

DUGELAY Enzo

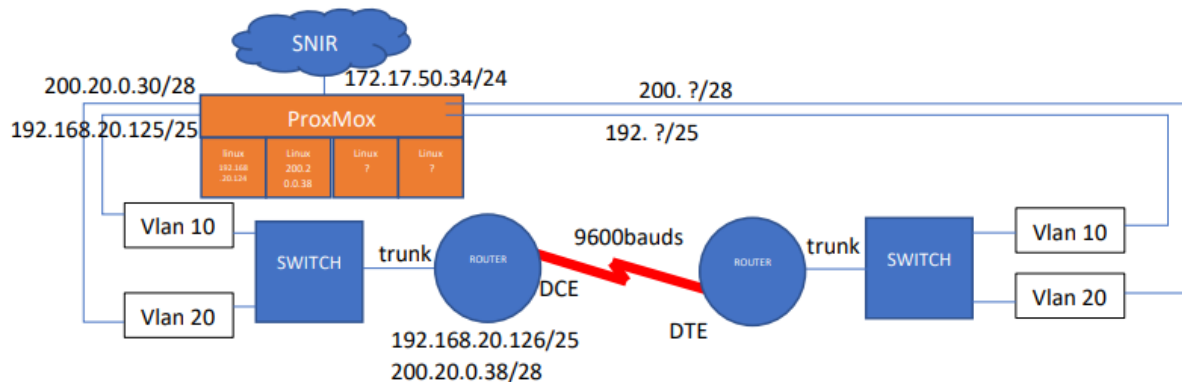
# TP Proxmox

**Classe :** BTS SNIR2

**Date :** 19/10/2022

**Professeur :** M. MARQUETTE

## Sujet du TP noté :



## Travail des étudiants :

### Etudiant 1 (15 pts) :

- Mise en place de ProxMox
- Mise en place du SSH permettant de se connecter au switch, au routeur et à ProxMox

### Etudiant 2 (15 pts) :

- Mise en place du VPN Lan to Lan
- Configuration de la liaison série en 9600 bauds

### Etudiant 3 (15 pts) :

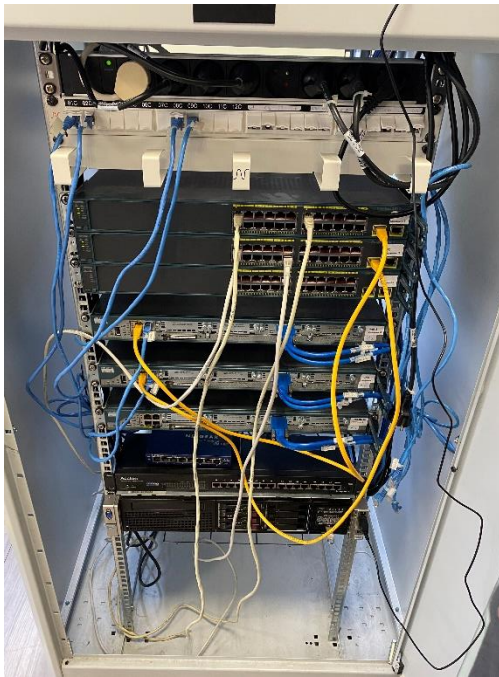
- Mise en place du CMS Wordpress par docker compose en statful dans le VLAN 10

### Etudiant 4 (15 pts) :

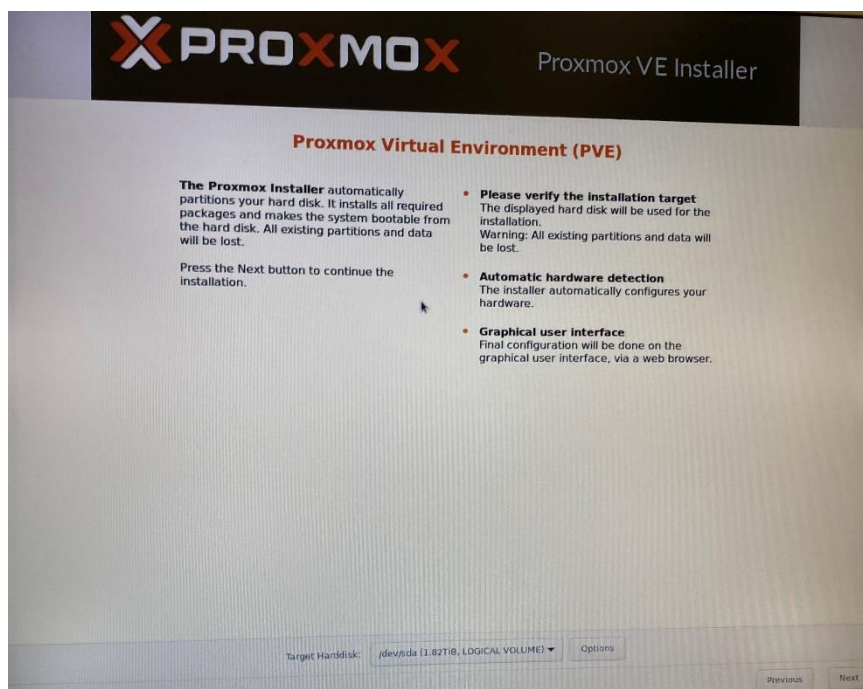
- Mise en place d'une machine Ubuntu avec une interface graphique et le VNC pour se connecter au CMS

Étudiant 1 :

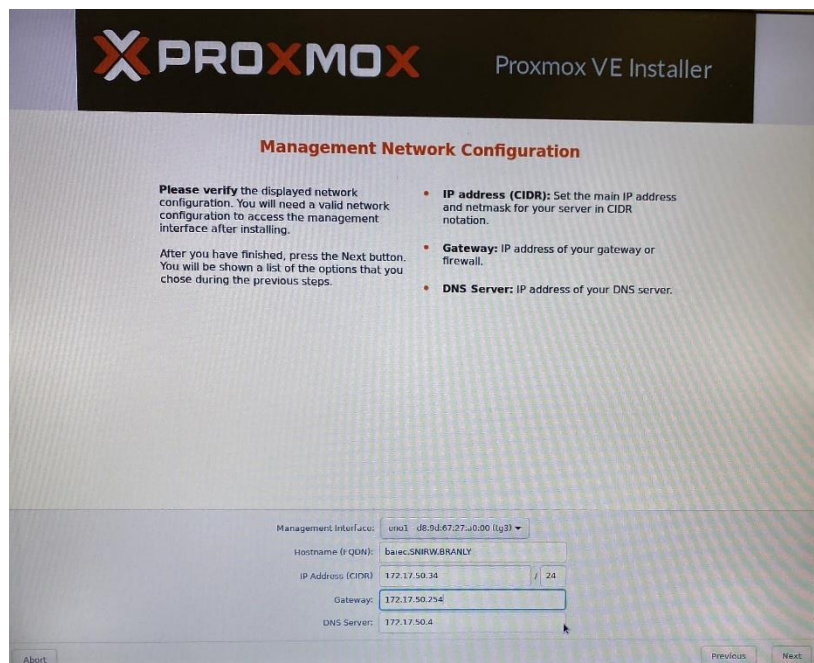
Câblage de la baie C :



Installation de proxmox :



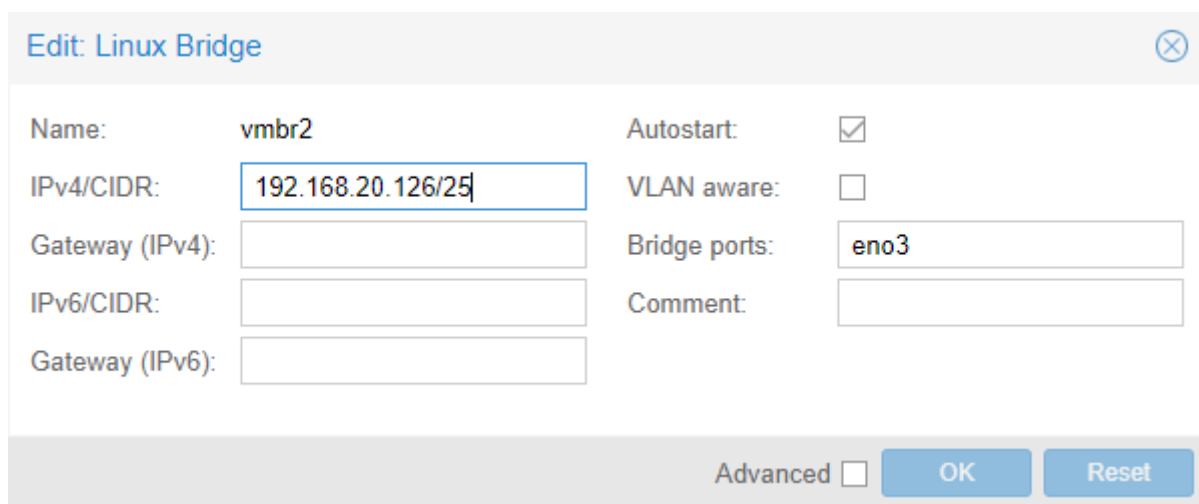
Configuration des adresse ip :



The image shows the 'Management Network Configuration' screen of the Proxmox VE Installer. At the top, the Proxmox logo and 'Proxmox VE Installer' text are visible. Below the title, there are instructions: 'Please verify the displayed network configuration. You will need a valid network configuration to access the management interface after installing.' and 'After you have finished, press the Next button. You will be shown a list of the options that you chose during the previous steps.' To the right, there are three bullet points: 'IP address (CIDR): Set the main IP address and netmask for your server in CIDR notation.', 'Gateway: IP address of your gateway or firewall.', and 'DNS Server: IP address of your DNS server.' At the bottom, there are input fields for 'Management Interface' (set to 'eno1 -d8:9d:67:27:a0:00 (lg3)'), 'Hostname (FQDN)' (set to 'barec.SNRW.BRANLY'), 'IP Address (CIDR)' (set to '172.17.50.34 / 24'), 'Gateway' (set to '172.17.50.254'), and 'DNS Server' (set to '172.17.50.4'). There are 'Abort', 'Previous', and 'Next' buttons at the bottom.

## Configuration Proxmox :

Création Bridge :



The image shows the 'Edit Linux Bridge' dialog box. It has a title bar with a close button. The dialog contains several fields: 'Name' (set to 'vmb2'), 'IPv4/CIDR' (set to '192.168.20.126/25'), 'Gateway (IPv4)' (empty), 'IPv6/CIDR' (empty), 'Gateway (IPv6)' (empty), 'Autostart' (checked), 'VLAN aware' (unchecked), 'Bridge ports' (set to 'eno3'), and 'Comment' (empty). At the bottom right, there is an 'Advanced' checkbox (unchecked) and two buttons: 'OK' and 'Reset'.

PROXMOX Virtual Environment 7.2-3

Server View | Node 'balec'

Search | Create | Revert | Edit | Remove | Apply Configuration

Summary | Notes | Shell | System | Network | Certificates | DNS | Hosts | Time | Syslog | Updates | Repositories | Firewall | Disks | LVM | LVM-Thin | Directory | ZFS | Ceph | Replication | Task History | Subscription

Name	Type	Active	Autostart	VLAN a...	Ports/Slaves	Bond Mode	CIDR	Gateway	Comment
eno1	Network Device	Yes	No	No					
eno2	Network Device	Yes	No	No					
eno3	Network Device	Yes	No	No					
eno4	Network Device	No	No	No					
vbr0	Linux Bridge	Yes	Yes	No	eno1		172.17.50.34/24	172.17.50.254	
vbr1	Linux Bridge	Yes	Yes	No	eno2		192.168.20.125/25		
vbr2	Linux Bridge	Yes	Yes	No	eno3		192.168.20.126/25		

Tasks | Cluster log

Start Time	End Time	Node	User name	Description	Status
Oct 19 16:38:58		balec	root@pam	VM/CT 102 - Console	
Oct 19 16:12:56		balec	root@pam	VM/CT 100 - Console	
Oct 19 16:53:43	Oct 19 16:53:44	balec	root@pam	SRV networking - Reload	OK
Oct 19 16:36:45	Oct 19 16:36:46	balec	root@pam	VM 102 - Start	OK
Oct 19 16:36:32	Oct 19 16:36:34	balec	root@pam	VM 101 - Clone	OK

## Configuration du SSH sur le routeur 1 :

```
Router>enable
Router#Passw0rd
Translating "Passw0rd"...domain server (255.255.255.255)

Translating "Passw0rd"...domain server (255.255.255.255)
(255.255.255.255)% Unknown command or computer name, or unable to find computer
address
Router#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#username root password Passw0rd
Router(config)#hostname R1
R1(config)#ip domain-name cisco.com
R1(config)#crypto key generate rsa modulus 1024
^
% Invalid input detected at '^' marker.

R1(config)#crypto key generate rsa 1024
^
% Invalid input detected at '^' marker.

R1(config)#crypto key generate rsa cisco.com
^
% Invalid input detected at '^' marker.

R1(config)#crypto key generate rsa
The name for the keys will be: R1.cisco.com
Choose the size of the key modulus in the range of 360 to 2048 for your
General Purpose Keys. Choosing a key modulus greater than 512 may take
a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

R1(config)#
*Jan 1 00:08:25.063: %SSH-5-ENABLED: SSH 1.99 has been enabled
R1(config)#line vty 0 4
R1(config-line)#transport input ssh
R1(config-line)#login local
R1(config-line)#exit
```

## Étudiant 2 :

Pour se connecter au routeur 1 avec l'ordinateur, il nous faut un mot de passe pour passer en mode administrateur, on ne l'a pas donc on redémarre le routeur. En le redémarrant on fait contrôle+pause sur Putty et on rentre confreg 0x2142 puis reset.

## Mise en place du VPN Lan to Lan :

### Mise en place des vlan 10 et 20 :

Mise en place du vlan 10 :

```
Switch(config)#vlan 10
Switch(config-vlan)#exit
Switch(config)#interface range fa0/1-12
Switch(config-if-range)#switchport access vlan 10
Switch(config-if-range)#no shutdown
Switch(config-if-range)#exit
```

Mise en place du vlan 20 :

```
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 20
Switch(config-vlan)#exit
Switch(config)#interface range fa0/13-24
Switch(config-if-range)#switchport access vlan 20
Switch(config-if-range)#no shutdown
Switch(config-if-range)#exit
```

Vérification que les vlan sont bien fonctionnels :

```
Switch#show vlan brief
```

VLAN	Name	Status	Ports
1	default	active	Gi0/1, Gi0/2
10	vlan_10	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12
20	LAN_STATION	active	Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24
100	VTPtest	active	
1002	fddi-default	act/unsup	
1003	trcrf-default	act/unsup	
1004	fddinet-default	act/unsup	
1005	trbrf-default	act/unsup	

On met ensuite les vlan 10 et 20 en mode trunk afin de faire transiter les vlan :

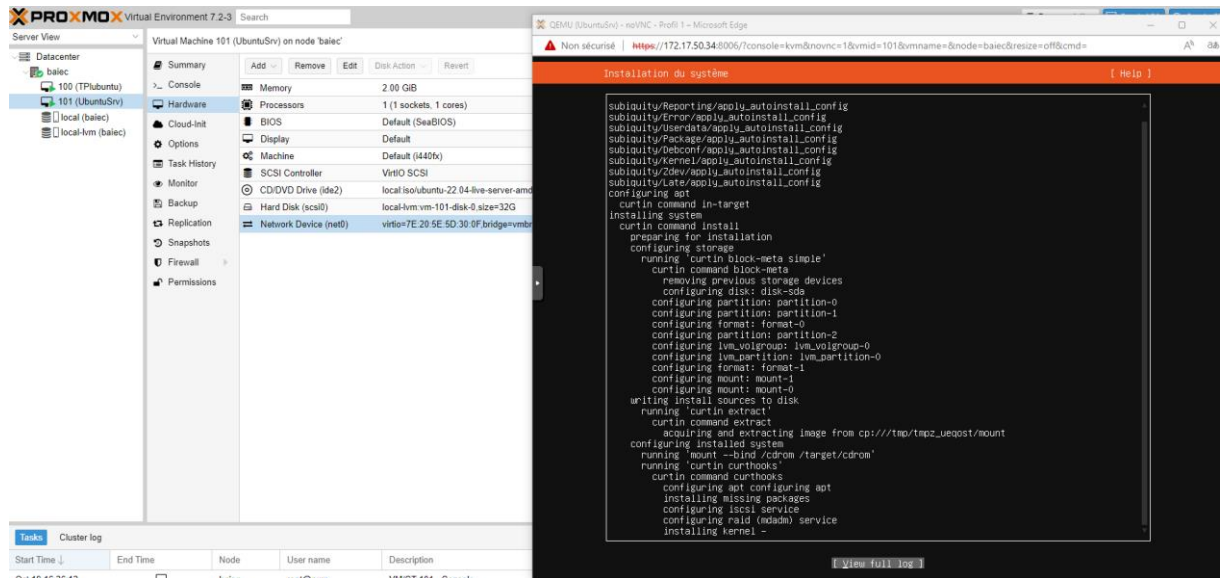
```
Switch#
Switch#conf t
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#interface ge0/1
      ^
% Invalid input detected at '^' marker.

Switch(config)#interface g0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan 10
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#exit
Switch(config)#interface g0/2
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#end
```

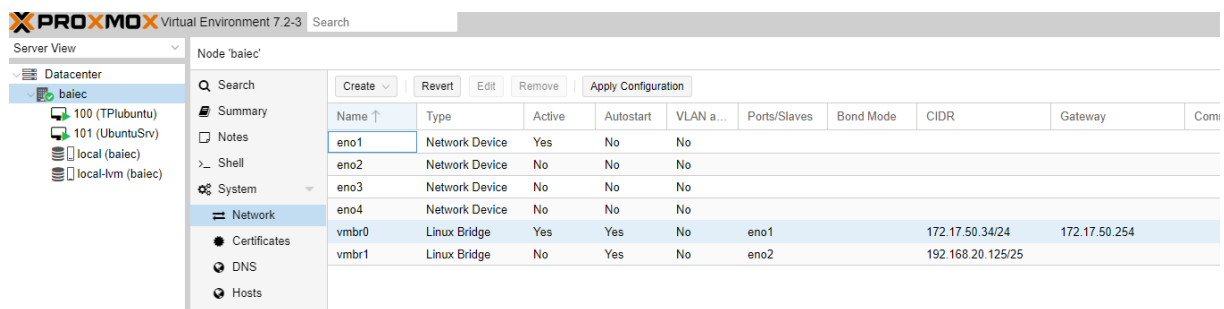
## Étudiant 3 :

### Création de la machine Ubuntu serveur

Création et configuration d'une machine Ubuntu serveur.



Création d'une carte réseau virtuelle vbr1 qui renvoie au serveur (eno2)



Création d'une Template de la machine qui me sert pour cloner une nouvelle machine : 102 docker



**PROXMOX** Virtual Environment 7.2-3

Server View

- Datacenter
  - baiec
    - 100 (TPlubuntu)
    - 102 (docker)**
    - 101 (UbuntuSrv)
    - local (baiec)
    - local-lvm (baiec)

Virtual Machine 102 on node 'baiec'

Summary

- >\_ Console
- Hardware
- Cloud-Init
- Options
- Task History
- Monitor
- Backup
- Replication
- Snapshots

docker (Uptime: 00:00:06) Note

Status	running
HA State	none
Node	baiec
CPU usage	108.22% of 1 CPU(s)
Memory usage	4.56% (93.34 MiB of 2.00 GiB)
Bootdisk size	32.00 GiB
IPs	No Guest Agent configured

Nouvelle machine :

```
elev login: elev
Password:
Welcome to Ubuntu 22.04 LTS (GNU/Linux 5.15.0-25-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

This system has been minimized by removing packages and content that are
not required on a system that users do not log into.

To restore this content, you can run the 'unminimize' command.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

elev@elev:~$
elev@elev:~$
elev@elev:~$ _
```

Il faut ensuite configurer l'interface graphique :

```
>sudo apt update
sudo apt install xfce4 xfce4-goodies
sudo apt install tightvncserver
vncserver
sudo nano ~/.vnc/xstartup
xrdp $HOME/.Xresources
```

```
startxfce4 &
```

```
selecting previously unselected package x11-common.  
Preparing to unpack .../004-x11-common_1%3a7.7+23ubuntu2_all.deb ...  
Unpacking x11-common (1:7.7+23ubuntu2) ...  
selecting previously unselected package libice6:amd64.  
Preparing to unpack .../005-libice6_2%3a1.0.10-1build2_amd64.deb ...  
Unpacking libice6:amd64 (2:1.0.10-1build2) ...  
selecting previously unselected package libltdl7:amd64.  
Preparing to unpack .../006-libltdl7_2.4.6-15build2_amd64.deb ...  
Unpacking libltdl7:amd64 (2.4.6-15build2) ...  
selecting previously unselected package libasynchns0:amd64.  
Preparing to unpack .../007-libasynchns0_0.8-6build2_amd64.deb ...  
Unpacking libasynchns0:amd64 (0.8-6build2) ...
```

```
Progress: [ 2%] [##.....]
```

```
eleve@eleve:~$ startxfce4  
/usr/bin/startxfce4: Starting X server  
  
X.Org X Server 1.21.1.3  
X Protocol Version 11, Revision 0  
Current Operating System: Linux eleve 5.15.0-25-generic #25-Ubuntu SMP Wed Mar 30 15:54:22 UTC 2022 x86_64  
Kernel command line: BOOT_IMAGE=/vmlinuz-5.15.0-25-generic root=/dev/mapper/ubuntu--vg-ubuntu--lv_ro  
xorg-server 2:21.1.3-2ubuntu2.1 (For technical support please see http://www.ubuntu.com/support)  
Current version of pixman: 0.40.0  
Before reporting problems, check http://wiki.x.org  
to make sure that you have the latest version.  
Markers: (--) probed, (**) from config file, (==) default setting,  
      (++) from command line, (!!) notice, (II) informational,  
      (WW) warning, (EE) error, (NI) not implemented, (??) unknown.  
== Log file: "/home/eleve/.local/share/xorg/Xorg.0.log", Time: Wed Oct 19 14:57:36 2022  
== Using system config directory "/usr/share/X11/xorg.conf.d"  
waiting for X server to shut down (II) Server terminated successfully (0). Closing log file.river: bochs-drmgpg-agent: a gpg-ag
```

## Installation de docker et docker-compose

Je lance d'abord la commande suivante pour m'assurer que la machine est à jour :

```
sudo apt update  
sudo apt upgrade
```

J'installe la commande curl pour pouvoir télécharger docker :

```
sudo apt-get install curl apt-transport-https ca-certificates software-properties-common
```

Je télécharge docker avec sa clé GPG :

```
curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo apt-key add -
```

J'ajoute le dépôt et le met à jour :

```
sudo add-apt-repository "deb [arch=amd64]  
https://download.docker.com/linux/ubuntu $(lsb_release -cs) stable"
```

```
sudo apt update
```

Installation de docker :

```
sudo apt install docker-ce
```

Vérification du statut :

```
sudo systemctl status docker
```

Installation docker compose :

```
apt-get install docker-compose
```

## Configuration de WordPress avec docker compose

```
>mkdir ~/wordpress-compose && cd ~/wordpress-compose
```

```
>nano docker-compose.yml
```

```
wordpress:
  image: wordpress
  links:
    - mariadb:mysql
  environment:
    - WORDPRESS_DB_PASSWORD=password
    - WORDPRESS_DB_USER=root
  ports:
    - "public_ip:80:80"
  volumes:
    - ./html:/var/www/html
mariadb:
  image: mariadb
  environment:
    - MYSQL_ROOT_PASSWORD=password
    - MYSQL_DATABASE=wordpress
  volumes:
    - ./database:/var/lib/mysql
```

```
>docker-compose up -d
>docker-compose pull
>docker-compose up -d
>docker-compose start
```

## Étudiant 4 :

Connexion a la baie C, sur proxmox, avec l'adresse : <https://172.17.50.34:8006/>

**Authentification Proxmox VE**

Utilisateur:

Mot de passe:

Realm:

Langue:

Save User name: ☐

Installation et configuration de la machine virtuel Ubuntu sur Proxmox :

**PROXMOX Virtual Environment 7.2-3** Rechercher

Vue Serveur

Rechercher

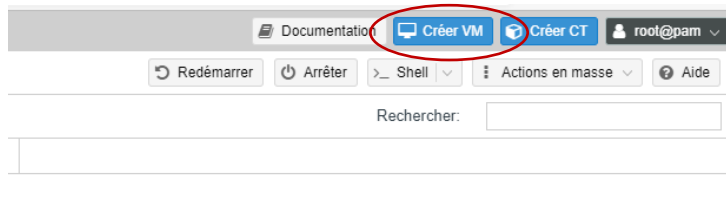
Type	Description	Utilisation ...	Utilisation ...	Utilisation ...	Uptime	Utilisation ...	Utilisation ...
storage	local (baieC)	2.8 %					
storage	local-lvm (baieC)	0.0 %					

Rechercher:

**Tâches** Journaux du cluster

Heure de début	Heure de fin	Nœud	Utilisateur	Description	Statut
Oct 19 16:04:28	Oct 19 16:04:28	baieC	root@pam	Démarrer toutes les VMs et les conteneurs	OK

On va créer une machine linux :



Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

Nœud: baiec Pool de ressource:

VM ID: 100

Nom: TPlubuntu

Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

☒ Utiliser une image de disque (ISO) OS invité: Linux

Stockage: local Type: Linux

Image ISO: ubuntu-20.04.1-desktop-amd64 Version: 5 x - 2.6 Kernel

☐ Utiliser le lecteur Nom For... Taille

☐ N'utiliser aucun disque virtuel

Nom	Format	Taille
ubuntu-20.04.1-desktop-amd64.iso	iso	1.79 GB

Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

Carte graphique: Défaut Contrôleur SCSI: VirtIO SCSI

Machine: Défaut (i440fx) Agent Qemu: ☐

Firmware BIOS: Défaut (SeaBIOS) Add TPM: ☐

Aide Avancé ☐ Retour Suivant

Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

Sockets: 1 Type: Défaut (kvm64)

Cœurs: 1 Total cœurs: 1

Aide Avancé ☐ Retour Suivant

Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

Mémoire (MiB): 4096

Aide Avancé ☐ Retour Suivant

Créer: Machine Virtuelle

Général OS Système Disques CPU Mémoire Réseau Confirmation

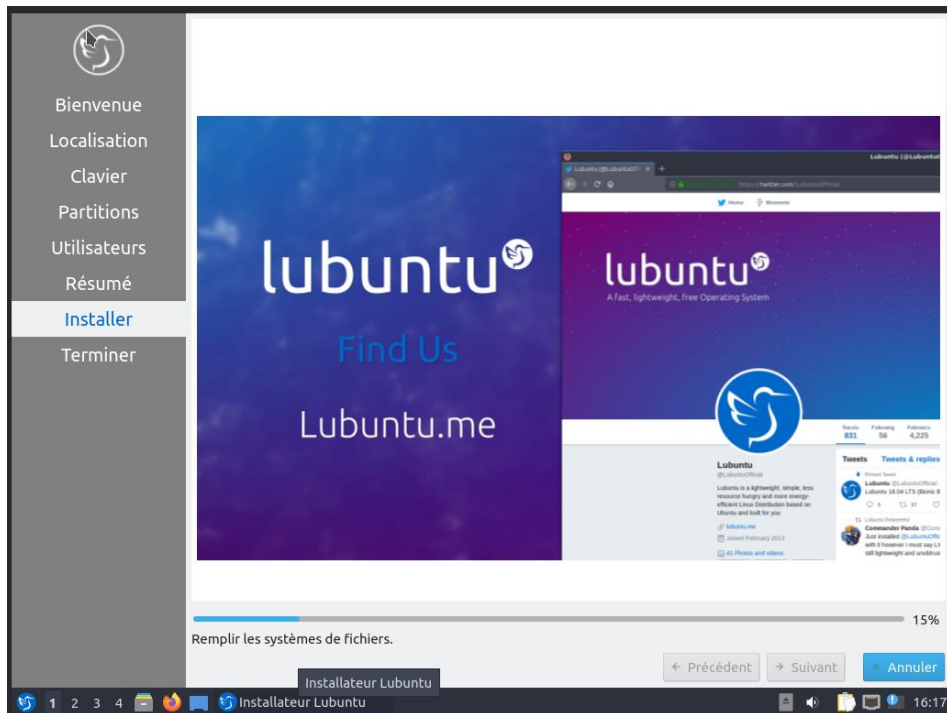
☐ Aucun périphérique réseau

Bridge: vmbr0 Modèle: VirtIO (paravirtualisé)

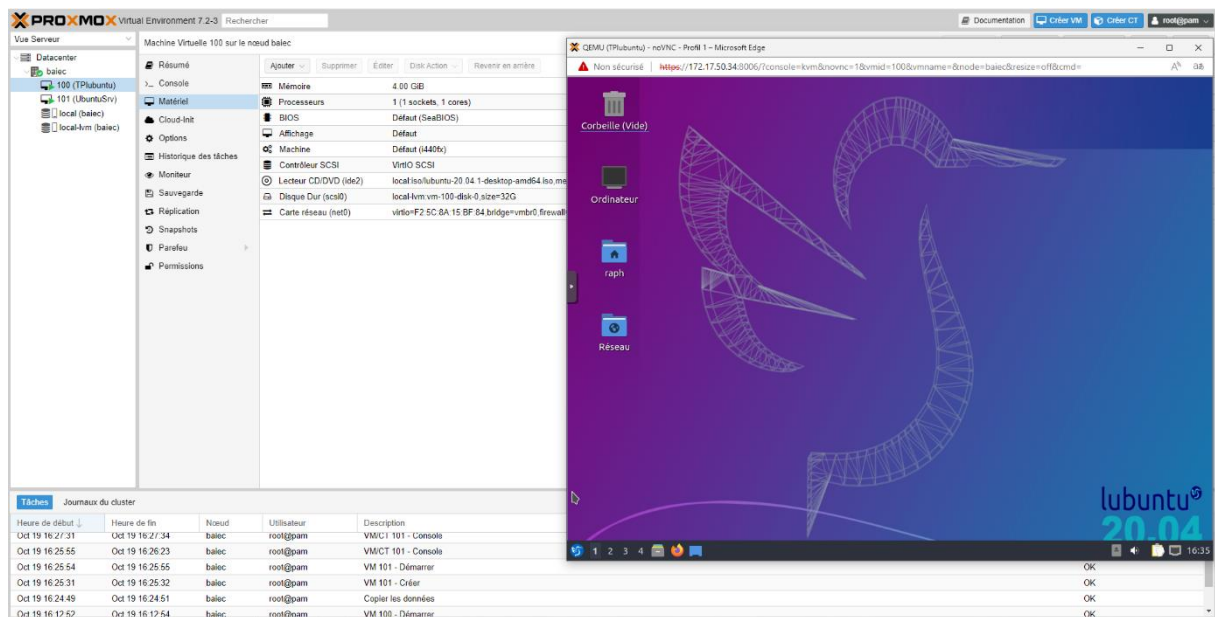
Tag VLAN: no VLAN Adresse MAC: auto

Parefeu: ☒

Aide Avancé ☐ Retour Suivant

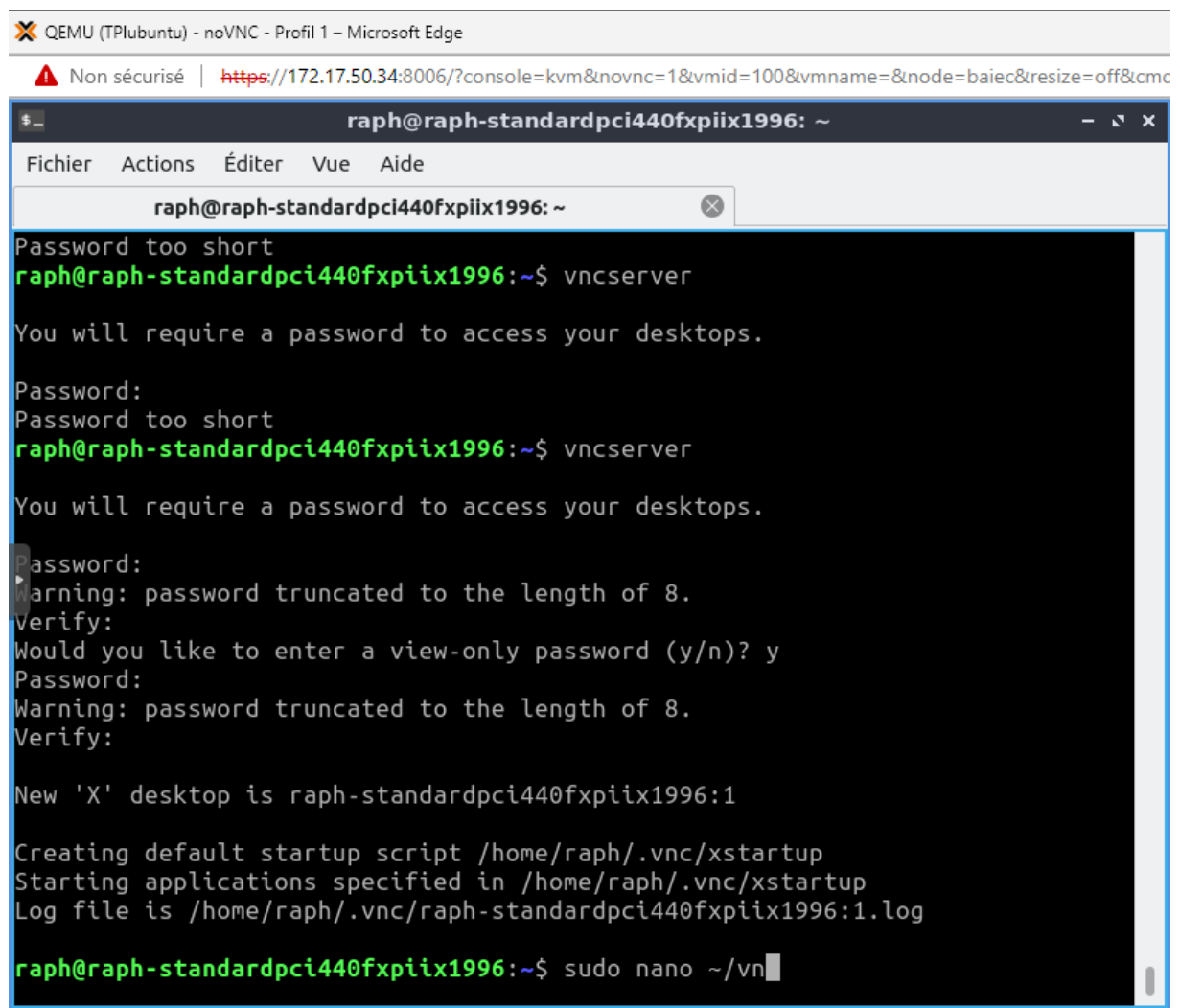


## Page d'accueil



## Mise en place du VNC

```
sudo apt update
sudo apt install xfce4 xfce4-goodies
sudo apt install tightvncserver
vncserver
sudo nano ~/.vnc/xstartup
xrdp $HOME/.Xresources
startxfce4 &
```



QEMU (TPlubuntu) - noVNC - Profil 1 - Microsoft Edge

Non sécurisé | <https://172.17.50.34:8006/?console=kvm&novnc=1&vmid=100&vmname=&node=baiec&resize=off&cm>

```
raph@raph-standardpci440fxpiix1996: ~
Fichier Actions Éditer Vue Aide
raph@raph-standardpci440fxpiix1996: ~
Password too short
raph@raph-standardpci440fxpiix1996:~$ vncserver
You will require a password to access your desktops.
Password:
Password too short
raph@raph-standardpci440fxpiix1996:~$ vncserver
You will require a password to access your desktops.
Password:
Warning: password truncated to the length of 8.
Verify:
Would you like to enter a view-only password (y/n)? y
Password:
Warning: password truncated to the length of 8.
Verify:
New 'X' desktop is raph-standardpci440fxpiix1996:1
Creating default startup script /home/raph/.vnc/xstartup
Starting applications specified in /home/raph/.vnc/xstartup
Log file is /home/raph/.vnc/raph-standardpci440fxpiix1996:1.log
raph@raph-standardpci440fxpiix1996:~$ sudo nano ~/.vnc
```