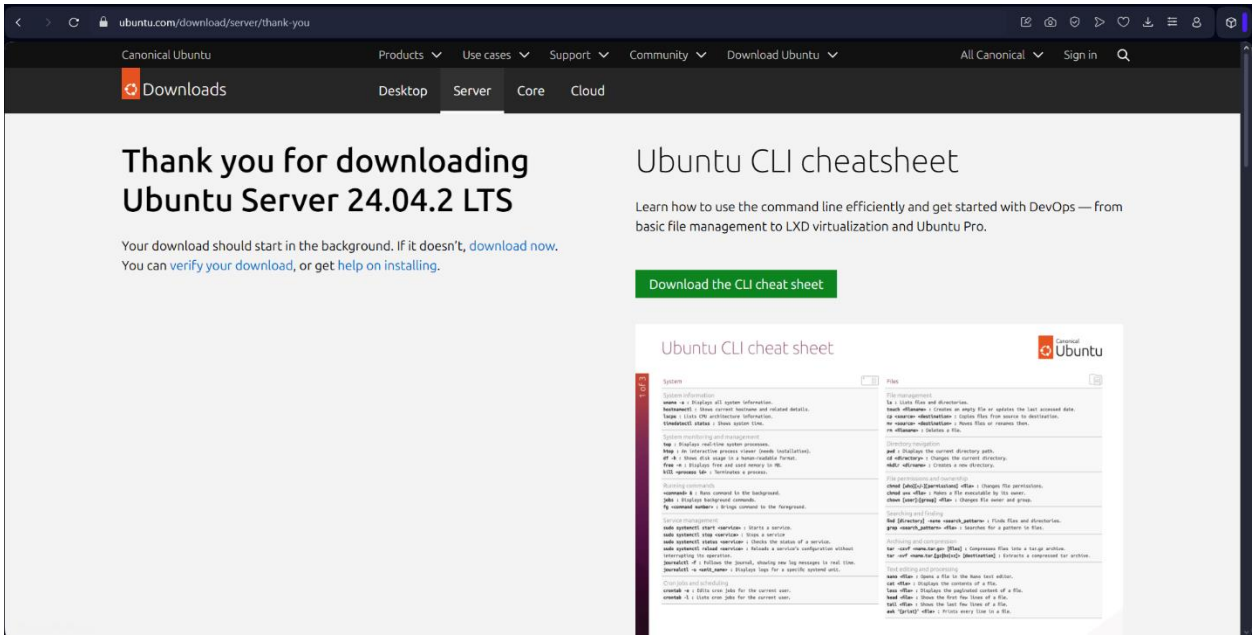
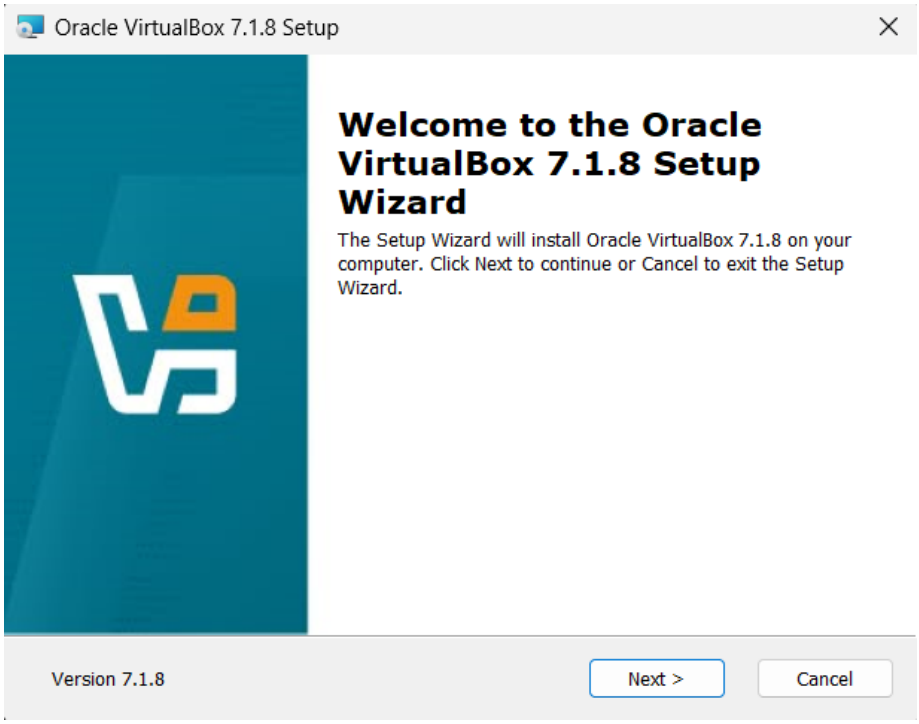
1. Ubuntu Server

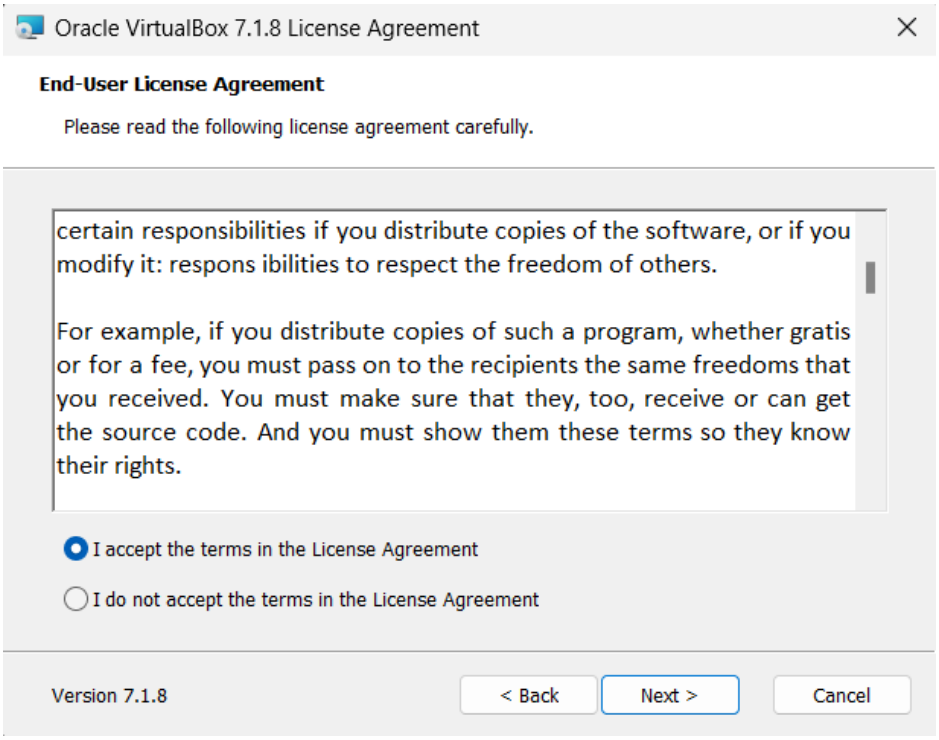
1.Download VirtualBox(Windows hosts)

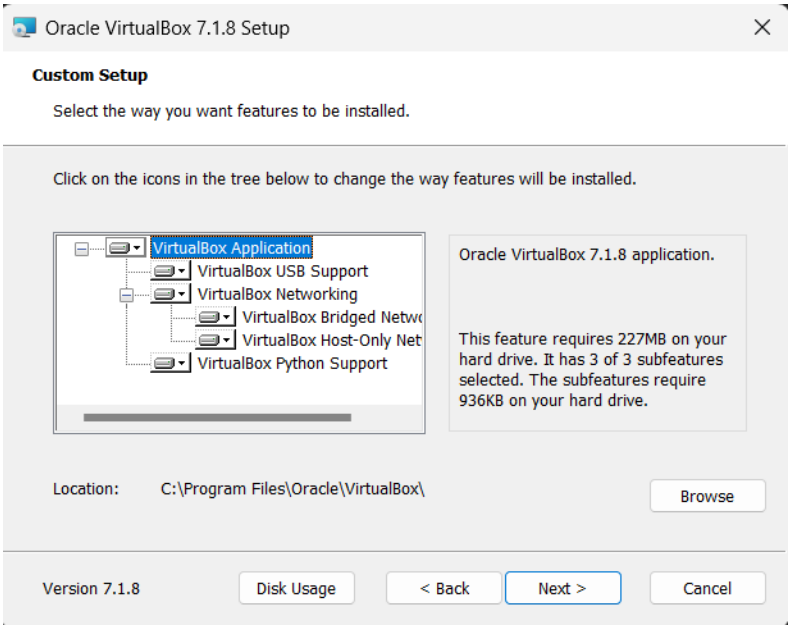
2. Download Ubuntu Sever

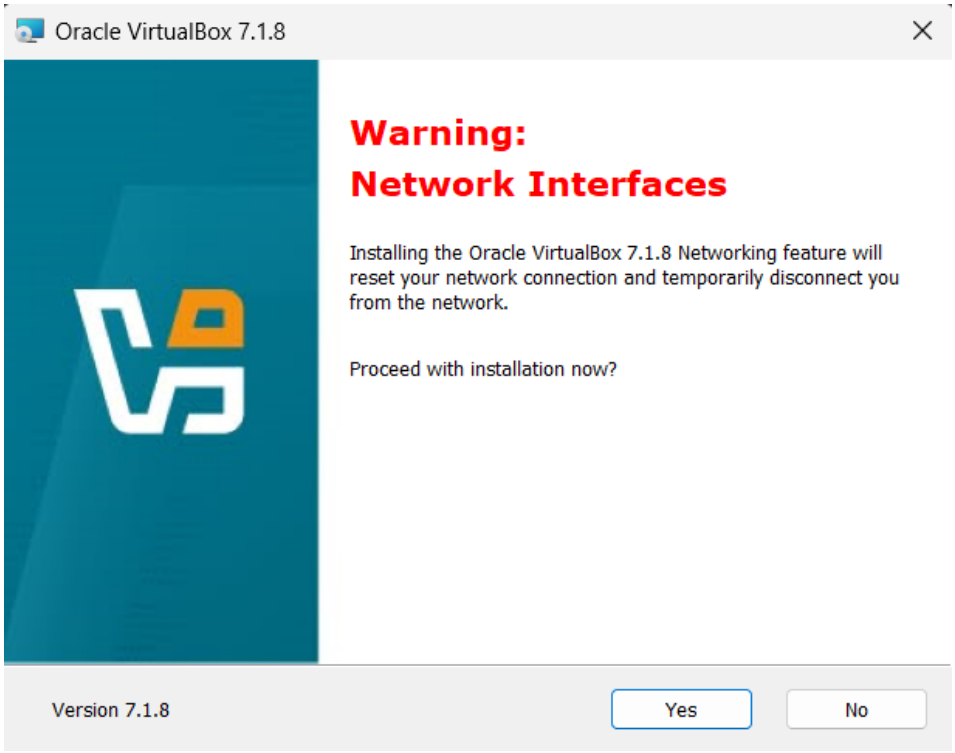


3. Finishing installing of VirtualBox

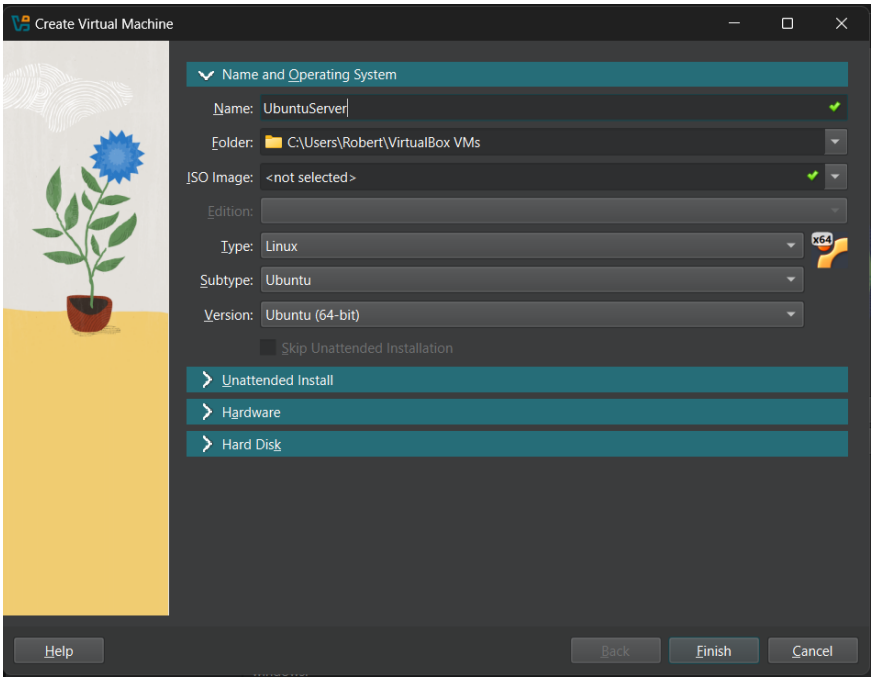


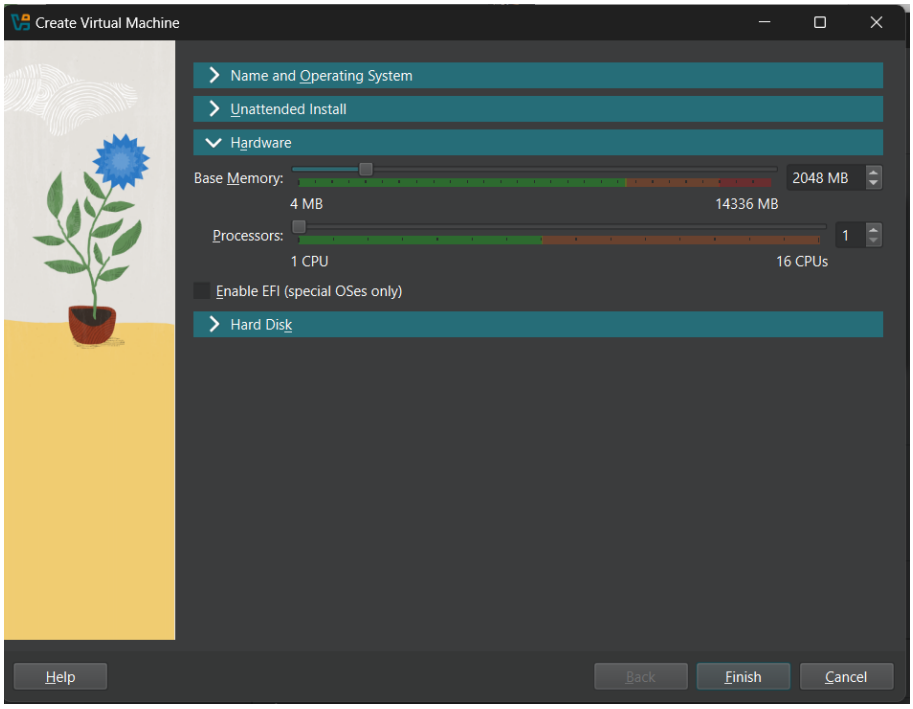


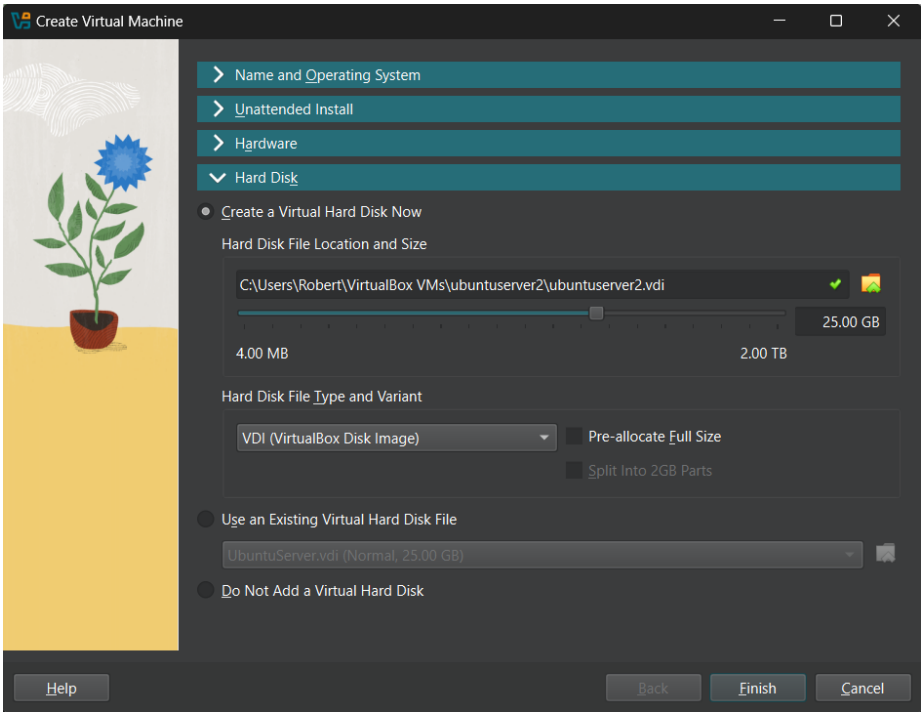

Oracle VirtualBox 7.1.8 Setup
Custom Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
VirtualBox Application
VirtualBox USB Support
VirtualBox Networking
VirtualBox Bridged Netwo
VirtualBox Host-Only Net
VirtualBox Python Support
Oracle VirtualBox 7.1.8 application.
This feature requires 227MB on your hard drive. It has 3 of 3 subfeatures selected. The subfeatures require 936KB on your hard drive.
Location:
C:\Program Files\Oracle\VirtualBox\
Browse
Version 7.1.8
Disk Usage
< Back
Next >
Cancel

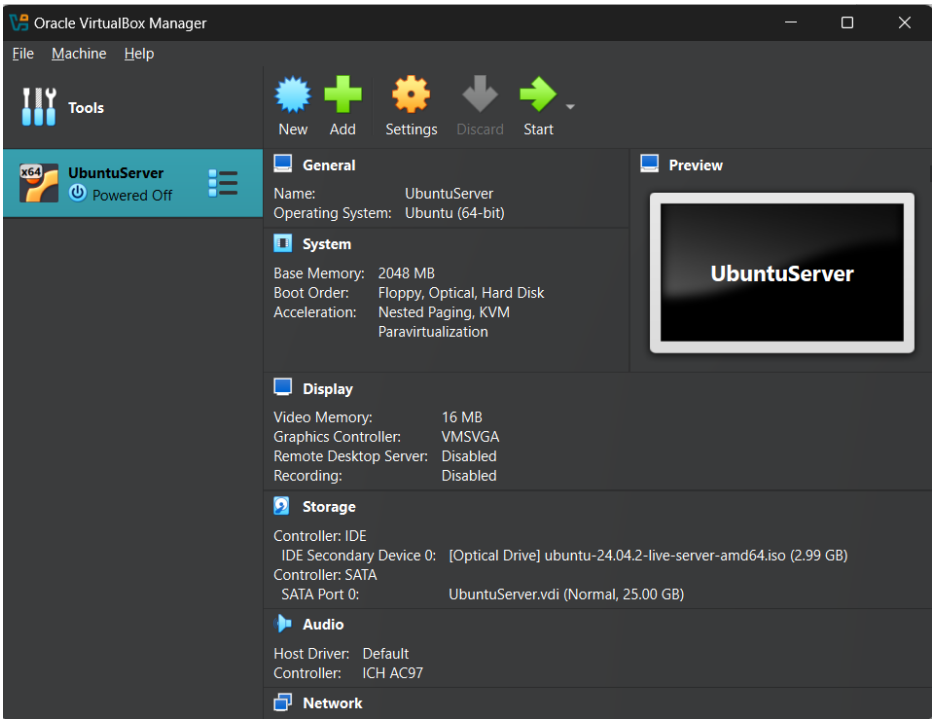

Oracle VirtualBox 7.1.8
Warning:
Network Interfaces
Installing the Oracle VirtualBox 7.1.8 Networking feature will reset your network connection and temporarily disconnect you from the network.
Proceed with installation now?
Version 7.1.8
Yes
No

4. Creating new virtual machine




Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Base Memory:
2048 MB
4 MB
14336 MB
Processors:
1
1 CPU
16 CPUs
Enable EFI (special OSes only)
Hard Disk
Help
Back
Finish
Cancel

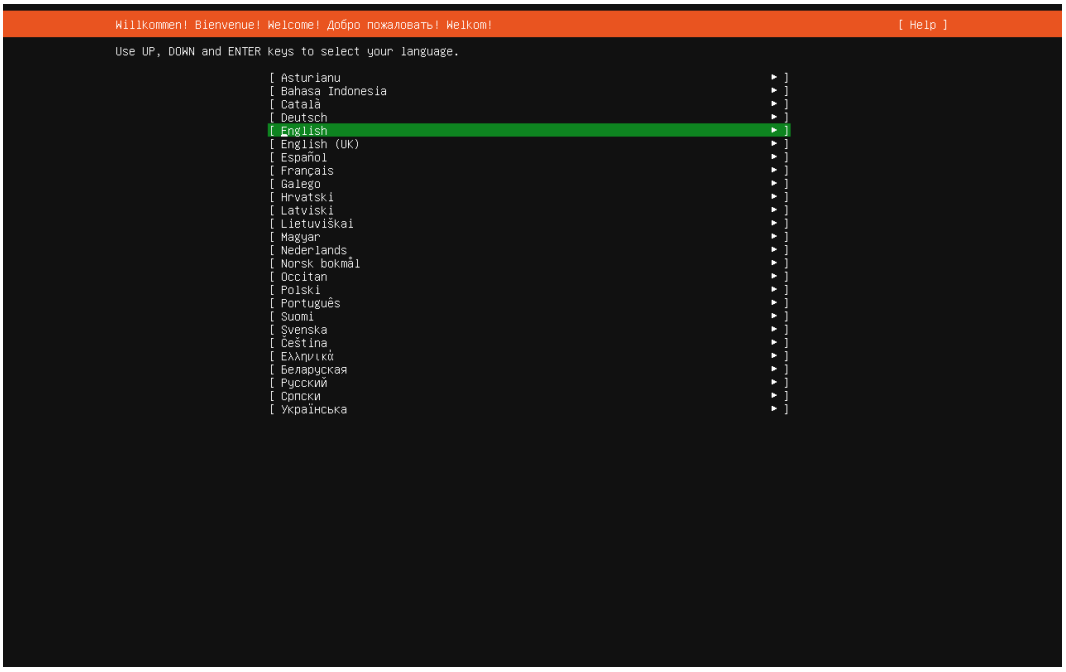

Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Hard Disk
Create a Virtual Hard Disk Now
Hard Disk File Location and Size
C:\Users\Robert\VirtualBox VMs\ubuntuserver2\ubuntuserver2.vdi
25.00 GB
4.00 MB
2.00 TB
Hard Disk File Type and Variant
VDI (VirtualBox Disk Image)
Pre-allocate Full Size
Split Into 2GB Parts
Use an Existing Virtual Hard Disk File
UbuntuServer.vdi (Normal, 25.00 GB)
Do Not Add a Virtual Hard Disk
Help
Back
Finish
Cancel

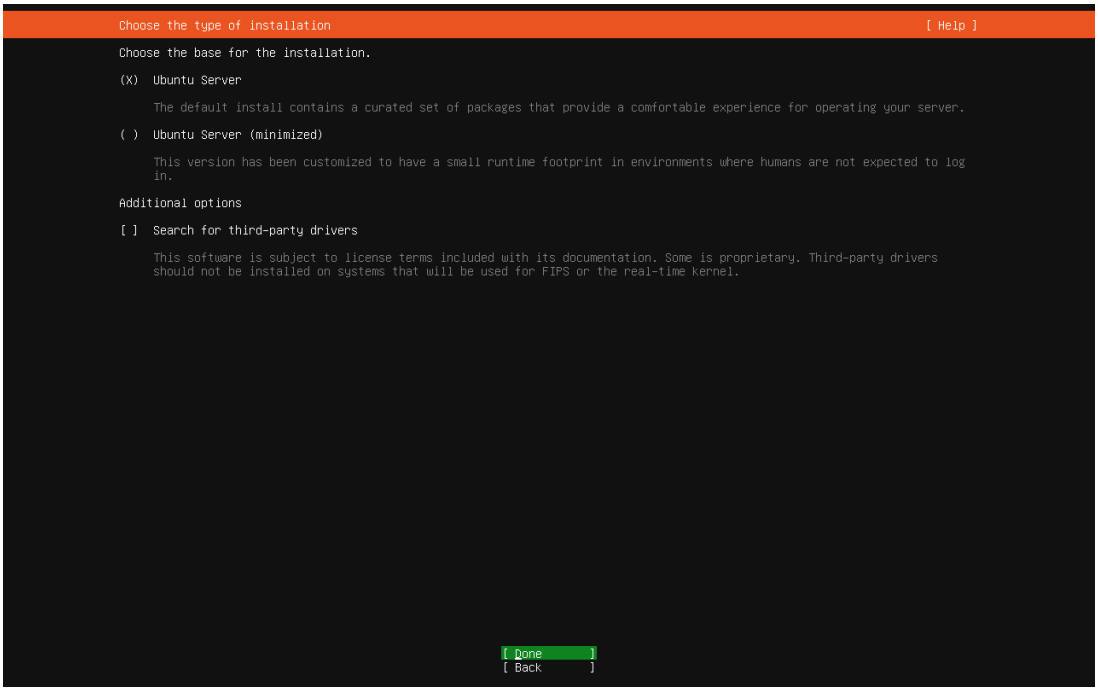


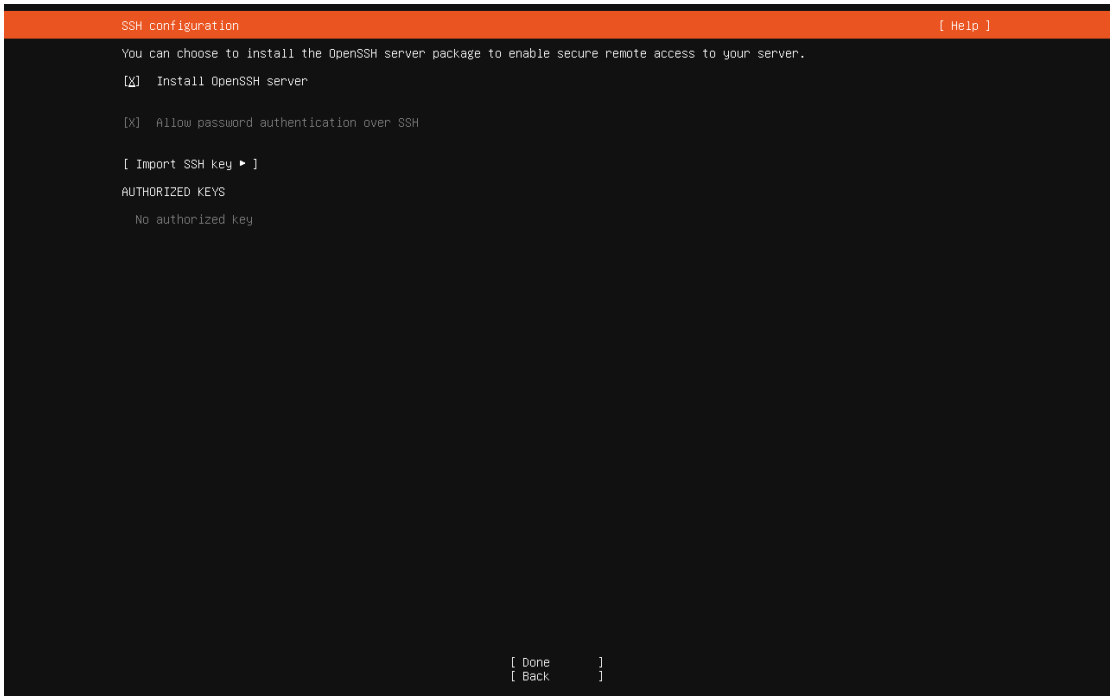
Here we can see all the details and if the machine is set up

5. Starting the virtual machine

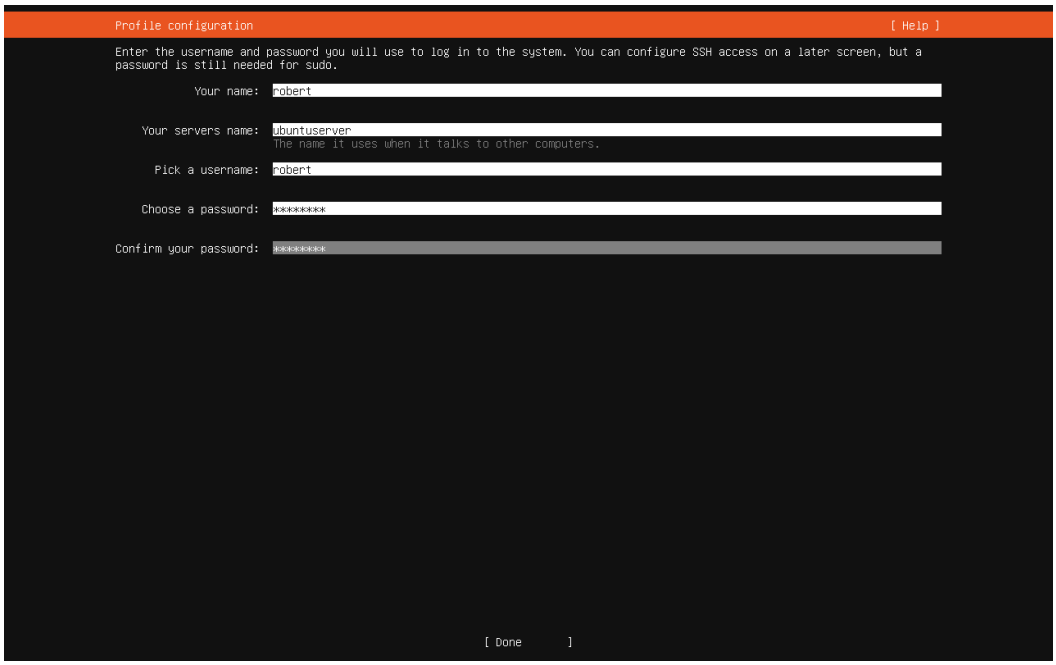
Choosing the language



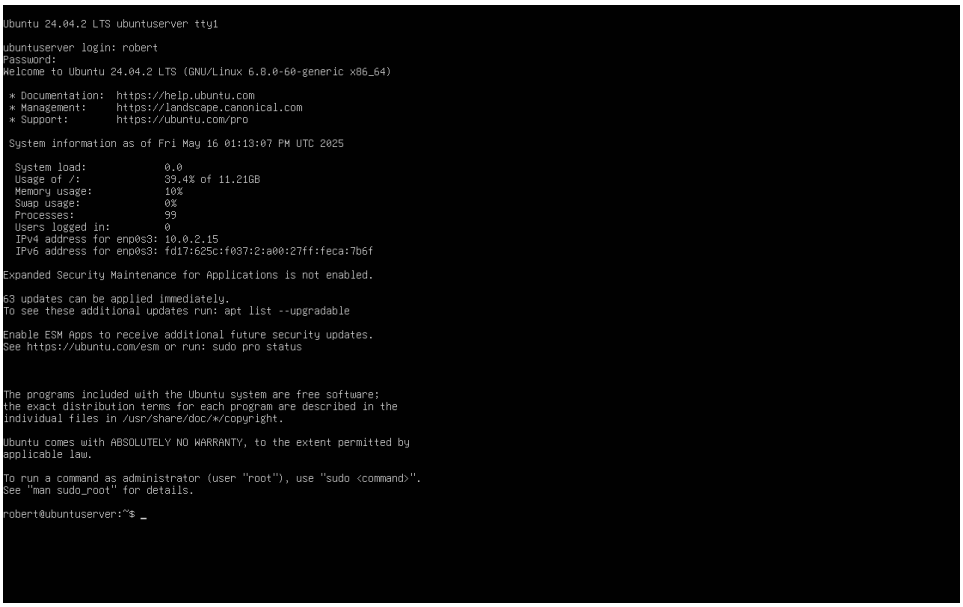




Configuring the profile and server

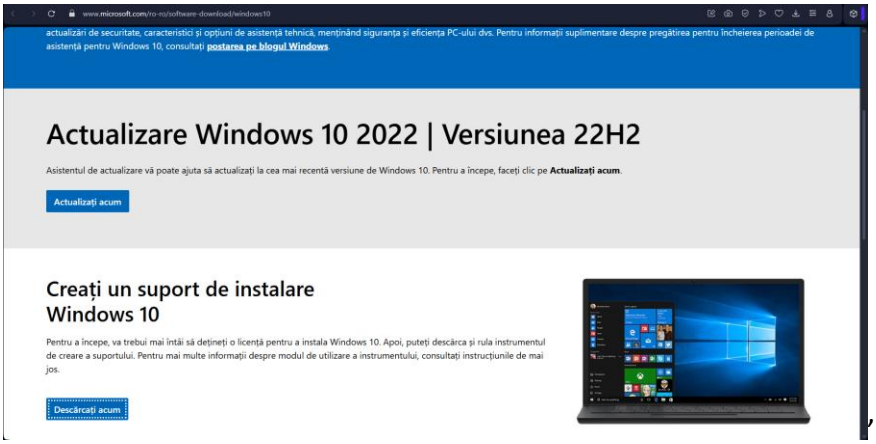


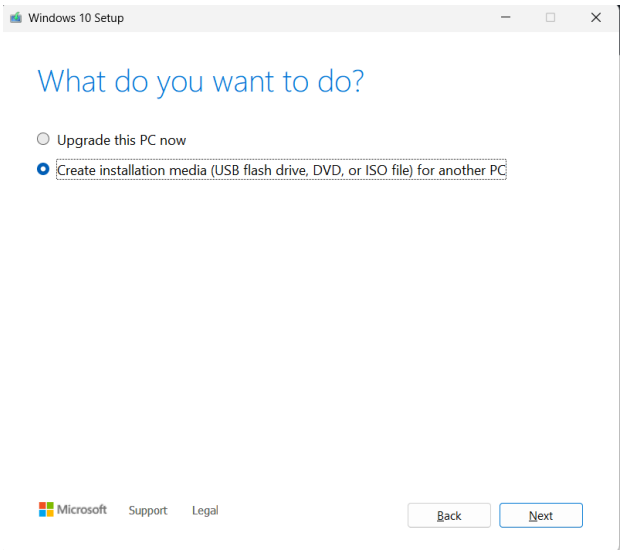
After the reboot, we can login and be ready for use

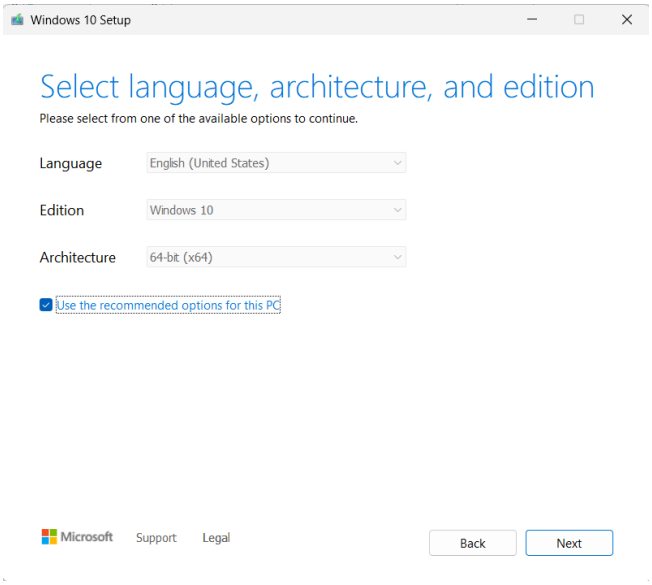


2. Windows 10

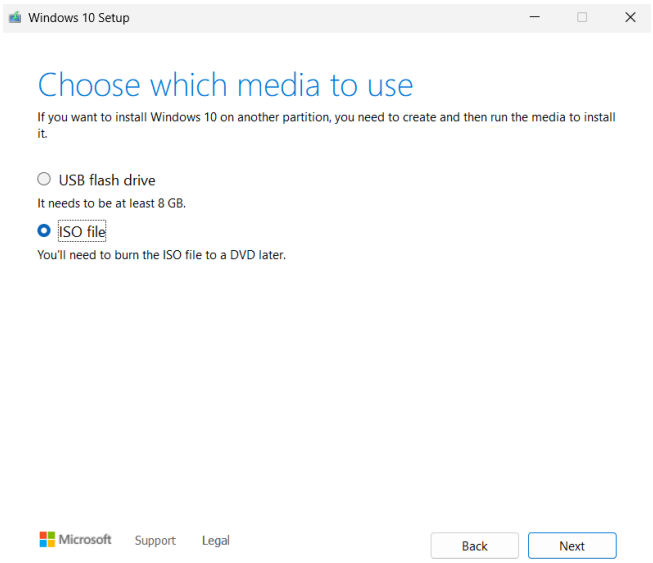
Download Windows10

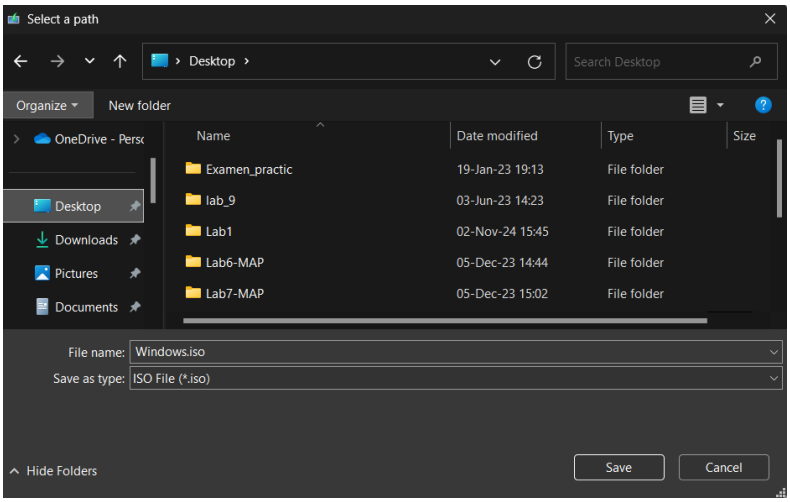


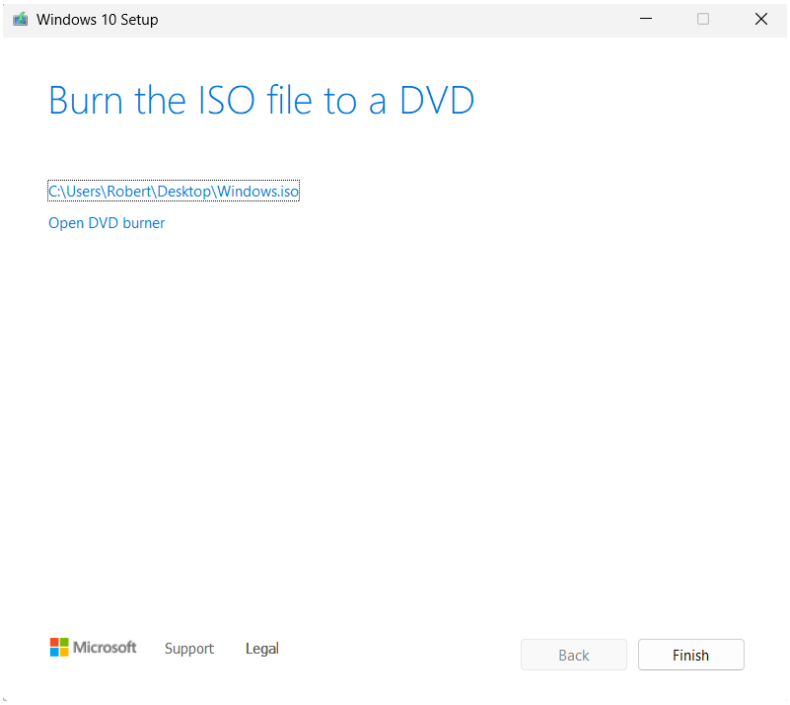




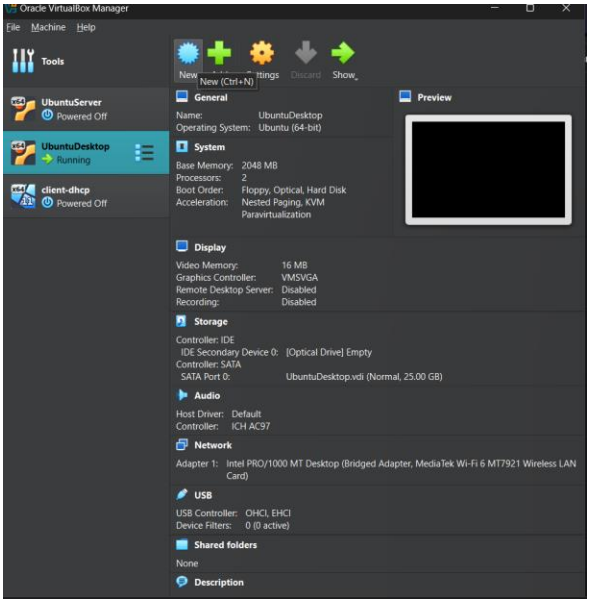
Selecting options for ISO Files.

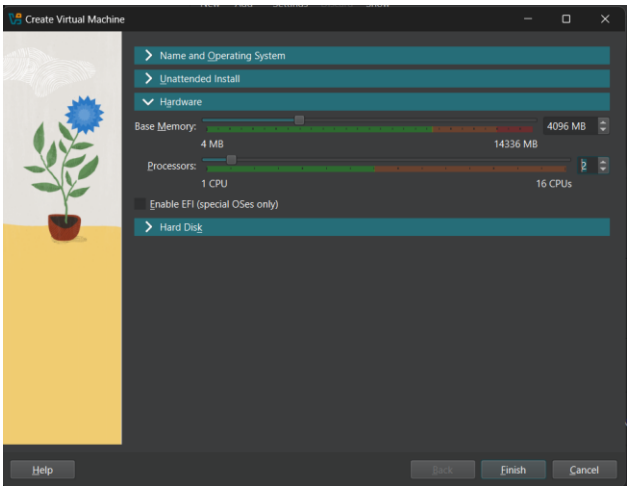

Windows 10 Setup
Choose which media to use
If you want to install Windows 10 on another partition, you need to create and then run the media to install it.
USB flash drive
It needs to be at least 8 GB.
ISO file
You'll need to burn the ISO file to a DVD later.
Microsoft
Support
Legal
Back
Next

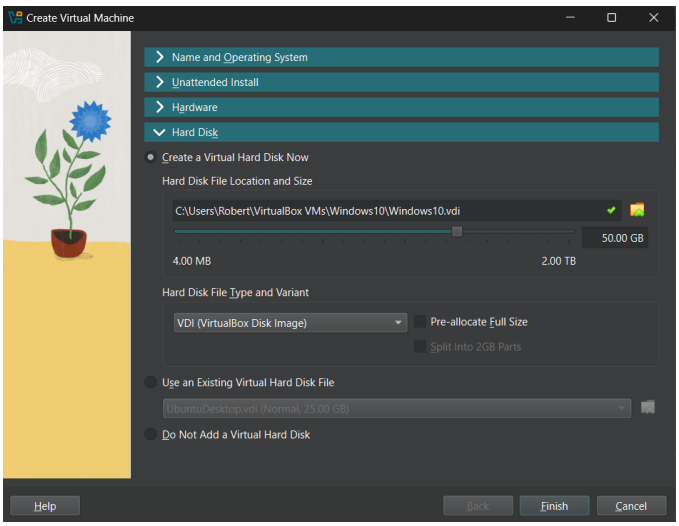

Select a path
Desktop
Search Desktop
Organize
New folder
OneDrive - Perso
Desktop
Downloads
Pictures
Documents
Name
Date modified
Type
Size
Examen_practic
19-Jan-23 19:13
File folder
lab_9
03-Jun-23 14:23
File folder
Lab1
02-Nov-24 15:45
File folder
Lab6-MAP
05-Dec-23 14:44
File folder
Lab7-MAP
05-Dec-23 15:02
File folder
File name:
Windows.iso
Save as type:
ISO File (*.iso)
Hide Folders
Save
Cancel

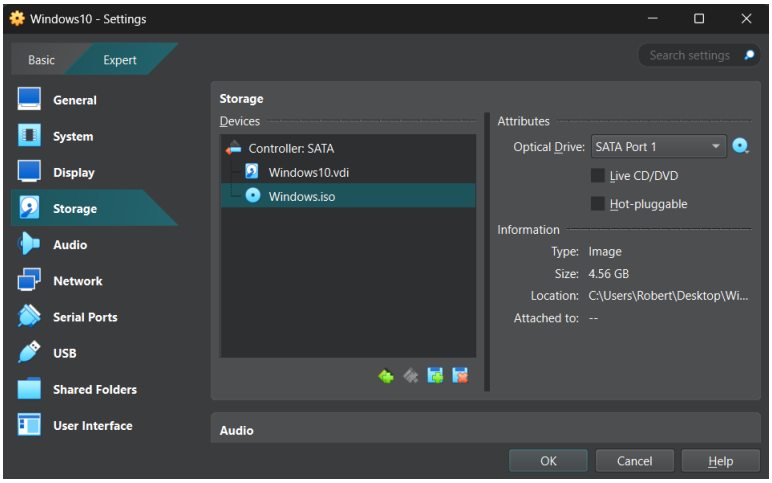

Windows 10 Setup
Burn the ISO file to a DVD
C:\Users\Robert\Desktop\Windows.iso
Open DVD burner
Microsoft
Support
Legal
Back
Finish

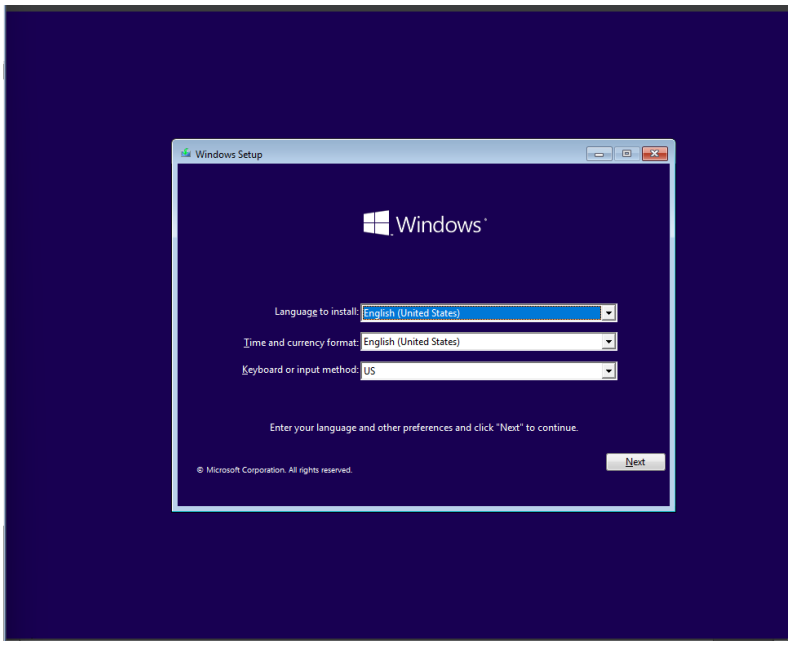
Virtual Box

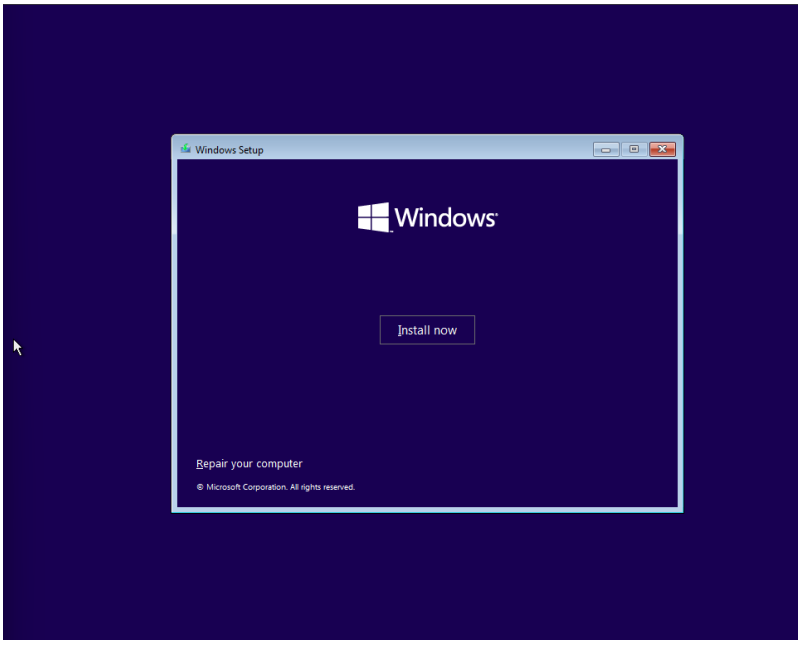

Oracle VirtualBox Manager
File Machine Help
Tools
UbuntuServer
Powered Off
UbuntuDesktop
Running
client-dhcp
Powered Off
New (Ctrl+N)
Discard
Show
General
Name: UbuntuDesktop
Operating System: Ubuntu (64-bit)
System
Base Memory: 2048 MB
Processors: 2
Boot Order: Floppy, Optical, Hard Disk
Acceleration: Nested Paging, KVM Paravirtualization
Preview
Display
Video Memory: 16 MB
Graphics Controller: VMSVGA
Remote Desktop Server: Disabled
Recording: Disabled
Storage
Controller: IDE
IDE Secondary Device 0: [Optical Drive] Empty
Controller: SATA
SATA Port 0: UbuntuDesktop.vdi (Normal, 25.00 GB)
Audio
Host Driver: Default
Controller: ICH AC97
Network
Adapter 1: Intel PRO/1000 MT Desktop (Bridged Adapter, MediaTek Wi-Fi 6 MT7921 Wireless LAN Card)
USB
USB Controller: OHCI, EHCI
Device Filters: 0 (0 active)
Shared folders
None
Description

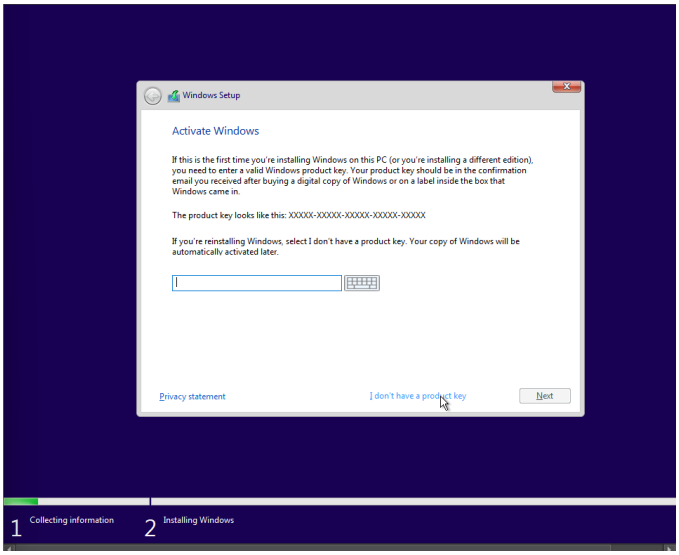

Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Base Memory:
4096 MB
4 MB
14336 MB
Processors:
2
1 CPU
16 CPUs
Enable EFI (special OSes only)
Hard Disk
Help
Back
Finish
Cancel

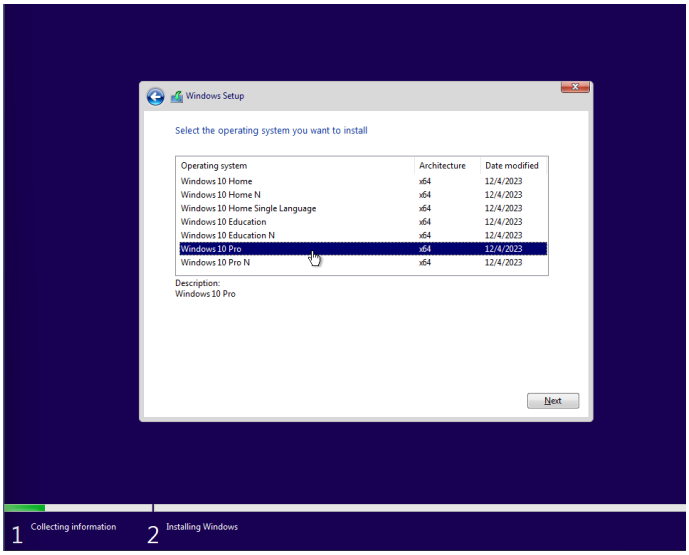

Create Virtual Machine
Name and Operating System
Unattended Install
Hardware
Hard Disk
Create a Virtual Hard Disk Now
Hard Disk File Location and Size
C:\Users\Robert\VirtualBox VMs\Windows10\Windows10.vdi
50.00 GB
4.00 MB
2.00 TB
Hard Disk File Type and Variant
VDI (VirtualBox Disk Image)
Pre-allocate Full Size
Split Into 2GB Parts
Use an Existing Virtual Hard Disk File
UbuntuDesktop.vdi (Normal, 25.00 GB)
Do Not Add a Virtual Hard Disk
Help
Back
Finish
Cancel

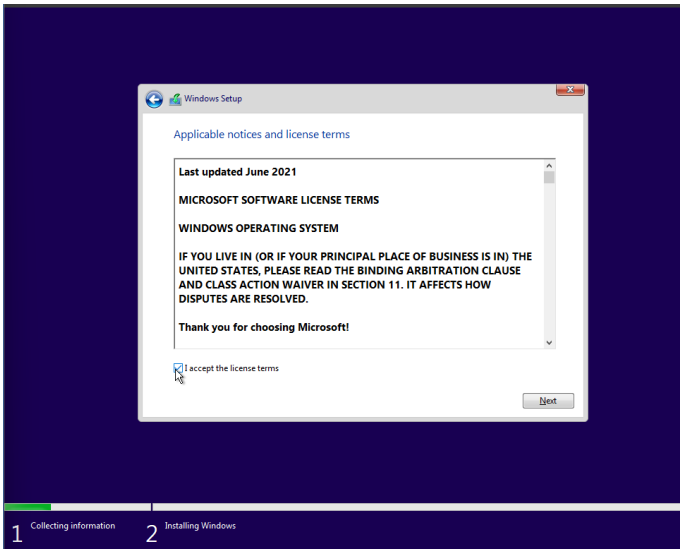

Windows10 - Settings
Basic
Expert
Search settings
General
System
Display
Storage
Audio
Network
Serial Ports
USB
Shared Folders
User Interface
Storage
Devices
Controller: SATA
Windows10.vdi
Windows.iso
Attributes
Optical Drive:
SATA Port 1
Live CD/DVD
Hot-pluggable
Information
Type: Image
Size: 4.56 GB
Location: C:\Users\Robert\Desktop\Wi...
Attached to: --
Audio
OK
Cancel
Help

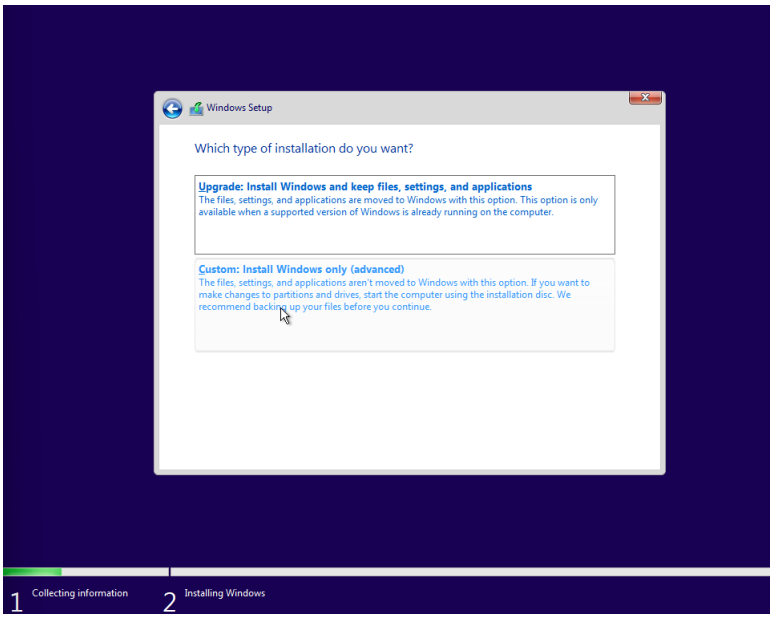

Windows Setup
Windows
Language to install: English (United States)
Time and currency format: English (United States)
Keyboard or input method: US
Enter your language and other preferences and click "Next" to continue.
© Microsoft Corporation. All rights reserved.
Next

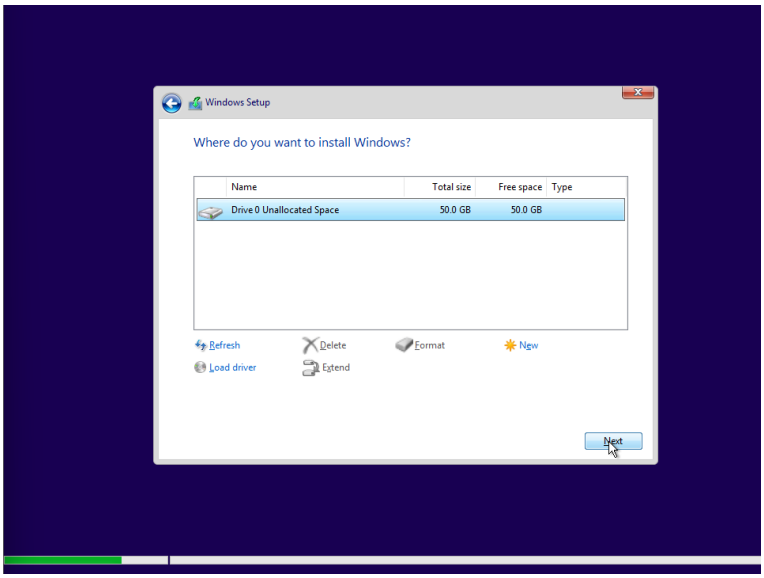

Windows Setup
Windows
Install now
Repair your computer
© Microsoft Corporation. All rights reserved.

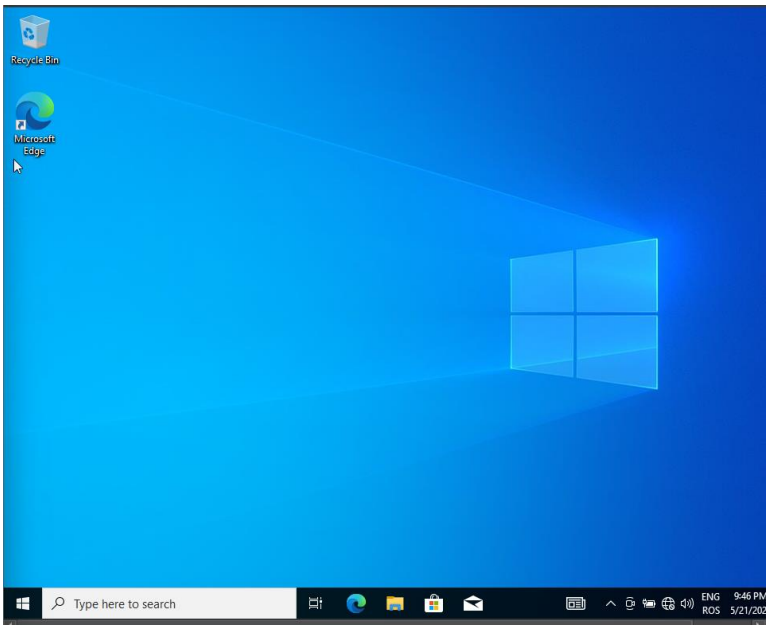

Windows Setup
Activate Windows
If this is the first time you're installing Windows on this PC (or you're installing a different edition), you need to enter a valid Windows product key. Your product key should be in the confirmation email you received after buying a digital copy of Windows or on a label inside the box that Windows came in.
The product key looks like this: XXXXX-XXXXX-XXXXX-XXXXX-XXXXX
If you're reinstalling Windows, select I don't have a product key. Your copy of Windows will be automatically activated later.
Privacy statement
I don't have a product key
Next
1 Collecting information
2 Installing Windows


Windows Setup
Select the operating system you want to install
Operating system
Architecture
Date modified
Windows 10 Home
Windows 10 Home N
Windows 10 Home Single Language
Windows 10 Education
Windows 10 Education N
Windows 10 Pro
Windows 10 Pro N
x64
12/4/2023
Description:
Windows 10 Pro
Next
1 Collecting information
2 Installing Windows


Windows Setup
Applicable notices and license terms
Last updated June 2021
MICROSOFT SOFTWARE LICENSE TERMS
WINDOWS OPERATING SYSTEM
IF YOU LIVE IN (OR IF YOUR PRINCIPAL PLACE OF BUSINESS IS IN) THE UNITED STATES, PLEASE READ THE BINDING ARBITRATION CLAUSE AND CLASS ACTION WAIVER IN SECTION 11. IT AFFECTS HOW DISPUTES ARE RESOLVED.
Thank you for choosing Microsoft!
I accept the license terms
Next
1 Collecting information
2 Installing Windows


Windows Setup
Which type of installation do you want?
Upgrade: Install Windows and keep files, settings, and applications
The files, settings, and applications are moved to Windows with this option. This option is only available when a supported version of Windows is already running on the computer.
Custom: Install Windows only (advanced)
The files, settings, and applications aren't moved to Windows with this option. If you want to make changes to partitions and drives, start the computer using the installation disc. We recommend backing up your files before you continue.
1 Collecting information
2 Installing Windows


Windows Setup
Where do you want to install Windows?
Name
Total size
Free space
Type
Drive 0 Unallocated Space
50.0 GB
50.0 GB
Refresh
Delete
Format
New
Load driver
Extend
Next


Recycle Bin
Microsoft Edge
Type here to search
ENG
ROS
9:46 PM
5/21/202

There we go!!!

3. SSH

Verificarea existenței serviciului SSH:

sudo systemctl status ssh

```
robert@robert-VirtualBox:~$ sudo systemctl status ssh
[sudo] password for robert:
Unit ssh.service could not be found.
```

Actualizează lista locala cu informatii despre pachetele disponibile din sursele de software configurate pe system:

sudo apt update

```
robert@robert-VirtualBox:~$ sudo apt update
Hit:1 http://ro.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ro.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:4 http://ro.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:5 http://ro.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,1
01 kB]
Get:6 http://ro.archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [1
62 kB]
Get:7 http://ro.archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Compone
nts [212 B]
```

Instalam pachetul openssh-server, adica serverul SSH care permite conectarea la acest sistem prin rețea, folosind protocolul SSH (Secure Shell):

sudo apt install openssh-server

```
robert@robert-VirtualBox:~$ sudo apt install openssh-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  molly-guard monkeysphere ssh-askpass
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 111 not upgraded.
Need to get 832 kB of archives.
After this operation, 6,743 kB of additional disk space will be used.
Get:1 http://ro.archive.ubuntu.com/ubuntu noble-updates/main amd64 openssh-sftp-
```

Verificarea existenței serviciului SSH:

```
robert@robert-VirtualBox:~$ sudo systemctl status ssh
○ ssh.service - OpenBSD Secure Shell server
     Loaded: loaded (/usr/lib/systemd/system/ssh.service; disabled; preset: ena>
     Active: inactive (dead)
TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
             man:sshd_config(5)
```

Activarea serviciului SSH pentru a porni automat: sudo systemctl enable ssh

```
robert@robert-VirtualBox:~$ sudo systemctl enable ssh
Synchronizing state of ssh.service with SysV service script with /usr/lib/system
d/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable ssh
Created symlink /etc/systemd/system/sshd.service → /usr/lib/systemd/system/ssh.s
ervice.
Created symlink /etc/systemd/system/multi-user.target.wants/ssh.service → /usr/l
ib/systemd/system/ssh.service.
```

Pornirea efectivă a serviciului SSH: sudo systemctl start ssh

```
robert@robert-VirtualBox:~$ sudo systemctl start ssh
robert@robert-VirtualBox:~$ sudo systemctl status ssh
● ssh.service - OpenBSD Secure Shell server
     Loaded: loaded (/usr/lib/systemd/system/ssh.service; enabled; preset: enab>
     Active: active (running) since Tue 2025-05-20 22:07:39 EEST; 3s ago
TriggeredBy: ● ssh.socket
       Docs: man:sshd(8)
             man:sshd_config(5)
    Process: 21581 ExecStartPre=/usr/sbin/sshd -t (code=exited, status=0/SUCCES>
   Main PID: 21582 (sshd)
      Tasks: 1 (limit: 2271)
     Memory: 2.1M (peak: 2.3M)
        CPU: 23ms
     CGroup: /system.slice/ssh.service
             └─21582 "sshd: /usr/sbin/sshd -D [listener] 0 of 10-100 startups"
```

Permiterea traficului SSH în firewall (UFW): sudo ufw allow ssh

Instalarea pachetului net-tools pentru netstat: sudo apt install net-tools

Verificarea dacă serviciul SSH ascultă pe portul 22: netstat -tlpn

```
robert@robert-VirtualBox:~$ netstat -tlpn
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
PID/Program name
tcp        0      0 127.0.0.54:53           0.0.0.0:*               LISTEN
-
tcp        0      0 127.0.0.53:53           0.0.0.0:*               LISTEN
-
tcp        0      0 127.0.0.1:631           0.0.0.0:*               LISTEN
-
tcp6       0      0 :::22                   :::*                    LISTEN
-
tcp6       0      0 ::1:631                 :::*                    LISTEN
-
```

Verificarea adresei IP a mașinii Ubuntu

```
robert@robert-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP gr
oup default qlen 1000
    link/ether 08:00:27:b2:b6:33 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.164/24 brd 192.168.0.255 scope global dynamic noprefixroute e
np0s3
       valid_lft 3576sec preferred_lft 3576sec
    inet6 fe80::a00:27ff:feb2:b633/64 scope link
       valid_lft forever preferred_lft forever
```

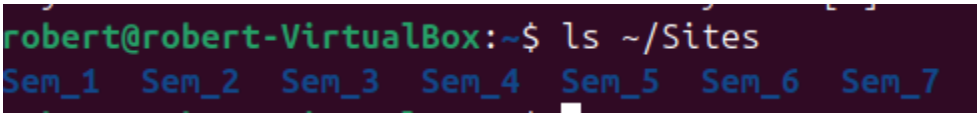
Am creat un folder Sites in Ubuntu: mkdir -p ~/Sites

Transferul de fișiere de pe Windows pe Ubuntu cu pscp, comandă rulată în Command Prompt (CMD) pe Windows:

pscp -r "C:\Users\Robert\Desktop\Seminars*" robert@192.168.0.164:/home/robert/Sites/

```
C:\Users\Robert>pscp -r "C:\Users\Robert\Desktop\Seminars\*" robert@192.168.0.164:/home/robert/Sites/
The host key is not cached for this server:
  192.168.0.164 (port 22)
You have no guarantee that the server is the computer you
think it is.
The server's ssh-ed25519 key fingerprint is:
  ssh-ed25519 255 SHA256:5a1HdYu6TAjs2SSq2Lsr9AuY6/7dbCjkMw0KsxlhxdA
If you trust this host, enter "y" to add the key to PSCP's
cache and carry on connecting.
If you want to carry on connecting just once, without adding
the key to the cache, enter "n".
If you do not trust this host, press Return to abandon the
connection.
Store key in cache? (y/n, Return cancels connection, i for more info) y
robert@192.168.0.164's password:

angajati.txt              | 0 kB |   0.9 kB/s | ETA: 00:00:00 | 100%
exercitii.txt             | 1 kB |   1.2 kB/s | ETA: 00:00:00 | 100%
script_1                  | 0 kB |   0.1 kB/s | ETA: 00:00:00 | 100%
script_2                  | 0 kB |   0.5 kB/s | ETA: 00:00:00 | 100%
solutii.txt               | 2 kB |   2.2 kB/s | ETA: 00:00:00 | 100%
angajati.txt              | 1 kB |   1.4 kB/s | ETA: 00:00:00 | 100%
exercitii.txt             | 1 kB |   1.1 kB/s | ETA: 00:00:00 | 100%
solutii.txt               | 1 kB |   1.8 kB/s | ETA: 00:00:00 | 100%
angajati.txt              | 0 kB |   0.9 kB/s | ETA: 00:00:00 | 100%
exercitii.txt             | 1 kB |   1.6 kB/s | ETA: 00:00:00 | 100%
script_1                  | 0 kB |   0.0 kB/s | ETA: 00:00:00 | 100%
solutii.txt               | 2 kB |   2.4 kB/s | ETA: 00:00:00 | 100%
```

Verificarea existentei fisierelor de pe desktop in ubuntu:



4. DHCP

1. Update & Instalare server DHCP

sudo apt update

sudo apt install isc-dhcp-server -y

```
robert@robert-VirtualBox:~$ sudo apt update
[sudo] password for robert:
Hit:1 http://ro.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://ro.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://ro.archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 http://ro.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,1
01 kB]
Get:6 http://ro.archive.ubuntu.com/ubuntu noble-updates/universe amd64 Packages
[1,064 kB]
Fetched 2,291 kB in 1s (1,911 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
8 packages can be upgraded. Run 'apt list --upgradable' to see them.
robert@robert-VirtualBox:~$ sudo apt install isc-dhcp-server -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  isc-dhcp-common
```

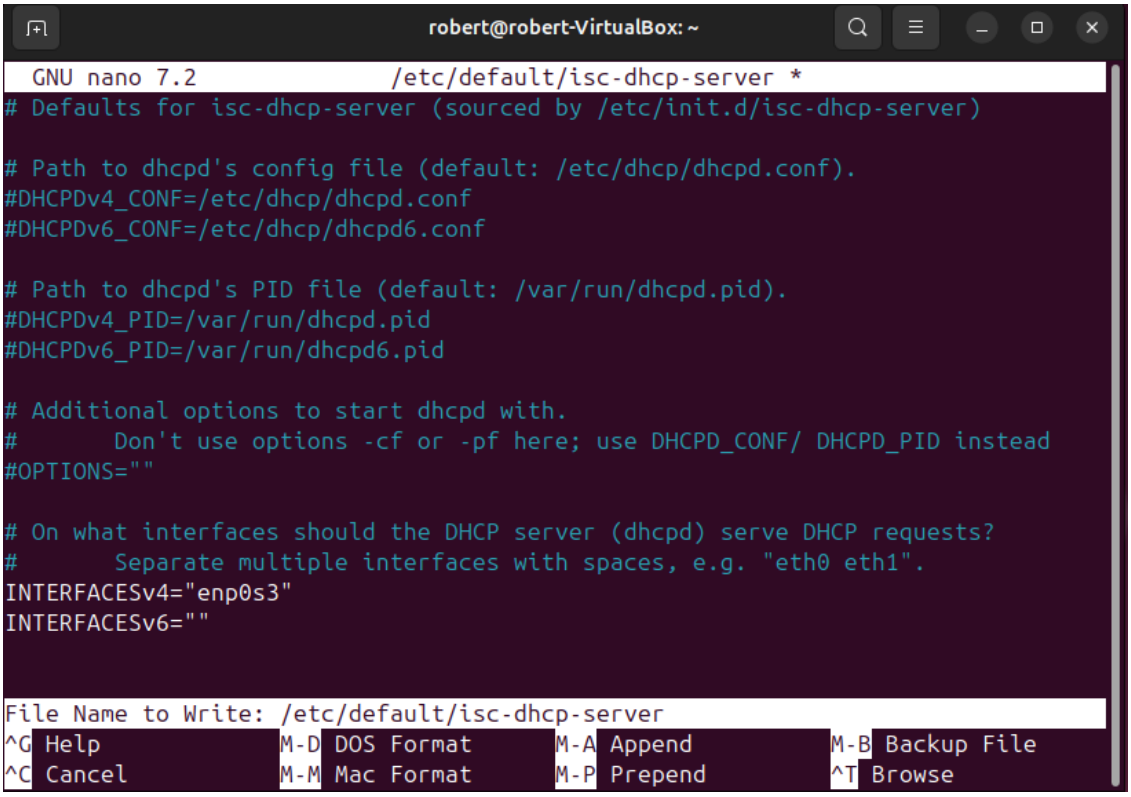
2. Identificarea interfetei de retea : ip a

```
robert@robert-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defaul
t qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP gr
oup default qlen 1000
    link/ether 08:00:27:b2:b6:33 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.164/24 brd 192.168.0.255 scope global dynamic noprefixroute e
np0s3
       valid_lft 2607sec preferred_lft 2607sec
    inet6 fe80::a00:27ff:feb2:b633/64 scope link
       valid_lft forever preferred_lft forever
```

3. Specificarea interfetei in fisierul de configurare DHCP

sudo nano /etc/default/isc-dhcp-server

Modificam linia: INTERFACESv4="enp0s3"



4. Configurare IP static pentru server

sudo nano /etc/netplan/01-netcfg.yaml

adaugam configuratia:

```
network:
  version: 2
  ethernets:
    enp0s3:
      dhcp4: no
      addresses:
        - 192.168.0.1/24
      gateway4: 192.168.0.1
      nameservers:
        addresses: [8.8.8.8, 1.1.1.1]
```

```
  GNU nano 7.2                  /etc/netplan/01-netcfg.yaml
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: no
      addresses:
        - 192.168.0.10/24
      gateway4: 192.168.0.1
      nameservers:
        addresses:
          - 8.8.8.8
          - 8.8.4.4




                            [ Read 14 lines ]
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^/ Go To Line
```

Aplica modificarile: sudo netplan apply

5. Configurare fisier DHCP principal

sudo nano /etc/dhcp/dhcpd.conf

```
  GNU nano 7.2                     /etc/dhcp/dhcpd.conf
#  }
#  subnet 10.0.29.0 netmask 255.255.255.0 {
#    option routers rtr-29.example.org;
#  }
#  pool {
#    allow members of "foo";
#    range 10.17.224.10 10.17.224.250;
#  }
#  pool {
#    deny members of "foo";
#    range 10.0.29.10 10.0.29.230;
#  }
#}

subnet 192.168.0.0 netmask 255.255.255.0 {
  range 192.168.0.50 192.168.0.100;
  option routers 192.168.0.10;
  option domain-name-servers 8.8.8.8, 8.8.4.4;
}

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

Am adaugat:

```
subnet 192.168.0.0 netmask 255.255.255.0 {
  range 192.168.0.50 192.168.0.100;
  option routers 192.168.0.1;
  option subnet-mask 255.255.255.0;
  option domain-name-servers 8.8.8.8, 1.1.1.1;
}
```

6. Verificare configuratie DHCP

sudo dhcpd -t

7. Activare si pornire serviciu DHCP

sudo systemctl enable isc-dhcp-server

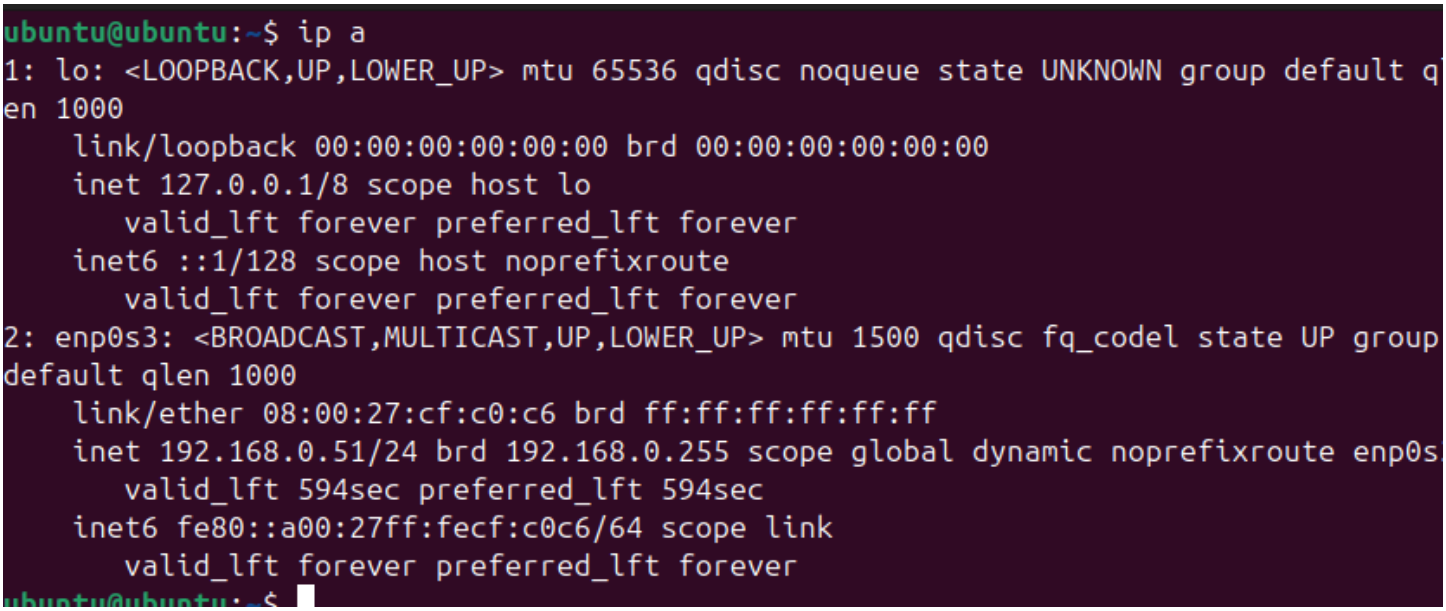
sudo systemctl start isc-dhcp-server

sudo systemctl status isc-dhcp-server

```
robert@robert-VirtualBox:~$ sudo systemctl restart isc-dhcp-server
robert@robert-VirtualBox:~$ sudo systemctl enable isc-dhcp-server
Synchronizing state of isc-dhcp-server.service with SysV service script with /us
r/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable isc-dhcp-server
robert@robert-VirtualBox:~$ sudo systemctl status isc-dhcp-server
● isc-dhcp-server.service - ISC DHCP IPv4 server
     Loaded: loaded (/usr/lib/systemd/system/isc-dhcp-server.service; enabled; >
     Active: active (running) since Wed 2025-05-21 00:32:15 EEST; 20s ago
       Docs: man:dhcpd(8)
   Main PID: 5402 (dhcpd)
      Tasks: 1 (limit: 2271)
     Memory: 3.7M (peak: 4.0M)
        CPU: 12ms
     CGroup: /system.slice/isc-dhcp-server.service
             └─5402 dhcpd -user dhcpd -group dhcpd -f -4 -pf /run/dhcp-server/d>

May 21 00:32:15 robert-VirtualBox dhcpd[5402]: PID file: /run/dhcp-server/dhcpd>
May 21 00:32:15 robert-VirtualBox dhcpd[5402]: Wrote 0 leases to leases file.
May 21 00:32:15 robert-VirtualBox sh[5402]: Wrote 0 leases to leases file.
May 21 00:32:15 robert-VirtualBox dhcpd[5402]: Listening on LPF/enp0s3/08:00:27>
```

8.Testare

Am creat o masina client careia am dat comanda: ip a



Vedem inet 192.168.0.51/24 ... dynamic, inseamna ca a primit IP prin DHCP.

5. DNS

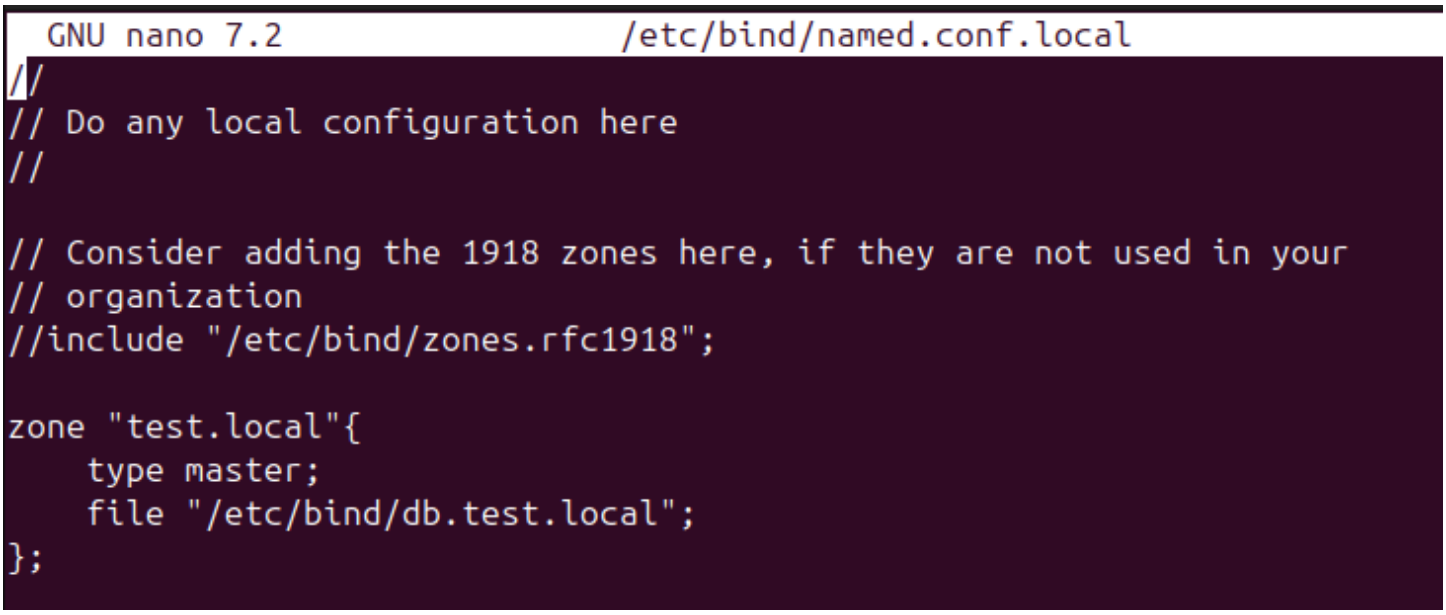
1. Instalare BIND9

sudo apt update

sudo apt install bind9 bind9utils bind9-doc

2. Configurare zona directa in BIND9

sudo nano /etc/bind/named.conf.local



Adaugat:

```
zone "test.local" {
   type master;
   file "/etc/bind/db.test.local";
};
```

3. Creare fisier de zona:

sudo cp /etc/bind/db.local /etc/bind/db.test.local

sudo nano /etc/bind/db.test.loca

```
  GNU nano 7.2                     /etc/bind/db.test.local
;
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA     localhost. root.localhost. (
                              2         ; Serial
                         604800         ; Refresh
                          86400         ; Retry
                        2419200         ; Expire
                         604800 )       ; Negative Cache TTL
;
@       IN      NS      ns.test.local.
ns      IN      A       192.168.0.10
www     IN      A       192.168.0.10
```

4. Verificari si restart BIND9

sudo named-checkzone test.local /etc/bind/db.test.local

sudo systemctl restart bind9

```
robert@robert-VirtualBox:~$ sudo named-checkzone test.local /etc/bind/db.test.local
zone test.local/IN: loaded serial 2
OK
robert@robert-VirtualBox:~$ sudo systemctl status bind9
● named.service - BIND Domain Name Server
     Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; preset: en>
     Active: active (running) since Wed 2025-05-21 16:32:23 EEST; 8min ago
       Docs: man:named(8)
   Main PID: 3856 (named)
     Status: "running"
      Tasks: 8 (limit: 2271)
     Memory: 7.3M (peak: 7.7M)
        CPU: 54ms
     CGroup: /system.slice/named.service
             └─3856 /usr/sbin/named -f -u bind
```

```
robert@robert-VirtualBox:~$ sudo systemctl restart bind9
```

5. Configurare firewall (UFW)

sudo ufw allow 53

sudo ufw reload

sudo ufw status

```
robert@robert-VirtualBox:~$ sudo ufw allow 53
Rule added
Rule added (v6)
robert@robert-VirtualBox:~$ sudo ufw reload
Firewall reloaded
```

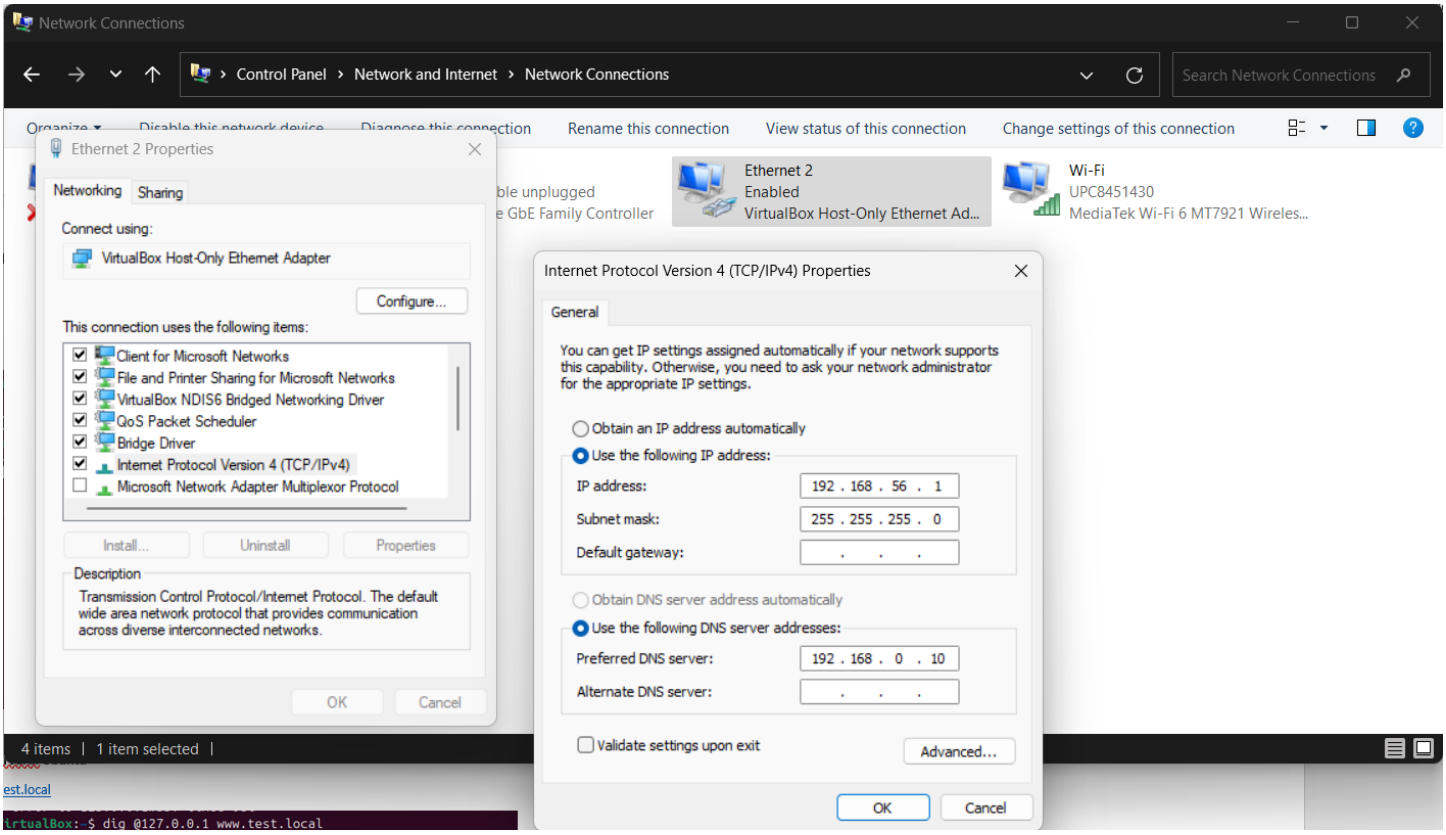
```
robert@robert-VirtualBox:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW       Anywhere
21                         ALLOW       Anywhere
53                         ALLOW       Anywhere
22/tcp (v6)                ALLOW       Anywhere (v6)
21 (v6)                    ALLOW       Anywhere (v6)
53 (v6)                    ALLOW       Anywhere (v6)
```

6. Testare locala pe serverul Ubuntu

dig @127.0.0.1 www.test.local

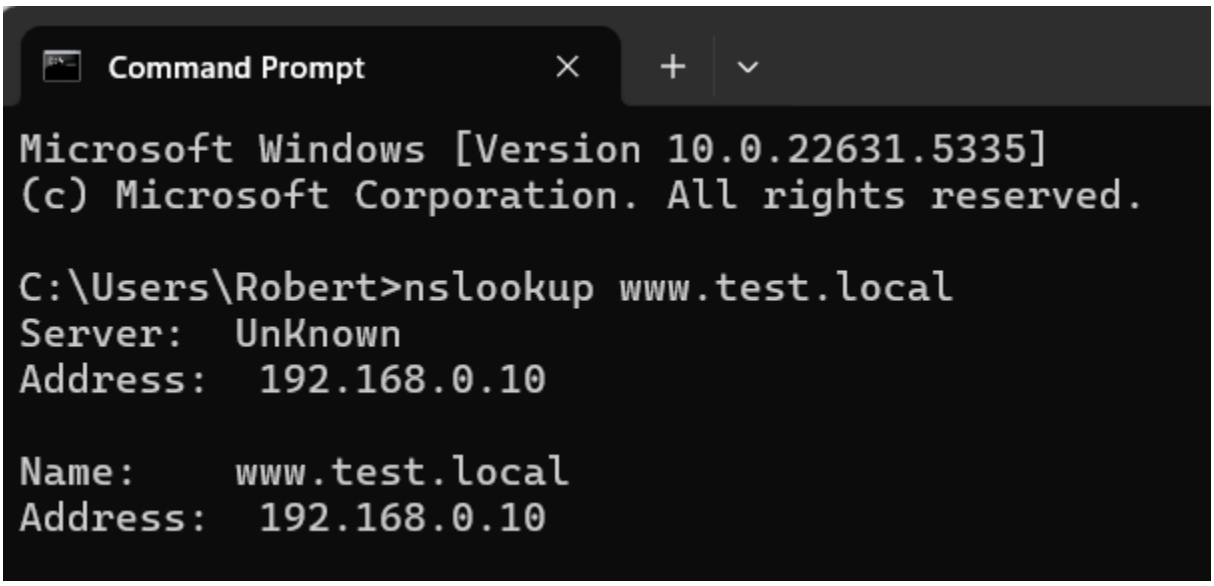
```
^Crobert@robert-VirtualBox:~$ dig @127.0.0.1 www.test.local

; <<>> DiG 9.18.30-0ubuntu0.24.04.2-Ubuntu <<>> @127.0.0.1 www.test.local
; (1 server found)
;; global options: +cmd
;; Got answer:
;; WARNING: .local is reserved for Multicast DNS
;; You are currently testing what happens when an mDNS query is leaked to DNS
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 51825
;; flags: qr aa rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1
```

7. Configurare client Windows



8. Testare de pe client Windows

nslookup www.test.local



6. FTP

1. Instalare vsftpd

sudo apt update

sudo apt install vsftpd

```
robert@robert-VirtualBox:~$ sudo apt install vsftpd -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  vsftpd
0 upgraded, 1 newly installed, 0 to remove and 8 not upgraded.
Need to get 120 kB of archives.
After this operation, 312 kB of additional disk space will be used.
Get:1 http://ro.archive.ubuntu.com/ubuntu noble-updates/main amd64 vsftpd amd64
3.0.5-0ubuntu3.1 [120 kB]
Fetched 120 kB in 0s (343 kB/s)
Preconfiguring packages ...
Selecting previously unselected package vsftpd.
(Reading database ... 153231 files and directories currently installed.)
Preparing to unpack .../vsftpd_3.0.5-0ubuntu3.1_amd64.deb ...
Unpacking vsftpd (3.0.5-0ubuntu3.1) ...
Setting up vsftpd (3.0.5-0ubuntu3.1) ...
Created symlink /etc/systemd/system/multi-user.target.wants/vsftpd.service → /us
r/lib/systemd/system/vsftpd.service.
Processing triggers for man-db (2.12.0-4build2) ...
```

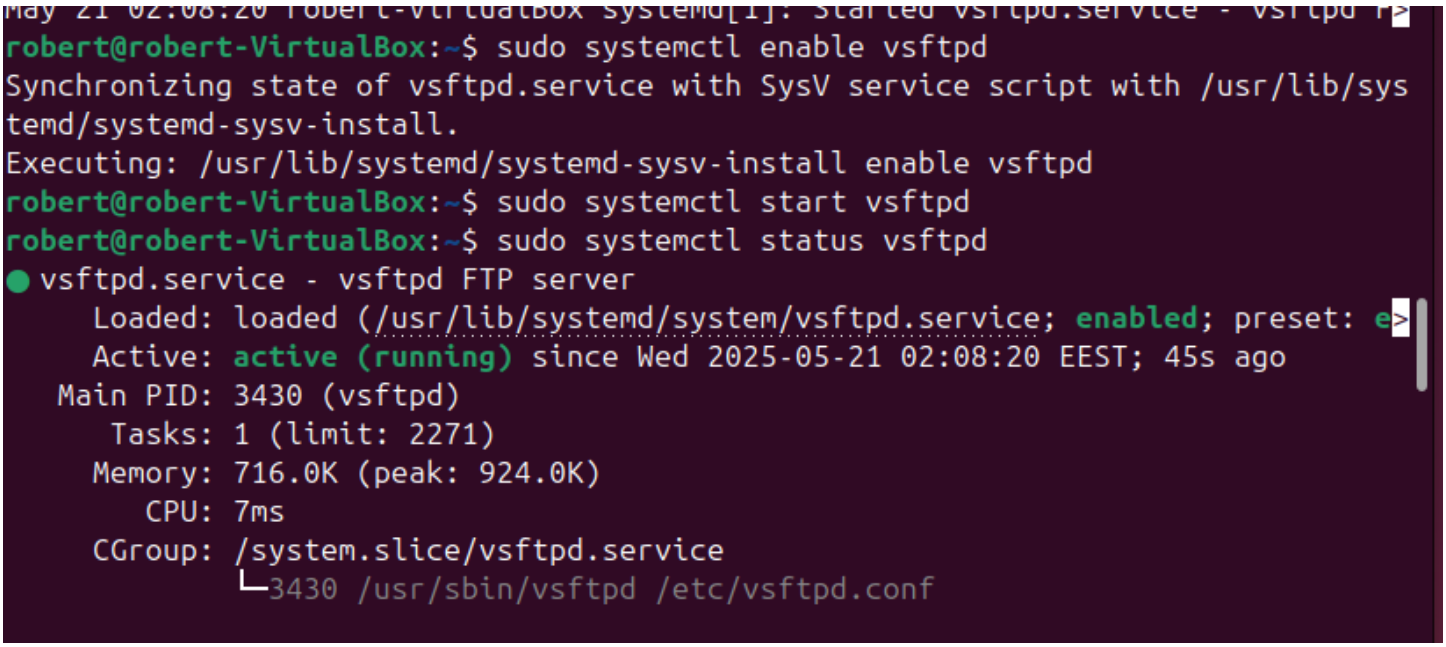
2.Verificam daca serviciul vsftpd ruleaza

```
robert@robert-VirtualBox:~$ sudo systemctl status vsftpd
● vsftpd.service - vsftpd FTP server
     Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; enabled; preset: e>
     Active: active (running) since Wed 2025-05-21 02:08:20 EEST; 12s ago
    Process: 3428 ExecStartPre=/bin/mkdir -p /var/run/vsftpd/empty (code=exited>
   Main PID: 3430 (vsftpd)
      Tasks: 1 (limit: 2271)
     Memory: 716.0K (peak: 924.0K)
        CPU: 7ms
     CGroup: /system.slice/vsftpd.service
             └─3430 /usr/sbin/vsftpd /etc/vsftpd.conf

May 21 02:08:20 robert-VirtualBox systemd[1]: Starting vsftpd.service - vsftpd >
May 21 02:08:20 robert-VirtualBox systemd[1]: Started vsftpd.service - vsftpd F>
```

3. Am activat serviciul FTP sa porneasca automat si l-am pornit manual dupa configurare, cu comenzile:

sudo systemctl enable vsftpd

sudo systemctl start vsftpd



4.Configurare fișier /etc/vsftpd.conf:

sudo nano /etc/vsftpd.conf

Valori recomandate:

listen=YES — permite conexiuni IPv4.

anonymous_enable=NO — dezactivează accesul anonim.

local_enable=YES — permite autentificarea utilizatorilor existenți pe sistem.

write_enable=YES — permite scrierea (upload, ștergere etc.).

chroot_local_user=YES — restricționează utilizatorul în propriul director.

local_root=/home/robert/ftp — setează directorul FTP al utilizatorului robert.

5. Configurare firewall (ufw)

```
robert@robert-VirtualBox:~$ sudo ufw allow 21
Rule added
Rule added (v6)
robert@robert-VirtualBox:~$ sudo ufw reload
Firewall reloaded
robert@robert-VirtualBox:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW       Anywhere
21                         ALLOW       Anywhere
22/tcp (v6)                ALLOW       Anywhere (v6)
21 (v6)                    ALLOW       Anywhere (v6)
```

6. Crearea directorului + permisiuni:

mkdir -p /home/robert/ftp/files

chmod 555 /home/robert/ftp

chmod 755 /home/robert/ftp/files

```
robert@robert-VirtualBox:~$ mkdir -p /home/robert/ftp/files
robert@robert-VirtualBox:~$ chmod 555 /home/robert/ftp
robert@robert-VirtualBox:~$ chmod 755 /home/robert/ftp/files
robert@robert-VirtualBox:~$ echo "Salut! Aceste e serverul FTP." > /home/robert/
ftp/files/bun-venit.txt
robert@robert-VirtualBox:~$ sudo systemctl restart vsftpd
```

7. Repornire serviciu

sudo systemctl restart vsftpd

8. Conectare la FTP din Windows/Linux:

ftp 192.168.0.10

```
C:\Users\Robert>ftp 192.168.0.10
Connected to 192.168.0.10.
220 (vsFTPd 3.0.5)
200 Always in UTF8 mode.
User (192.168.0.10:(none)): robert
331 Please specify the password.
Password:

230 Login successful.
```

Vedem si fisierul creat bun-venit.txt

```
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
files
226 Directory send OK.
ftp: 10 bytes received in 0.04Seconds 0.26Kbytes/sec.
ftp> cd files
250 Directory successfully changed.
ftp> ls
200 PORT command successful. Consider using PASV.
150 Here comes the directory listing.
bun-venit.txt
```

6. WEB

1. Instalare Apache

sudo apt update

sudo apt install apache2

2. Verificare status serviciu Apache

sudo systemctl status apache2

```
robert@robert-VirtualBox:~$ sudo systemctl status apache2
● apache2.service - The Apache HTTP Server
     Loaded: loaded (/usr/lib/systemd/system/apache2.service; enabled; preset: enab>
     Active: active (running) since Wed 2025-05-21 17:26:10 EEST; 9s ago
       Docs: https://httpd.apache.org/docs/2.4/
   Main PID: 6017 (apache2)
      Tasks: 55 (limit: 2271)
     Memory: 5.4M (peak: 5.6M)
        CPU: 56ms
     CGroup: /system.slice/apache2.service
             ├─6017 /usr/sbin/apache2 -k start
             ├─6019 /usr/sbin/apache2 -k start
             └─6020 /usr/sbin/apache2 -k start
```

3. Configurare firewall (UFW) pentru HTTP

sudo ufw allow 80

sudo ufw reload

sudo ufw status

```
robert@robert-VirtualBox:~$ sudo ufw allow 80
Rule added
Rule added (v6)
robert@robert-VirtualBox:~$ sudo ufw reload
Firewall reloaded
robert@robert-VirtualBox:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW       Anywhere
21                         ALLOW       Anywhere
53                         ALLOW       Anywhere
80                         ALLOW       Anywhere
22/tcp (v6)                ALLOW       Anywhere (v6)
21 (v6)                    ALLOW       Anywhere (v6)
53 (v6)                    ALLOW       Anywhere (v6)
80 (v6)                    ALLOW       Anywhere (v6)
```

4. Afisare IP pentru acces din retea

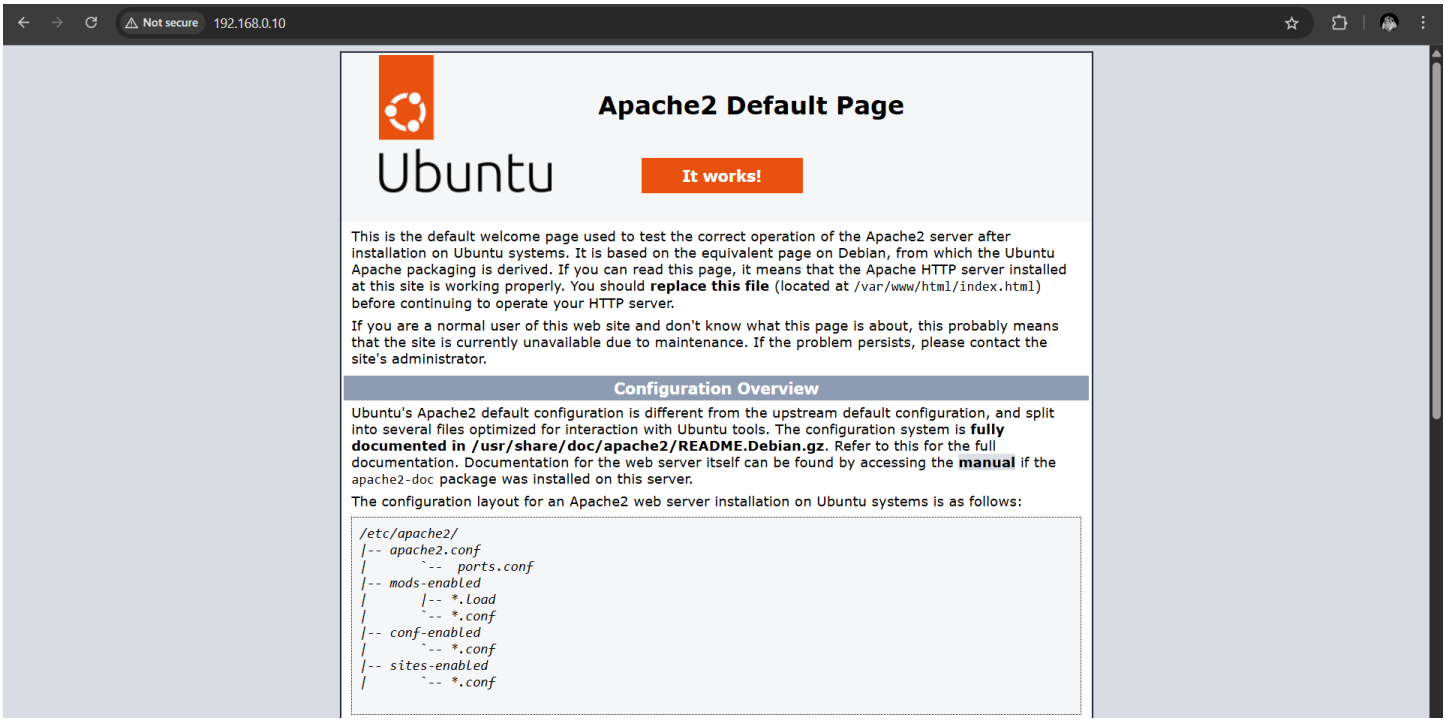
ip a

Noteaza IP-ul: 192.168.0.10

```
robert@robert-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default ql
en 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group
default qlen 1000
    link/ether 08:00:27:b2:b6:33 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.10/24 brd 192.168.0.255 scope global noprefixroute enp0s3
       valid_lft forever preferred_lft forever
    inet 192.168.0.164/24 brd 192.168.0.255 scope global secondary dynamic noprefixr
oute enp0s3
       valid_lft 3040sec preferred_lft 3040sec
    inet6 fe80::a00:27ff:feb2:b633/64 scope link
```

5. Acces de pe alt calculator din retea (Windows)

Deschid browser (Chrome in acest caz) si accesam cu http://192.168.0.10



8. Proxy

1. Instalarea Squid

sudo apt update

sudo apt install squid -y

```
robert@robert-VirtualBox:~$ sudo apt install squid -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libdbi-perl libecap3 squid-common squid-langpack
Suggested packages:
  libmldbm-perl libnet-daemon-perl libsql-statement-perl squidclient squid-cgi
  squid-purge resolvconf smbclient winbind
```

Trash

2. Verificarea statusului squid

Sudo systemctl status squid

```
robert@robert-VirtualBox:~$ sudo systemctl status squid
● squid.service - Squid Web Proxy Server
     Loaded: loaded (/usr/lib/systemd/system/squid.service; enabled; preset: enable>
     Active: active (running) since Wed 2025-05-21 19:48:59 EEST; 16s ago
       Docs: man:squid(8)
    Process: 8788 ExecStartPre=/usr/sbin/squid --foreground -z (code=exited, status>
   Main PID: 8792 (squid)
      Tasks: 4 (limit: 2271)
     Memory: 17.9M (peak: 18.6M)
        CPU: 152ms
     CGroup: /system.slice/squid.service
             ├─8792 /usr/sbin/squid --foreground -sYC
             ├─8795 "(squid-1)" --kid squid-1 --foreground -sYC
             ├─8796 "(logfile-daemon)" /var/log/squid/access.log
             └─8797 "(pinger)"
```

3. Configurarea de bază a Squid

a) Editarea fisierului:

sudo nano /etc/squid/squid.conf

b) Configuratii esentiale:

http_port 3128

acl localnet src 192.168.0.0/24

http_access allow localnet

http_access deny all

c) Pornirea serviciului:

sudo systemctl restart squid

4. Verificam daca Squid asculta pe toate interfetele IPv4, port 3128

sudo netstat -tulnp | grep 3128

```
robert@robert-VirtualBox:~$ sudo netstat -tulnp | grep 3128
tcp        0      0 0.0.0.0:3128            0.0.0.0:*               LISTEN      9085
/(squid-1)
```

5. Deschiderea portului in firewall (ufw)

sudo ufw allow 3128/tcp

sudo ufw reload

```
robert@robert-VirtualBox:~$ sudo ufw allow 3128/tcp
Rule added
Rule added (v6)
robert@robert-VirtualBox:~$ sudo ufw reload
Firewall reloaded
robert@robert-VirtualBox:~$ sudo ufw status
Status: active

To                         Action      From
--                         ------      ----
22/tcp                     ALLOW       Anywhere
21                         ALLOW       Anywhere
53                         ALLOW       Anywhere
80                         ALLOW       Anywhere
3128/tcp                   ALLOW       Anywhere
22/tcp (v6)                ALLOW       Anywhere (v6)
21 (v6)                    ALLOW       Anywhere (v6)
53 (v6)                    ALLOW       Anywhere (v6)
80 (v6)                    ALLOW       Anywhere (v6)
3128/tcp (v6)              ALLOW       Anywhere (v6)
```

6. Testare ping si conexiune

Pe client Windows:

ping 192.168.0.10

curl -x http://192.168.0.10:3128 http://example.com

```
C:\Users\Robert>ping 192.168.0.10

Pinging 192.168.0.10 with 32 bytes of data:
Reply from 192.168.0.10: bytes=32 time<1ms TTL=64
Reply from 192.168.0.10: bytes=32 time<1ms TTL=64
Reply from 192.168.0.10: bytes=32 time<1ms TTL=64
Reply from 192.168.0.10: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
C:\Users\Robert>curl -x http://192.168.0.10:3128 http://example.com
<!doctype html>
<html>
<head>
    <title>Example Domain</title>

    <meta charset="utf-8" />
    <meta http-equiv="Content-type" content="text/html; charset=utf-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1" />
    <style type="text/css">
    body {
        background-color: #f0f0f2;
        margin: 0;
        padding: 0;
        font-family: -apple-system, system-ui, BlinkMacSystemFont, "Segoe UI", "Open Sans", "Helvetica Neue", Helvetica,
 Arial, sans-serif;

    }
    div {
        width: 600px;
        margin: 5em auto;
        padding: 2em;
        background-color: #fdfdff;
        border-radius: 0.5em;
        box-shadow: 2px 3px 7px 2px rgba(0,0,0,0.02);
    }
    a:link, a:visited {
```

Pagina HTML de la example.com a fost returnata via proxy

9. Docker

1. Actualizarea sistemului

sudo apt update

sudo apt upgrade -y

```
robert@robert-VirtualBox:~$ sudo apt upgrade -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
```

2. **Instalarea dependintelor necesare**

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

```
robert@robert-VirtualBox:~$ sudo apt install apt-transport-https ca-certificate
s curl software-properties-common -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
software-properties-common is already the newest version (0.99.49.2).
```

4. **Adaugarea cheii GPG pentru Docker**

curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg

```
robert@robert-VirtualBox:~$ curl -fsSl https://download.docker.com/linux/ubuntu
/gpg | sudo gpg --dearmor -o /usr/share/keyrings/docker-archive-keyring.gpg
```

5. Adaugarea repository-ului Docker

sudo nano /etc/apt/sources.list.d/docker.list

```
robert@robert-VirtualBox:~$ sudo nano /etc/apt/sources.list.d/docker.list
```

Continut corect:

deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https://download.docker.com/linux/ubuntu noble stable

```
robert@robert-VirtualBox:~$ sudo cat /etc/apt/sources.list.d/docker.list
deb [arch=amd64 signed-by=/usr/share/keyrings/docker-archive-keyring.gpg] https
://download.docker.com/linux/ubuntu noble stable
```

6. Actualizarea surselor si instalarea Docker

sudo apt update

sudo apt install docker-ce docker-ce-cli containerd.io -y

```
robert@robert-VirtualBox:~$ sudo apt update
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:2 https://download.docker.com/linux/ubuntu noble InRelease [48.8 kB]
Hit:3 http://ro.archive.ubuntu.com/ubuntu noble InRelease
Get:4 https://download.docker.com/linux/ubuntu noble/stable amd64 Packages [24.
0 kB]
Hit:5 http://ro.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:6 http://ro.archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 72.8 kB in 1s (93.0 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
8 packages can be upgraded. Run 'apt list --upgradable' to see them.
robert@robert-VirtualBox:~$ sudo apt install docker-ce docker-ce-cli containerd
.io -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  docker-buildx-plugin docker-ce-rootless-extras docker-compose-plugin git
  git-man liberror-perl libslirp0 pigz slirp4netns
```

7. Testarea instalarii

docker --version

docker run hello-world

```
robert@robert-VirtualBox:~$ docker --version
Docker version 28.1.1, build 4eba377
robert@robert-VirtualBox:~$ sudo docker run hello-world
Unable to find image 'hello-world:latest' locally
latest: Pulling from library/hello-world
e6590344b1a5: Pull complete

Digest: sha256:dd01f97f252193ae3210da231b1dca0cffab4aadb3566692d6730bf93f123a48
Status: Downloaded newer image for hello-world:latest

Hello from Docker!
This message shows that your installation appears to be working correctly.

To generate this message, Docker took the following steps:
 1. The Docker client contacted the Docker daemon.
 2. The Docker daemon pulled the "hello-world" image from the Docker Hub.
    (amd64)
 3. The Docker daemon created a new container from that image which runs the
    executable that produces the output you are currently reading.
 4. The Docker daemon streamed that output to the Docker client, which sent it
    to your terminal.

To try something more ambitious, you can run an Ubuntu container with:
 $ docker run -it ubuntu bash
```

8. Permisiuni pentru rulare fara sudo

sudo usermod -aG docker $USER

newgrp docker

```
robert@robert-VirtualBox:~$ sudo usermod -aG docker $USER
robert@robert-VirtualBox:~$ newgrp docker
```

9. Rulare container nginx

docker run -d -p 8080:80 nginx

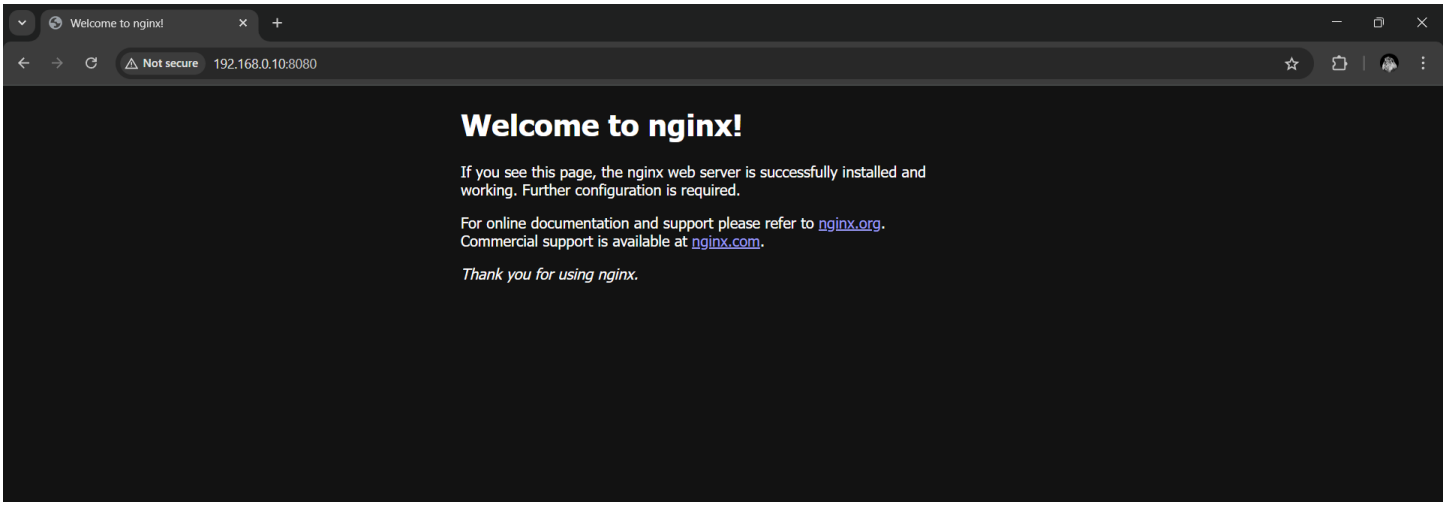
```
robert@robert-VirtualBox:~$ docker run -d -p 8080:80 nginx
Unable to find image 'nginx:latest' locally
latest: Pulling from library/nginx
254e724d7786: Pull complete
913115292750: Pull complete
3e544d53ce49: Pull complete
4f21ed9ac0c0: Pull complete
d38f2ef2d6f2: Pull complete
40a6e9f4e456: Pull complete
d3dc5ec71e9d: Pull complete
Digest: sha256:c15da6c91de8d2f436196f3a768483ad32c258ed4e1beb3d367a27ed67253e66
Status: Downloaded newer image for nginx:latest
bd32a2831b70a9022213ba0dcaaf65fde7f26246069b089f889d8e85e388aecd
robert@robert-VirtualBox:~$ groups
docker adm cdrom sudo dip plugdev users lpadmin robert
```

10. Accesarea serverului web din browser

ip a

```
robert@robert-VirtualBox:~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group defau
lt qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
       valid_lft forever preferred_lft forever
2: enp0s3: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP g
roup default qlen 1000
    link/ether 08:00:27:b2:b6:33 brd ff:ff:ff:ff:ff:ff
    inet 192.168.0.10/24 brd 192.168.0.255 scope global noprefixroute enp0s3
       valid_lft forever preferred_lft forever
    inet 192.168.0.164/24 brd 192.168.0.255 scope global secondary dynamic nopr
efixroute enp0s3
       valid_lft 2510sec preferred_lft 2510sec
    inet6 fe80::a00:27ff:feb2:b633/64 scope link
```

http://192.168.0.10:8080



10. Mail (port 25)

1. Instalare si configurare Postfix (server SMTP – port 25)

sudo apt install postfix mailutils -y

```
robert@robert-VirtualBox:~$ sudo apt install postfix mailutils -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
postfix is already the newest version (3.8.6-1build2).
mailutils is already the newest version (1:3.17-1.1build3).
0 upgraded, 0 newly installed, 0 to remove and 8 not upgraded.
```

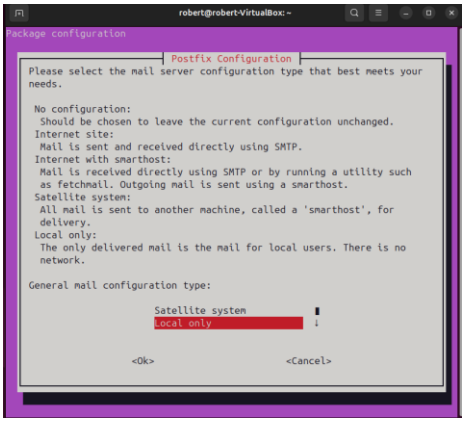
2. Redeschide wizard-ul de configurare Postfix

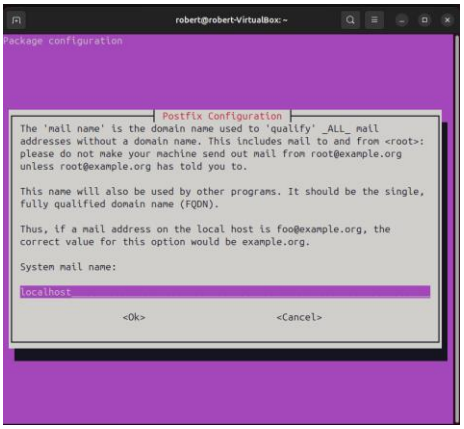
sudo dpkg-reconfigure postfix

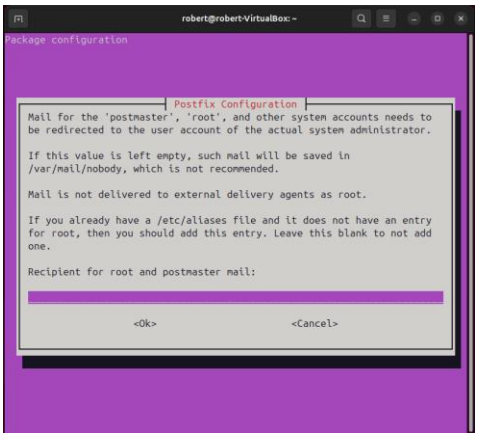
```
robert@robert-VirtualBox:~$ sudo dpkg-reconfigure postfix
setting synchronous mail queue updates: false
mailname is not a fully qualified domain name.  Not changing /etc/mailname.
setting destinations: robert-VirtualBox.home, localhost, robert-VirtualBox, loc
alhost.localdomain, localhost
setting relayhost:
setting mynetworks: 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128S
setting mailbox_size_limit: 0
setting recipient_delimiter: +
setting inet_interfaces: all
setting inet_protocols: all
WARNING: /etc/aliases exists, but does not have a root alias.
```

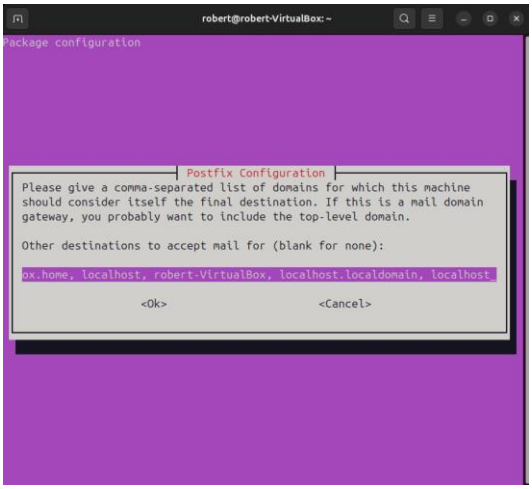
Am configurat:

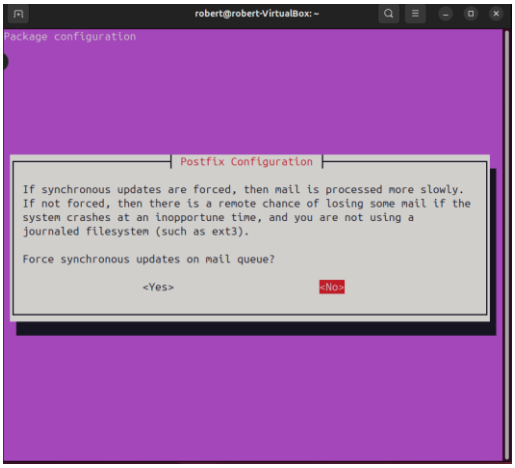
- Tipul serverului de mail (Internet Site)
- Numele sistemului (localhost)
- Destinatar pentru mailurile trimise catre root, postmaster
- Dimensiunea maxima a casutei
- Porturi si protocoale
- Comportamentul in retea (relay, subneturi acceptate)

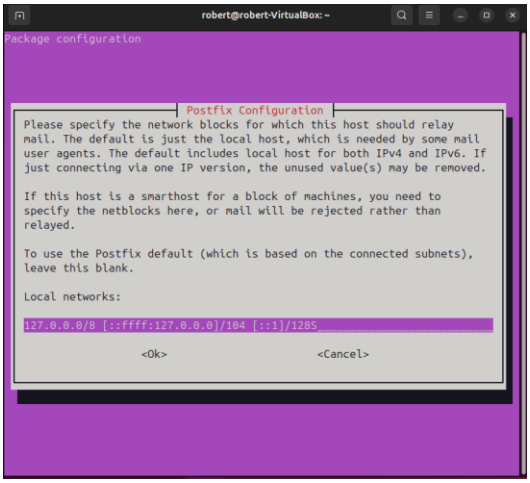


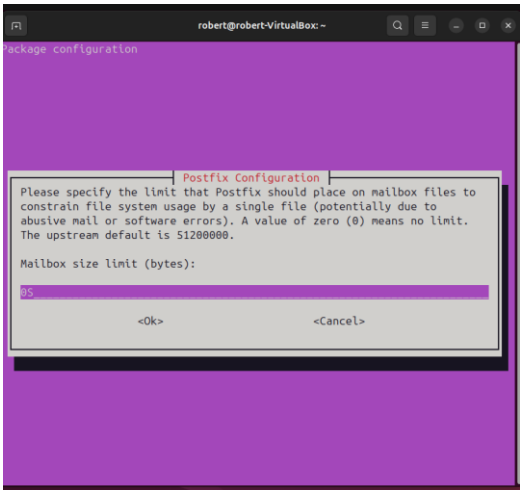

robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
The 'mail name' is the domain name used to 'qualify' _ALL_ mail addresses without a domain name. This includes mail to and from <root>: please do not make your machine send out mail from root@example.org unless root@example.org has told you to.
This name will also be used by other programs. It should be the single, fully qualified domain name (FQDN).
Thus, if a mail address on the local host is foo@example.org, the correct value for this option would be example.org.
System mail name:
localhost
<Ok>
<Cancel>

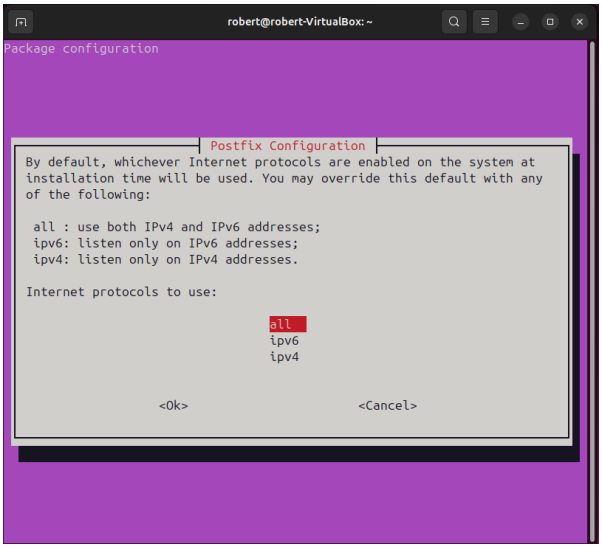

robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
Mail for the 'postmaster', 'root', and other system accounts needs to be redirected to the user account of the actual system administrator.
If this value is left empty, such mail will be saved in /var/mail/nobody, which is not recommended.
Mail is not delivered to external delivery agents as root.
If you already have a /etc/aliases file and it does not have an entry for root, then you should add this entry. Leave this blank to not add one.
Recipient for root and postmaster mail:
<Ok>
<Cancel>


robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
Please give a comma-separated list of domains for which this machine should consider itself the final destination. If this is a mail domain gateway, you probably want to include the top-level domain.
Other destinations to accept mail for (blank for none):
ox.home, localhost, robert-VirtualBox, localhost.localdomain, localhost
<Ok>
<Cancel>


robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
If synchronous updates are forced, then mail is processed more slowly.
If not forced, then there is a remote chance of losing some mail if the
system crashes at an inopportune time, and you are not using a
journaled filesystem (such as ext3).
Force synchronous updates on mail queue?
<Yes>
<No>


robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
Please specify the network blocks for which this host should relay
mail. The default is just the local host, which is needed by some mail
user agents. The default includes local host for both IPv4 and IPv6. If
just connecting via one IP version, the unused value(s) may be removed.
If this host is a smarthost for a block of machines, you need to
specify the netblocks here, or mail will be rejected rather than
relayed.
To use the Postfix default (which is based on the connected subnets),
leave this blank.
Local networks:
127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128
<Ok>
<Cancel>


robert@robert-VirtualBox: ~
Package configuration
Postfix Configuration
Please specify the limit that Postfix should place on mailbox files to
constrain file system usage by a single file (potentially due to
abusive mail or software errors). A value of zero (0) means no limit.
The upstream default is 51200000.
Mailbox size limit (bytes):
0
<Ok>
<Cancel>



3. Verificare si testare Postfix

systemctl status postfix

```
robert@robert-VirtualBox:~$ systemctl status postfix
● postfix.service - Postfix Mail Transport Agent
     Loaded: loaded (/usr/lib/systemd/system/postfix.service; enabled; preset:>
     Active: active (exited) since Thu 2025-05-22 00:41:05 EEST; 27s ago
       Docs: man:postfix(1)
    Process: 7954 ExecStart=/bin/true (code=exited, status=0/SUCCESS)
   Main PID: 7954 (code=exited, status=0/SUCCESS)
        CPU: 2ms
```

4. Trimiterea unui email local

echo "Acesta este un mesaj de test local!" | mail -s "Mail de test" Robert

```
robert@robert-VirtualBox:~$ echo "Acesta este un mesaj de test local!" | mail -
s "Mail de test" robert
```

5. Verificare port SMTP (25)

ss -tuln | grep :25

```
robert@robert-VirtualBox:~$ ss -tuln | grep :25
tcp   LISTEN 0      100                                0.0.0.0:25         0
.0.0.0:*
tcp   LISTEN 0      100                                   [::]:25
  [::]:*
```

6. Citirea emailului primit: mail

```
robert@robert-VirtualBox:~$ mail
"/var/mail/robert": 1 message 1 new
>N   1 robert              Thu May 22 00:42  13/499   Mail de test
?
Return-Path: <robert@robert-VirtualBox>
X-Original-To: robert
Delivered-To: robert@robert-VirtualBox.home
Received: by robert-VirtualBox.home (Postfix, from userid 1000)
        id F38AE164DEC; Thu, 22 May 2025 00:42:03 +0300 (EEST)
Subject: Mail de test
To: robert@robert-VirtualBox.home
User-Agent: mail (GNU Mailutils 3.17)
Date: Thu, 22 May 2025 00:42:03 +0300
Message-Id: <20250521214203.F38AE164DEC@robert-VirtualBox.home>
From: robert <robert@robert-VirtualBox>

Acesta este un mesaj de test local!
? q
Saved 1 message in /home/robert/mbox
Held 0 messages in /var/mail/robert
```

Navigare in interfata mail:

- Enter – deschide mesajul
- q – iesire
- d – sterge mesajul