Installation PFSENSE

Tutoriel pour le déploiement de pfSense, solution de pare-feu openSource

PfSense est une solution de **pare-feu (Firewall) openSoure** basée sur le système d'exploitation FreeBSD. Dans le cadre de cet article, nous vous proposons un tutoriel qui présente le déploiement d'un firewall pour sécuriser les accès internet d'une entreprise.

Historiquement, pfSense est un fork de mOnOwall. Il offre une solution de firewall complète pour les entreprises :

- Gestion des interfaces réseau
- Filtrage
- NAT
- Gestion des accès internet
- Services VPN (IPSEC, SSL, ...)
- Qualité de Service
- Gestion des VLAN
- Serveur DHCP
- Serveur DNS
- Portail Captif
- Solution proxy
- Filtrage d'urls
- Antivirus sur certains flux

Certilience propose des formations pfSense depuis Septembre 2013. Cette formation est l'occasion pour les participants d'aborder l'ensemble des briques de cette solution Firewall complète et de les mettre en pratique directement.
Avec à son actif plus de 2500 boitiers déployés sous cette technologie, Certilience dispose d'une solide expérience dans cet environnement et peut ainsi répondre aux questions de tous les utilisateurs.
La distribution peut s'installer directement depuis une image ISO disponible sur pfsense.org.
Pfsense peut s'installer sur plusieurs types de hardware. La configuration minimum recommandée par Certilience :

- CPU : 1Ghz
- RAM 1 Go
- Disque : 1Go

Installation

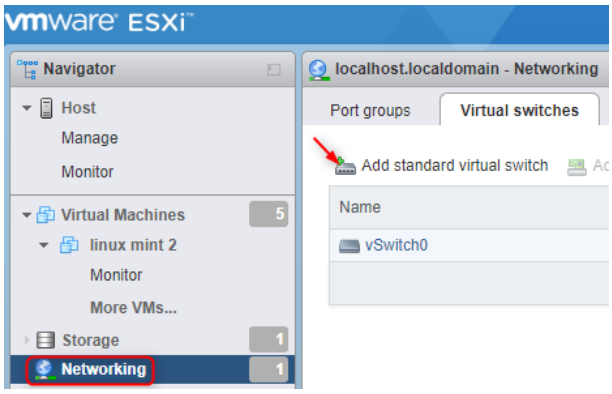
Pour procéder à l'installation de pfSense, il est nécessaire dans un premier temps de télécharger la distribution :

- Au format ISO
- Au format clef USB

En fonction de l'architecture de votre processeur, il faudra utiliser la bonne version de la distribution.
Après avoir préparé votre média, vous pouvez démarrer dessus et débuter la configuration :

2 cartes réseaux obligatoires pour l'installation

Sur VMWARE ESXI

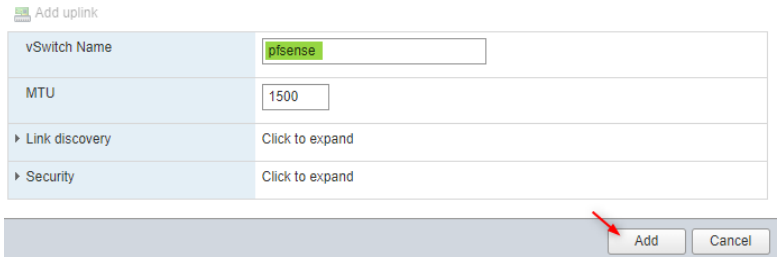


Sélectionner **Networking**

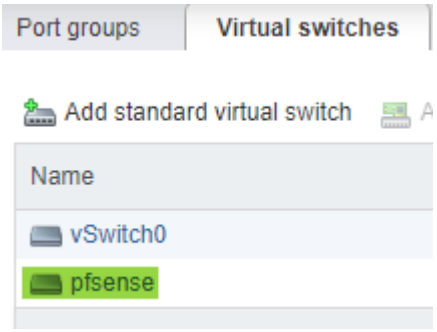
Ensuite cliquer sur **Add standard Virtual switch**

Il faudra créer une deuxième carte réseaux

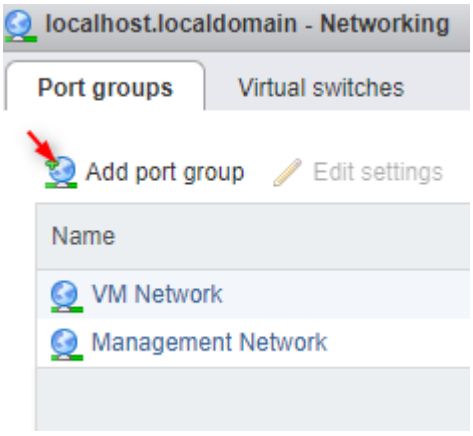
1) Nommer, le nom de votre carte réseaux



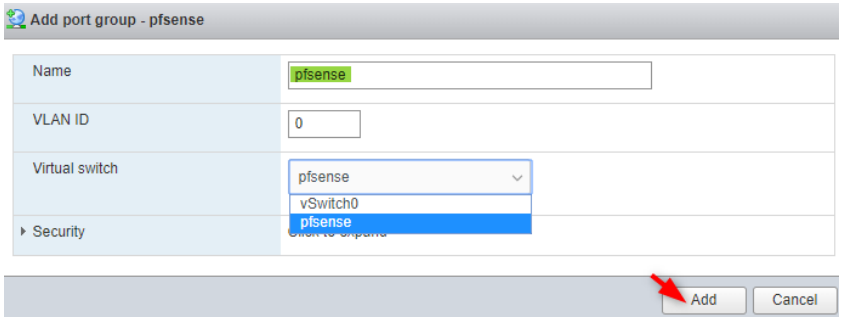
2) La carte réseaux a été bien créer



3) Il faut maintenant l'ajouter dans le groupe de Port

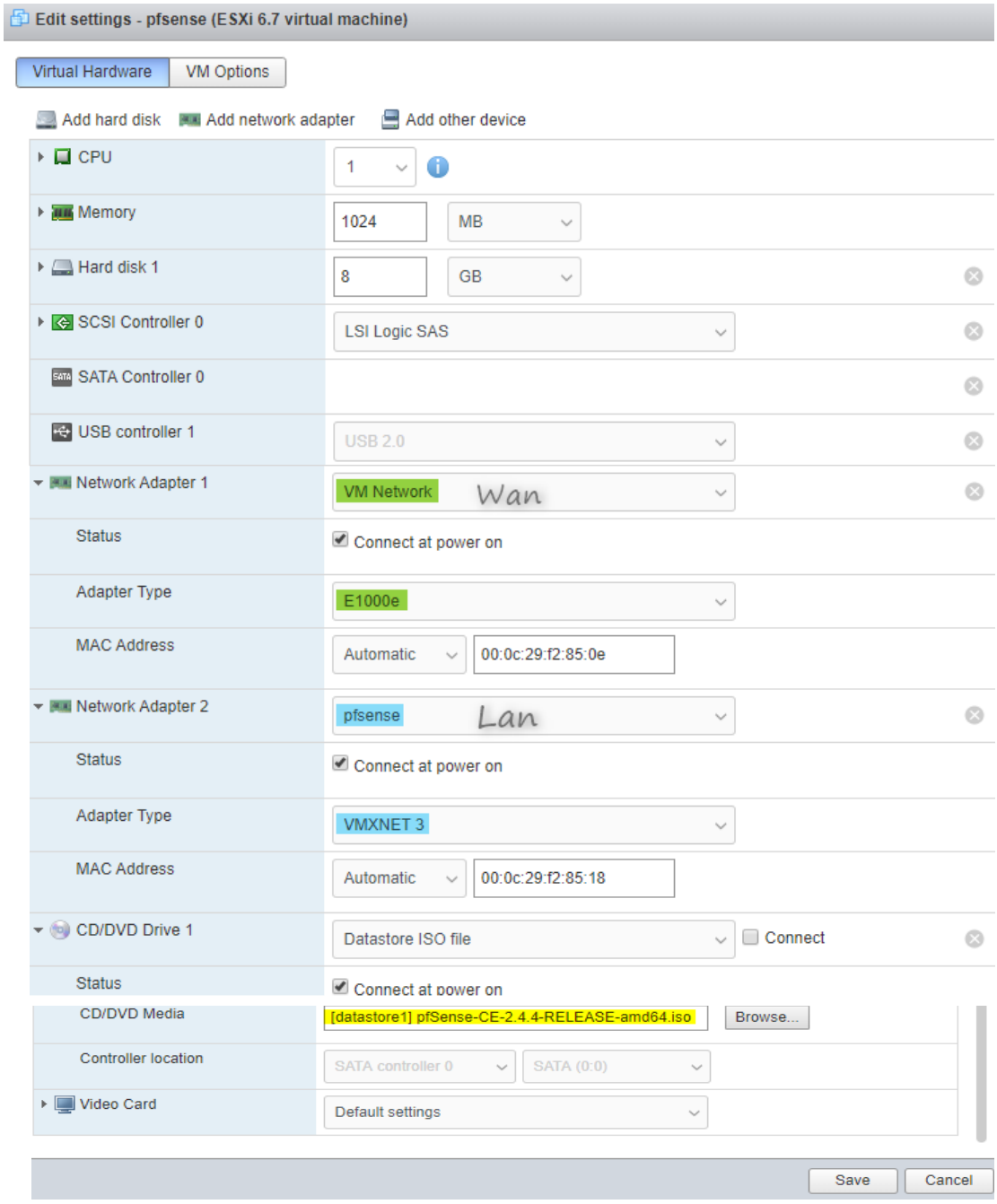


4) Nommer le nom de votre carte de nouveau, puis sur Virtual switch sélectionner le nom de votre carte réseau



Pour l'installation il faut **Créer une VM** -> **système exploitation** -> **other** -> **Free BSD 12 ou version ultérieure** -> sélectionner votre ISO

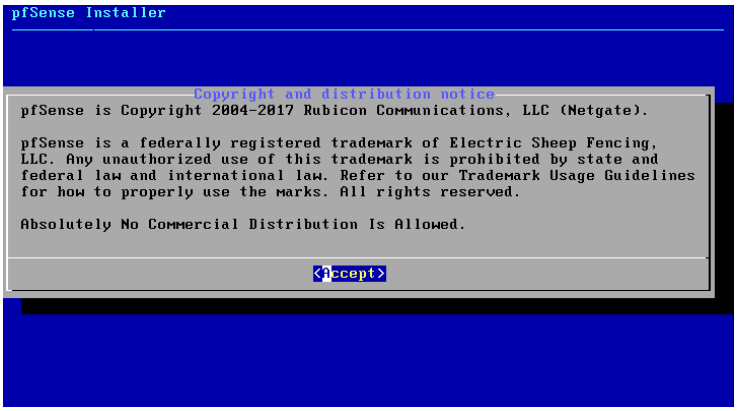
Lors de l'installation de PFSENSE assurer d'avoir cette configuration



Installation PFSENSE

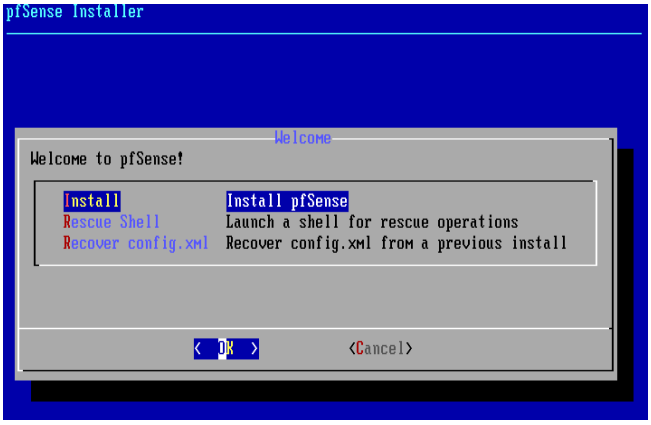
- Avec les flèches clavier, cherchez : **French ISO-8859-1**
- Appuyez sur **Entrée** pour valider le choix
- Montez d'un cran pour sélectionnez **Continue with fr.iso.kbd keymap** et **Entrée**
- **Partitioning : Auto (UFS)** : **Entrée**
- **Manual Configuration**, laissez sur **No : Entrée**
- **Complete, Reboot : Entrée**
- Dans la foulée, menu **Périphériques > Lecteurs optiques > Ejecter le disque du lecteur virtuel**
- Menu : **Machine > Redémarrage**

1)

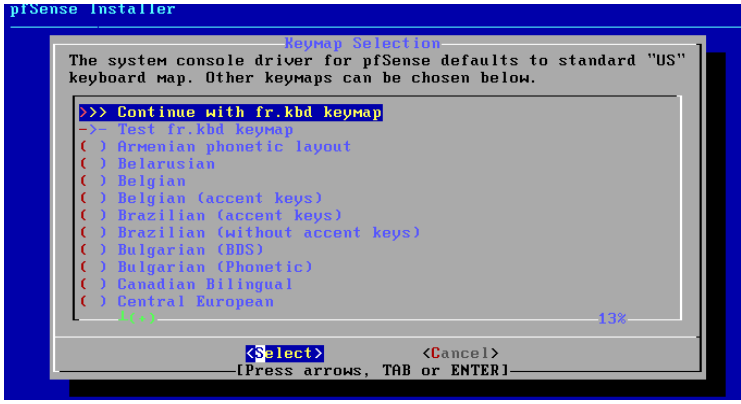


2)

3)



4)



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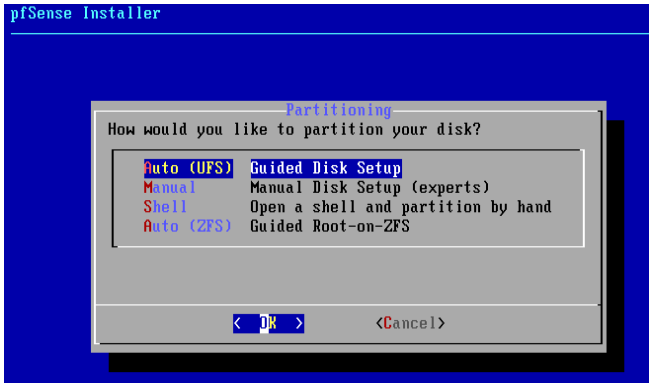

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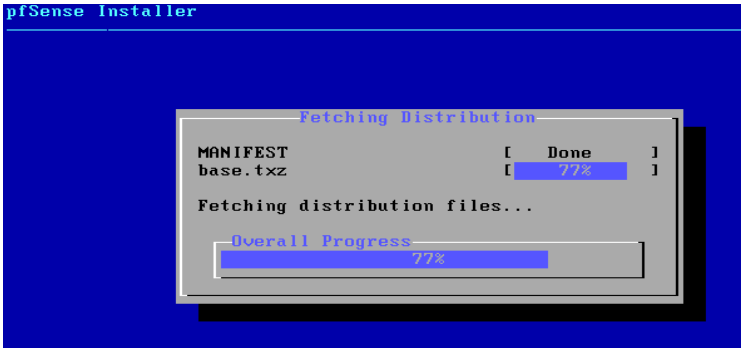
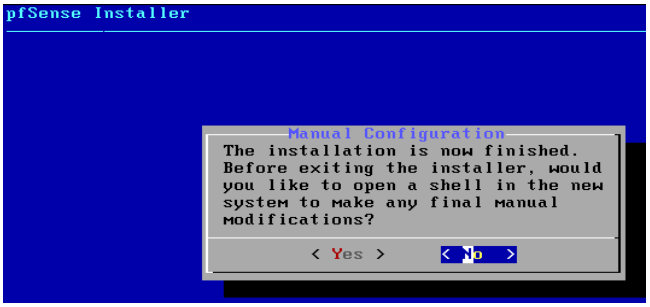


7)



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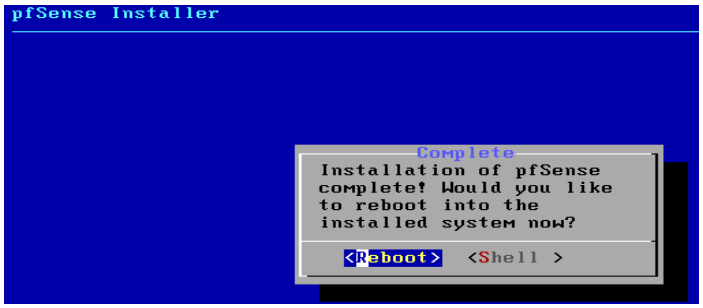


9)

```
  Structured Extended Features3=0xbc000000<IBPB,STIBP,ARCH_CAP,SSBD>
  IA32_ARCH_CAPS=0xc
  TSC: P-state invariant
Hypervisor: Origin = "VMwareVMware"
Done.
..... done.
Initializing..................... done.
Starting device manager (devd)...done.
Loading configuration......done.
Updating configuration...........done.
Warning: Configuration references interfaces that do not exist: em1

Network interface mismatch -- Running interface assignment option.
vmx0: link state changed to UP

Valid interfaces are:

em0     00:0c:29:f2:85:0e   (up) Intel(R) PRO/1000 Network Connection 7.6.1-k
vmx0    00:0c:29:f2:85:18 (down) VMware VMXNET3 Ethernet Adapter

Do VLANs need to be set up first?
If VLANs will not be used, or only for optional interfaces, it is typical to
say no here and use the webConfigurator to configure VLANs later, if required.

Should VLANs be set up now [y|n]?
```

n

```
If the names of the interfaces are not known, auto-detection can
be used instead. To use auto-detection, please disconnect all
interfaces before pressing 'a' to begin the process.

Enter the WAN interface name or 'a' for auto-detection
(em0 vmx0 or a): em0

Enter the LAN interface name or 'a' for auto-detection
NOTE: this enables full Firewalling/NAT mode.
(vmx0 a or nothing if finished): vmx0
```

Configurer votre carte WAN et LAN

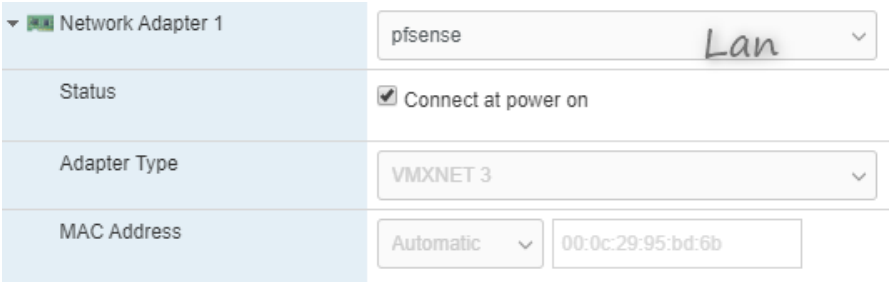
```
The interfaces will be assigned as follows:

WAN  -> em0
LAN  -> vmx0

Do you want to proceed [y|n]? y
```

y

```
Starting syslog...done.
Starting CRON... done.
pfSense 2.4.4-RELEASE amd64 Thu Sep 20 09:03:12 EDT 2018
Bootup complete

FreeBSD/amd64 (pfSense.localdomain) (ttyv0)

VMware Virtual Machine - Netgate Device ID: 43aeb27eda88a821dd9d

*** Welcome to pfSense 2.4.4-RELEASE (amd64) on pfSense ***

 WAN (wan)       -> em0        -> v4/DHCP4: 192.168.2.17/24
 LAN (lan)       -> vmx0       -> 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:
```

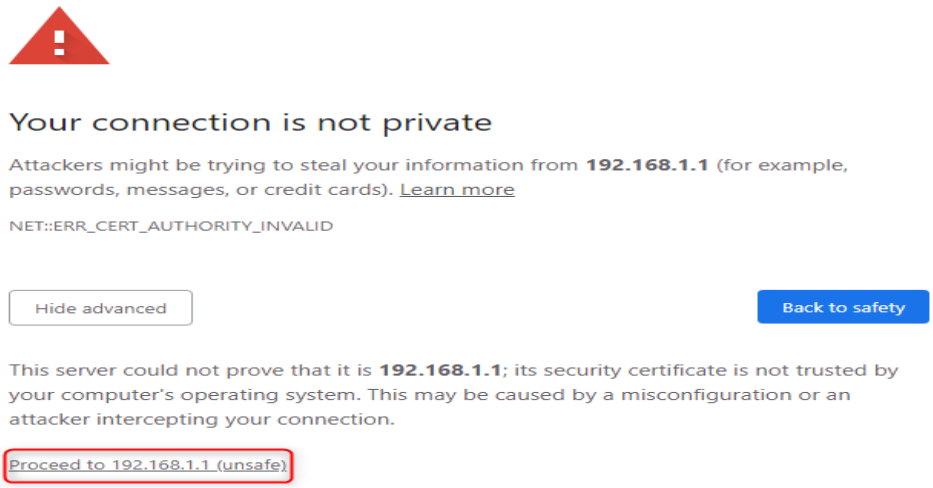
Maintenant, il faudra se connecter avec IP de votre Lan

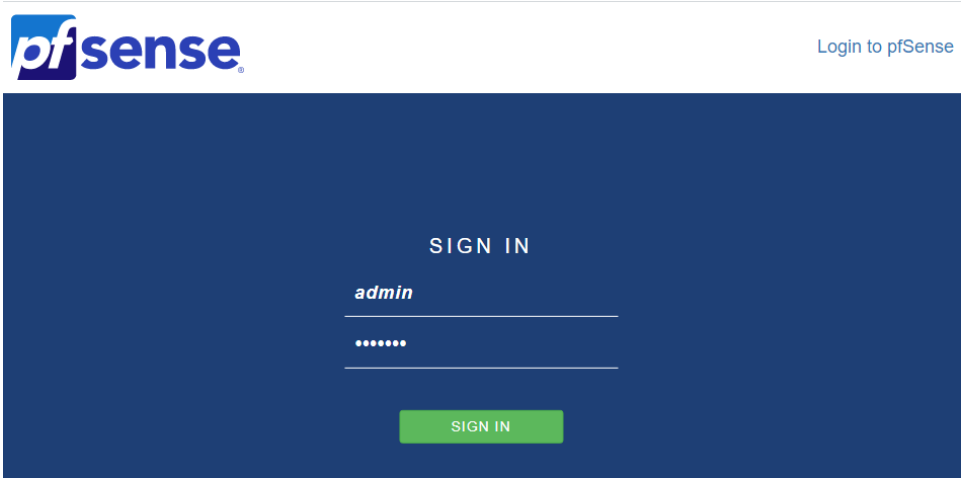
Comme machine client j'utiliserai Windows 10, je vais utiliser qu'une seule carte réseaux sa sera le LAN du PFSENSE



Lancer la machine

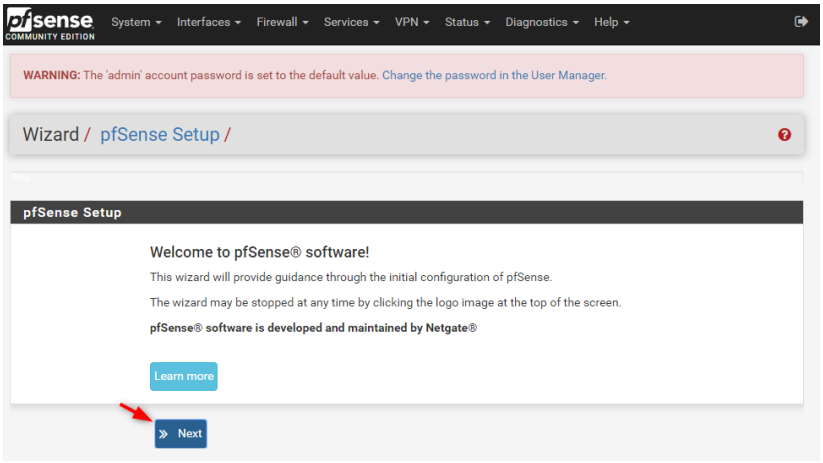
Mettez IP du Lan PFSENSE sur votre URL de navigateur web

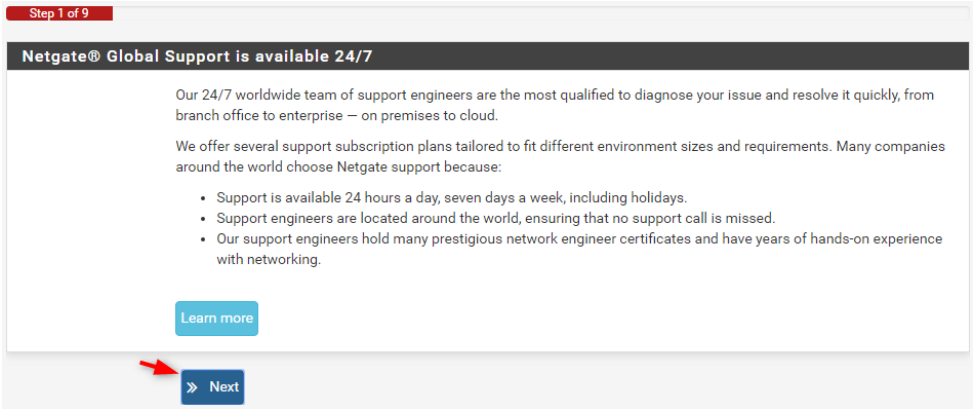


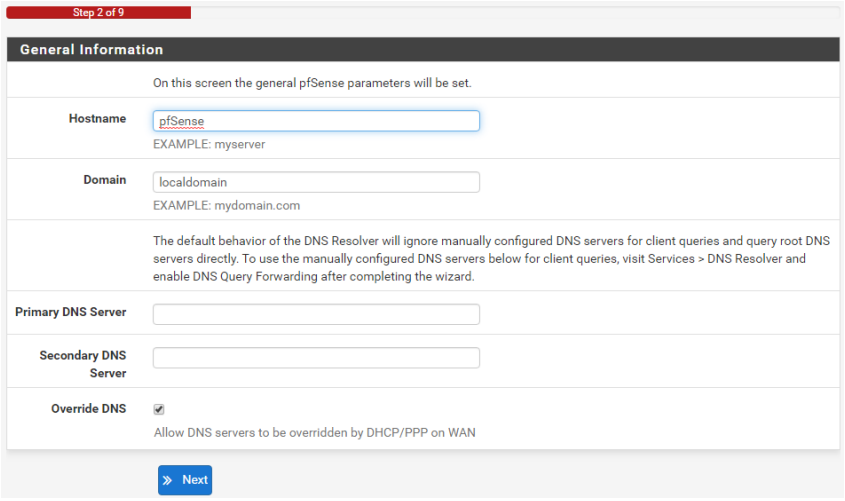


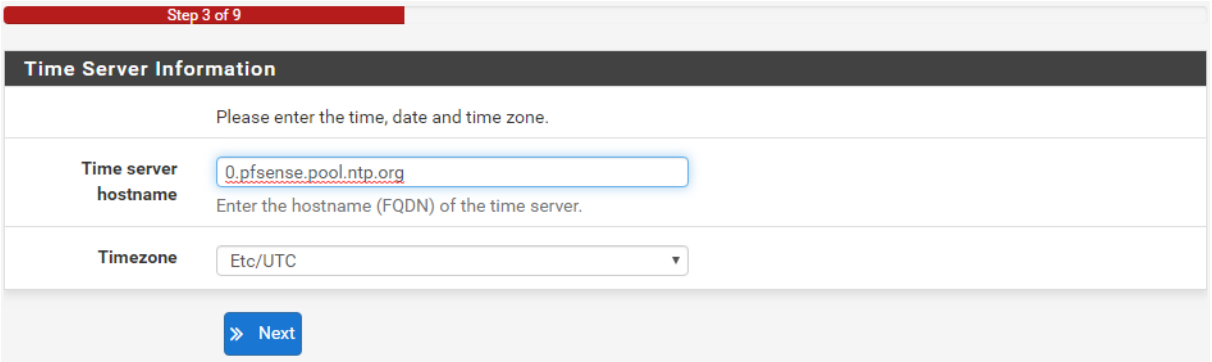
identifiant : admin

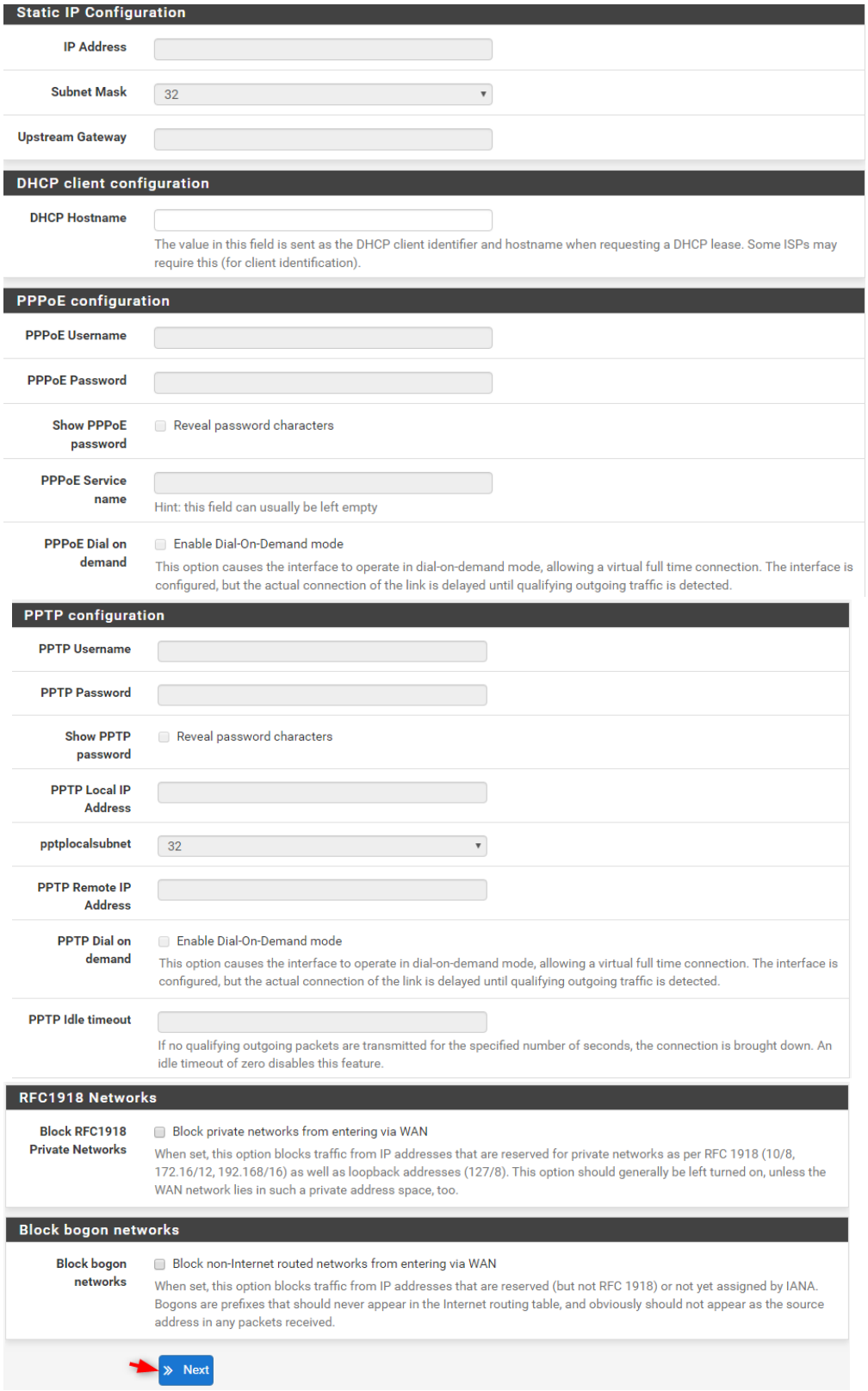
mdp : admin


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 /
pfSense Setup
Welcome to pfSense® software!
This wizard will provide guidance through the initial configuration of pfSense.
The wizard may be stopped at any time by clicking the logo image at the top of the screen.
pfSense® software is developed and maintained by Netgate®
Learn more
Next

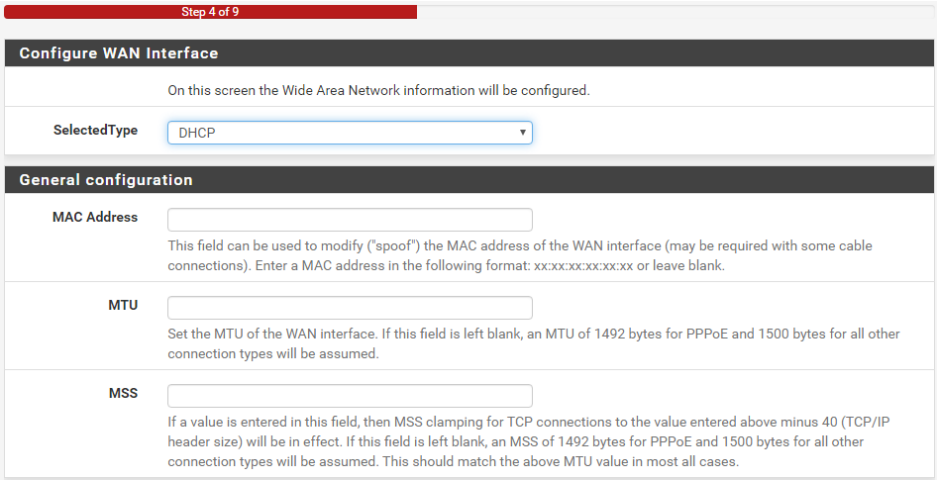

Step 1 of 9
Netgate® Global Support is available 24/7
Our 24/7 worldwide team of support engineers are the most qualified to diagnose your issue and resolve it quickly, from branch office to enterprise — on premises to cloud.
We offer several support subscription plans tailored to fit different environment sizes and requirements. Many companies around the world choose Netgate support because:
Support is available 24 hours a day, seven days a week, including holidays.
Support engineers are located around the world, ensuring that no support call is missed.
Our support engineers hold many prestigious network engineer certificates and have years of hands-on experience with networking.
Learn more
Next

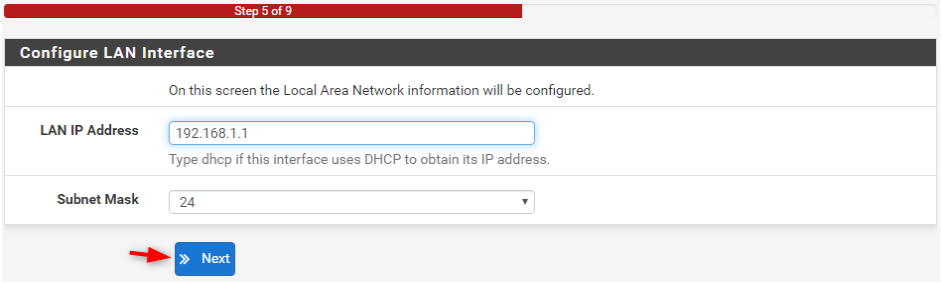

Step 2 of 9
General Information
On this screen the general pfSense parameters will be set.
Hostname
pfSense
EXAMPLE: myserver
Domain
localdomain
EXAMPLE: mydomain.com
The default behavior of the DNS Resolver will ignore manually configured DNS servers for client queries and query root DNS servers directly. 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
Secondary DNS Server
Override DNS
Allow DNS servers to be overridden by DHCP/PPP on WAN
Next

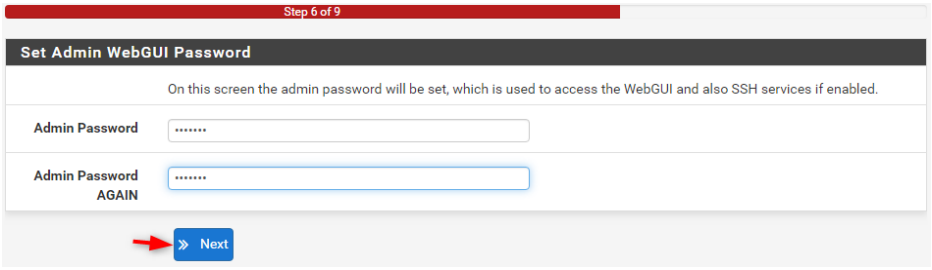

Step 3 of 9
Time Server Information
Please enter the time, date and time zone.
Time server hostname
0.pfsense.pool.ntp.org
Enter the hostname (FQDN) of the time server.
Timezone
Etc/UTC
Next

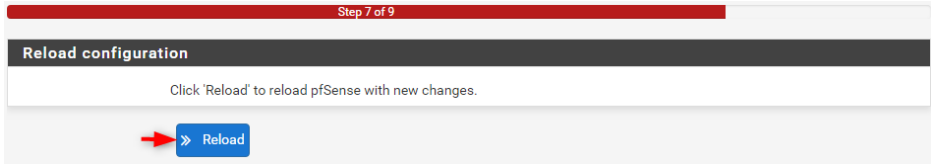


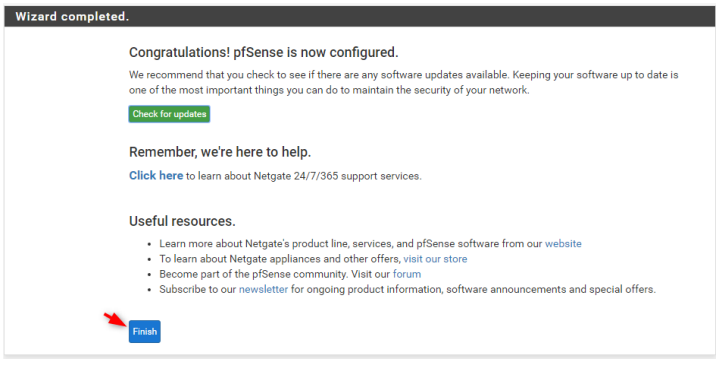
Décocher ces 2 case

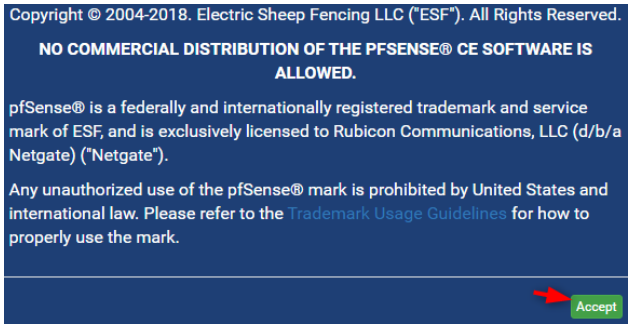

Step 4 of 9
Configure WAN Interface
On this screen the Wide Area Network information will be configured.
SelectedType
DHCP
General configuration
MAC Address
This field can be used to modify ("spoof") the MAC address of the WAN interface (may be required with some cable connections). Enter a MAC address 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.


Step 5 of 9
Configure LAN Interface
On this screen the Local Area Network information will be configured.
LAN IP Address
192.168.1.1
Type dhcp if this interface uses DHCP to obtain its IP address.
Subnet Mask
24
Next


Step 6 of 9
Set Admin WebGUI Password
On this screen the admin password will be set, which is used to access the WebGUI and also SSH services if enabled.
Admin Password
Admin Password AGAIN
Next


Step 7 of 9
Reload configuration
Click 'Reload' to reload pfSense with new changes.
Reload


Wizard completed.
Congratulations! pfSense is now configured.
We recommend that you check to see if there are any software updates available. Keeping your software up to date is one of the most important things you can do to maintain the security of your network.
Check for updates
Remember, we're here to help.
Click here to learn about Netgate 24/7/365 support services.
Useful resources.
Learn more about Netgate's product line, services, and pfSense software from our website
To learn about Netgate appliances and other offers, visit our store
Become part of the pfSense community. Visit our forum
Subscribe to our newsletter for ongoing product information, software announcements and special offers.
Finish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Accept

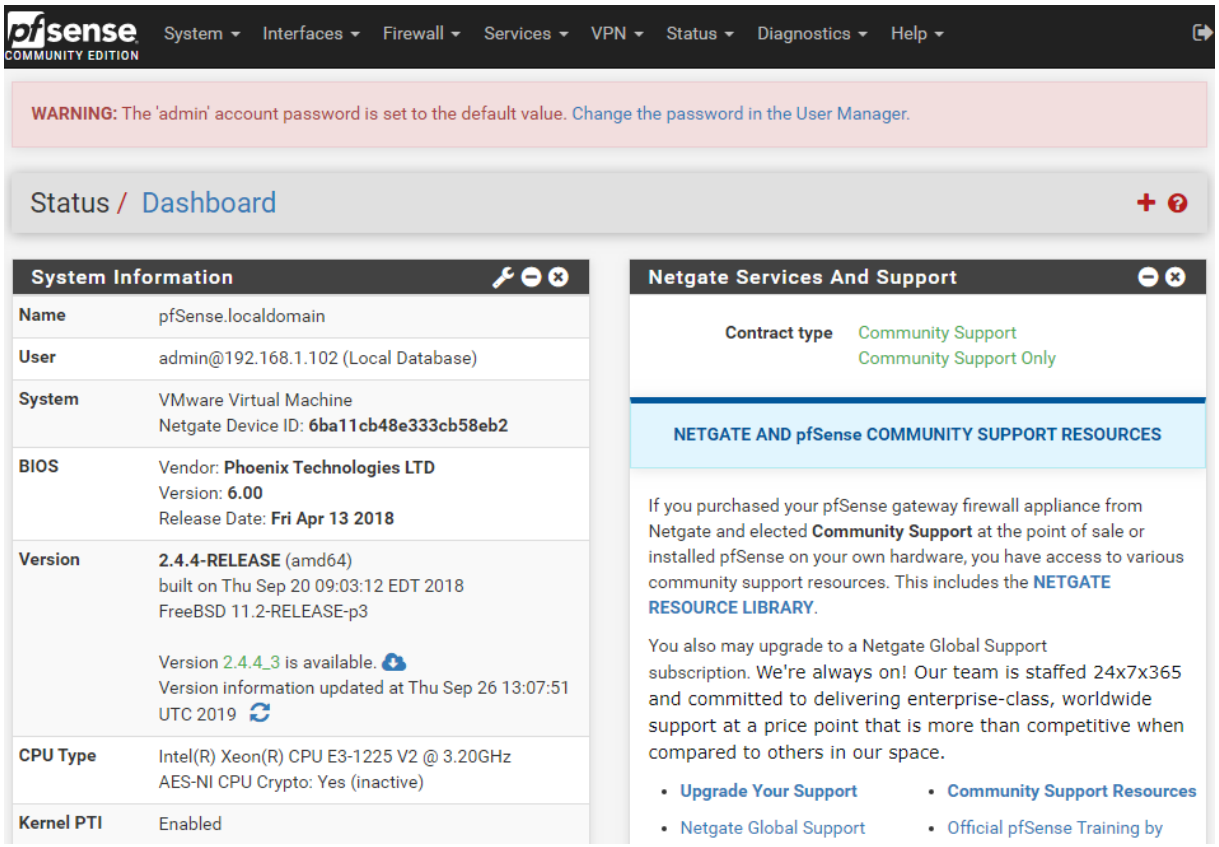

Schéma d'infrastructures

Pour une machine physique il suffit de prendre un câble RJ45 et de le brancher sur la 2ème carte réseau et le brasser sur une autre machine ou un switch la configuration se fera automatiquement, assurer de garder votre PFSENSE toujours allumé que ça soit en physique ou en virtuel