

COE768 Environment Setup Manual

Requirements

- **Operating System:** Windows 10 Home/Pro
- **Memory:** 12-16GB (recommended)
- **Free Space:** 60GB (at least)

Enable Virtualization and Install VirtualBox

Follow the steps in the video to do the following:

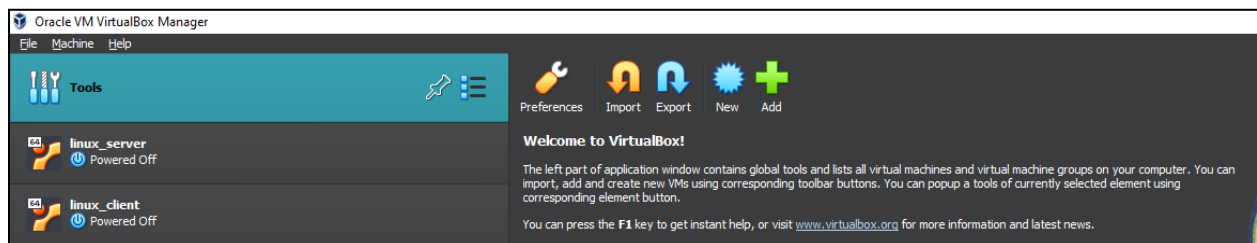
▶ How to use VirtualBox - Tutorial for Beginners

- ☐ Enable virtualization in motherboard BIOS. (needed to install virtualbox)
- ☐ Install the VirtualBox software. Oracle VirtualBox is the software that lets us replicate the lab environment.
- ☐ Download the Ubuntu ISO

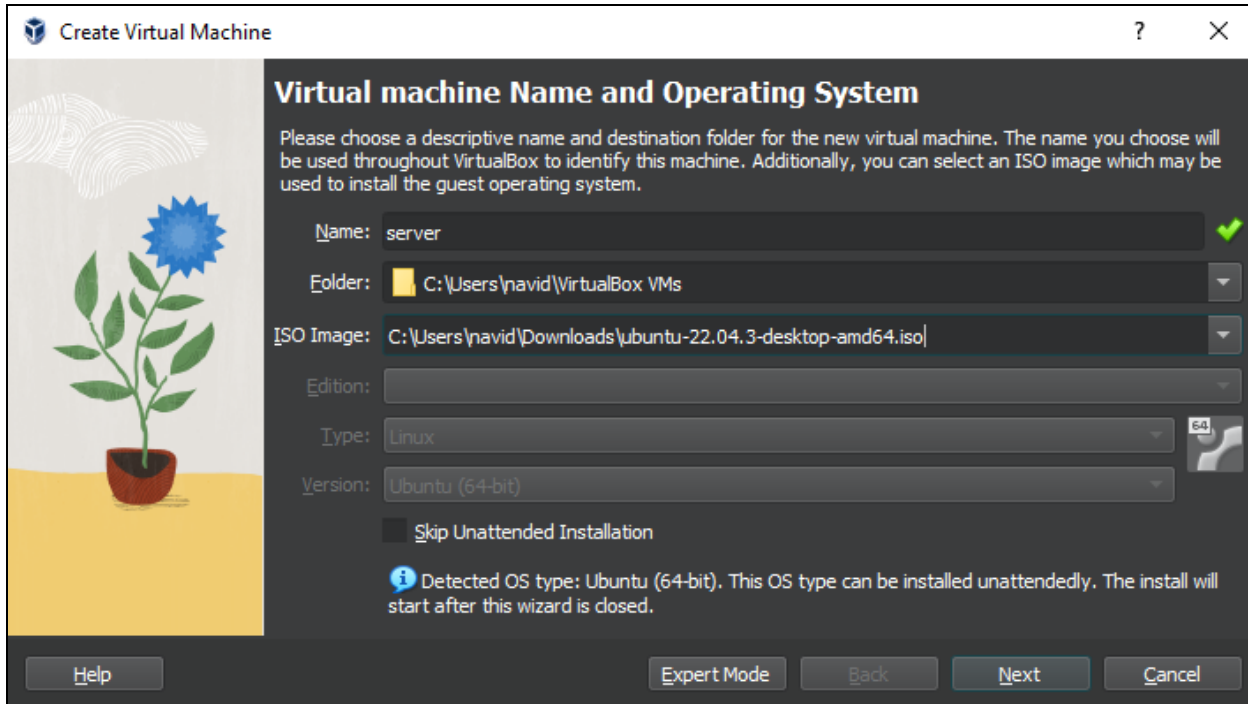
IMPORTANT: Do not create any virtual machines as was done in the video. We don't need them for our project. Although it is good to watch the steps in the video become familiar with the process of creating a virtual machine.

Create a Client and Server VM

- ☐ Launch the Oracle **VirtualBox** application
- ☐ In the welcome screen. Select **New** in the right panel.



- ☐ Name the virtual machine **server**.
- ☐ Allocate a folder in your storage (choose a storage location that has at least 60 GB). Select a clean directory under that storage location for the **Folder** field.
- ☐ Then select the path to the Ubuntu ISO you downloaded previously for the **ISO Image** field.
- ☐ Click **Next**



Create Virtual Machine

Virtual machine Name and Operating System

Please choose a descriptive name and destination folder for the new virtual machine. The name you choose will be used throughout VirtualBox to identify this machine. Additionally, you can select an ISO image which may be used to install the guest operating system.

Name: ✓

Folder:

ISO Image:

Edition:

Type: 64

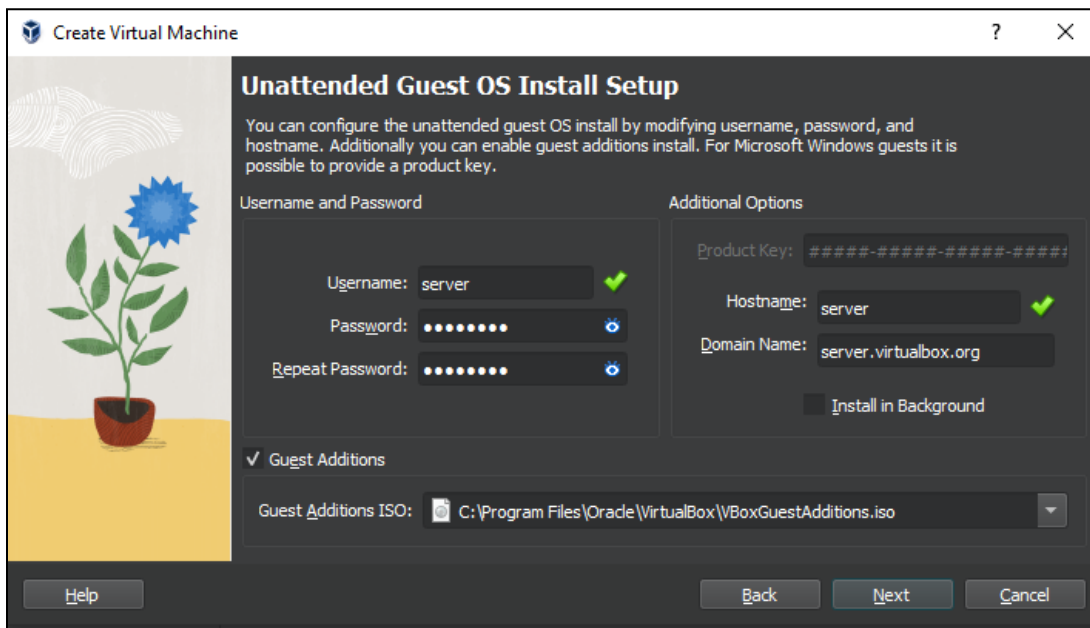
Version:

☐ Skip Unattended Installation

Detected OS type: Ubuntu (64-bit). This OS type can be installed unattendedly. The install will start after this wizard is closed.

Help Expert Mode Back Next Cancel

- ☐ **username** = *server*
- ☐ **hostname** = *server*
- ☐ **domain name** = *server.virtualbox.org*
- ☐ Set the password to something simple
- ☐ Check the **Guest Additions** checkbox
- ☐ Click **Next**



Create Virtual Machine

Unattended Guest OS Install Setup

You can configure the unattended guest OS install by modifying username, password, and hostname. Additionally you can enable guest additions install. For Microsoft Windows guests it is possible to provide a product key.

Username and Password Additional Options

Username: ✓

Password: ✓

Repeat Password: ✓

Product Key:

Hostname: ✓

Domain Name:

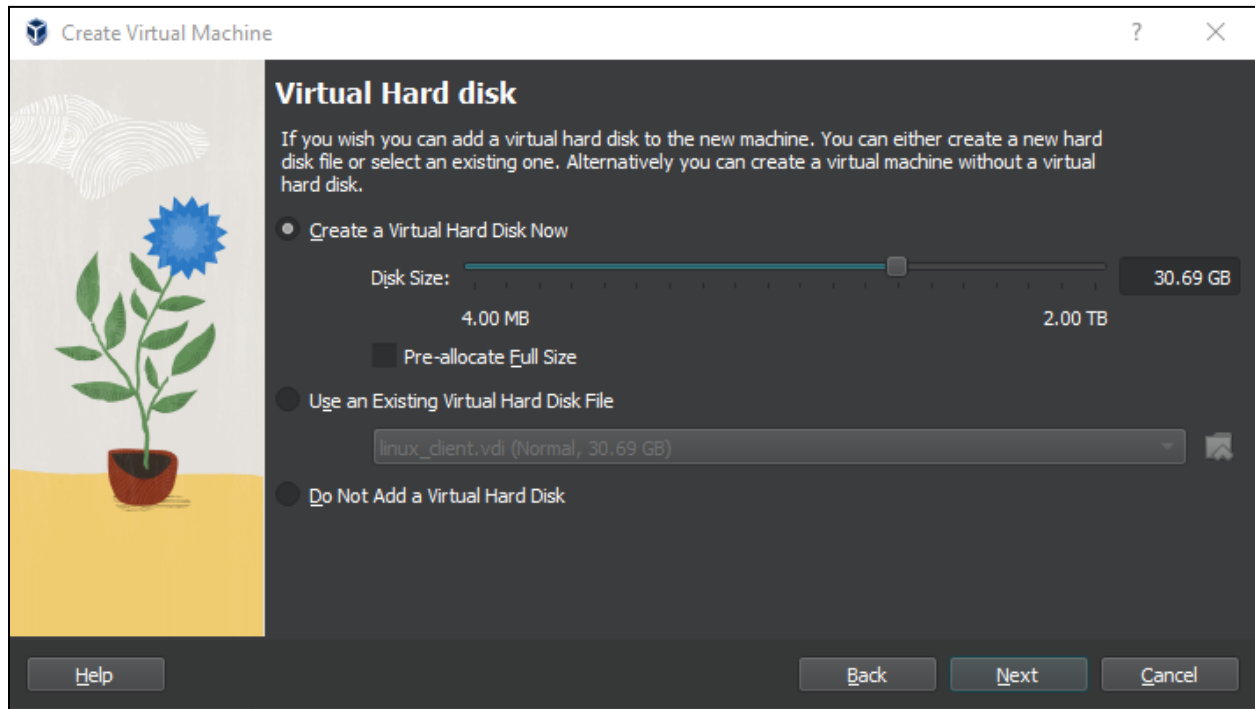
☐ Install in Background

✓ Guest Additions

Guest Additions ISO:

Help Back Next Cancel

- ☐ **Base memory** = 4096MB
- ☐ **Processors** = 4
- ☐ Click **Next**
- ☐ Select 30GB for **Virtual Hard Disk**
- ☐ Click **Next**, then **Finish**.



Create Virtual Machine

Virtual Hard disk

If you wish you can add a virtual hard disk to the new machine. You can either create a new hard disk file or select an existing one. Alternatively you can create a virtual machine without a virtual hard disk.

☒ **Create a Virtual Hard Disk Now**

Disk Size:
30.69 GB

4.00 MB 2.00 TB

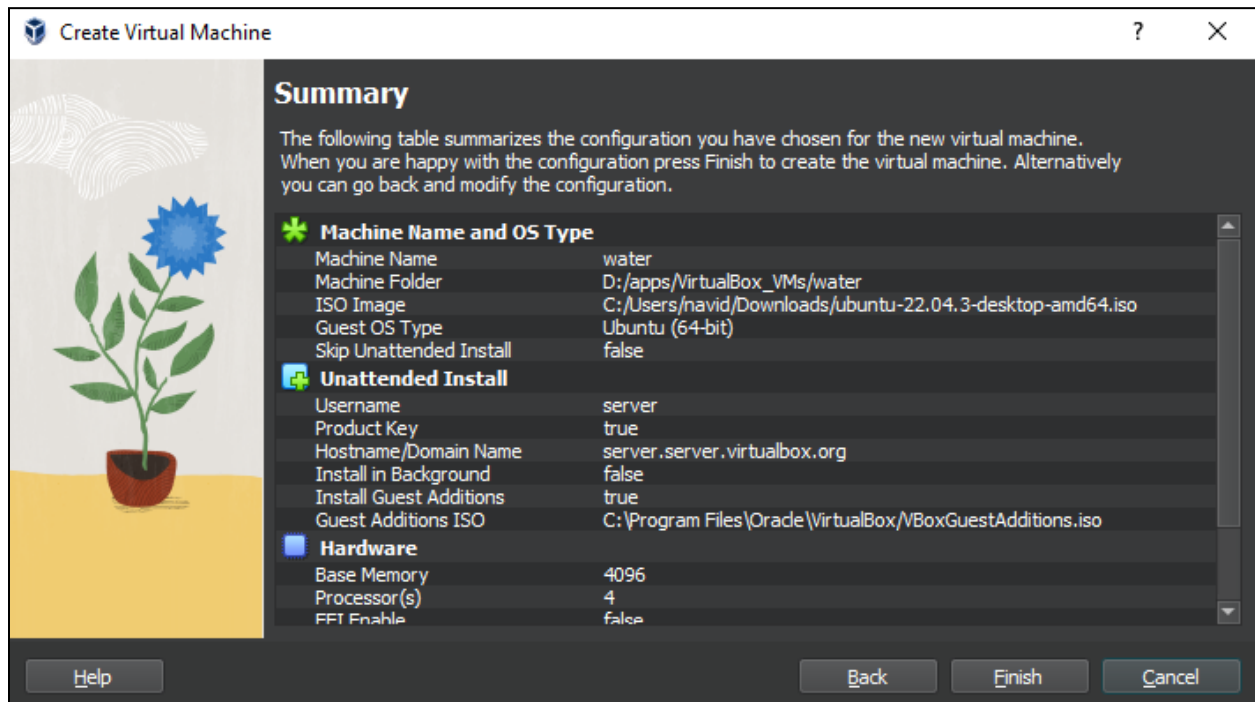
☒ Pre-allocate **Full Size**

☐ **Use an Existing Virtual Hard Disk File**

linux_client.vdi (Normal, 30.69 GB)

☐ **Do Not Add a Virtual Hard Disk**

[Help](#) [Back](#) [Next](#) [Cancel](#)



Create Virtual Machine

Summary

The following table summarizes the configuration you have chosen for the new virtual machine. When you are happy with the configuration press Finish to create the virtual machine. Alternatively you can go back and modify the configuration.

Machine Name and OS Type	
Machine Name	water
Machine Folder	D:/apps/VirtualBox_VMs/water
ISO Image	C:/Users/nauid/Downloads/ubuntu-22.04.3-desktop-amd64.iso
Guest OS Type	Ubuntu (64-bit)
Skip Unattended Install	false
Unattended Install	
Username	server
Product Key	true
Hostname/Domain Name	server.server.virtualbox.org
Install in Background	false
Install Guest Additions	true
Guest Additions ISO	C:/Program Files/Oracle/VirtualBox/VBoxGuestAdditions.iso
Hardware	
Base Memory	4096
Processor(s)	4
EFI Enable	false

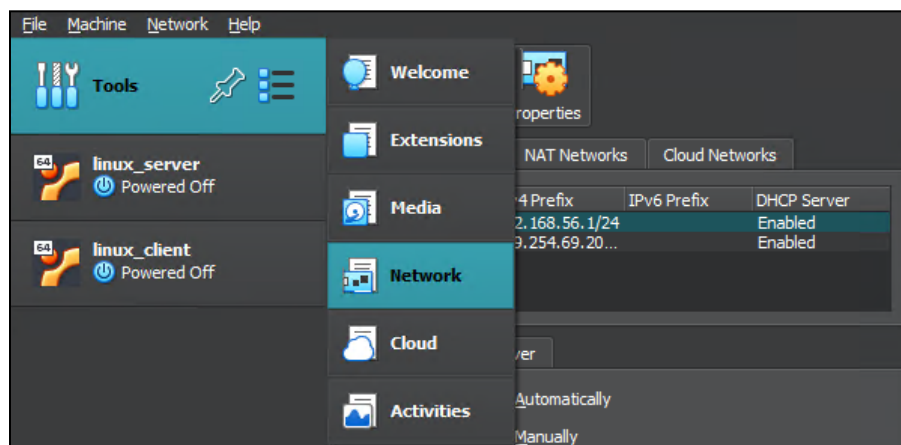
[Help](#) [Back](#) [Finish](#) [Cancel](#)

- ☐ Repeat all of the above steps except use **client** as the **name** of the VM and use the following in the **Unattended Guest OS Install Setup** page:

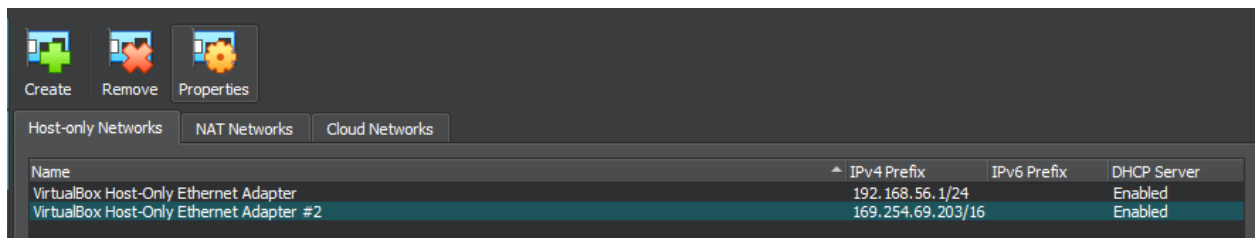
- ☐ **username** = *client*
- ☐ **hostname** = *client*
- ☐ **domain name** = *client.virtualbox.org*

Creating a Network Adapter

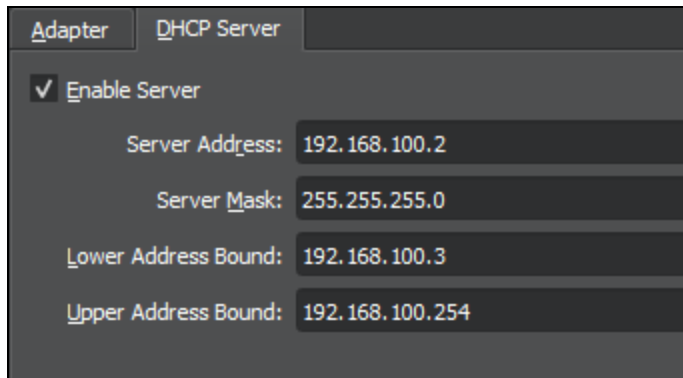
- ☐ In the Oracle VirtualBox application. Click on the checklist icon in the **Tools** section. Then select **Network** from the dropdown list.



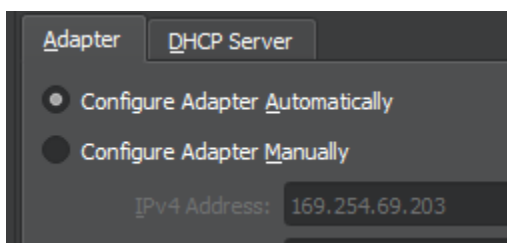
- ☐ Then click **create** in the network tools menu on the right panel. It should be called **VirtualBox Host-Only Ethernet Adapter #2**.



- ☐ To edit the configuration of this new adapter. Navigate to the **DHCP Server** tab, Check the **Enable Server** checkbox then set the parameters in the image below:

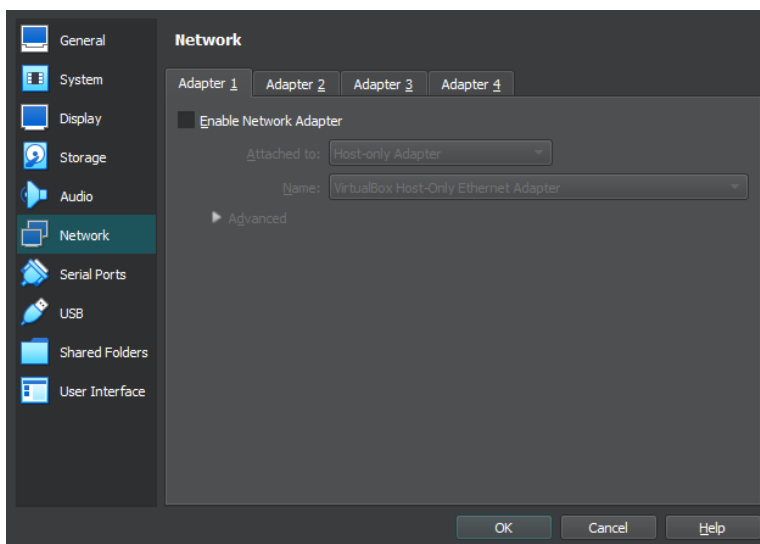


- ☐ Navigate back to the **Adapter** tab and select **Configure Adapter Automatically**.



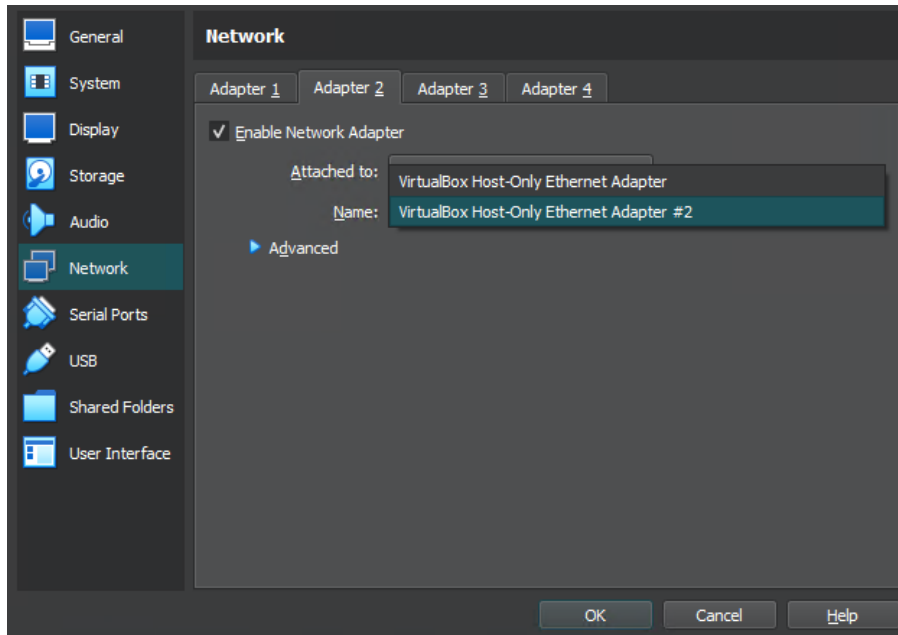
Assign the Network Adapter to both VMs

- ☐ In the Oracle VirtualBox application menu, navigate to the **server VM** and open the settings by right-clicking and finding **settings** from the dropdown menu.
- ☐ Next, click on the **Network** section. Uncheck the **Enable Network Adapter** for the **Adapter 1** tab.



- ☐ Then navigate to the **Adapter 2** tab and check the **Enable Network Adapter** checkbox.

- ☐ For the **Name** field in the adapter settings. Select the newly created **VirtualBox Host-Only Ethernet Adapter #2** from the dropdown options.

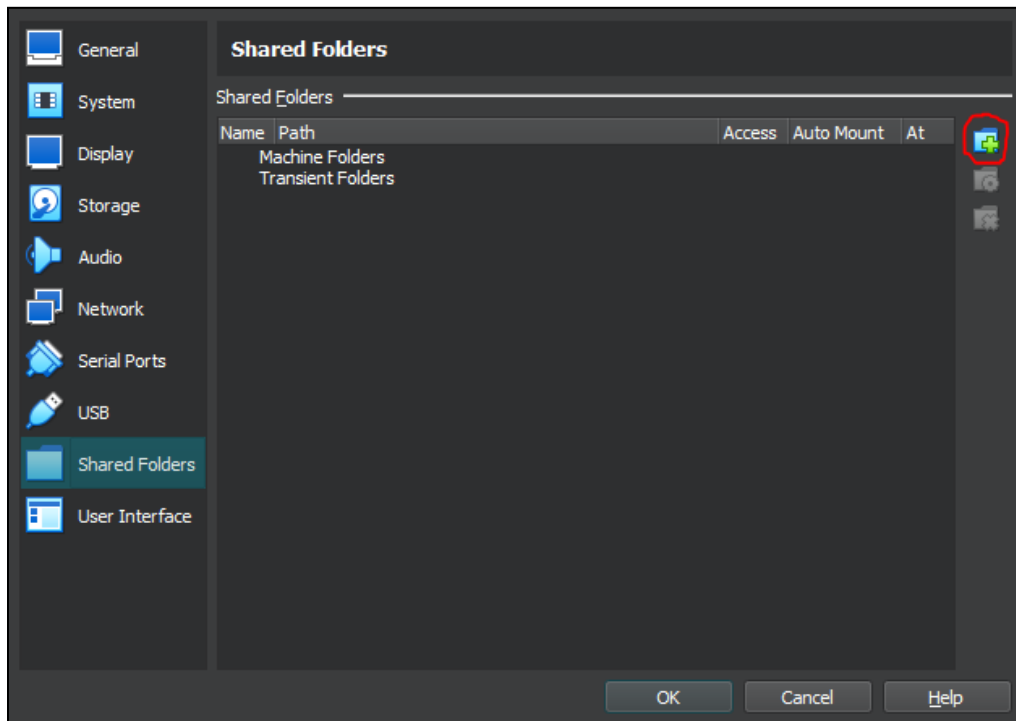


- ☐ Finally, click **OK**.
- ☐ Repeat the same steps for the **client VM**.

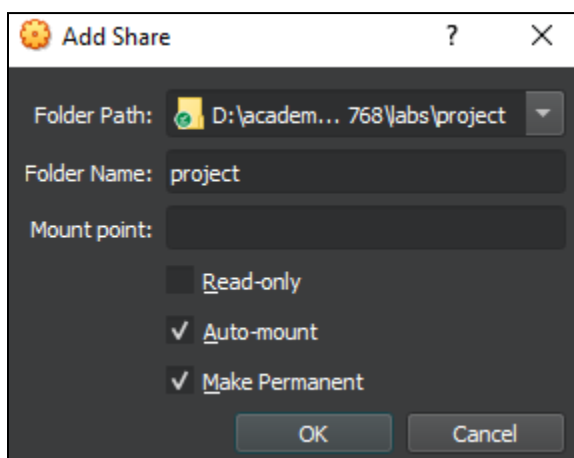
Launch and Setup the VMs

- ☐ From the Oracle VirtualBox home page **start the server virtual machine**.
- ☐ Wait for the initialization and boot up process to complete.
- ☐ For the Ubuntu installation process, skips the following steps:
 - ☐ Connect Your Online Accounts
 - ☐ Enable Ubuntu Pro
 - ☐ Help improve Ubuntu
 - ☐ Select - No, don't send system info
 - ☐ Privacy
- ☐ Open a new **terminal** window and run the following commands
 - ☐ su -
 - ☐ *Enter the admin password*
 - ☐ sudo apt update
 - ☐ sudo apt upgrade
 - ☐ sudo apt install wireshark
 - ☐ sudo apt install net-tools
- ☐ Repeat the above steps with the client VM
- ☐ There may be problems with copying files from your computer into the VM.

- ☐ Enable **Shared Clipboard** from the top toolbar of the VirtualBox window by going to **Devices>Shared Clipboard>Bidirectional**.
- ☐ Enable **Drag and Drop** from the top toolbar of the VirtualBox window by going to **Devices>Drag and Drop>Bidirectional**.
- ☐ Start your virtual machine select **Shared Folders** from the top toolbar of the VirtualBox window.
- ☐ Add a new shared folder by clicking the plus icon as indicated below.



- ☐ Select the **path** to the folder you would like to access from your host PC.
- ☐ Give your shared folder a **name**.
- ☐ Check the boxes Auto-mount and Make Permanent.



- ☐ Click **OK**.

- ☐ You should now be able to access the folder in the folder application.
- ☐ Finally, run a test program from the working and finished code of one of the coe768 labs.