Installing VirtualBox and Setting Up the Linux Virtual Machine from the Genomics and Clinical Microbiology 2024 Course

Introduction to VirtualBox and the Virtual Machine

VirtualBox is freely available software which allows a user to run a virtual machine on their host computer, meaning that they can run, as we will, a Linux operating system on Windows or OSX. The virtual machine contains all of the software and data to be used during the course.

As we ran the course using VirtualBox 7.0, please use this when setting up your virtual machine.

Installation of VirtualBox

VirtualBox is available from this website:

https://www.virtualbox.org/

Please download the installer for the operating system of your computer and run through the installation process. **PLEASE NOTE:** admin rights to your computer are required to install VirtualBox.

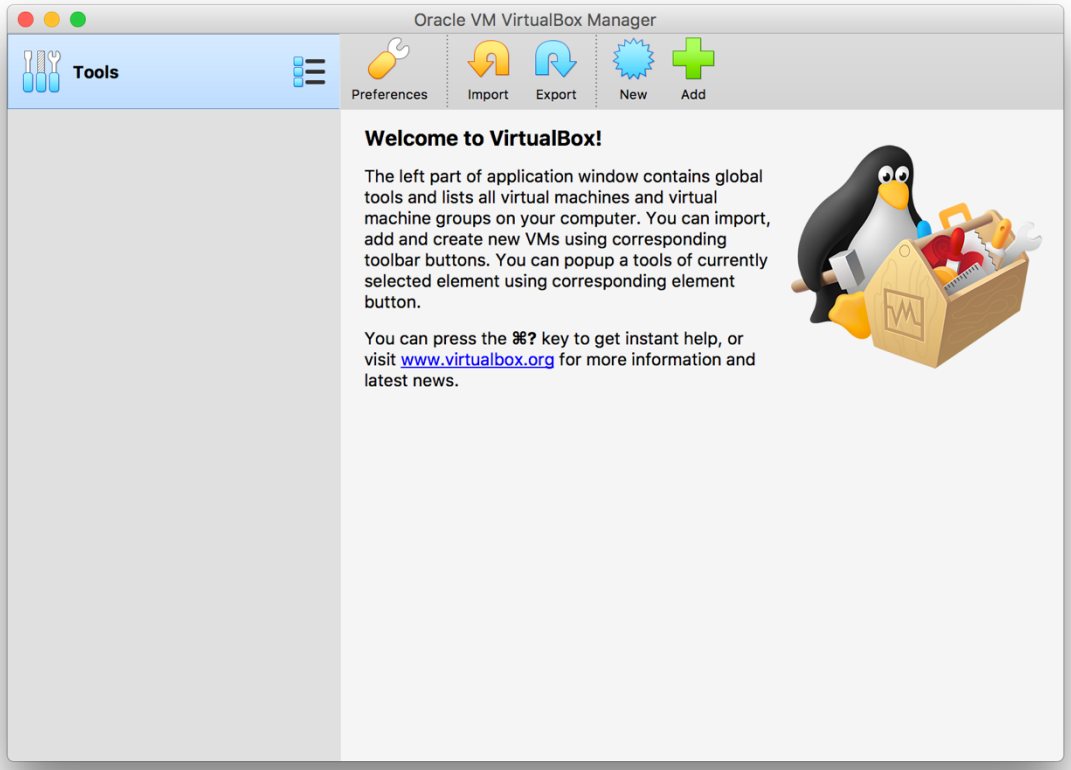
Also, **please note** that VirtualBox will not, as yet, run on a new Apple Mac with the M1/M2/M3 chip sets.

Windows PC only: If it is not already installed, you will need to install Microsoft Visual C++ Redistributable package, which is available here:

https://learn.microsoft.com/en-us/cpp/windows/latest-supported-vc-redist?view=msvc-170

After installation of VirtualBox, you should also install the VirtualBox extension pack, which is available on the same page as VirtualBox. The installation process for this should start after download. The extension pack is not essential but does include many useful features e.g. the ability to attach a USB drive to the virtual machine.

Once VirtualBox and its extension pack are installed, running the software should give a manager window similar to this:



Note that this is the OSX version of VirtualBox. The Windows interface differs slightly.

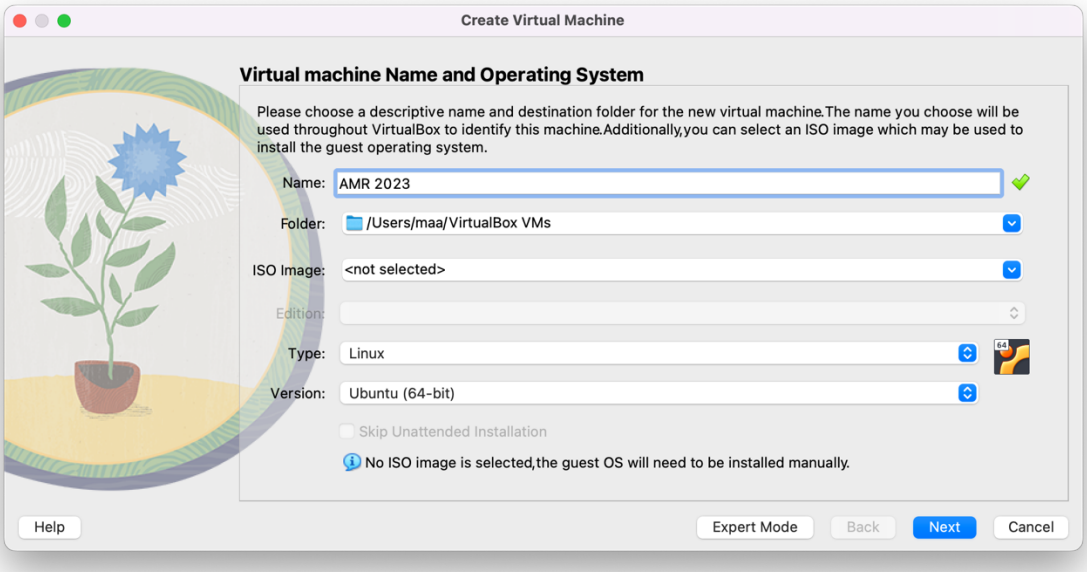
Setting Up the Virtual Machine

PLEASE NOTE: Some of the example images below are taken from previous/different courses.

Once the virtual machine file has downloaded and uncompressed successfully, you can start to set the virtual machine up. To do so:

1) Click the New button as seen on the above screenshot.

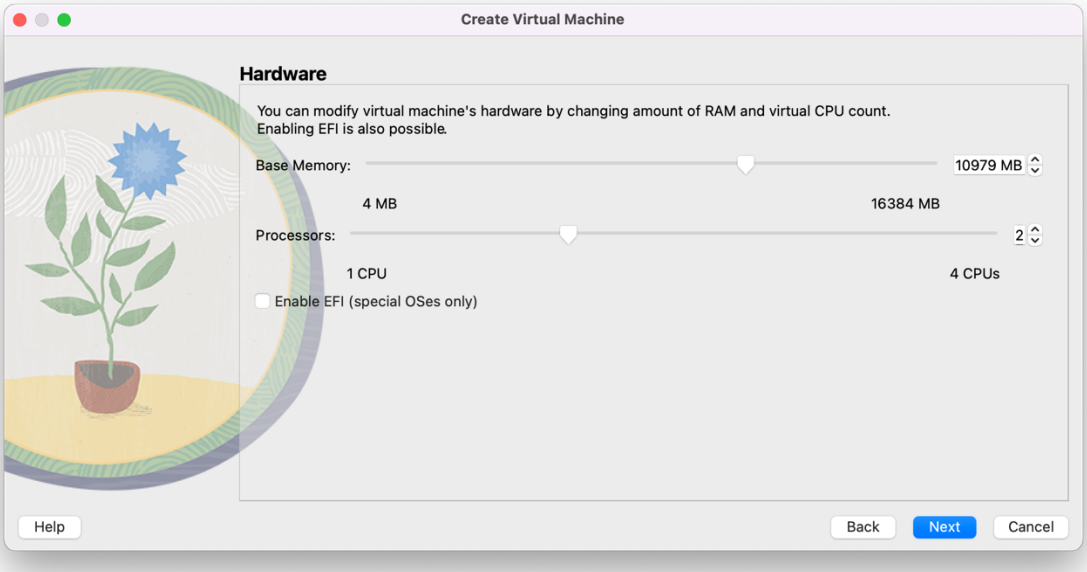
2) This leads to a window similar to this:



Give a name to your machine. This can be anything but it makes sense to name it with something related to the course such as ‘GCM 2024’.

Next, set the Type to ‘Linux’ and the version to ‘Ubuntu (64-bit)’. Ubuntu is the precise version of Linux we use for this course. Once done, click the Next button.

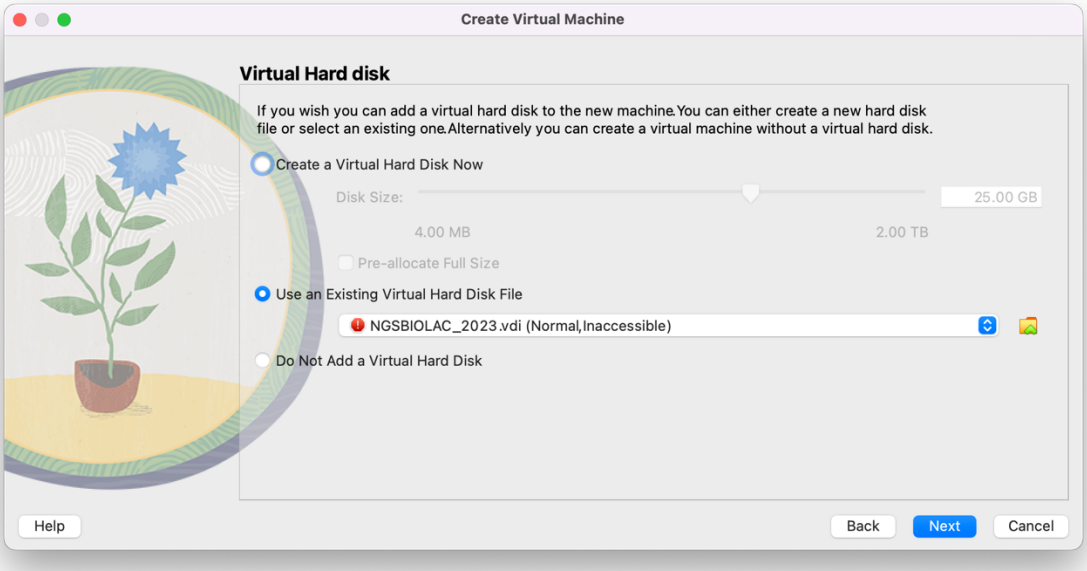
3) This leads to a window allowing you to set the memory (RAM) allocated to the virtual machine, along with the number of processors:



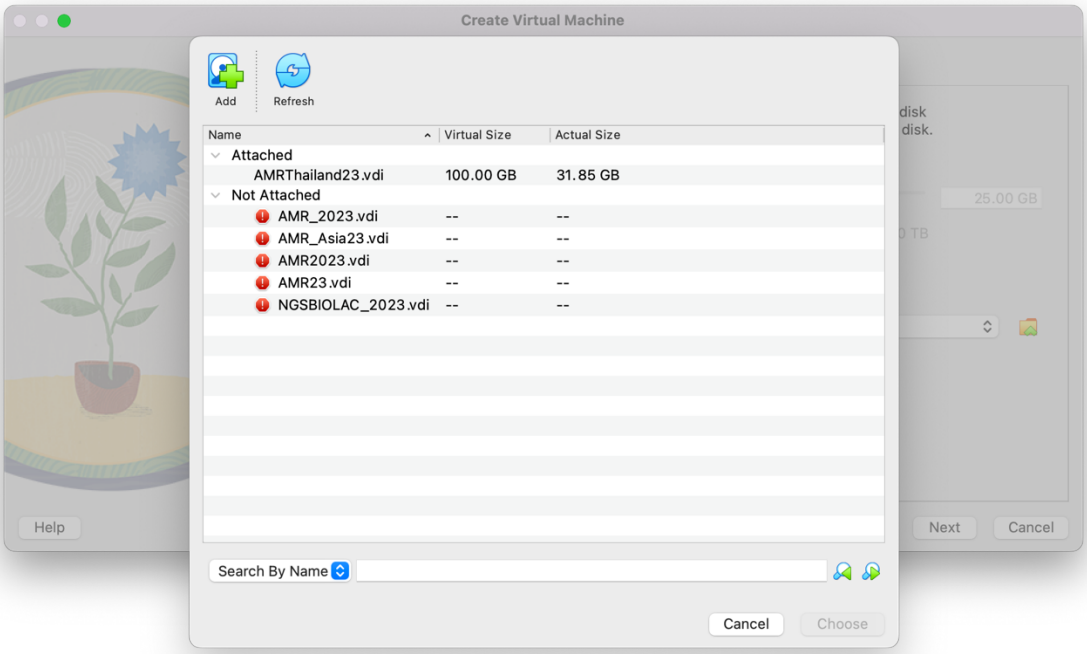
The amount of memory you may allocate differs from machine to machine, depending on how much your computer has. For the course, it's best to set the memory as high as possible whilst leaving enough to run your computer's operating system. Thus, we advise that you set the memory so that it is close to the top end of the green part of the line on a PC but not so high that the pointer reaches the pink part of the line (note this does not show on a Mac). Do similar with the number of processors. In general, the number of processors allocated should be half of the number available.

Once RAM and processor number are set, click Next.

4) The next thing to do is to point VirtualBox to the virtual machine file you have downloaded. This is done using this Window:



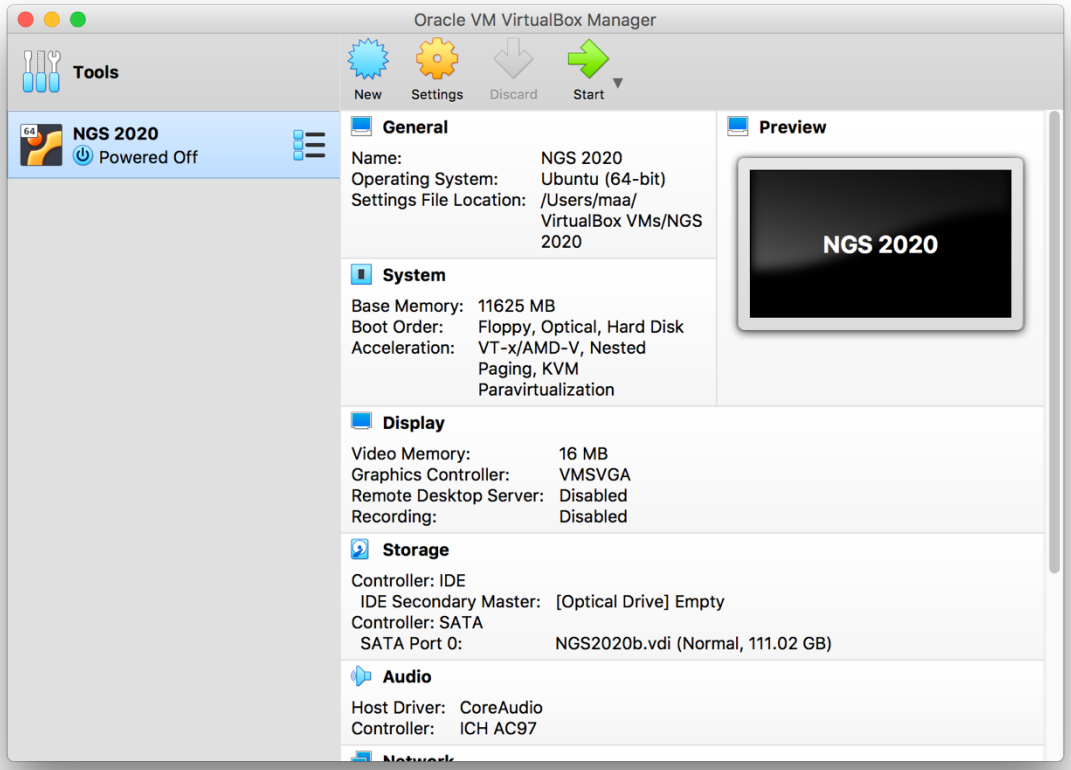
Select the 'Use an existing virtual hard disk file' and click the yellow and green icon to the right of the pulldown menu. This should lead to a window similar to this:



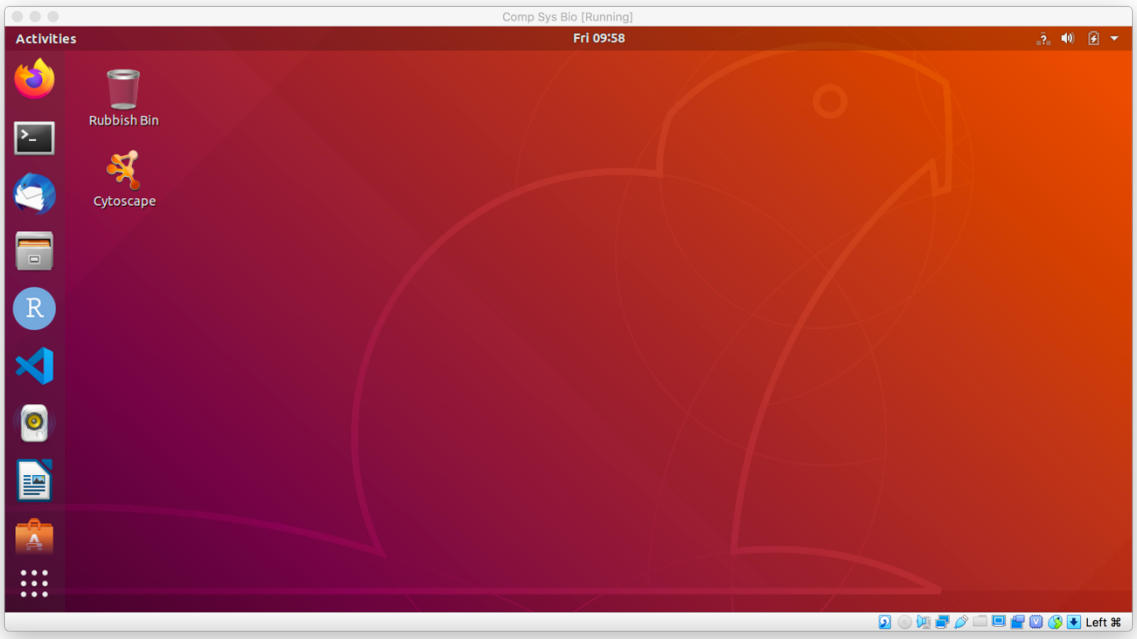
Click the Add button on the top left and choose the .vdi file you have downloaded. This file will then appear in a list of Unattached files in the above window. Highlight it and click Choose.

The next step after this is a confirmation window giving details of your choices in the above steps. Quickly doublecheck this information and click Finish.

If all has gone correctly, the manager window should now show looking similar to this:



5) All that remains now is to start the virtual machine. On the manager window, highlight your virtual machine's name and click the 'Start' icon. The virtual machine should run through a boot process and, after a short time, you should see a window similar to this:



The user account on the virtual machine is named ‘manager’ and the password, if required, is also ‘manager’.