

## Lab 4b – Configuring VMWare WorkStation 15 and installing Ubuntu Desktop as a New Virtual Machine

This assignment relates to the following Course Learning Requirements:

- CLR 2: Explain clearly and access the information and resources contained in Brightspace.
- CLR 5: Describe the architecture and processing of hardware and software functional components of a computer.
- CLR 8: Install and configure an operating system in a virtual environment using VMWare.

### Objective of this Assignment:

- Configuring your VMWare WorkStation 15 ready for installing Ubuntu Desktop as a new Linux Virtual machine. This involves making sure that your computer is ready for a virtual machine.
- Downloading and Installing Ubuntu Desktop.
- Ubuntu Desktop will be required in the future semesters for Algonquin College online courses to run Linux.

### Pre-Assignment Instructions:

You will require the followings:

- Laptop running Microsoft Windows 10.x.
- Network Connection to Internet and sufficient download Bandwidth.
- VMWare Workstation already installed.

### Assignment Tasks:


 Follow the steps described below.

#### Procedure outlined:

Lab 4b has two parts:

1. Part 4b-1: Preparing your Computer and configuring VMWare WorkStation 15.
2. Part 4b-2: Downloading and Installing Ubuntu Desktop as a Linux virtual machine.

The following instructions will guide you through the downloading and installation process for Ubuntu Desktop as a Linux Virtual Machine.

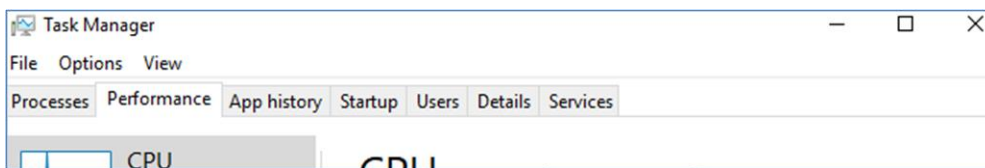
 *Note: The steps and screen captures shown in this lab may be slightly different from your screen.*

## Preparing your Computer for Linux Virtual Machine

### Step A: Ensuring that CPU's Virtualization is Turned On

Before starting this lab, you must ensure that the CPU's Virtualization is turned on for your computer. To find out whether virtualization is turned on follow the steps below:

1. Press the CTRL-ALT-DEL keys at the same time and then select the Task Manager
2. Click on the **Performance** tab



3. On the bottom right hand side of the screen, you will see the if the virtualization is enabled or disabled.

If Virtualization is disabled, you will see something similar to the screen captured below:

Maximum speed:	3.30 GHz
Sockets:	1
Cores:	4
Logical processors:	4
Virtualization:	Disabled
Hyper-V support:	Yes
L1 cache:	256 KB
L2 cache:	1.0 MB
L3 cache:	6.0 MB

4. If the CPU virtualization is disabled, you will have to restart your computer and enter your computers' BIOS settings to enable Virtualization.
5. If you do not know how to enter BIOS settings and modify any option you will have to find your computer's owner's/user's manual. The manual will guide you to configure that.
  - Suppose you are looking for the owner's manual for Dell Latitude E7240.
  - (Google) search using your computer's make and model.
  - Select an authentic link from your computer's manufacturer (like the one below) to download the owner's manual.

### Support for Latitude E7240 Ultrabook | Overview | Dell US

<https://www.dell.com> > [product](#) > [latitude-e7240-ultrabook](#) > [manuals](#) ▼

Jump to **Manuals and Documents** - Manuals, documents, and other information for your product are included in this section. Bahasa Indonesia, Češky ...

🔗 You may find other useful documents at the same page:

### Manuals and Documents

Manuals, documents, and other information for your product are included in this section. English ▾

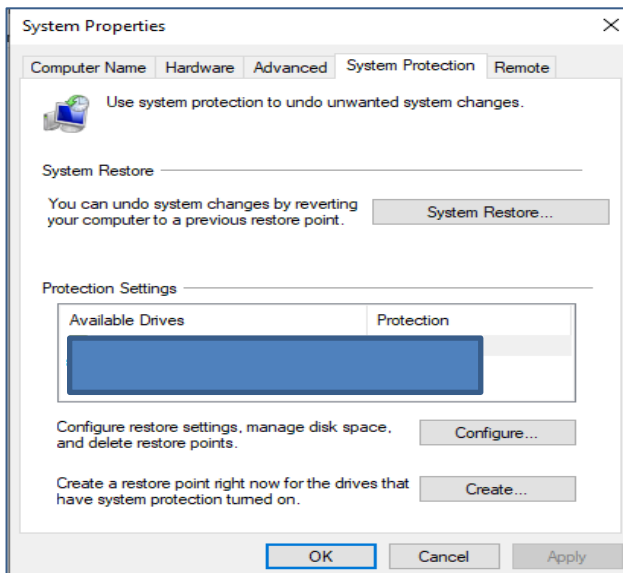
- Dell Latitude E7240 Owner's Manual 📄 View PDF 📄 View Page ▾
- Dell Latitude E7240/E7440Series Setup and Features Information 📄 View PDF 📄 View Page ▾
- Dell ControlVault Installation Instructions for the ControlVault Update 📄 View PDF ▾
- Statement Of Volatility 📄 View PDF ▾

6. If your CPU virtualization is enabled, **take a screen shot of Task Manager>Performance tab**. Next, you may proceed to Step-B.

### Step B: Creating a Restore Point to make sure that you may restore your computer if something is messed up.

Before downloading and installing Linux, you should create a system restore point. To set a restore point:

1. click on the **start** button, -> **control panel**, -> **system**, -> **system protection**, -> **create**.

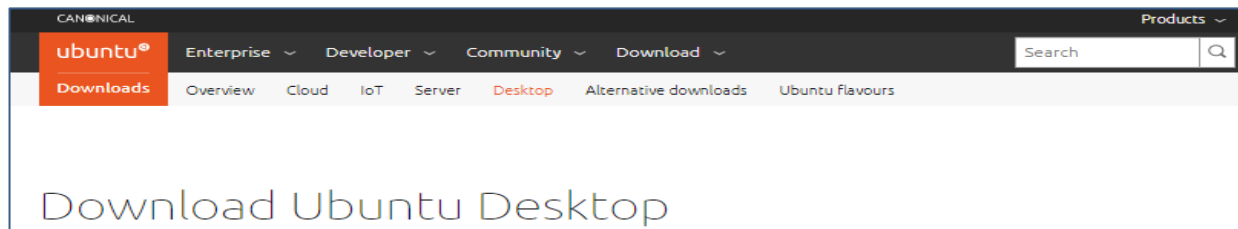


2. You will be prompted for a name of a restore point.
  - a. Enter a name for the restore point such as **Before Linux Installation** and
  - b. click the **create** button.
  - c. Once completed **take a screen shot and submit with your deliverable**.

🔗 **Now you are ready for Downloading and Installing Ubuntu Desktop**

## Preparing your Computer: Selecting and Downloading

1. After creating a restore point, start your favorite web browser and go to <https://www.ubuntu.com>
2. Once the Ubuntu home page has loaded, select the desktop option from the menu bar located on the top of the page.



3. In this page you will find Ubuntu Desktop 18.04.3 LTS.

### Ubuntu 18.04.3 LTS

Download the latest **LTS** version of Ubuntu, for desktop PCs and laptops. LTS stands for long-term support — which means five years, until April 2023, of free security and maintenance updates, guaranteed.

[Ubuntu 18.04 LTS release notes](#)

Recommended system requirements:

- 2 GHz dual core processor or better
- 4 GB system memory
- 25 GB of free hard drive space
- Either a DVD drive or a USB port for the installer media
- Internet access is helpful

[Download](#)

For other versions of Ubuntu Desktop including torrents, the network installer, a list of local mirrors, and past releases see our [alternative downloads](#).

4. Many people prefer to install some popular older version like 16.04.6 LTS. You may simply click “Alternative Downloads” or search for “16.04.6 LTS Desktop” within ubuntu website (top right corner). You will be redirected to the page <http://releases.ubuntu.com/xenial/>.
5. Here you may download both the desktop version and the server version. In this example case we wish to download the “64-bit PC (AMD64) desktop image.

## Ubuntu 16.04.6 LTS (Xenial Xerus)

### Select an image

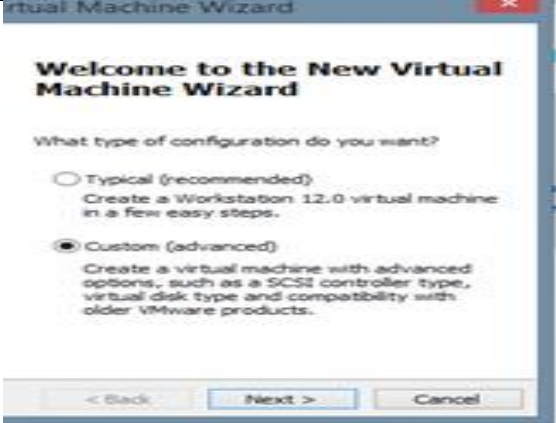
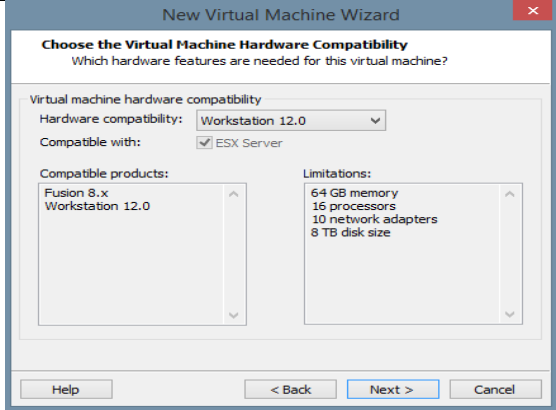
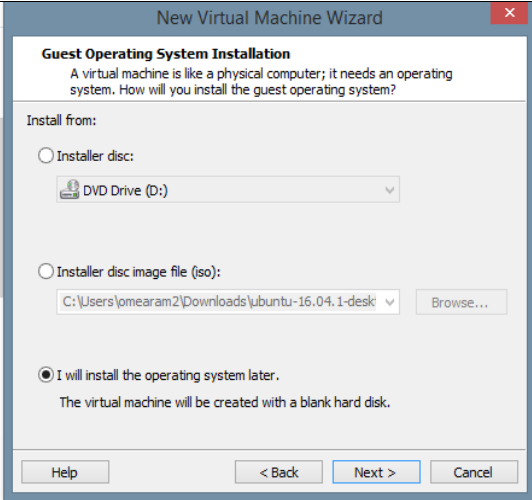
Ubuntu is distributed on two types of images described below.

<h4>Desktop image</h4> <p>The desktop image allows you to try Ubuntu without changing your computer at all, and at your option to install it permanently later. This type of image is what most people will want to use. You will need at least 384MiB of RAM to install from this image.</p>	<h4>64-bit PC (AMD64) desktop image</h4> <p>Choose this if you have a computer based on the AMD64 or EM64T architecture (e.g., Athlon64, Opteron, EM64T Xeon, Core 2). If you have a non-64-bit processor made by AMD, or if you need full support for 32-bit code, use the i386 images instead. Choose this if you are at all unsure.</p> <h4>32-bit PC (i386) desktop image</h4> <p>For almost all PCs. This includes most machines with Intel/AMD/etc type processors and almost all computers that run Microsoft Windows, as well as newer Apple Macintosh systems based on Intel processors.</p>
---	---

6. You will be prompted to save the installation file on your hard drive. You may save it in your downloads folder.

## Instructions for Creating a Virtual Machine for Linux

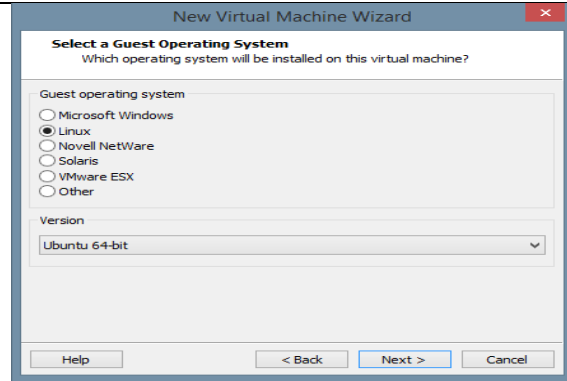
- ☞ Following example elaborates the installation of **UBUNTU 16.04.6 LTS** on **VMWare Workstation 15** (ref: daytime on campus course).
- ☞ If you choose to install **Ubuntu Desktop 18.04.3 LTS**, you'll follow a similar procedure.

<ol style="list-style-type: none"> <li>1. Select <b>File -&gt;New Virtual Machine</b> →The new Virtual Machine Wizard appears.</li> <li>2. Select <b>Custom (advanced)</b> --&gt; then click the <b>Next</b> button.</li> </ol>	
<ol style="list-style-type: none"> <li>3. In the “Choose the Virtual Machine Hardware Compatibility” Window. Keep the default settings for <b>Virtual machine hardware compatibility</b> --&gt; Click the <b>Next</b> button.</li> </ol>	
<ol style="list-style-type: none"> <li>4. In Guest Operating System Installation Window, Select <b>I will install the operating system later</b> radio button.</li> </ol>	

5. In the Select a Guest Operating System window, Select the **Linux** radio button from the **Guest Operating System** selection list.

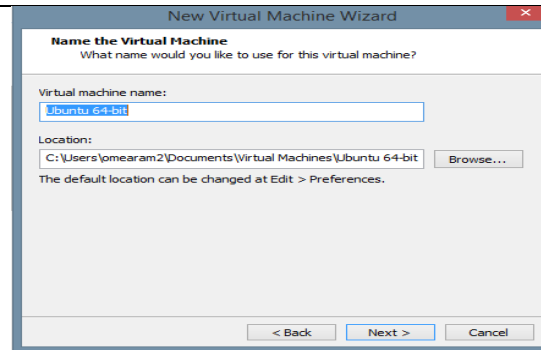
6. Select **Ubuntu 64-bit** from the **Version** selection list.

👉 Take a screen shot

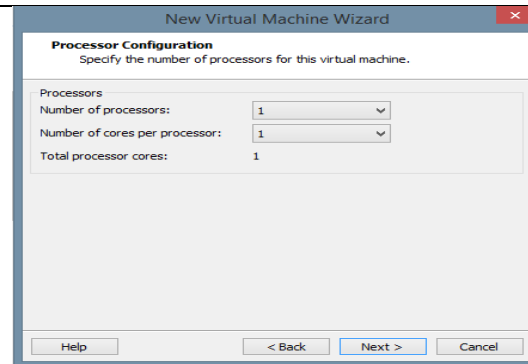


7. In the Name the Virtual Machine window, write **Ubuntu 16.04.04** as the name of the virtual machine and accept the default location on your hard drive.

8. Click the **Next** button

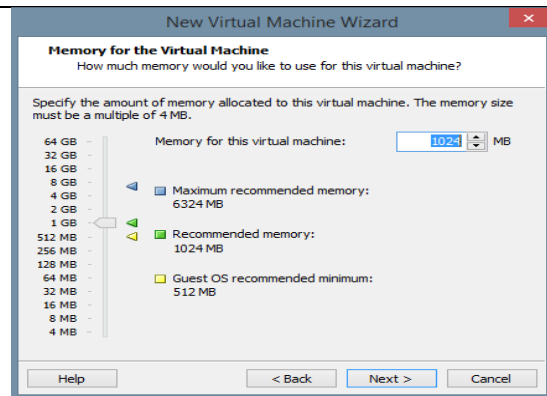


b) In the Processor Configuration Window, keep the default values. Click **Next**

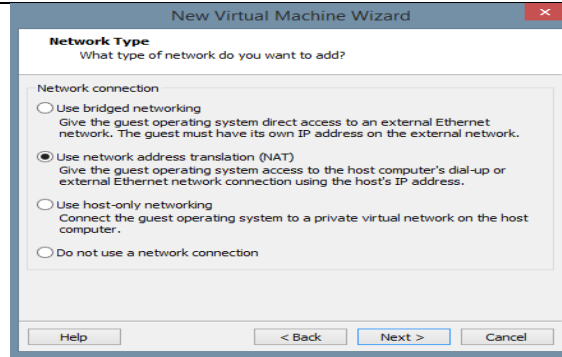


9. In the Memory for the Virtual Machine window, specify **2048 MB** as the memory for the virtual machine, Click **Next**.

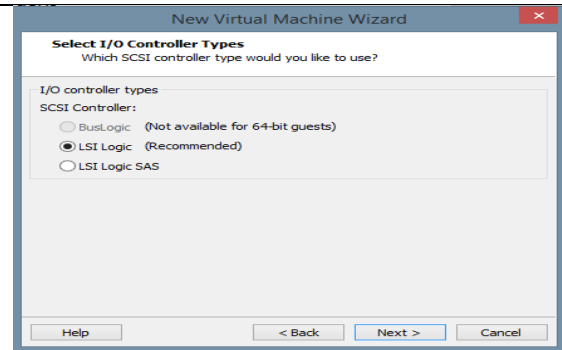
👉 Take a screen shot



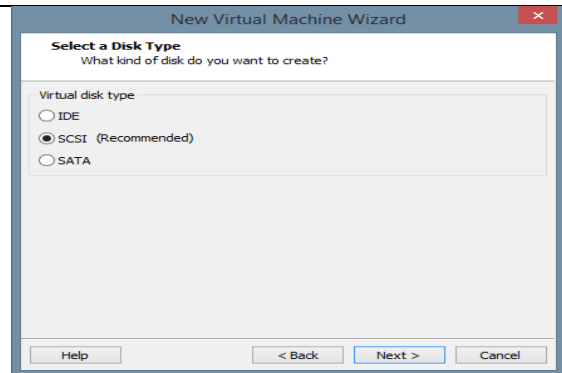
10. In the Network Type window, keep the default settings. Click **Next**.



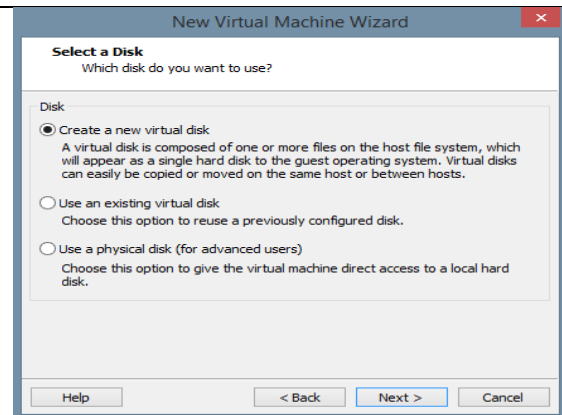
11. In the Select I/O Controller Type window, keep the default settings. Click **Next**



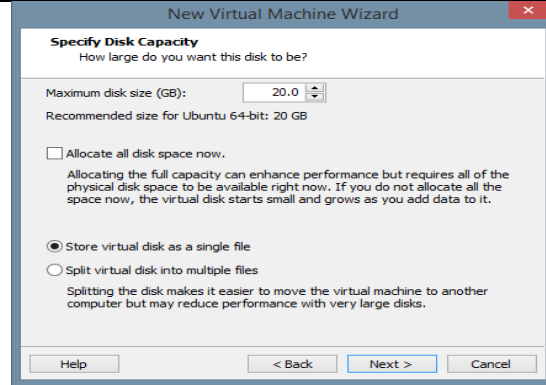
12. In the Select a Disk Type window, keep the default settings. Click **Next**



13. In the Select a Disk window, ensure the **Create a new virtual disk** radio button is selected.  
 📷 **Take a screen shot.**

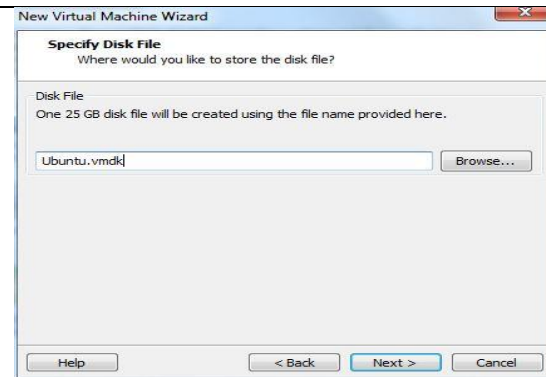


14. In the Specify Disk Capacity window, set the **Maximum disk size (GB)** field to **20.0 GB** and **Store virtual disk as a single file**. Click **Next**.



15. In the Specify Disk File window, keep the default settings.

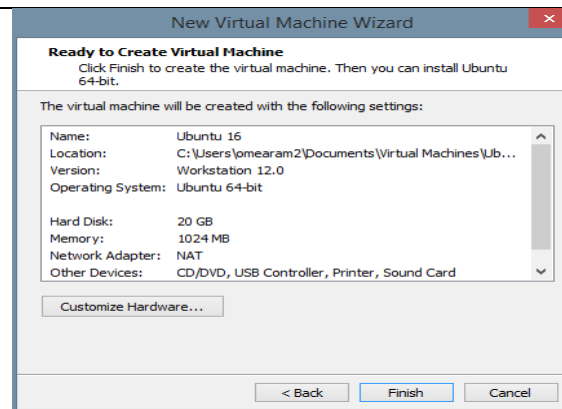
16. Click **Next**.



17. In the Ready to Create Virtual Machine window, verify the information in the table is correct and if so, click the **Finish** button.

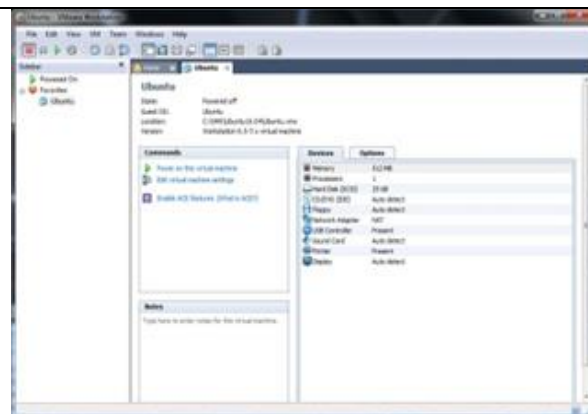
18. Otherwise, click the **Back** button and make corrections.

 **Take one screen shot**



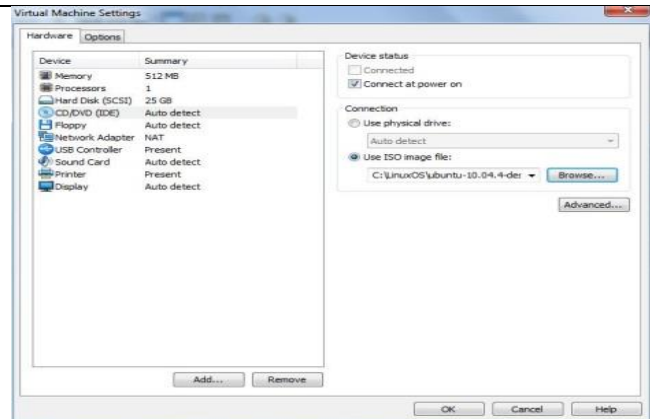
19. The summary page for the Ubuntu virtual machine is now visible.

 **Take one screen shot**



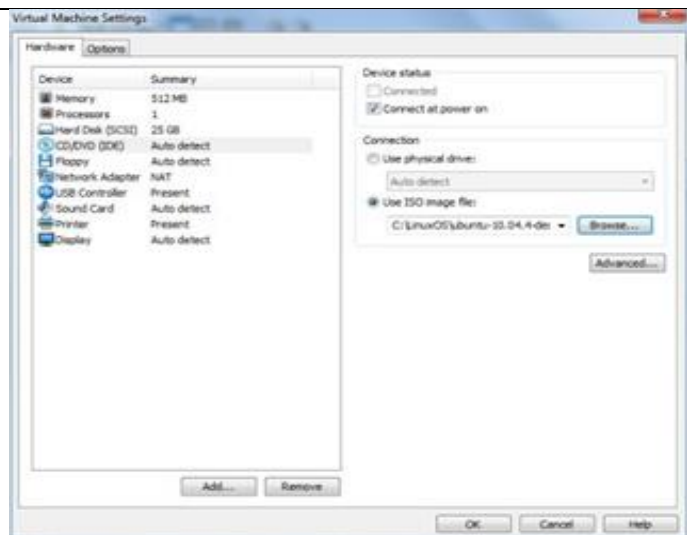
## Mounting the Ubuntu image file

1. Mount the ISO image to the Ubuntu virtual machine.
2. From the summary page, double click on the **CD/DVD** device. This brings up the **Virtual Machine Settings** dialog.



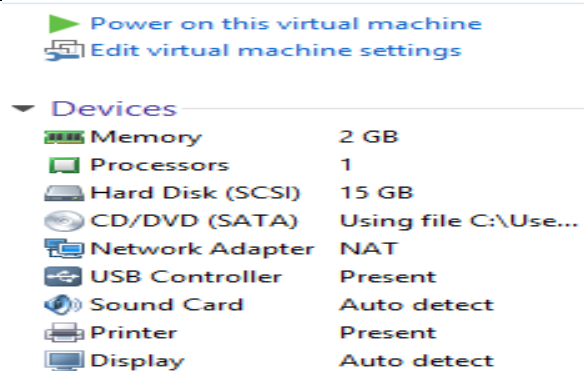
3. In the Virtual Machine Settings dialog box, under the **Connection**, select the **Use ISO image file** radio button and browse to the location of the Ubuntu.iso file.
4. Click **OK**.

👉 Take one screen shot

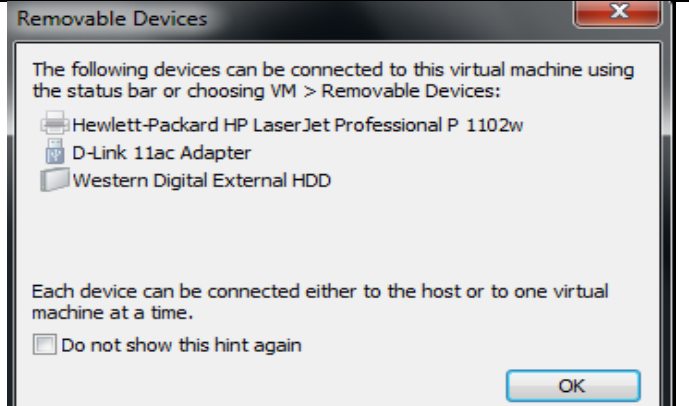


## Starting the Ubuntu Virtual Machine

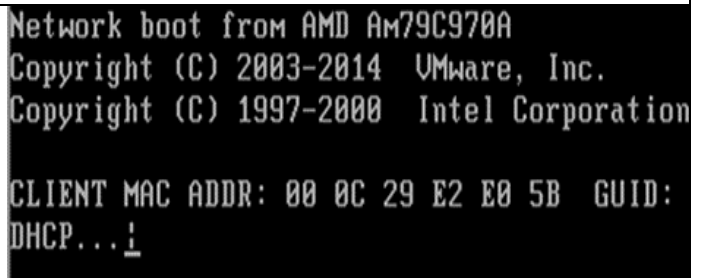
1. Now Ubuntu takes you back to the **Summary** page again. Click **On power on this virtual machine** to turn on the virtual machine.
2. If a pop-up window emerges about the "keyboard hook timeout", click **OK**.



**Note:** If you see a page listing your removable devices, Click the check box that says: Do not show this hint again and click the **OK** button.



**Note:** If you get a black screen, similar to the one the right, with a slash that is just spinning. This means VMWare Workstation did not find the Ubuntu file.

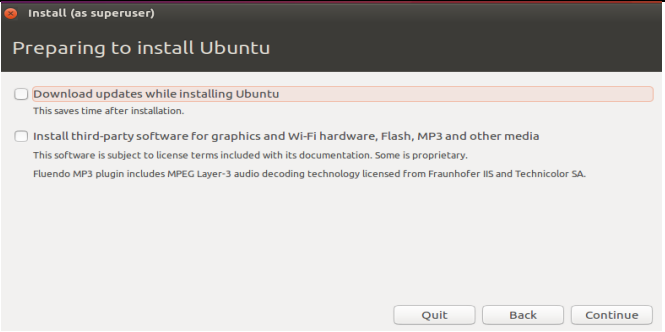
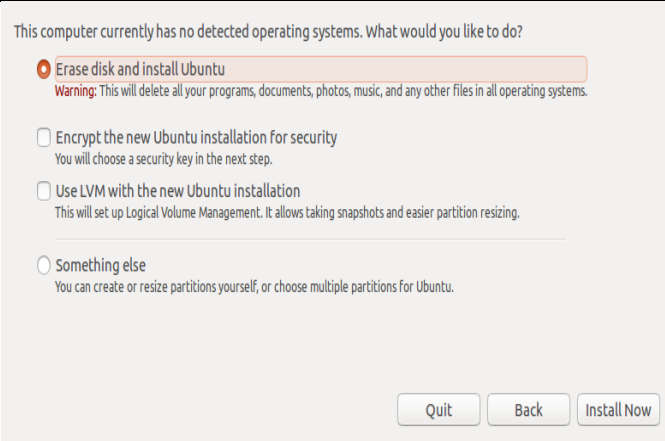

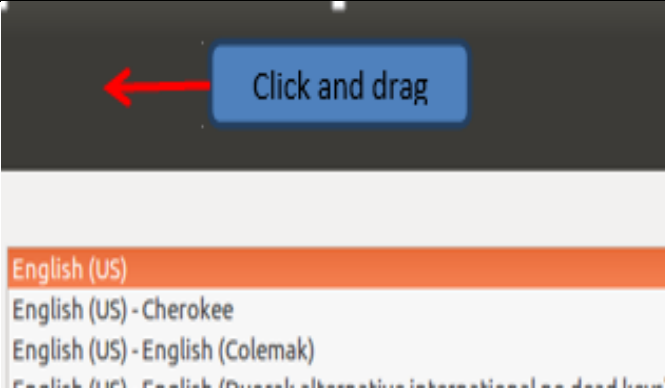


In your VM machine menu bar, click on the **VM** tab and choose Power. Click the **Power off** button to shut off your virtual machine.

Go back to the **summary** page and under **connection** and select **Use ISO image** file again. Click the browse button and locate your Ubuntu ISO image files and click **OK**.


1. In the **Ubuntu** tab, go to the **Commands** section and click on **Power on this virtual machine**. If a pop-up window appears about the "keyboard hook timeout", click **OK**.
2. In the **Welcome** page, select English as the language and click on the **Install Ubuntu** button.

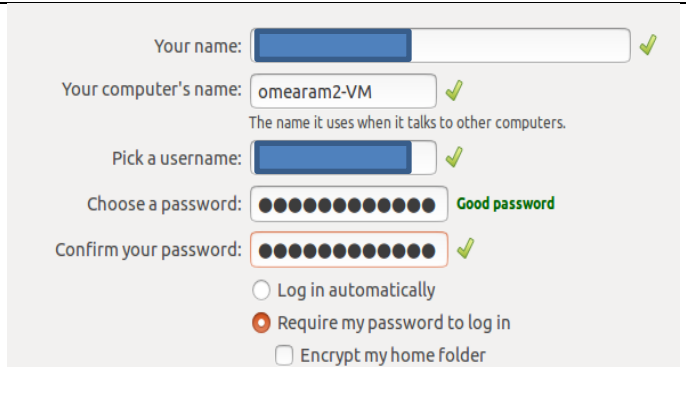


<p>3. In the Preparing to Install Ubuntu window; do not accept the default selection.</p> <p>4. Ensure the Download updates while installing Ubuntu box is <b>unchecked</b>.</p> <p>5. Click the <b>Continue</b> button.</p>	
<p>6. Accept the default the installation type; <b>Erase Disk and Install Ubuntu</b></p> <p>7. <b>Note: we are not actually erasing the hard disk, we are creating a folder on the hard drive, erasing that folder space, and installing Linux in that folder.</b></p> <p>8. Click <b>Install Now</b>.</p> <p>9. You will be prompted to <b>write the changes to disk</b>.</p> <p>10. Click the Continue button.</p>	
<p>11. Select your time zone (time is very important to computers, especially when communicating to other computers). The default should be Toronto which is ok because Ottawa and Toronto are in the same time zone</p> <p>12. Click the <b>Continue</b> button</p>	
<p>Next you will be prompted to select a keyboard layout.</p> <p>a) Select English (US)</p> <p><b>Note:</b> This window may be larger than your screen. If this is the case, click and drag the title bar to drag it to the left so that you can click the continue button.</p>	

b) You will then be prompted for your name. Enter Your full name.

The login name must start with a lowercase letter. Use your **College (Brightspace) username** for your Linux username.

 **Keep a screen shot of this window (hide your details if needed)**



c) Now change your computer's name from your **username-virtual-machine** to your **username-VM**. **Choose a strong password for your Linux VM.**

d) Ensure that **Require my password to log in** is selected (you may need to scroll down to see this option).

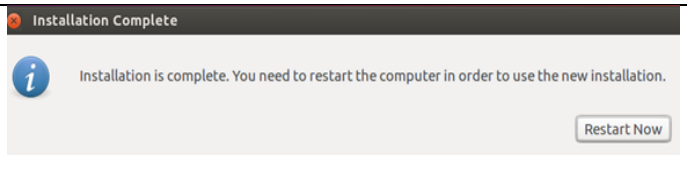
e) Click the **Continue** button.

f) The Welcome to Ubuntu screen appears and Ubuntu begins to install.

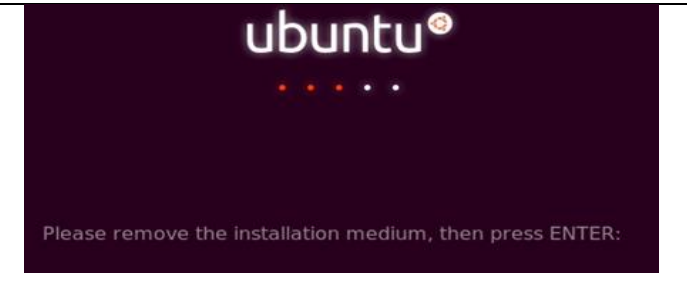
**Note:** This process takes several minutes.

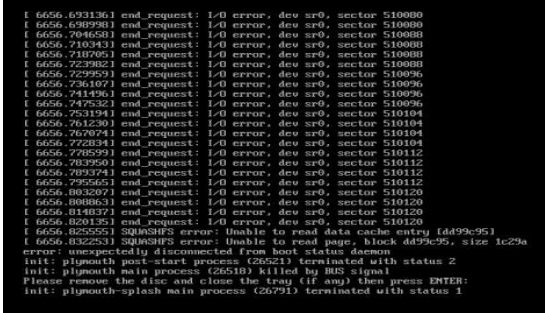
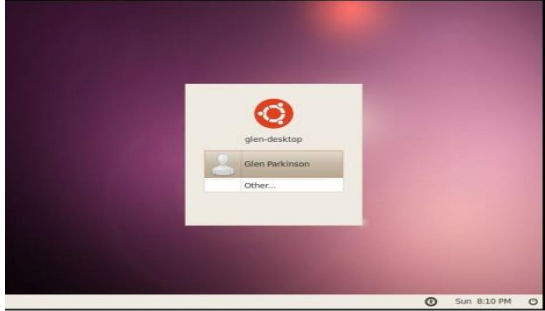


g) Once Ubuntu is finished, it asks you to restart your machine. Click on the **Restart Now** button.



If you see the screen on the left, just press the **Enter** key on your keyboard



<p>When the new operating system boots, you may see errors such as these. If so, click I <b>Finished Installing</b> on the bottom of the <b>Ubuntu</b> tab in VMWare Workstation. Click on the error screen and press <b>1</b> to reboot. Ubuntu should boot normally.</p>	
<p>h) When the Ubuntu boot screen appears, click on the account you created, and log in as that user.</p> <p>☞ <b>Take one screen shot before login.</b></p> <p>☞ <b>Take a second screen shot after successful login.</b></p>	

## Deliverables (a document file lastName\_studentID\_Lab04b.docx):

Congratulations!! you have completed your Lab 04

1. Submit following screen shots those you may have/not already taken:
  - a. A screen shot of Task Manager>Performance tab.
  - b. A screen shot of Restore point which confirms a new Restore point is successfully created.
  - c. A screen shot of your computer's "Control Panel\All Control Panel Items\System" page
  - d. A screen shot of step 5 and 6 on page 6.
  - e. A screen shot of step 9 on page 6.
  - f. A screen shot of step 13 on page 7.
  - g. A screen shot of step 17, 18 on page 8.
  - h. A screen shot of step 19 on page 8.
  - i. A screen shot of step 3 on page 9.
  - j. A screen shot of step b on page 12.
  - k. Two screen shots of step h, page 13
2. Please confirm which version of Ubuntu Desktop have you installed.
3. List any problems you encountered and how you solved them. If you had no problem, then say so NO.
4. Submit after the followings are completed:
  - a. Create a folder as yourLastName\_studentID\_Lab04All.
  - b. Keep both .docx files from Lab04a and Lab04b in this folder. Now, go one level up
  - c. Zip this folder (preferably with 7 zip) as yourLastName\_studentID\_Lab04All.zip and submit this.