How to view the population project downloaded files

Introduction

While https://populationproject.ca/ has links to datasets hosted on https://osf.io/ the original download data from 2007 to 2023 is held on an encrypted external disk in the possession of Susan Davis (twitter @SusanDavis15, email `susan.1968@hotmail.com`). To access the data, contact Susan with your request.

The disk is encrypted using the Linux LUKS system and requires the cryptsetup tool to view the data. If you are unfamiliar with linux file systems. The following tutorials may be useful:

- https://tecadmin.net/linux-file-system/ (file system basics)
- https://www.geeksforgeeks.org/linux-file-system/ (file system basics)
- https://www.redhat.com/sysadmin/navigating-linux-filesystem (file system basics)
- https://www.baeldung.com/linux/filesystems (file system basics)
- https://linuxconfig.org/basic-guide-to-encrypting-linux-partitions-with-luks (encryption)
- https://www.linuxfordevices.com/tutorials/linux/encrypting-partitions-with-luks (encryption)

Instructions

If you are running a linux variant you can view the disk contents by either opening up a GUI session where you can plug the drive into any USB slot and open the nautilus file browser to access the disk. If you are mounting the disk using the command line the following sequence of commands should work for Ubuntu 22.04 LTS:

The commands assume you have root access. If you do not you may find virtualization software helpful. See the “Other operating systems” section for a description of one way to do this.

Download the decryption software

```
$ sudo apt-get install -y cryptsetup
```

Mount the disk after plugging it in

Find out where the disk is in the file system.

```
$ lsblk
```

Based on the output of lsblk we know the disk is device /dev/sdd.
Get the password to make drive readable:

```
$ sudo cryptsetup luksOpen /dev/sdd pp
```

There will be a mapper device now “/dev/mapper/pp”.
Mount the disk:

```
$ sudo mkdir /mnt/pp
$ sudo mount /dev/mapper/pp /mnt/pp
```

At this point the disk should be readable from any file browser. See the README.txt file(s) for a description of the subdirectories on the disk. Note that the file system has been made READ ONLY.

Unmount the disk

Unmount the disk with umount:
$ sudo umount /mnt/pp

Remove decryption information for the drive:
$ sudo cryptsetup luksClose /dev/mapper/pp

Other operating systems

LUKS is a linux specific encryption/decryption system. To read the drive on computers using other operating systems use a virtual machine (vm). The following instructions use Oracle VirtualBox to implement a vm and access a USB disk. Documentation can be found here:

https://www.virtualbox.org/manual/ch01.html

Instructions

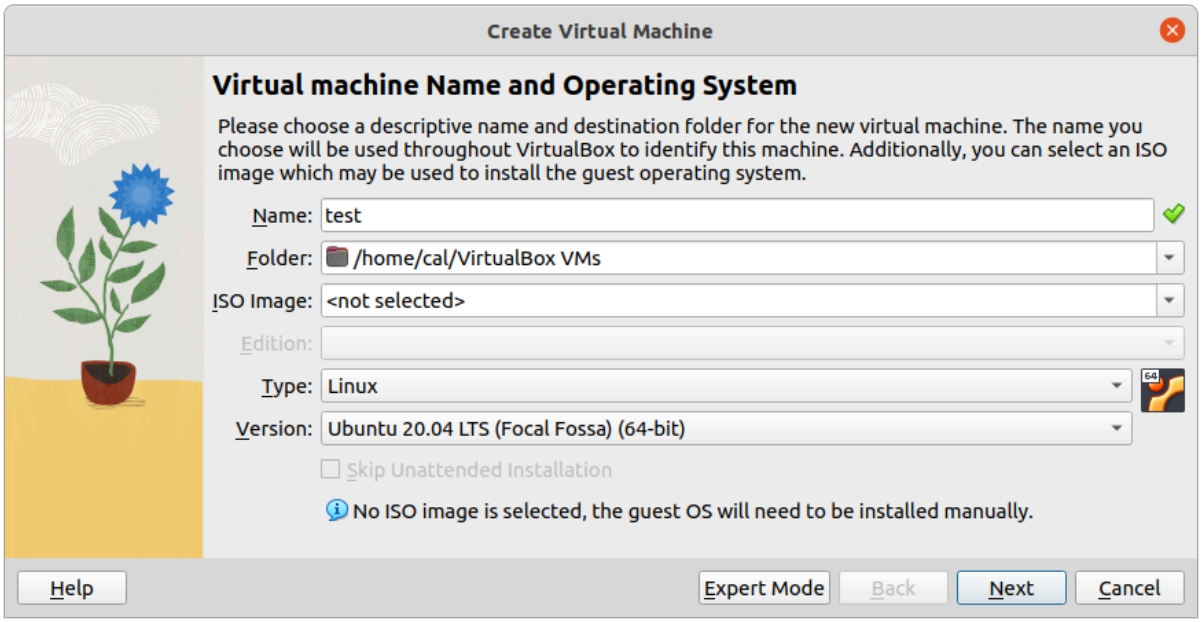
From https://www.virtualbox.org/wiki/Downloads I downloaded the appropriate version of VirtualBox.

I installed the downloaded package file as usual.

I downloaded a Ubuntu 20.04 LTS virtual disk from https://www.osboxes.org/ubuntu/ to act as the operating system. There are other organizations other than osboxes.org that provide these. The hard disk image can be used directly by the virtual machine rather than having to install the OS by hand.

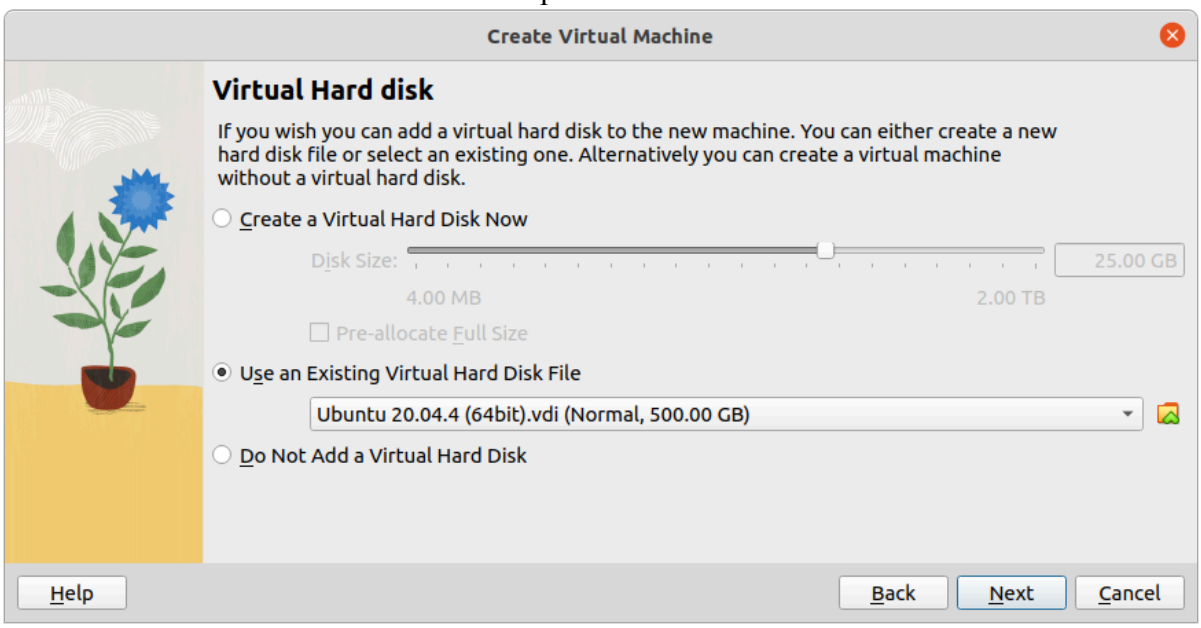
Note that the link redirected to https://sourceforge.net/projects/osboxes/files/v/vb/55-U-u/20.04/20.04.4/64bit.7z/download. The downloaded file needs 7zip https://sourceforge.net/projects/sevenzip/ to be read.

To use the .vdi file create a new vm from the VirtualBox program. I named the vm “test” and left the .iso field blank and selected the OS Ubuntu 20.04 LTS from the dropdown list of operating systems.

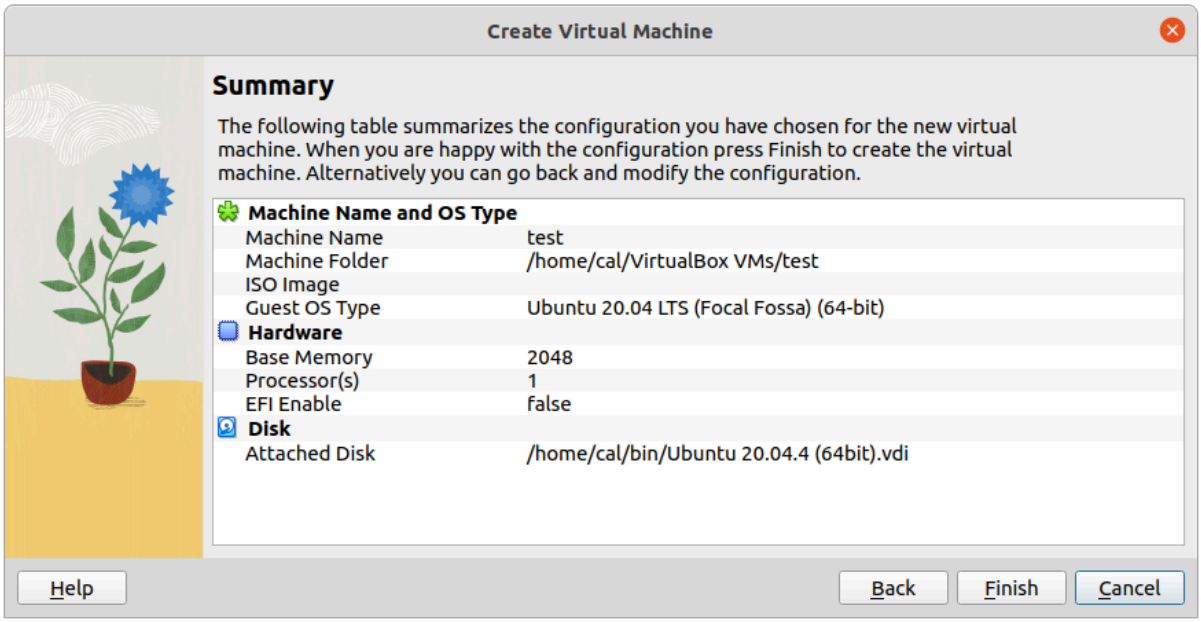


I then clicked “Next” until I was at the USB setting page. I selected “USB 3”.

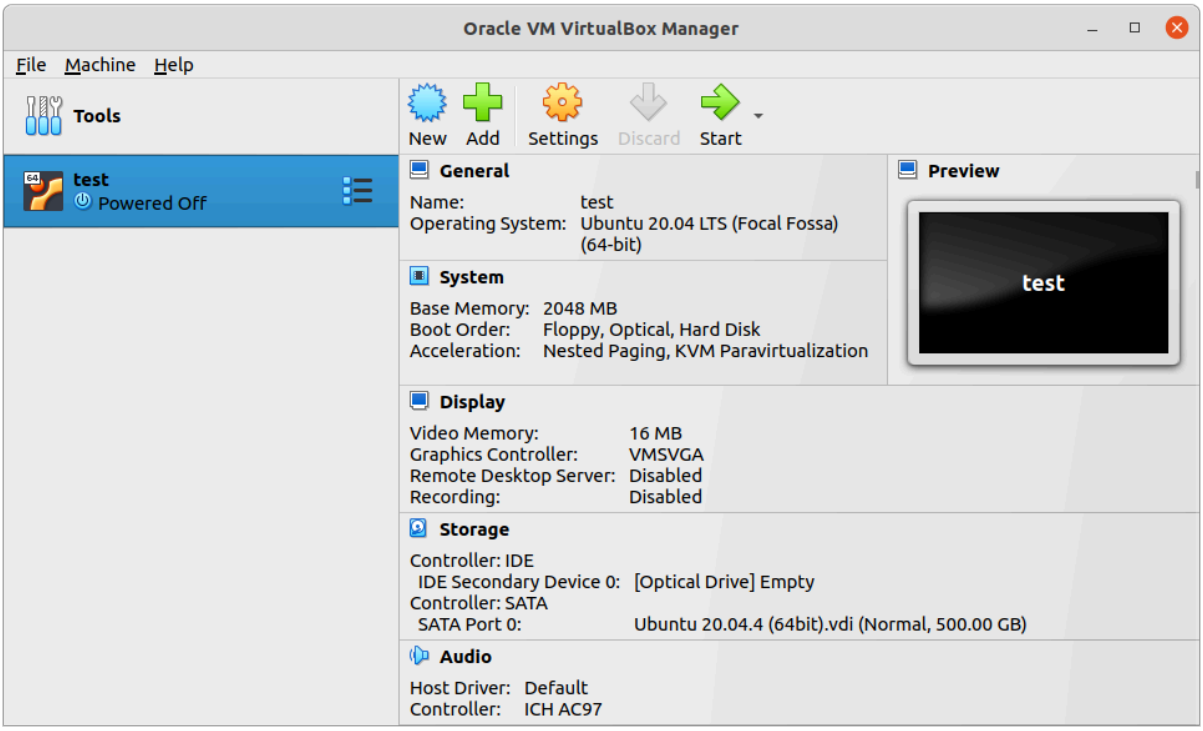
I clicked “Next” again. This is the virtual disk page where I selected the “Use an Existing Virtual Hard Disk File” and selected the unpacked .vdi file.



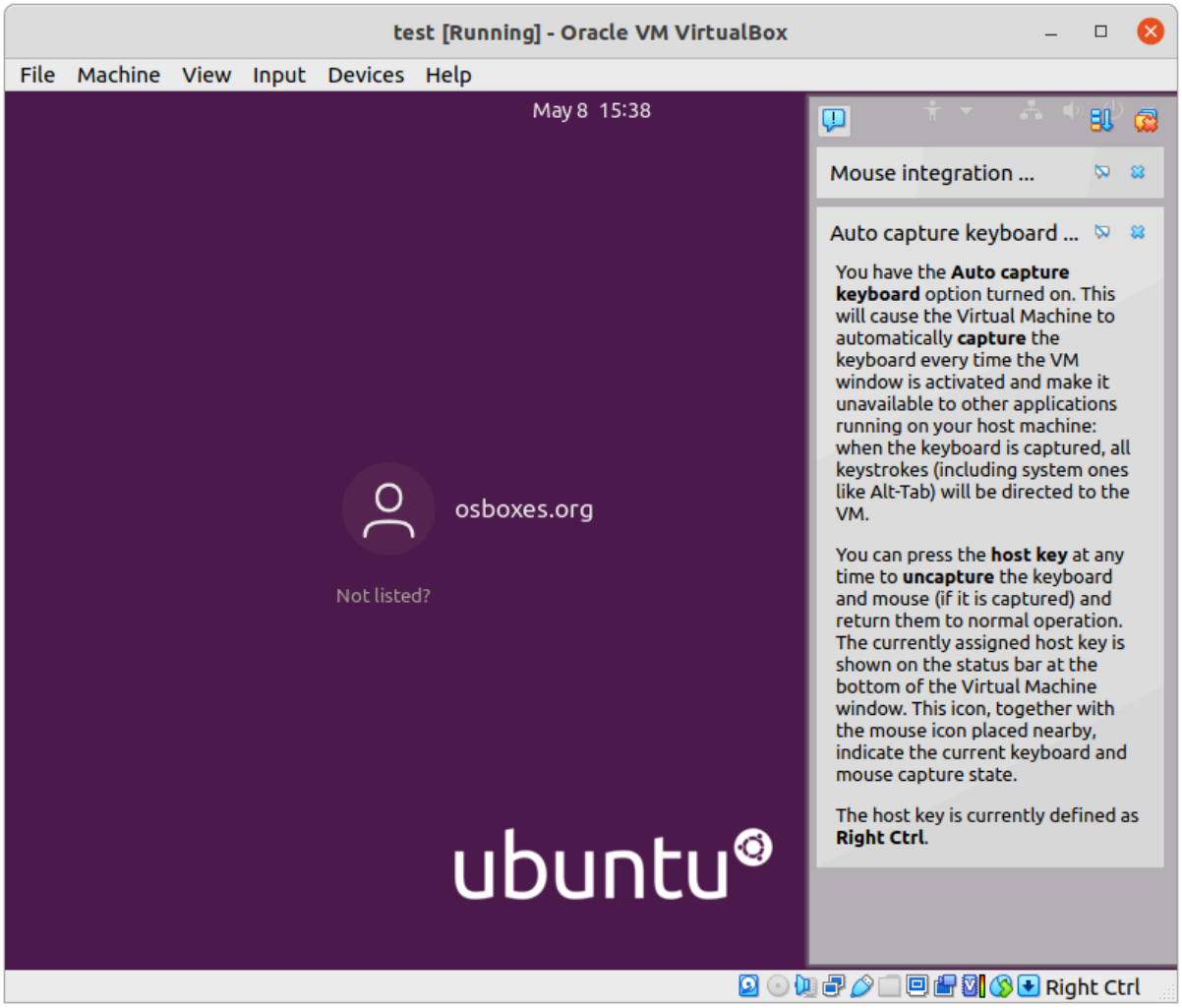
I then clicked “Next” and “Finish”



After this process I saw the test vm listed in the VirtualBox application

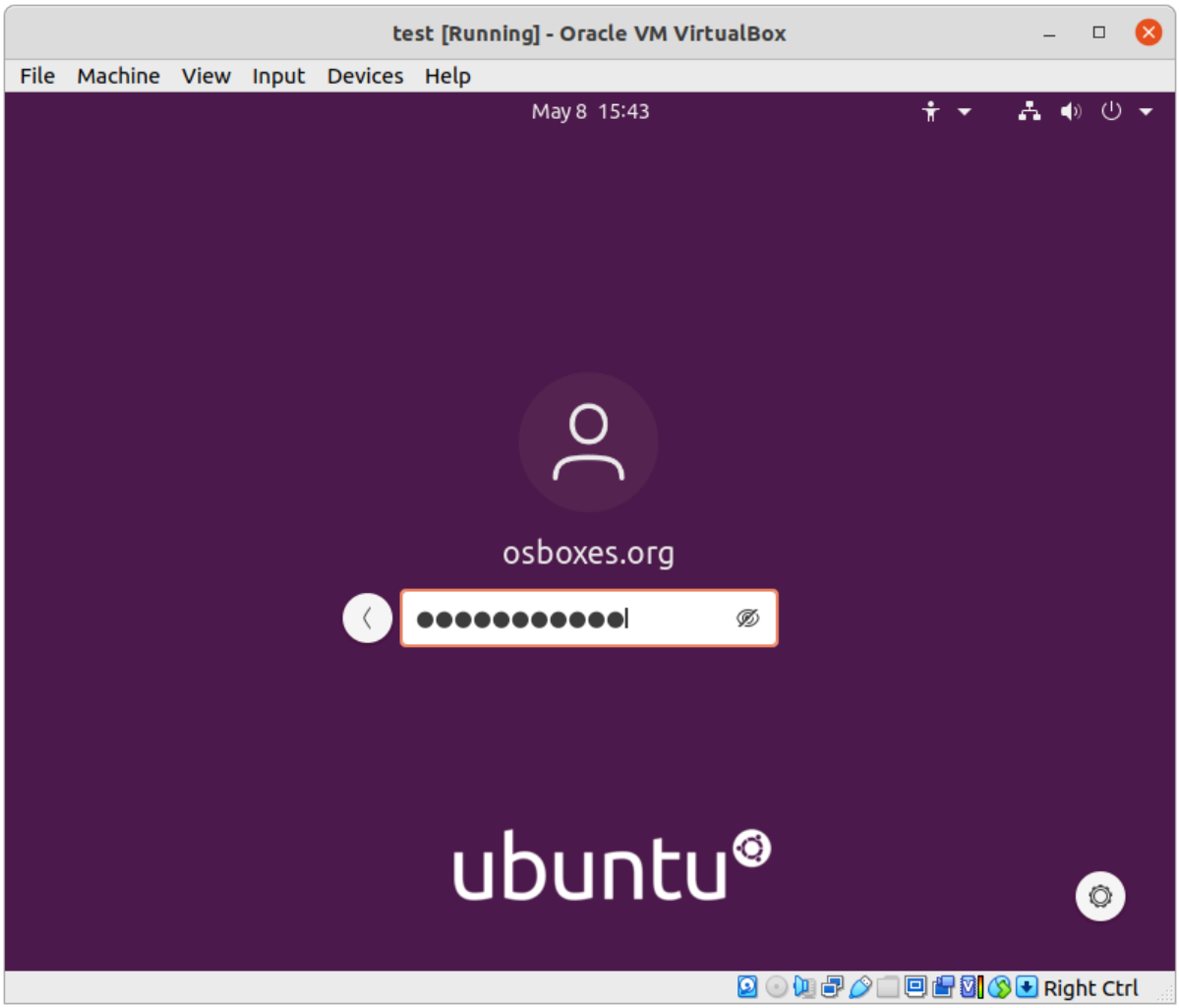


I clicked “Start” to power up the vm

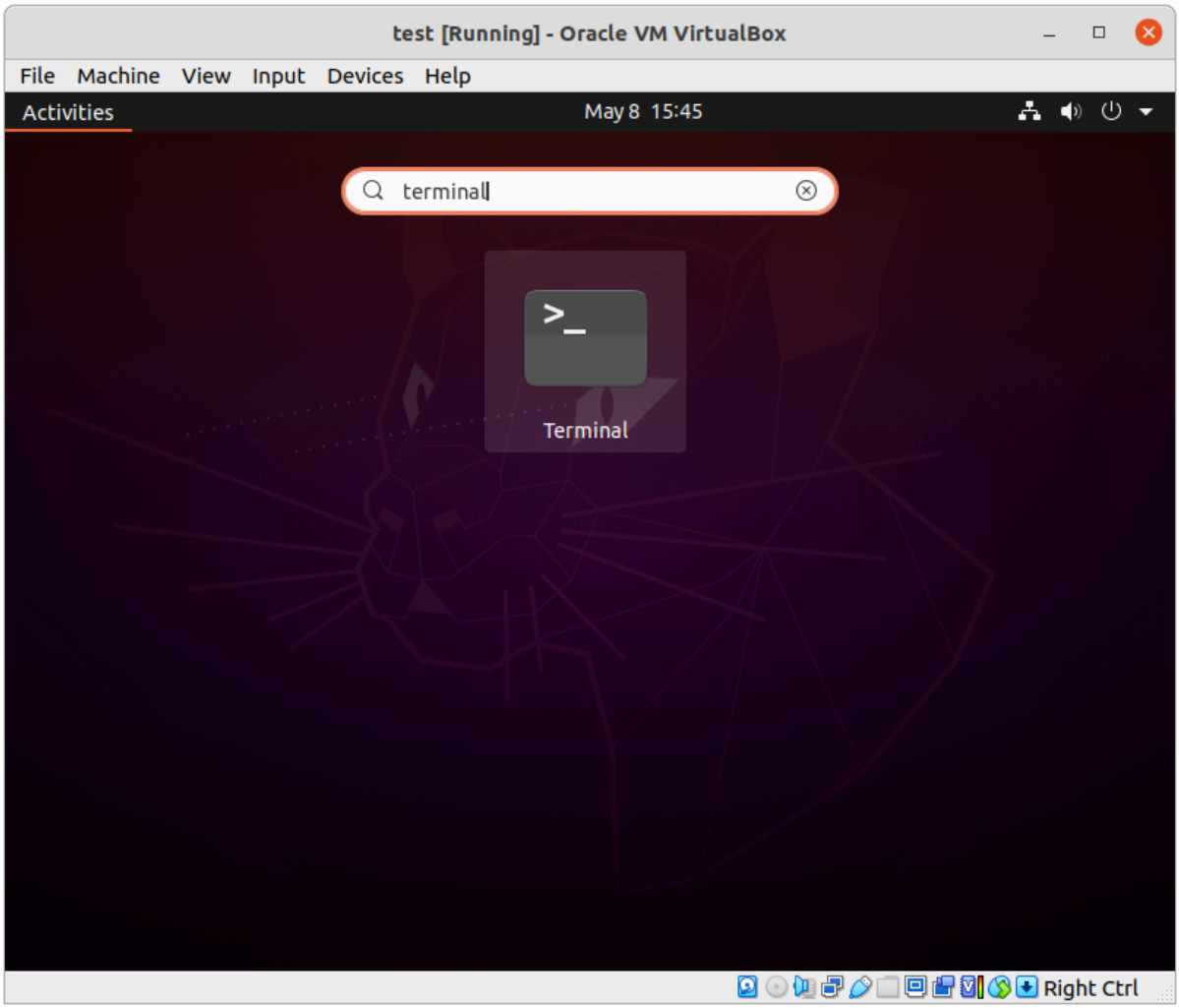


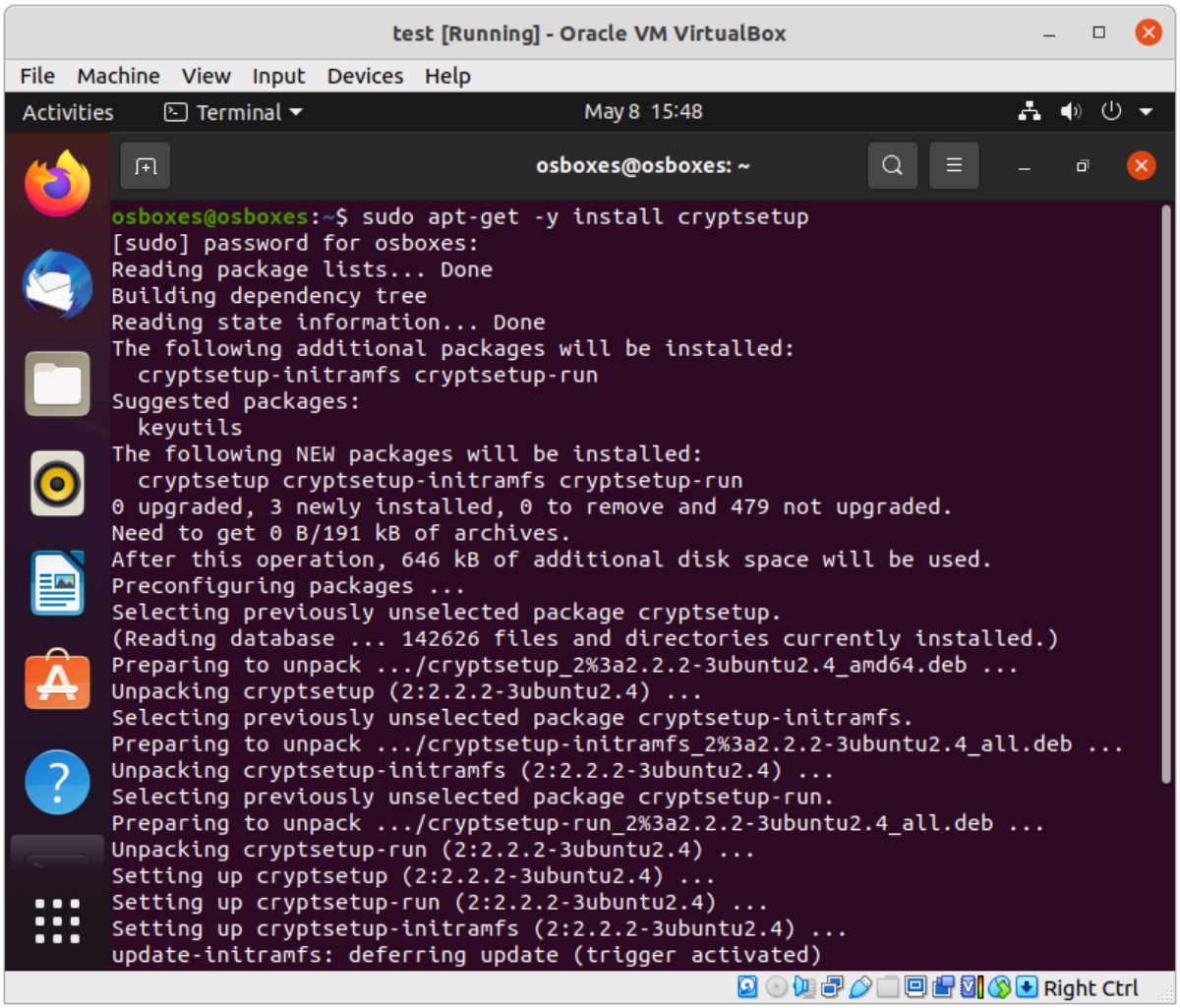
At this point the mouse and keyboard input will go to the vm. To toggle this behavior press “Right Ctrl”.

I then clicked on the “osboxes.org” to log in to the GUI using password “osboxes.org” listed here: https://www.osboxes.org/faq/what-are-the-credentials-for-virtual-machine-image/



After logging in I started the linux terminal to execute the previously described steps for downloading the decryption software and mounting the disk

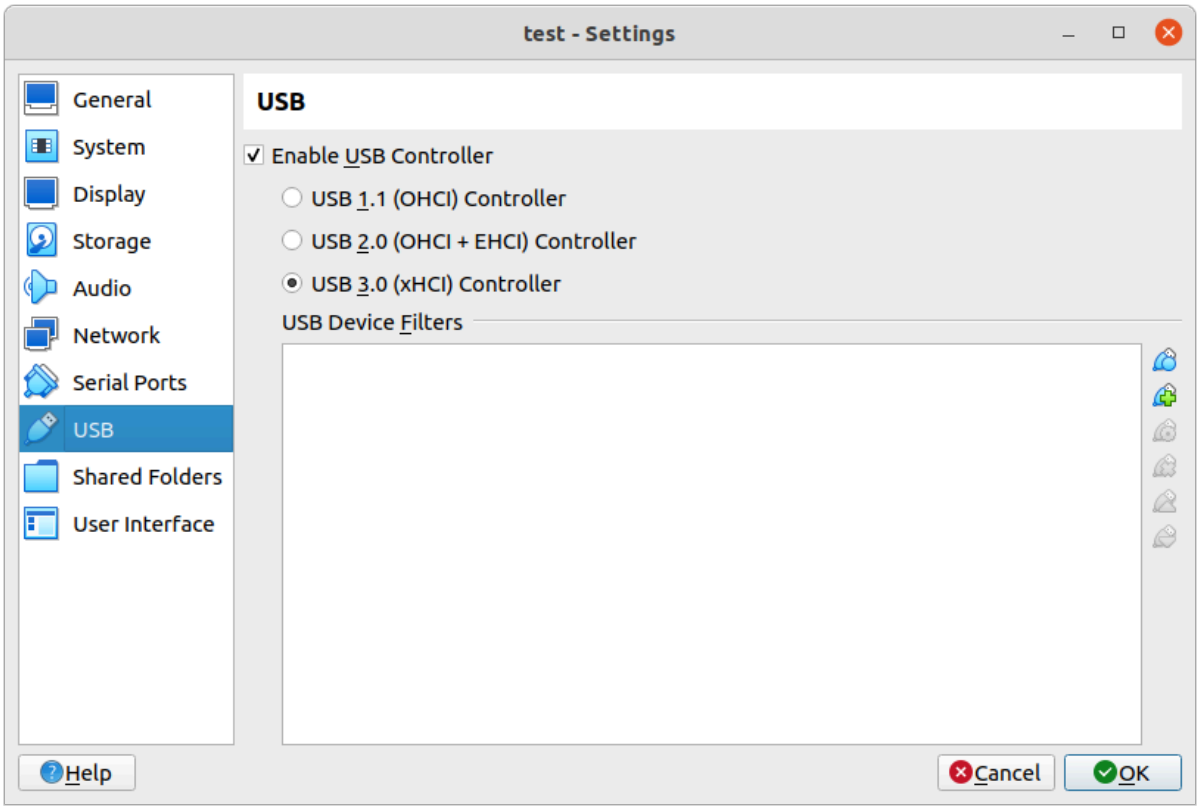


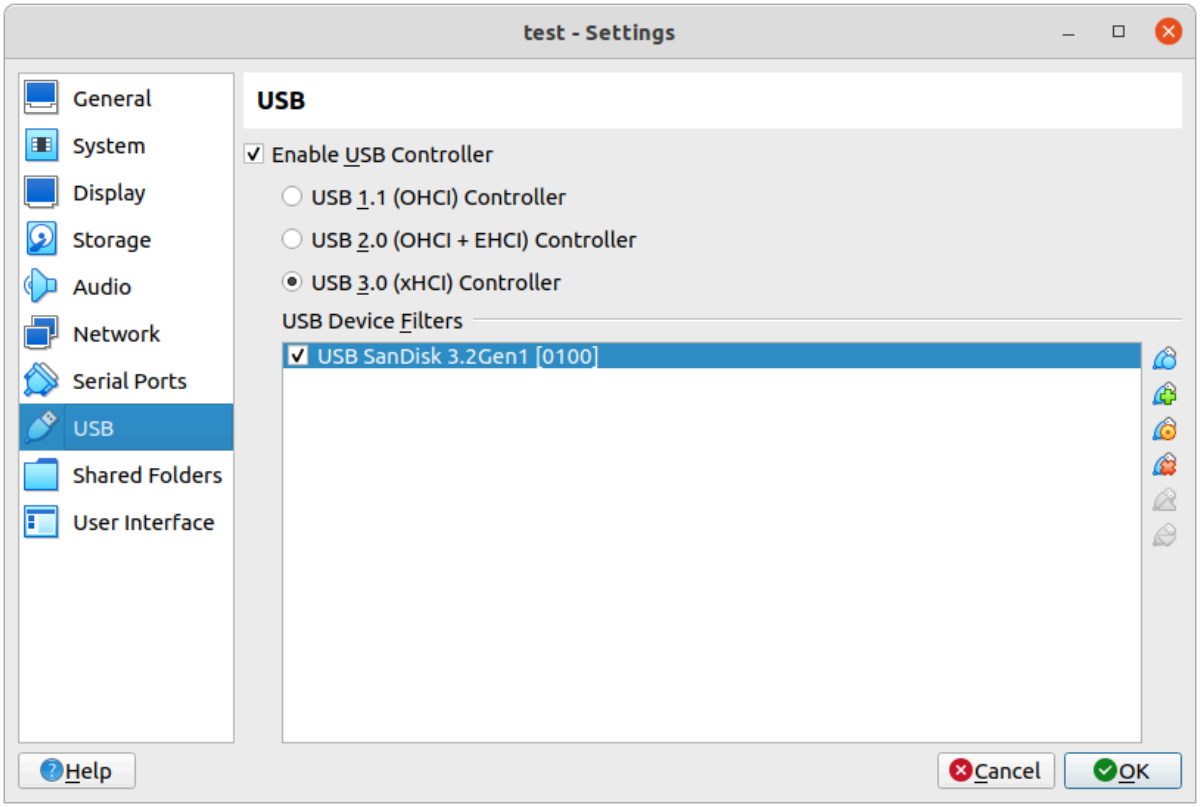


The password for installing is also “osboxes.org”.

Connecting a USB disk to a VirtualBox vm

After plugging in the USB disk, I was not able to see it so I “Powered off” the vm and clicked “Settings”. In the USB tab I clicked “+” to add a device.





After restarting the vm I was able to see the disk in the nautilus file browser.