

Part 02 - Install Kali Linux

This tutorial covers installing Kali Linux VM in Virtual-box, to serve as our primary attack system for ethical hacking exercises.

This should be installed after, your OpnSense firewall is installed.

1) Start your OpnSense firewall. You will need this for running updates and internet access within your hack lab network.

2) Go to kali.org and download the latest ISO.

3) We will create a new VM. Set the following values on the first creation screen:

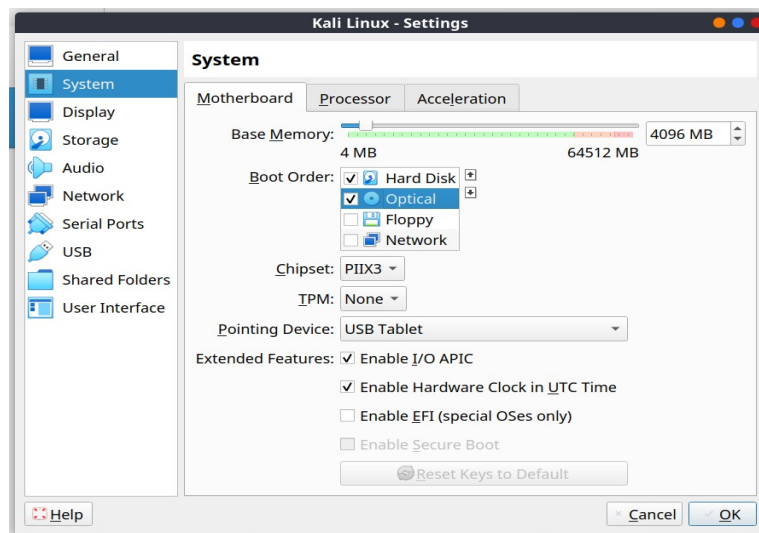
- Name: Kali Linux
- Folder: *leave default*
- ISO: *leave not selected*
- Type: Linux
- Version: Debian 11 Bullseye (later versions of kali may require different version)

4) Set the hardware levels to the following:

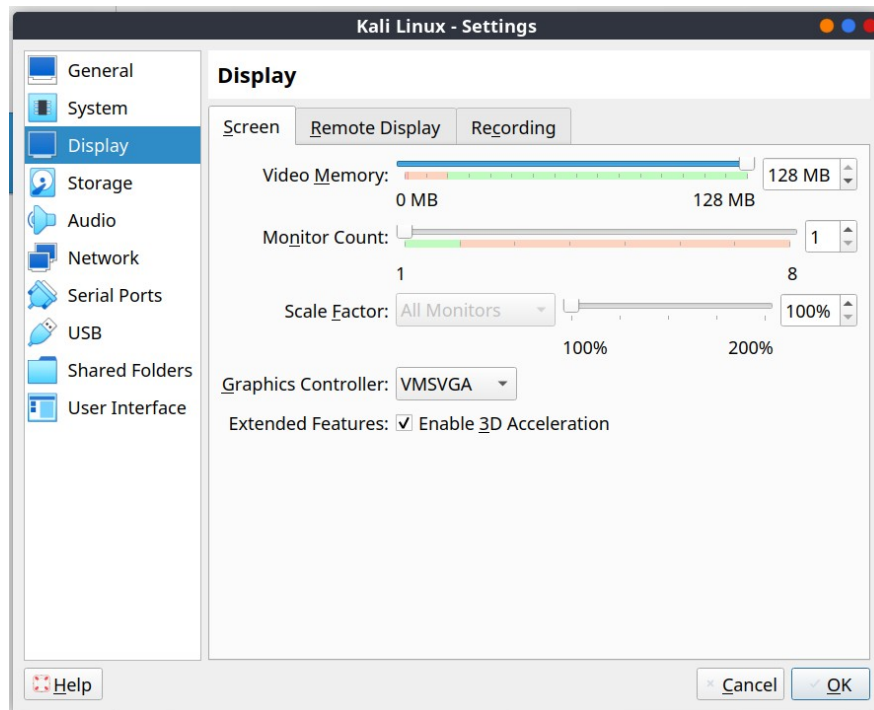
- Base Memory: 4096 MB
- Processors: 2 vCPU
- Hard Disk: 50 GB

5) Before we boot the VM, we will need to make a few adjustments. Select the Kali Linux VM and go to the VM settings.

First start by adjusting the Boot order, move the Hard disk up and make the optical disk 2nd in the boot order.

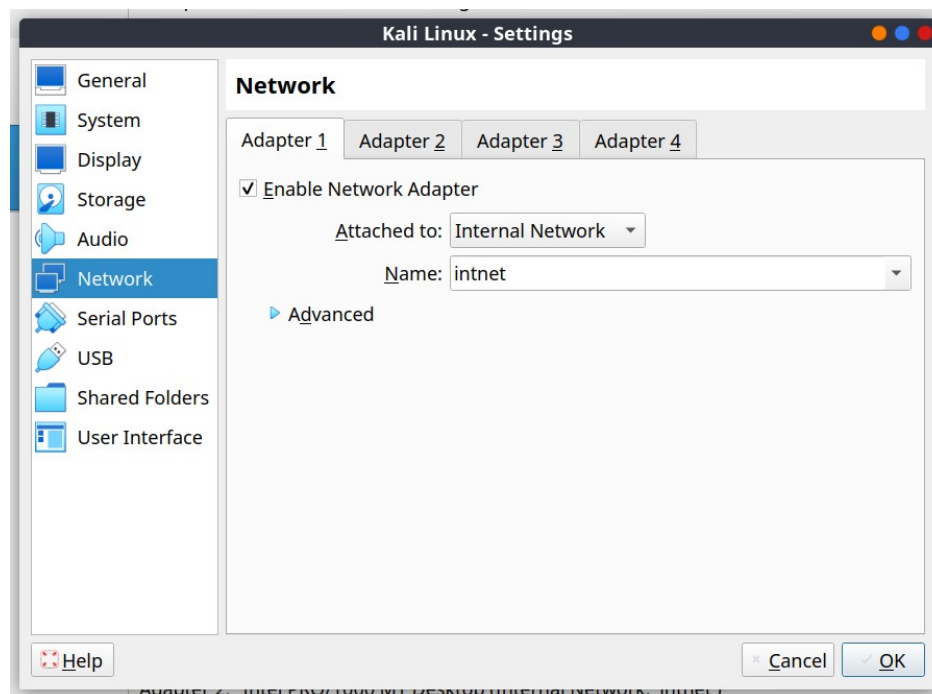


6) Next, adjust the display memory. Give the machine 128 MB of video memory and set the check mark to Enable 3D Acceleration.

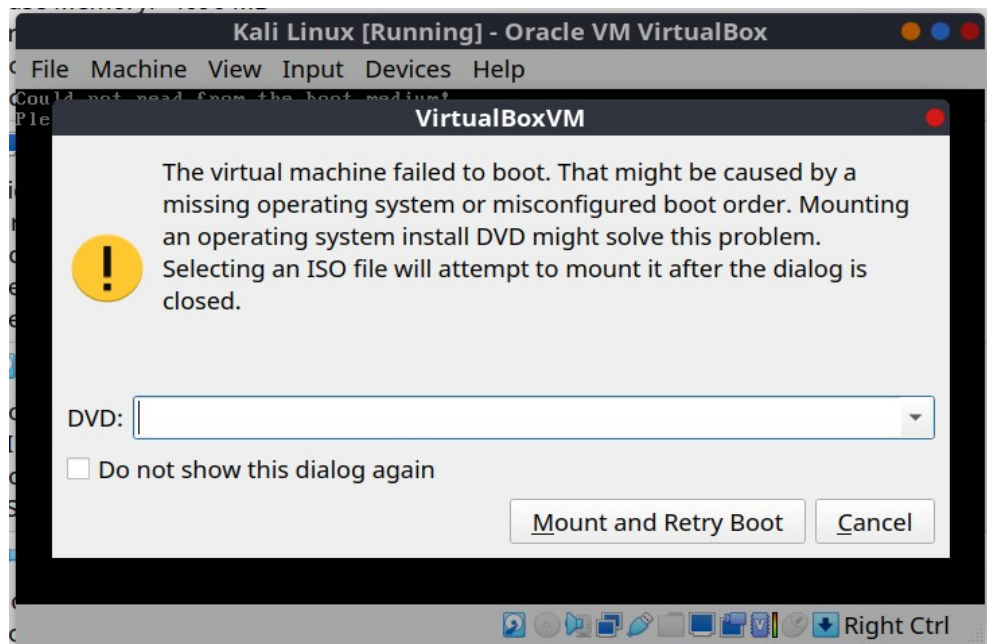


7) Next, we will adjust the network adapter. Change the network adapter from “NAT” → “Internal Network”. Your VM will receive DHCP from your Firewall that you are running and built prior.

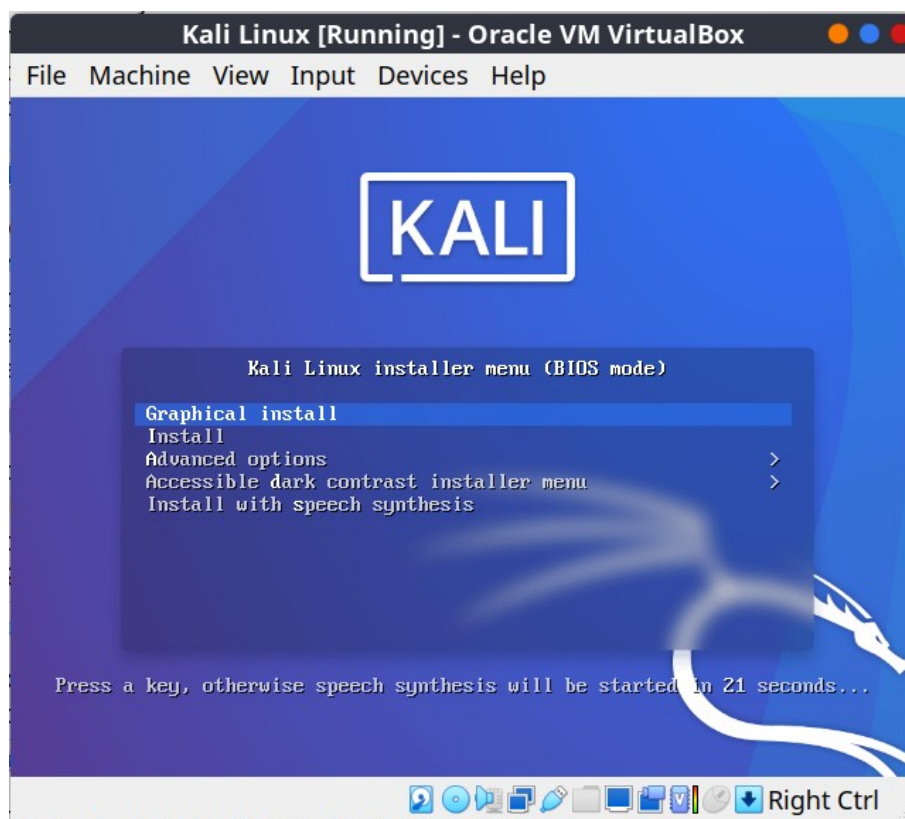
NOTE: You will need your firewall active from now on to use your Kali Linux VM in this lab environment



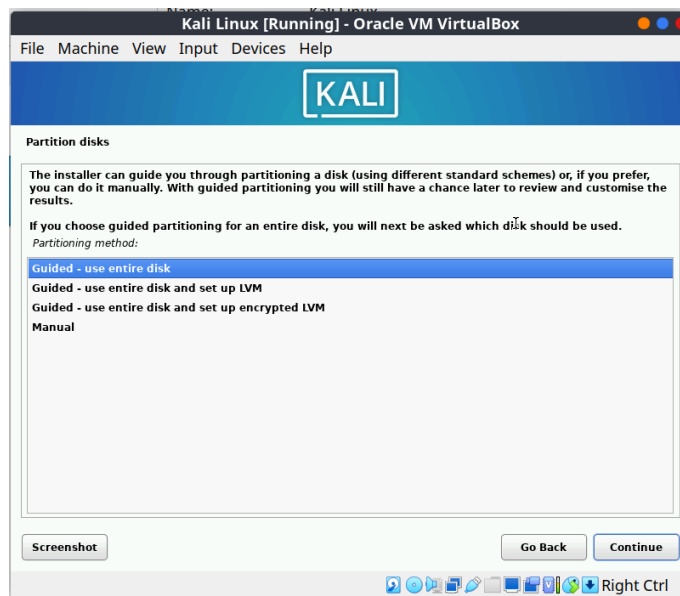
8) With your settings set, you can start the VM. Since you did not select the ISO file, a pop up should appear asking you to find your ISO and mount it. Select the drop down, select the folder icon, and search for your Kali Linux ISO that you downloaded. Then Mount and Retry Boot.



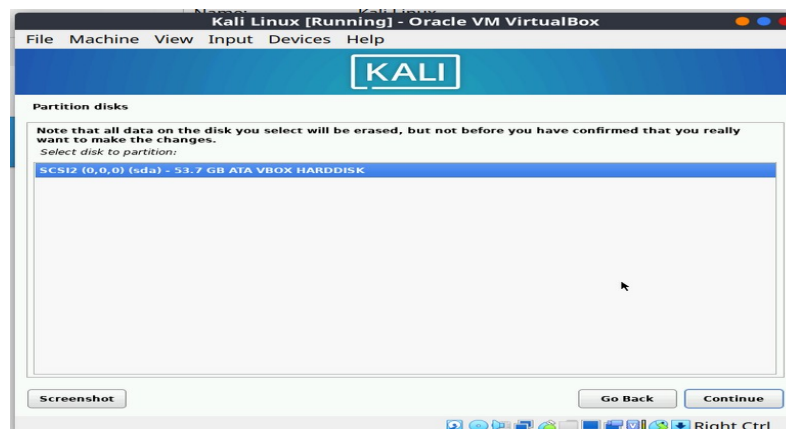
9) On the boot screen, select Graphical Install.



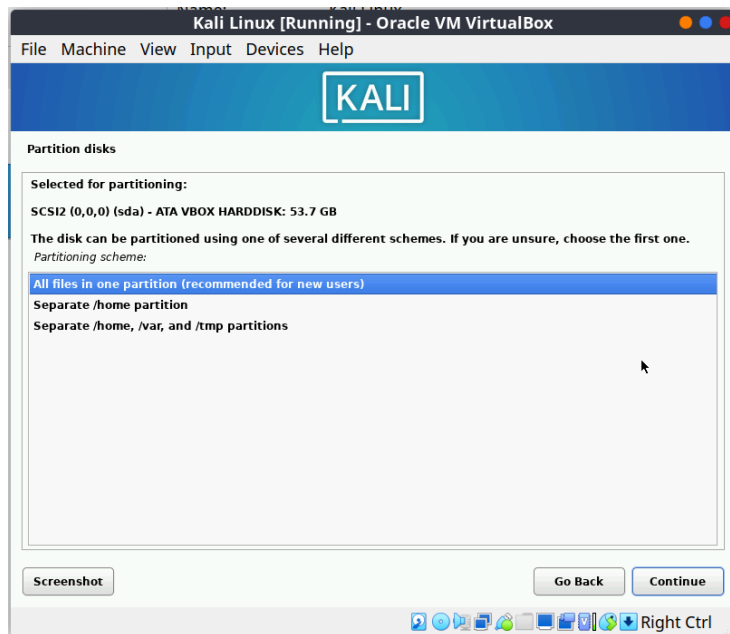
- 10) On the next screen, set the language English.
- 11) On the next screen, set the keymap to American English.
- 12) On the next screen, set the host name to “kali”.
- 13) On the next screen, leave the domain name blank.
- 14) On the next screen, set the username to “kali”.
- 15) On the next screen, set the password. Take note of your password.
- 16) On the next screen, set the clock configuration to the timezone “Eastern”.
- 17) On the next screen, we are going to set up the disk partitioning. To make things easy, go with the “Guided – use entire disk” option.



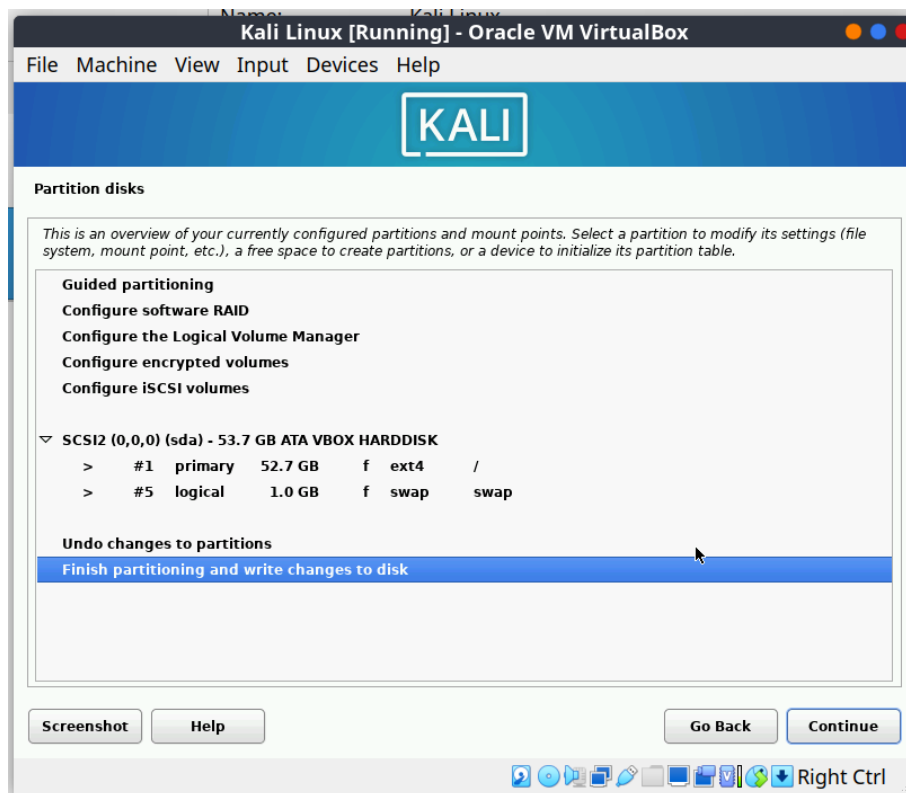
- 18) Next, select the hard disk (the virtual disk associated with the VM) to setup the partitioning on.



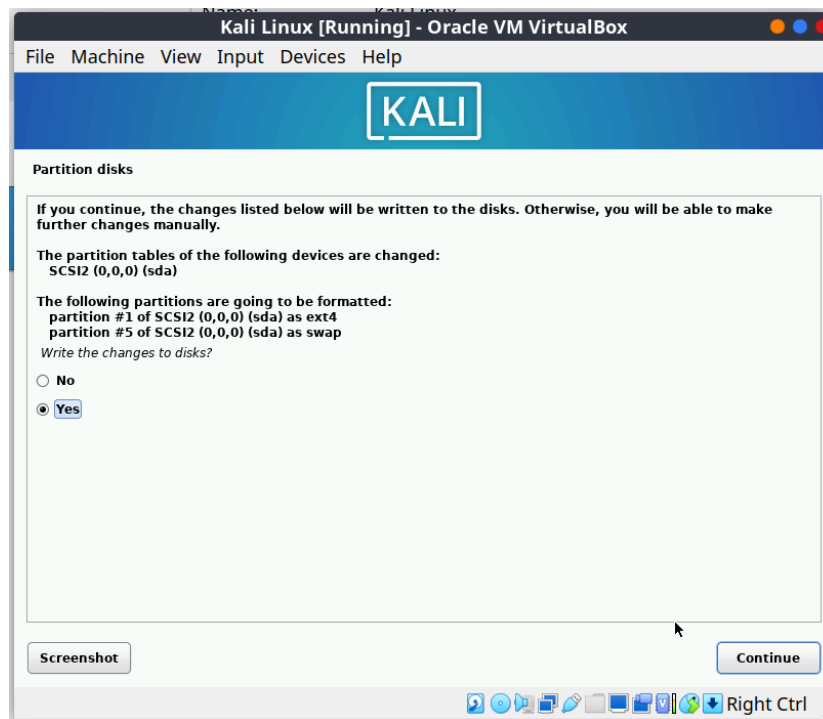
19) Select “All Files on one partition”, this will place all of your installation files on a single partition.



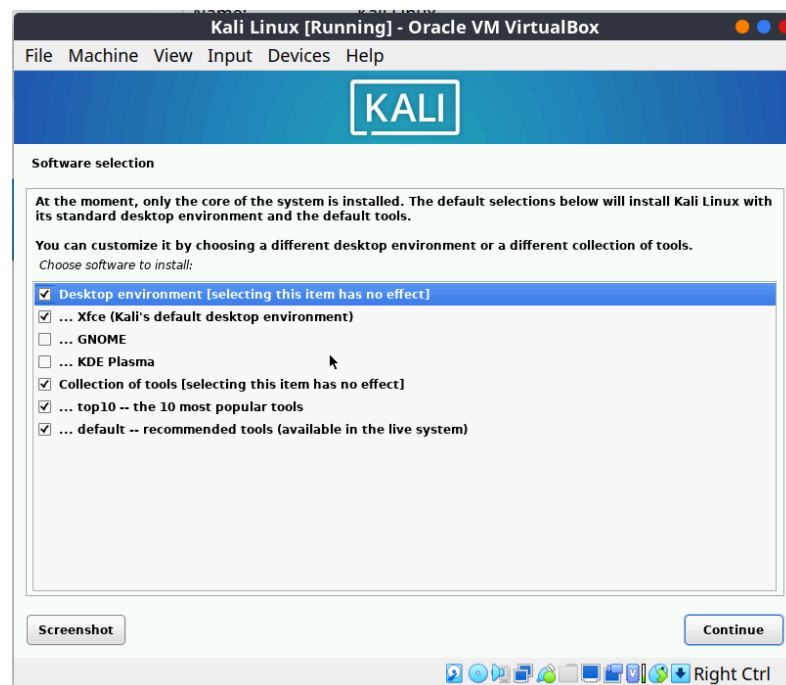
20) Select “Finish partitioning and write the changes to disk.”



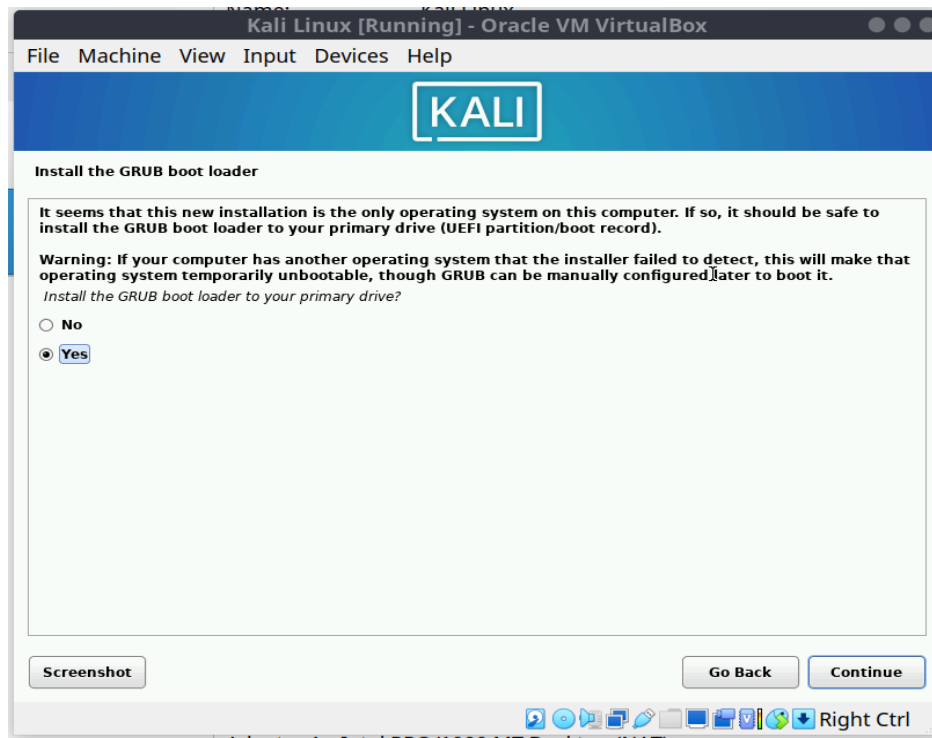
21) The next screen will ask for confirmation to write the changes to your disks to begin the installation. Select “Yes” to continue the installation.



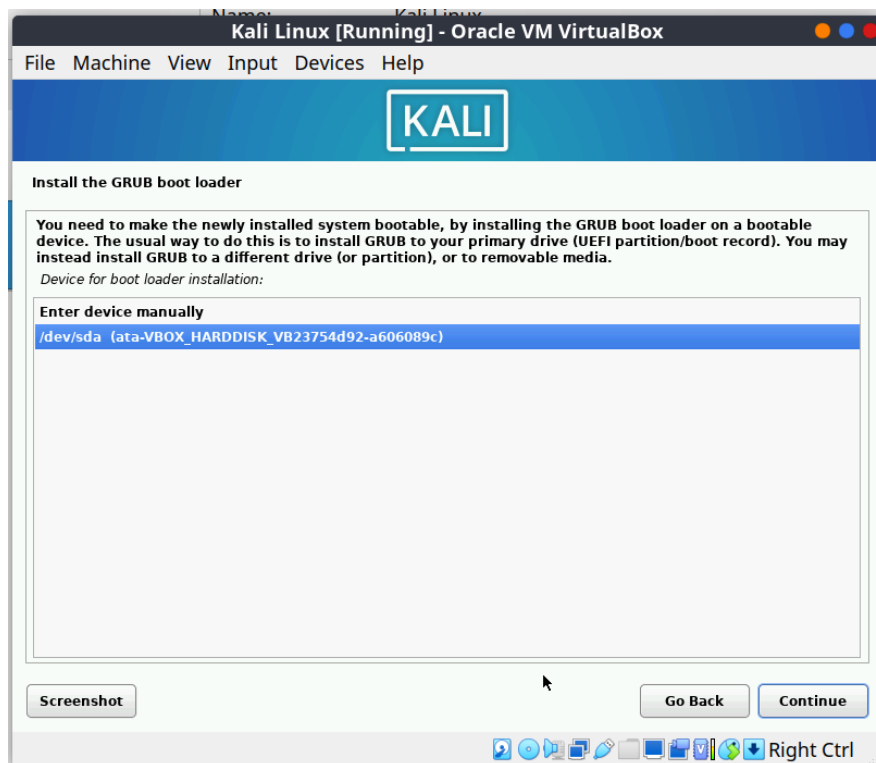
22) As you progress through the installation, eventually, a screen will pop up asking you to select your desktop environment. Since we are running in a VM, select “Xfce”, which is a lighter weight desktop environment. Keep/select the top10 & default recommended tools. If you need additional tools in the future, you can download those at a later date.



23) On the next screen, you will be asked to install the GRUB bootloader. Select “Yes”.



24) On the next screen, select the “/dev/sda” device as your grub installation target.



25) Allow the installation to complete.

26) Once the installation is finished, reboot the VM.

27) Log into the VM. Assuming you installed virtualbox guest additions with your virtualbox installation, you should be able to resize the screen. (if not you will need to install them on your host and in the VM, for screen resizing)

28) Open a terminal in your Kali Linux VM, and run the following command to update the system.

```
sudo apt update && sudo apt dist-upgrade -y
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It is recommended that you run this command at least once a week on Kali Linux. Kali Linux is a rolling release distribution, so there are always new updates.