Lab 2: Setting up an Ubuntu Virtual Machine using VirtualBox

1. Overview

In this lab, we'll walk you through one of the easiest ways to try out Ubuntu Desktop on a virtual machine. **VirtualBox <https://www.virtualbox.org/>** is a general purpose virtualiser that is available across Linux, Mac OS and Windows. It's a great way to experience Ubuntu regardless of your current operating system.

What you'll learn

- How to install and configure VirtualBox
- How to import an Ubuntu image
- How to run a virtual instance of Ubuntu Desktop
- Further configuration options

What you'll need

- A PC with internet access!

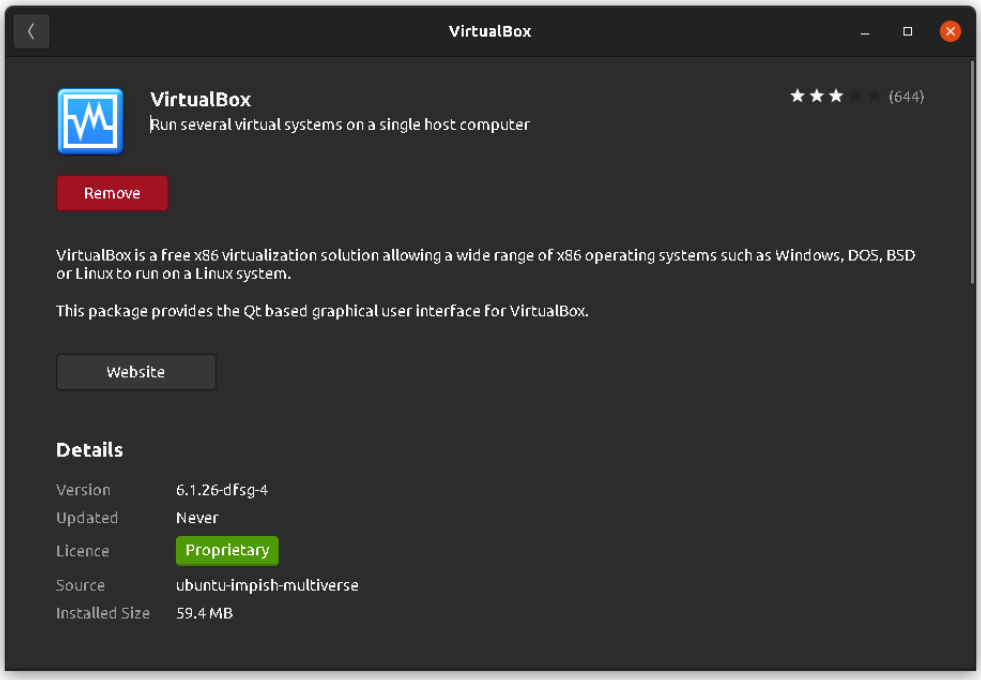
Download an Ubuntu Image

You can download an Ubuntu image **here <https://ubuntu.com/download/desktop>** . Make sure to save it to a memorable location on your PC! For this tutorial, we will use the Ubuntu 20.04 LTS release.

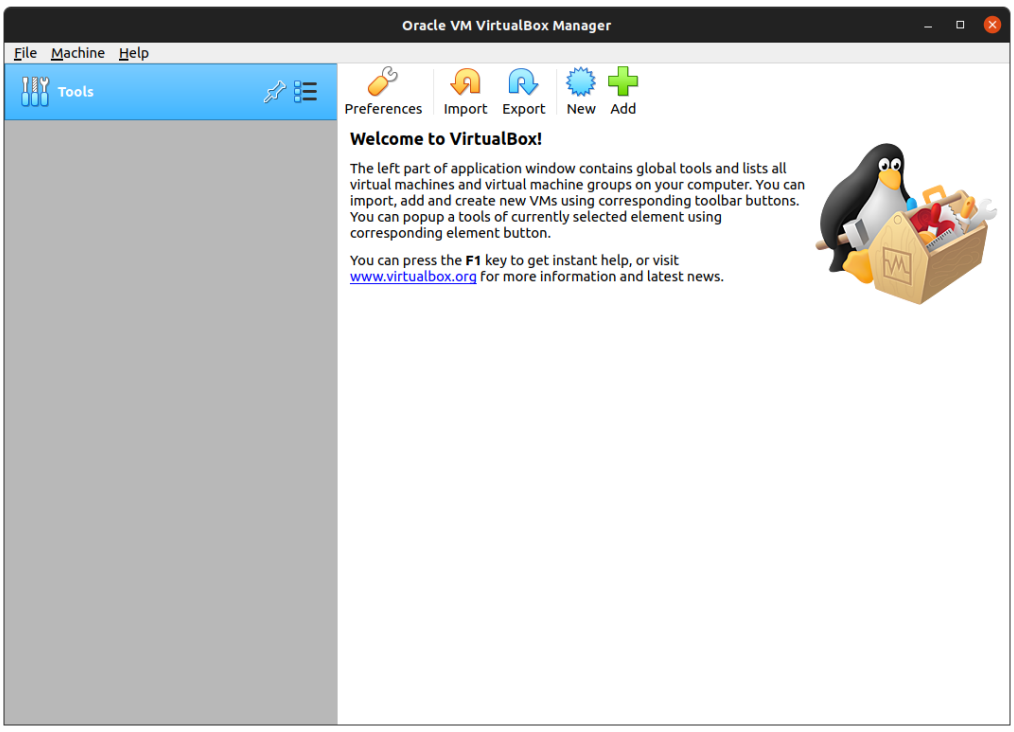
Download and install VirtualBox

On Mac OS or Windows you can download VirtualBox from the downloads page **here <https://www.virtualbox.org/wiki/Downloads>** .

This page also includes instructions to download VirtualBox for Linux. However, on Ubuntu, you can find VirtualBox by simply searching for it in the Ubuntu Software app.



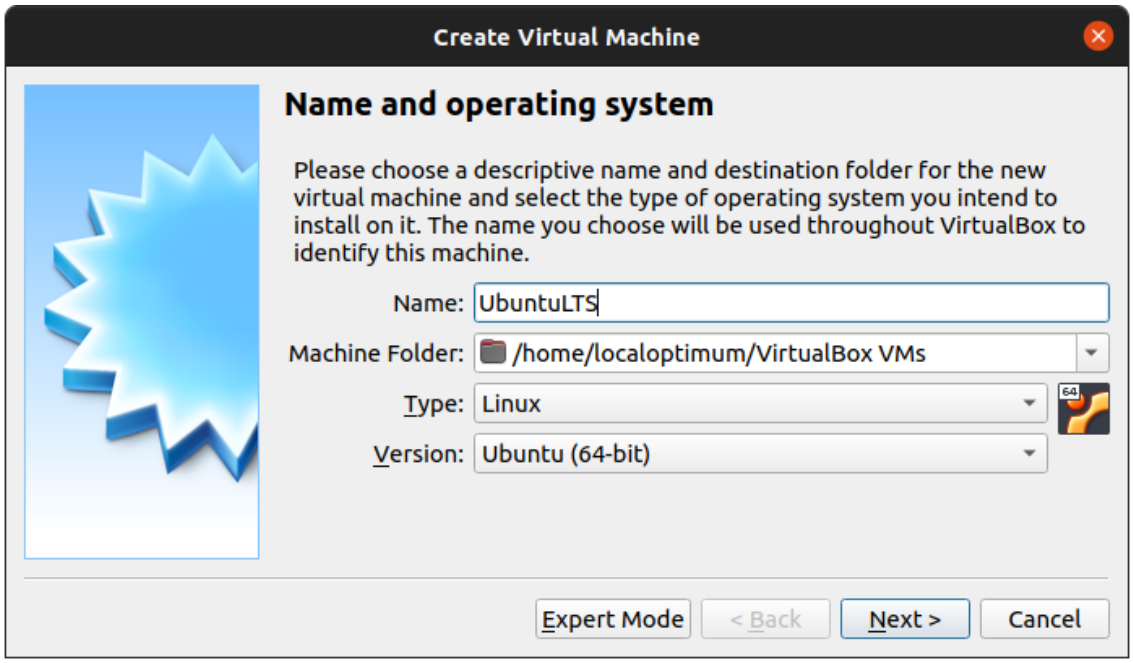
Once you have completed the installation, go ahead and run VirtualBox.



2. Create a new virtual machine

Click **New** to create a new virtual machine. Fill in the appropriate details:

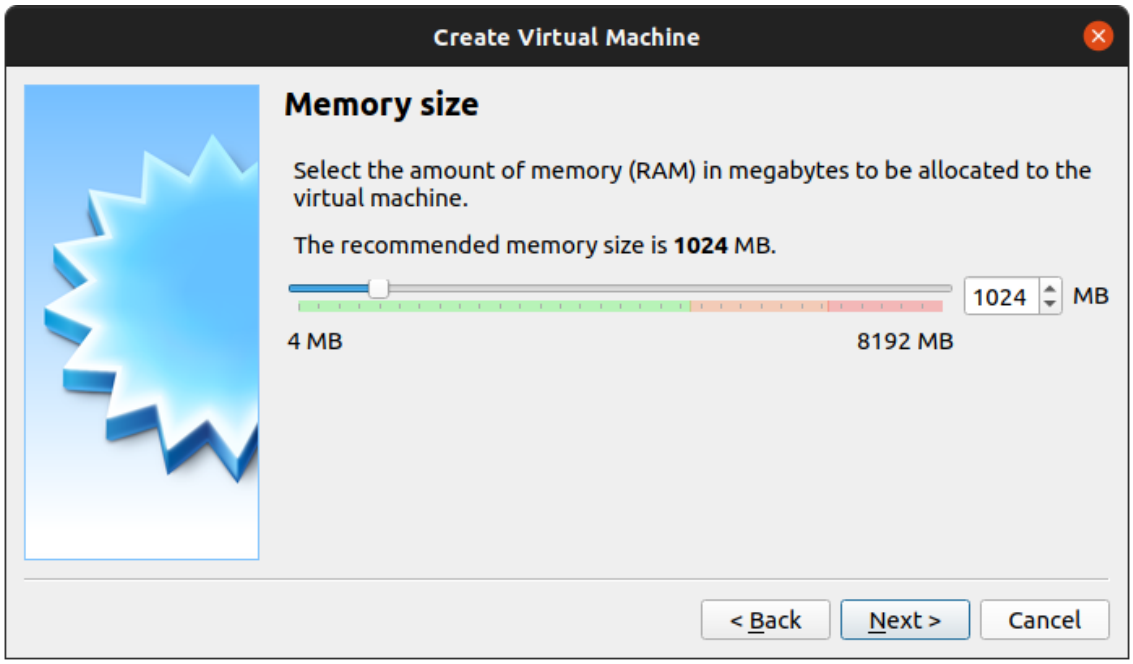
- Name: If you include the word Ubuntu in your name the Type and Version will auto-update.
- Machine Folder: This is where your virtual machines will be stored so you can resume working on them whenever you like.
- Type: Linux
- Version: Ubuntu (64-bit)



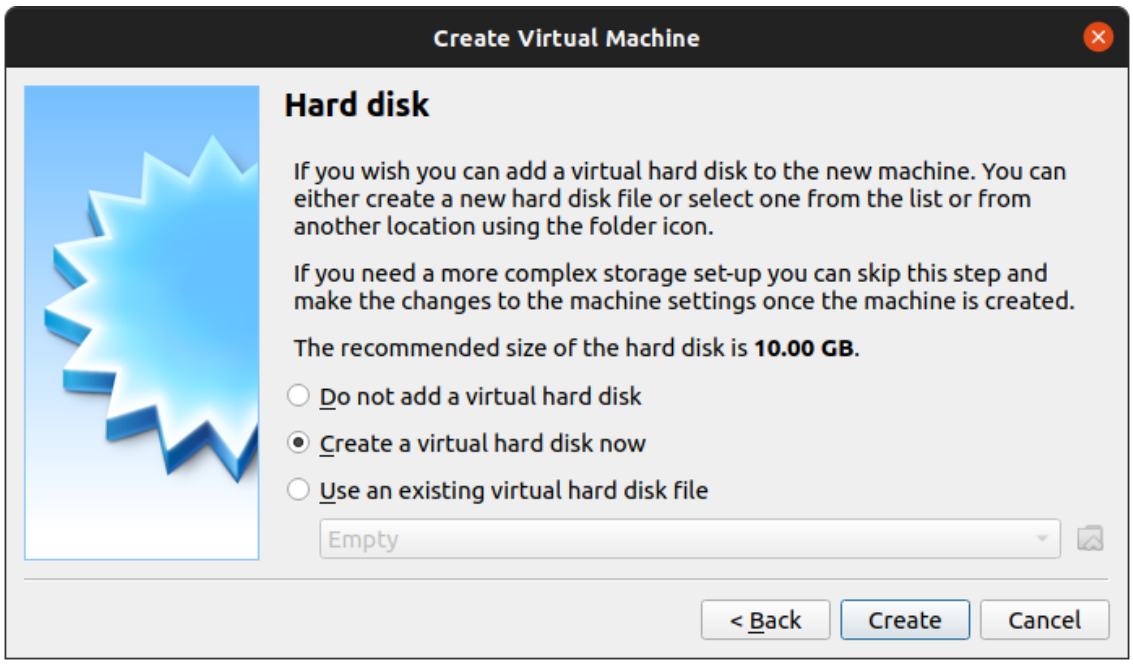
On the next screen, you will be able to select the amount of RAM from your main PC that the virtual machine will access. Be sure to remain inside the green bar to ensure you can continue to work outside of the VM whilst it's running!

Note: If you select Expert Mode, you will be given the option to set all of these parameters in one go. Useful for future setups!

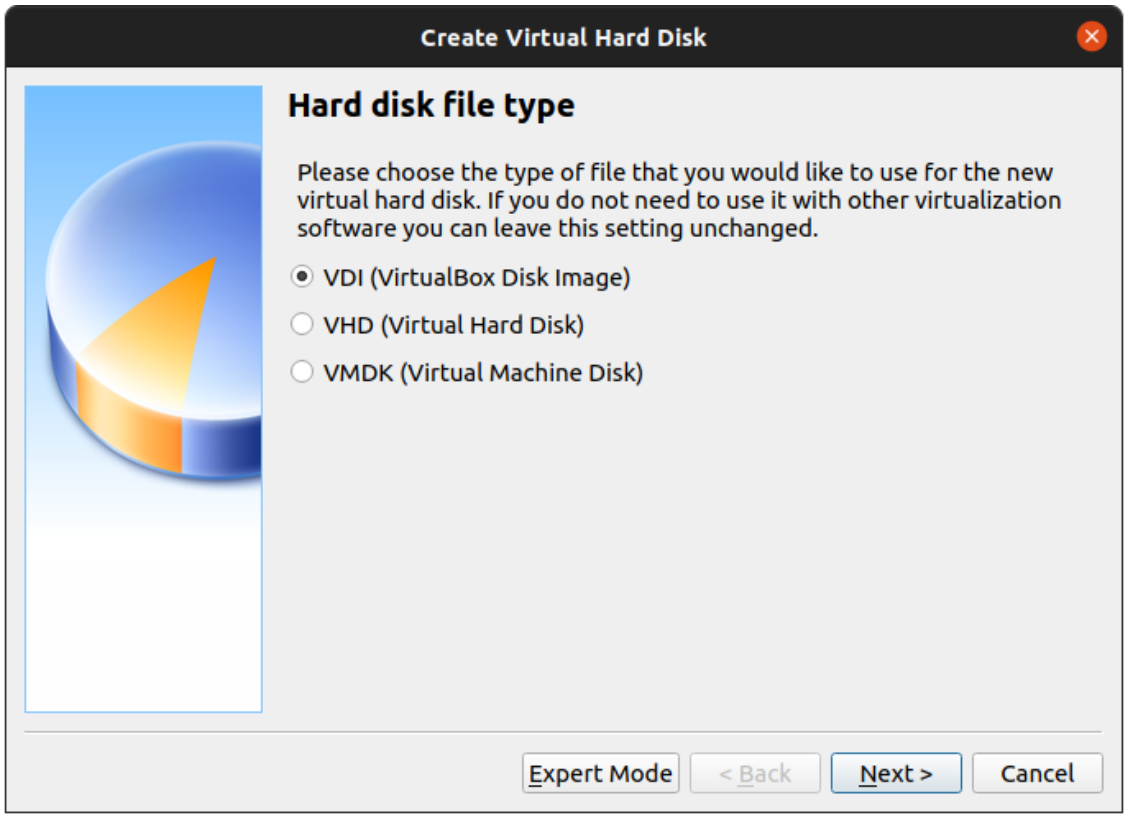
It's fine to use the default settings for now.



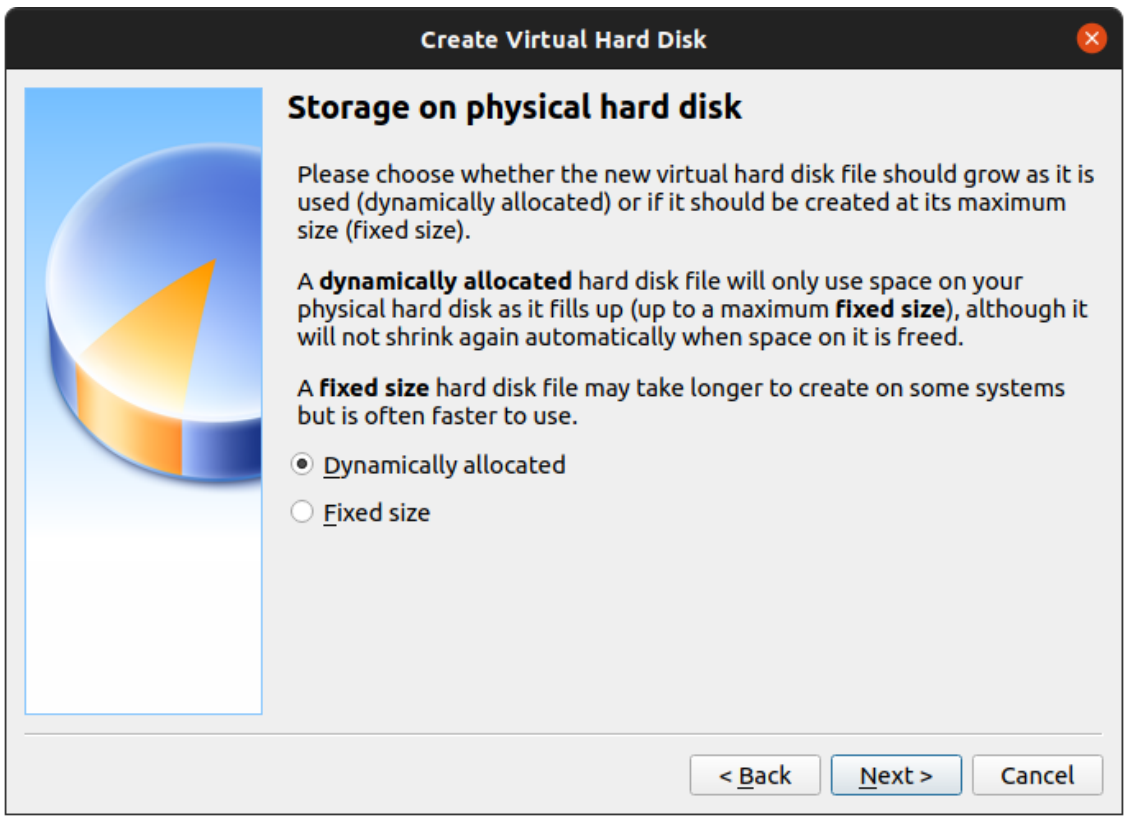
After that, you can select how much of your hard disk your VM will use.



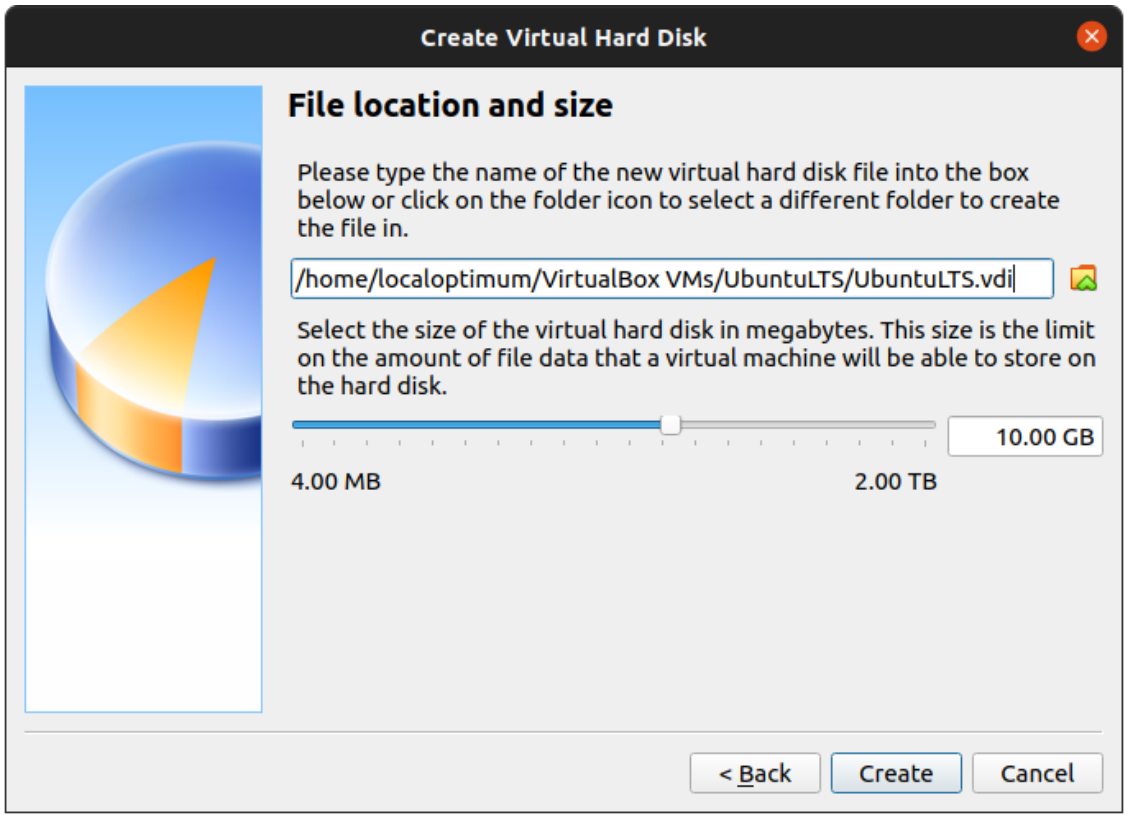
The type of hard disk depends on whether you use VirtualBox with other VM software. For now, we can leave this as a VDI.



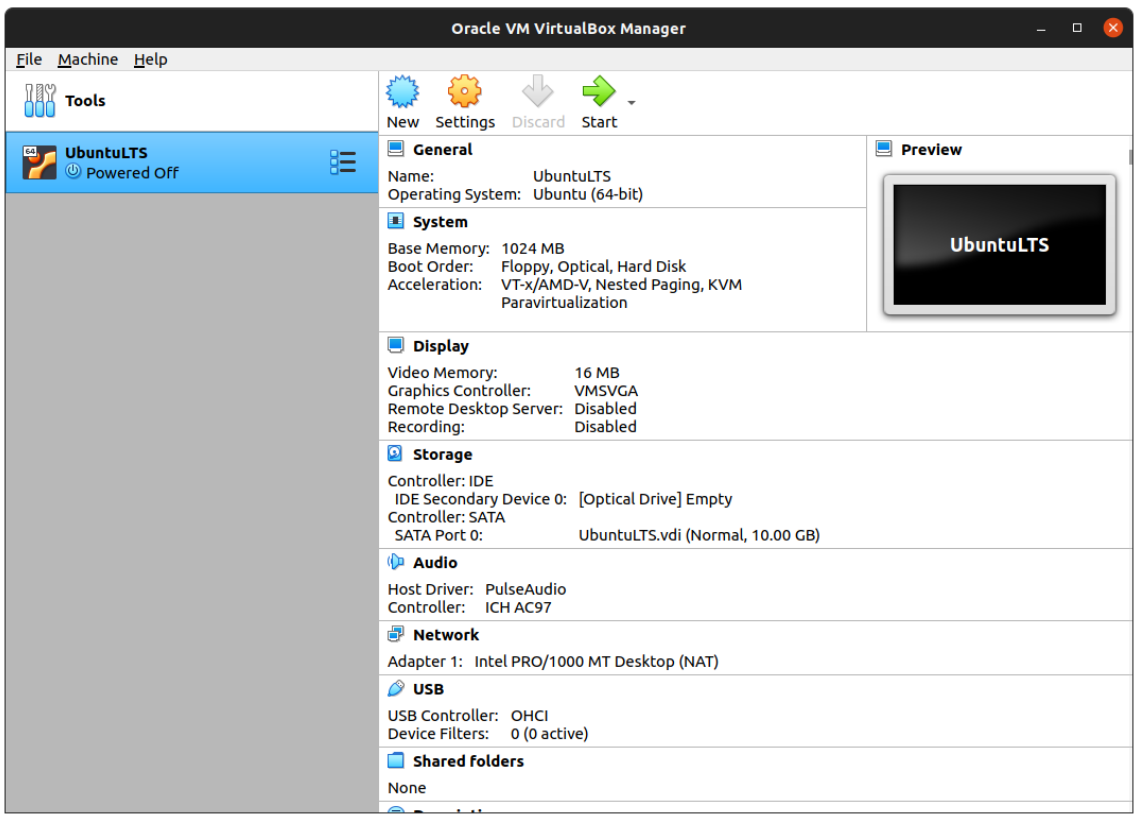
Then you can choose whether the hard disk is dynamically allocated (up to the limit we will set on the next screen), filling up as the VM requires it. Otherwise, we can tell it to allocate the full amount of memory right from the start. This will improve performance but may take up unnecessary space. We'll leave it as dynamically allocated for this tutorial.



Finally you can set the maximum amount of memory your VM can access.

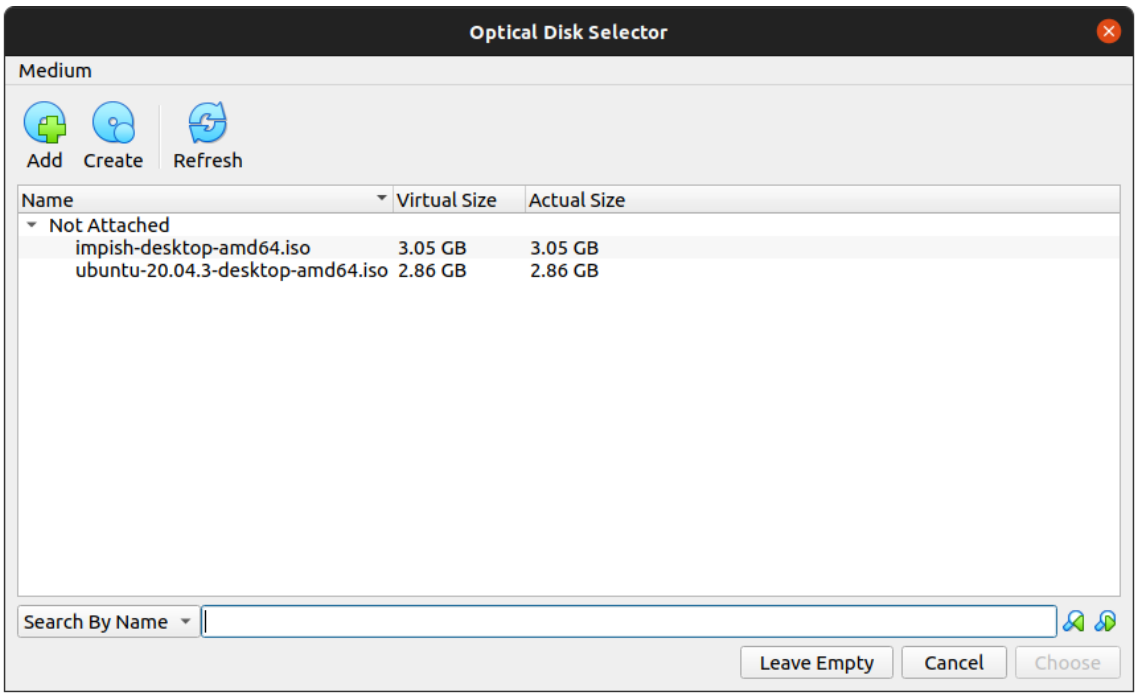


After this click **Create** to initialize the machine!



3. Install your image

Click **Start** to launch the virtual machine. You will be prompted to select the start-up disk. Use the file icon to open the Optical disc selector and click **Add** to find your .iso file

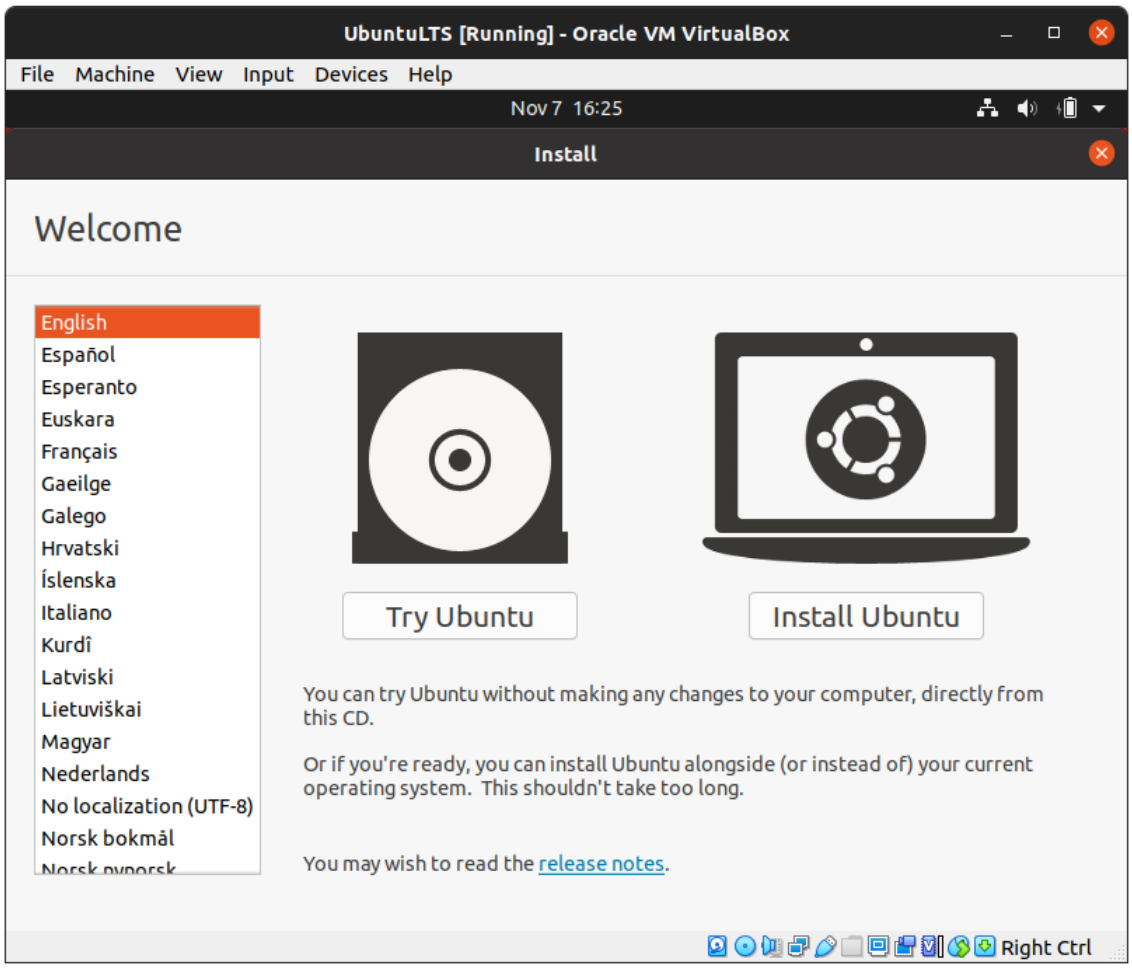


Choose the disc image you want to use, then click **Start** on the start-up disc window.

Note: If you close this window before selecting an image you can still do so from the Devices menu at the top of the VM window. Select **Devices > Optical Drives > Choose/Create a disc**

image...

Ubuntu desktop should now boot and display the installation menu.



After this point you can follow the normal **installation flow <https://ubuntu.com/tutorials/install-ubuntu-desktop#11-installation-complete>** for Ubuntu Desktop.

But there's one more thing to talk about before we move on!

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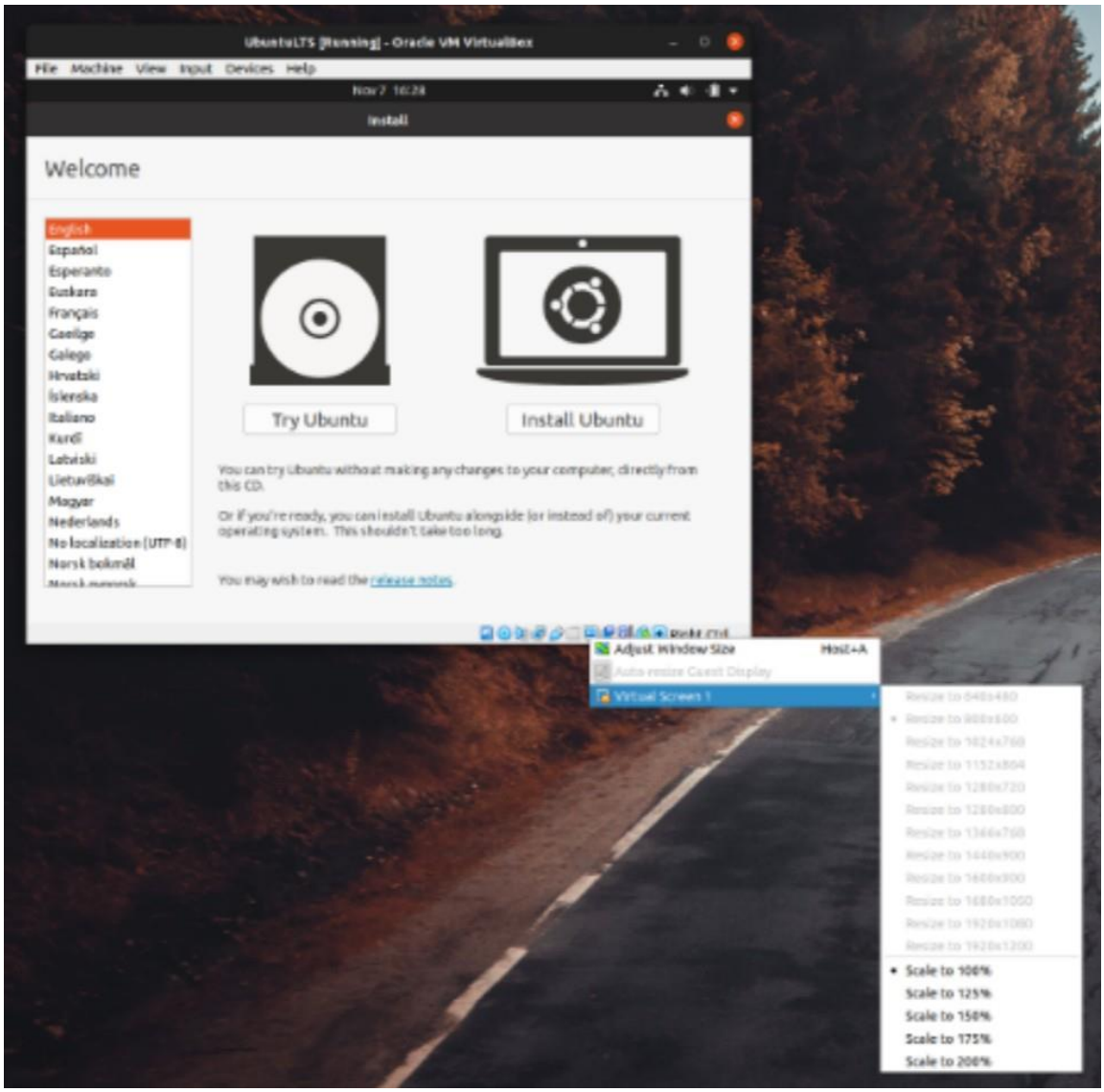
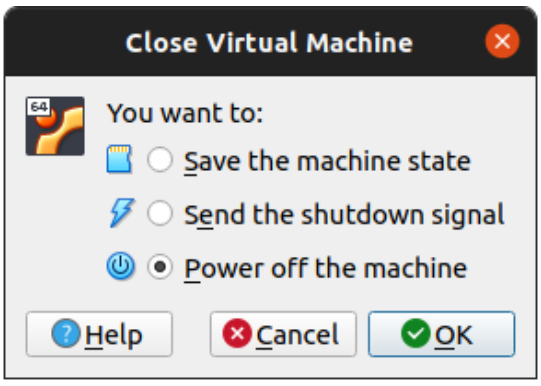
4. Changing the window resolution

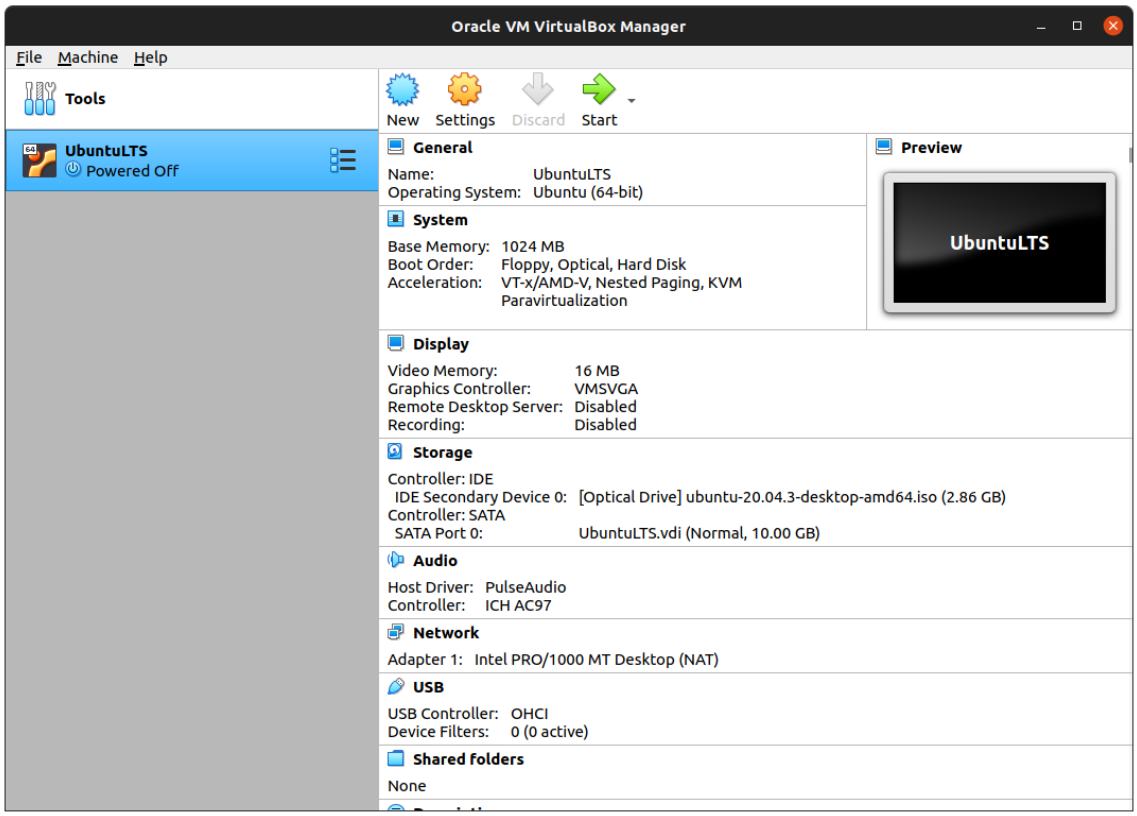
You'll notice that by default VirtualBox only displays at 800x600 resolution. But if you right click the **Window in monitor** icon at the bottom of the screen and select **Virtual Screen 1**, there are many more options available, but greyed out.



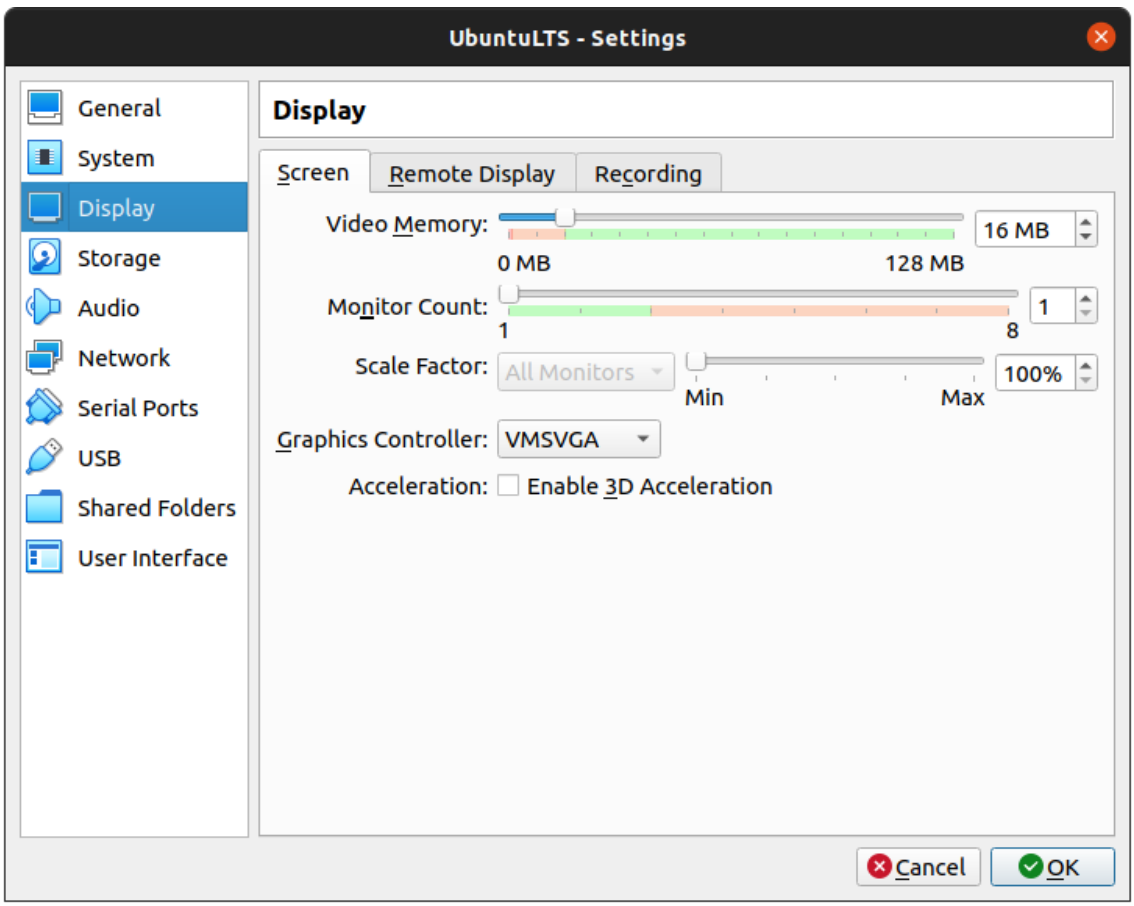
To resolve this we need to change some settings. Close the window and select **Power off the machine**.



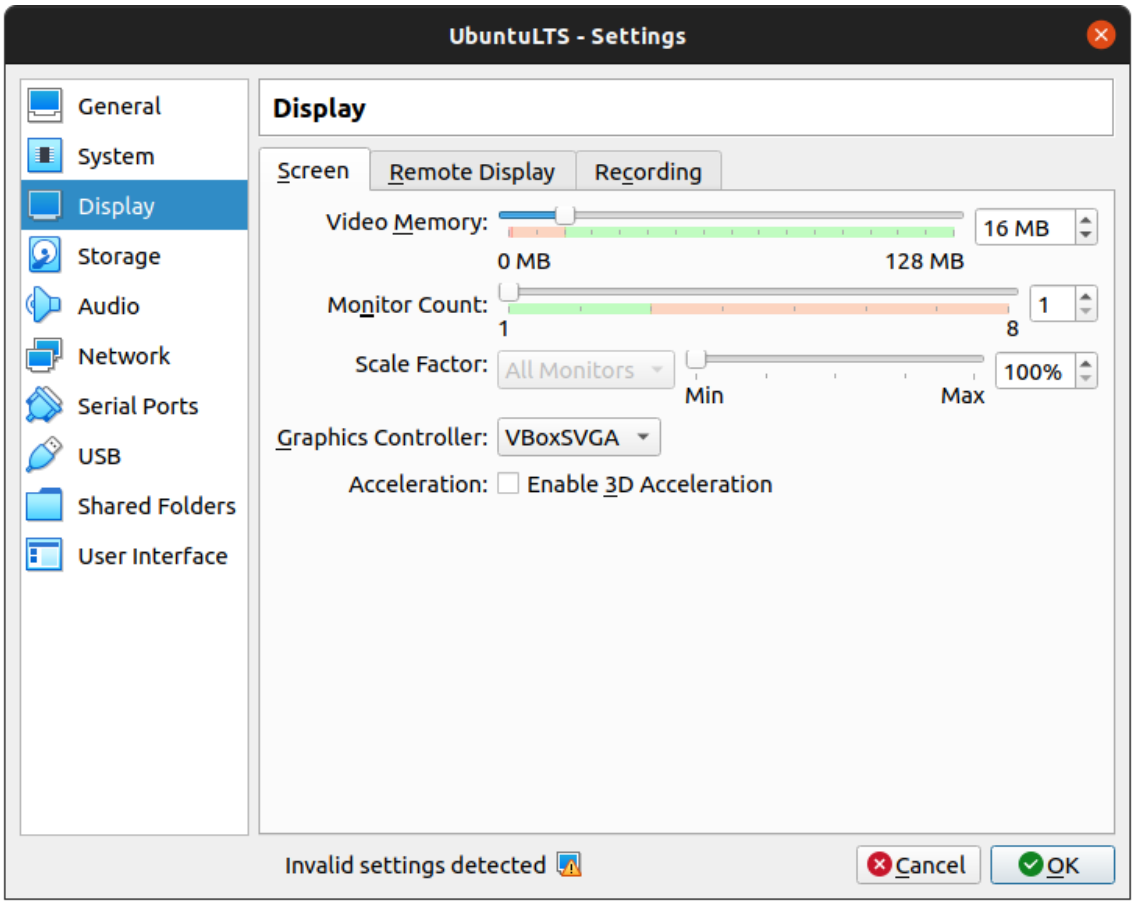
Return to the manager window and select **Settings**.



Then navigate to the **Display** tab.

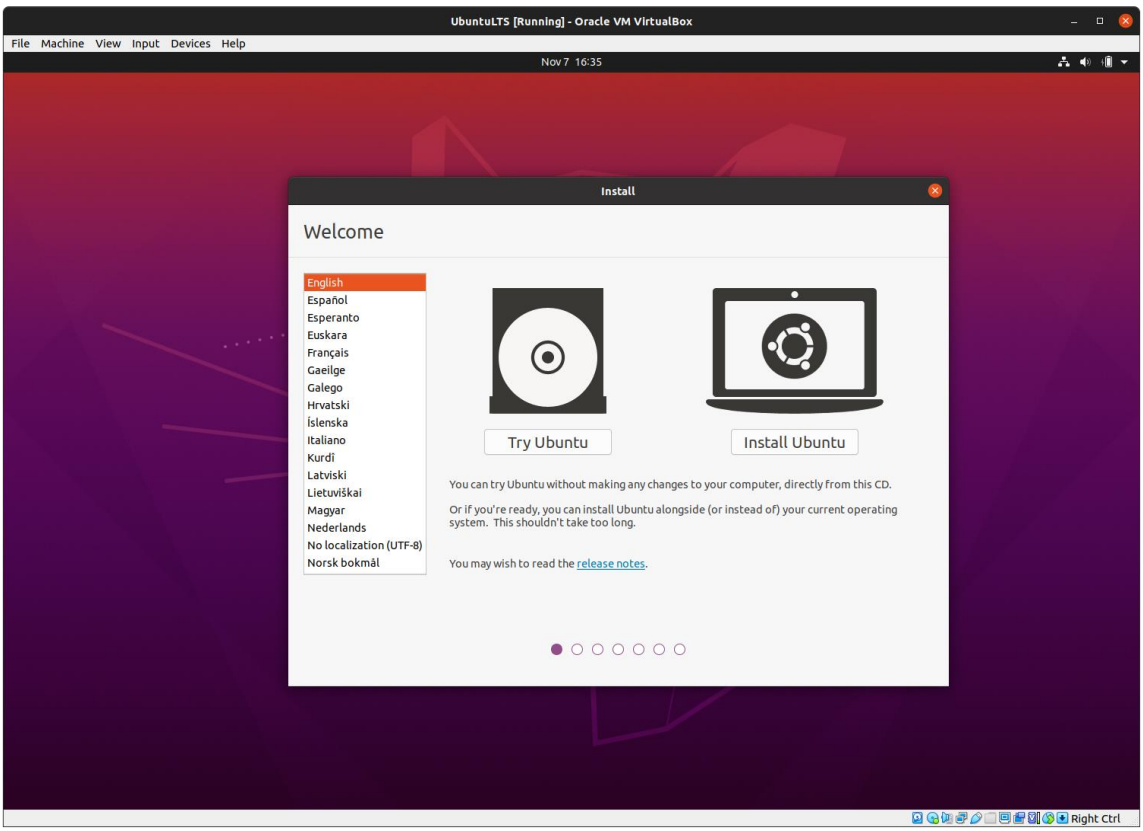


Change the Graphics Controller setting to **VBoxSVGA** and click **OK** (ignore the warning).



Now restart your virtual machine.

Once Ubuntu has started, you should now be able to select all of the available resolutions from the virtual monitor menu, or simply resize the window to adjust the display.



That's the end of the primary tutorial. Congratulations, you now have Ubuntu running on a virtual machine!

What follows are some more advanced options if you'd like to explore VirtualBox further.

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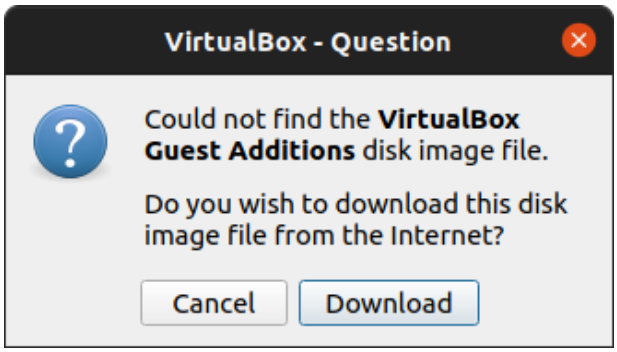
5. Installing Guest Additions

Guest Additions is an extra piece of software that unlocks some more advanced features of VirtualBox. This includes better integration between your virtual machine and the host machine, as well as improved video support that enables the display resolution options when using VMSVGA.

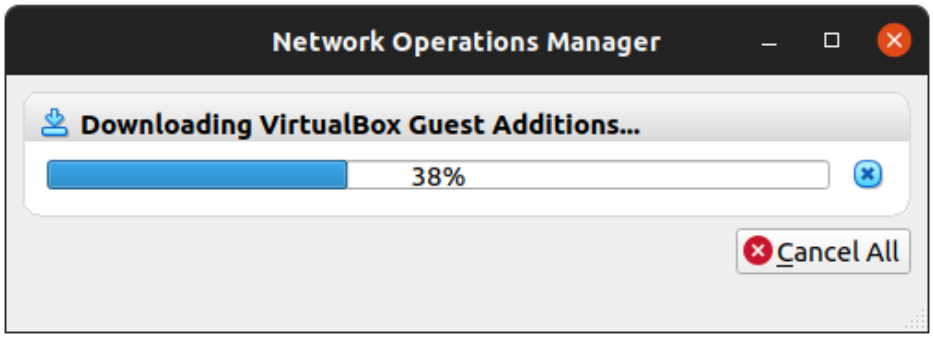
To install Guest Additions, you need to complete your installation of Ubuntu in your virtual machine and boot to the desktop.

From there, select **Devices > Insert Guest Additions CD**.

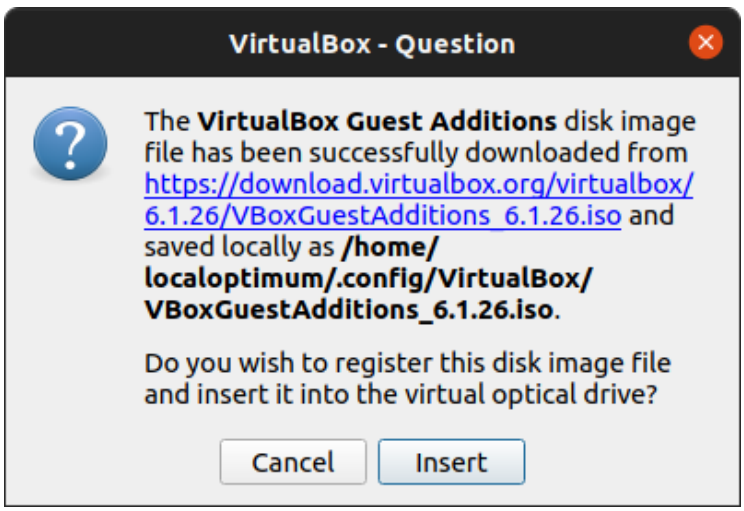
This will prompt you to download the Guest Additions disk image file.



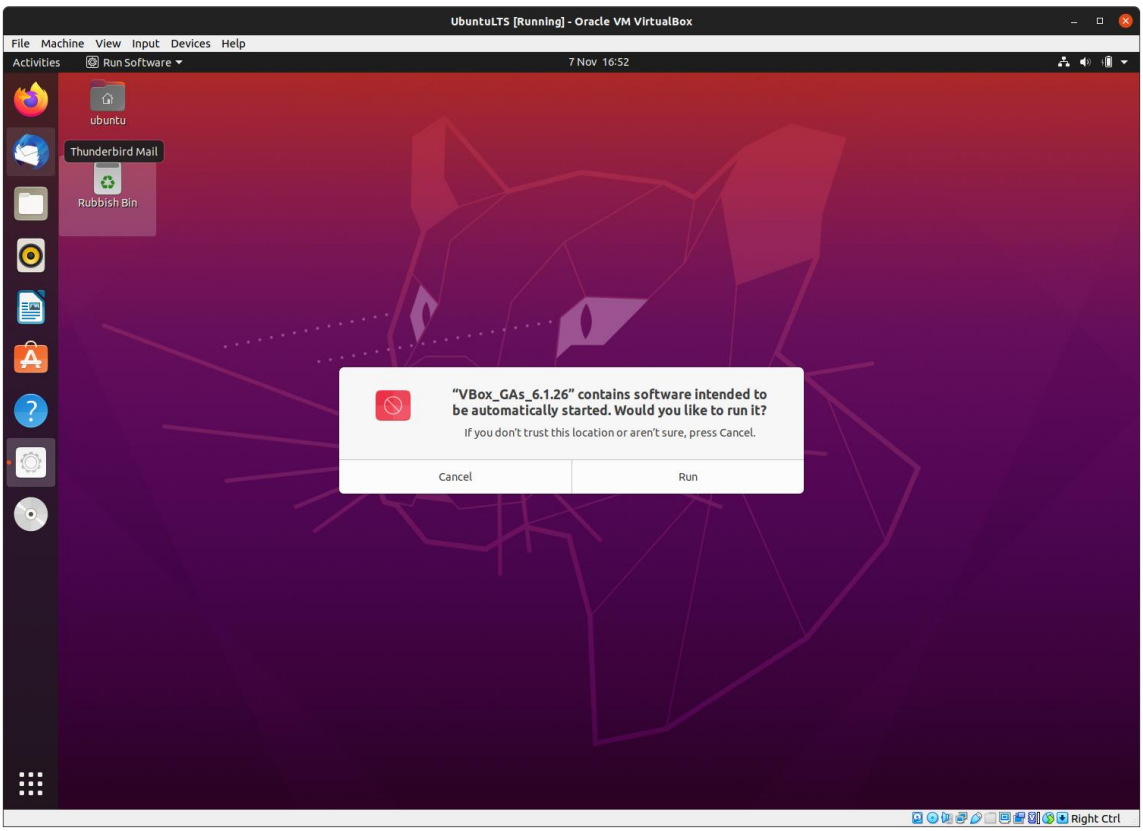
Click **Download**.



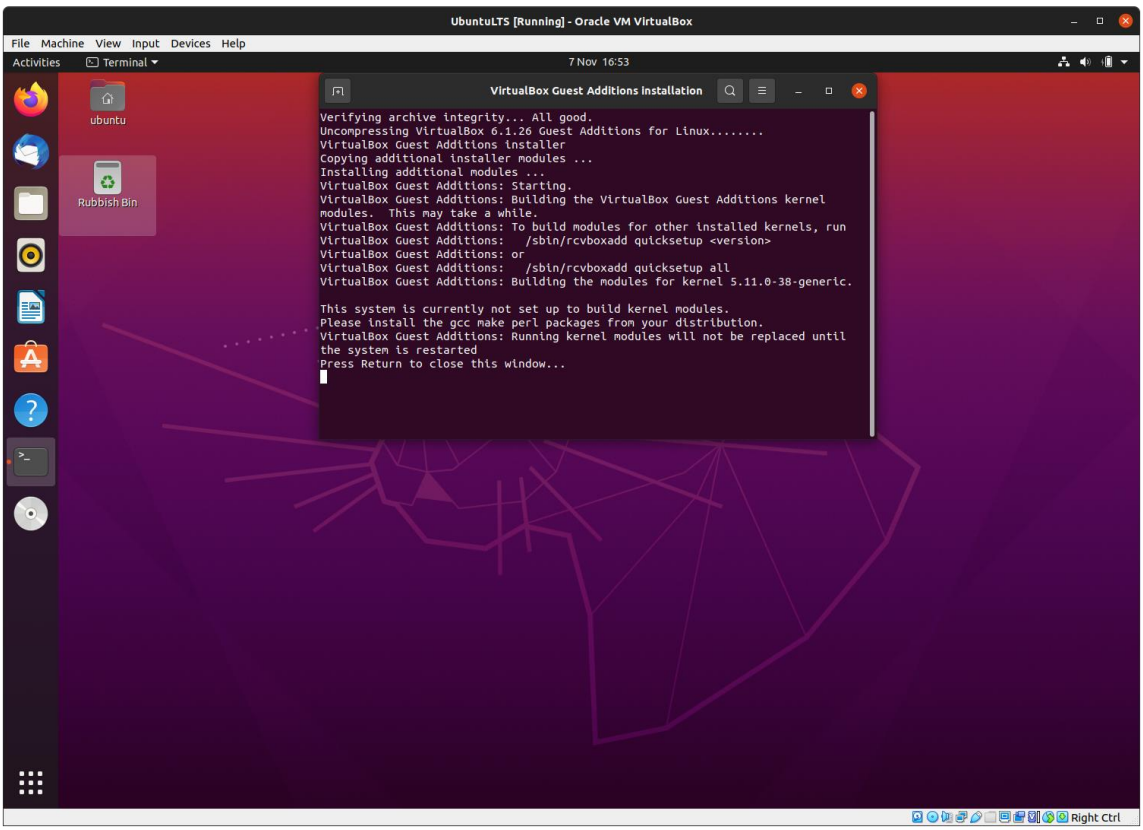
Then click **Insert**.



The disc will appear inside your virtual desktop and you will be prompted to run the software.

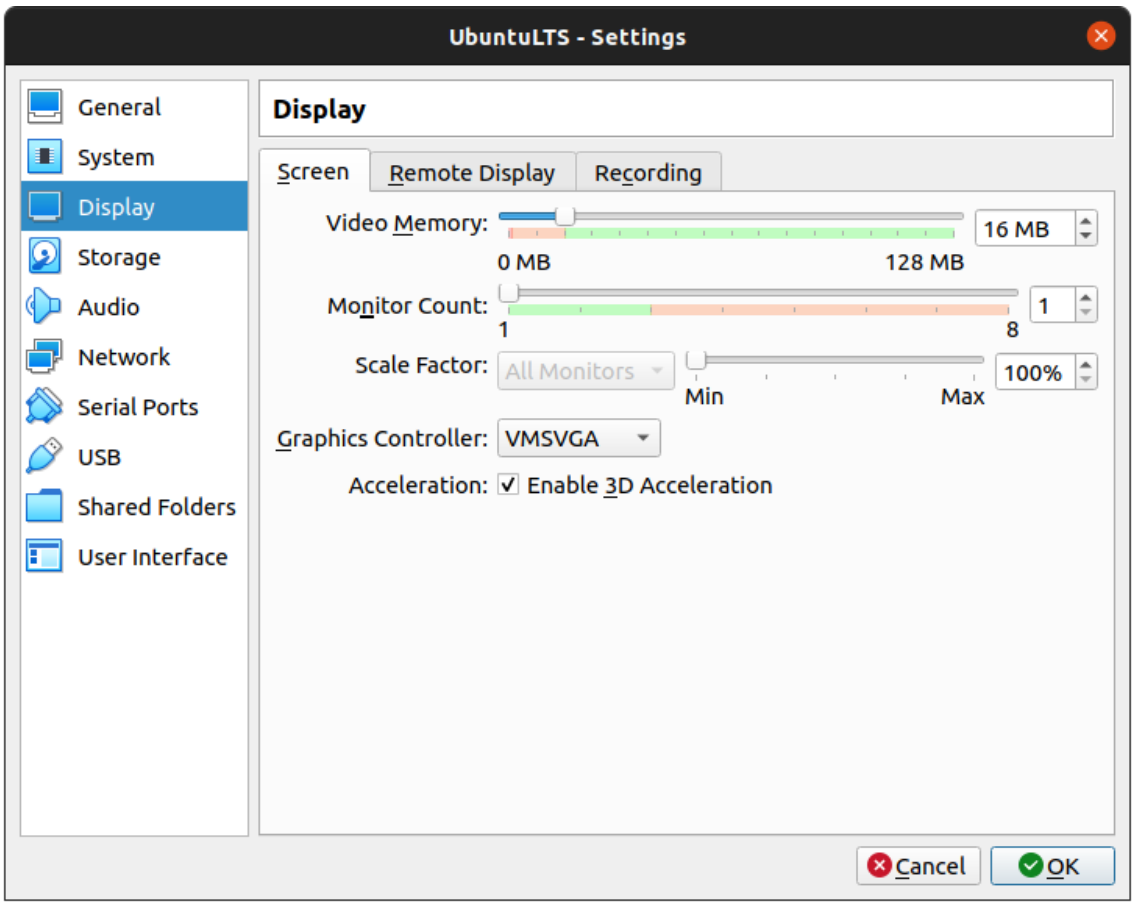


Enter your password to install it.



Once this is complete, you will need to restart your virtual machine for the new features to take effect.

Close the machine, but *before* you start it up again, return to the **Settings** menu and change the Graphics Controller back to **VMSVGA** and **Enable 3D Acceleration**. This will improve the performance of your virtual machine by taking advantage of your PC's 3D hardware and allow you to resize your desktop resolution!



Another feature this unlocks is the shared clipboard, which you can activate in **Devices > Shared Clipboard**. This will allow you to copy and paste between your virtual and host machines, useful when you want to copy outputs from one device to the other.

You can also try the above with one of the Ubuntu flavours **<https://ubuntu.com/download/flavours>** !

Ubuntu flavours

Ubuntu flavours offer a unique way to experience Ubuntu, each with their own choice of default applications and settings. Ubuntu flavours are backed by the full Ubuntu archive for packages and updates.

Kubuntu

Kubuntu offers the KDE Plasma Workspace experience, a good-looking system for home and office use.

Lubuntu

Lubuntu is a light, fast, and modern Ubuntu flavor using LXQt as its default desktop environment. Lubuntu used to use LXDE as its default desktop environment.

Ubuntu Budgie

Ubuntu Budgie provides the Budgie desktop environment which focuses on simplicity and elegance. It provides a traditional desktop metaphor based interface utilising a customisable panel based menu driven system.

Ubuntu Kylin

The Ubuntu Kylin project is tuned to the needs of Chinese users, providing a thoughtful and elegant Chinese experience out-of-the-box.

Ubuntu MATE

Ubuntu MATE expresses the simplicity of a classic desktop environment. Ubuntu MATE is the continuation of the GNOME 2 desktop which was Ubuntu's default desktop until October 2010.

Ubuntu Studio

Ubuntu Studio is a multimedia content creation flavor of Ubuntu, aimed at the audio, video and graphic enthusiast or professional.

Xubuntu

Xubuntu is an elegant and easy to use operating system. Xubuntu comes with Xfce, which is a stable, light and configurable desktop environment.

Adapted from https://ubuntu.com/tutorials/how-to-run-ubuntu-desktop-on-a-virtual-machine-using-virtualbox