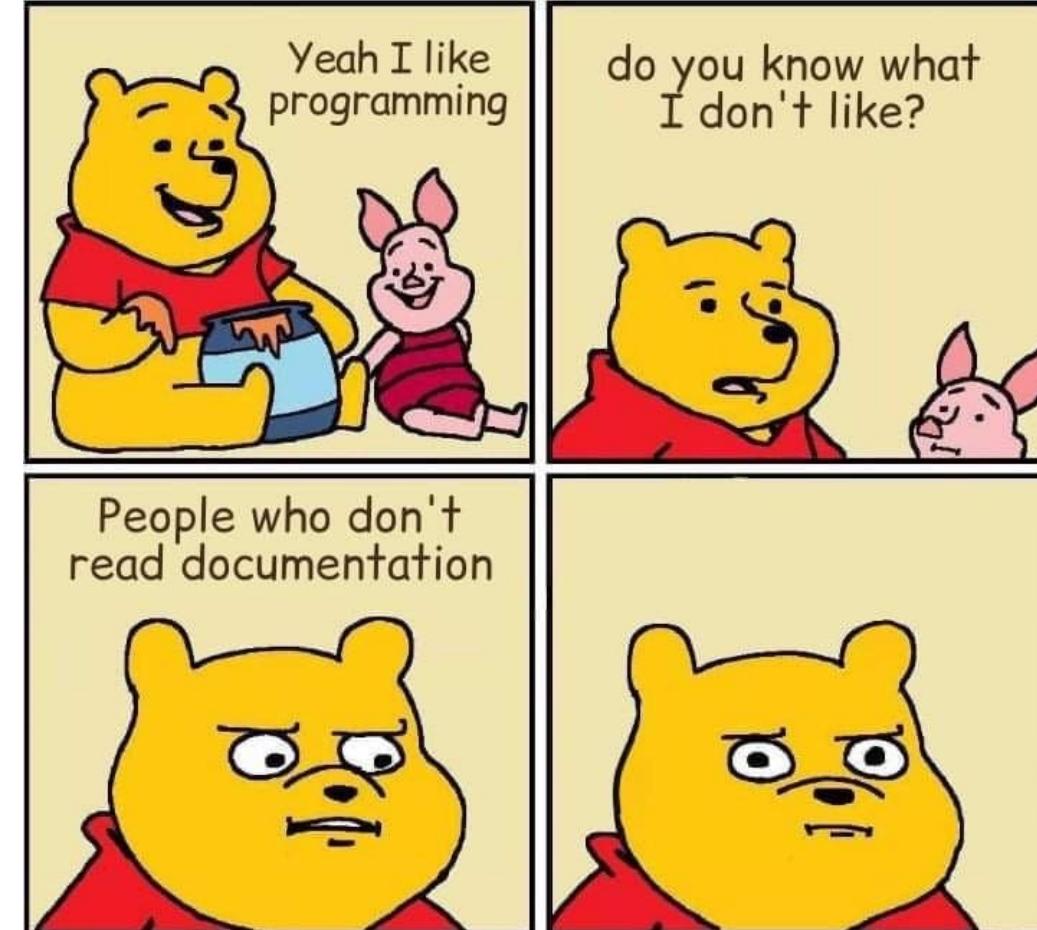


# Virtual Machine Guide

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Simone Arreghini, Elia Cereda

# Don't skip any step



# Downloading VMware Fusion

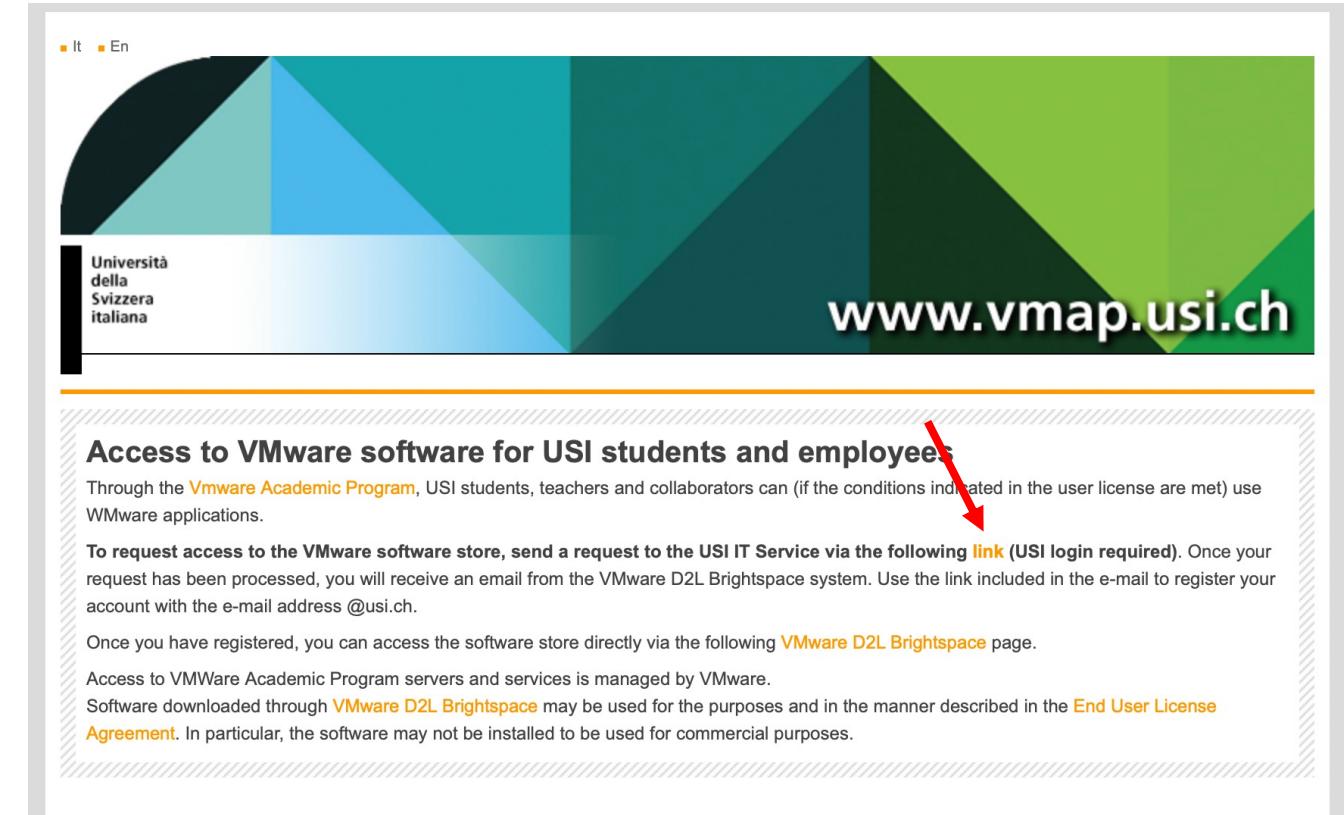
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# Request VMware license

1. Go to <http://vmap.usi.ch/>
2. Request access to USI IT service.

This is not immediate, **do it now!**

In the meantime, continue to the next slides



The screenshot shows the VMware Academic Program landing page. At the top right, there is a navigation bar with 'It' and 'En' language options. Below the navigation bar, the USI logo is displayed with the text 'Università della Svizzera italiana'. On the right side of the page, the URL 'www.vmap.usi.ch' is prominently shown. A red arrow points from the text 'send a request to the USI IT Service via the following link (USI login required)' down towards the 'VMware D2L Brightspace' link. The main content area contains text about the VMware Academic Program, the request process, and software availability.

**Access to VMware software for USI students and employees**

Through the [Vmware Academic Program](#), USI students, teachers and collaborators can (if the conditions indicated in the user license are met) use VMware applications.

To request access to the VMware software store, send a request to the USI IT Service via the following [link](#) (USI login required). Once your request has been processed, you will receive an email from the VMware D2L Brightspace system. Use the link included in the e-mail to register your account with the e-mail address @usi.ch.

Once you have registered, you can access the software store directly via the following [VMware D2L Brightspace](#) page.

Access to VMWare Academic Program servers and services is managed by VMware.

Software downloaded through [VMware D2L Brightspace](#) may be used for the purposes and in the manner described in the [End User License Agreement](#). In particular, the software may not be installed to be used for commercial purposes.

# Download VMware

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3. Download and install the trial version, you can use it for 30 days

**macOS:** VMware Fusion Pro

<https://www.vmware.com/go/getfusion>

**Windows:** VMware Workstation Pro

<https://www.vmware.com/go/getworkstation-win>

**Linux:** VMware Workstation Pro

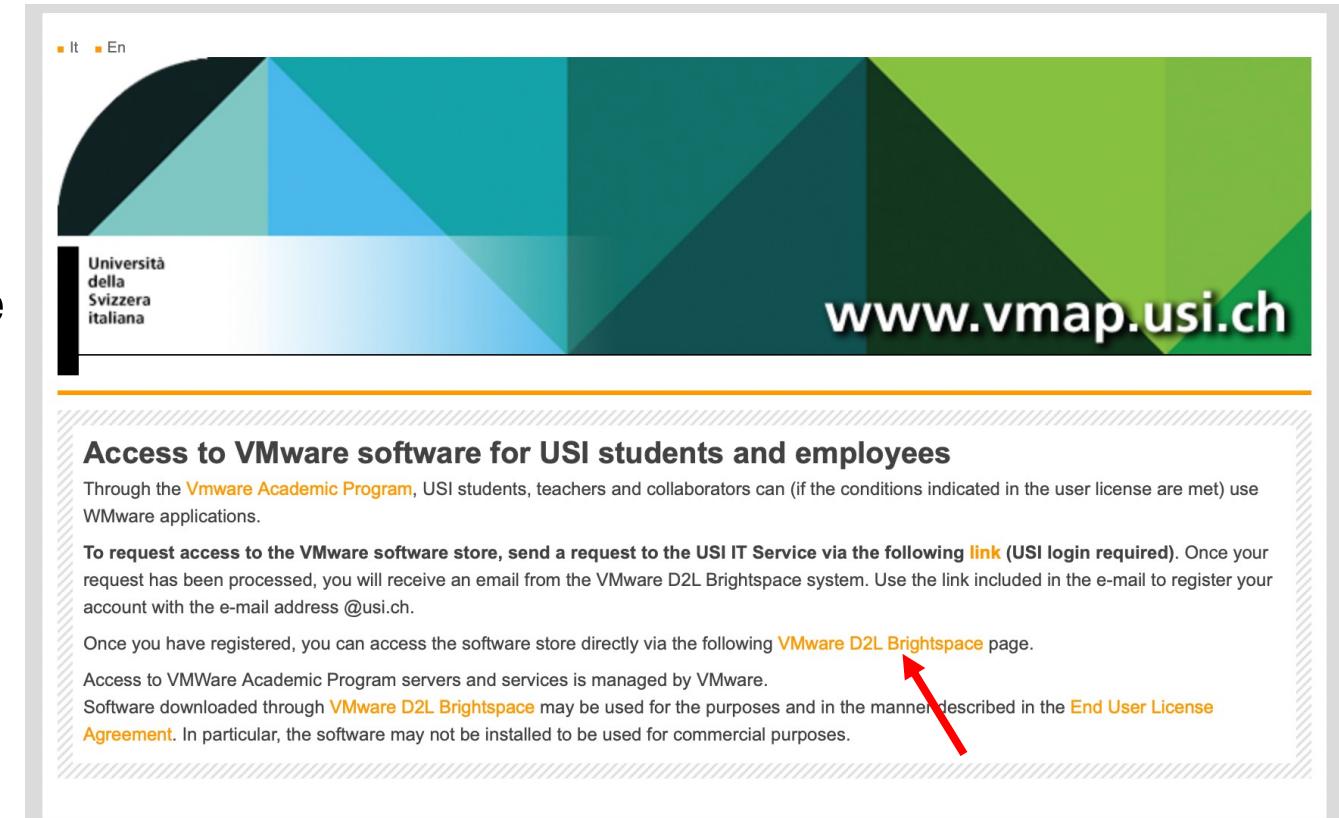
<https://www.vmware.com/go/getworkstation-linux>

# Request VMware license

After the IT service grants you access:

4. Create an account

While waiting for the IT you can use the  
VMware free trial



The screenshot shows the VMware Academic Program landing page. At the top right is the USI logo with the text "www.vmap.usi.ch". Below it is a section titled "Access to VMware software for USI students and employees". It explains that through the "Vmware Academic Program", USI students, teachers and collaborators can use VMware applications. It instructs users to request access via the USI IT Service and provides a link to the "VMware D2L Brightspace" page. A red arrow points to this link. The page also mentions that access is managed by VMware and that software may not be used for commercial purposes.

It En

Università della Svizzera italiana

www.vmap.usi.ch

**Access to VMware software for USI students and employees**

Through the [Vmware Academic Program](#), USI students, teachers and collaborators can (if the conditions indicated in the user license are met) use VMware applications.

To request access to the VMware software store, send a request to the USI IT Service via the following [link](#) (USI login required). Once your request has been processed, you will receive an email from the VMware D2L Brightspace system. Use the link included in the e-mail to register your account with the e-mail address @usi.ch.

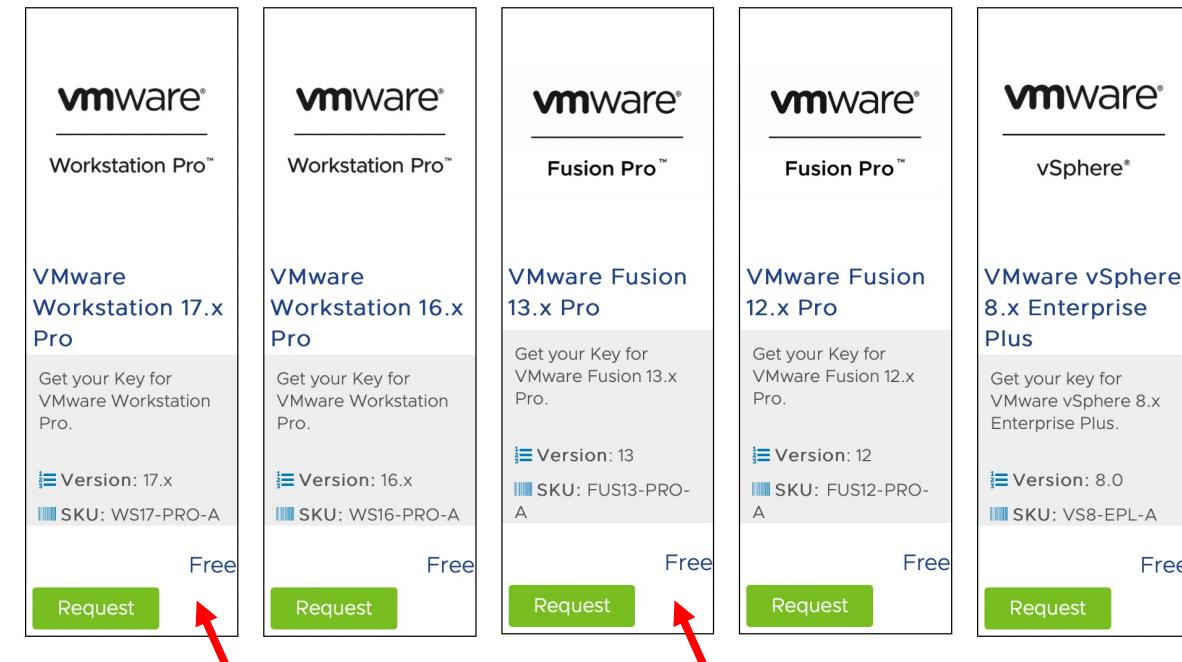
Once you have registered, you can access the software store directly via the following [VMware D2L Brightspace](#) page.

Access to VMWare Academic Program servers and services is managed by VMware.

Software downloaded through [VMware D2L Brightspace](#) may be used for the purposes and in the manner described in the [End User License Agreement](#). In particular, the software may not be installed to be used for commercial purposes.

# Request VMware license

5. Request a license for Fusion Pro or Workstation Pro (depending on your OS)  
<https://itacademy.vmware.com/catalog?pagename=Software-Licenses-Repository>



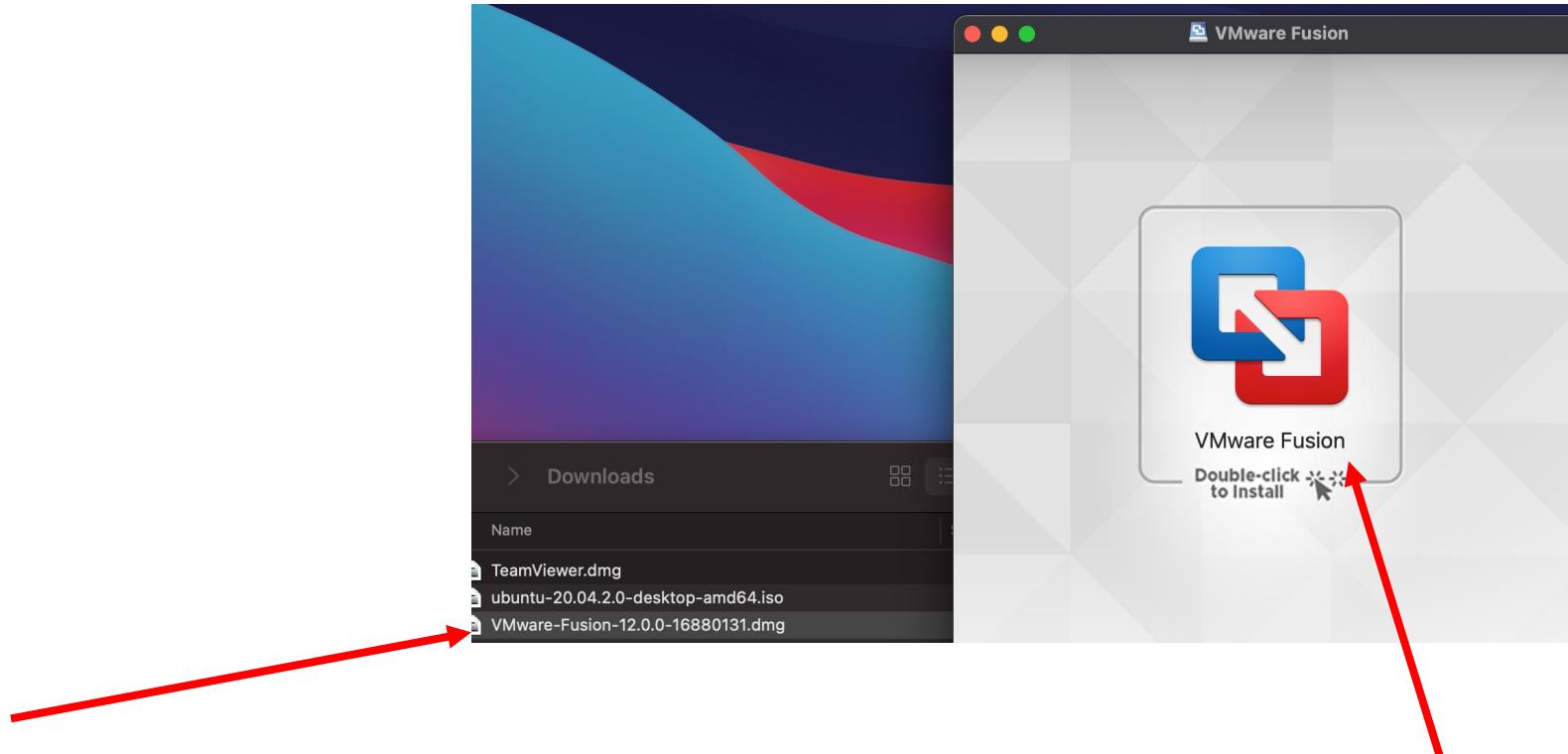
This again is not immediate, don't wait until the trial expires to do it! ;)

# Install VMware Fusion

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# Install VMware Fusion

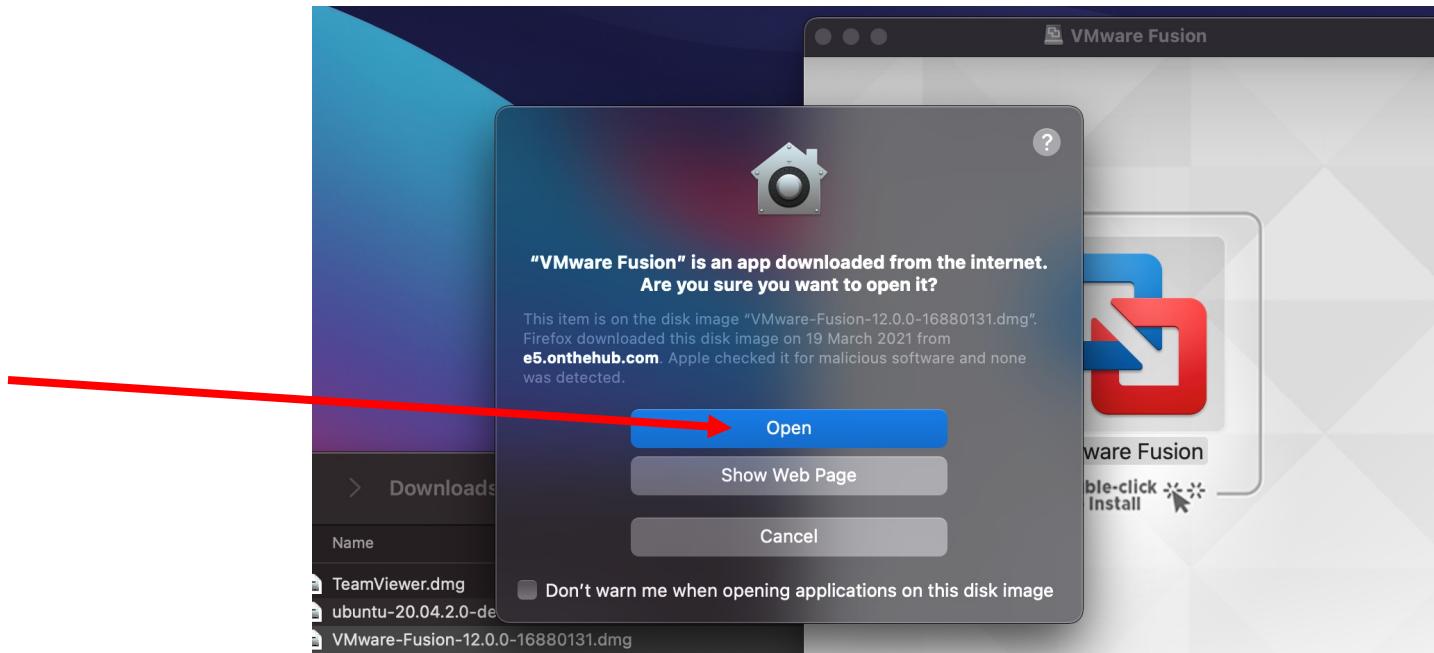
- Open the .dmg file and double-click it to install



# Install VMware Fusion

Click open to install VMware Fusion

When requested, insert the serial number



# Download the VM image

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# Download the VM image

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- Here you will find two files:
  - .ova is the VM image for Intel-based computers
  - .zip is a compressed VM file for Arm computers (mainly Apple Silicon Macs)

# Download the VM image

- Just download the correct one for your CPU architecture
- The next part will depend to your CPU architecture. Skip to the correct section.



# Import the VM image (Arm)

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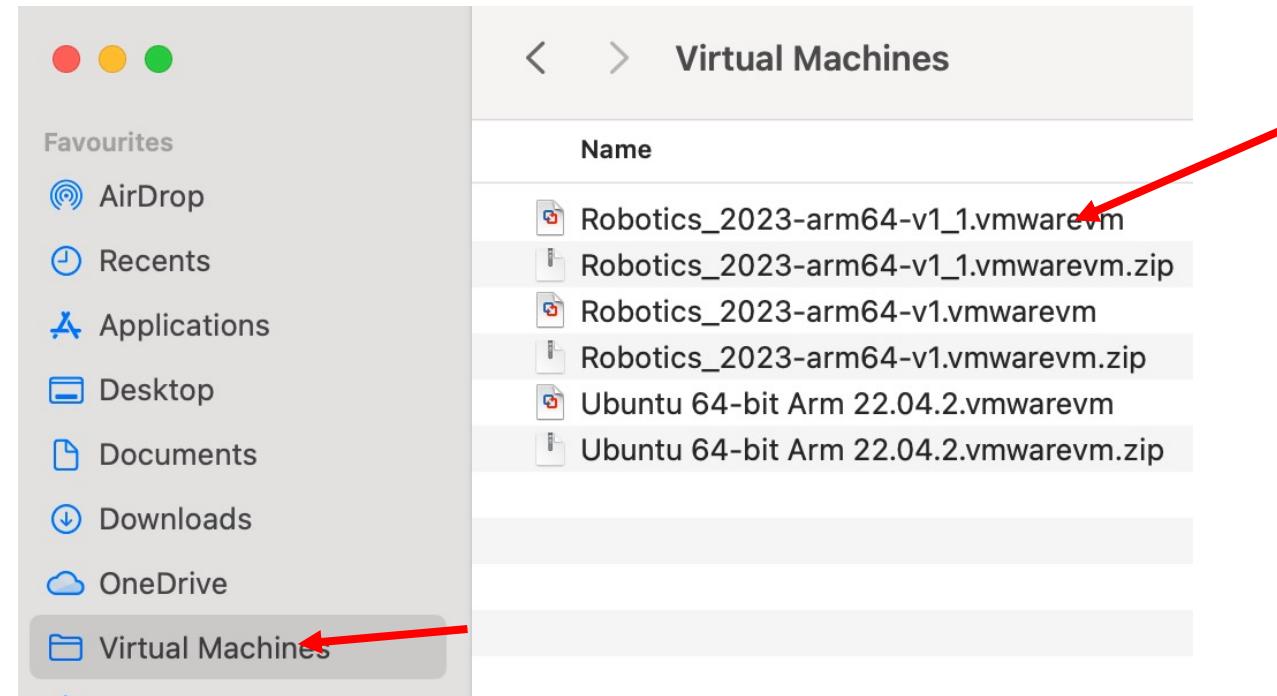
# Import the VM image (Arm)

- The VM for the Arm SHOULD NOT be updated.
- Most of the software you will use has been debugged, patched, and compiled by us and uses selected libs for a stable performance.
- Some bugs may come up from time to time, just gives us a heads up and we will find a solution.



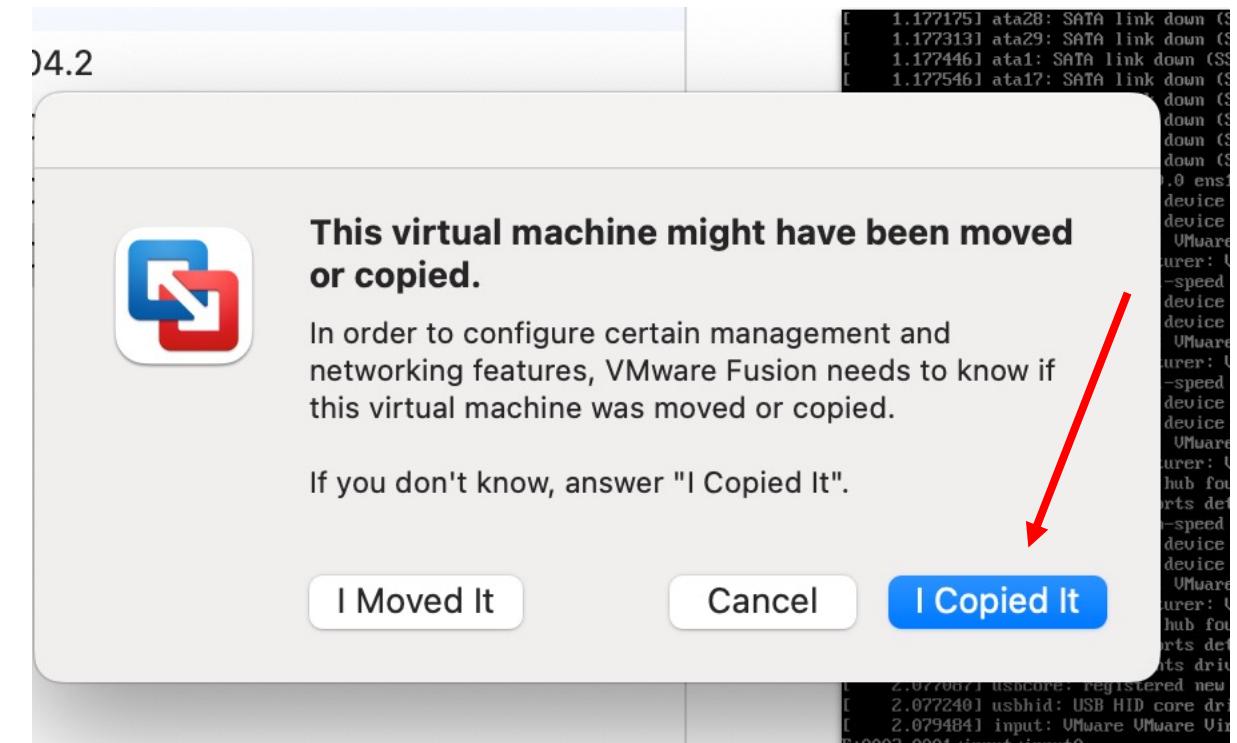
# Import the VM image (Arm)

- Unzip the .zip file in the ~Virtual Machines directory (VMware should create one)
- NB: the unzipped folder is ~ 30GB
- After the VM is unzipped, double click on it



# Import the VM image (Arm)

- After double clicking VMware might ask you to take ownership of the VM, do it
- In any case, the first time you open the provided VM, VMware will ask you about the VM image, click “I Copied It”
- Now the VM will start.
- Please stop it now

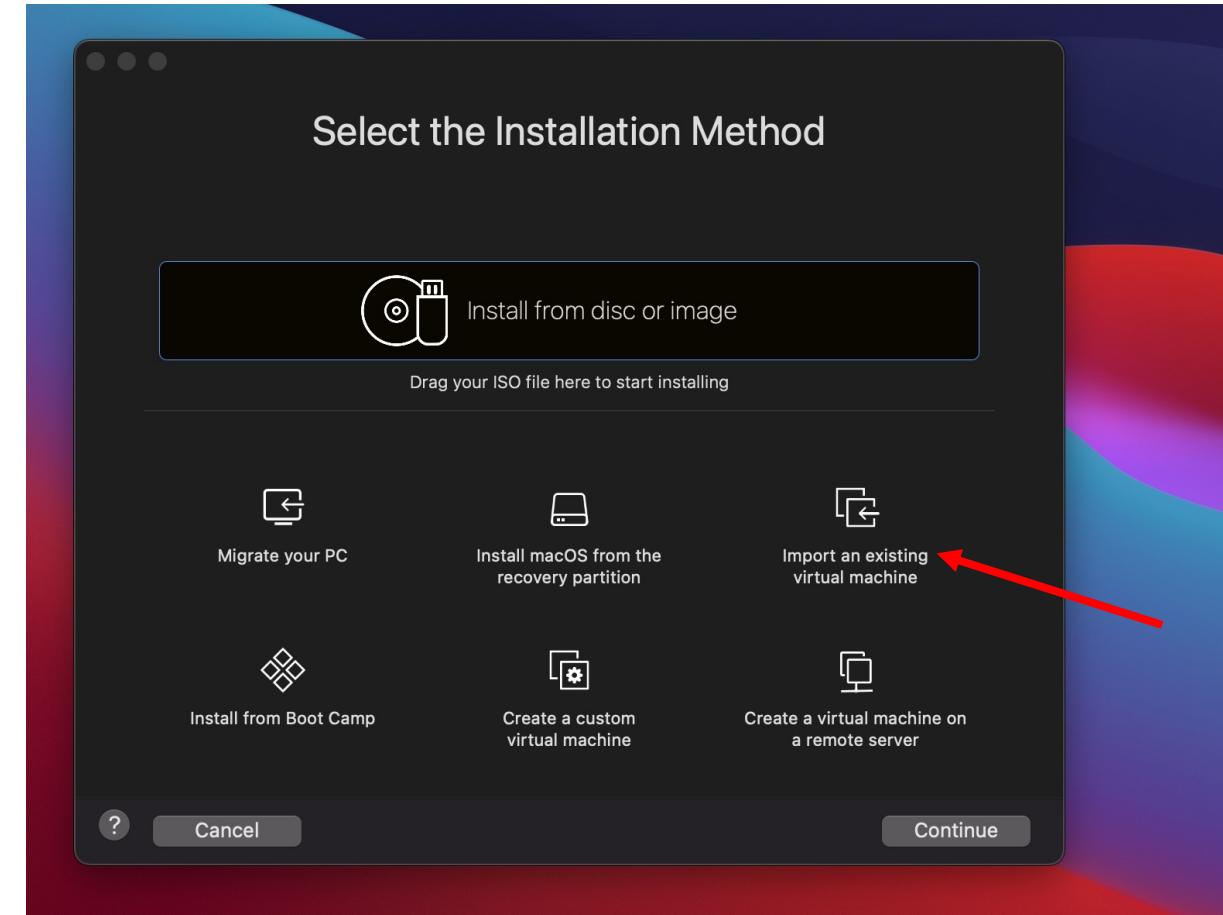


# Import the VM image (x86/64)

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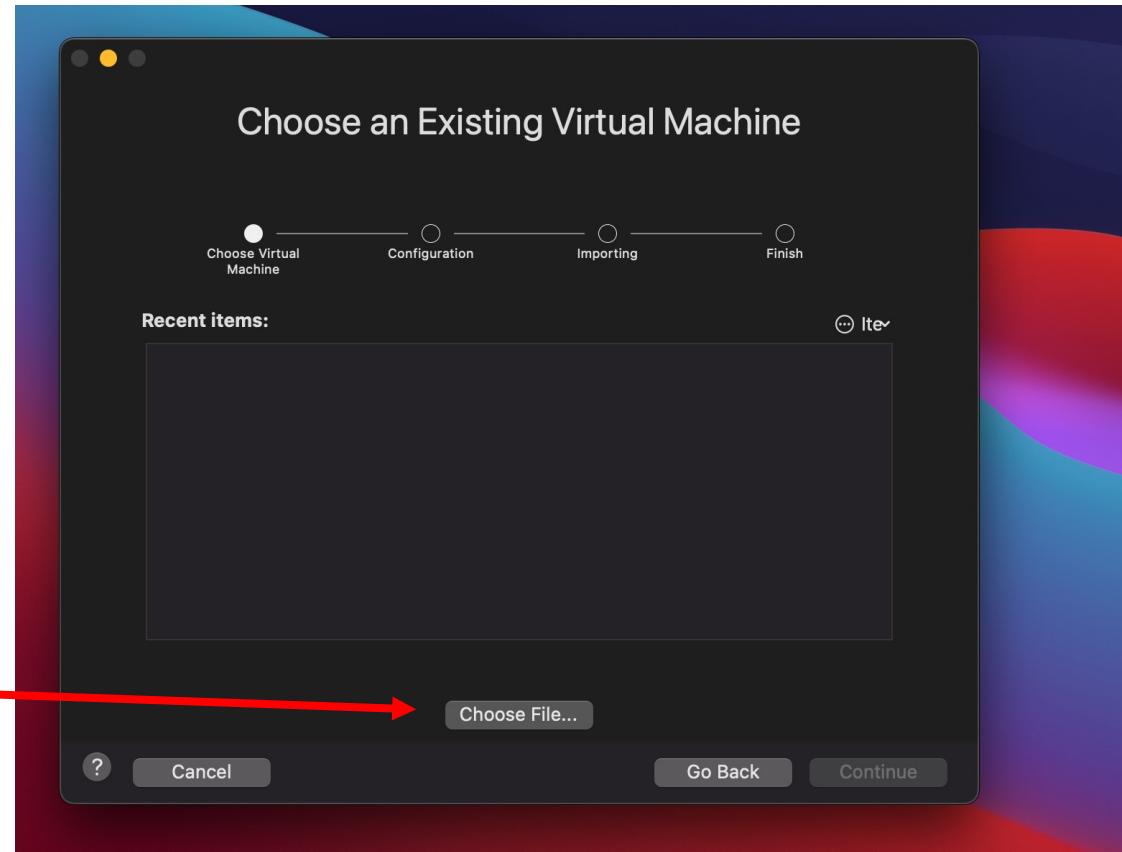
# Import the VM image (x86/x64)

- Start VMware Fusion
- Click “Import an existing virtual machine”



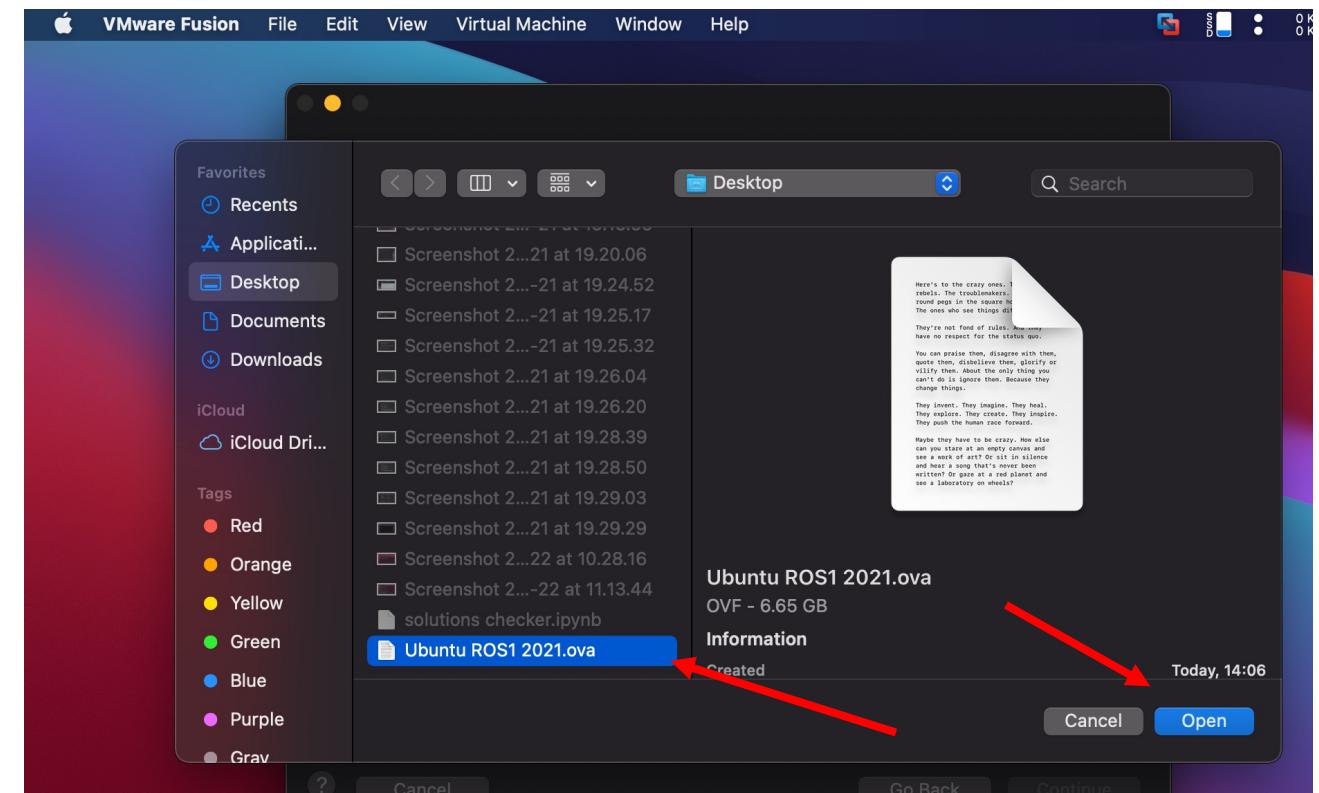
# Import the VM image (x86/x64)

- Click “Choose file”



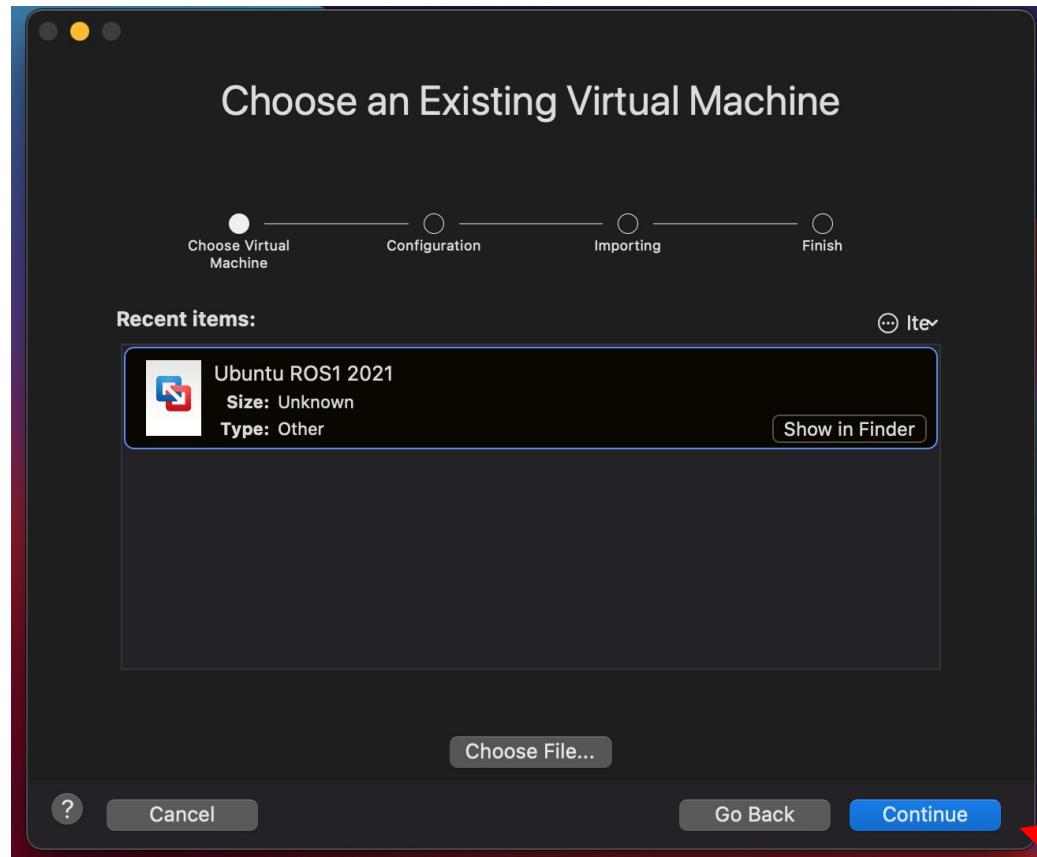
# Import the VM image (x86/x64)

- Select the .ova file that you have downloaded
- Click “Open”



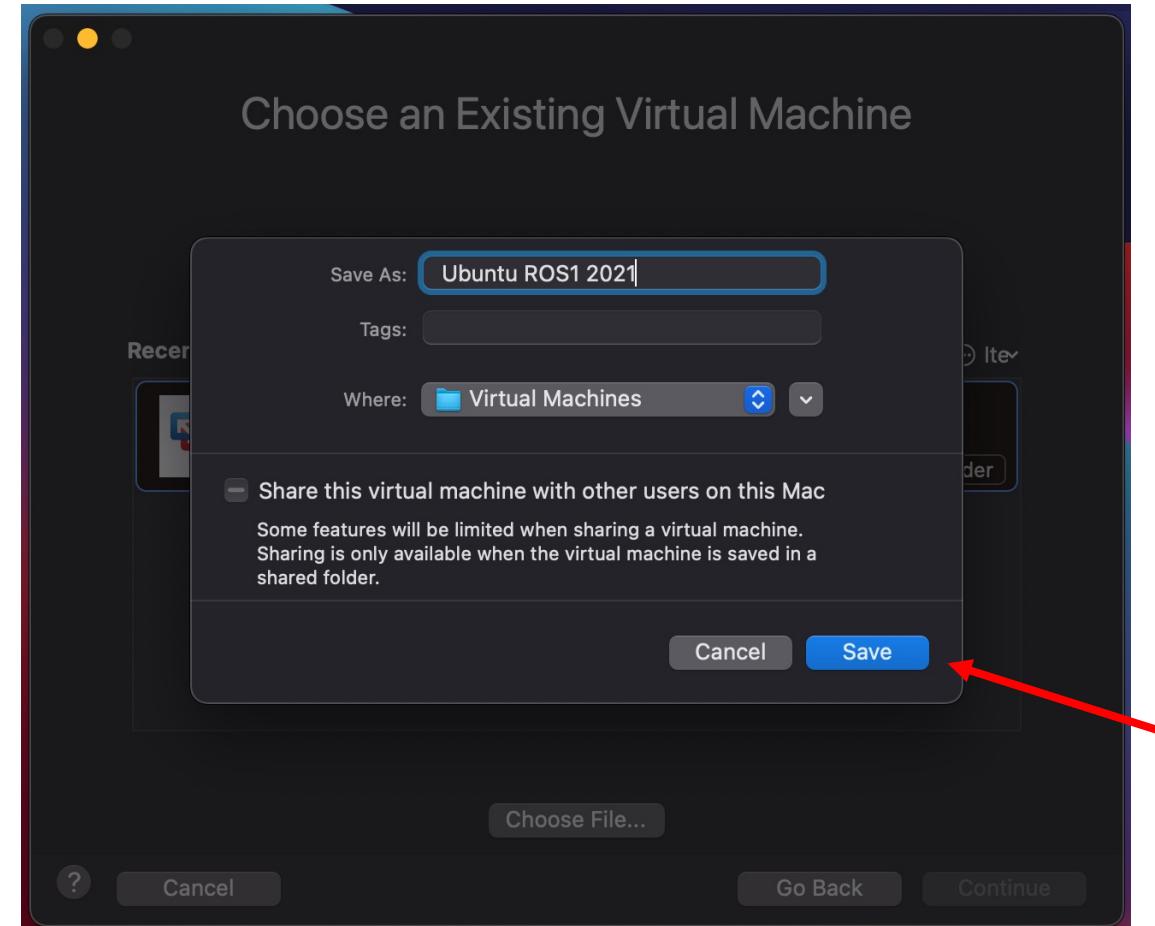
# Import the VM image (x86/x64)

- Click “Continue”



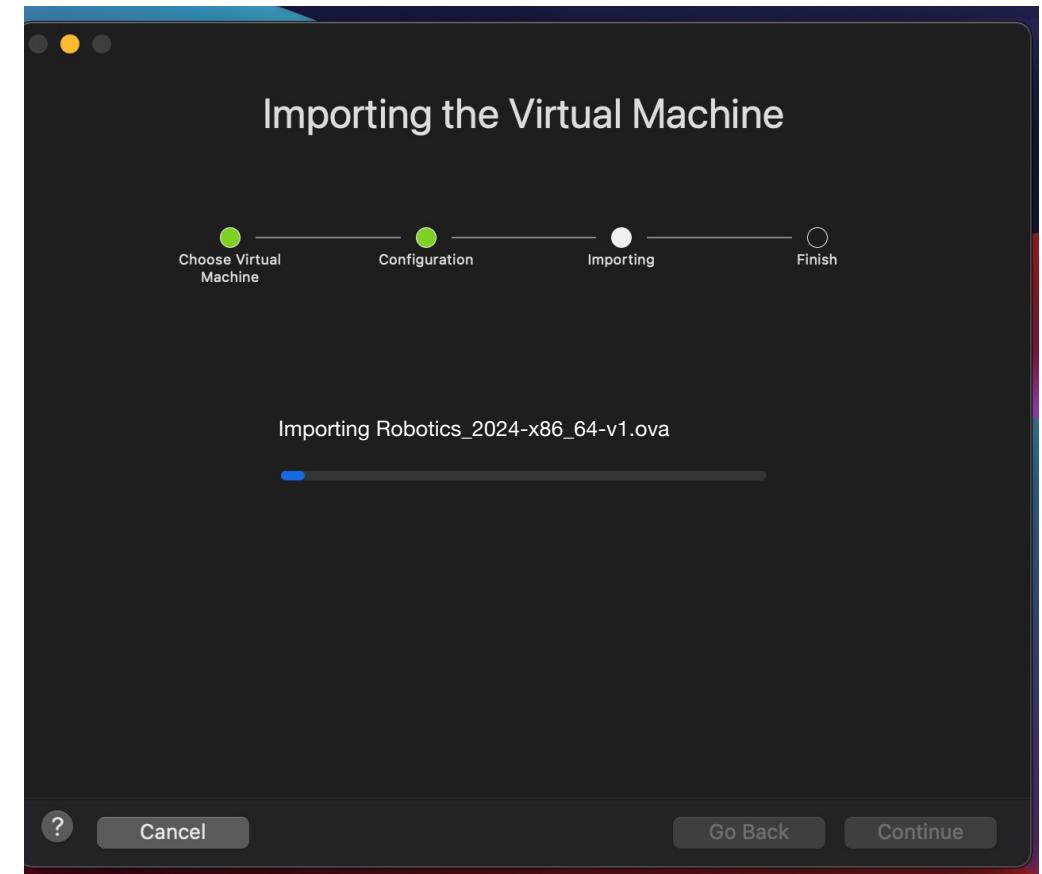
# Import the VM image (x86/x64)

- Click “Save”



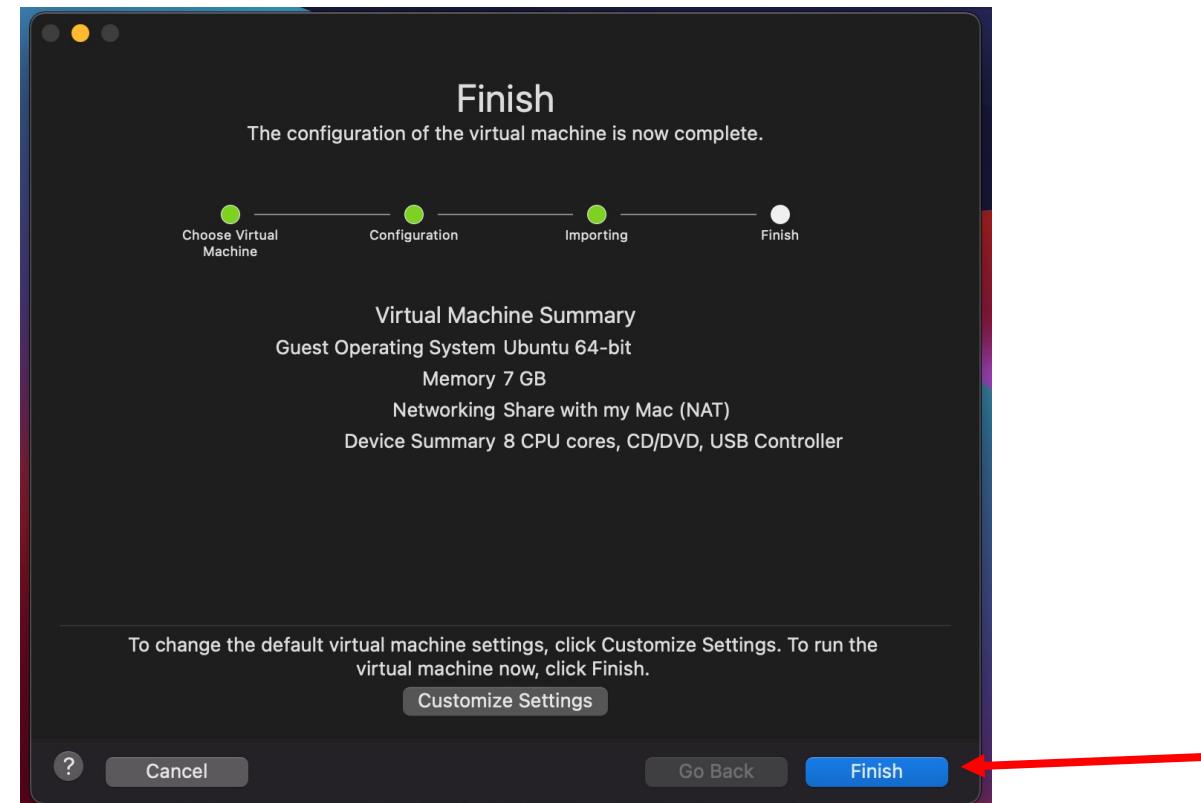
# Import the VM image (x86/x64)

- Wait for VMware Fusion to complete the import



# Import the VM image (x86/x64)

- Once the import is completed, you will see a similar summary (if not identical) to the following
- Click “Finish”



# Setup the VM (ANY CPU!)

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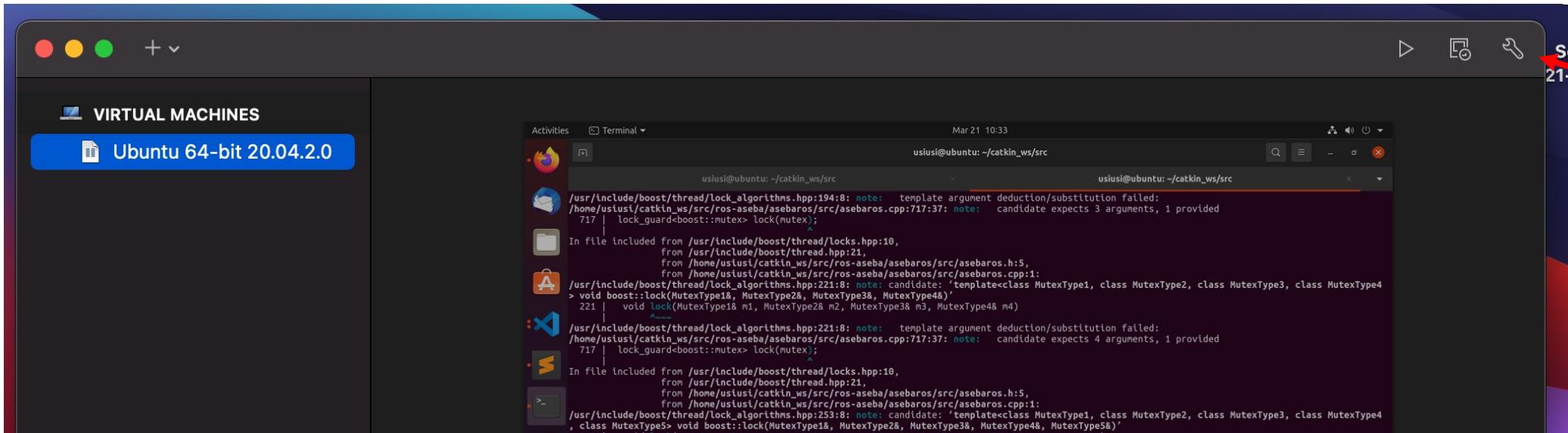
# Setup the VM

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- In case the virtual machine has started, please **shut it down**
- We have to setup VMware first

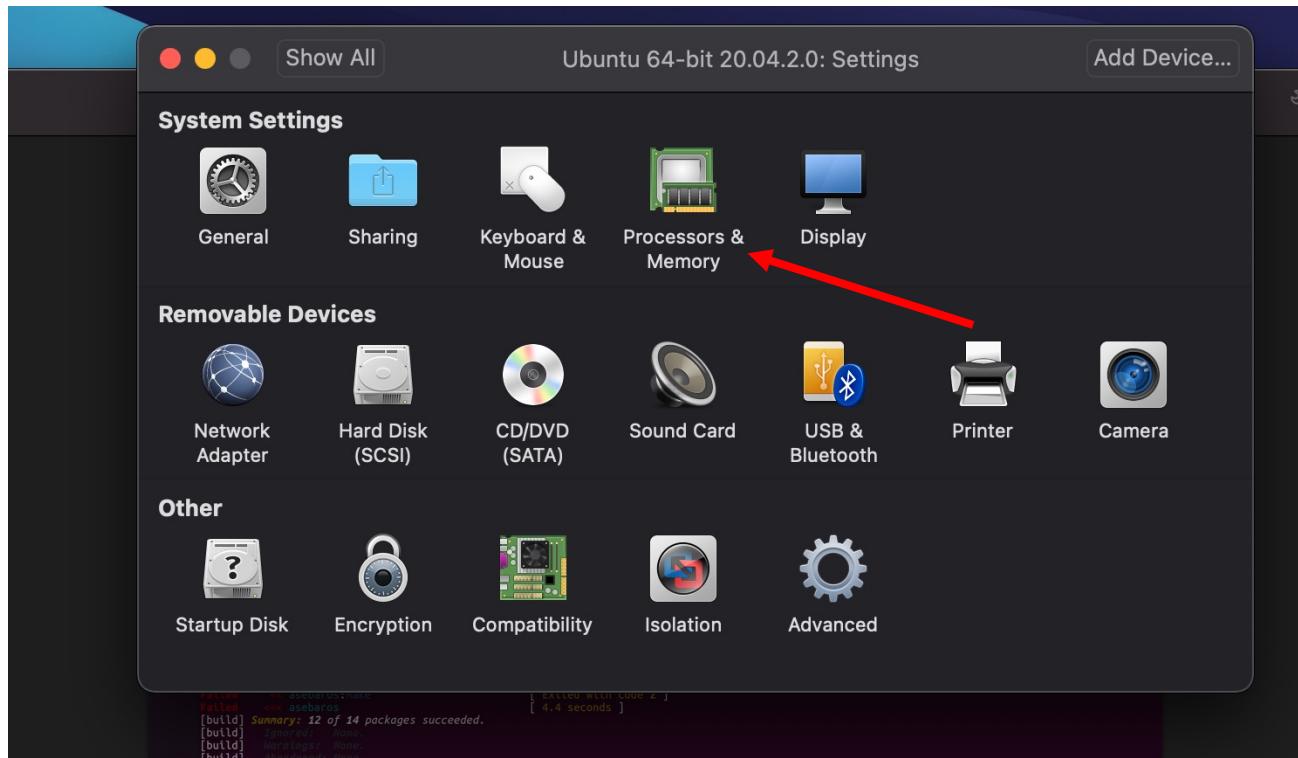
# Setup the VM

- Select your virtual machine in the VM library of VMware
- Click on the Settings icon to open the VM configuration panel



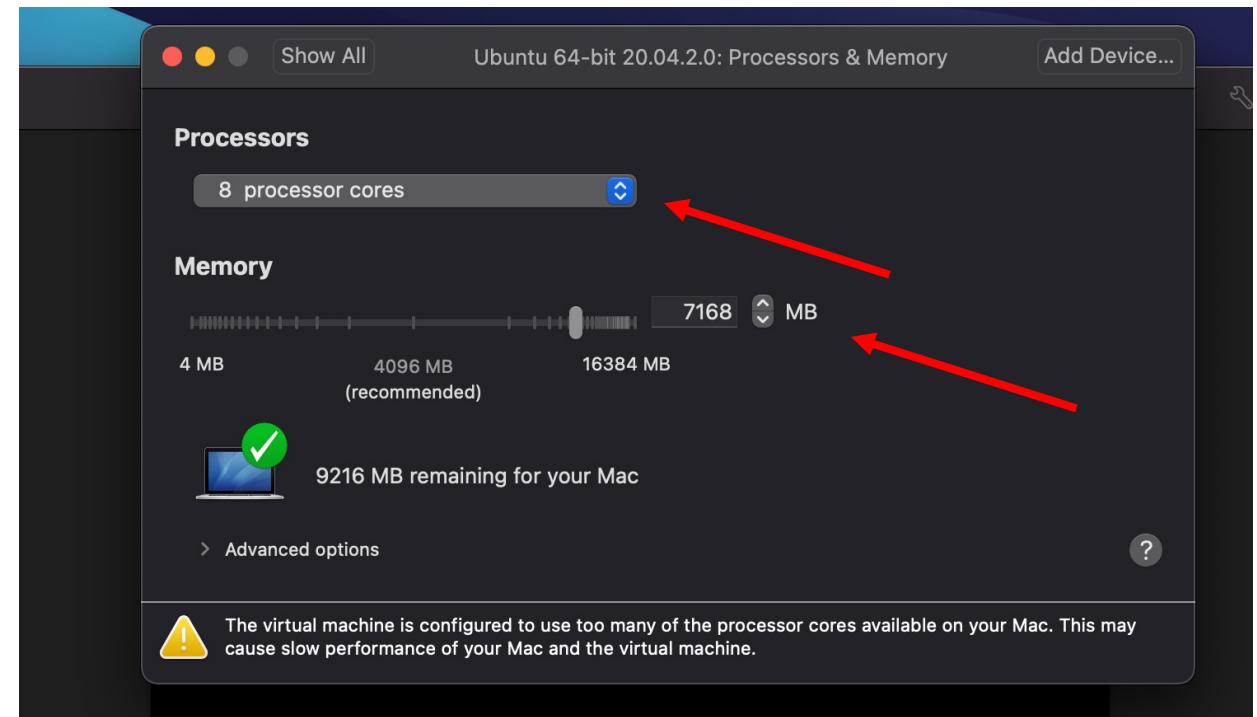
# Setup the VM

- Click “Processors and Memory”



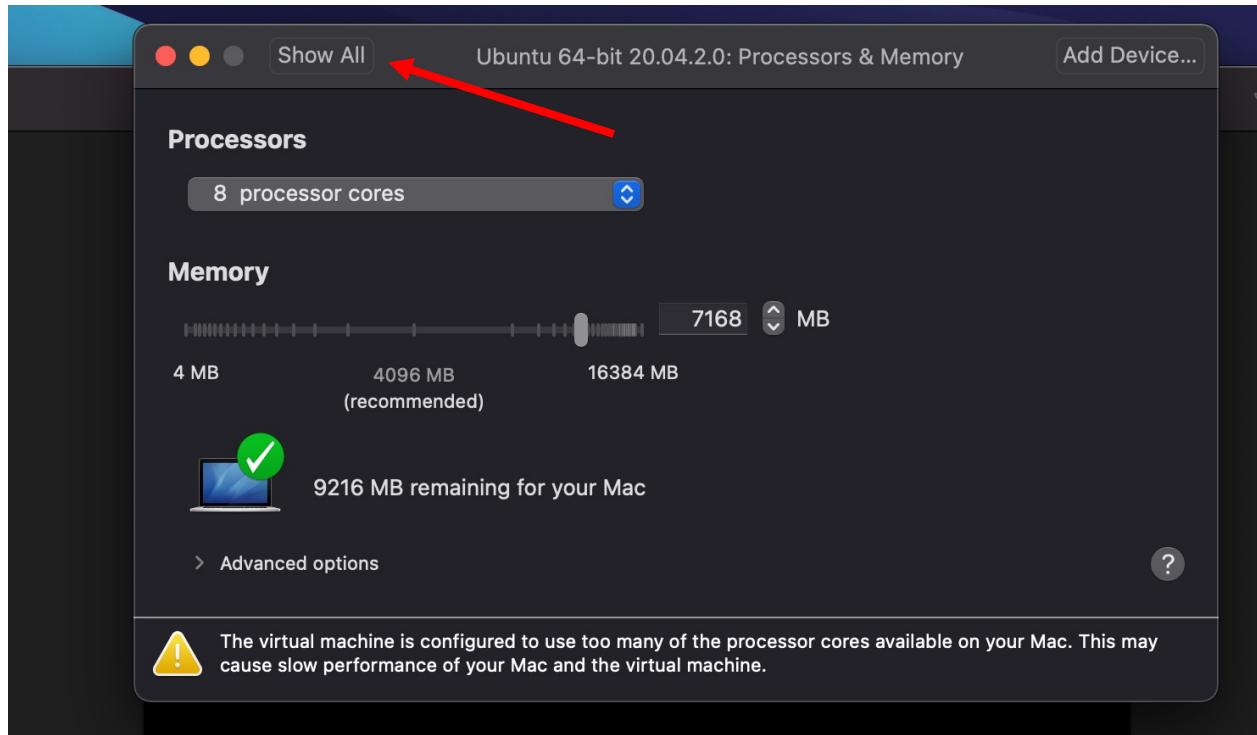
# Setup the VM

- Change the number of CPU cores and RAM size dedicated to the VM
- We suggest half your cores and RAM. On M1 Pro, it is safe to use 6 cores and 8192 MB of RAM, even if a warning might appear
- Please write to us if your laptop has less than 16GB of RAM total!



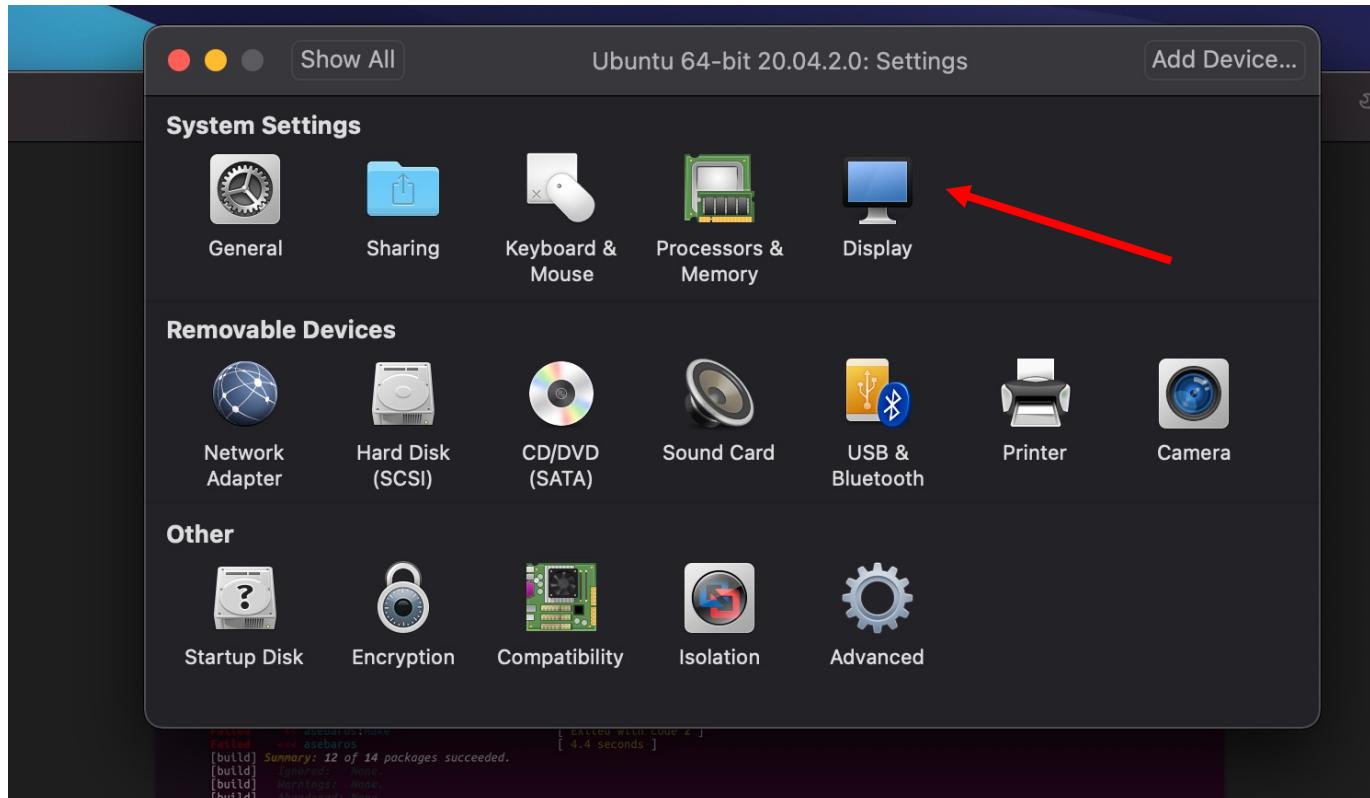
# Setup the VM

- Go back by clicking “Show All”



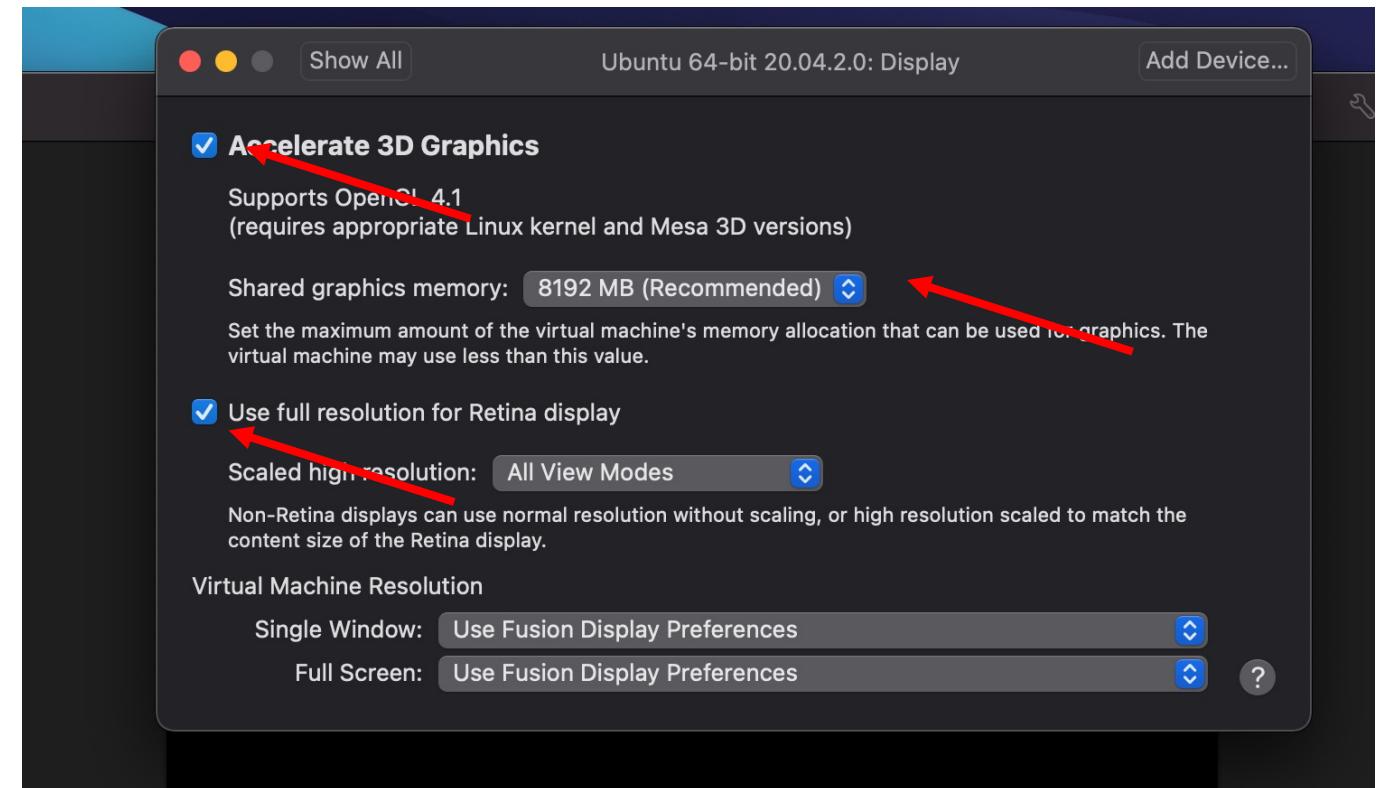
# Setup the VM

- Click “Display”



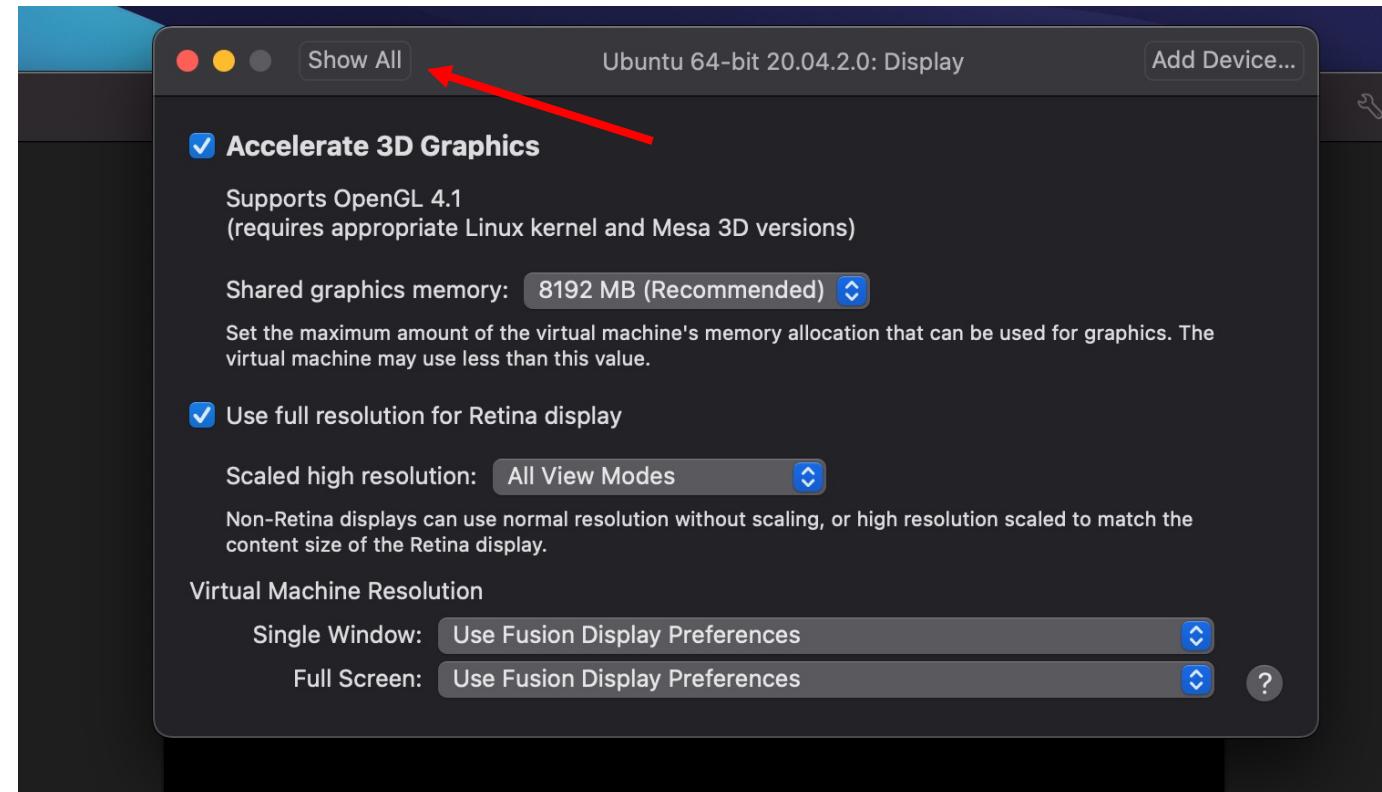
# Setup the VM

- Set this page as you can see here.
- Note that the recommended shared graphics memory could vary for you



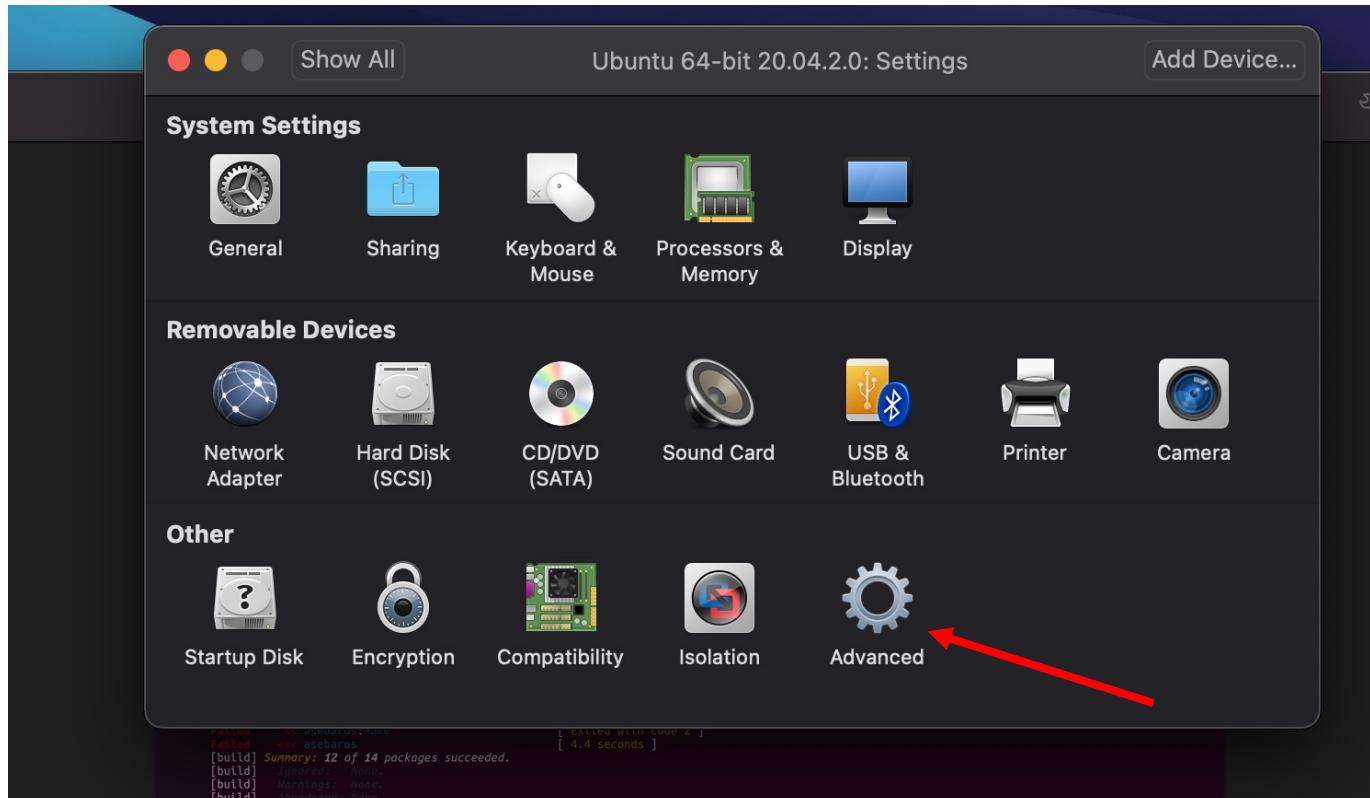
# Setup the VM

- Go back by clicking “Show All”



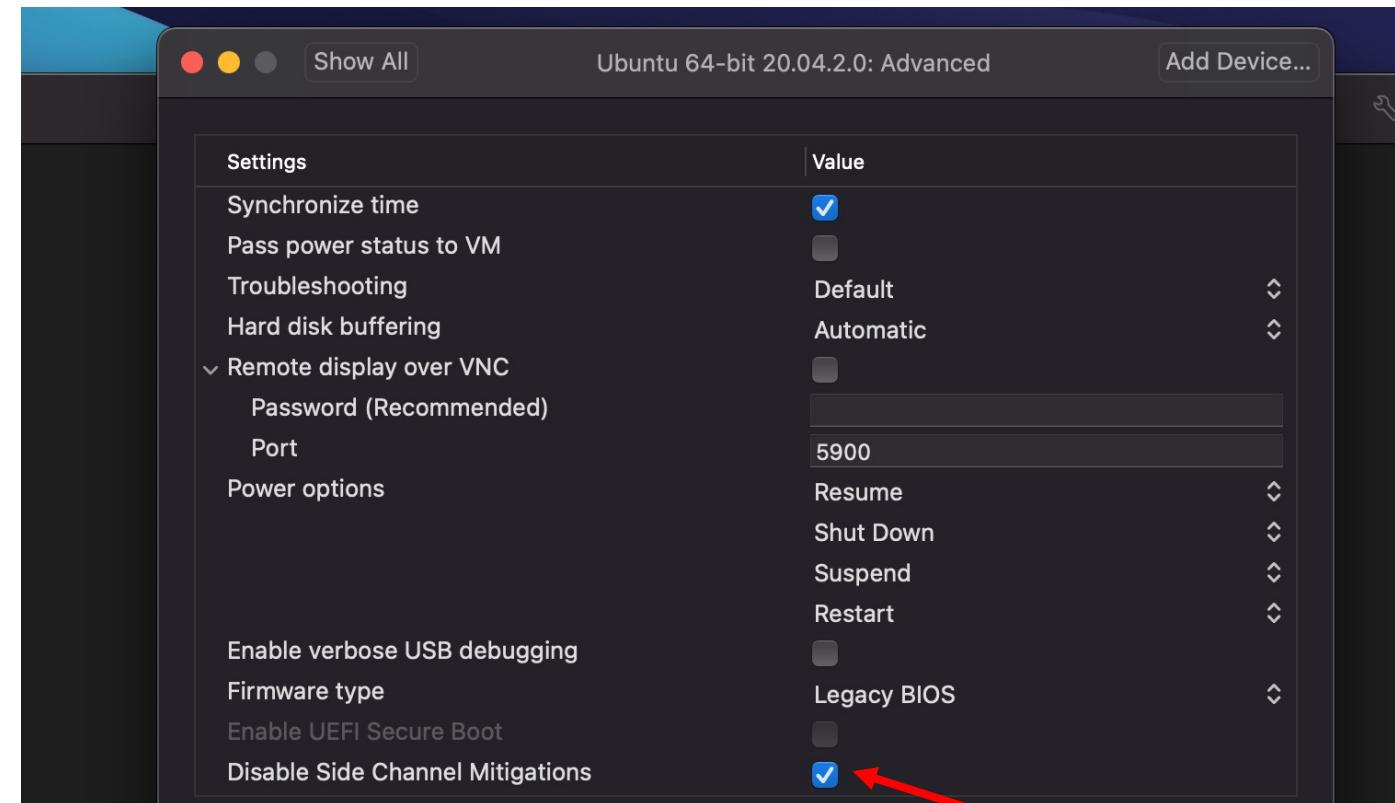
# Setup the VM

- Click “Advanced”



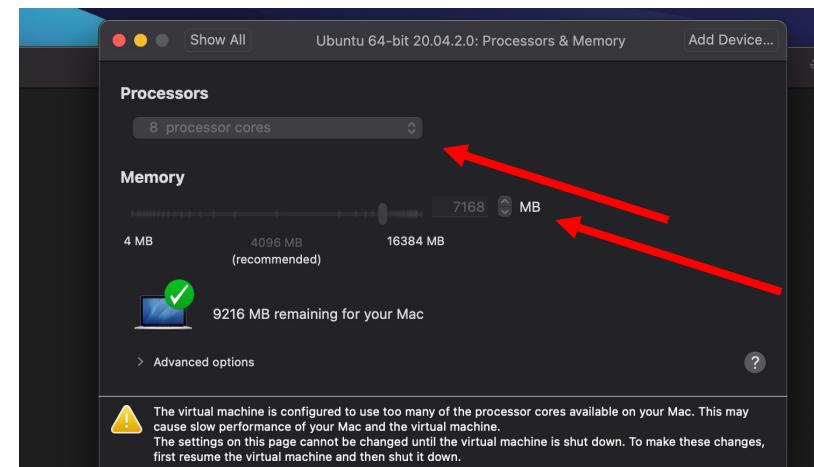
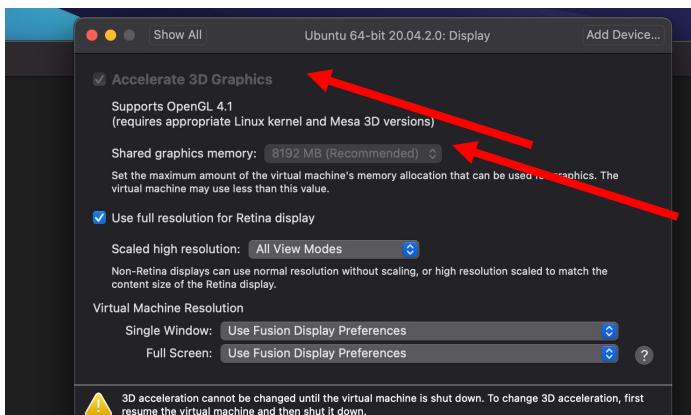
# Setup the VM – ONLY INTEL x86/x64

- Flag the “Disable Side Channel Mitigations” option



# Setup the VM

- In case any of the options are grayed-out it means that the VM is either running or suspended. **Shut down the VM** and try again



# Using the VM

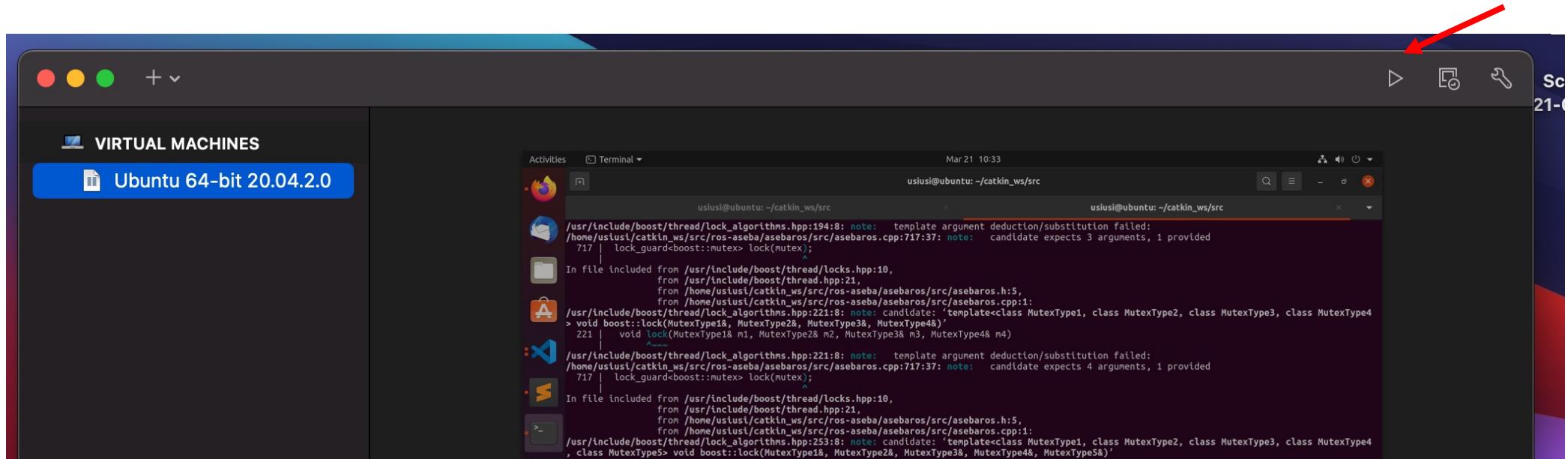
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# Using the VM

- You are now ready to use the VM. Start it by clicking on the Play button.

Username: **robotics**

Password: **123a**



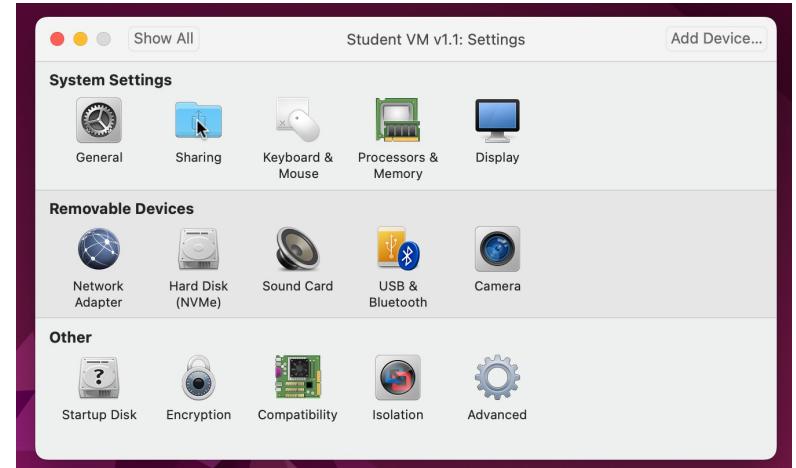
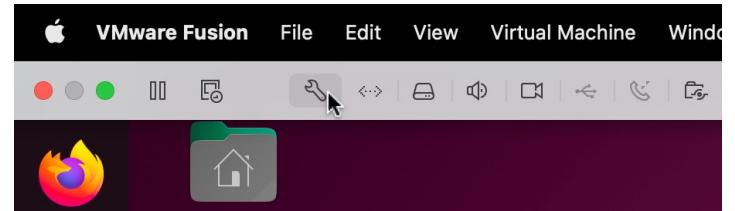
# Shared folders

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# Create a shared folder

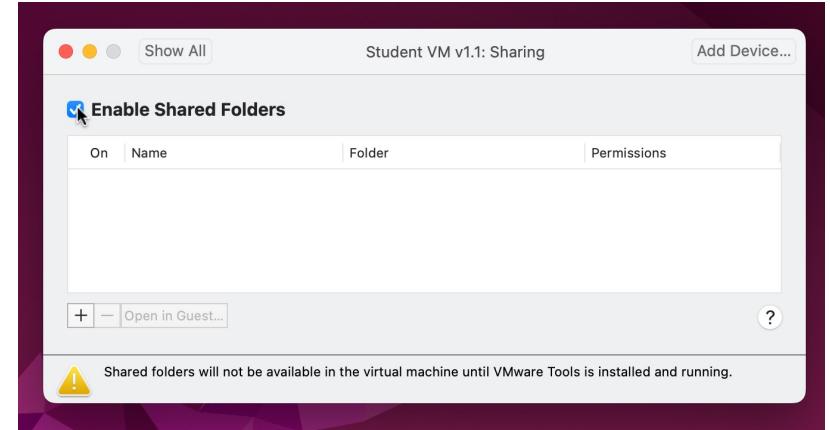
Shared folders allow you to easily move files in and out of the VM

1. Click on the Settings button to open the VM configuration
2. Open the Sharing panel

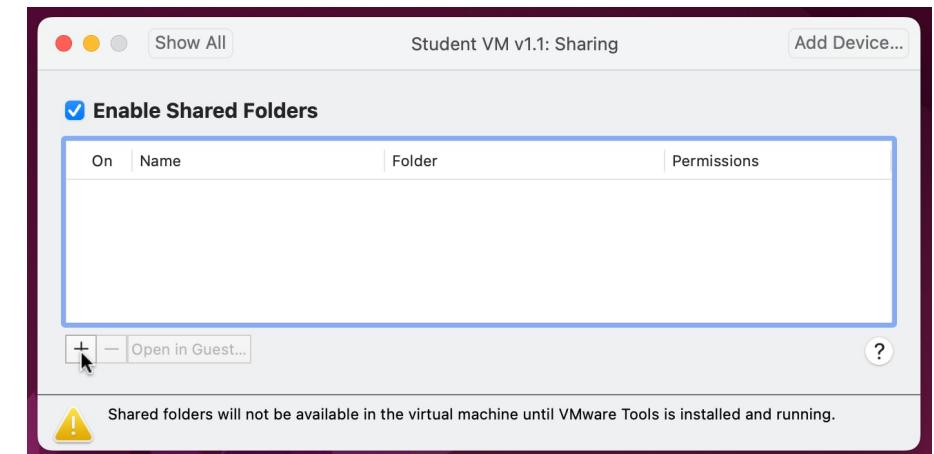


# Create a shared folder

3. Check the “Enable Shared Folders”

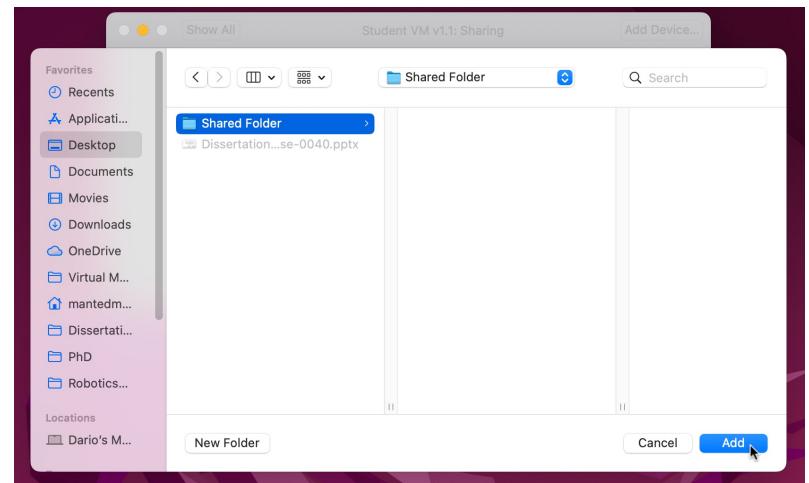
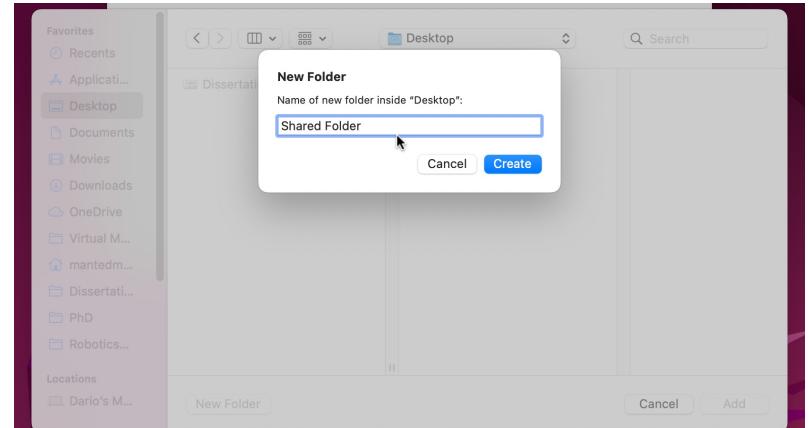


4. Click on the Add button



# Create a shared folder

5. Create a new folder somewhere on your host OS. Here I'm creating one called "Shared Folder" on my Desktop



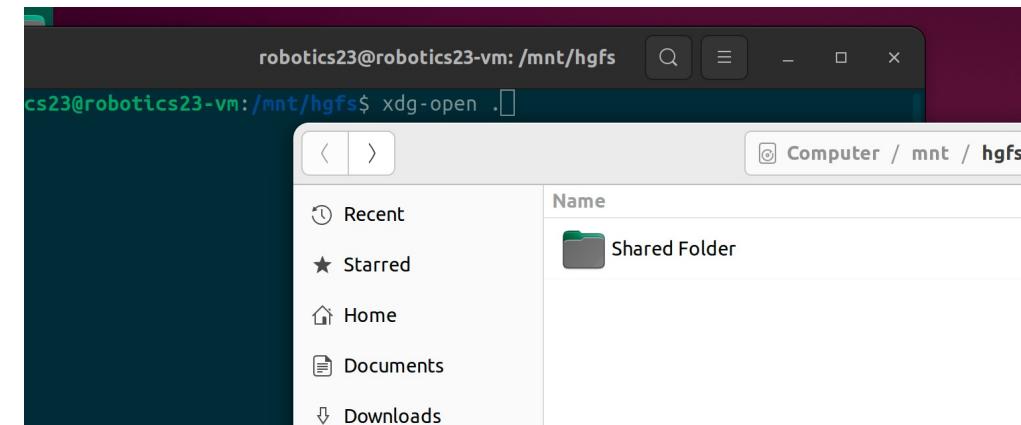
6. Click "Add"

# Create a shared folder

7. Open a terminal inside the VM
8. Navigate to the /mnt/hgfs folder

```
cd /mnt/hgfs
```

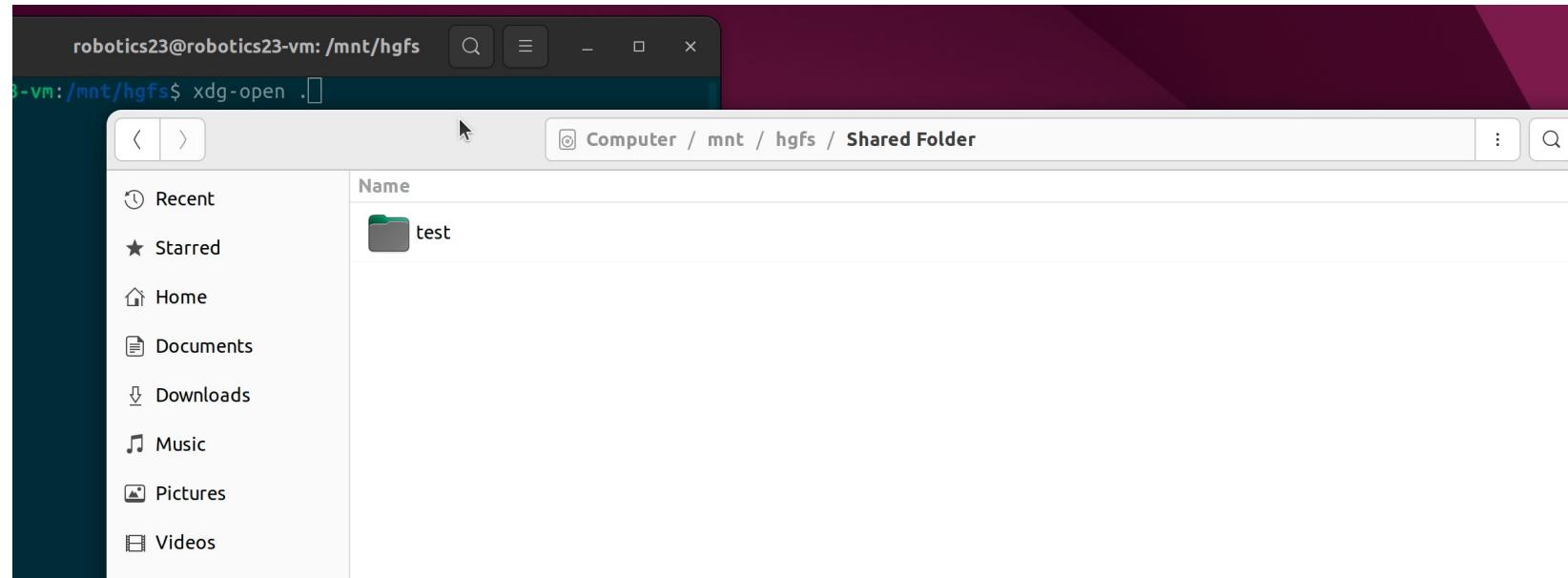
8. Open this directory using `xdg-open .`.  
This opens a window with all the Shared Folders that you configured.
9. The first time you will probably get a window asking if you want to grant read-write permissions to the folder, accept.



# Create a shared folder

Now you can use this folder to share files between the host OS and the VM

In this example, I created a “test” folder on the host OS which I see also from Ubuntu. If the Ubuntu GUI does not update automatically, press F5



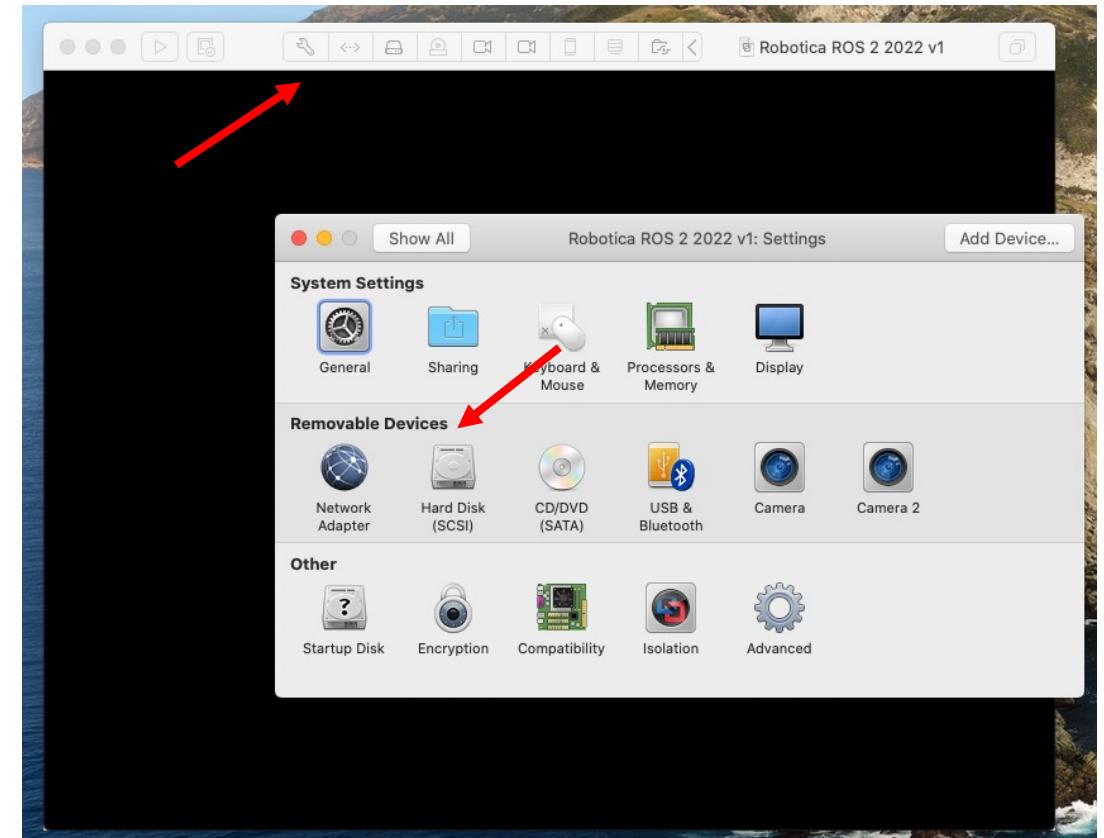
# Extra

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# Resizing the VM's disk

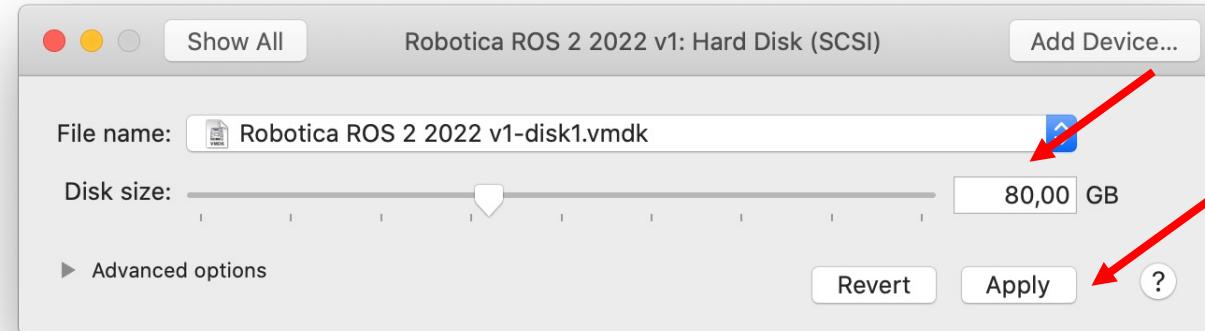
In case the disk of your VM fills up, you can resize it with the following instructions

- Open the VM settings -> Hard Disk (SCSI)



# Resizing the VM's disk

- Set the new disk size in VMware



- Power on again the VM

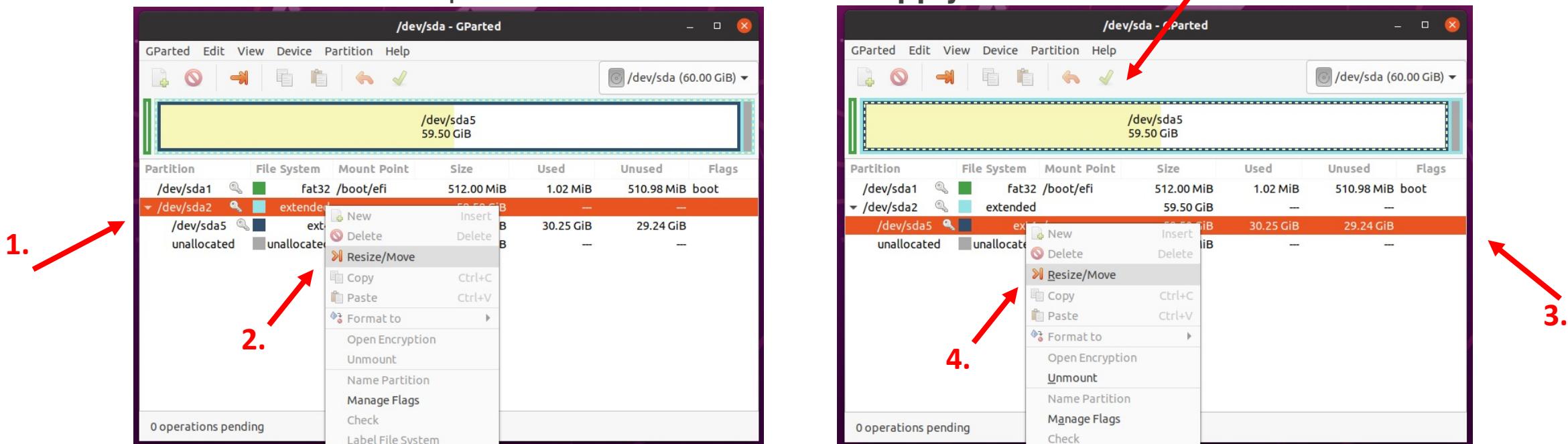
# Resizing the VM's disk

- Inside the VM, install **gparted** with the command:

- `sudo apt install -y gparted`

- Open gparted with the command: **gparted**

- Resize the outer and inner partitions to the new size and **Apply**



# Enjoy!

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