

Project 1: Environment Setup

In this exercise, you will be working in an Ubuntu 16.04 virtual appliance, which is provided with the download.

1. Download the **Ethereum.ova** file linked on Coursera.

Follow the steps accordingly for **Windows** vs. **Mac**

Windows:

The file will look something like this:

2vYOIVYkEei6-Q5oMlIdTA_db109ab0562411e893fa877286bab8c4_**Ethereum.tar**

This is a **.tar** file, a compressed filetype similar to a Windows .zip file. Like a ZIP file, the contents need to be extracted before being used.

1. Download a free program called [7-Zip](#). There are two versions, one for 32-bit processors and one for 64-bit processors. Select the Download link corresponding to your processor. (If you don't know which your processor is (for Windows 10 users), open Settings -> System -> About).

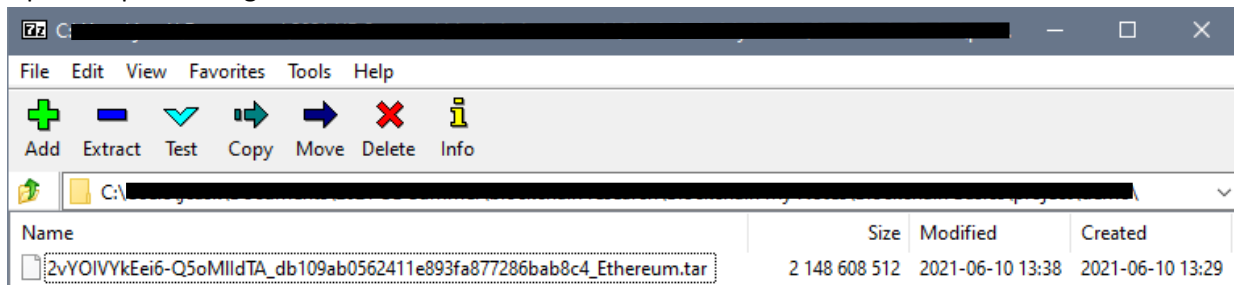


7-Zip is a file archiver with a high compression ratio.

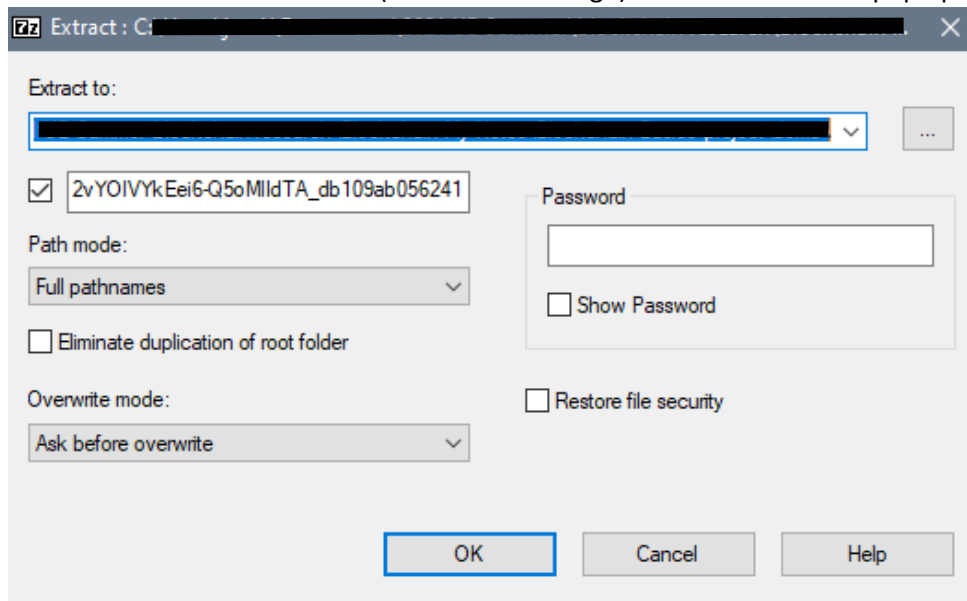
Download 7-Zip 19.00 (2019-02-21) for Windows:

Link	Type	Windows	Size
Download	.exe	32-bit x86	1.2 MB
Download	.exe	64-bit x64	1.4 MB

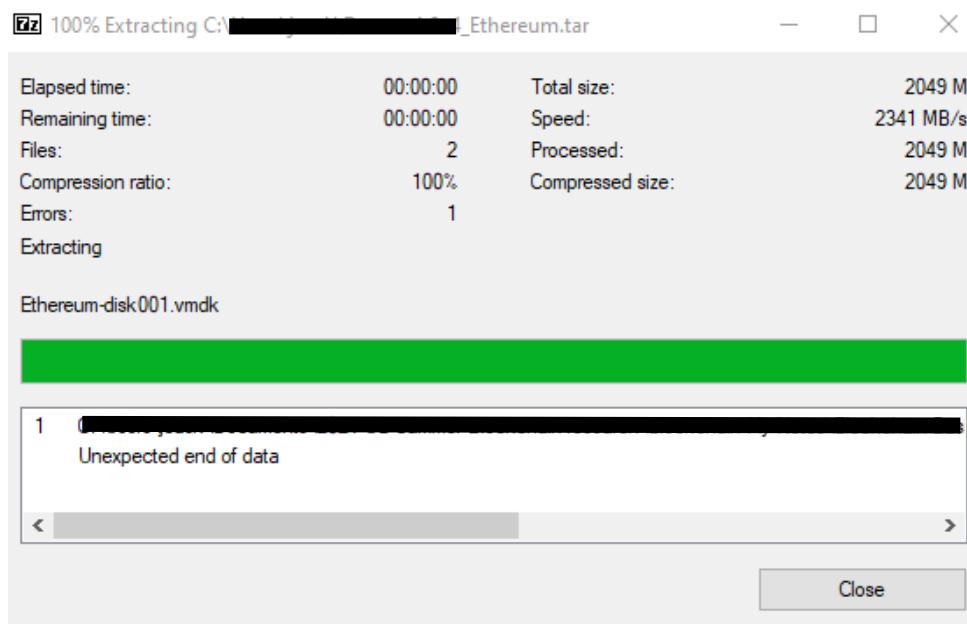
2. Open 7-zip and navigate to where the .tar file is stored.



3. Select the file and click **Extract** (the blue minus sign). A new window will pop up:



4. Click **OK**.
5. When the green bar is full, click **Close**.



6. There should now be a folder next to the .tar file of the same name.

Name	Date modified	Type	Size
2vYOIVYkEei6-Q5oMlIdTA_db109ab05624...	7/17/2021 2:58 PM	File folder	
2vYOIVYkEei6-Q5oMlIdTA_db109ab05624...	6/10/2021 1:38 PM	TAR File	2,098,251 KB

7. Enter it, and you should see two files.

Name	Date modified	Type	Size
Ethereum.ovf	5/12/2018 5:19 AM	Open Virtualizatio...	11 KB
Ethereum-disk001.vmdk	5/12/2018 5:19 AM	Virtual Machine Di...	2,098,239 KB

8. For the later steps of this project while importing to VirtualBox, you'll select the **Ethereum.ovf** file.

Mac:

1. The **Ethereum.ova** file should be downloaded and stored in an OVA format. This is what you will use for importing to VirtualBox.

Importing the Virtual Machine

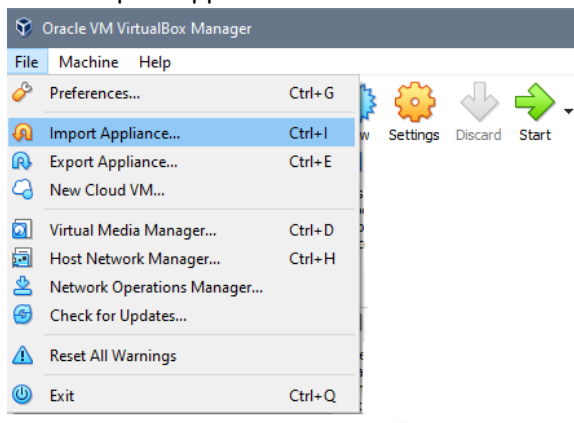
Now that the .tar file is extracted, we'll move on to installing [VirtualBox](https://www.virtualbox.org/wiki/Downloads). This **.ovf/.ova** file contains the guest Ubuntu (Linux) operating system with all the installations necessary to run a full Ethereum Node (along with the .vmdk file).

VirtualBox will create a Virtual Machine instance, separate from your computer, to run the Node.

1. Download VirtualBox from this link:
<https://www.virtualbox.org/wiki/Downloads>
 - a. **Windows users** – Open the download file as an Administrator to install, otherwise the virtual machine may not connect to the Internet.

Next, you will need to install **Ethereum.ovf** (Windows) or **Ethereum.ova** (Mac) into VirtualBox.

2. Open VirtualBox
3. File -> Import Appliance



4. Select **Ethereum.ovf** (Windows) or **Ethereum.ova** (Mac) and click **Next**.

Import Virtual Appliance

Appliance to import

Please choose the source to import appliance from. This can be a local file system to import OVF archive or one of known cloud service providers to import cloud VM from.

Source: Local File System

Please choose a file to import the virtual appliance from. VirtualBox currently supports importing appliances saved in the Open Virtualization Format (OVF). To continue, select the file to import below.

File: Ethereum.ovf

5. Change the **MAC Address Policy** to “Generate new MAC addresses for all network adapters”

Import Virtual Appliance

Appliance settings

These are the virtual machines contained in the appliance and the suggested settings of the imported VirtualBox machines. You can change many of the properties shown by double-clicking on the items and disable others using the check boxes below.

Virtual System 1	
Name	Ethereum 3
Guest OS Type	Ubuntu (64-bit)
CPU	2
RAM	4096 MB
DVD	<input checked="" type="checkbox"/>
USB Controller	<input checked="" type="checkbox"/>
Sound Card	<input checked="" type="checkbox"/> ICH AC97
Network Adapter	<input checked="" type="checkbox"/> Intel PRO/1000 MT Desktop (82540EM)
Storage Controller (IDE)	PIIX4
Storage Controller (IDE)	PIIX4
Storage Controller (SATA)	AHCI
Virtual Disk Image	Ethereum-disk001.vmdk
Base Folder	C:\[redacted]\[redacted]
Primary Group	/

Machine Base Folder: C:\[redacted]

MAC Address Policy: Include only NAT network adapter MAC addresses

Additional Options: Include only NAT network adapter MAC addresses

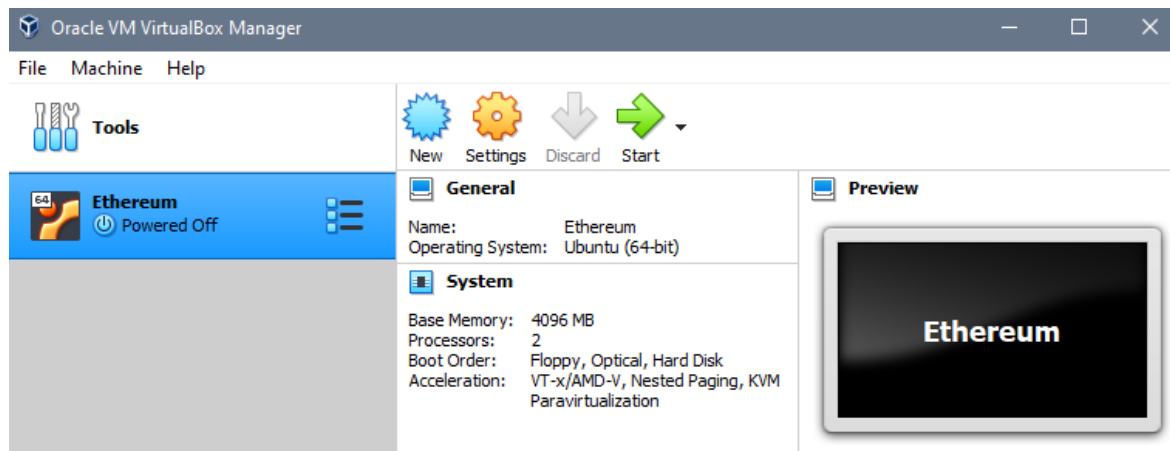
Appliance is not signed: Generate new MAC addresses for all network adapters

Generate new MAC addresses for all network adapters during importing.

Restore Defaults Import Cancel

6. Click **Import**.

This imports the Ethereum Ubuntu appliance into VirtualBox.

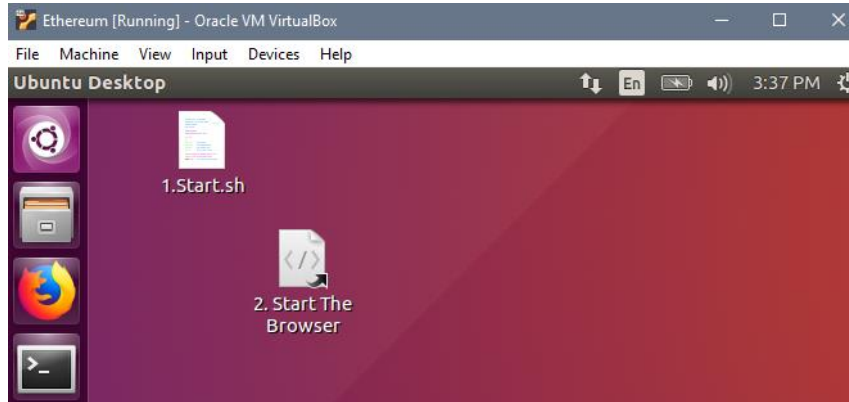


Running the Virtual Machine

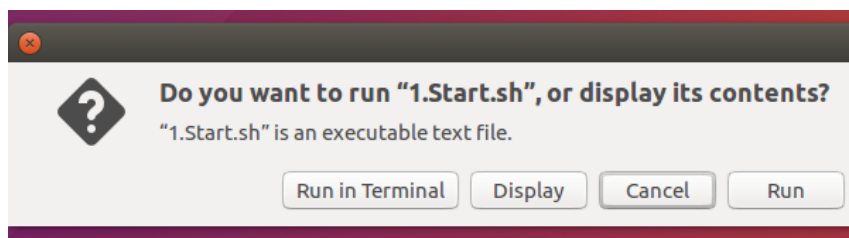
1. Select the VM you've imported and click the green **Start** arrow.
2. Password: **ubuntu**

Starting the Project

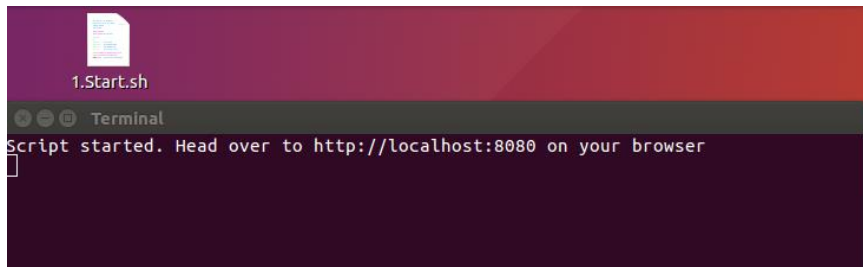
1. Once the VM is running, double click the file named "1.Start.sh"



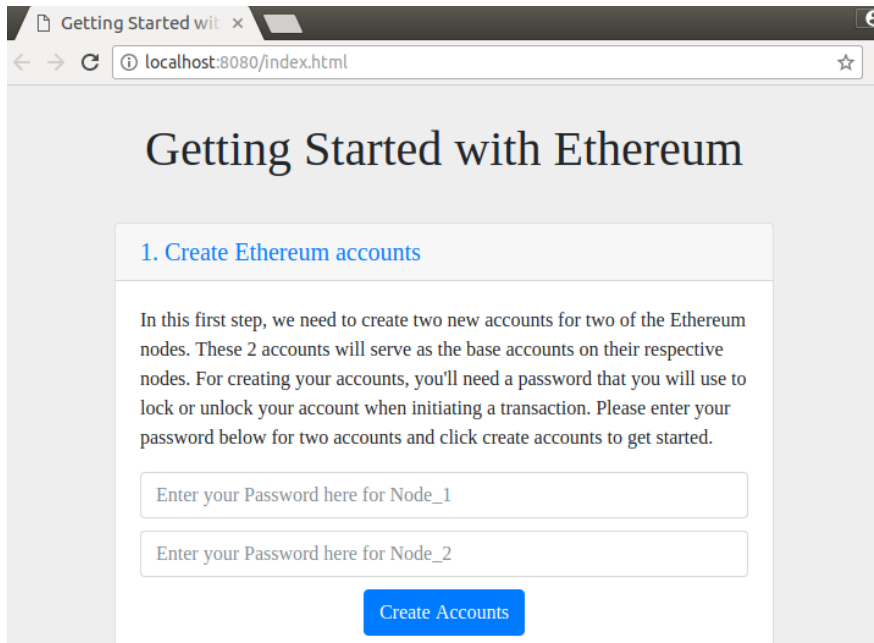
2. Select **Run in Terminal**



Note: This will start the terminal in a few seconds. **Do not** close the terminal until the end of the exercise.



3. Minimize the terminal. (Do not close it)
4. Double click the shortcut file named "2. Start the Browser"



You are now ready to proceed with the project!