KALI Linux

Install in Virtual Box get your Kali Linux up and running in a Virtual Machine

Overview:

This guide is to help you get going with the "The Complete Hacking Course" for beginners without buying any specialized equipment for penetration testing. As an introduction to Pen Testing this will be all you need for this course. As you advance you will probably not be using a Virtual Machine (VM) for your testing purposes.

It does not matter what the OS of your host machine is, if you can get a Virtual Box up and running the steps are the same.

The reason we suggest a Virtual Machine for beginners is that if something goes awry you won't lose your entire system.

This document was done independently with no connections to anyone. The intent is to speed up the Kali installation process.

Before you Begin

- ♦ Working with what you already have is fine for the course, however not for real world pen testing
- ♦ Most things will work, and by the way some things just DO NOT.
- ♦ Does internal wireless meet the chip requirements? **STOP Warning:** A VM will show up in Kali as an Ethernet adapter eth0. You can't do the wireless lectures without an external USB wireless card when using a Virtual Machine.
- ♦ To be redundant I did not say use the internal wireless card in a Virtual Machine.
- ♦ To be able to do the wireless lectures in a VM, do a search for USB wireless adapters for Kali Linux. Here are a couple of sites that talk about what to use:
  http://www.blackmoreops.com/2014/01/08/recommended-usb-wireless-cards-kali-linux/ and http://www.aircrack-ng.org/doku.php?id=compatibility_drivers and http://www.wirelesshack.org/top-kali-linux-compatible-usb-adapters-dongles-2015.html

Installation Steps

Pre-Flight check List

♦ Check for any updates to your BIOS, then Enable Virtualization in your BIOS.

♦ Check your disk space on your current OS. You need 15% free for your system and then you need additional space for Virtual Box and Kali. *This is important to CHECK before you begin.*

♦ Hyper-V cannot be used for this course. VMware can, but you should know how to use it.

♦ **Note:** If you have enabled Hyper-V, you will have issues when trying to install Kali in Virtual Box and will not be able to see the 64Bit versions of Linux for Virtual Machines you can disable Hyper-V in Windows Features just uncheck anything Hyper-V and reboot

♦ Check your version of your OS. Is it 64 Bit or 32 Bit? All your downloads should match your system. *(64 bit program is not going work on a 32 bit machines)*

♦ Before attaching your USB external Wireless card, be sure to get Kali up and working with any guest additions and updates performed.

BIOS Enable Virtualization

Enable Virtualization in the BIOS (if you do not you will not be able to see 64bit editions and the install may fail). Enter the BIOS during startup of your physical system. Each system is different so **the key to press may be different for your system.** I used a Dell laptop so I had to hit F2 on boot up to get into my BIOS.
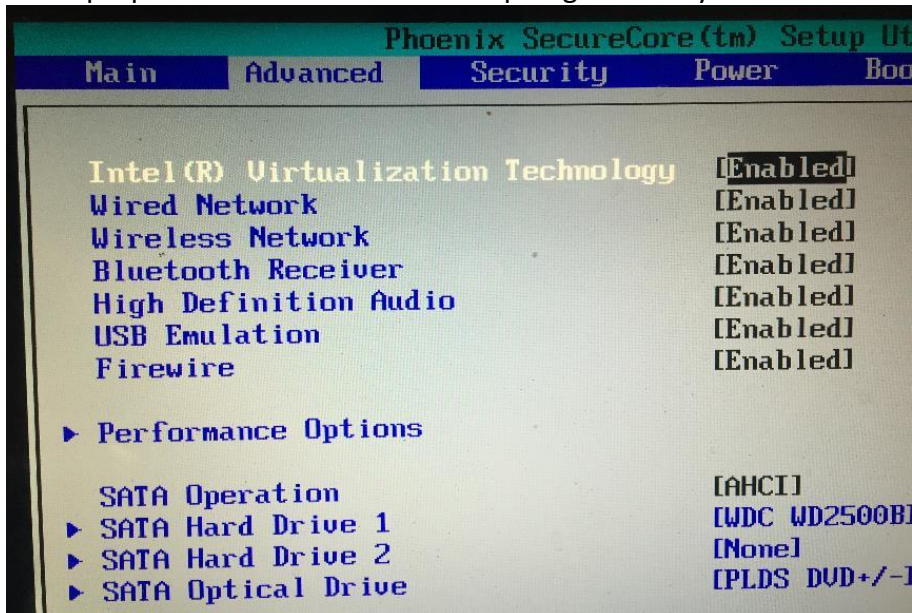
In this case Virtualization was under the Advanced Tab, you want to make sure that it is enabled **(MOST of the trouble with setting up a VM have been caused by skipping doing this part)** Once you have enabled Virtualization you want to save your changes and exit the BIOS
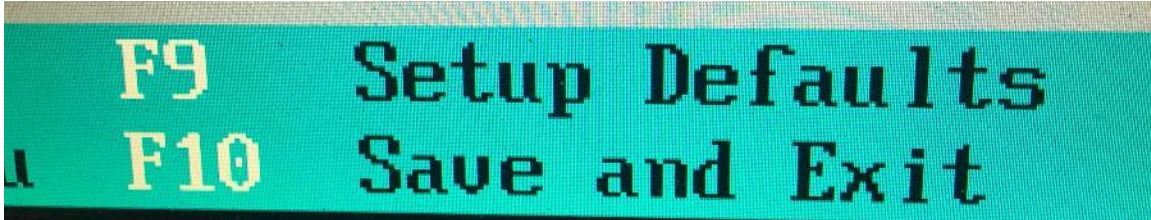

Some systems may need to be powered down completely then restarted for this to take effect. You can check with your system manufacturer or google how to get into your BIOS. You can read about what the BIOS is at https://en.wikipedia.org/wiki/BIOS

Virtual Box + Extensions

Install the Virtual Box and then install the Virtual Box Extensions. These are basic Windows programs just take the defaults for both Virtual Box & Virtual Box Extensions. Be sure you have the version that matches your system, 32 Bit or 64 Bit. All downloads can be found at https://www.virtualbox.org/wiki/Downloads Install based on your operating system.

Building your Kali Virtual Machine

Start Virtual Box (I already have Kali installed here in another VM that's why you see that icon there ….we will make a new VM here)
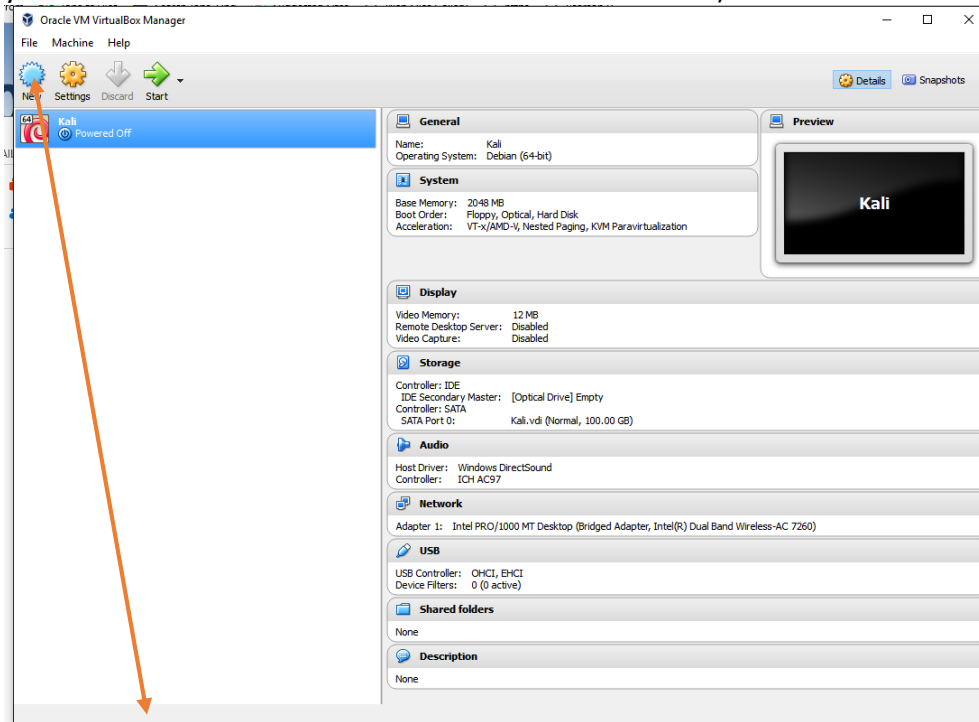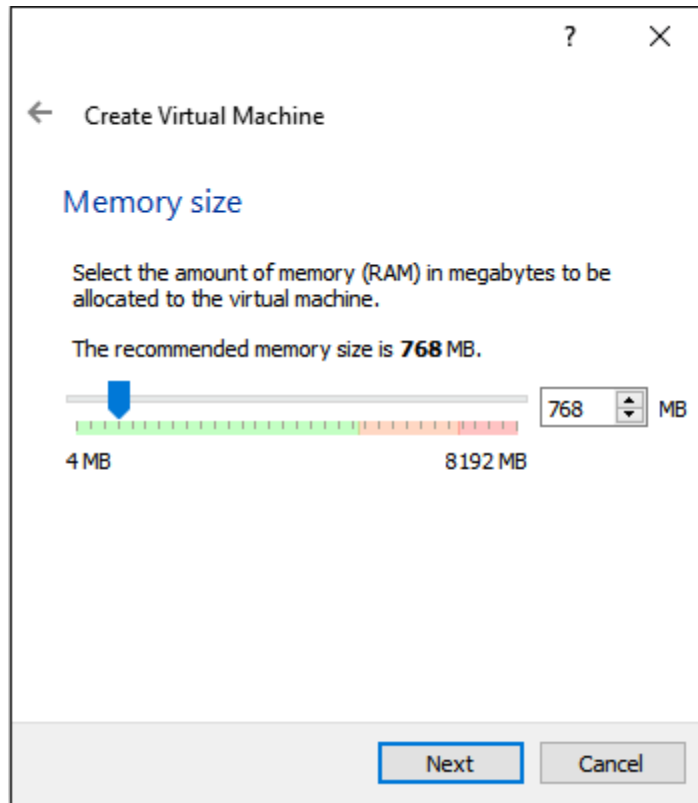

Click on New

This Starts the Creation of a new VM
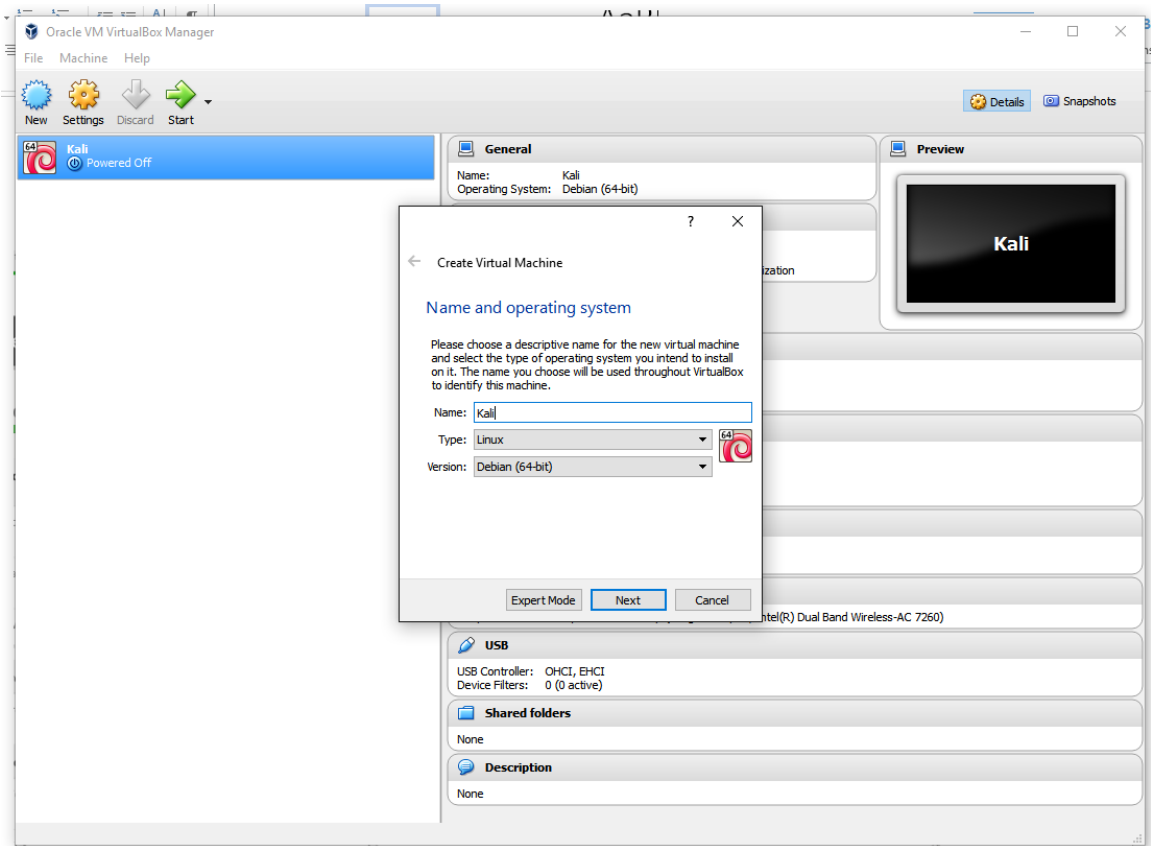
- ♦ Give it a name like "Kali" or whatever you want it to be.
- ♦ Then click the drop down menu by "type" and choose "Linux"
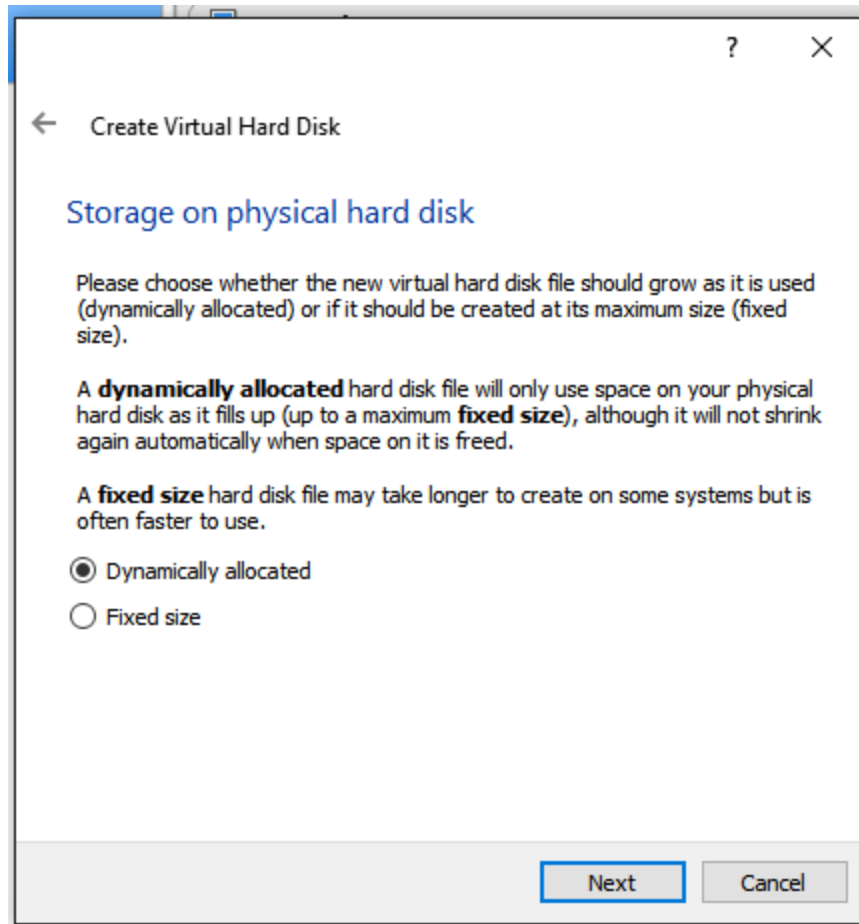- ♦ Then choose the "Debian 64bit"(if you have a 64 bit system, and virtualization is on in the BIOS) PRESS next

Set your memory size, my machine has 8gig available so I am giving the VM 2 gig. You can type in how much you want to give the VM. I chose 2048. This can be changed later if needed .(Don't give it to little or it will be slow and too much your host system will be slow)
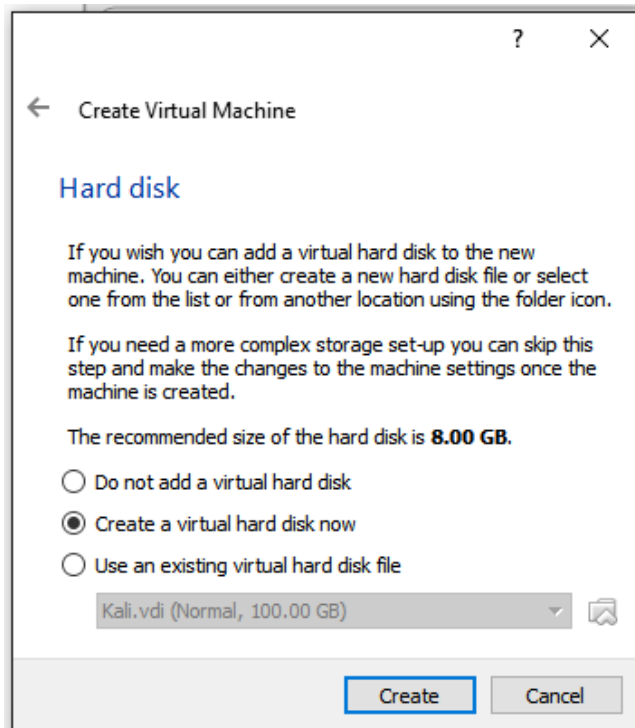
Next we will Create a virtual hard disk for Kali. I used 32gig for this example. You can give it more space if you have it. (again check the free space on your actual hard drive)
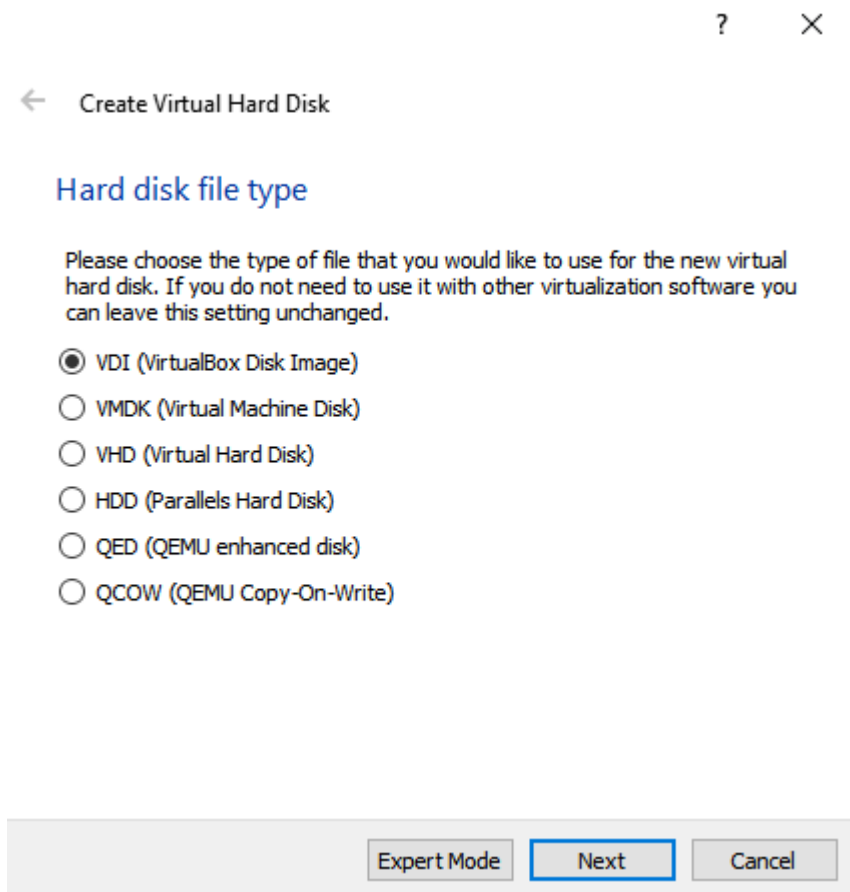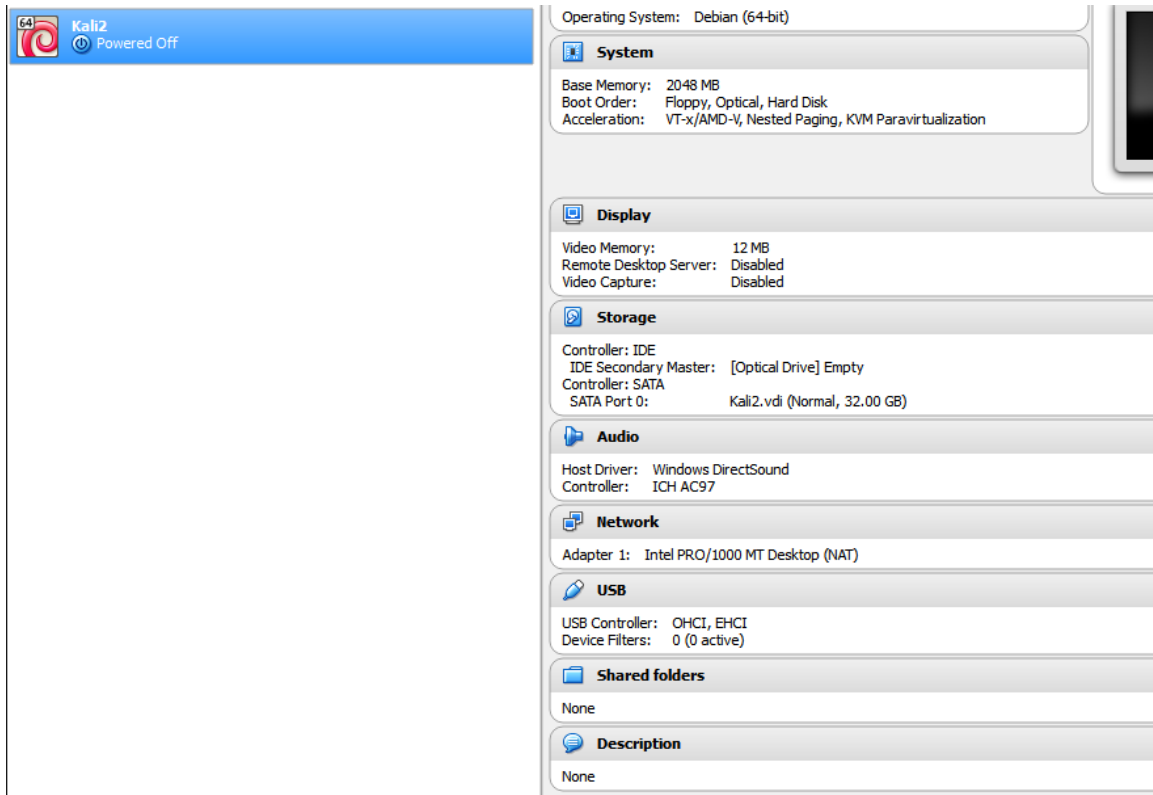

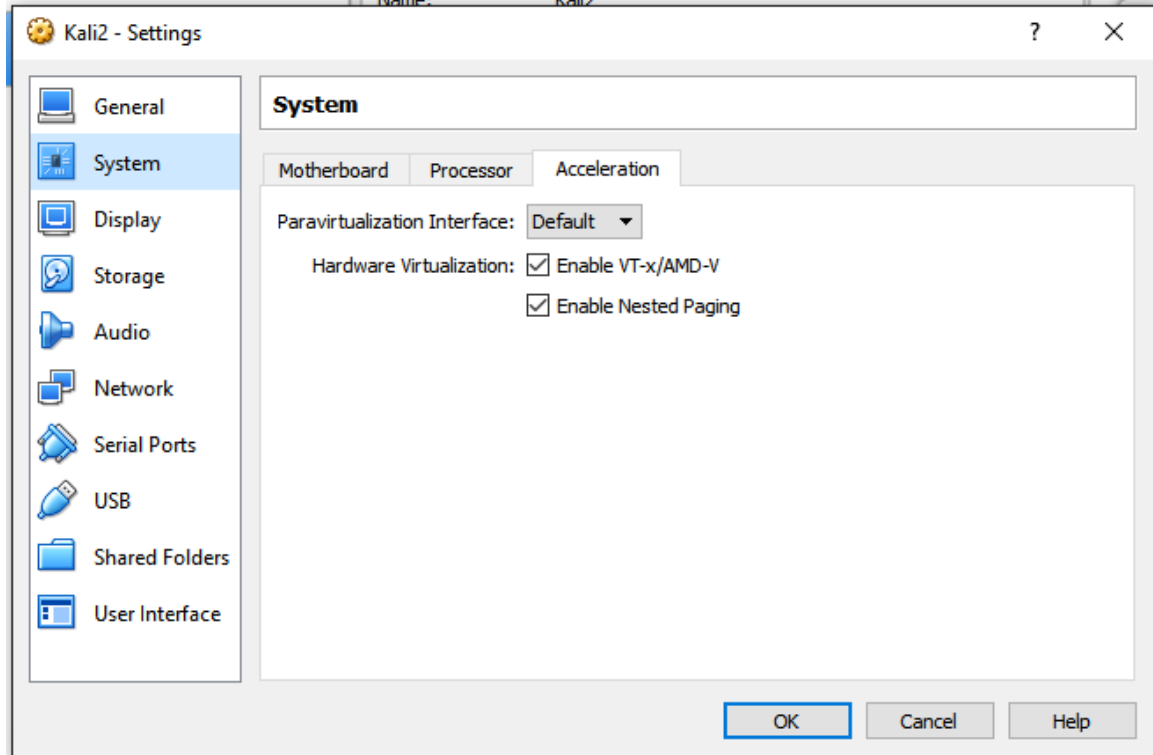Unless you have other plans take the default and press next

Take the default press next
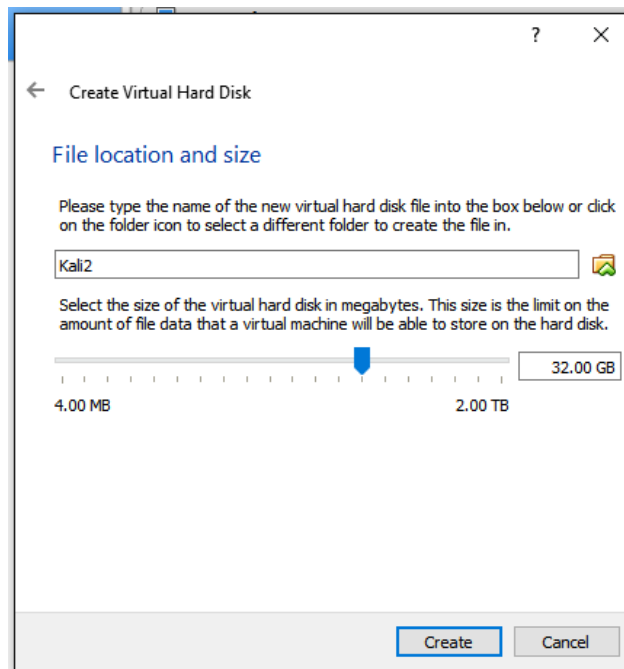
I set this to 32 gig. If have space to spare try 64 gig and click create

Operating System: Debian (64-bit)

System

Base Memory: 2048 MB
Boot Order: Floppy, Optical, Hard Disk
Acceleration: VT-x/AMD-V, Nested Paging, KVM Paravirtualization

Display

Video Memory: 12 MB
Remote Desktop Server: Disabled
Video Capture: Disabled

Storage

Controller: IDE
  IDE Secondary Master: [Optical Drive] Empty
Controller: SATA
  SATA Port 0: Kali2.vdi (Normal, 32.00 GB)

Audio

Host Driver: Windows DirectSound
Controller: ICH AC97

Network

Adapter 1: Intel PRO/1000 MT Desktop (NAT)

USB

USB Controller: OHCI, EHCI
Device Filters: 0 (0 active)

Shared folders

None

Description

None

The new VM is created now it is time to click on settings

Kali2 - Settings   ?   ✕

General

System

Display

Storage

Audio

Network

Serial Ports

USB

Shared Folders

User Interface

System

Motherboard   Processor   Acceleration

Paravirtualization Interface: Default ▼

Hardware Virtualization: ☑ Enable VT-x/AMD-V

☑ Enable Nested Paging

OK   Cancel   Help

Under System, under the Acceleration tab, all of the options should be checked
(these might be grayed out if you did not turn on virtualization on in your BIOS)

Bridge your adapter (the name of your actual adapter may be different)
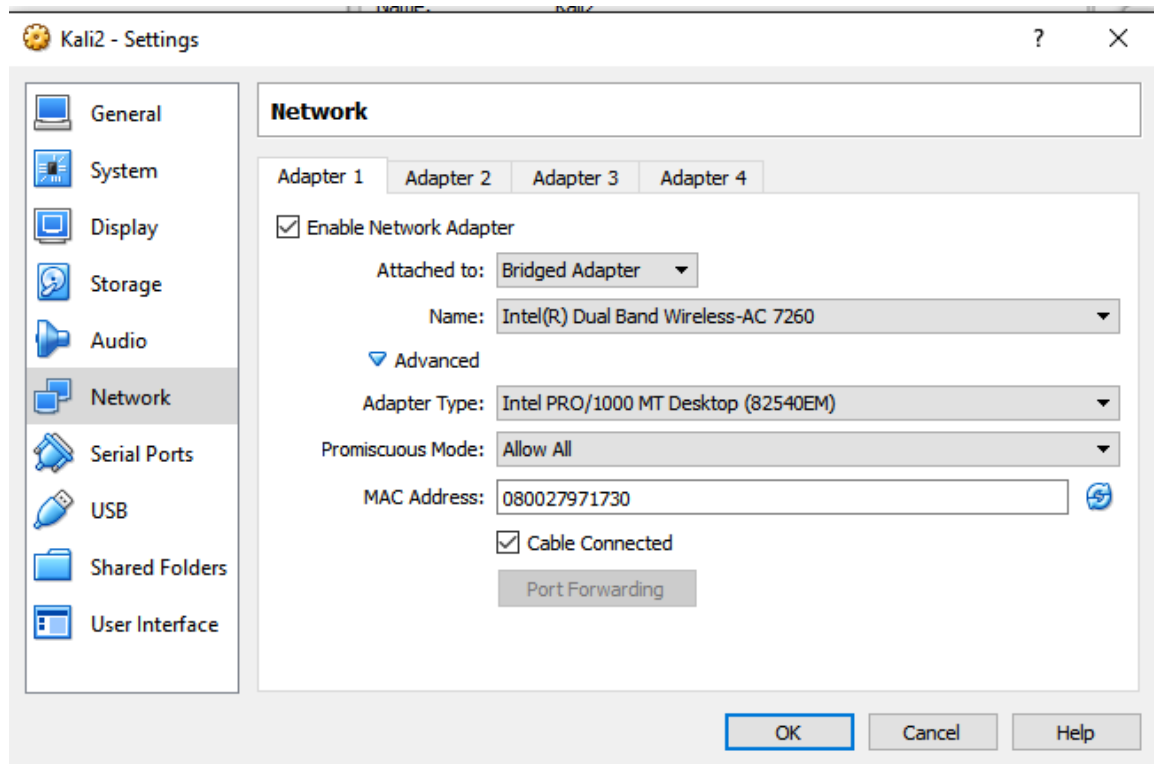
Make your network setting look exactly like this, but with your adapter and **allow all** in the advanced section. Your VM is now prepped, press OK, go to the top of VBox and press START
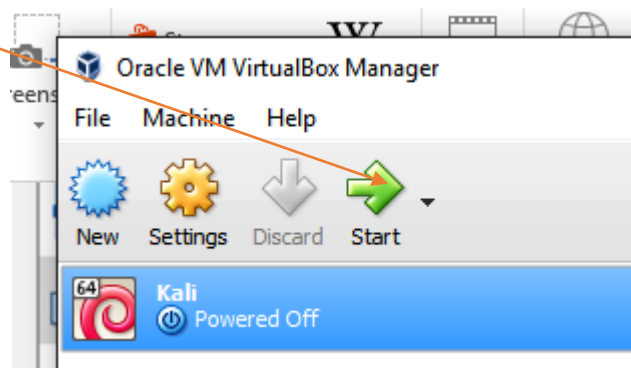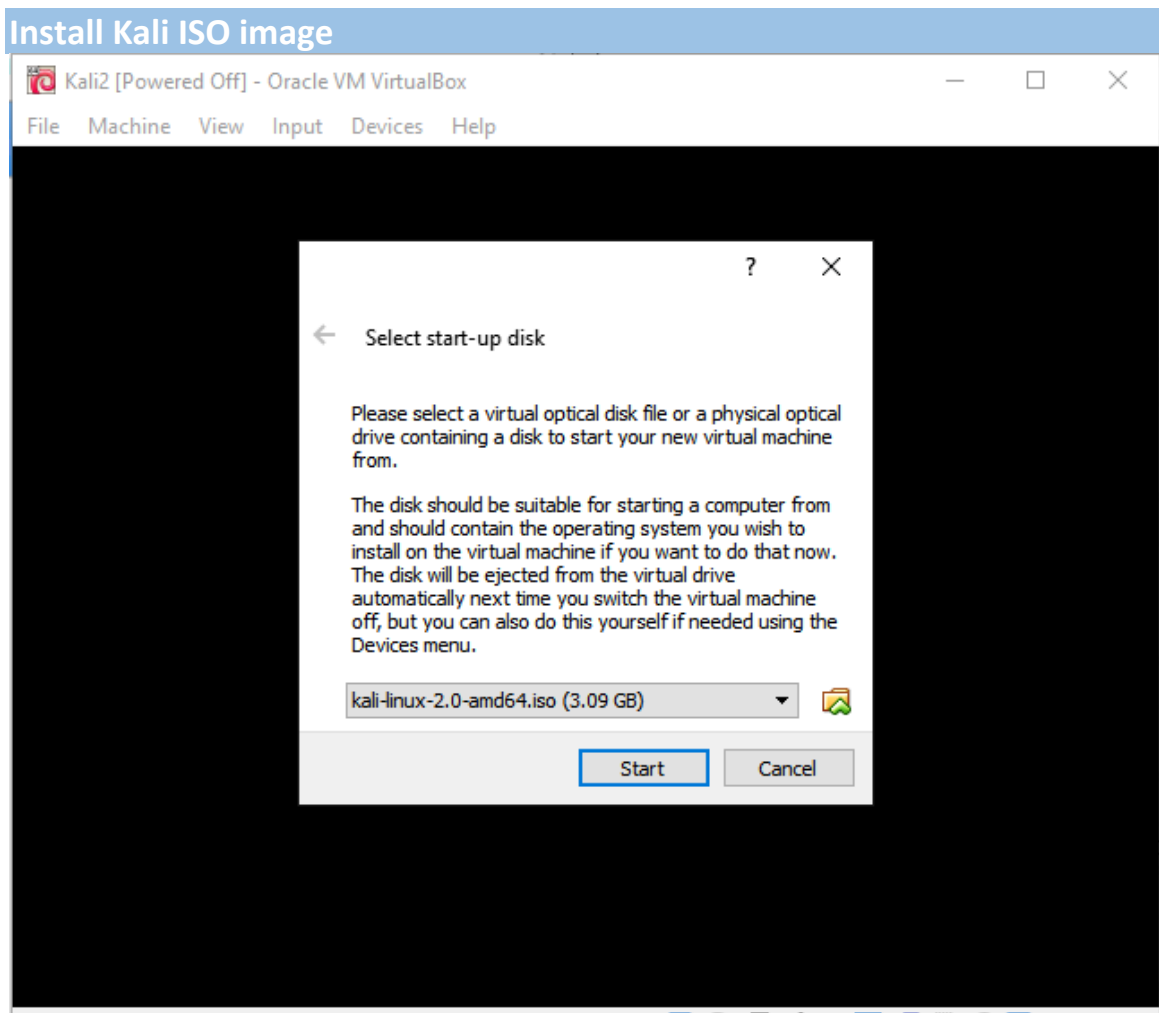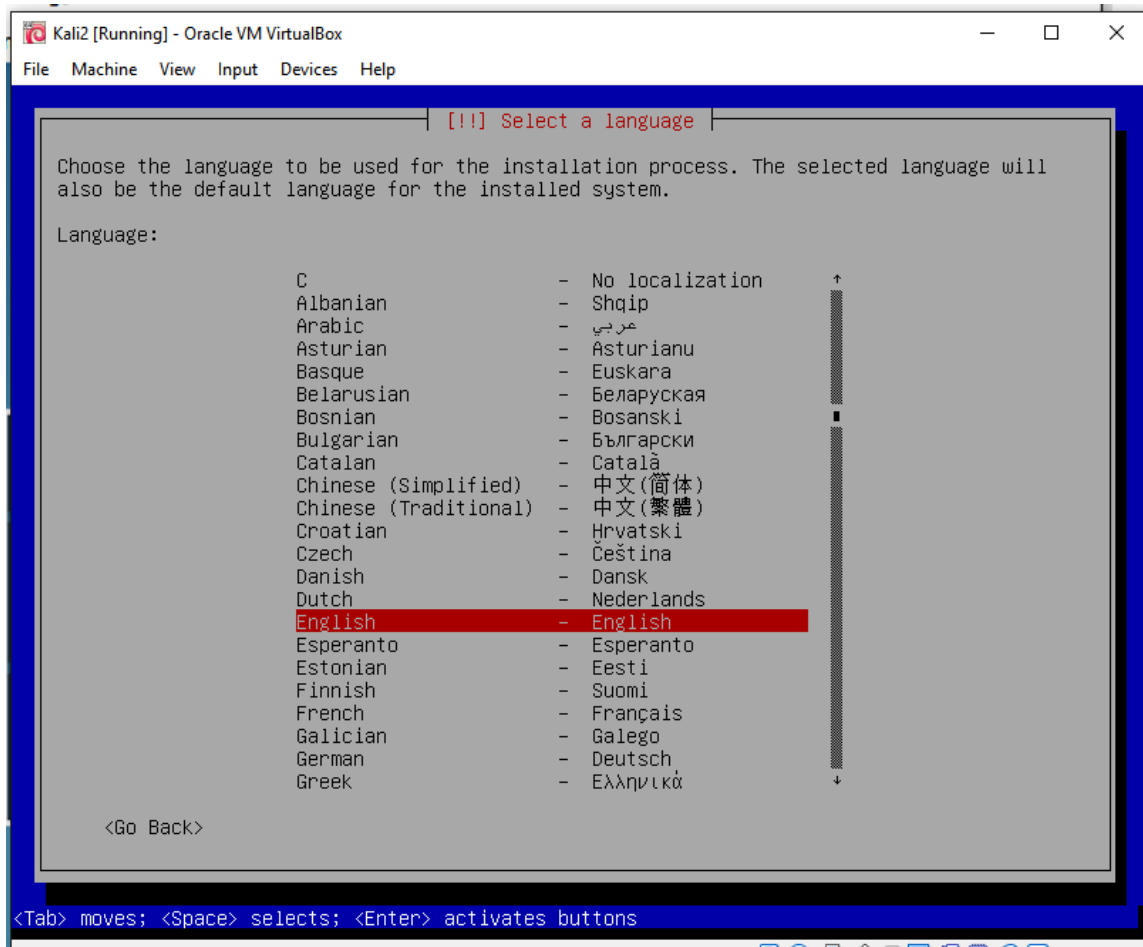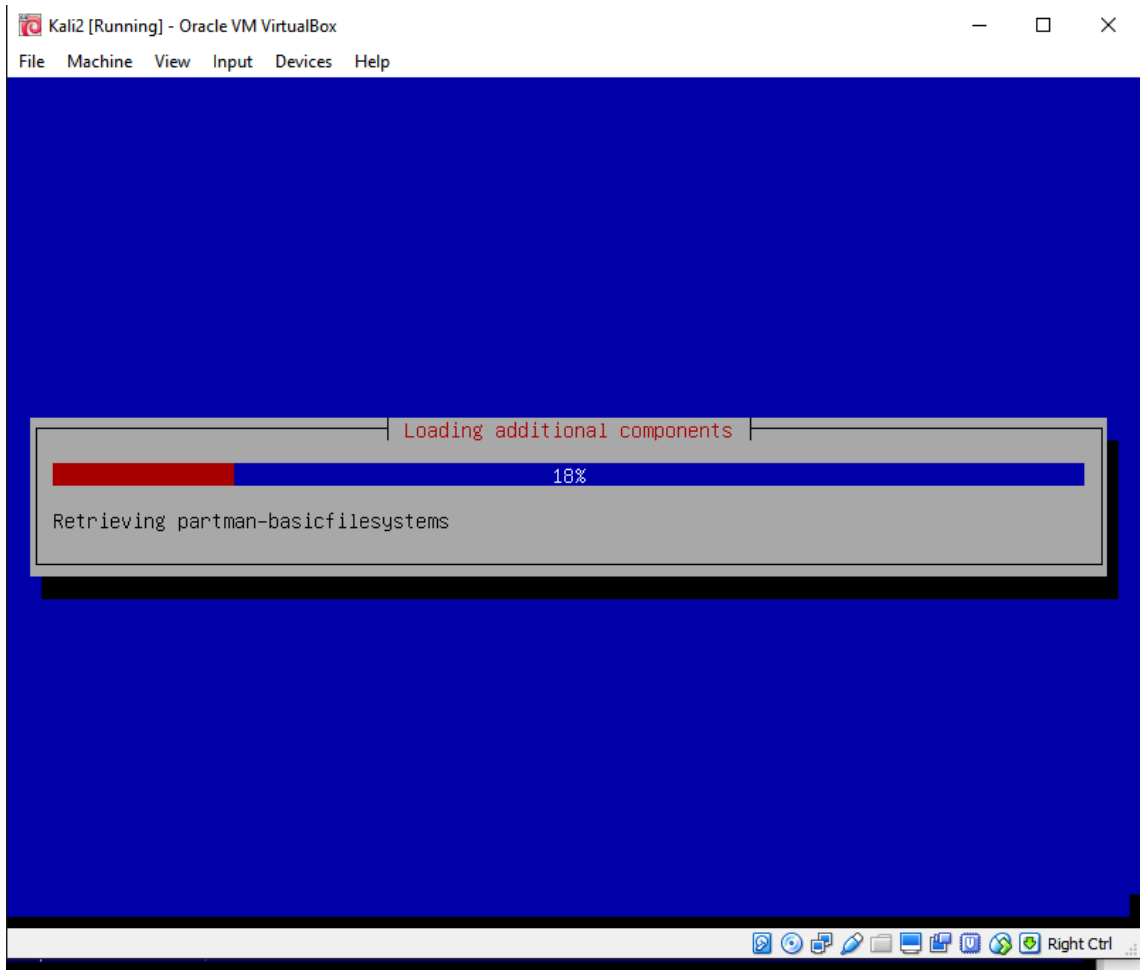
"Select start-up disk" will pop up, browse to the Kali ISO image you downloaded. Use the folder icon to browse to it if you do not see it (hopefully you remember where you put it) press **Start**
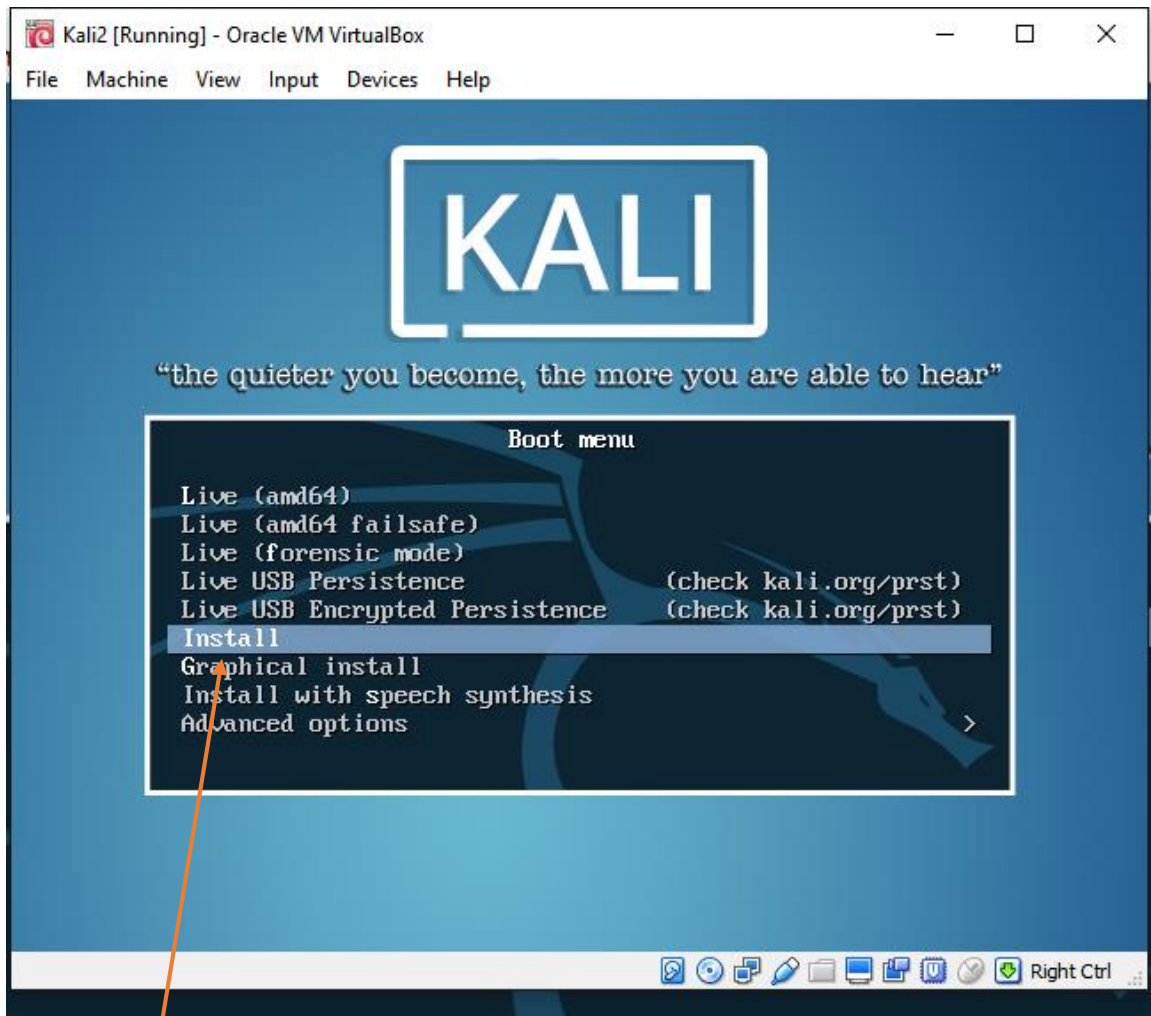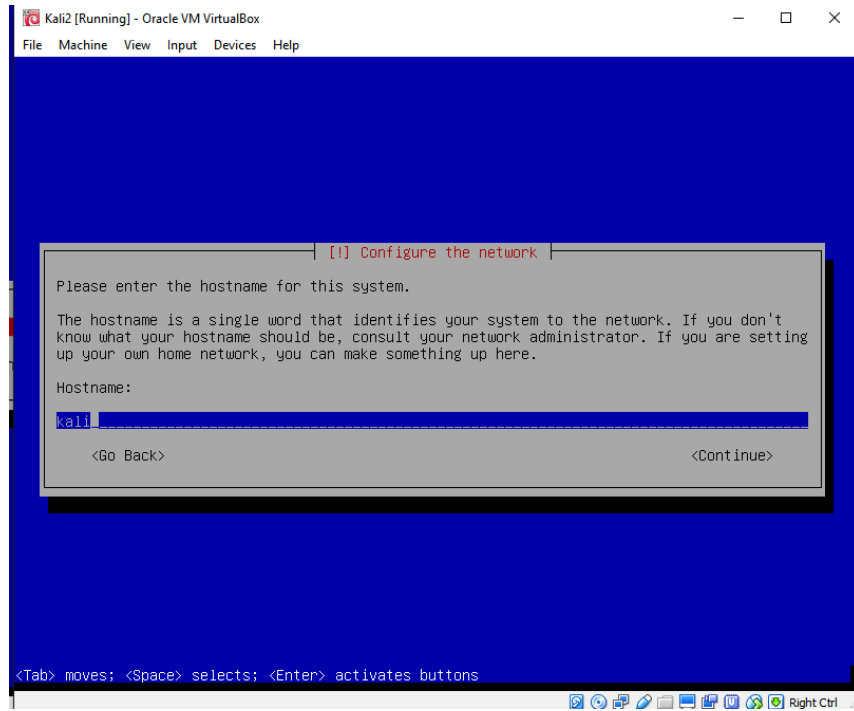
Use the Install option and you are on your way

Select your language and country. I picked American English *(select the defaults on the remainder of the set up screens for your country etc)*

The install should begin. This can take time. *(If you did not allow enough disk space, this operation may fail)*

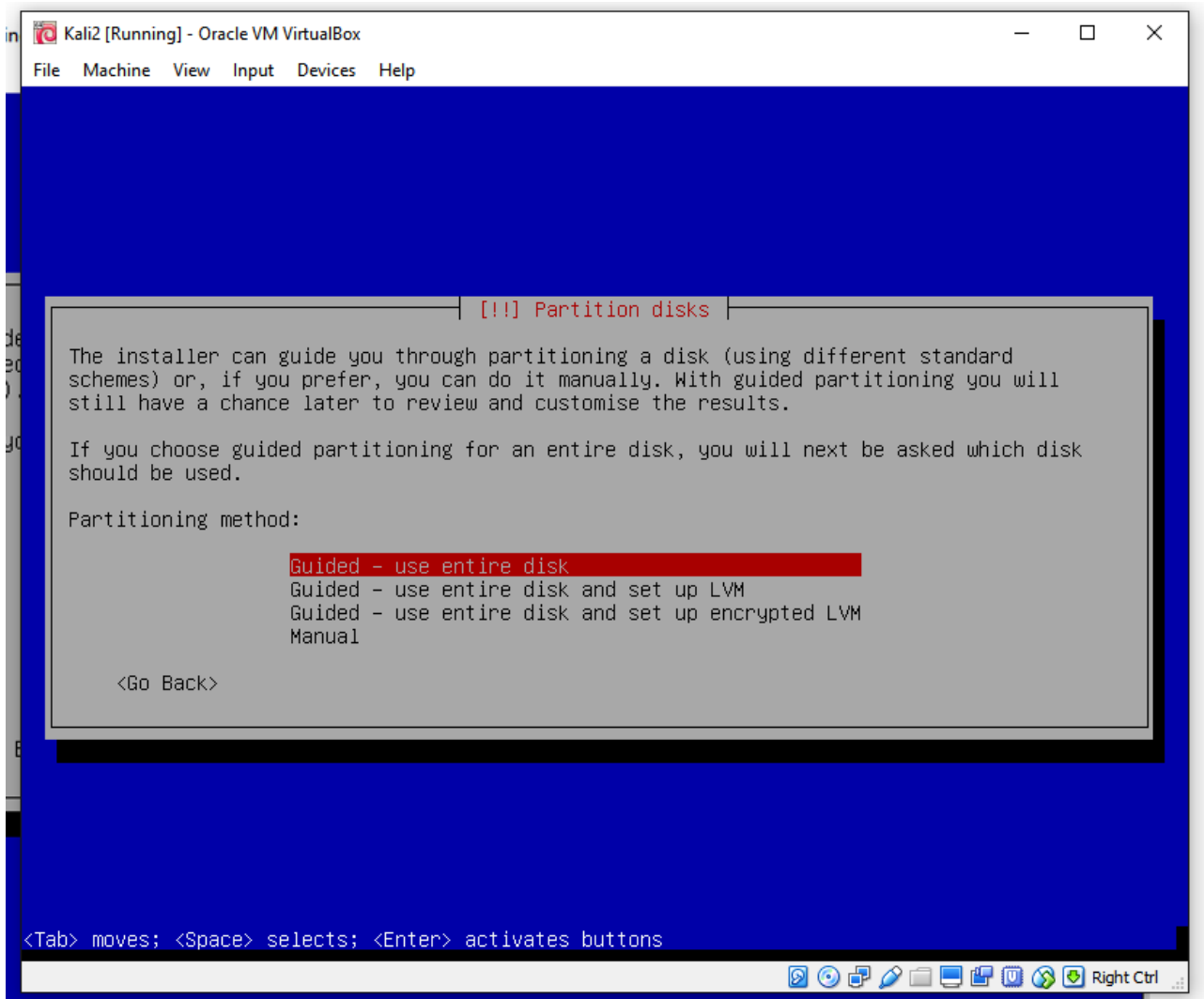Most of the screens, you can take the default and just press continue *(enter key)*
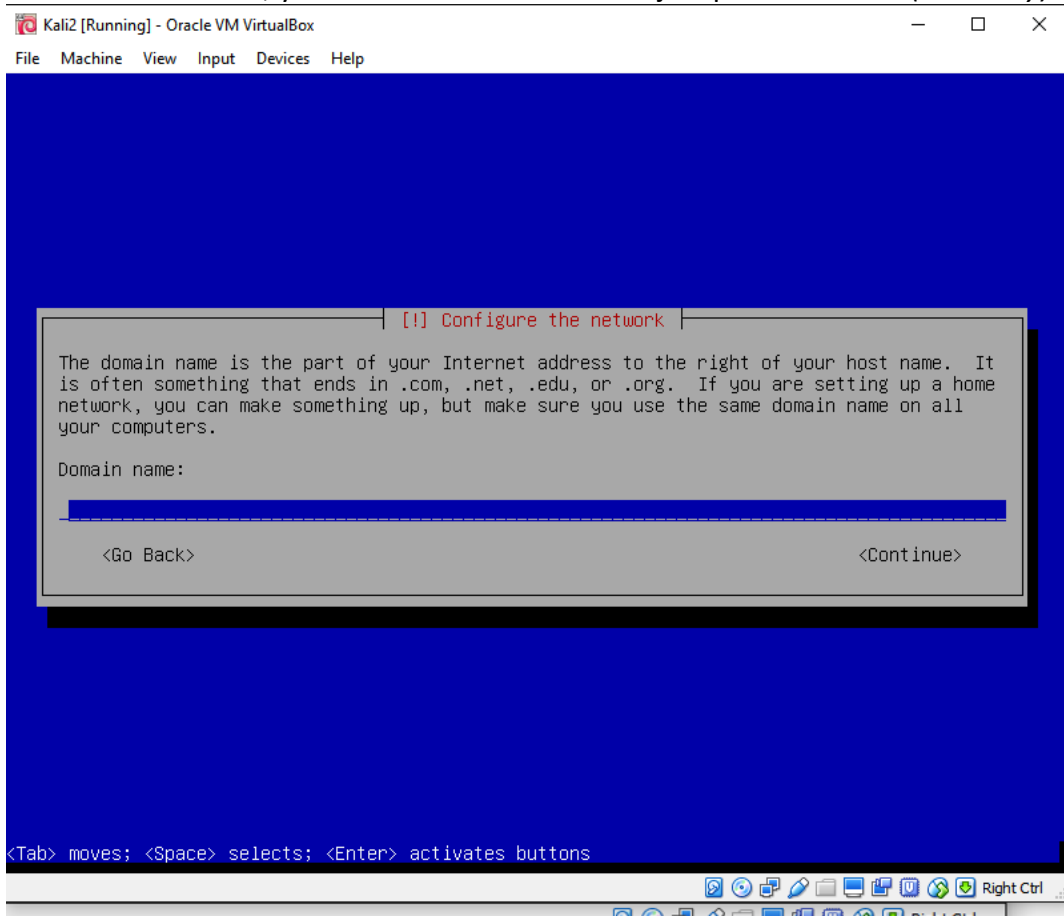
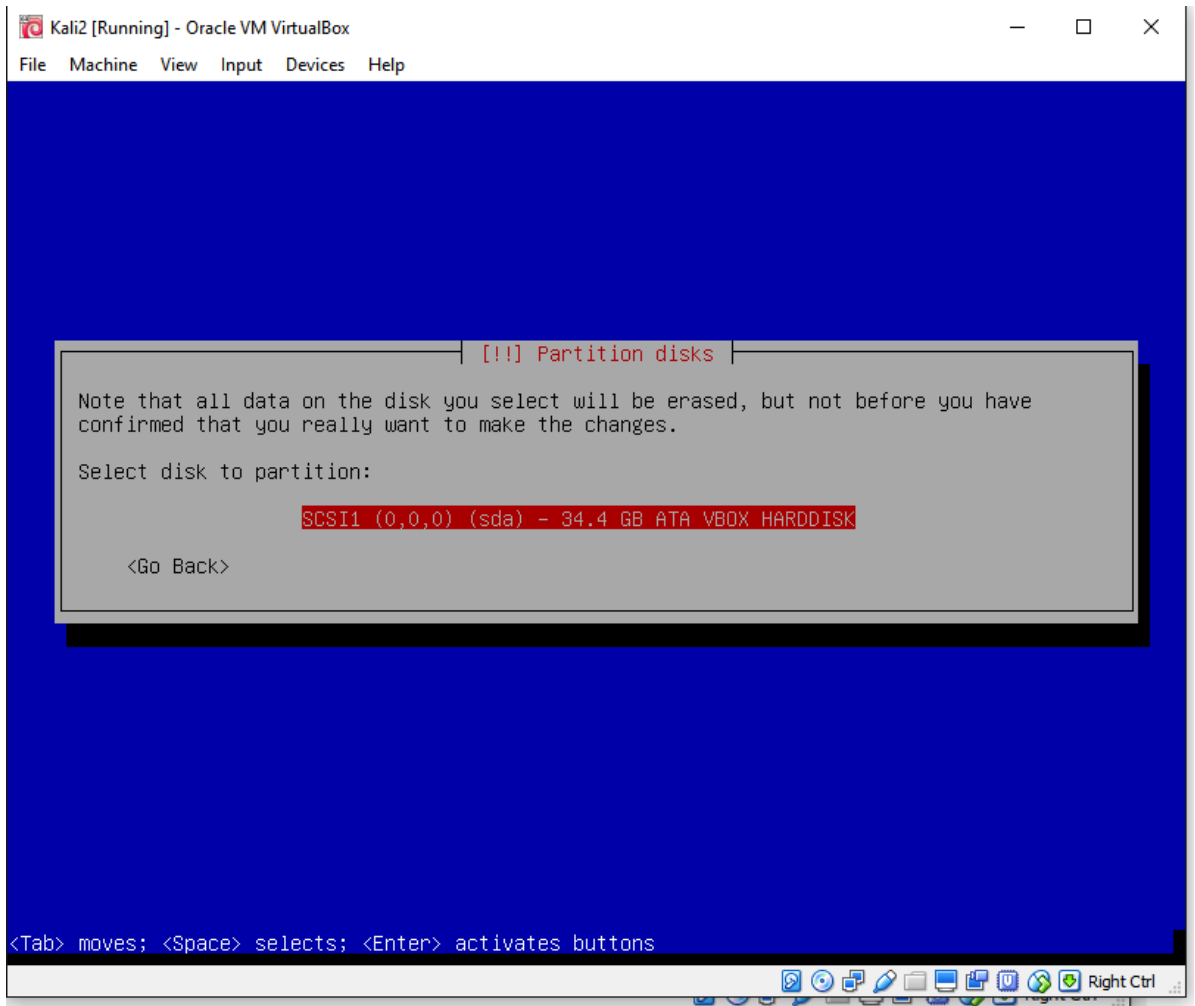A domain name is not required, just press continue.
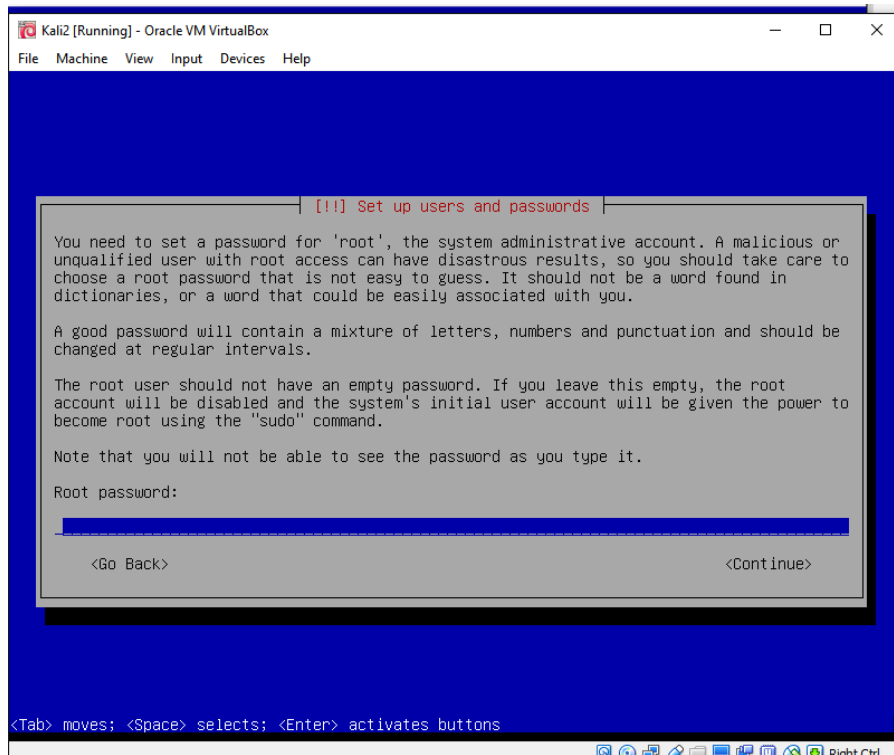
Set your password, don't forget it. It is case sensitive, and you will need to verify it on the next screen

Set your time zone (when you boot into Kali make sure your time zone and time are correct), this can prevent some programs from loading correctly like the Tor browser
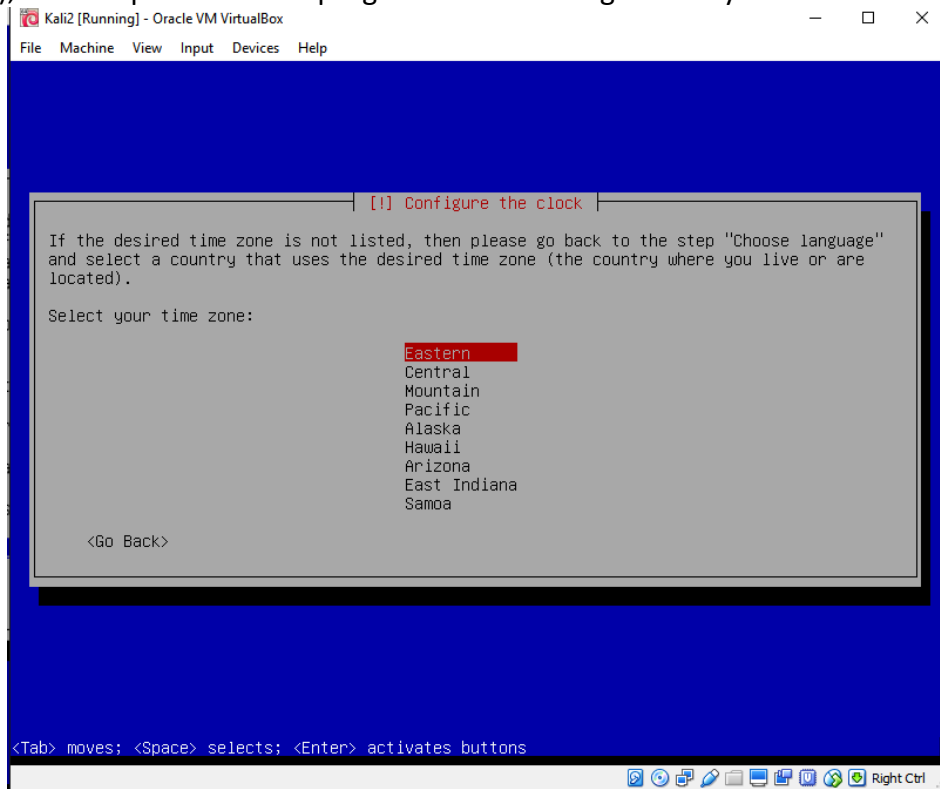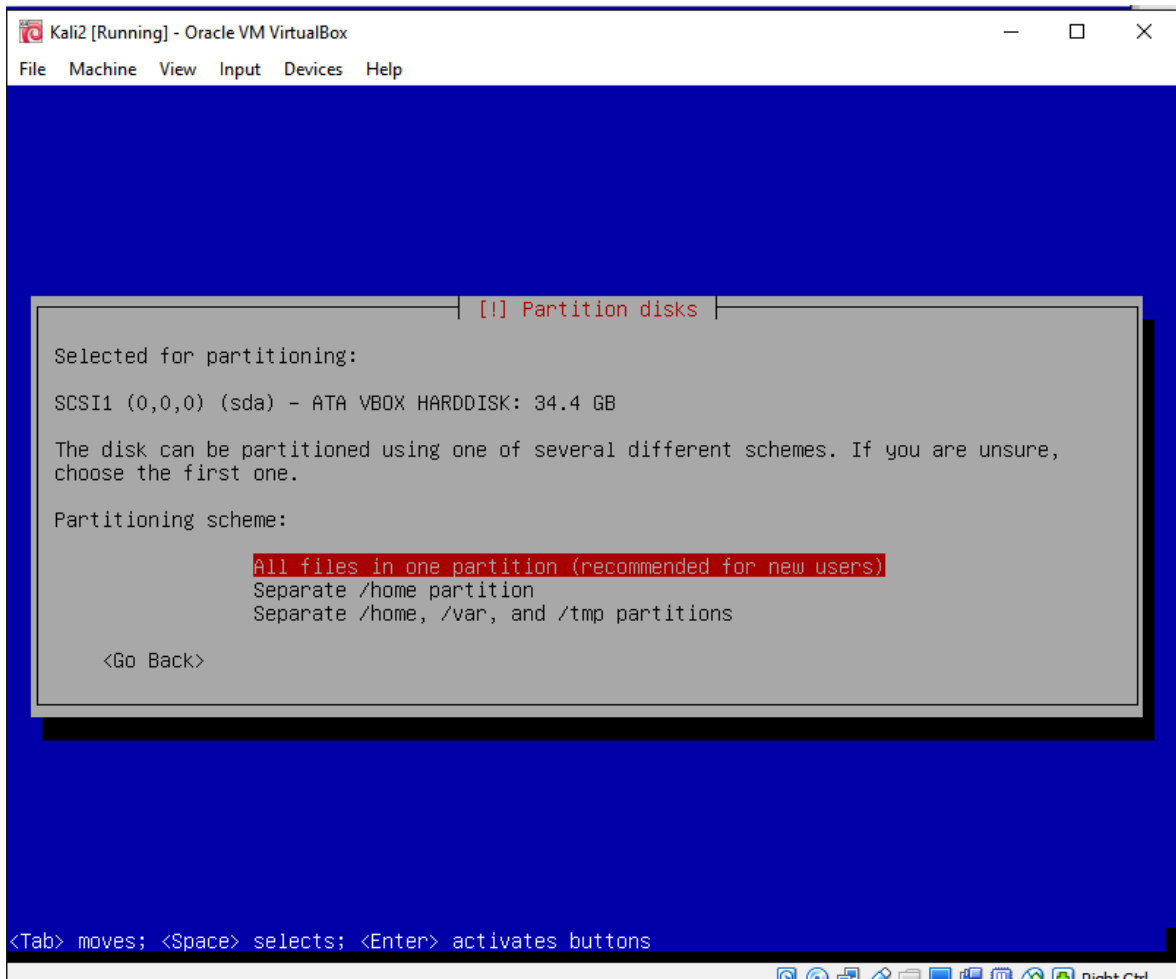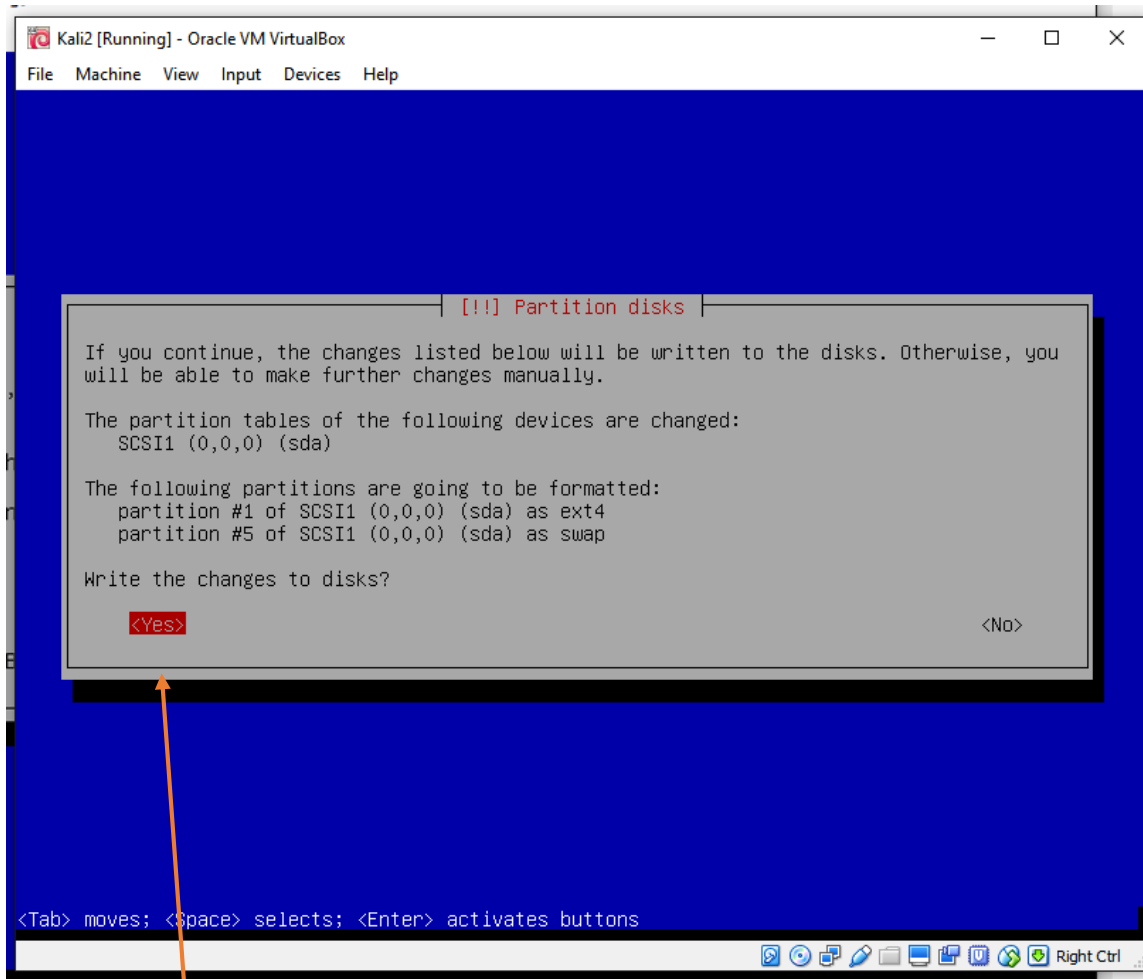
Select the default for this

Press enter

File   Machine   View   Input   Devices   Help

[!] Partition disks

Selected for partitioning:

SCSI1 (0,0,0) (sda) — ATA VBOX HARDDISK: 34.4 GB

The disk can be partitioned using one of several different schemes. If you are unsure, choose the first one.

Partitioning scheme:

                      All files in one partition (recommended for new users)
                      Separate /home partition
                      Separate /home, /var, and /tmp partitions

    <Go Back>

<Tab> moves; <Space> selects; <Enter> activates buttons

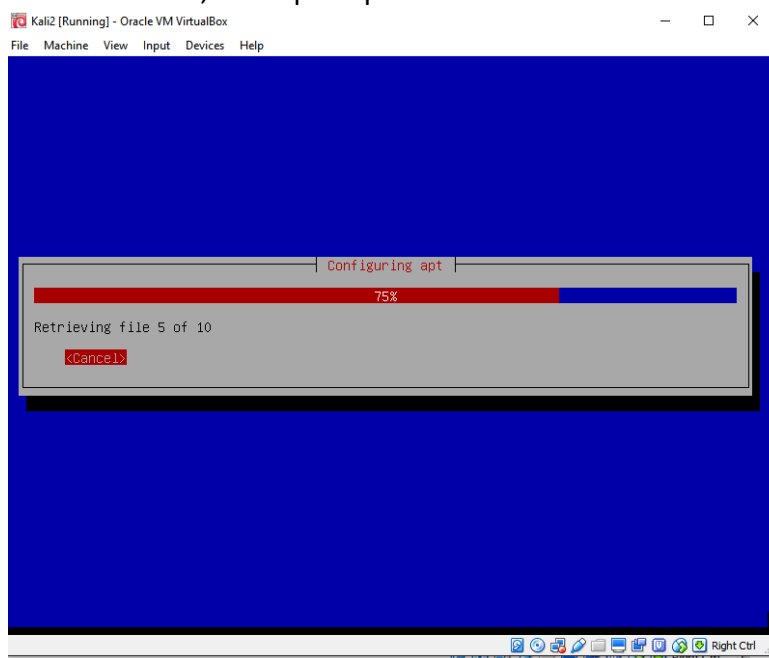Keep selecting the defaults until you get to "Network Mirror"
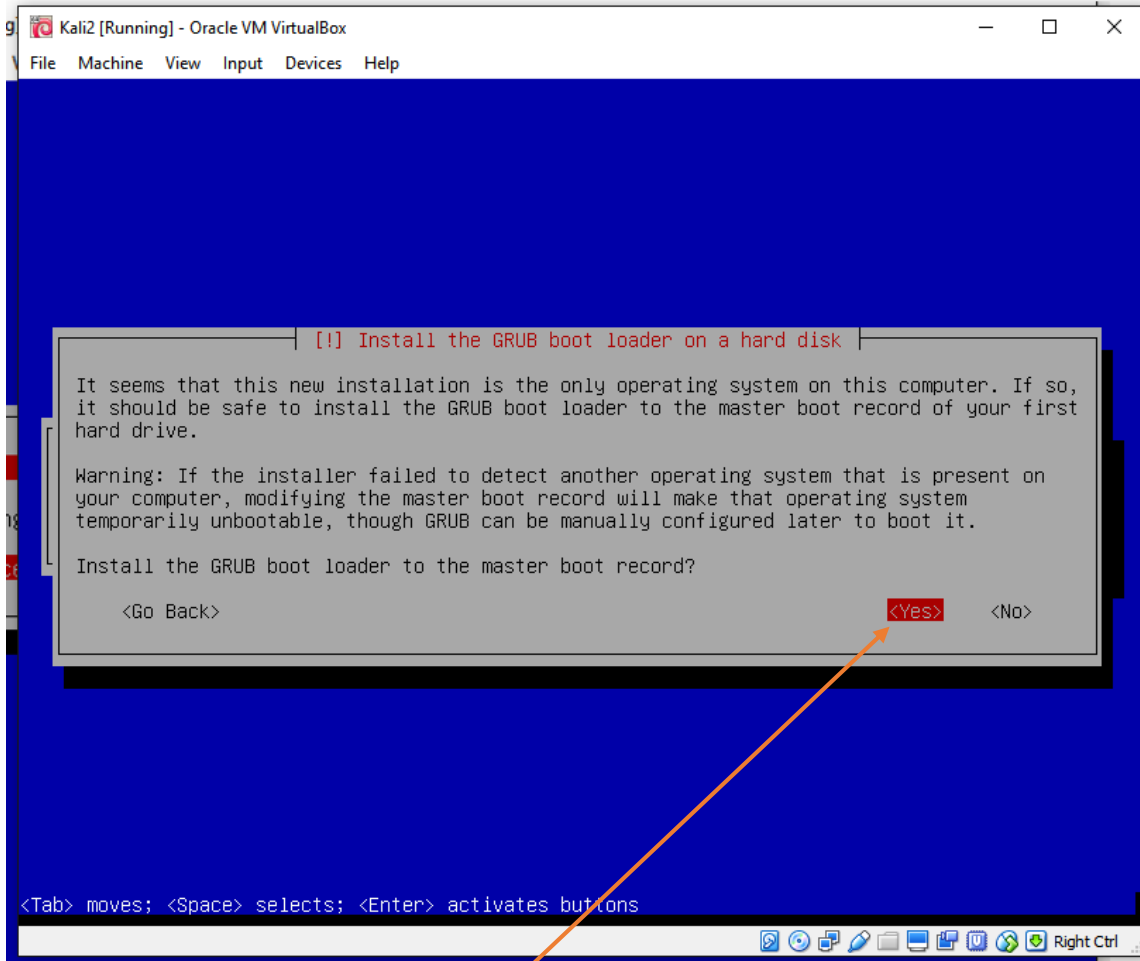
Tab over to "Yes" Press enter

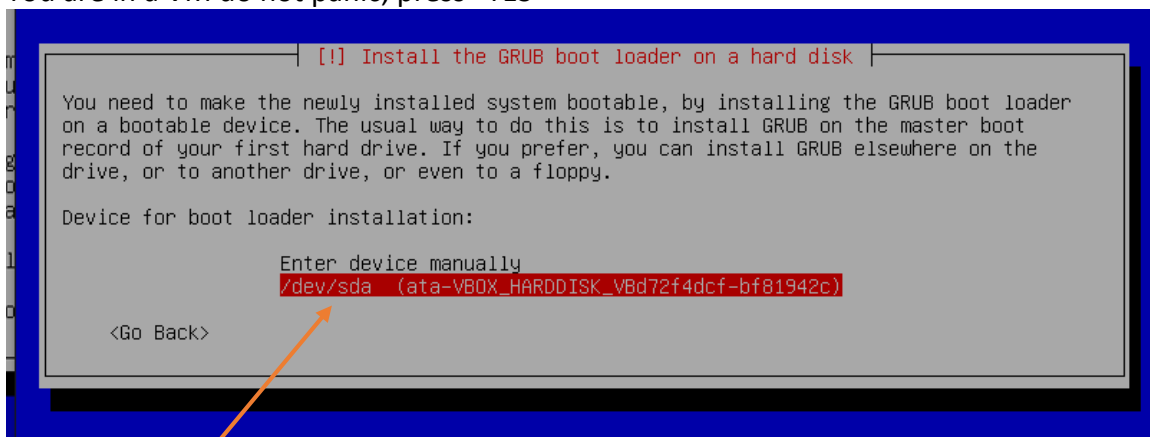The install will begin and will take a while, be patient.
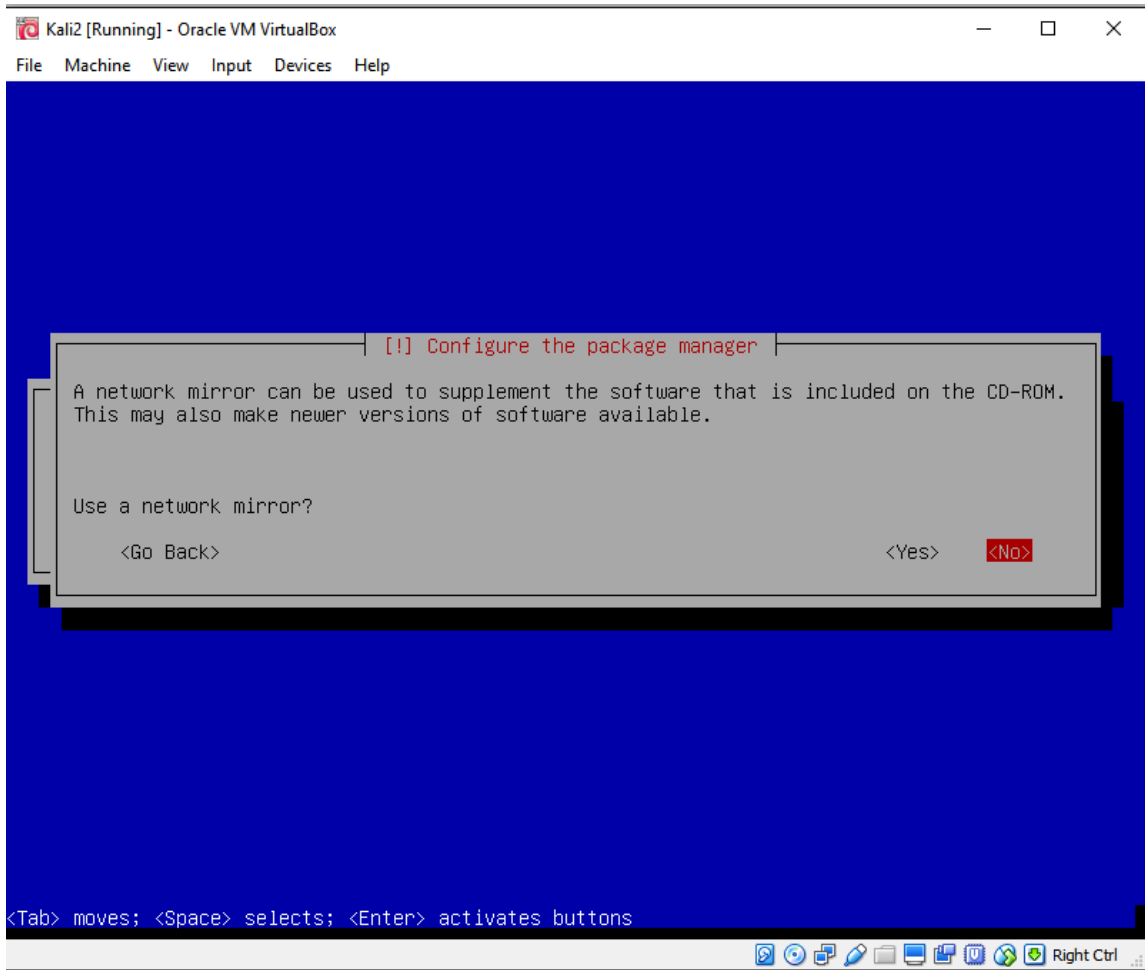
When it gets close to the end, it will prompt about a network mirror select "No" for this
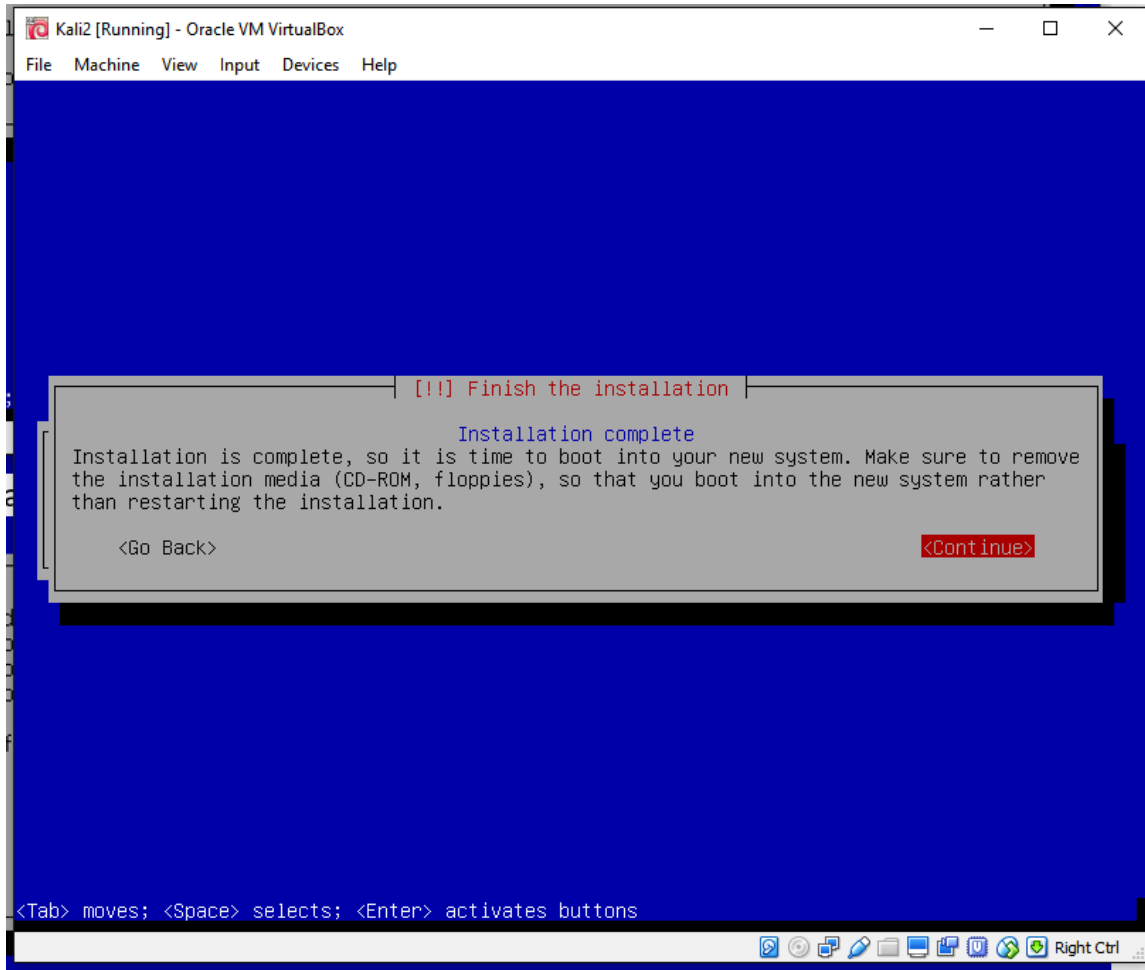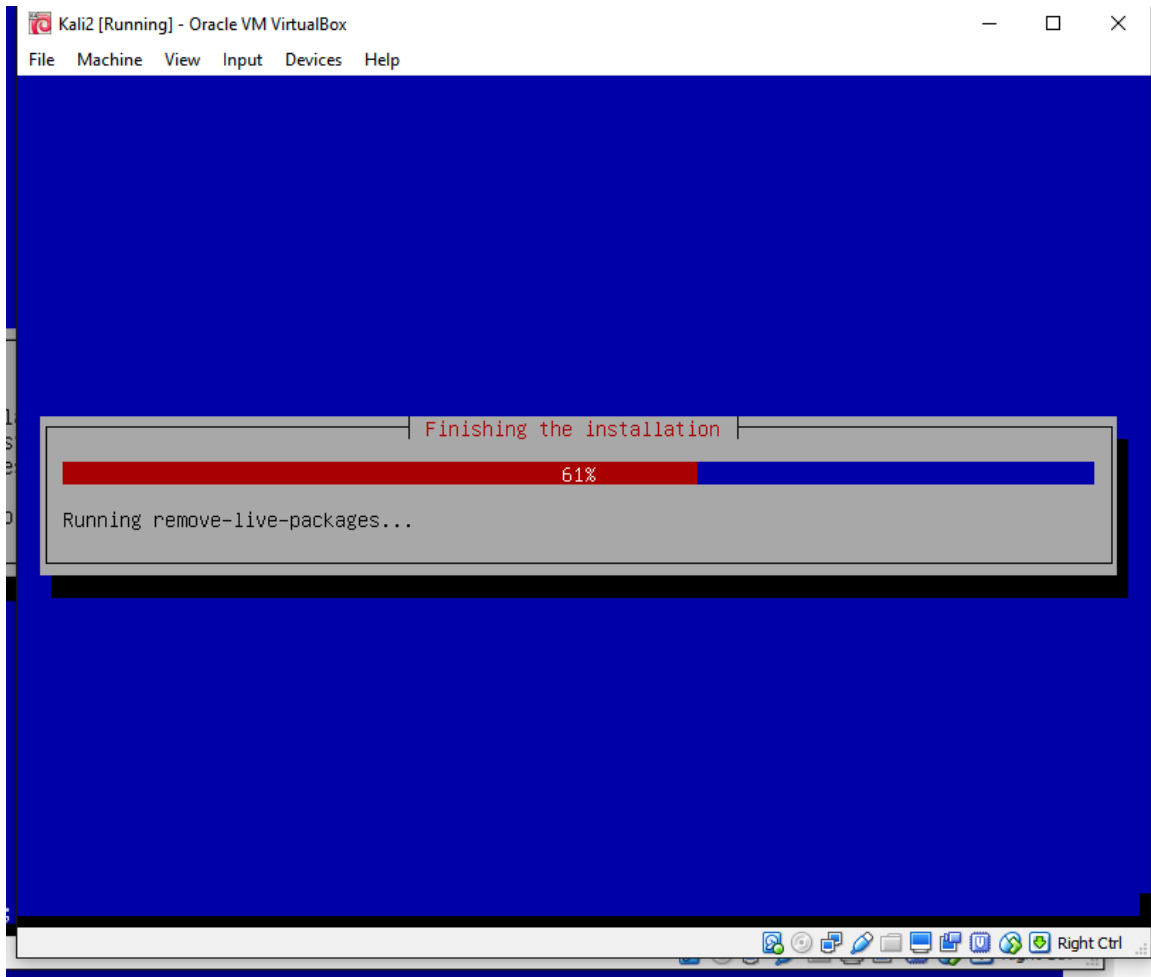

The installation will continue.
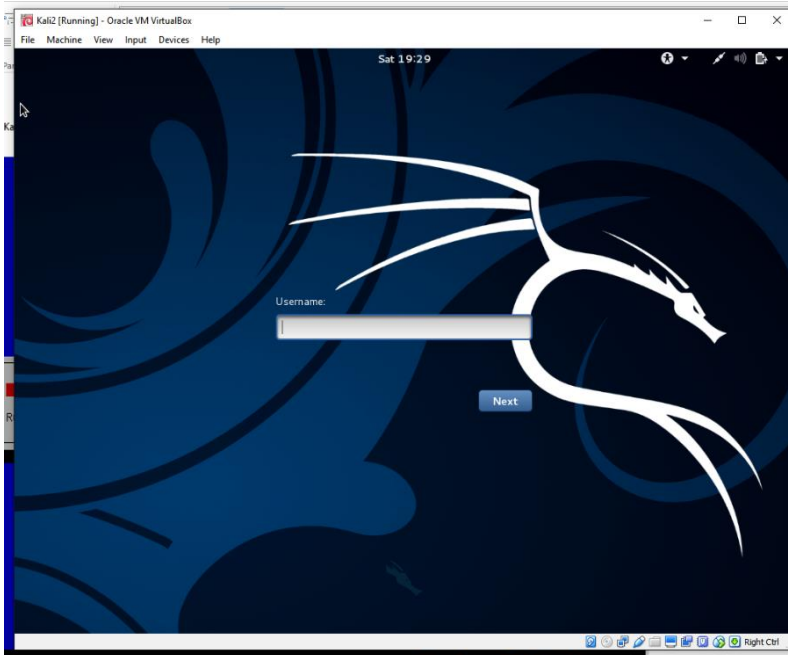
You are in a VM do not panic, press "YES"

It is a VM select the second option, and the install will continue. This does not touch your physical hard drive it is going to go on the virtual hard drive you created
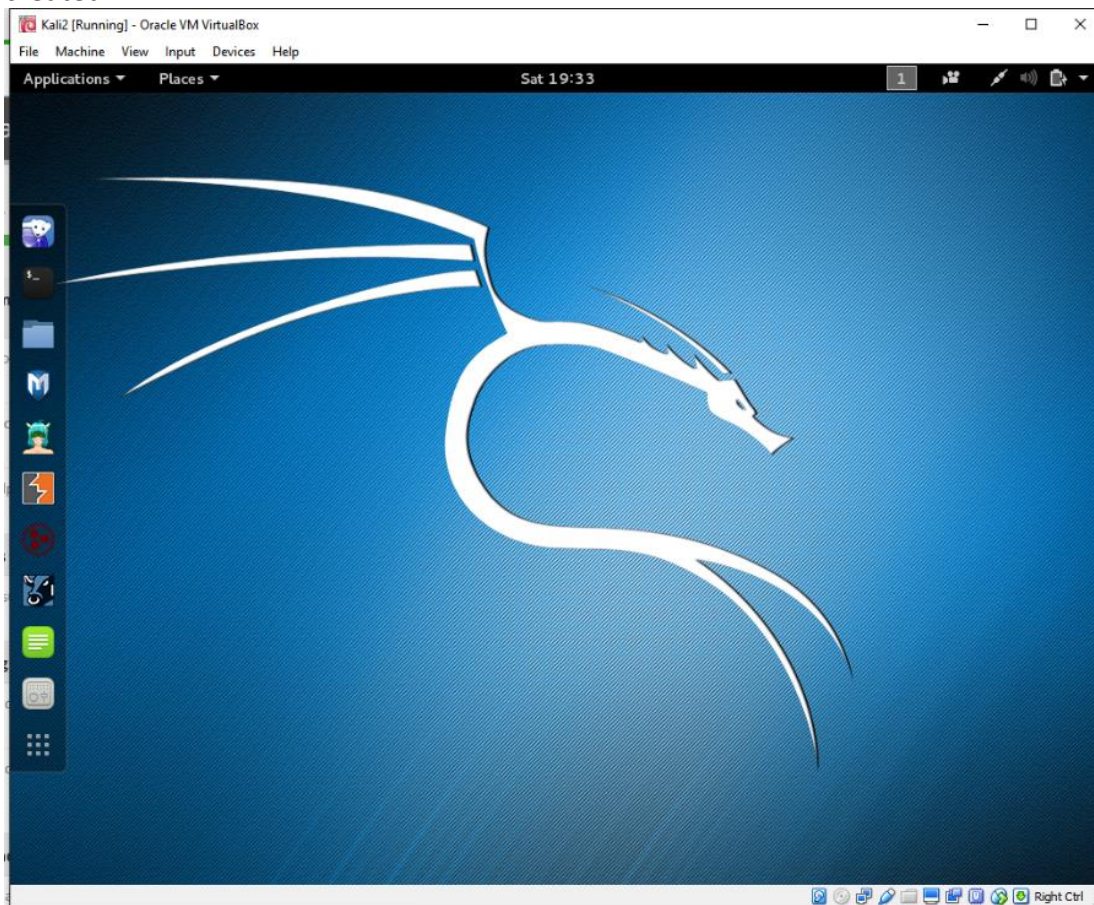
You are almost there

Almost done.

Welcome to KALI in a VM, login as root and use the password you have previously created

Let the games begin. You have gotten this far, next we will tweak the installation and get ready for updates and other internet functionality

Tweak your Kali VM

There are a few final steps and your Kali VM will be ready to go. Let's go to the "Terminal" and verify and change some settings.
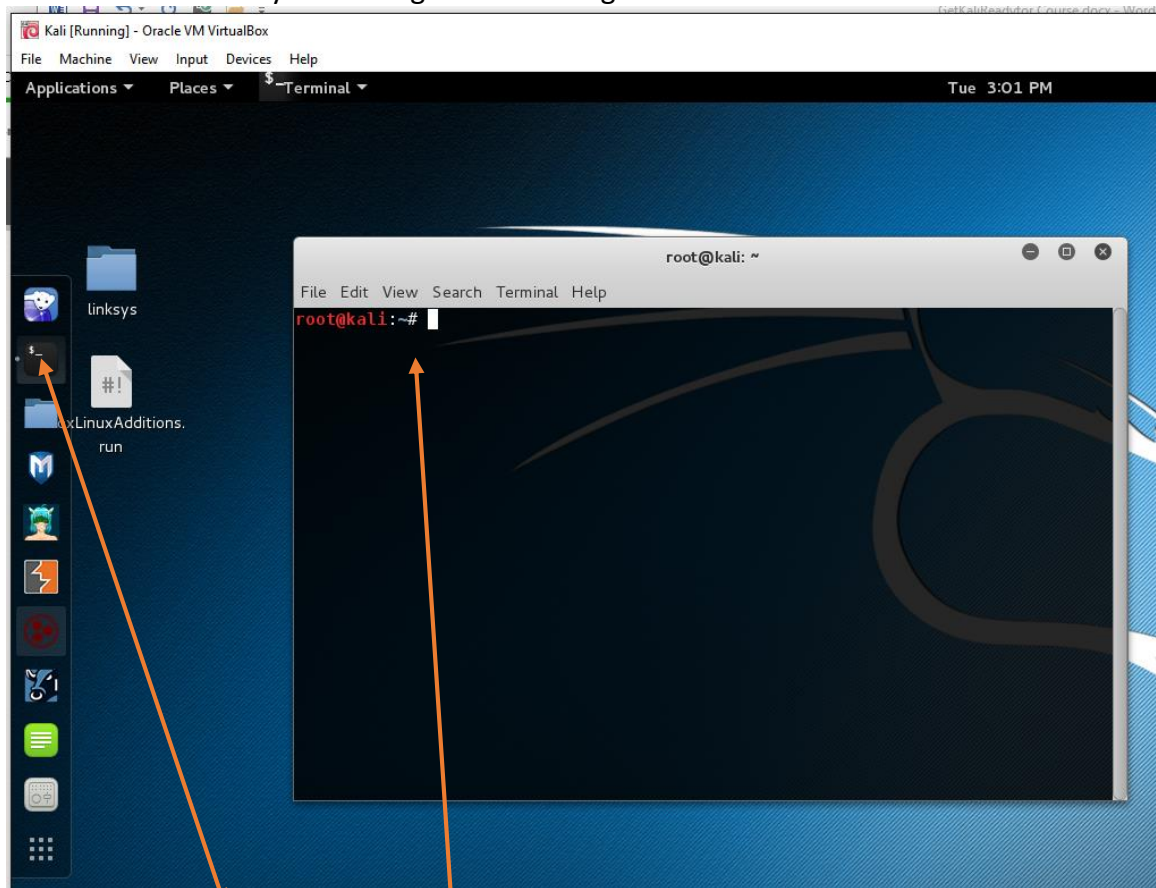
To launch the terminal: press the icon under iceweasel, it looks like a command prompt, and when it opens you see this screen. This is where we are going to verify some settings.

Change the   NetworkManager.conf   file settings from "false" to "true"
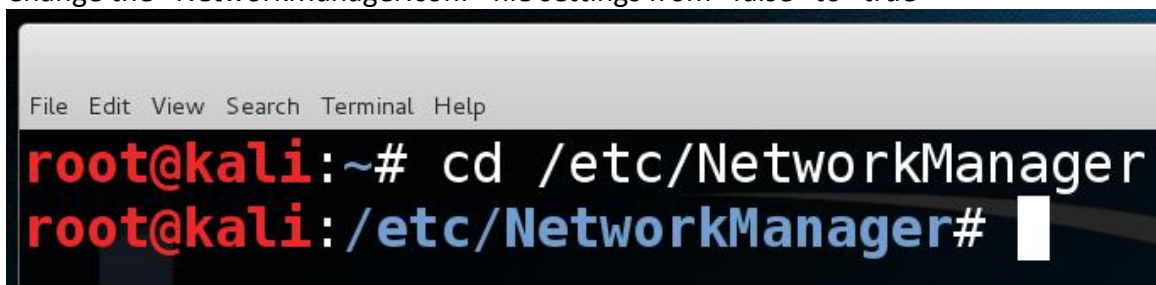
We want to get to the directory that contains the NetworkManager.conf file. From the prompt, change your directory with cd /etc/NetworkManager (case sensitive) your prompt should change to that directory

Once there type in **ls** and confirm. You will see the "NetworkManager.conf file" (Seen here in white).
We then want to edit this file. We are going to use nano (a text editor for this)
In the same directory type in nano NetworkManager.conf and press enter (case sensitive)

Where it says "managed=false" change to managed=ture
Then hit Ctrl+O and hit enter to save then Ctrl+X to exit the editor and return to the terminal and see if u can ping google.com

Check your source file for the correct repositories for Kali updates and upgrades the current files can be found here http://docs.kali.org/general-use/kali-linux-sources-list-repositories You need all 4 lines of this to match in your source file to avoid duplicates. I just cleaned mine out and pasted the ones in that link in. Let's check or clean out the file

Navigate to cd /etc/apt directory and do an ls to check for the sources.list file again we are going to use nano to check out this file by typing   nano sources.list
In this case I took the 4 lines in the link and pasted them into the file and cleaned out the rest

deb http://http.kali.org/kali sana main non-free contrib

deb http://security.kali.org/kali-security sana/updates main contrib non-free

deb-src http://http.kali.org/kali sana main non-free contrib

deb-src http://security.kali.org/kali-security sana/updates main contrib non-free

If they match you are good to go, if not cut and paste into your nano session again

Ctrl+O and press enter to save and Ctrl+X to exit

Time to get updates and/or upgrades. Once we have connectivity and repositories in the source file it's time to check for updates
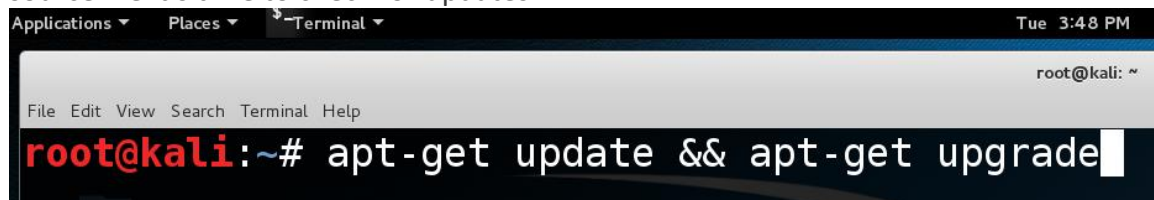
Type in   apt-get update && apt-get upgrade –y (the –y is answering yes to things that want to install without prompting you to answer for each one)
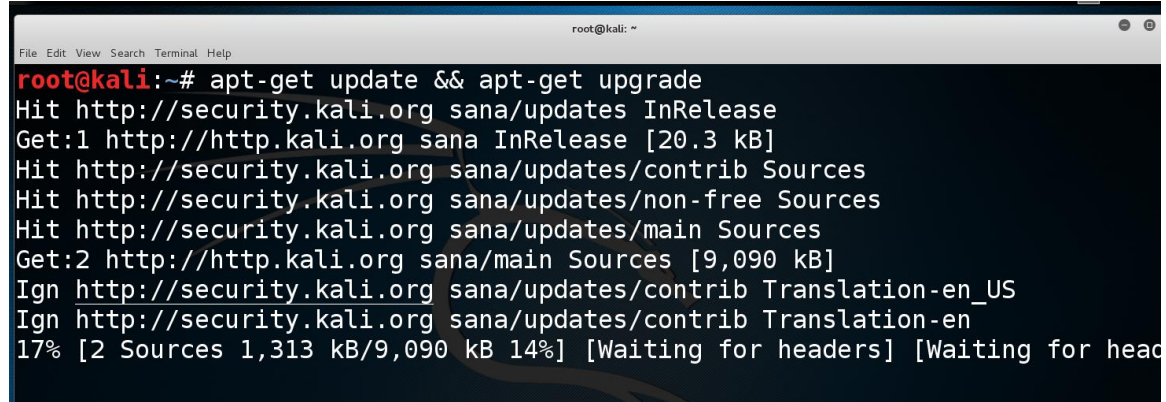
Once the updates start, be patient big files sometimes look like your system is locked and the first time you do this it can take a while. (You should consider doing this fairly often as there are often updates) When completed, you may see notices, the ones that begin with "W" are only warnings and not a problem. However, if you start seeing ones that begin with "E" and text, read them /check connectivity/check the source file again.

Your Kali VM is ready to use, ENJOY!

Resources

- VBOX & Guest Additions https://www.virtualbox.org/wiki/Downloads
- Kali ISO https://www.kali.org/downloads/
- TOR Browser https://www.torproject.org/
- Kali Repository for your source file http://docs.kali.org/general-use/kali-linux-sources-list-repositories
- Kali Docs http://docs.kali.org/
- What is the BIOS https://en.wikipedia.org/wiki/BIOS

Good To Have:

Home router or a neighbor's permission for you to study them ☺

Old windows pc to attack or VM with Windows (unpatched to see the ugly)