Tutorial

VirtualBox

VirtualBox is a simple, yet powerful tool. In this tutorial you will learn how to use VirtualBox to create easier software installations. You will do this by adding an executable file to your VirtualBox and then locate the ``.vdi" and ``.vbox" files that you would give to whoever is installing your application.

When to use VirtualBox

As a software engineer, you might develop an application that has dependencies on a certain operating system or dependencies on older software packages (for example Java 7). Instead of having a complicated installation process for your clients, you could instead put your application and its dependencies in a virtual machine so that your client could simply open the file in VirtualBox.

Loading a file into VirtualBox

For the purposes of this tutorial you will put a small executable onto the Linux virtual machine you created as part of the pre-assignment. Although the executable you will install is small and simple, the concept would be the same for a large, complicated setup. We can include our executable with all of its dependencies into a Virtual Machine that we then can send to someone who wants to use it.

1. Start up your Ubuntu Virtual Machine by double-clicking it or selecting "Start."
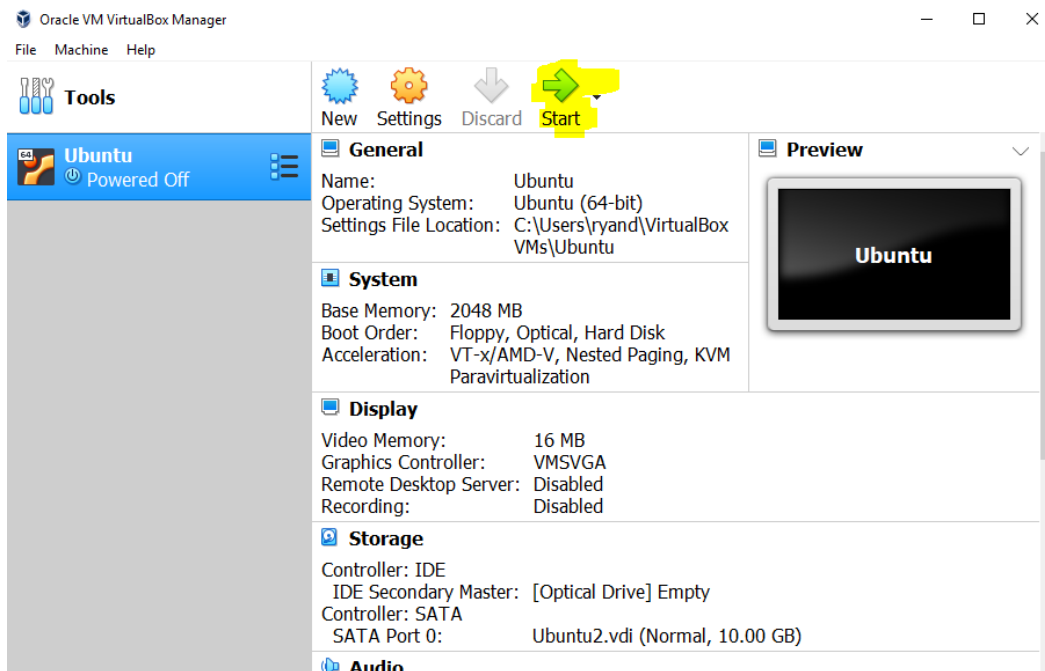
2. In the next step, you will want to cut and paste from this document into a browser on your Ubuntu Virtual Machine. This capability is disabled by default, so you need to enable it by completing the following steps:

   Note: We only need to do this once. Once enabled, this capability will stay enabled until we disable it.

   a. Select "Devices / Insert Guest Additions CS Image…", and run the file this places on your virtual machine's desktop.
   b. Open a terminal from within your virtual machine and type the following command:

   ```
   sudo apt-get install virtualbox-guest-additions-iso
   ```

   c. This installs a "guest additions" package on your guest operating system that will allow you to share the clipboard between the host and the virtual machine. The install process may take a few minutes. When it completes you can close the terminal.
   d. Select "Devices / Shared Clipboard / Bidirectional" from the VM's menu.
   e. Select "Devices / Drag and Drop / Bidirectional" from the VM's menu.
   f. Shut down your virtual machine (by sending the shutdown signal) and restart it.

3. Open Firefox from within your Ubuntu virtual machine and download the [Virtual Machines Tutorial Start file](#).
    a. **Note:** If you were actually working on a software application you would most likely create a git repo that you would clone onto your machine instead of downloading a file from google drive.
    b. **Note:** If you are not able to get copy/paste to work between your host OS and virtual machine, you can open this tutorial document in a browser on the virtual machine and then just click the link.

4. Place this file on the desktop of your virtual machine. This way, anyone can find and start your program.
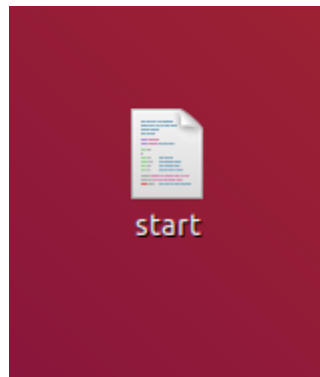

5. Right click your desktop and select "Open terminal".
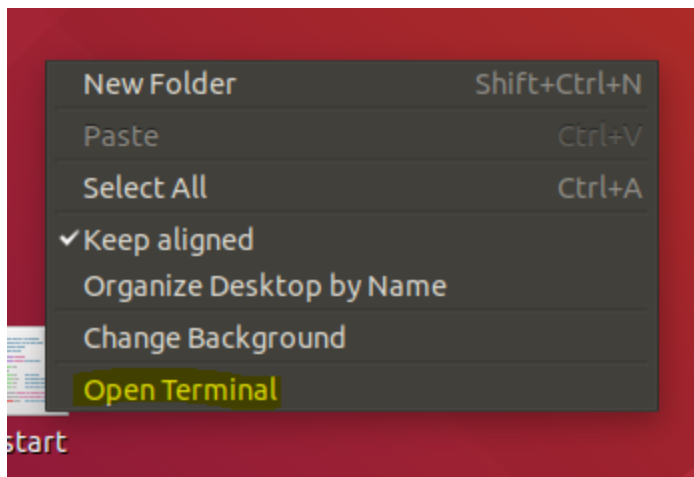
6. Run the following commands to make your desktop the current directory, add the execute permission to the file, and run the 'start' program:
    a. cd Desktop
    b. chmod 700 ./start
    c. ./start
    d. Type in your name

```
remerrd@remerrd-VirtualBox:~$ cd Desktop/
remerrd@remerrd-VirtualBox:~/Desktop$ ./start
Hello CS 204 student
Enter your name
John Smith
Hello John Smith!
Take a screenshot of this terminal with your name and turn it in
remerrd@remerrd-VirtualBox:~/Desktop$ █
```

7. Open the program "Screenshot" and **take a screenshot of your terminal to turn in to Canvas.**
8. You can submit your screenshot from your virtual machine, or you should be able to drag it from the VM to the host operating system and submit from the host.
9. Power off your virtual virtual machine.
10. Right click your Ubuntu instance in VirtualBox and click "Show in Explorer" if using Windows or "Show in Finder" if using a Mac.
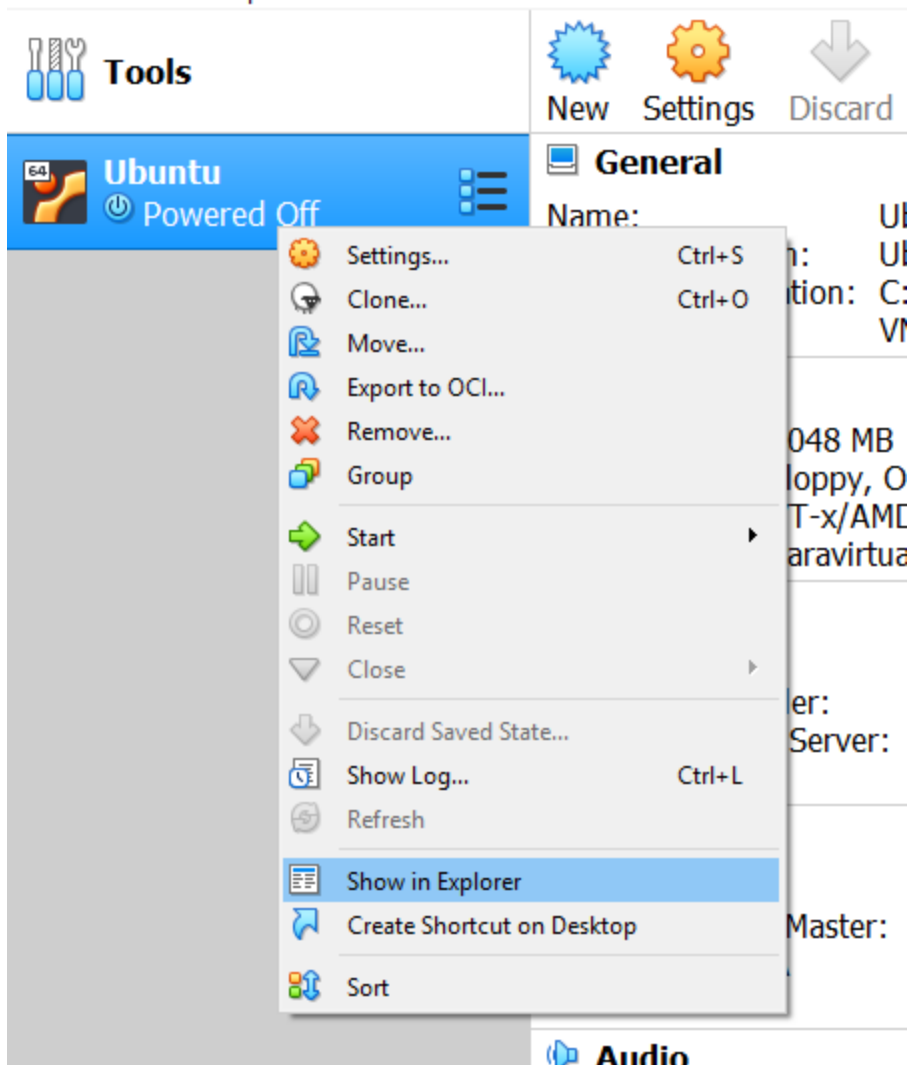
11. You should see the following.

Logs	12/27/2019 9:26 AM	File folder	
Ubuntu.vbox	12/27/2019 10:47 AM	VirtualBox Machine Definition	6 KB
Ubuntu.vbox-prev	12/27/2019 9:55 AM	VBOX-PREV File	7 KB
Ubuntu.vdi	12/27/2019 10:47 AM	Virtual Disk Image	9,473,024 KB

12. You can now share your "Ubuntu.vdi" file to install and run on any machine that has VirtualBox installed.