Install Guide

TheAlternative

Version: October 10, 2022

Contents

1 Introduction

A few years ago, installing Linux was quite the journey: One had to know how to handle what laptop brands, look out for NVIDIA graphic cards, avoid MacBooks and Microsoft Surface in general, do some hacky stuff in order for IR camera or fingerprint sensor to work, etc. A proof of this is our old 22 page long install guide, which still didn't cover close to what could be known about installing linux. Nowadays, however, this process is much more simple, and basically consists of three steps:

1. Partition your hard drive

2. Start the Install Stick

3. Have a beer while the installer does the rest for you

Sometimes, however, there's still stuff which can go wrong (even though it's rare), and that's what we're here for: The helpers.

1.1 Install Events

If you are at a TheAlternative Install Event, you'll get a USB drive at the desk. Just follow this install guide and raise your hand if you're not sure what to do or run into any problems, there will be a helper to help you out.
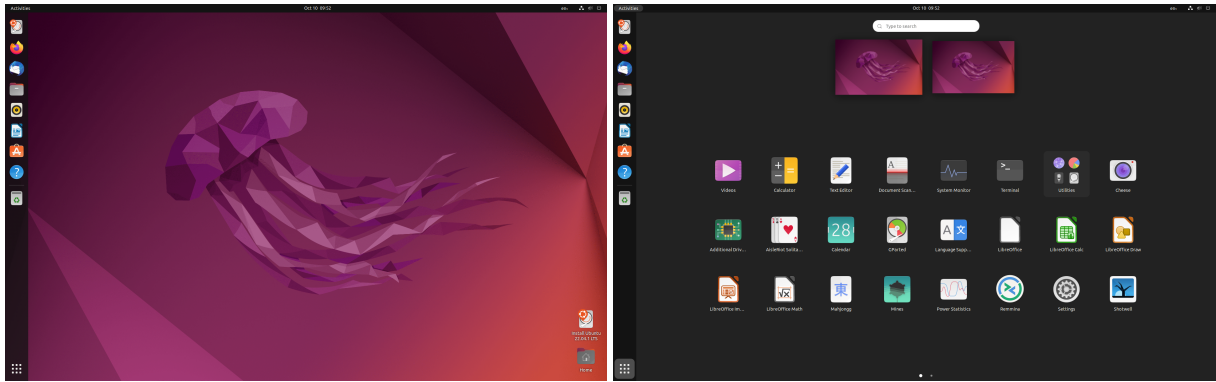
1.2 Distributions

Distributions are different executions of the GNU/Linux operating system. Everything under the hood still works the same (in general), but they tweak the software here and there to meet a specific need. The distributions available at our install events are all suited for Linux beginners, and have an additional focus described below.

If you're unsure about what to install, just start both distributions (without installing them) and play around to see what you like more. You can just exchange your USB stick where you got yours in the first place.

1.2.1 Ubuntu

Ubuntu is the most well-known GNU/Linux distribution and is a very common choice among beginners. It's designed to be super user-friendly with a nice (but unique) user interface. At our instal events, we will only install Ubuntu 22.04, as this is both the newest version and an LTS (long term support).

Note that if your laptop is a very recent model (less than, say, 8 Months), it is usually a better idea to install Fedora, as the drivers and kernel are newer and thus support your hardware better.
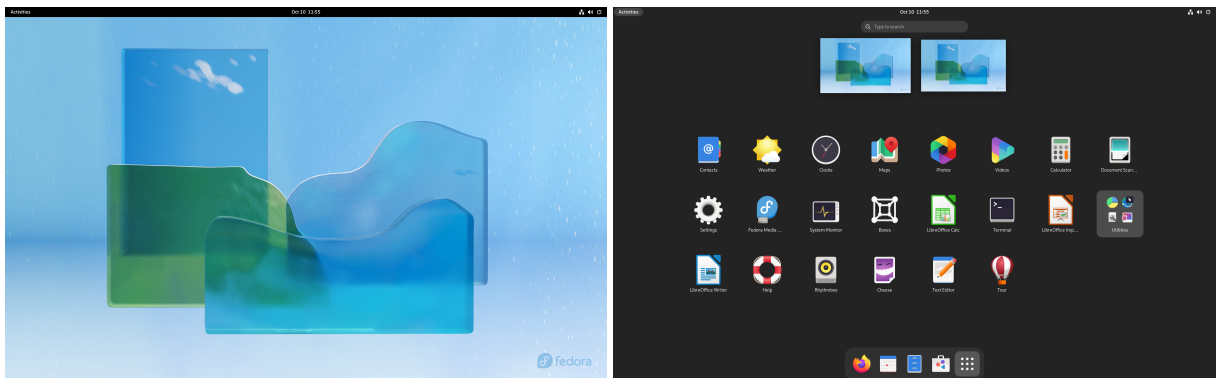
(a) Desktop View   (b) Applications View

Figure 1: Screenshots of the Ubuntu 22.04 LTS Desktop

1.2.2 Fedora

Fedora is a distribution with focus on both new software versions and free and open source software. It is, however, easy to add repositories to also use proprietary software (via flatpak and rpmfusion). As the software is very new, this distribution is especially suited for new hardware.

If you use a M1 MacBook, we strongly recommend to use fedora, is it has the best chances to work on this hardware. We tested it, and the only thing needing fixing was audio[1].

(a) Fedora 36 Desktop   (b) Fedora 36 Applications View

Figure 2: Screenshots of the Fedora Desktop

1.3 Important things to know about Linux

1. Linux is **neither Windows nor Mac**. Don't expect everything to work the way it used to work on your old operating system. Try to figure out the differences and to adapt to your new system.

2. **Installing Software** is not done by downloading stuff with your browser. You'll find (almost) everything in the software store preinstalled on your distribution.

---

[1]Even running Linux on M1 was near impossible about 3 years ago

3. There are a few programs which **do not work** on Linux. The most important of which are Microsoft Word, Excel, PowerPoint and OneNote, as well as all Adobe products. You'll find suitable replacements at the end of this document.

4. If you run into problems, just look them up online. Really. There's a huge amount of documentation and questions/answers by other users. If you don't find any helpful information, just ask us on `https://thealternative.ch`.

2 Partitioning

In order to make some space for our new Linux installation, we have to partition[2] our hard disks. This is possible in Linux directly, but it is safer to let the Operating System which manages this hard drive space do it.

The size of your new partition(s) can vary, depending on what you plan to do on your new Linux system:

- The Operating System itself will use about 8 GB

- If you want to use your Linux system now and then, but don't plan on having lots of software and data on your Linux system, about 20 GB is enough.

- If you plan on making your Linux system your main OS, or use software with high storage demands (e.g. MatLab, Video Editors, etc.), we recommend at least 80 GB

2.1 Windows

First, we'll have to make sure that bitlocker is not activated on your windows system, as this can result in data loss. To check this, open your file manager and go to «my computer». There, right click your Windows drive (usually `C:`) and look for an option like «disable bitlocker». If bitlocker isn't mentioned at all, your machine does not have bitlocker on it.

Start your Windows. After being logged in, press ⊞ + R and type `diskmgmt.msc` to open Disk Management. In here, you can see all the partitions which, together, form your windows system. Now, you'll have to decide which partition(s) to shrink. Typically, this is either `C:` or `D:`, as those are the partitions containing the most (unused) space. Also, it is probably a good idea to shrink an SSD rather than a HDD, as this makes your Linux system significantly faster.

Now, right click the partition to shrink in the diagram on the bottom of the window (next to e.g. «Disk 0») and select «shrink volume». Enter the size you want your Linux installation to be (in MB, multiply your GB value by 1000).

After partitioning, you are ready to continue with section 3: Booting.

---

[2]A partition is a «part» of the hard drive, and partitioning means to manage those partitions.
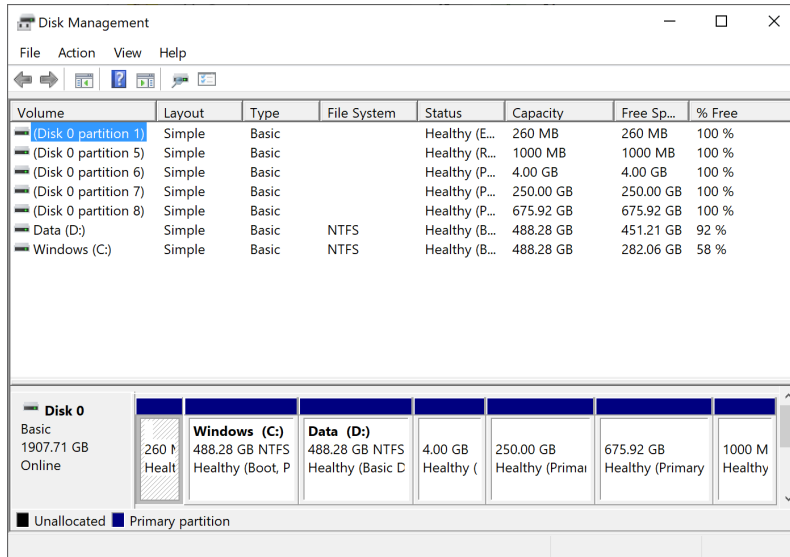
Figure 3: Disk Management Software of Windows 10.

2.2 MacOS

After starting MacOS, start the application «Disk Utility» («Festplattendienstprogramm» in german). In the top bar, click the «Partition» icon.

In the newly opened window, click the plus button under the pie chart and select «Add Partition». Now, drag the point on the pie chart around to get your preferred partition size. Click «apply» when you are done.
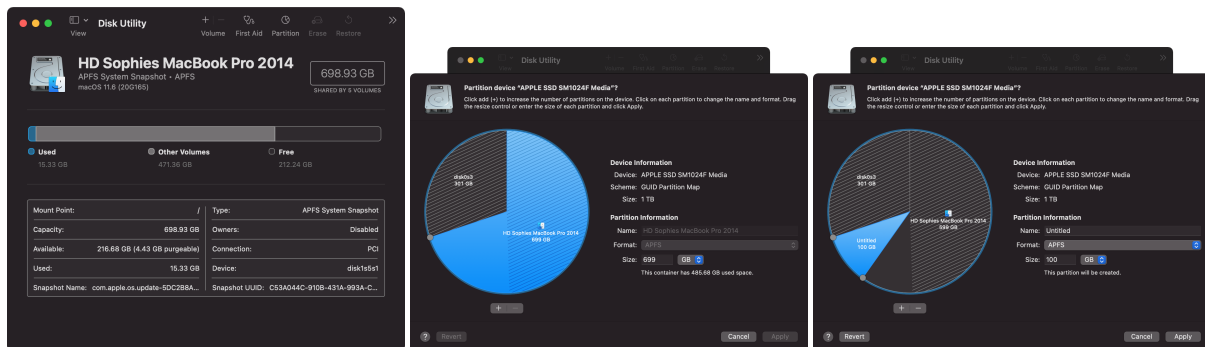
(a) Disk Utility   (b) Pie Chart   (c) Partitioning

Figure 4: Screenshots of the «Disk Utility» application on MacOS Big Sur

After partitioning, you are ready to continue with section 3: Booting.

3 Booting

Turn off your PC. Now, plug in the USB stick you received when entering the room and start the Linux OS installed on it. This «live system» has a few properties:

- It contains the installer software for this distribution

- Whatever you install, change or delete, it won't have any concequences on your current operating system or the one you are about to install

5

- As this system is booted from USB, it is much slower than an actually installed version.

3.1 Windows

While turning your Computer on, hold down the «Boot Menu» key (see tab. 1). A menu with hard drives should appear, and you can select the USB drive there.

Table 1: List of common hardware manufacturers with typical keys to open the BIOS or the boot menu. Typically, you'll only need the boot menu. The BIOS, however, can be very useful if stuff isn't working the way it is supposed to.[3]

Hardware	BIOS	Boot Menu
ASUS	`F2`	`Esc` or `F8`
Acer	`F2` or `Del.`	`F12`
Dell	`F2` or `F12`	`F12`
HP	`F10`	`Esc`
Lenovo ThinkPad	`↵` when prompted	`↵` when prompted
Microsoft Surface	Press and hold volume up button	Press and hold volume up button

Note This may sound a bit stupid, but many TheAlternative members just spam the F-key row, as the Boot Menu key for some reason changes with every new model a manufacturer releases. This usually works surprisingly well!

3.2 MacOS

While turning your Mac on, hold down the `⌥` button. A menu for selecting hard drives should pop up. From there, select the USB drive.
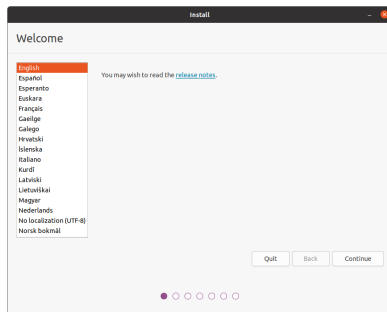
4 Installation

4.1 Ubuntu

After starting Ubuntu, select «Try Ubuntu (live)», such that we can setup a wifi connection. For this, click on the top right, select the wifi symbol and click on «Select Network». There, select Eduroam and enter the following information (and leave everything else at its default):
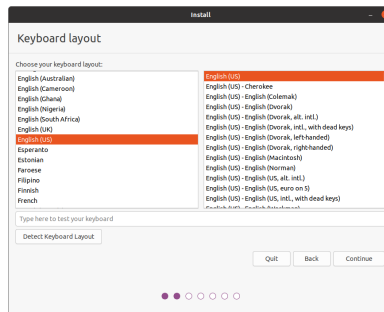
- Security: Protected EAP (PEAP)

- Check the «no certificate required» checkbox

- Username: nethz@student-net.ethz

---

[3]more info: `https://support.fixmestick.com/hc/en-us/articles/360001753213-List-of-Boot-Menu-Hot-Keys`

Now, open the installer (top left) and click through the menus displayed below. For the keyboard layout section, you can select the swiss keyboard called «German (Switzerland)». Also, don't forget to check «Install third party software» in the «Updates and other Software» menu to make sure that everything will work out of the box[4]. Also, select e.g. «Install Ubuntu alongside Windows» (or similar) and let the installer do the dangerous stuff.
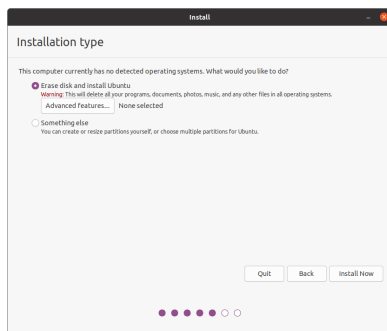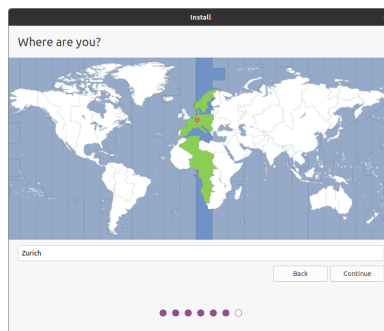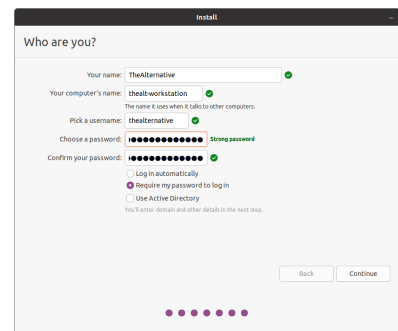

(a) Language

(b) Keyboard Layout
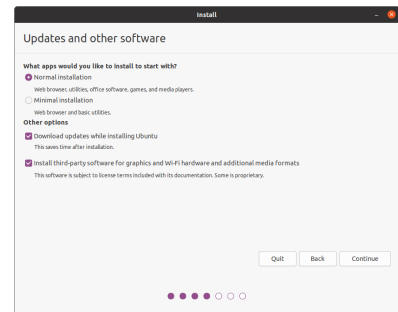
(c) Software

(a) Installation Type

(b) Time Zone

(c) User Account

Now, while waiting for the installer to do the rest, go grab a snack or a drink, as this process can take about 10 min to 20 min.

4.2 Fedora

After starting Fedora, select «Try Ubuntu (live)», such that we can setup a wifi connection. For this, click on the top right, select the wifi symbol and click on «Select Network». There, select Eduroam and enter the following information (and leave everything else at its default):

- Security: Protected EAP (PEAP)

- Check the «no certificate required» checkbox

- Username: nethz@student-net.ethz

Now, start the Installer (Press ⊞ and select the installer at the bottom) and select your language. After that, you'll have a menu on which to select your keyboard layout (probably

---

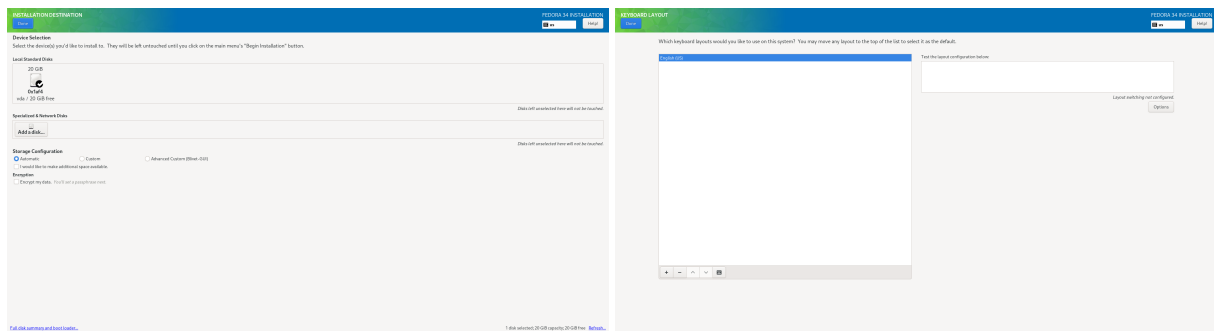[4]This is primarily drivers for your hardware

«German (Switzerland)») and Partitioning. Just select the hard disk to install fedora on and let the installer do the dangerous work.

If you are on Mac, select the partition you created earlier manually, as MacOS always creates a partition with a filesystem on it.
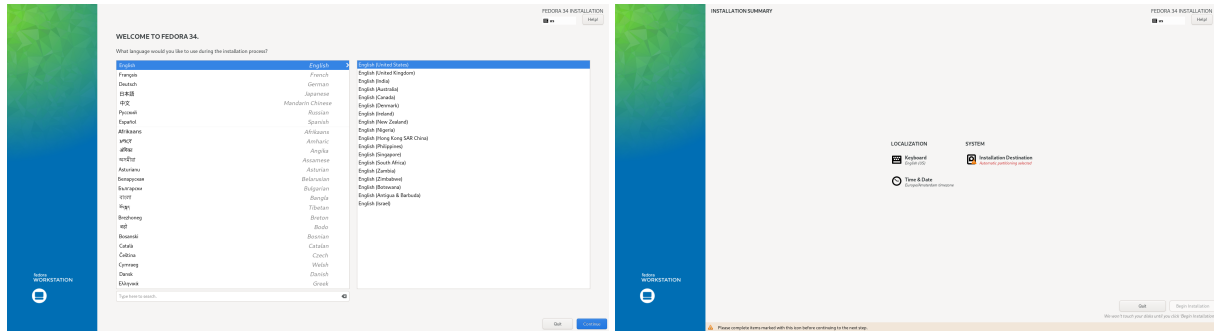
(a) Language

(b) Main Menu

(a) Partitioning

(b) Keyboard Layout

Now, while waiting for the installer to do the rest, go grab a snack or a drink, as this process can take about 10 min to 20 min.

5 Post-Install

5.1 Fedora

As fedora has a focus on free and open source software (FOSS), it is necessary to enable a few repositories in order to get access to all software available on Linux.

After starting the «Software» application, it will ask you if you want to enable «third party repositories». Enable them.

The first repository we are going to activate is «RPMfusion». For this, open firefox and visit `https://rpmfusion.org/Configuration` and click the «RPM Fusion free for Fedora 36» and «RPM Fusion nonfree for Fedora 36». The software center should pop up and you'll be able to click «Install». With RPMfusion, you'll now have access to all multimedia codecs and more software.

The second repository we enable is «flathub». It contains a lot of closed-source software, such as Discord, Steam, Microsoft Teams, etc. To enable it, visit `https://flatpak.org/setup/Fedora/` and click on the blue button. Again, the software store will open up and present you an install button.

5.2 Software

After booting into the newly installed Linux OS, it is generally a good idea to update all software and check if everything still works. For that, open the application «Software» on fedora or «Applications» on Ubuntu. On fedora, it is also useful to enable a few software repositories, as explained in the section before.

Also, you'll find a compiled list of software suggestions for Linux here: `https://thealternative.ch/guides/install.php#software`

5.3 The End

Now that everything is set up and running, you are... done. Congrats, you just finished the most difficult step in becoming a Linux Guru, and we wish you great fun on your journey on becoming one!

If you want to learn more about Linux and how to get efficient with it, visit our next LinuxDays courses (information on `https://thealternative.ch`). Also, don't forget to leave some feedback on `https://feedback.thealternative.ch`, such that we can improve our courses in the future.