Run a Virtual Machine (VM) with Oracle VirtualBox

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1 Summary

This guide was prepared for the Grain Days 2021 Doctoral School and will show you how to install and run a Linux VM on Windows. As part of my lecture, you will have three hands-on tutorials to (1) use Fiji to batch process CT images of Ottawa Sands and (2) use in-house codes that call Fiji in Python to calculate three-dimensional (3D) sphericity and roundness of individual particles in Ottawa Sands. In order to complete the tutorials, you will need to use the VM we provided. The document outlines how you can import an existing VM. I suggest everyone to try and set up the virtual machine before the lecture. Don't hesitate to contact me via email should you run have any issues.

2 Introduction

This document provides a basic guide on how to set up a Virtual Machine (VM) with Oracle VirtualBox 6.1.28. This guide was prepared based on Windows 10 being the host Operating System (OS) and Ubuntu 18.04.6 being the guest OS. You will also need at least 40 GB of free scape on your hard disk (HD). An SSD is recommended for best performance.

Note that your VM will have to share all components/hardware with your physical machine (host). This is like running two OS at the same time. Hence, things on the host machine might run a little slower and so does the VM.

3 Download and install Oracle Virtualbox (it's free)

Go to the following website: https://www.virtualbox.org/

Download and install:

- VirtualBox 6.1.28 platform packages
- VirtualBox 6.1.28 Oracle VM VirtualBox Extension Pack

After completed installation start the Oracle VM VirtualBox Manager. You can import the provided VM appliance in which Fiji and our in-house codes are included.

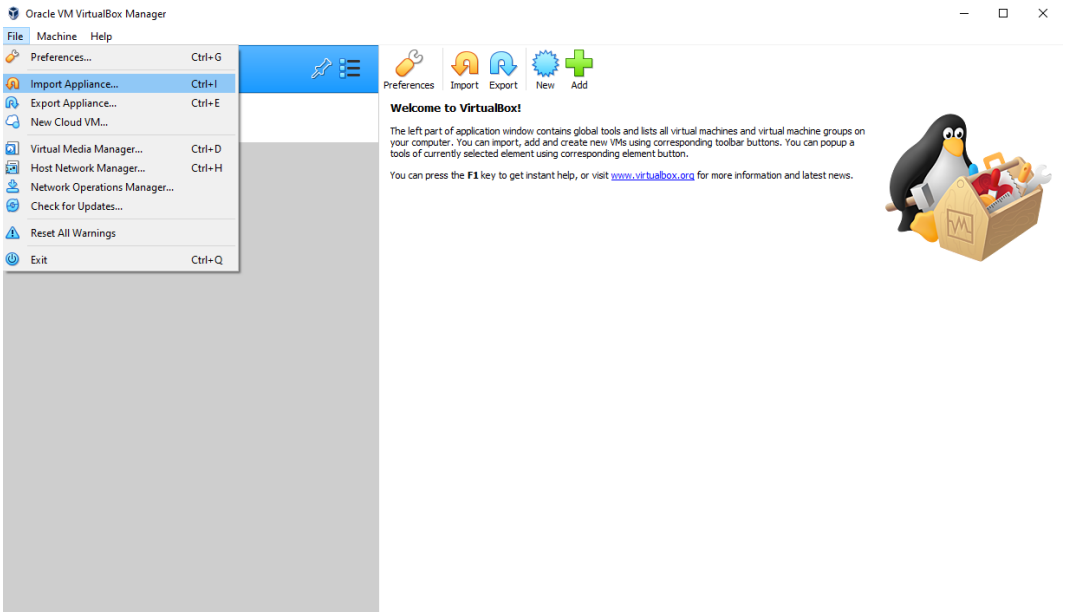
4 Create a VM by importing a Virtual Appliance

3.1 Download provided virtual appliance

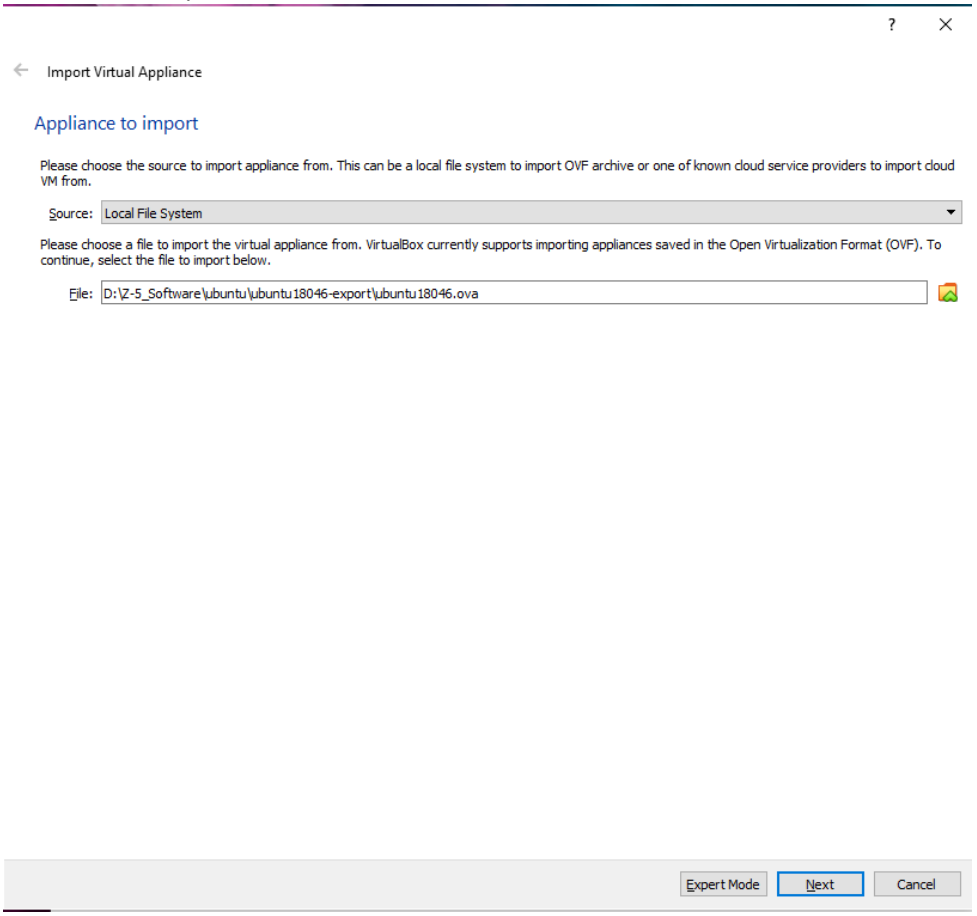
Download the virtual appliance from the link below. The password is **GrainDays_123456**
https://cloudstor.aarnet.edu.au/plus/s/YRnAMis6vR2ZKmo

3.2 Import VM

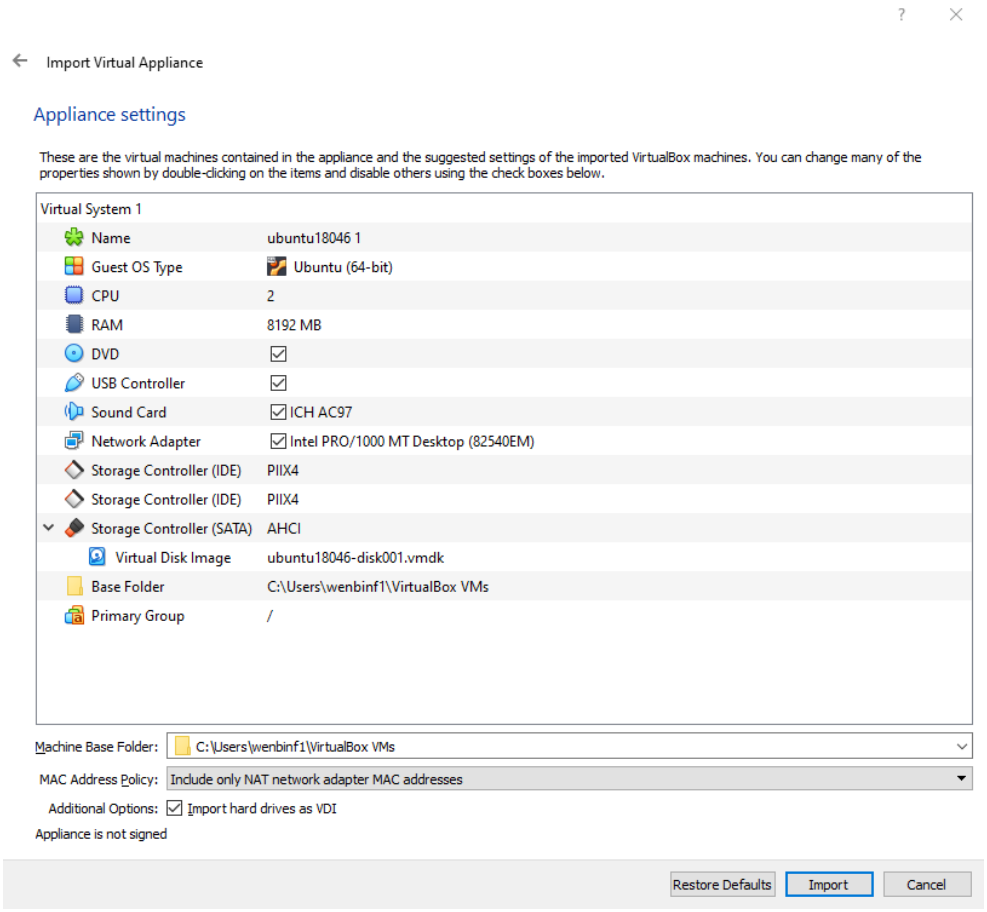
Select File > Import Appliance…



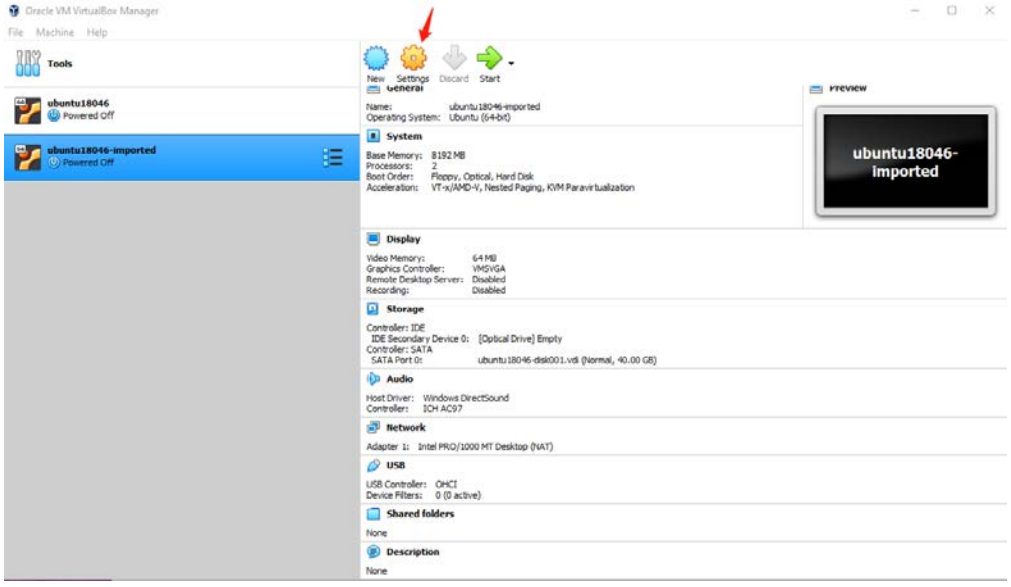
Select the file provided:



If required you can adjust the settings (e.g. CPU, RAM etc.) before starting the import:



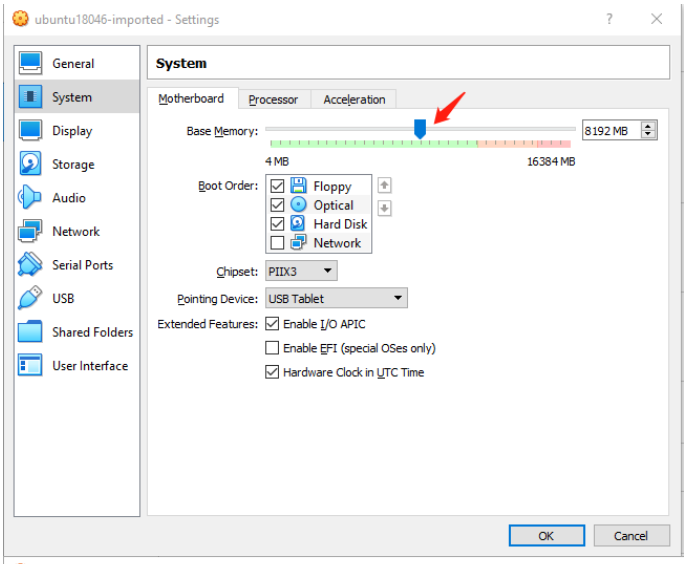
After the import is completed you will see the new VM listed in Oracle VM VirtualBox Manager. Before starting the VM, it is suggested to check the settings as outlined in the next section.

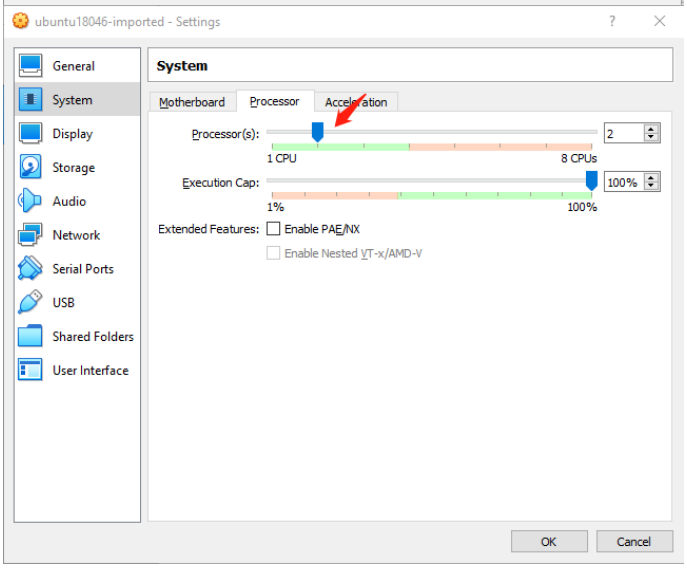


3.3 Check Settings

3.3.1 System

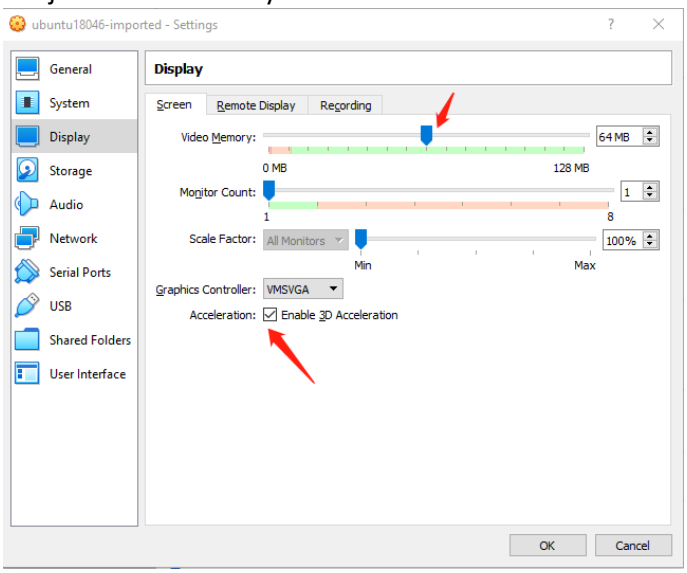
Adjust Base Memory (min. 8 GB) and Processor (min. 1-2):





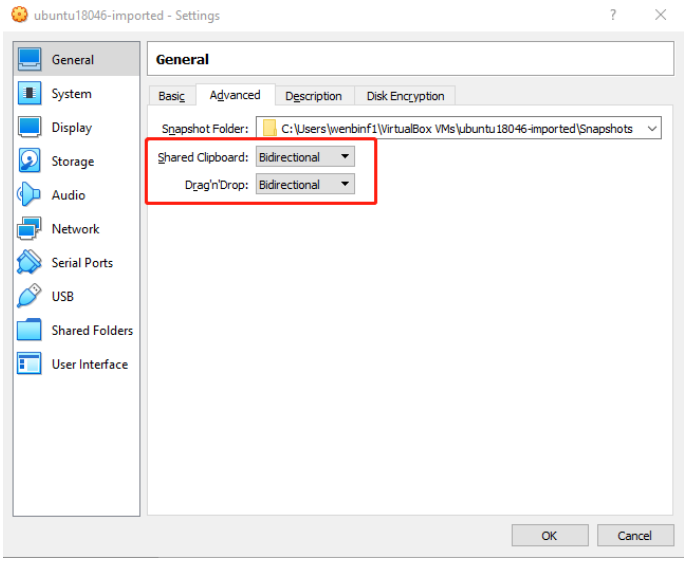
3.3.2 Display

Adjust Video Memory and Acceleration:



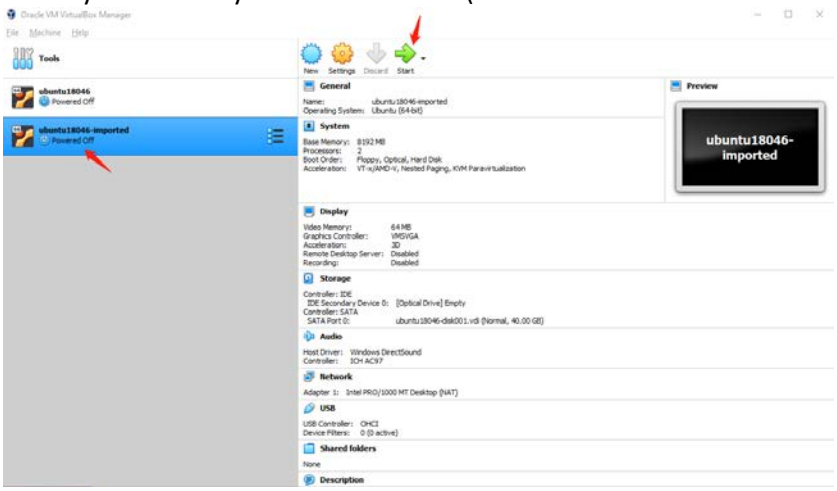
3.3.3 General

In order to be able to copy to and from the VM you need to set Shared Clipboard and Drag'n'Drog to Bidirectional.



4 Run the VM

Now you are ready to launch the VM (click on Start or double-click on VM):

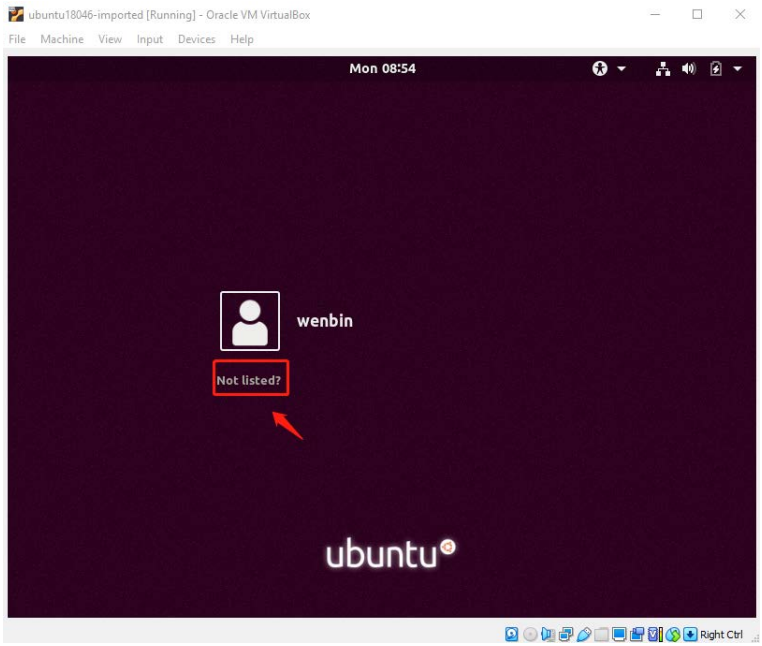


This will boot into Ubuntu:

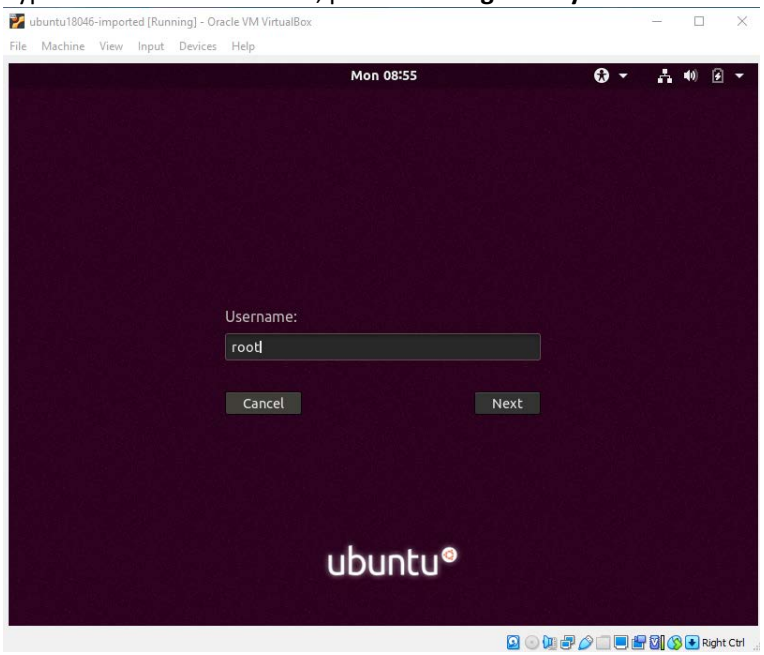
5 Your credentials for the VM

We will use root account to login.

Clink “Not listed?”

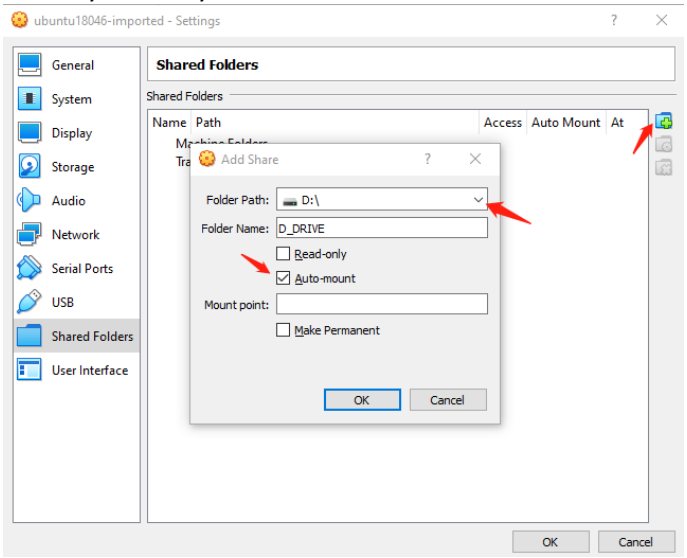


Type in “**root**” in Username, password is “**graindays**”

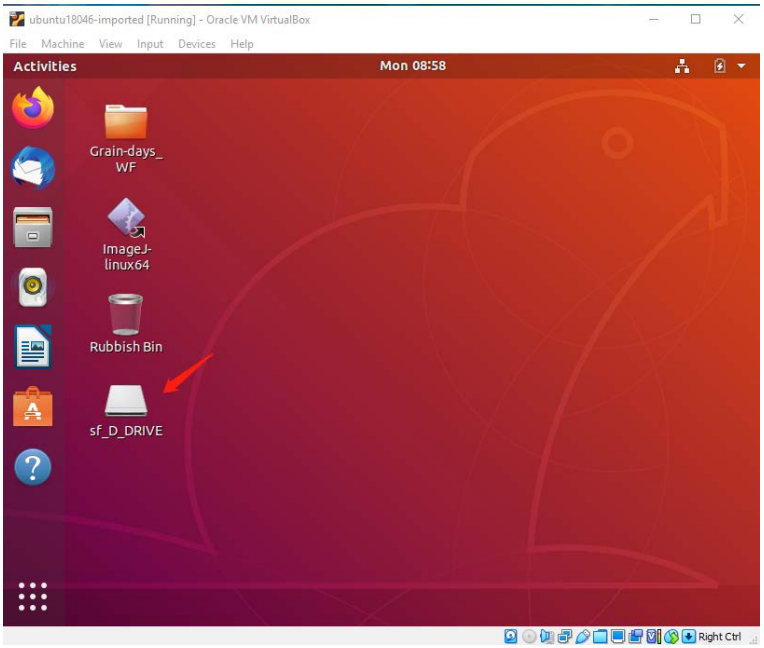


6 Set up Shared Folders

Add any folders you want to have access to in the VM to shared folders (tick Auto-mount)



Then, you should be able to access the shared folder on the desktop:



7 Frequently asked questions

Q: VirtualBox Error VT-x is not available in Windows 10

A: You might need to enable hardware virtualization in BIOS following the steps in the link below.
https://www.wintips.org/fix-virtualbox-error-vt-x-is-not-available-in-windows-10/

If it still does not work,

- *open a cmd with admin privilige*
- *bcdedit /set hypervisorlaunchtype off*
- *reboot*

Q: How to fix the error “Call to NEMR0InitVMPart2 failed VERR_NEM_INIT_FAILED (VERR_NEM_VM_CREATE_FAILED)” the first time starting VirtualBox in my computer?

A: Please refer to https://ourcodeworld.com/articles/read/1616/how-to-fix-virtualbox-session-error-call-to-nemr0initvmpart2-failed-verr-nem-init-failed-verr-nem-vm-create-failed to fix this issue. Or you can launch a new command prompt with administrator rights and then type ‘bcdedit /set hypervisorlaunchtype off’ and restart your computer, if you run the VirtualBox Windows 10 Home.