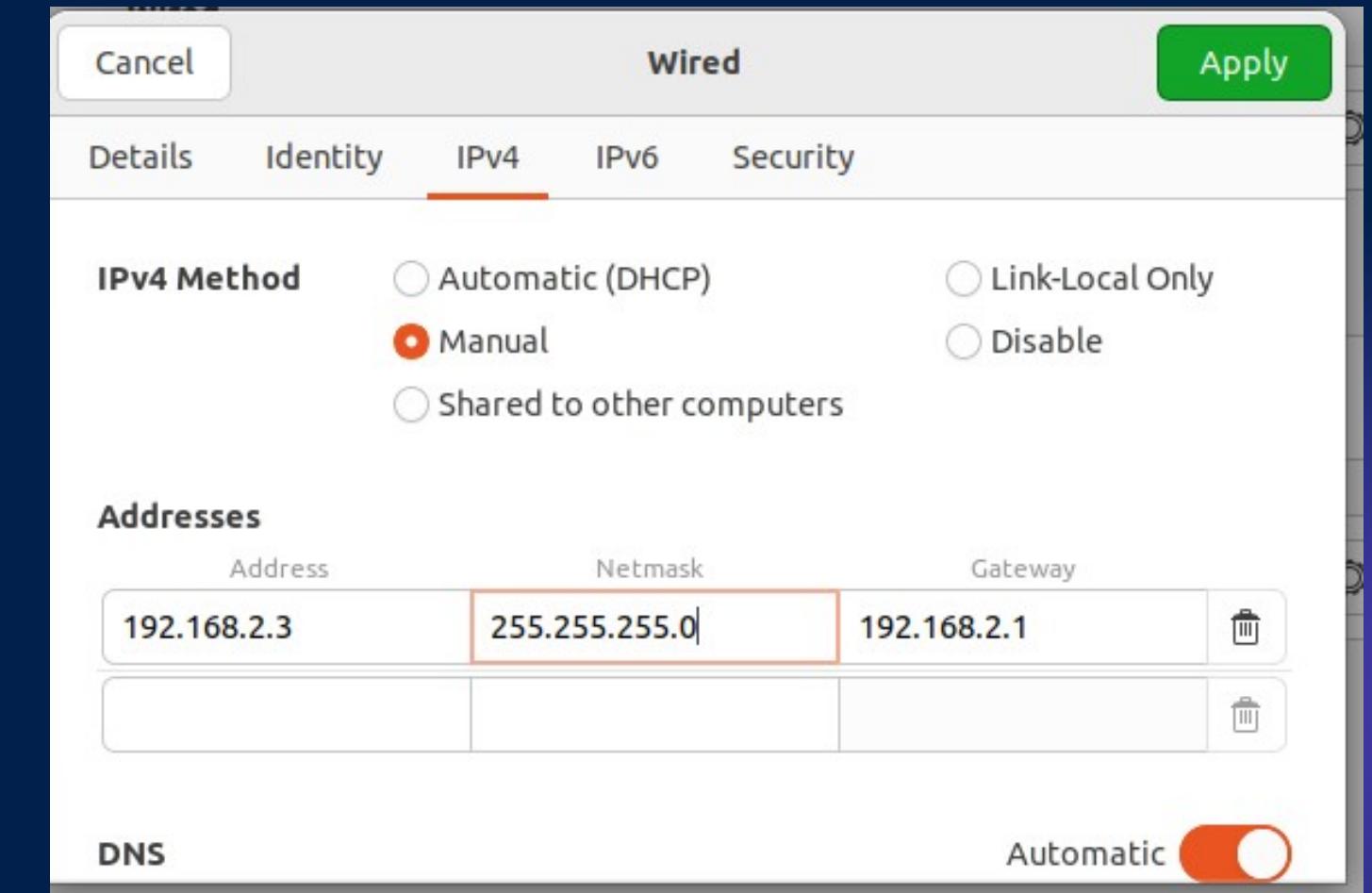
# configuration ubuntu

donc on vas la changer du nat en reseau interne et on selectione lan pour savoir avec qui il vas communiquer comme ce qu on a fait avec le pfSense .



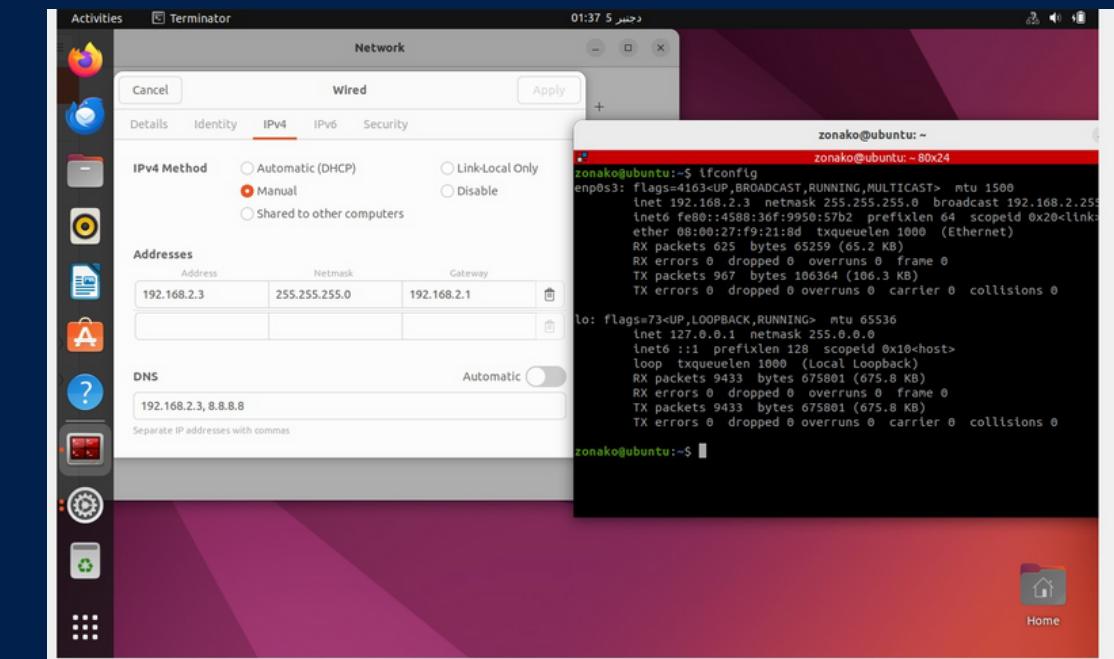
# configuration ubuntu

apres on vas modifier l adresse de notre machine et on lui donne le gateway qu on a configuré pour notre machine pfSense et un mask



# configuration ubuntu

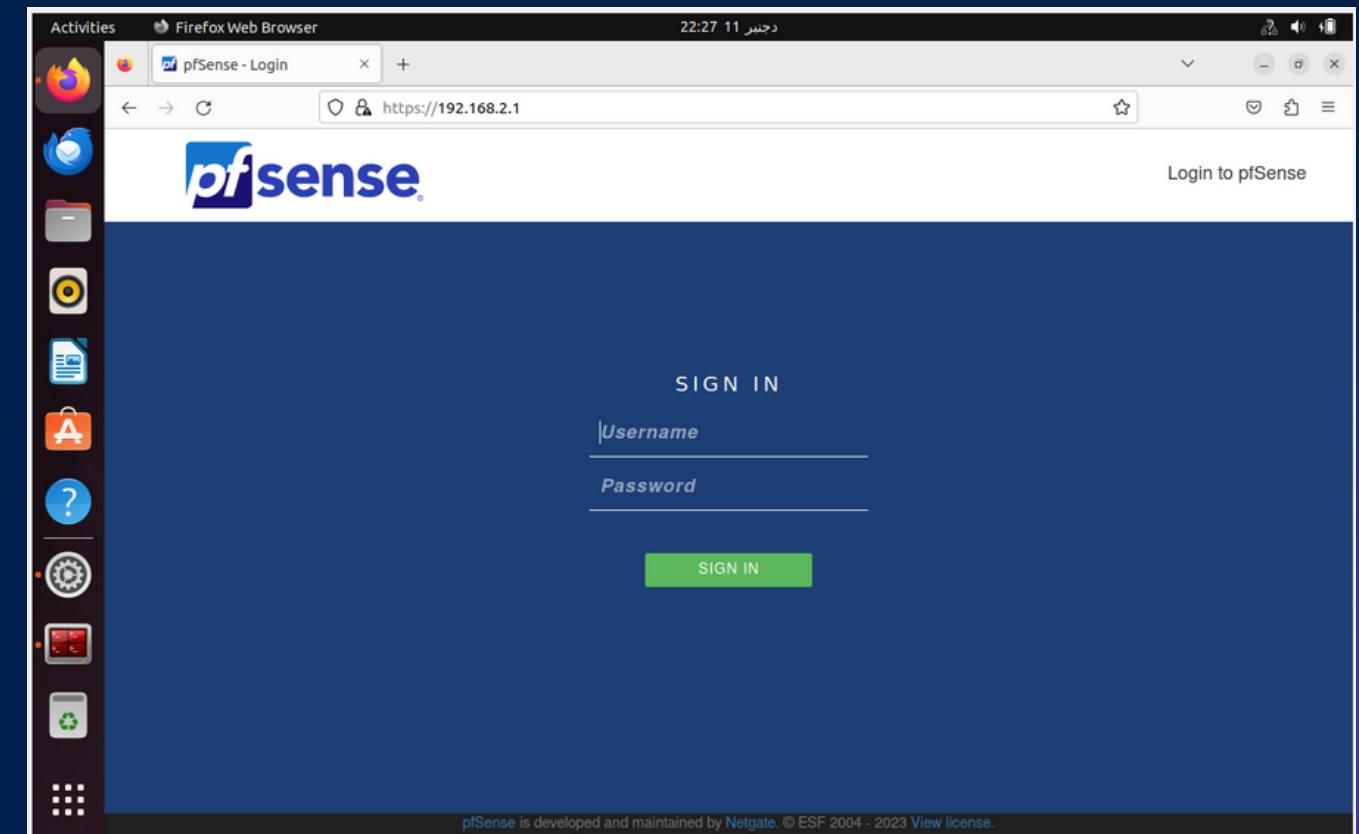
la si on recheck l ip de notre machine on peut remarquer qu il a changer et si on ping note machine on peut voir que tout marche bien



```
ping: can't find host 192.168.2.3: No such service known.
zonako@ubuntu:~$ ping192.168.2.3
ping192.168.2.3: command not found
zonako@ubuntu:~$ ping 192.168.2.3
PING 192.168.2.3 (192.168.2.3) 56(84) bytes of data.
64 bytes from 192.168.2.3: icmp_seq=1 ttl=64 time=0.031 ms
64 bytes from 192.168.2.3: icmp_seq=2 ttl=64 time=0.036 ms
64 bytes from 192.168.2.3: icmp_seq=3 ttl=64 time=0.034 ms
64 bytes from 192.168.2.3: icmp_seq=4 ttl=64 time=0.037 ms
64 bytes from 192.168.2.3: icmp_seq=5 ttl=64 time=0.034 ms
64 bytes from 192.168.2.3: icmp_seq=6 ttl=64 time=0.035 ms
64 bytes from 192.168.2.3: icmp_seq=7 ttl=64 time=0.053 ms
64 bytes from 192.168.2.3: icmp_seq=8 ttl=64 time=0.036 ms
64 bytes from 192.168.2.3: icmp_seq=9 ttl=64 time=0.037 ms
64 bytes from 192.168.2.3: icmp_seq=10 ttl=64 time=0.028 ms
64 bytes from 192.168.2.3: icmp_seq=11 ttl=64 time=0.224 ms
64 bytes from 192.168.2.3: icmp_seq=12 ttl=64 time=0.028 ms
64 bytes from 192.168.2.3: icmp_seq=13 ttl=64 time=0.029 ms
64 bytes from 192.168.2.3: icmp_seq=14 ttl=64 time=0.042 ms
```

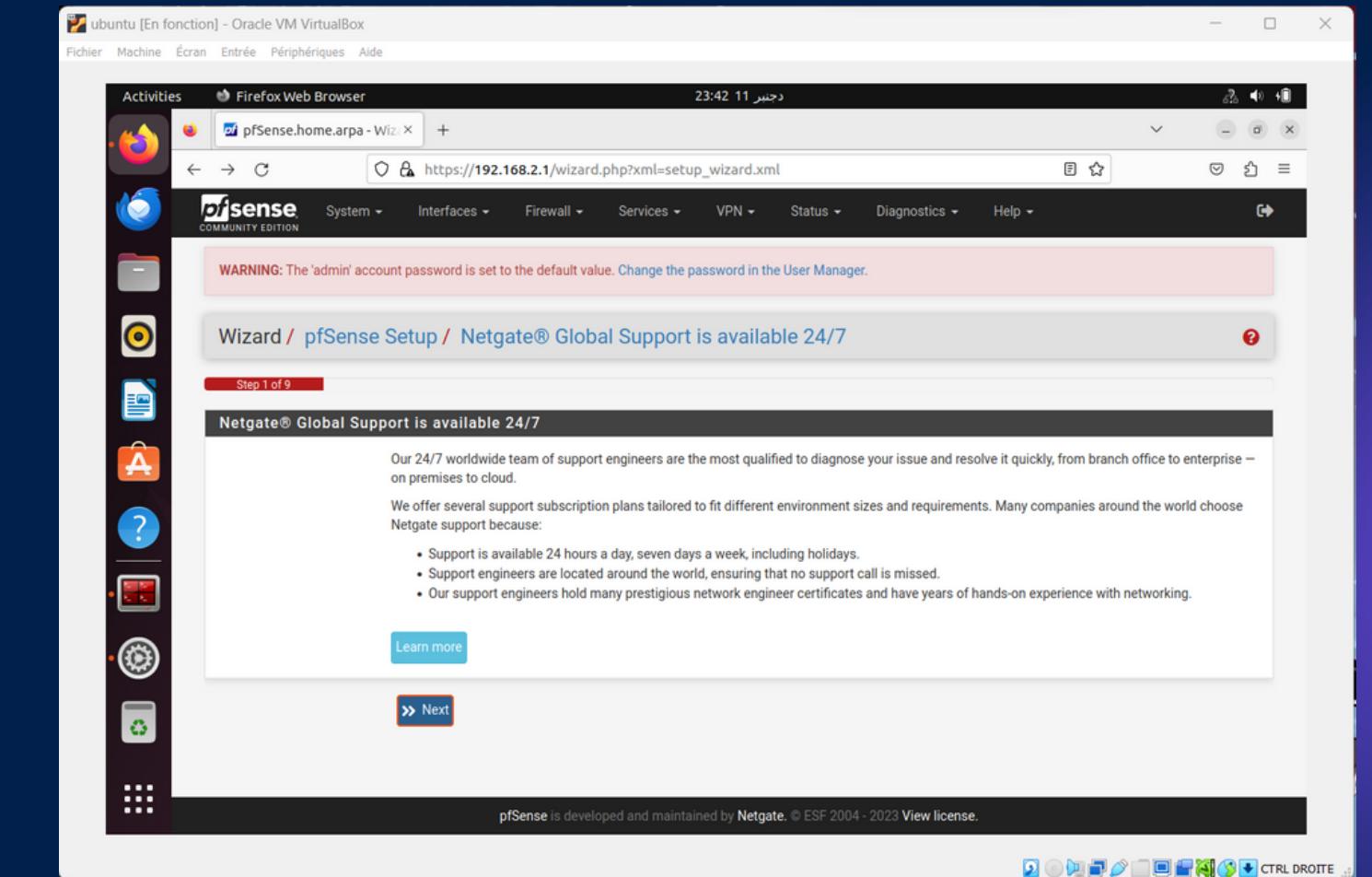
# configuration ubuntu

et la en fin on peux acceder a l interface pfSense en entrant l adresse du gateway qu on avais configuré sur la barre de recherche et le username et le mot de passe sont par defaut admin et pfSense.



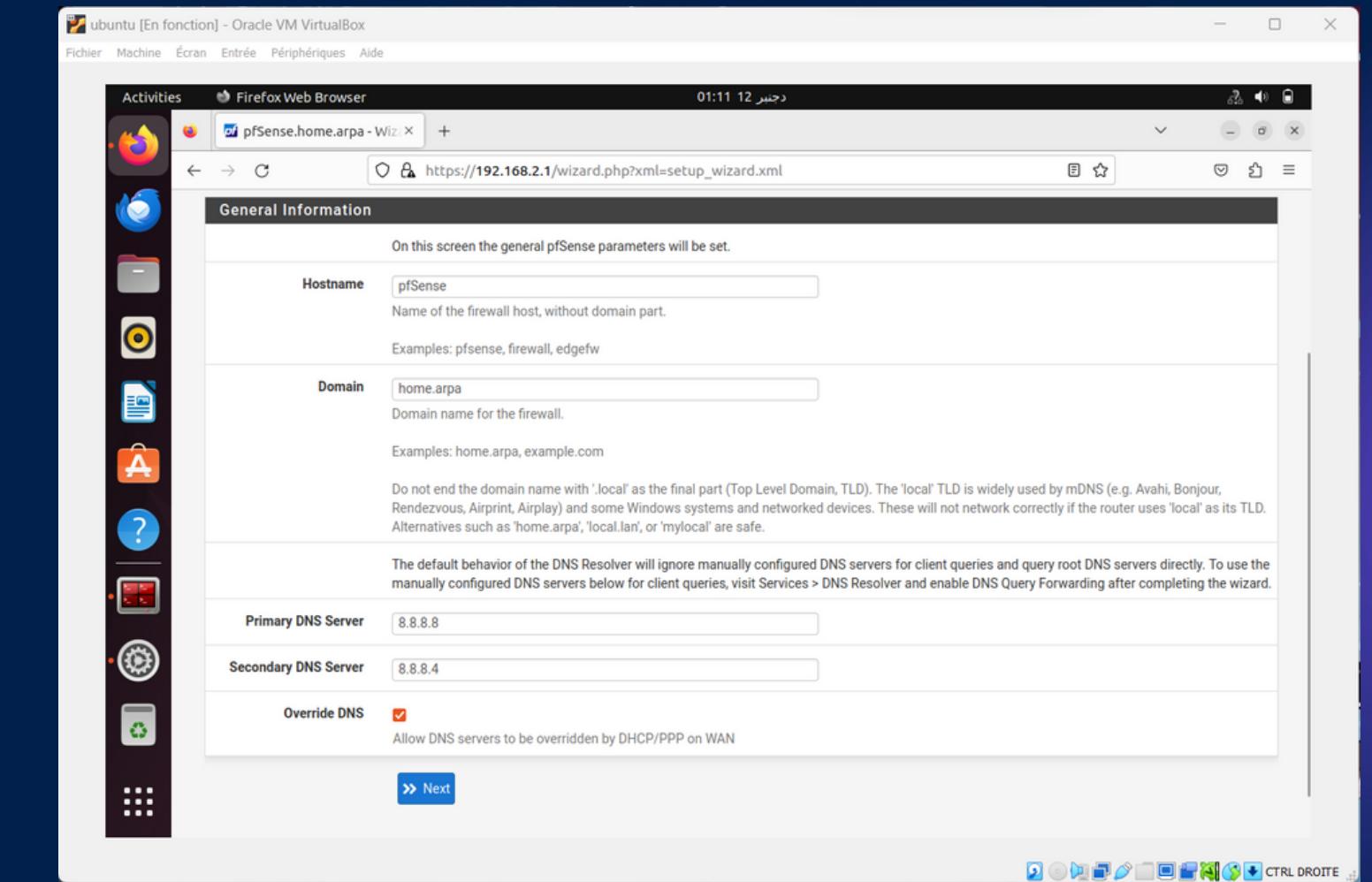
# interface pfSense

apres entres l identifiant et le mot de passe on a acces au pfSense et on peut faire les derniére modifications



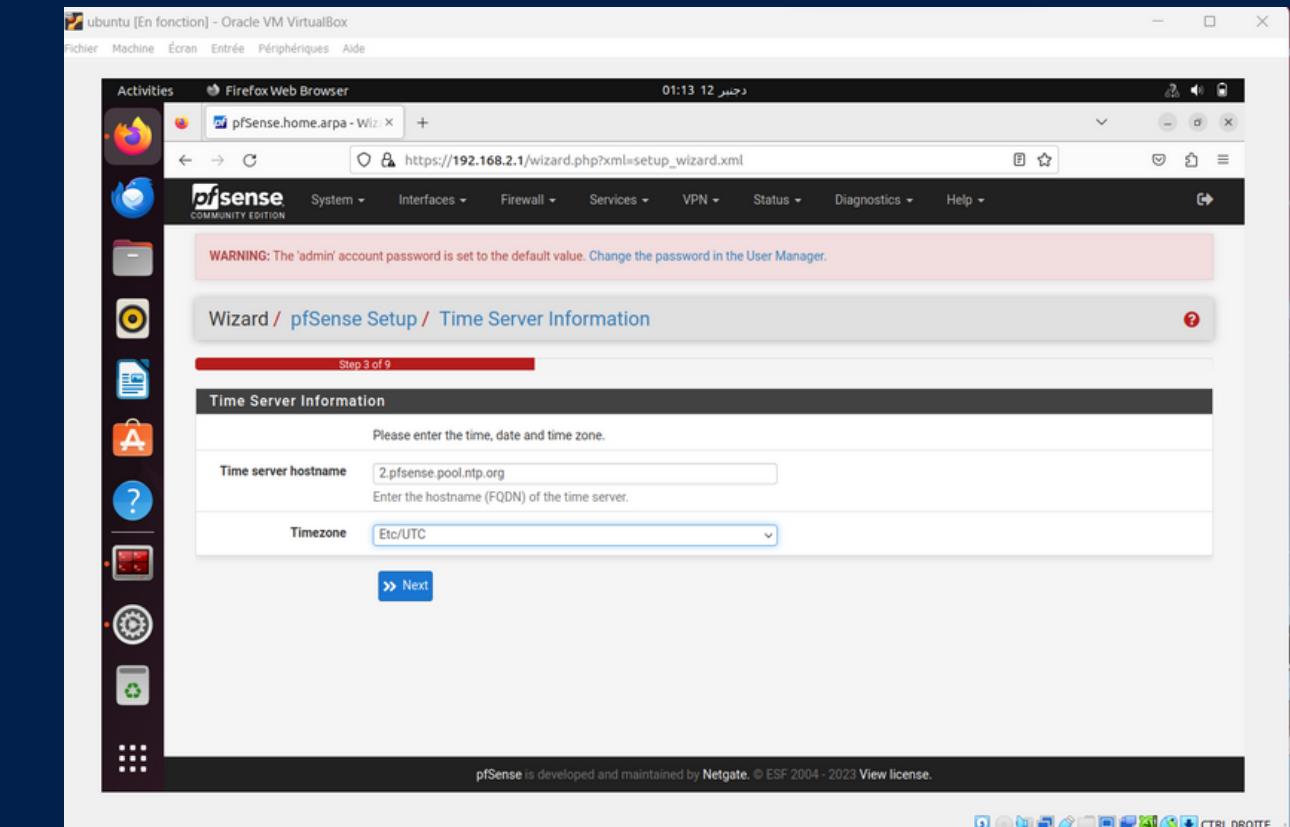
# interface pfSense

on vas ajouter le dns de google 8.8.8.8  
qu on a ajouter lors de la config du  
reseau de notre ubuntu



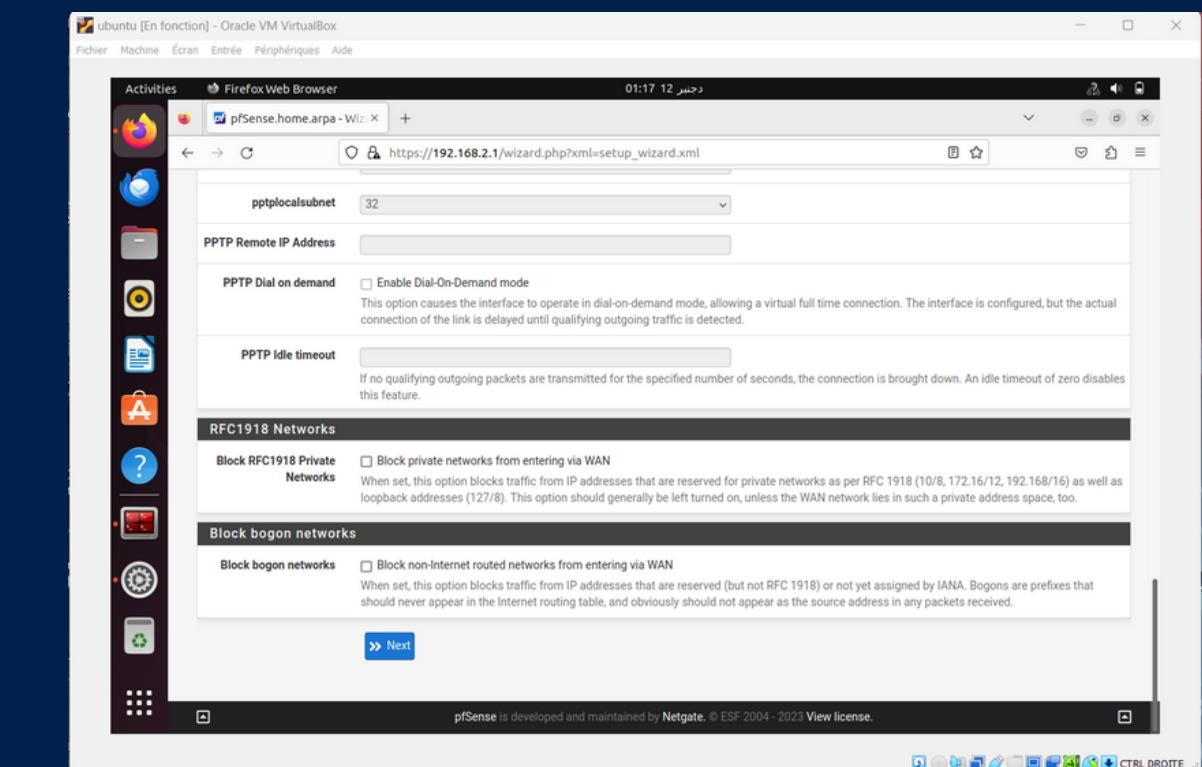
# interface pfSense

ET ON VAS CONFIGURER LE TIMEZONE  
EN FONCTION DE LA ZONE OU ON SE  
TROUVE



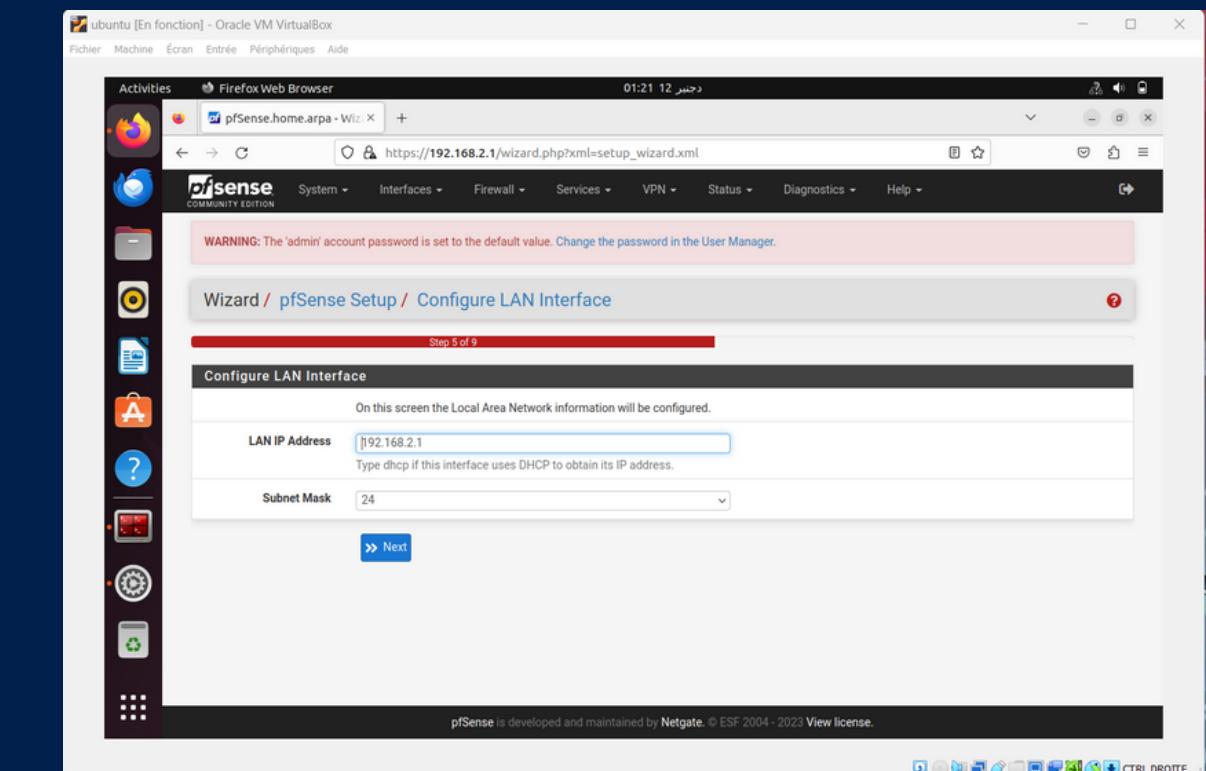
# interface pfSense

La il faut décocher les deux options  
block private networks and loopback  
addresses et Block bogon networks  
pour qu il nous causent pas un blockage  
de trafique des données



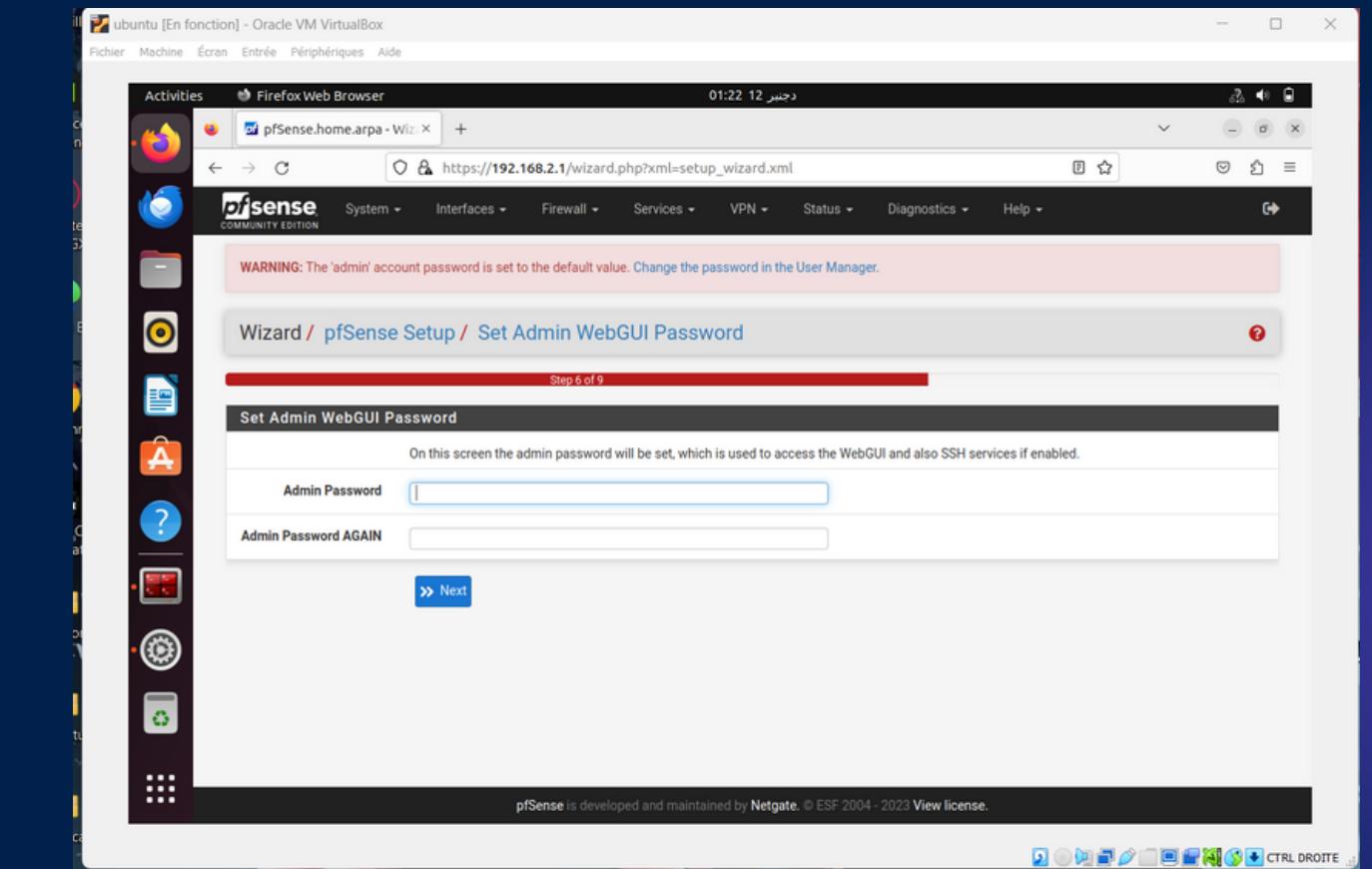
# interface pfSense

Ici il faut presser notre adresse et elle  
masque qu'on a une adresse au LAN et  
normalement ça se fait  
automatiquement



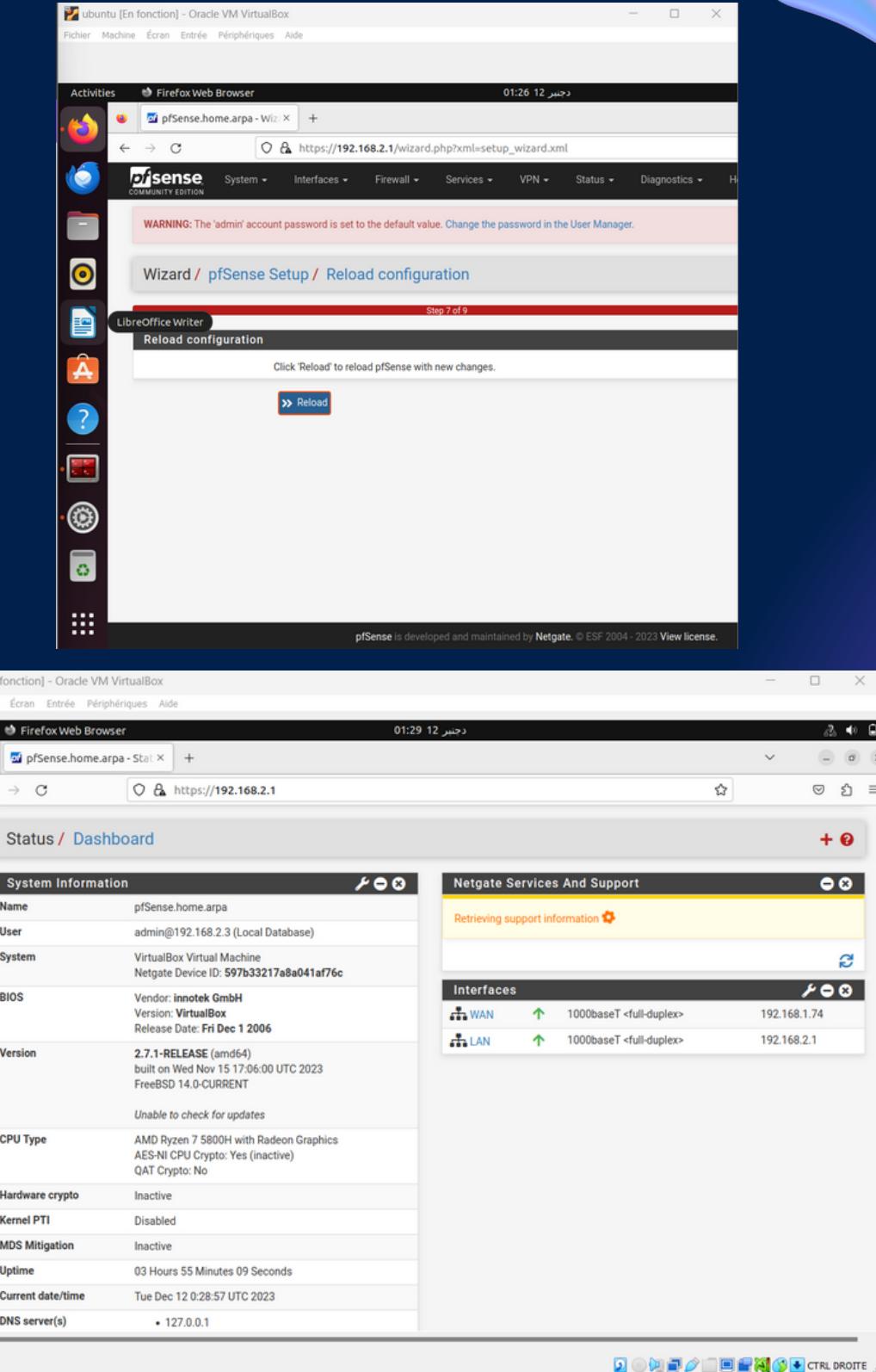
# interface pfSense

la on vas configurer notre nouveau mot de passe admin qui vas servir a nous donner l acces au webgui et au ssh pour les activer si ils sont désactivés



# interface pfSense

et la felicitation t ass reussit a configurer et installer ton pfSense <3



# interface pfSense

et la felicitation t ass reussit a configurer et installer ton pfSense <3

