Install and Configure VirtualBox on Windows

Ronald Mak
Department of Computer Engineering
Department of Computer Science
January 11, 2019

Introduction

Because the class will use Linux software tools and utilities, we will run Ubuntu as a virtual machine on your Windows laptop. Ubuntu is a popular version of the Linux operating system. See https://www.ubuntu.com/

Hardware-assisted virtualization

To support a virtual machine, your laptop's Intel CPU chip must have virtualization technology (VT-x) enabled. It is enabled by default on some laptop brands, but disabled by default on others. To see whether or not it's enabled on your Windows laptop, follow the instructions at https://www.intel.com/content/www/us/en/support/articles/000005486/processors.html

If VT-x is disabled, you must enable it by changing an option in the BIOS of your laptop. See the instructions at https://www.sysprobs.com/disable-enable-virtualization-technology-bios

How to access the BIOS depends on the laptop brand: https://www.lifewire.com/bios-setup-utility-access-keys-for-popular-computer-systems-2624463

Download the Ubuntu installation disk

Go to https://www.ubuntu.com/download/desktop and download Ubuntu 18.10, which is a 64-bit operating system. You will get a .iso file which is an image of the installation optical disk (i.e., a CD ROM). Remember where you stored the file.

Install and configure VirtualBox

VirtualBox is a virtual machine manager which we will use to run Ubuntu on Windows. Windows will be the **host operating system** for the virtual machine, and Ubuntu will be the **guest operating system** running in the virtual machine.

Download the latest version of VirtualBox from https://www.virtualbox.org/. Install and run it. It should appear as in Figure 1, except that if this is your first time running it, there won't be any other guest operating systems already installed.

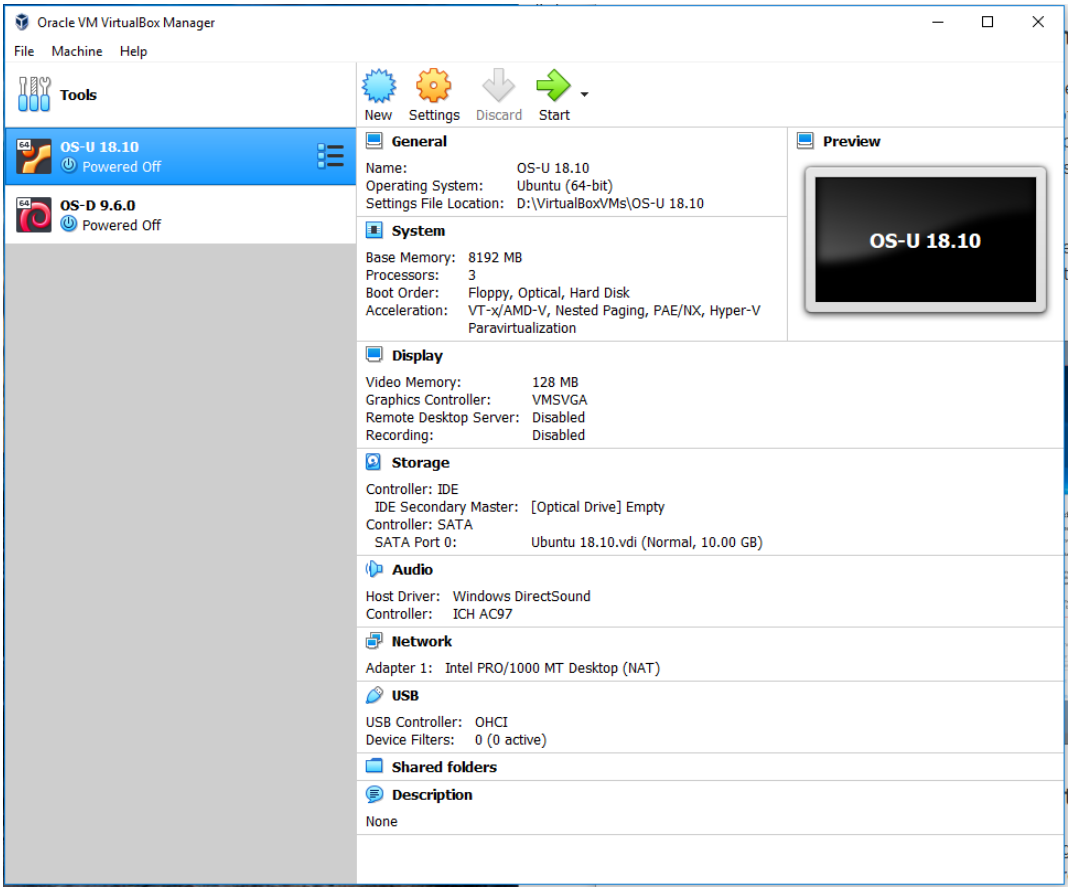

Figure 1. The VirtualBox main screen.

Click the *New* button and fill in the **Create Virtual Machine** form (Figure 2). Pick a useful name. Choose a machine folder on your laptop that will contain the virtual machine image. The type should be *Linux*, and the version should be *Ubuntu (64 bit).* Set a memory size for the virtual machine, but don't give it more than half of the memory of your host laptop. Select the *Create a virtual hard disk now* radio button. Click the *Create* button.

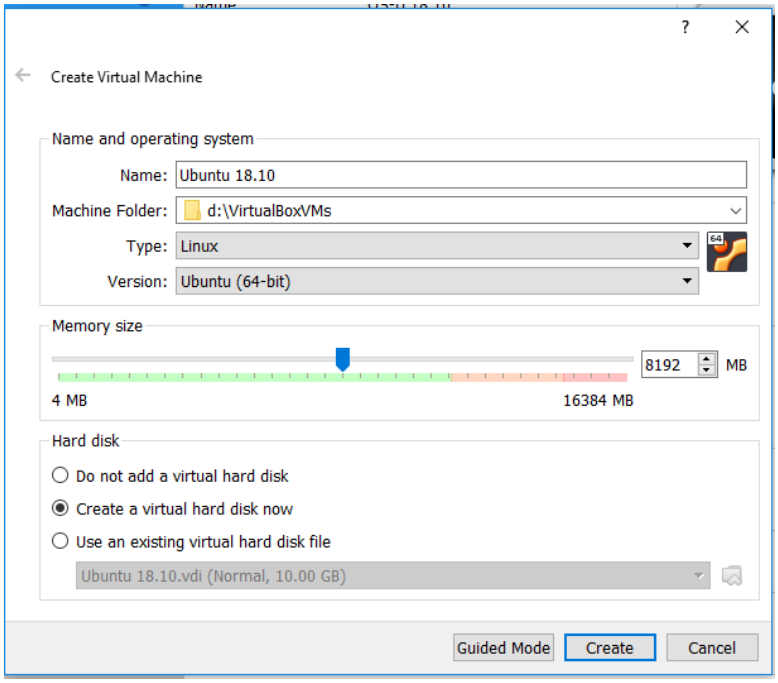

Figure 2. The Create Virtual Machine form.

On the **Create Virtual Hard Disk** form (Figure 3), specify the maximum size to which Ubuntu's virtual hard disk can grow. Select the *VDI (VirtualBox Disk Image)* and *the Dynamically allocated* radio buttons. Click the *Create* button. This creates the new virtual machine named Ubuntu 18.10 (Figure 4).

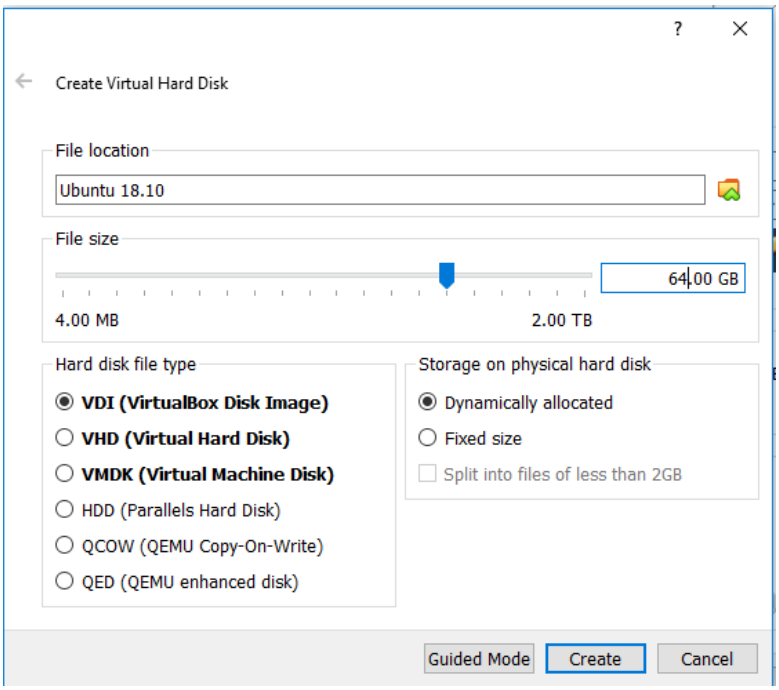

Figure 3. The Create Virtual Disk form.

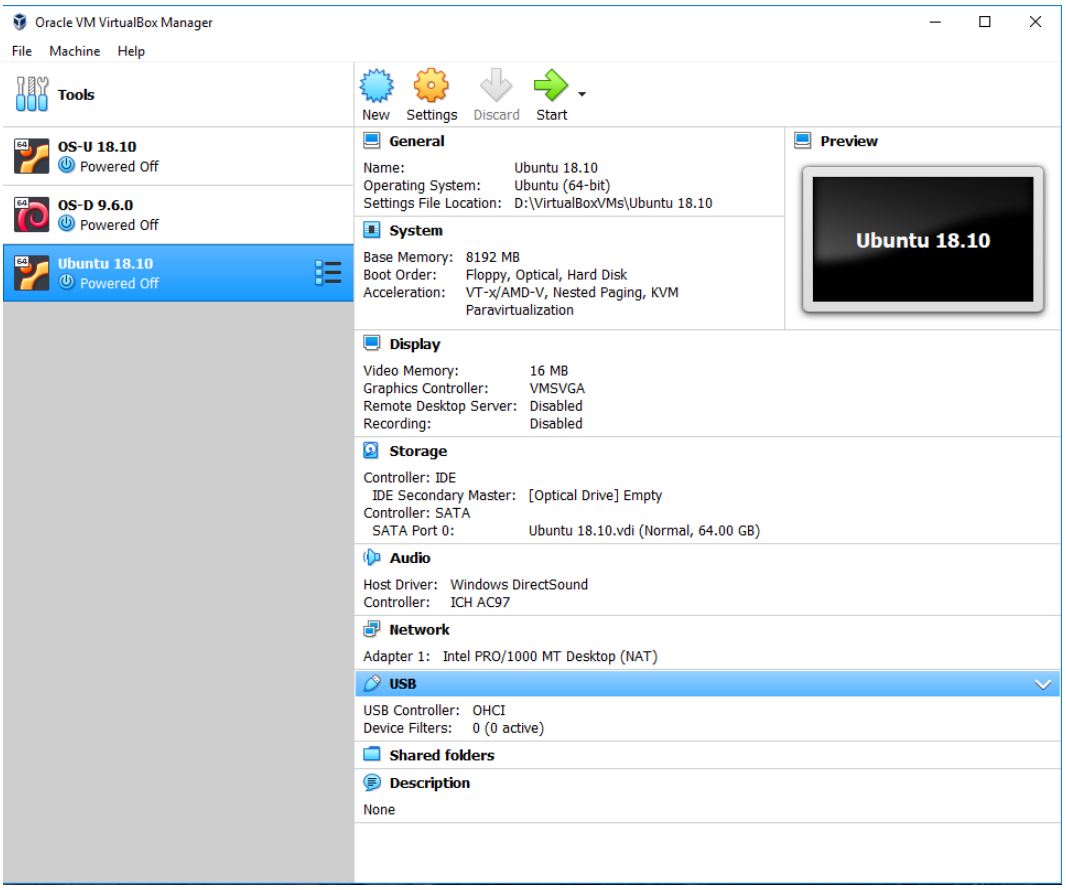

Figure 4. The virtual machine named Ubuntu 18.10 is created.

Select the name of the newly created virtual machine. Click the *Settings* icon at the top. Then click on *System* in the left panel. In the **System Settings** form (Figure 5), select the *Processor* tab and specify the number of CPUs you want to devote to the virtual machine, but not more than half the number of CPUs in your host machine. Click the *OK* button.

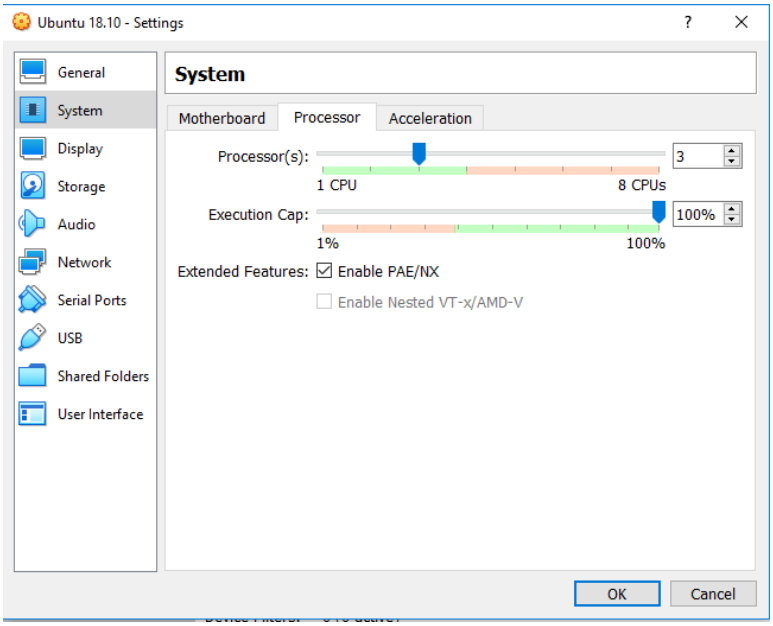

Figure 5. The System Settings form.

Click *Storage* in the left panel. The **Storage Settings** form (Figure 6) shows the virtual CD ROM drive, which is initially empty, and the virtual hard drive, which is the .vdi virtual disk image that VirtualBox created. Select *Empty* under *Controller: IDE*.

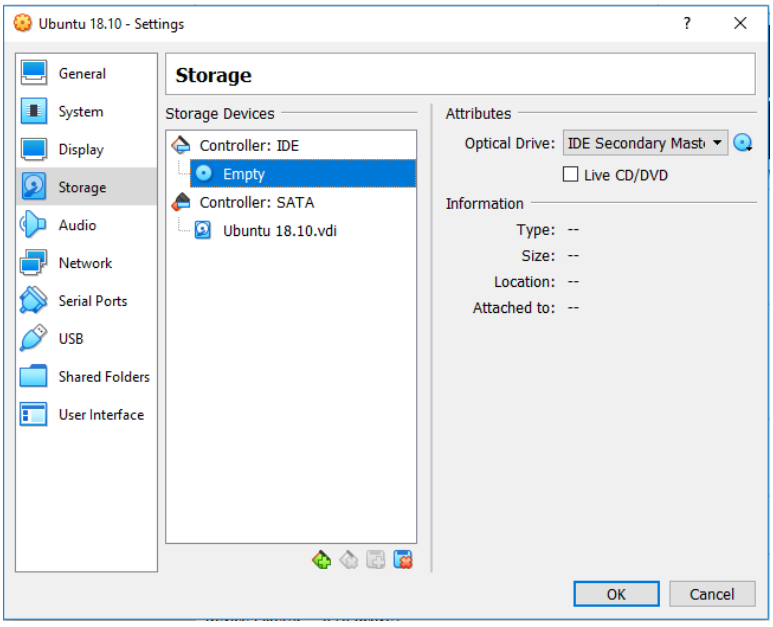

Figure 6. The initial Storage Settings form.

We want to install Ubuntu on the virtual machine, so we must "insert" the .iso installation disk image file that we downloaded earlier into the virtual CD ROM drive. Look under *Attributes* and click on the image of the disk to the right of the drop-down menu. Select the .iso file to insert into the drive. You should now see the .iso file name under *Controller: IDE* (Figure 7). Click the *OK* button.

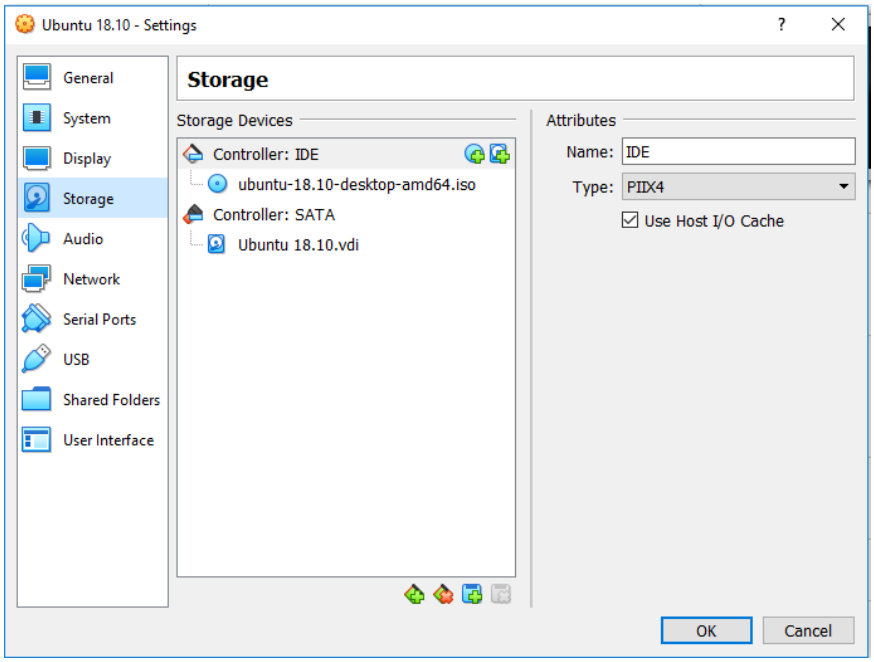

Figure 7. The installation disk image inserted into the virtual CD ROM drive.

Now we are ready to start the virtual machine (Figure 8). To start the Ubuntu 18.10 virtual machine, highlight it and click the *Start* button at the top.

To continue installing Ubuntu, read “Installing and Configuring Ubuntu on a VirtualBox Virtual Machine”.

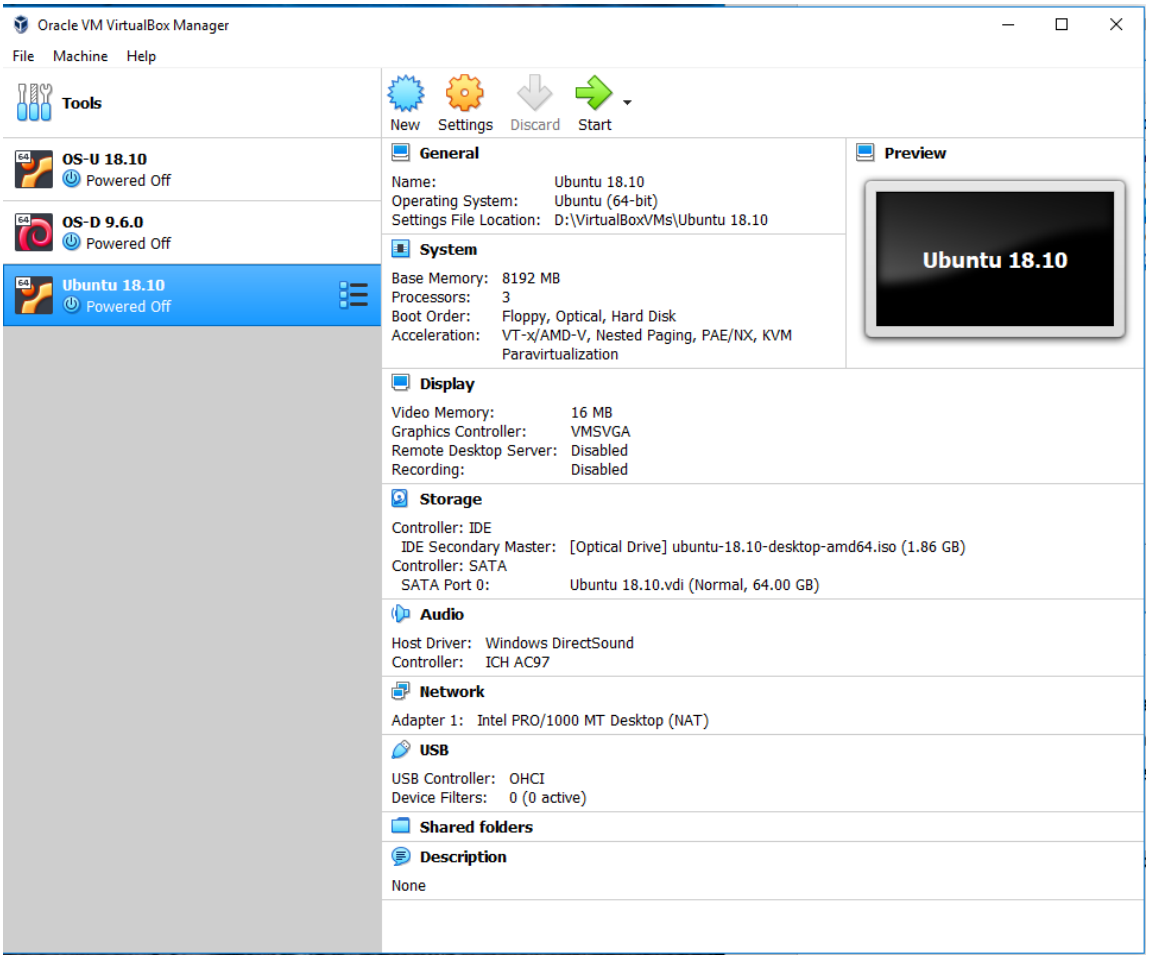

Figure 8. Ready to start the virtual machine Ubuntu 18.10.