Install SEED VM on VirtualBox

## Account Information of this VM

- User name: seed
- Password: dees

Preparation

Before installing the SEED VM, please do the following:

- Install the free VirtualBox software first. The VM has been tested on Version 6.1.16.

- Download the zip file SEED-Ubuntu20.04.zip from the SEED website, unzip it, and you will get a .vdi file. This file contains the pre-built SEED Ubuntu 20.04 image. This document shows how to build a virtual machine using this image.
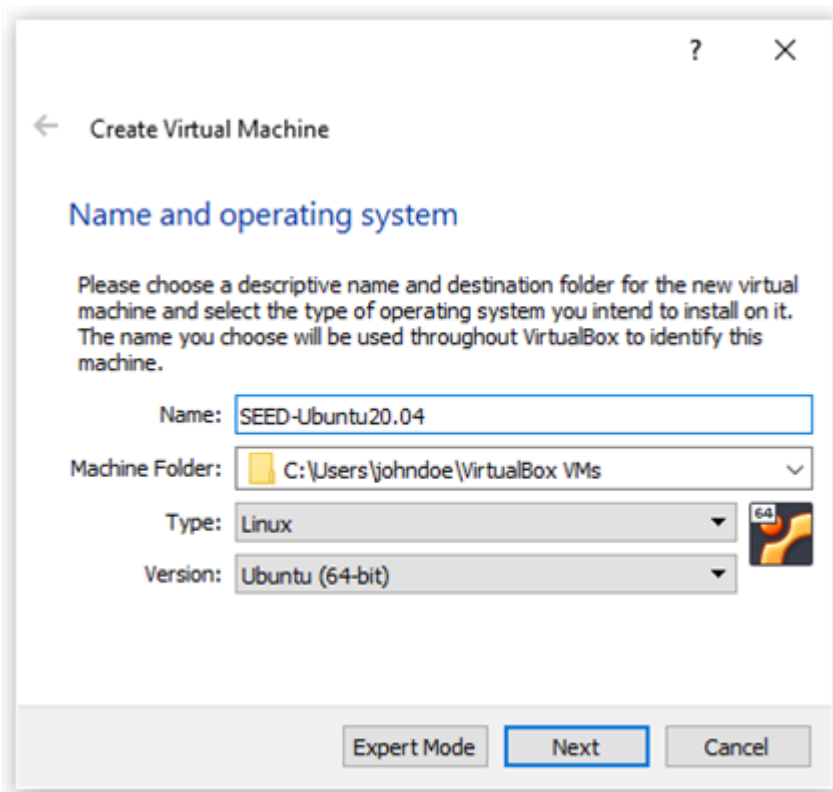
Step 1: Create a New VM in VirtualBox

We need to use New to create a new virtual machine.
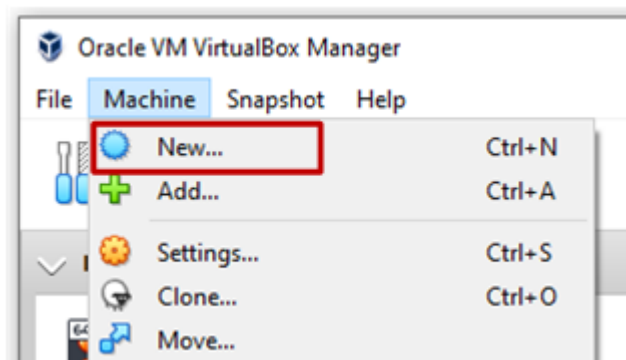
Step 2: Provide a Name and Select the OS Type and Version

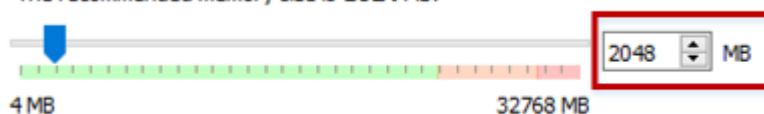Our prebuilt Ubuntu 20.04 VM is 64-bit, so pick Ubuntu (64-bit).

Step 3: Set the Memory Size

We need to allocate dedicated memory for the VM. 1024 MB should be sufficient, but we recommend 2GB. If your computer has more RAM, you can increase accordingly. The more memory you give to the VM, the better the performance you will get.

Step 4: Select the Pre-built VM File Provided by Us

Click the folder image. On the popup window, use the Add button to select the .vdi file downloaded from the SEED website.

Note: If you get an error message saying that the UUID already exists, this is because the UUID in the selected vdi file is the same as the one used by an existing VM. You can either remove the other VM or change the UUID in the vdi file.

Step 5: Configure the VM

After the previous step, your VM will be created, and you will see it on VirtualBox's VM panel. We need to do some further configuration. Right-click the M, click the Settings option, and we will see the Settings window.
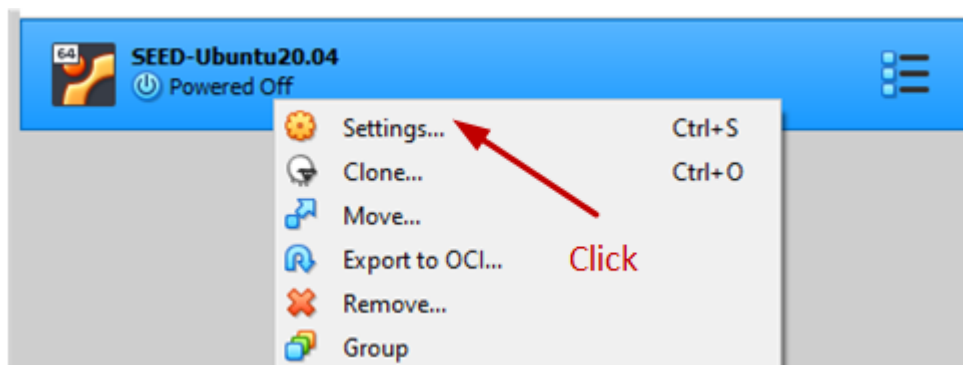

Step 5.a: Enable Copy and Paste

Go to the General category, and select the Advanced tab. Select Bidirectional for both items. The first item allows users to copy and paste between the VM and the host computer The second item allows users to transfer files between the VM and the host computer using Drag'n Drop (this feature is not always reliable).
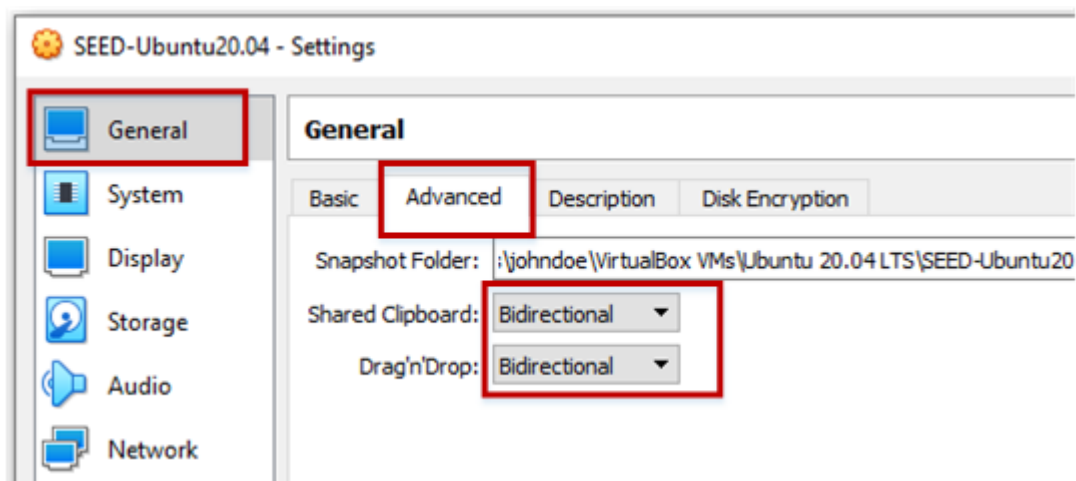
The copy-and-paste feature is very useful. If you can't do copy and paste, chances are that you forgot to do this step. You can always do it later by selecting the Devices menu item, and you will see the Shared Clipboard submenu.

Step 5.b: CPUs

Go to the System category, and select the Processor tab. Assign number of CPUs to this VM if you prefer. Although may be sufficient, if the performance seems to be an issue, increase the number.
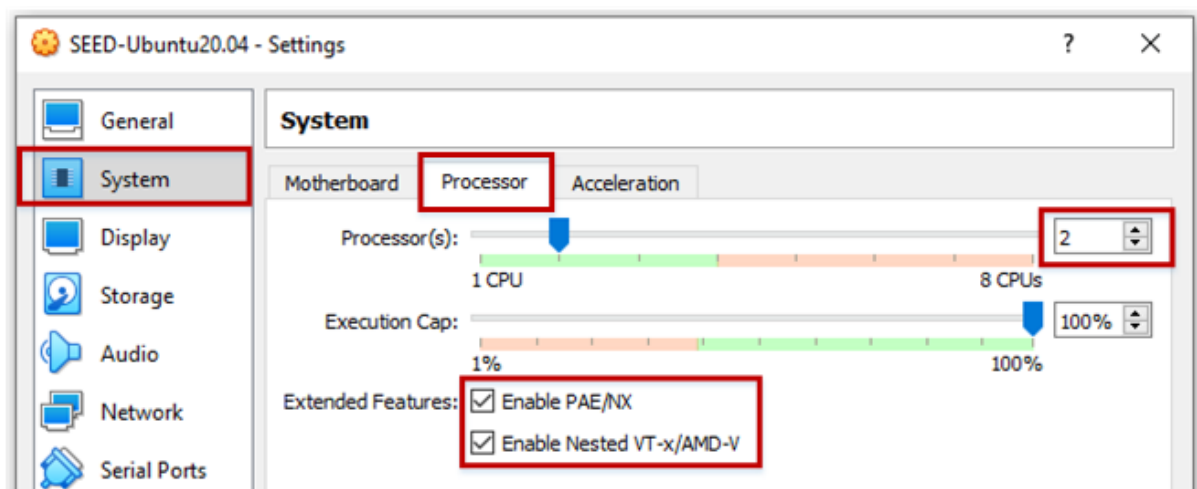
Step 5.c: Display

Go to the Display category, and select the Screen tab. If the display does not seem to work properly, try to increase the amount of video memory. In our testing, 28 MB seems to be sufficient.
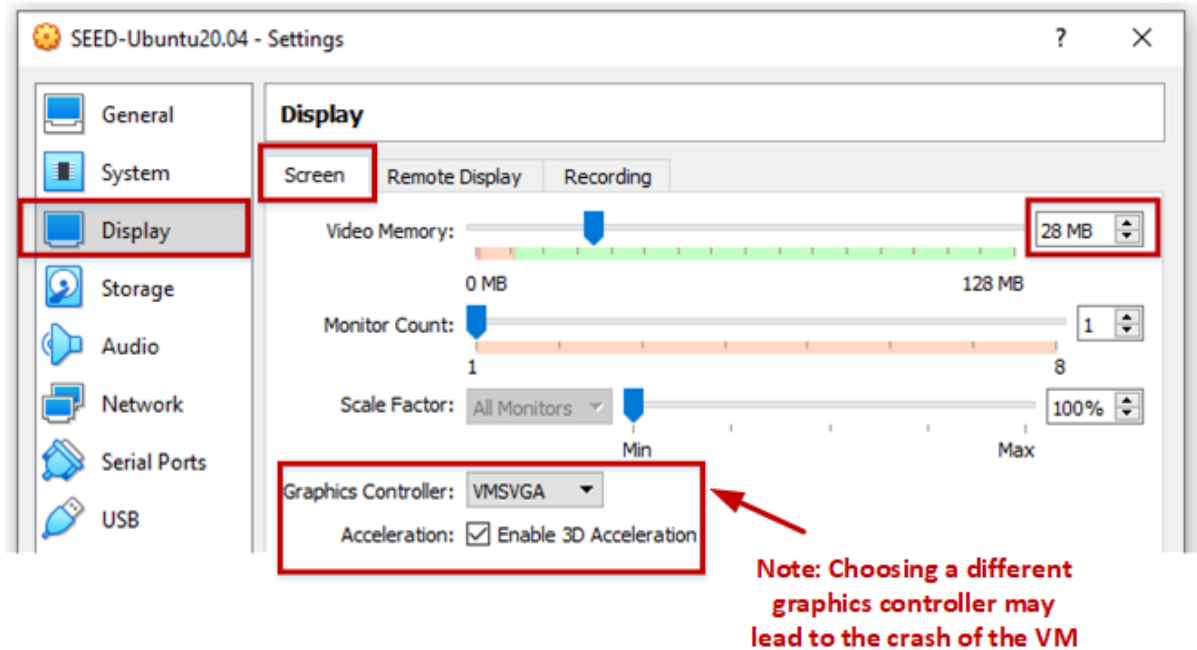
Note 1: Make sure to select VMSVGA, as choosing other graphic controllers may lead to the crash of the VM.

Note 2: If your computer's screen resolution is too high, the VM may not be able to match the high resolution. As results, your VM will be very small on your screen. To make it bigger, adjust the Scale Factor in this setting.

Step 5.d: Network

Go to the Network category, and select the Adapter 1 tab. We will choose the NAT Network adaptor. Click the Advanced drop-down menu to further configure the network adaptor. If you don't see such an adaptor, see the note below.
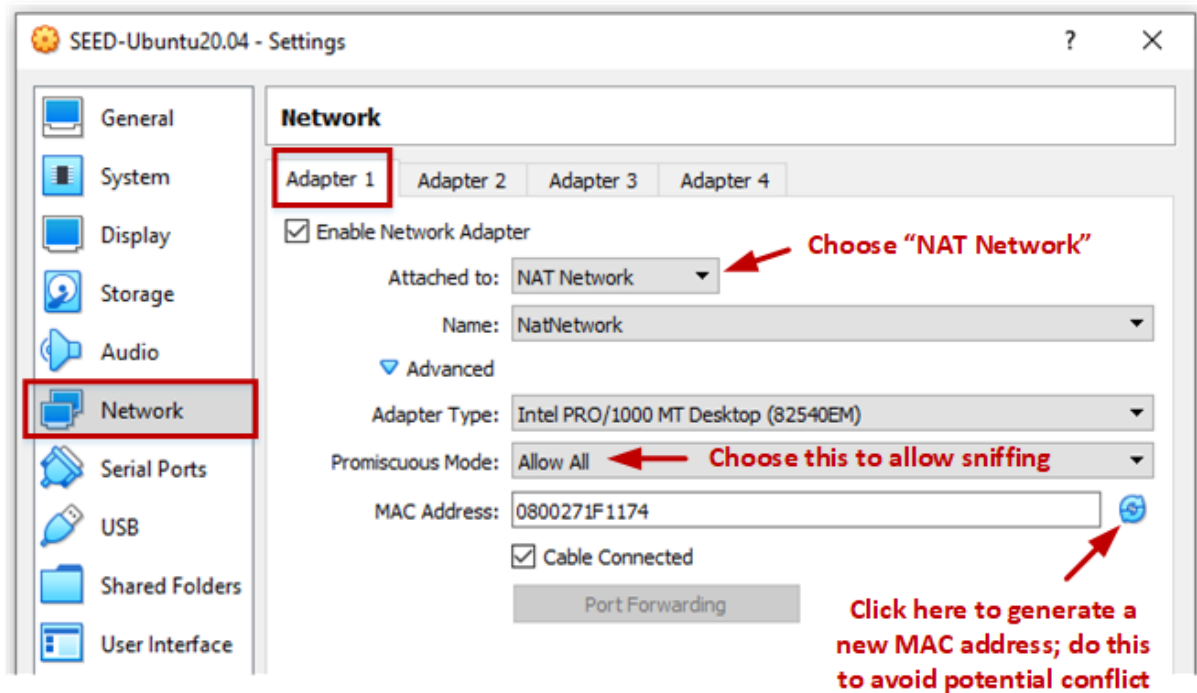
Note: If you don't see the NAT Network adaptor, you need to create one. Go to the File menu, click Preferences.... You will see a popup window. Go to the Network tab, and you can add a new Nat Network adaptor there.

Appendix A: Start the VM and Take Snapshot

We can now start the VM. You can also use the Take button to take a snapshot of your VM. This way, if something goes wrong, you can roll back the state of your VM using the saved snapshots.
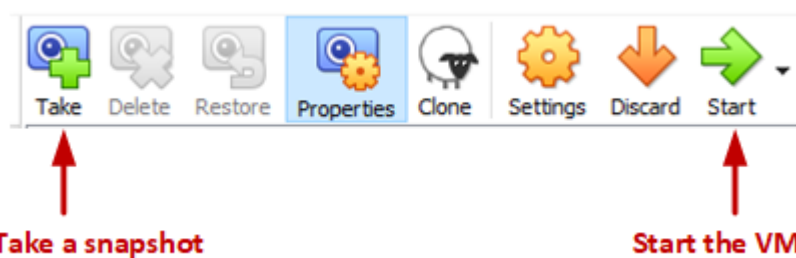
Appendix B: Stop the VM

There are many ways to stop the VM. The best way is to use the Save State. This is different from shutting down the VM. It saves the current VM state, so next time when you restart the VM, the state will be recovered. Moreover, the speed is also faster than booting up a VM.
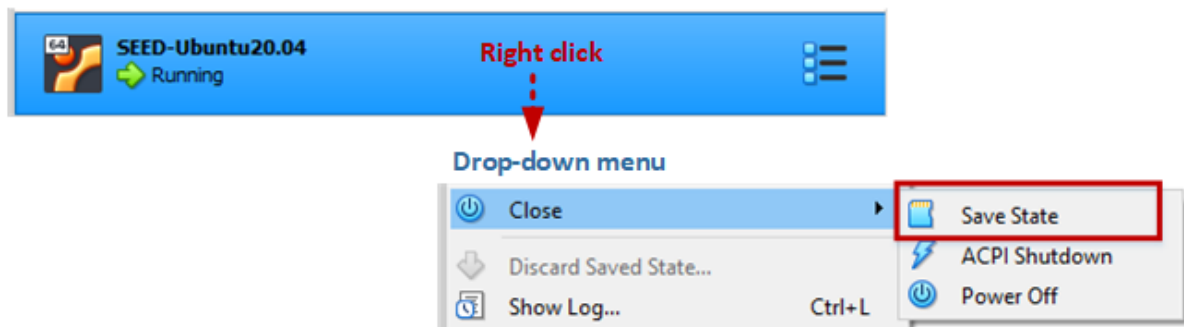
Appendix C: Creating a Shared Folder

Sometimes, we need to copy files between the host machine and the VM. If you are using the VM from the cloud, you can see our cloud VM manual for instructions. Or, you can just use a cloud storage service, such as Dropbox and Google Drive to share files between your VM and host machine.

If you run the VM on your local computer, you can create a shared folder between your computer and the VM.
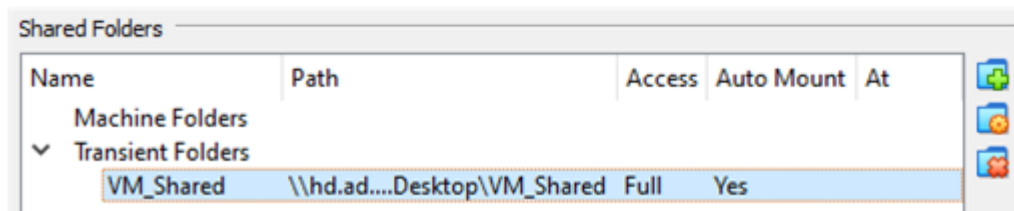
Step A. First you need to create a folder on your local computer (or using an existing folder). We will let the VirtualBox know that this folder should be shared with the VM. Go to the following menus:
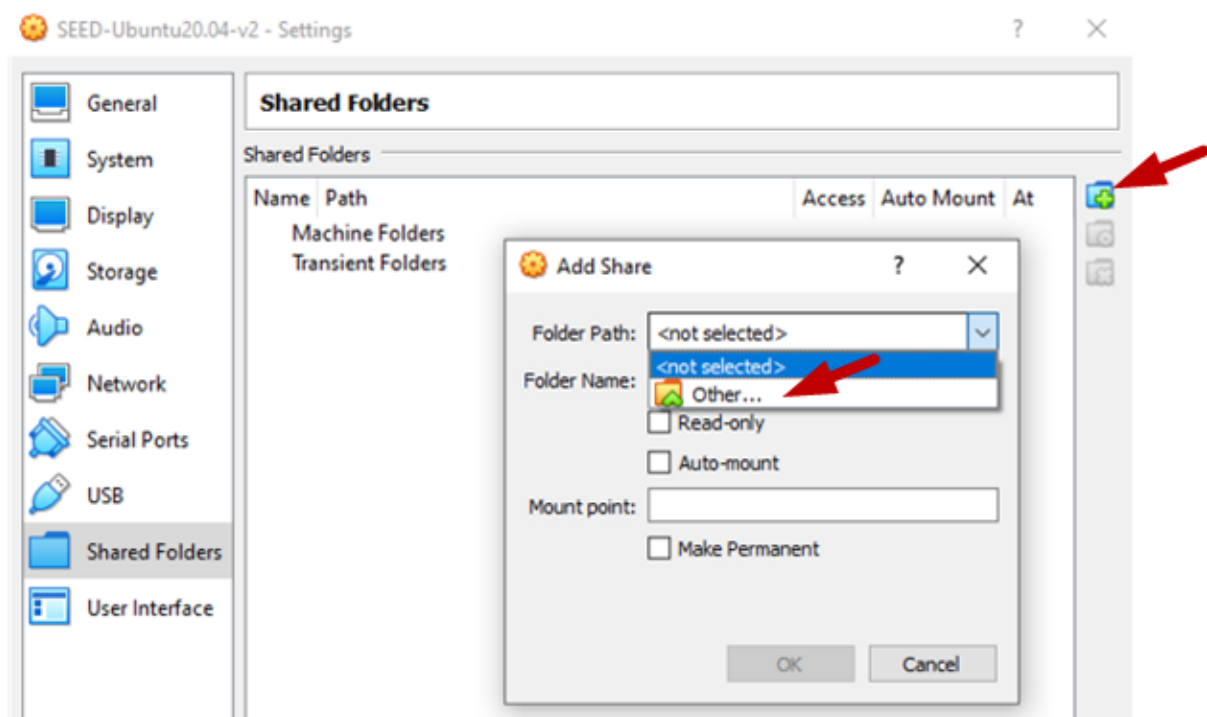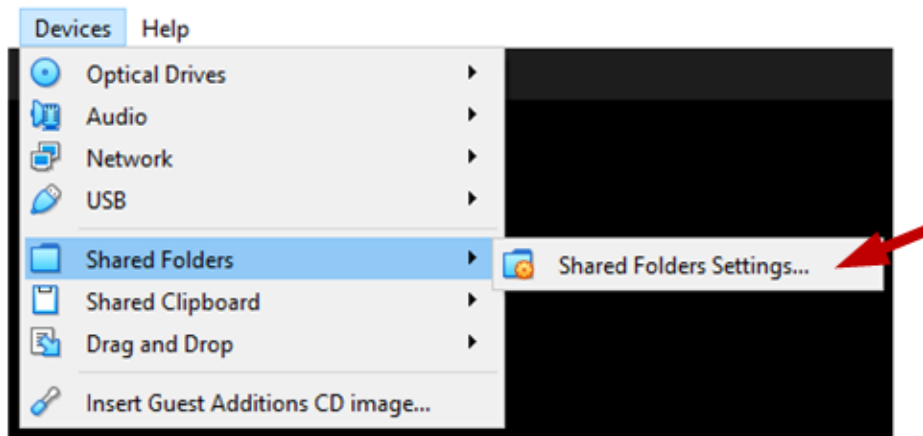
Once you see a Add Share popup window, select the folder that you want to share, click OK, and you will see that the folder is now made available for sharing.
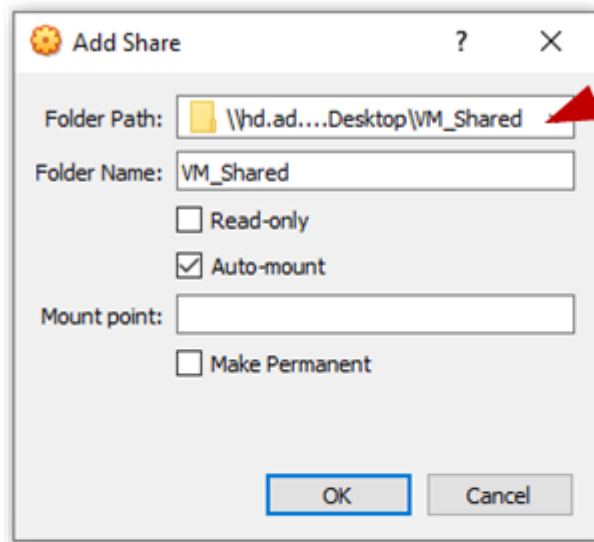
Step B. Inside the VM, we need to mount the shared folder somewhere. Let's mount it to the home directory as a folder Share. We will create a folder called Share in the home directory, and then mount the shared folder VM_Shared to this Share folder using the following command. After that, you can access the shared folder from ~/Share.

```
$ mkdir -p ~/Share
$ sudo mount -t vboxsf VM_Shared ~/Share
```

Important Note. Please only use the shared folder to copy files between the VM and the host machine, and **never use it as your working folder**. Working from the shared folder has caused many problems, especially on the permissions of the files created inside the shared folder. For example, if we unzip the Labsetup.zip file inside the shared folder, the permissions of the unzipped files will be different from those on the original files. Some labs and containers are very sensitive to those permissions.