Environment Setup

In this unit, hands-on labs and assignments will be conducted on a dedicated virtual machine image. You are strongly suggested to follow the guidelines to setup your own hands-on environment before doing your assignments and labs. The environment includes the virtual machine software, e.g., VirtualBox and Linux (Ubuntu 16.04), with which you can work on the assignments and labs using your own personal computers. Getting familiar with them is critical.

Virtual Machine Software:

VirtualBox is recommended for the assignment in this unit, which is open-source and completely free. It can be downloaded at https://www.virtualbox.org/wiki/Downloads. We note that other virtual machine software like VMware Player and Parallels Desktop are also compatible to use.

Go to the download page shown as below and choose the appropriate installation package according to your host operating system:

VirtualBox 6.0.4 platform packages

- Windows hosts
- OS X hosts
- Linux distributions
- Solaris hosts

For MAC users, please select VirtualBox for OS X hosts.

Operating System:

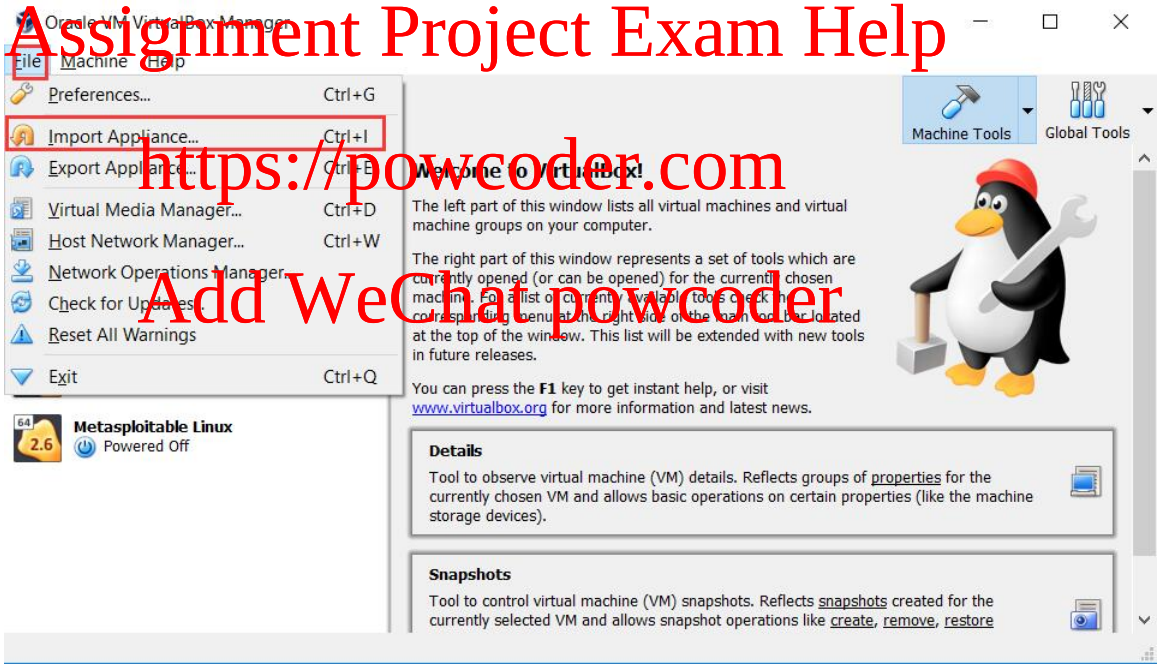
A pre-built Ubuntu 16.04 Oracle VM appliance (OVA) (3031.lu16d.build_v1.1.ova 3.3GB) can be downloaded from google drive at https://drive.google.com/open?id=1wUUuHn1pJrGvsxsAN47ft_uMYgQrXVgb

Most of the necessary tools, software, and libraries for the hands-on assignments have been installed in this pre-built VM image. They are “libnet1, libnet1-dev, libpcat-dev, libpcap-dev, libattr1-dev, vim, apache2, php5, libapache2-mod-php5, mysql-server, wireshark, bind9, nmap, netwox/netwag, openjdk-6-jdk, snort, xpdf, vsftpd, telnetd, zsh, ssh, dpkg-dev, openssl.”

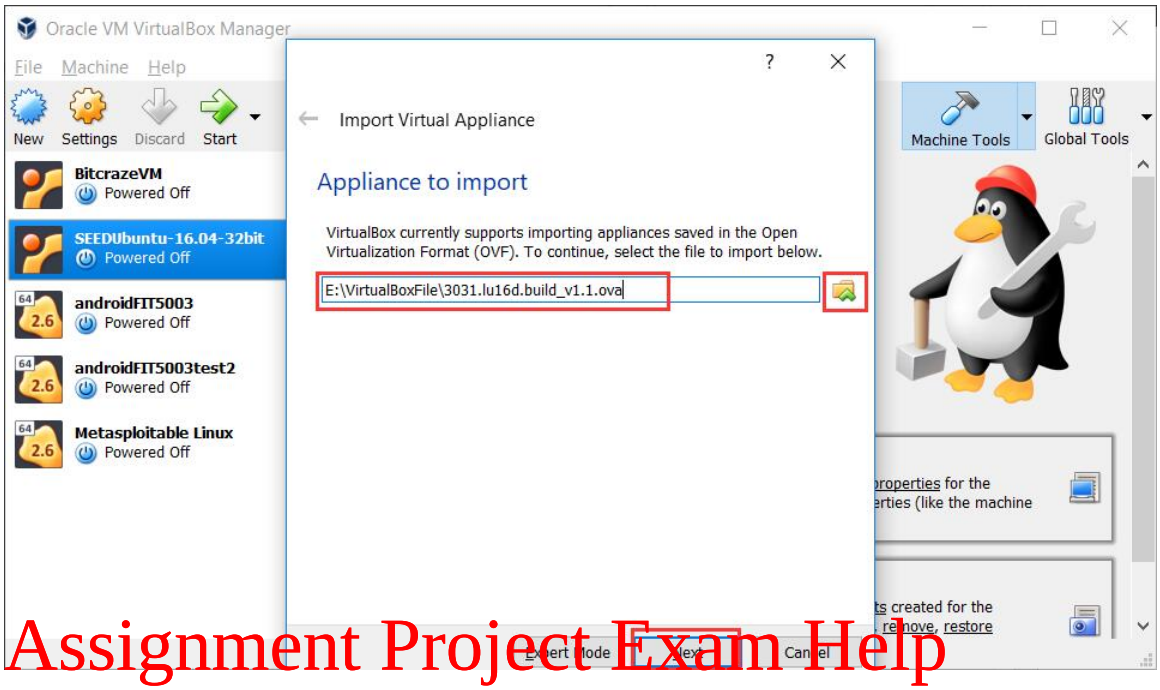
User Manual of the Pre-built Ubuntu 16.04 VM:

We use a Windows 10 machine as the setup example. You can host the Ubuntu image using VirtualBox by performing the following steps:

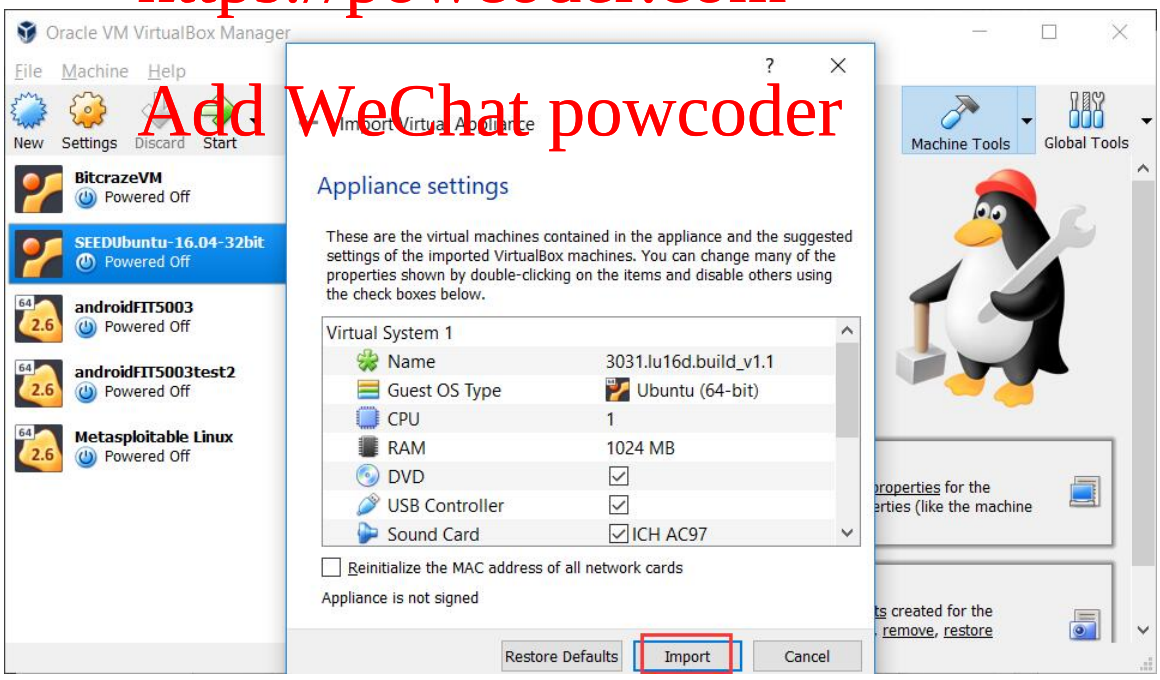
1. Install VirtualBox player using the downloaded installer.
2. Lunch VirtualBox player.



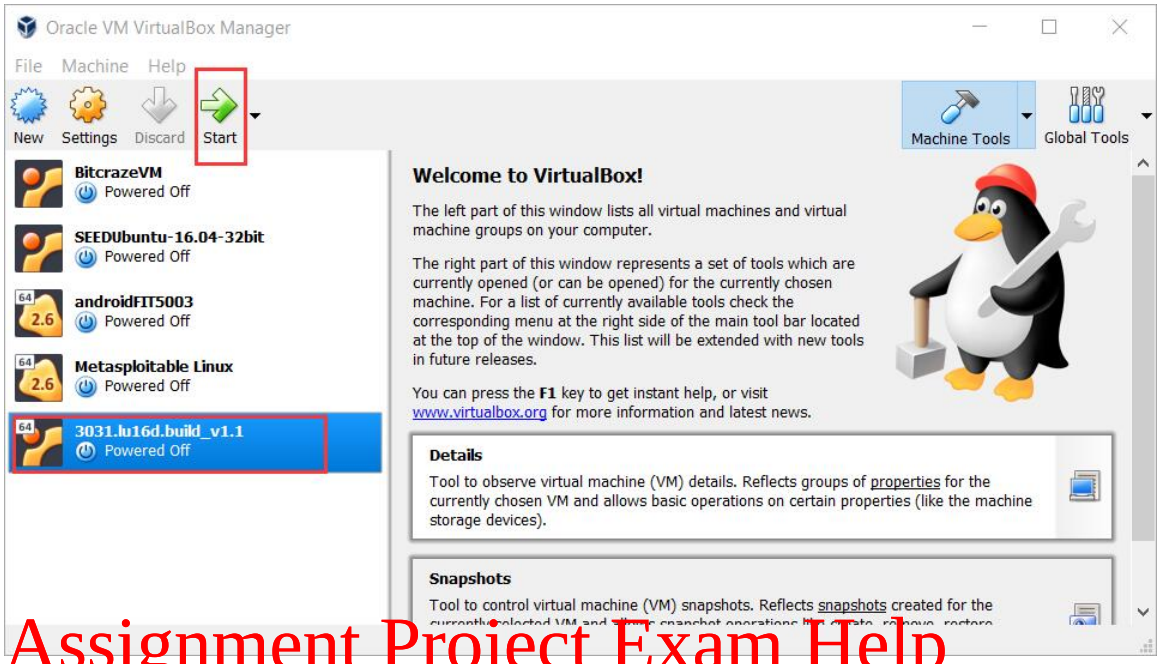
3. Select File and Import Appliance.



4. Select your OVA file in the import box and verify the settings in the center and then click Import.

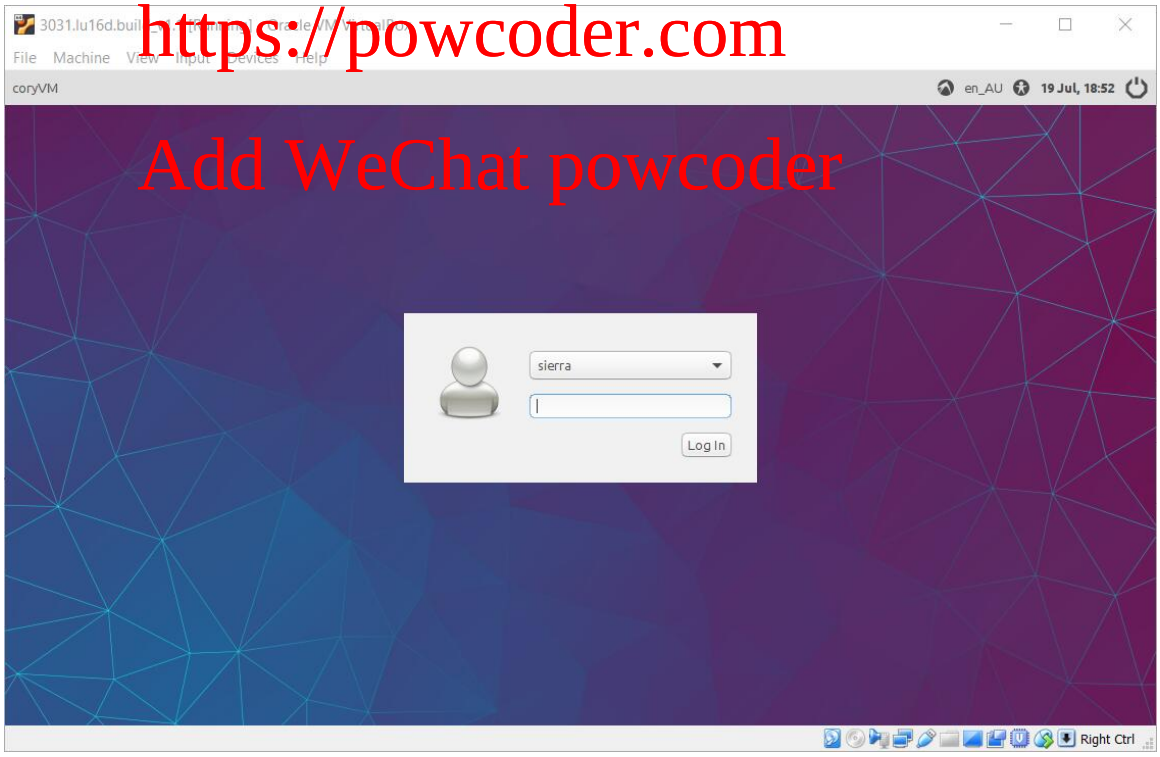


5. Select the virtual machine that is imported in step 4 and start it.

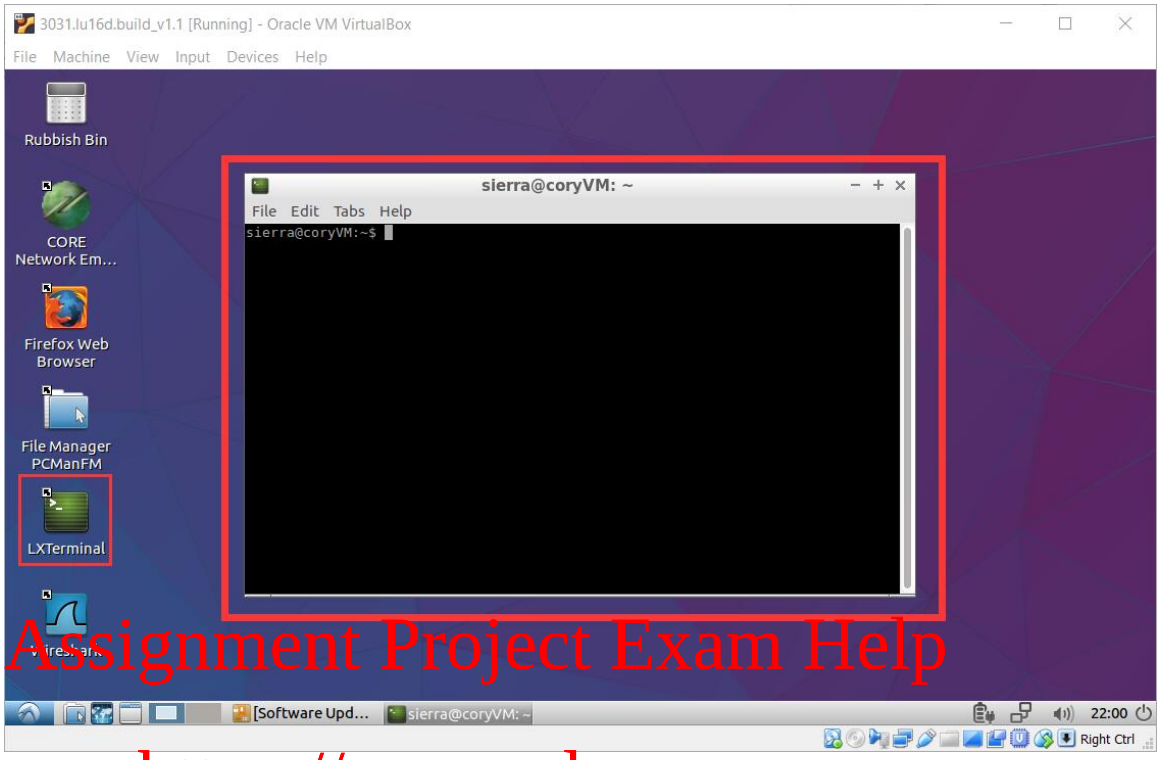


6. Log in the system. Please note the default password is the same as the username.

   Username: sierra



7. Open a terminal by clicking the LXTerminal icon on desktop.

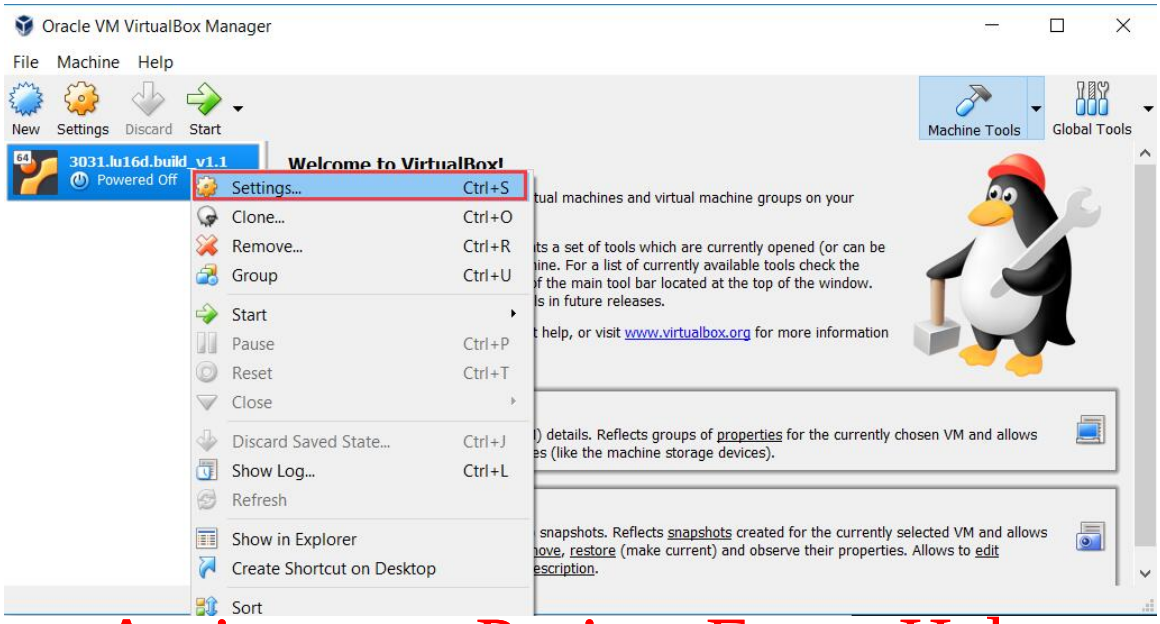


Please ignore and cancel all the OS update popped up to make sure the compatibility of installed libraries and tools in our assignments.

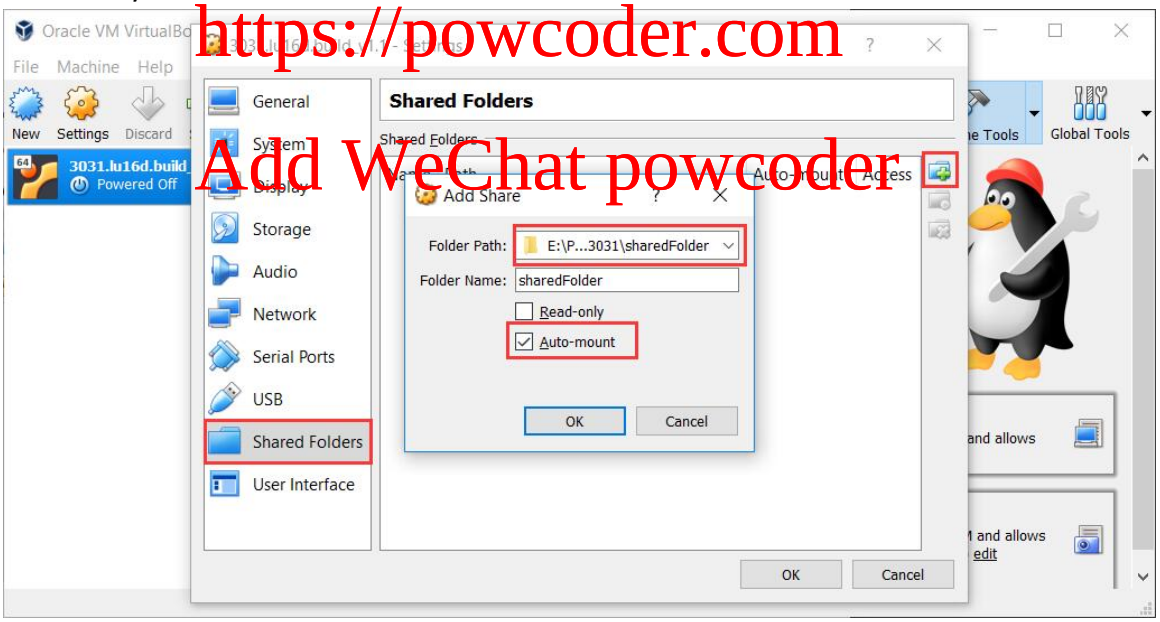
Creating a shared folder between your host machine and Ubuntu virtual machine in VirtualBox

Accessing your host machine's files from Ubuntu VM is useful when you already have existing applications/ programming files and want to run them on the virtual machine. Following example presents how to create the shared folder between Mac OS as a host machine and Seed Ubuntu virtual machine. If you are using other host operating systems, the instruction should be the same.

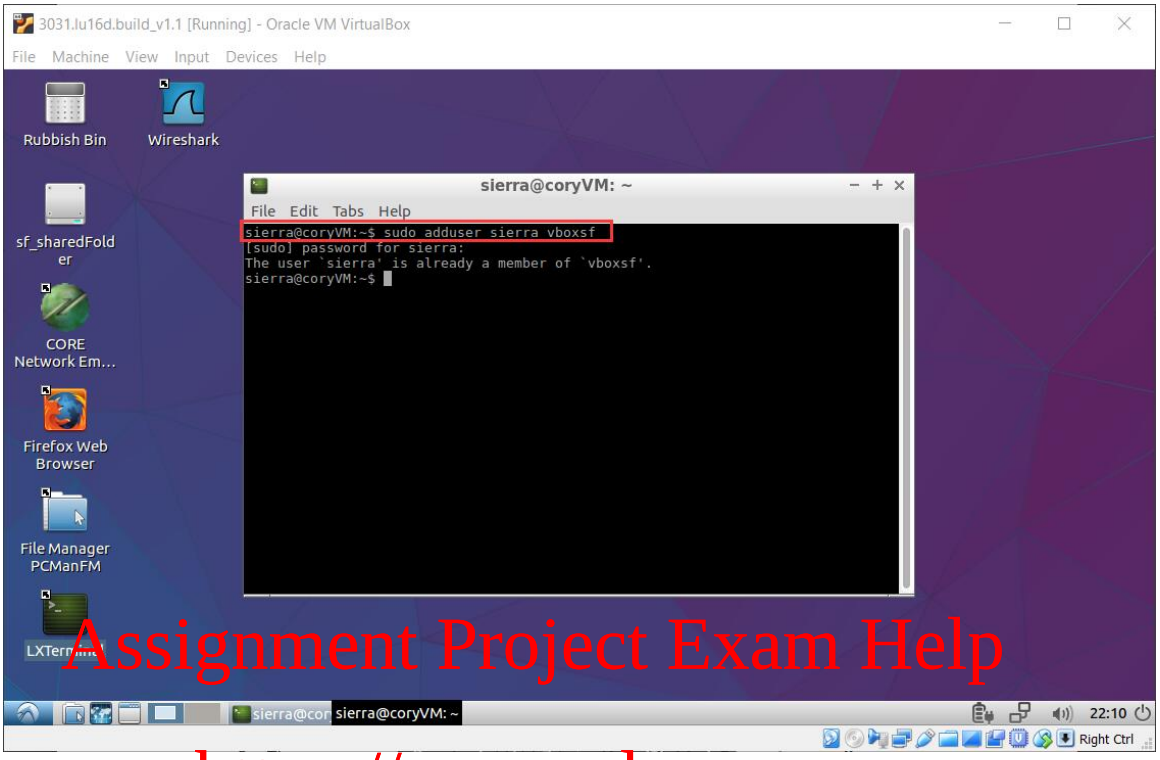
1. Create "**sharedFolder**" folder in your host machine and put your applications/ files into the folder. For testing purpose, you can simply create "**hello.txt**" text file in the folder.
2. Right-click imported virtual machine and then click setting.



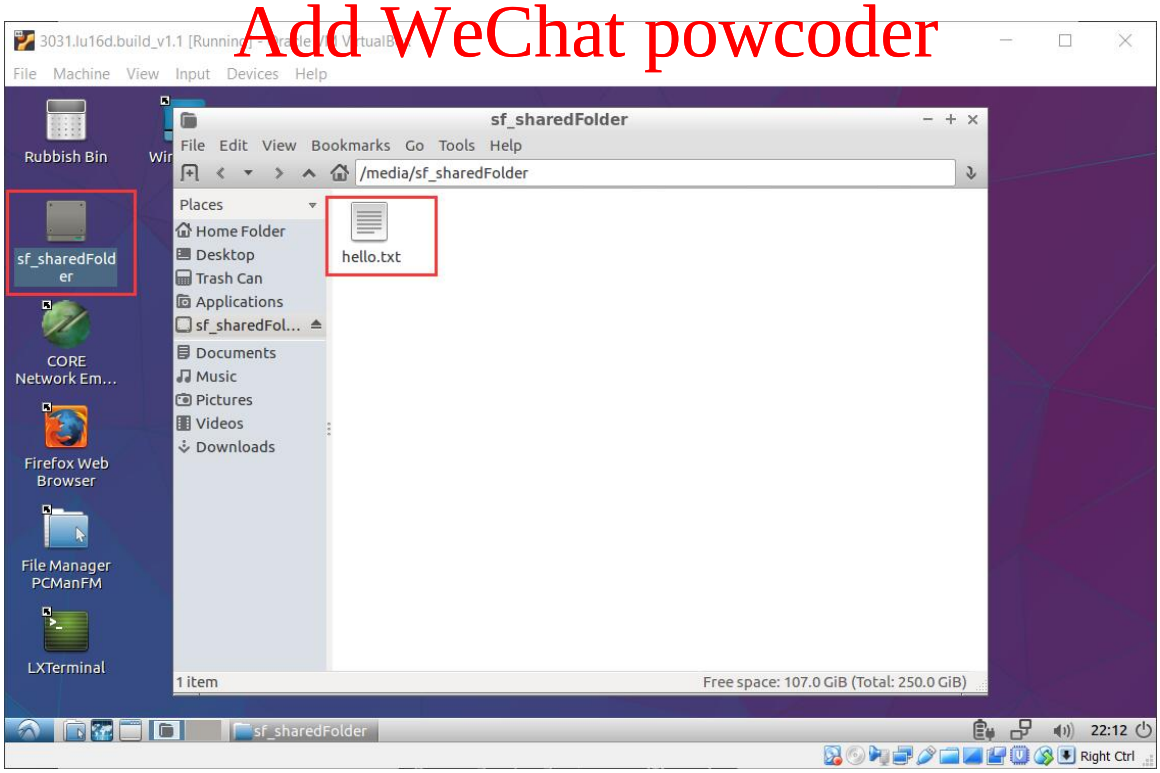
3. Then select the "Shared Folders" and click on "Add a new Shared" to mount the folder on your host machine. Check on "**Auto-mount**" then click Ok.



4. Add current user "seed" to the shared group of the virtual machine. In the terminal window, type "***sudo adduser sierra vboxsf*** "



5. Reboot your Ubuntu VM to make setting apply, Then you can see the shared folder from Home Folder>Computer>media



Reference Links:

Commonly used unix commands: http://infohost.nmt.edu/tcc/help/unix/unix_cmd.html

*Please direct your questions to our tutors.