Download/Install VirtualBox:

1. Go to the VirtualBox Downloads page and click the "OS X hosts" link from the "platform packages" section of the site. Once you click on "OS X hosts", VirtualBox will start downloading.

2. Once the download completes, navigate to the directory where the file has been downloaded and double-click the VirtualBox .dmg file.

3. On the "VirtualBox" window that opens, double click "VirtualBox.pkg" to start the installer.

4. Click "Continue" to navigate through the installation process until you reach the "Installation Type" page. On this page, click "Install" to install Virtual Box. You may be prompted for your username and password. If so, input the username and password of the Mac OS X user you are logged in as and click "Install Software".

5. After the installation is successful, click on "Close".

6. To verify the installation of the VirtualBox, 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:

1. Go to the [Vagrant Downloads page](#) and click on the macOS 64-bit link. Upon clicking the link, the Vagrant installation package will start downloading.

2. Once the download completes, navigate to the directory where the file has been downloaded and double-click the Vagrant .dmg file.

3. Double-click "vagrant.pkg" to begin the installation process. Click "Continue" to navigate through the installation process until you reach the "Installation Type" page. On this page, click "Install" to install Vagrant. You may be prompted for your username and password. If so, input the username and password of the Mac OS X user you are logged in as and click "Install Software".

4. After the installation is complete, click on "Close".

5. 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** file 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 to uninstall Vagrant:

   rm -rf /opt/vagrant

   rm -f /usr/local/bin/vagrant

   sudo pkgutil --forget com.vagrant.vagrant