

# Setting up C Programming Environment

# Before you start..

- ✓ Please note that this is “**NOT**” a required part of the course and is not a homework.
- ✓ This manual is written for someone who has never programmed / never used Linux before.  
If you have background knowledge, you can ignore this.
- ✓ If you have any questions, please email Yoonji Shin [ys2476@columbia.edu](mailto:ys2476@columbia.edu)
- ✓ Don't be scared, programming is fun! Enjoy :)

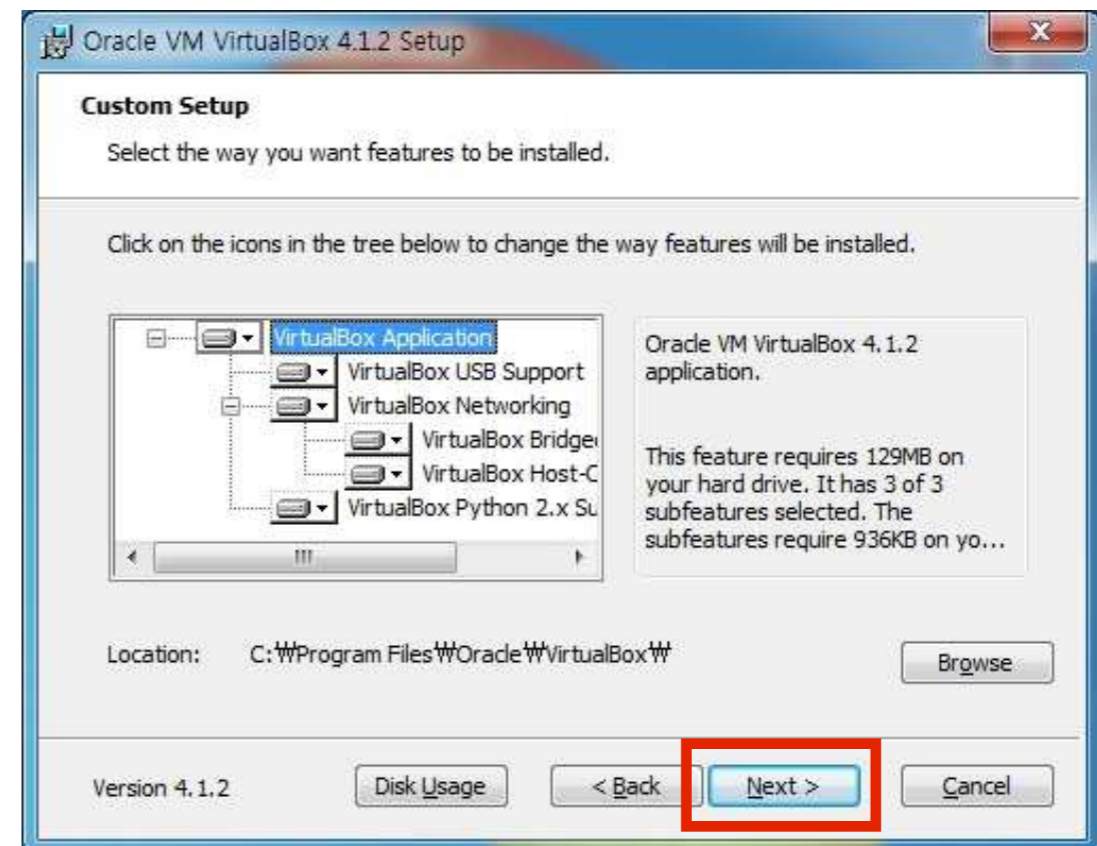
# Install VirtualBox

1. Visit <http://www.virtualbox.org/wiki/downloads>
2. Download VirtualBox platform packages for your OS
3. Open the Installation Package by double clicking

## MAC



## PC



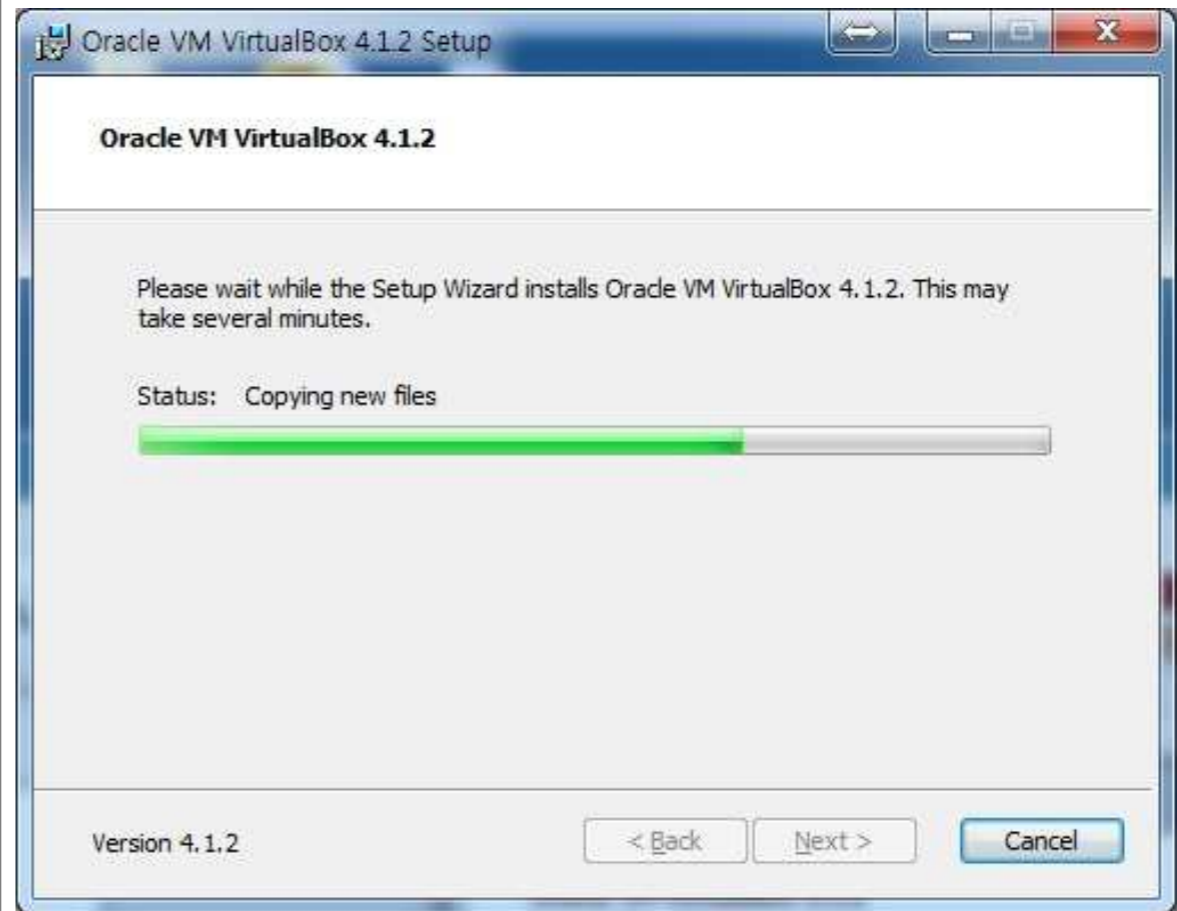
# Install VirtualBox

## 4. Click continue and finish installing VirtualBox

MAC



PC



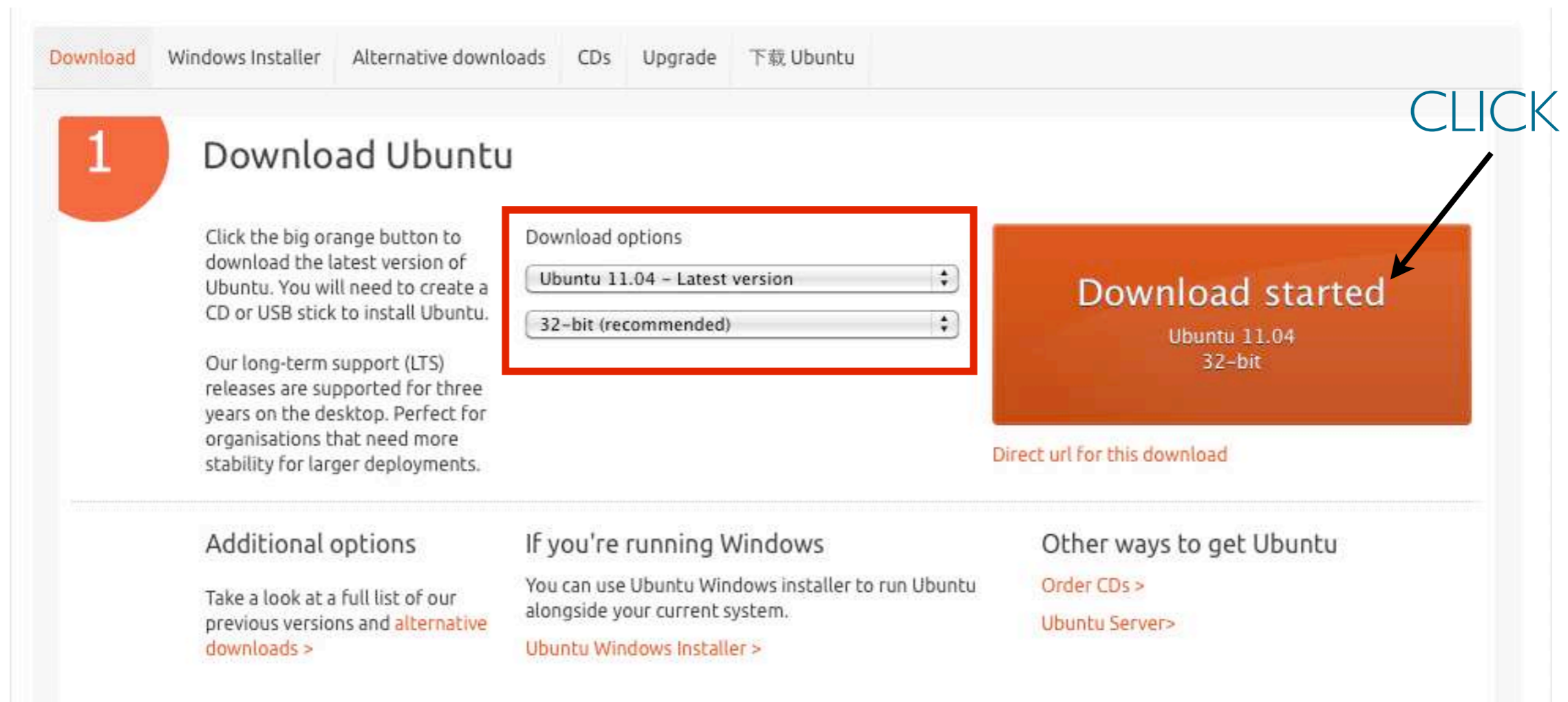
## 5. When finished installation, close the window.

# Download Linux

1. Visit the page

<http://www.ubuntu.com/download/ubuntu/download>

2. Choose the Latest version of Ubuntu and 32-bit and click “Start Download”



The screenshot shows the Ubuntu download page. At the top, there is a navigation bar with tabs: [Download](#), [Windows Installer](#), [Alternative downloads](#), [CDs](#), [Upgrade](#), and [下载 Ubuntu](#). The main content area is titled "1 Download Ubuntu". It contains instructions: "Click the big orange button to download the latest version of Ubuntu. You will need to create a CD or USB stick to install Ubuntu." and "Our long-term support (LTS) releases are supported for three years on the desktop. Perfect for organisations that need more stability for larger deployments." Below this is a "Download options" section with two dropdown menus: "Ubuntu 11.04 - Latest version" and "32-bit (recommended)". To the right of these options is a large orange button labeled "Download started" with "Ubuntu 11.04 32-bit" underneath. A blue arrow labeled "CLICK" points to this button. Below the main content are three sections: "Additional options" (with a link to "alternative downloads >"), "If you're running Windows" (with a link to "Ubuntu Windows Installer >"), and "Other ways to get Ubuntu" (with links to "Order CDs >" and "Ubuntu Server >").

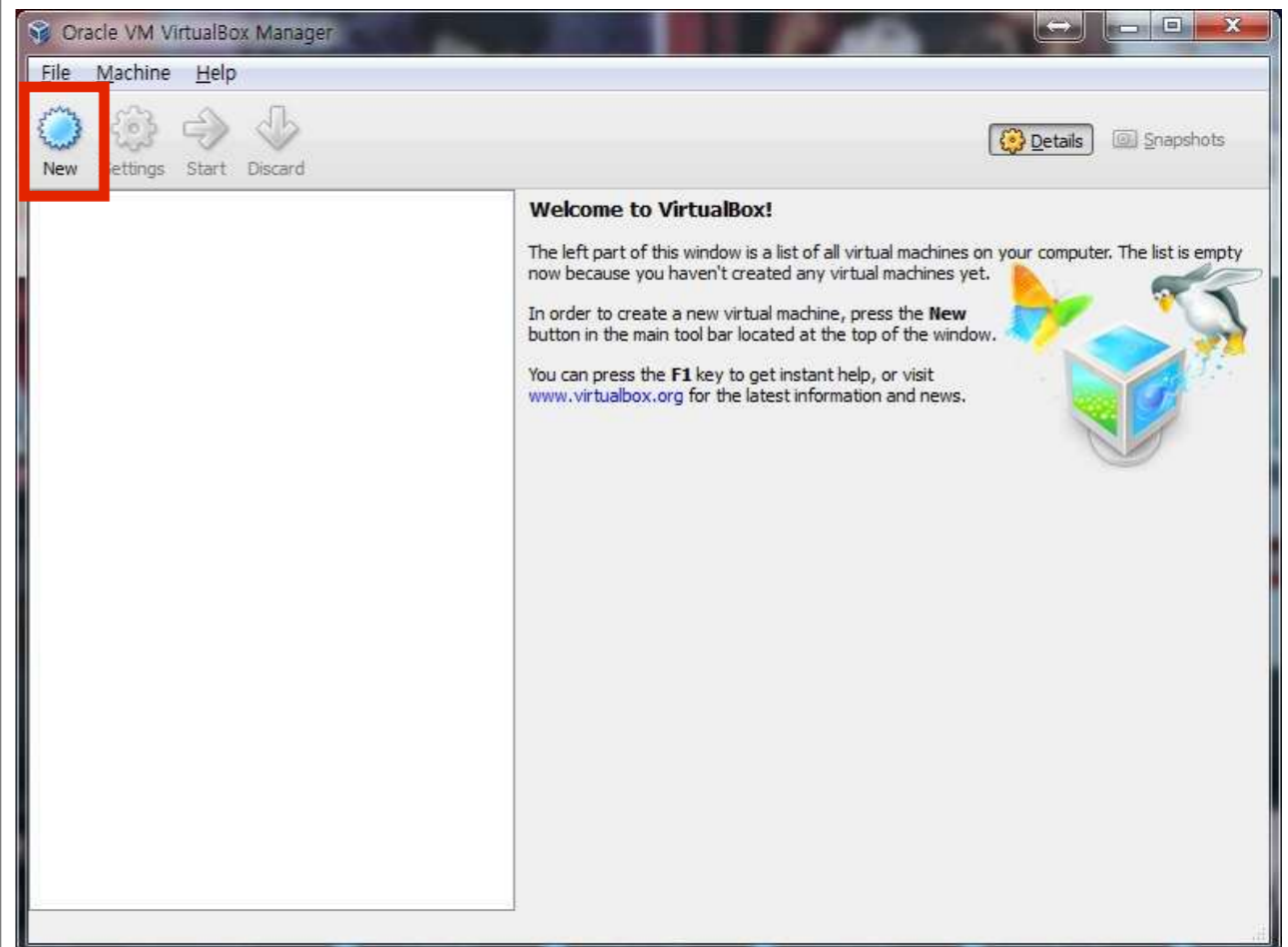
# Install Linux using Virtual Box

1. Run VirtualBox by double-clicking the icon
2. Click “New” button on the top left corner

MAC



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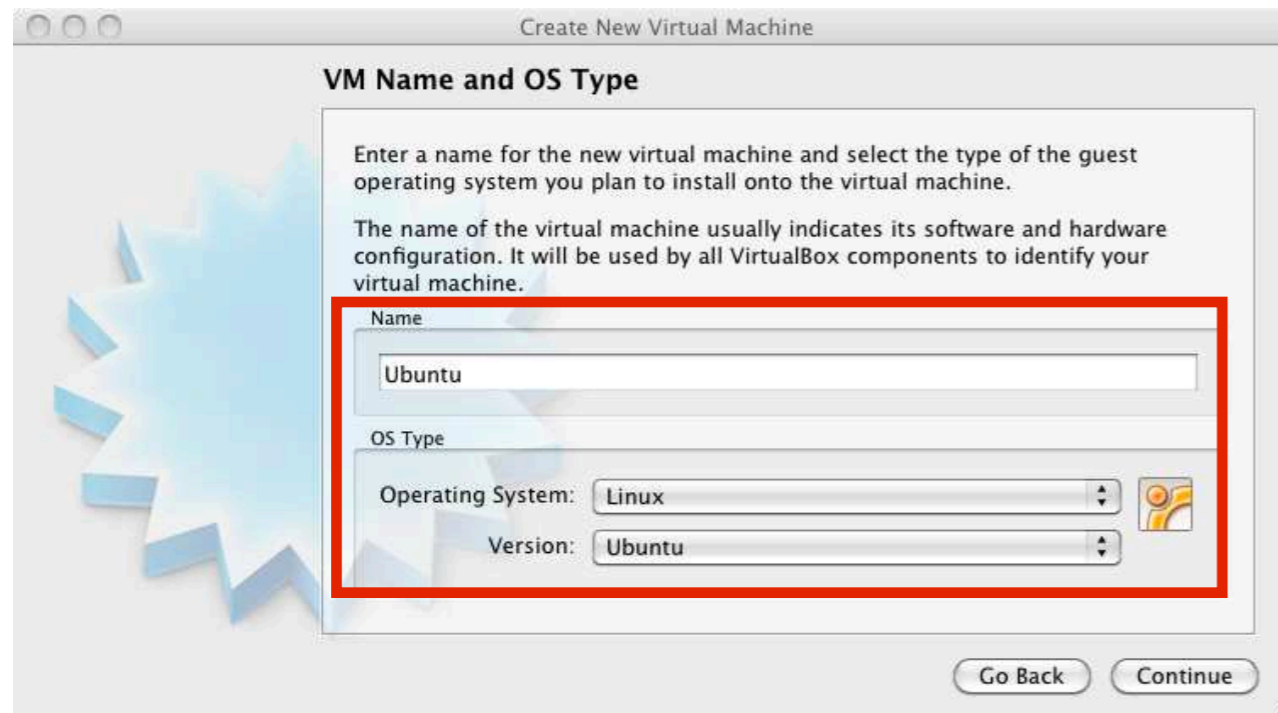




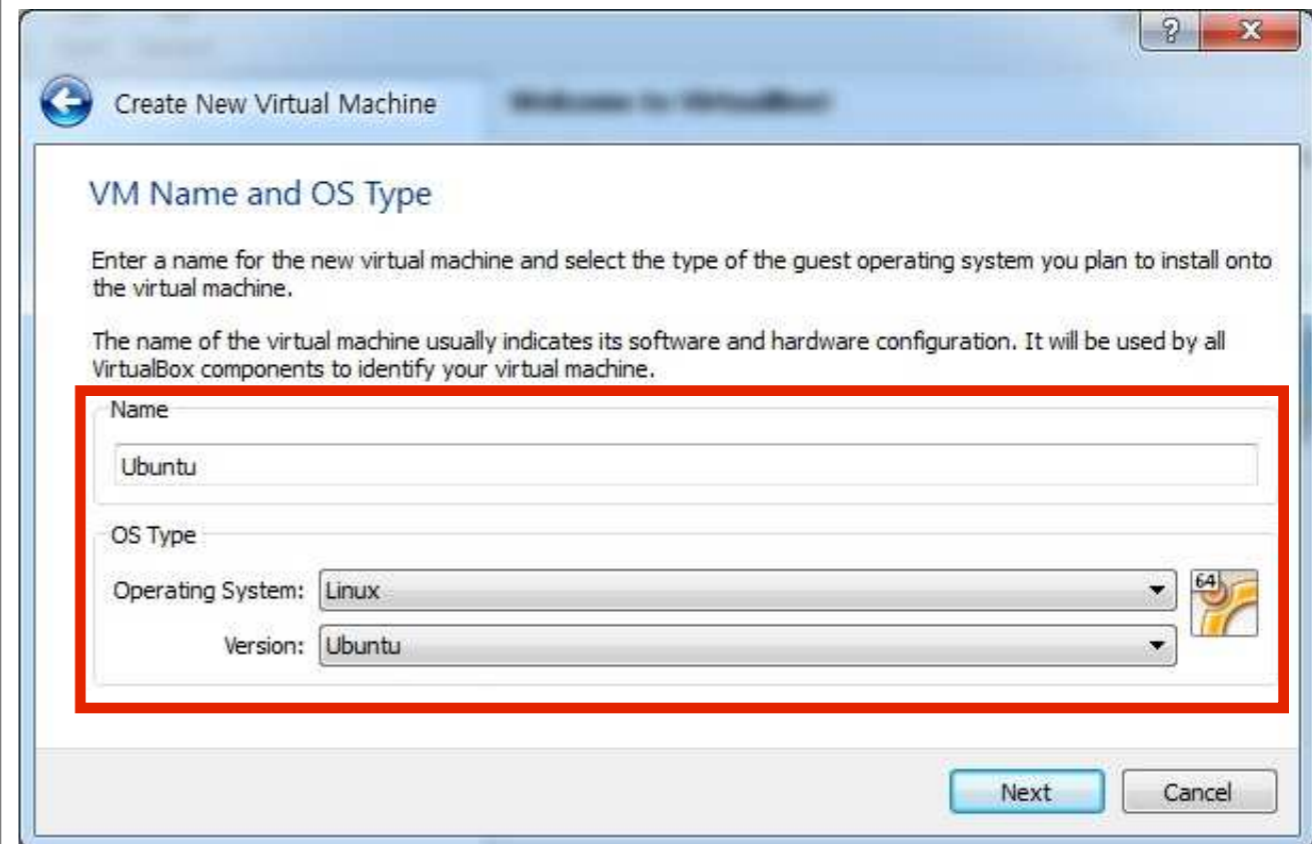
# Install Linux using Virtual Box

3. Click “Continue” on the pop-up window
4. Type VM name, select “Linux” for the OS and choose “Ubuntu” for the version.

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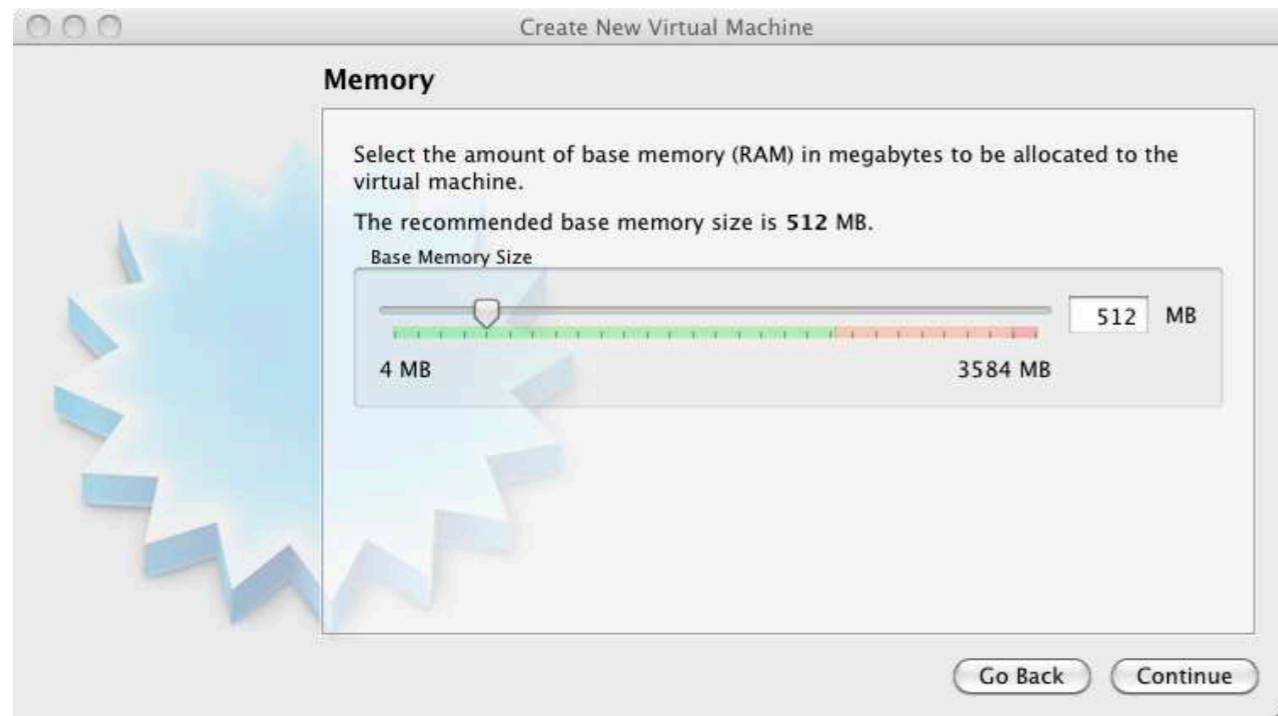


# Install Linux using Virtual Box

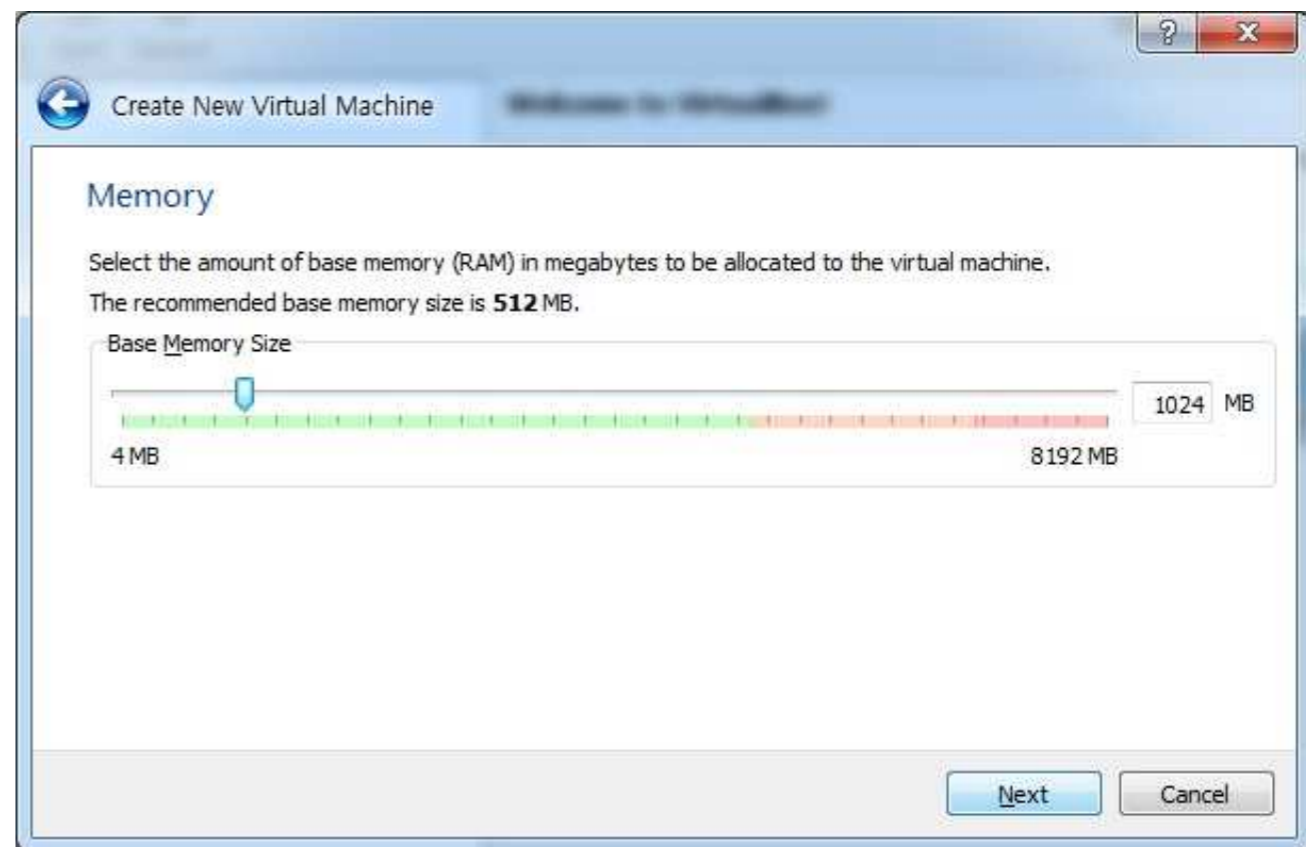
5. Choose the amount of memory to allocate (I suggest choosing between 512 MB to 1024 MB)

6. Click Continue or Next

MAC



PC





# Install Linux using Virtual Box

7. Choose create a new virtual hard disk

8. Click Continue or Next

MAC



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# Install Linux using Virtual Box

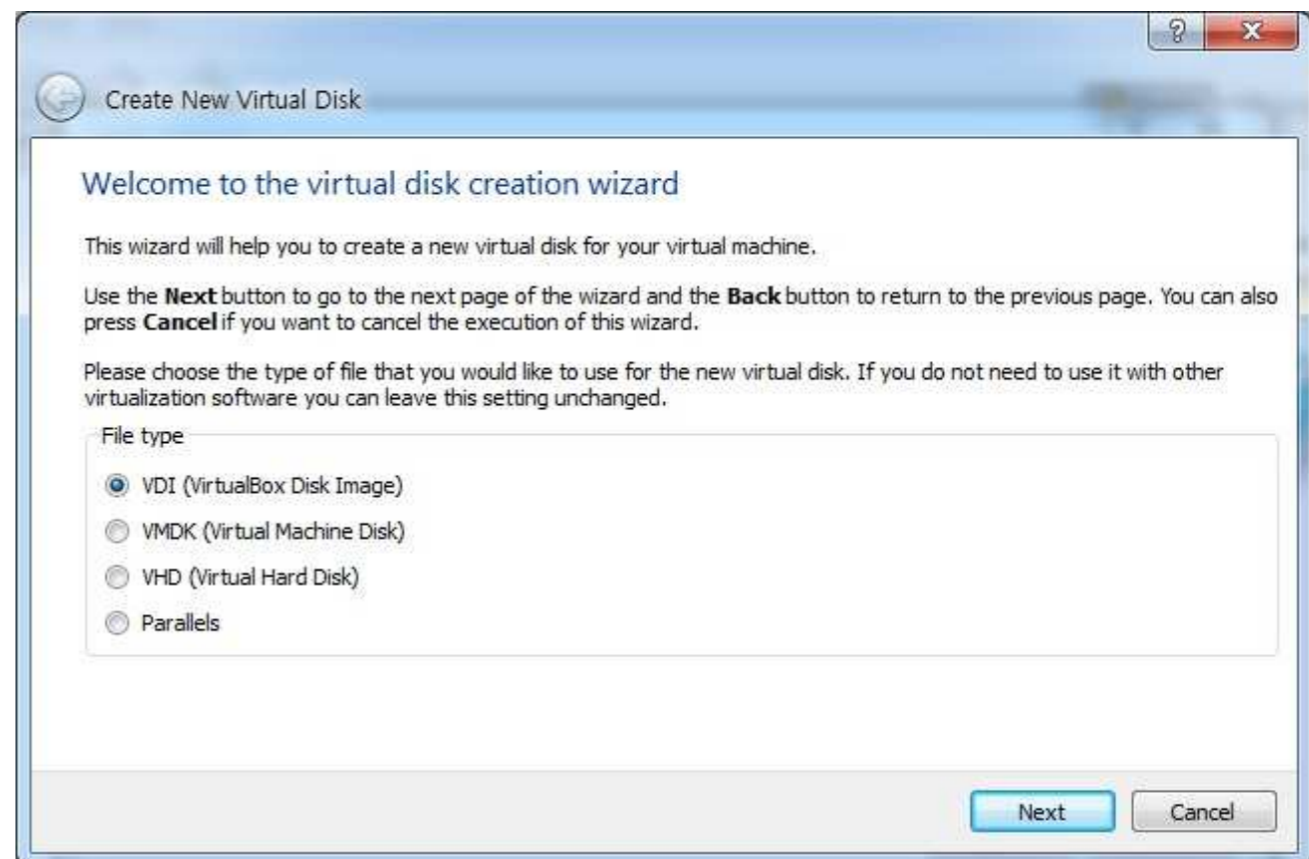
9. Choose VDI (VirtualBox Disk Image)

10. Click Continue or Next

MAC



PC



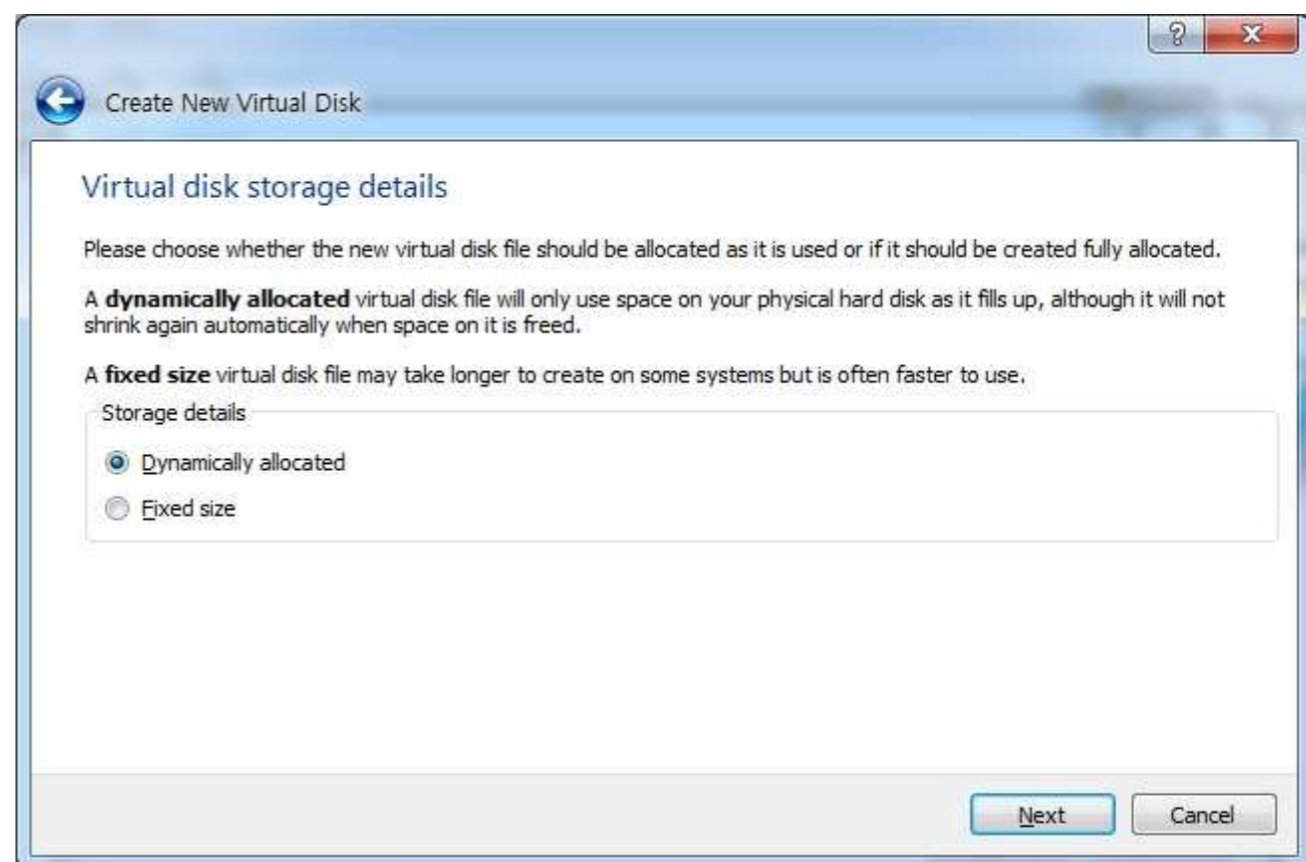
# Install Linux using Virtual Box

11. Choose “Dynamically Allocated” click continue.  
This way, the size of your Virtual Hard Disk will grow as you use.

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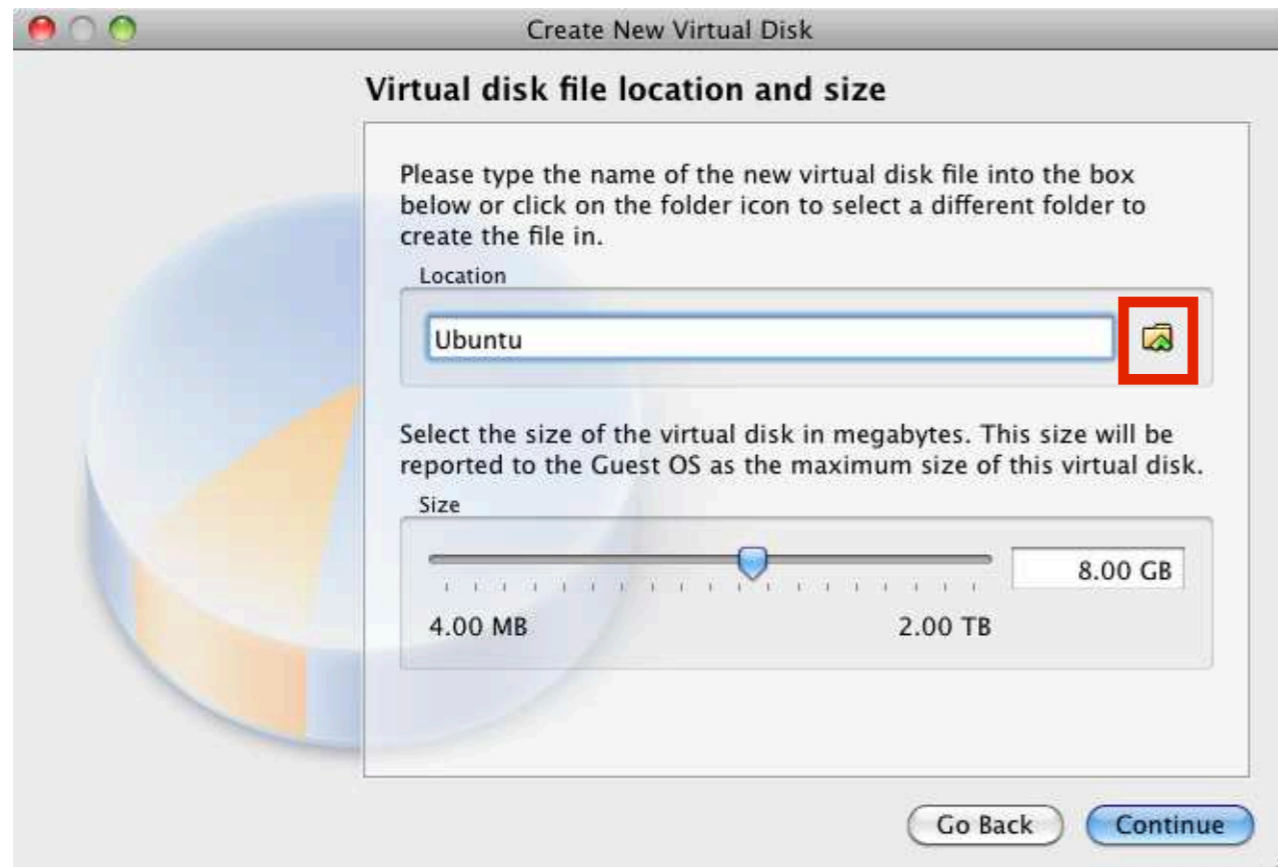
PC



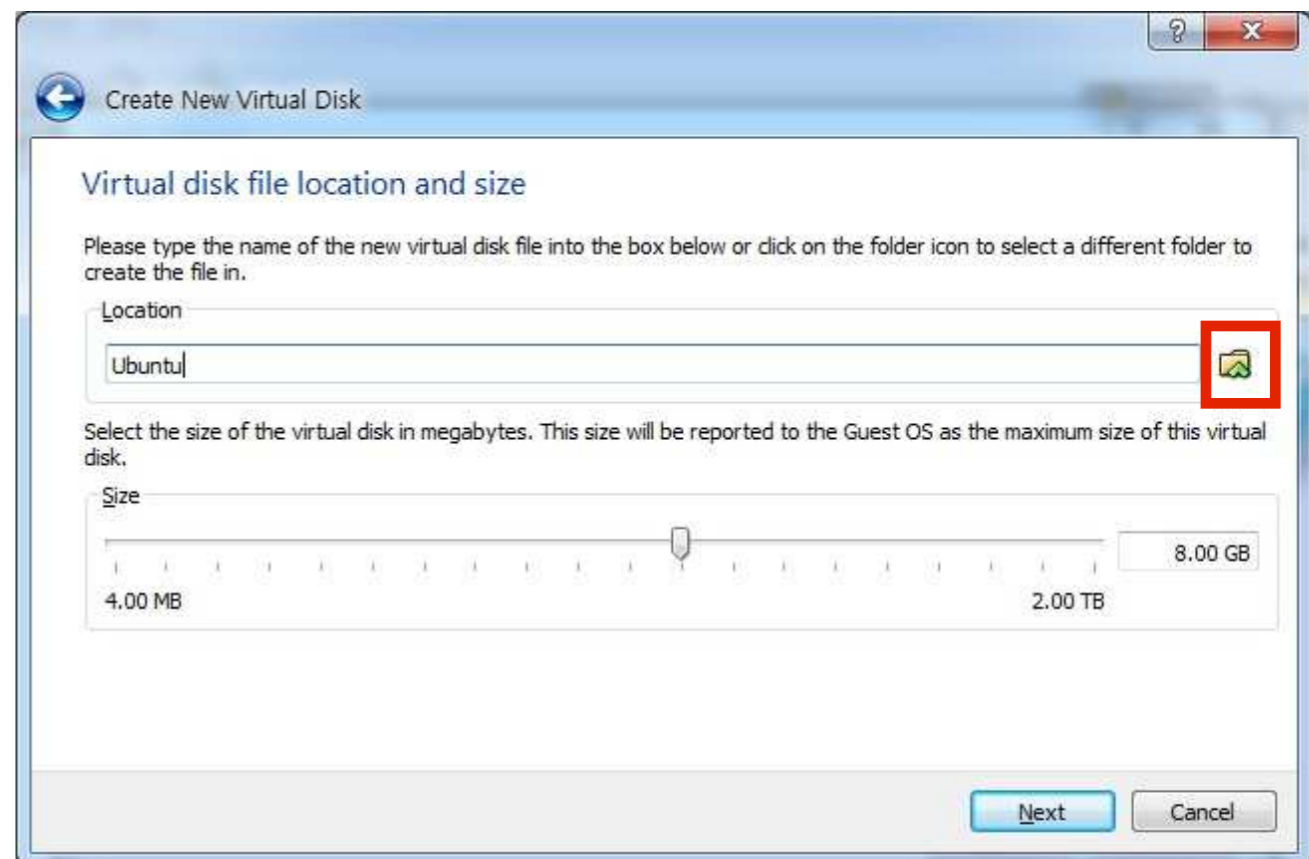
# Install Linux using Virtual Box

12. Click the folder icon and choose the ubuntu iso file you downloaded.
13. Select the size of the Virtual Disk (I recommend choosing 8 GB) and click continue

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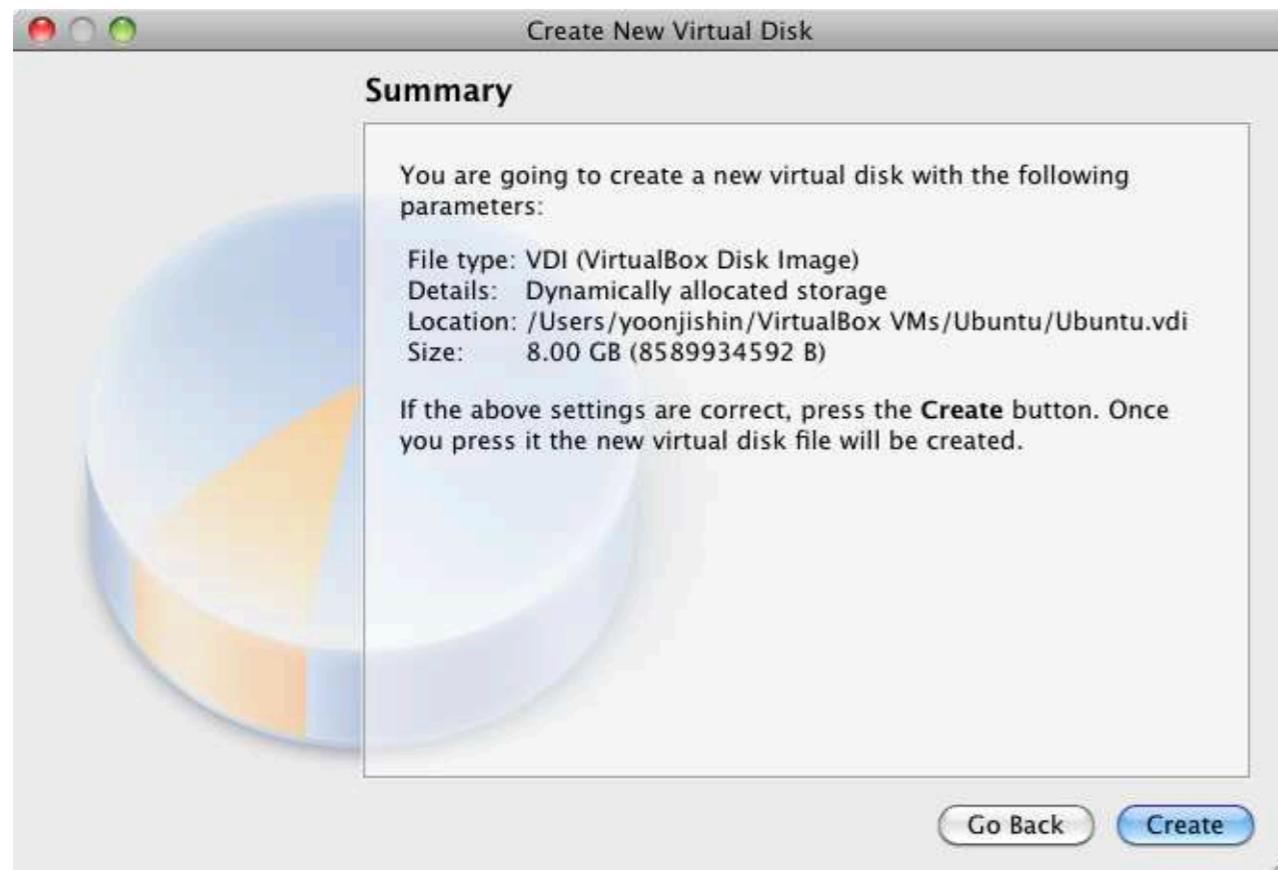




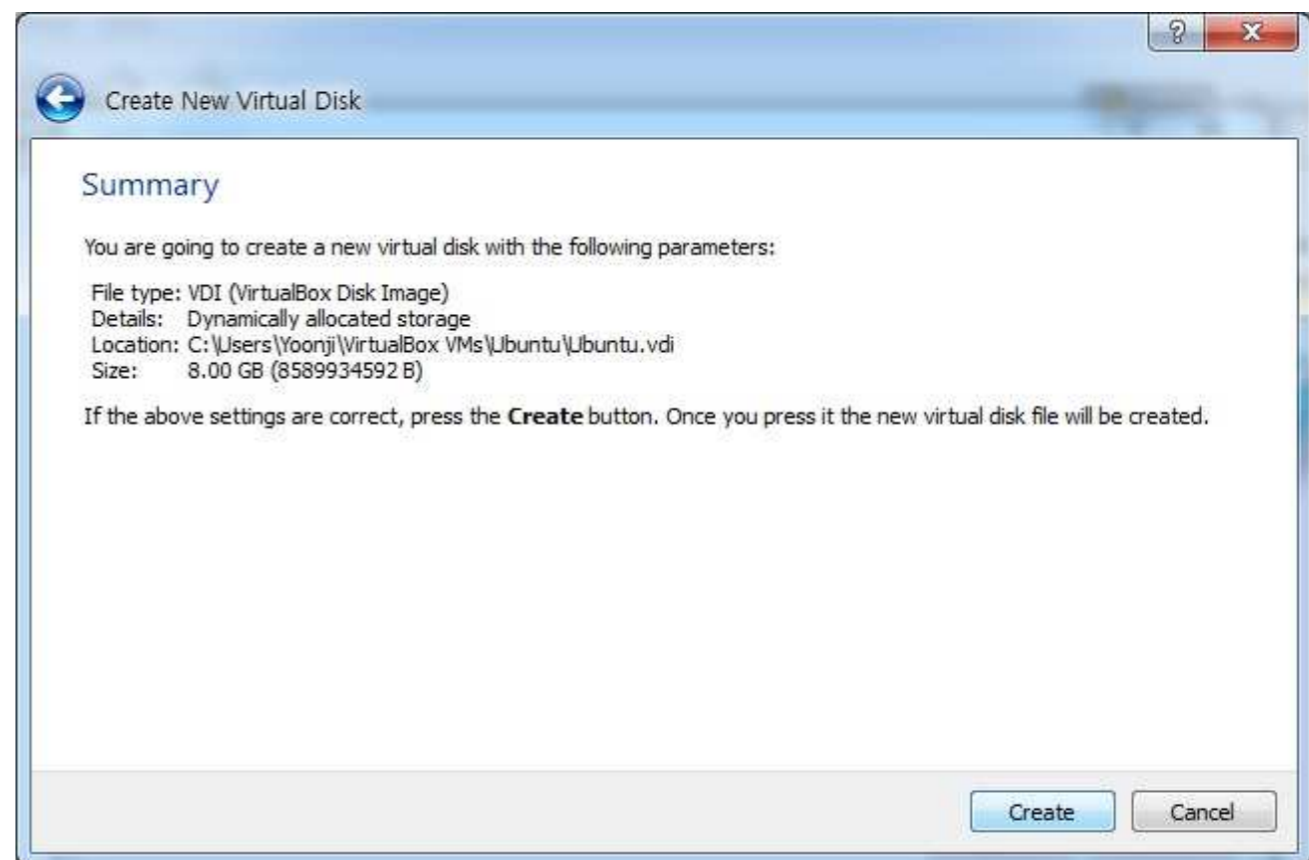
# Install Linux using Virtual Box

## 14. Click Create

MAC



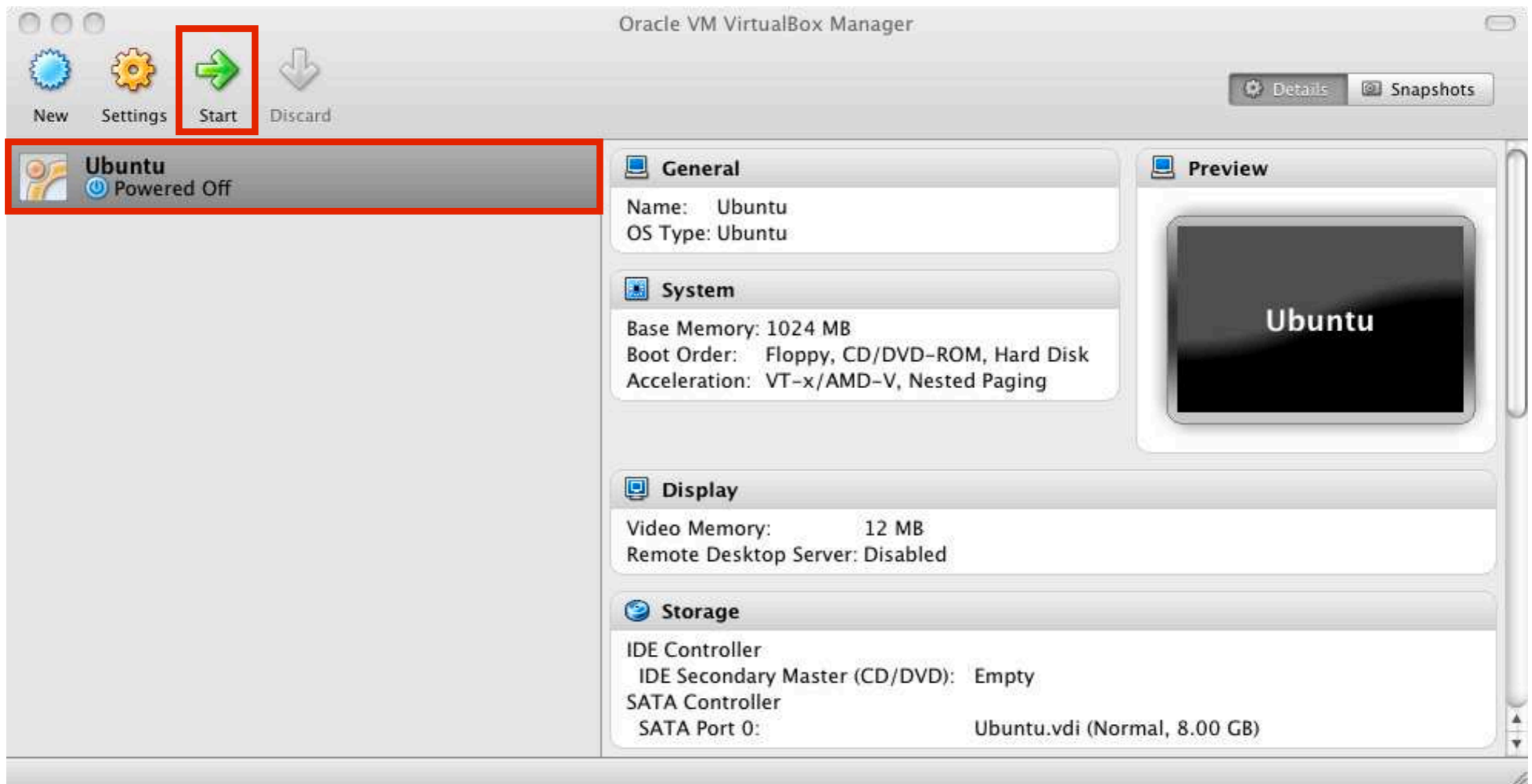
PC



# Running Linux

I. Choose Ubuntu from left column and click Start

MAC & PC





# Running Linux

## 2. Click continue on pop-up window

MAC



PC



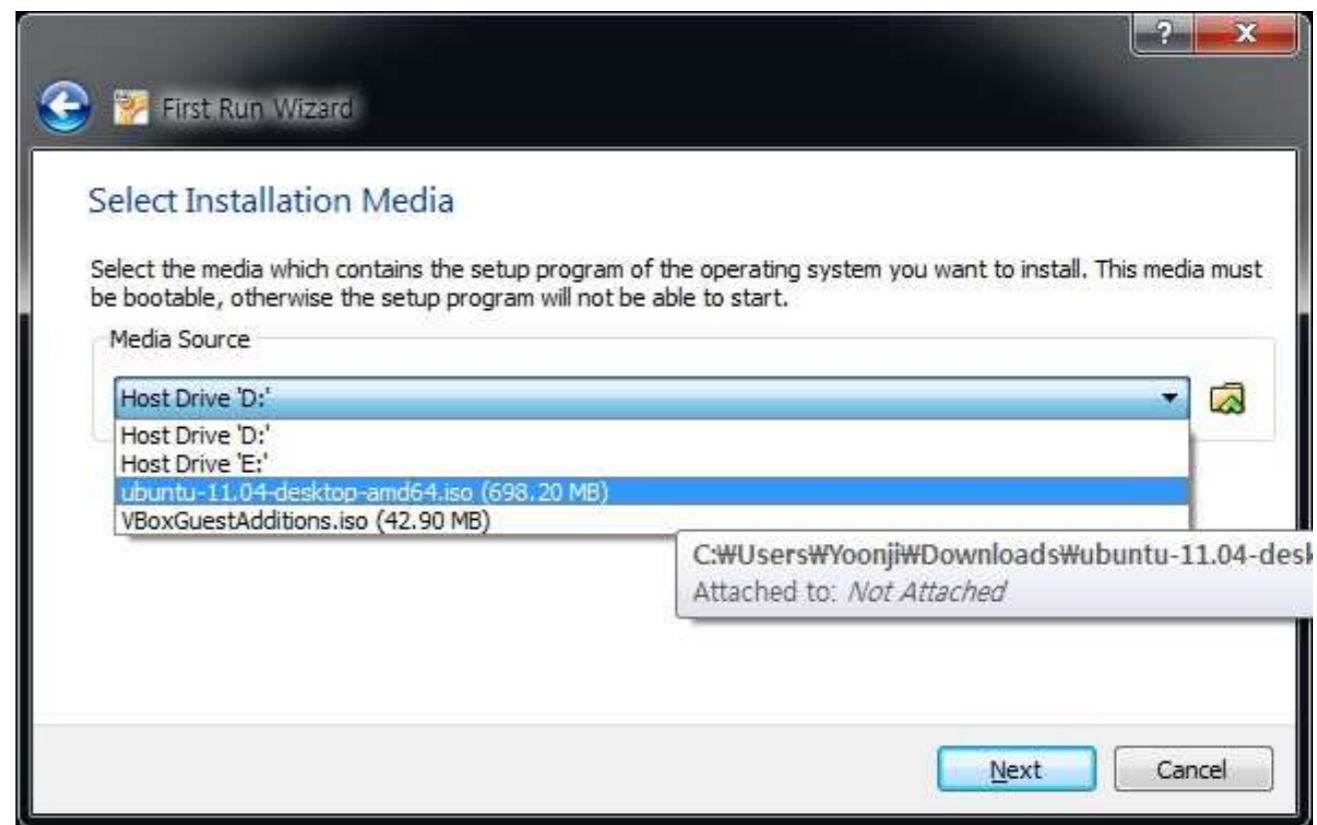
# Running Linux

3. Click the folder icon and choose the ubuntu iso file you downloaded and click continue and start

MAC

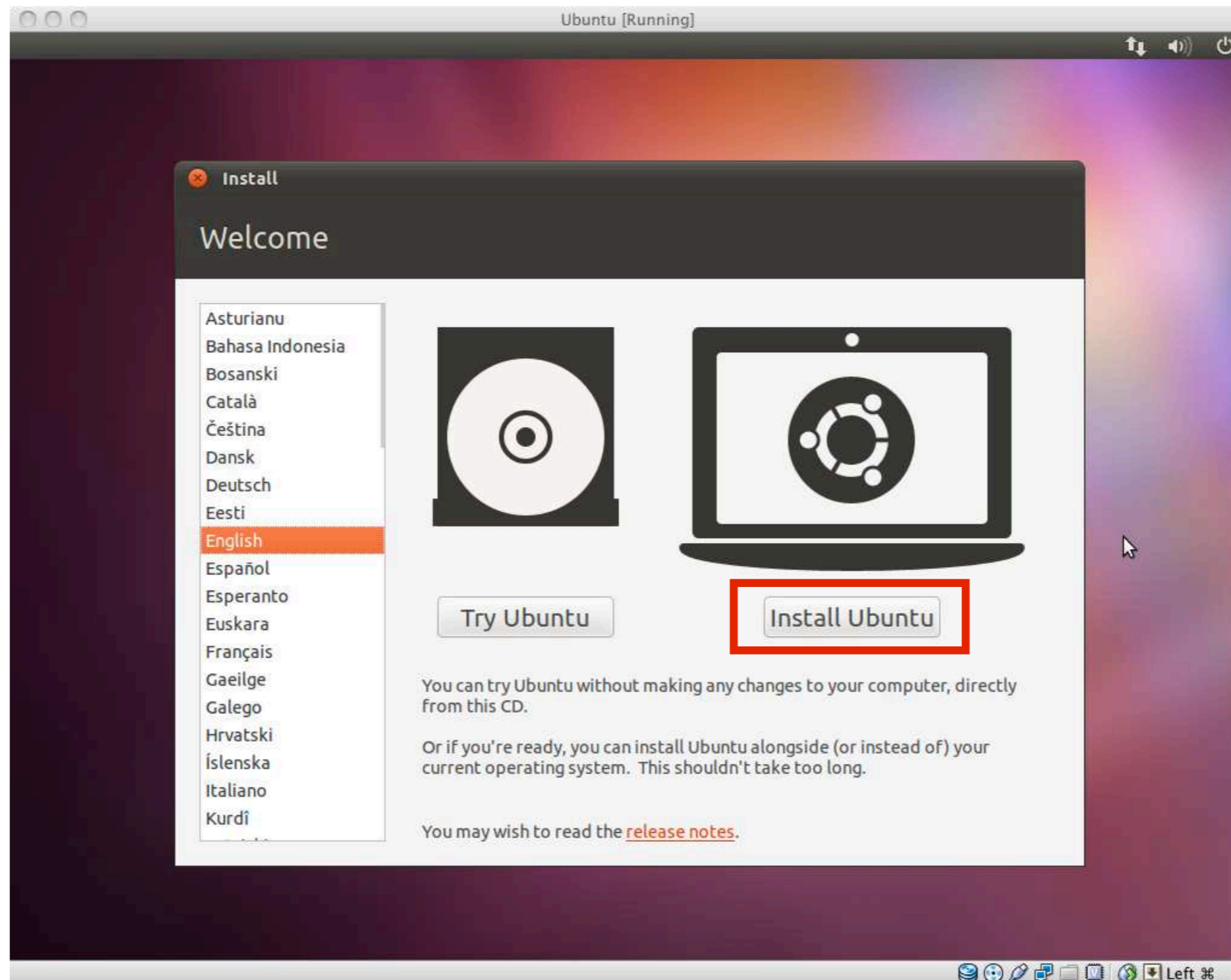


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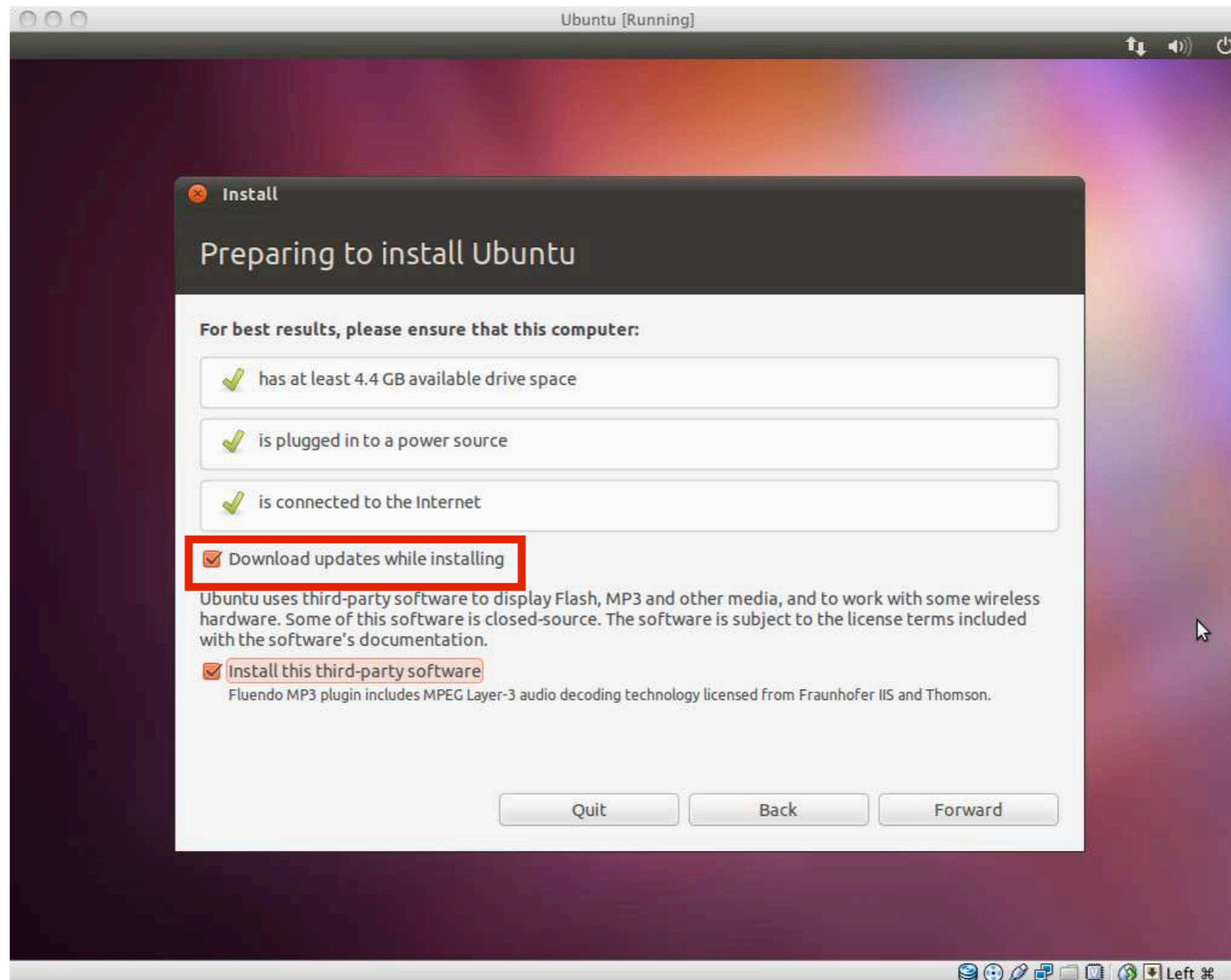
# Running Linux

## 4. Click Install Ubuntu



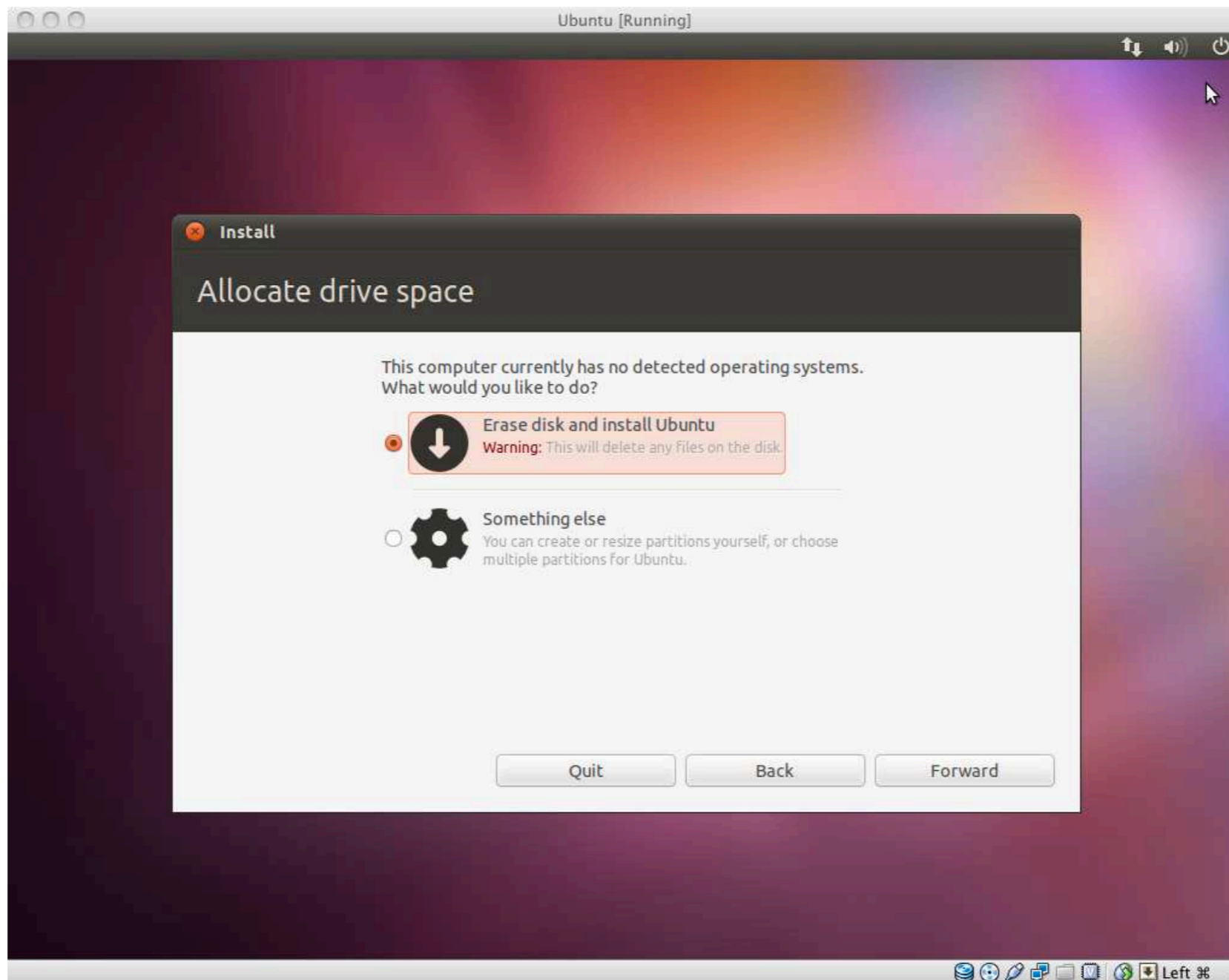
# Running Linux

## 4. Check “Download updates” and click Forward



# Running Linux

5. Choose “Erase disk and install Ubuntu” and click Forward (Don’t worry, it won’t wipe your computer)

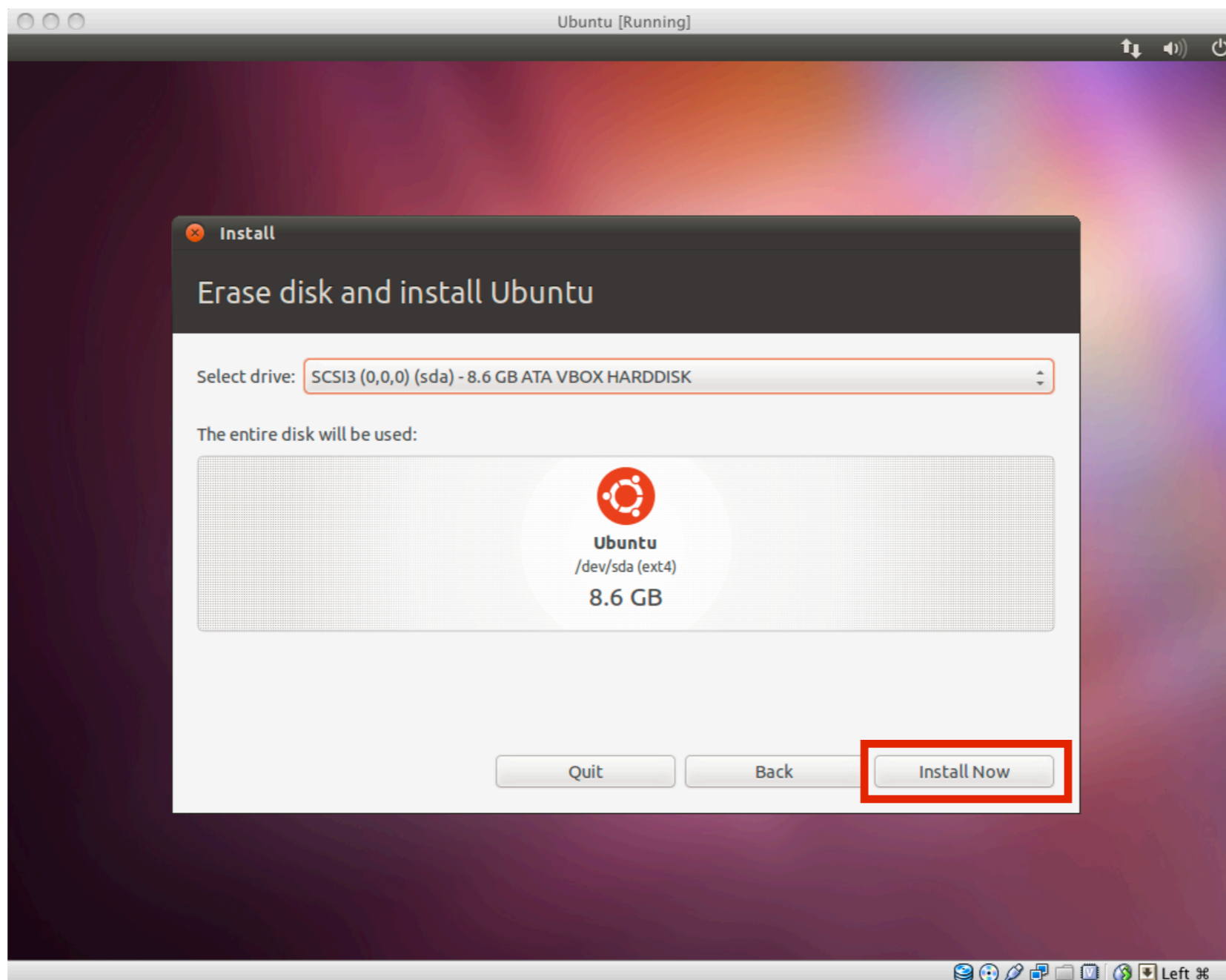




# Running Linux

6. Click “Install Now” and wait. Maybe grab a snack.

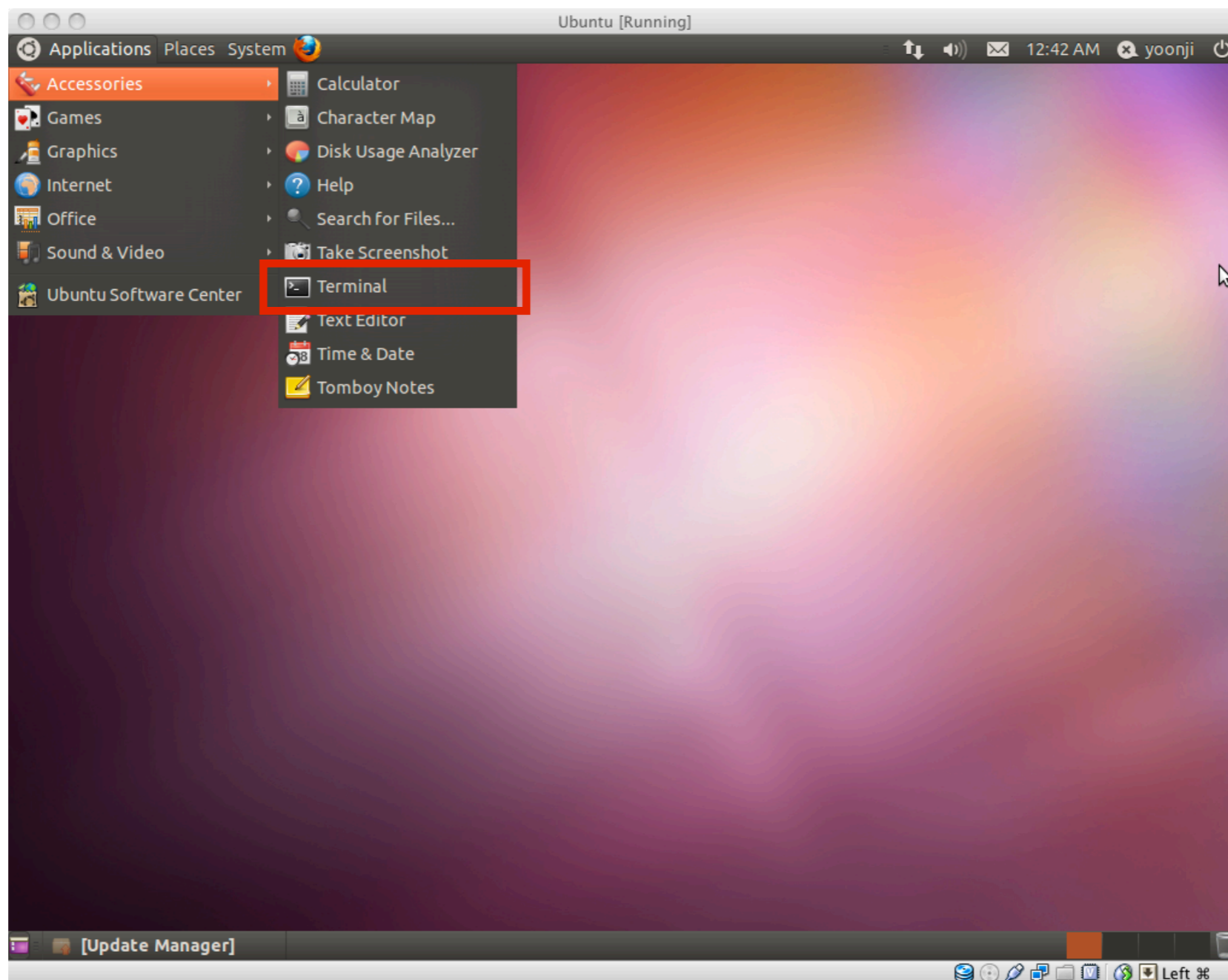
7. When finished, click Restart and press Enter.





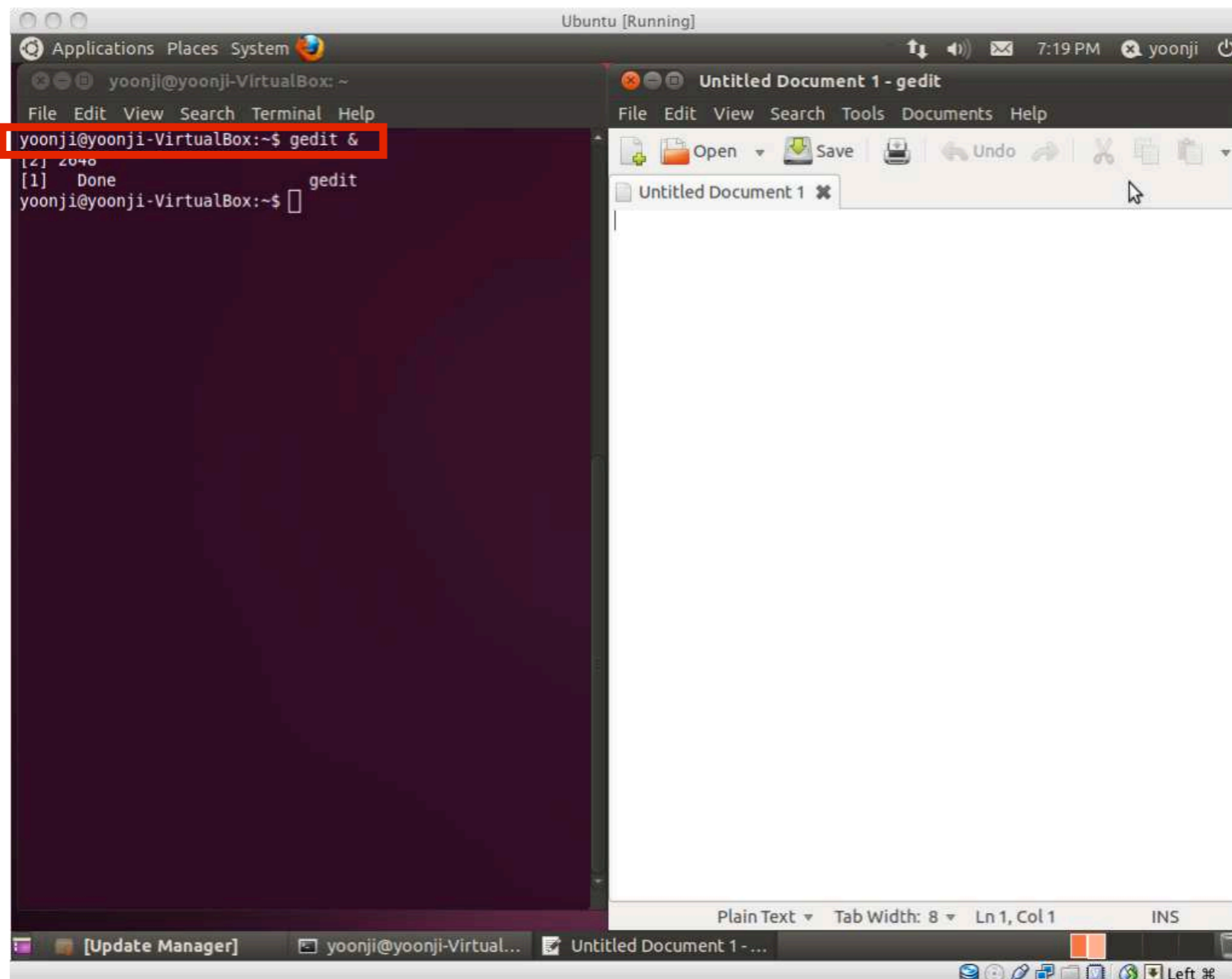
# C Programming on Linux

## I. Open Terminal (Applications-Accessories-Terminal)



# C Programming on Linux

2. Open gedit by typing “gedit &” on terminal  
(You can also use any other Text Editor application)



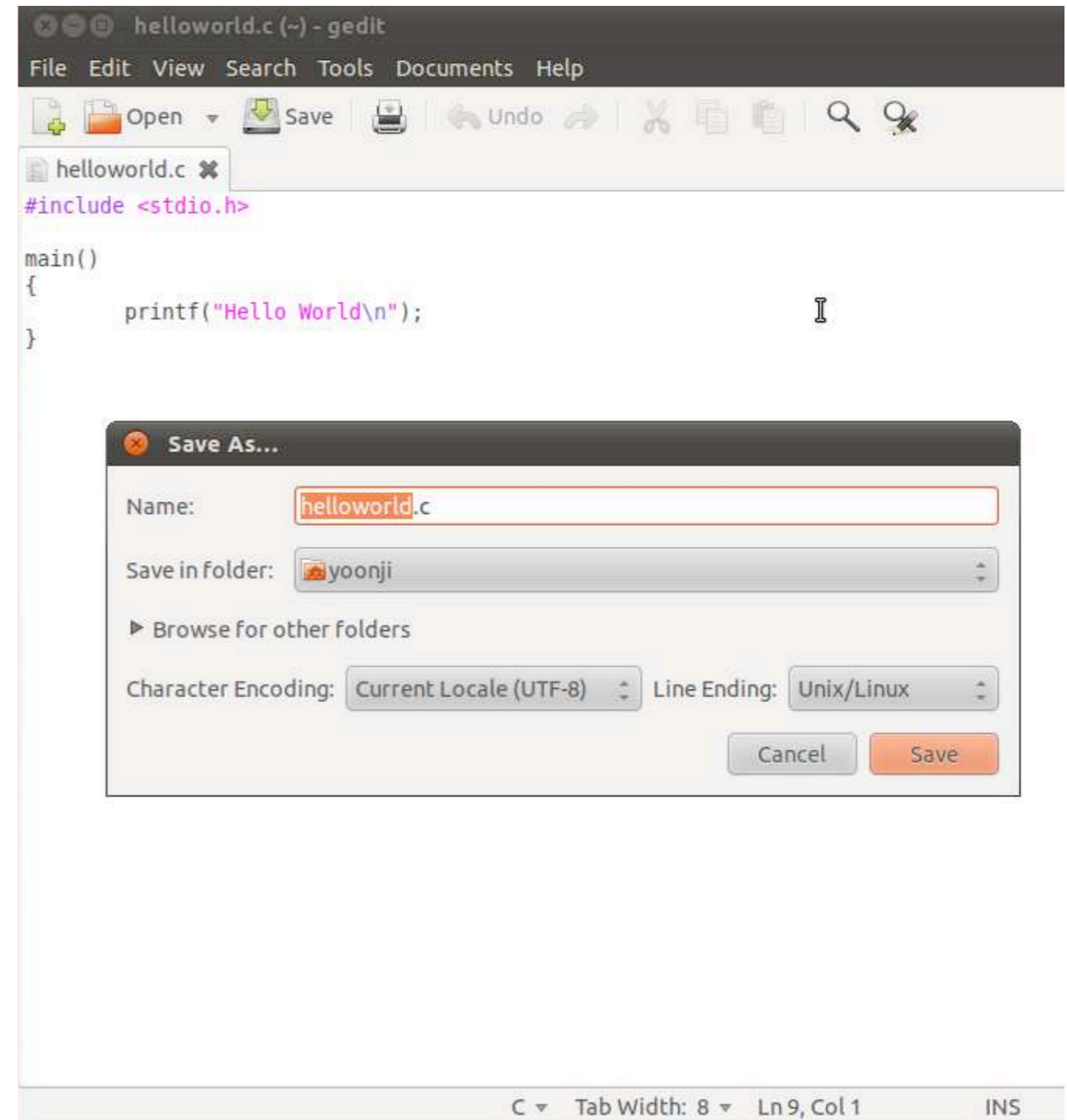
# C Programming on Linux

3. Type the following on gedit  
(or any other text editor)

```
#include<stdio.h>

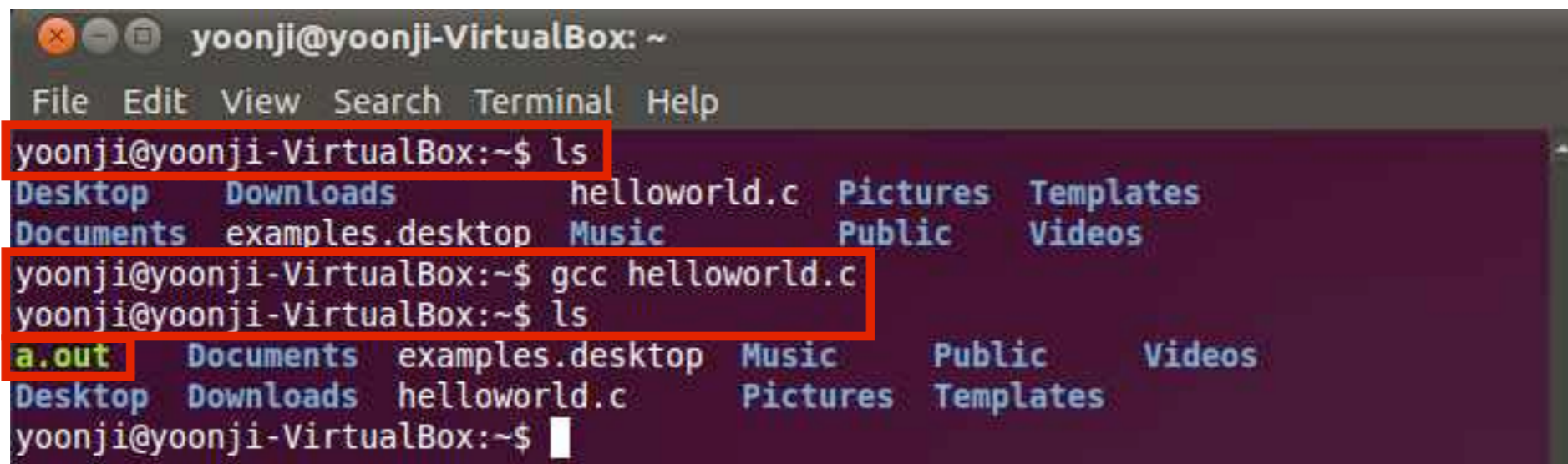
main( )
{
    printf("Hello World\n");
}
```

4. Save this file as  
“helloworld.c”



# C Programming on Linux

5. Type “ls” on Terminal to see all files under current folder
6. Confirm that “helloworld.c” is in the current directory. If not, type `cd DIRECTORY_PATH` to go to the directory that has “helloworld.c”
7. Type “gcc helloworld.c” to compile, and type “ls” to confirm that a new executable file “a.out” is created



```
yoonji@yoonji-VirtualBox: ~  
File Edit View Search Terminal Help  
yoonji@yoonji-VirtualBox:~$ ls  
Desktop Downloads helloworld.c Pictures Templates  
Documents examples.desktop Music Public Videos  
yoonji@yoonji-VirtualBox:~$ gcc helloworld.c  
yoonji@yoonji-VirtualBox:~$ ls  
a.out Documents examples.desktop Music Public Videos  
Desktop Downloads helloworld.c Pictures Templates  
yoonji@yoonji-VirtualBox:~$
```

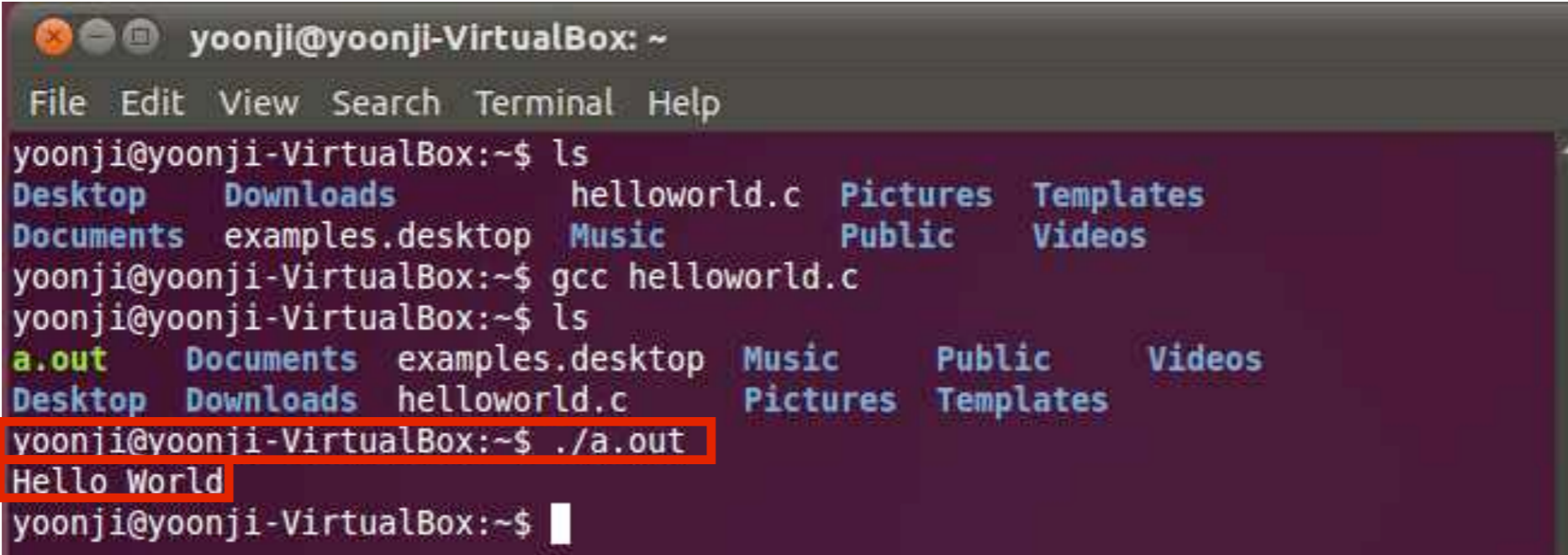


# C Programming on Linux

8. Type “./a.out” on Terminal to run the program

9. If you see “Hello World” on the next line,  
you just successfully ran your first C program!

10. Try other codes from “A Shotgun Introduction to C”  
on professor Edwards’s webpage. You can also find many  
C programming guides online. (just google it!) Enjoy :)



```
yoonji@yoonji-VirtualBox: ~  
File Edit View Search Terminal Help  
yoonji@yoonji-VirtualBox:~$ ls  
Desktop Downloads helloworld.c Pictures Templates  
Documents examples.desktop Music Public Videos  
yoonji@yoonji-VirtualBox:~$ gcc helloworld.c  
yoonji@yoonji-VirtualBox:~$ ls  
a.out Documents examples.desktop Music Public Videos  
Desktop Downloads helloworld.c Pictures Templates  
yoonji@yoonji-VirtualBox:~$ ./a.out  
Hello World  
yoonji@yoonji-VirtualBox:~$
```