

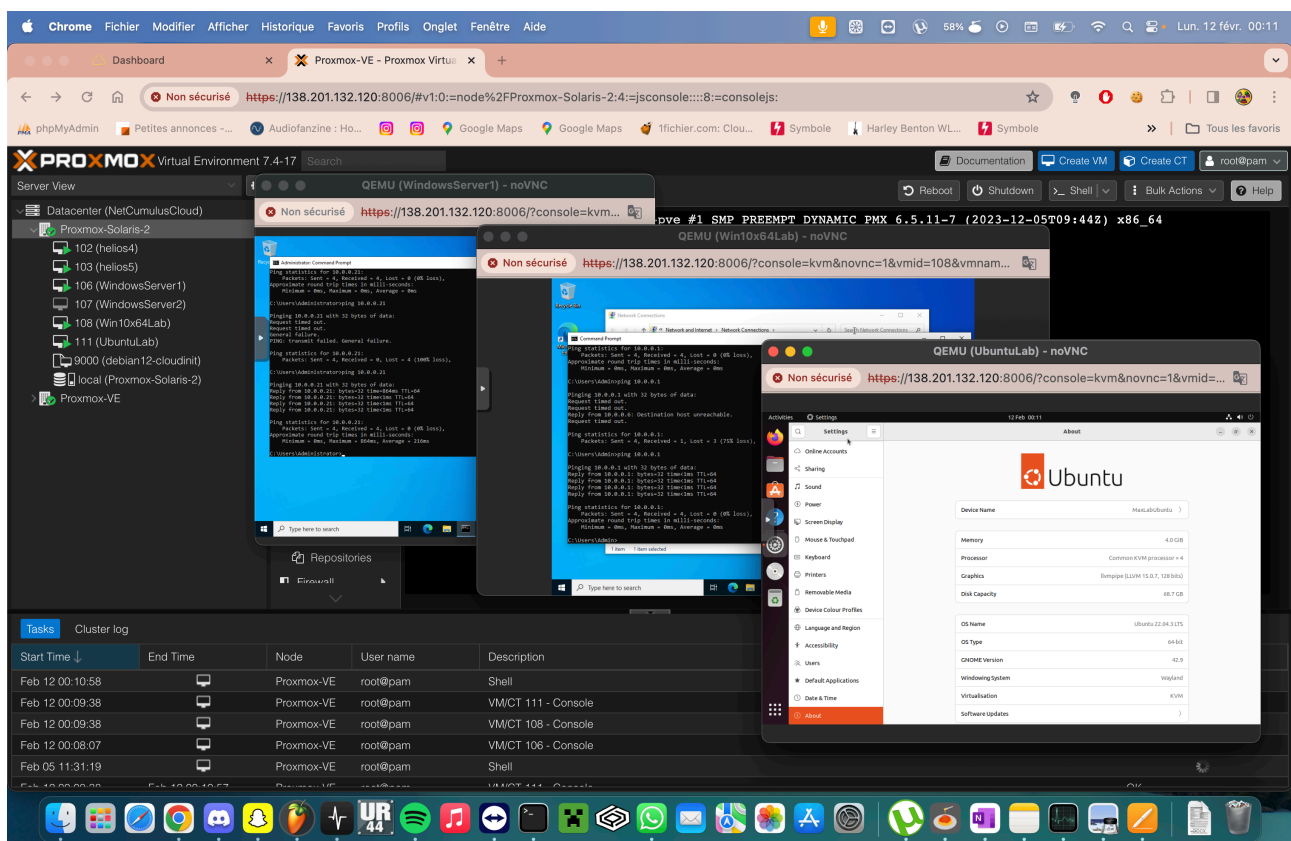
HANDSON ACTIVITY

Task 1 : Lab Setup

The virtual lab has been installed on a distant dedicated server (hosted on Hetzner), with a type 1 hypervisor (Proxmox), to ensure a total control of the hardware ressources available for the virtual machines. Also, as this Lab has been setup with a Mac, it was impossible to install a Virtualbox on this local machine, as this type 2 hypervisor is only available on x86 architectures, and apple is using their own ARM scheme since a couple of years. x86 emulation is possible on ARM, but is not very stable, and extremely slow.

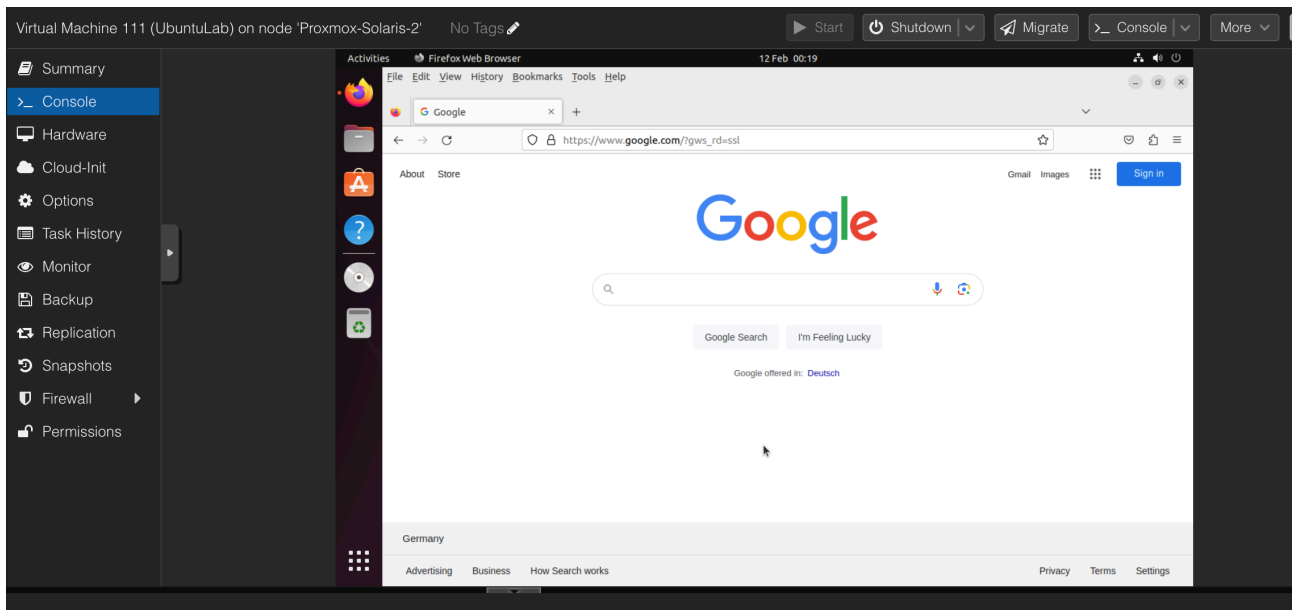
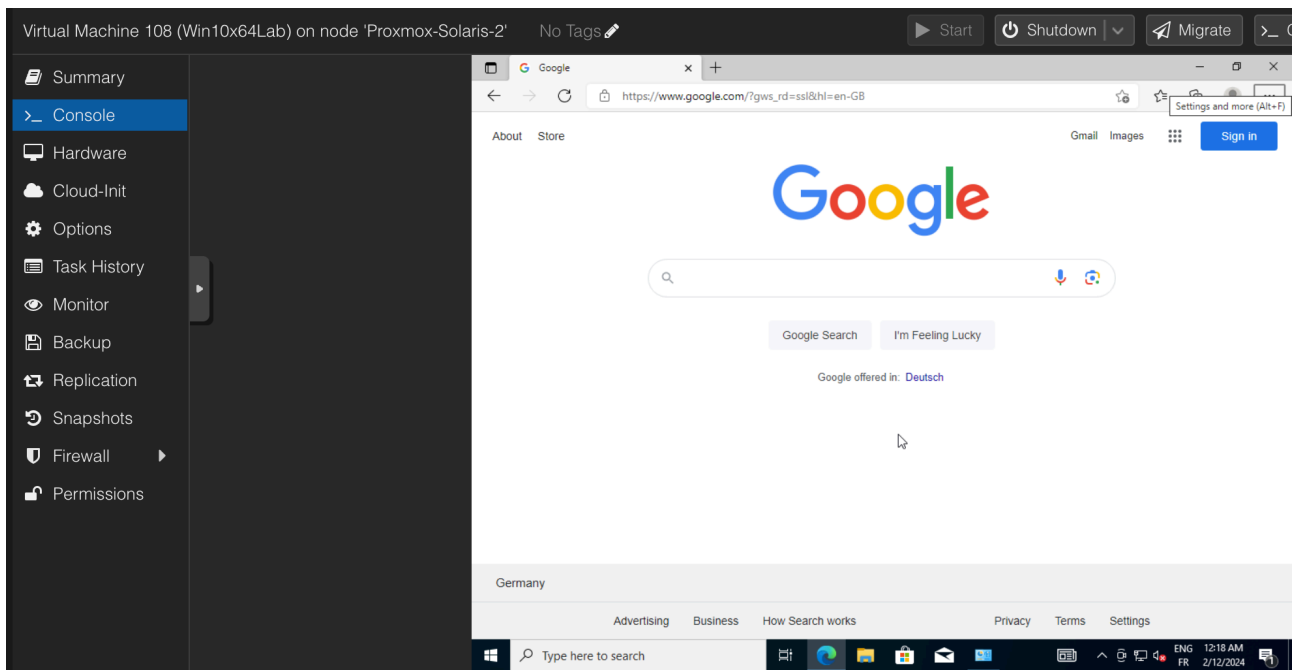
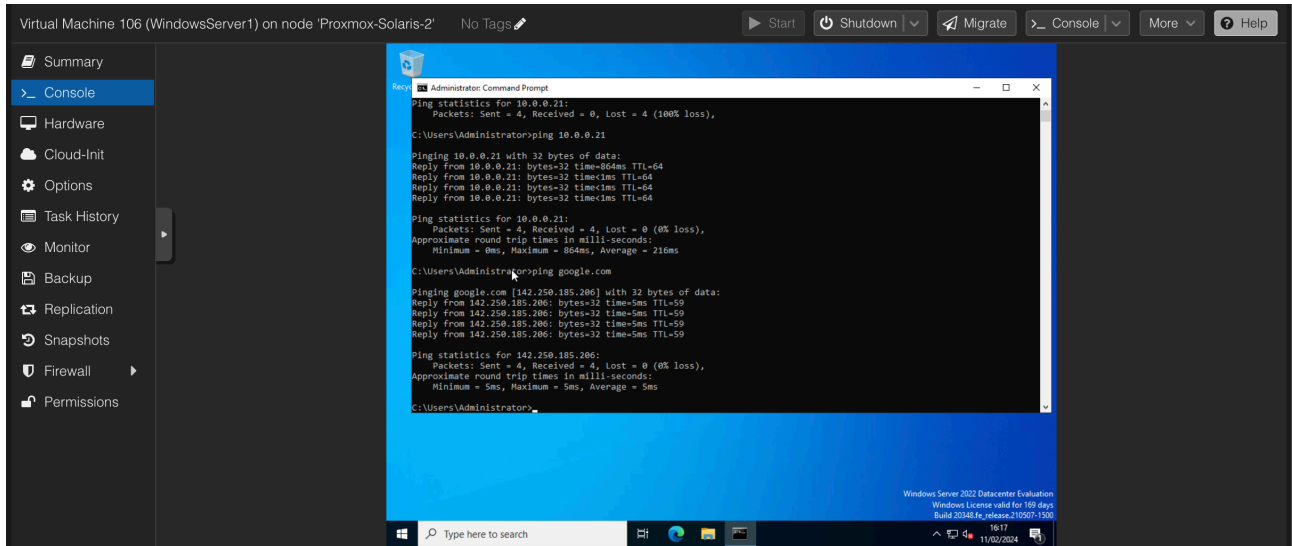
As requested, 3 virtual machines are running :

- Windows 10 22H2 (Client) (IPV4 10.0.0.6)
- Windows Server 2022 (IPV4 10.0.0.2)
- Ubuntu 23.04 (IPV4 10.0.0.21)



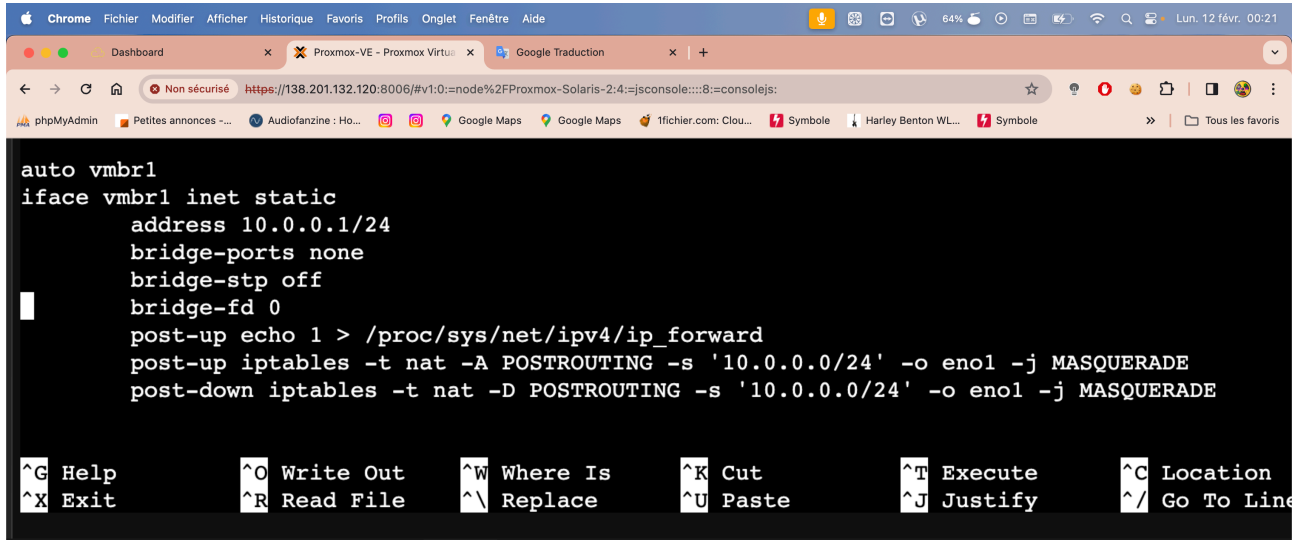
Troubleshooting :

The main difficulty encountered was to setup a network bridge giving, on one hand, a link between all the three virtual machines, on the other hand, an internet connection to install third-party softwares and updates.



By giving a NAT link and refreshing the network configuration, all the machines were finally connected together with internet.

Here is the network configuration used for this lab :



The screenshot shows a Chrome browser window with a terminal window open. The terminal displays the following configuration for a VM named vmbr1:

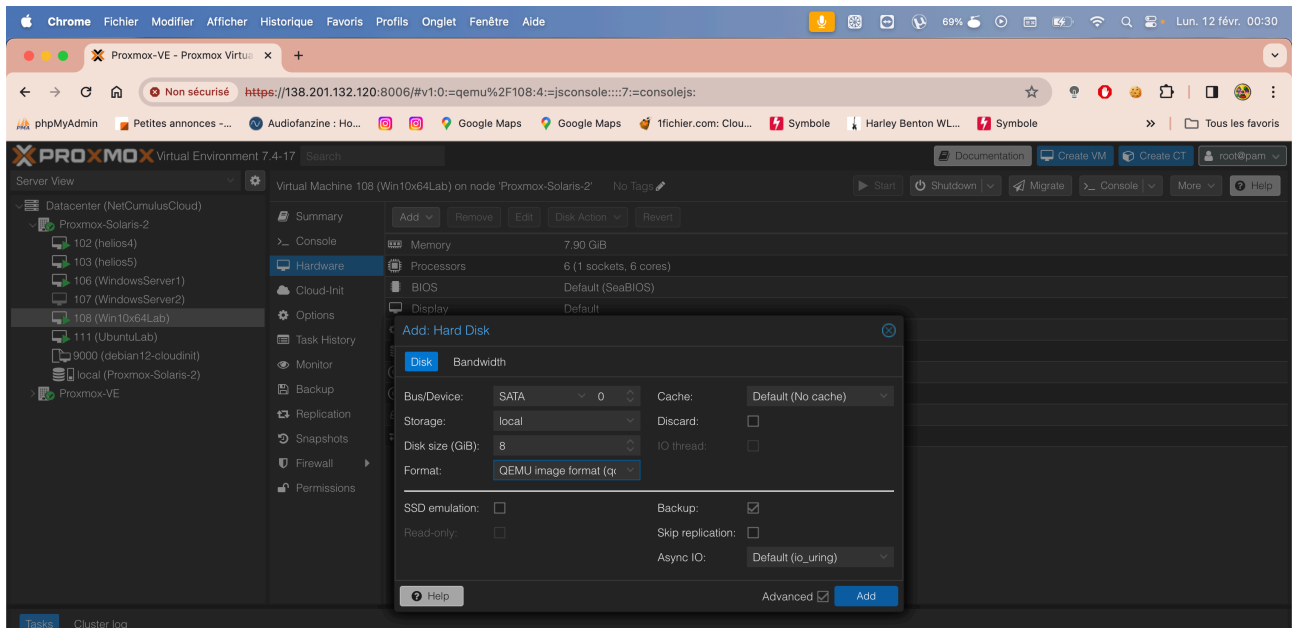
```
auto vmbr1
iface vmbr1 inet static
    address 10.0.0.1/24
    bridge-ports none
    bridge-stp off
    bridge-fd 0
    post-up echo 1 > /proc/sys/net/ipv4/ip_forward
    post-up iptables -t nat -A POSTROUTING -s '10.0.0.0/24' -o eno1 -j MASQUERADE
    post-down iptables -t nat -D POSTROUTING -s '10.0.0.0/24' -o eno1 -j MASQUERADE
```

Below the terminal output, there is a row of keyboard shortcuts for the terminal window:

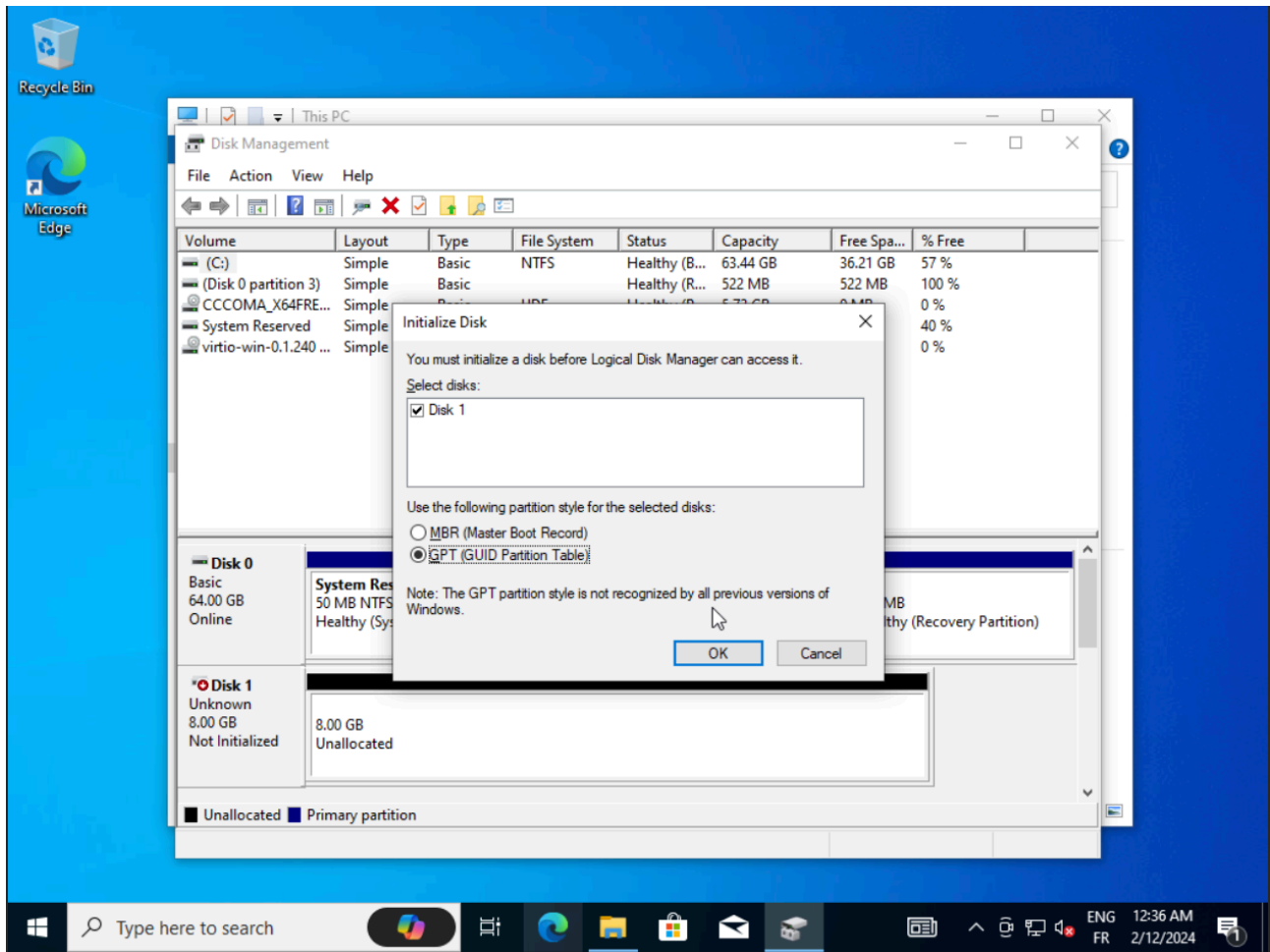
^G Help	^O Write Out	^W Where Is	^K Cut	^T Execute	^C Location
^X Exit	^R Read File	^N Replace	^U Paste	^J Justify	^/ Go To Line

Task 2 : Disk Write Lock on registry

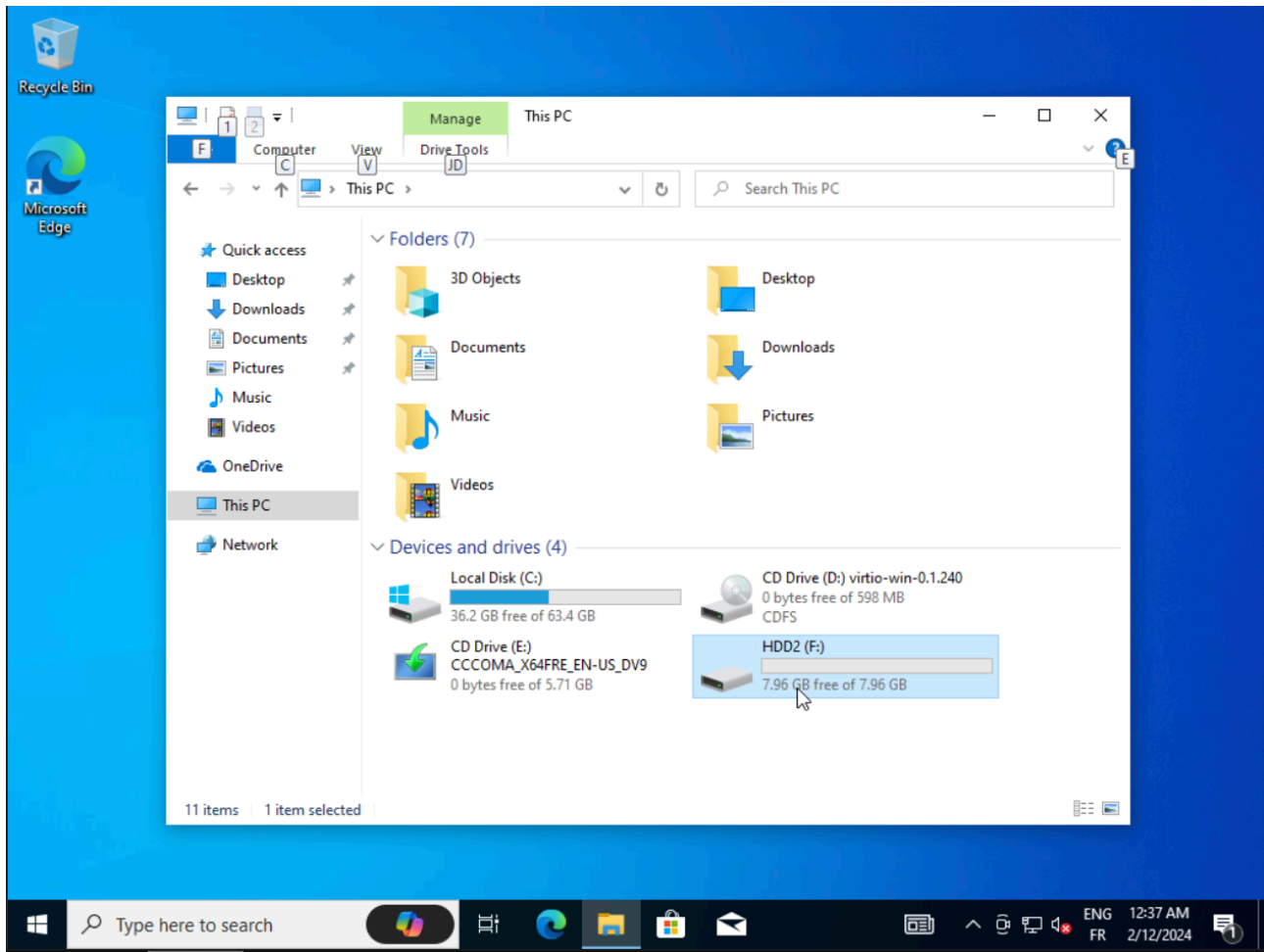
As it is not possible to plug an USB device on a dedicated server working on a distant datacenter, we will use a second virtual drive instead of an USB key.



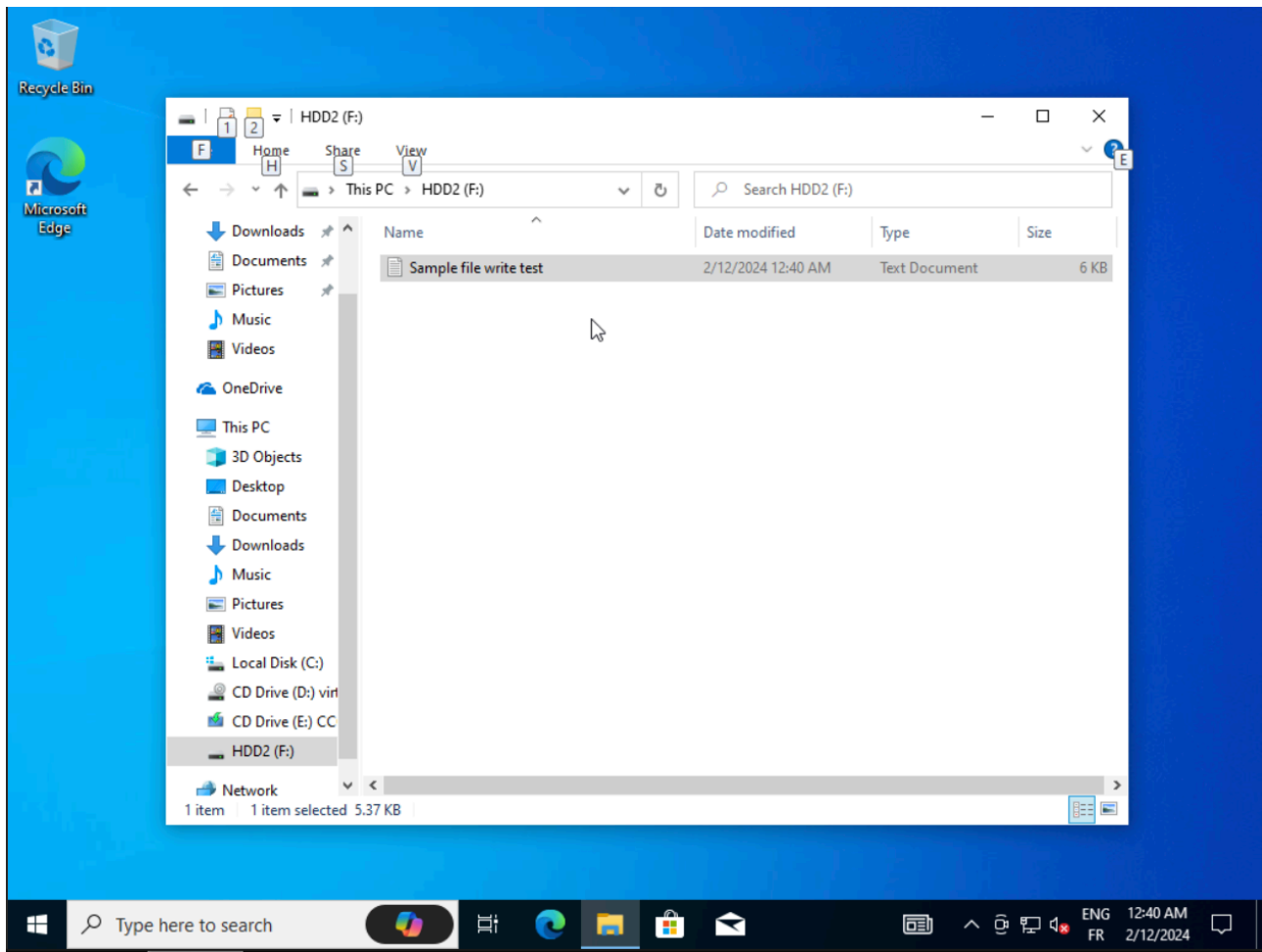
After adding this hard drive, we reboot the virtual machine.



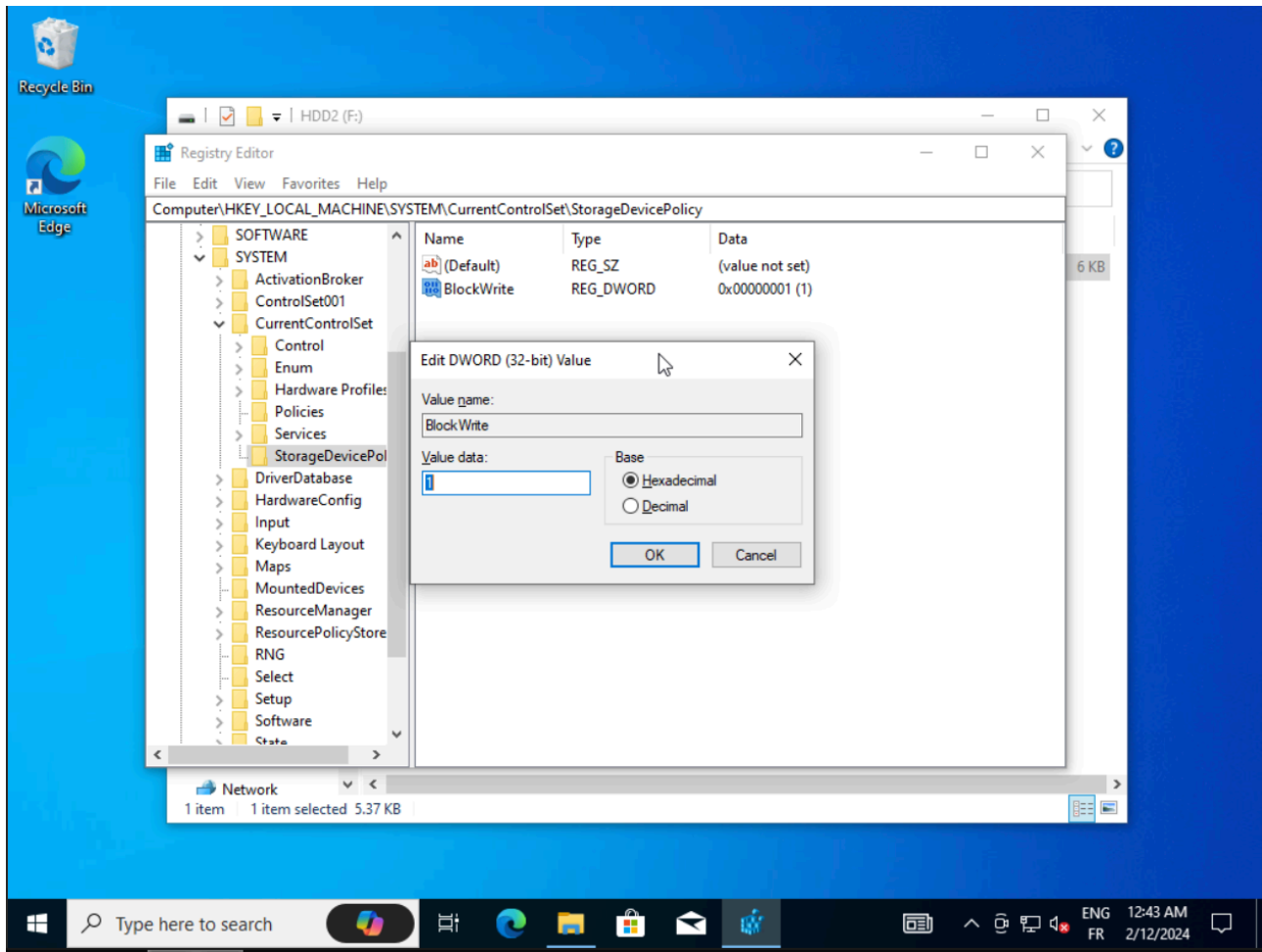
The new drive is now available and writeable.



We place a new TXT file on it to, next, trying to copy it to test the write lock of the main C: disk.

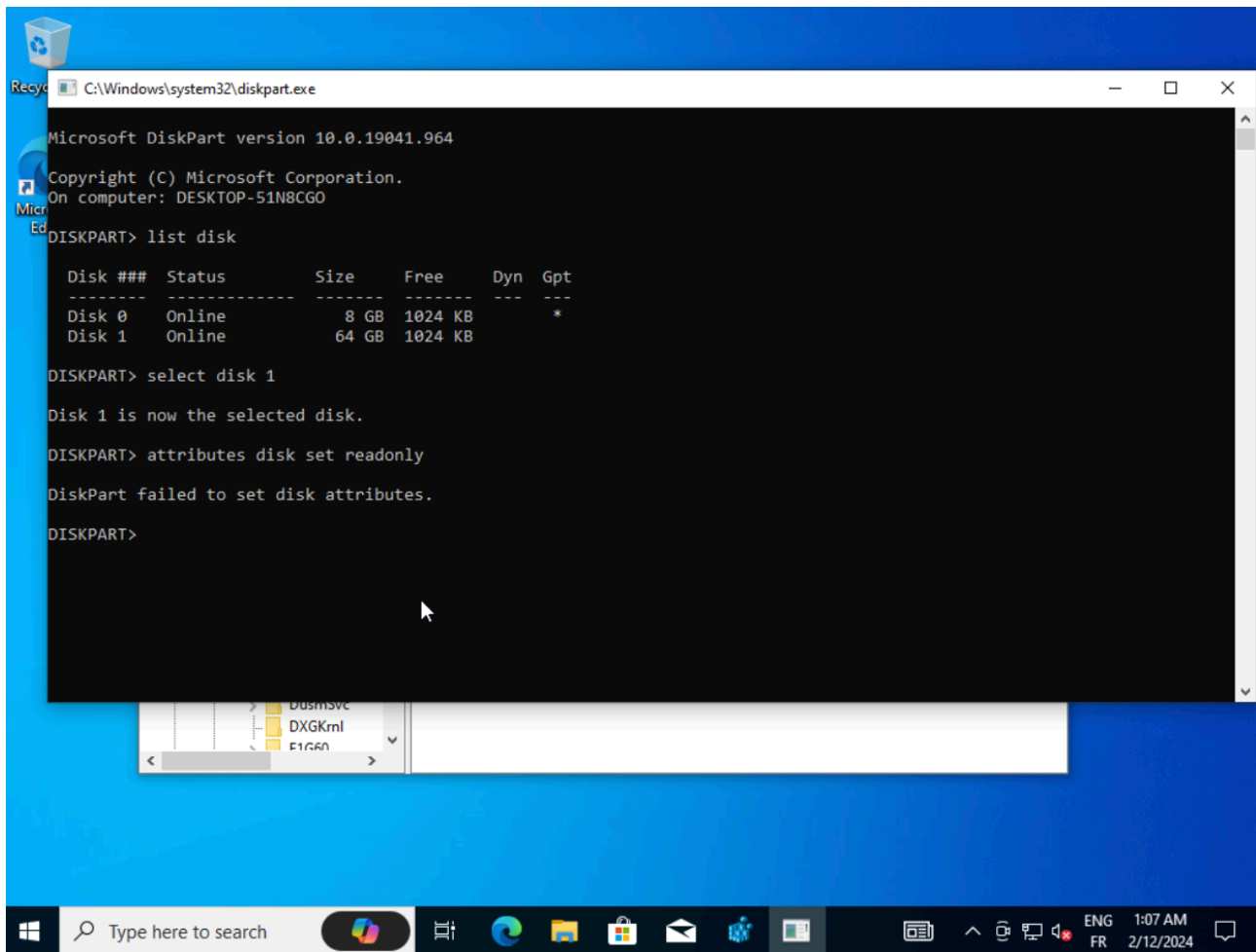


Now we set the new key to block disk write on the registry, as explained in the task description, then we reboot the virtual machine.

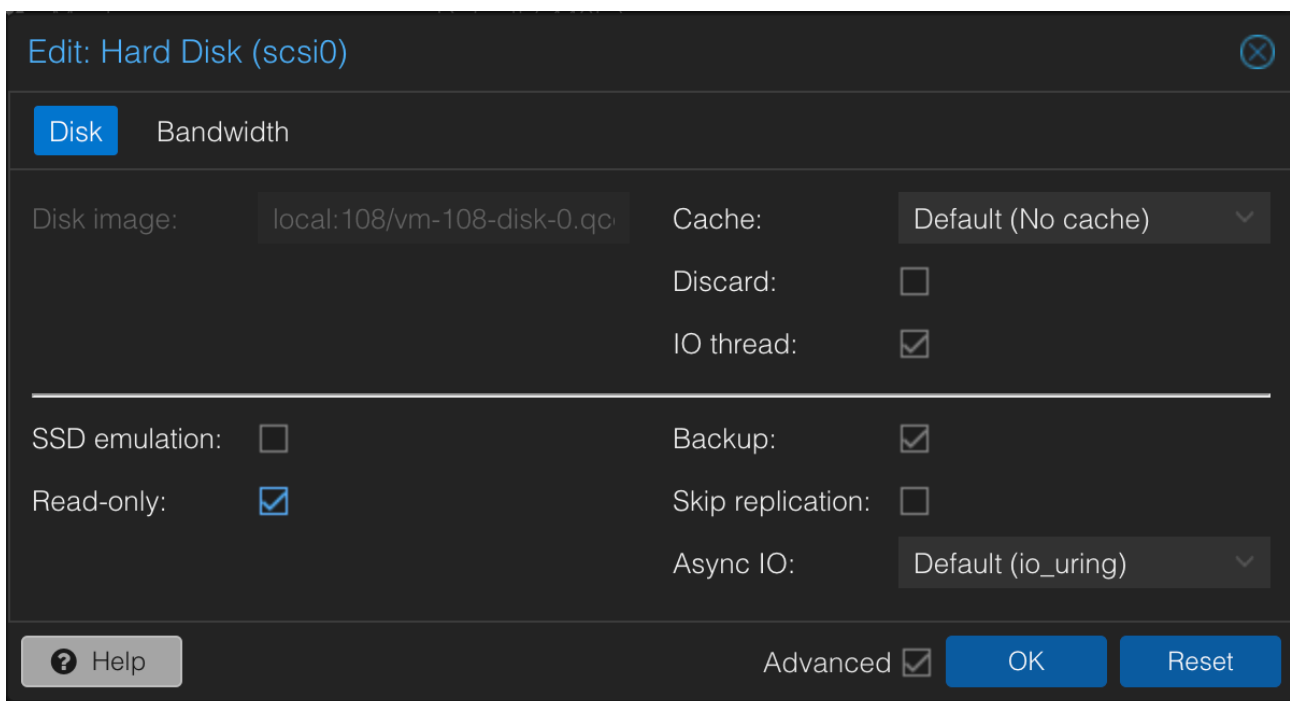


Troubleshoot :

After trying to modify the registry to get a read-only system, we still had the possibility to write on the system. We tried an alternative method with DISKPART, but it also failed :



After some research, we found that Proxmox does have a read-only option for any virtual disk.



After activating it and rebooting the machine to apply change, a blue screen appeared. So, we did not use this proxmox option.

Final Try :

After several time of research, we were not able to get a read only disk on the lab. So we setup a new Windows 10 virtual machine on a UWTSD virtualbox and applied the diskpart method. It was a success. We still are doing research to make it possible on the proxmox windows 10 client.

