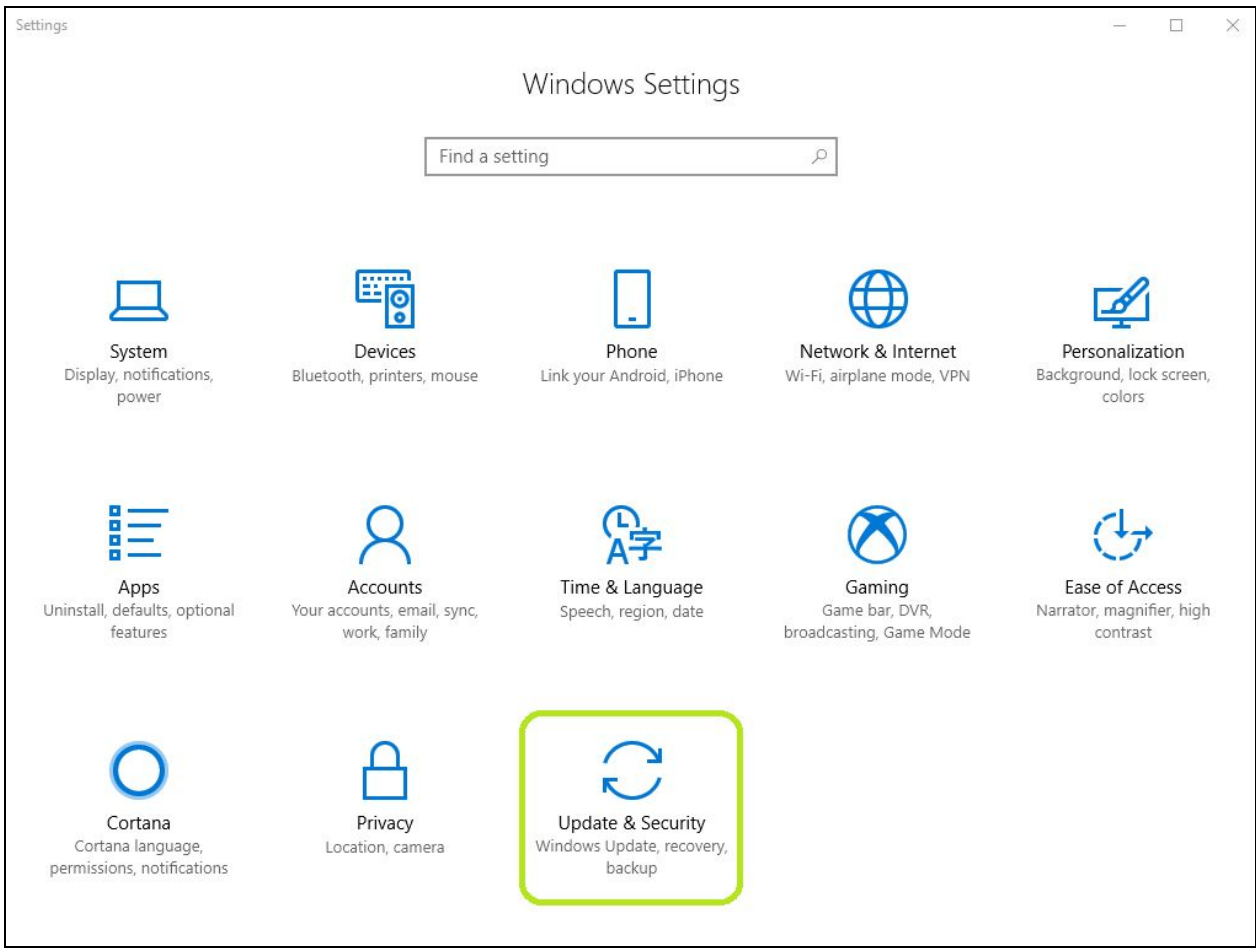
Installing Linux in VirtualBox

During this session we will start with installing VirtualBox on your computer. VirtualBox is virtualization software which lets you run other operating systems on your computer.

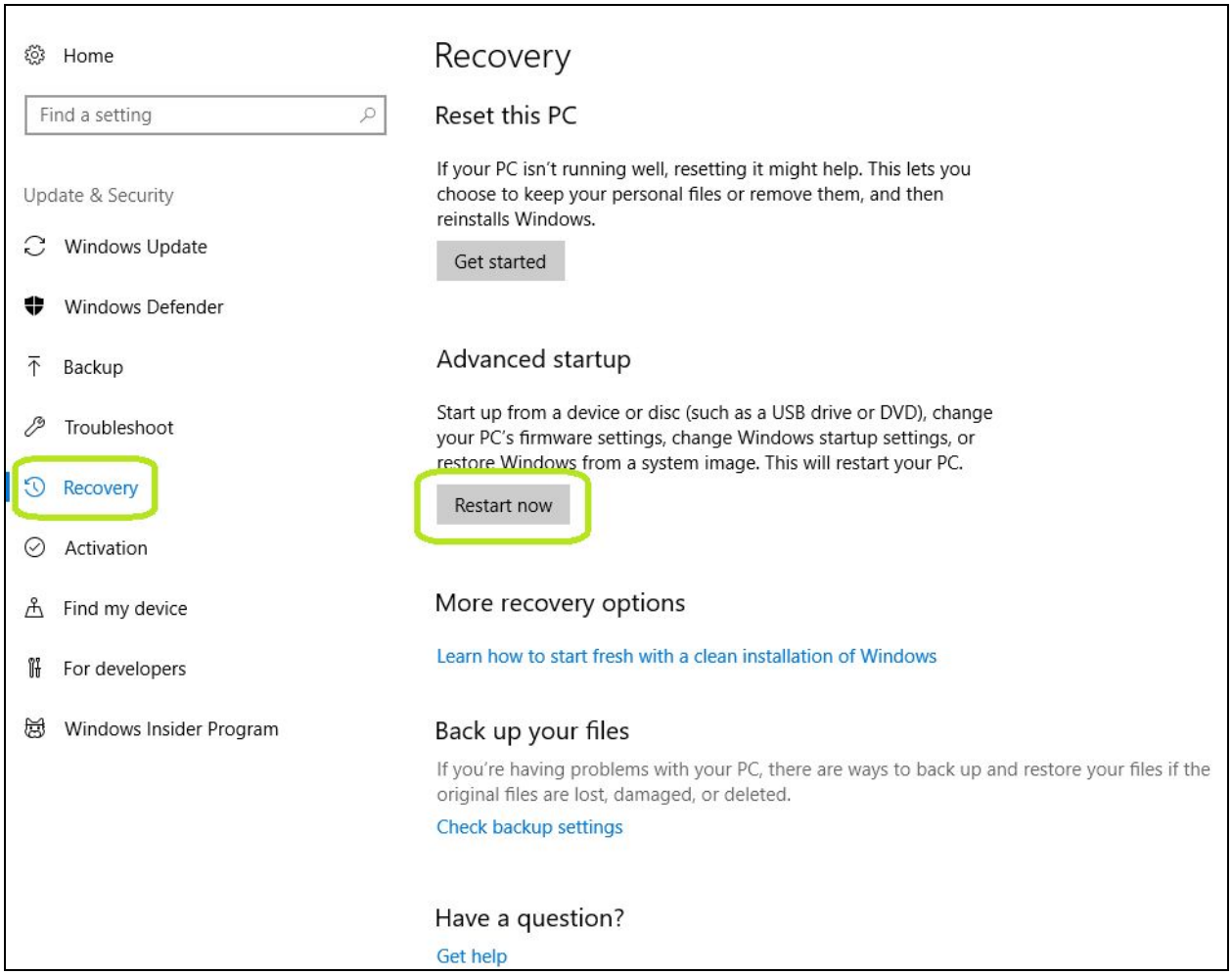
Enable Virtualization

Before we start with the Ubuntu installation we must verify that your laptop's Virtualization Extensions are enabled in the BIOS:

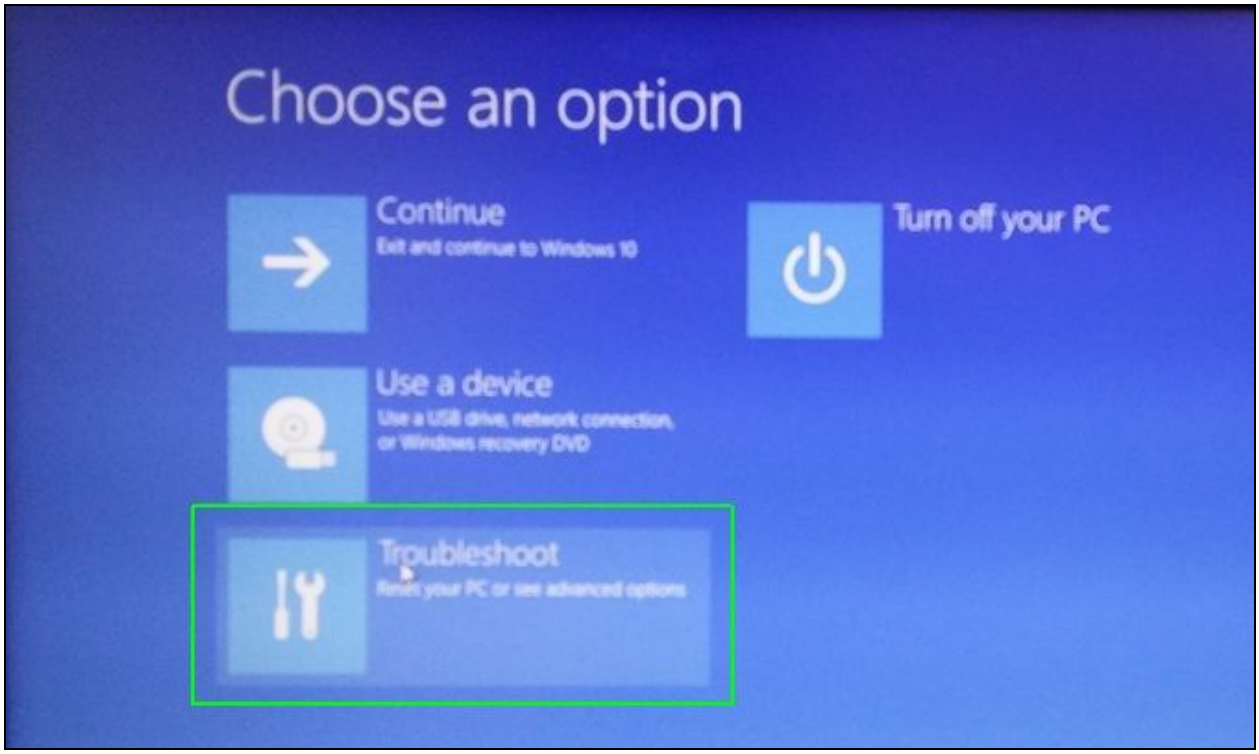
1. Click on the Gear icon in your start menu or search for Settings in the search box next to the Start Menu
2. Click on Update & Security



3. Click on Recovery on the left, followed by Restart Now under Advanced Setup



4. Click Troubleshoot



5. Click Advanced Options

6. Select UEFI firmware settings

7. Click Restart

8. Once you are inside the BIOS/UEFI look for an option to Enable Virtualization Extensions and verify that it is enabled or turned on.
9. Save your changes and exit the BIOS/UEFI.
10. Your system will reboot.

https://www.laptopmag.com/articles/access-bios-windows-10

Download VirtualBox

We will download the VirtualBox software from this website:
https://www.virtualbox.org/wiki/Download_Old_Builds_5_2

1. Download the proper VirtualBox package (Windows or OSX) depending on the type of computer you have **AND** the VirtualBox Extension Pack

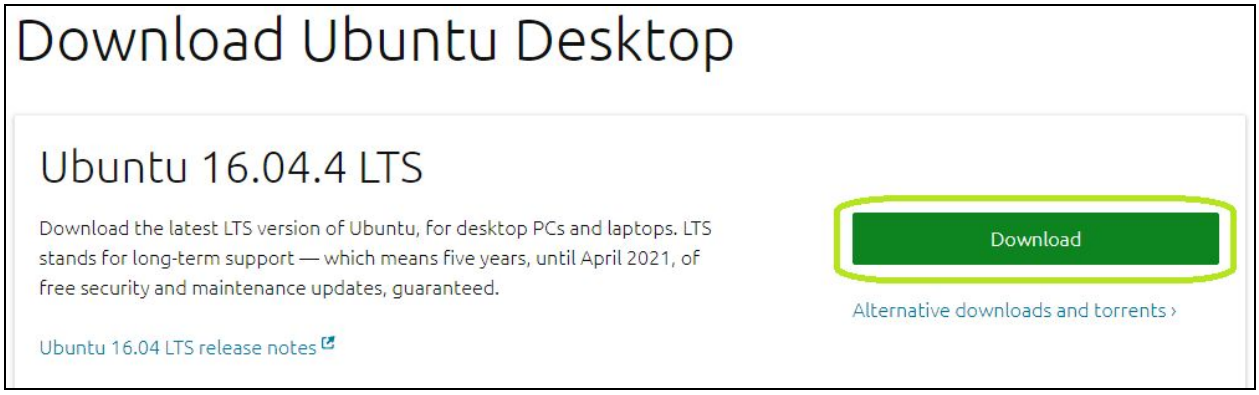
2. Install the VirtualBox software (as Administrator)
3. Now install the VirtualBox Extension Pack (as Administrator)

Download and install Ubuntu

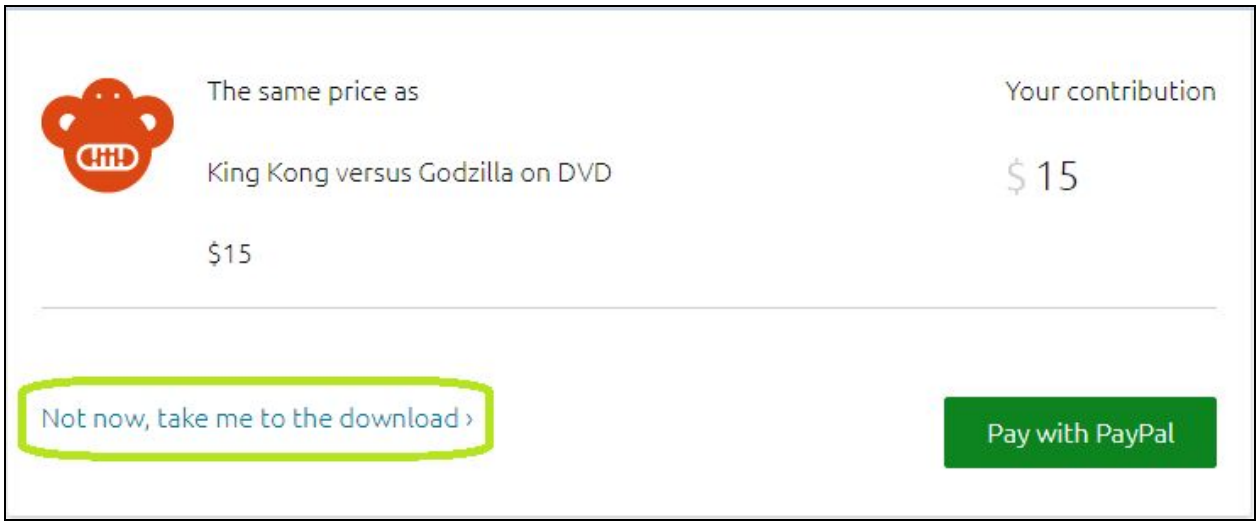
Note: you need to have a computer with at least 8GB of RAM to effectively run Ubuntu. Less than this will result in a very slow and sluggish system that will be very difficult to work with.

We will download the Ubuntu installation image from:
https://www.ubuntu.com/download/desktop

1. Download version 16.04.4 LTS of the Ubuntu Desktop installation image (click the green Download button)



2. Scroll down the page and click the Download Link. **Note**: do not open this file yet



3. Make a note of where the Ubuntu installation image is saved on your laptop
4. Start VirtualBox
5. Click the “New” button to create a new virtual environment
    a. Name: Ubuntu
    b. Type: Linux
    c. Version: Ubuntu (64-bit)
    d. Memory size: 2048 MB
    e. Hard disk: Create a virtual hard disk now

    f. Click “Create” button
    g. File location: Ubuntu
    h. File size: 32 GB
    i. Hard disk file type: VDI (VirtualBox Disk Image)
    j. Storage on physical hard disk: Dynamically allocated
    k. Click “Create” button.
6. In the left panel of the VirtualBox Manager software click on the VM and then click the green “Start” button
7. It will prompt you for a start-up disk
    a. Click the small folder with a green arrow icon on the right of the popup box
    b. Navigate to where you saved the Ubuntu installation ISO and select that for your startup disk
    c. Then click the “Start” button. The installation will begin
8. Click the “Install Ubuntu” button
9. Click the “Download updates…” and “Install third-party software…” check boxes then “Continue”
10. Click “Erase disk…” if necessary then “Install Now”
11. Click “Continue” to write the changes to disk
12. Click on the map to set your location to “Denver” then “Continue”
13. Accept the defaults of “English (US)” keyboard then “Continue”
14. Your name: *enter your first name in lower-case*
15. Your computer’s name: *this will be auto-populated*
16. Pick a username: *this will be auto-populated*
17. Choose a password: enter a password you can remember
18. Confirm your password: re-enter the password
19. Click “Continue” and let the installer run
20. Click “Reboot” when the installation is finished
21. Additionally, press “Enter” if necessary

First Login and Updates

1. When your VM (virtual machine) is rebooted log in with the username and password you created during installation
2. Tap your “Windows” key on your keyboard if your computer is running Windows or the “Command” key if your computer is a MAC
    a. If neither of these options work click on the round white and purple button to bring up the search utility
3. Type **term** in the search window then click on the Terminal icon which is displayed
4. In the terminal window type: `sudo apt-get update` followed by your password
    a. This will run a command which updates the list of available software packages
5. In the terminal window run: `sudo apt-get upgrade`
6. In the terminal window run: `sudo reboot`

7. Log back into your VM
8. Click on “Devices” in the top-most menu
    a. select “Insert Guest Additions CD Image…”
    b. A popup will ask you if you want to run the software on the Guest Additions CD, click “Yes”
    c. Once again, type in your password then click “Authenticate”
    d. The guest additions will be built and installed
    e. Next press “Return” to close the window
9. Back in the terminal window type `sudo poweroff` to shutdown the VM

Installing Guest Additions

1. Click on the VM in the left panel of the VirtualBox Manager
2. Click the “Settings” button
3. A “Settings” window will be displayed
4. Click on “General” in the left panel then click the “Advanced” tab in the right panel and change these settings:
    a. Shared Clipboard: Bidirectional
    b. Drag’n’Drop: Bidirectional
    c. Then click “OK”
5. Click “Start” to startup your VM
6. Log in when your VM is finished booting

Exploring Your Desktop

1. Press the Settings icon in the top far-right corner of the screen
    a. Then select “About This Computer”
    b. Explore the information contained in the new popup window
    c. How much memory does your VM contain?
    d. What kind of Processor does your VM have?
2. Clicking on the “All Settings” tab gives you many more areas to explore
    a. To return back to the previous screen click on the “Details” icon