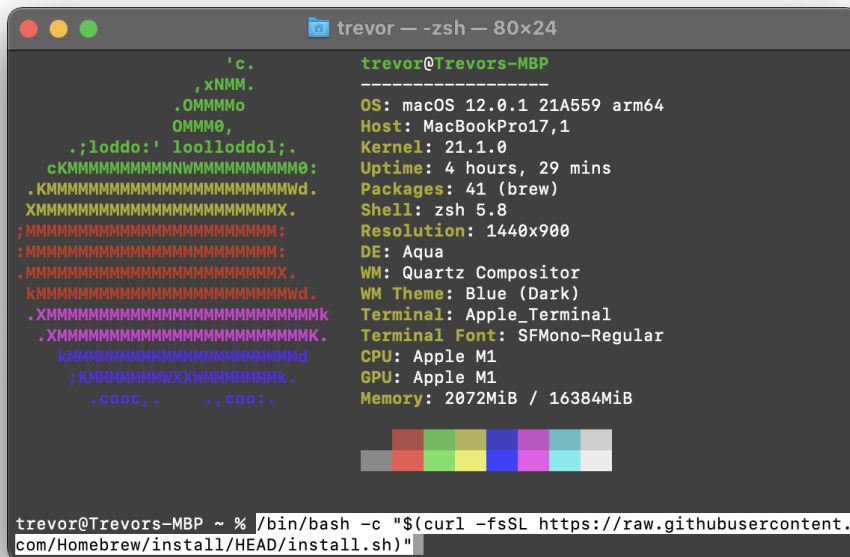
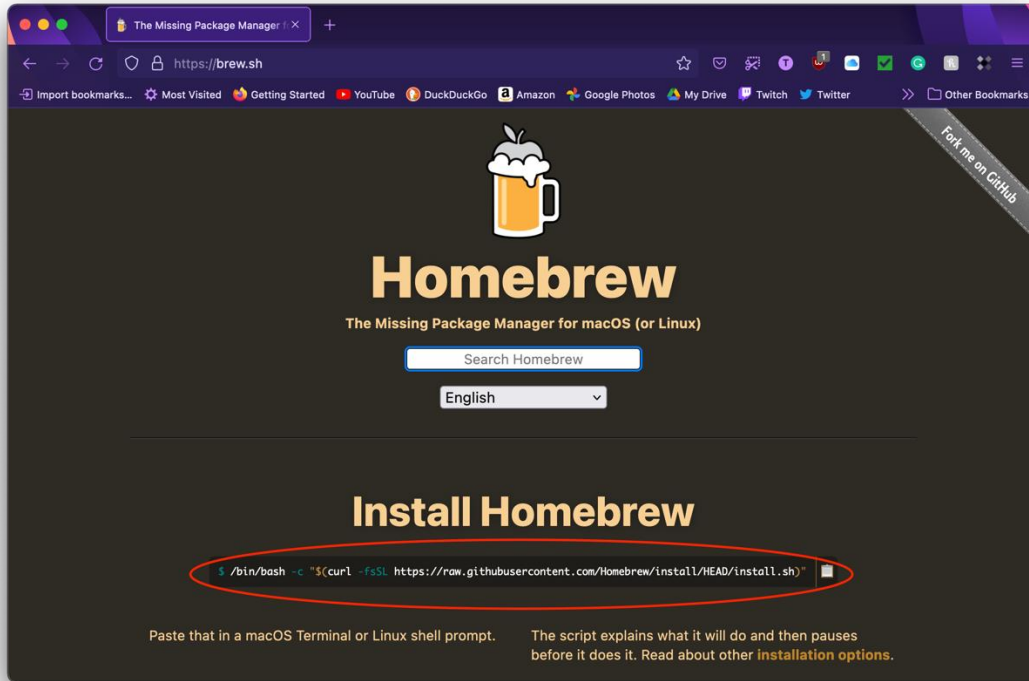


First, you will need to install Homebrew in order to get UTM. Homebrew is a package manager that allows you to install other MacOS apps such as Spotify and Visual Studio Code.

Go to <https://brew.sh> in your web browser and copy the command underneath Install Homebrew. Then open a terminal and paste the command. Then press enter. Homebrew may need your password during installation.

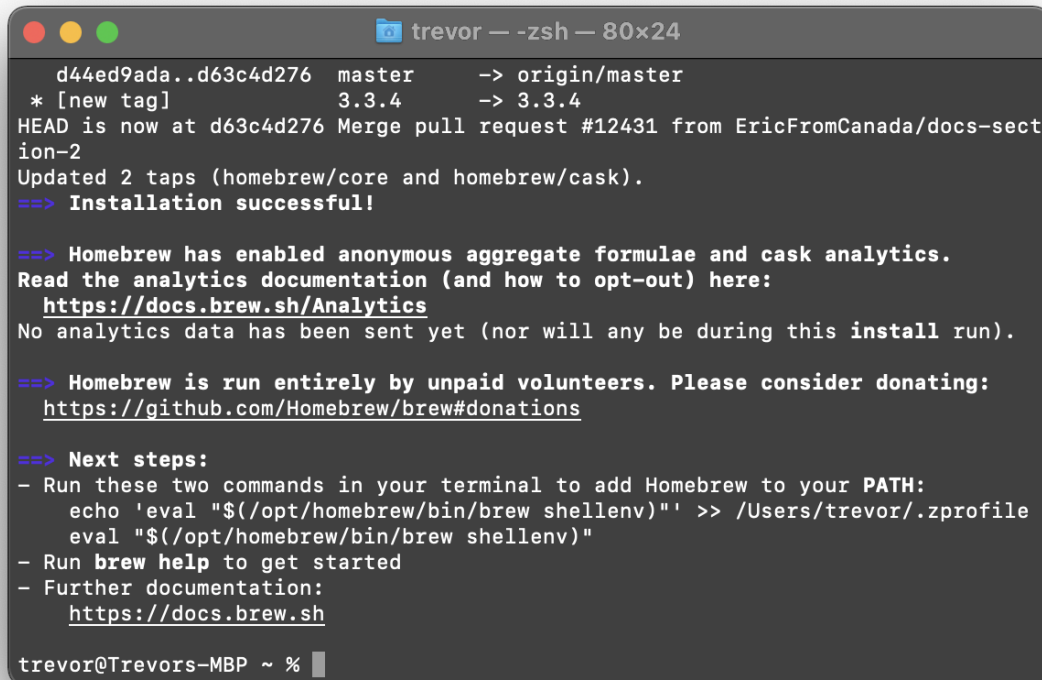


When the Homebrew installation has finished, you are going to enter the two terminal commands to complete the installation.

```
echo 'eval "$(/opt/homebrew/bin/brew shellenv)"' >> /Users/<username>/.zprofile
```

```
eval "$(/opt/homebrew/bin/brew shellenv)"
```

Make sure to substitute in your username where it says <username>.



```
trevor — -zsh — 80x24
d44ed9ada..d63c4d276 master -> origin/master
* [new tag] 3.3.4 -> 3.3.4
HEAD is now at d63c4d276 Merge pull request #12431 from EricFromCanada/docs-section-2
Updated 2 taps (homebrew/core and homebrew/cask).
==> Installation successful!

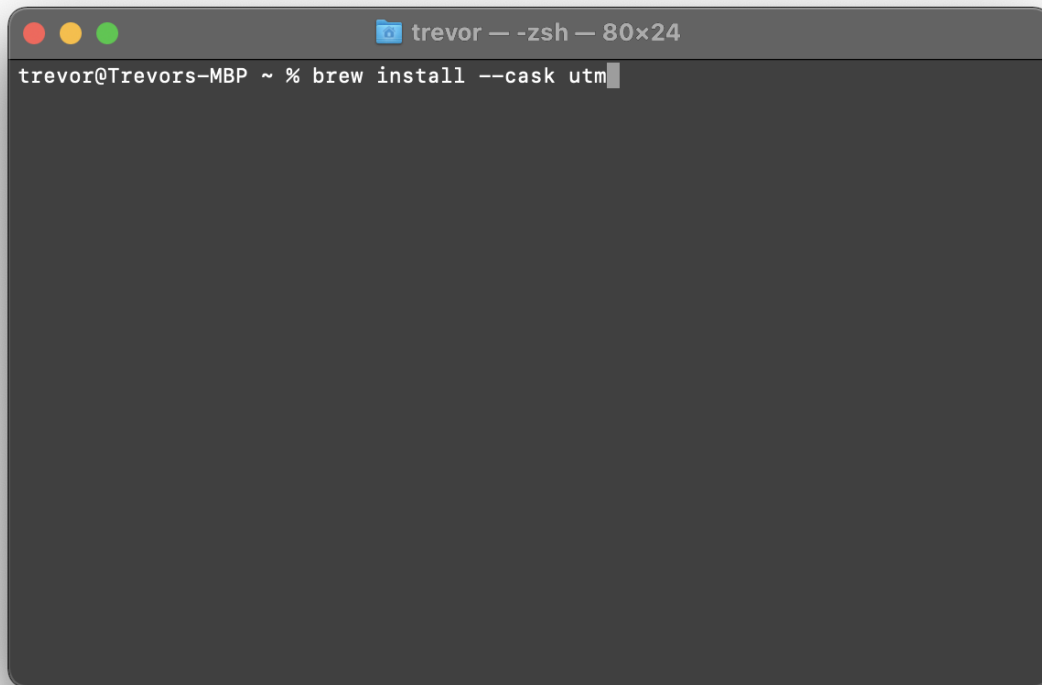
==> Homebrew has enabled anonymous aggregate formulae and cask analytics.
Read the analytics documentation (and how to opt-out) here:
https://docs.brew.sh/Analytics
No analytics data has been sent yet (nor will any be during this install run).

==> Homebrew is run entirely by unpaid volunteers. Please consider donating:
https://github.com/Homebrew/brew#donations

==> Next steps:
- Run these two commands in your terminal to add Homebrew to your PATH:
  echo 'eval "$(/opt/homebrew/bin/brew shellenv)"' >> /Users/trevor/.zprofile
  eval "$(/opt/homebrew/bin/brew shellenv)"
- Run brew help to get started
- Further documentation:
  https://docs.brew.sh

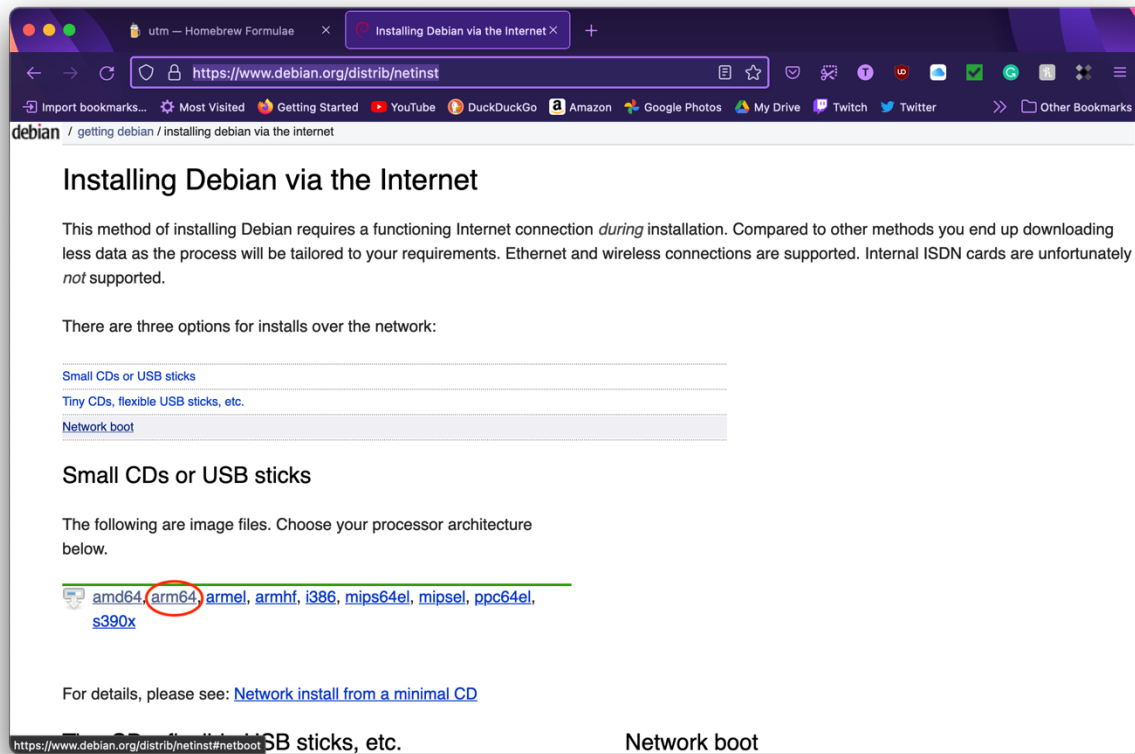
trevor@Trevors-MBP ~ %
```

Next, you need to install UTM. To do this, enter in the terminal `brew install --cask utm`. Installing packages with Homebrew does not require root, so you do not need `sudo` in front of the command.

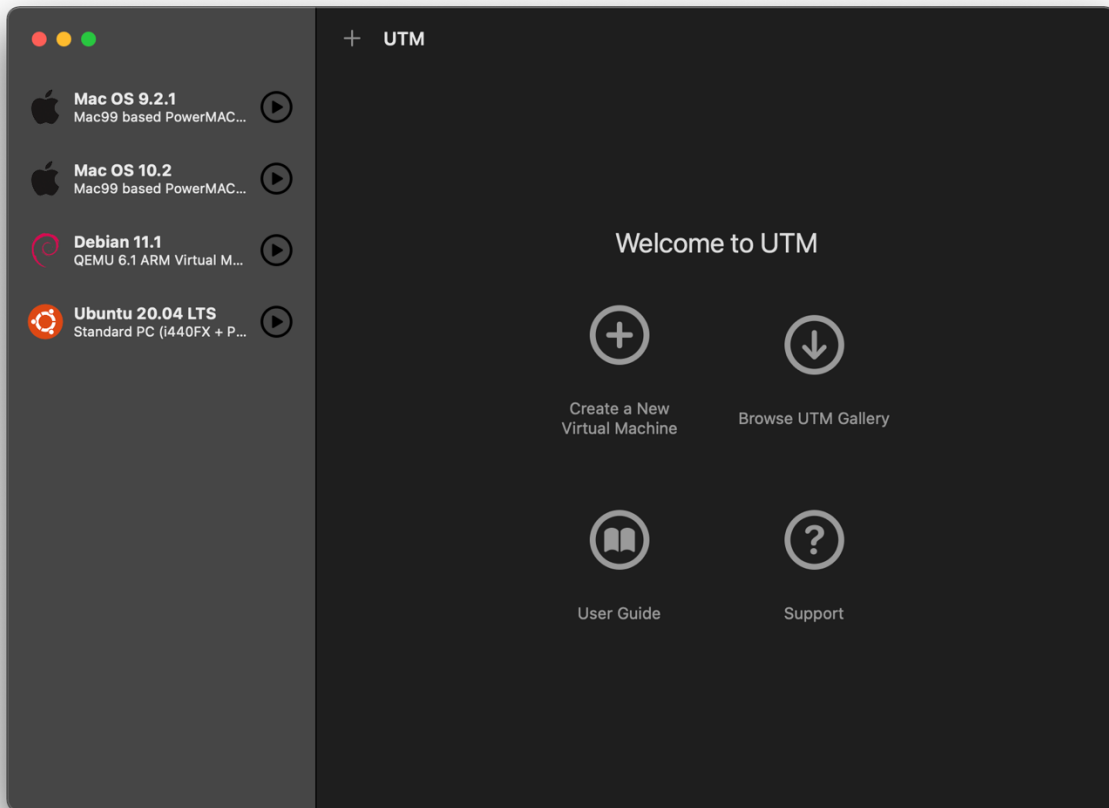
A terminal window with a dark background and light text. The title bar at the top shows three colored window control buttons (red, yellow, green) on the left, followed by the text "trevor — zsh — 80x24". The main content of the terminal shows the prompt "trevor@Trevors-MBP ~ %" followed by the command "brew install --cask utm" and a cursor at the end of the line.

```
trevor@Trevors-MBP ~ % brew install --cask utm
```

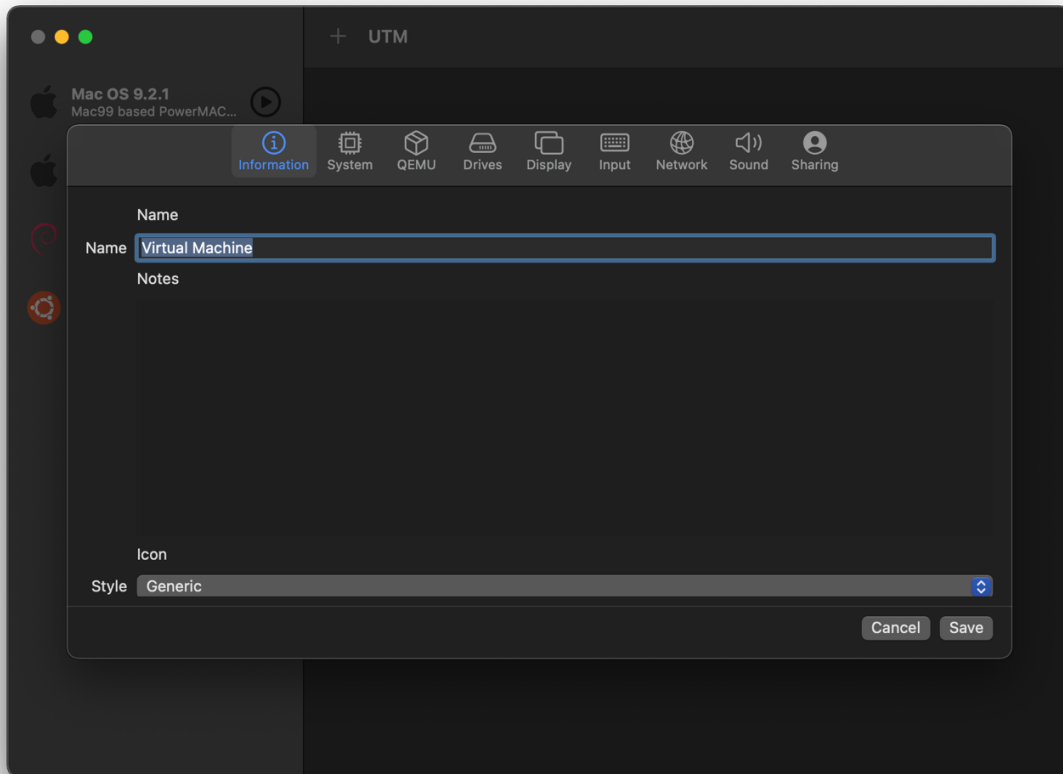
Before you open UTM, lets download the Debian ISO. Go to <https://www.debian.org/distrib/netinst> and click on arm64. This will download the ARM64 version of the internet installation for Debian. This may take some time to download. Also, since this is the internet installation version, you will need an internet connection during the Debian installation process.



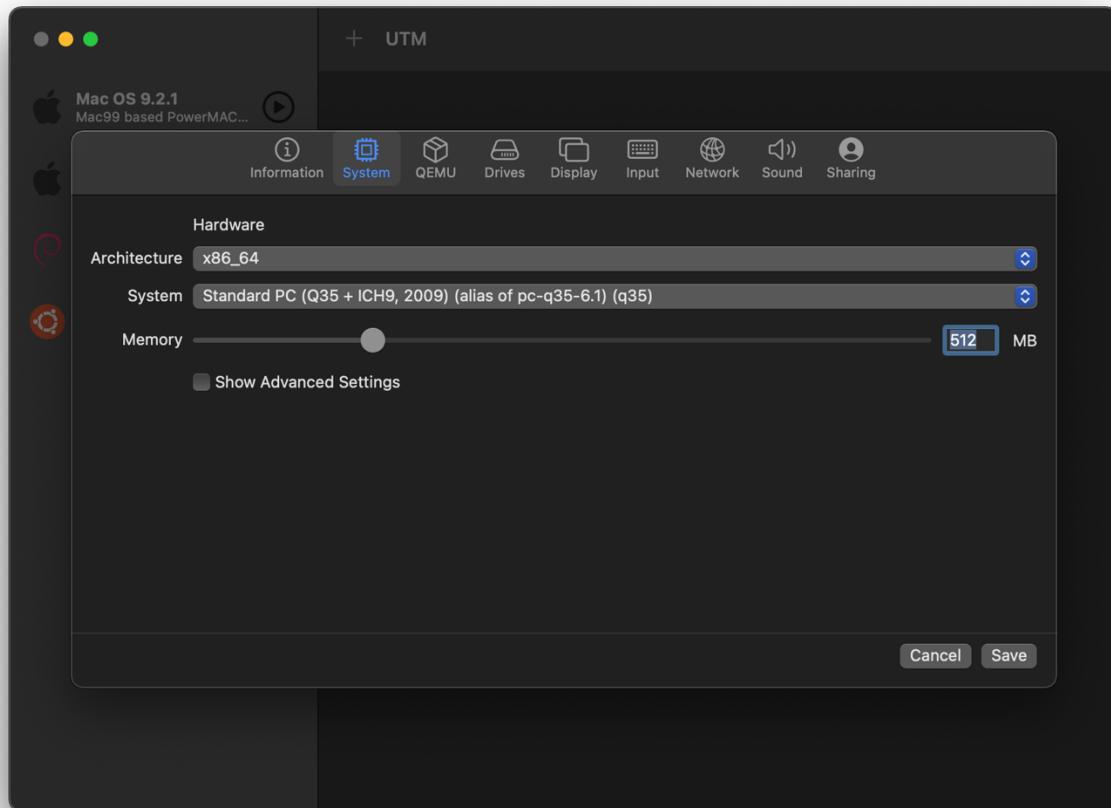
When the Debian installation ISO is fully downloaded, open UTM. When you open UTM, it should look similar to the screenshot, just without the virtual machines.

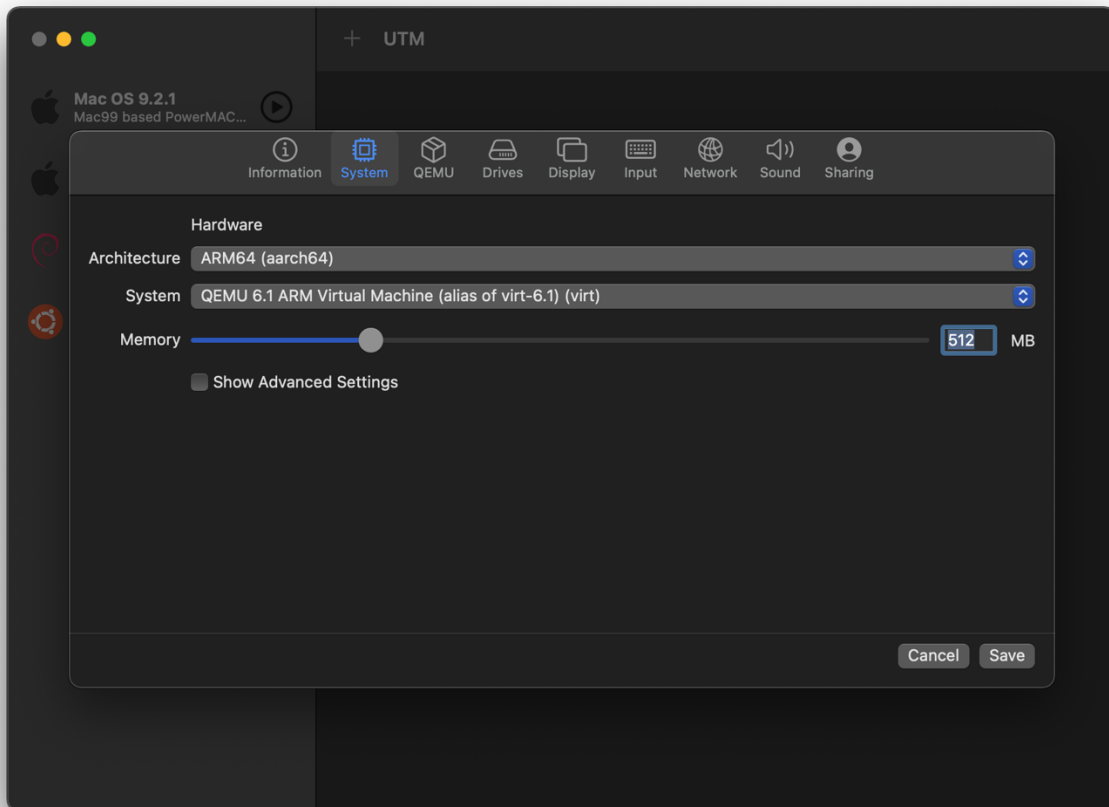


Next click on create new virtual machine. A window will open allowing you to configure the virtual machine. In this case, I am going to name it Debian Test but you can name it whatever you want and give it whatever icon you want.



Next go to the system tab and change the architecture from x86_64 to ARM64. This selection will be up towards the top of the list.



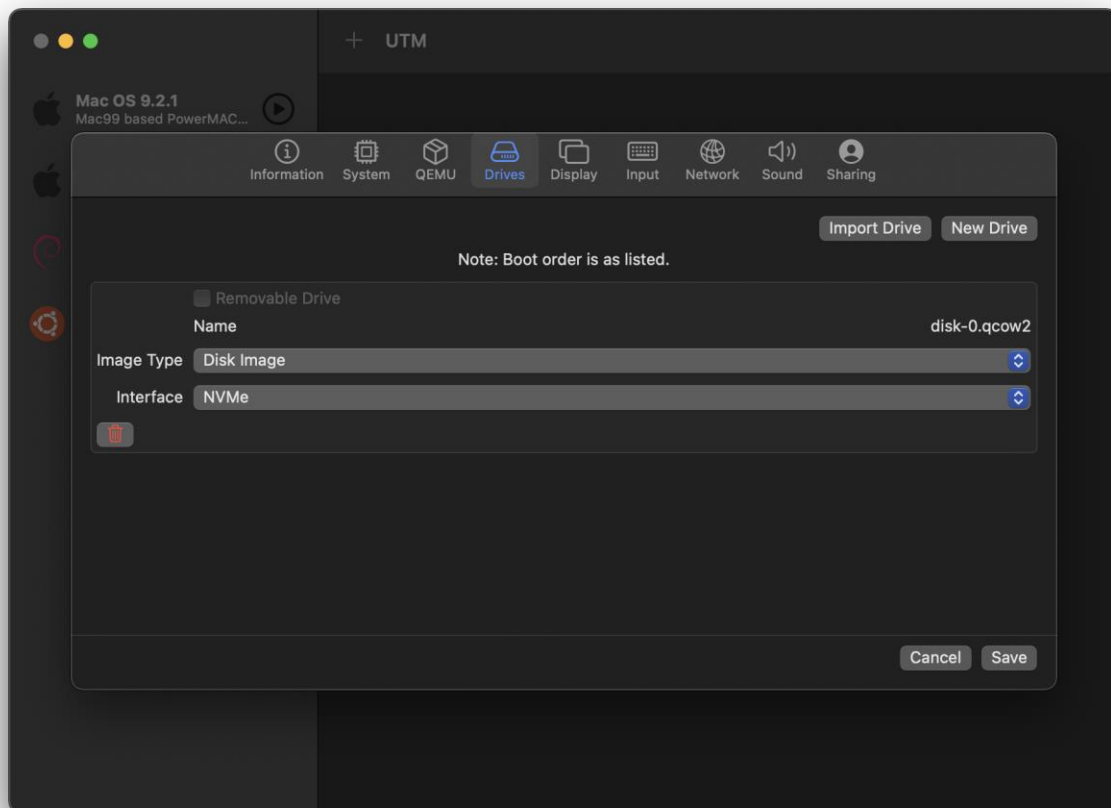


Next change the amount of ram from 512 MB to 2048 MB. Since Debian is very lightweight, this will be plenty of ram for it. You can add more ram if you need to. You can also check Show Advanced Options and change how many cores the system will be emulated on and what CPU you want to emulate but I am doing to stick with the defaults.

Next go to the drives tab and click on New Drive. Change the interface from VirtIO to NVMe and set the drive size to 60 GB.

Note, not changing the interface from VirtIO to NVMe may result in the disk image being corrupted and unbootable, resulting in you having to do the Debian installation over again.

Then click create.

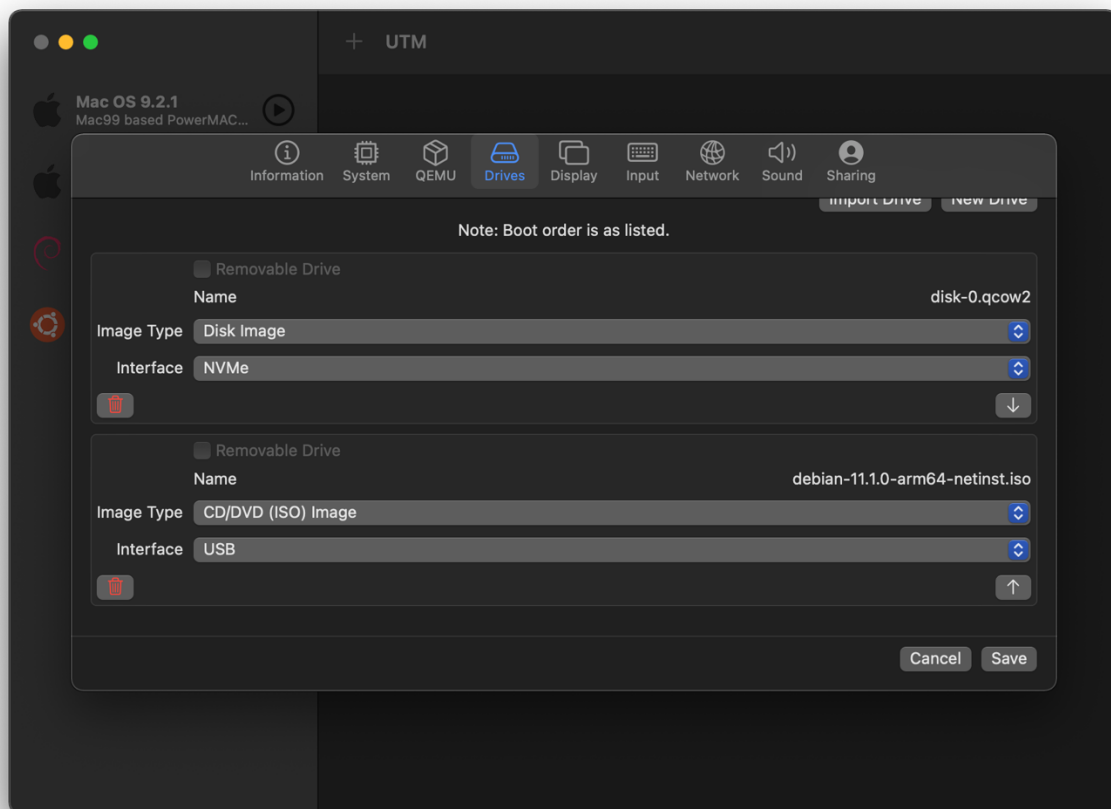


Next, to add the ISO that you downloaded, click on import drive and select the ISO that you downloaded. You can leave the interface as USB for this drive.

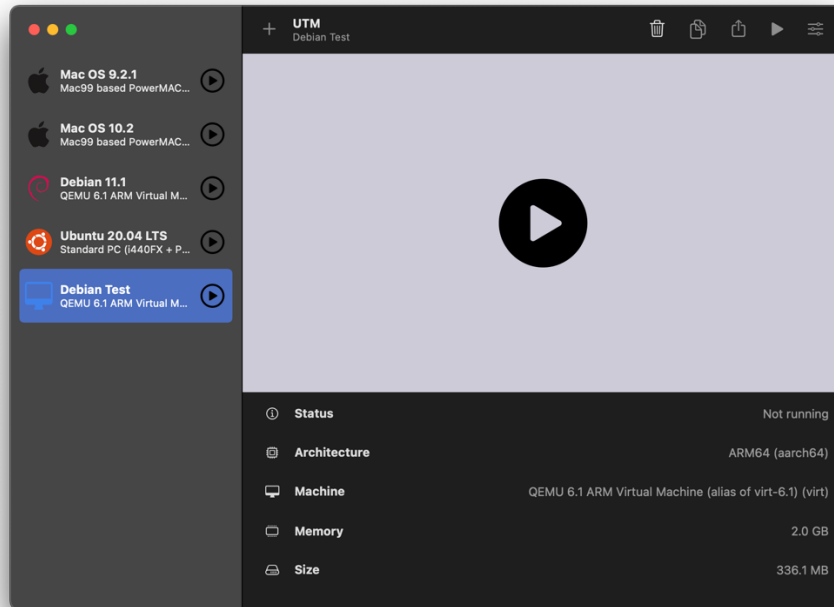
Note: Boot order in UTM is determined by the order of the drives in the drives tab. You can use the arrows in the bottom right corners of the drives to change the boot order.

You can also change other settings such as the display, input and network but those are not necessary to change. If you want sound, click on the sound tab and then click on the enabled check box. You can leave the sound card the same or you can change it to something else if you prefer.

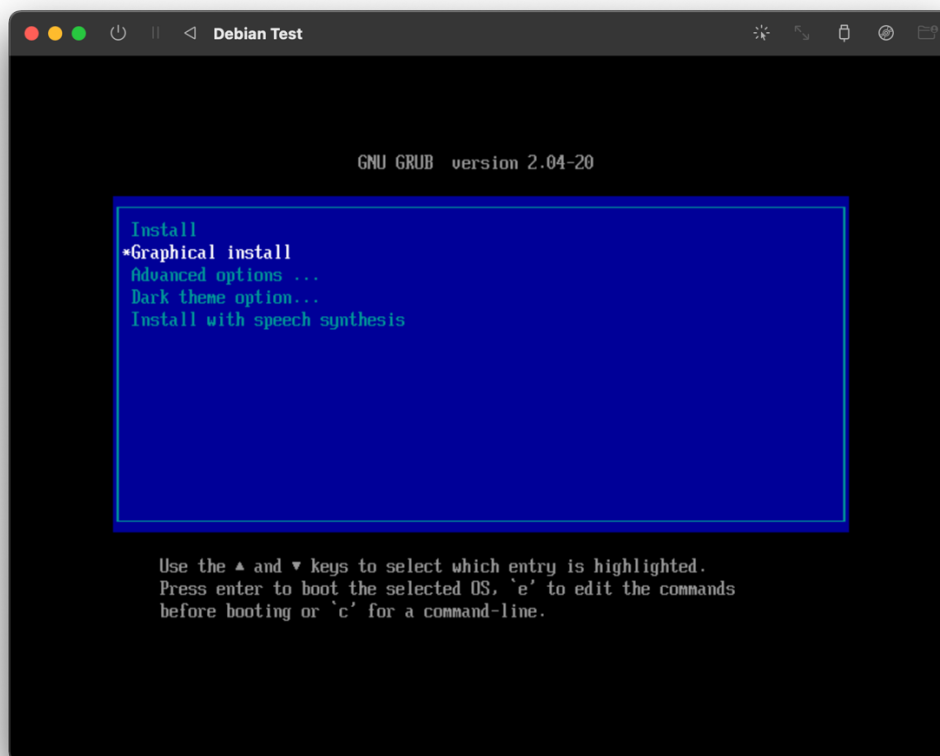
When you are done click save. You can change these settings later when the VM is off.



Now that you are done setting up your VM, click on it. Click on the play button to start the virtual machine.

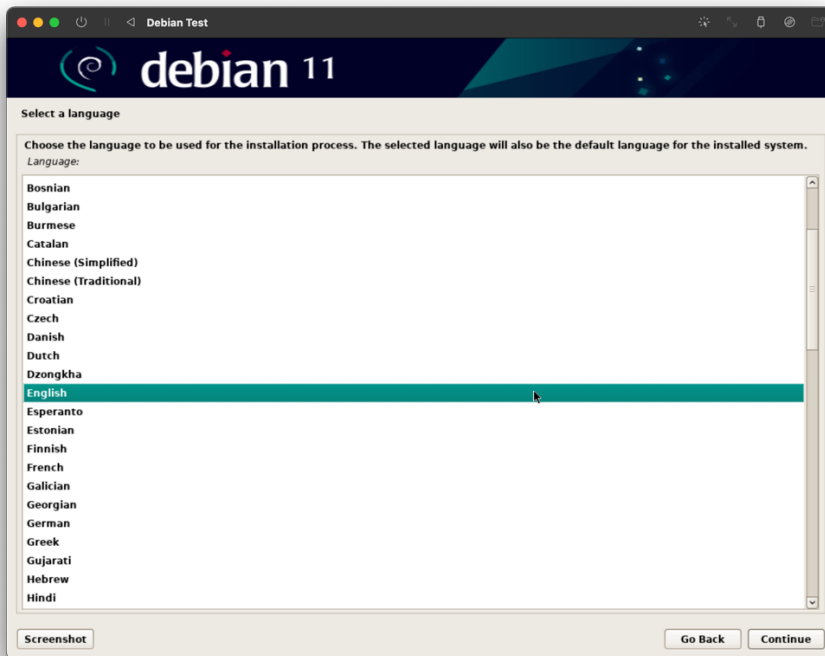


When the virtual machine starts, use the arrow keys to move your selection to Graphical Install.

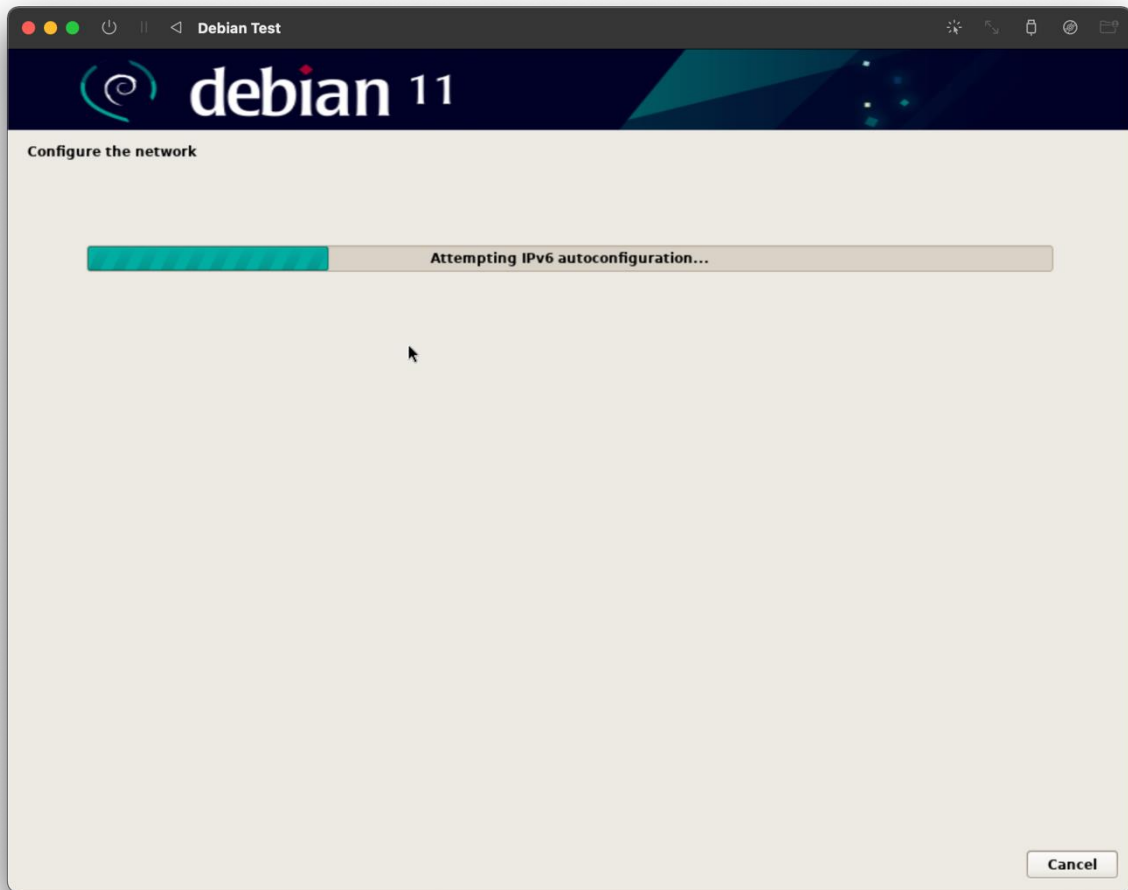


Then you will be prompted for language, select English or whatever language you can natively speak. Then on the next prompt select United States.

If your mouse cursor does not work right away, click off the window then back on the window. You should be able to click on objects in the virtual machine.



Then choose American English for your keyboard layout, unless you are using a different keyboard layout. The installer should then start connecting to the internet, wait for the progress bars to fill.



Next you will be prompted to enter your hostname, you can enter pretty much whatever you want to here but I am going to leave it as the default.



Next it will ask you for the domain name, you can leave that blank.



Next, the installer will ask you for the root password. In our case, leave it blank.



The installer will then ask you for the full name of your user account, you can enter your name or anything else that you want as the full name. This is not your username.



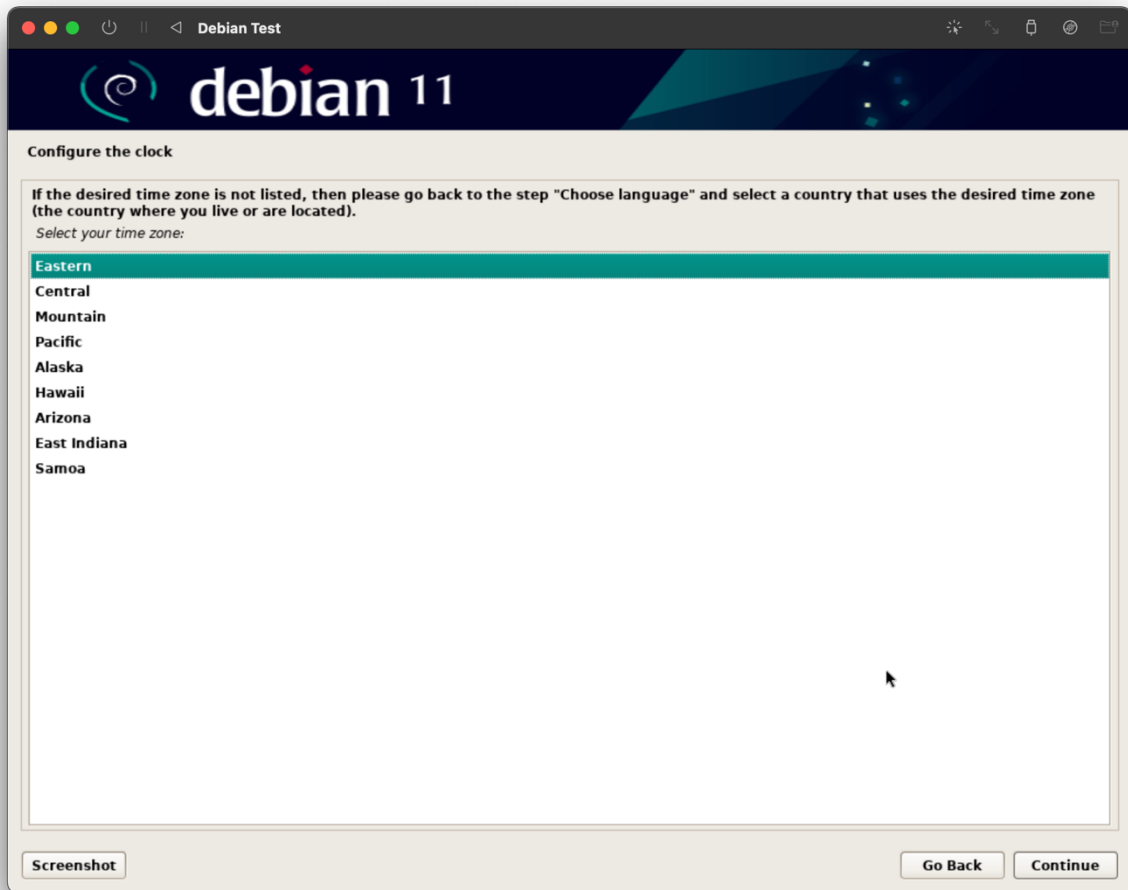
Next, the installer will ask for your username. You can enter pretty much whatever you want, just make sure you remember it for when you log into the system.



Then the installer will prompt you to enter a password. Make sure you enter a password that is easy to remember.



Next, select your time zone. We are in the eastern time zone.



Then the Debian installation will detect the disks and set up the partitioner.

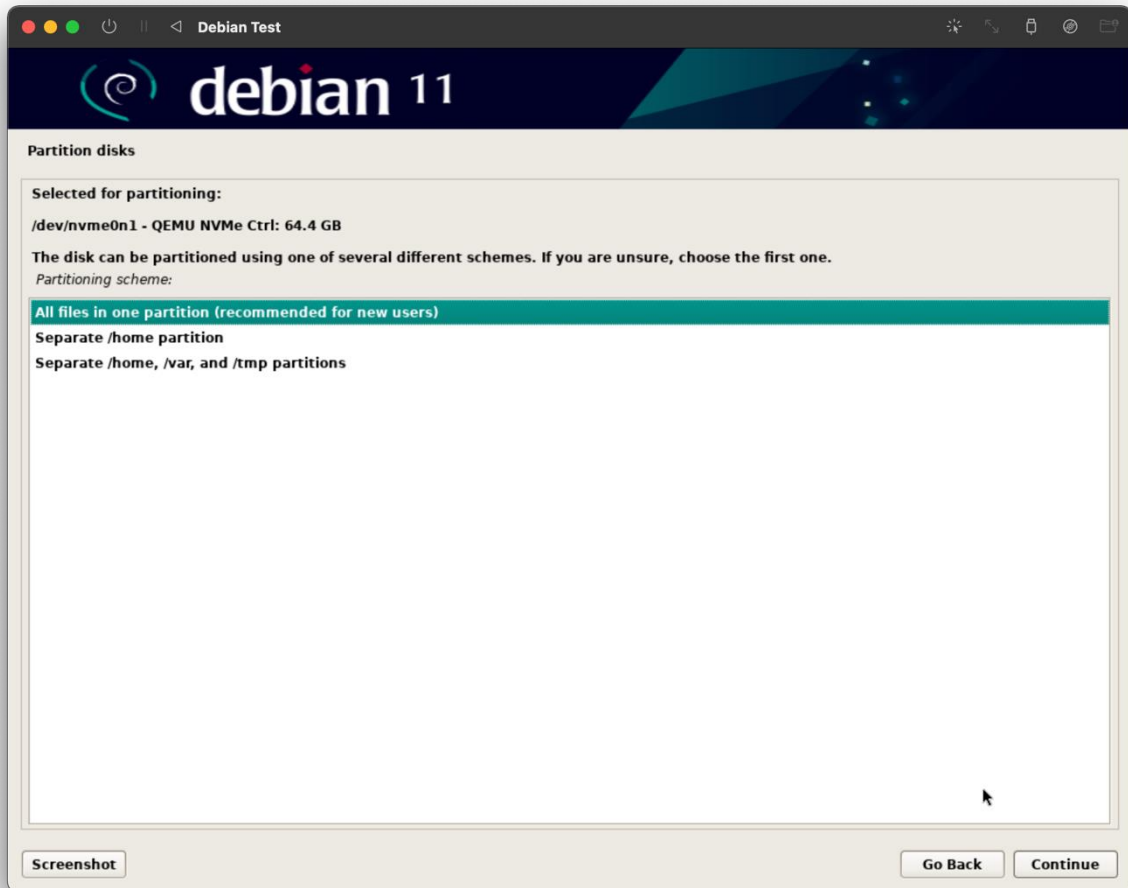
Next, select Guided – use entire disk. If you want to, you can do something else for partitioning the disk. In our case, using the entire disk is fine.



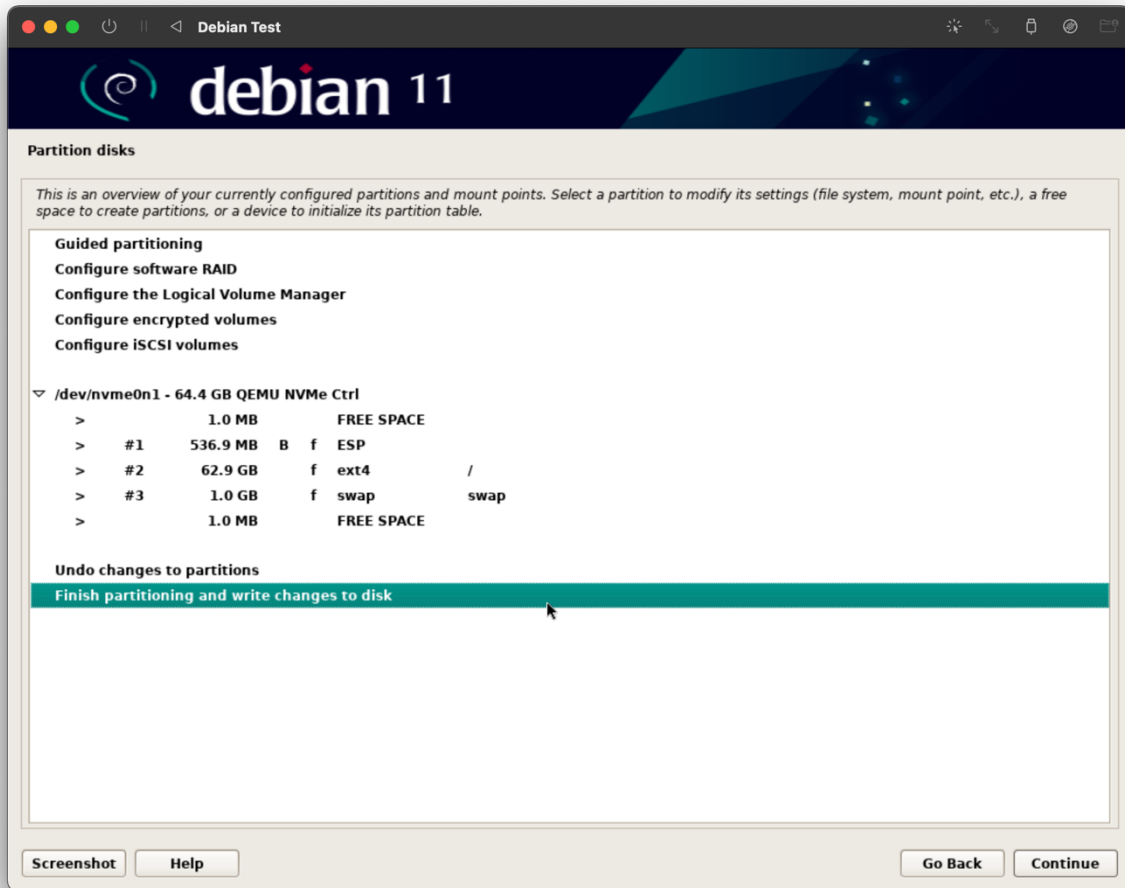
Then it will ask you what disk you want it on. You will only have one choice if you chose to use the entire disk. Select the disk to install Debian on, which should be `/dev/nvme0n1`.



Next select, all files on one partition. You can choose to have separate partitions for separate areas of the operating system, but this is not necessary for our case.



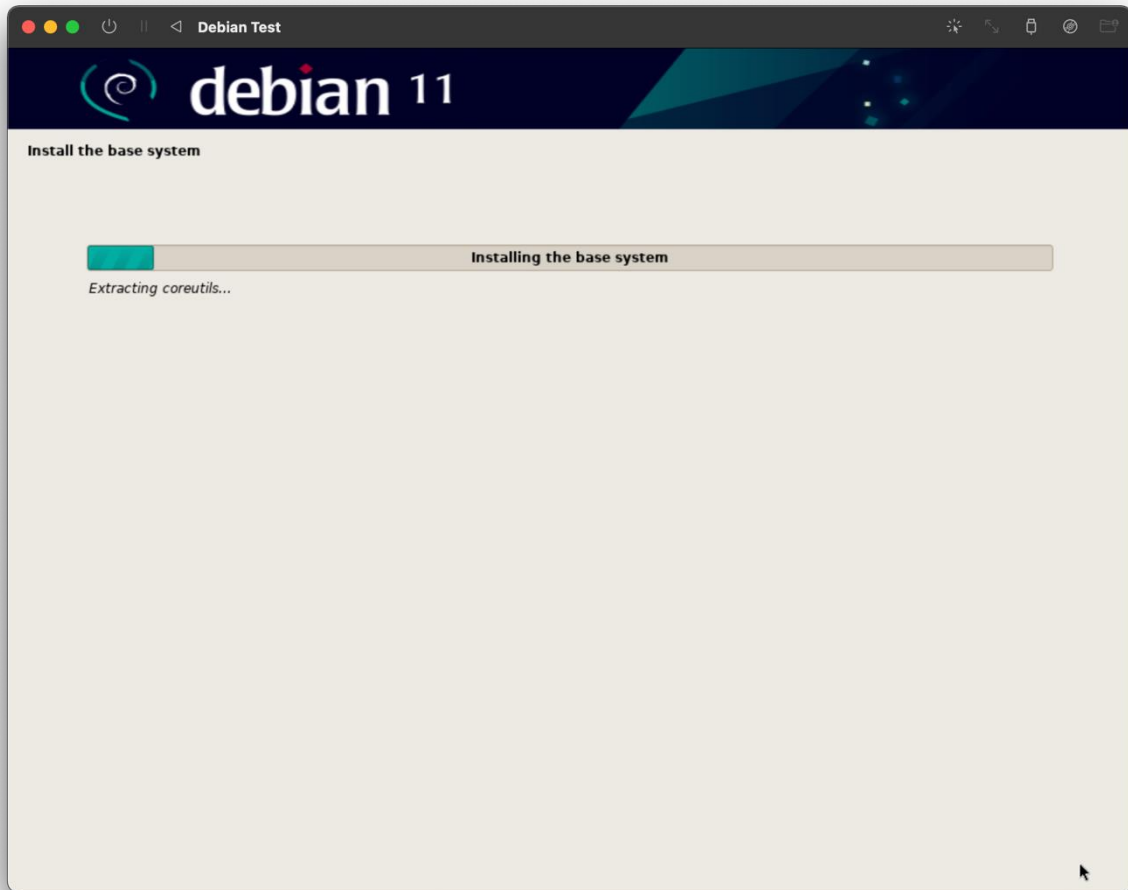
Then it will ask you to confirm your choices. If you want to make any changes select Undo changes to partitions. If you are finished, select Finish partitioning and write changes to disk and click continue.



It will ask you to confirm one more time. Select yes and click on continue.



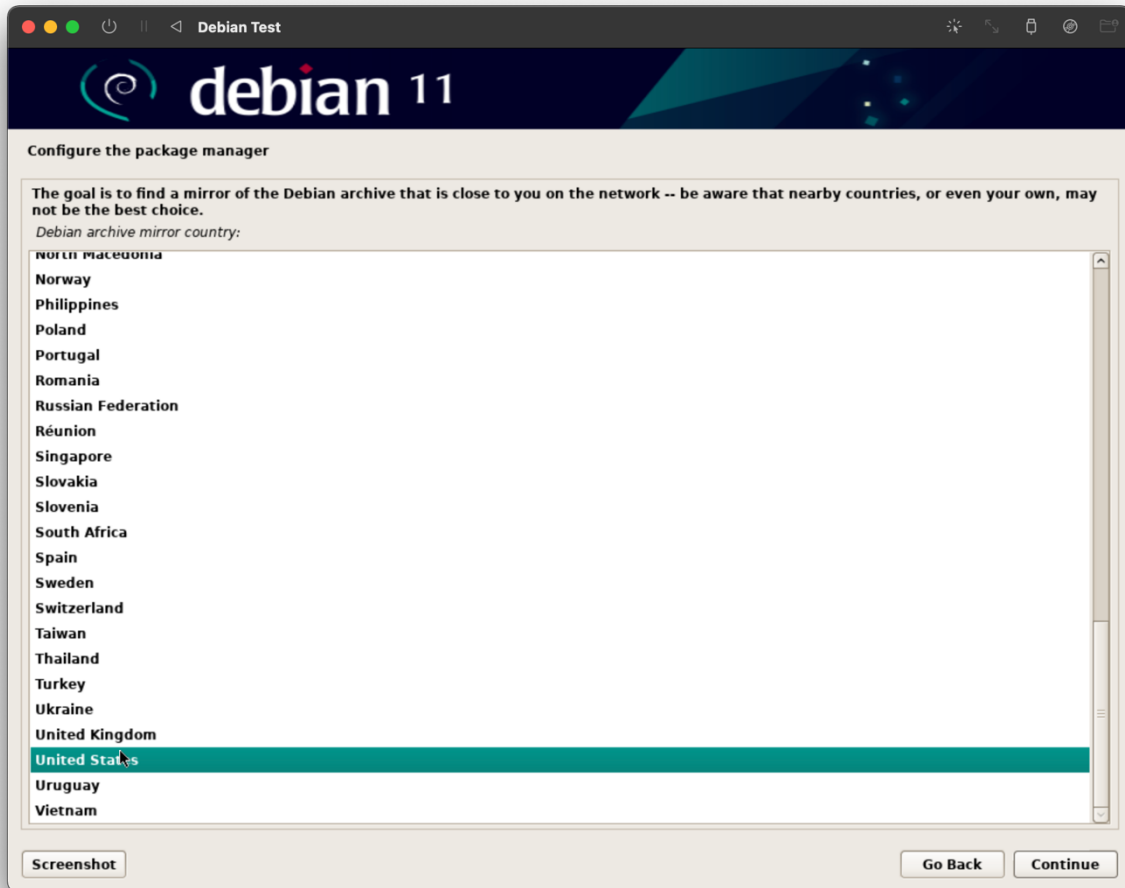
Now the installer will partition the disk and install the operating system. Wait for the progress bars to fill.



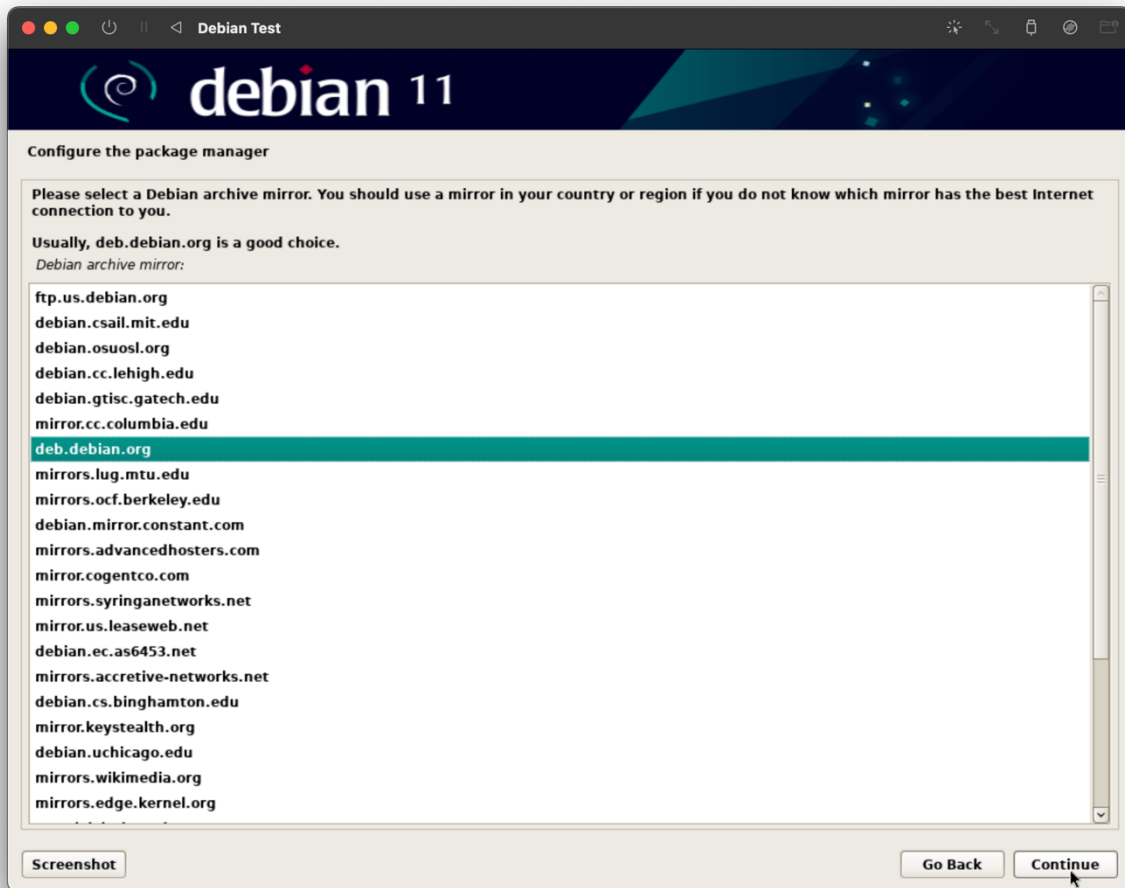
The installer will then ask you if you would like to scan extra installation media. Select no and click continue.



Next you will configure the package manager, APT. For the country mirror, select United States and click continue. It should be selected by default.



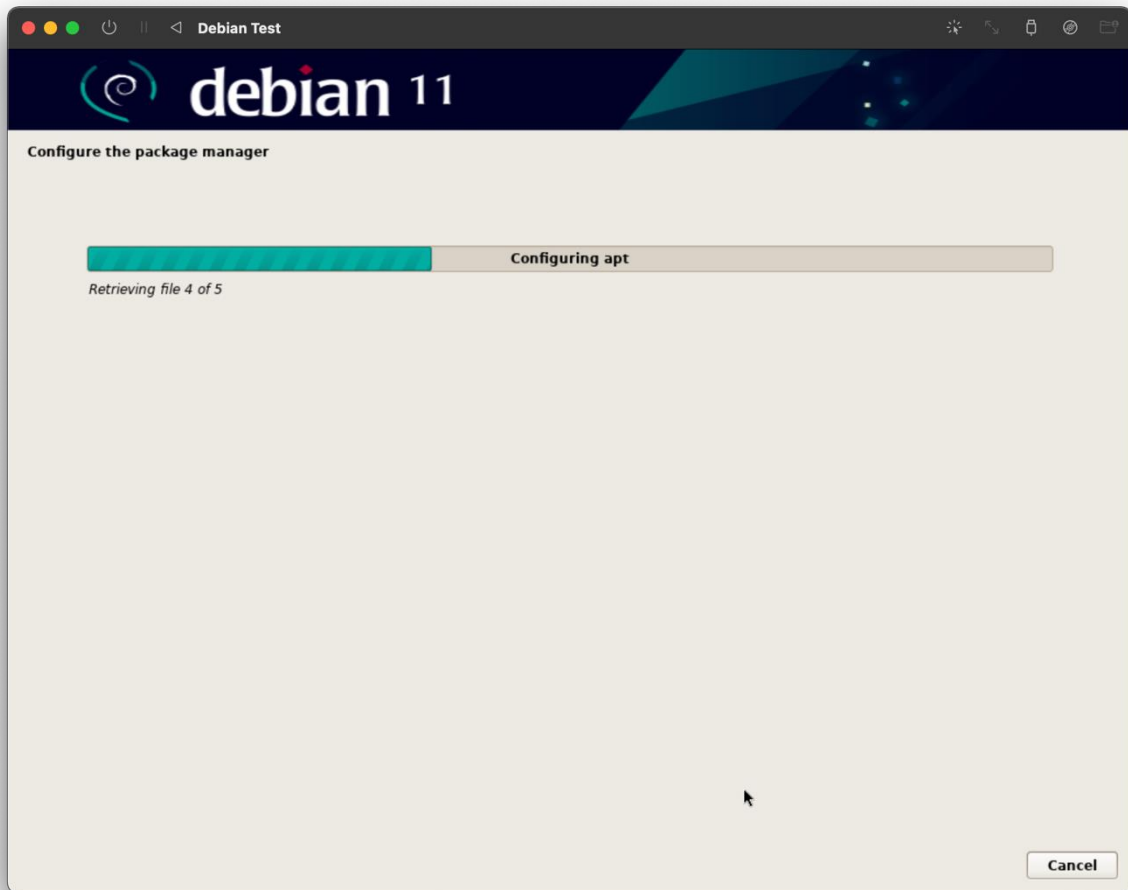
The installer will then ask you to select the mirror for APT. Select deb.debian.org, which is the default, and click continue.



Then it will ask you for a proxy, just leave this blank.



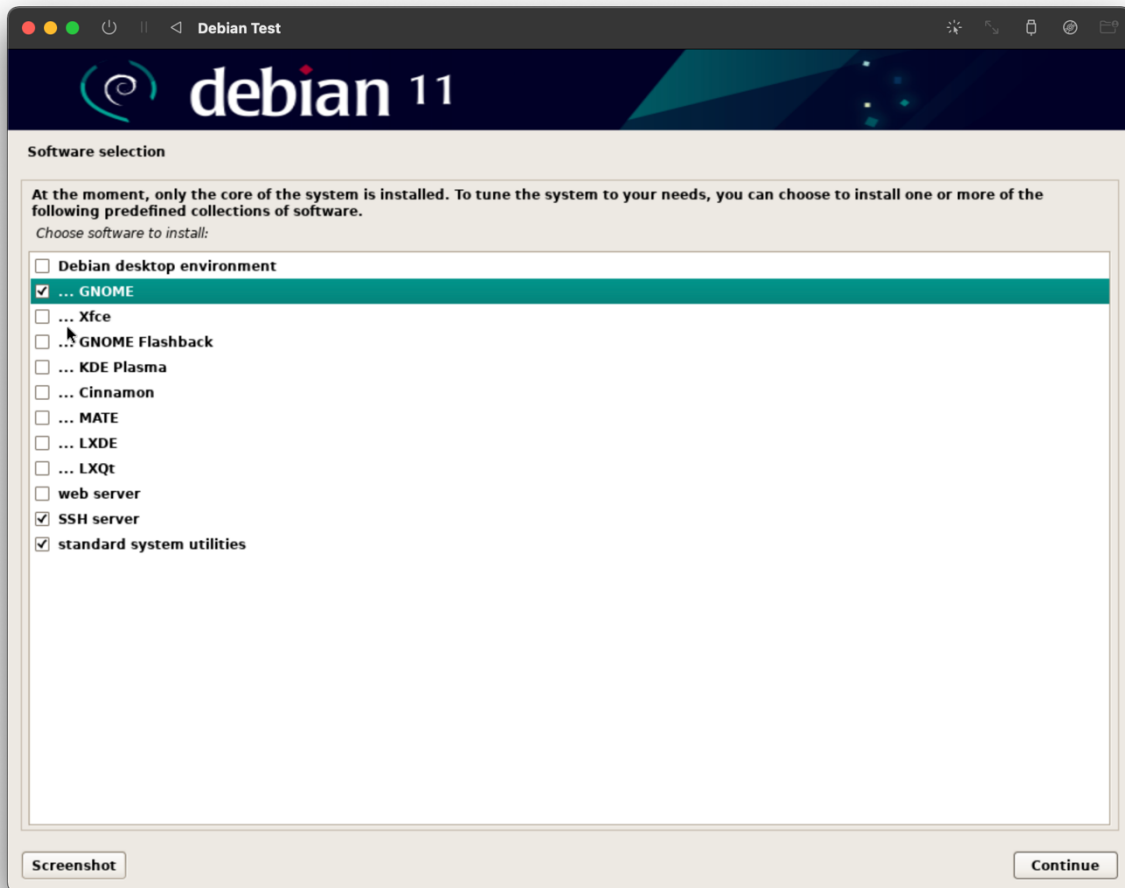
Then the installer will configure APT. Wait for the progress bar to fill.



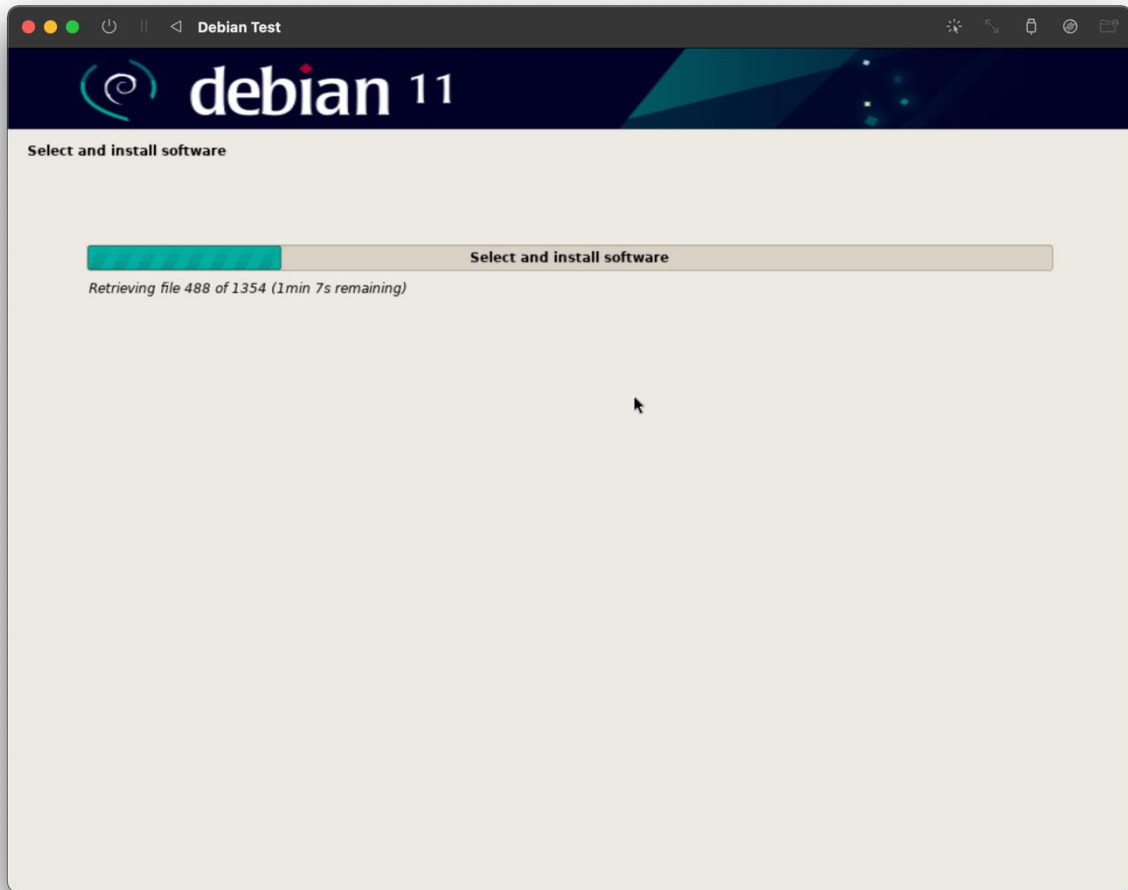
The installer will then ask if you would like to participate in sending statistics to package developers. If you want to select yes, then click continue. If you do not want to, select no, then click continue. I am going to select no.



Next, the installer will ask you which desktop environment you want to install. Desktop environments contain all of the GUI elements such as login screens and window managers. Each desktop environment has a different look and feel. I am going to select GNOME but you can select which ever you want or you can go without a desktop environment and use the terminal entirely.



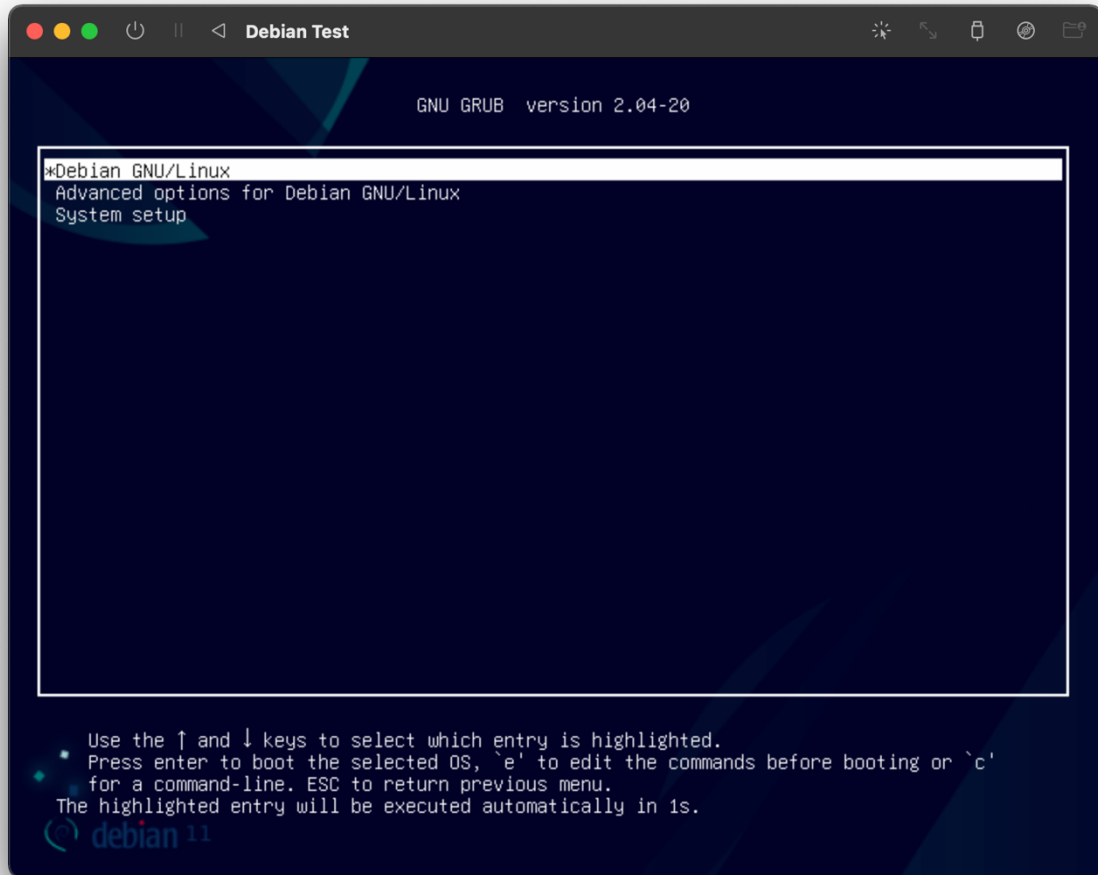
Then the installer will install of the packages necessary. This process may take some time so be patient.



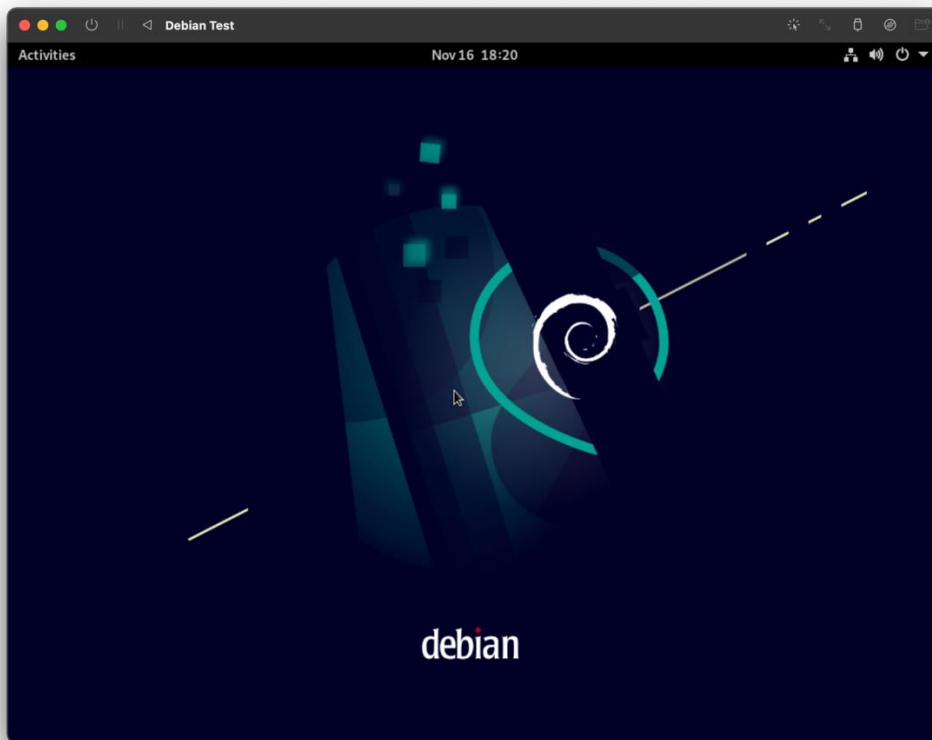
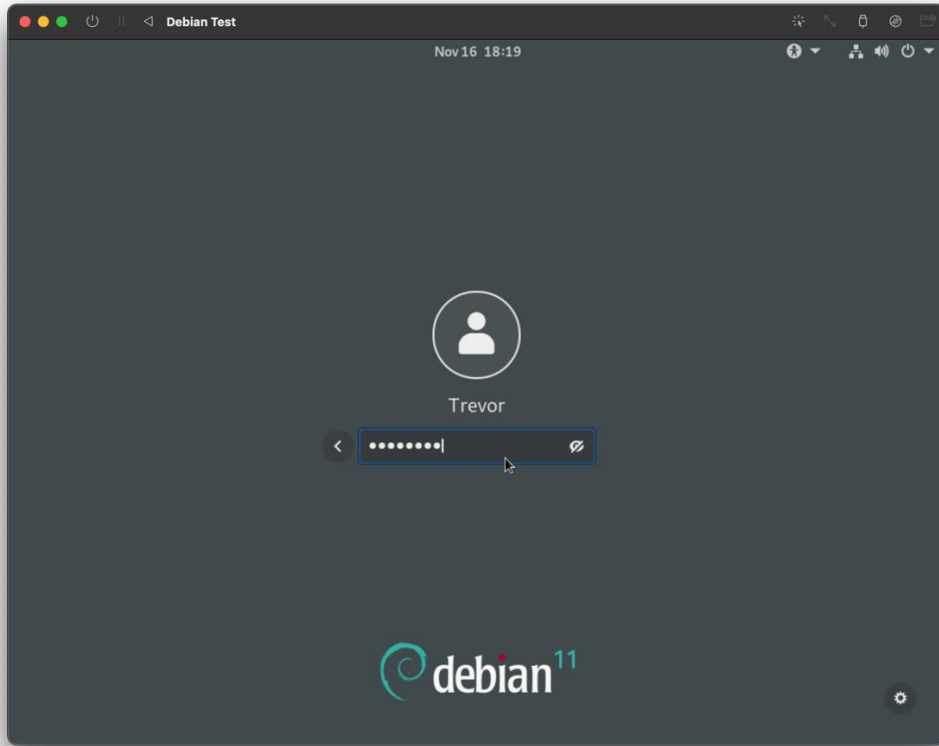
When the installation finishes, select continue and the system will reboot automatically. Congratulations! You just installed Debian inside of a virtual machine.



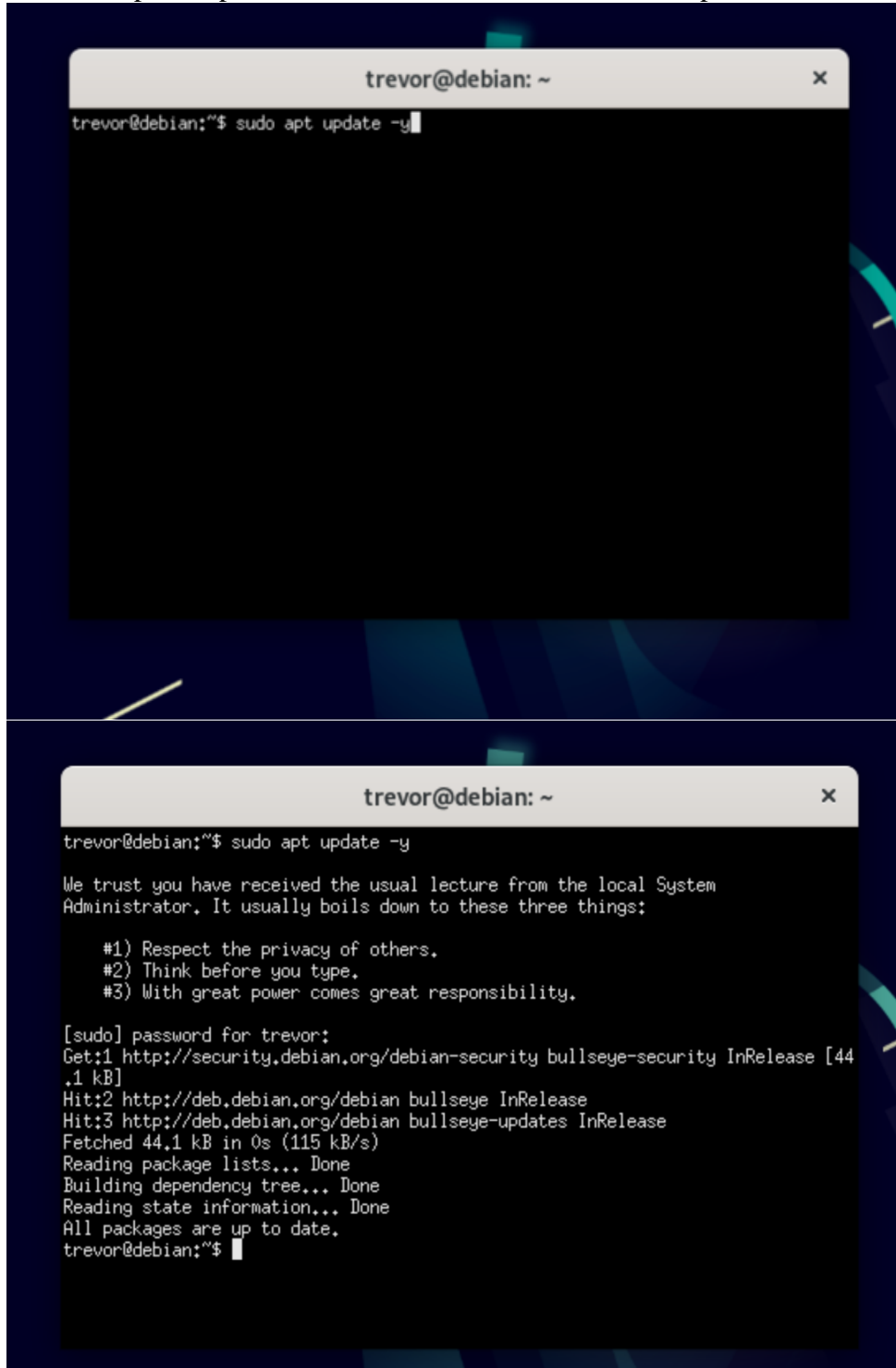
When the system reboots, make sure Debian GNU/Linux is selected. If you do not see this screen, shut down the virtual machine and make sure that the hard disk image that you installed Debian on to is on the top of the boot order.



Log in to your new installation.



Next open your terminal and enter `sudo apt update -y` and press enter. Then enter your password. This will update apt to have the latest information about repositories.

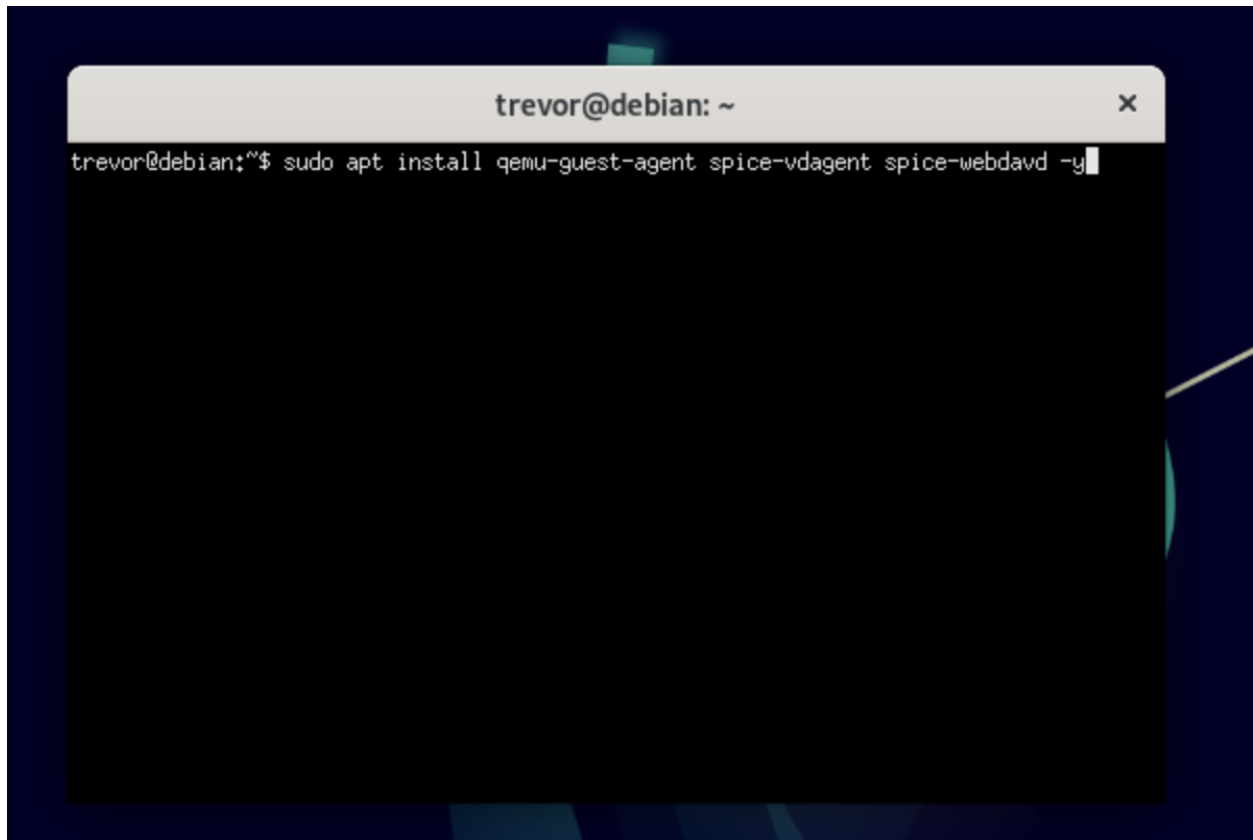


```
trevor@debian: ~  
trevor@debian:~$ sudo apt update -y  
  
We trust you have received the usual lecture from the local System  
Administrator. It usually boils down to these three things:  
  
#1) Respect the privacy of others.  
#2) Think before you type.  
#3) With great power comes great responsibility.  
  
[sudo] password for trevor:  
Get:1 http://security.debian.org/debian-security bullseye-security InRelease [44  
.1 kB]  
Hit:2 http://deb.debian.org/debian bullseye InRelease  
Hit:3 http://deb.debian.org/debian bullseye-updates InRelease  
Fetched 44.1 kB in 0s (115 kB/s)  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
All packages are up to date.  
trevor@debian:~$
```

To install SPICE guest utilities, which allows you to set up shared drives with the virtual machine, change display size, and shared clipboard, enter:

```
sudo apt install qemu-guest-agent spice-vdagent spice-webdavd -y
```

Then press enter.

A terminal window titled 'trevor@debian: ~' with a close button 'x' in the top right corner. The terminal shows the command 'trevor@debian:~\$ sudo apt install qemu-guest-agent spice-vdagent spice-webdavd -y' being entered. The rest of the terminal area is black, indicating the command is still being processed or the output is not visible.

```
trevor@debian:~$ sudo apt install qemu-guest-agent spice-vdagent spice-webdavd -y
```

When the installation, is finished reboot the virtual machine.

Congratulations! You have finished installing Debian and setting up the SPICE Guest Agent Tools.