



INSTITUT PROVENÇANA

Pràctica Guiada

Creació de Màquines Virtuals

MÒDUL 1:

SISTEMES INFORMÀTICS

UNITAT FORMATIVA 1:

INSTAL·LACIÓ, CONFIGURACIÓ
I EXPLOTACIÓ DEL SISTEMA INFORMÀTIC

Eina Coma Bages

Curs 2022/2023

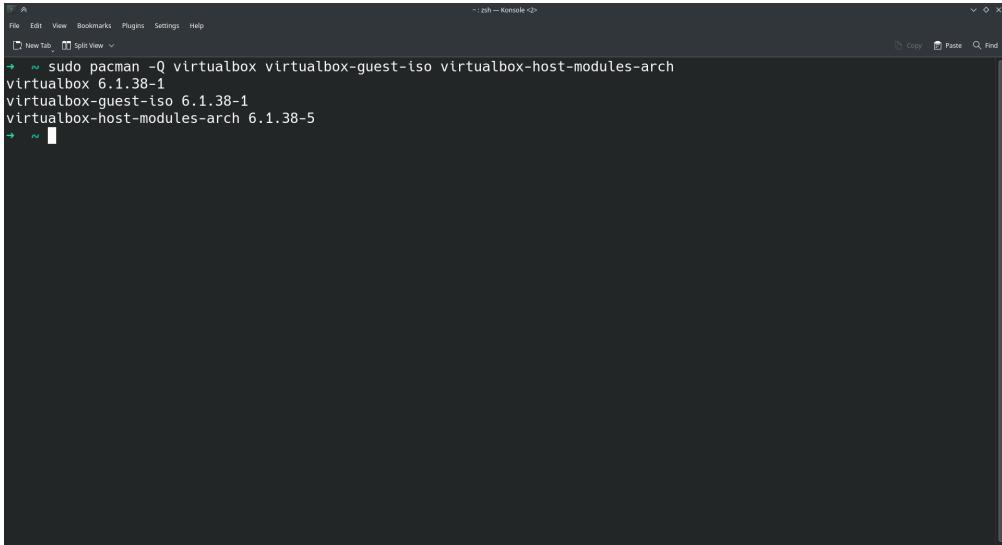
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1 INSTAL·LACIÓ DE VIRTUALBOX A LA MÀQUINA AMFITRIONA

Comprovem que VirtualBox, les addicions i els mòduls de kernel ja estan instal·lats amb la següent ordre: `pacman -Q virtualbox virtualbox-guest-iso virtualbox-host-modules-arch`.

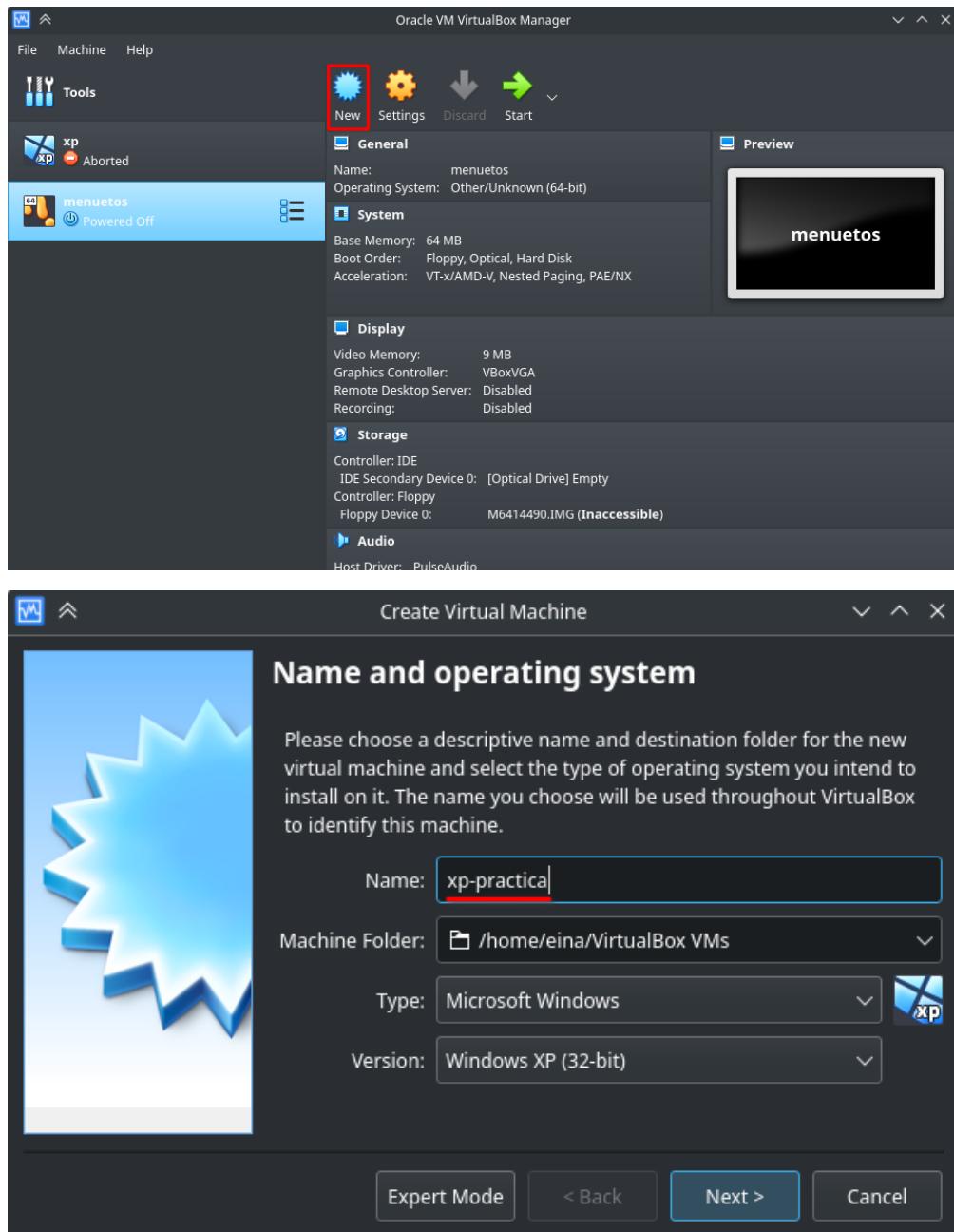
Si no ho estiguessin ho podríem fer amb l'ordre `pacman -S` i els noms dels paquets.

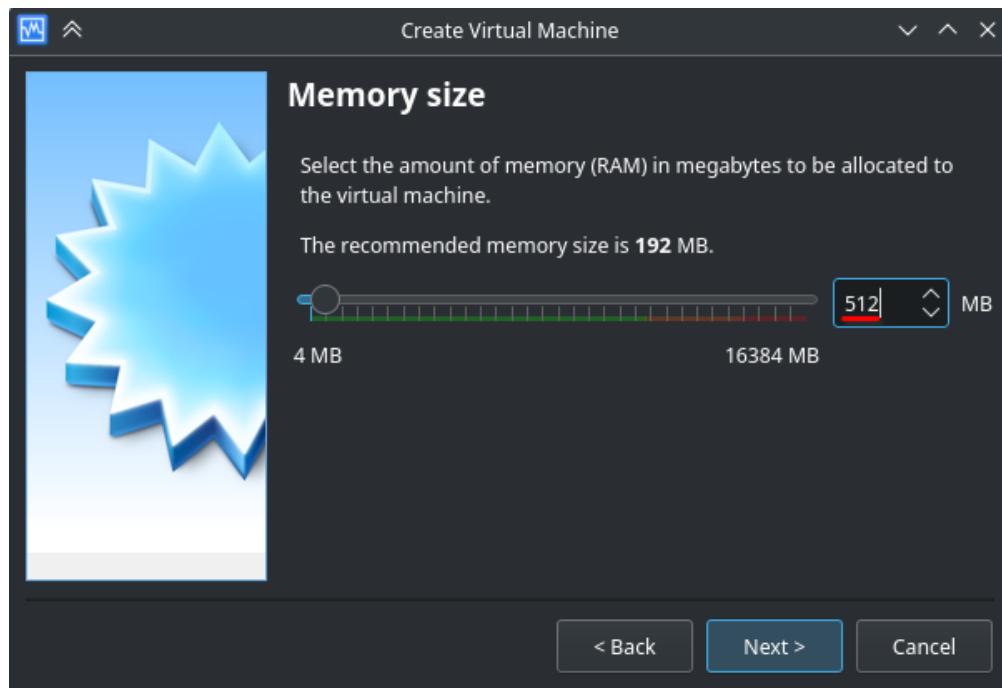


```
File Edit View Bookmarks Plugins Settings Help
New Tab Split View ~: /zh — Konsole <P>
copy Paste Find
~ sudo pacman -Q virtualbox virtualbox-guest-iso virtualbox-host-modules-arch
virtualbox 6.1.38-1
virtualbox-guest-iso 6.1.38-1
virtualbox-host-modules-arch 6.1.38-5
~
```

2 INSTAL·LACIÓ D'XP

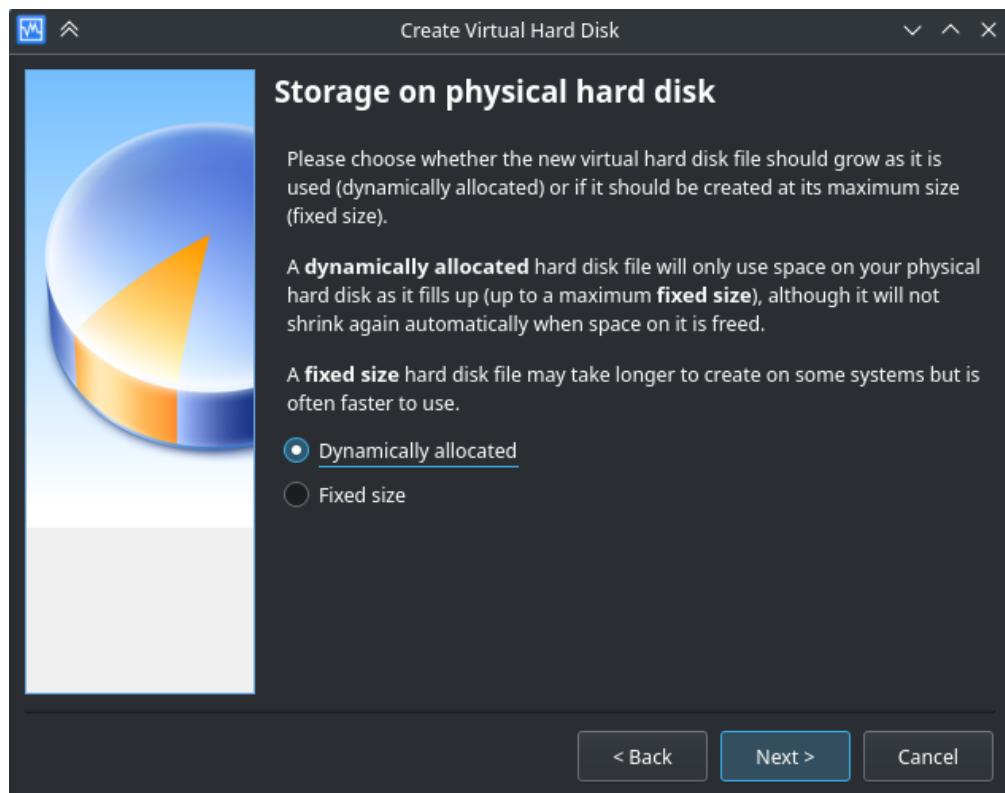
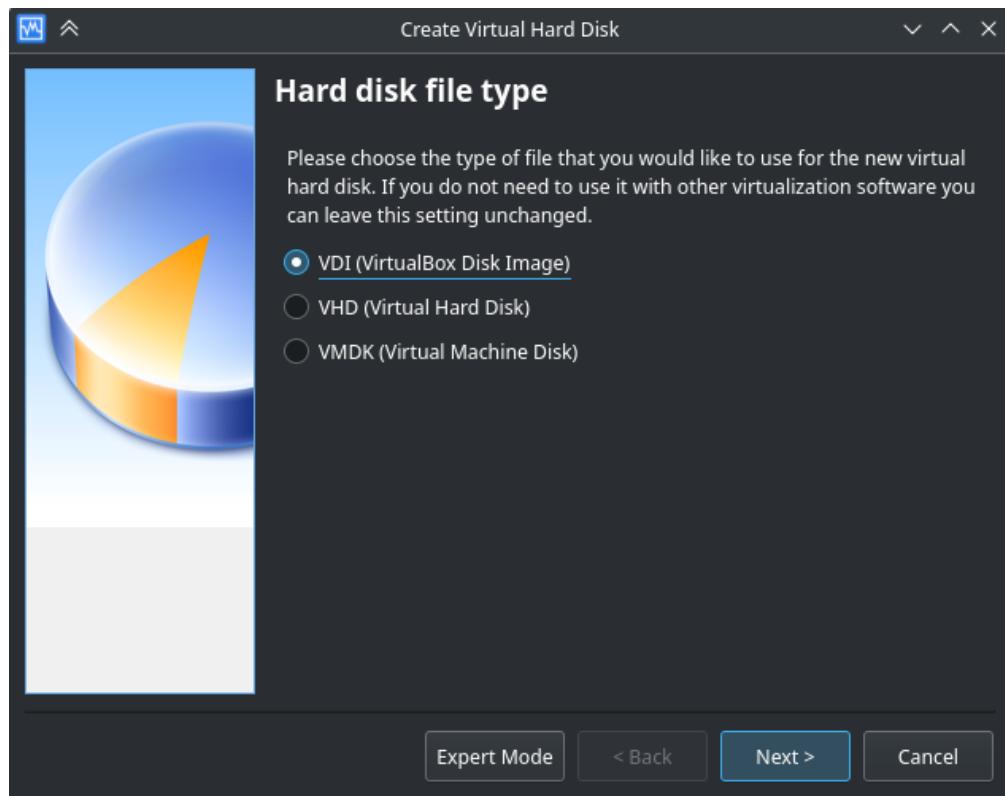
Creem una nova màquina virtual, l'anomenarem **xp-practica** i augmentarem a 512 MB dels 192 MB de RAM que VirtualBox suggereix per defecte.

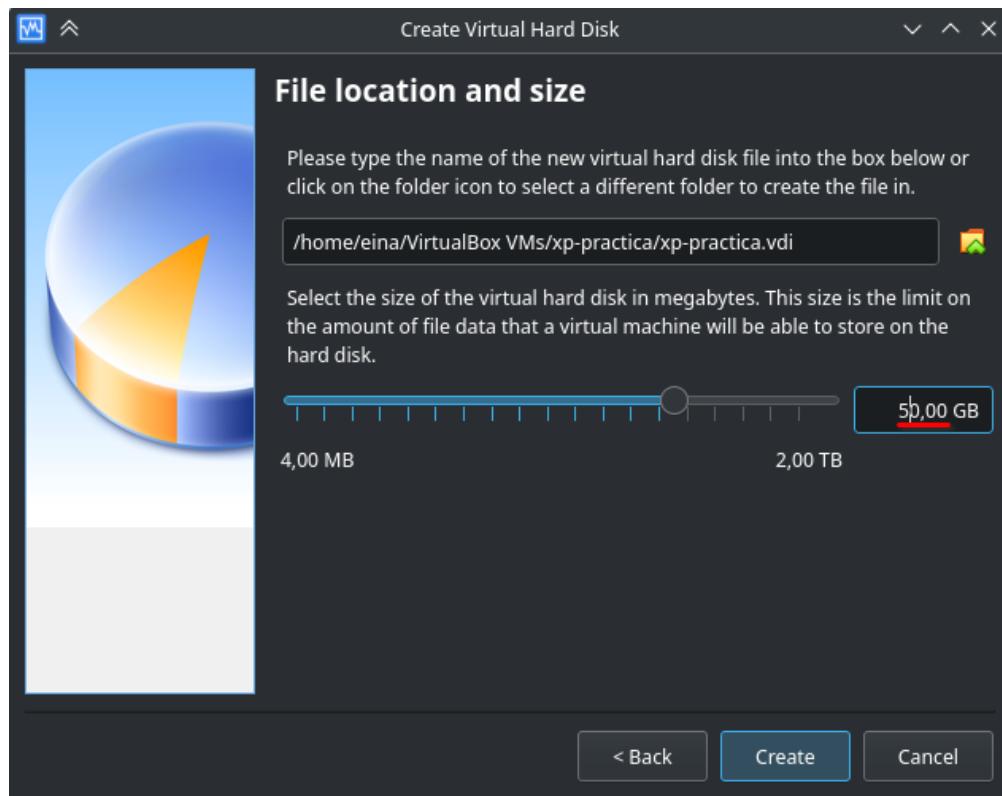




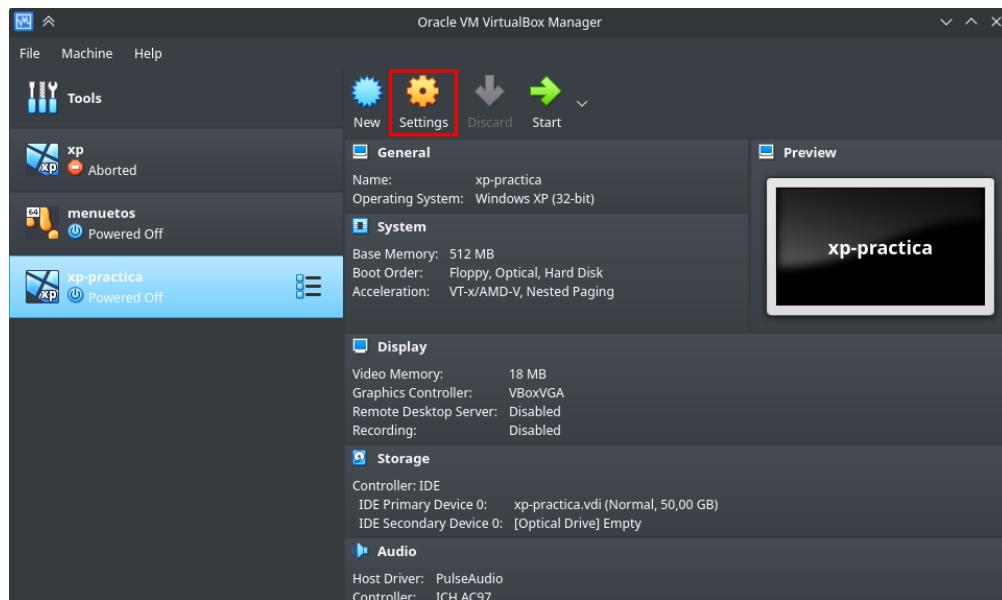
Creem un disc dur tipus VDI, allotjat dinàmicament, de 50 GB (en comptes dels 10 GB que surten per defecte).

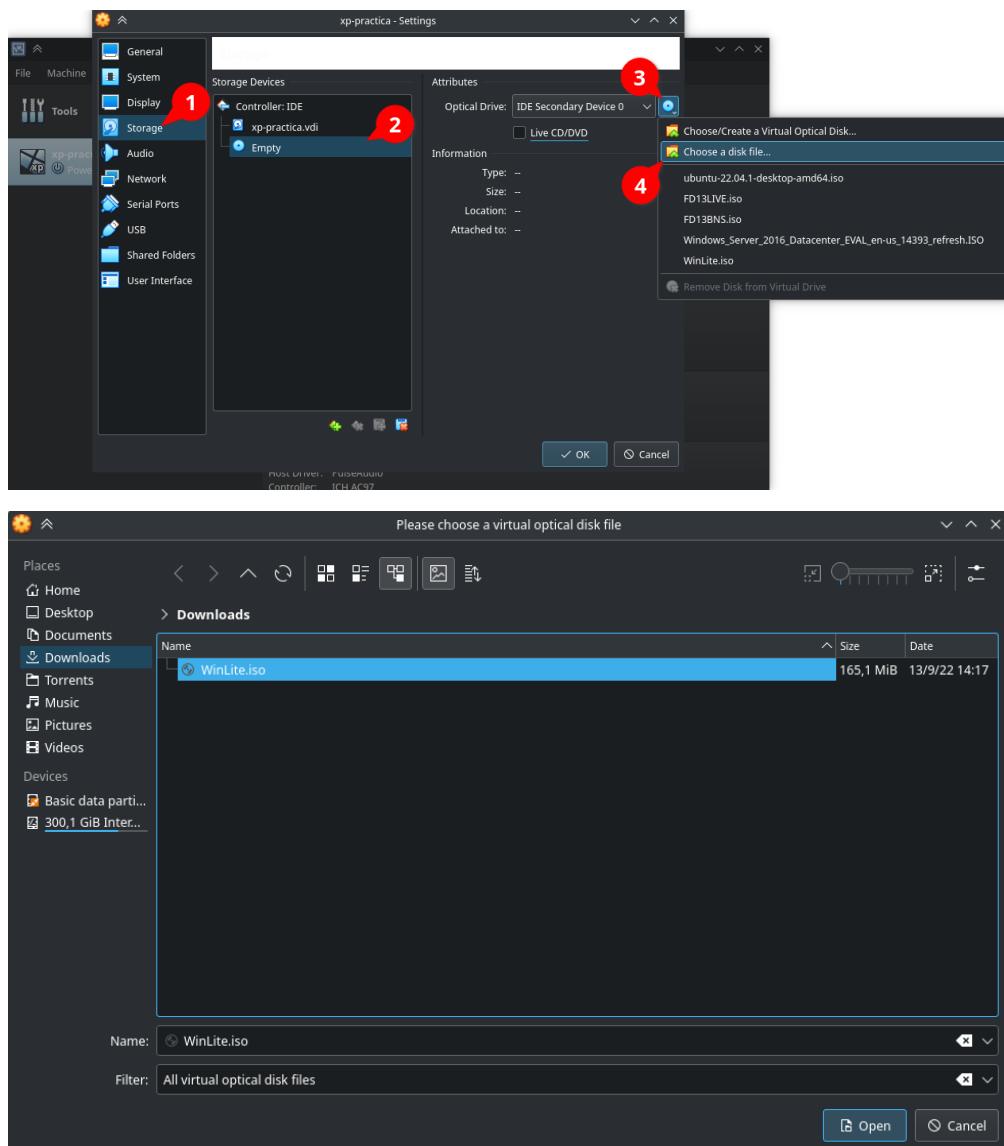


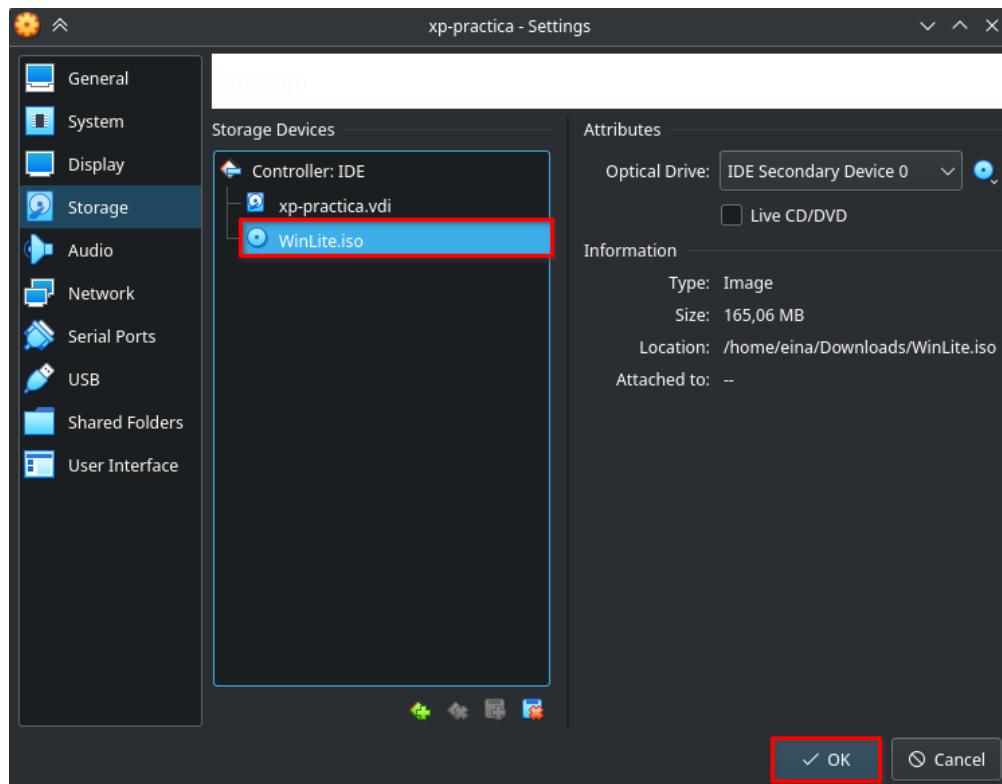




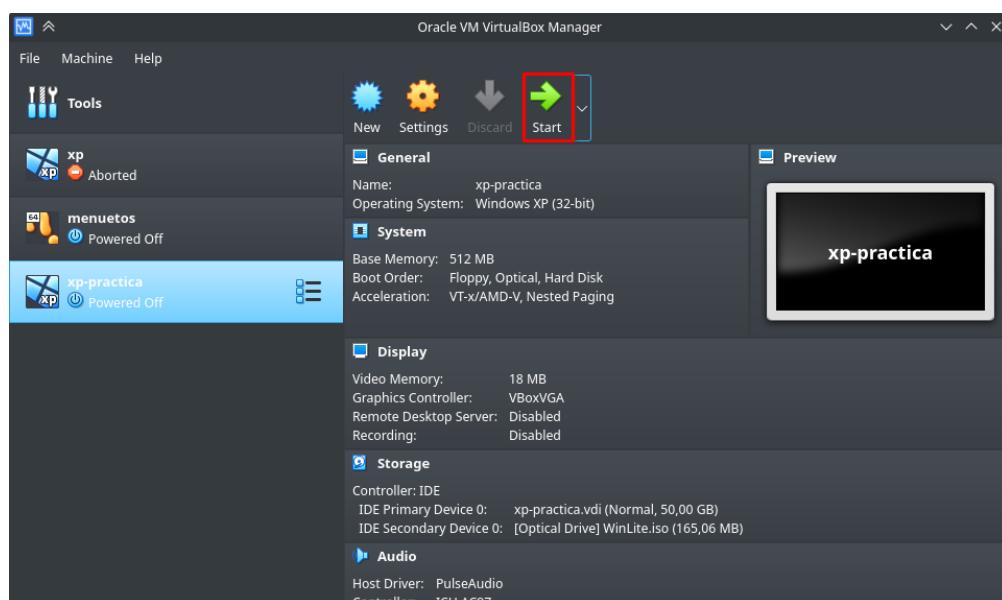
Una vegada acabat el procés de creació, seleccionem la màquina que acabem de crear i anem a configuració, pestanya Emmagatzematge i seleccionem el disc, que està buit. Pitgem la icona de la dreta i triem l'ISO de Windows XP.

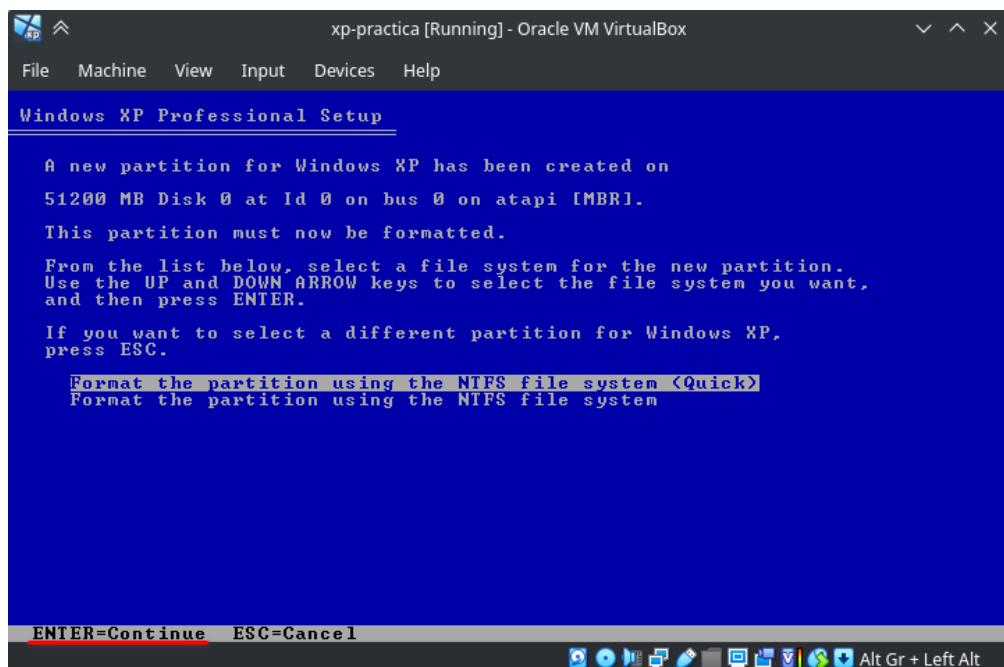
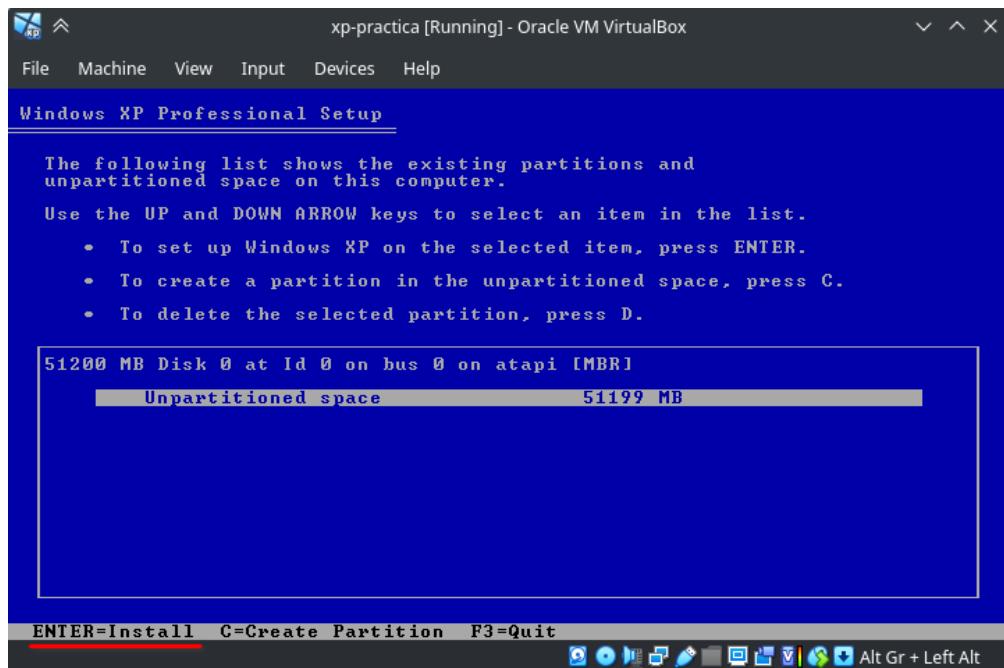


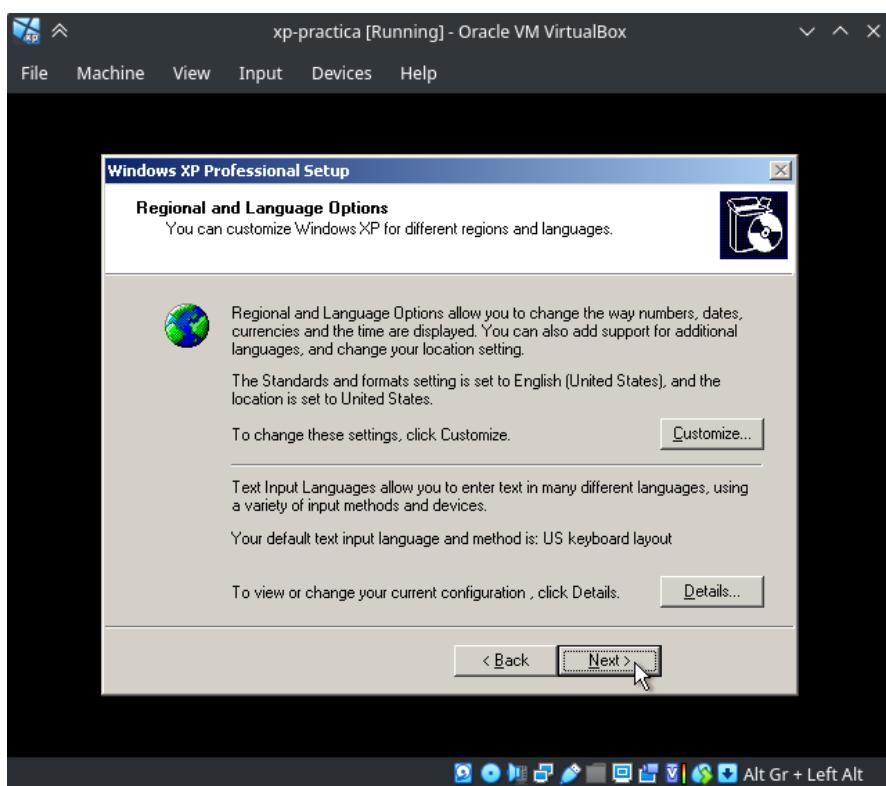
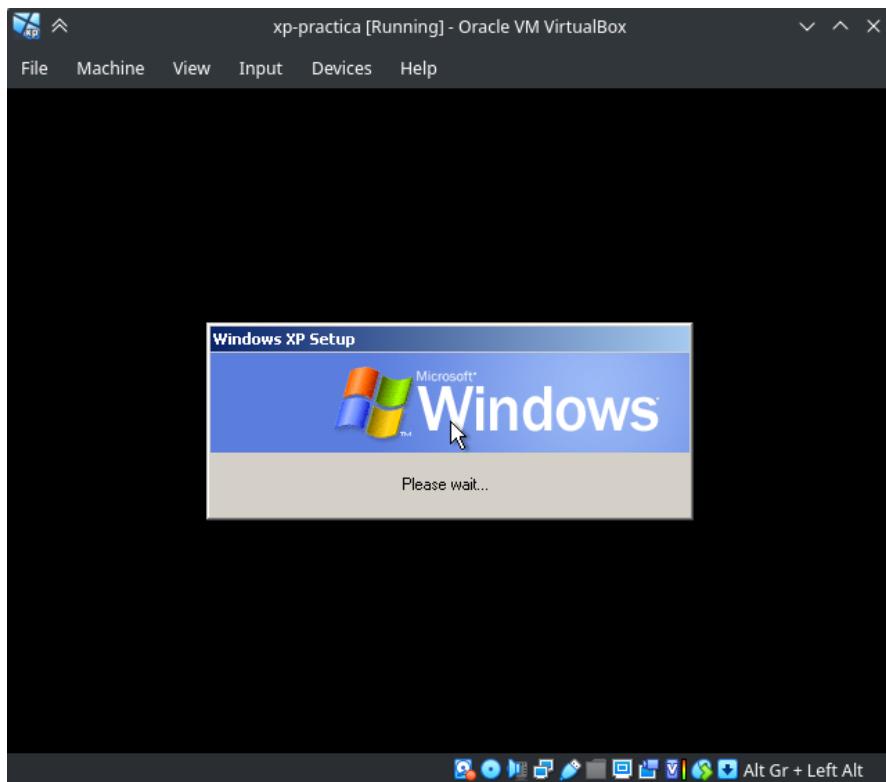


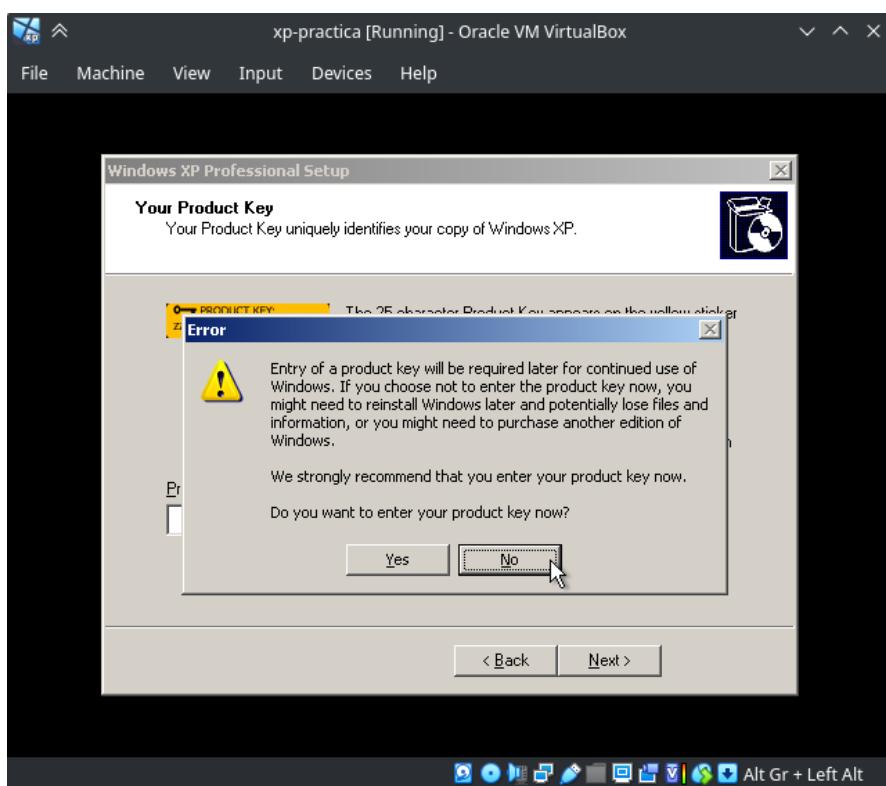
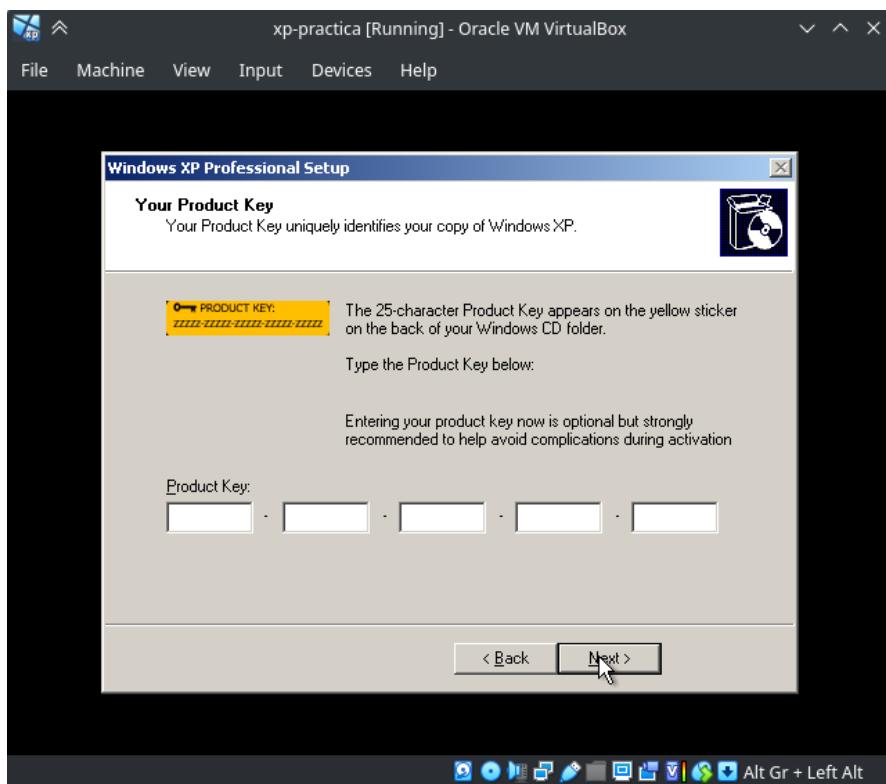


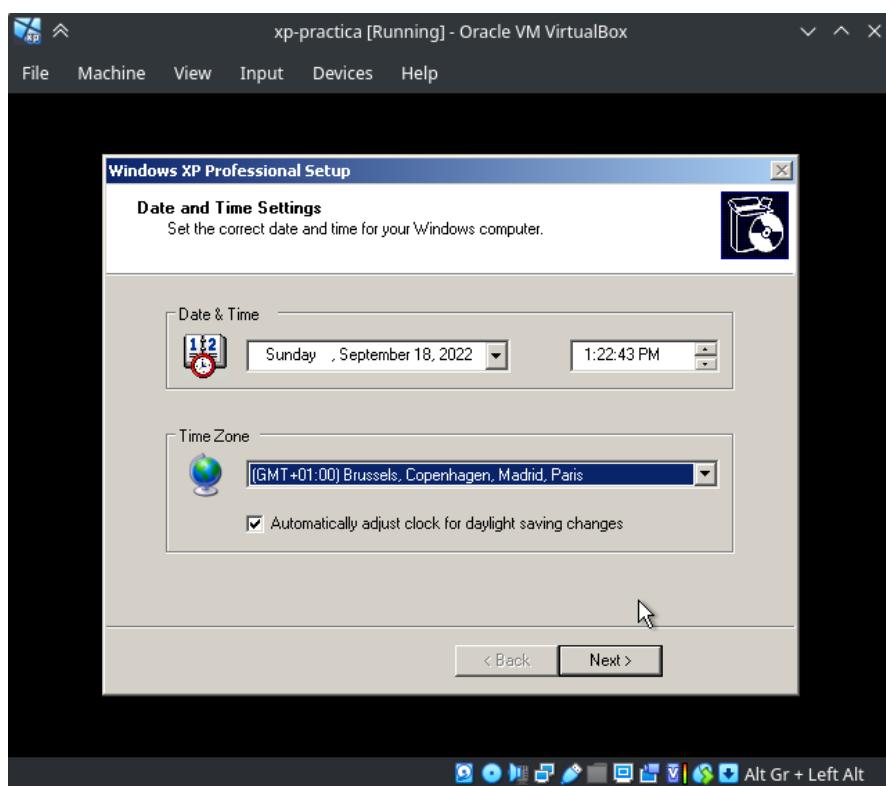
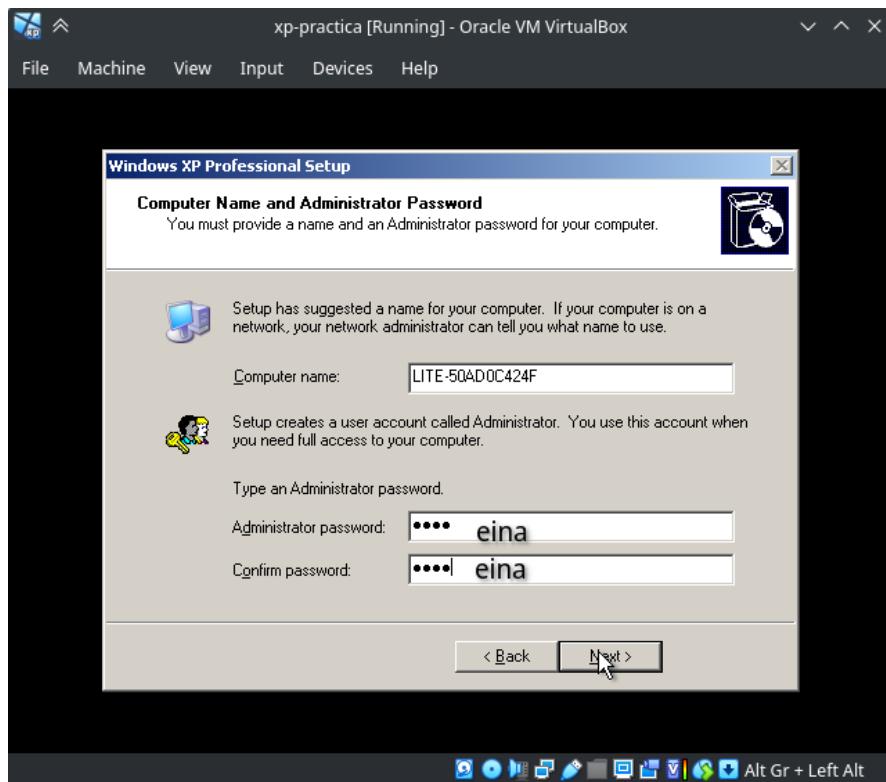
Ara ja podem iniciar la màquina i començar amb la instal·lació. Seleccionem l'espai sense particionar i el formatem amb NTFS i seguim els passos de l'instal·lador.

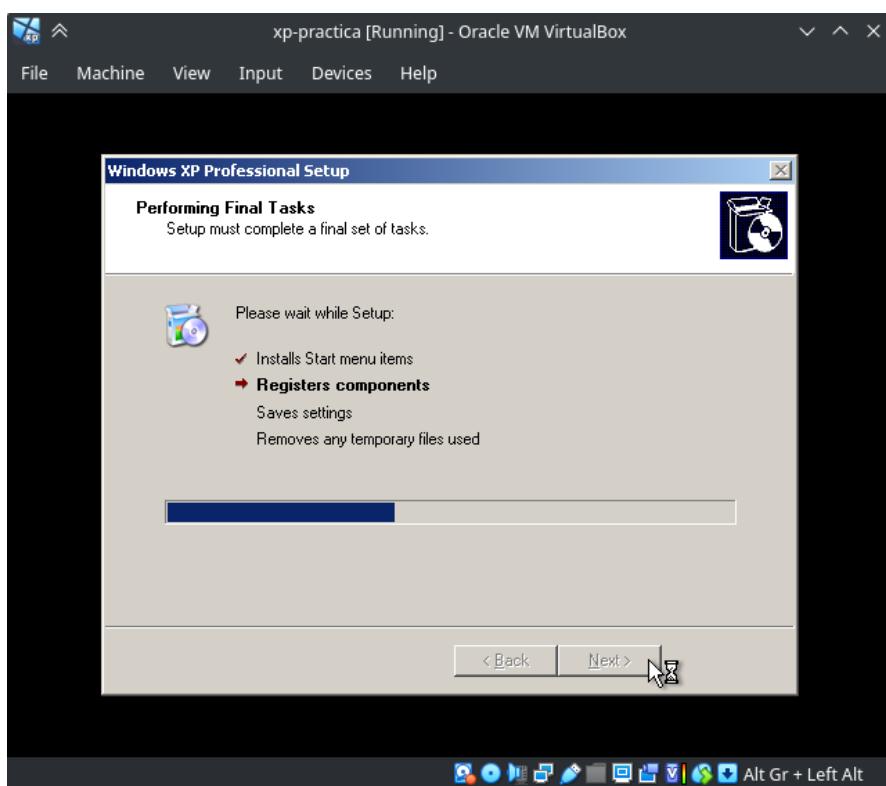
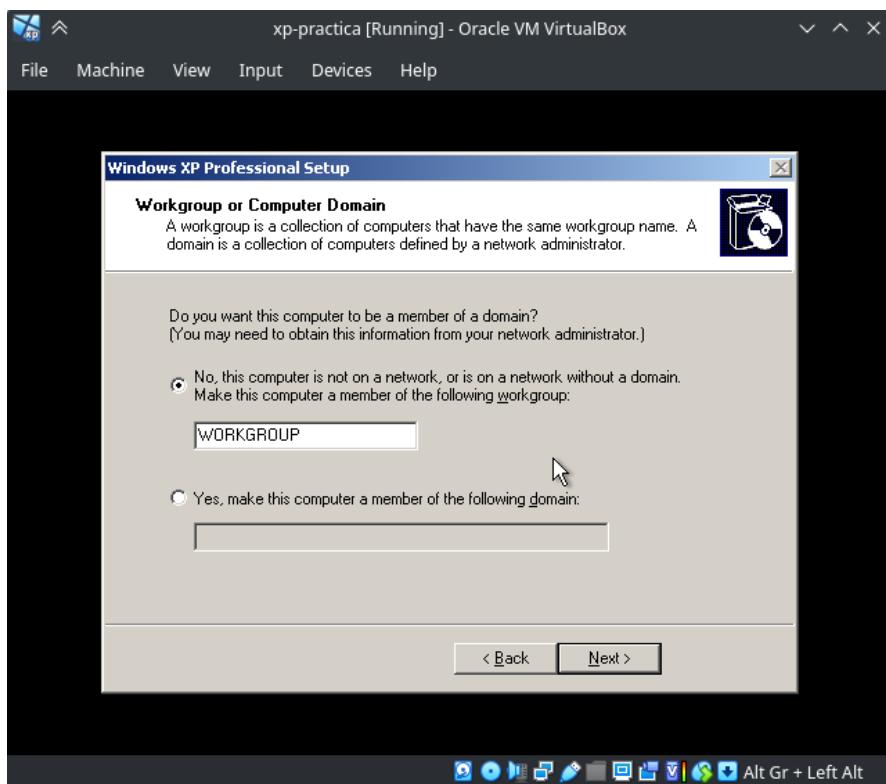


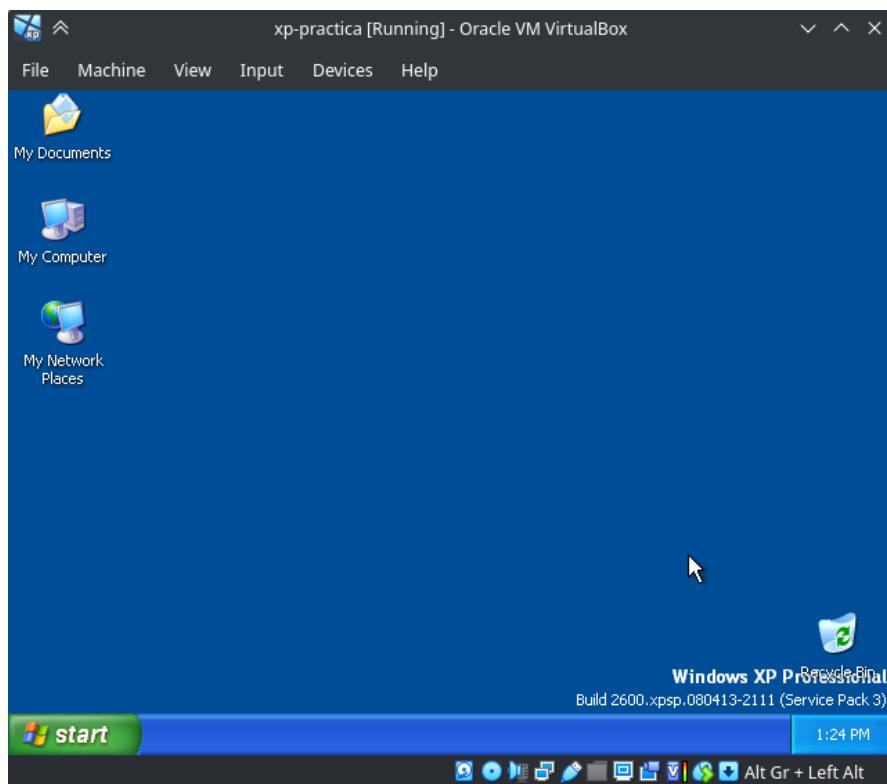




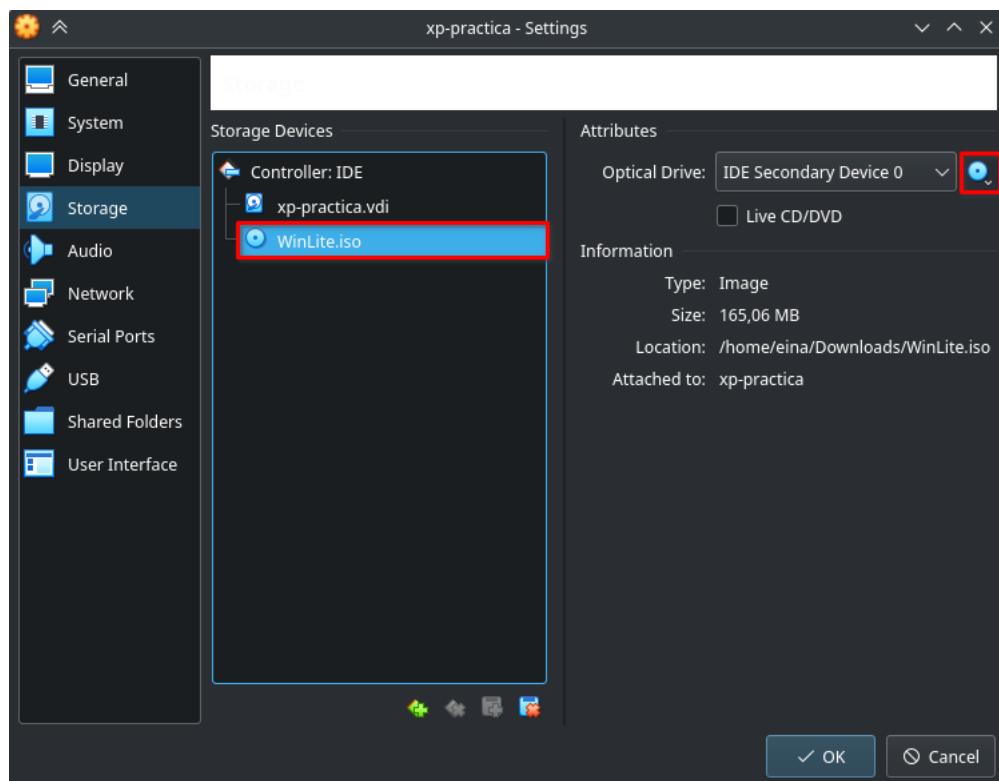


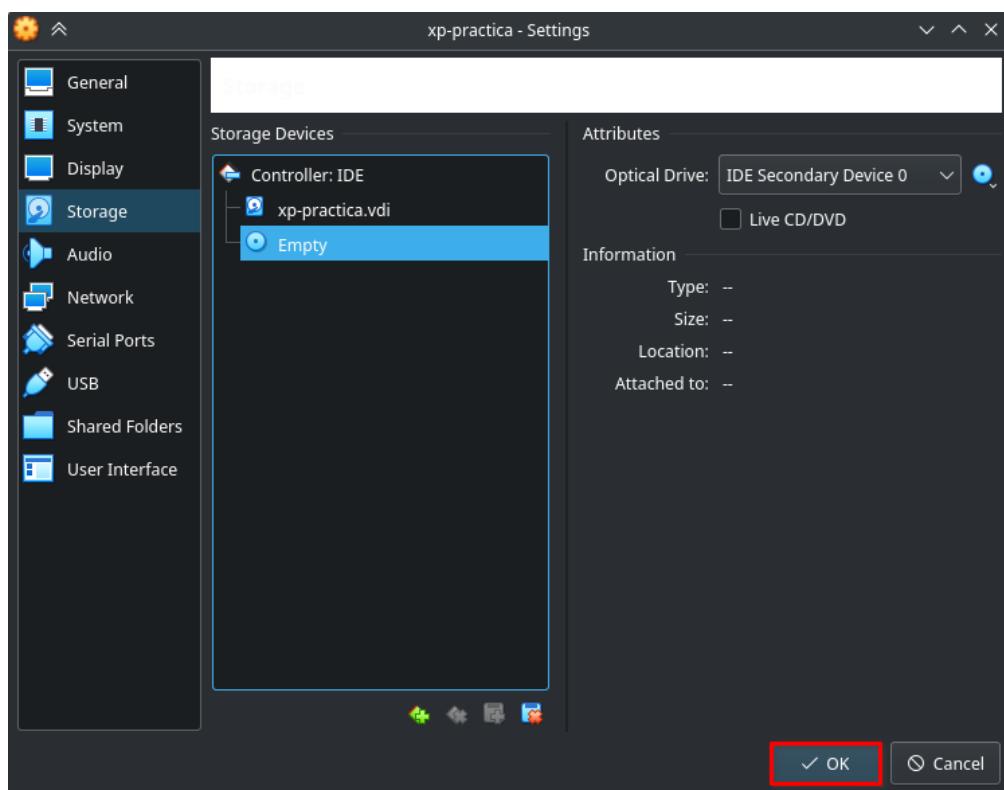
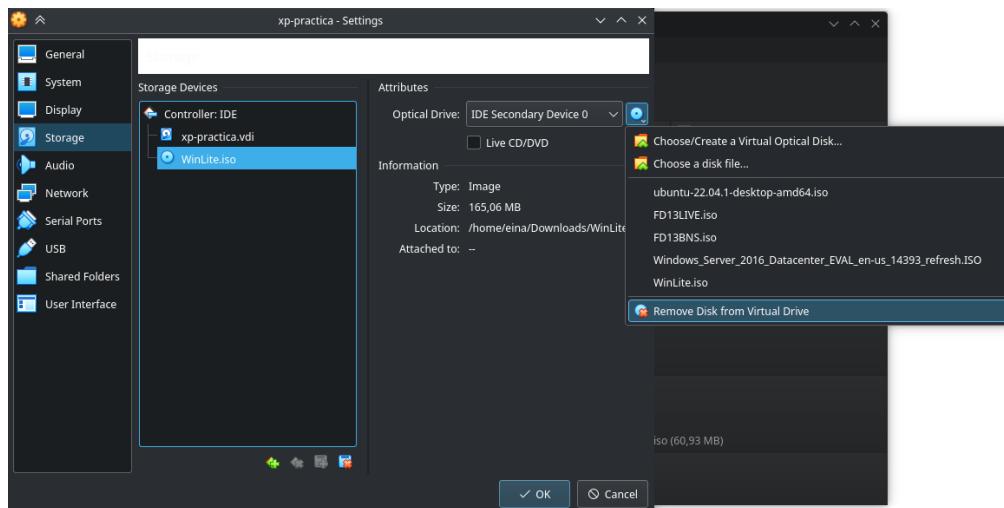






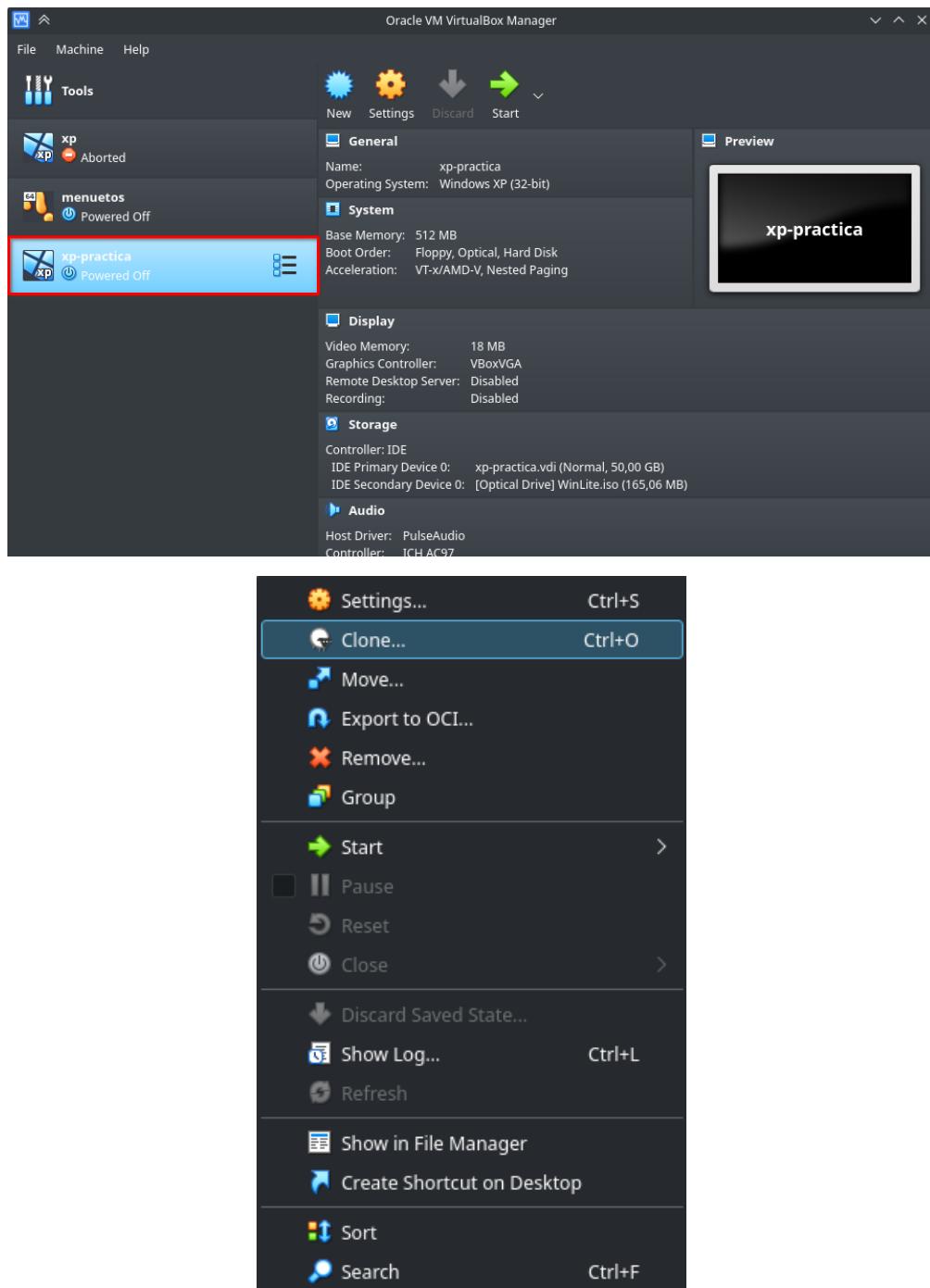
Amb la instal·lació feta, ja podem treure el disc.

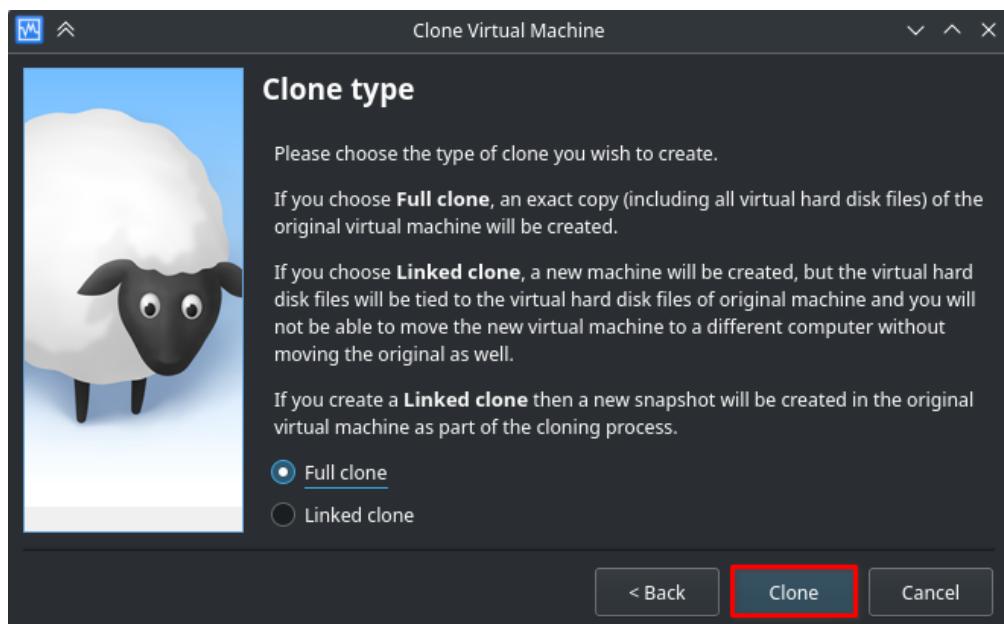
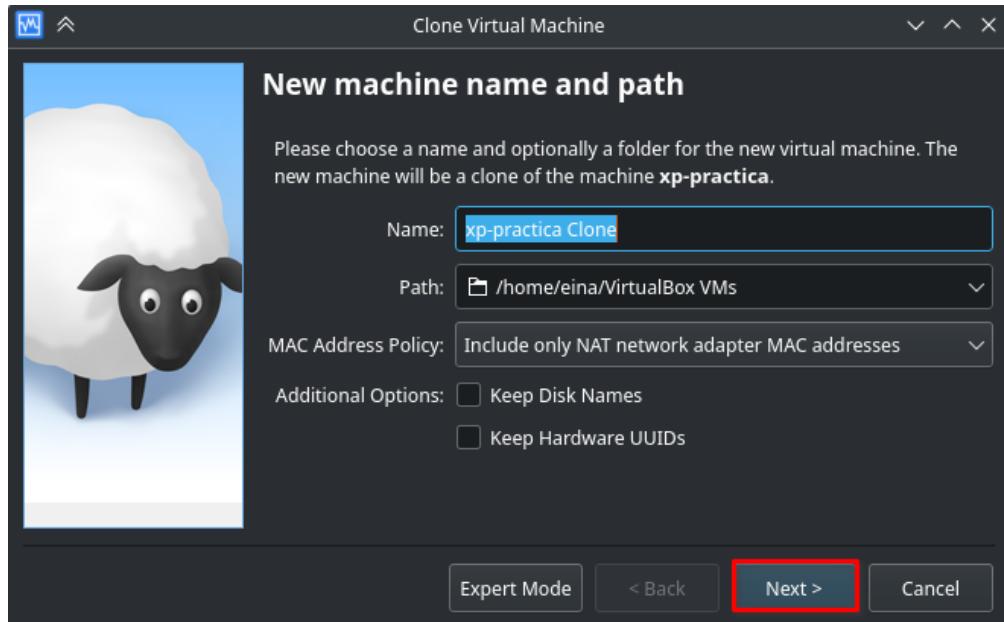


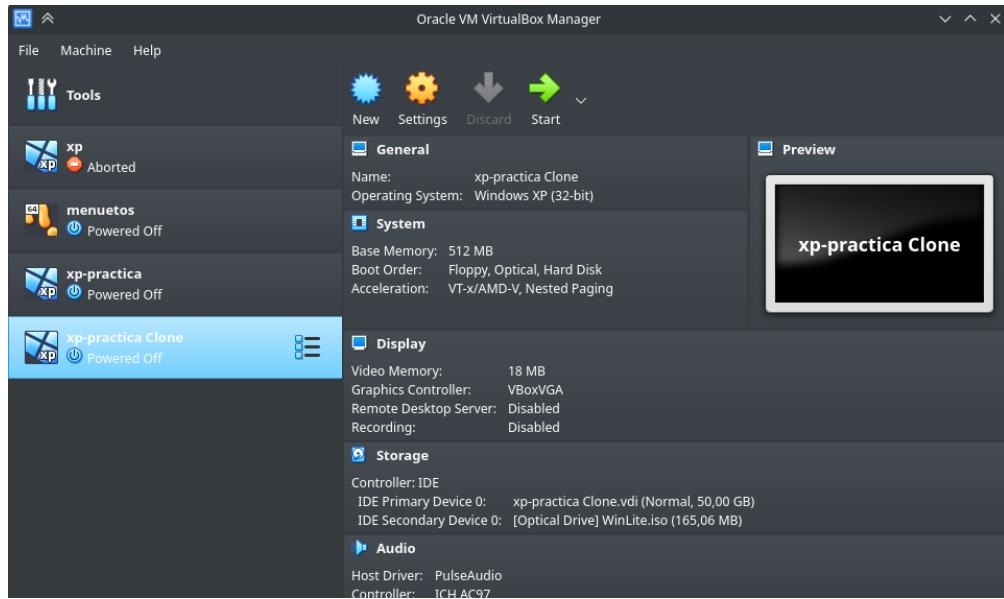


2.1 CLONACIÓ DE LA MÀQUINA

Fem clic dret a la nostra màquina i seleccionem clonar. Ens estan bé les opcions per defecte.

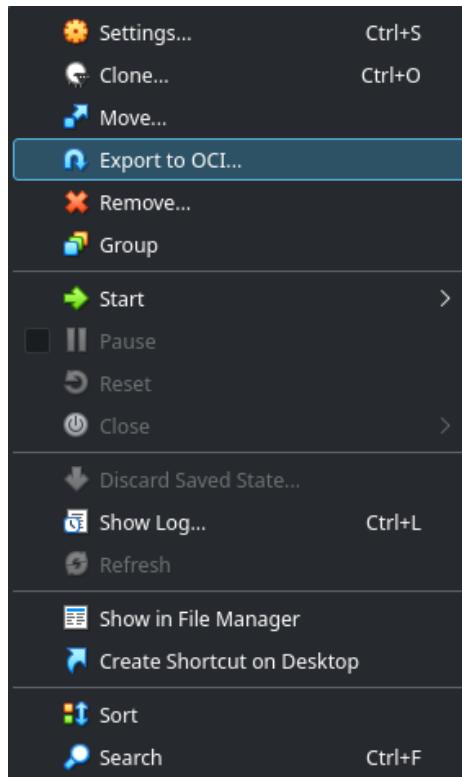


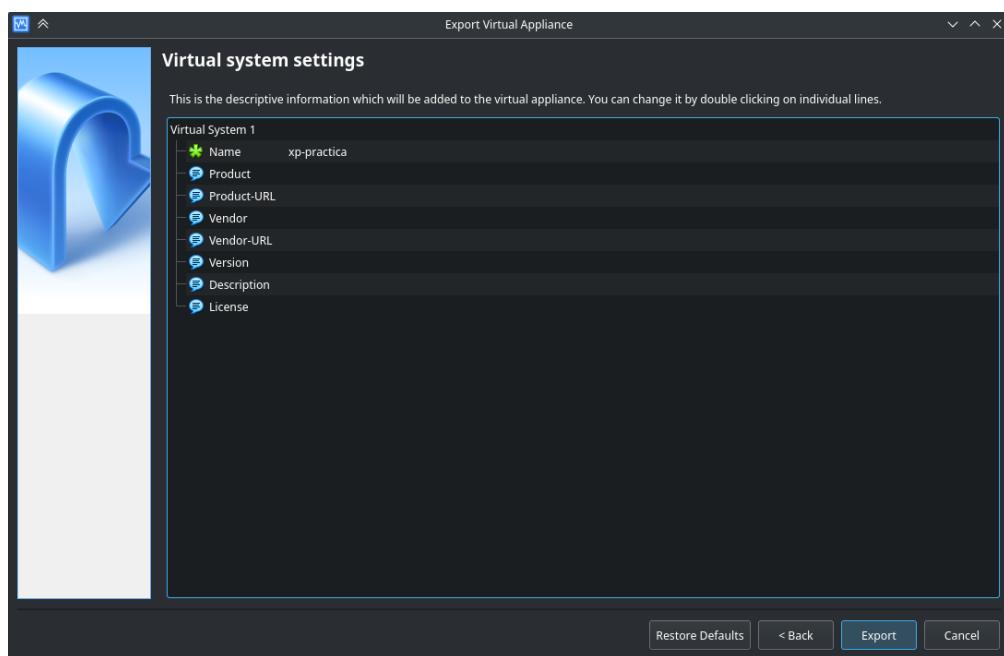
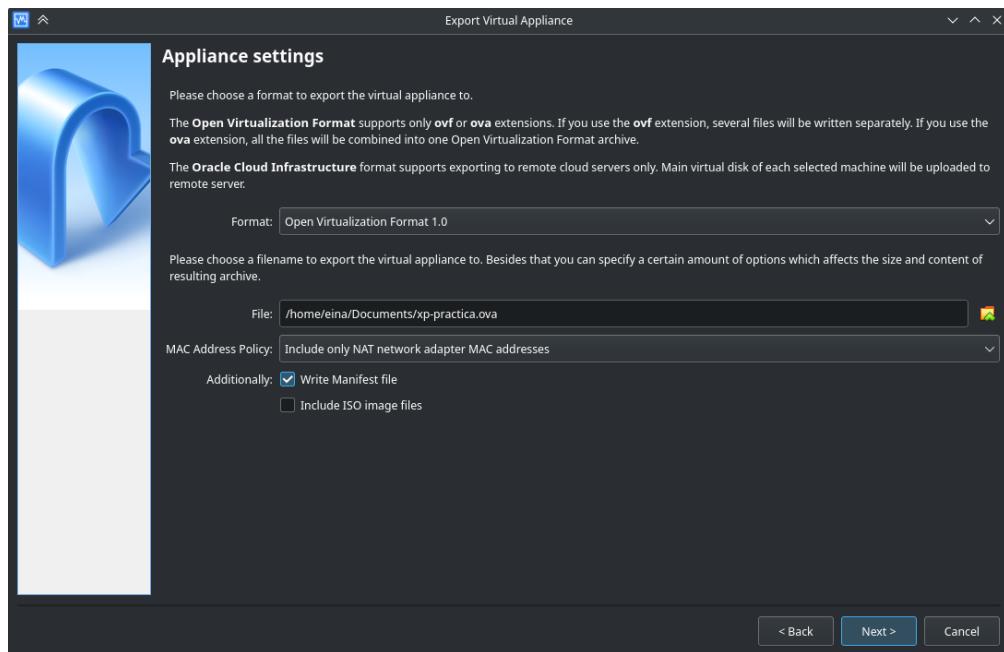




2.2 EXPORTACIÓ

Tornem a fer clic dret a la nostra màquina, però aquesta vegada seleccionarem exportar. També ens estan bé les opcions per defecte.





3 INSTAL·LACIÓ D'UBUNTU

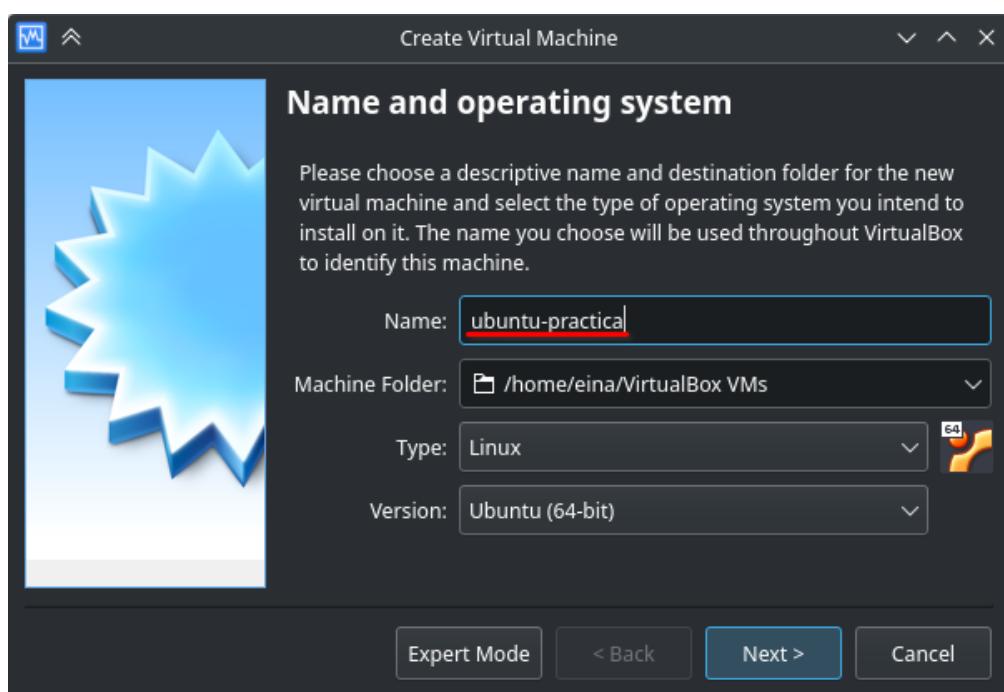
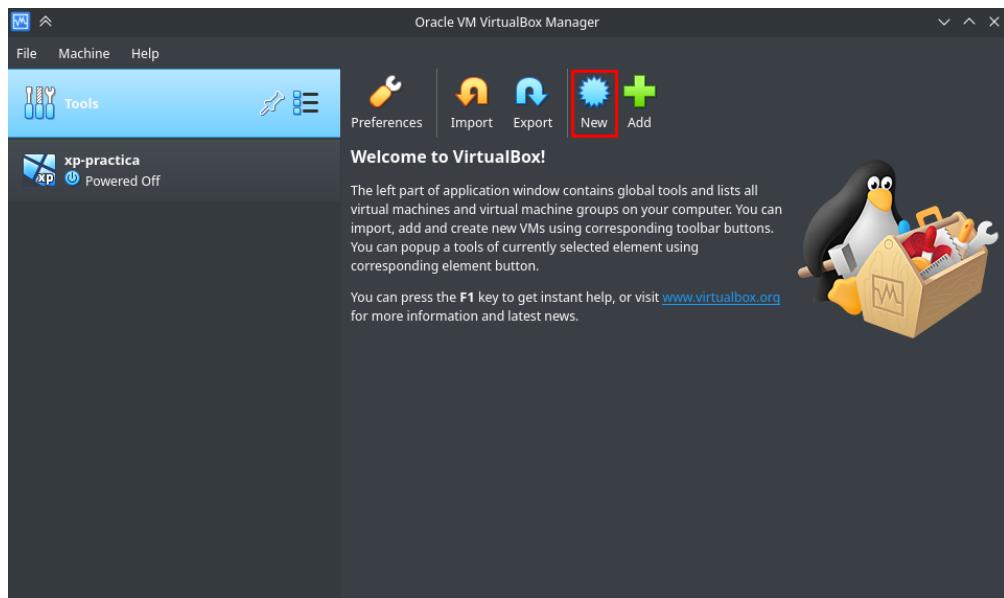
Canonical ja no ofereix els checksums MD5 de les versions més recents d'Ubuntu, només els SHA256, per tant farem servir aquest últim algoritme. Descarreguem el fitxer **SHA256SUMS**, que conté les signatures per les ISOs de la versió 22.04, al mateix directori on prèviament ja hem descarregat l'ISO que volem validar.

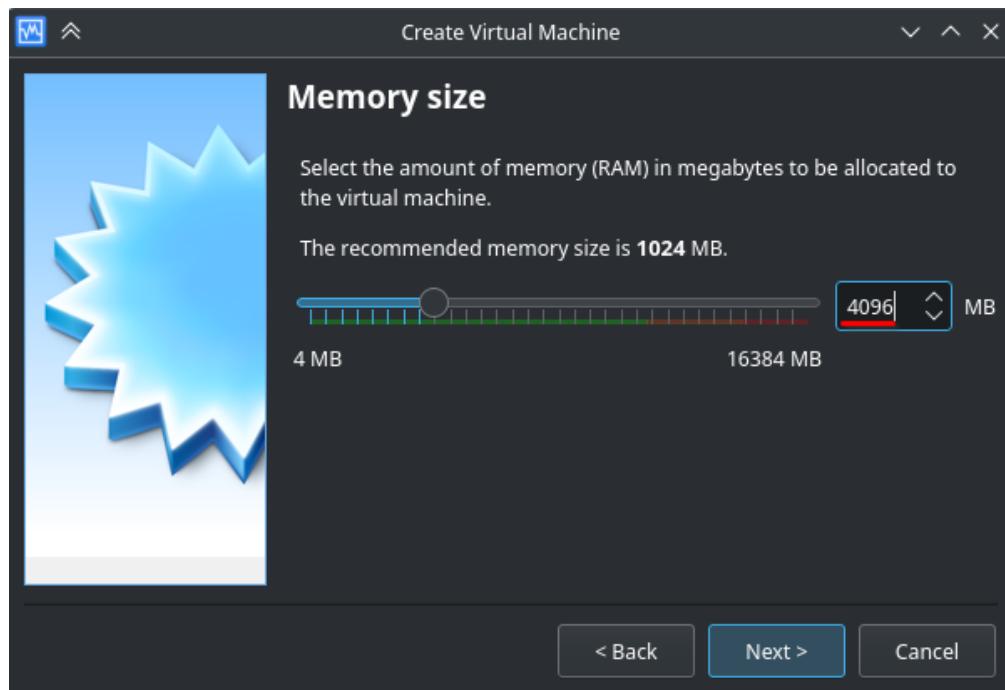
Com que aquest arxiu conté els hashes de les versions d'escriptori i la de servidor, ens dona un error, ja que no pot trobar la segona imatge, però el que a nosaltres ens importa és que aconsegueix verificar la primera.

```
Downloads: zsh — Konsole <>
File Edit View Bookmarks Plugins Settings Help
New Tab Split View
Downloads wget https://releases.ubuntu.com/releases/22.04/SHA256SUMS
2022-09-23 21:43:47  https://releases.ubuntu.com/releases/22.04/SHA256SUMS
Loaded CA certificate '/etc/ssl/certs/ca-certificates.crt'
Resolving releases.ubuntu.com (releases.ubuntu.com)... 91.189.91.124, 185.125.190.40, 185.125.190.37, ...
Connecting to releases.ubuntu.com (releases.ubuntu.com)|91.189.91.124|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 202
Saving to: 'SHA256SUMS'

SHA256SUMS          100%[=====] 202 --KB/s   in 0s
2022-09-23 21:43:47 (152 MB/s) - 'SHA256SUMS' saved [202/202]
Downloads sha256sum -c SHA256SUMS
ubuntu:~ 22.04.1-desktop-amd64.iso: OK
sha256sum: ubuntu-22.04.1-live-server-amd64.iso: No such file or directory
ubuntu-22.04.1-live-server-amd64.iso: FAILED open or read
sha256sum: WARNING: 1 listed file could not be read
Downloads
```

El procediment per crear la màquina és el mateix que hem descrit abans amb Windows. Posarem de nom **ubuntu-practica**, 4 GB de ram i 50 de disc dur.





Hard disk file type

Please choose the type of file that you would like to use for the new virtual hard disk. If you do not need to use it with other virtualization software you can leave this setting unchanged.

VDI (VirtualBox Disk Image)
 VHD (Virtual Hard Disk)
 VMDK (Virtual Machine Disk)

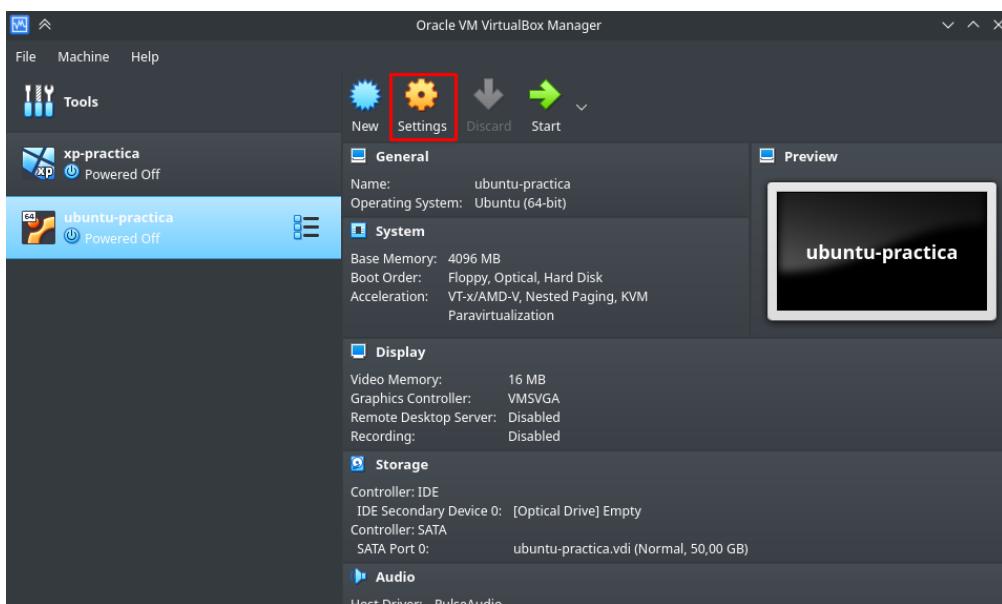
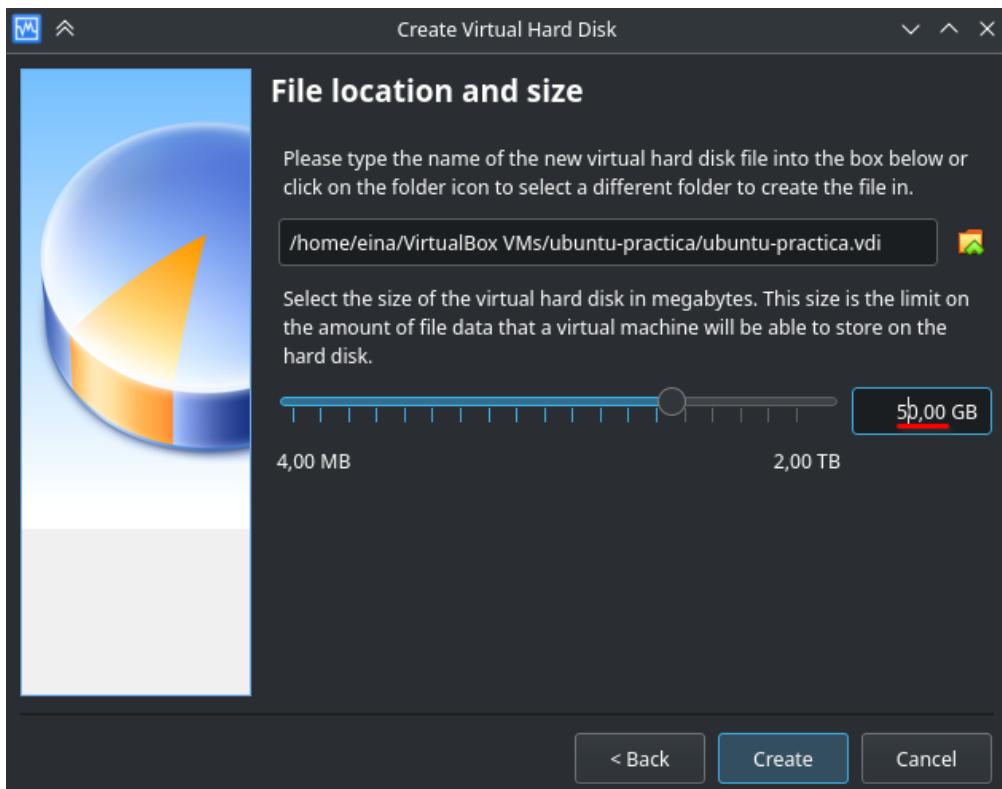
Storage on physical hard disk

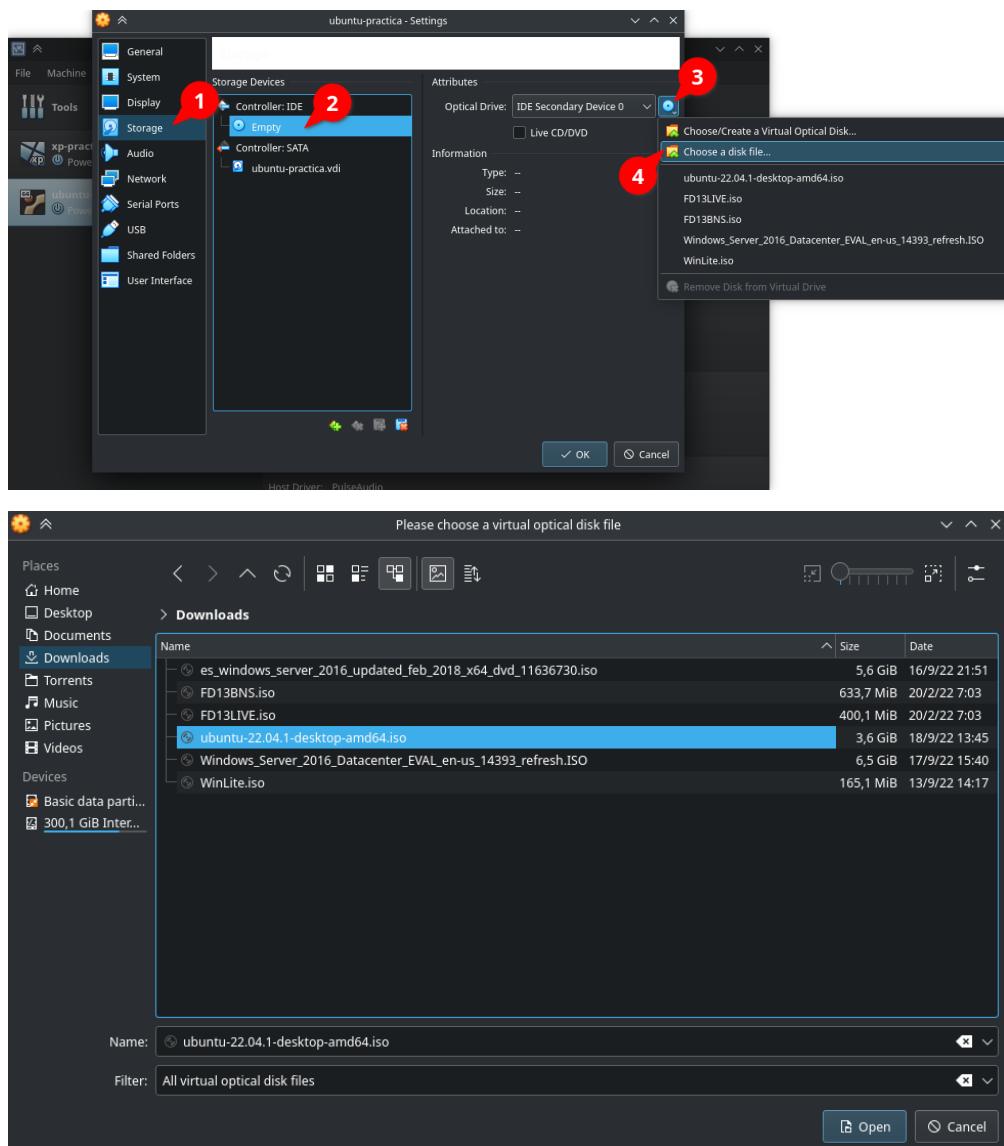
Please choose whether the new virtual hard disk file should grow as it is used (dynamically allocated) or if it should be created at its maximum size (fixed size).

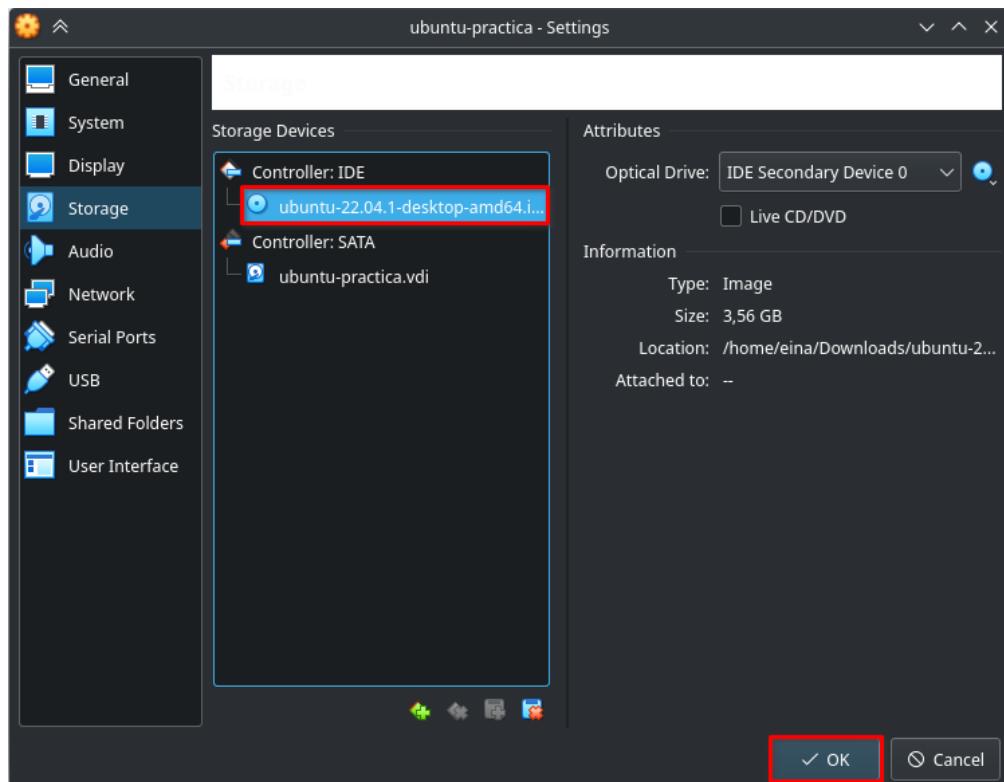
A **dynamically allocated** hard disk file will only use space on your physical hard disk as it fills up (up to a maximum **fixed size**), although it will not shrink again automatically when space on it is freed.

A **fixed size** hard disk file may take longer to create on some systems but is often faster to use.

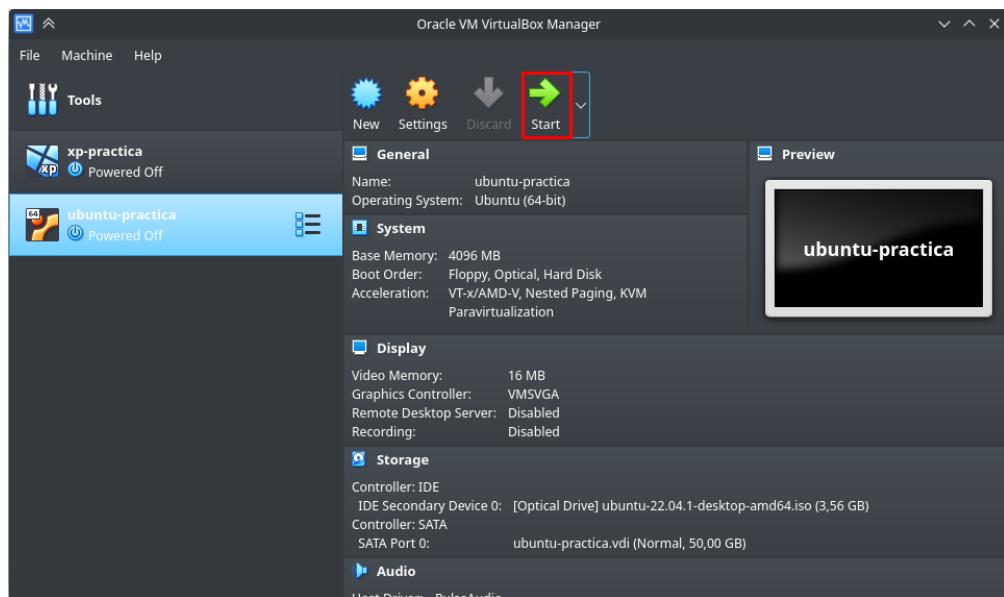
Dynamically allocated
 Fixed size

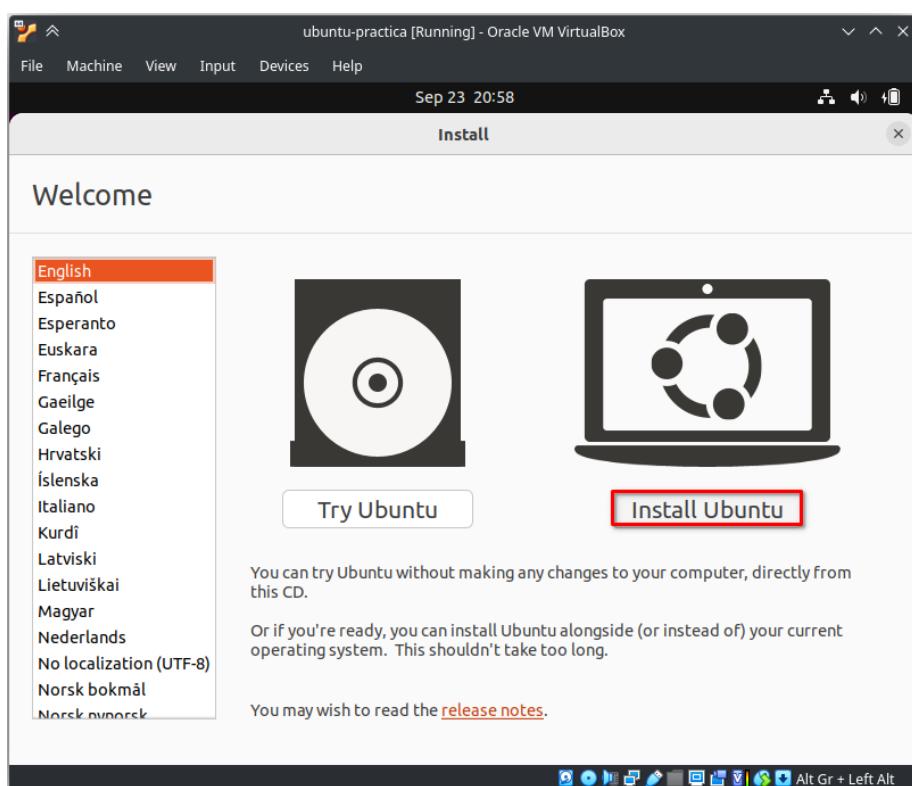
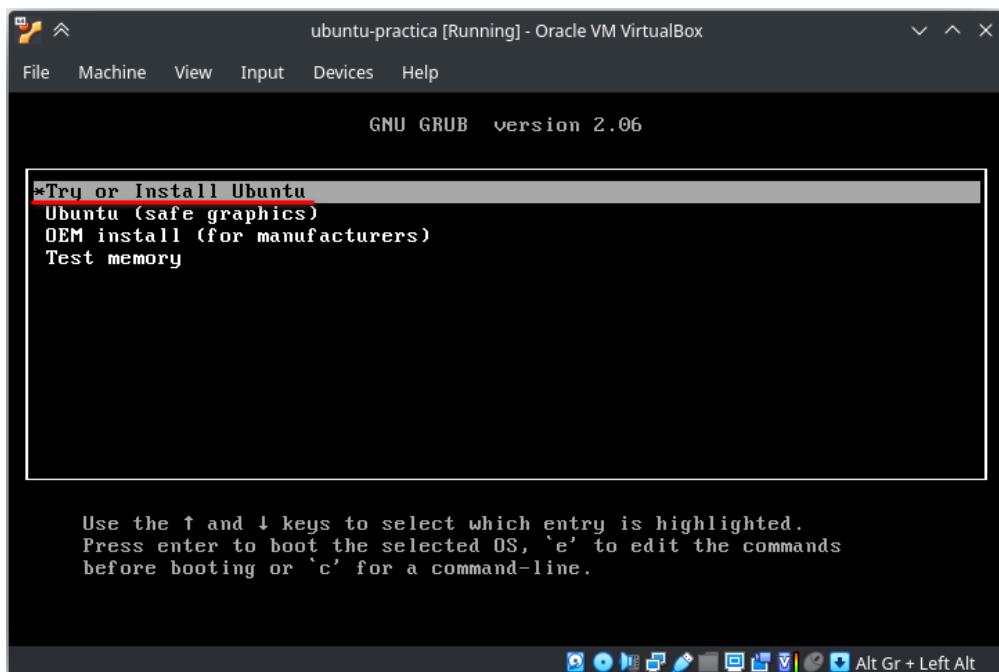


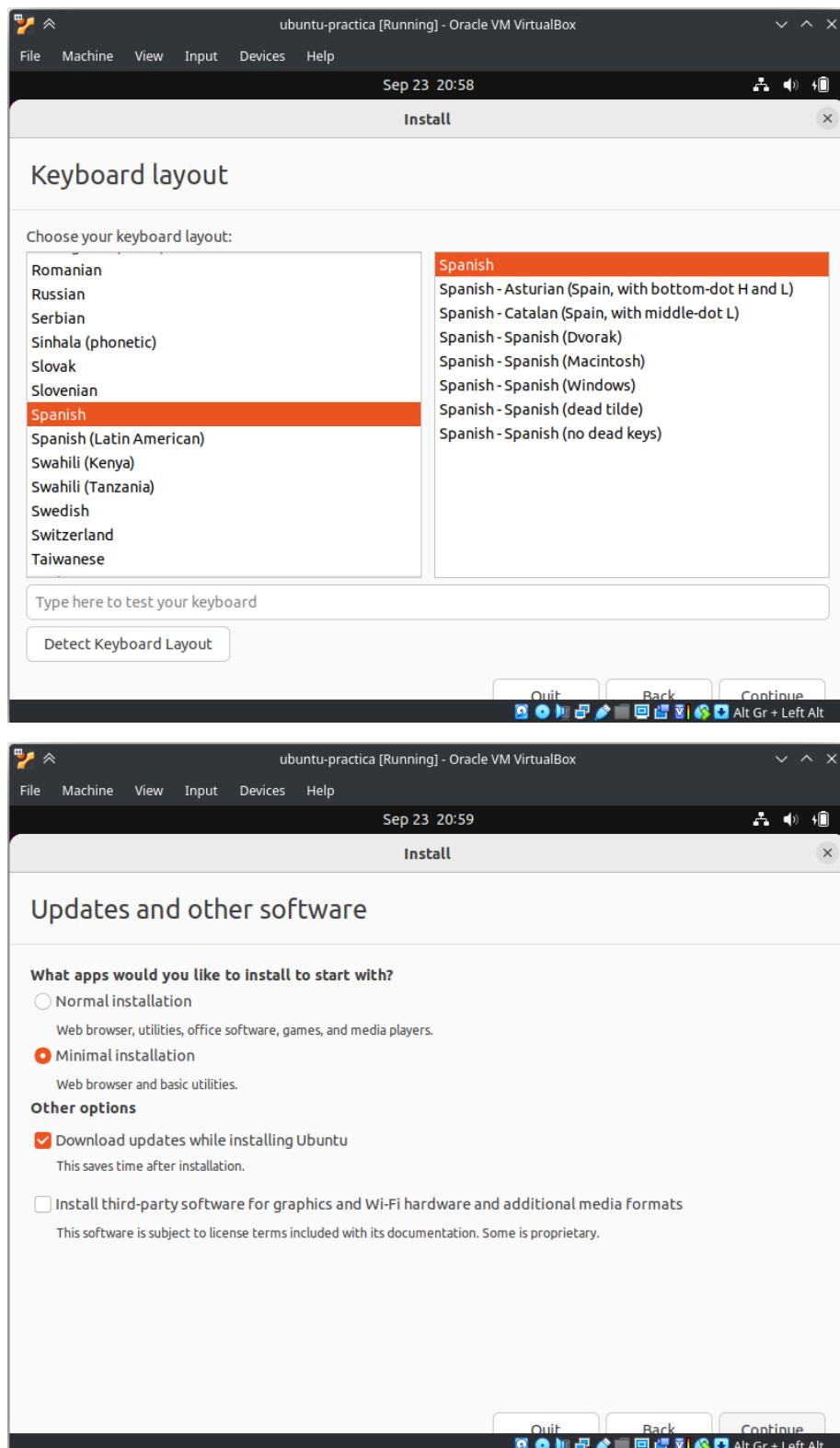


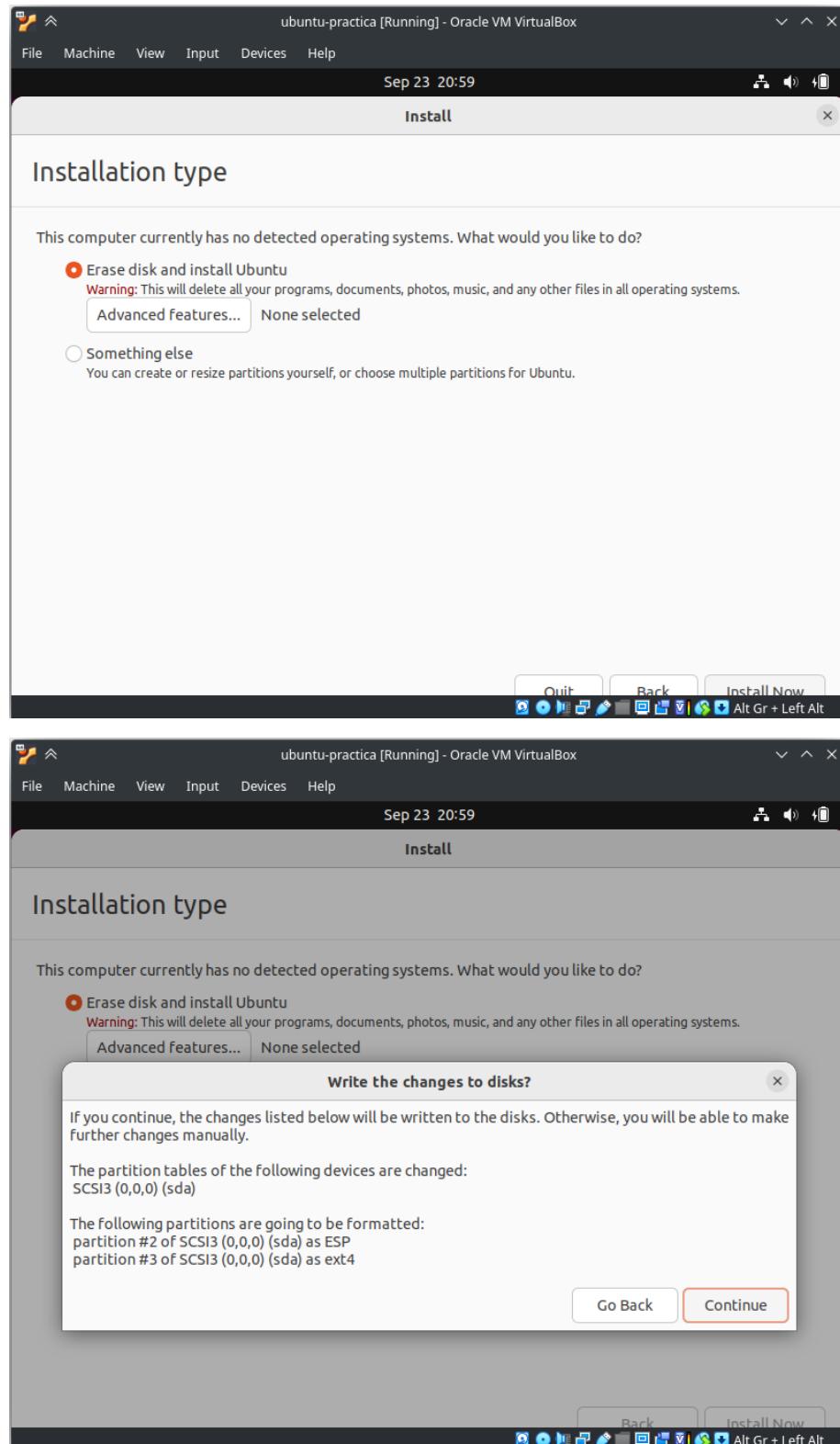


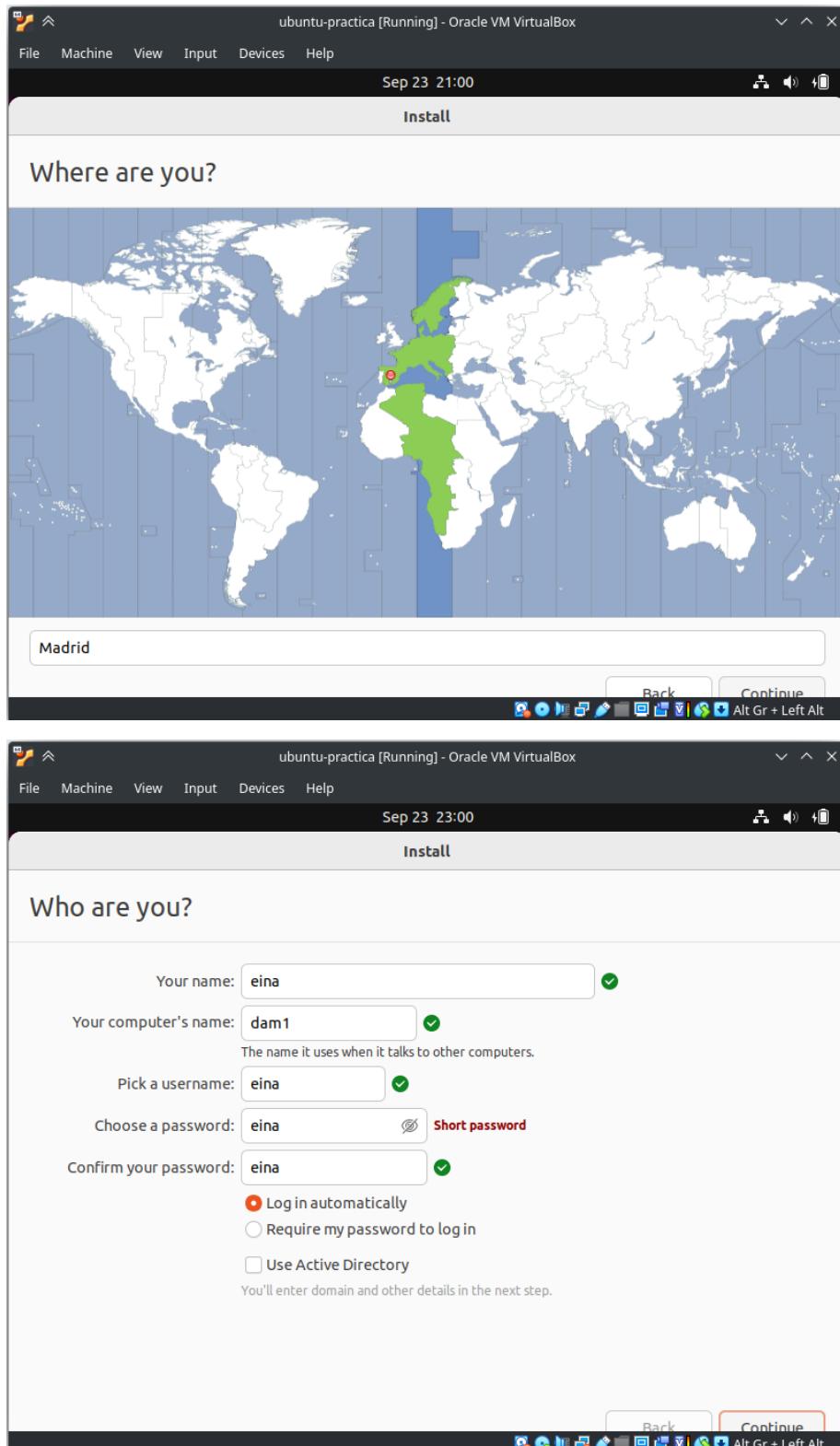
Ara ja ho tenim tot a punt per a començar la instal·lació.

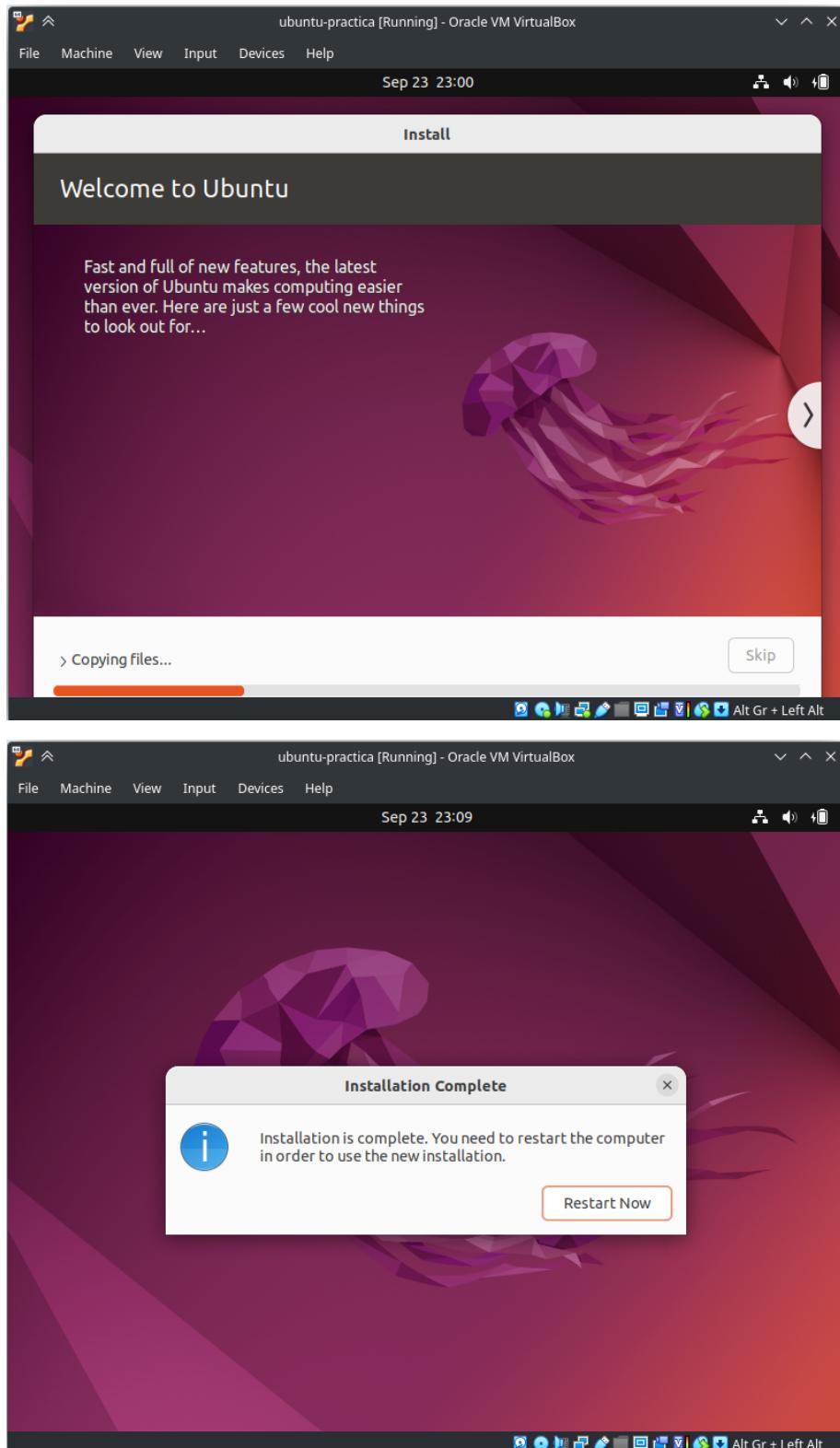






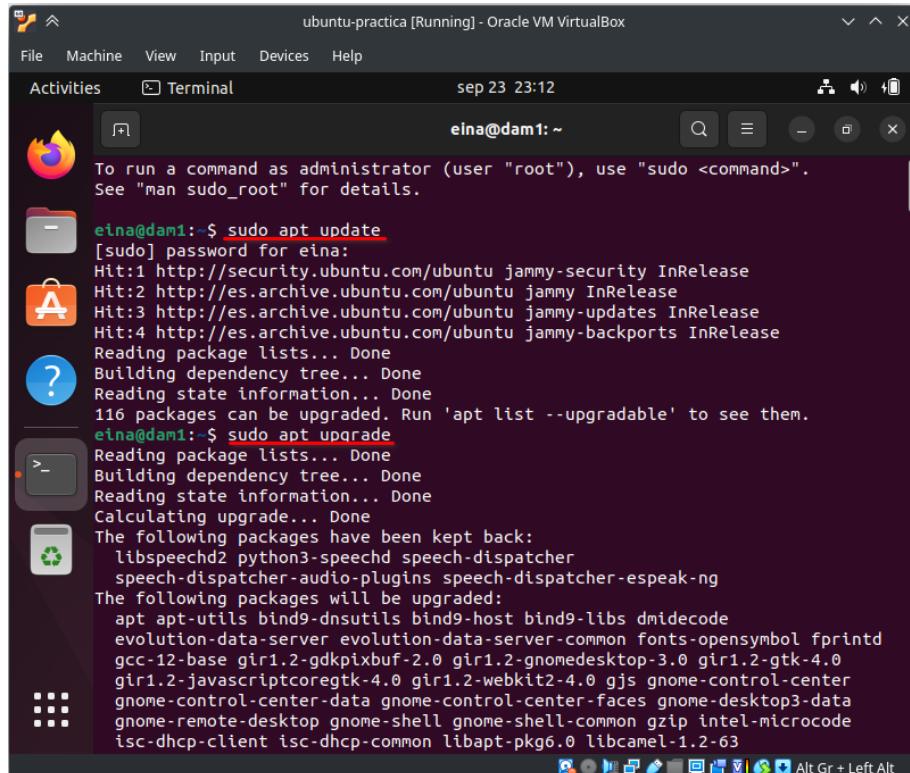






Una vegada hem reiniciat, procedim a instal·lar `gparted`, però no sense abans assegurar-nos que tenim l'última versió dels paquets ja instal·lats.

`apt update` per refrescar les llistes de paquets i `apt upgrade` per actualitzar els que tinguin disponibles noves versions. Finalment ja podem donar l'ordre d'`apt install gparted`.



```
ubuntu-practica [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Activities Terminal sep 23 23:12
eina@dam1: ~
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

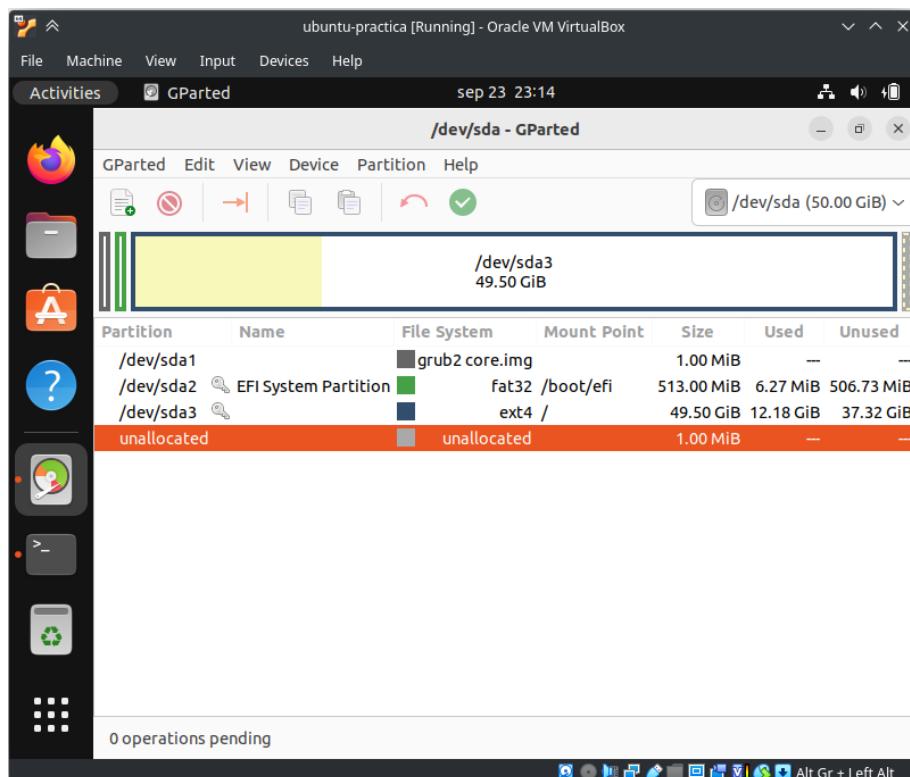
eina@dam1: $ sudo apt update
[sudo] password for eina:
Hit:1 http://security.ubuntu.com/ubuntu jammy-security InRelease
Hit:2 http://es.archive.ubuntu.com/ubuntu jammy InRelease
Hit:3 http://es.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:4 http://es.archive.ubuntu.com/ubuntu jammy-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
116 packages can be upgraded. Run 'apt list --upgradable' to see them.
eina@dam1: $ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages have been kept back:
  libspeechd2 python3-speechd speech-dispatcher
  speech-dispatcher-audio-plugins speech-dispatcher-espeak-ng
The following packages will be upgraded:
  apt apt-utils bind9-dnsutils bind9-host bind9-libs dmidecode
  evolution-data-server evolution-data-server-common fonts-opensymbol fprintd
  gcc-12-base gir1.2-gdkpixbuf-2.0 gir1.2-gnomedesktop-3.0 gir1.2-gtk-4.0
  gir1.2-javascriptcoregtk-4.0 gir1.2-webkit2-4.0 gjs gnome-control-center
  gnome-control-center-data gnome-control-center-faces gnome-desktop3-data
  gnome-remote-desktop gnome-shell gnome-shell-common gzip intel-microcode
  isc-dhcp-client isc-dhcp-common libapt-pkg6.0 libcamel-1.2-63
F: apt apt-utils bind9-dnsutils bind9-host bind9-libs dmidecode
F: evolution-data-server evolution-data-server-common fonts-opensymbol fprintd
F: gcc-12-base gir1.2-gdkpixbuf-2.0 gir1.2-gnomedesktop-3.0 gir1.2-gtk-4.0
F: gir1.2-javascriptcoregtk-4.0 gir1.2-webkit2-4.0 gjs gnome-control-center
F: gnome-control-center-data gnome-control-center-faces gnome-desktop3-data
F: gnome-remote-desktop gnome-shell gnome-shell-common gzip intel-microcode
F: isc-dhcp-client isc-dhcp-common libapt-pkg6.0 libcamel-1.2-63
Alt Gr + Left Alt
```

ubuntu-practica [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

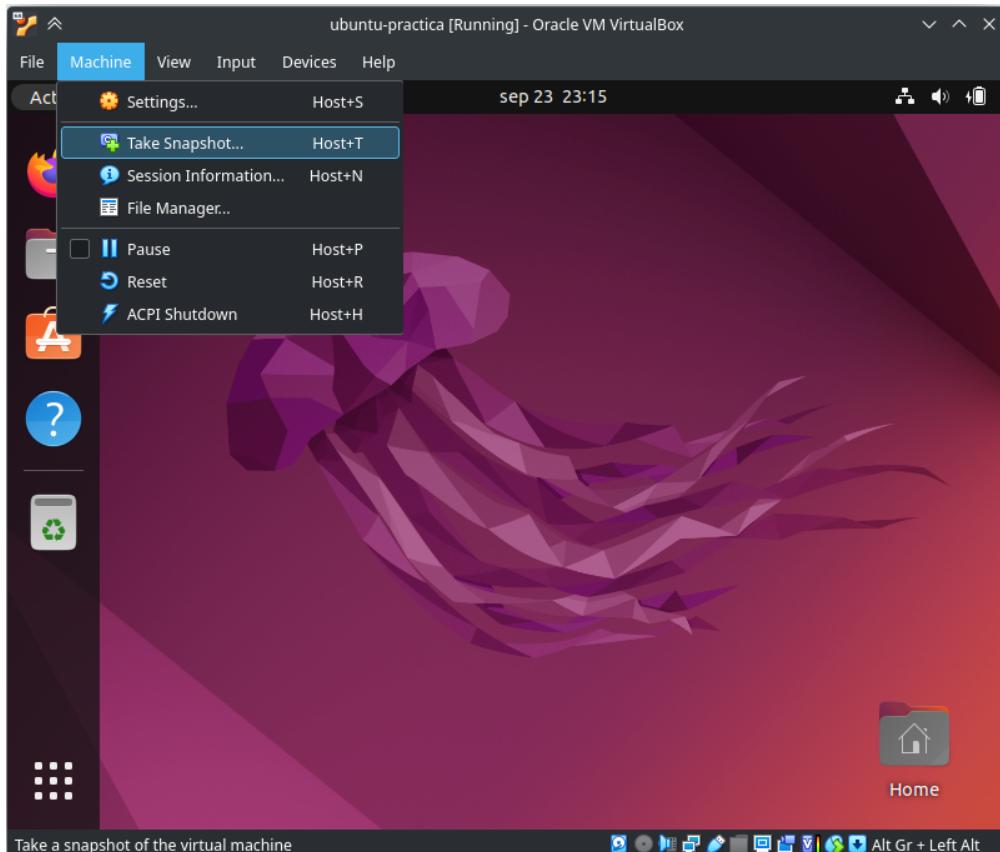
Activities Terminal sep 23 23:13

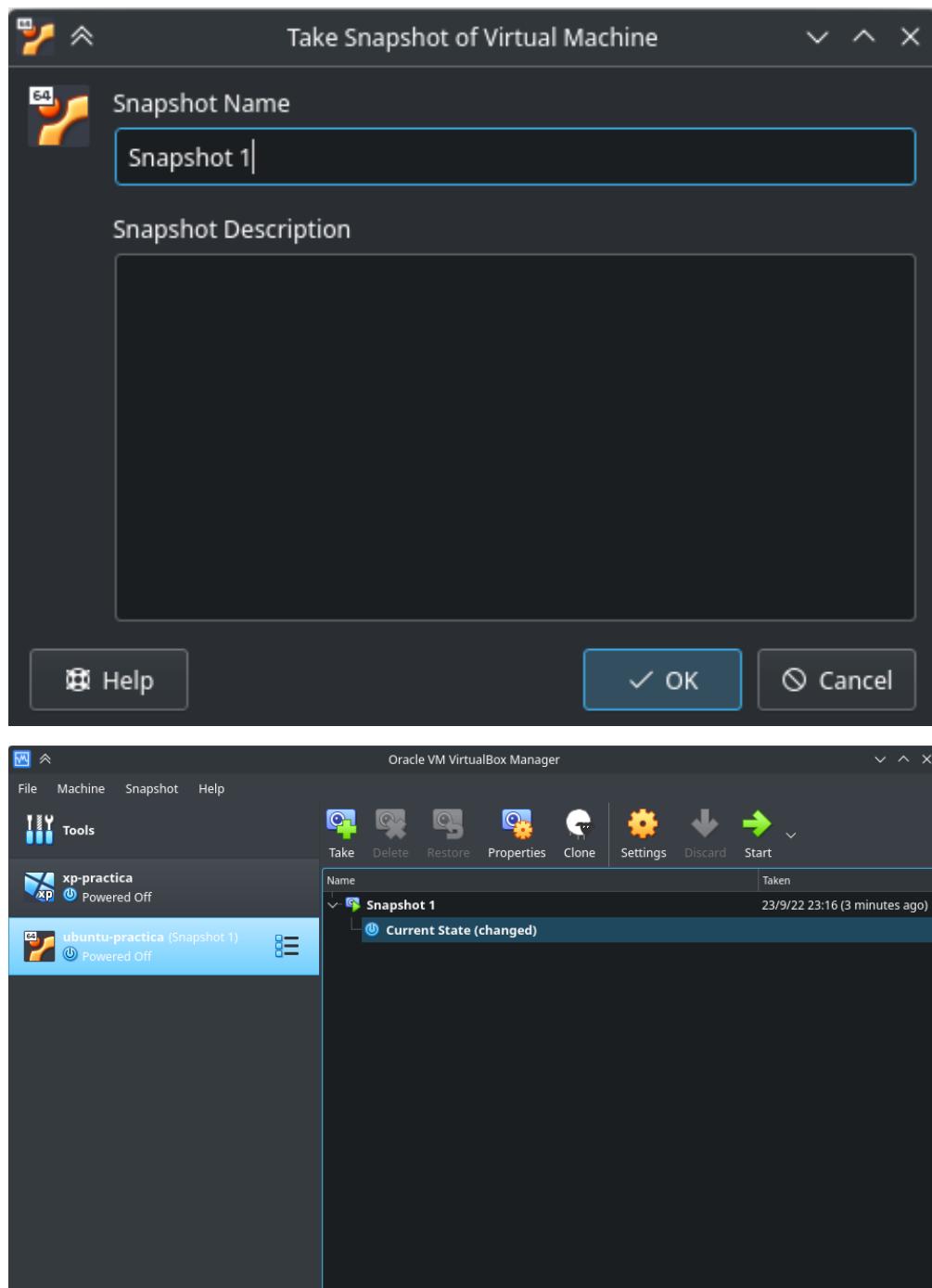
```
eina@dam1: ~
Setting up libgnome-bg-4-1:amd64 (42.4-0ubuntu1) ...
Setting up libedata-cal-2.0-1:amd64 (3.44.4-0ubuntu1) ...
Setting up libedata-book-1.2-26:amd64 (3.44.4-0ubuntu1) ...
Setting up libebook-1.2-20:amd64 (3.44.4-0ubuntu1) ...
Setting up evolution-data-server (3.44.4-0ubuntu1) ...
Setting up gnome-shell (42.4-0ubuntu0.22.04.1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.1) ...
eina@dam1: $ sudo apt install gparted
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  gparted-common
  Suggested packages:
    dmraid gpart jfsutils kpartx mtools reiser4progs reiserfsprogs udftools
    xfsprogs exfatprogs
The following NEW packages will be installed:
  gparted gparted-common
0 upgraded, 2 newly installed, 0 to remove and 5 not upgraded.
Need to get 490 kB of archives.
After this operation, 1.128 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://es.archive.ubuntu.com/ubuntu jammy/main amd64 gparted-common all 1
.3.1-1ubuntu1 [71,9 kB]
Get:2 http://es.archive.ubuntu.com/ubuntu jammy/main amd64 gparted amd64 1.3.1-
1ubuntu1 [418 kB]
Fetched 490 kB in 1s (794 kB/s)
```



3.1 SNAPSHOT

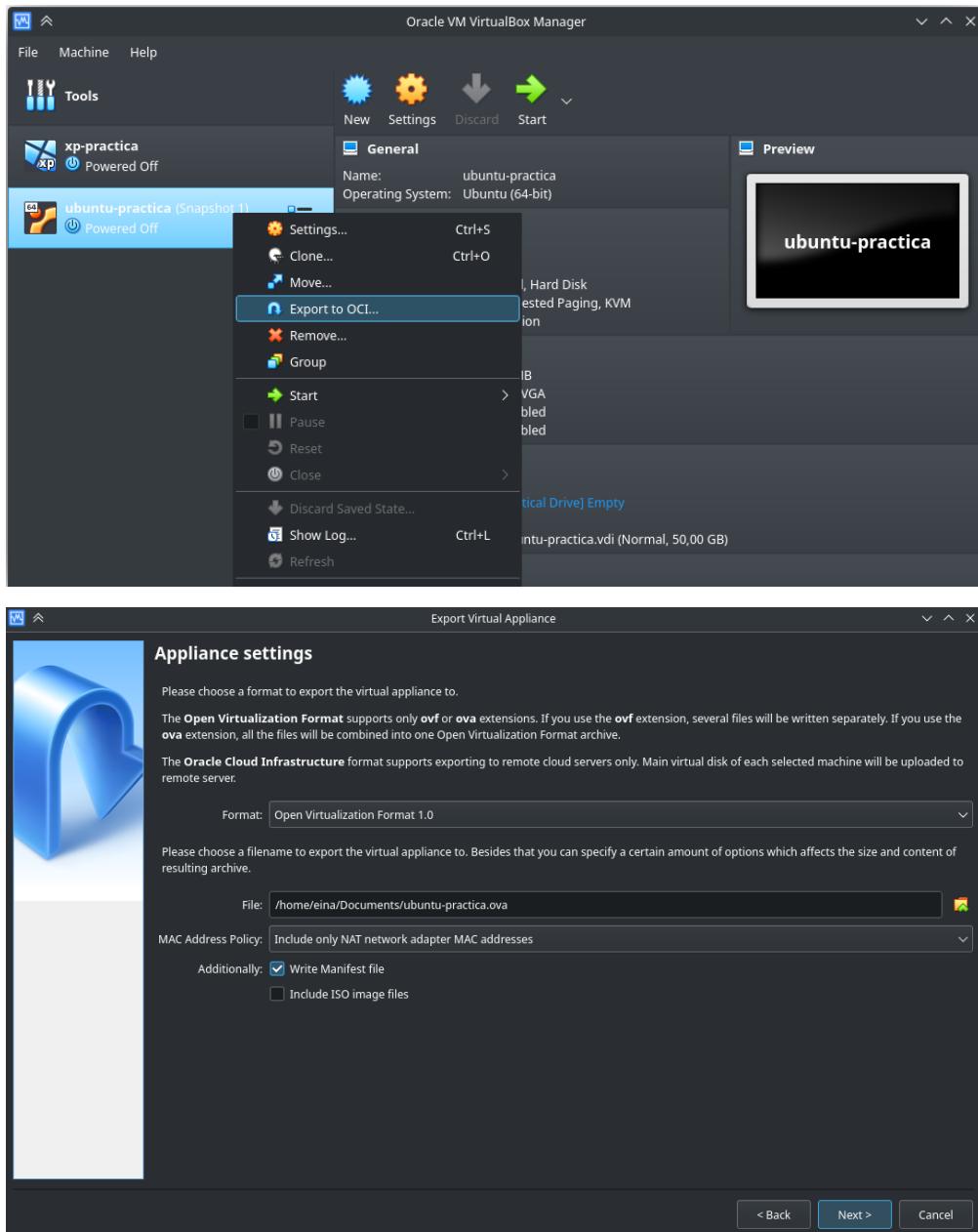
A la barra de menú, seleccionem Machine i Take Snapshot. El nom per defecte ens està bé i premem OK

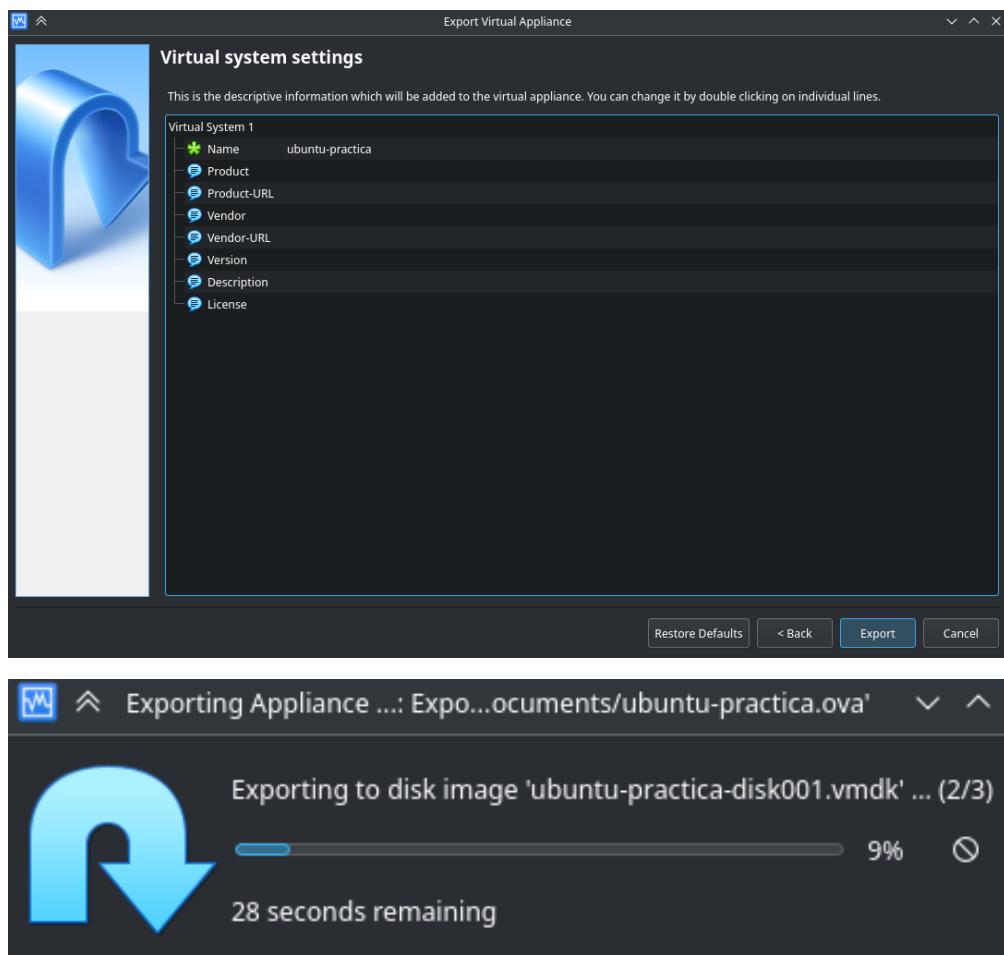




3.2 EXPORTACIÓ

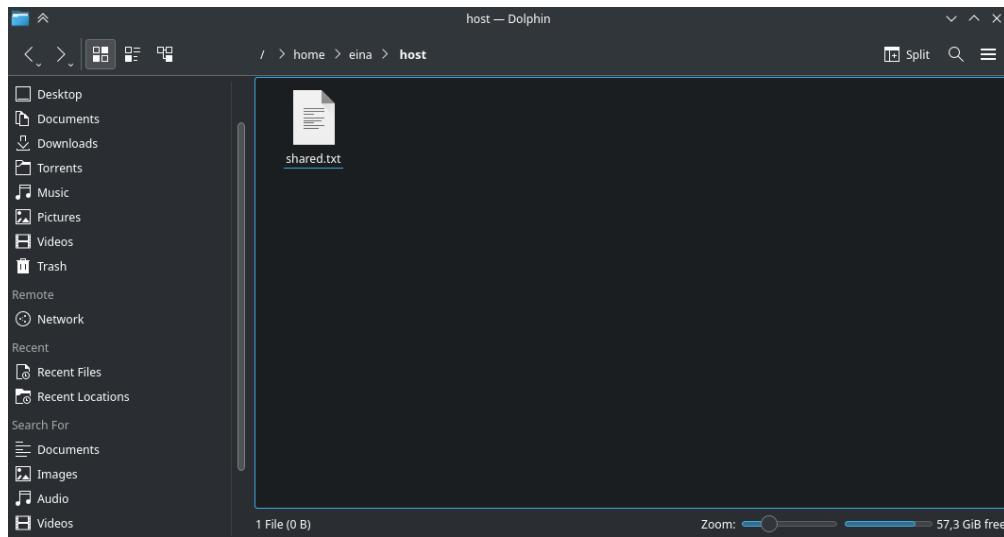
Com hem fet abans amb l'XP, clic dret sobre la màquina i exportar.





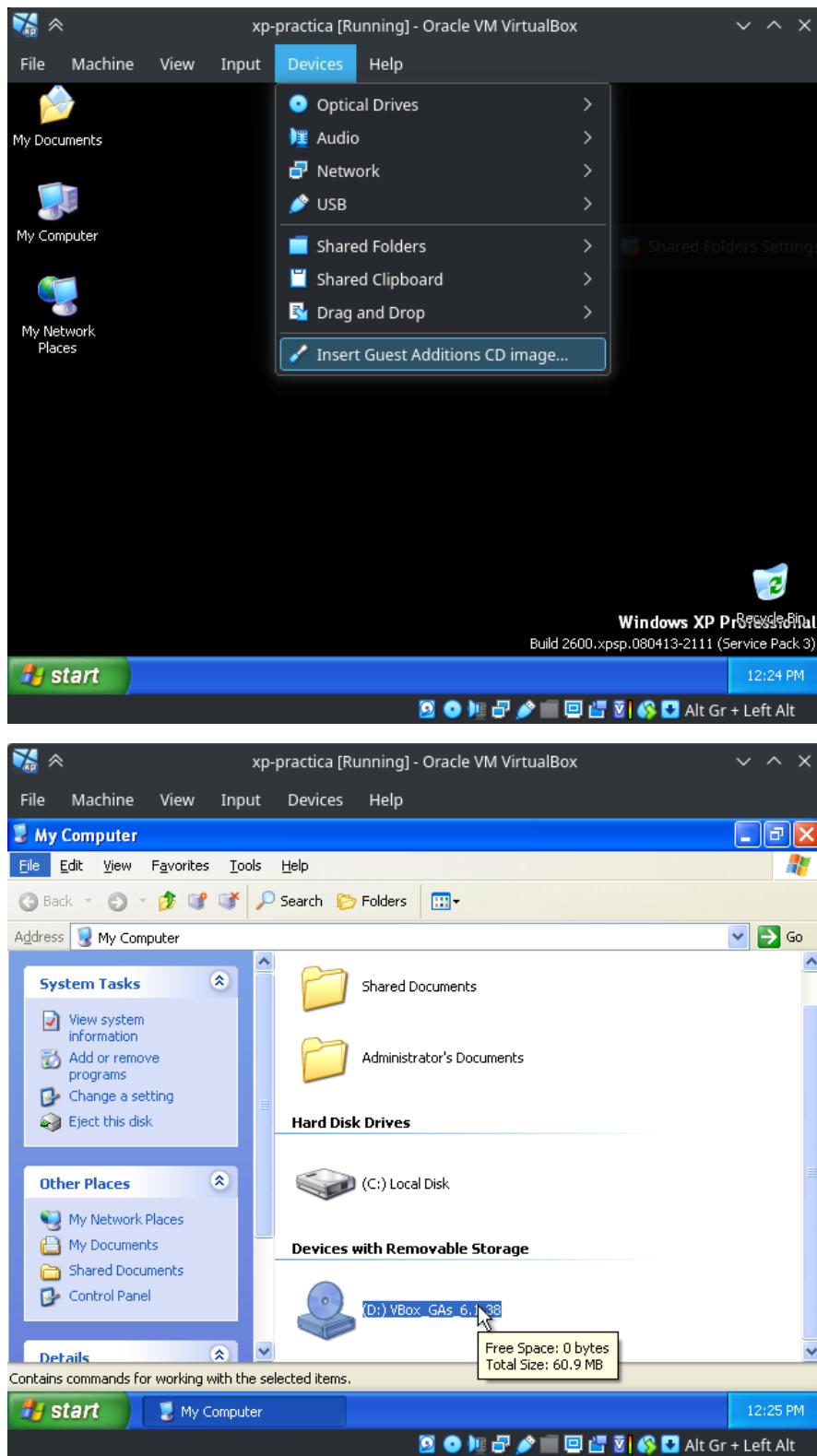
4 GUEST ADDITIONS I CARPETA COMPARTIDA

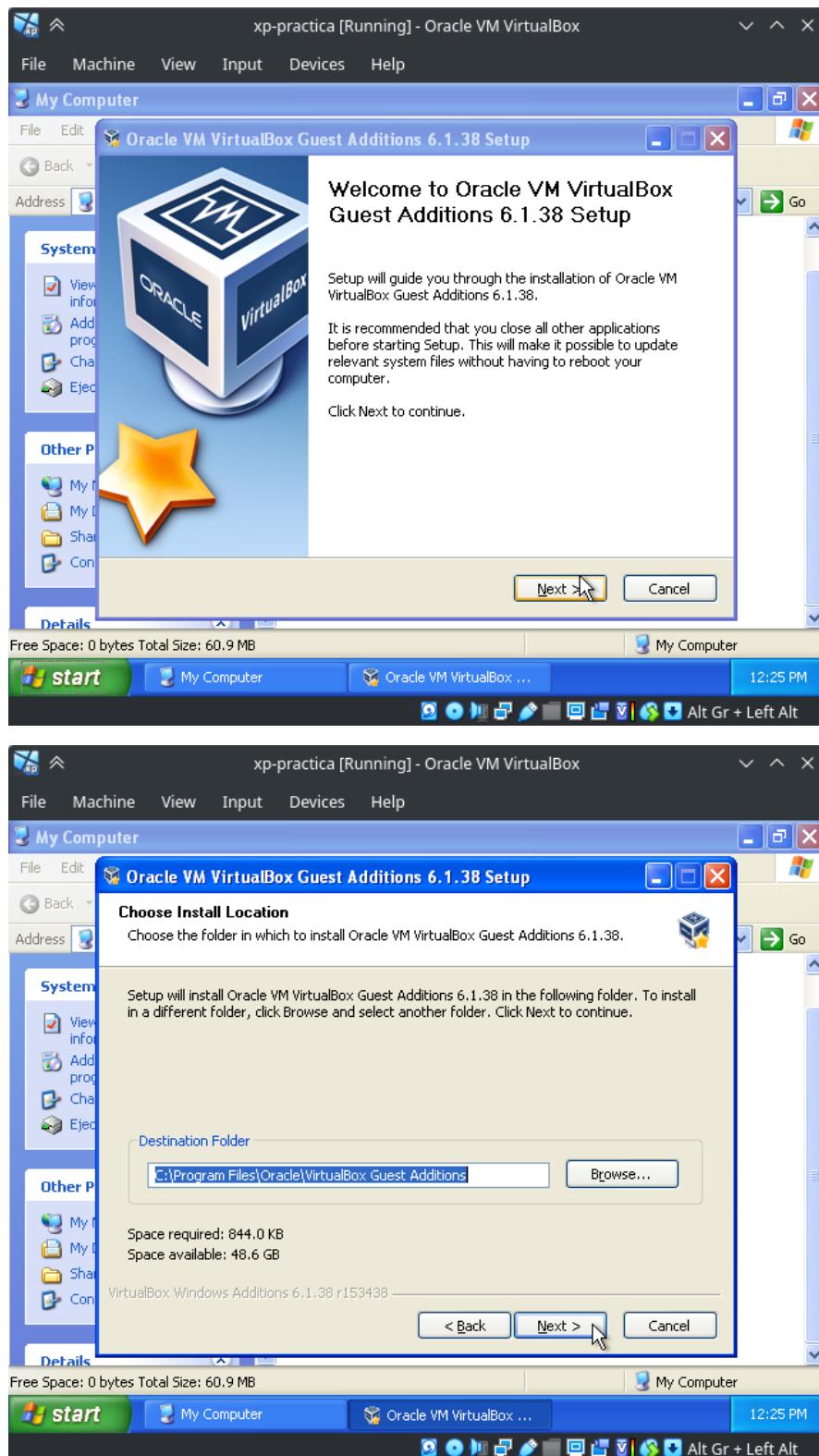
Creem la carpeta **host** al directori home del nostre usuari i a dins un fitxer de text, per ara buit, que anomenarem **shared.txt**.

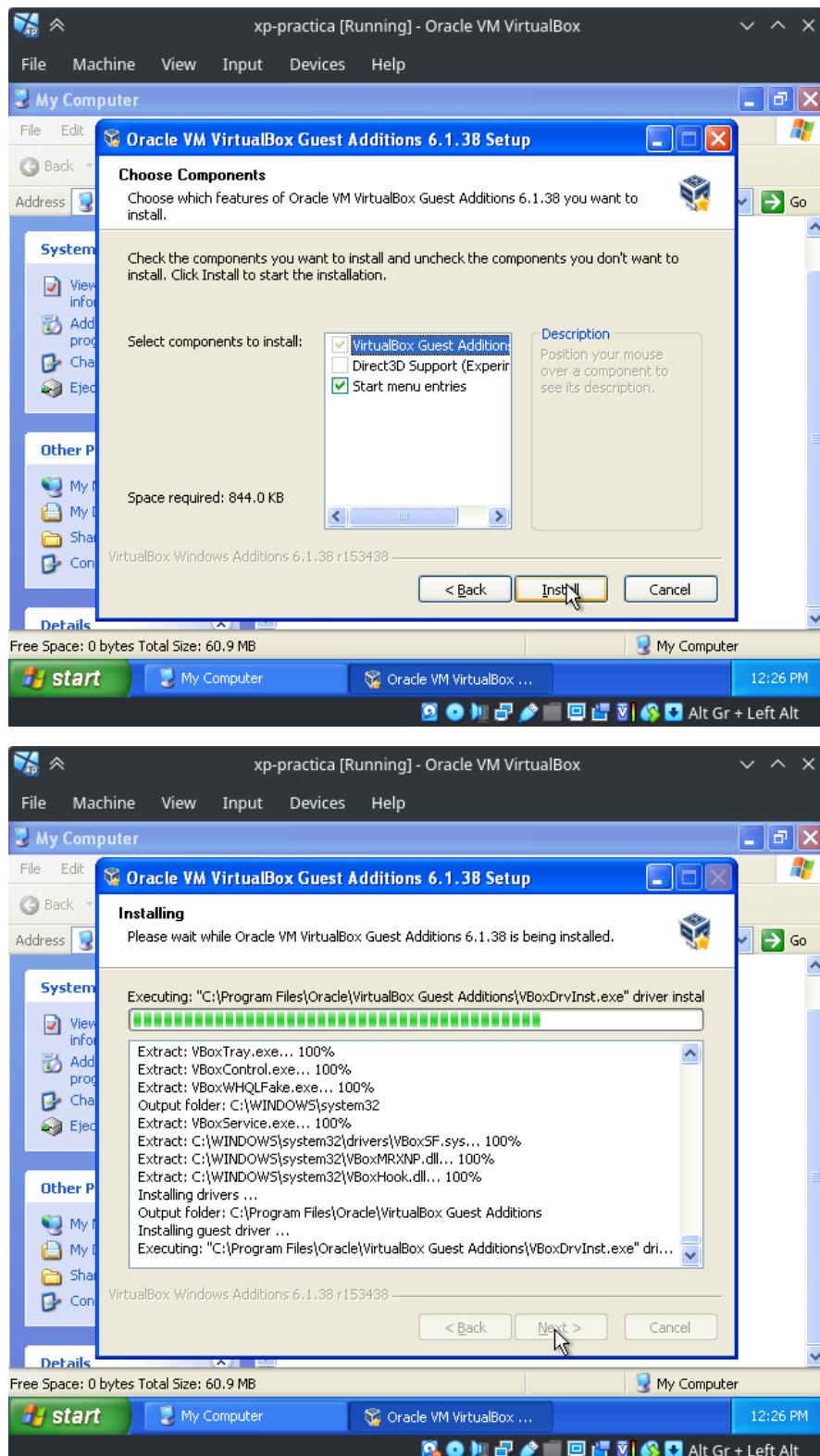


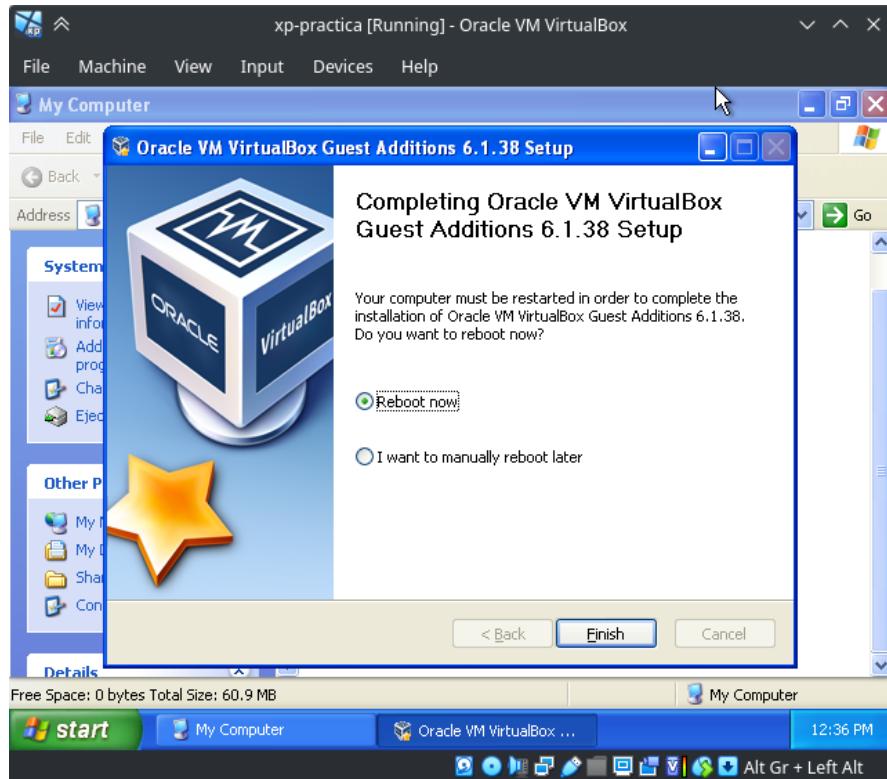
4.1 WINDOWS XP

Inserim les Guest Additions. Quan obrim la unitat D: ja s'executa automàticament l'instal·lador, i seguim les instruccions. Una vegada acabada, reiniciem la màquina.

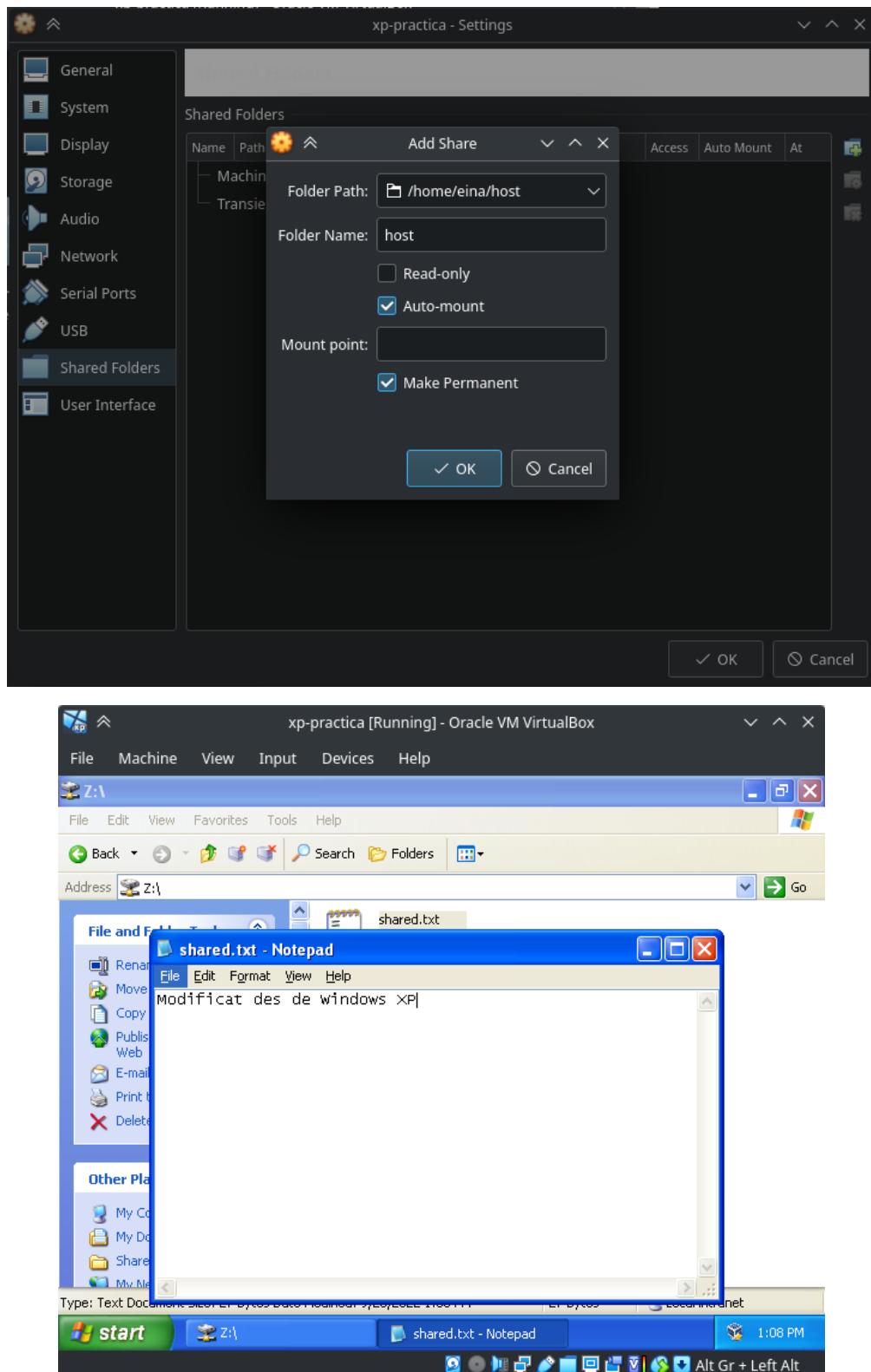


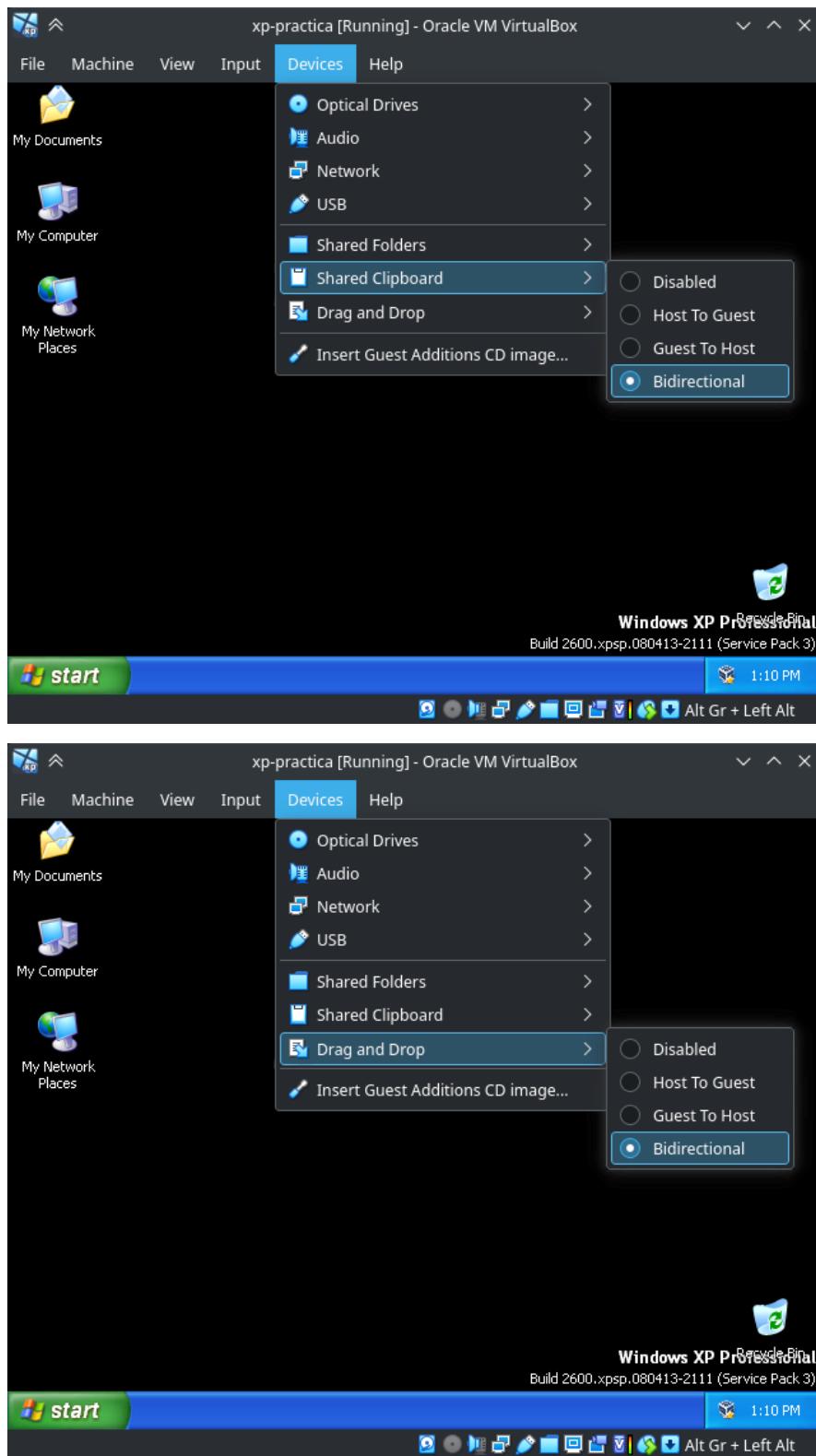






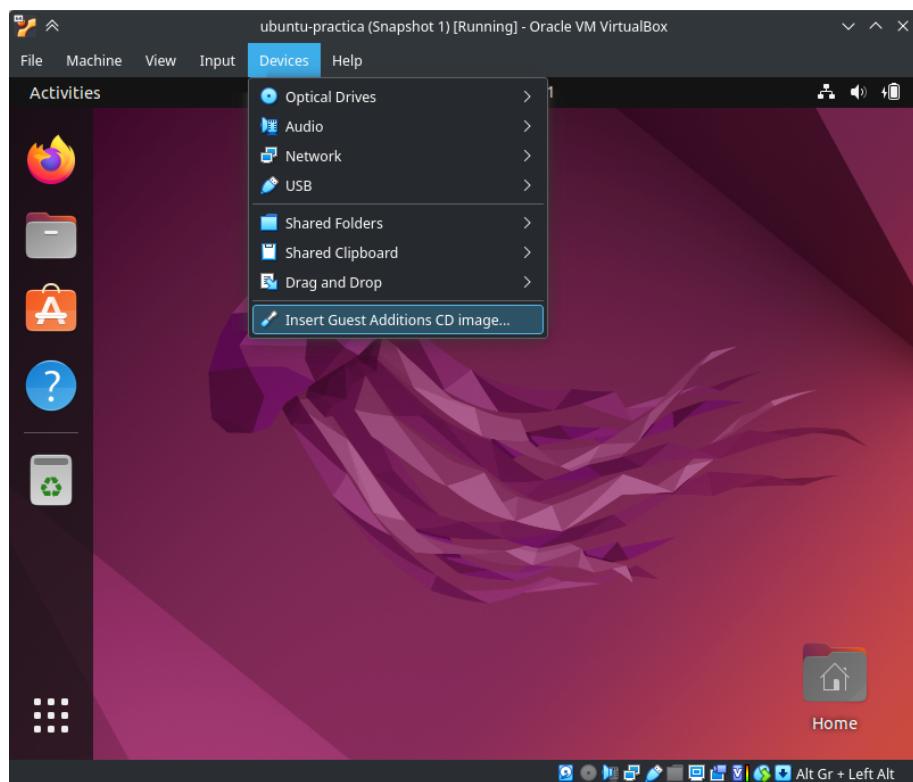
Una vegada reiniciada, podem accedir a la carpeta que hem creat anteriorment, que apareixerà com una unitat de xarxa compartida amb lletra Z:. I a dins, el fitxer shared.txt, on escriurem "Modificat des de Windows XP". També podrem configurar el porta-retalls i l'arrossegament de fitxers bidireccional.

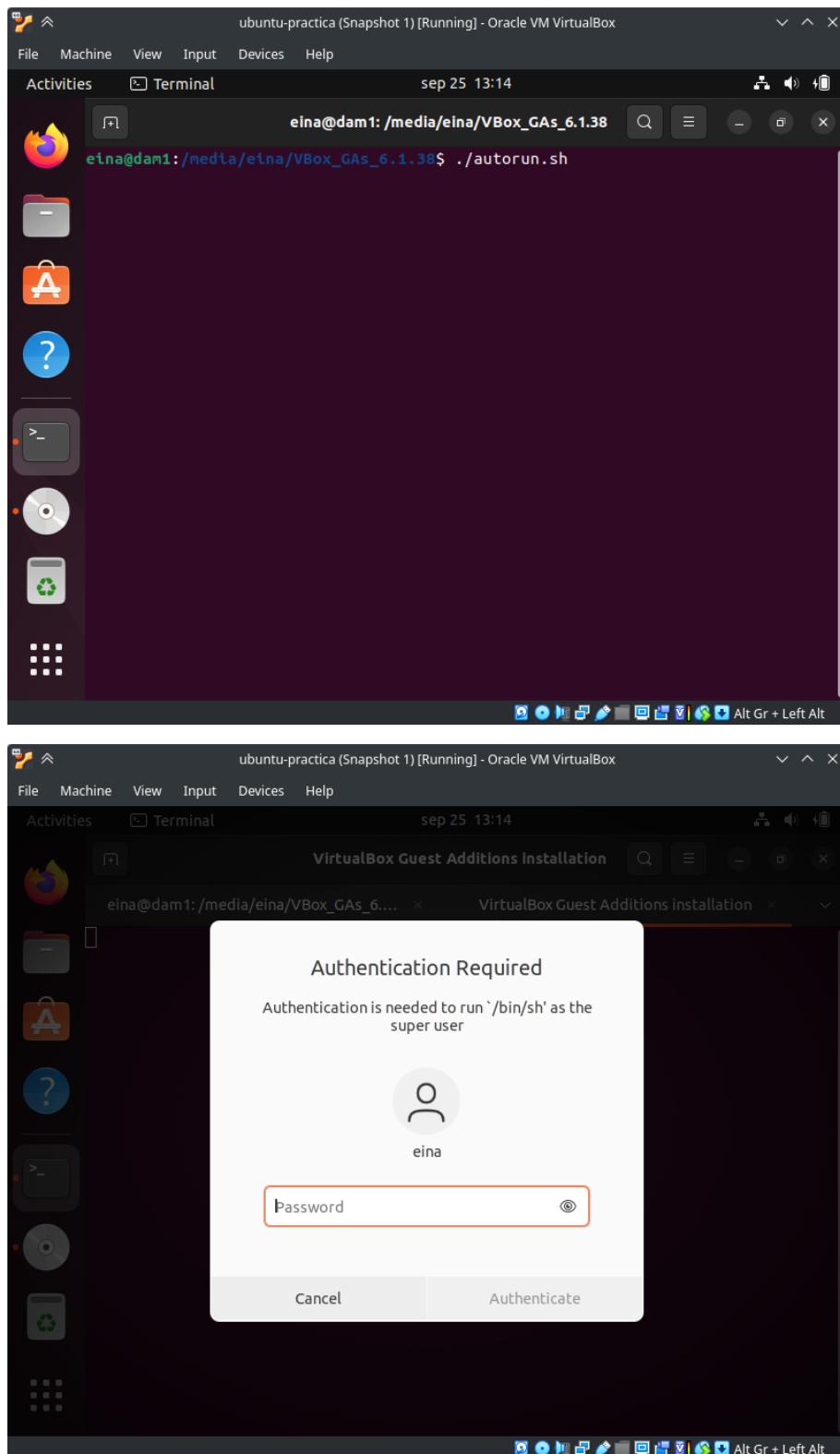


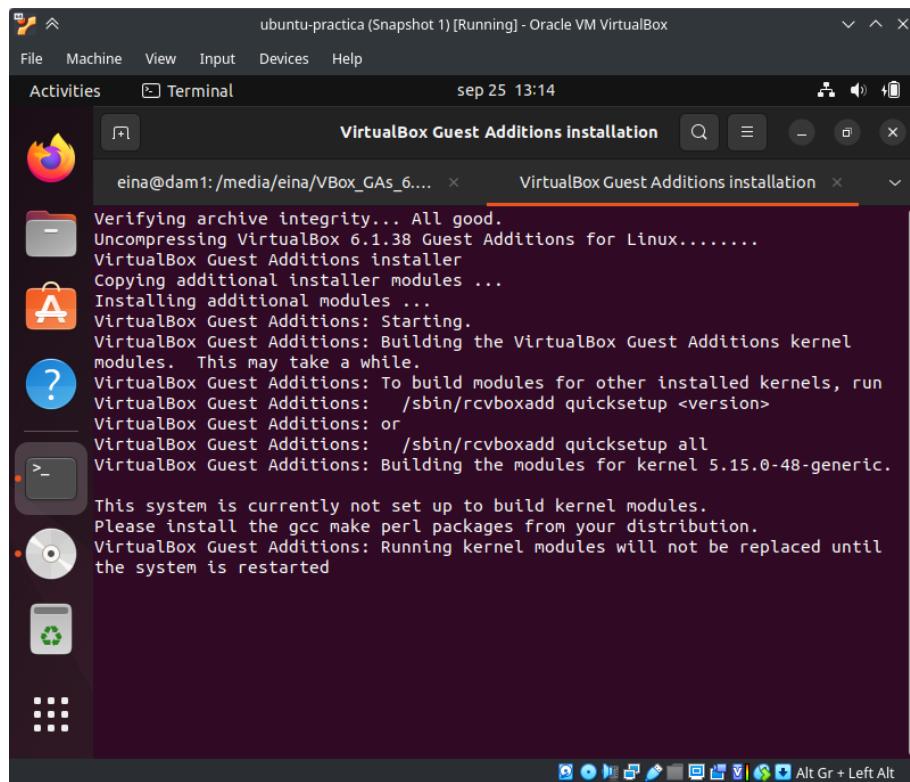


4.2 UBUNTU

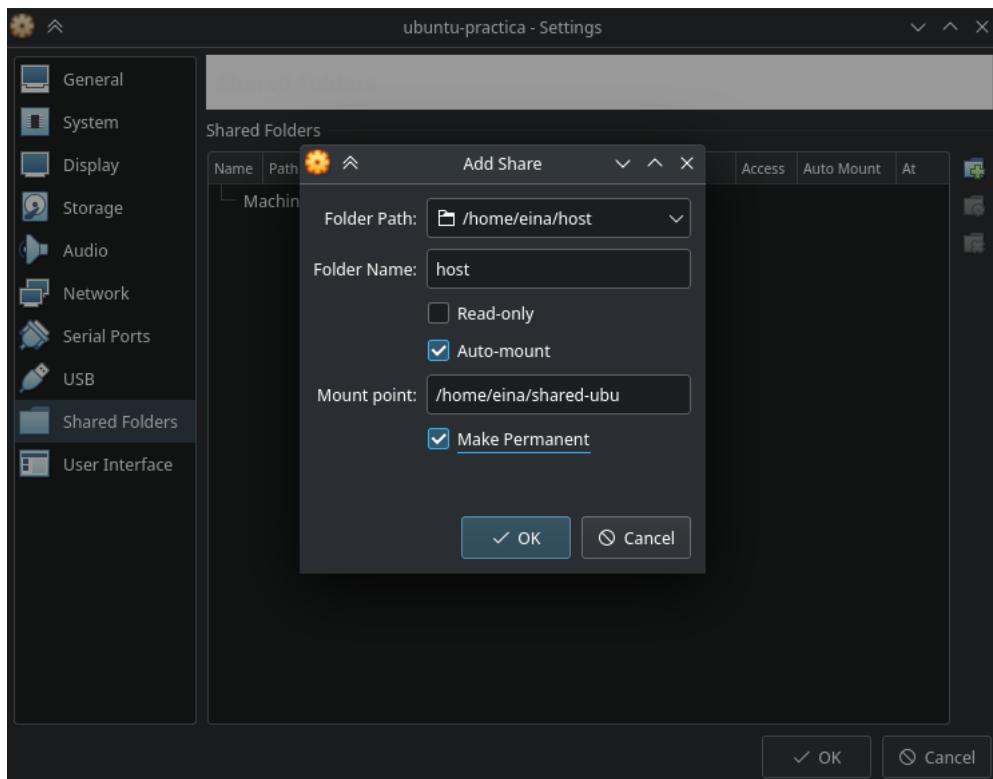
Inserim també les Guest Additions. En aquest cas, no se'ns han executat automàticament, per tant ho farem nosaltres. `./autorun.sh` per executar l'script que no ho ha automàticament. Posem la nostra contrasenya i esperem que acabi la instal·lació. Una vegada finalitzada reiniciem.







Aprofitem aquest impàs per compartir la carpeta.

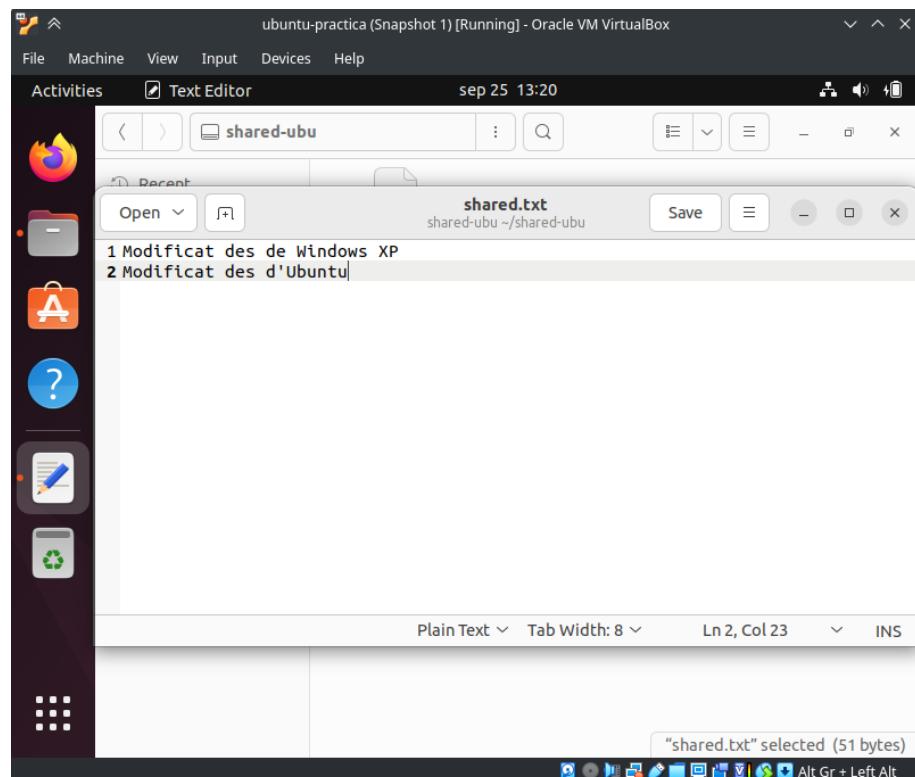


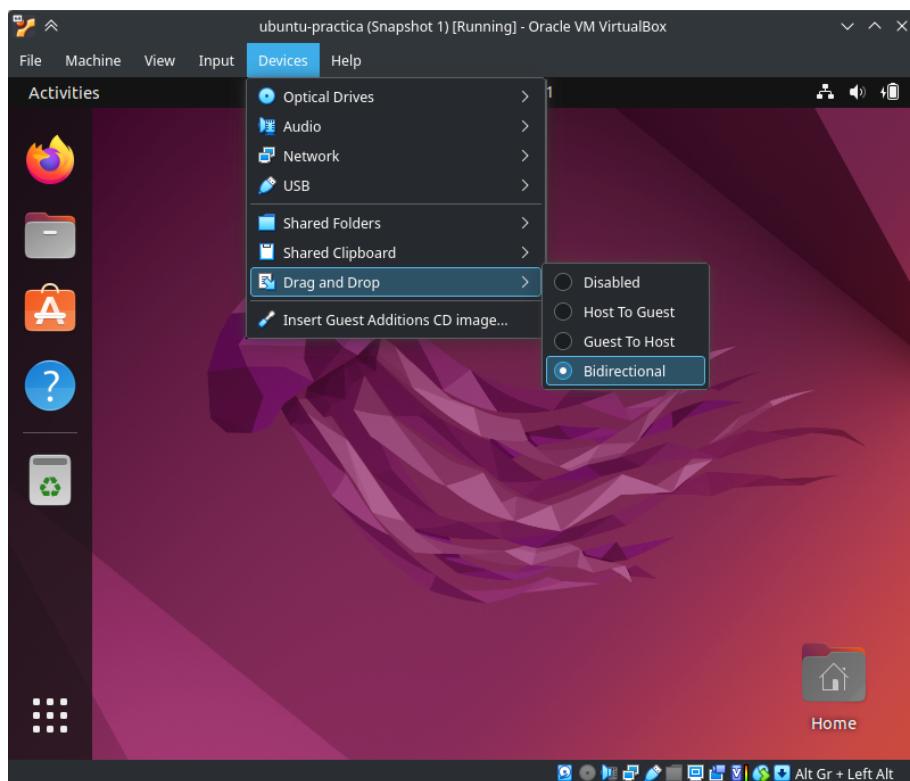
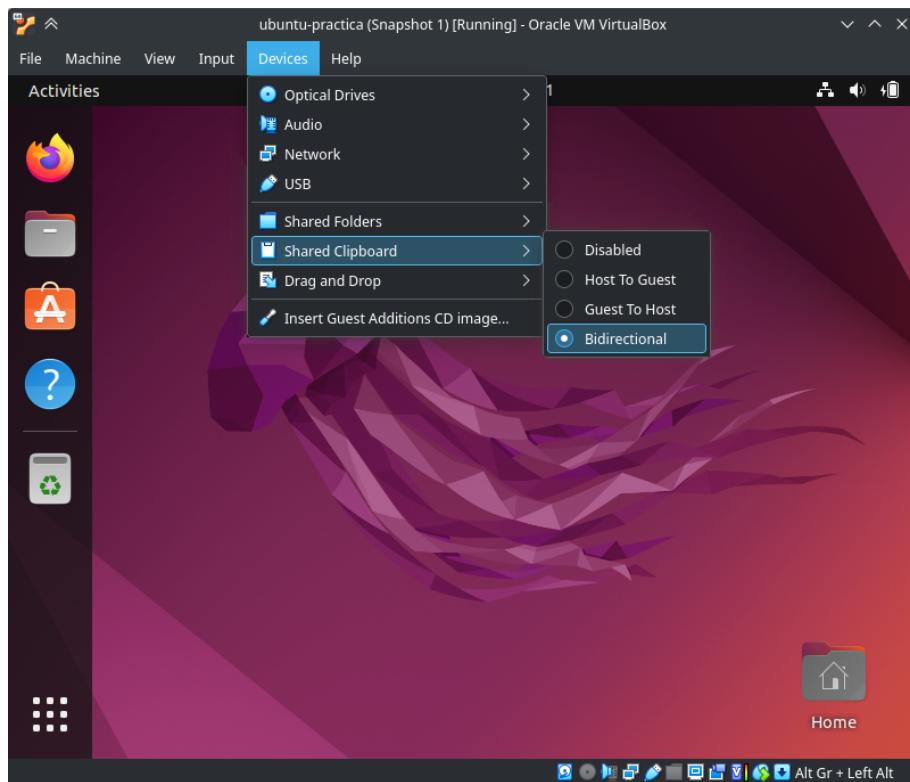
Ens trobarem que root i els membres del grup vboxsf tenen tots els permisos d'aquesta carpeta, però la resta d'usuaris no en té cap. Ho solucionarem afegint el nostre usuari al grup, amb l'ordre `usermod -aG vboxsf eina`.

```
eina@dam1:~$ ll
total 100
drwxr-x--- 17 eina eina 4096 sep 25 13:16 .
drwxr-xr-x  3 root root 4096 sep 23 23:04 ../
-rw-----  1 eina eina 120 sep 25 13:15 .bash_history
-rw-r--r--  1 eina eina 220 sep 23 23:04 .bash_logout
-rw-r--r--  1 eina eina 3771 sep 23 23:04 .bashrc
drwx----- 11 eina eina 4096 sep 23 23:14 .cache/
drwx----- 13 eina eina 4096 sep 25 13:16 .config/
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Desktop/
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Documents/
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Downloads/
drwx----- 2 eina eina 4096 sep 23 23:12 .gnupg/
drwx----- 3 eina eina 4096 sep 23 23:10 .local/
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Music/
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Pictures/
-rw-r--r--  1 eina eina 807 sep 23 23:04 .profile
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Public/
drwxrwx--- 1 root vboxsf 4096 sep 25 13:05 shared-uba/
drwx----- 5 eina eina 4096 sep 25 13:17 snap/
drwx----- 2 eina eina 4096 sep 23 23:12 .ssh/
-rw-r--r--  1 eina eina 0 sep 23 23:11 .sudo_as_admin_successful
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Templates/
-rw-r----- 1 eina eina 5 sep 25 13:15 .vboxclient-clipboard.pid
-rw-r----- 1 eina eina 5 sep 25 13:15 .vboxclient-display-svga-x11.pid
-rw-r----- 1 eina eina 5 sep 25 13:15 .vboxclient-draganddrop.pid
-rw-r----- 1 eina eina 5 sep 25 13:15 .vboxclient-seamless.pid
drwxr-xr-x  2 eina eina 4096 sep 23 23:10 Videos/
eina@dam1:~$
```

```
eina@dam1:~$ sudo usermod -aG vboxsf eina
[sudo] password for eina:
eina@dam1:~$
```

Ara que ja hi tenim accés, podem editar el fitxer `shared.txt`, on trobarem la línia que hem afegit des de Windows. Escriurem "Modificat des d'Ubuntu" i el desarem. Finalment, també activarem el porta-retalls i l'arrossegament bidireccional de fitxers.





5 CANVI D'UUID

La manera de clonar un disc i que tingui un UUID diferent de l'original, és amb l'ordre `vboxmanage clonemedium`. Aquesta pren com a argument el nom del disc que volem clonar i el nom que volem donar al clon.

The screenshot shows a terminal window titled "xp-practica : zsh — Konsole". The command entered is:

```
→ xp-practica vboxmanage clonemedium xp-practica.vdi xp-practica-2.vdi
0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%
Clone medium created in format 'VDI'. UUID: 11cfef6c-02a5-4d49-a3af-7c0b5fefe80a
→ xp-practica
```

The terminal window has a dark background and light-colored text. It includes standard menu options like File, Edit, View, Bookmarks, Plugins, Settings, and Help. There are tabs at the bottom labeled "sudo invoker" and "xp-practica : zsh".