Documentation technique

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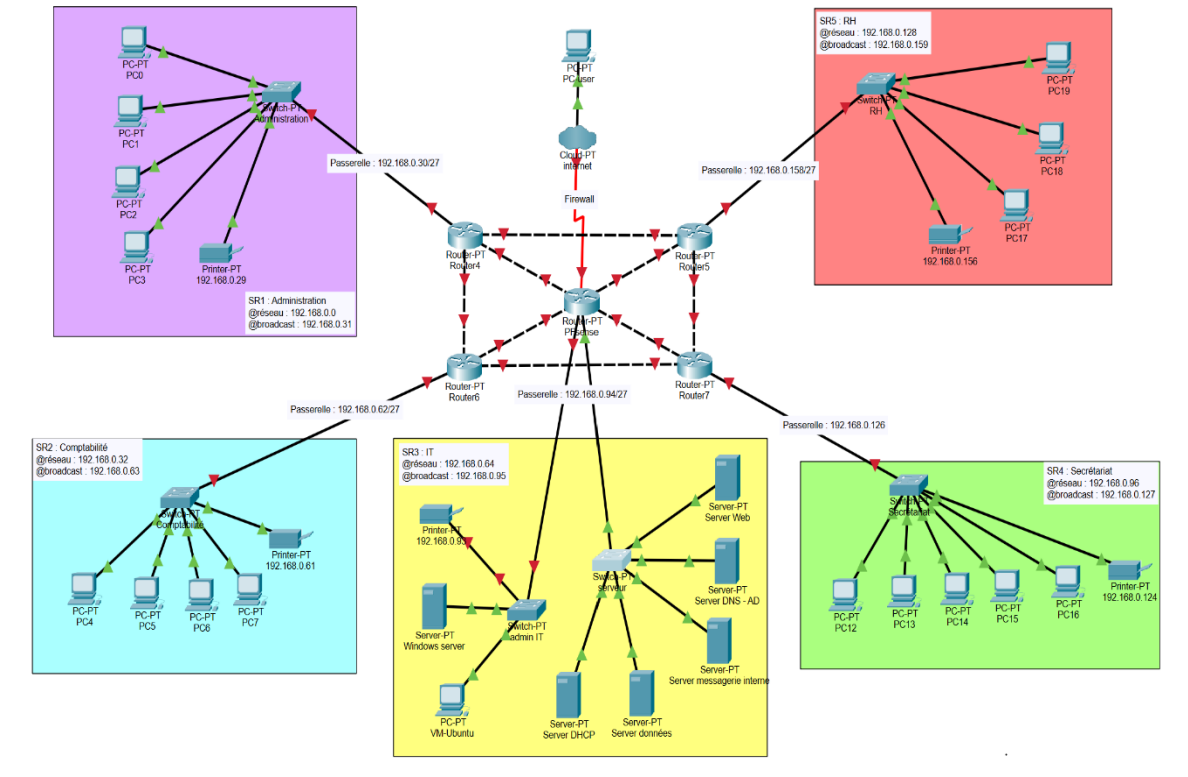
BTS SIO - SISR



16/01/2024 au 26/03/2024

SOMMAIRE

I. PFsense (routeur)

1. Installation de PFsense

1.1. Configuration basique

Grâce à l'ISO, on va installer le PFsense dans notre réseau virtuel sur VirtualBox.

Appuyer sur :

Nouvelle > Nom : PFsense

Folder : l'emplacement de votre VM.

ISO Image : indiquer le chemin vers l'ISO pfsense

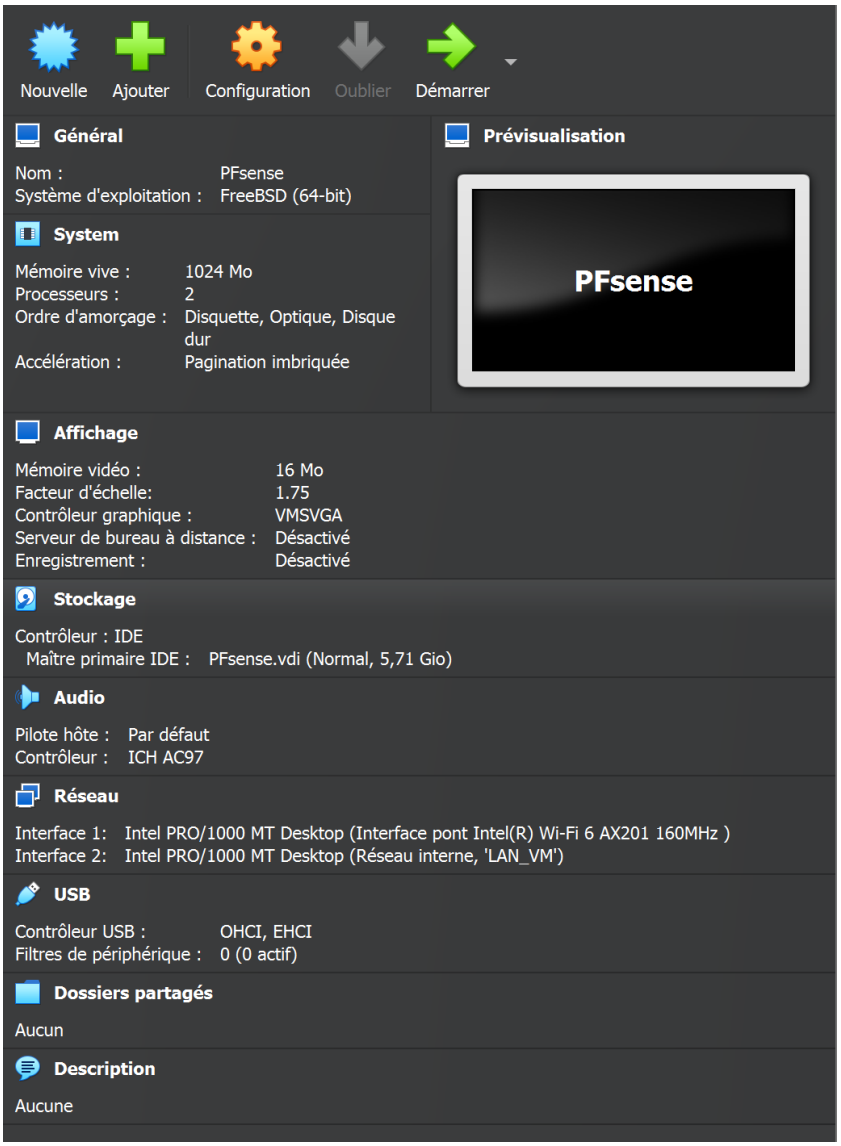
Hardware > Mémoire vive : 1024 MB

Processors : 2 CPUs

Virtual hard disk : cliquer sur create a virtual hard disk now.

Disk size > 25 Go

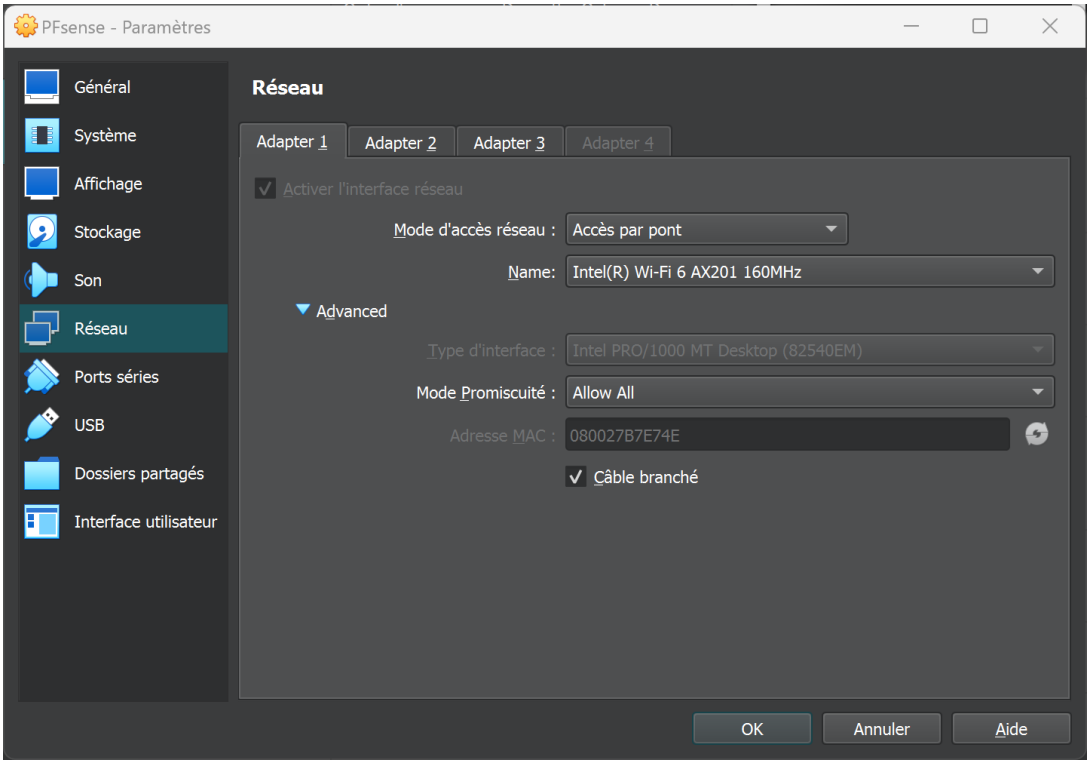
Cliquer sur suivant.



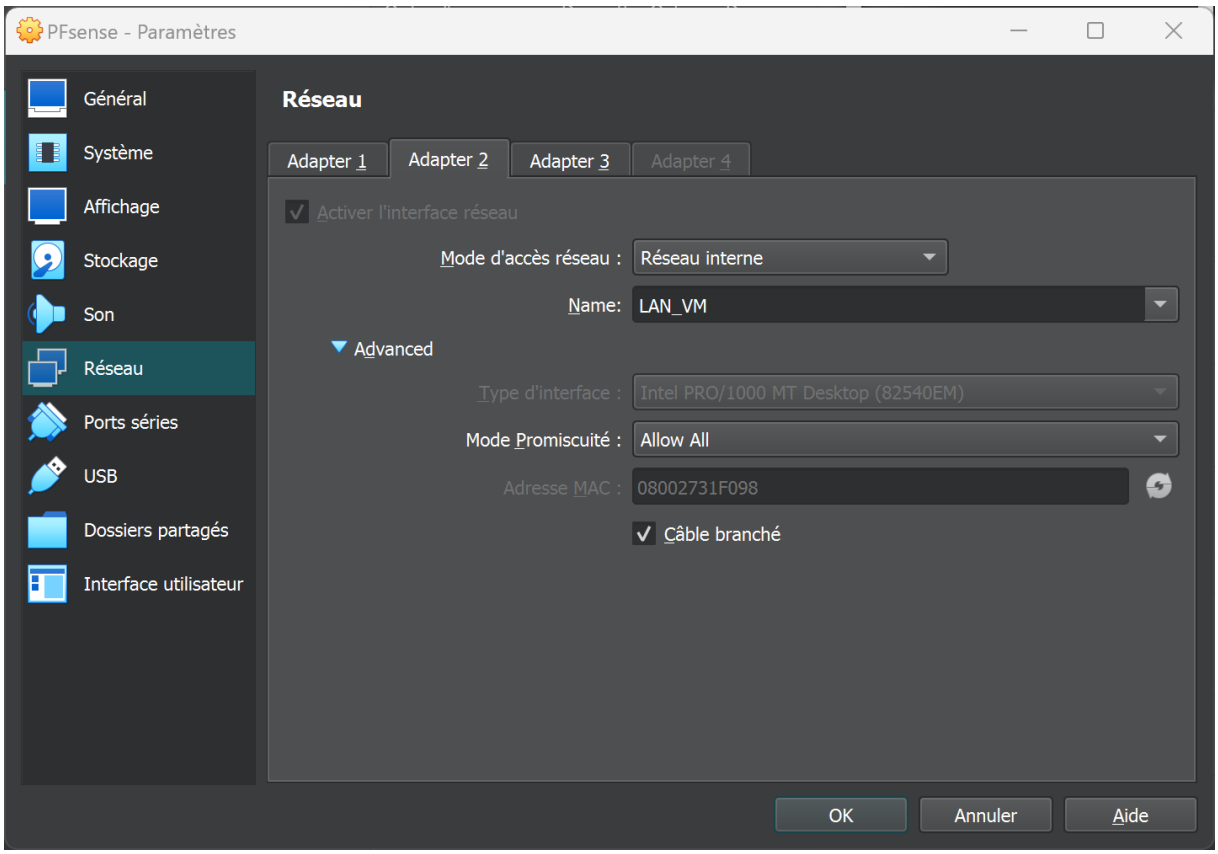
1.2. Configuration de la carte réseau

Cliquer sur configuration > réseau

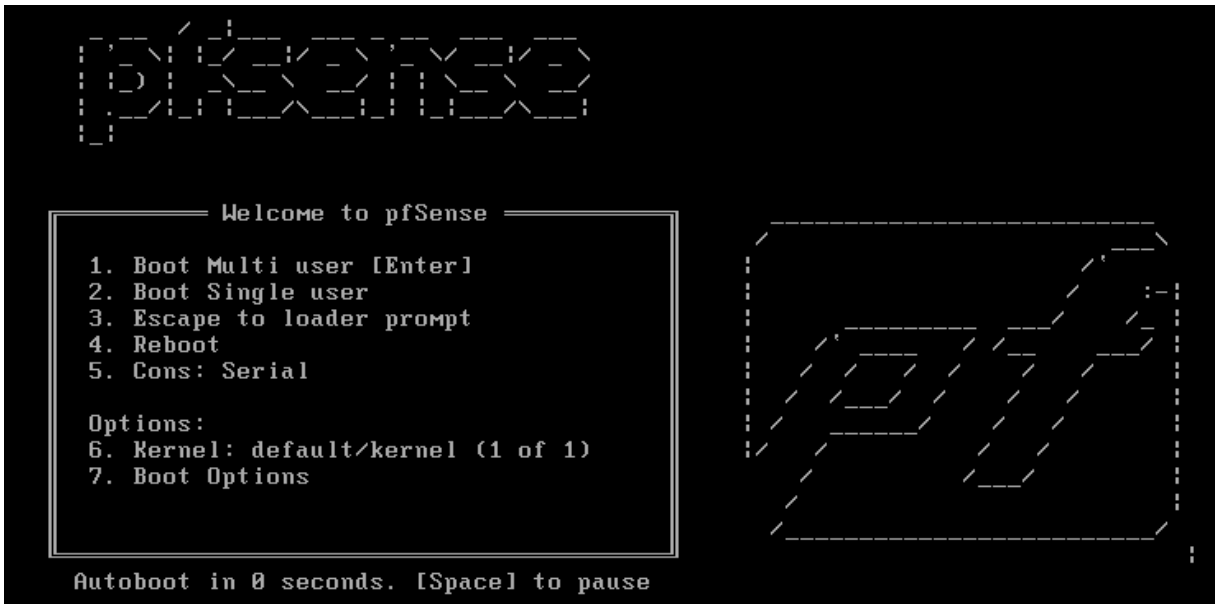
Adaptateur 1 :



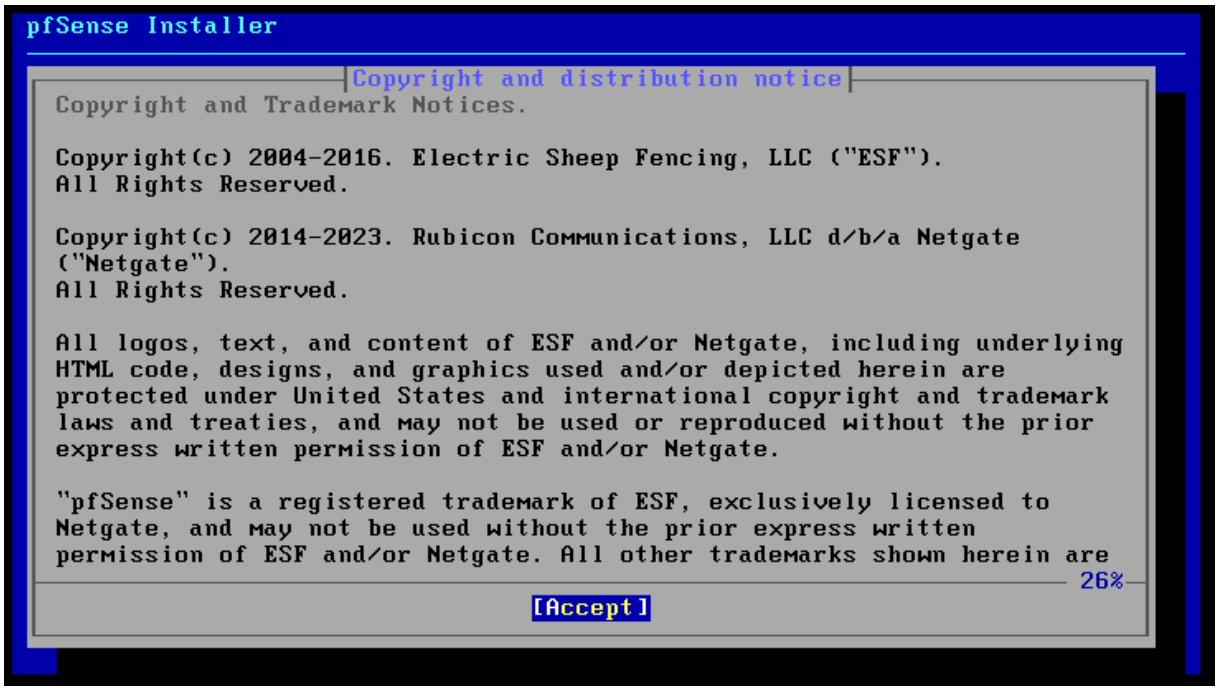
Adaptateur 2 :



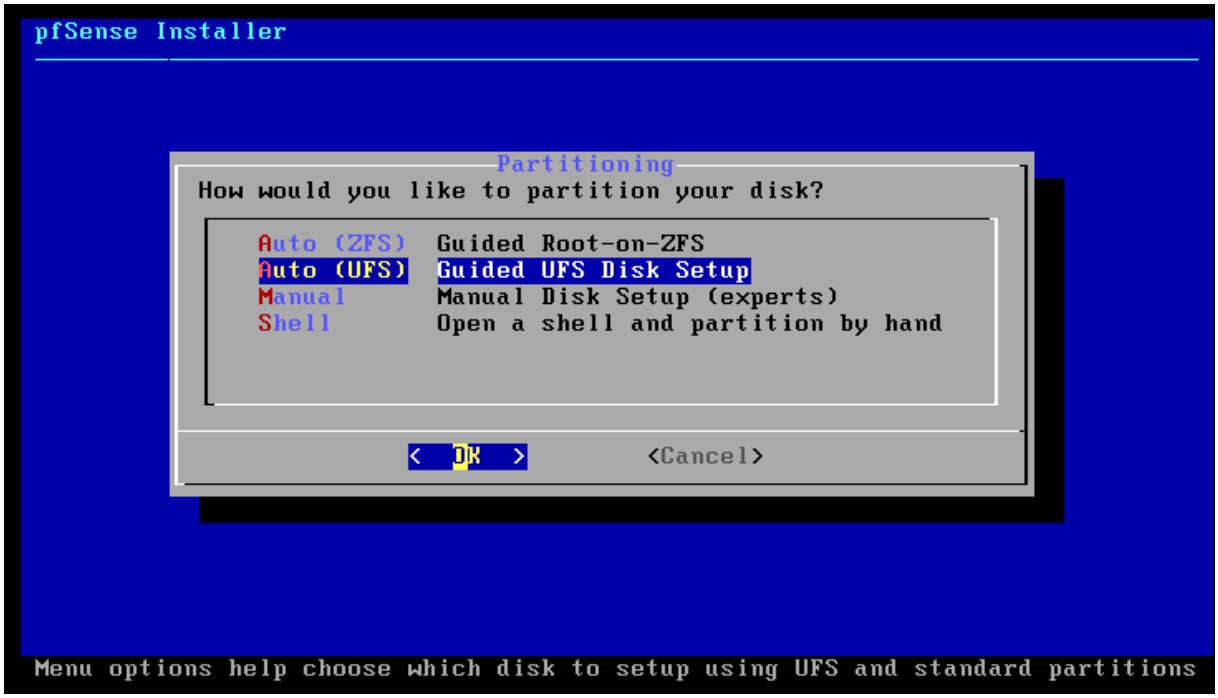
1.3. License PFsense



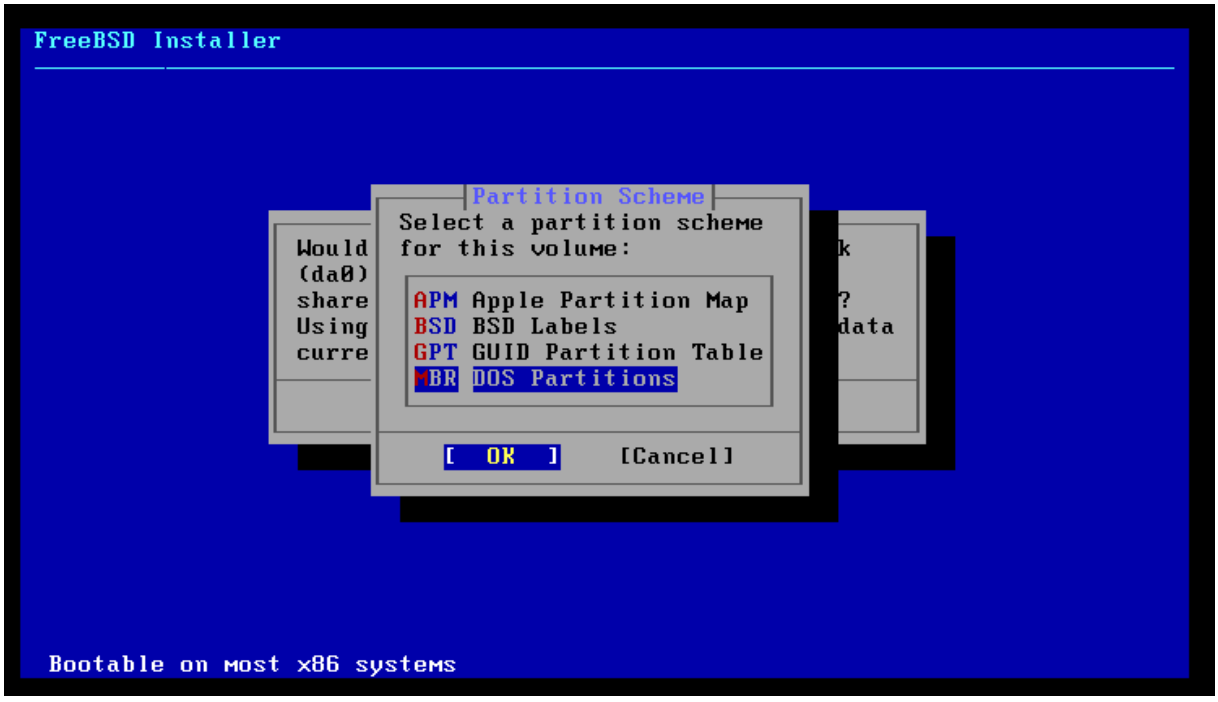
Suivre les étapes suivantes :

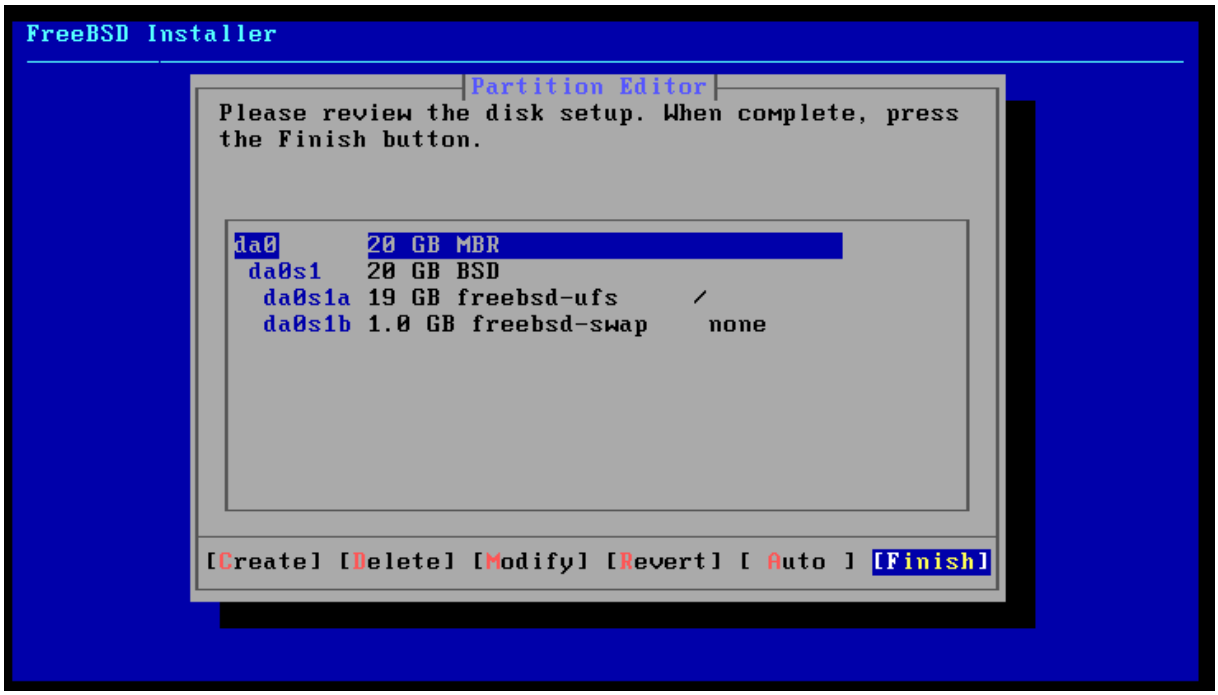



pfSense Installer
Welcome
Welcome to pfSense!
Install
Install pfSense
Rescue Shell
Launch a shell for rescue operations
Recover config.xml
Recover config.xml from a previous install
< OK >
<Cancel>

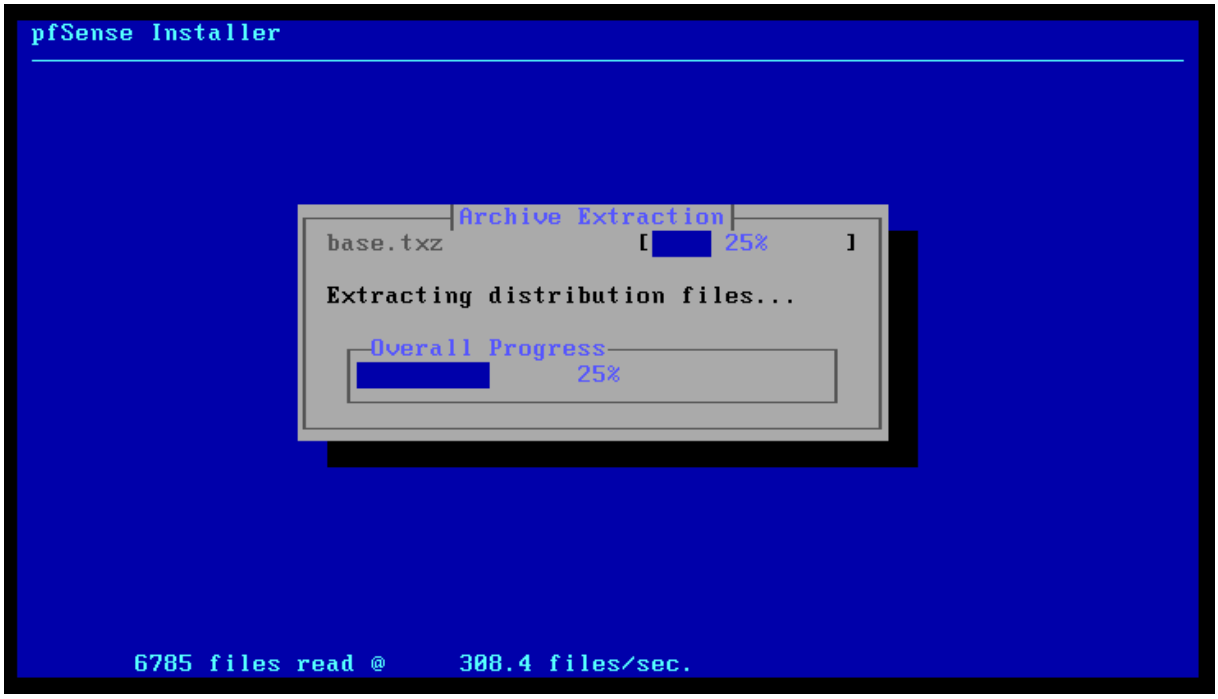

pfSense Installer
Partitioning
How would you like to partition your disk?
Auto (ZFS)
Guided Root-on-ZFS
Auto (UFS)
Guided UFS Disk Setup
Manual
Manual Disk Setup (experts)
Shell
Open a shell and partition by hand
< OK >
<Cancel>
Menu options help choose which disk to setup using UFS and standard partitions

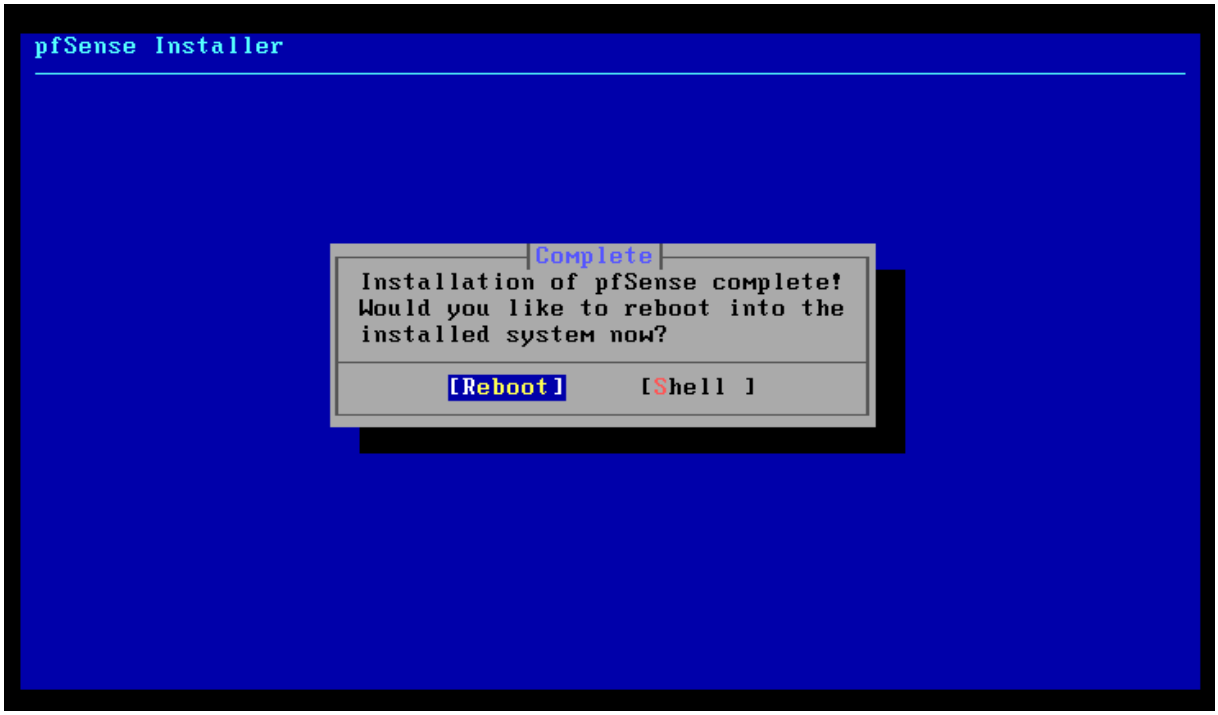

FreeBSD Installer
Partition
Would you like to use this entire disk (da0) for pfSense or partition it to share it with other operating systems? Using the entire disk will erase any data currently stored there.
[Entire Disk]
[Partition]


FreeBSD Installer
Partition Scheme
Select a partition scheme for this volume:
APM Apple Partition Map
BSD BSD Labels
GPT GUID Partition Table
MBR DOS Partitions
[OK]
[Cancel]
Bootable on most x86 systems


FreeBSD Installer
Partition Editor
Please review the disk setup. When complete, press the Finish button.
da0 20 GB MBR
da0s1 20 GB BSD
da0s1a 19 GB freebsd-ufs /
da0s1b 1.0 GB freebsd-swap none
[Create] [Delete] [Modify] [Revert] [Auto] [Finish]

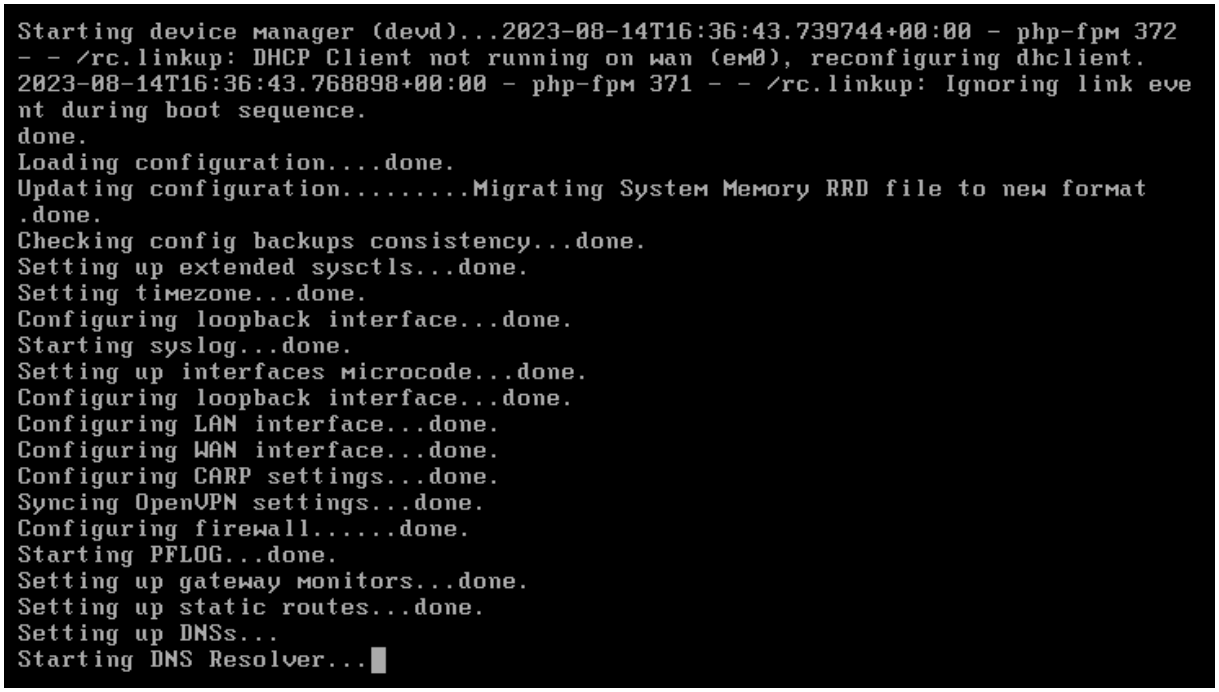

FreeBSD Installer
Partition Editor
Please review the disk setup. When complete, press the Finish button.
Confirmation
Your changes will now be written to disk. If you have chosen to overwrite existing data, it will be PERMANENTLY ERASED. Are you sure you want to commit your changes?
[Commit] [Revert & Exit] [Back]
[Create] [Delete] [Modify] [Revert] [Auto] [Finish]


pfSense Installer
Archive Extraction
base.txz [25%]
Extracting distribution files...
Overall Progress
25%
6785 files read @ 308.4 files/sec.

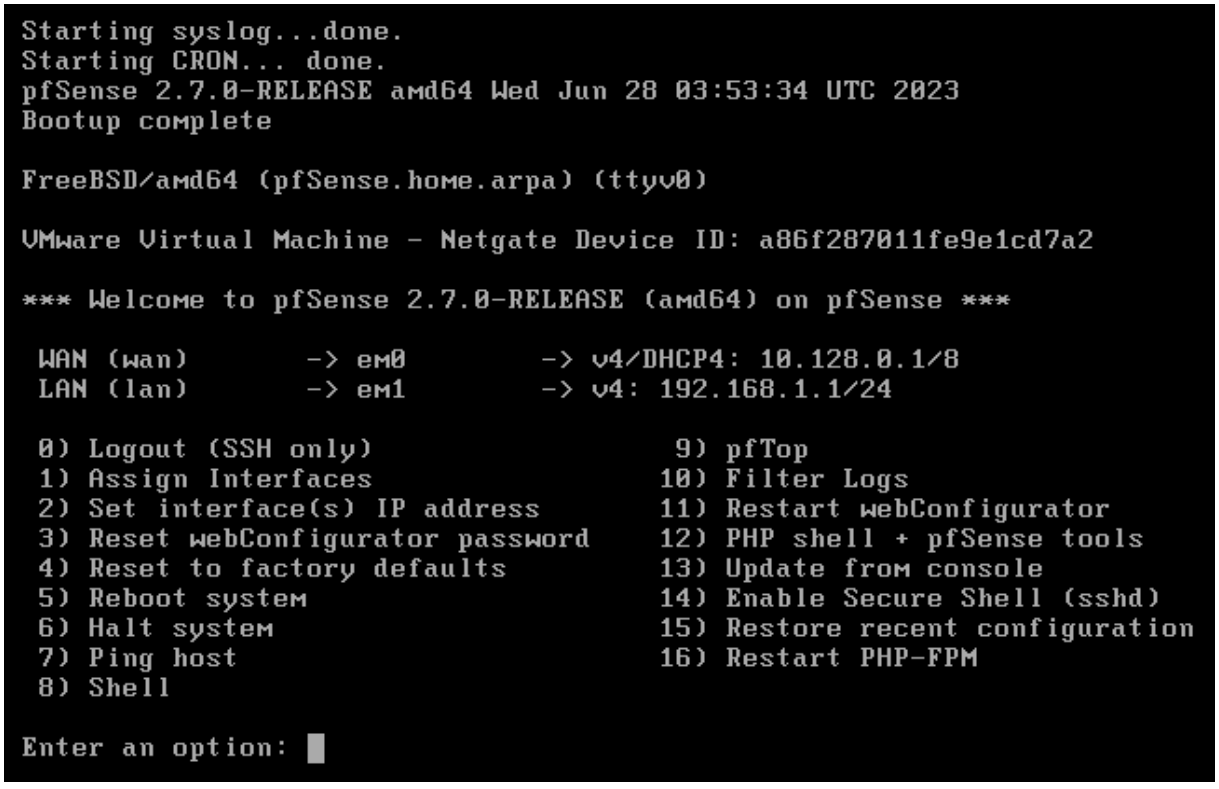

pfSense Installer
Complete
Installation of pfSense complete!
Would you like to reboot into the
installed system now?
[Reboot] [Shell]

PFsense va se lancer, tester et configurer les services dont il a besoin.

Ejecter le disque et reboot la machine.

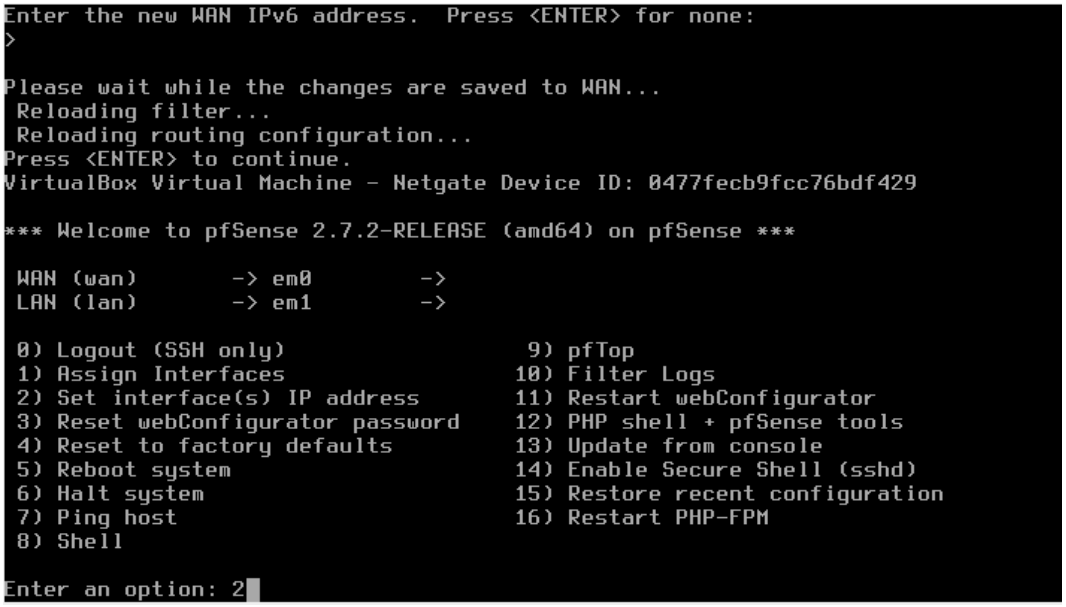


Une fois que le démarrage est finalisé, il y aura cette page :



2. Configuration PFsense

2.1. Configuration des interfaces



On va tout d'abord déterminer les interfaces.

*Enter an option : **1** <entrée>*

*Should VLANs be set up now [y|n]? **n** <entrée>*

*Enter the WAN interface name or "a" for auto-detection (em0 or a) : **em0** <entrée>*

*Enter the LAN interfaces name or "a" for auto-detection (a or nothing if finished) : **em1** <entrée>*

*Enter the OPT1 interfaces name or "a" for auto-detection (a or nothing if finished) : **em2** <entrée>*

*Do you want to proceed [y|n] : **y** <entrée>*

Le menu PFsense s'affiche à nouveau.

2.2. Attribution des adresses réseau

WAN-em0

*Enter an option : **2** <entrée>*

Enter the number of interface you wish to configure:1

Configure IPV4 address WAN interface via DHCP ?(y/n) y

Configure IPV6 address WAN interface via DHCP 6(y/n) n

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

The IPv4 WAN address has been set to dhcp

Press <ENTER> to continue. <ENTER>.

LAN-em1 (SR-IT)

La même configuration, mais ici on va utiliser l'adresse IPv4 : 192.168.3.254 avec le masque /24.

A la fin nous allons configurer le DHCP avec :

Enter an option : 2 <entrée>

Enter the number of interface you wish to configure:2

Configure IPV4 address LAN interface via DHCP ?(y/n) n

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

192.168.3.1

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

192.168.3.254

Should this gateway be set as the default gateway? (y/n)y

Configure IPV6 address LAN interface via DHCP 6(y/n) n

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

Do you want to enable the dhcp server on LAN?(y/n) Y

Enter the start address of the IPV4 client address range : 192.168.3.1

Enter the end address of the IPV4 client address range : 192.168.3.252

The IPv4 WAN address has been set to 192.168.3.1 /24

Press <ENTER> to continue. <ENTER>.

OPT1-em2 (SR-SERVER)

La même configuration, mais ici on va utiliser l'adresse IPv4 : 192.168.4.254 avec le masque /24.

A la fin nous allons configurer le DHCP avec :

*Enter an option : **2** <entrée>*

Enter the number of interface you wish to configure:3

Configure IPV4 address LAN interface via DHCP ?(y/n) n

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

192.168.4.1

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

192.168.4.254

Should this gateway be set as the default gateway? (y/n)y

Configure IPV6 address LAN interface via DHCP 6(y/n) n

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

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

The IPv4 WAN address has been set to 192.168.3.1 /24

Press <ENTER> to continue. <ENTER>.

➔ **TESTER LA COMMUNICATION:**

Routeur bers le WAN

Enter an option : 7 <entrée>

Enter the host name or IP address:8.8.8.8

Routeur vers le server ubuntu :

Routeur bers le WAN

Enter an option : 7 <entrée>

Enter the host name or IP address:192.168.4.2

II. Serveur LAMP-IIS-SMTP-BDD-BACKUPMANAGER

1. Installation de UBUNTU sur VirtualBox

Grâce à l'ISO on va installer le Ubuntu dans notre réseau virtuel sur VirtualBox.

Appuyer sur :

Nouvelle > Nom : SRV-LAMP-SMTP-BDD-IIS

Folder : l'emplacement de votre VM.

ISO Image : indiquer le chemin vers l'ISO ubuntu

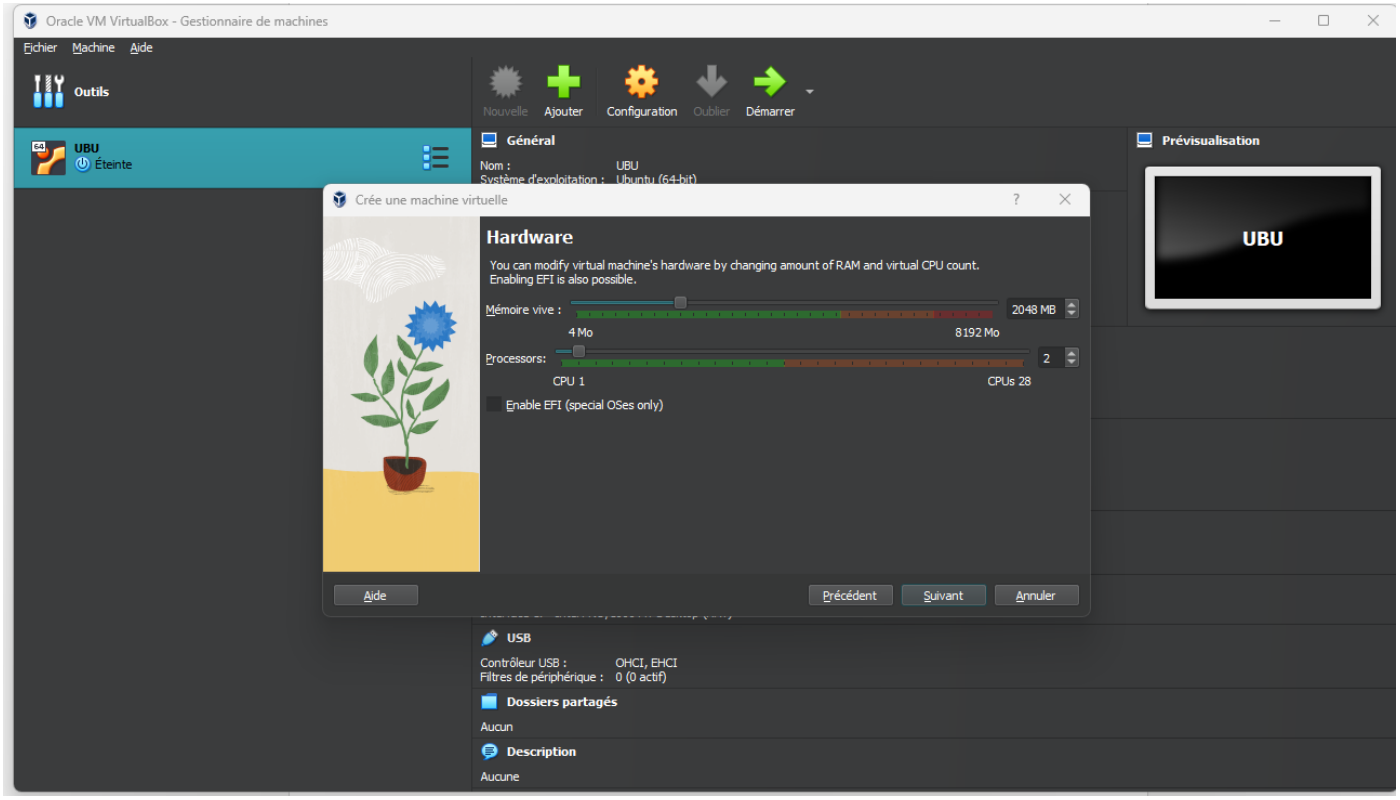
Hardware > Mémoire vive : 2048 MB

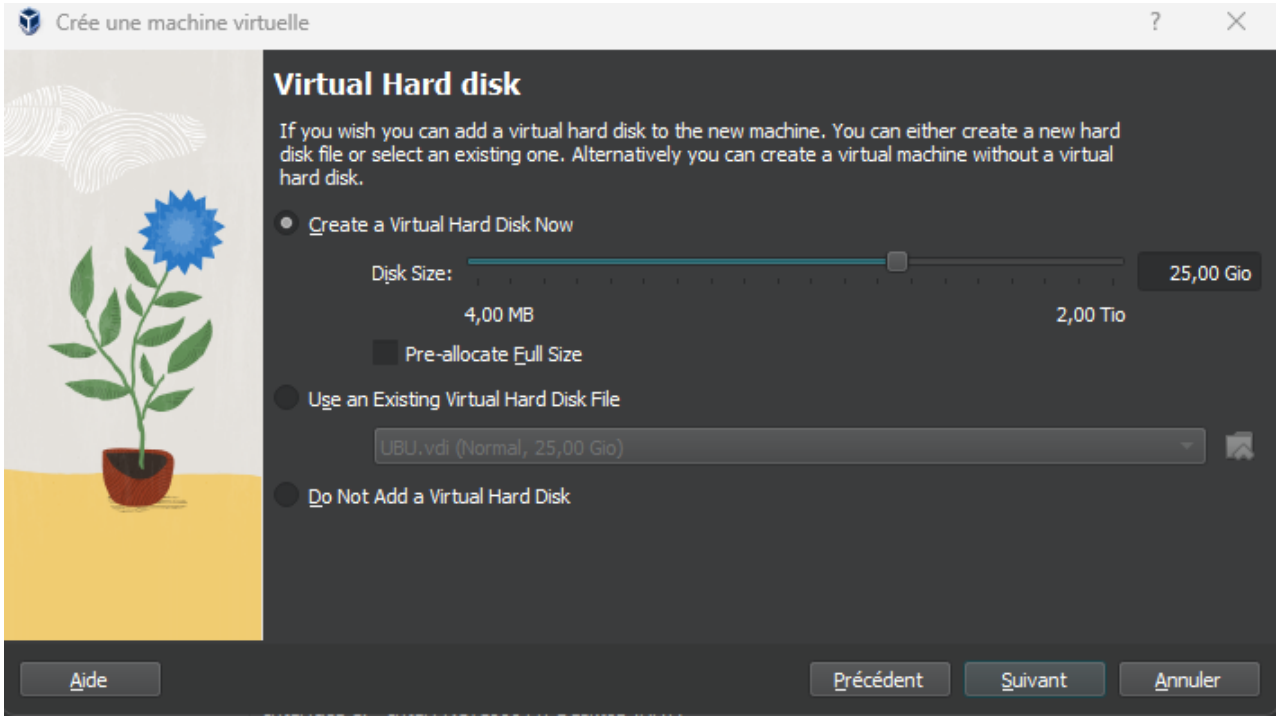
Processors : 4 CPUs

Virtual hard disk : cliquer sur create a virtual hard disk now.

Disk size > 25Go

Cliquer sur suivant.





2. Installation du terminator

Une fois connecté à la session, installer terminator :

Si le terminal ne se lance pas, effectuer les commandes suivantes pour accéder à TTY3 :

Ctrl+alt+F3

Entrée le login/mot de passe utilisateur de votre machine.

Appuyer sur entrée, taper les commandes suivantes :

Sudo apt update

su

Visudo

```
# User privilege specification
root            ALL=(ALL:ALL) ALL
vboxuser        ALL=(ALL:ALL) ALL



root@Ubuntun:~# exit
```

Se diriger dans user privilige spécification.

Effectuer un copier-coller du root ou réécrire la commande avec le nom de sa machine.

(vboxuser ALL=(ALL:ALL) ALL)

Apt get install terminator

3. Apache

https://www.digitalocean.com/community/tutorials/how-to-install-the-apache-web-server-on-ubuntu-20-04-fr

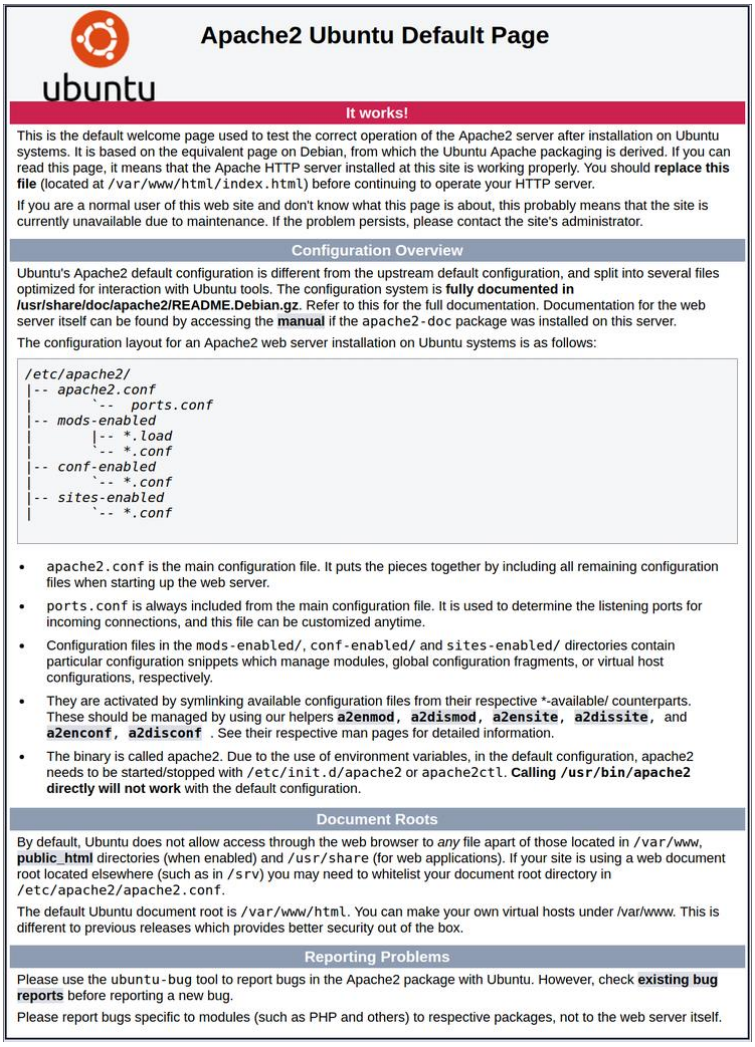
3.1. Installation Apache

Sudo apt update

Sudo apt install apache2

Sudo systemctl status apache2

Une fois l'installation terminé cette page s'affiche.



Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Ubuntu's Apache2 default configuration is different from the upstream default configuration, and split into several files optimized for interaction with Ubuntu tools. The configuration system is **fully documented in /usr/share/doc/apache2/README.Debian.gz**. Refer to this for the full documentation. Documentation for the web server itself can be found by accessing the **manual** if the `apache2-doc` package was installed on this server.

The configuration layout for an Apache2 web server installation on Ubuntu systems is as follows:

```
/etc/apache2/
|-- apache2.conf
|       `--  ports.conf
|-- mods-enabled
|       |-- *.load
|       `-- *.conf
|-- conf-enabled
|       `-- *.conf
|-- sites-enabled
|       `-- *.conf
```

- `apache2.conf` is the main configuration file. It puts the pieces together by including all remaining configuration files when starting up the web server.
- `ports.conf` is always included from the main configuration file. It is used to determine the listening ports for incoming connections, and this file can be customized anytime.
- Configuration files in the `mods-enabled/`, `conf-enabled/` and `sites-enabled/` directories contain particular configuration snippets which manage modules, global configuration fragments, or virtual host configurations, respectively.
- They are activated by symlinking available configuration files from their respective *-available/ counterparts. These should be managed by using our helpers **`a2enmod`**, **`a2dismod`**, **`a2ensite`**, **`a2dissite`**, and **`a2enconf`**, **`a2disconf`** . See their respective man pages for detailed information.
- The binary is called apache2. Due to the use of environment variables, in the default configuration, apache2 needs to be started/stopped with `/etc/init.d/apache2` or `apache2ctl`. **Calling `/usr/bin/apache2` directly will not work** with the default configuration.

Document Roots

By default, Ubuntu does not allow access through the web browser to *any* file apart of those located in `/var/www`, **public_html** directories (when enabled) and `/usr/share` (for web applications). If your site is using a web document root located elsewhere (such as in `/srv`) you may need to whitelist your document root directory in `/etc/apache2/apache2.conf`.

The default Ubuntu document root is `/var/www/html`. You can make your own virtual hosts under /var/www. This is different to previous releases which provides better security out of the box.

Reporting Problems

Please use the `ubuntu-bug` tool to report bugs in the Apache2 package with Ubuntu. However, check **existing bug reports** before reporting a new bug.

Please report bugs specific to modules (such as PHP and others) to respective packages, not to the web server itself.

4. MySQL

https://doc.ubuntu-fr.org/mysqla

4.1. Installation MySQL

Taper les commandes suivantes :

Sudo apt install mysql-server

Sudo systemctl start mysql

4.2. Accéder à la console

Sudo mysql

4.3. Créer un utilisateur

Mysql> create user 'handy'@'localhost' identified by 'connexion';

4.4. Privilèges

Mysql> grant all on *.* to 'handy'@'localhost';

4.5. Créer une base de données

Mysql> create database client-;

5. PhpMyAdmin

https://www.malekal.com/installer-phpmyadmin-ubuntu-debian/

https://www.youtube.com/watch?v=rTKi6cfMVF0&t=291s

sudo apt update & sudo apt upgrade

sudo mysql_secure_installation

press y|Y for Yes, any other key for No : y

please enter 0 = LOW, 1 = MEDIUM and 2 = STRONG : 0

remove anonymous users? (Press y|Y for yes, any other key for no) : y

Une fois installé, connectez-vous à l'interpréteur de commandes MySQL via la commande suivante :

Sudo mysql

ALTER USER 'root'@'localhost' IDENTIFIED with mysql_native_password by 'dirtechit';

sudo service mysql restart

sudo mysql

Entrée le mot de passe mais cela ne fonctionnera pas, car vous avez attribuer le mot de passe pour l'utilisateur root.

mysql -u root -p

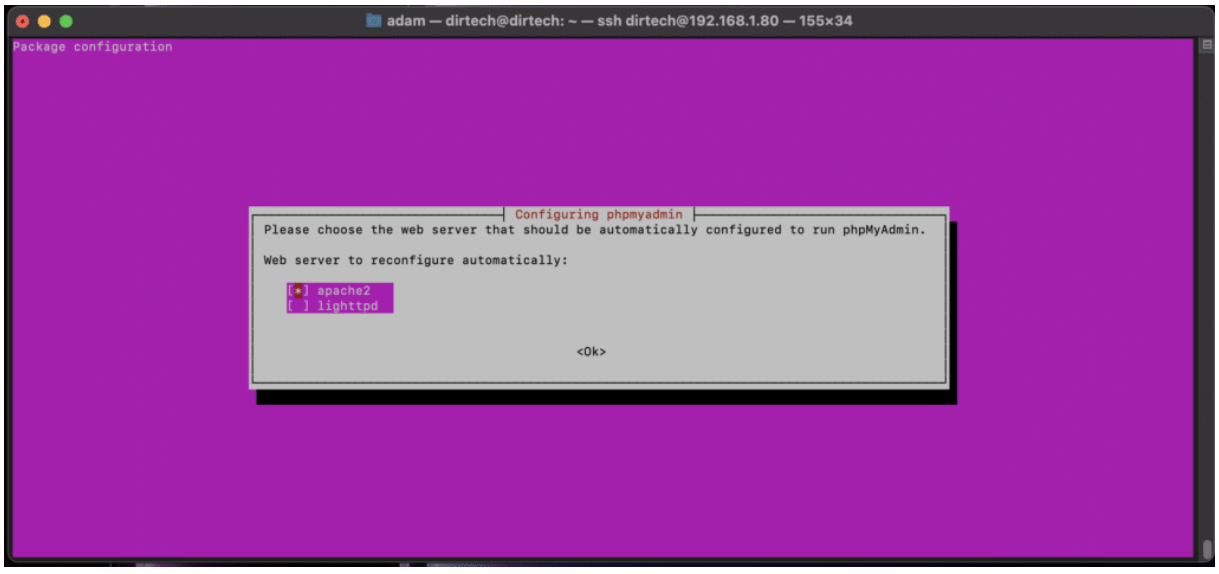
➔ Installation de PHP :

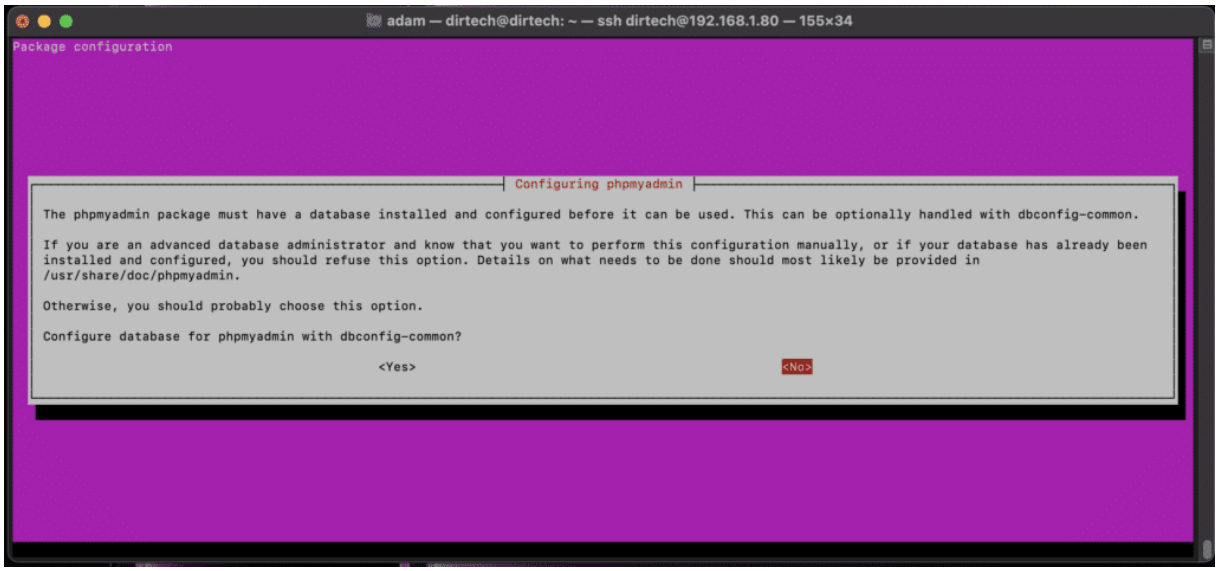
sudo apt install php libapache2-mod-php php-mysql

php -v

➔ Installation de PhpMyAdmin :

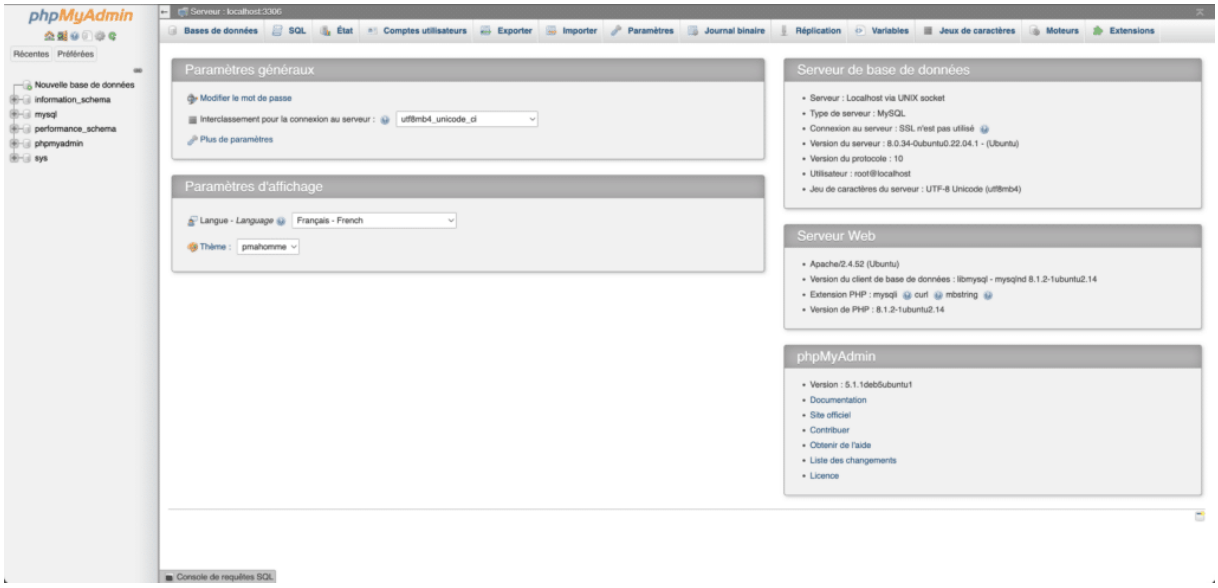
Sudo apt install phpmyadmin





Sudo systemctl restart apache2

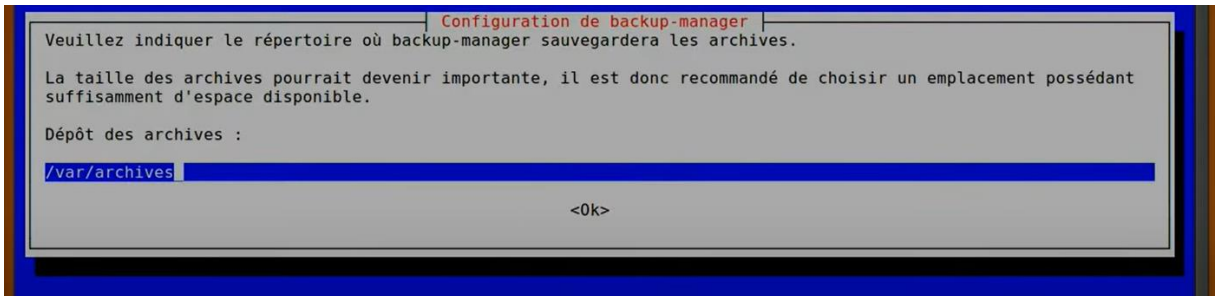
http://votre_adresse_ip/phpmyadmin

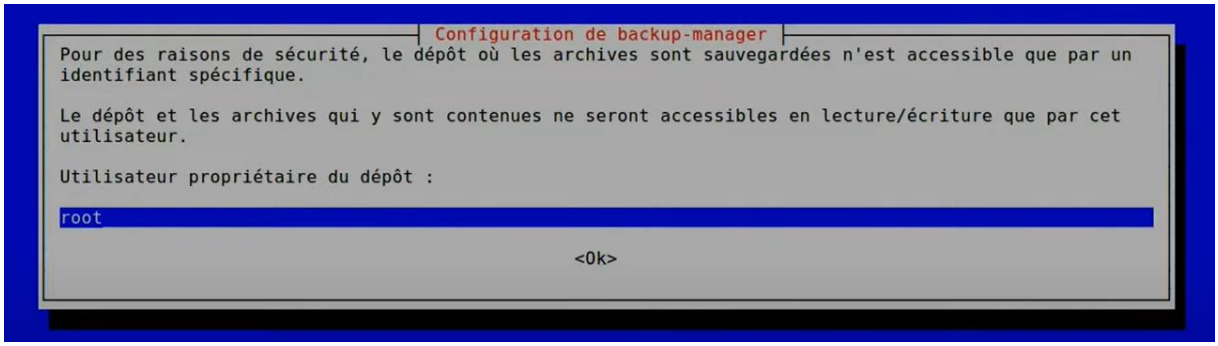


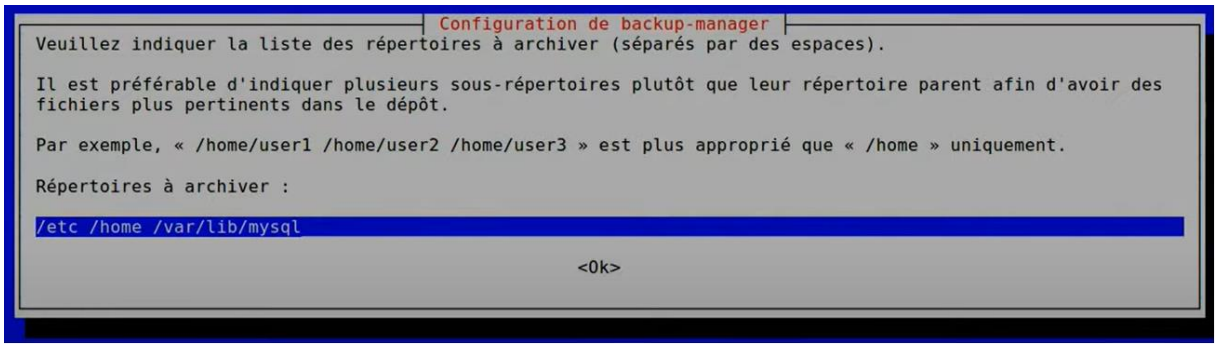
6. Backup manager

https://www.youtube.com/watch?v=sL0a-HAZZ_k

apt-get install backup-manager







Vi /etc/back2up-manager.conf

Vérifier les configurations et ensuite accéder à la l'interface graphique.

Cd /etc/cron.daily/

Vi backup-manager

 # !/bin/sh

 # cron script for backup-manager

Test -x /usr/sbin/backup-manager || exit 0

/usr/sbin/backup-manager

Exit

Chmod 751 backup-manager

Ls -l backup-manager

ftp ftpback-rbx2-68.ovh.net

7. Serveur IIS

https://www.youtube.com/watch?v=PQOZEpJzPMc

Sudo su

Apt-get update

Apt-get upgrade

Apt-get dist-upgrade

Ufw app list

Ufw app infor "Apache Full"

Ufw allow in "Apache full"

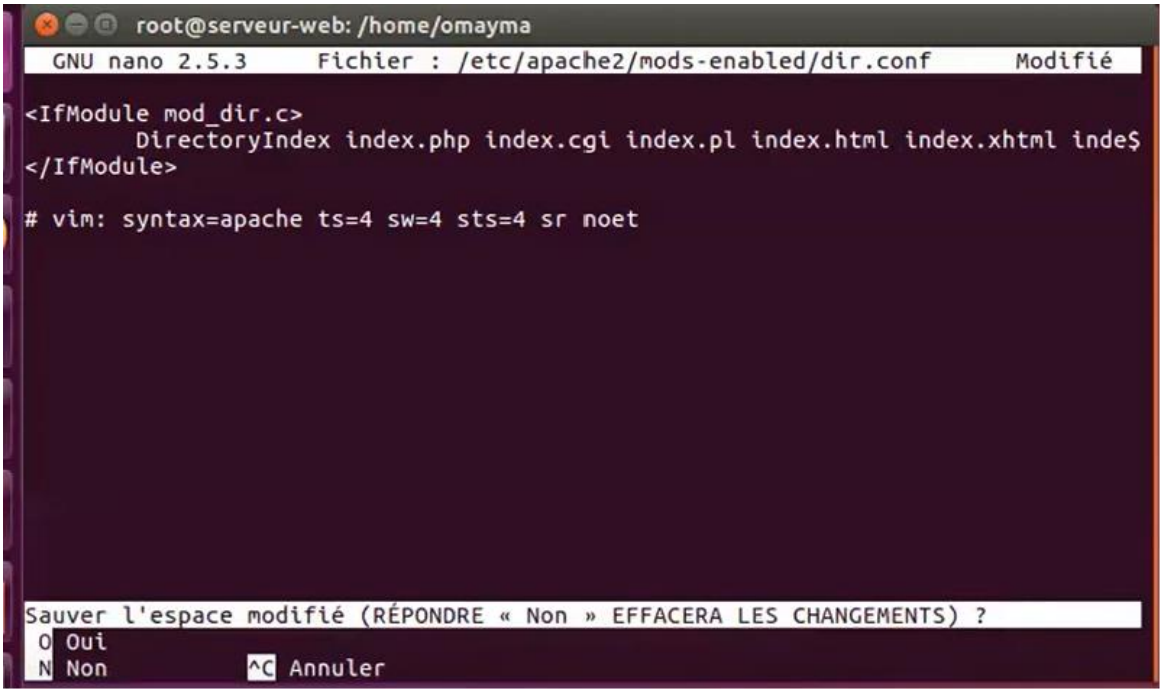
Dans le navigateur, vous devez pouvoir accéder à la l'interface graphique à l'aide de votre adresse IP.

Mysql -u root -p

Mysql> select user ,authentification_string,plugin,host from mysql.user;

Exit

Nano /etc/apache2/mods-enabled/dir.conf



Systemctl restarts apache2

Nano /var/www/html/info.php

<?php

Phpinfo() ;

?>

Nano /var/www/html/pfe.html

<html>

<head><title>ma première page</title></head>

<body>

** <h1>Projet PPE test</h1> **

voici ma 2e page

</body>

</html>

Nano /var/www/html/pfe2.html

<html>

<head><title>ma deuxième page</title></head>

<body>

** <h1>Projet PPE test</h1> **

voici ma 1e page

</body>

</html>

III. WS10-user-IT-admin

1. Configuration basique

Grâce à l'ISO, on va installer le PC qui servira pour effectuer des tests par l'administrateur dans notre réseau virtuel sur VirtualBox.

Appuyer sur :

Nouvelle > Nom : WS10-user-IT-admin

Folder : l'emplacement de votre VM.

ISO Image : indiquer le chemin vers l'ISO Windows 10

Hardware > Mémoire vive : 4096 MB

Processors : 3 CPUs

Virtual hard disk : cliquer sur create a virtual hard disk now.

Disk size > 100 Gio

Cliquer sur suivant.

Installation des logiciels :Wampserver,Visualstudio-code.

Installation

IV. WS10-user-externe

1. Configuration basique

Grâce à l'ISO, on va installer le PC qui est l'hôte client, c'est-à-dire utilisé par un vrai client.

Nouvelle > Nom : WS10-user-externe

Folder : l'emplacement de votre VM.

ISO Image : indiquer le chemin vers l'ISO Windows 10

Hardware > Mémoire vive : 4096 MB

Processors : 3 CPUs

Virtual hard disk : cliquer sur create a virtual hard disk now.

Disk size > 100 Gio

Cliquer sur suivant.

V. SRV-LAMP-SMTP-IIS

1. Postfix

Voici les différentes étapes pour installer et configurer votre server postfix.

Tout d'abord ouvrir le port 587 pour envoyé directement via le port :

Ouvrir le port SMTP 587 en entrée/sorti sur le pare-feu

sudo iptables -A INPUT -p tcp --dport 587 -j ACCEPT

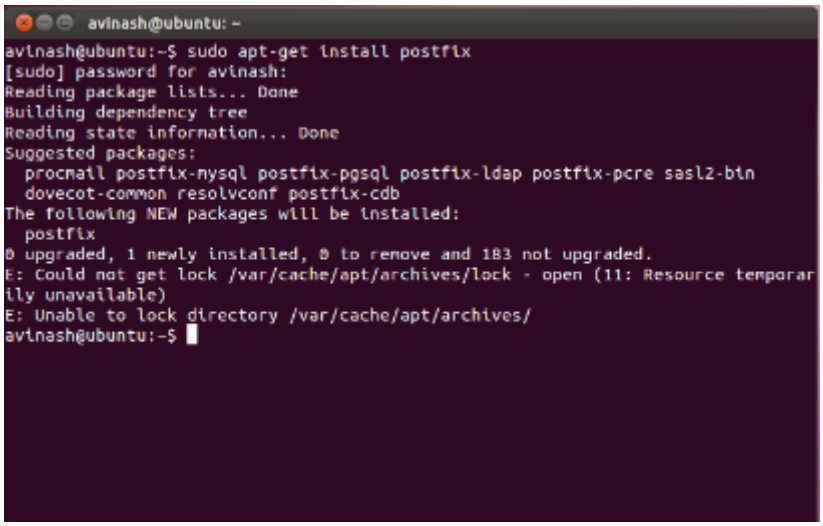
sudo iptables -A OUTPUT -p tcp --dport 587 -j ACCEPT

C'est deux commandes de base :

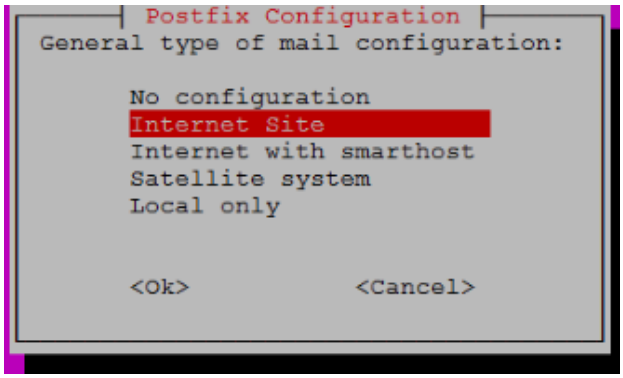
sudo apt update

sudo apt upgrade

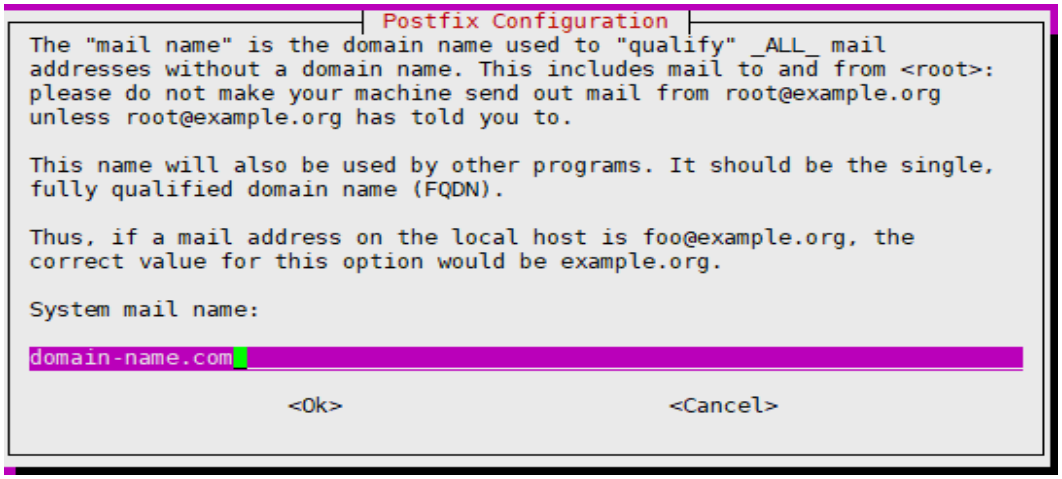
sudo apt install postfix



Choisissez l'option "Site Internet" ou "Internet Site" pour une configuration standard.



Ensuite fournir un nom de domaine qualifié (FQDN) et qu'il soit correctement configuré.



Postfix utilise des fichiers de configuration principaux situés dans /etc/postfix/.

Les fichiers de configuration principaux incluent main.cf et master.cf. Vous pouvez ajuster les paramètres principaux dans main.cf en fonction de vos besoins spécifiques.

Ensuite redémarrage du service Postfix

sudo systemctl restart postfix

sudo systemctl enable postfix

Ensuite effectuer ces commandes suivantes :

Sudo mkdir /etc/postfix/ssl/

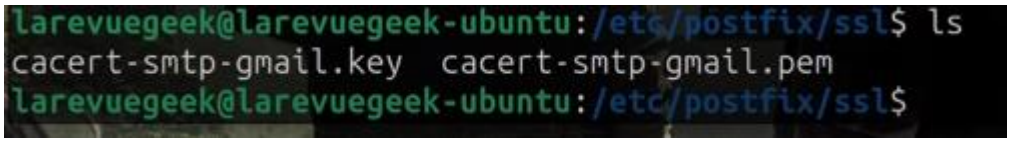
Cd /etc/postfix/ssl/

sudo openssl req -newkey rsa:2048 -new -nodes -x509 -days 3650 -keyout cacert-smtp-gmail.key -out cacert-smtp-gmail.pem

Il faudra aussi obligatoirement associer une clé privée à un certificat SSL est essentiel pour établir une communication sécurisée via le protocole HTTPS (HTTP sécurisé) ou d'autres protocoles sécurisés comme SMTPS (SMTP sécurisé) utilisé avec Postfix .

Des informations seront demandé mais ce n'est pas obligatoire de tout remplir car ce n'est pas un vrai certificat.

Ensuite effectuer un ls pour vérifier ceci devrait être afficher :



Cacert-smtp-gmail.key représente la clé.

Cacert-smtp-gmail.pem représente le certificat.

Maintenant la configuration des paramètre principaux :

sudo nano /etc/postfix/main.cf

Rajouter ces informations suivantes importantes :

relayhost = [smtp.gmail.com]:587

smtp_sasl_auth_enable = yes

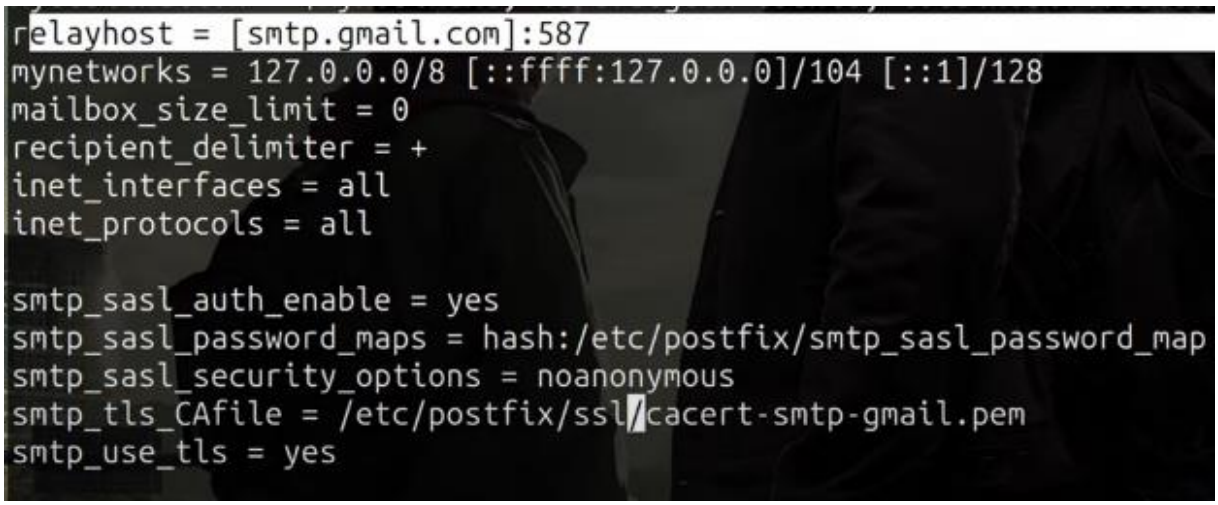
smtp_sasl_password_maps = hash:/etc/postfix/smtp_sasl_password_map

smtp_sasl_security_options = noanonymous

smtp_tls_CAfile = /etc/postfix/ssl/cacert-smtp-gmail.pem

smtp_use_tls = yes

Ensuite pour l'enregistrement du fichier ctrl 0 ensuite ctrl x



Maintenant on passe a Création du fichier smtp_sasl_password_map:

sudo nano /etc/postfix/smtp_sasl_password_map

Ecrire ceci dans le fichier :

[smtp.gmail.com]:587 USERNAME@gmail.com:MDP_Application

Remplacer le username l'addresse eamail choisie puis MDP_Application par le mot de passe voulu.

Ensuite pour l'enregistrement du fichier ctrl 0 ensuite ctrl x.

Sécuriser le fichier pour que personne n'y est accès en écriture ou en lecture avec un chmod.

sudo chmod 400 /etc/postfix/smtp_sasl_password_map

sudo postmap /etc/postfix/smtp_sasl_password_map

Ensuite viendra la phase de test :

sudo systemctl restart postfix

sudo systemctl status postfix

echo "Ceci est un test" | mail -s "Test de Postfix" USERNAME@gmail.com

Vérifier les journaux de postfix pour les éventuels problèmes:

sudo tail -f /var/log/mail.log