

Download/Install VirtualBox:

1. Go to the [VirtualBox Downloads page](#) and click [Linux distributions](#). Then choose the Linux version that you are using to download VirtualBox.
2. Once the download has been completed, navigate to the directory where the file has been downloaded and double-click the VirtualBox .deb file.
3. Click **Install** on the Ubuntu Software installer. A pop-up window will ask for the system password. After authenticating it, installation will start.
4. To verify the installation of the VirtualBox, you can look for **Oracle VM VirtualBox Manager** in the “Show Application” or run the following command in Terminal:

vboxmanage --version

A number, representing the version of VirtualBox, should be printed as output if the installation was successful.

Download/Install Vagrant:

There are two different ways to install Vagrant. Please select the option you are most comfortable with.

Option 1: Vagrant Installation using .zip file

1. Go to the [Vagrant Downloads page](#) and click on the Linux 64-bit link.
2. Once the download completes, navigate to the directory where the file has been downloaded and extract the vagrant .zip file.
3. Then, go to the Terminal and type the following command:

```
sudo apt install vagrant
```

Option 2: Vagrant Installation using Ubuntu Software Installer

1. Go to the [Vagrant Downloads page](#) and click on the Debian 64-bit link.
2. Once the download completes, navigate to the directory where the file has been downloaded and double click the Vagrant .deb file.
3. Click **Install** on the Ubuntu Software installer. A pop-up window will ask for the system password. After authenticating it, installation will start.

To verify the installation of vagrant, run the following command in Terminal:

```
vagrant --version
```

A number, representing the current version of Vagrant, should be printed as output if the installation was successful.

Setting up the Vagrant Environment:

1. Download the **m103-vagrant-env.zip** from the handouts section of this page. Create a folder in your home directory called **m103** and copy **m103-vagrant-env.zip** into the **m103** folder.
2. Extract the contents of the zip file in the m103 folder by double clicking the file. Your directory structure should now look like this:

Home → m103 → m103-vagrant-env → provision-mongod, Vagrantfile

3. Then in terminal navigate to m103-vagrant-env using the following commands:

cd ~/m103/m103-vagrant-env/

4. Bring up the vagrant environment by running the following command:

vagrant up --provision

5. It might take a few minutes to complete as it builds directories in the virtual machine and downloads all the software and validation scripts necessary to complete this course.
6. Then to connect to your vagrant instance using ssh, run the following command:

vagrant ssh

7. If it prompts you for username and password, use the following:

Username: vagrant

Password: vagrant

If you face any issues when setting up or using Vagrant, use the following instructions to uninstall Vagrant (If required):

1. Run the following commands in the terminal:

```
rm -rf /opt/vagrant
```

```
rm -f /usr/bin/vagrant
```

If you get permission denied for any of the above commands, add sudo in the beginning of the respective command

2. Also, in the Ubuntu Software, **Remove** the Vagrant (if you have downloaded .deb file).