Kali Linux on VirtualBox© Installation Addendum

For Professional Engineer CEU Courses

By

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Abstract & Preamble

Engineering Practices - With the recognition of the Professional Engineer (PE) status for the practice of Computer Engineering in April of 2009, the practice of Control Systems Engineering in October of 2011, and the practice of Software Engineering in April of 2013, there has been the need for specialized continuing education courses related to these practices.

1.0 Installing (OS) Environments –
The Linux OS can be installed as the host operating system on most laptop and desktop computers using the popular variants of the AMD and Intel microprocessors. Many systems are purchased using these microprocessors with a Microsoft Windows OS as the host. You may also have an installation with Apple or SunOS installed. For uniformity, we have introduced the VirtualBox application and we install Xubuntu Linux in a virtual machine.

You must first install the VirtualBox application as directed in the VirtualBox© Installation Addendum document, then install the Kali Linux as the operating system in a VirtualBox virtual machine.
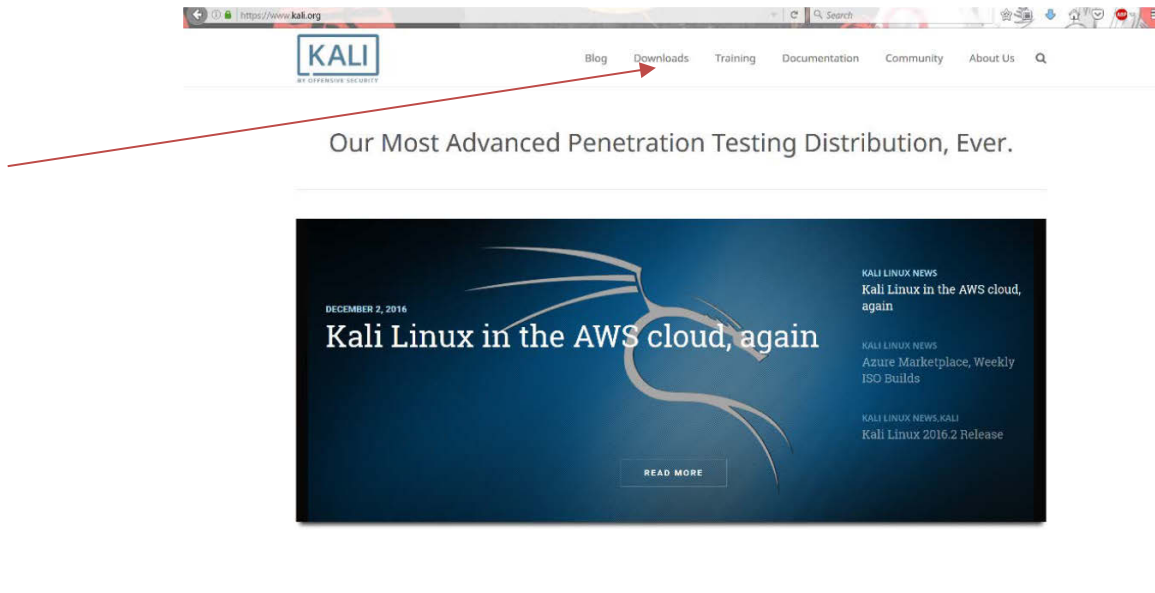
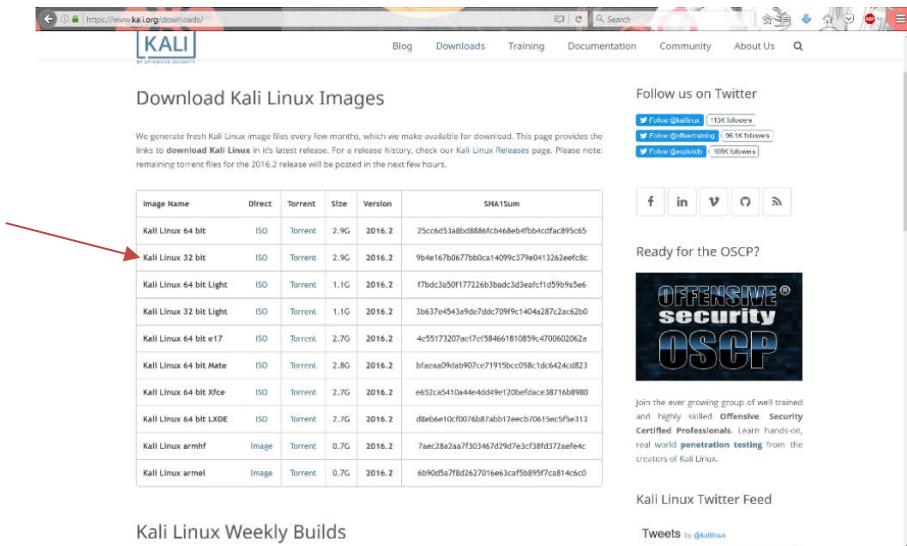In preparation, use Google or another search engine to find the location of the Kali downloads:
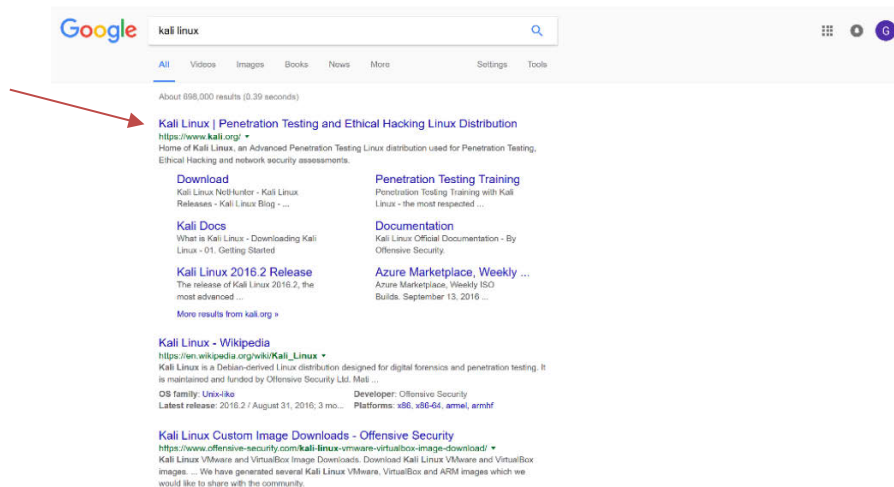
First, you will be directed to the page that introduces Kali where you will find a link to the downloads.

The page below shows the available list of **.iso** disk image copies of the distribution.

The Kali Linux is distributed in 32-bit and 64-bit versions. Unlike the Xubuntu distribution, we have found the installation of Kali to be somewhat time-consuming and prone to errors.

The first error that you are likely to encounter and need to overcome is to download a "clean" **.iso** disk image for your host machine VirtualBox combination. We have installations running under both 64 bit and 32-bit environments and have found the least difficulty by

installing the 32-bit distribution indicated, regardless of the host environment. Kali is specialized for cybersecurity and is "particular" about installation and not particularly forgiving of small errors.
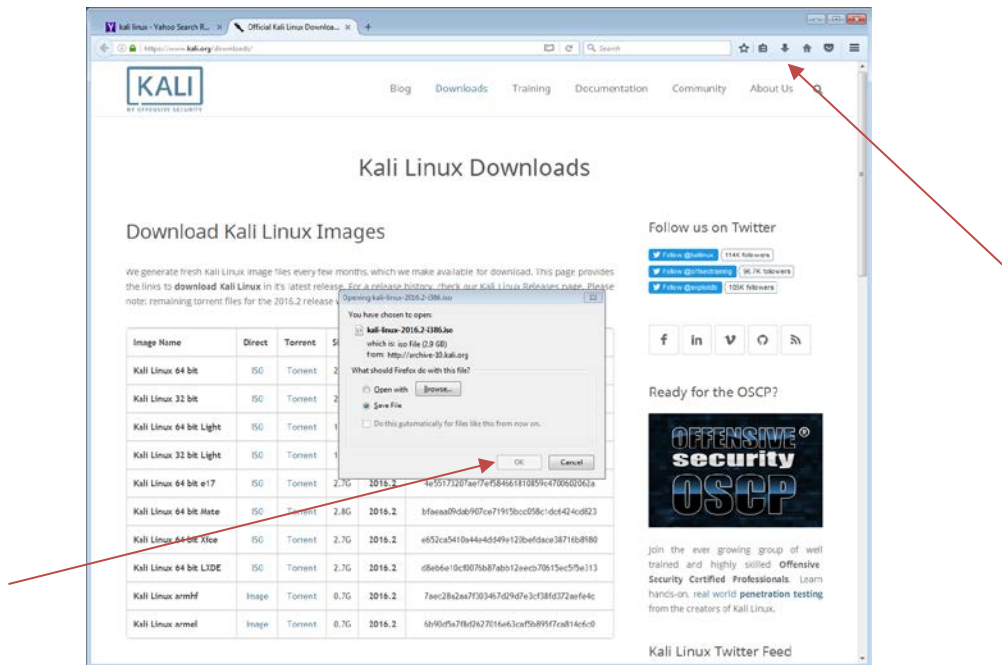

After selecting the distribution and indicating a download of the **.iso** disk image file, you will see a small green progress indicator that leads to a progress bar indicator as shown below.
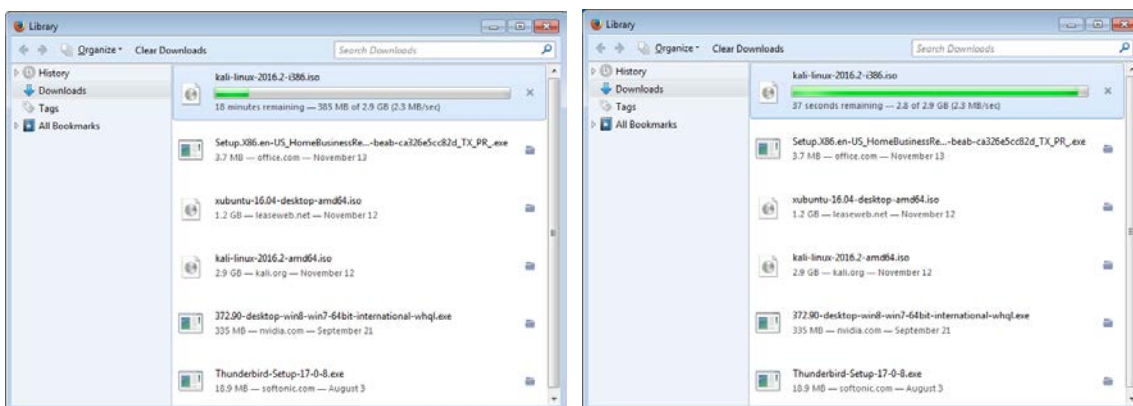
You will note the destination of the copy is into the Downloads folder. We have removed all other files from the Downloads folder leaving both 32-bit and a prior 64-bit **.iso** disk image copies, as shown below.
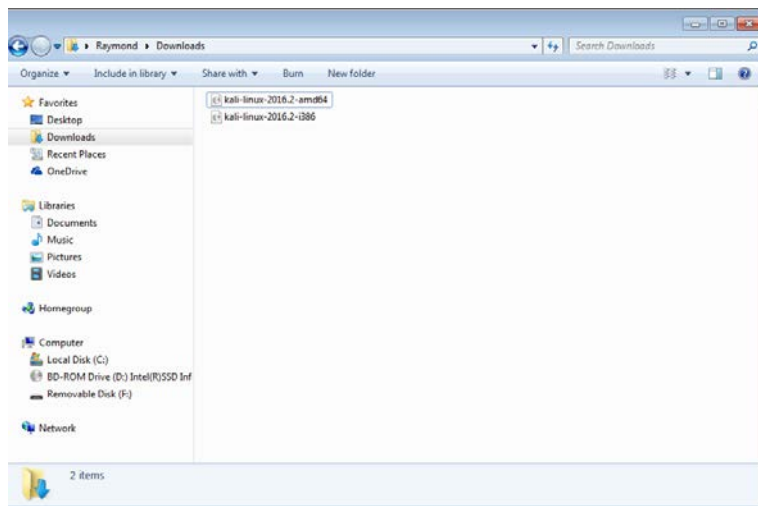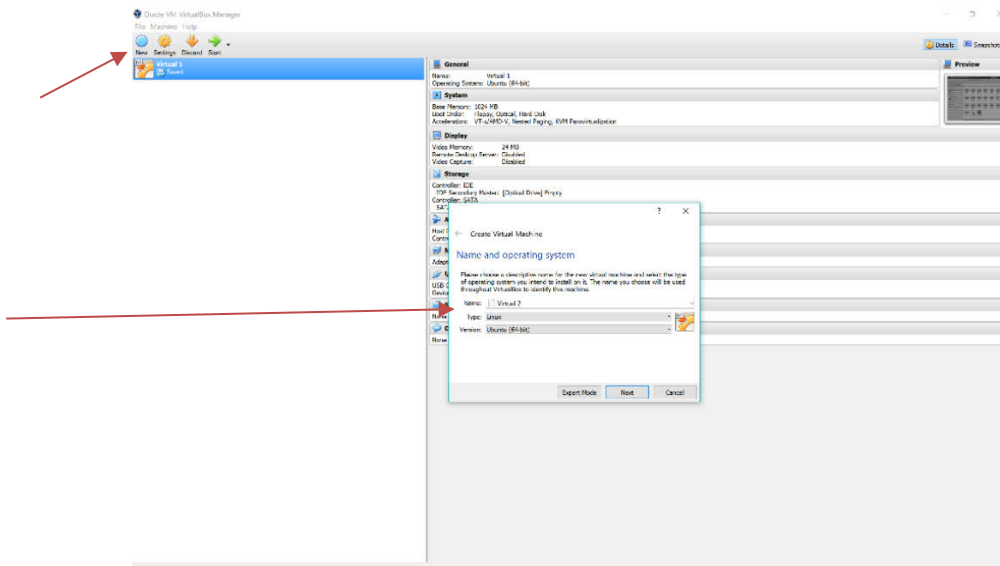
Because the time taken to download may be substantial, depending on your Internet speed, we recommend that you keep the copies available for future re-use.

With the **.iso** disk image secured, we return to the VirtualBox application to install the Kali Linux in a **new** virtual machine.
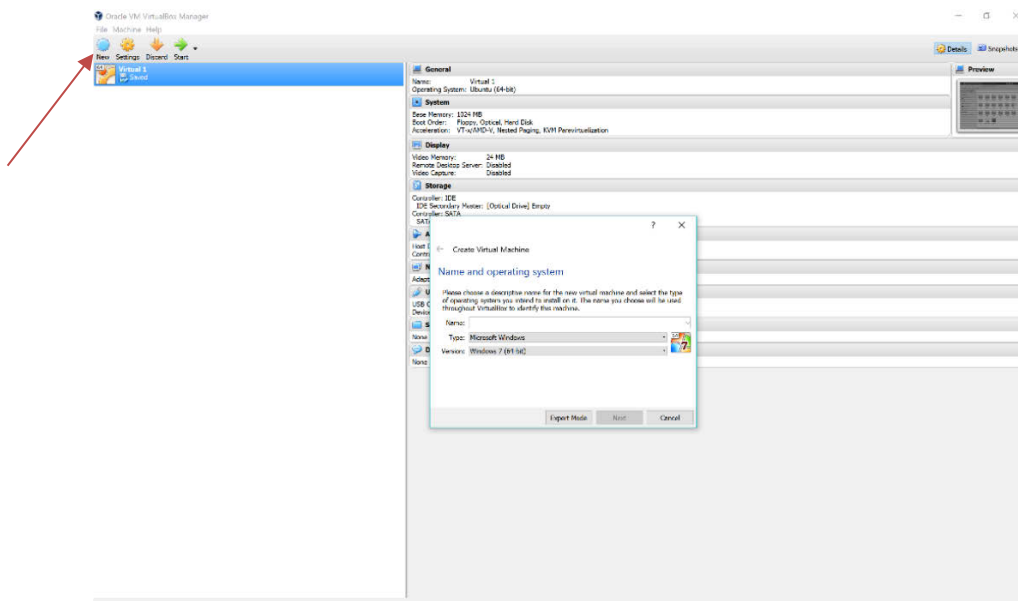
With the existing virtual machine (in this installation) having the name Virtual1, the new virtual machine is named Virtual2 and Linux is selected as the operating system as shown above. Because you have both the **.iso** disk image for 64-bit and 32-bit, and (in this case the hardware supports both), you can choose which is to be installed. You could also define yet another virtual machine and have both 64-bit and 32-bit versions to compare.
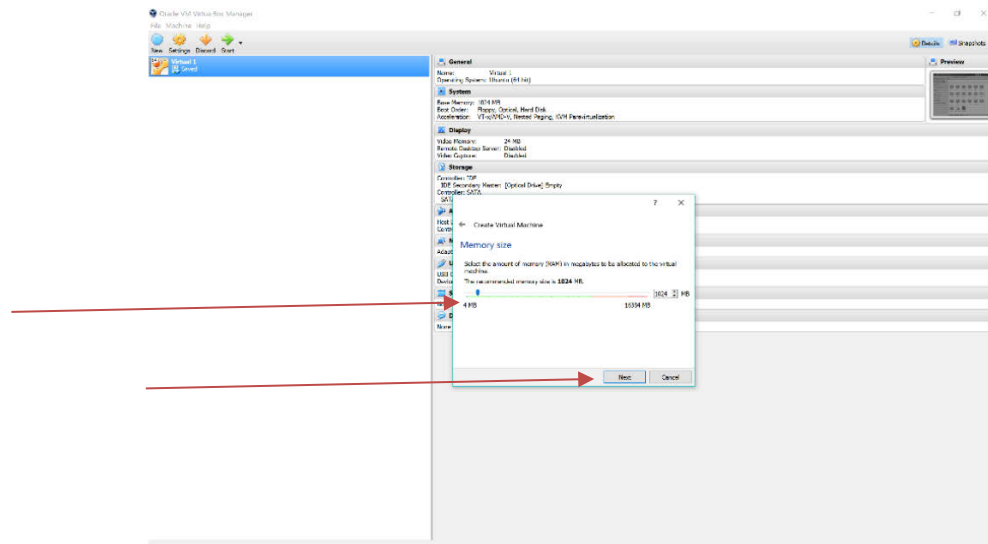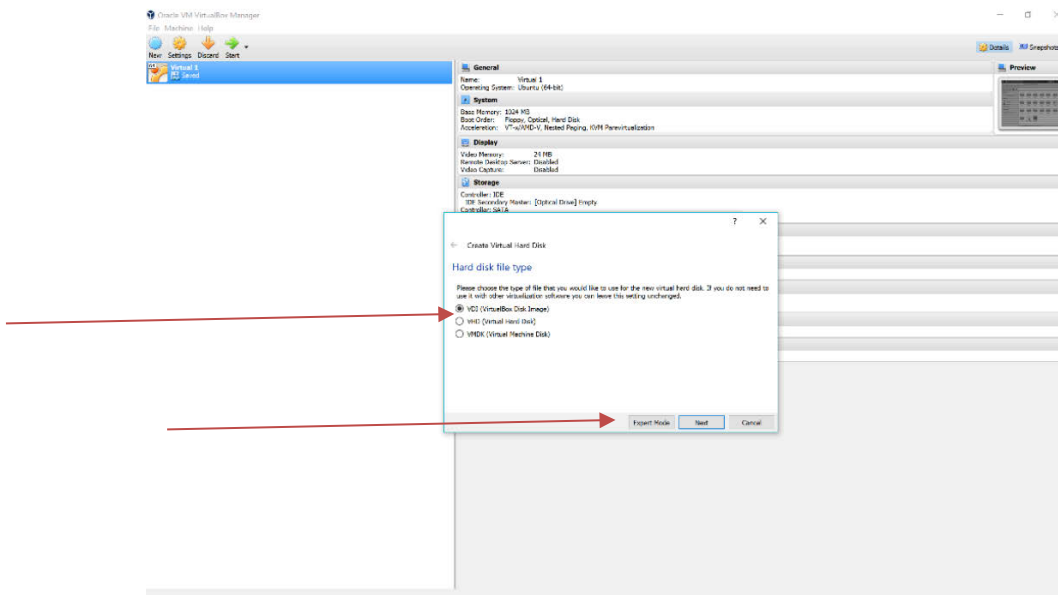

Set the memory size at 1024 M Bytes (the default size) and proceed.
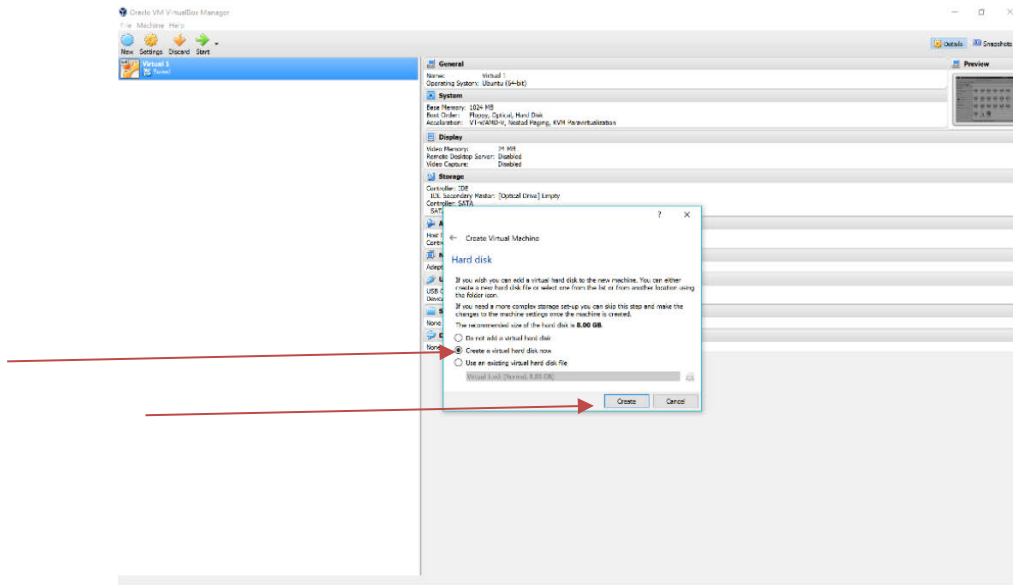
We create a VDI virtual hard drive
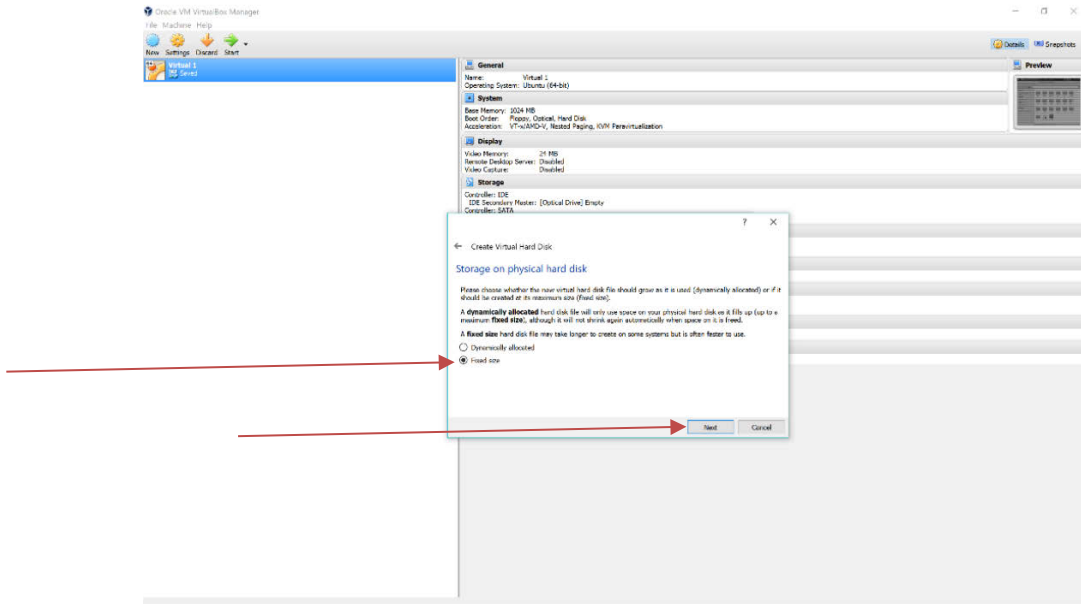
We created a fixed-size VDI virtual hard drive, finding in prior installations that a dynamic allocation can occasionally go "insane" and consume all disk space in the host OS. Also, we have found installation difficulties if the default 8 G Byte size is chosen. We advise that you use a size greater than 12 G Byte and 16 G Byte is what we recommend. You can try the default, but later, remember this recommendation as a likely cure.
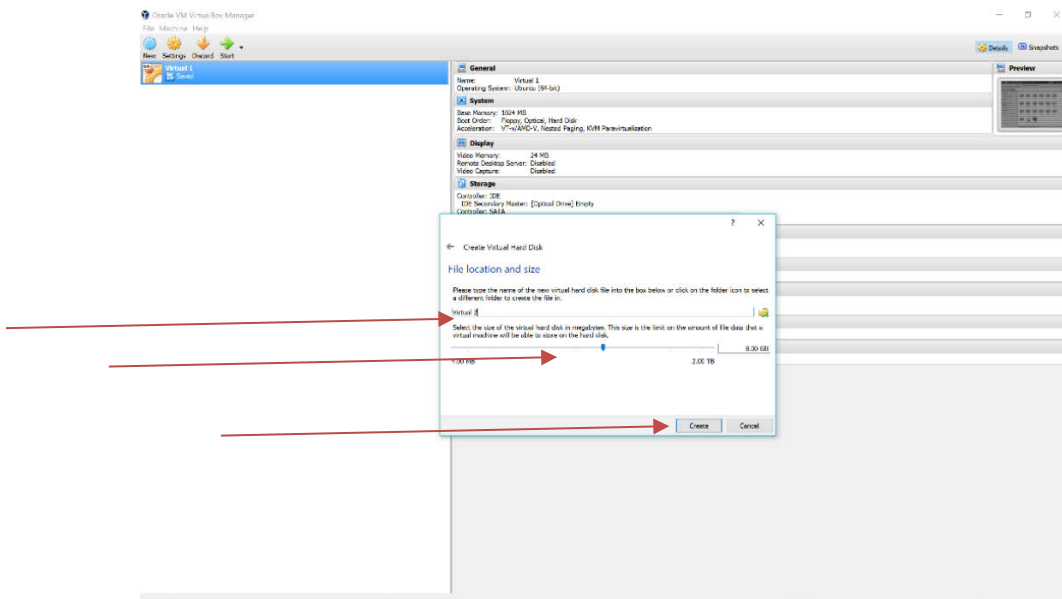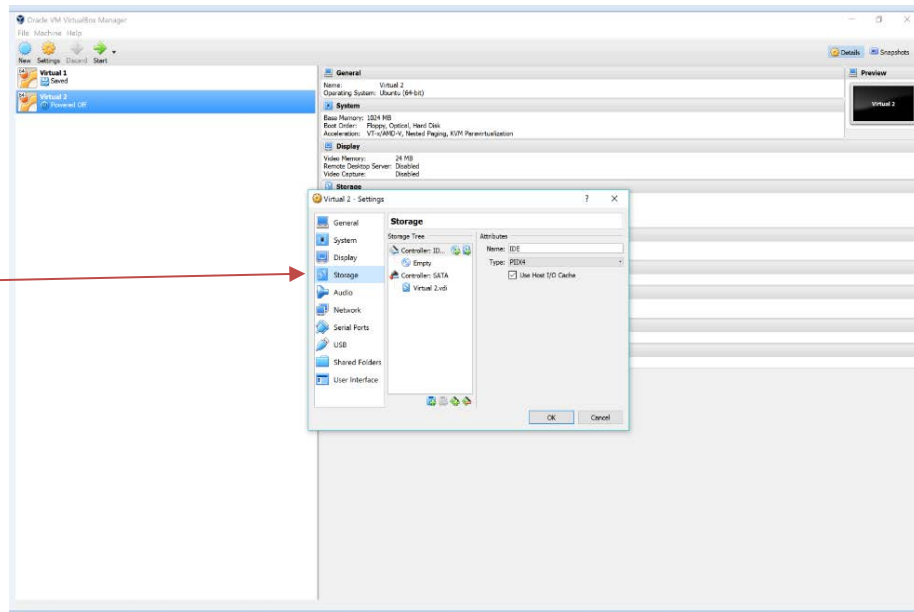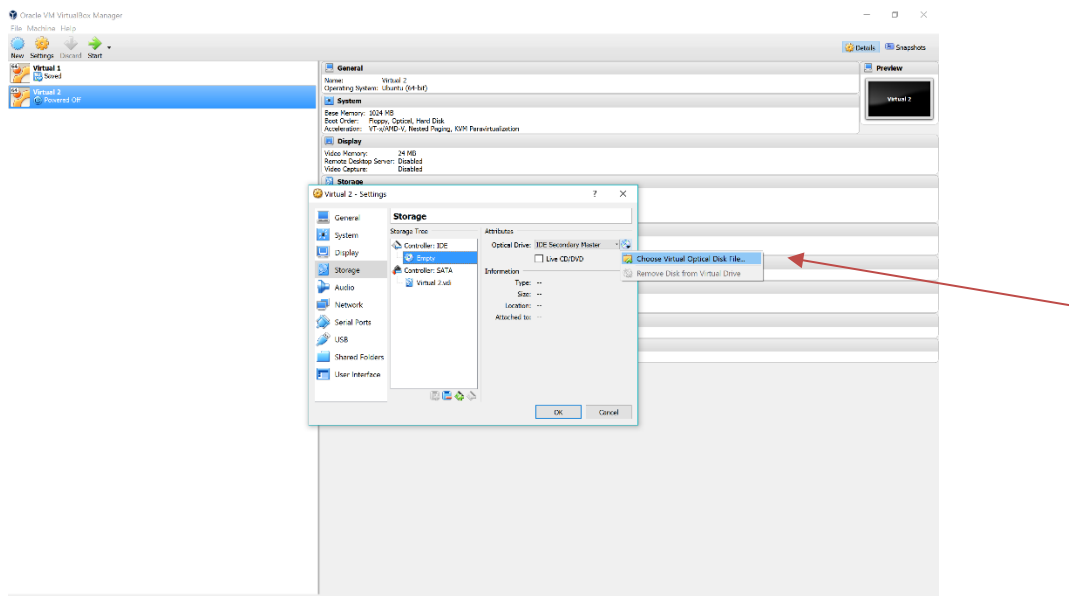
We now direct the Storage selection to an **.iso** disk image, We select (double-click) the "Choose Virtual Optical Disk File" and we obtain a dialog box to locate an **.iso** disk image in the Downloads folder.
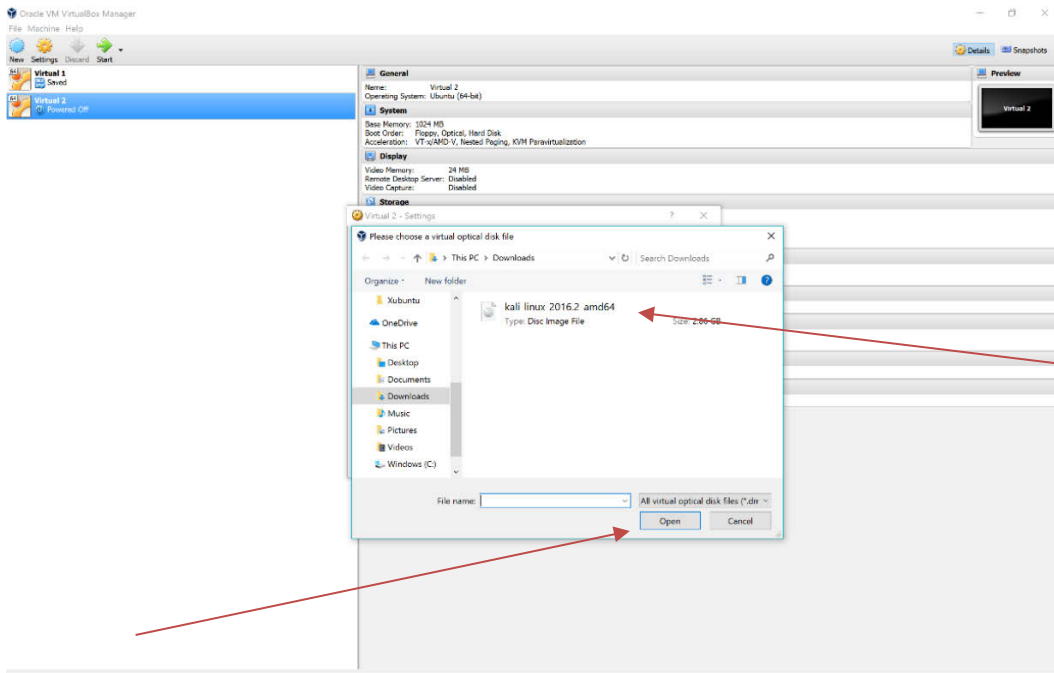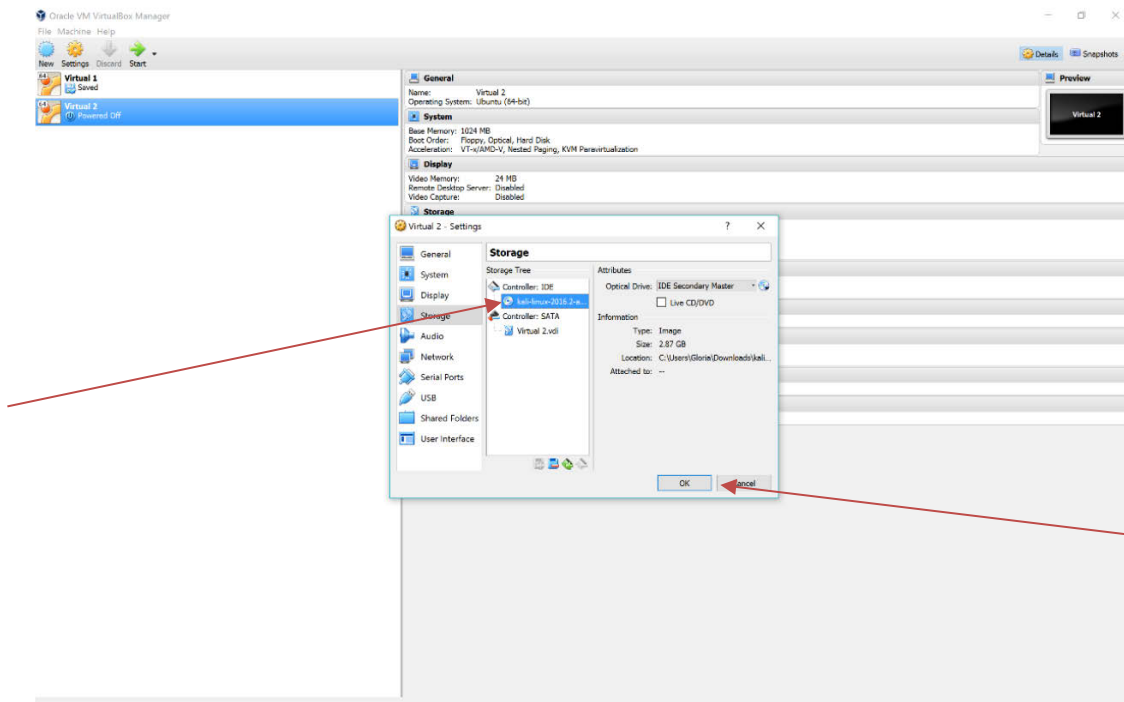
We will then see the selected **.iso** disk image name appear as the virtual optical drive.
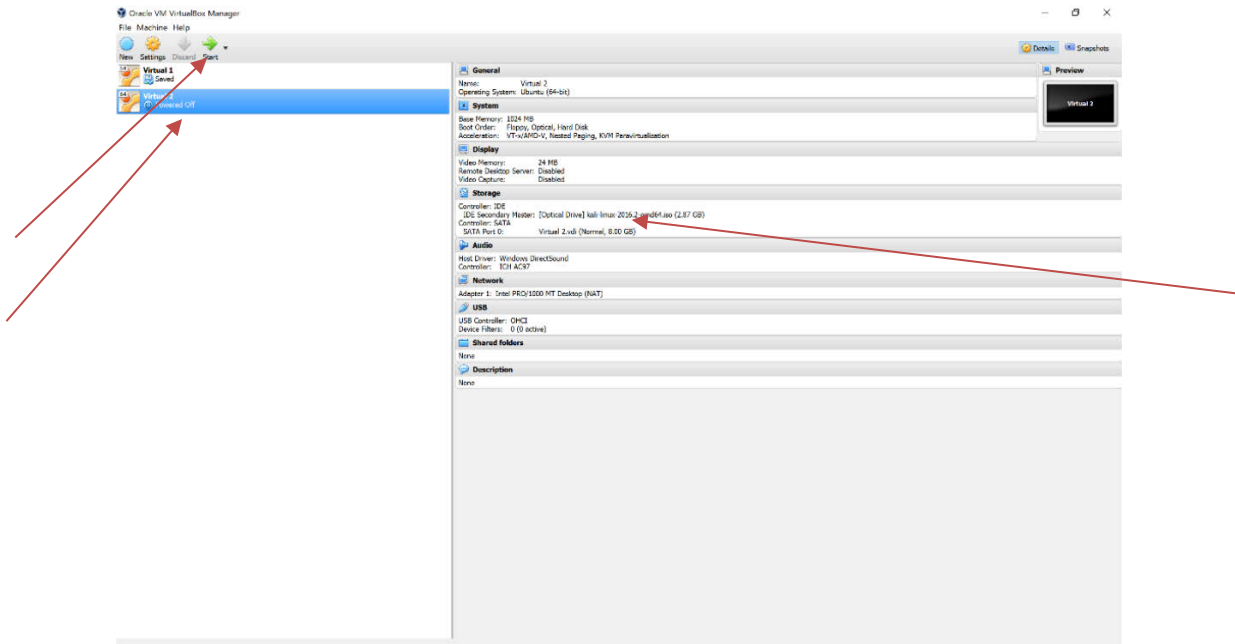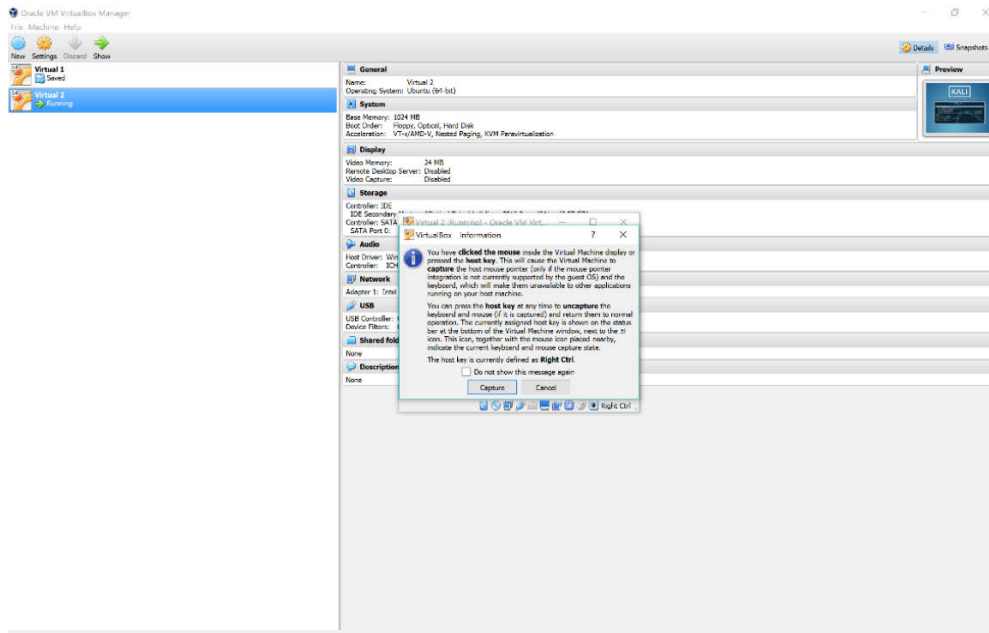
We see in the illustration above that the virtual machine is "Powered Off" and the Green button indicates "Start." After the "Start" is activated, the status changes to "running" and the Kali Linux Loader Desktop appears as below.
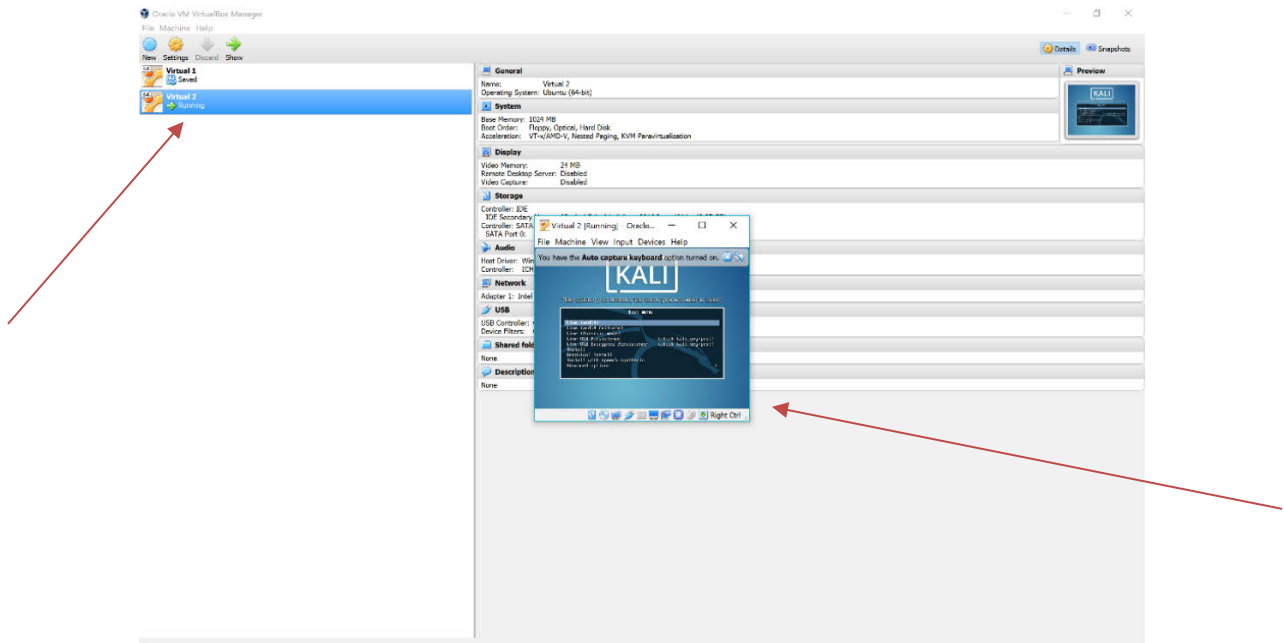
We see in the illustration above that may occur if you try to make a loader selection using the mouse. Use the arrow keys on your keyboard to move up/down in the list. The "Graphical Install" loader is an auxiliary program that does not give consistent results. We recommeng that you select the "Install" option and press the "Enter" key and get the screen below. It will show several lines of text and eventually present a series of dialog boxes.
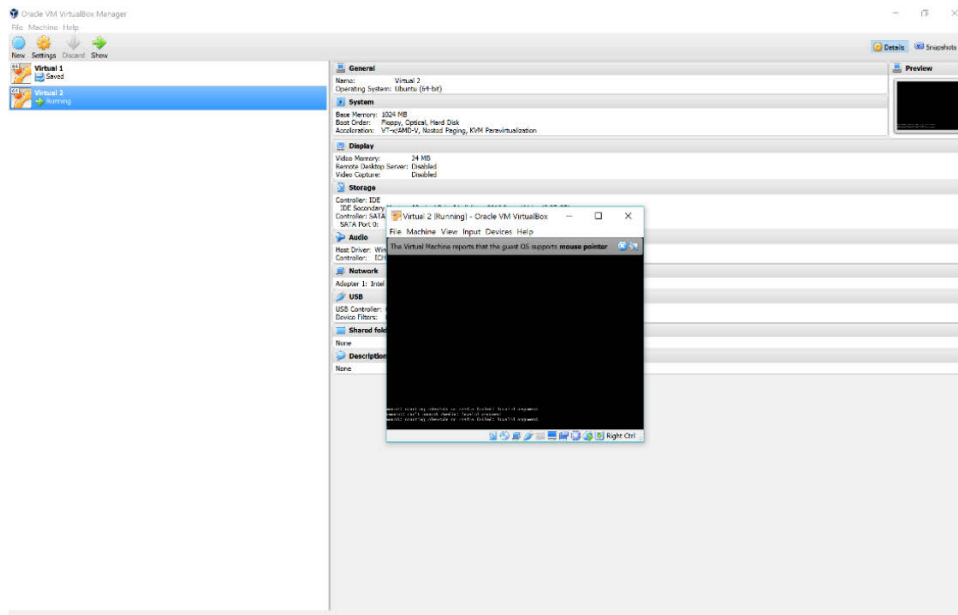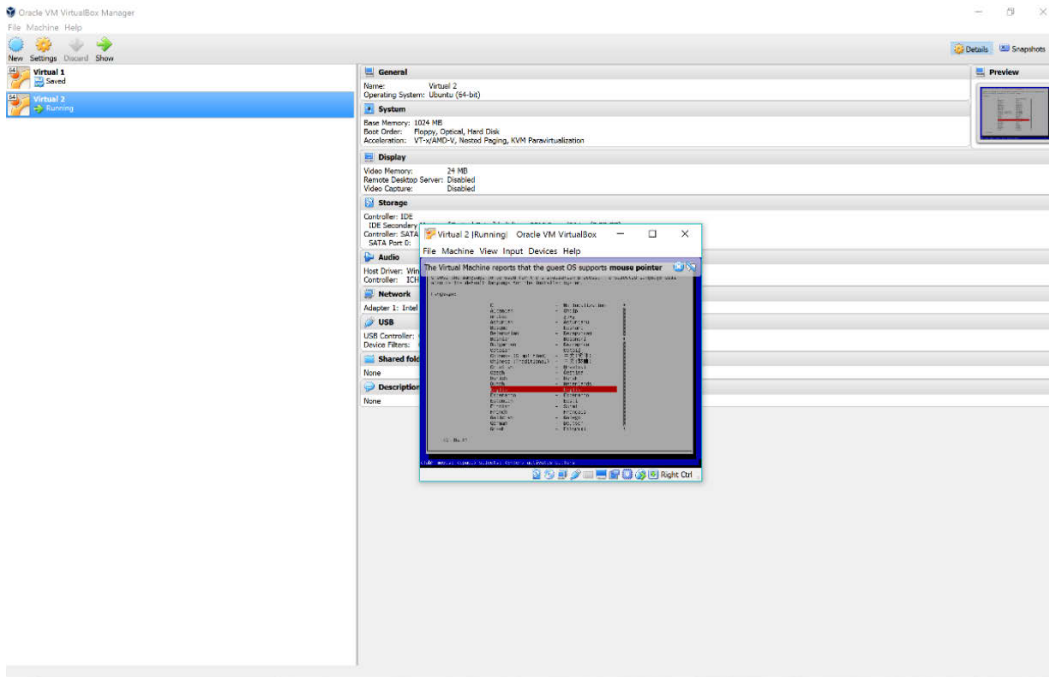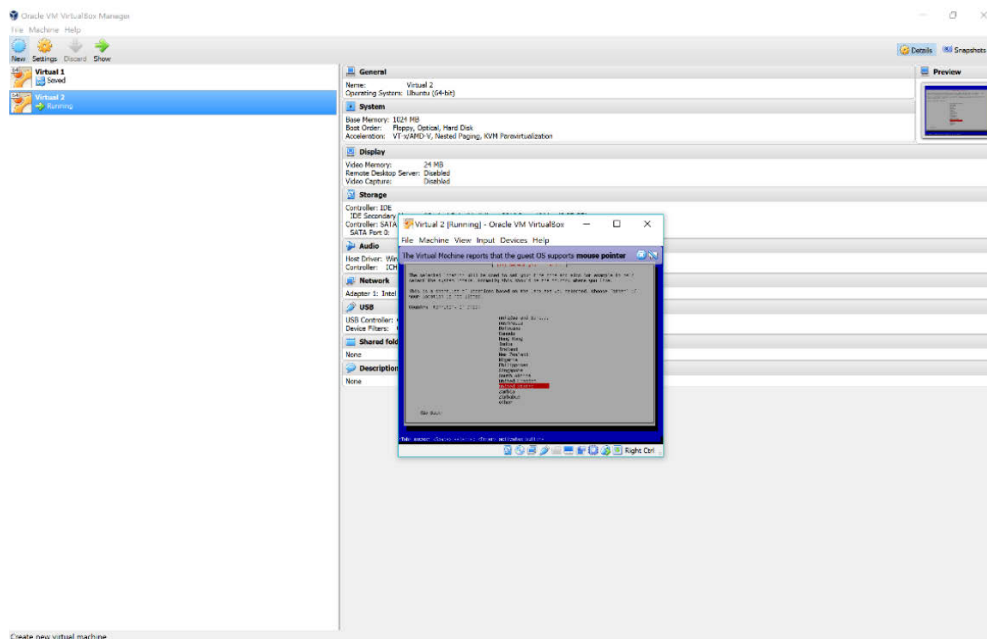
Use the arrow keys on your keyboard to move up/down in the list and press enter to select.
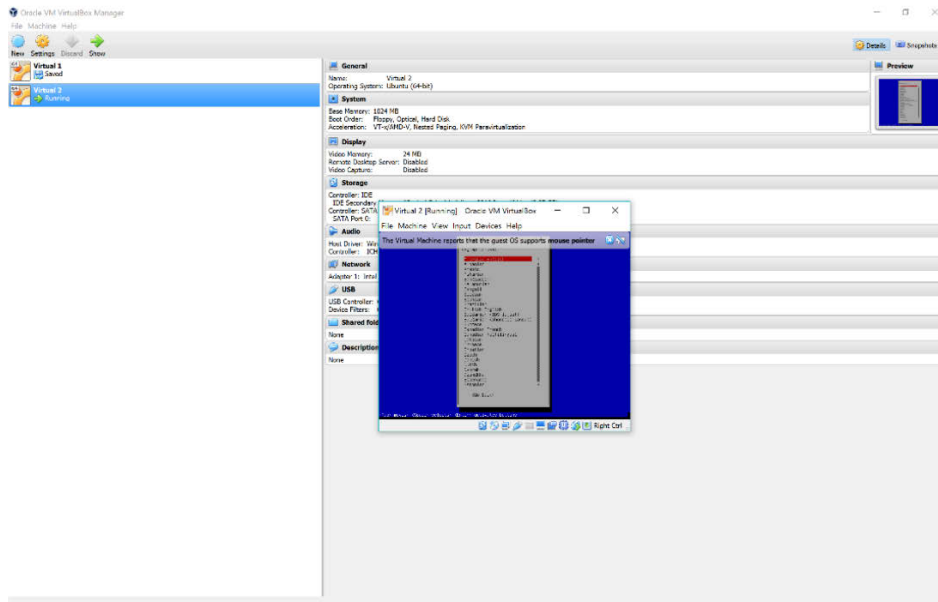
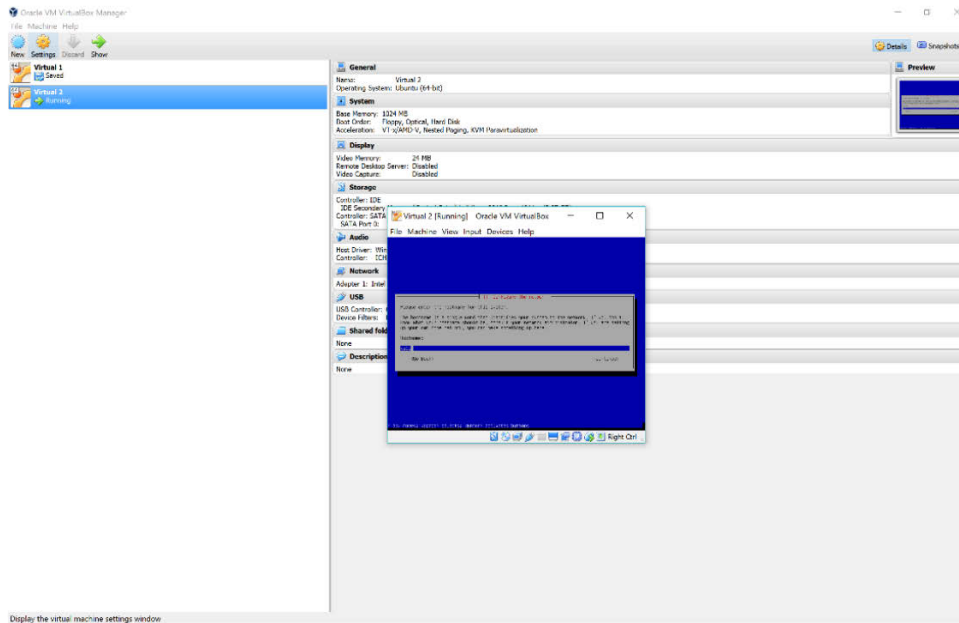After your options are selected, you will start to see progress bars identifying stages of installation. There are a few options remaining, though.
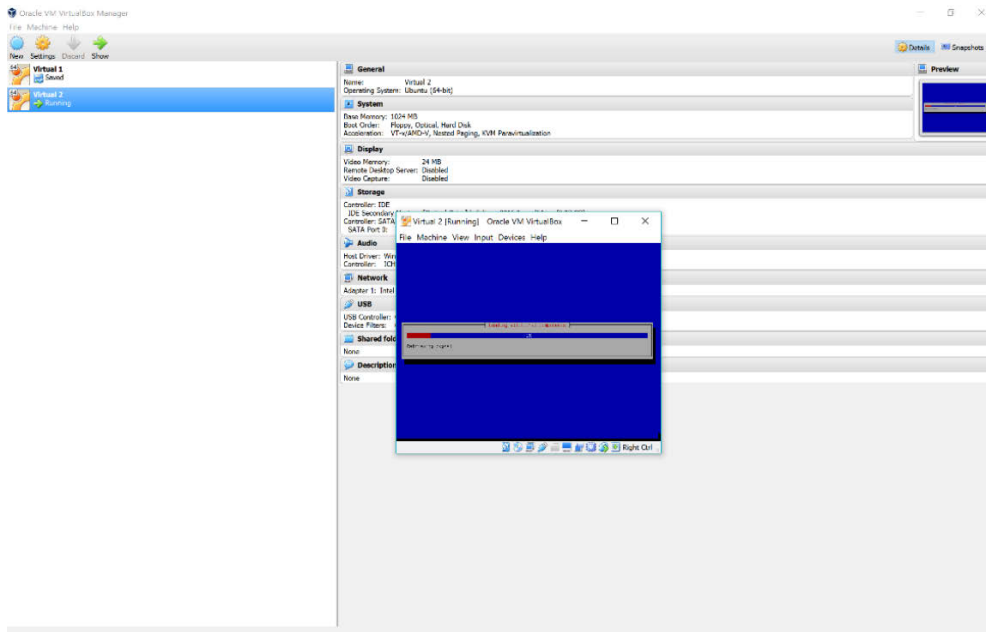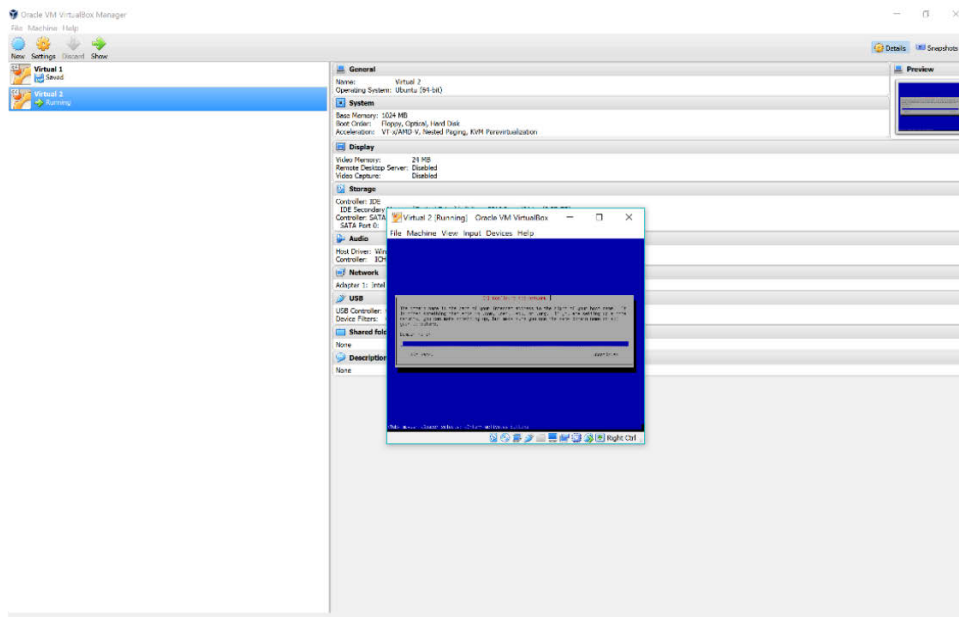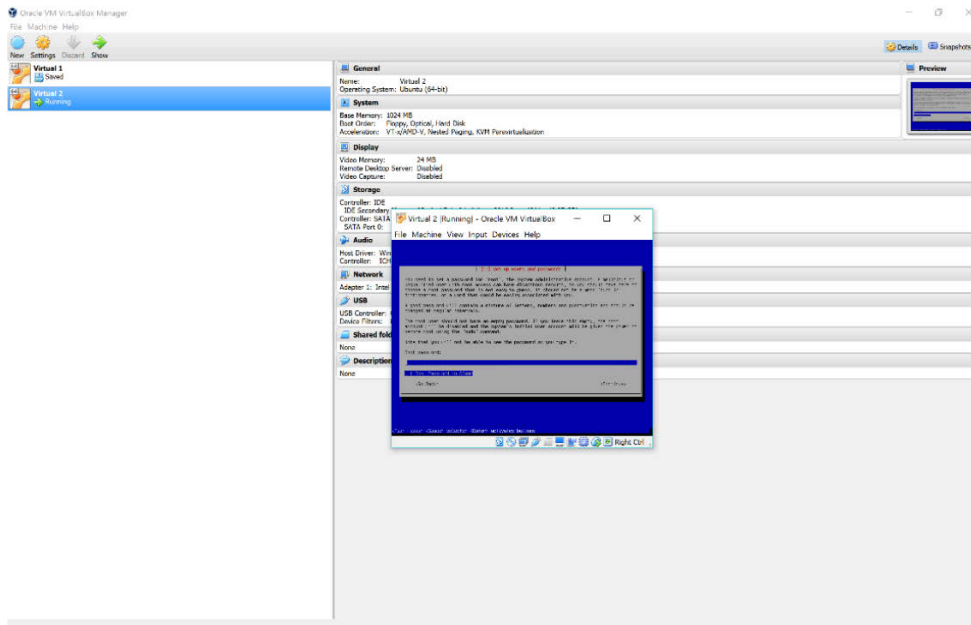
One option is the machine "boot" name (above) and we have chosen Kali1; you may choose as you like. You will need to supply your internet name as suggested. A business is usually *<business_name>*.com and a school is *<school_name>*.edu, for example
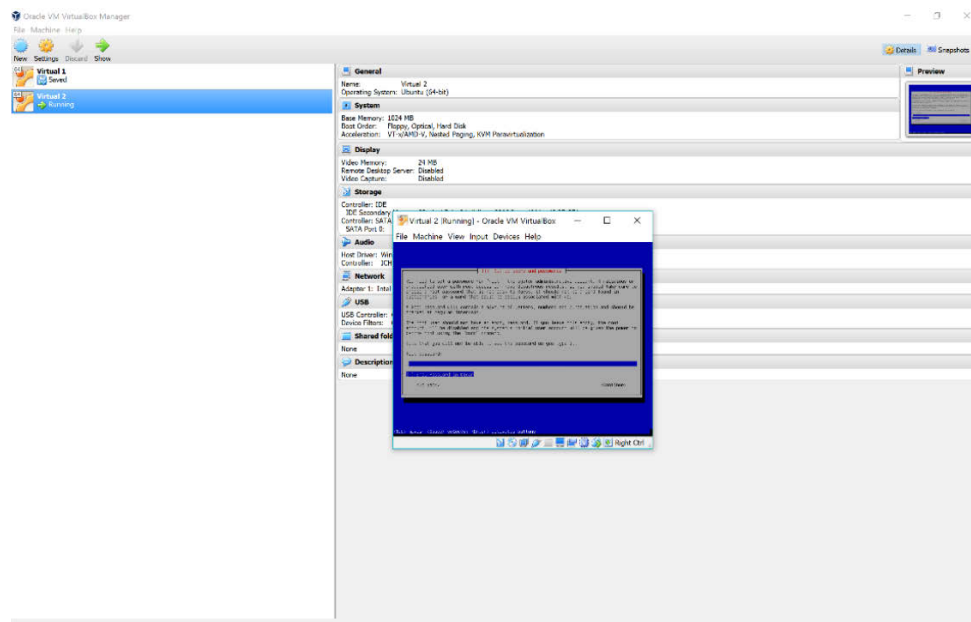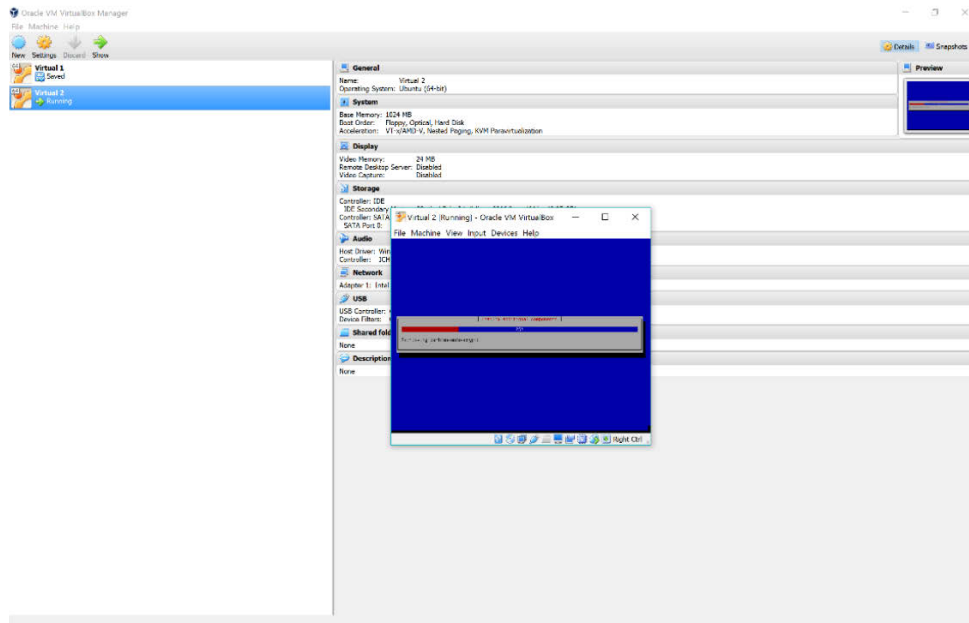
The next pair of dialog boxes ask for a root password and a repeat to make sure. Some older and smaller versions of Kali pre-install the password set to "toor" (root spelled backwards). This practice is OK because you are later permitted to change the password. Then, as below, you are asked to set your time zone.
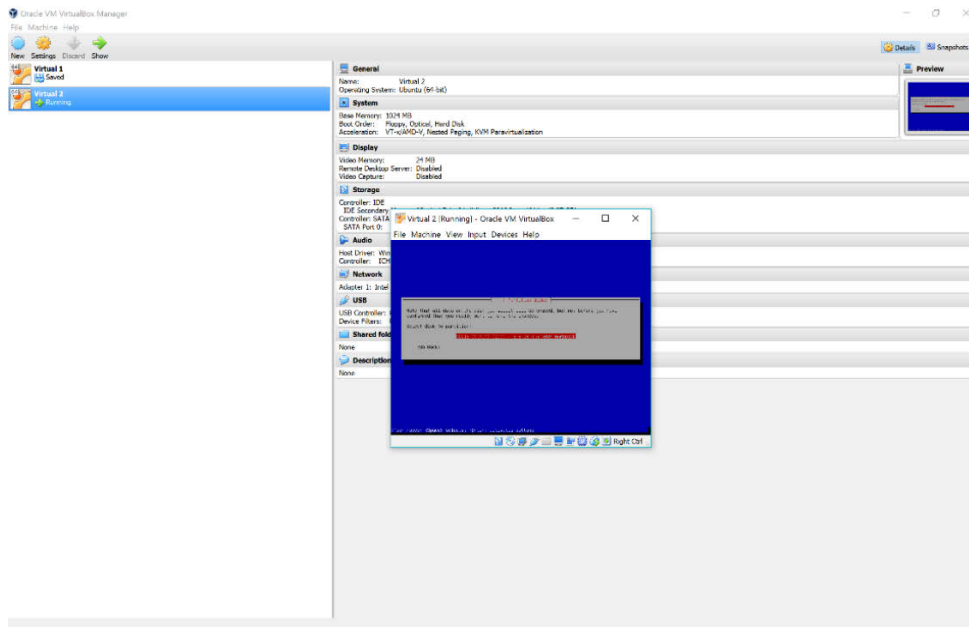
More files are loaded and the virtual disk is formatted

You are asked to specify partitions but just use a single partition unless you know a lot about the subject. Then a summary is presented with a chance to change anything you may have mistaken as well as a second chance asked befor writing.
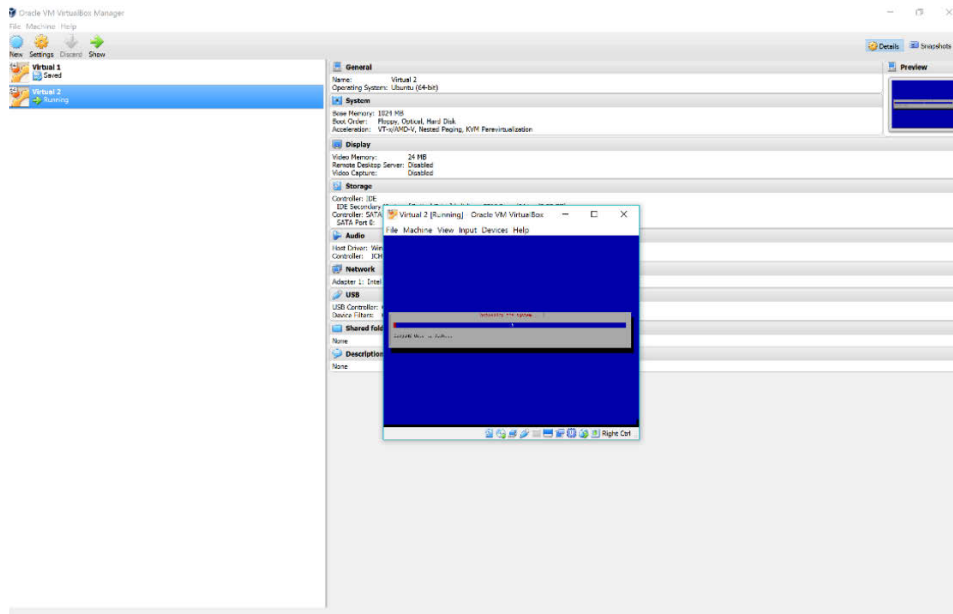
Finally the installation begins and copies files to the virtual hard drive. Successful installation requires that you turn-off the virtual optical drive and restart the virtual machine. Finally, you are greeted with the Kali Desktop.