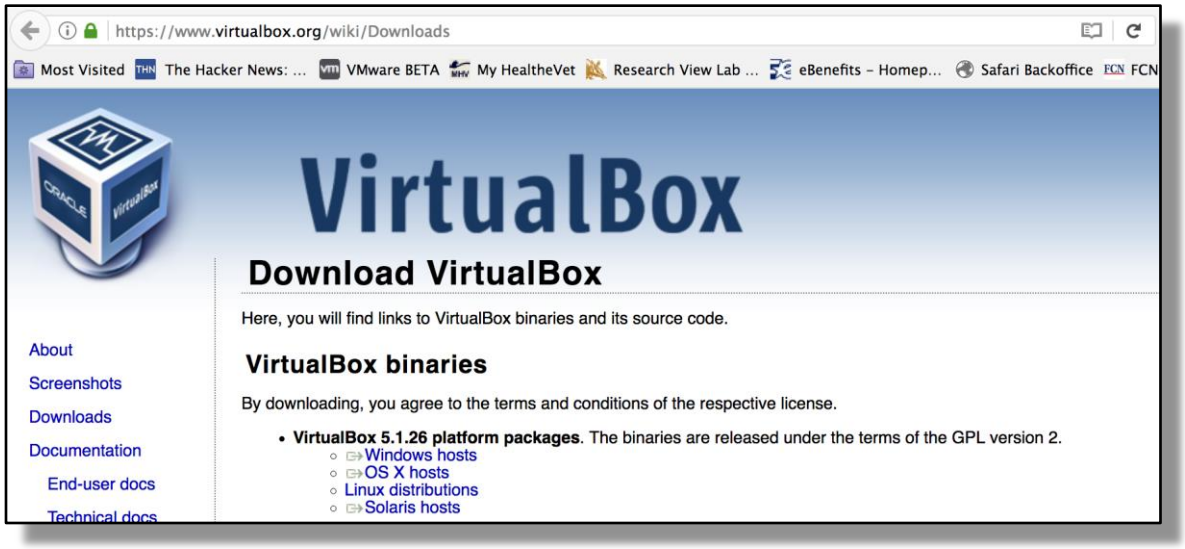
Appendix A: Installing Virtual Box and Ubuntu on Mac OSX

The instructions below describe installation of an Ubuntu Linux VM to serve as the Labtainer host on a Mac. If you already have a Linux system that can support Dockers, you may use that system and not use this appendix. If you already have VirtualBox installed on your Mac, be sure it is updated to the latest version.

• Install Virutal Box from : https://www.virtualbox.org/wiki/Downloads

Click on the "OS X hosts" link.

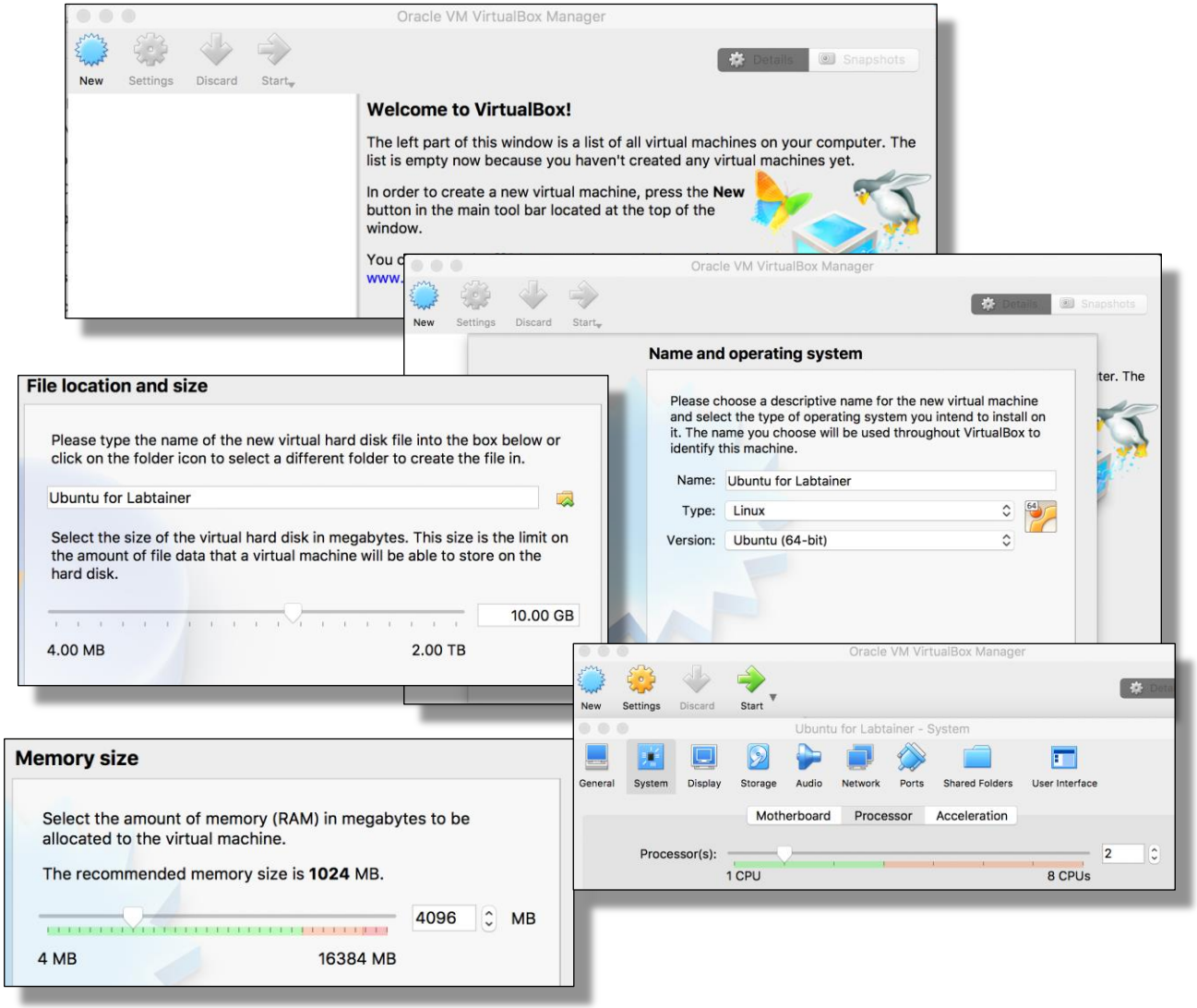


Install per your OS' usual installation procedure…

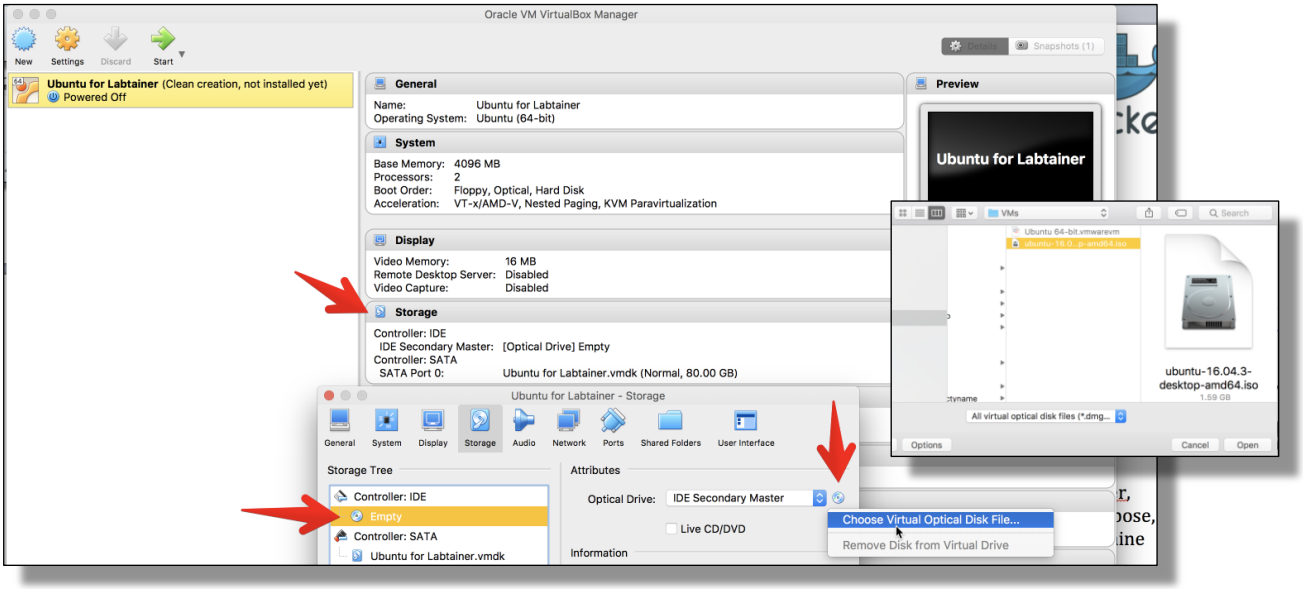
• Download the latest Ubuntu Desktop LTS distribution *.iso image*. It is important you download this as an .iso image as that will be used to install Ubuntu on the VM you create. https://www.ubuntu.com/download

• Use VirtualBox to create a new VM, allocate at least **10GB of disk** storage, **4GB**

RAM and **2 CPUs**.

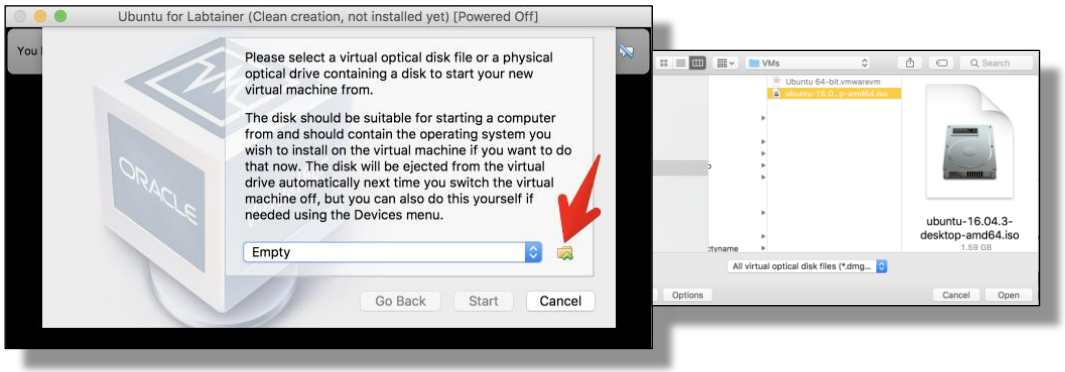


• Select the Ubuntu iso image in the VirtualBox storage settings, and select ”Live CD/DVD”

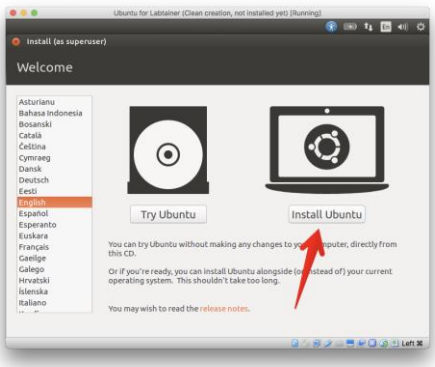


• Power on the virtual machine to install Ubuntu.

- If the VirtualBox window shows the following screen, the previous step did not work, please remount the ISO by selecting the little folder icon to the right.

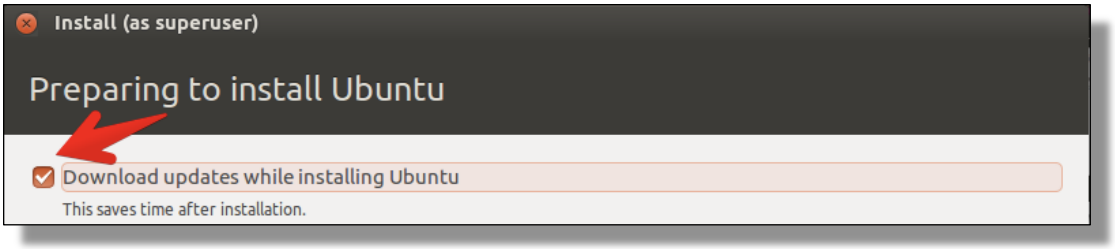


- Once you see the following desktop, you can install Ubuntu



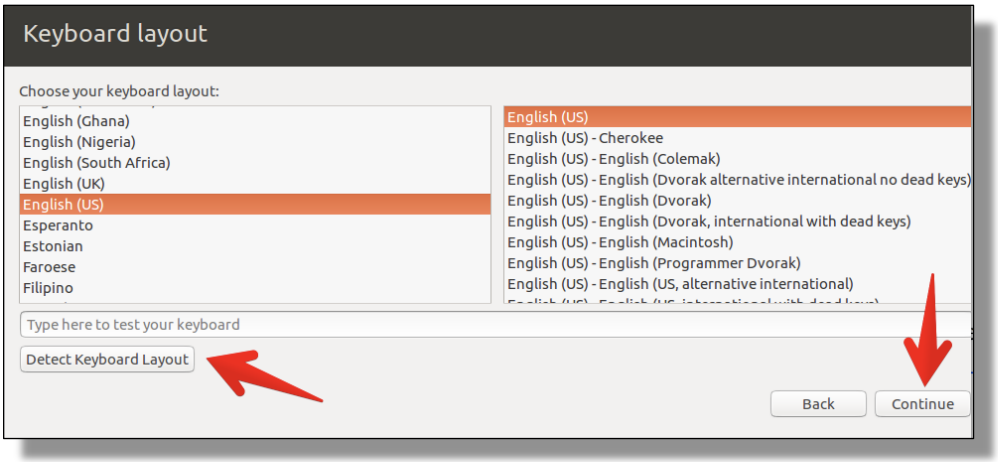
You should be able to install Ubuntu by accepting the default options provided. It is recommended, though not required, you do select the following options:

- Download Updates while Installing Ubuntu



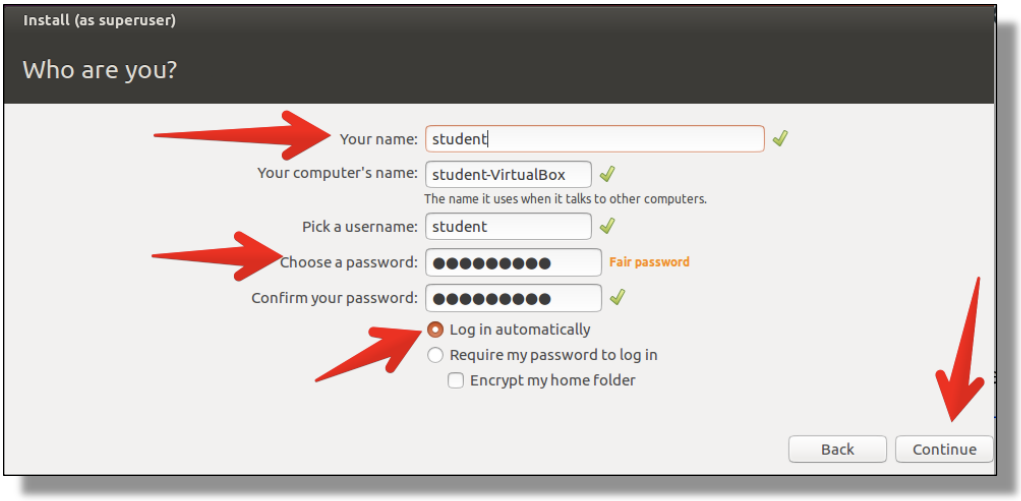
- Set your Time Zone

- Select your appropriate language



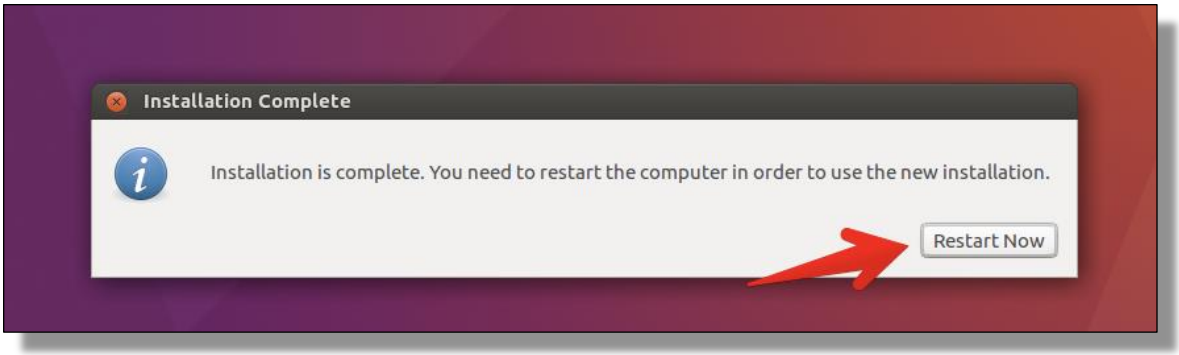
When prompted, enter a user name and password:

{student is used here in the example, you may use whatever name you like}

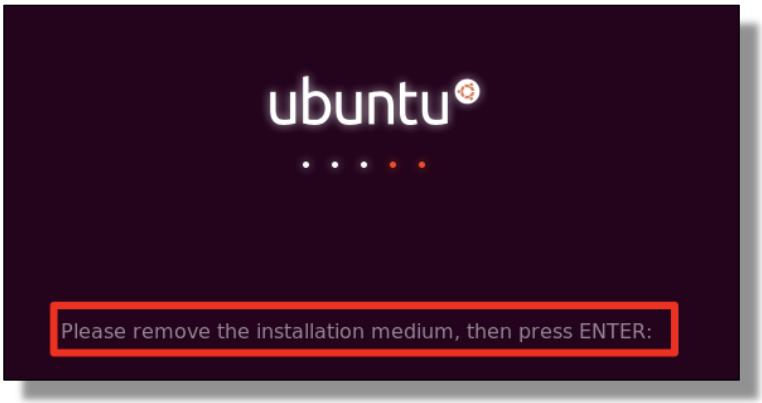


Ubuntu will then install on to the virtual hard drive.

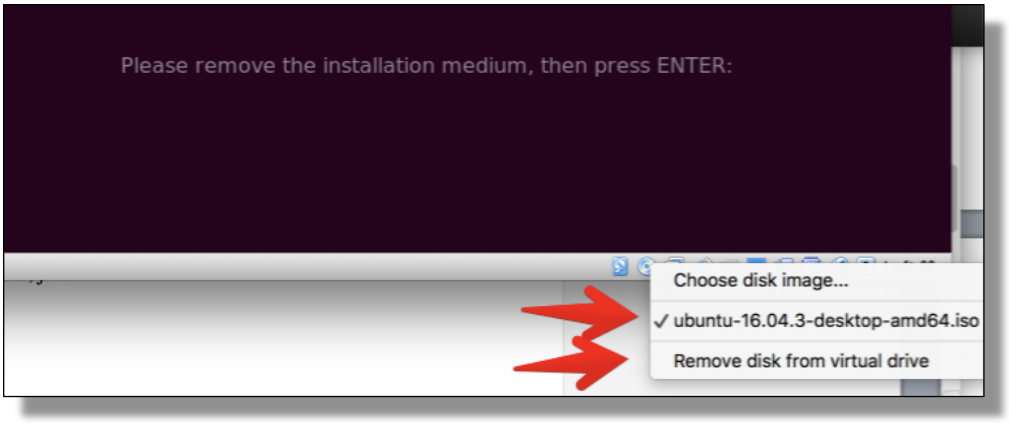
Once the files are installed, you will need to restart the VM.



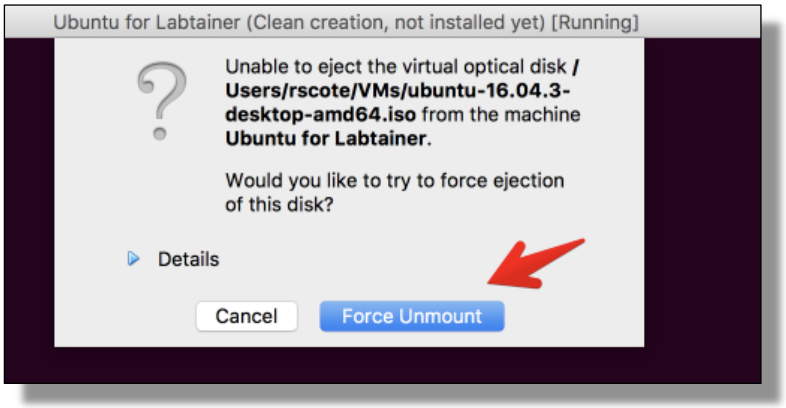
NOTE: be sure to unmount the ISO file before restarting. If you don't you will see the following screen:



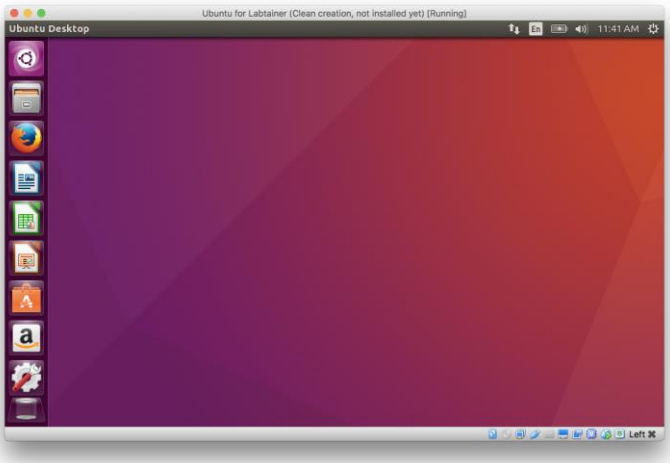
To unmount the ISO, just choose the DVD icon in the lower left corner and select **Remove disk from virtual drive** (note if that is greyed out, first click on the ISO line above it then click on the Remove disk from virtual drive)



If it displays a message asking to force the unmount, that is okay, just select the **Force Unmount**



Once the VM reboots you should have a screen that looks like this:

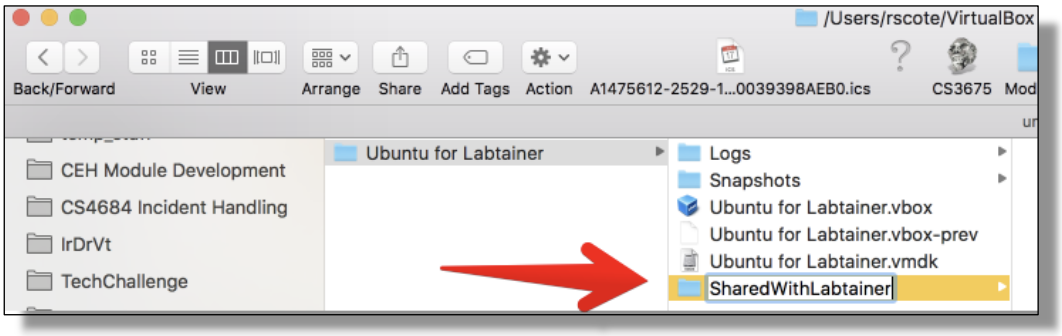


Note: If your Ubuntu desktop has a DVD icon on it, you did not unmount it correctly and should be unmounted by right clicking and ejecting the DVD ISO.

The following step simplifies movement of files between Virtual Box guests and the host computer.

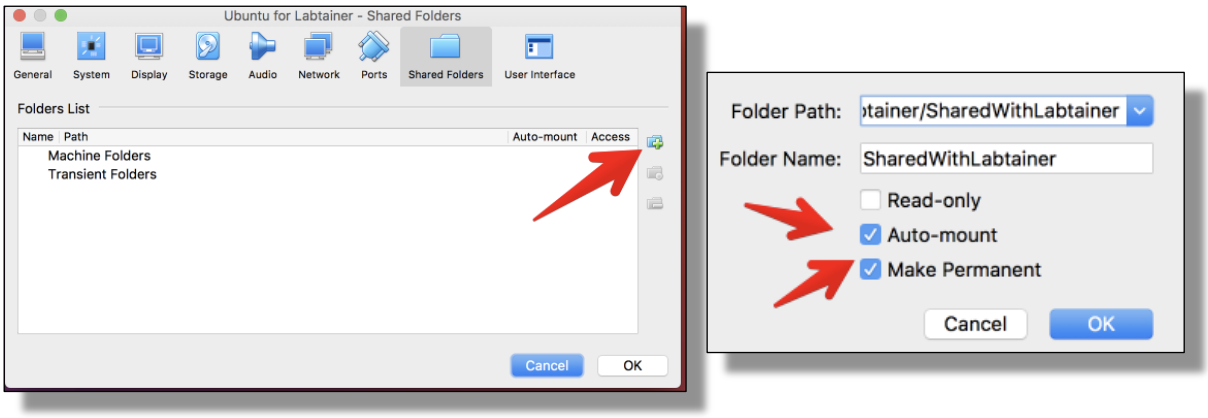
Setup shared folder:

- create or identify a folder on the host to share with the guest



- On the VirtualBox window, select the "Shared Folders" icon.

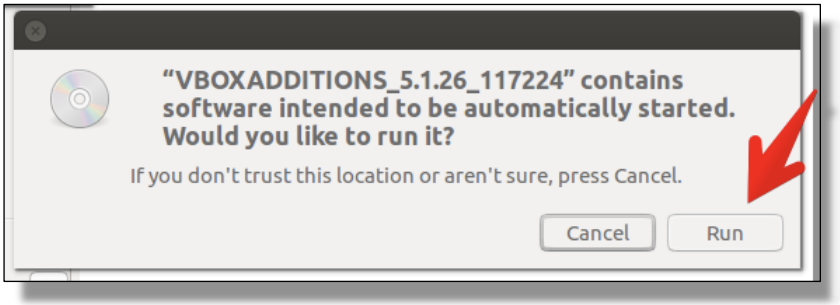
Then select the **add folder** button on the right, and add in the folder you created above, being sure to select **Auto-mount** and **Make Permanent.**



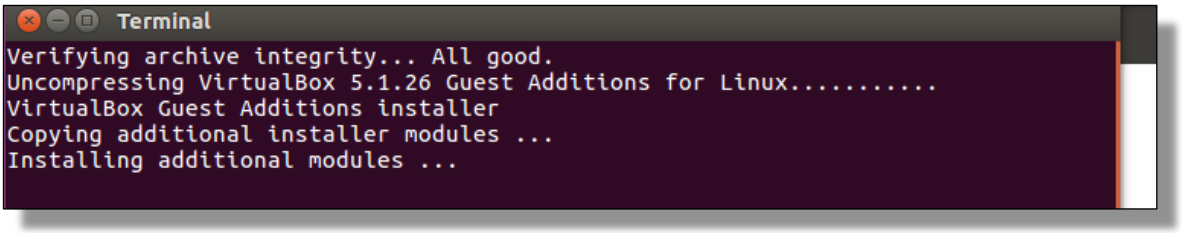
- Install VirtualBox Guest Additions

  VirtualBox Guest Additions contain device drivers and system applications that optimize the operating system for improved performance.

To install them, choose **Devices** from the *VirtualBox VM Menus,* then



select **Insert Guest Additions CS Image…**

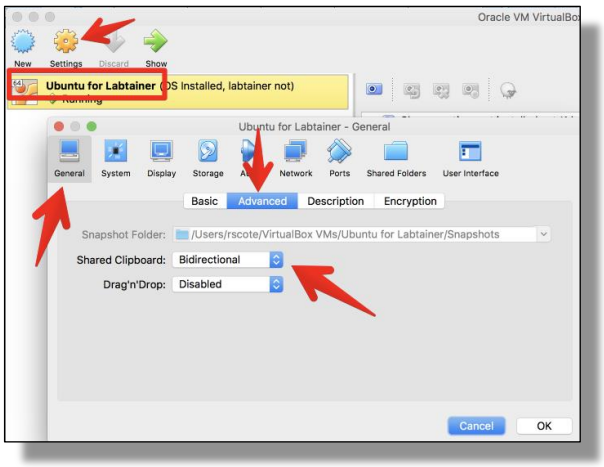


This will *auto-launch the install program*. Choose **Run**

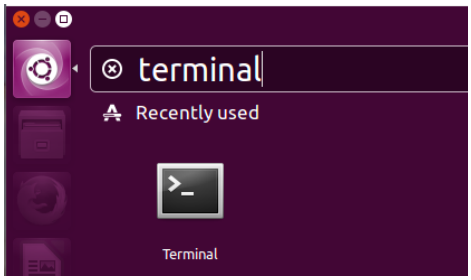
You will then see the guest additions load, and finally ask you to *hit return to exit*.

- In order to cut and paste from and to the VM, lets enable sharing the

clipboard. To do this, go to the settings in the VirtualBox Manager (NOT the individual VM's window) then choose *Settings, General, Advanced, and allow for Shared Clipboard.*



Then, open a terminal



and run this command in the terminal by typing:

```
sudo adduser $USER vboxsf
```

Then, reboot the guest Linux system:

```
sudo reboot
```