



Installing Linux Mint

You've been introduced to Linux Mint and its different versions, you have what you need to get the operating system on to your computer and you're ready to go. The only thing left now is to test it and see how it works; and then finally install it.

Thankfully the process is easy to get to grips with and shouldn't take you more than an hour at most. Make sure you have an active Internet connection, either wireless or wired and if possible a second computer or device with an Internet connection in case you need to look anything up.

Over the coming pages you'll learn how to transfer the downloaded Linux Mint image to a USB stick or DVD, how to set up VirtualBox and how to install Mint onto a PC and in a virtual environment. So let's get cracking.



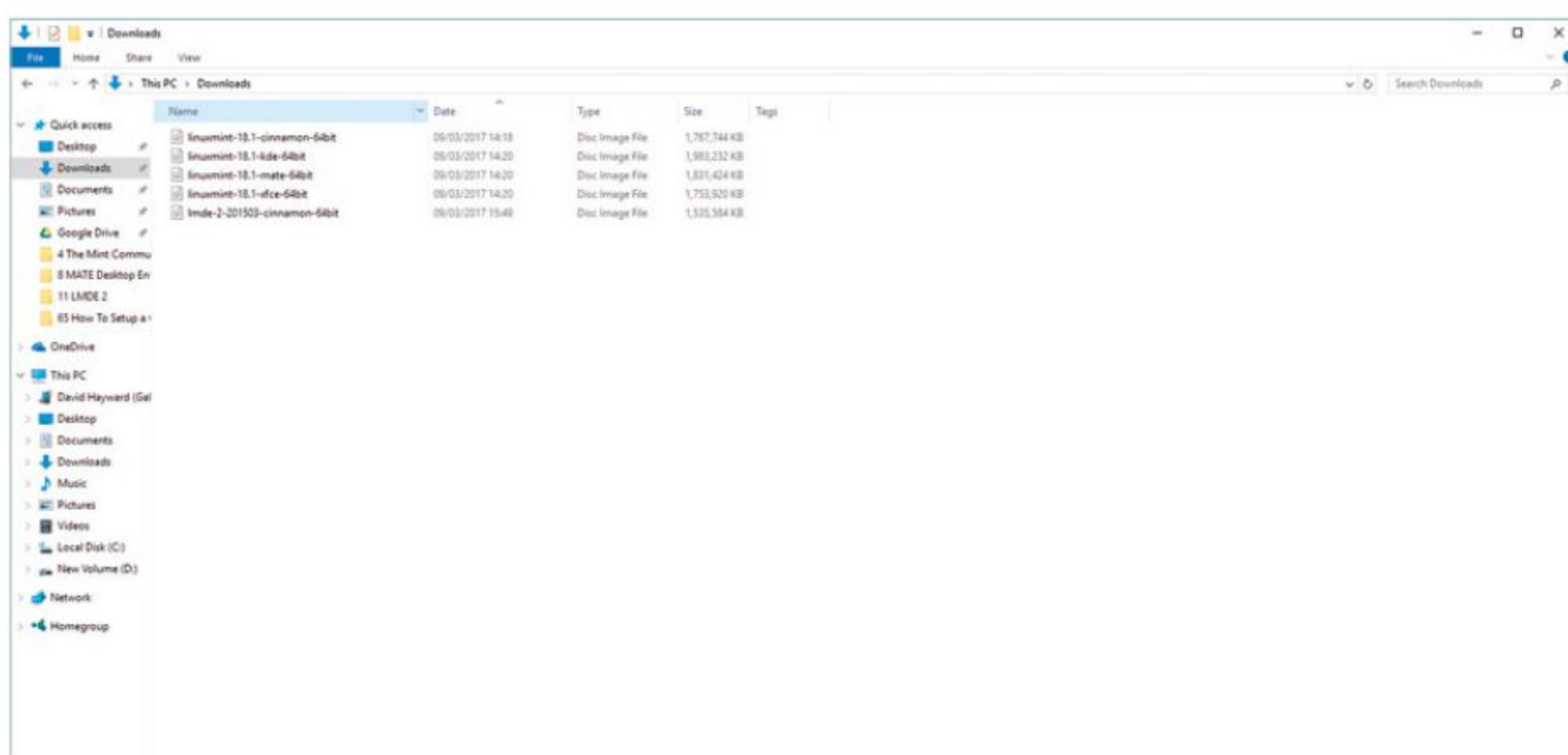
Transfer Mint to DVD or USB

You need to transfer the downloaded Linux Mint ISO to either a DVD or a USB key before installing it onto a computer. This will be a live environment, which we'll look at in a moment, but first you need to create the bootable media.

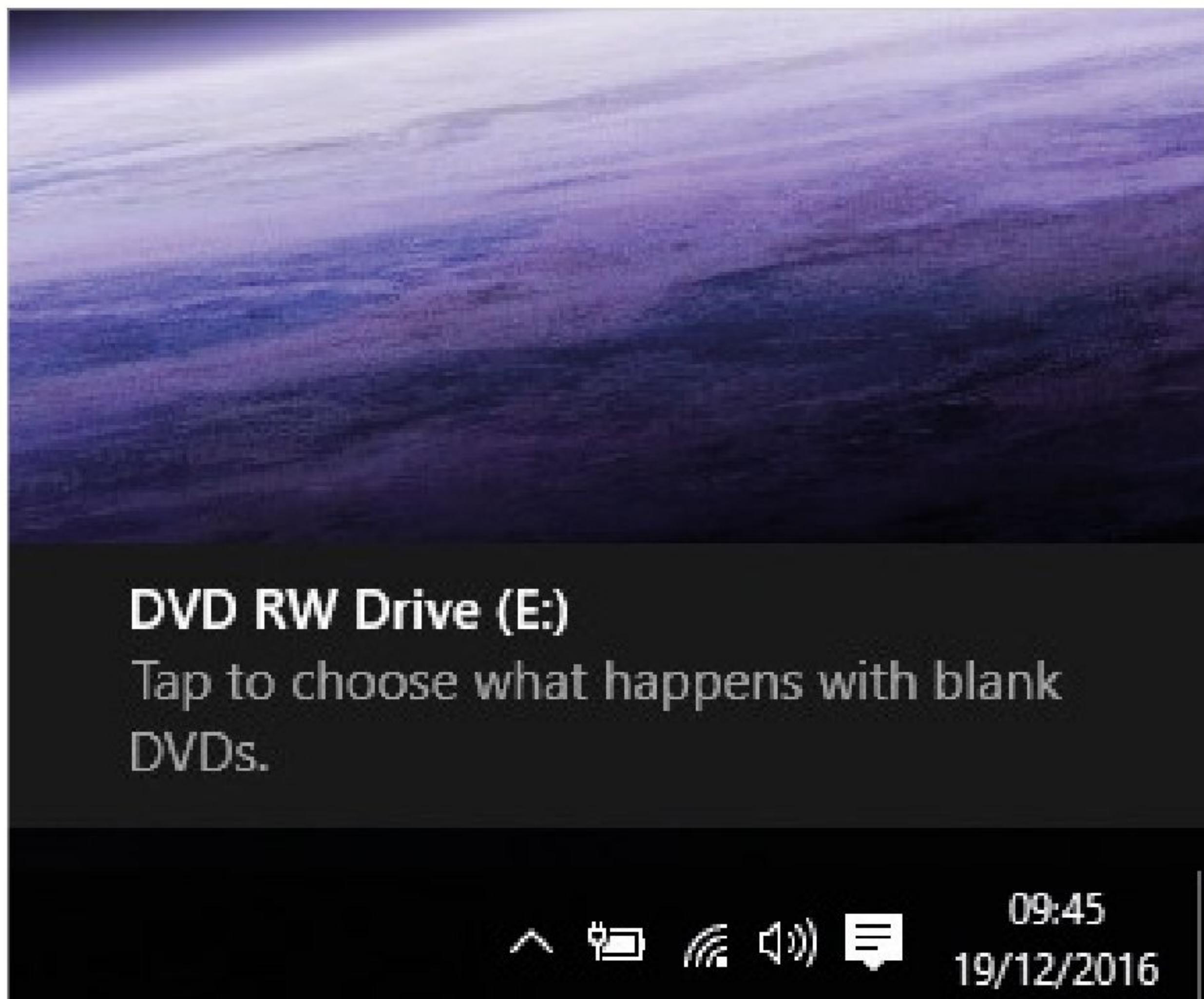
DVD BOOTABLE MEDIA

We're using a Windows 10 PC here to transfer the ISO to a DVD. If you're using a version of Windows from 7 onward the process is extremely easy.

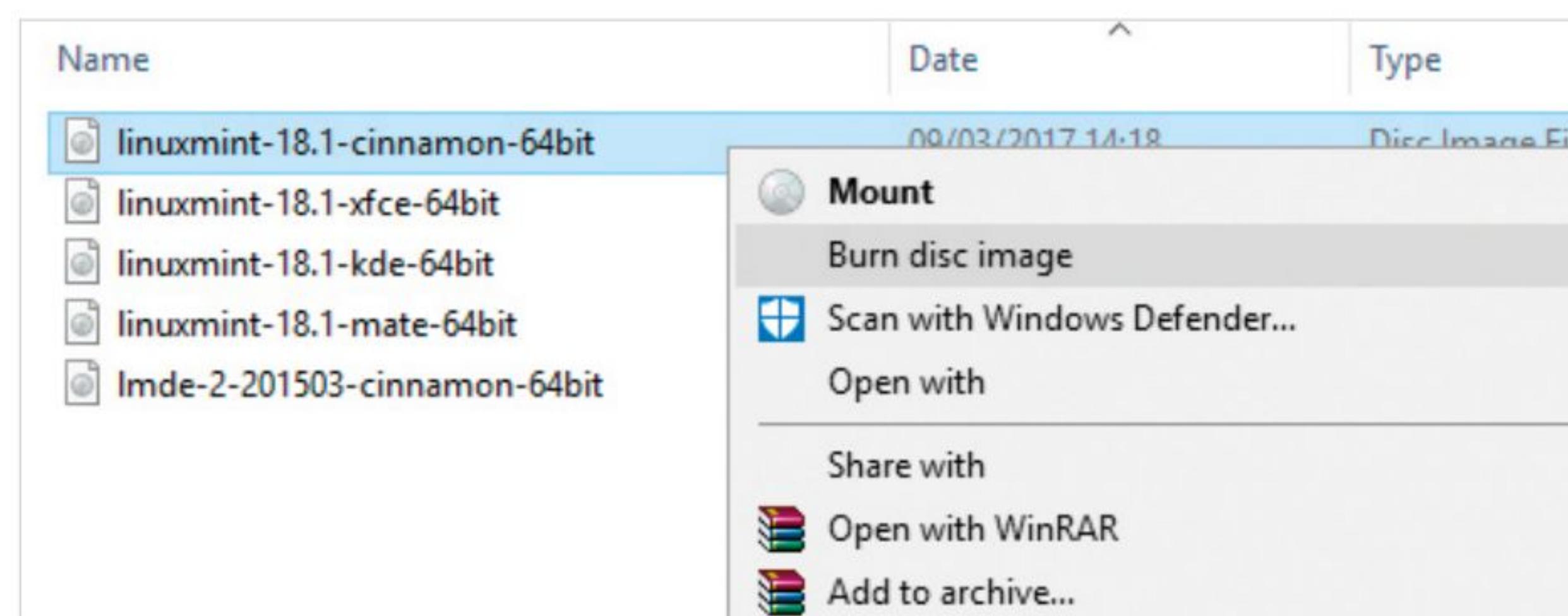
- STEP 1** First locate the ISO image of Mint you've already downloaded. You can usually find this in the Downloads folder of Windows 7, 8.1 and 10 computers; unless you specified a different location when saving it.



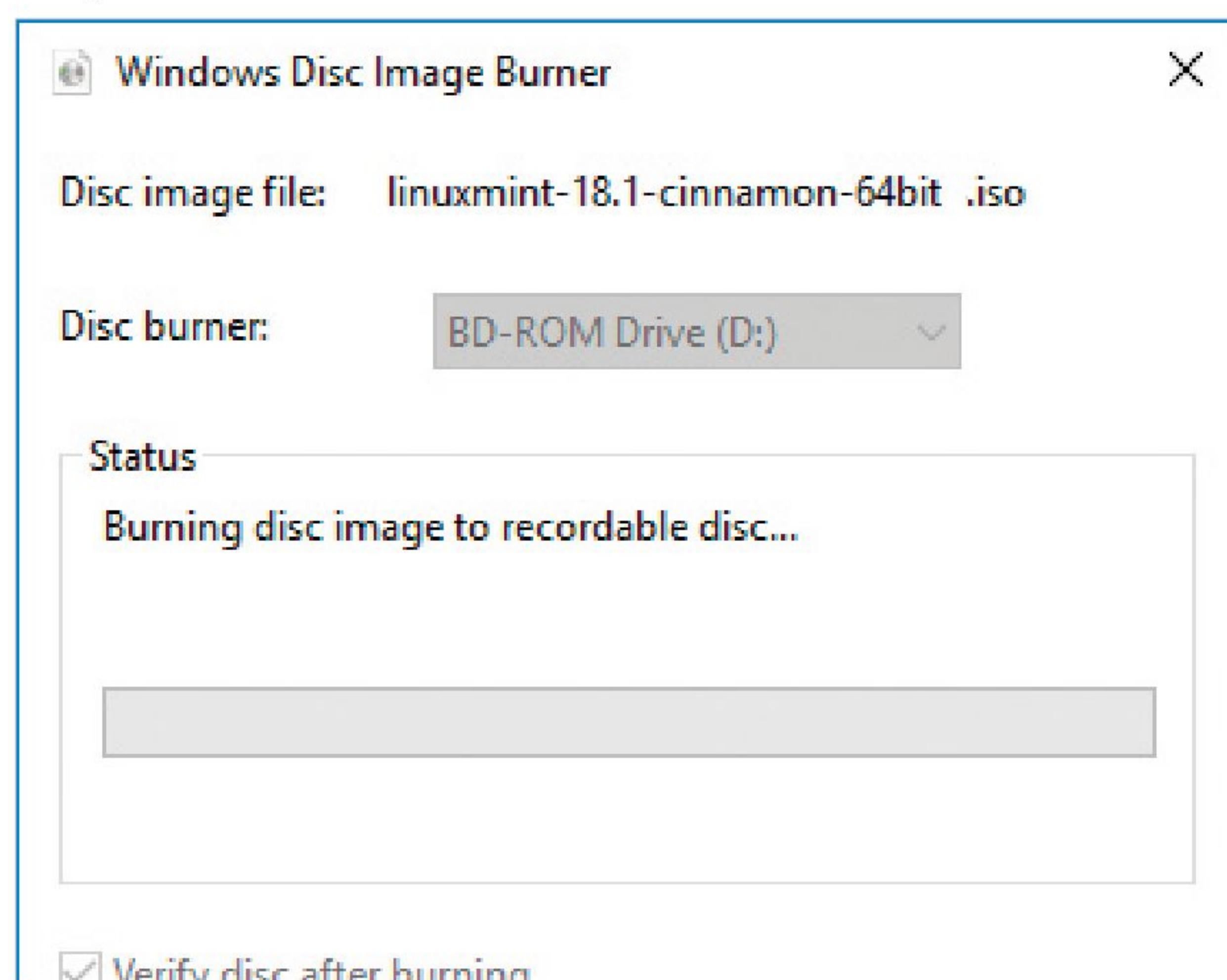
- STEP 2** Next insert a recordable DVD disc into your computer's optical drive. After a few seconds, while the disc is read, Windows will display a pop-up message asking you what to do with the newly inserted disc; ignore this, as you're going to use the built-in image burning function.



- STEP 3** Right-click the Mint ISO and from the menu select Burn Disc Image. Depending on the speed of the PC, it may take a few seconds before anything happens. Don't worry too much, unless it takes more than a minute in which case it might be worth restarting your PC and trying again. With luck, the Windows Disc Image Burner should launch.



- STEP 4** Right-click the Mint ISO and from the menu select Burn Disc Image. Depending on the speed of the PC, it may take a few seconds before anything happens. Don't worry too much, unless it takes more than a minute in which case it might be worth restarting your PC and trying again. With luck, the Windows Disc Image Burner should launch.

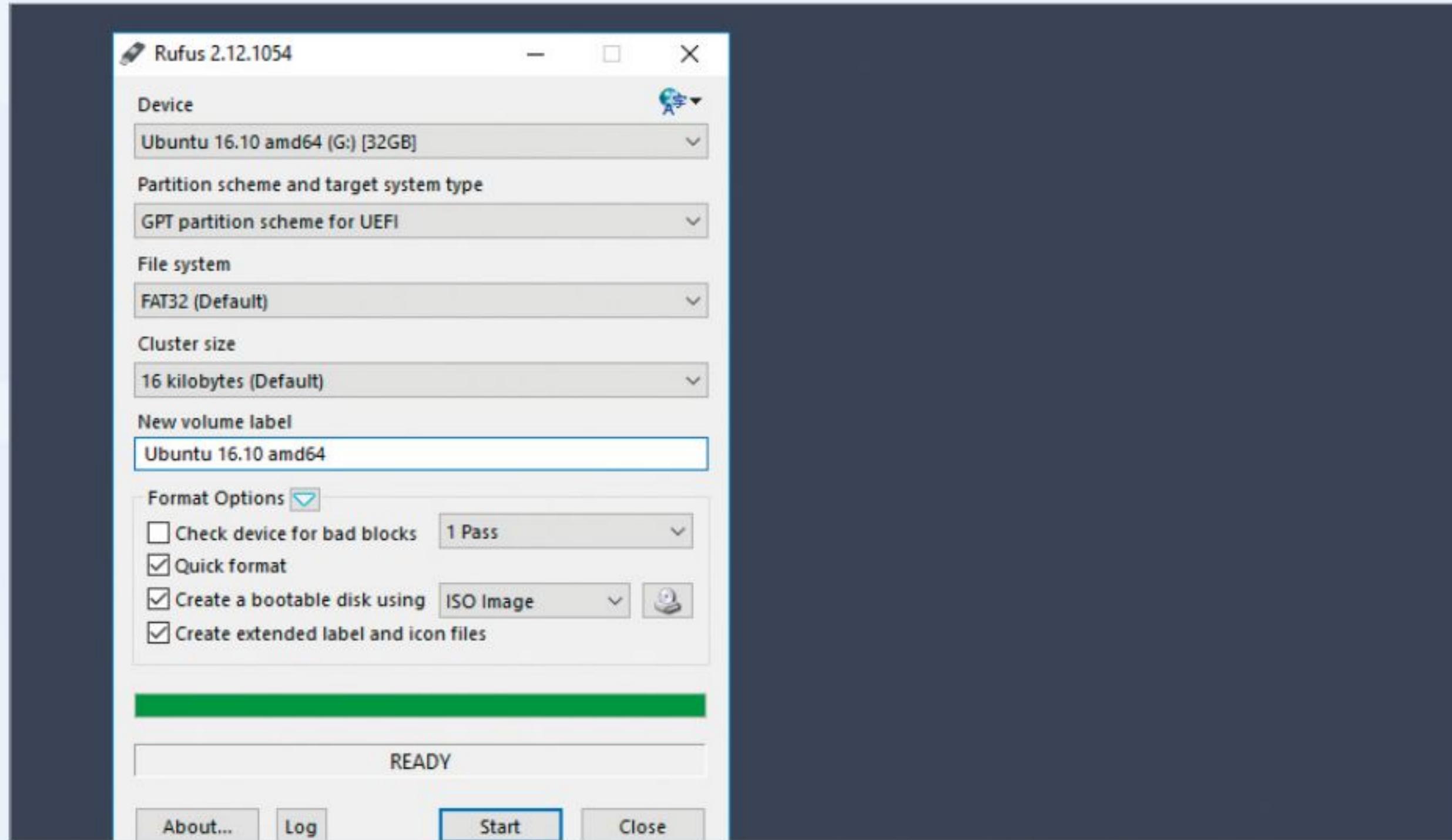




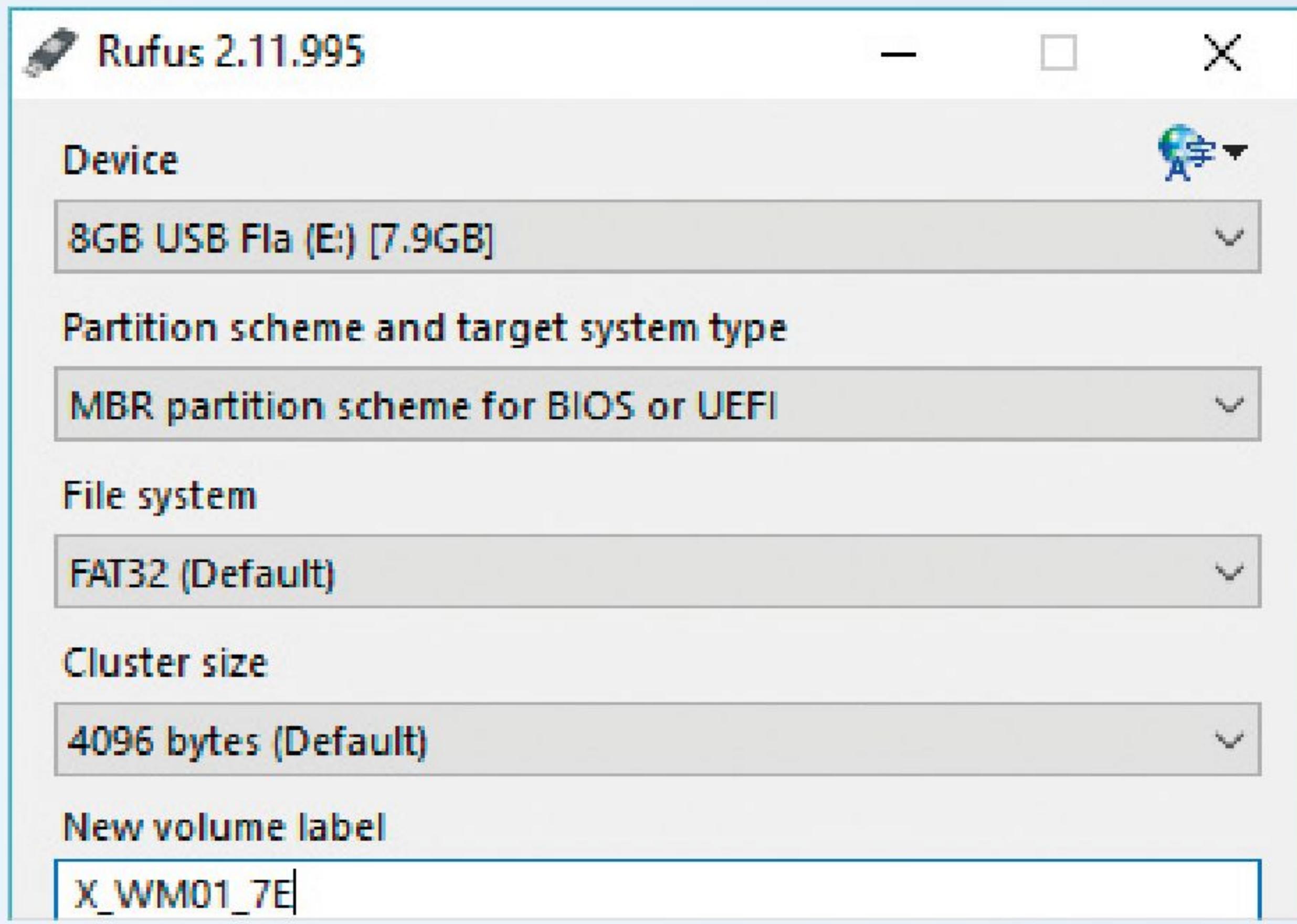
USB BOOTABLE MEDIA

USB media is faster than a DVD and it's often more convenient as most modern PCs don't have an optical drive installed. The process of transferring the image is easy but you need a third-party app first and a USB flash drive of 4GB or more.

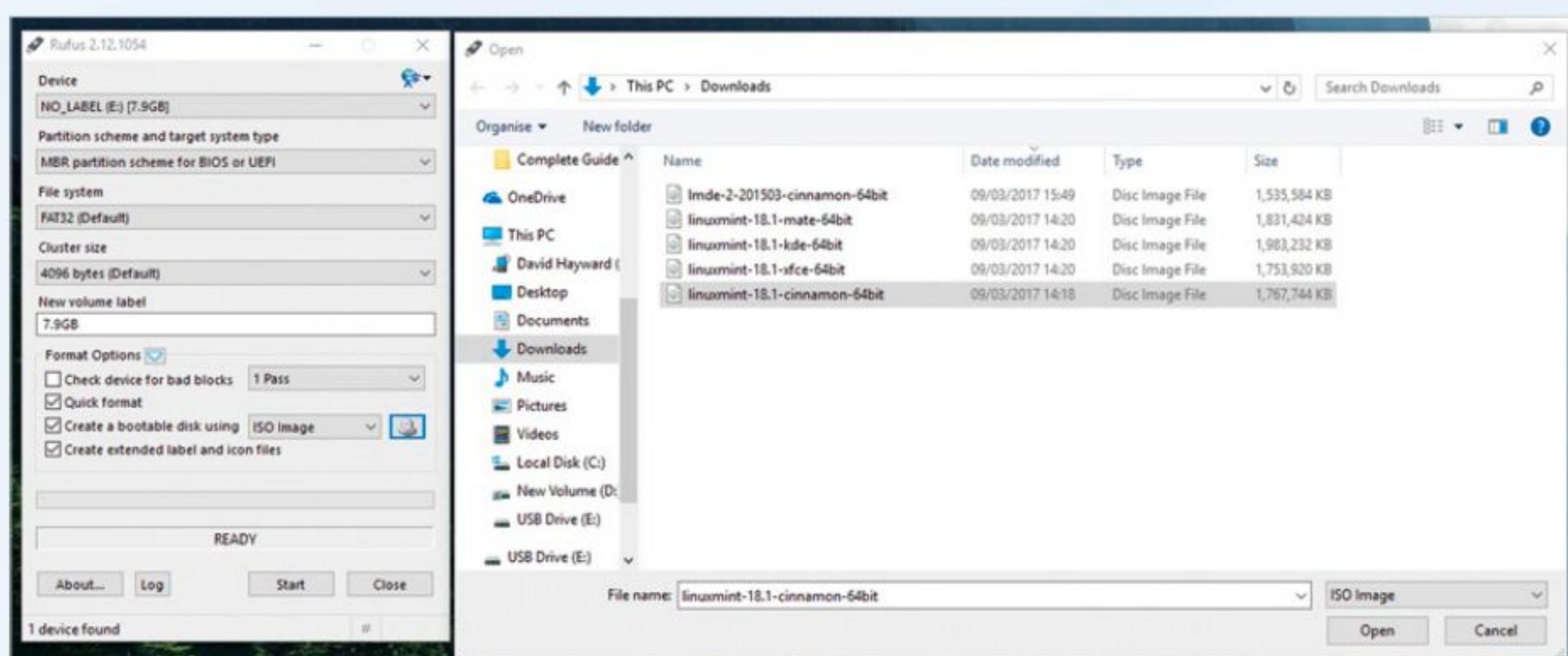
- STEP 1** First open up a web browser and go to www.rufus.ie. Scroll down the page a little and you come to a Download heading, under which you can see the latest version of Rufus (2.12 in this instance). Left click the link to start the download.



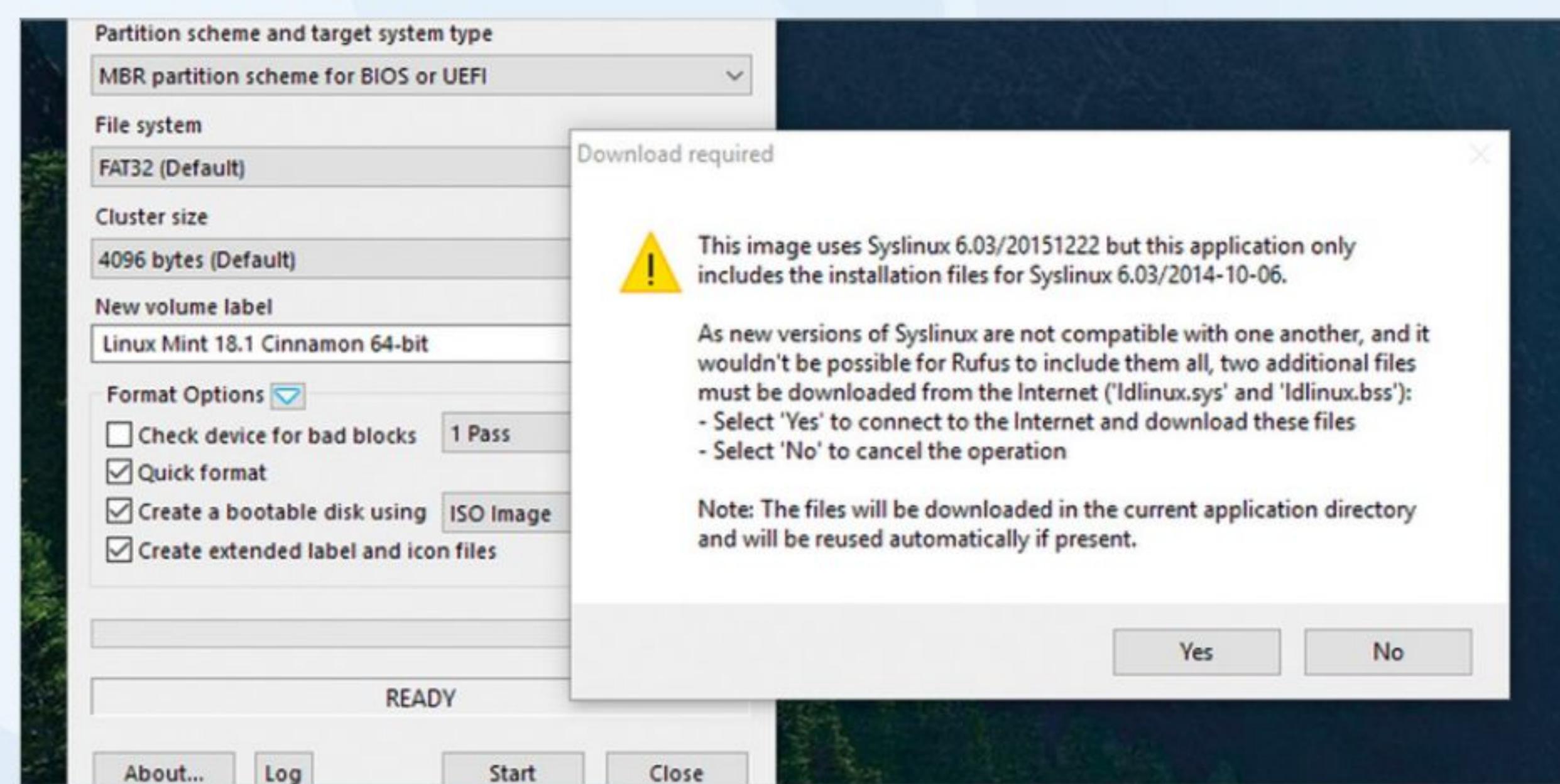
- STEP 2** Double-click the downloaded Rufus executable; you can click 'Yes' to the Windows security question and 'Yes' to checking for updates. With Rufus launched it should have already identified your inserted USB flash drive; if not just remove and reinsert.



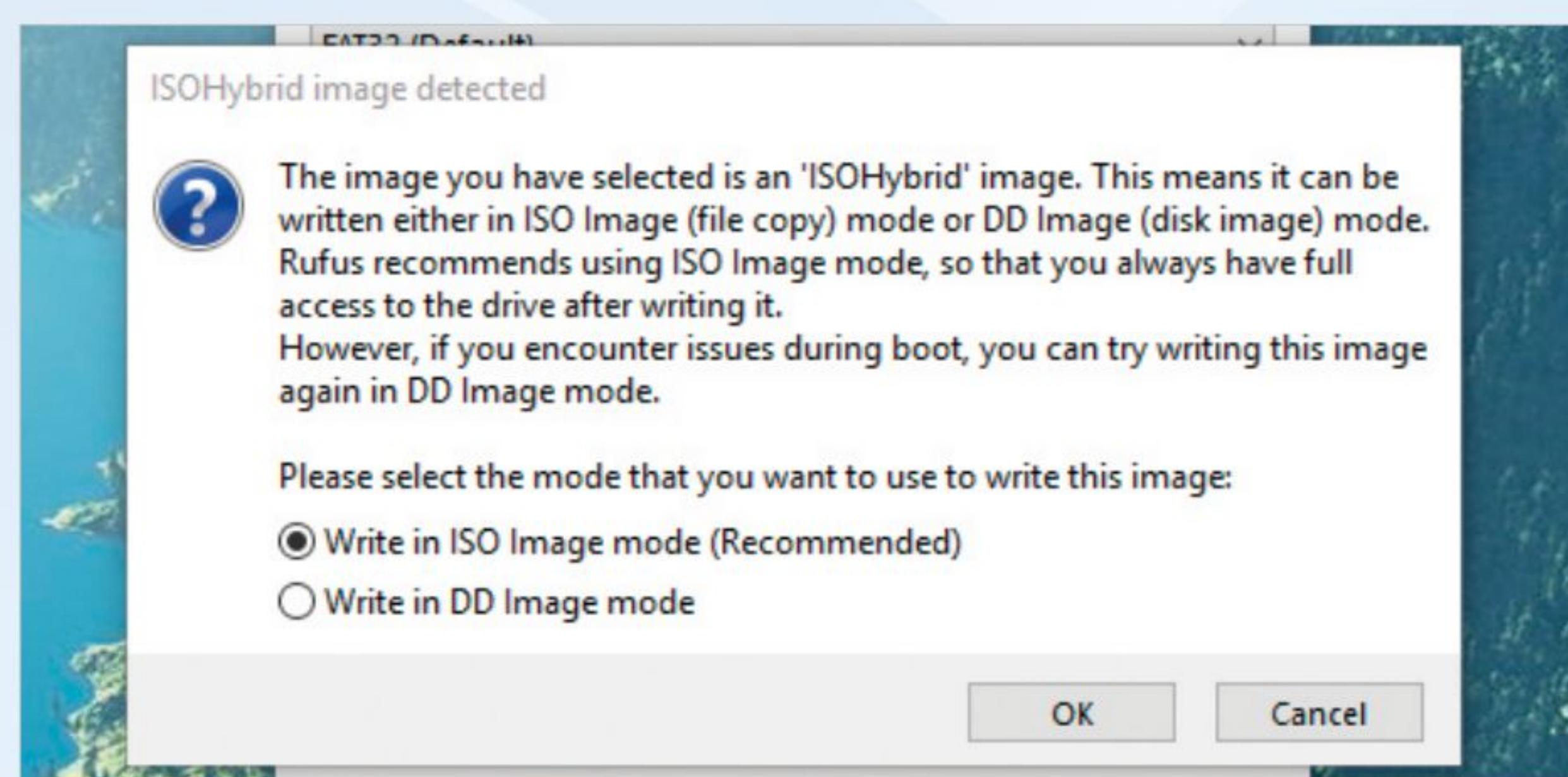
- STEP 3** At first glance the Rufus interface can look a little confusing, don't worry though it's really quite simple. To begin with, click on the disc and drive icon next to the 'Create a bootable disk using..' section and the 'FreeDOS' pull-down menu. This will launch a Windows Explorer window where you can locate and select the Linux Mint ISO.



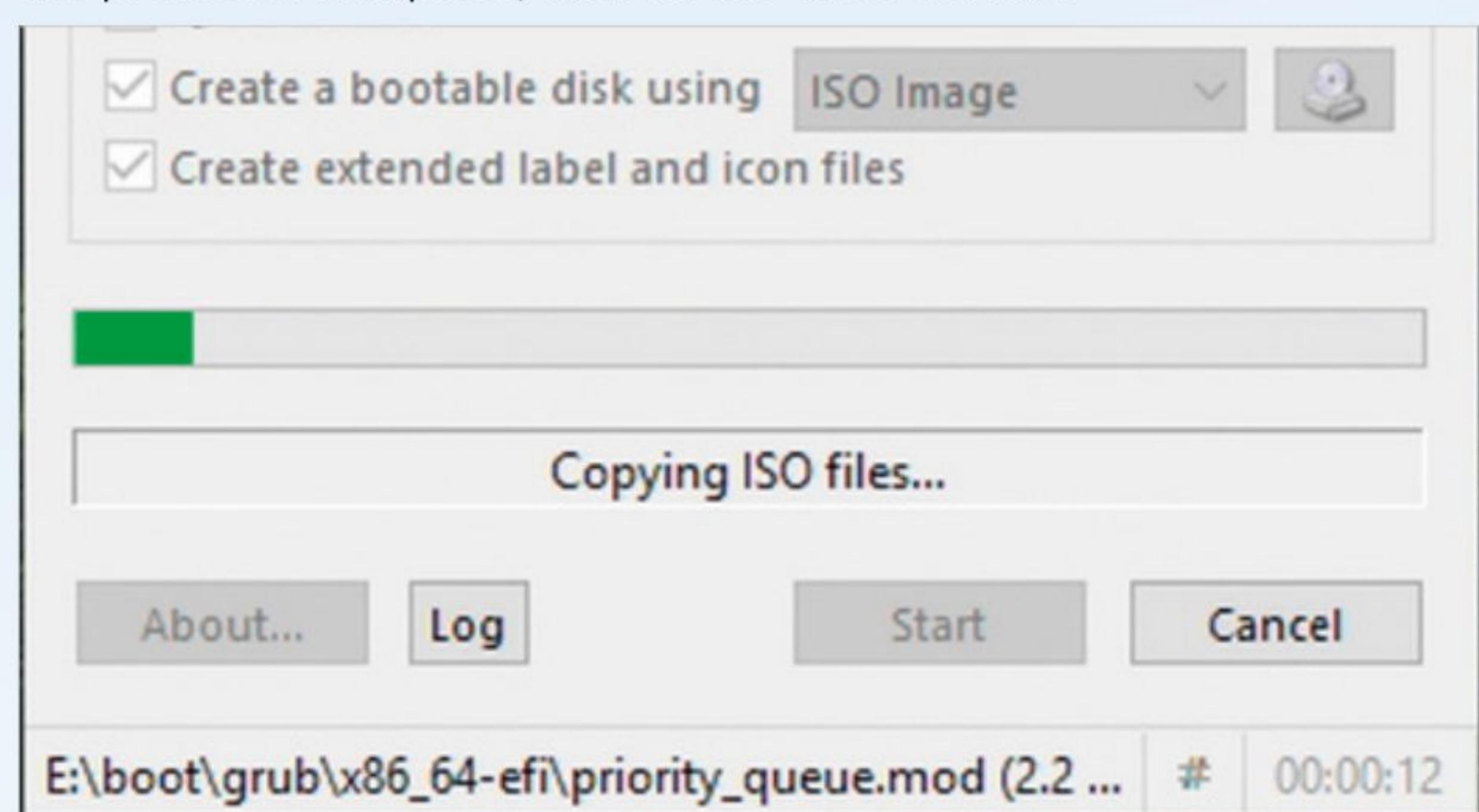
- STEP 4** When you're ready, click on the Start button at the bottom of the Rufus app. This will open up another dialogue box asking you to download and use a new version of SysLinux. SysLinux is a selection of boot loaders used to allow a modern PC to access and boot from a USB flash drive. It is necessary, so click on 'Yes' to continue.



- STEP 5** The next step asks which image mode you want the Mint ISO to be written to the USB flash drive in. Both methods work for different situations but generally, the recommended ISO Image Mode is the more popular. Make sure this mode is preselected and click OK to continue, followed by OK again to confirm the action.



- STEP 6** The Mint ISO is now being transferred to the USB flash drive. The process shouldn't take too long, again depending on the speed of the USB device and the PC. You may find Rufus will auto-open the USB drive in Windows Explorer during the process; don't worry you can minimise or close it if you want. When the process is complete, click on the Close button.





Installing Virtualbox

As we mentioned earlier, Oracle's VirtualBox is one of the easiest virtual machine platforms for the beginner to experiment on. Within it you can install Linux Mint and a wealth of other operating systems, without ever having to alter your main computer's setup.

GOING VIRTUAL

Using a Virtual Machine (VM) will take resources from your computer: memory, hard drive space, processor usage and so on; make sure you have enough of each before commencing.

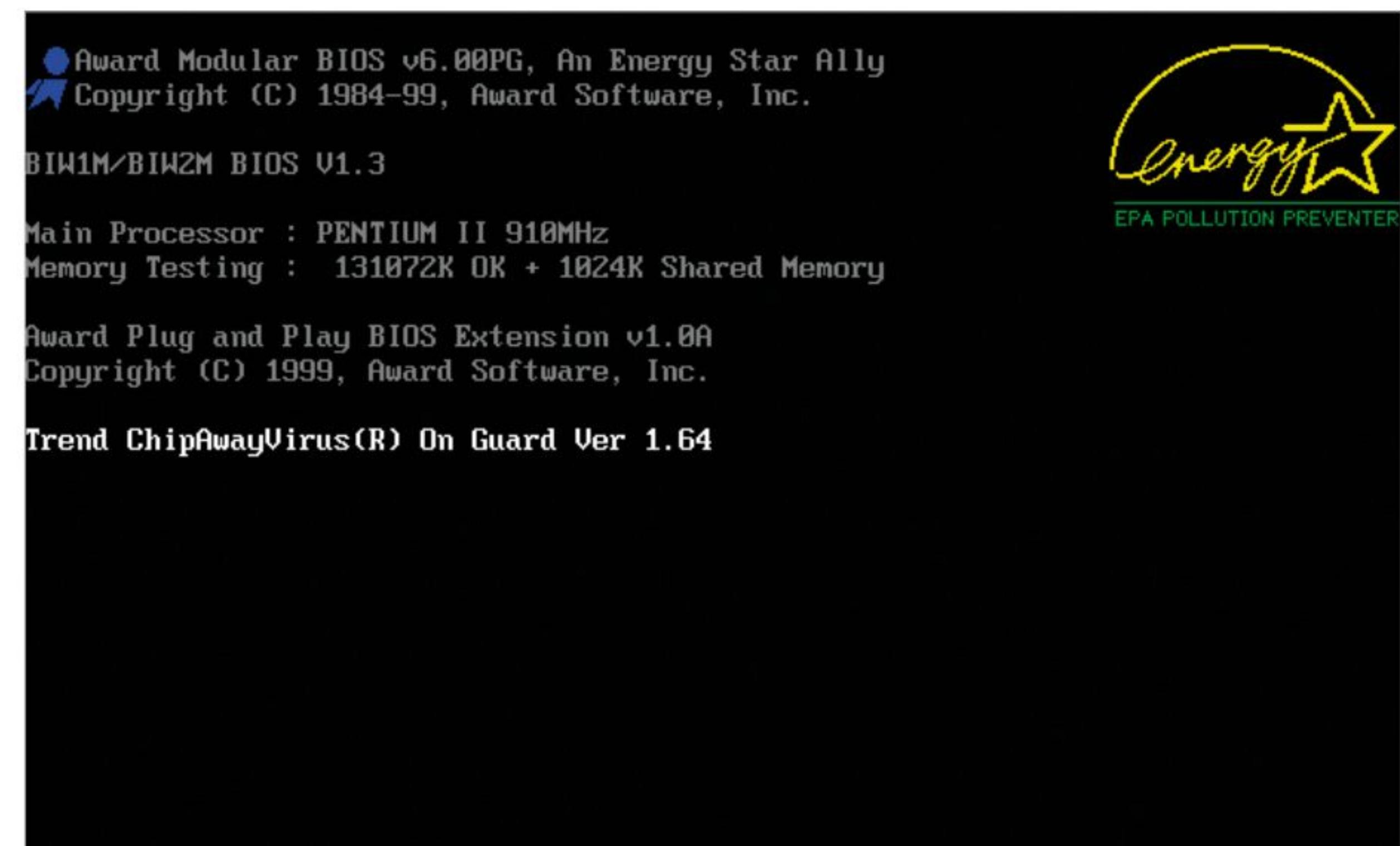
STEP 1 The first task is getting hold of VirtualBox. If you haven't already, head over to www.virtualbox.org and click on the large 'Download VirtualBox 5.1' box. This will take you to the main download page. Locate the correct host for your system, Windows or Mac, the host is the current installed operating system, and click to begin the download.



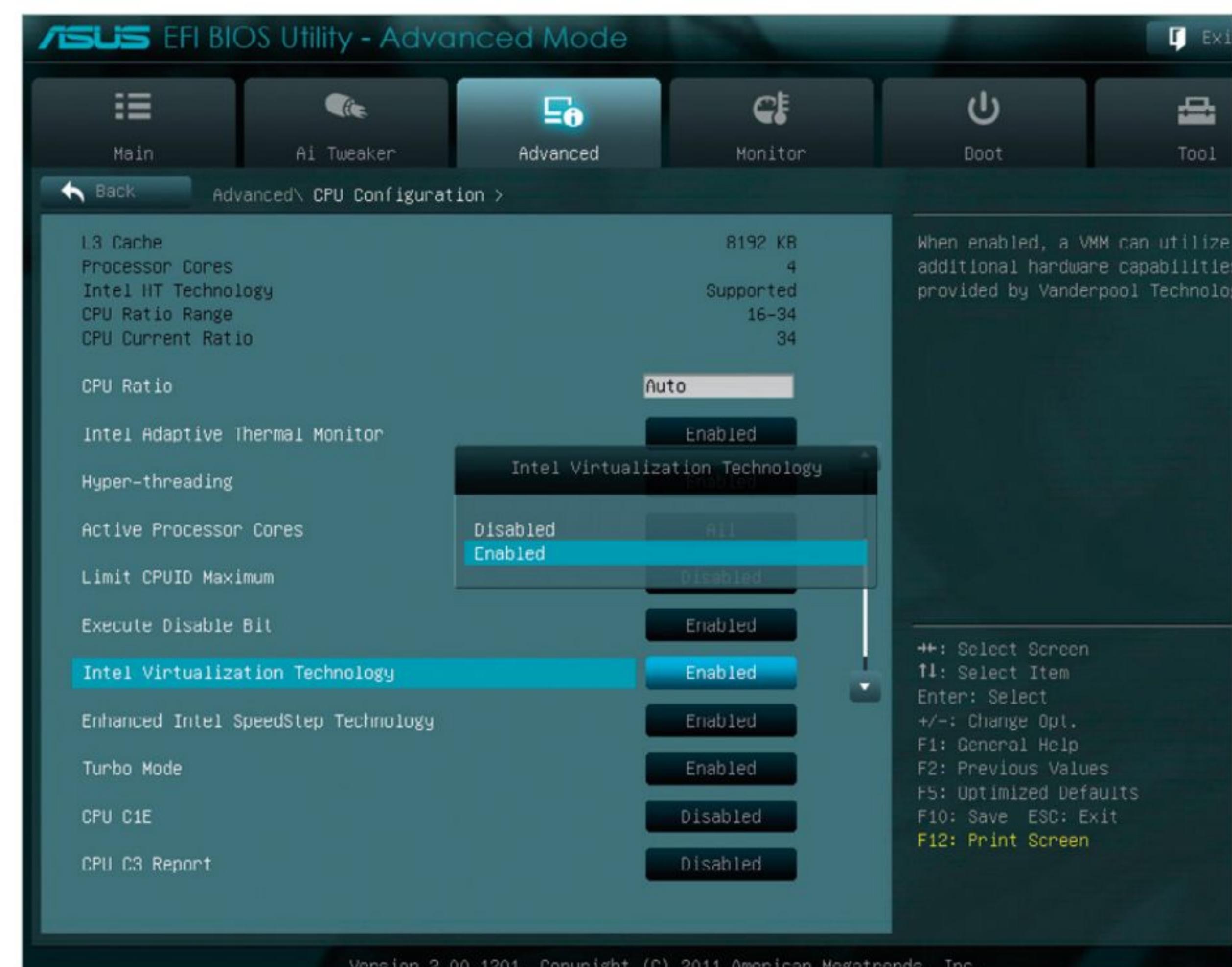
STEP 2 Next, while still at the VirtualBox download page, locate the VirtualBox Extension Pack link. The Extension Pack supports USB devices, as well as numerous other extras that can help make the VM environment a more accurate emulation of a 'real' computer.



STEP 3 With the correct packages downloaded, and before we install anything, you need to make sure that the computer you're using is able to host a VM. To do this, reboot the computer and enter the BIOS. As the computer starts up, press the Del, F2 or whichever key is necessary to Enter Setup.

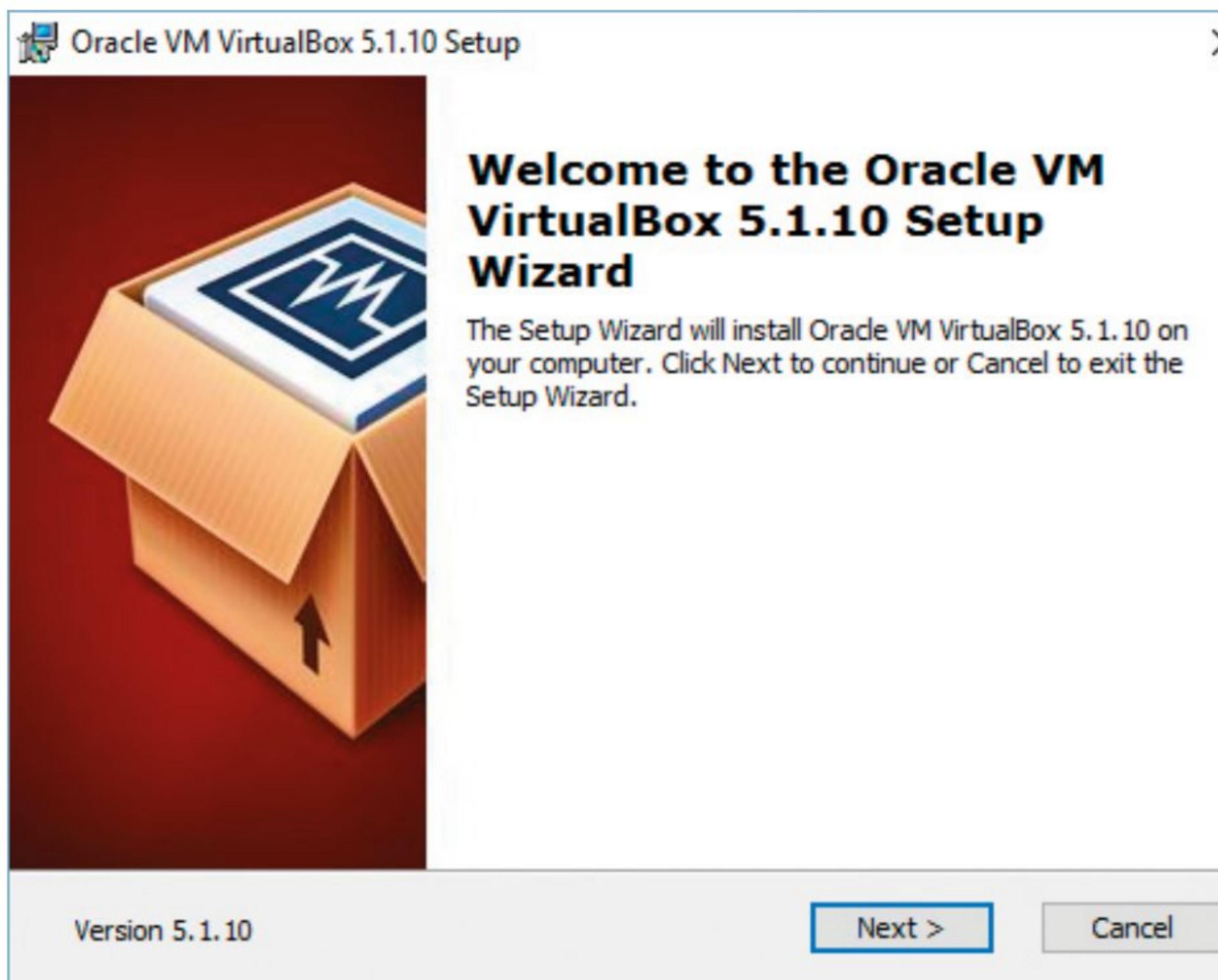


STEP 4 As each BIOS is laid out differently it's very difficult to assess where to look in each personal example. However, as a general rule of thumb, you're looking for Intel Virtualisation Technology or simply Virtualisation; it's usually within the Advanced section of the BIOS. When you've located it, Enable it, save the settings, exit the BIOS and reboot the computer.



**STEP 5**

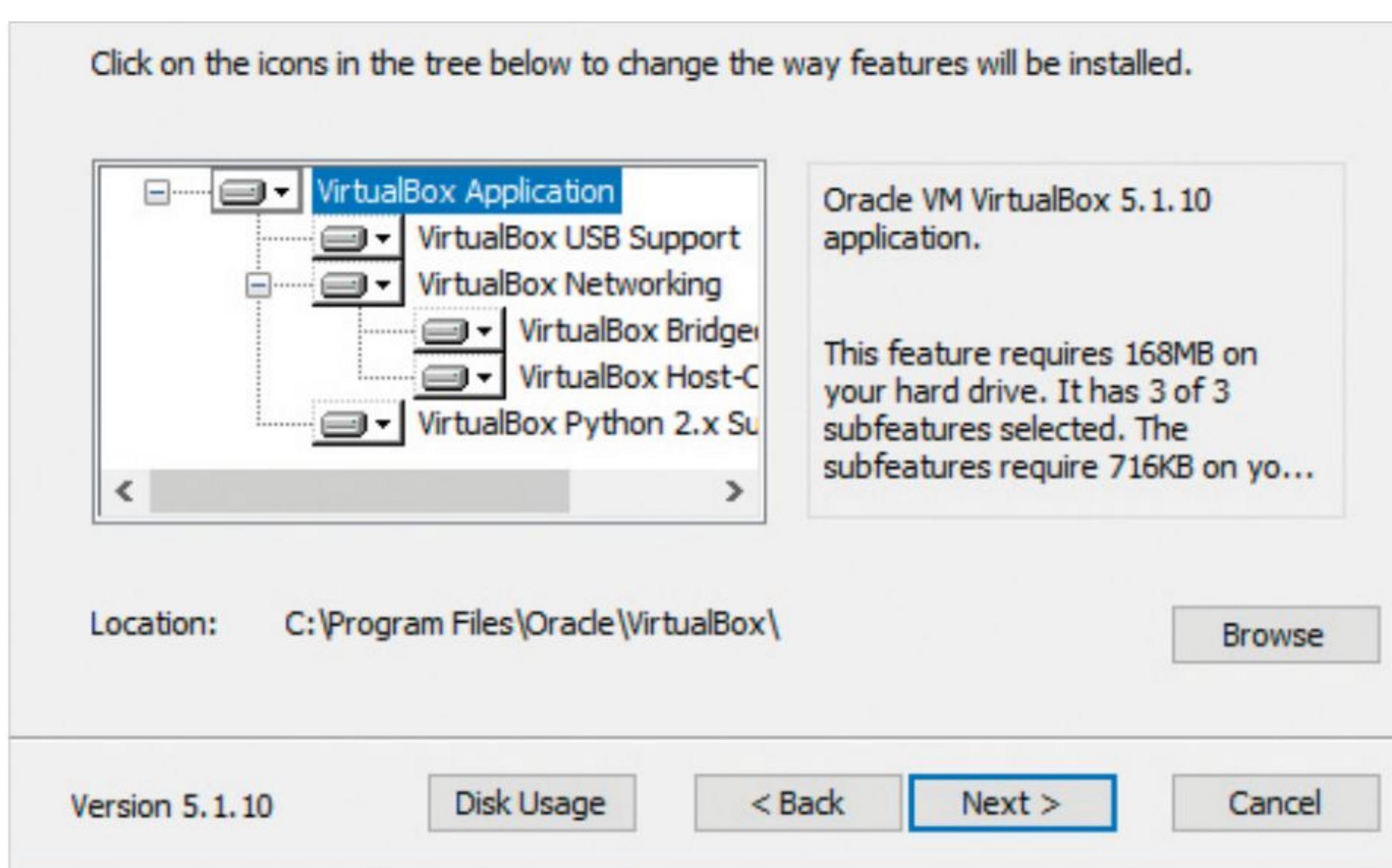
With the computer back up and running, locate the downloaded main VirtualBox application and double-click to begin the installation process. Click Next to continue, when you're ready.

**STEP 8**

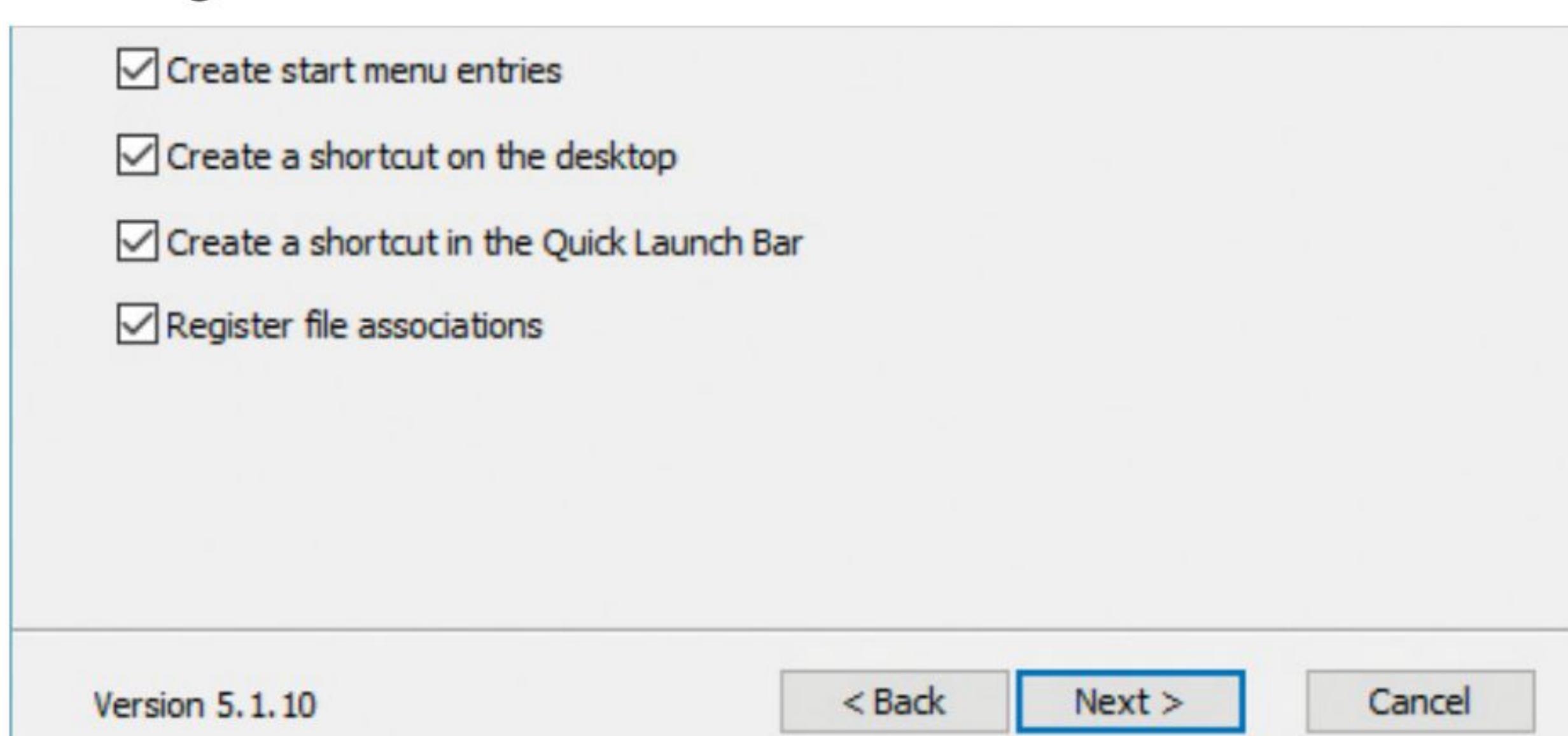
When installing VirtualBox your network connection will be disabled for a very brief period. This is due to VirtualBox creating a linked, virtual network connection so that any VM installed will be able to access the Internet, and your home network resources, via the computer's already established network connection. Click Yes then Install to begin the installation.

**STEP 6**

The default installation location of VirtualBox should satisfy most users but if you have any special location requirements click on the Browse button and change the install folder. Then, make sure that all the icons in the VirtualBox feature tree are selected and none of them have a red X next to them. Click Next to move on.

**STEP 7**

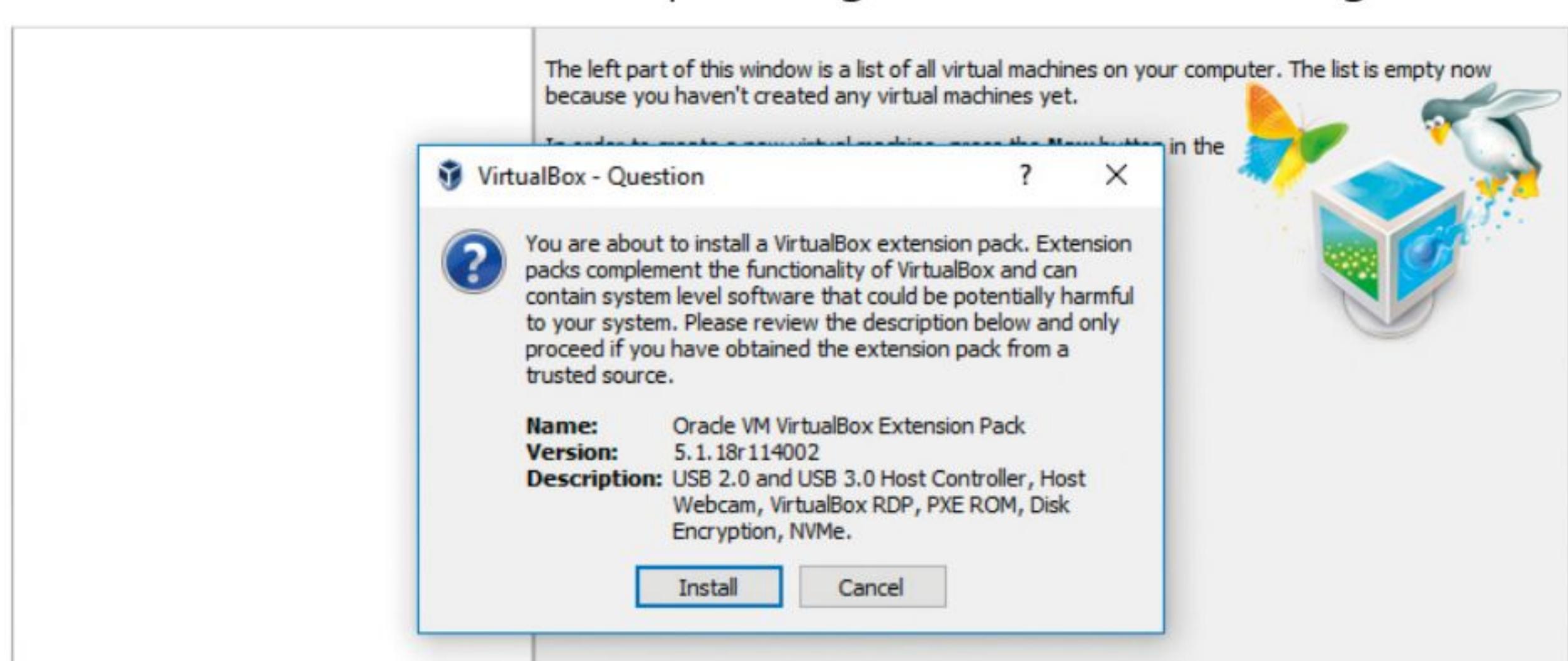
This section can be left alone to the defaults, should you wish. It simply makes life a little easier when dealing with VMs; especially when dealing with downloaded VMs, as you may encounter in the future. Again, clicking Next will move you on to the next stage.

**STEP 9**

You may well be asked by Windows to accept a security notification; click Yes for this and you may encounter a dialogue box asking you to trust the installation from Oracle. Again, click yes and accept the installation of the VirtualBox application. When it's complete, click finish to start VirtualBox.

**STEP 10**

With VirtualBox up and running you can now install the VirtualBox Extension Pack. Locate the downloaded add-on and double-click. There may be a short pause while VirtualBox analyses the pack but eventually you receive a message to install it; obviously click Install to begin the process, scroll down the next screen to accept the agreement and click 'I Agree'.





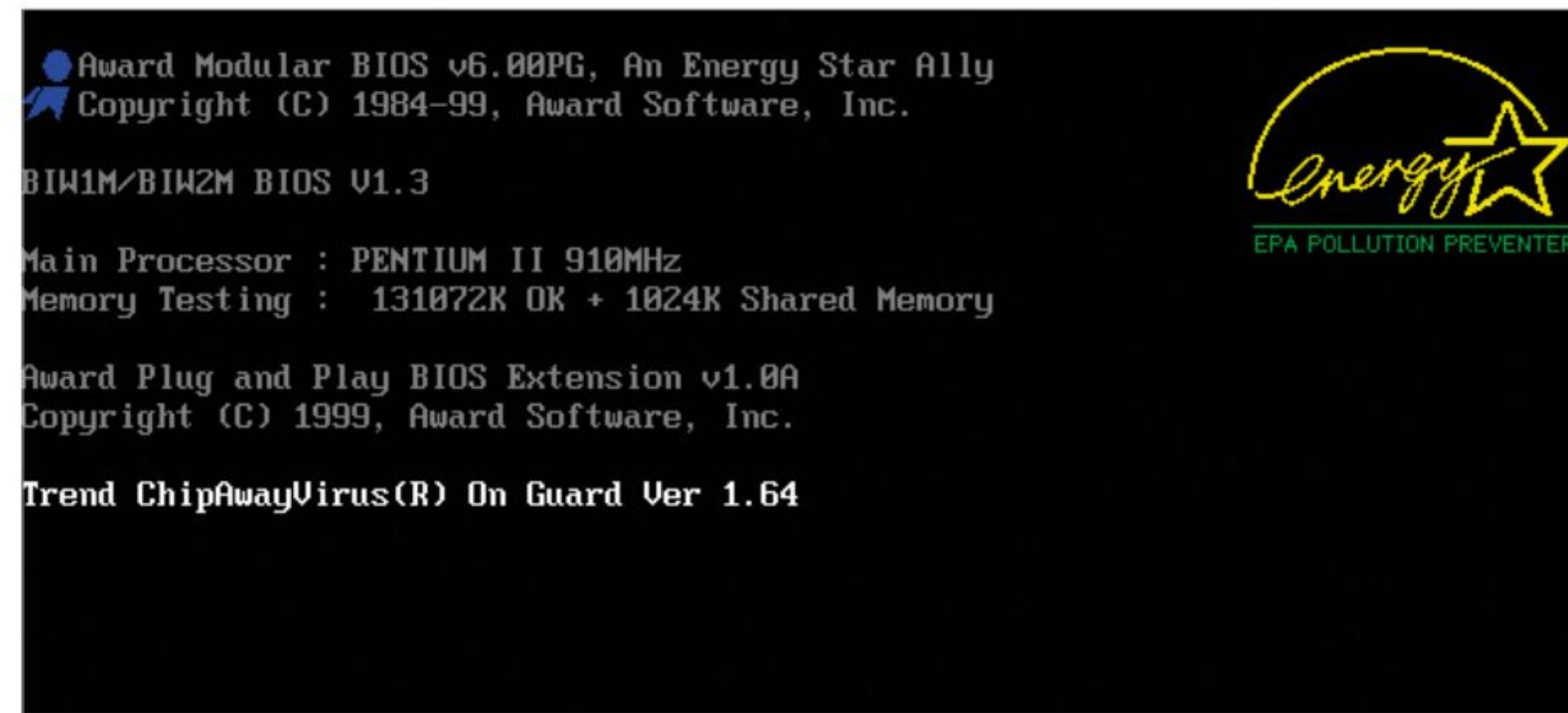
Testing Linux Mint's Live Environment

With the DVD or USB boot media ready you can now test Mint in a Live Environment before deciding to install it. A Live Environment is a functioning version of Mint that's running from the boot media as opposed to running off your computer's hard drive.

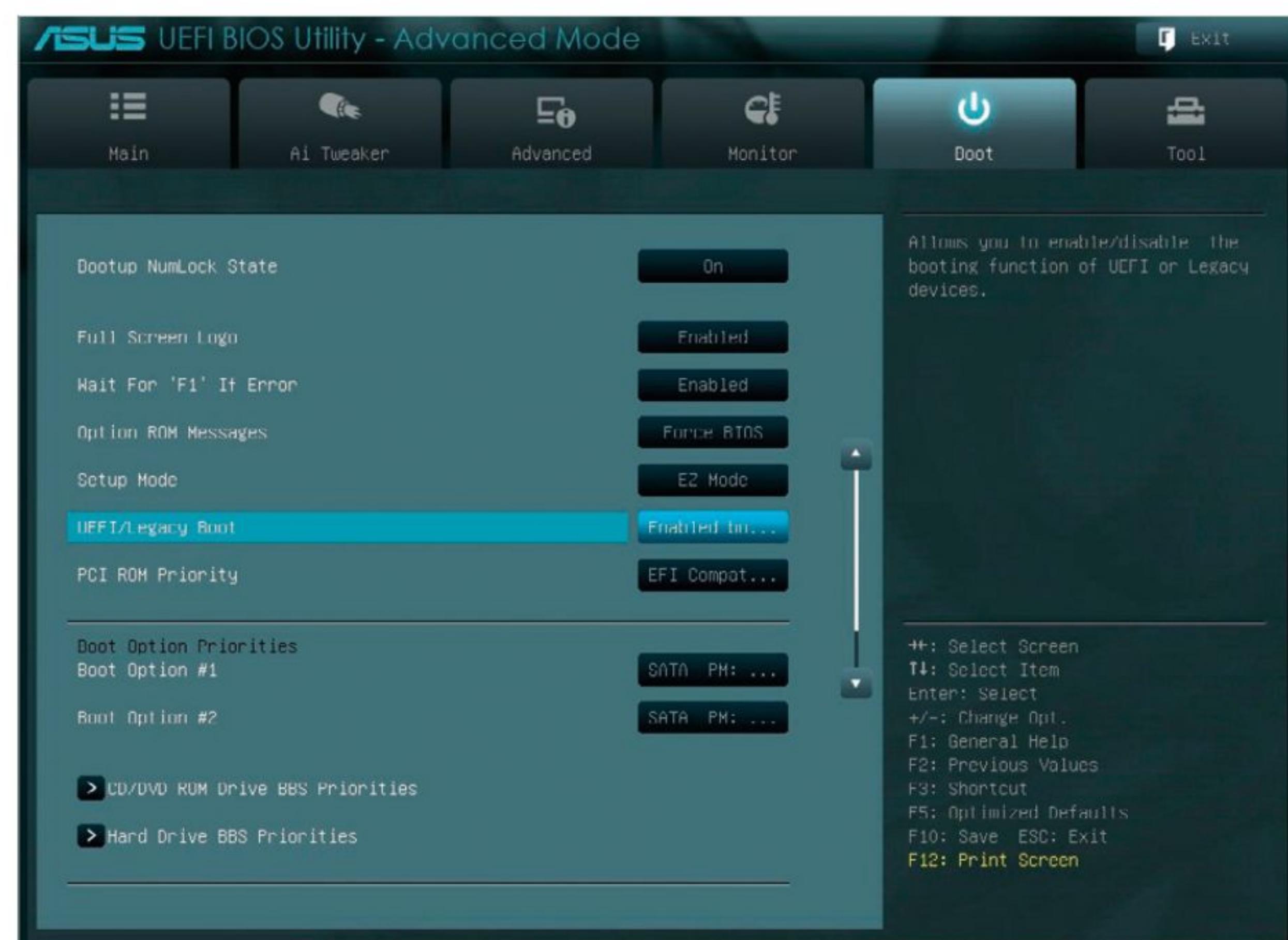
UEFI BIOS

The Unified Extensible Firmware Interface (UEFI) is used to identify hardware and protect a PC during its boot-up process. It replaces the traditional BIOS but can cause issues when installing Linux Mint.

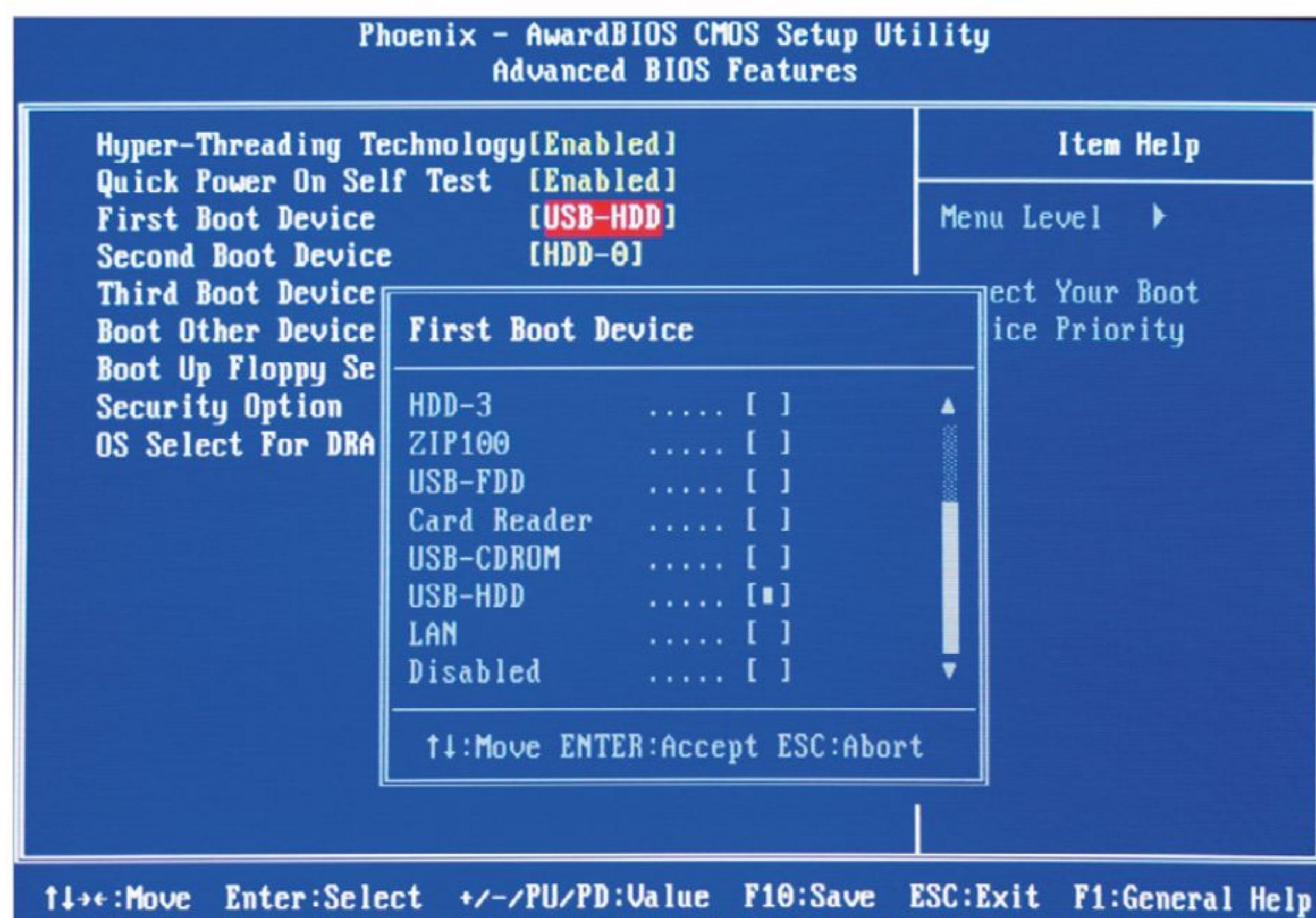
STEP 1 Insert your DVD or USB flash drive into your PC and, if you haven't already, shutdown Windows. In this instance we're using the USB boot media but the process is virtually identical. Start the PC and when prompted press the appropriate keys to enter the BIOS or SETUP; these could be, for example, F2, Del or even F12.



STEP 2 There are different versions of a UEFI BIOS, so covering them all would be impossible. What you're looking for is a section that details the Boot Sequence or Boot Mode. Here you have the option to turn off UEFI and choose Legacy or disable Secure Booting. Mint does work with UEFI but it can be a tricky process to enable it to boot.



STEP 3 With UEFI turned to Legacy mode, there are now two ways of booting into the Mint Live Environment. The first is via the BIOS you're already in. Locate the Boot Sequence and change the first boot device from its original setting, usually Internal HDD or similar, to USB Storage Device for the USB media option; or DVD Drive, for the DVD media option.



STEP 4 Alternatively use the Boot Option Menu. With this option you can press F12 (or something similar) to display a list of boot media options; from there, you can choose the appropriate boot media. Either way, you can now save and exit the BIOS by navigating to the Save & Exit option and choosing Save Changes and Exit.

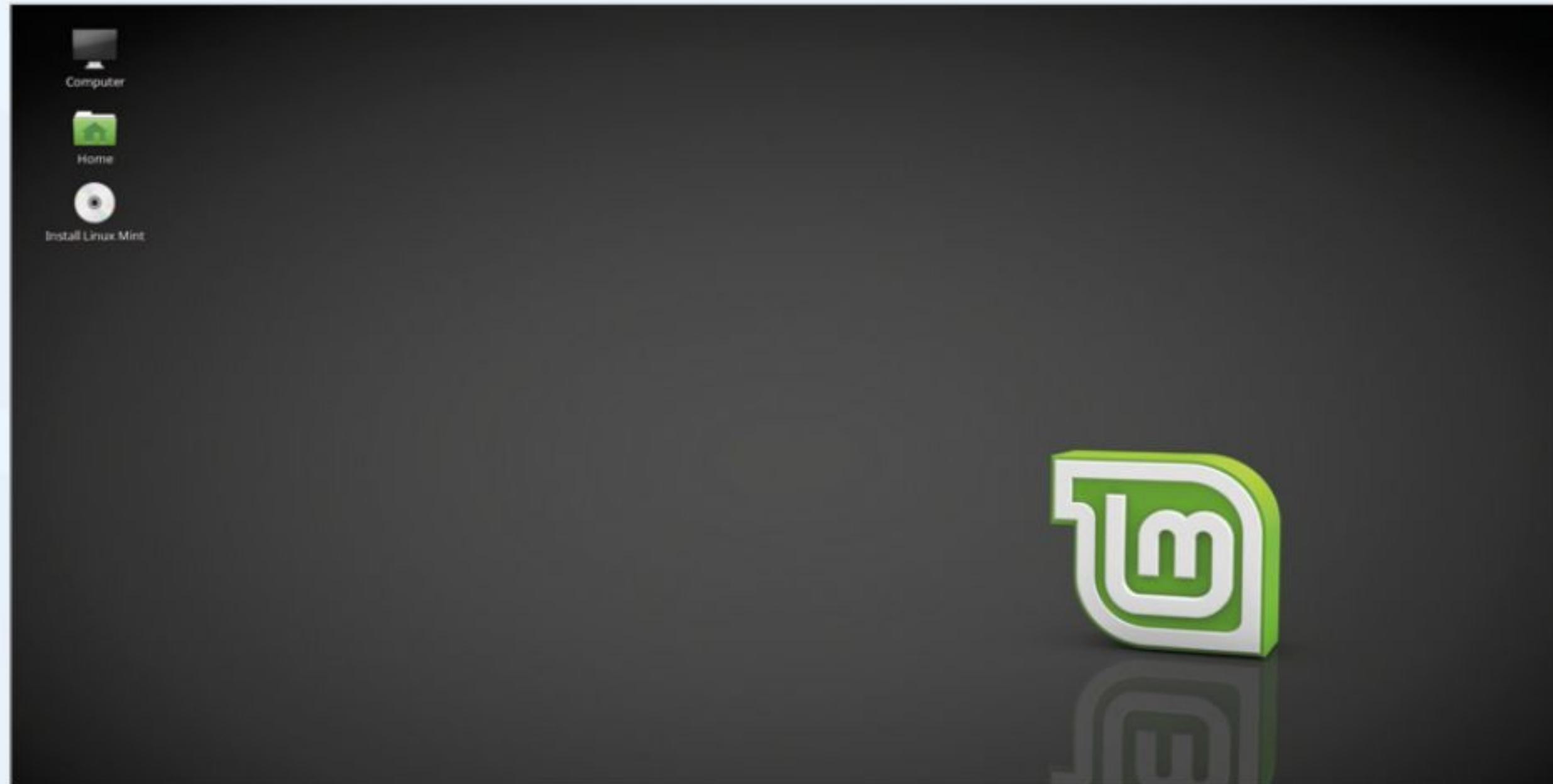




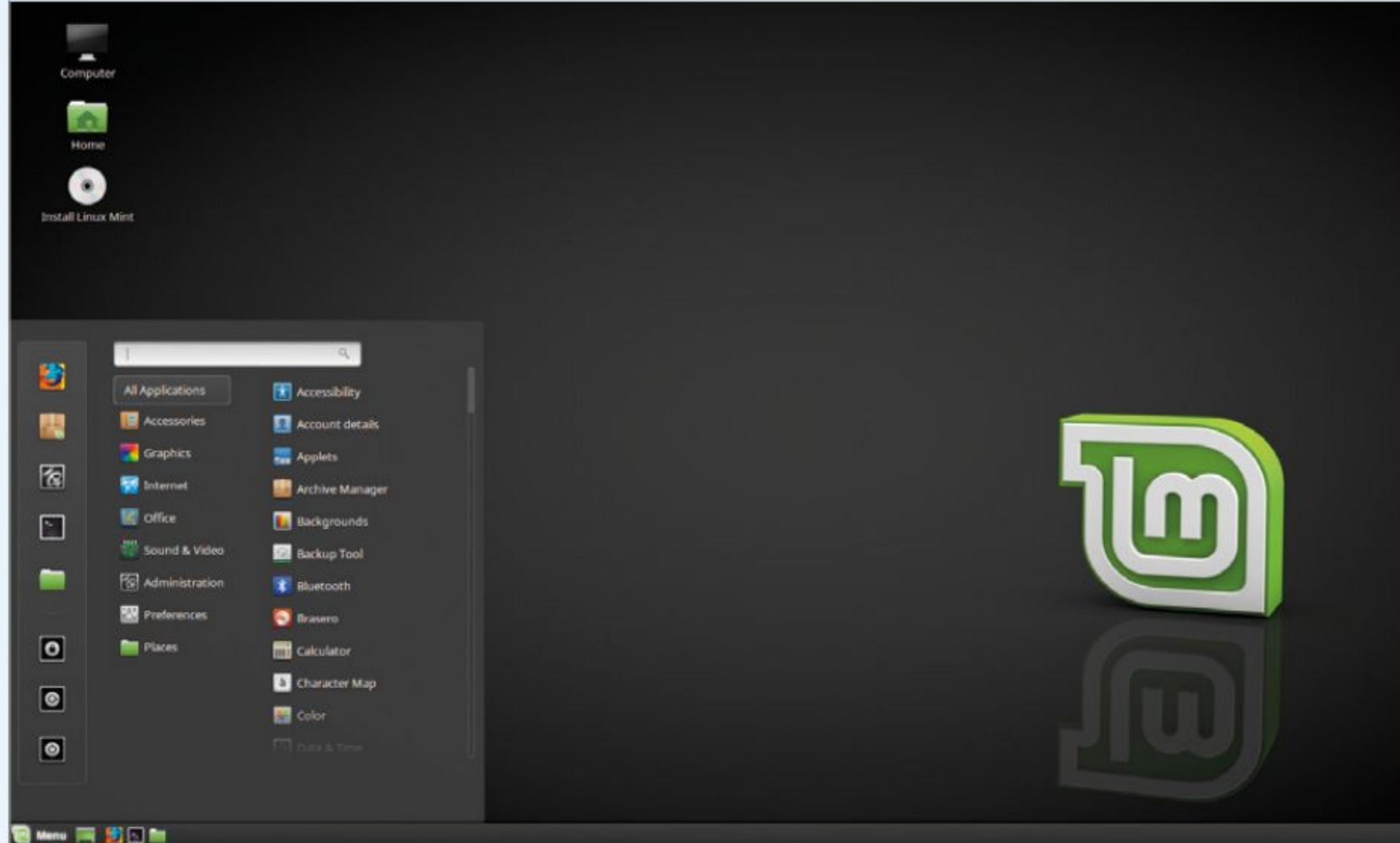
TESTING MINT

With the UEFI BIOS side of things behind us, it's time to see what the Linux Mint desktop has to offer, albeit in the test, Live Environment.

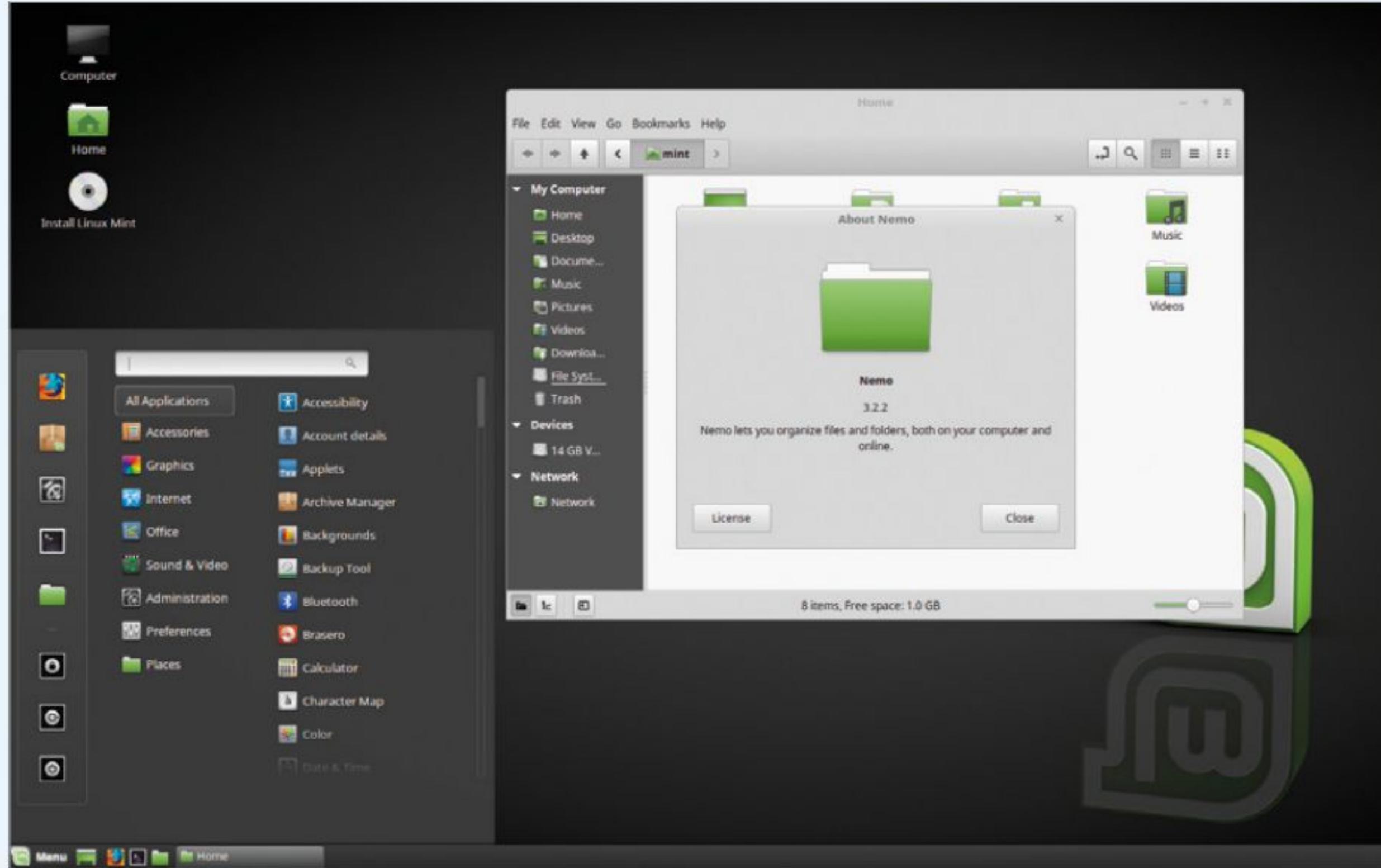
- STEP 1** Linux Mint now boots up and you are taken directly to the Mint default desktop; we have the Cinnamon mainstream version in the screenshot here. You can see three icons on the desktop: Computer, Home and Install Linux Mint.



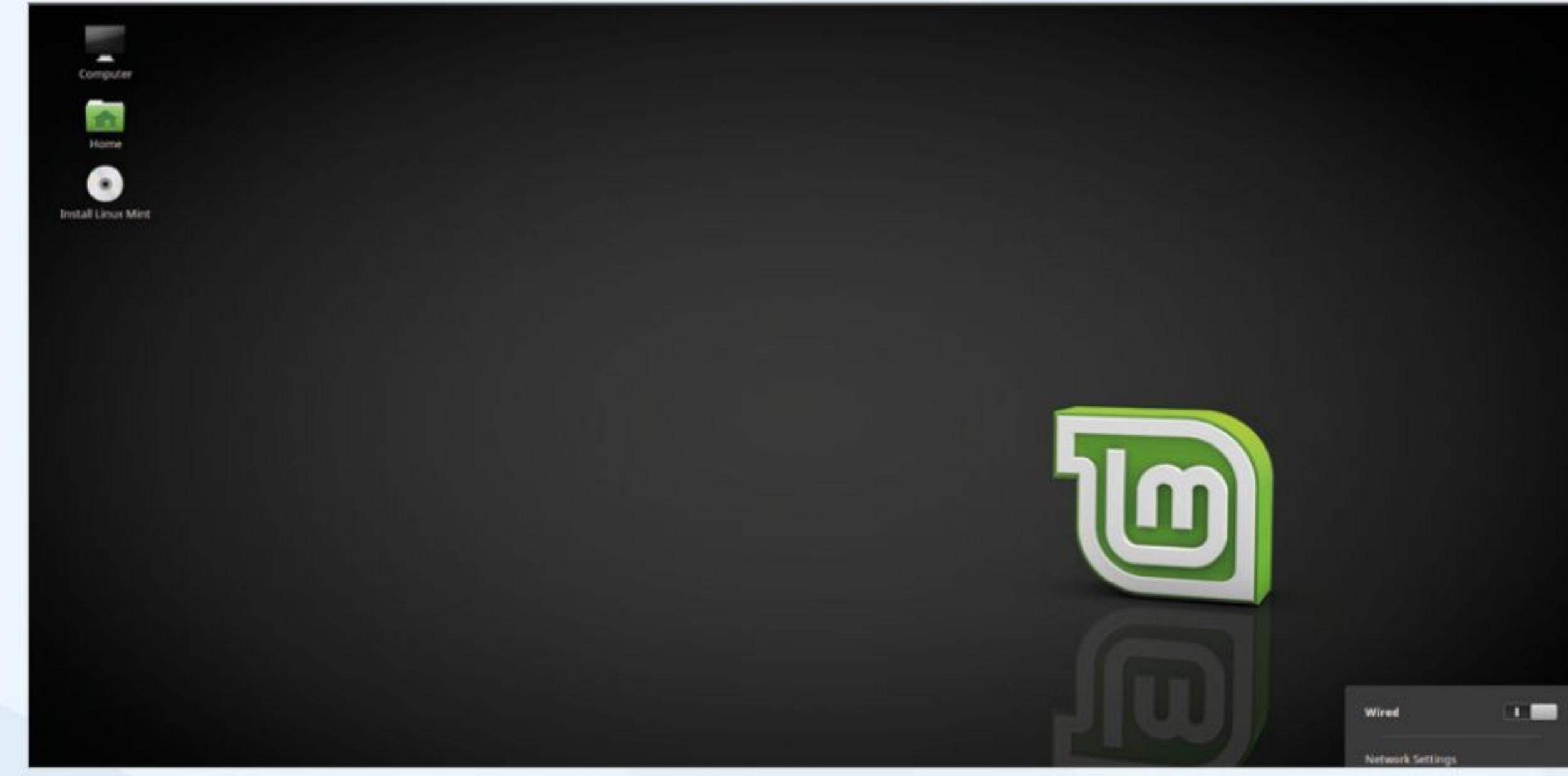
- STEP 2** Along the bottom of the desktop is the Mint Panel and the Mint Menu. Click the Menu and it displays the core applications along with a search bar and various icons lined up down the left-hand side. These are quick launch icons that will change to the more recently used apps as you use Mint.



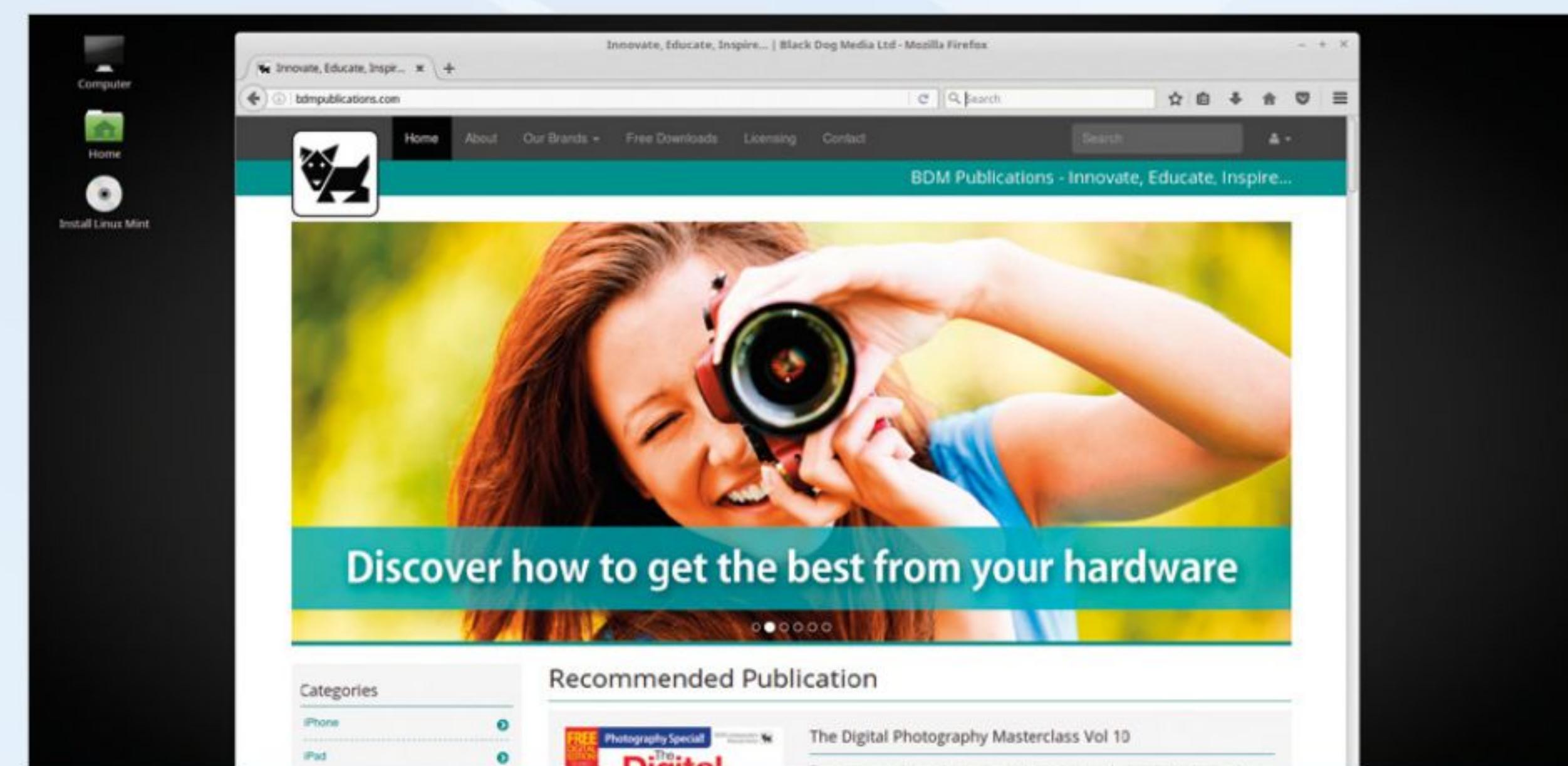
- STEP 3** The three icons to the bottom of the quick launch strip indicate the session options: Lock Screen, Logout and Quit (shutdown Linux Mint). Just above the Lock Screen icon is Files, clicking this will launch Nemo, the Linux Mint Cinnamon file manager.



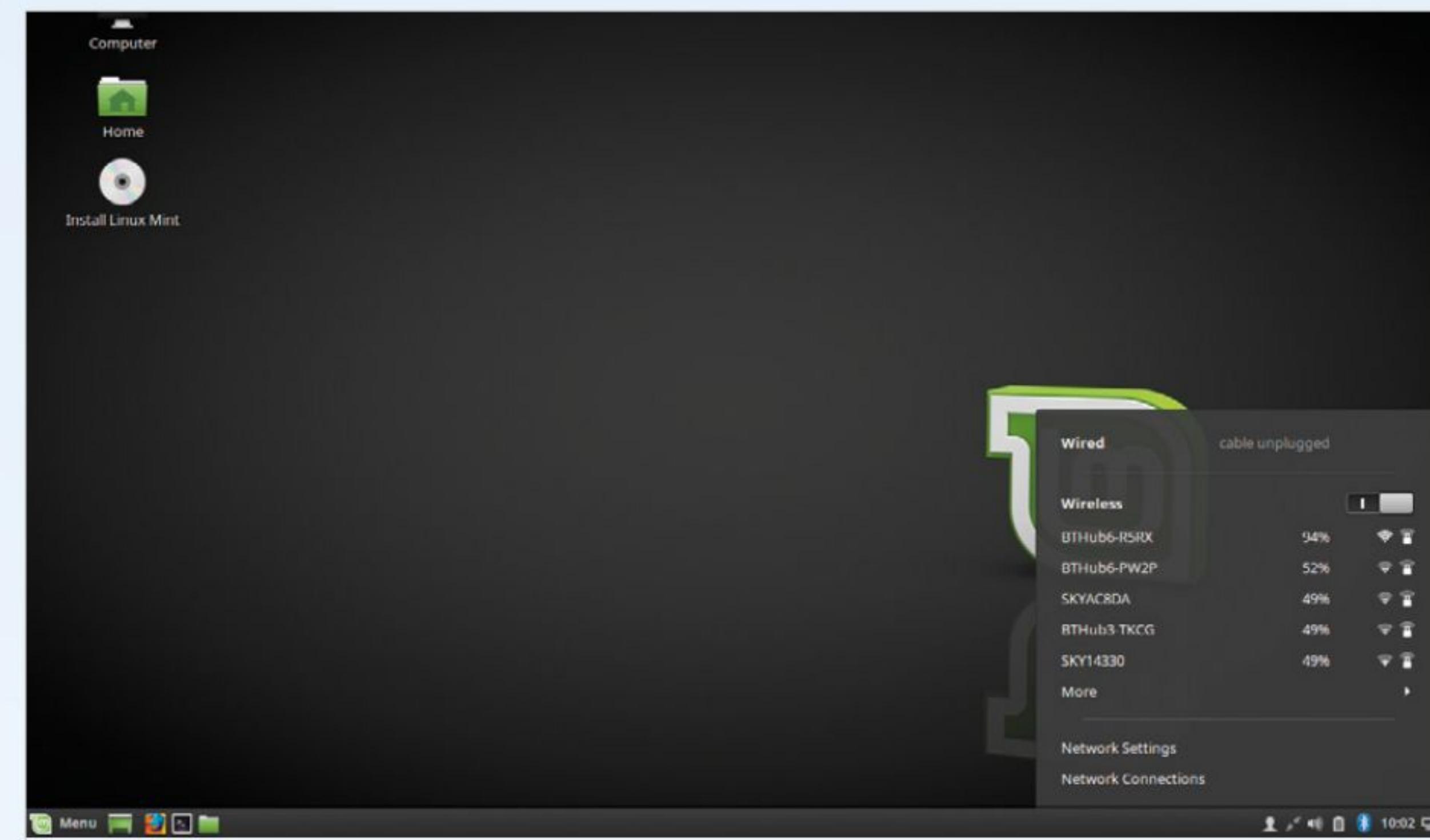
- STEP 4** To the far right of the Panel, you can see several icons; these indicate the current logged in user account (which is Live Session User at present), active network connections (where you can adjust or setup your WiFi or wired internet connection), volume controls, time and date, and All Windows, which when clicked displays all opened apps.



- STEP 5** There are also some quick launch icons on the Panel next to the Mint Menu: Show Desktop, which will return you to a blank desktop while minimising all open apps; Firefox web browser; the Terminal command line; and Nemo file manager. You can use any of these in a live session but anything stored won't be saved on quitting.



- STEP 6** Before you install Mint, you need to make sure you have an active Internet connection. If you have a wired, Ethernet connection, and it's not already plugged into the computer, do so now. If you're using Wi-Fi, click on the network connection icon in the bottom right of the Panel, find your router id and enter the details.





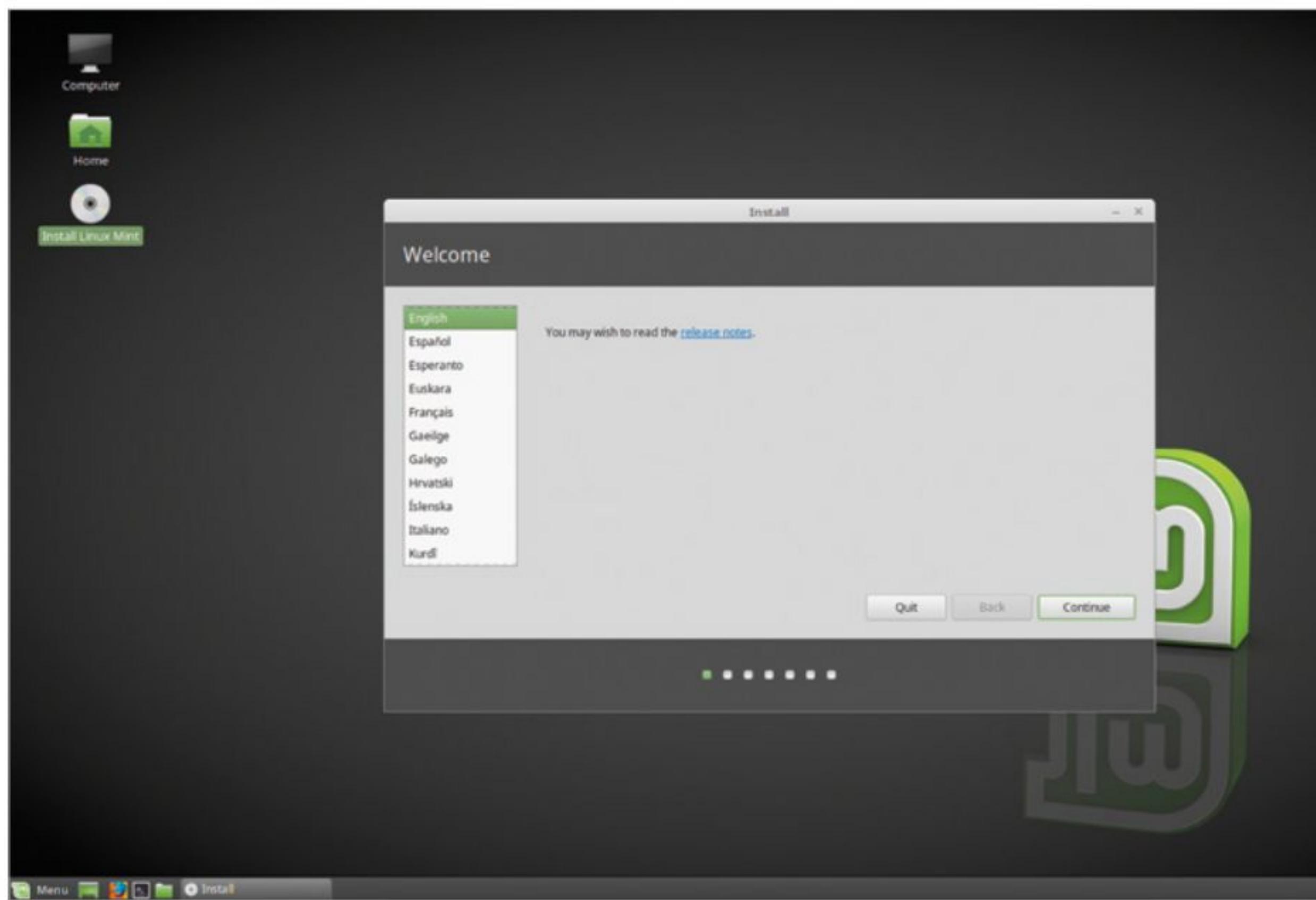
Installing Linux Mint on a PC

You've picked your Linux Mint desktop version and you've played around in the Live Environment. Now it's time to get Mint onto your PC as a permanent replacement for Windows. Thankfully the process is extremely easy.

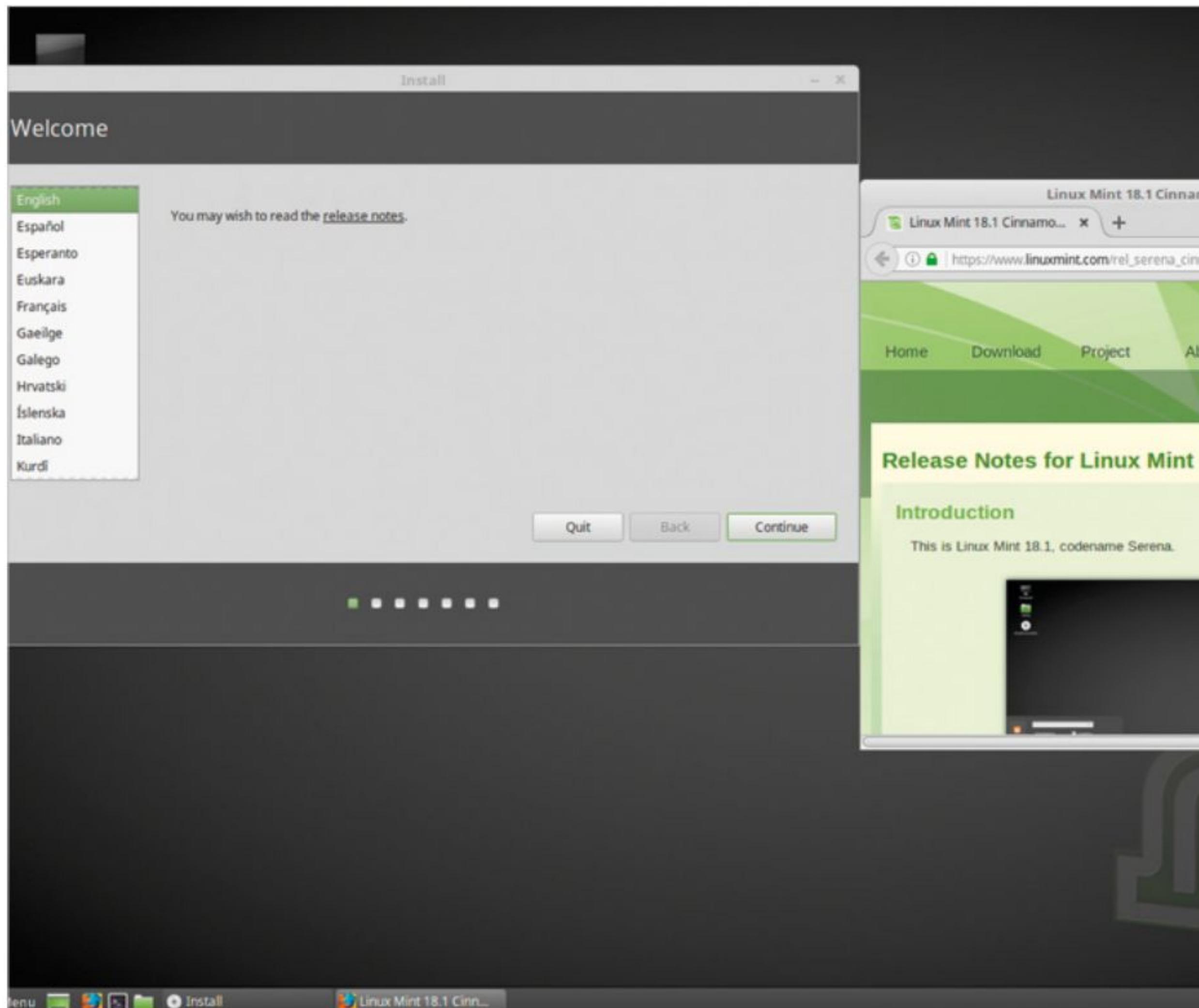
GOING MINT

We're assuming at this point that you're still in the Live Environment and that you've set up and activated your Wi-Fi connection, or plugged your computer into your router via a wired connection.

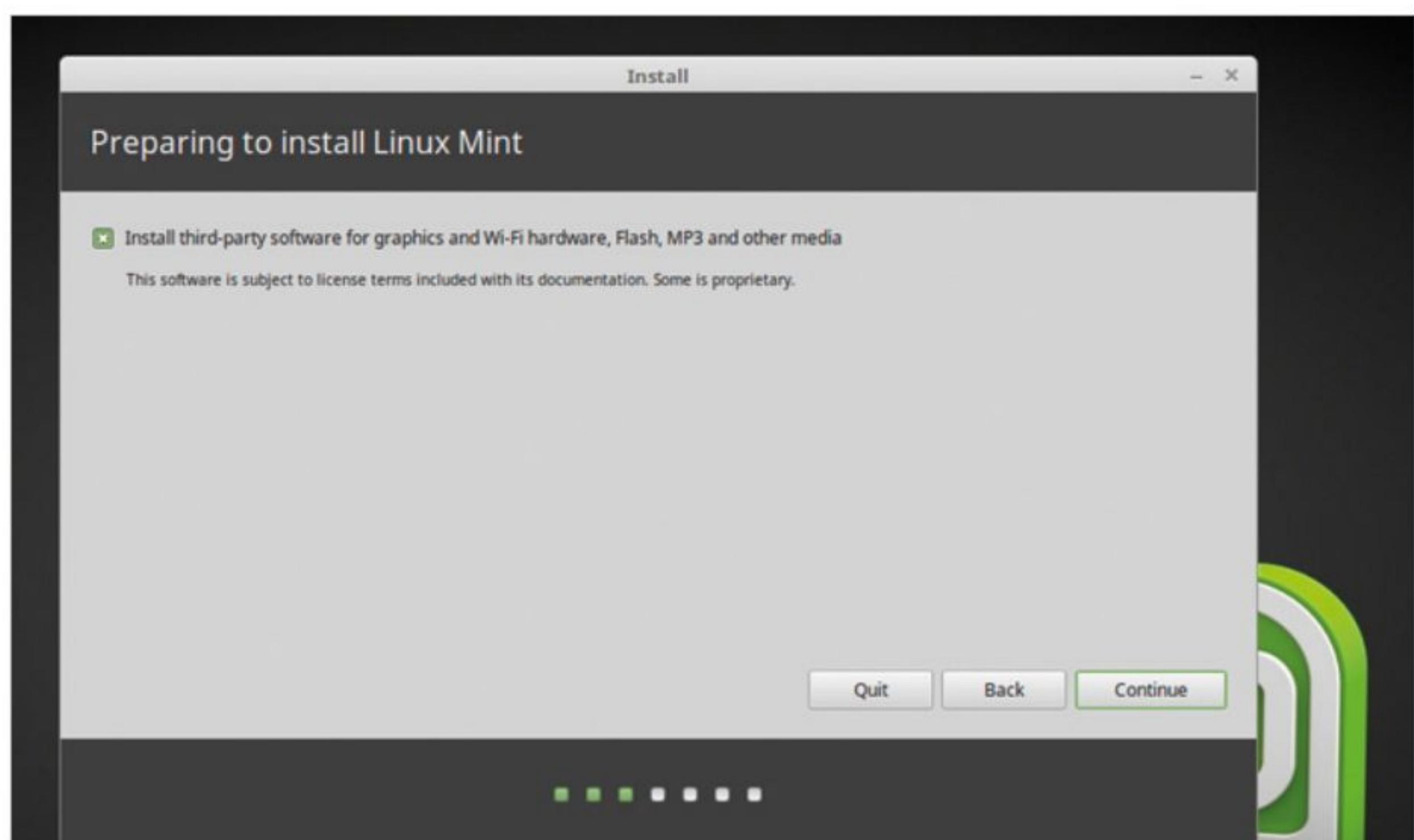
- STEP 1** Providing you're connected to the internet (if not then do so now) and you're in the Live Environment, start the installation process by double-clicking on the Install Linux Mint icon on the desktop.



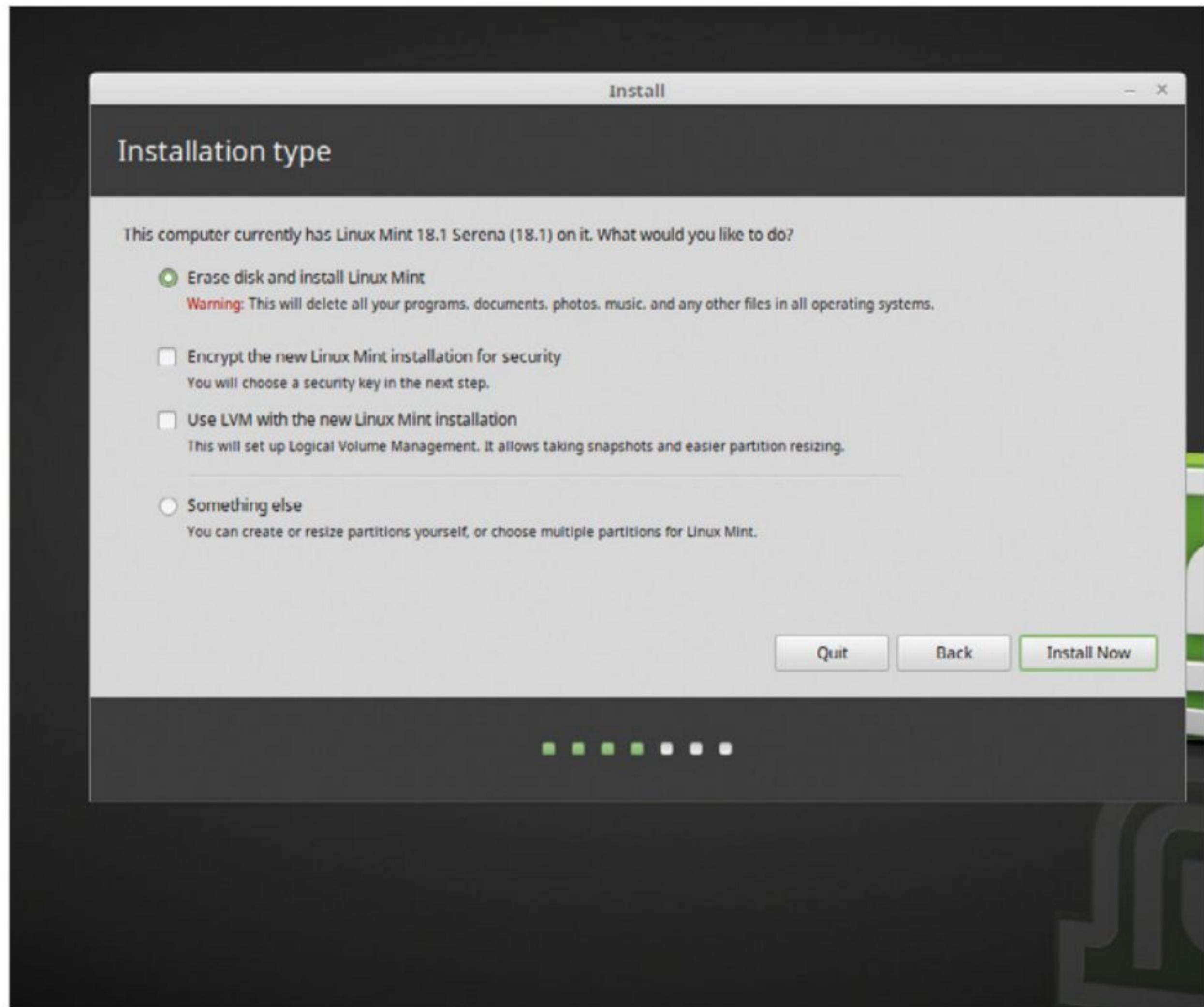
- STEP 2** Launching the Install Linux Mint app will open up the Welcome screen. Make sure your language is selected from the list on the left and if you want to click the Release Notes link to read what the latest changes and additions are to Linux Mint 18.1 Cinnamon. When you're ready, click the Continue button.



- STEP 3** After clicking Continue you're asked if you want to Install Third-Party Software. Providing you're connected to the internet, as from Step 1, then tick the box. This will make sure that hardware drivers, Adobe Flash and codecs for MP3 and video files are installed with the main Mint system. Click Continue for the next stage.

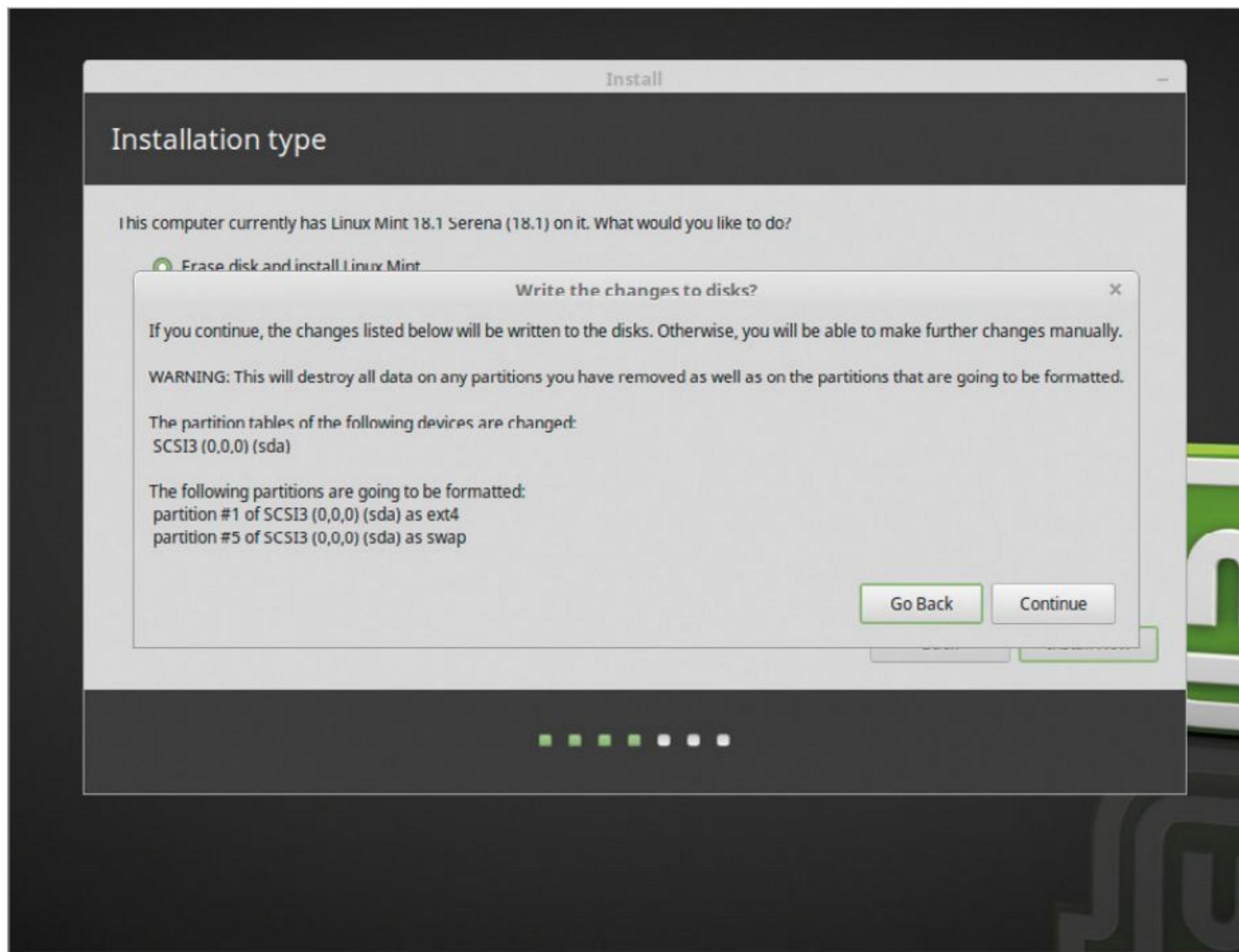


- STEP 4** This next stage asks you how you want to manage the installation of Linux Mint onto your PC. In our example, we're going to Erase Disk and Install Linux Mint, which will wipe the current OS and ALL DATA replacing it with Mint; make sure you have a good backup, just in case. Click Install Now to continue.

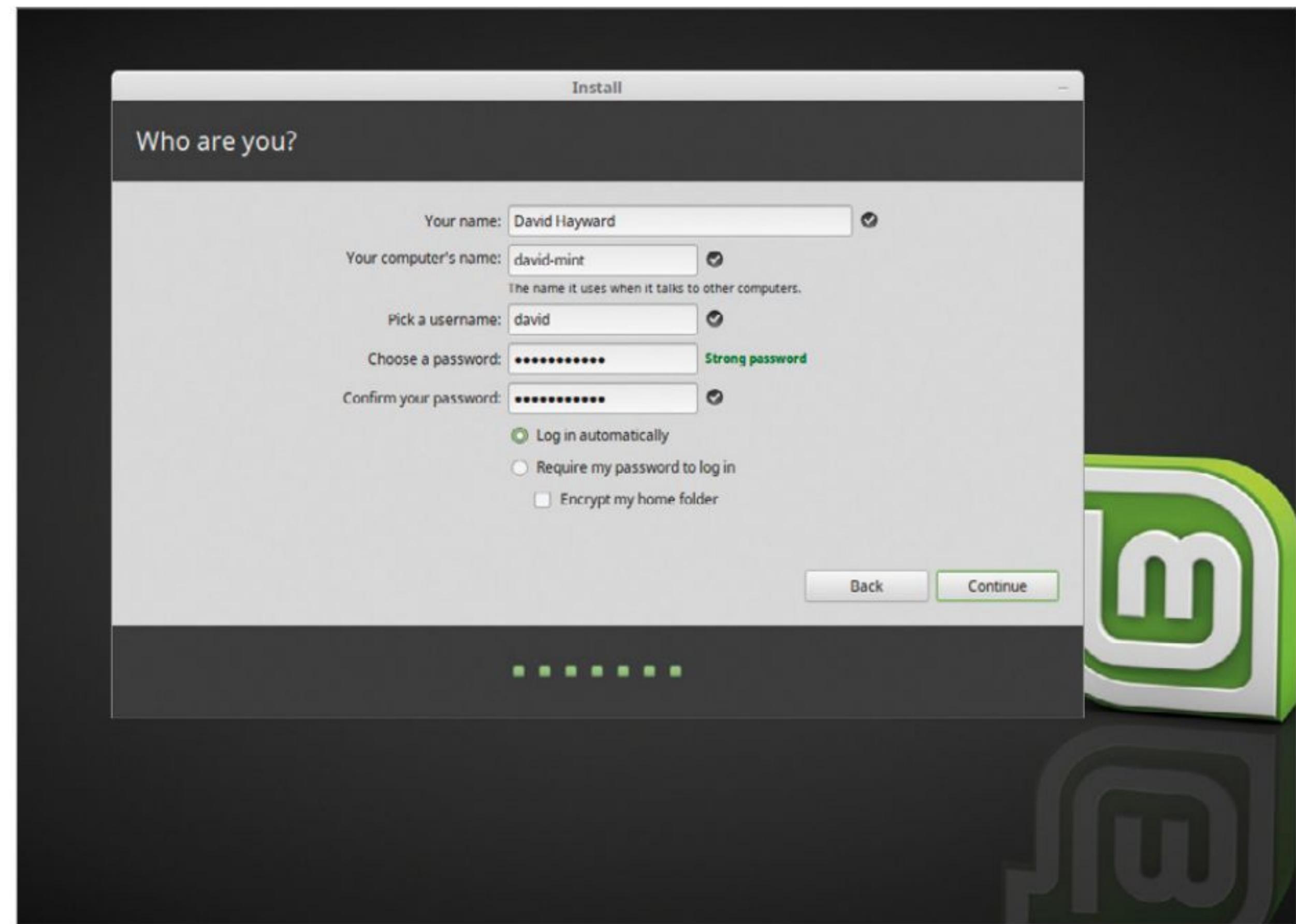


**STEP 5**

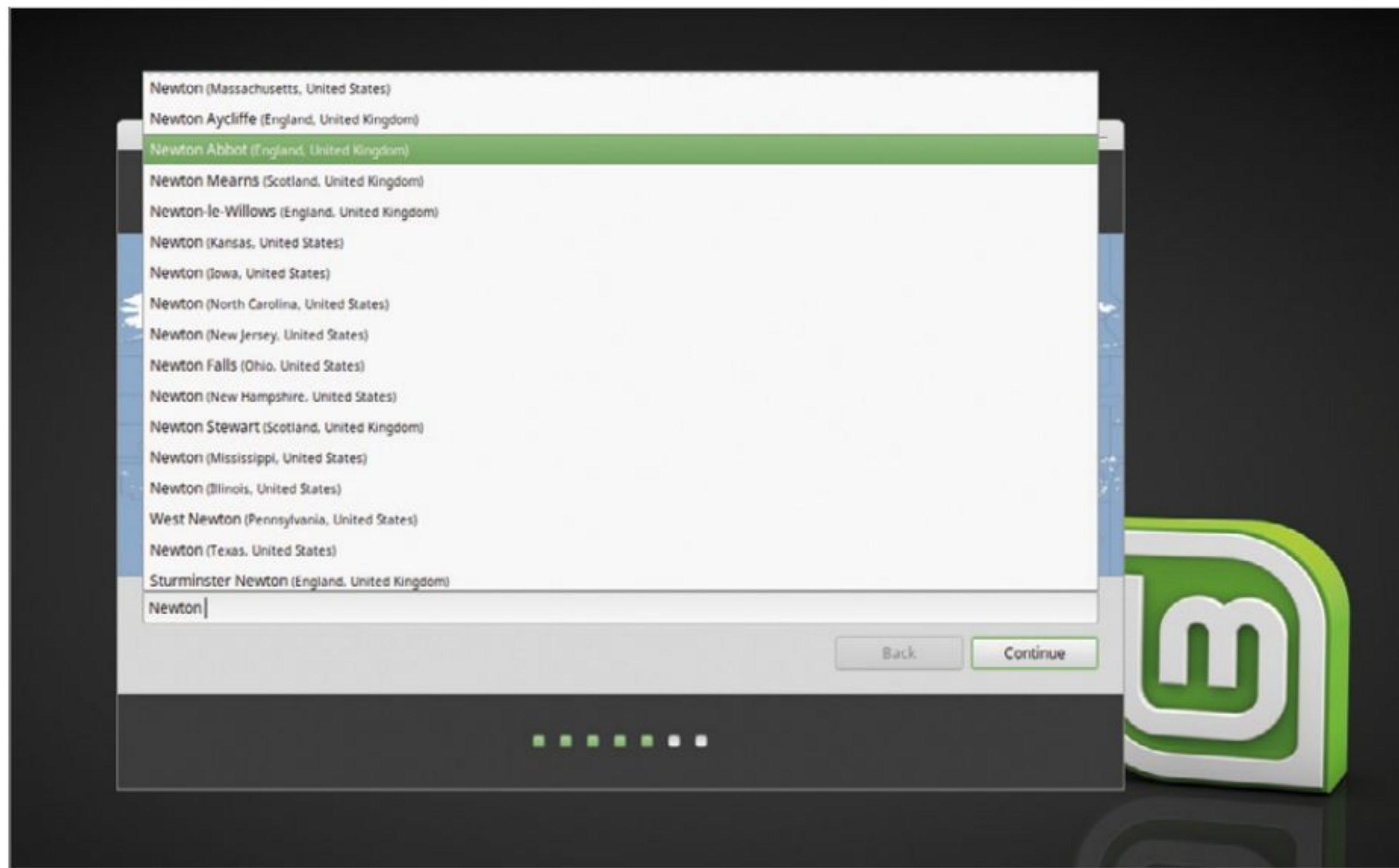
Before the installation process can begin, you're asked if the choice you made regarding the erasure of the hard drive is correct. This is your last chance to back out. If you're certain you don't mind wiping everything and starting again with Linux Mint, click Continue.

**STEP 8**

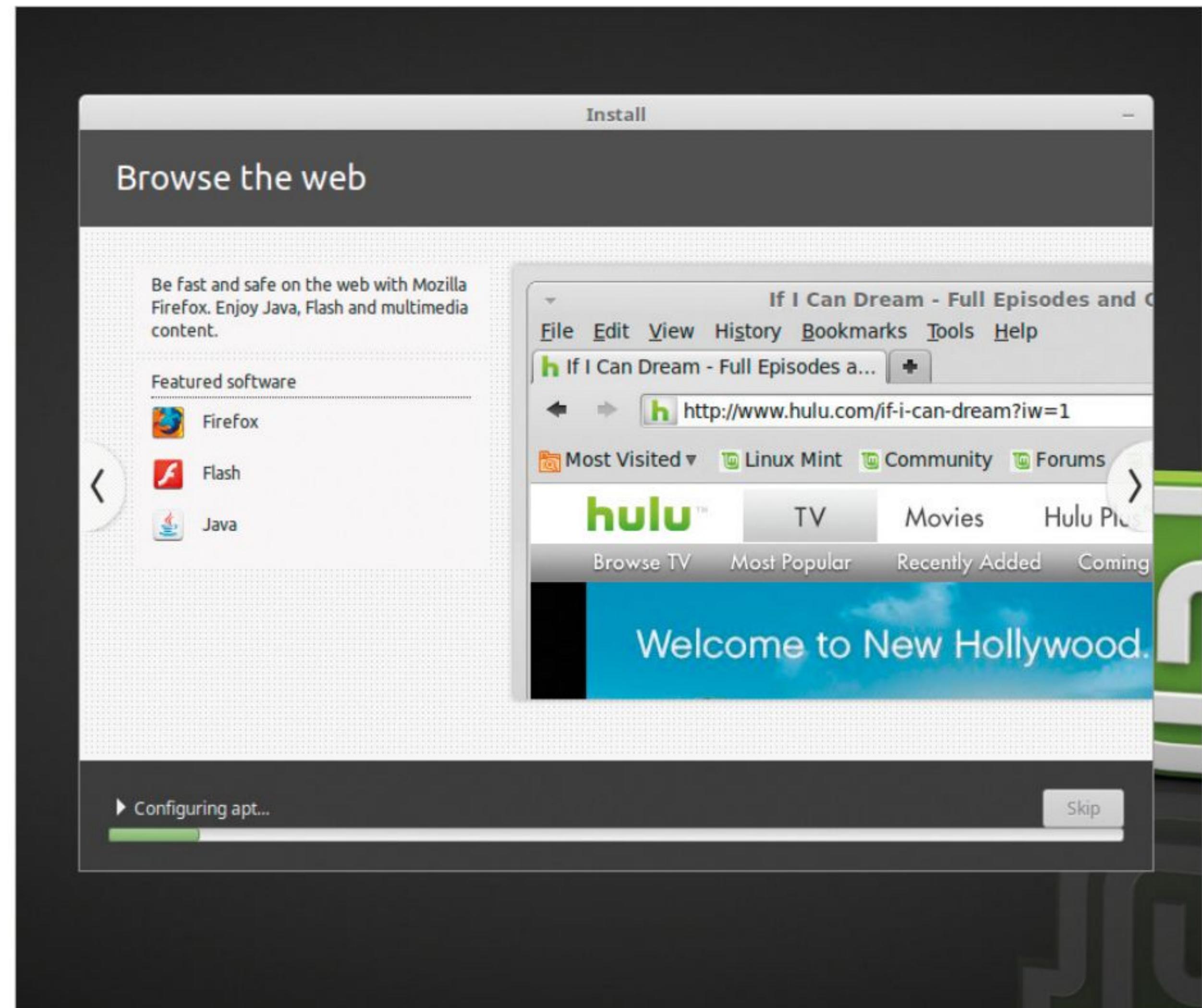
In this stage you need to set up your Mint username and password. Enter your Name to begin with, then Computer Name, which is the name it's identified on the network as. Next choose a Username, followed by a good Password. You can tick the Login Automatically option but leave the Encrypt Home Folder option for now.

**STEP 6**

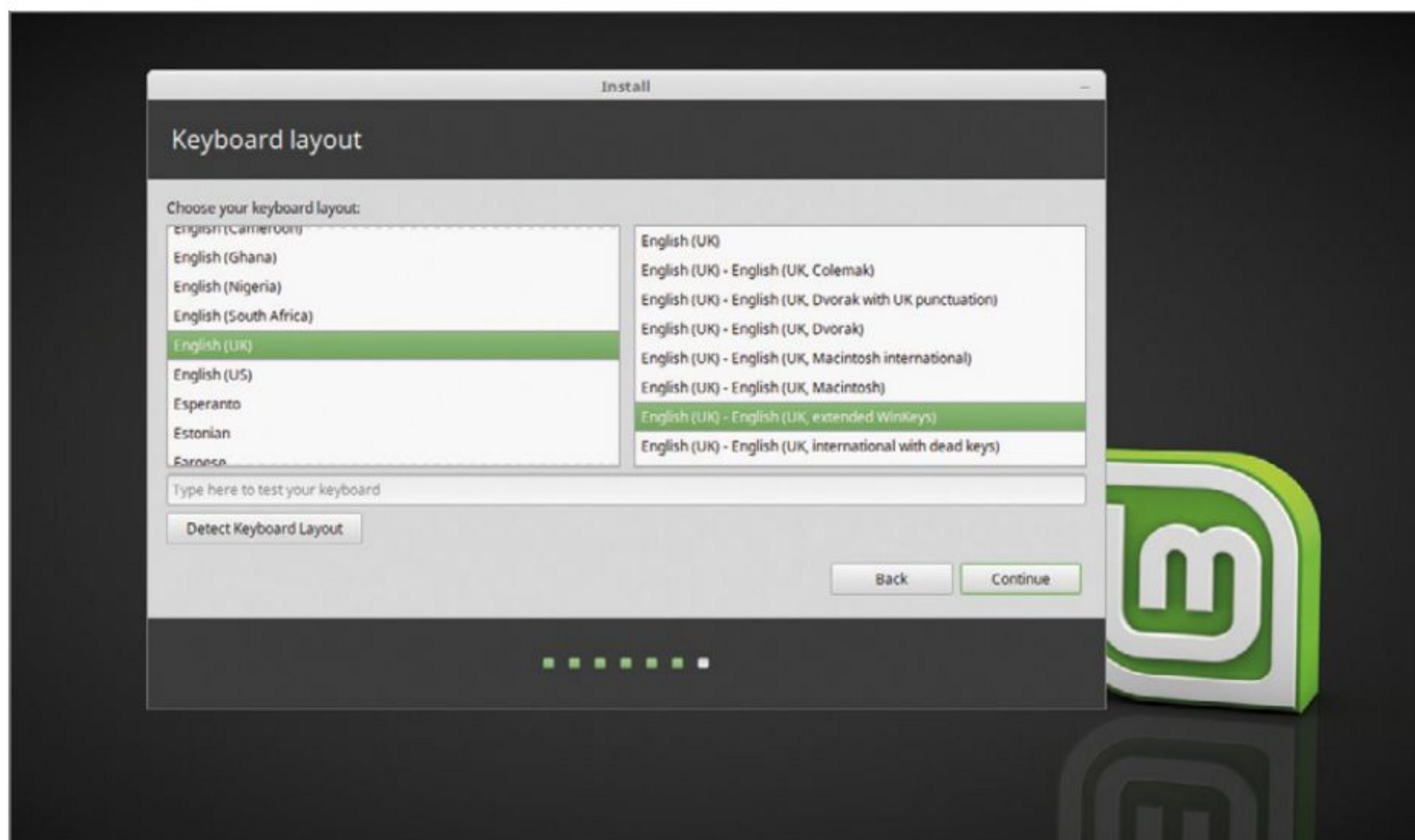
This next stage determines your location. You can enter the nearest major city, or even try your local town and see if it's in the list of available choices. When you're ready, click Continue.

**STEP 9**

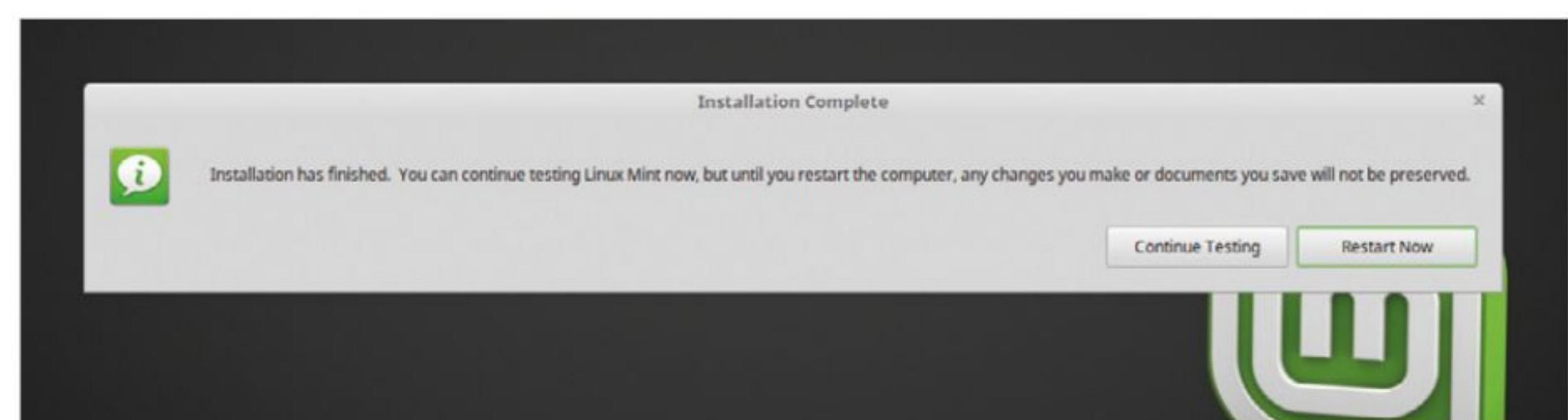
The installation process will now begin and you can see what's being installed along the bottom of the install window. You can also use the arrows on the screen to browse through some of the features available in Linux Mint.

**STEP 7**

Next up, use the options to pick which keyboard you're using. In most cases it will be the option with the Extended WinKeys. Use the Type Here... box to test your keyboard setup is correct. Click Continue when you're ready to move on.

**STEP 10**

When the installation is complete you are presented with a completion box, asking you if you want to continue with the Live Environment or restart the PC with Linux Mint as the main operating system. Click on the Restart Now button, followed by Enter and remove the Installation Media when asked. Congratulations, Linux Mint is now installed.





Installing Linux Mint in Virtualbox

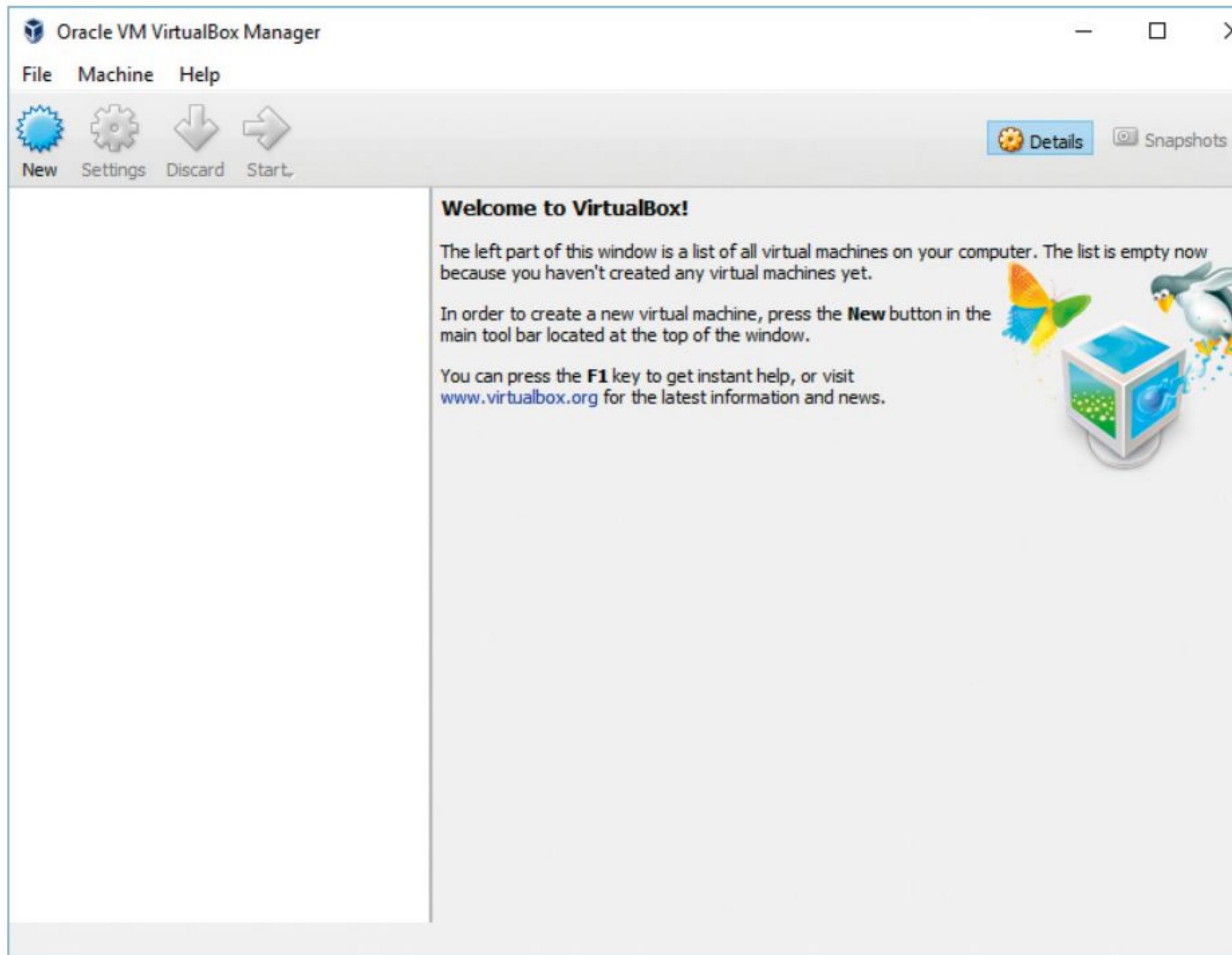
With Oracle's VirtualBox now up and running, and continuing from the previous section, the next task is to create the Virtual Machine (VM) environment into which you install Linux Mint.

CREATING THE VM

There are plenty of options to choose from when creating a VM. For now though, you can set up a VM adequate to run Mint Cinnamon and perform well.

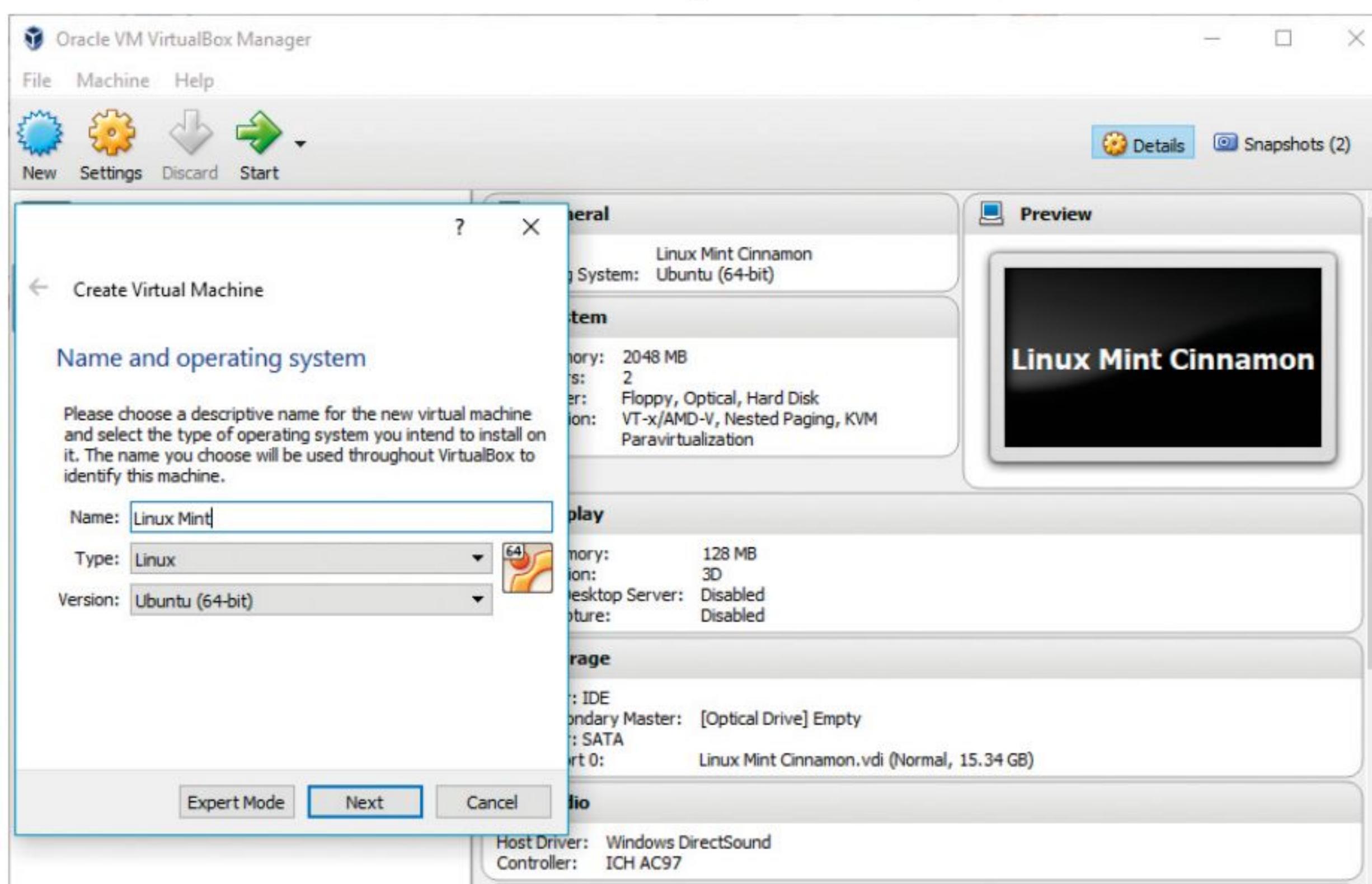
STEP 1

With VirtualBox open, click on the New icon in the top right of the app. This will open the new VM Wizard.



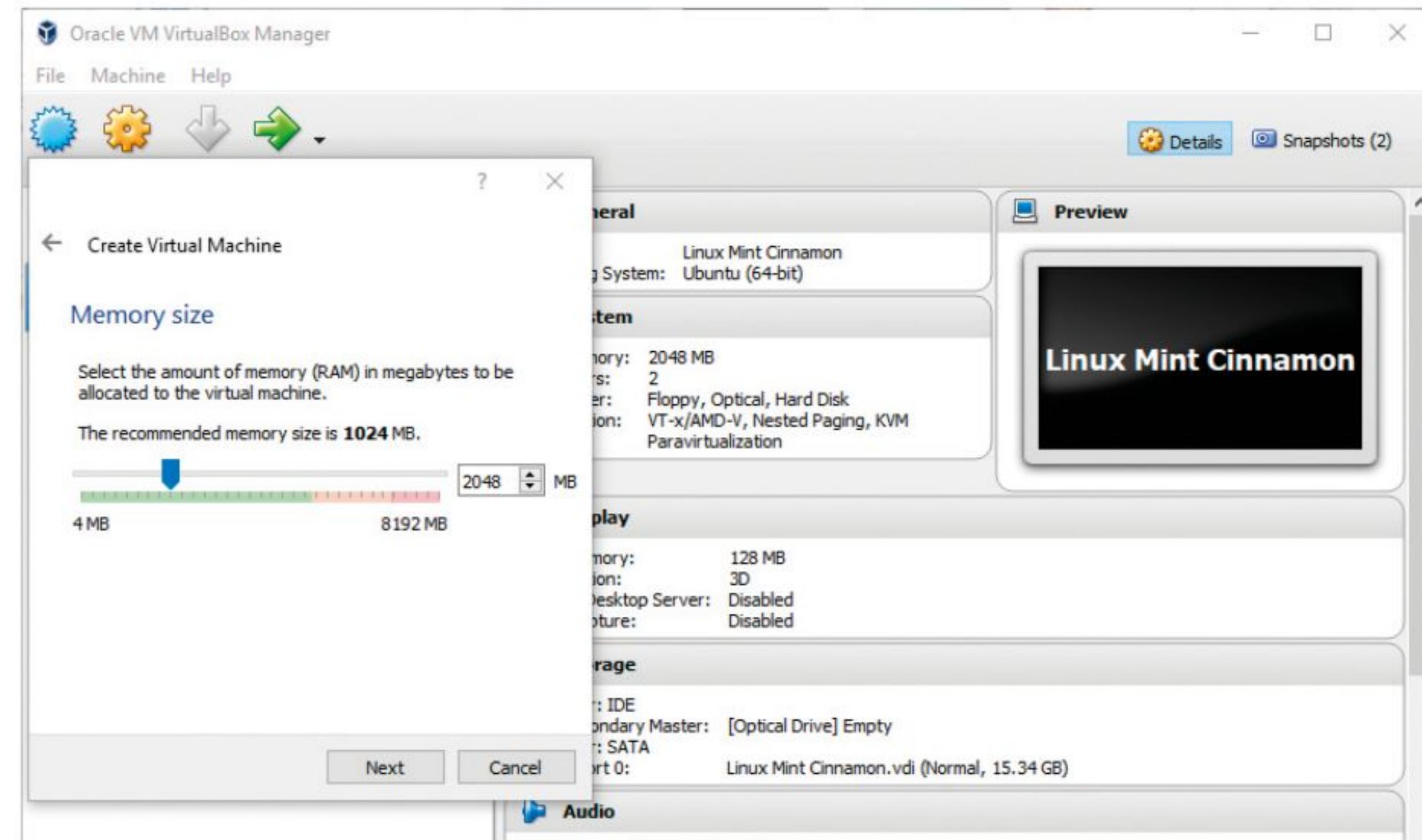
STEP 2

In the box next to Name, type Linux Mint and VirtualBox should automatically choose Linux as the Type and Ubuntu (64-bit) as the Version. If not then use the drop-down boxes to select the correct settings; remember Mint mainstream is based on Ubuntu. Click Next when you're ready to proceed.



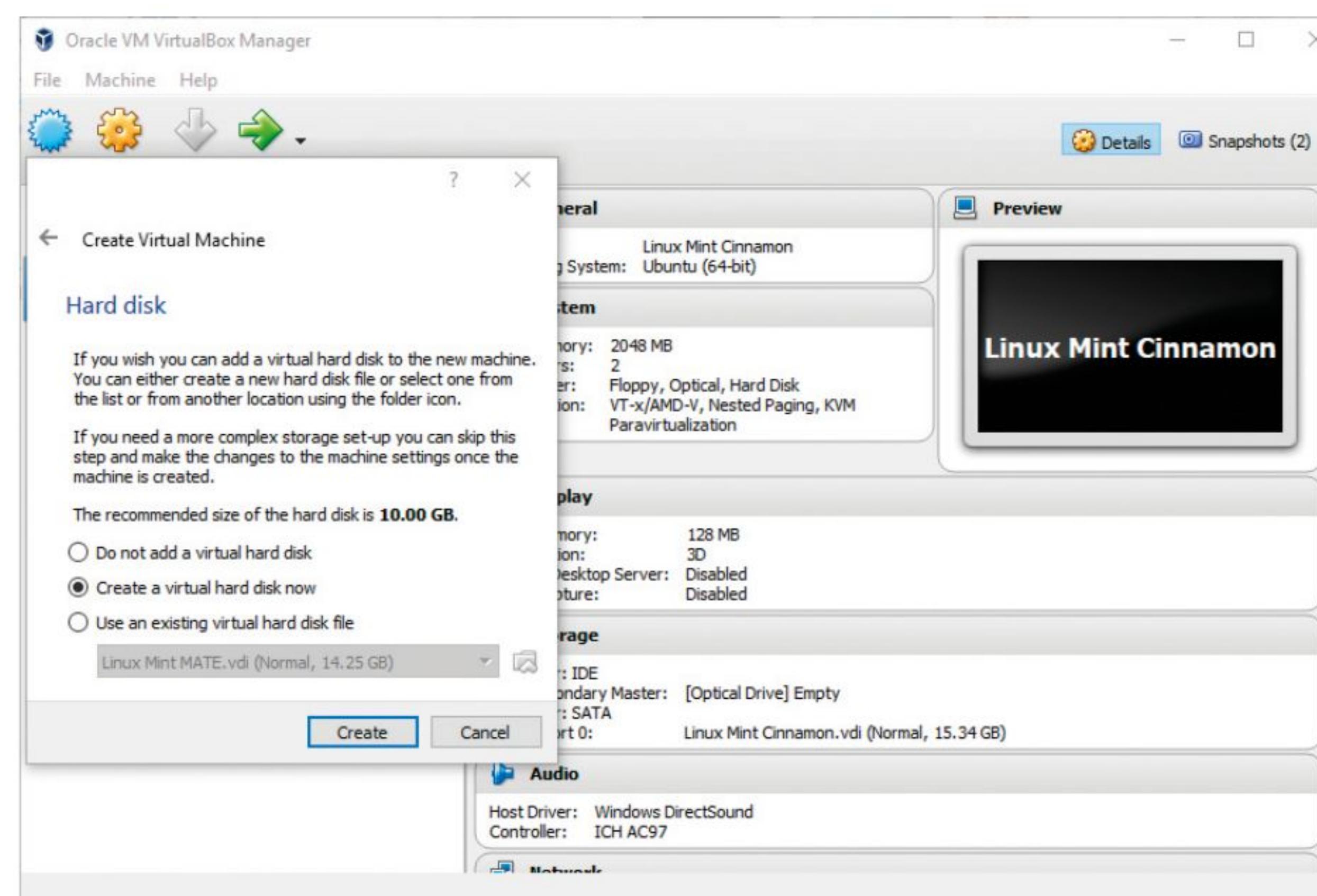
STEP 3

The next section will define the amount of system memory (RAM) the VM has allocated. Remember this amount will be taken from the available memory installed in your computer, so don't give the VM too much. For example, we have 8GB of memory installed and we're giving 2GB to the VM. When you're ready, click Next to continue.



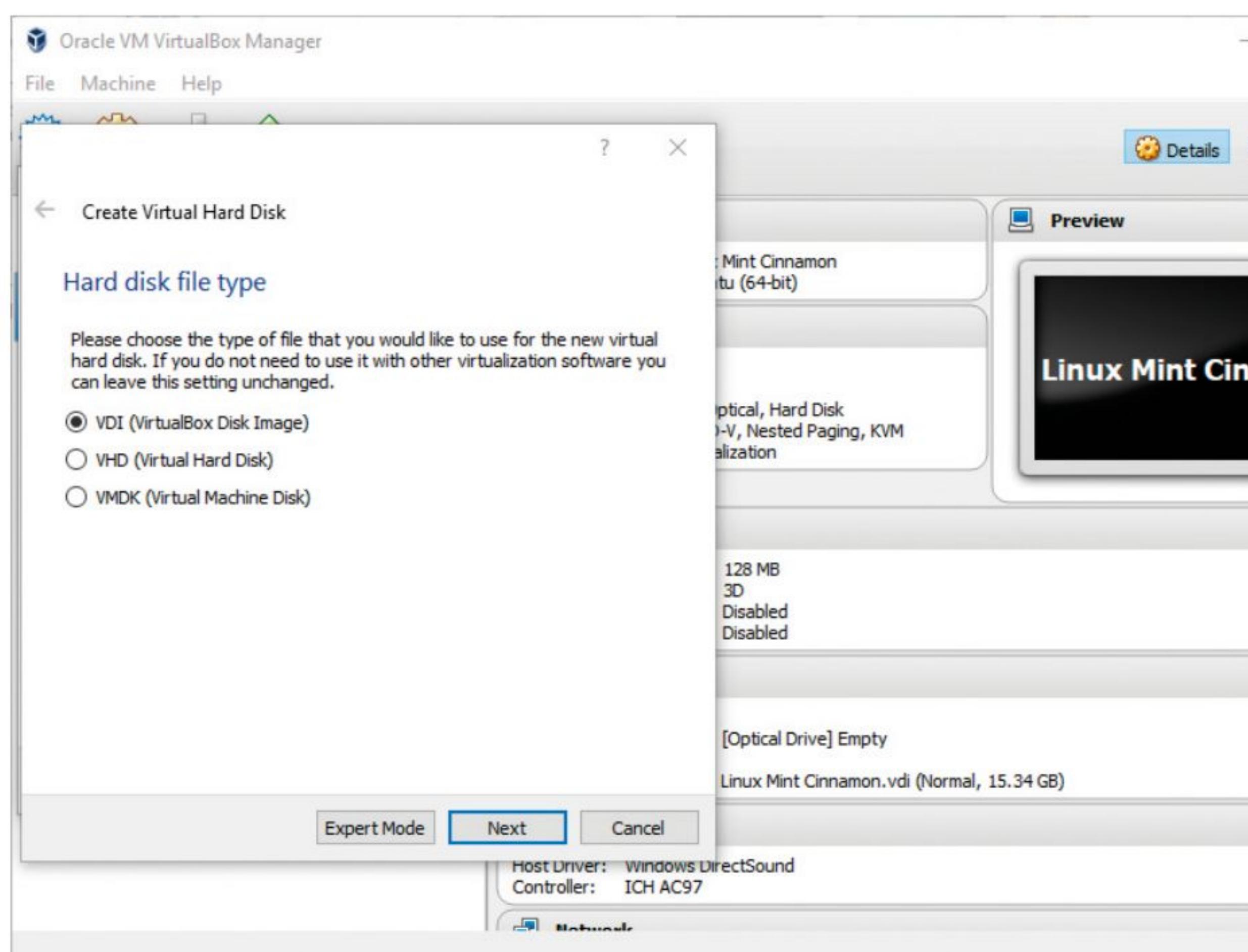
STEP 4

This section is where you start to create the virtual hard disk that the VM will use to install Mint on to. The default option, 'Create a virtual hard disk now', is the one we're using. Click Create to move on.

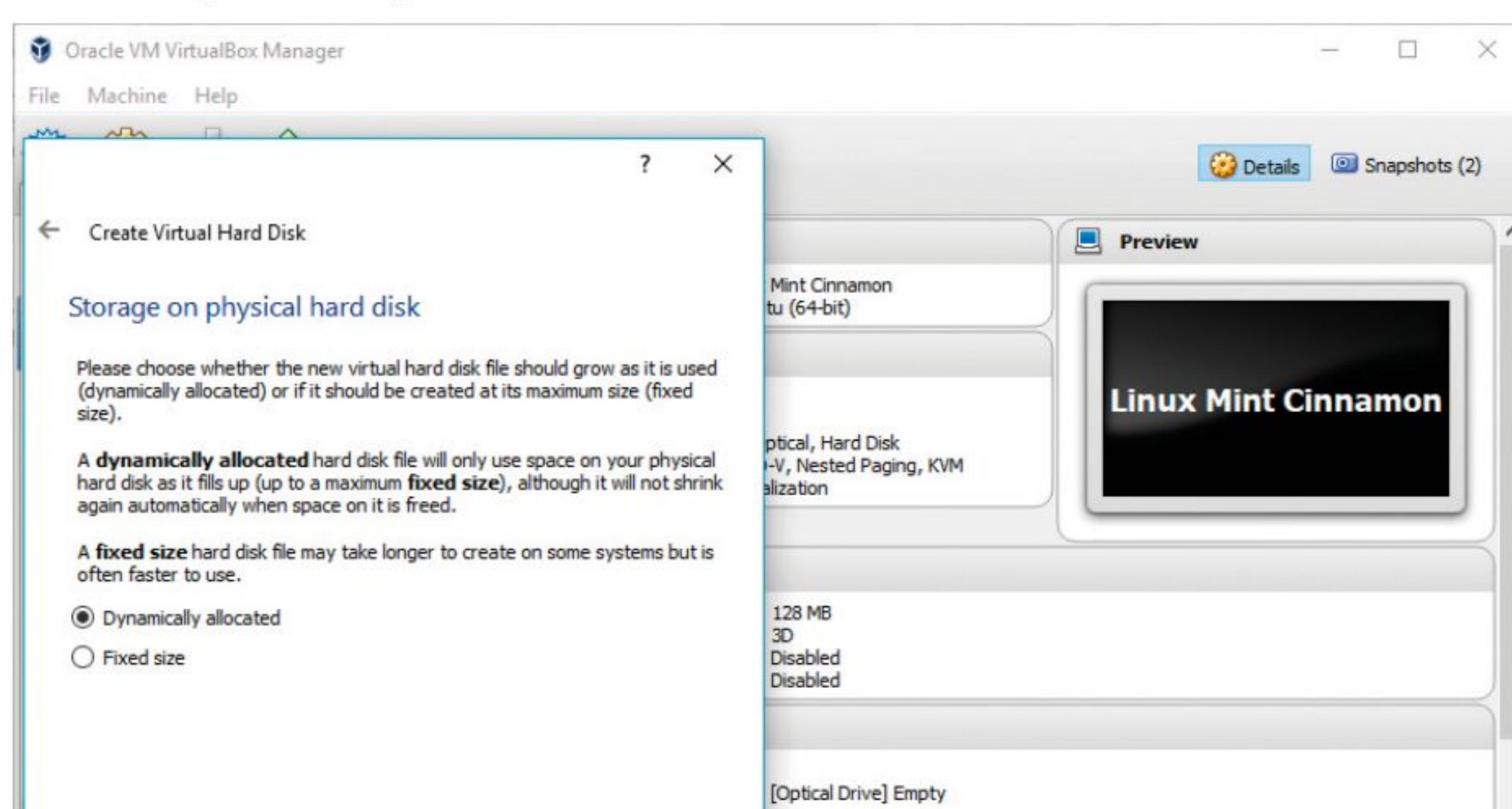


**STEP 5**

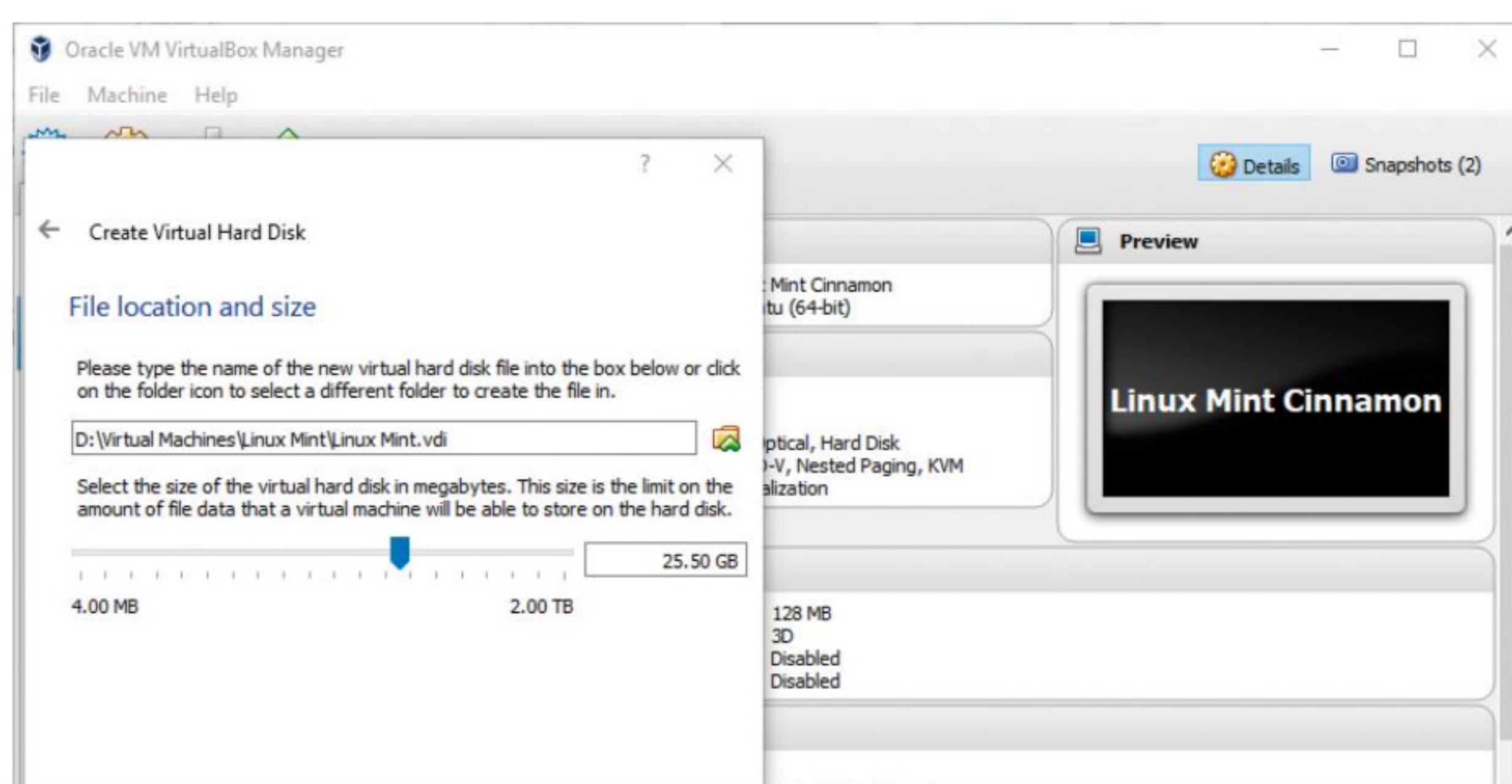
The pop-up window that appears after clicking Create is asking you what type of virtual hard disk you want to create. Use the default VDI (VirtualBox Disk Image) in this case, as the others are often used to move VMs from one VM application to the next. Make sure VDI is selected and click Next.

**STEP 6**

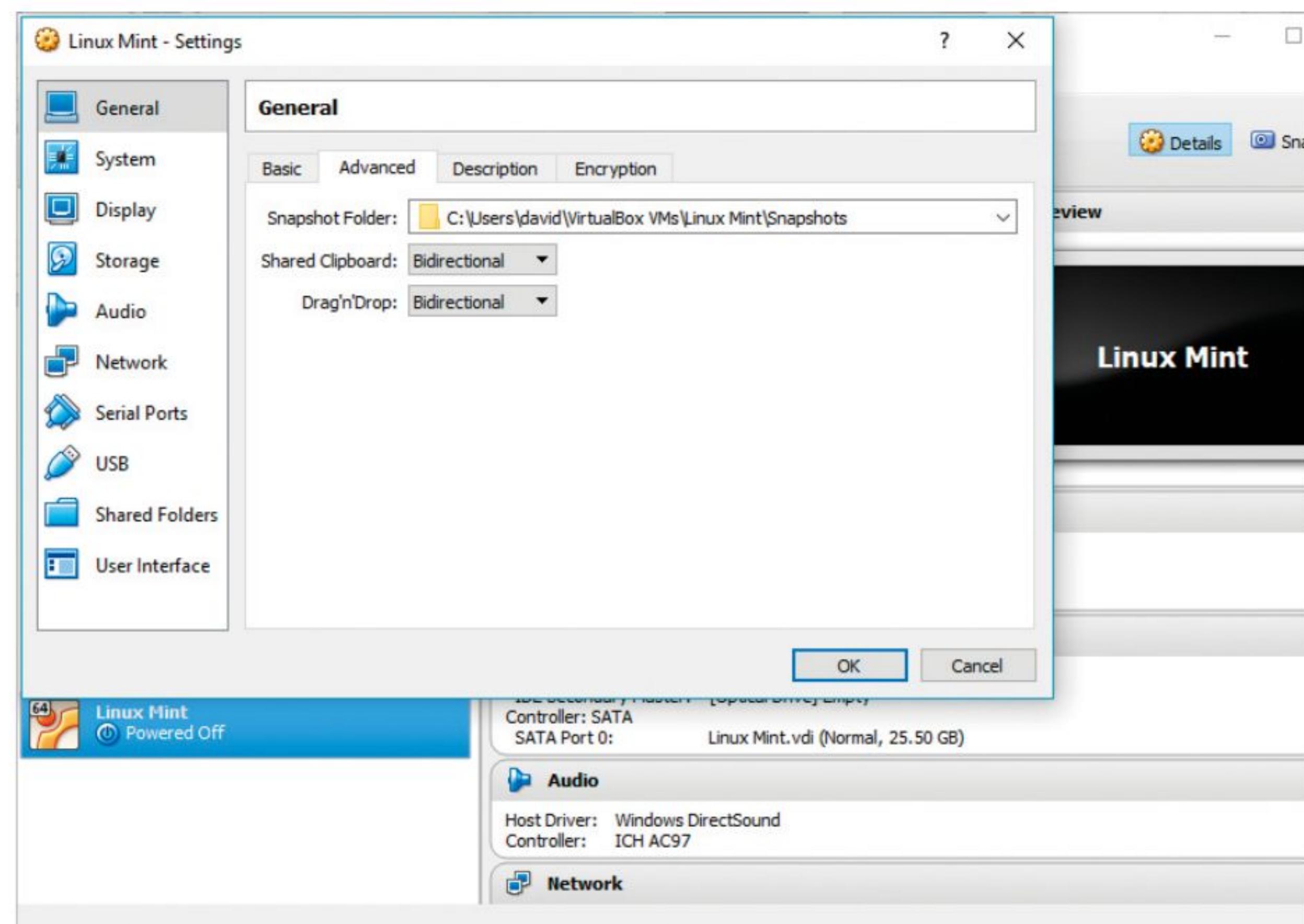
The question of whether to opt for Dynamically or Fixed sized virtual hard disks may come across as being somewhat confusing to the newcomer. Basically, a Dynamically Allocated virtual hard disk is a more flexible storage management option. It won't take up much space within your physical hard disk to begin with either. Ensure Dynamically Allocated is selected and click Next.

**STEP 7**

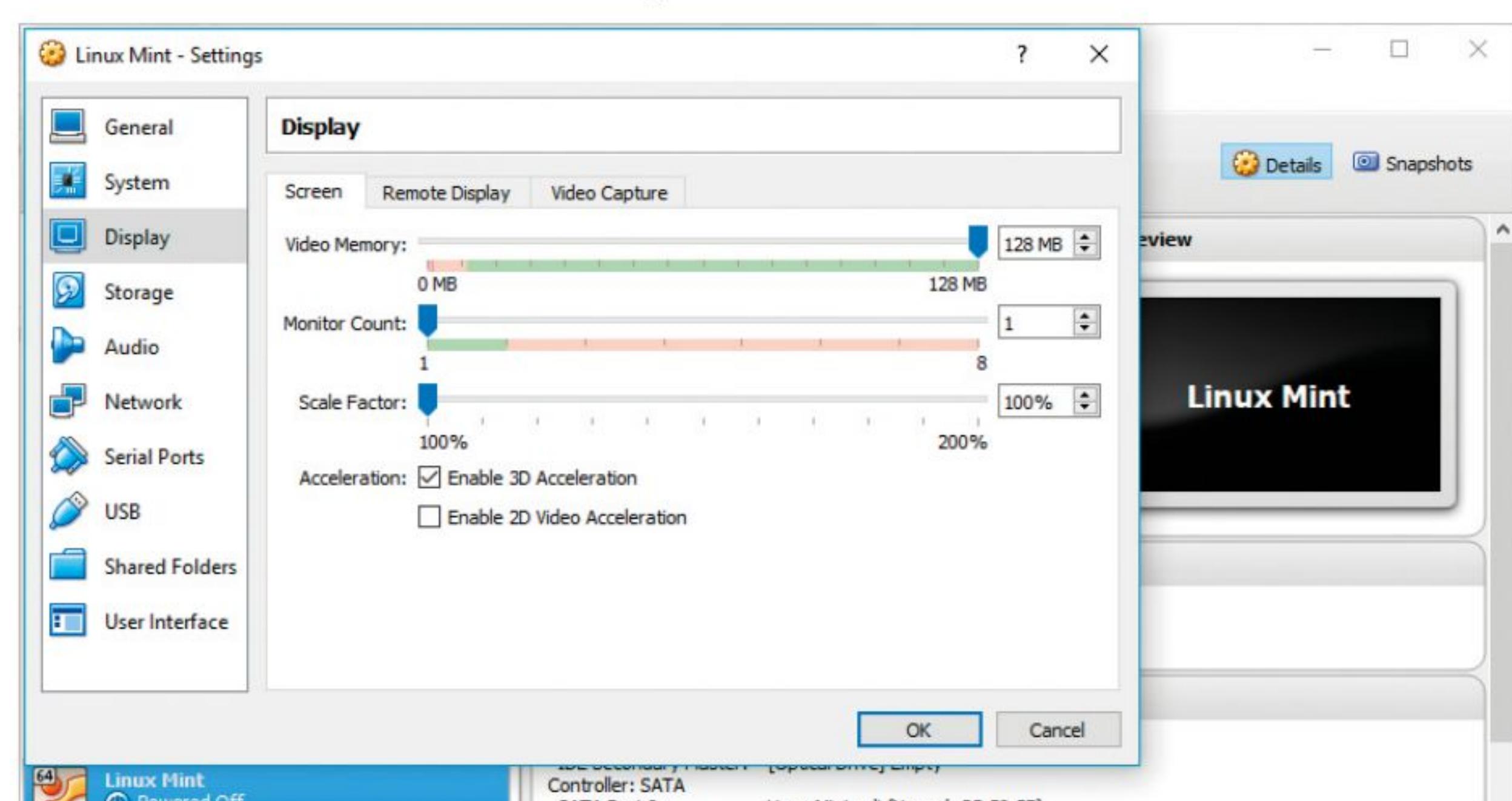
The virtual hard disk will be a single folder, up to the size you state in this section. Ensure the location of the virtual hard disk, on your computer, has enough free space available. For example, we've used a bigger storage option on our D:\ drive, named it Linux Mint and allocated 25.50GB of space to the virtual hard disk.

**STEP 8**

After clicking Create the initial set up of the VM is complete; you should now be looking at the newly created VM within the VirtualBox application. Before you begin though, click the Settings button and within the General section click the Advanced tab. Using the pull-down menus, choose 'Bidirectional' for both Shared Clipboard and Drag'n'Drop.

**STEP 9**

Follow that by clicking on the System section, then the Processor tab. Depending on your CPU allocate as many cores as you can without detriment to your host system; we've opted for two CPUs. Now click on the Display section, slide the Video Memory up to the maximum and tick 'Enable 3D Acceleration'. Click OK to commit the new settings.

**STEP 10**

Click on the Start button and use the explorer button in the 'Select Start-up Disk' window to locate the downloaded ISO of Mint; the explorer button is a folder with a green arrow. Click Start to boot the VM with the Linux Mint Live Environment. You can now install Linux Mint as detailed in the previous Installing Linux Mint on a PC section.

