



Linux: Why and How

Dan Richter - 07 Sep 2020

When I tell people that I run Linux on my computers, the first question I usually get is, "Why". A lot of times, I will give them a 'stock' response, such as "I don't like the bloat of Windows", or "It's so much faster". While these are true responses, there is a lot more to the story.

Let me give you a bit of my background. I purchased my first computer in 1991. It was a super-fast 386sx-25, with 1MB RAM and a 20MB HD! This computer came with GeoWorks, which I loved. I would spend hours trying out different DOS commands, just to learn what they did, and how they worked. I figured I had a re-install disk, so if I messed up the computer, I could re-install everything and start over.

It wasn't long after this, that I started building computers for resale. One of the monsters that I built was for my use. A full tower case, 386dx40, 4MB RAM, and 2 220MB HDs. This was also about the time that Windows 3.1 was being talked about in all the magazines and computer stores. I figured GeoWorks wasn't being developed anymore, so I would give it a shot. It was handy for a lot of things, but I still did most of my work outside of the GUI. You see, Windows 3.1 had this awesome feature. It allowed you to exit Windows.

Later on, once I started running a BBS, I changed over to running OS/2. At the time, OS/2 was able to do everything that I needed, without the huge overhead that Windows had. During this time, I started looking at Linux as well. I had received a CD of Red Hat, and started learning how it all worked.

Then, life got in the way of computer hobbies, and while I still had computers, they were used for web browsing and email, with a few games thrown in. Windows made it simple to do everything that I needed.

In the late 2000s and 2010s, I was going to school online. During this time, I had earned my Bachelor's and Master's degrees. While working on these, I was really getting tired of the constant upgrades, restarts, and crashing that I was experiencing with Windows. Due to my schooling, I was unable to change operating systems. There were too many Windows specific applications needed.

After finishing my schooling, I started researching different distributions of Linux. I found that Ubuntu was a great one for beginners to start with, so I made to move. I had installed Ubuntu on my main computer. There was a bit of a transition, as it had been quite awhile since I worked with Red Hat, and it was a lot different.

While I do still have one computer that is running Windows 7, everything else is running variants of Linux. At this time, my main system is running Manjaro, my secondary system is running PCLinuxOS, the BBS computer is running Debian, my laptop is running Manjaro, the Raspberry Pi 3 is running Raspbian, and my phones and tablets are running Android.

Now, why would someone chose Linux?

A lot of people think that Linux is becoming popular due to people hating Microsoft. No, I don't hate Microsoft. I think they were instrumental in getting more people involved in computers in the 1990-2000s. They made it possible for people with no computer

experience to be able to accomplish tasks. MS gave them easy access to email, the newly popular Internet, office productivity, etc.

The problem is, Microsoft is a company that wants/needs to make money. One of the ways they accomplish this, is making people obtain a new Windows 'key' if the computer is upgraded in any way. If the hard drive is removed and placed into a different computer, Windows won't work until a new 'key' is obtained.

Microsoft also forces updates on Windows users. It seems like every week there is a new update, and any time something gets updated the system needs to reboot. While a lot of these updates can be delayed a couple times, they will force update.

While I was going through my schooling, my main computer was running Windows 7. I then started getting notifications that the 'Free' update to Windows 8 was going to be applied. I kept declining it, as I knew upgrades didn't always work as planned. Finally, while typing a term paper, my system decided to upgrade to Windows 8. Hours later, I was able to try to get everything working again and start my term paper over, as the auto-save in Word didn't get saved in the upgrade.

What seemed like a couple months later, I was again working on school work, and Microsoft decided my system needed to be upgraded to Windows 10. This time, I wasn't given the option to delay the upgrade, and it just upgraded. This upgrade took hours to complete. When finished, it felt as though I was still running on that 386sx25, as it was so slow it was almost not even a usable system. Running under Windows 7 or 8 was no problem.

It was around this time the decision was made to get rid of Windows. As soon as I finished my schooling, the change was in the works, as stated above.

If you wanted to customize Windows, there were a few things that could be changed. Overall, if major changes are needed, you would have to edit the registry in order to make them. The registry isn't that difficult to edit, but one wrong move, and you have a dead system.

I don't want this to sound like I dislike Microsoft. As I said, they have done a lot to get people into computers. What I don't like, is their business practices. Forcing people to upgrade something that is working fine, Charging people for something they have already purchased, and being overall unstable and vulnerable are what people don't like about them.

When you want to run Linux, you can go to a website such as distrowatch.com, and take a look at all of the different distributions out there. (Don't pay any attention to the rankings, as it's a popularity contest.) Click on one of them, and it takes you to a page describing the distribution, and giving you details about it. Some of the things I look for on this page, are what it is based on, versions of packages included (such as Python, Linux kernel, etc), and what the release model is. Another thing that can be useful, is how often upgrades are made available.

Yes, there is a lot of information on this website, and most of it won't really mean anything to you, yet. You just want to make sure the distro is currently being maintained, and packages are up-to-date as possible.

Once you find a distribution that you would like to take a look at, go to their website and download the ISO file. It will be a larger file, probably between 1 and 5 GB in size. Once downloaded, this file can be mounted on a flash drive, or burnt to a CD/DVD, and used as a bootable device. Most distributions offer an ISO that is considered Live Media. This means you can run it off the bootable device without installing it to the hard drive.

When I started using Ubuntu, and learning how Linux worked, everything was great. But as updates came out for Ubuntu, as they do every 6 months, I noticed the amount of bloat was increasing. They started adding everything they could think of to their distributions. While these other programs could be removed, it was the decision to add them in that was getting annoying. It was almost like Ubuntu (Canonical) was trying to become the Microsoft of the Linux world.

Ubuntu is great for someone just starting out with Linux. It has enough programs pre-installed, that you will probably have what you need when you need it. Also, the community behind Ubuntu is great. There are many forums and wikis that can help you out when you run into a snag. It is also based on Debian, which has been around for many years, and has a great following as well. Between the two, there is someone who has had the same questions that you have.

After running Ubuntu for a few years, and getting tired of the bloat that came with each upgrade, I decided to change over to Debian, as it is the base for Ubuntu, I figured it would be an easy change. The change was simple, and the setup was very similar to Ubuntu. The one issue that I did have with Debian, is it is very stable, and will run forever. This meant that things were not updated until they were heavily tested. Versions of programs available in Debian were old, sometimes 5+ years older than what was available elsewhere. If you're running a server system, such as the BBS computer here, it is great. If you want to be able to take advantage of some new software, you will run into some issues.

This is why I chose to use Manjaro as my 'daily driver'. It is based on Arch, which is very cutting edge, and has a rolling release. This means, as soon as something is developed or updated, Arch will do minimal testing, and place it in the repo. Manjaro developers will test these a bit further, usually about a week or so, before placing them into their repo. With this model, you get the latest software available, without having it pushed down your throat like Microsoft likes to do.

Now that I've rambled on way too much about myself, let's take a look at what you would need to do to install Linux on one of your systems.

First, you need to understand that the Linux kernel, is like the engine of a car. The same engine can power just about any type of car. Running Linux, is just using what is called a 'distribution' that uses the Linux engine. Unlike Windows, which has one version which is current at any given time, there are MANY different distributions of Linux available to fit anyone's tastes.

Take a look at the distrowatch.com website again. This website has a great list of distributions, and gives you some information about them. The one feature that I like about this site, is it has the links to the official websites for each of the distributions. So, if I want to check out the latest information about PCLinuxOS, I can just click on it on the right side of the screen, and it will give me their website link. It also tells you current information about the latest release, and what versions of packages it contains. At one time, I was having an issue with the AMD Ryzen chip in my computer, and needed to have a distribution that had a more recent kernel. I was able to look at each distribution and see what kernel they were using in their current release.

I also wanted to mention, that when looking at downloading the ISO files, which you will be doing shortly, make sure you look for 'Live' versions. These are versions that you can run off of your USB drive, without having to install onto the hard drive. This is a great way to get a feel for a distribution before committing yourself to it. You have full functionality, while completely running from your USB. You do have the option of installing from this, but there is no pressure, as the USB will let you learn your way around.

Once you pick a distribution that you would like to take a look at, go to their website and download the ISO file. Each distro has a different setup on their website, so it may take a bit of searching to find the current ISO download section. I'll use Debian as an example here. From their web page, you will notice a link called 'CD/USB ISO images'. Click on that link. On the following page, click on 'Download CD/DVD images using HTTP'. From there, scroll down a bit, and under the "CD" section, click on 'amd64'. That is probably the most popular choice. From that page, you can scroll down, and see you have a few options available. I would either choose the debian-10.5.0-amd64-netinst.iso, which is the net install version, or the debian-10.5.0-amd64-xfce-CD-1.iso, which is the XFCE desktop version. The net install will do a basic install on your computer, and connect to the repositories and download any of the packages it needs. This is helpful if you have limited space on your USB drive you will be using.

Debian is a distribution that fully supports the 'free' concept of Linux. Basically, free in this sense, means the software is open source, and available for anyone to look at or contribute to. With them doing this, they do NOT include ANY proprietary drivers in their ISO's. This has caused many problems with people trying to install Debian, as there are a lot of WiFi cards and network cards that require a proprietary driver to work properly.

There is good news for people wanting to try Debian though. They do have 'non-free' versions available, but you really have to look for them. I'll make it easy for you, being the nice guy I am. Copy and paste the following link into your browser:
<https://cdimage.debian.org/images/unofficial/non-free/images-including-firmware/current-live/amd64/iso-hybrid/>

This is a link to the 'unofficial' non-free options available from Debian. If you scroll down, you will see a lot more options available to you. Just what you need at this point, more choices, right? Well, to make this a bit easier, they are all the same version of Debian, so when looking at the list, ignore the 'debian-live-10.5.0-amd64' part of the file names. Also, just look at the .ISO files, the rest of them are not important at this point. What you are looking at now, is the desktop environments you want to use. You have choices of: Cinnamon, Gnome, KDE, LXDE, LXQT, Mate, Standard, and XFCE. So, now you can open

another window in your browser and look up those desktop environments and decide which one you'd like to try out. Keep in mind you can always change it once it's installed. I'll write an article on how to do that later. Go ahead, take a look at different desktop environments. I'll wait here.

OK, good, you're back... So, you've picked a desktop environment, and downloaded the ISO file. Now what? Well, if you're running Linux already, it's actually easy to install this onto a USB drive. Insert your USB into your computer. Once the computer reads the USB drive, right click on the ISO file you downloaded. You should be given an option of 'Open with Disk Image Writer', chose that one, and write the file to your USB drive. **ENSURE YOU HAVE THE RIGHT DRIVE CHOSEN, OR YOU MIGHT INSTALL IT ONTO YOUR HARD DRIVE!** You don't want to do that yet.

If you are running Windows, as you probably are, or you wouldn't be reading this, you can also right click on the ISO file, and you should have the option of 'Burn disc image'. Chose this, and make sure you install it to your USB drive. No problem right?

Now, reboot your computer, and it 'should' boot to the new USB drive. If not, you may have to go into your BIOS or UEFI settings, and change your boot order. You should now be presented with a look at your Live version of Linux, running off of your USB drive. Go ahead, take a look around. At this point, nothing has been changed on your hard drive.

If you do want to install this onto your hard drive, you should have an option from the main screen to install to the hard drive. Just click on that, and follow the prompts. It's actually pretty straightforward to install.

Sorry this got a bit longer than I had anticipated. I am planning on writing up some how-to articles for Linux. Some of the Linux users will probably already know most of what I'll be writing, but for people just starting out with Linux, there will be some good tutorials.