

Create an Ubuntu VM in your Windows Machine

written by Georgia Kapatai – 28th March 2018

To run PneumoCaT you need access to a Terminal; a suitable terminal is available in Mac and Linux machines but for Windows machines a virtual Linux machine needs to be created. If using Mac or Linux machines you can skip that part and go to the PneumoCaT installation instructions document.

Step 1: Download VirtualBox

The first think to do is get a virtual machine environment install. In this example we use the free [Oracle VM VirtualBox](#). Download the 64-bit for Windows hosts and save it in a convenient location in your Windows machine.

Step 2: Install VirtualBox:

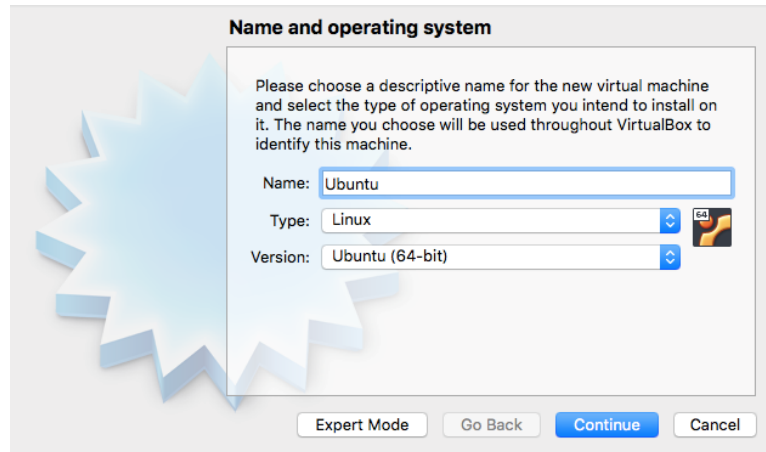
At this point you have a file VirtualBox-5.2.8-121009-Win.exe saved in your Downloads folder or on wherever you selected to save it. Double click on the file and follow the instructions to install VirtualBox.

Step 3: Download Ubuntu:

Now we need to download a linux OS and for this example we are using Ubuntu. Head to the [Ubuntu website](#) and download the latest Ubuntu desktop LTS version. LTS stands for long-term support and it just means it will be supported for longer. At the time of writing this document the latest version was the Ubuntu 16.04.4 LTS. When you click on Download you will first come across a website where the Ubuntu team is asking for financial contributions. Feel free to ignore that and click 'Not now, take me to the download' which will initiate the download of .iso image. This is used as an installation disk for Ubuntu.

Step 4: Launch VirtualBox and create a virtual machine:

Double-click the VirtualBox image to initiate the software. A blank "Oracle VM VirtualBox Manager" appears. Click on the New button in the upper left of the window to start creating a new virtual machine. The first window you'll see looks like this:



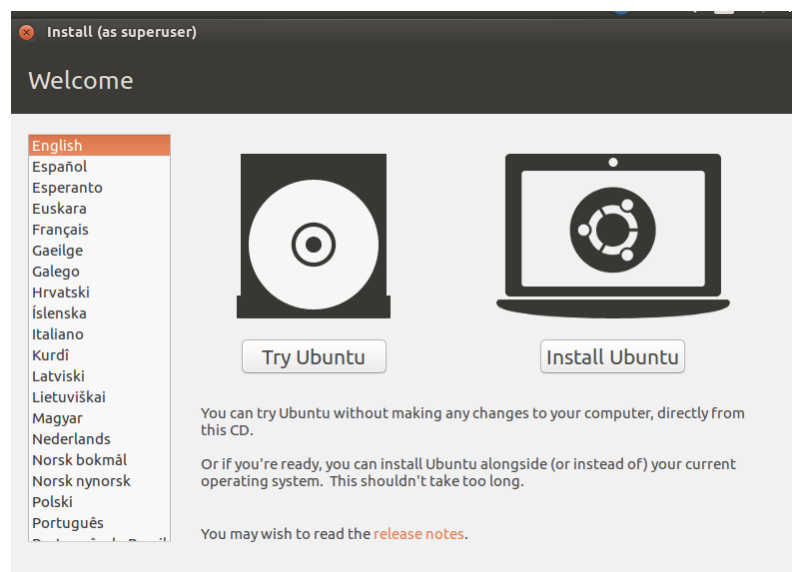
Feel free to choose a more original name for your machine. The type of operating system is Linux, the version in this case is Ubuntu (64 bit). Click Continue. A screen appears asking for the amount of memory you wish to allow to your VM. Of course this depends on your machine. Most recent Windows laptops should have at least 8 Gb RAM in which I would allocate 2 Gb to the VM. If your machine has less RAM then go for 1 Gb. Clicking Continue again, you're then asked if you want to add a virtual hard drive to the new machine. Use the default "Create a virtual hard drive now" radio button, and click "Create".

The next screen asks what kind of hard drive file type you would like to use. I chose the default VDI setting, and clicked yet again on Continue. Now you need to select the storage size of the virtual hard drive on your physical drive. Once again, select the default "Dynamically allocated" and click Continue.

At the next screen you are asked to select the storage to your virtual hard drive. Again this depends on your machine and how much storage you have available. I suggest, if you want to try running PneumoCaT, using the at least 20 GB, and select the name your virtual hard drive and location where you want it to be stored. I used the default options. Click Create to continue. If you are planning to use it to run samples then you definitely need more space as during the process, sam and bam files are created which could reach up to 2Gb. You can choose to run PneumoCaT with the `-c` flag which removes all bam files upon completion but the files will still be created during the process so you need to allocate at least 2 Gb when running a sample.

At this point you are back at the Oracle VM Virtual Box Manager. With your new virtual machine selected in the left sidebar, click the green Start arrow. As your virtual machine boots, it will want to be pointed at the installation media -- in this case, that's the Ubuntu distribution file. That is the .iso image we download in step 3. Mine was called "ubuntu-16.04.4-desktop-amd64.iso", but yours might be different dependent on the version number of the download. Select the distribution file by clicking on the folder icon, then using the standard Windows Explorer dialog to find and select it on your machine. Once you're ready to go, click Start.

Your VM will now initiate using this .iso file and you will get the following screen asking whether you want to Try or Install Ubuntu.

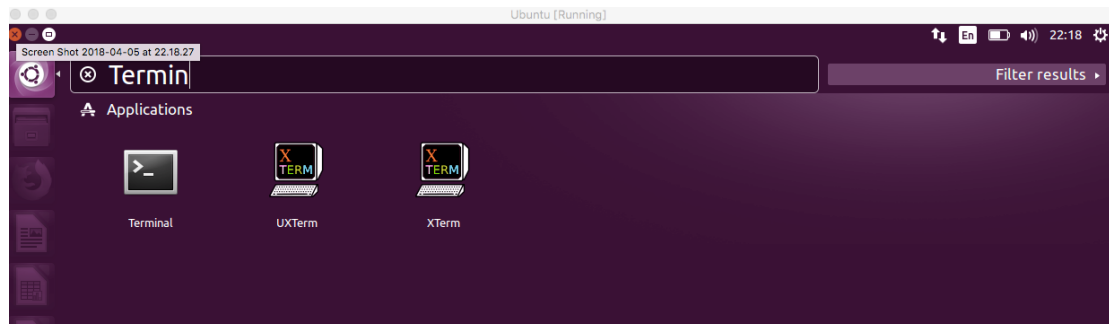


If you press Try then you will initiate Ubuntu directly from the file. However, at every startup you will get this screen and if at any point you decide to Install Ubuntu you will have to erase your disk with all your files so I suggest install at first start of your VM. At the next screen I ticked the Downloading updates while installing Ubuntu box and left the Install third party software box unticked. Of course that depends what you are planning on doing with your VM. In my case I only need it to access the Internet and use the Terminal. In the next screen I left the default selection that is Erase disk and install Ubuntu and press Install Now. Then press Continue in the next window and then during the following steps create a user by selecting the settings that apply to you (Location, Keyboard language etc.). When installation is complete you are asked to restart the machine. Press Restart Now and voila you have a VM running Ubuntu in Windows.

At restart you will be asked to remove the installation medium. That just means you need to delete or move the .iso file. Once you do that go back to your VM window and press Enter to start your VM.

I personally am a Chrome user so the first thing I do is go to Firefox and type Chrome in the search window and click on the link that says Download Now and double-click Download Chrome. I leave everything as default for the following steps and install Chrome. You will be asked for your password every time you install something new. This is the password you provided while creating your user so make sure to make it memorable or note it down otherwise you will not be able to proceed with the following steps described in SetUpInstructions.pdf document.

To access the Terminal in your VM click the top image on your sidebar to search your applications.



Then drag and drop the terminal icon onto your sidebar to create a shortcut for easy access.

There are two additional issues that you might want to resolve before starting to use your VM:

(a) copying and pasting between the main machine and the VM. For example if you want to copy and paste commands from `SetUpInstructions.pdf` document into your VM terminal then currently the only way is if you open it within your VM. However another way is described [here](#).

(b) sharing files between your local machine and your VM. There are some good instructions [here](#) on how to set up a shared folder.

And with these steps you are ready to move to the next document (`SetUpInstructions.pdf`).