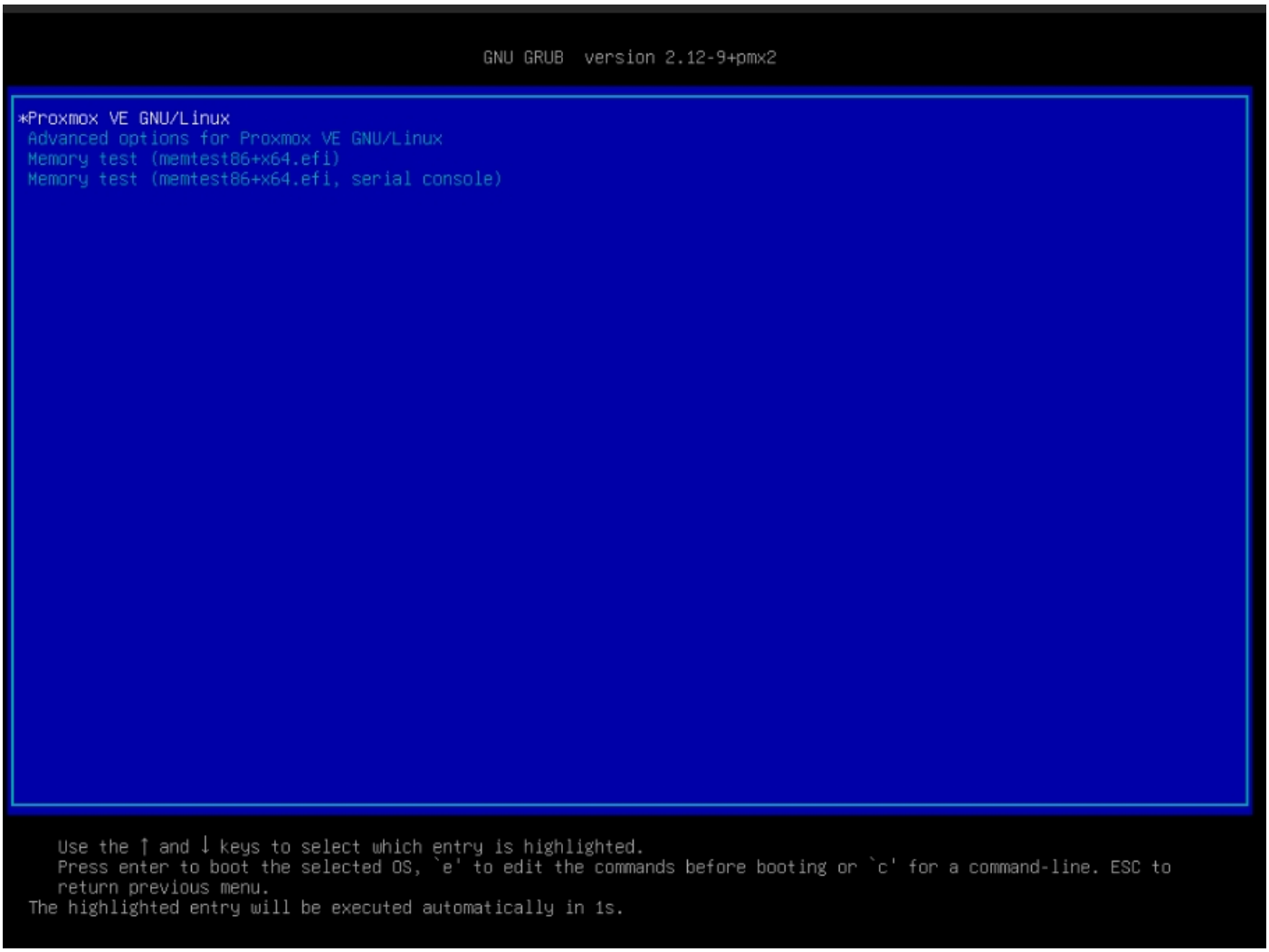
Proxmox + CT ollama + VM ubuntu docker OpenwebUI



After proxmov deployment

4 lspci | grep NVIDIA

5 lsmod | grep nouveau ### nouveau 要禁用

6 cd /

7 ls -l /dev/dri

8 ls -l /dev/nvidia*

9 echo -e "blacklist nouveau\noptions nouveau modeset=0" > /etc/modprobe.d/blacklist-nouveau.conf && update-initramfs -u && reboot

10 cat /etc/modprobe.d/blacklist-nouveau.conf

root@pve:~# cat /etc/modprobe.d/blacklist-nouveau.conf

blacklist nouveau

options nouveau modeset=0

11 lsmod | grep nouveau

12 lsmod | grep nouveau

13 lspci | grep NVIDIA

wget https://us.download.nvidia.com/XFree86/Linux-x86_64/580.95.05/NVIDIA-Linux-x86_64-580.95.05.run

121 chmod +x NVIDIA-Linux-x86_64-580.95.05.run

123 ./NVIDIA-Linux-x86_64-580.95.05.run

124 reboot

Nvidia-smi verify driver version

###PVE 完成

create CT

61 pveam download local ubuntu-24.04-standard_24.04-2_amd64.tar.zst

Create CT101 ollama

root@pve:~# cat /etc/pve/lxc/101.conf

=== [NVIDIA GPU %E6%98%A0%E5%B0%84%E8%A8%AD%E5%AE%9A - %E8%AB%8B%E5%8B%99%E5%BF%85%E8%B2%BC%E5%9C%A8%E9%85%8D%E7%BD%AE%E6%AA%94%E6%9C%AB%E5%B0%BE] ===

%E6%AC%8A%E9%99%90%E6%8E%88%E6%AC%8A (%E4%BD%BF%E7%94%A8%E6%82%A8%E7%A2%BA%E8%AA%8D%E9%81%8E%E7%9A%84%E7%B7%A8%E8%99%9F)

%E6%98%A0%E5%B0%84 NVIDIA %E5%B0%88%E7%94%A8%E8%A3%9D%E7%BD%AE

%E6%98%A0%E5%B0%84 DRM %E6%B8%B2%E6%9F%93%E8%A3%9D%E7%BD%AE

arch: amd64

cores: 16

features: nesting=1

hostname: ollama-ct

memory: 32768

nameserver: 192.168.55.254

net0: name=eth0,bridge=vmbr0,gw=192.168.55.254,hwaddr=BC:24:11:BF:DD:D1,ip=192.168.55.181/24,type=veth

ostype: ubuntu

rootfs: local-lvm:vm-101-disk-0,size=200G

searchdomain: nx3230.local

swap: 1024

unprivileged: 1

lxc.cgroup2.devices.allow: c 195:* rwm

lxc.cgroup2.devices.allow: c 511:* rwm

lxc.cgroup2.devices.allow: c 226:* rwm

lxc.mount.entry: /dev/nvidia0 dev/nvidia0 none bind,optional,create=file

lxc.mount.entry: /dev/nvidiactl dev/nvidiactl none bind,optional,create=file

lxc.mount.entry: /dev/nvidia-uvm dev/nvidia-uvm none bind,optional,create=file

lxc.mount.entry: /dev/nvidia-uvm-tools dev/nvidia-uvm-tools none bind,optional,create=file

lxc.mount.entry: /dev/dri/card0 dev/dri/card0 none bind,optional,create=file

lxc.mount.entry: /dev/dri/card1 dev/dri/card1 none bind,optional,create=file

lxc.mount.entry: /dev/dri/renderD128 dev/dri/renderD128 none bind,optional,create=file

root@pve:~#

195:

📍 **範例：映射 NVIDIA GPU**

對於 NVIDIA GPU，LXC 容器設定通常會使用一個特殊選項來處理所有必要的節點：

```
lxc.cgroup2.devices.allow: c 195:* rwm  # 允許 NVIDIA 設備
lxc.mount.entry: /dev/nvidia-uvm dev/nvidia-uvm none bind,optional,create=file
lxc.mount.entry: /dev/nvidia0 dev/nvidia0 none bind,optional,create=file
lxc.mount.entry: /dev/nvidiactl dev/nvidiactl none bind,optional,create=file
```

或者，您可以使用 Proxmox 的 `lxc.hook` 腳本來自動處理。

511

您的下一個步驟是執行 **步驟 1: 驗證 NVIDIA 專用裝置節點**，然後開始編輯您的 CT 配置檔。

```
root@pve:~# ls -l /dev/nvidia*
crw-rw-rw- 1 root root 195,   0 Dec  2 16:09 /dev/nvidia0
crw-rw-rw- 1 root root 195, 255 Dec  2 16:09
/dev/nvidiactl
crw-rw-rw- 1 root root 511,   0 Dec  2 16:09 /dev/nvidia-...
```

太好了！您提供的輸出**確認了所有 NVIDIA 專有裝置節點**都已經在 Proxmox 主機上成功創建並準備就緒。

這些節點（尤其是 `/dev/nvidia0`、`/dev/nvidiactl`、`/dev/nvidia-uvm`）是容器 (CT) 存取 GPU 進行計算或轉碼的關鍵。

現在，我們可以精確地配置您的 CT 映射檔案。

226

```
root@pve:~#  ls -l /dev/dri
total 0
drwxr-xr-x 2 root root        100 Dec  3 13:38 by-path
crw-rw---- 1 root video  226,   0 Dec  3 13:38 card0
crw-rw---- 1 root video  226,   1 Dec  3 13:38 card1
crw-rw---- 1 root render 226, 128 Dec  3 13:38 renderD128
```

c 195:* 和 **c 511:*** 是根據您輸出的 Major Number (例如 195, 0 和 511, 0) 設置的 **NVIDIA 專有裝置**權限。

c 226:* 是針對您 /dev/dri/ 下的 **顯示渲染裝置 (DRM)** 權限。

lxc.mount.entry 負責將主機上的實體檔案路徑映射到容器內部相同路徑。

##進到 CT

86 pct start 101

87 pct enter 101

```
    5  vi /etc/apt/sources.list
root@ollama-ct:~#  cat /etc/apt/sources.list
deb http://archive.ubuntu.com/ubuntu noble main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu noble-updates main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu noble-security main restricted universe multiverse

deb http://archive.ubuntu.com/ubuntu noble main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu noble-updates main restricted universe multiverse
deb http://archive.ubuntu.com/ubuntu noble-security main restricted universe multiverse

    8  apt install libnvidia-cuda-toolkit
    9  apt install libnvidia-cuda-toolkit libnvidia-ml-dev -y

   11  apt install nvidia-utils-580 libnvidia-compute-580 libnvidia-decode-580 -y
   12  curl -fsSL https://ollama.com/install.sh | sh
   13  apt install curl
   14  curl -fsSL https://ollama.com/install.sh | sh
   15  ollama
   34  apt search libnvidia-compute | grep  580
   35  apt install nvidia-utils-580
   36  nvidia-smi       ####CT 與 PVE 版本要一到才跑得起來
   37  ollama run llama3

root@ollama-ct:/etc/systemd/system# pwd
/etc/systemd/system
root@ollama-ct:/etc/systemd/system# cat ollama.service
[Unit]
```

Description=Ollama Service

After=network-online.target

[Service]

ExecStart=/usr/bin/ollama serve

User=ollama

Group=ollama

Restart=always

RestartSec=3

Environment="PATH=/sbin:/bin:/usr/sbin:/usr/bin"

Environment="OLLAMA_HOST=0.0.0.0" ####這個後面或現在要改 沒有加只有 127.0.0.1 自己能存取 ，要改 openwebui 才拿得到

[Install]

WantedBy=default.target

root@ollama-ct:/etc/systemd/system#

74 sudo systemctl daemon-reload

75 sudo systemctl restart ollama

##CT ollama 完成

PVE CVM install Ubuntu OS

user@vm-103:~$ history

1 sudo apt update

4 sudo apt install ca-certificates curl gnupg lsb-release -y

5 sudo install -m 0755 -d /etc/apt/keyrings

6 curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg

7 sudo chmod a+r /etc/apt/keyrings/docker.gpg

8 echo "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] https://download.docker.com/linux/ubuntu \

9 $(. /etc/os-release && echo "$VERSION_CODENAME") stable" | sudo tee /etc/apt/sources.list.d/docker.list > /dev/null

10 sudo apt update

11 sudo apt install docker-ce docker-ce-cli containerd.io docker-buildx-plugin docker-compose-plugin -y

12 sudo docker run hello-world

13 sudo usermod -aG docker $USER

14 docker run -d --name open-webui -p 3000:8080 -e OLLAMA_BASE_URL=http://192.168.55.181:11434 -v open-webui-data:/app/backend/data --restart always ghcr.io/open-webui/open-webui:main

15 exit <<<<<<跳出重登 !13 才會生效

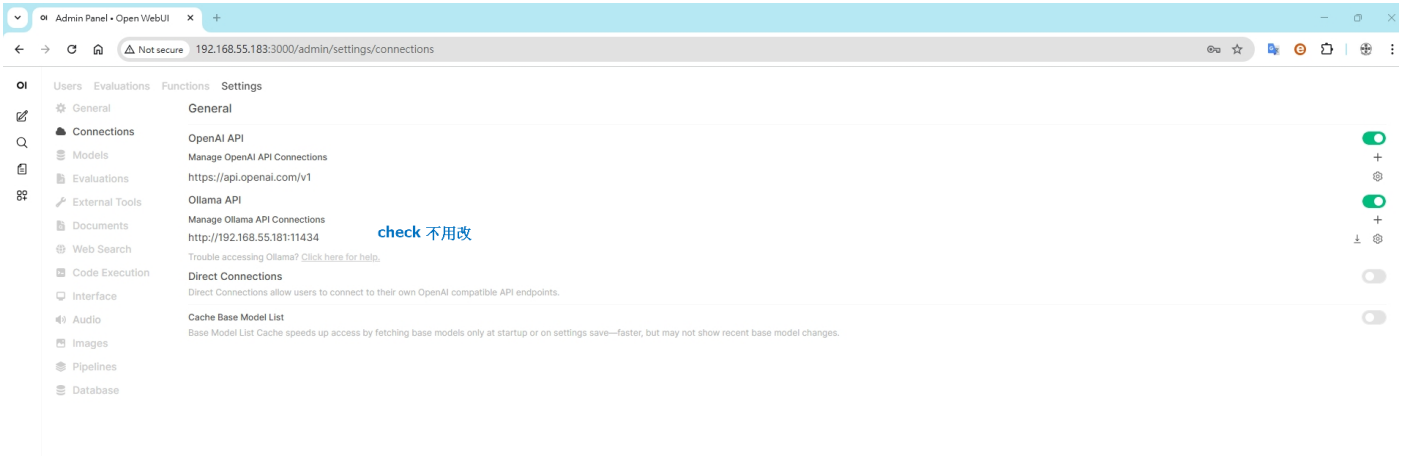
16 docker ps

17 docker run

18 docker run -d --name open-webui -p 3000:8080 -e OLLAMA_BASE_URL=http://192.168.55.181:11434 -v open-webui-data:/app/backend/data --restart always ghcr.io/open-webui/open-webui:main

19 docker ps

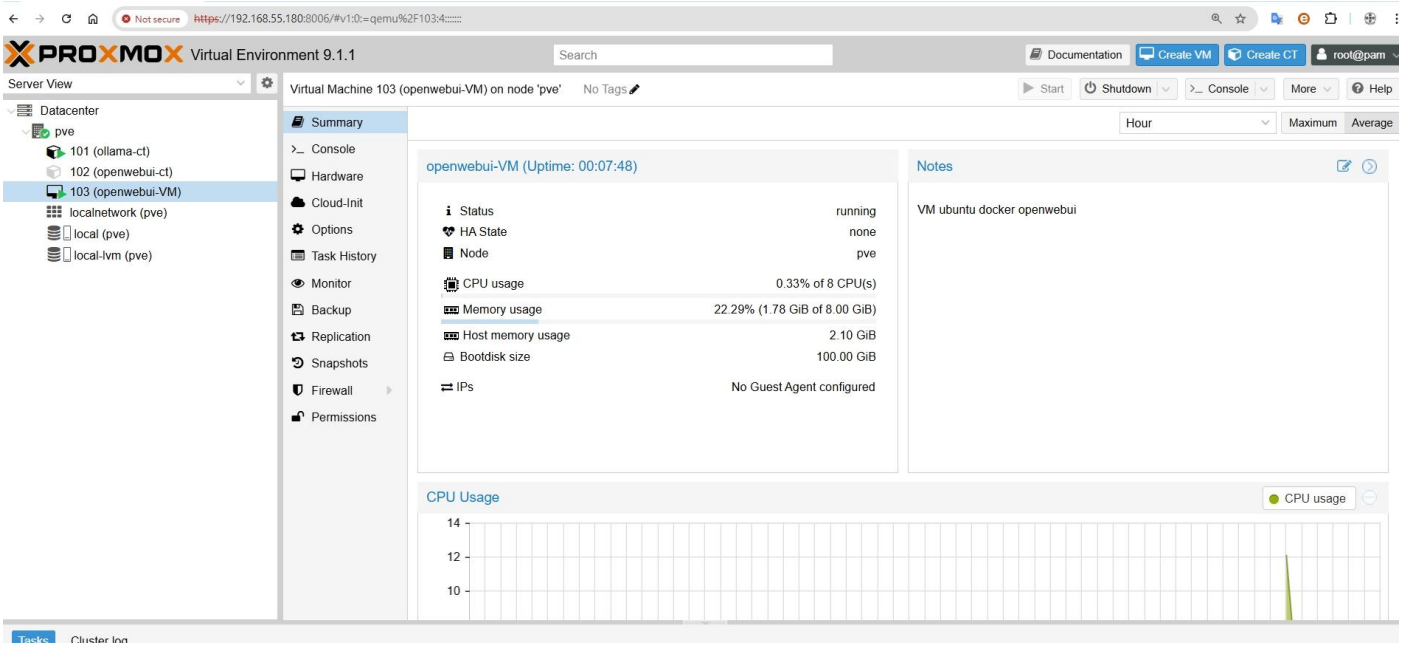
22 sudo ufw status



對映到 CT 已經是 Environment="OLLAMA_HOST=0.0.0.0"

如此才能確保 OpenWebUI 能連到 Ollama-IP :11434

下載 Model 的功能才接下去


Not secure https://192.168.55.180:8006/#v1:0:=qemu%2F103:4::::::
PROXMOX Virtual Environment 9.1.1
Search
Documentation
Create VM
Create CT
root@pam
Server View
Datacenter
pve
101 (ollama-ct)
102 (openwebui-ct)
103 (openwebui-VM)
localnetwork (pve)
local (pve)
local-lvm (pve)
Virtual Machine 103 (openwebui-VM) on node 'pve'
No Tags
Start
Shutdown
Console
More
Help
Summary
Console
Hardware
Cloud-Init
Options
Task History
Monitor
Backup
Replication
Snapshots
Firewall
Permissions
Hour
Maximum
Average
openwebui-VM (Uptime: 00:07:48)
Status running
HA State none
Node pve
CPU usage 0.33% of 8 CPU(s)
Memory usage 22.29% (1.78 GiB of 8.00 GiB)
Host memory usage 2.10 GiB
Bootdisk size 100.00 GiB
IPs No Guest Agent configured
Notes
VM ubuntu docker openwebui
CPU Usage
CPU usage
14
12
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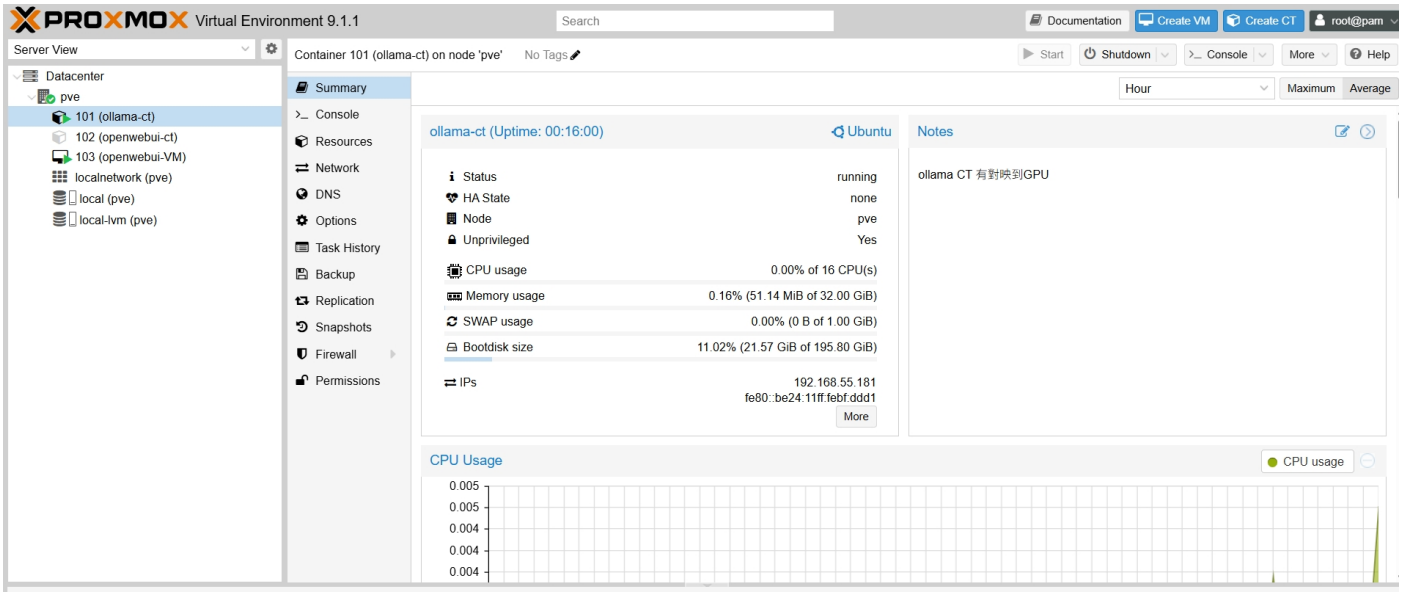
Tasks
Cluster log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local (pve)
local-lvm (pve)
Container 101 (ollama-ct) on node 'pve'
No Tags
Start
Shutdown
Console
More
Help
Summary
Console
Resources
Network
DNS
Options
Task History
Backup
Replication
Snapshots
Firewall
Permissions
Hour
Maximum
Average
ollama-ct (Uptime: 00:16:00)
Ubuntu
Status running
HA State none
Node pve
Unprivileged Yes
CPU usage 0.00% of 16 CPU(s)
Memory usage 0.16% (51.14 MiB of 32.00 GiB)
SWAP usage 0.00% (0 B of 1.00 GiB)
Bootdisk size 11.02% (21.57 GiB of 195.80 GiB)
IPs 192.168.55.181
fe80::be24:11ff:febf:ddd1
More
Notes
ollama CT 有對映到GPU
CPU Usage
CPU usage
0.005
0.005
0.004
0.004
0.004