

1 CHR6

1.1 1.Creation de la VM

Creation d'une Nouvelle VM :

- OS Type Linux 5.x - 2.6 Kernel
 - Processeur : 1 sockets, 2 cores
 - SCSI Controller : VirtIO SCSI
 - Network Device : virtio
 - Mémoire : 1Gb
 - Ballooning = 0
-
- virtio block device storage, 1 core , 256mb, 2 Interface reseau (WAN+LAN)

Warning: We do not recommend using E1000 network interface if better synthetic interface options are available on specific Hypervisor!

Noter le N° de la VM qui vient d'être créé.

Dans mon cas 106

Virtual Network Adapters

Fast Path is supported since RouterOS v7 for "vmxnet3" and "virtio-net" adapters.

RouterOS v6 does not support Fast Path.

The image shows two screenshots of the Proxmox VM creation wizard. The first screenshot is the 'OS' tab, where 'Do not use any media' is selected. The second screenshot is the 'Hard Disk' tab, where 'VirtIO Block' is selected for the bus/device, 'local-zfs' for storage, '1' for disk size, and 'Raw disk image (raw)' for format. The 'Backup' checkbox is checked.

Create: Virtual Machine

General **OS** System Hard Disk CPU Memory Network Confirm

☐ Use CD/DVD disc image file (iso)

Storage: ISO

ISO image:

Guest OS:

Type: Linux

Version: 5.x - 2.6 Kernel

☐ Use physical CD/DVD Drive

☒ Do not use any media

Create: Virtual Machine

General OS System **Hard Disk** CPU Memory Network Confirm

Bus/Device: VirtIO Block 0

Storage: local-zfs

Disk size (GiB): 1

Format: Raw disk image (raw)

Cache: Default (No cache)

Discard: ☐

SSD emulation: ☐

Backup: ☒

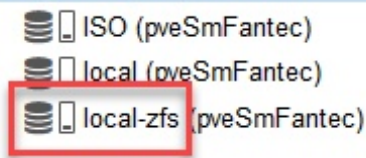
1.2 2.Install CHR

Setting up a CHR VM on proxmox with zfs :

Download CHR Raw image : <https://mikrotik.com/download>
 wget <https://download.mikrotik.com/routeros/6.48/chr-6.48.img.zip>
 unzip chr-6.48.img.zip

wget <https://download.mikrotik.com/routeros/7.1beta4/chr-7.1beta4.img.zip>

Noter le nom du Storage utilisé pour stocker les VM:



Trouver l'emplacement du local filesystem for VM's disk:

```
pvesm list <poolname> | grep <vmid>
pvesm list local-zfs | grep 106
```

```
root@pveSmFantec:~# pvesm list local-zfs | grep 106
local-zfs:vm-106-disk-0    raw    images    17179869184 106
root@pveSmFantec:~#
```

that will tell you the name of the disks attached to the VM

Recupérer le chemin complet Disk RAW virtuel :

```
pvesm path local-zfs:vm-106-disk-0
root@pveSmFantec:~# pvesm path local-zfs:vm-106-disk-0
/dev/zvol/rpool/data/vm-106-disk-0
root@pveSmFantec:~#
```

copy the raw image to the raw virtual disk :

```
dd if=/path/to/chr/img of=/full/local/path/raw/virtual/disk e.g.,
dd if=/mnt/pve/foenix-proxmox-content/template/iso/chr-6.45.8.img of=/dev/zvol/mass/vm-139-d

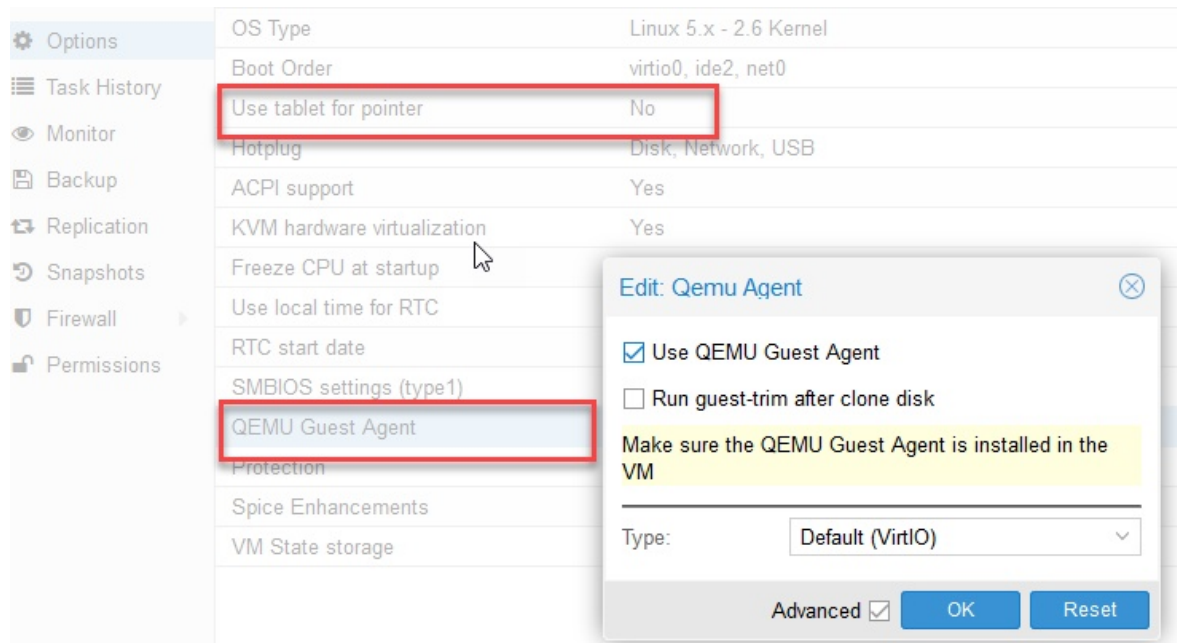
dd if=/root/chr-6.48.img of=/dev/zvol/rpool/data/vm-106-disk-0
dd if=/root/chr-7.1beta4.img of=/dev/zvol/rpool/data/vm-114-disk-0
```

Demarrer la VM

1.3 3.3.Guest-Agent (Enable)

Menu Option

Use Tablet for pointer : No
 QEMU Guest Agent : Use QEMU Guest Agent



Si la VM tourne, l'arreter puis la Redemarrer pour que le réglage soit pris en compte.

Après qq seconde on peut voir apparaitre les infos dans le Summary de la VM :



1.4 3.4.Demarrage Automatique

Une fois la config de CHR opérationnel, sous PVE pensez a cocher la case :
Start at boot pour démarrer la VM automatiquement

Start at Boot = Yes

>_ Console	Name	CHR
Hardware	Start at boot	Yes
Cloud-Init	Start/Shutdown order	order=any
Options	OS Type	Linux 5.x - 2.6 Kernel
	Boot Order	virtio0, ide2, net0

1.5 Config Reseau

Node 'pveSmFantec'

Reboot Shutdown Shell Bulk Actions Help

Create Revert Edit Remove Apply Configuration

Name	Type	Active	Autostart	VLAN aware	Ports/Slaves	Bond Mode	CIDR	Gateway	Comment
eno1	Network Device	Yes	No	No					
enp0s25	Network Device	Yes	No	No					
enp2s0	Network Device	Yes	No	No					
enp2s0d1	Network Device	Yes	No	No					
vmbr0	Linux Bridge	Yes	Yes	No	enp0s25		192.168.10.242/24	192.168.10.2	LAN
vmbr1	Linux Bridge	Yes	Yes	No	eno1				WAN
vmbr2	Linux Bridge	Yes	Yes	No	enp2s0				SFP-LAN
vmbr3	Linux Bridge	Yes	Yes	No	enp2s0d1				SFP-WAN

Server View

Datacenter

- pveSmFantec
 - 103 (OpenVPN)
 - 100 (OPNsenseFW)
 - 101 (UntangleNGFW)
 - 102 (Nas2-Data)
 - 104 (OPNsense2)
 - 105 (OPNsenseFibre)
 - 106 (CHR)
 - ISO (pveSmFantec)
 - local (pveSmFantec)
 - local-zfs (pveSmFantec)

Virtual Machine 106 (CHR) on node 'pveSmFantec'

Summary Add Remove Edit Resize disk Move disk Revert

Console

Hardware

Cloud-Init

Options

Task History

Monitor

Backup

Replication

Snapshots

Firewall

Memory	1.00 GiB [balloon=0]
Processors	1 (1 sockets, 1 cores)
BIOS	Default (SeaBIOS)
Display	Default
Machine	Default (i440fx)
SCSI Controller	VirtIO SCSI
CD/DVD Drive (ide2)	none,media=cdrom
Hard Disk (virtio0)	local-zfs:vm-106-disk-0,size=16G
Network Device (net0)	virtio=96:16:FA:D3:37:1A,bridge=vmbr3
Network Device (net1)	virtio=3A:57:2C:C1:ED:C9,bridge=vmbr2
Network Device (net2)	virtio=16:7E:22:63:F0:8C,bridge=vmbr1

1.5.1 Creation des Bridge sous Pve

Sous Pve dans System Network

Cliquer sur Create puis créer 2 Bridge (1 pour Chaque port de la Carte Fibre)

1 Create Revert Edit Remove

2 Edit: Linux Bridge

Name: vmbr4 Autostart: ☒

IPV4/CIDR: VLAN aware: ☐

Gateway (IPV4): Bridge ports: enp3s0f0

IPV6/CIDR: Comment:

Gateway (IPV6):

MTU: 1500

Advanced ☒ OK Reset

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Name	Type	Active
eno1	Network Device	Yes
enp0s25	Network Device	Yes
enp2s0	Network Device	Yes
enp2s0d1	Network Device	Yes
enp3s0f0	Network Device	Yes
enp3s0f1	Network Device	Yes
vmbr0	Linux Bridge	Yes
vmbr1	Linux Bridge	Yes
vmbr2	Linux Bridge	Yes
vmbr3	Linux Bridge	Yes
vmbr4	Linux Bridge	Yes
vmbr5	Linux Bridge	Yes

Une fois créé les Interfaces et les bridge s'activent automatiquement (Champs : Active=Yes)

Je branche une 1ere Fibre dans ce qui sera mon LAN

Puis avec la commande `ethtool [Nom du Network Device]` je cherche celui qui va monter.

```
ethtool enp3s0f0
```

```

Settings for enp3s0f0:
  Supported ports: [ FIBRE ]
  Supported link modes:   1000baseT/Full
                        10000baseT/Full
  Supported pause frame use: Symmetric Receive-only
  Supports auto-negotiation: No
  Supported FEC modes: Not reported
  Advertised link modes:  10000baseT/Full
  Advertised pause frame use: No
  Advertised auto-negotiation: No
  Advertised FEC modes: Not reported
  Speed: 10000Mb/s
  Duplex: Full
  Port: Direct Attach Copper
  PHYAD: 1
  Transceiver: internal
  Auto-negotiation: off
  Supports Wake-on: g
  Wake-on: d
  Current message level: 0x00000000 (0)

  Link detected: yes
root@pveSmFantec:~#

```

Idem sur l'autre porte avec ONU pluggé :

```
ethtool enp3s0f1
```

```

root@pveSmFantec:~# ethtool enp3s0f1
Settings for enp3s0f1:
  Supported ports: [ FIBRE ]
  Supported link modes:   1000baseT/Full
                        10000baseT/Full
  Supported pause frame use: Symmetric Receive-only
  Supports auto-negotiation: No
  Supported FEC modes: Not reported
  Advertised link modes:  10000baseT/Full
  Advertised pause frame use: No
  Advertised auto-negotiation: No
  Advertised FEC modes: Not reported
  Speed: Unknown!
  Duplex: Unknown! (255)
  Port: None
  PHYAD: 1
  Transceiver: internal
  Auto-negotiation: off
  Supports Wake-on: g
  Wake-on: d
  Current message level: 0x00000000 (0)

  Link detected: no

```

J'utilise un G-010S-A, il faut donc lui faire la petite soudure.

Une fois la soudure effectué (Plus facile en enlevant le capot,mais quand même pas évident.)

Re-plugger le module et attendre qq seconde qu'il démarre.

```
ethtool enp3s0f1
```



```

root@pveSmFantec:~# ethtool enp3s0f1
Settings for enp3s0f1:
    Supported ports: [ FIBRE ]
    Supported link modes:   1000baseT/Full
    Supported pause frame use: Symmetric Receive-on
    Supports auto-negotiation: No
    Supported FEC modes: Not reported
    Advertised link modes:  Not reported
    Advertised pause frame use: No
    Advertised auto-negotiation: No
    Advertised FEC modes: Not reported
    Speed: 1000Mb/s
    Duplex: Full
    Port: FIBRE
    PHYAD: 1
    Transceiver: internal
    Auto-negotiation: off
    Supports Wake-on: g
    Wake-on: d
    Current message level: 0x00000000 (0)

    Link detected: yes
root@pveSmFantec:~#

```

Le lien est bien activé, le module est donc bien reconnu.

A ce stade on peut éditer les Bridges et ajouter un commentaire type : SFP-LAN , SFP-WAN pour se souvenir de qui est qui

Idem sur les ports de la carte Réseau, [Port Haut LAN], [Port Bas ONT]

enp3s0f0	Network Device	Yes	No	No		Port Haut LAN
enp3s0f1	Network Device	Yes	No	No		Port Bas ONT
vmbr4	Linux Bridge	Yes	Yes	No	enp3s0f0	SFP-LAN
vmbr5	Linux Bridge	Yes	Yes	No	enp3s0f1	SFP-WAN

Pour le moment comme le montre la capture on est toujours en 1000Mb/s

```
ethtool -s enp3s0f1 speed 2500 duplex full autoneg off
```

```

root@pveSmFantec:~# ethtool -s enp3s0f1 speed 2500 duplex full autoneg off
Cannot set new settings: Invalid argument
not setting speed
not setting duplex
not setting autoneg

```

Dans mon bridge vmbr5, je vais éditer les paramètres pour pouvoir me connecter sur l'ONU depuis l'hôte Pve en SSH.

vmbr5	Linux Bridge	Yes	Yes	No	enp3s0f1	192.168.1.9/29	SFP-WAN
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Ensuite dans la console de Pve ou en SSH sur Pve on peut tenter de se connecter (Note à ce stade je n'ai pas encore mis la fibre, je ne sais pas si ça peut jouer)

On lance la petite commande qui va bien :

```

ssh ONTUSER@192.168.1.10
sshpass -p SUGAR2A041 ssh ONTUSER@192.168.1.10

```

Pour rappel le mdp associé est : **SUGAR2A041**

```

root@pveSmFantec:~# ssh ONTUSER@192.168.1.10
Login fail count since last successful login: 0
ONTUSER@192.168.1.10's password:
Last successful login date and time: Date:2021-01-18 Time:23:44:01

BusyBox v1.22.1 (2018-02-07 17:12:54 CST) built-in shell (ash)
Enter 'help' for a list of built-in commands.

OpenWrt - (14.07_ltq) --- Lantiq Edition for GPON
-----
ONTUSER@SFP:~# onu ploamsg
errorcode=0 curr_state=1 previous_state=0 elapsed_msec=4294726292
ONTUSER@SFP:~# onu lannsg 0

```

Fibre branché :

```

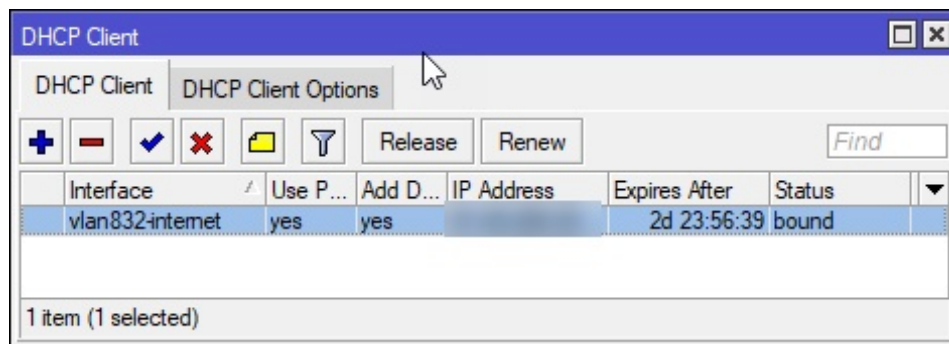
ONTUSER@SFP:~# onu ploamsg
errorcode=0 curr_state=5 previous_state=4 elapsed_msec=3044840
ONTUSER@SFP:~# onu lannsg 0

```

N'ayant plus le NET pour le moment, je change mon bridge affecté a CHR pour qu'il point sur la carte BCM (Ca se fait en LIVE sans rebooter quoi que ce soit)

Sous WINBOX , la connexion ne revient pas d'elle meme (enfin j'ai pas attendu plus de 2min)

Je vais dans Menu/IP/DHCP Client :



Un petit clique sur release et hop une nouvelle IP est récupéré coté WAN, le NET est revenu

Pendant ce temps là, je constate que je peux toujours me connecter sur mon ONU.

```

ethtool -s <ifname> speed 2500
ethtool -s enp3s0f1 speed 2500

```

```

root@pveSmFantec:~# dmesg | grep bnx2x
[ 1.280407] bnx2x: loading out-of-tree module taints kernel.
[ 1.282572] bnx2x: QLogic 5771x/578xx 10/20-Gigabit Ethernet Driver bnx2x
99.1.713.36-0 (2014/02/10)
[ 1.283147] bnx2x 0000:03:00.0: msix capability found
[ 1.285081] bnx2x 0000:03:00.0: part number 0-0-0-0
[ 1.442215] bnx2x 0000:03:00.0: 16.000 Gb/s available PCIe bandwidth,
limited by 5 GT/s x4 link at 0000:00:06.0 (capable of 32.000 Gb/s with 5 GT/s
x8 link)

```

```
[ 1.442247] bnx2x 0000:03:00.1: msix capability found
[ 1.442451] bnx2x 0000:03:00.1: part number 0-0-0-0
[ 1.581860] bnx2x 0000:03:00.1: 16.000 Gb/s available PCIe bandwidth,
limited by 5 GT/s x4 link at 0000:00:06.0 (capable of 32.000 Gb/s with 5 GT/s
x8 link)
[ 1.582698] bnx2x 0000:03:00.0 enp3s0f0: renamed from eth0
[ 1.601331] bnx2x 0000:03:00.1 enp3s0f1: renamed from eth2
[ 3555.969895] bnx2x 0000:03:00.0 enp3s0f0: using MSI-X IRQs: sp 32 fp[0] 34
... fp[3] 37
[ 3556.200777] bnx2x 0000:03:00.0 enp3s0f0: NIC Link is Up, 10000 Mbps full
duplex, Flow control: ON - receive & transmit
[ 3556.965930] bnx2x 0000:03:00.1 enp3s0f1: using MSI-X IRQs: sp 41 fp[0] 43
... fp[3] 46
[ 4865.338068] bnx2x 0000:03:00.1 enp3s0f1: Warning: Link speed was forced to
1000Mbps. Current SFP module in port 1 is not compliant with 10G Ethernet
[ 4935.887965] bnx2x 0000:03:00.1 enp3s0f1: NIC Link is Up, 1000 Mbps full
duplex, Flow control: ON - receive & transmit
```

```
root@pveSmFantec:~# ip a
2: enp3s0f0: <NO-CARRIER,BROADCAST,MULTICAST,UP> mtu 1500 qdisc mq master vmbr4
state DOWN group default qlen 1000
    link/ether 00:0a:f7:1c:6e:a0 brd ff:ff:ff:ff:ff:ff
4: enp3s0f1: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq master vmbr5
state UP group default qlen 1000
    link/ether 00:0a:f7:1c:6e:a2 brd ff:ff:ff:ff:ff:ff
```

```
root@pveSmFantec:~# ethtool enp3s0f1
Settings for enp3s0f1:
    Supported ports: [ FIBRE ]
    Supported link modes:   1000baseT/Full
                           2500baseX/Full
    Supported pause frame use: Symmetric Receive-only
    Supports auto-negotiation: No
    Supported FEC modes: Not reported
    Advertised link modes:  2500baseX/Full
    Advertised pause frame use: No
    Advertised auto-negotiation: No
    Advertised FEC modes: Not reported
    Speed: 2500Mb/s
    Duplex: Full
    Port: FIBRE
    PHYAD: 1
    Transceiver: internal
    Auto-negotiation: off
    Supports Wake-on: g
    Wake-on: d
    Current message level: 0x00000000 (0)

    Link detected: yes
root@pveSmFantec:~#
```