

# Sanitation Guide: Fast Restoration Method (Labtix)

Tags:

[labtix](#)  
[installation](#)  
[installer](#)  
[install](#)  
[image](#)  
[cloning](#)  
[autodeploy](#)  
[labtix 1](#)  
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Labdoo recommends installing by cloning images with the free installation tool Labtix, developed by Labdoo helpers. As you could see in the video tutorial, there are numerous setting and selection options to adapt Labtix to your requirements.

Since Ubuntu version 20.04 LTS (April 2020), there are only 64 bit versions as hybrid images that can boot in both legacy and UEFI mode. To install current Ubuntu images, however, Labtix version 2 had to be adapted. Labtix is regularly developed further. Please check our FTP server regularly for updates <http://ftp.labdoo.org/download/install-disk/Labtix/>.

32 bit versions of the images cannot be installed with Labtix 2 anymore. If you still want to work with the old 32 bit images you have to use Labtix 1. However, neither the 32 bit images nor the installation tool Labtix 1 will be maintained further. For the 32 bit Ubuntu versions the support of the developers has also expired. More about Labtix 1 on <https://platform.labdoo.org/de/content/labtix-1-archive>.

version	until Ubuntu 20.04 LTS (64 Bit)	Ubuntu 22.04 LTS and higher (64 Bit)
Labtix 2	✓	✓

**Note for advanced users:** Labtix has a persistence mode, i.e. you can make your own changes to Labtix and save them. You act as root user in fact. The password (only needed if you "get stuck" in the terminal when booting) is "labdoo". But beware - as root you can destroy Labtix or bloat it by too many changes. Labtix fits on a CD when delivered. The tool ISO-snapshot also allows you to create a new ISO-file that takes over possible changes to the system.

Labtix comes with various tools and installation tools <https://platform.labdoo.org/en/content/preinstalled-tools-labtix>.

Most of them can be found directly on the desktop. You have to decide for yourself which tool suits you best: You can find the installation tools directly in the context menu of zzzFM:

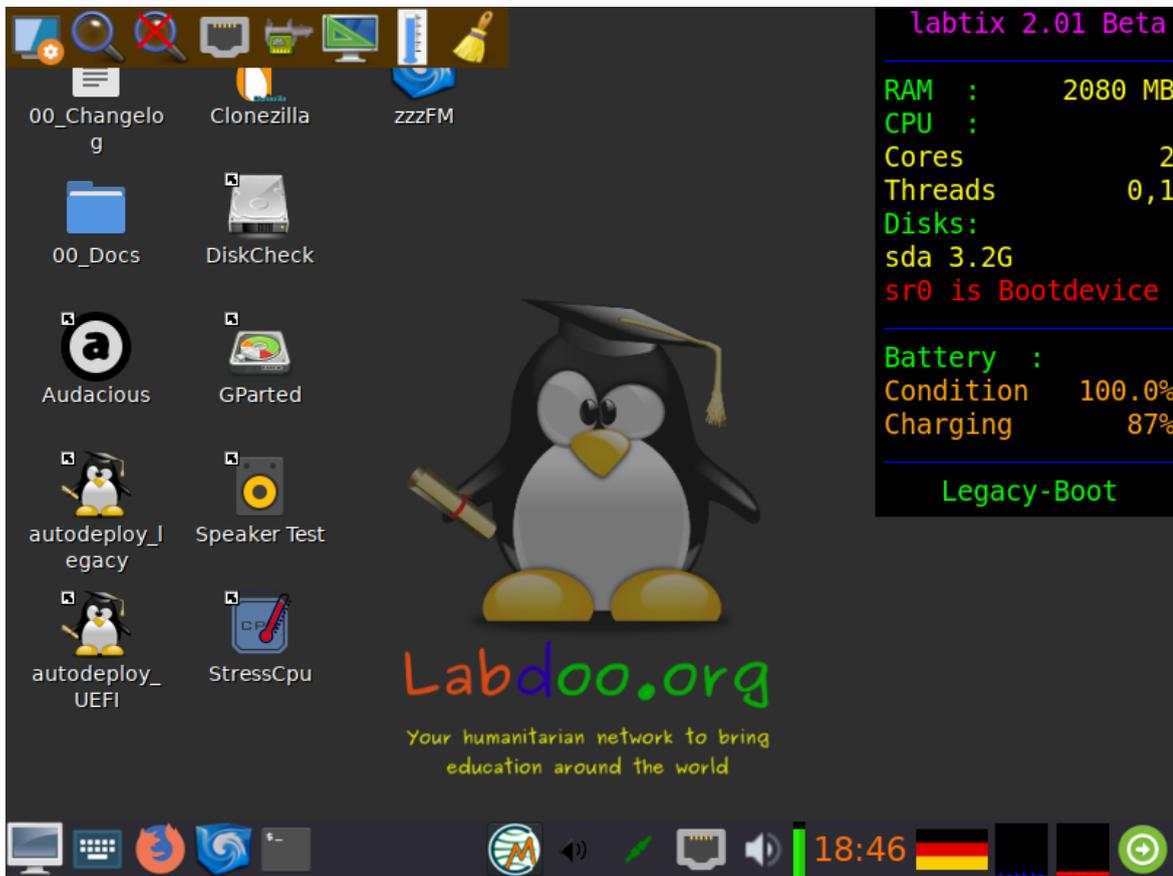
- Labdoo installer for cloning the hybrid images that boot in legacy and UEFI mode,
- Labdo legacy installer for a pure legacy installation if a device has problems booting a hybrid installation.

On the Labtix desktop you will find a Docs folder containing manuals in PDF format. However, we recommend that you first watch the individual steps and tools as a YouTube video tutorial.

Sometimes you have to select certain settings in the boot menu because of the hardware, e.g. with netbooks or Apple laptops often failsafe mode etc. Otherwise it can happen that Labtix does not boot, hangs at terminal level (the desktop does not appear) or the monitor remains dark.

Then try out the options in **Failsafe Mode** or **Safe Video Mode**. This is also explained in the above YouTube tutorial.

You can find all video tutorials on our YouTube channel <https://www.youtube.com/user/LabdooDACH/playlists> and on our FTP server <http://ftp.labdoo.org/download/Public/videos/for-technicians/>.



## Labtix release information

Tags:

[labtix](#)  
[release](#)  
[version](#)  
[information](#)  
[update](#)

All Labtix versions can be downloaded from the FTP server

current version: <http://ftp.labdoo.org/download/install-disk/>

older version (archive): [http://ftp.labdoo.org/download/archive/Labtix\\_former\\_releases/](http://ftp.labdoo.org/download/archive/Labtix_former_releases/)

## Labtix 2 (from 2022)

Since its launch in 2017, Labtix has become the most popular installer and remover tool within the Labdoo project. Labtix Release 1 is based on a 32-bit Antix 17 (2017) kernel. Labtix 2 is based on a 64-bit Antix 21 (2021) kernel.

Don't put Labtix 1 too far away as this "old" version works well with "old" hardware. And the new Labtix version 2 fits the more modern your donated laptop is, which requires current drivers that are only available in 2. And cloning images of 22.04 LTS and higher Labtix 2 is mandatory.

**Ubuntu 22.04 LTS introduced a new boot partition format (grub2 core.img). Labtix 1 and also older Clonezilla versions do not know this format and therefore cannot clone current images on Ubuntu 22.04 and higher! Please try whether Labtix 2 starts with a setting such as failsafe or safe graphics if there is a problem. Then there would be Parted Magic as another installation tool on the web. Or you would have to take Labtix 1 and an image based on 20.04 LTS.**

**However, we recommend using Labtix 2 by default as it comes with many improvements and features:**

- Labtix 2 is based on Antix 21 and is only available in a 64-bit version. There is no longer a 32-bit version (sorry). Users who require a 32-bit version must use the earlier Labtix 1.
- The images provided by Labdoo on our FTP server can be processed with either Labtix 1 or Labtix 2.
- You need for Labtix 2
  - At least one 2GB USB key (recommended) or DVD to install and run Labtix 2 on. It is not possible to install Labtix 2 on a CD or a 1GB stick (too small).
  - min. 1.5 - 2 GB RAM in the computer to be installed.
- Labdoo team has changed the user interface as little as possible, so you don't need long training. Some changes were mandatory, e.g. Labtix 2 comes with the file manager zzzFM (Fork of SpaceFM). And 4 years of

software development have passed...

- Standard installation from the context menu of zzzFM with the Labdoo installer which performs a legacy and UEFI bootable (hybrid) installation,
- Legacy installation with the Labdoo legacy installer from the zzzFM context menu for devices that cannot boot with Labdoo's hybrid installations.
- The images provided by Labdoo on our FTP server can be processed with Labtix 1 up to 20.04 LTS and with Labtix 2 from 22.04 LTS.
- **From summer 23, only Labtix 2 will allow you to install the new smaller BASIC images and the desired content at the same time. If installed otherwise, the content can be added in Labdoo using the script.**
- UEFI (only for technicians): The number of IT donations with UEFI will increase. Normally you turn off UEFI and Secure Boot in the BIOS and enable Legacy Boot. However, there may be reasons why this is not possible (e.g. BIOS locked by unknown password; no legacy support implemented, etc.). There was already a manual UEFI procedure in Labtix 1, in Labtix 2 it is now largely automated. Labtix shows which mode (Legacy or UEFI) was booted in and you select the appropriate installation script in the 2-click installer in the file manager. If you select the UEFI Sprit, this happens: On the installation medium, the folder /UEFI with the UEFI image must be in the top folder. This small UEFI image is automatically installed first, followed by the actual image you want. After the installation, the UUID of the 2nd partition is entered in the grub file so that the computer starts up correctly. Labdoo had to decide to either maintain 2 complete sets of images (UEFI and legacy), which would have taken a lot of time and storage space on our servers. Or to have only one set of images (legacy) with the above solution, which is still started correctly in connection with an upstream UEFI image. Sounds more complicated than it is, everything is set automatically during installation.
- **Improved user support and more tools available:**
  - Remaining battery capacity: Labtix shows the percentage (%) of the remaining battery capacity (life cycle), e.g. 20% means that only  $\frac{1}{5}$  of the original battery capacity is available and a new battery should be considered.
  - Better support for SSDs
  - New driver for current hardware (graphics card, interfaces, LAN/WiFi etc.).
  - Additional tools: Speaker test, Live USB Maker, Avahi network scan, StressCPU (°C/°F check), DiskCheck and much more.
- Images for Cloning:
  - A new set of images for cloning based on Ubuntu 22.04 LTS was made available and uploaded to our FTP server in mid-2022,
  - the 20.04 LTS based images are moved to the /archives directory on the FTP server,
  - The 18.04 LTS images need to be removed from the FTP server due to the capacity of the FTP server (those were the last images that could run on a 32-bit CPU; thus ending the 32-bit range for the Labdoo project) .
  - **From summer 2023, only small "BASIC" images will be used for the respective languages. The content is then installed in Labtix by the installers. The large images that contain content will continue to be created for a while, but will be phased out in the long term.**

Any image release can be processed with any Labtix release, fully compatible.

## Labtix 1 (2017 - 2021)

Based on Antix 17 (2017) you get a complete set of refurbishment and installation tools. Labtix 1 runs on 32-bit and 64-bit CPUs. The drivers included in Labtix 1 work best on older hardware (approx. 2008 - 2018, difficult to define exactly, it's best to try it).

- You need 1

for Labtix

- At least one 2GB USB stick or CD to install and run Labtix 1 on.
- 1GB RAM.

## Review of a donated laptop

Tags:

[control](#)  
[hardware](#)  
[overview](#)  
[stress](#)  
[heat](#)  
[cpu](#)  
[overheating](#)  
[gsmart](#)  
[readout](#)  
[hard drive](#)  
[secure boot](#)

[bios](#)

## Looking through a donated laptop

In order to start Labtix or Labdoo, settings in the UEFI may need to be changed. UEFI has replaced the old BIOS system, but can usually still be used in the same way as the old BIOS interfaces.

### UEFI Settings

On some laptops it is necessary to change UEFI settings:

### BIOS settings

On some laptops it is necessary to change BIOS settings:

BIOS Settings	Explanation
<b>Secure Boot</b>	Must always be turned off (disabled). Sometimes an administrator password must be set in the UEFI to deactivate Secure Boot. The admin password can then be removed again. Labtix does not start in secure boot mode but shows secure boot mode in the boot menu. In rare cases, however, an externally installed Labdoo installation boots on a computer with Secure Boot activated.
<b>Trusted Platform Module (TPM)</b>	TPM is a security chip that secures a computer. Ubuntu-Mate, which forms the basis for Labdoo images, is TPM certified. TPM should only be switched off if Labdoo does not boot.
<b>UEFI</b>	Up to <b>Ubuntu 20.04 LTS</b> it is recommended to disable UEFI and enable Legacy/CSM. However, there is also a concept for a UEFI-based installation developed by Labdoo helpers for 20.04 LTS. From <b>Ubuntu 22.04 LTS</b> a separate concept was developed for Ubuntu so that both UEFI and legacy/CSM installations are possible. Note: On some computers, Labtix starts and the image installation goes smoothly. But when you restart the laptop you get messages like "Invalid Partition table!" or similar and the laptop doesn't boot up. Then please set the UEFI mode or both (UEFI and Legacy) in the BIOS. In very stubborn cases, the tool uses SuperGrub2Disk ( <a href="https://www.supergrubdisk.org">https://www.supergrubdisk.org</a> ) to start Labdoo. The bootloader Grub can be reinstalled using the terminal command "sudo grub-install /dev/sda". An internet connection is required to download the required files!
<b>Turbo-Boost</b>	If Turbo Boost is activated, the processor may become significantly too hot when operated under load. In Labtix you can tell that under full load (e.g. with the Stress_Cpu tool) the clock frequency is in the 3Ghz range or higher. As a rule, the CPU temperature then rises well above 70 degrees, which can lead to long-term damage to the CPU. That's why it makes sense to switch off the turbo boost as a precaution. If the turbo boost cannot be deactivated or the temperature is still too high, the CpuPower-Gui tool in Labtix can temporarily help. In Labdoo, the maximum CPU frequency must be permanently limited using the script <b>temperature_workaround.sh</b> in the /scripts /temperature_workaround folder on the desktop!

## Check the hardware with Labtix

### System requirements (currently on <https://www.labdoo.org/deu/en/faq#FAQ04>)

- min. 120 GB disk capacity,
- min. 3 GB RAM, better 4 GB,
- if the laptop is max. 12 years old, it should fit (usually with Windows 7 / 8 / etc. seal).

Does the donated device meet our minimum requirements (3-4 GB RAM, max. 12 years old, min Windows 7 or higher upon delivery)? <https://www.labdoo.org/deu/en/faq#FAQ04>

**You should look through a donated computer before installing it.** It makes no sense to give a laptop that overheats in cool regions to hot countries. Or if the hard drive is already "crumbling", how will it survive transport and operation in hot regions? That's why Labtix comes with useful tools for not only the hard drive, but also speakers, temperature curves under load, and much more. more to check.

### Recommended hardware checks

Tool	Check
<b>GSmart / DiskCheck</b>	The "Disk_Check" icon on the desktop opens the GsmartControl tool. Checks the status of the target hard drive, usually "sda". The more "red" notices or icons and the darker red they are, the sooner the hard drive should be replaced.
<b>StressCpu / psensor</b>	The maximum temperature should be around 55 to 65°C under normal load, depending on the CPU/GPU type and the ambient temperature. To put load on the CPU, the "Stress CPU" script starts on the desktop (triggers "stress --cpu -8" in a terminal). Watch the temperature display of the CPU sensors in psensor. Stress CPU starts after 10 seconds and runs at full CPU load for 60 seconds in order not to damage the CPU and cooling system.

	<p>Under full load the temperatures often rise to over 70°C, less would be better. Many manufacturers specify an acceptable maximum temperature (CPU under full load) of 75° degrees. If temperatures rise to 80°C or higher under load, Stress CPU stops immediately to avoid damage to the processor and cooling system. Then the cooling system definitely needs to be revised (e.g. clean the fan or replace the cooler paste/cooling pads). An overheated cooling system can also be recognized by the fact that the copper-colored heat conductor has turned bluish.</p> <ul style="list-style-type: none"> <li>• Unscrew the cover from the fan area. Shine a lamp into it and check whether you can see the light clearly from outside through the fan. Then air can get through easily :) If not, the fan and ventilation system should be cleaned.</li> <li>• Sometimes it's enough to blow through the ventilation slots from the outside to the inside. The fan should be blocked with a nail or screwdriver so that it does not rotate. Additionally, dust flakes can be removed through the suction hole with a curved needle or soft brush.</li> <li>• If necessary. The thermal paste/film on the CPU cooler must be replaced.</li> </ul> <p>On some devices with Intel i3/5/7 processors, it is helpful to switch off the "Intel Turbo Boost" (it can also be called something else on some devices!) in the BIOS/UEFI in order to get the temperature below 75° degrees during full load.</p> <p>If the device is running in Turbo Boost mode and this cannot be switched off in the UEFI (recognizable by the fact that the clock frequency of the processor is in the 3 GHz range or higher), the clock frequency can be temporarily reduced using the Cpubower-Gui tool (in the top panel of Labtix). become. Values around 2.5 GHz have proven to be useful. <b>After installing Labdoo, the maximum CPU frequency must be permanently limited in Labdoo using the temperature-workaround script.</b></p>
<b>Speaker Test</b>	Alternately checks the left and right speakers.
<b>CD/DVD Test</b>	Play an audio CD using Audacious.

## Preparation for installation with Labtix

Tags:

[labtix](#)  
[installation](#)  
[preparation](#)

If you already have a bootable CD or USB stick with the Labtix installation environment and Laboo Images for Cloning, you can skip this chapter.

Using the **Labtix** tool as a live CD/DVD or USB stick (recommended), Labdoo systems prepared by our helpers and equipped with learning content can be easily and quickly transferred ("cloned") to new computers, using so-called **Images**. As of Labtix 2.09 there are 4 BASIC images in 4 languages (English, Spanish, German, French). Depending on the language in the target country of the IT donation, you can select the language and upload additional learning content in other languages using control files. Local teams maintain additional images, e.g. in Catalan.

You need 2 things:

**Labtix on a bootable medium:** this can be a DVD (from Labtix 2.xx, from 2022) or a CD (Labtix 1.xx, 2017-2021) or a USB stick (recommended, 2 GB or larger) with which you can boot a computer into the Labtix environment.

**External USB hard drive:** for storing the **Cloning Images** and other **learning content** from our FTP server (Labdoo Hubs in Germany can be obtained from Labdoo.org e.V. Retrieve donated, pre-recorded boot media and USB hard drives.)

## Labtix: The Labdoo installation environment

In order to be able to install older and newer computers yourself with a license-free tool, Labdoo.org has put together a small solution based on the Linux version [Antix](#), which we called Labtix (composed of **Labdoo** and **Antix**).

In Labtix you will find everything you need - for deleting old data on a donated computer, for quick and automated installation of finished systems. In addition, you will find many tools on Labtix to diagnose hardware and analyze and solve problems (CPU/processor, thermal problems (°C), detect damaged drives, battery status, etc.)

You could download the iso files for Labtix from the folder of [our FTP server](#). You could check the correct download using checksums (MD5 or sha512).

Once you have downloaded the file, you can create a boot medium from the iso file (CD or USB stick). This is the boot medium with which you can start and prepare donated computers.

### Create a boot medium (CD or USB stick) from the Labtix ISO

Als nächstes die ISO-Datei in eine Boot-CD oder USB-Bootstick umwandeln (einfaches Kopieren reicht nicht!). Dies geht oft mit Dateimanagern des Betriebssystems eures Vertrauens oder auch zusätzlichen Tools. U.a. findet ihre einige Vorschläge. Für weitere befragt das Web (sucht mal nach "CD / USB stick iso erstellen" und euer Betriebssystem).

### Anforderungen für Labtix 2:

- Installation auf DVD möglich, eine einfache CD reicht nicht mehr
- USB-Stick mit mindestens 2 GB Speicherplatz. Wenn mit Hilfe des Persistenzmodus Labtix erweitert werden soll kann es sinnvoll sein einen größeren Stick zu verwenden.

### WINDOWS:

- Installiert und starte ein Programm zur Erstellung von Startmedien, z.B. Rufus: <https://github.com/pbatard/rufus/releases/download/v3.4/rufus-3.4p.exe> oder Alternativen <https://alternativeto.net/software/rufus/>. Startet Rufus, wählt das USB-Device, klickt auf den "Auswählen"-Knopf, wählt die labtix.iso Datei, dann klickt auf Start.

### LINUX:

- **In Labtix gibt es das Tool Live USB Maker sowie das Tool ISO-Snapshot mit dessen Hilfe ihr vom existierenden System ein ISO-File erstellen könnt (empfohlen).**
- Auf <https://wiki.ubuntuusers.de/Brennprogramme/findet> ihr eine Reihe von Linux-Tools die Ihr nutzen könnt um Cds/DVDs zu brennen, z.B. Xfburn oder Brasero,
- zum Erstellen von bootfähigen USB-Sticks: Unetbootin, Startmedienersteller, Yumi, Laufwerksverwaltung etc. In der Regel hat jede Distro/Desktopumgebung ein entsprechendes Programm installiert
- Mit dd, dazu im Terminal eingeben: `dd if=/Pfad/zum/Labtix.iso of=/dev/Zielpartition bs=1M`  
Aber Achtung: Auf mit dd erstellten USB-Sticks lässt sich keine Persistenz einrichten !! Weitere Details unter : <https://antixlinux.com/forum-archive/writing-antix-iso-image-on-usb-flas...>

### MAC OS:

Das Tool balenaEtcher auf der Seite <https://www.balena.io/etcher/> erstellt nach der Installation auf einfache Weise das Bootmedium: Image-Datei auswählen, Ziellaufwerk festlegen und das Medium wird geflasht.

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## Labtix 2

Labtix 2 - die Labdoos Installationsumgebung (Deutsch, 2022)



<https://youtu.be/Q7WMvF1QXX8>

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## Labdoos Clone Images und zusätzliche Lerninhalt

Für das Cloning müsst ihr die Images vorher herunterladen. Images sind Kopien eines kompletten, vorinstallierten Systems. Linux hat eine tolle Eigenschaft, die andere Betriebssysteme nicht haben. Man kann ein System von Rechner A auf Rechner B übertragen - und es läuft!

Ihr findet diese Images online auf unserem Labdoo FTP-Server <http://ftp.labdoo.org/download/install-disk/>.

Einzelne Dateien könnt ihr über den Browser herunterladen, indem ihr mit der rechten Maustaste darauf klickt und dann "save link as / Link speichern unter" auswählt.



**Das funktioniert aber nicht für Ordner oder für viele Dateien! Diese müssen einzeln heruntergeladen werden und das ist natürlich nicht komfortabel.**

**Einfache Methoden für Download mehrerer Dateien für alle gängigen Betriebssysteme findet ihr auf <https://www.labdoo.org/de/content/zugang-zum-ftp-server>**

Images sind groß und der Download dauert lange. Wenn ihr euch mit FTP-Clients auskennt, empfehlen wir daher sie direkt per FTP herunterzuladen (sftp, user **labdoo** und Passwort **labdoo**).

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## Labdoo BASIC Images for Cloning

Seit Sommer 2023 wurden Images und Lerninhalte (Content) entkoppelt. Früher gab es schlüsselfertige Images, z.B. EN\_40, EN\_80, EN\_160, EN\_250 usw. Darin waren Lerninhalte bereits vorinstalliert, was aber die Images aufblähte, zu Redundanz und langen Download-Zeiten führte.

BASIC-Images könnt ihr mit ca. 16 GB schnell herunterladen und dann entweder während des Clonen mit Labtix 2 oder auch nach dem Neubooten mit dem gewünschten Content komplettieren. Dies geht deutlicher schneller, ist flexibler und spart Zeit und Ressourcen.

Um zu entscheiden, welches Image und welcher Content für euch am besten ist/sind, müsst ihr die jeweiligen Rahmenbedingungen mit einbeziehen:

- Die CPU/Prozessor-Architektur des Rechners, den ihr gerade bearbeitet (seit 2018 wird nur noch 64 Bit unterstützt). Aktuelle Images sein 2020 stehen nur noch als 64 Bit-Variante bereit.
- Die Sprache(n) in dem Zielland, für das ihr installieren wollt.
- Die Größe der Festplatte in dem aufzuarbeitenden Rechner. Die Größe der Festplatte wird z.B. im BIOS oder nach Hochfahren von Labtix angezeigt.

Der Name eines BASIC-Image auf dem FTP-Server sagt aus:

- **xx\_04\_LTS** = Version auf der Ubuntu basiert, z.B. 22.04 LTS (ältere Versionen liegen im Archiv)

**Es gibt Standardverzeichnisse je verfügbarem BASIC-Image und Anwendersprachen.**

- **Englisch (EN):** [http://ftp.labdoo.org/download/install-disk/EN\\_English\\_images/](http://ftp.labdoo.org/download/install-disk/EN_English_images/)
- **Deutsch (DE):** [http://ftp.labdoo.org/download/install-disk/DE\\_German\\_images/](http://ftp.labdoo.org/download/install-disk/DE_German_images/)
- **Spanisch (ES):** [http://ftp.labdoo.org/download/install-disk/ES\\_Spanish\\_images/](http://ftp.labdoo.org/download/install-disk/ES_Spanish_images/)
- **Französisch (FR):** [http://ftp.labdoo.org/download/install-disk/FR\\_French\\_images/](http://ftp.labdoo.org/download/install-disk/FR_French_images/)

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## Zusätzliche Lerninhalte

**Zusätzliche Lerninhalte können mit den BASIC-Images kombiniert werden. Der Content muss dabei lokal auf einem lokalen Datenträger oder auf einem lokalen Server vorliegen. Der Download vom FTP-Server bei der Installation wird bewusst nicht unterstützt (Überlastung des FTP-Servers und lange Laufzeit).**

- Entweder während der Installation mit Labtix. In der Maske ist **content: none** vorgelegt. Klickt man darauf, wird man in den Ordner mit vorbereiteten Steuerdateien weitergeleitet. Die Namen geben Auskunft über Inhalt und erforderliche Plattengröße, z.B. EN\_SW\_250 installiert Englischen und Swahili-Content und braucht eine 250 GB-Platte.
- Oder nach dem Installationsprozess mit dem Skript **installscript-content.sh**, zu finden auf dem Desktop auf dem Ordner **/scripts**. Ablauf ist wie vor, nur müsst ihr manuell zum Ordner mit den Steuerdateien für den Content navigieren (meist auf **install-disk/wiki-archives/content\_list**)

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## Vorbereitung der Externe USB-Festplatte (1+ TB)

Die heruntergeladenen Images sind bereits entpackt und sofort einsatzbereit. Kopiert sie auf eine externe Festplatte oder einen lokalen Server. Die USB-Platte muss so formatiert sein, dass große Dateien gespeichert werden können. Z.B. ist FAT32 nicht möglich, weil FAT32 nur Dateien kleiner 4GB handhaben kann. **NTFS** ist das empfohlene Filesystem für eine externe Festplatte.

## Images and educational content

Tags:

[image](#)

[content](#)

[learning content](#)

New functions are available from Labtix 2. In recent years, Labtix has become the most used installation tool worldwide within the Labdoo project.

In keeping with this, Labdoo (Germany) has been providing "pre-assembled, ready-made" images for cloning on the FTP server in various languages and contents for years. And here success has created a bottleneck. Thousands of helpers are now downloading the freely available, free images from the FTP server. The infrastructure and bandwidth, kindly provided free of charge by the Polytechnica Barcelona data center, are being shared by more and more users and this leads to slow downloads.

We have therefore expanded our concept. 2.09 can now handle both "finished" images as before, but also the new BASIC images without content.

These "finished" images will soon be removed from the FTP server. You will then find BASIC images prepared in 4 languages.

### The big advantage:

There are now only 4 small BASIC images each approx. 16 GB (DE, EN, ES, FR), which drastically reduces the upload and download volume. So far all images were around 500 GB...

### How does it work?

There are now control files that tell Labtix what content to install where. This affects the Kiwix and browser-based archives, which were previously part of the "finished" images.

This means that content is not saved multiple times in images, but only once in the folder <http://ftp.labdoo.org/download/install-disk/wiki-archive/> (you also need the subfolders here locally from the FTP server or ask for them via USB disk from your national hub representative).

This additional feature has other advantages. For example, you can create your own control files and quickly exchange them with each other, e.g. a file for reinstalling special content. Using a control file, it is also possible to install additional learning content in additional languages, e.g. the FR content for the EN\_250 package.

The name of the control file specifies: 1. Language at the front refers to the BASIC image, i.e. for EN\_250.txt = selects the image EN\_BASIC, 250 refers to the recommended disk size of 250 GB. So everything as before.

EN\_FR\_320.txt does the same thing, but also adds the French content, then needs 320 GB. By the way, FR\_EN\_250 matches the FR\_BASIC image and installs EN content to it. In one case the system language when starting up is French, in the other case it is English.

### What's the catch?

You need at least Labtix 2.09 (or higher) <http://ftp.labdoo.org/download/install-disk/Labtix/> and the learning content <http://ftp.labdoo.org/download/install-disk/wiki-archive/>.

An installation may take slightly longer. But you save a lot of time when downloading the images. If you have to install a lot of devices, you can save a local image you created yourself. Everything you need is included in Labtix.

### Where can we find what?

Control files [http://ftp.labdoo.org/download/install-disk/wiki-archive/control\\_files/](http://ftp.labdoo.org/download/install-disk/wiki-archive/control_files/)

Content <http://ftp.labdoo.org/download/install-disk/wiki-archive/>

Current Labtix version <http://ftp.labdoo.org/download/install-disk/Labtix/>

### Technical information:

Control files must be located locally on a data storage medium or server near the content folders with Kiwix, among others in the /content\_files/ folder.

Only local content on USB drives or local servers is supported. Remote servers over the Internet are deliberately not usable.

The control files need a certain syntax. Please refer to the examples (blank lines between comments and content; #### before headings, ####2nd\_lang, etc.).

If you want to use your own content, its archive name must match the name in the control file.

For content with a date in the name (e.g. for Kiwix) a wildcard (\*) is possible. So you could always install Wikipedia with the control file, regardless of the version.

Content can be installed once during installation. Or later via installscript-content.sh in the scripts folder on the desktop.

We would be happy to hear your suggestions.

## Connecting to the Labdoo FTP server

Tags:

[sftp](#)

[ftp](#)

[rsync](#)

[filezilla](#)

[server](#)

[download](#)

[images](#)

[swish](#)

[ios](#)

[itransfer](#)

[browser](#)

[dateimanager](#)

The Labdoo FTP server allows users to download files and images for Labdoo devices for free. Here are some simple ways to connect to the FTP server. Pick the one that suits you best. For security reasons, Labdoo does not allow unsecured FTP protocol, only the secured SFTP protocol (no ftp, only sftp).

Keep in mind again, that if this all takes too long or is too much work for you, especially for a one-time installation, then give your IT donation into the hands of Labdoo Hubs and helpers!

**Note:** Labdoo is not responsible for third-party software.

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## 1. Accessing the server through your browser

Open the URL <http://ftp.labdoo.org/download/> in a browser and navigate via the links (Make sure the URL begins with "http://" and not "ftp://"). Here you can download all files for free.

To download a file, click on a link with the right button of your mouse, then click "Save target as" (name can be different depending on your browser and operating system).

This method's advantage is that you can access without a password, but on the other hand files can only be downloaded individually.

How to download single files by browser from FTP server (Engli...



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## 2. Access data to connect to the FTP server

It is more convenient to connect your PC or server directly to the FTP server. Depending on your operating system there are several tools below. We created a user on the FTP server: **labdoo** with the password **labdoo** and read permissions (no write permissions), which is available to you for this purpose. If you need write permissions, please contact [contact@Labdoo.org](mailto:contact@Labdoo.org) (EN) or [Labdoo-DACH@Labdoo.org](mailto:Labdoo-DACH@Labdoo.org) (DE).

**Protocol** = sftp (sftp is safer than ftp, so only sftp is available)

**Server** = sftp.labdoo.org

**Username** = labdoo

**Password** = labdoo

**Path** = /

sftp://labdoo:labdoo@sftp.labdoo.org

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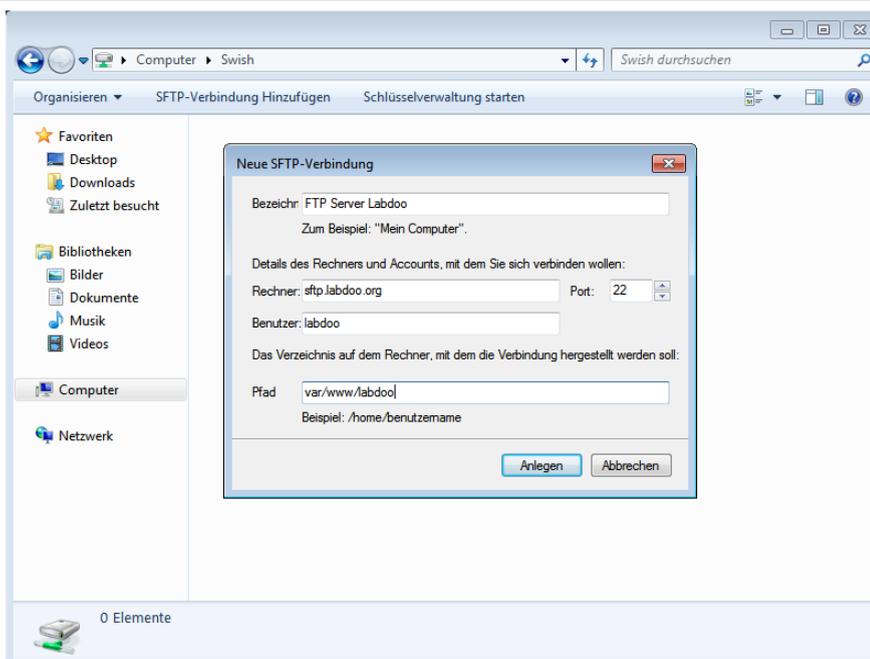
---

### 3. Integrate into the file manager (Windows, Swish)

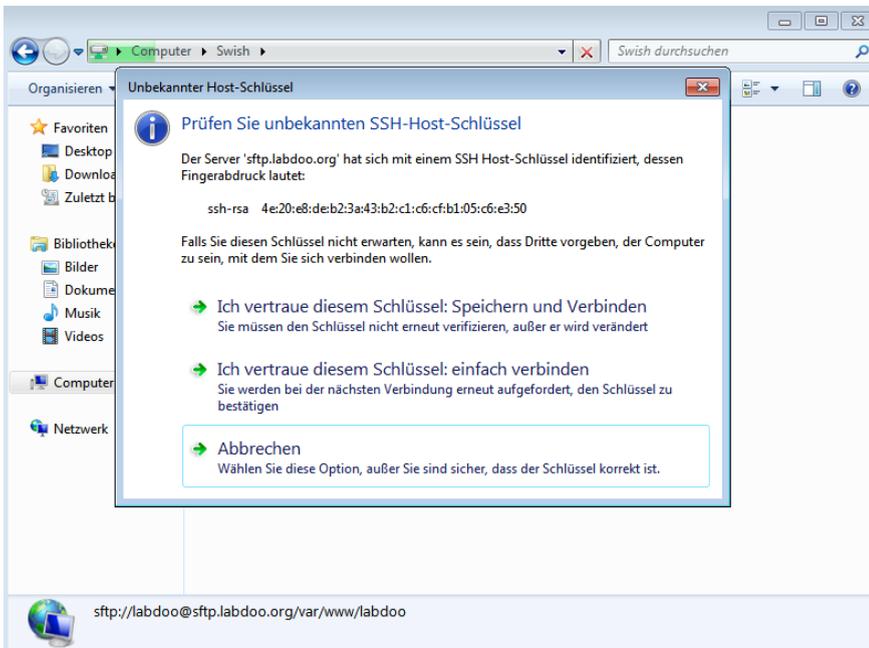
Windows does not offer its own way to connect the file manager to an FTP server via the sftp protocol. ftp would be possible, but we do not offer this for security reasons. However, you can use additional programs sftp, e.g. the **Swish Add-on** for the Windows file manager <http://www.swish-sftp.org/>(link is external) .



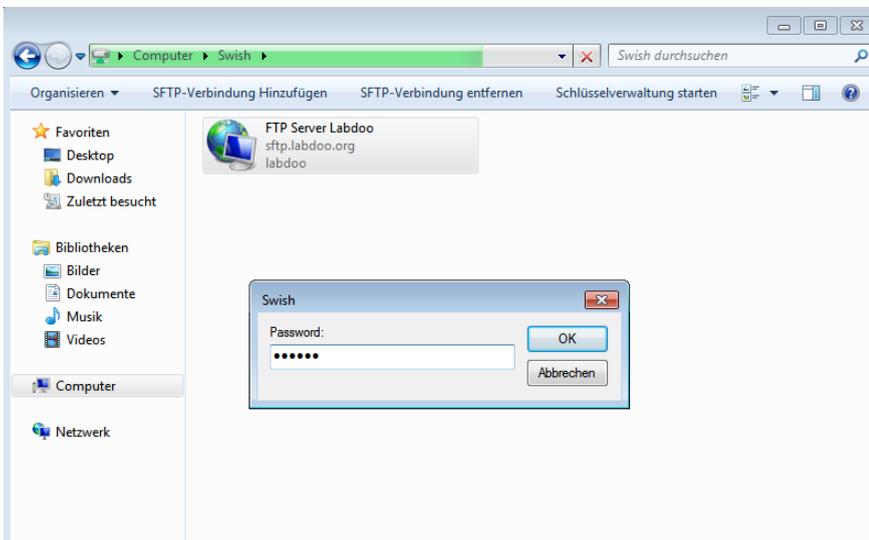
After installing Swish, you have to set up the access to the FTP-Server:



**Login to the FTP server:** Name - choose a name of your choice;  
server: sftp.labdoo.org; user: labdoo;  
path: /



**Security key:** Save and connect - key remains permanently on the PC until changed; Simply connect - key is only saved for this session and will be queried again next time



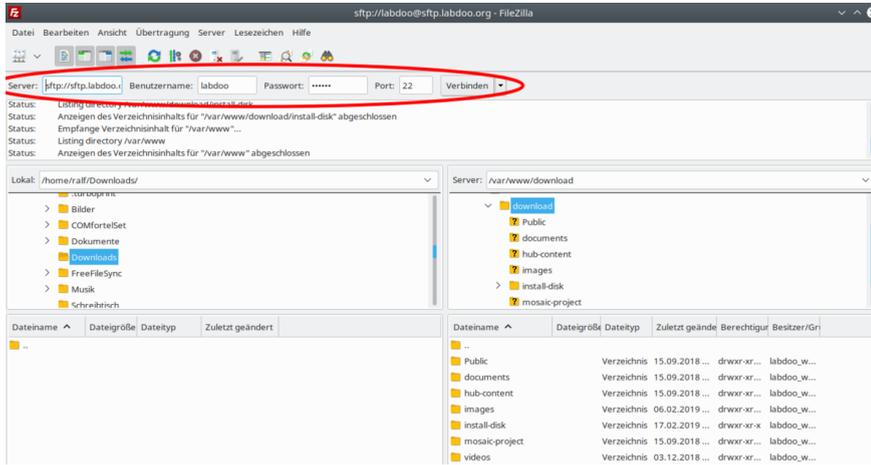
Enter the password **labdoo**, now you can use the FTP server like a drive on your PC.

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## 4. Filezilla

It is easy to connect your computer to the FTP server with special tools if you need to download massive files. The free FTP client Filezilla can be downloaded here <https://filezilla-project.org/>. Also available for Apple (macOS) <https://filezilla-project.org/download.php?platform=osx>.

The start path can be set in the settings under Advanced --> Default directory on the server. Then you don't always have to click through the whole file system.



Enter the access data: Server - **sftp://sftp.labdoo.org** ; Username **labdoo** ; Password - **labdoo** ; Port - **22**



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## 5. Linux

If you are using GNU/Linux, you can easily integrate the FTP server using the sftp protocol (secure FTP). Simply enter the path for the FTP folder → `s_COPY13@sftp.labdoo.org:/` in your favorite file manager.

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## 7. Connecting Apple (macOS and iOS) using Filezilla or iTransfer to an FTP server

For Apple and (macOS and iOS) you can install and use the free tools [Filezilla](#) or [iTransfer](#).

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## 8. recommended folders or links

If you want you can mirror the whole FTP drive :) Maybe you should choose the content you really need? Here are some useful paths that might be of interest to you:

All data necessary for an installation: <http://ftp.labdoo.org/download/install-disk/>

English documents: <http://ftp.labdoo.org/download/documents/english/>

Graphics + logos: <http://ftp.labdoo.org/download/documents/material/>

If you have any questions send an e-mail to [Labdoo Global Support team wall](#) and a Labdooer will get back to you.

Windows is a registered trademark of Microsoft Corporation.

# install-disk-maker

Tags:

[install-disk](#)

[install-disk-maker](#)

## Install Disk Maker [in preparation]

Labdoo's install disk is used to distribute Labdoo images and educational content in order to install Labdoo systems. Despite the name Install Disk, images and educational content do not necessarily have to be on a hard drive. Local folders or shares on the local network can also be used. The installation is usually carried out using the installation scripts in the zzFM file manager in Labtix. After installation, additional educational content can be installed from Labdoo using the `installscript_content.sh` script in the "Scripts" folder on the Labdoo desktop.

In order for the Labdoo installers to work correctly, the following folder structure must be ensured:

### For Images:

`/install-disk/DE_German_images/22.04_LTS_EN_Basic`

`/install-disk/EN_English_images/22.04_LTS_DE_Basic` etc.

### For Kiwix-Dateien:

`/install-disk/wiki-archive/kiwix/wikis/DE/Lerninhalt.zim`

`/install-disk/wiki-archive/kiwix/wikis/EN/Learning_content` etc.

### For Offline-Wikis:

`/install-disk/wiki-archive/wikis/DE/beispiel.tar.gz`

`/install-disk/wiki-archive/wikis/EN/example.tar.gz` etc.

### For control files ( content\_lists ) :

`/install-disk/wiki-archive/content_list/DE_120.txt`

`/install-disk/wiki-archive/content_list/EN_FR_80.txt` etc.

The Content\_Lists play a special role (see below). They serve as control files and contain the information about which additional content (wikis and Kiwix files) will be installed during the installation with the installer scripts in Labtix or after the installation with `installscript_content.sh` in Labdoo. Many Content\_Lists already exist on the server. The name contains the minimum size of the hard drives on the devices to be installed. With every download, the contents of the `content_lists` folder are updated!

It is still possible to use Clonezilla in Labtix to create your own Labdoo images with a lot of content and save them anywhere and clone them using the Labdoo installer in zzFM or with Clonezilla in Labtix.

The Install Disk Maker tool is used to easily create an install disk or a corresponding folder using selection menus. Images and content can be saved specifically in a correct folder structure.

The advantage is that the entire install disk no longer has to be downloaded from the Labdoo servers, thereby significantly reducing download times and server utilization. In addition, individual compilations can be created more easily, e.g. if Labdoo installations with bilingual content are required. Simply download the relevant content to the install disk, create a corresponding Content\_List (see below) and you have created the possibility for an individual Labdoo installation.

The install disk maker downloads the desired files from the Labdoo server (<http://ftp.labdoo.org/download/install-disk/>). A password is not necessary for this.

Of course the computer must be connected to the Internet!!!

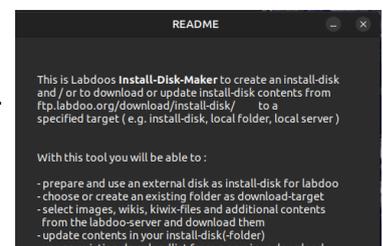
The possibilities of the install disk maker:

- Reformat an empty hard drive and set it up as an install disk with content,
- set up a folder, hard drive or local share as an install disk with content,
- update an existing install disk or an existing install disk folder. The tool searches for existing files on the disk or in the folder and updates them if newer versions are available.
- update an existing install disk (or install disk folder) using an existing download list or repeat a download using a download list if there is an interruption. A download list is created with each complete run of the tool and stored in the target directory with a time stamp. The download list is a pure text file with a list of the ftp addresses used. It can therefore also be edited manually.

In general, if folders/files already exist in the target folder, only newer versions or versions with a different size will be downloaded. This also helps enormously to reduce download times and relieve the load on the FTP server.

## The install-disk-maker

The Install Disk Maker is a shell script with Yad as the frontend for the dialogs. It should run on all Debian-based systems. The dependencies are `yad`, `wget` and `sed`. If not available, these should be installed later if necessary. Simply copy the script to your computer, make it executable, double-click it and run it in the terminal when asked. The script is already integrated into Labtix and Labdoo. It is only available with English user guidance.



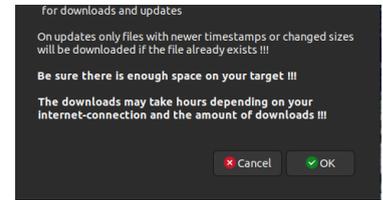
## Starting the script:

**In Labtix:** Double-click on the corresponding icon on the desktop (from Labtix 2.10)

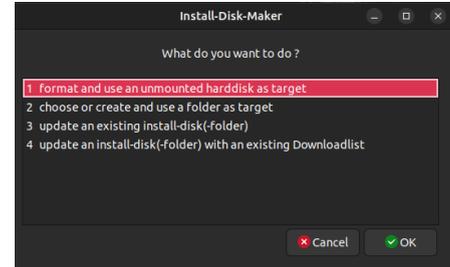
**In Labdo:** `/Desktop/Scripts/install-disk-maker.sh` , logged in as user labdo

After a short README, a selection list appears in which the further procedure is determined.

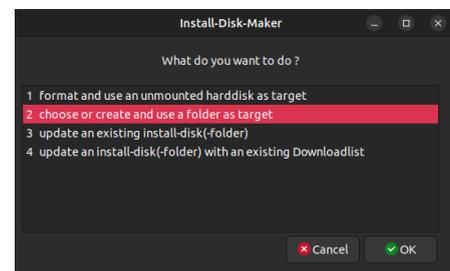
There are four options to choose from:



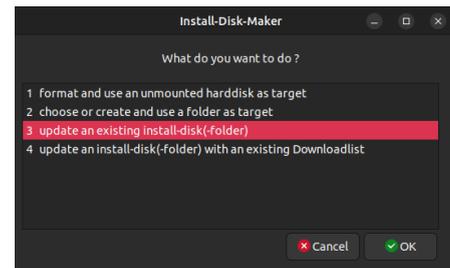
### 1 format and use an unmounted hard disk as target



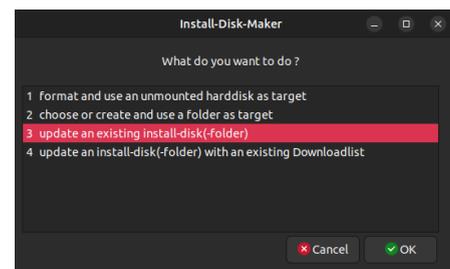
### 2 choose or create and use a folder as target



### 3 update an existing install-disk(-folder)

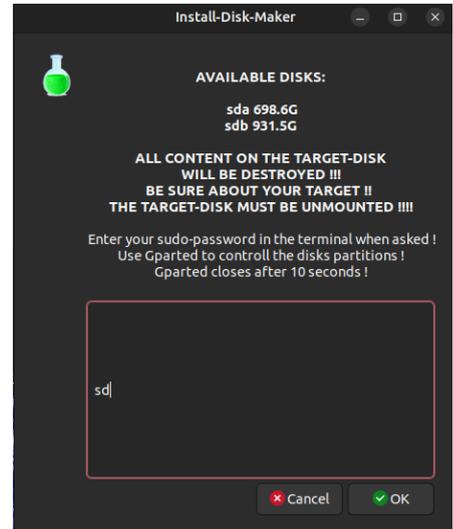


### 4 update an install-disk(-folder) with an existing Downloadlist

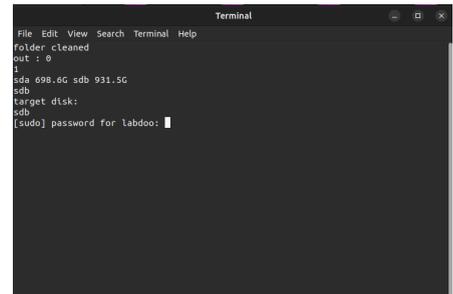


Depending on your selection, you will be guided to your destination via self-explanatory dialogues. Only option 1 requires you to enter the sudo password in the terminal once under Labdo.

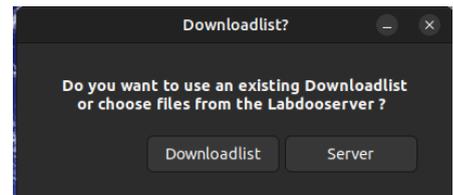
Selection of the drive for the install disk. Often sda is your own system disk and sdb is the external drive; like in the screenshot. However, this can change depending on the configuration.



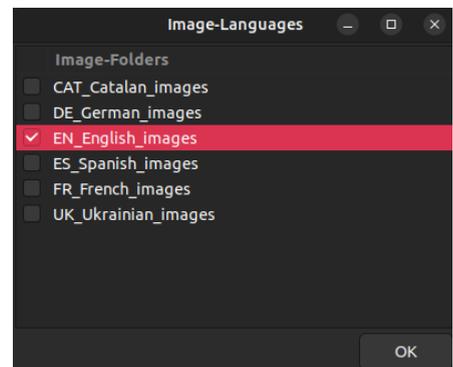
Entering the administrator password (sudo)



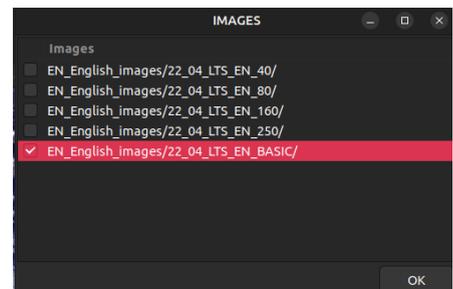
Should a download list from a previous download be used. Or should a new list be "clicked together" individually for download.



Mark the images to download by language



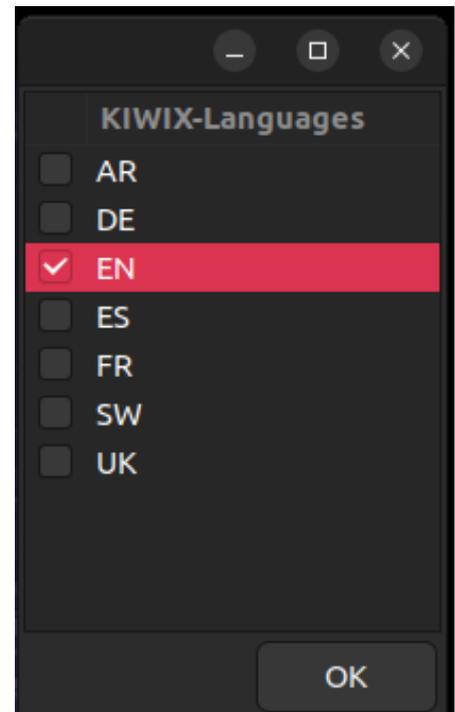
Selection of images to load in the language folder



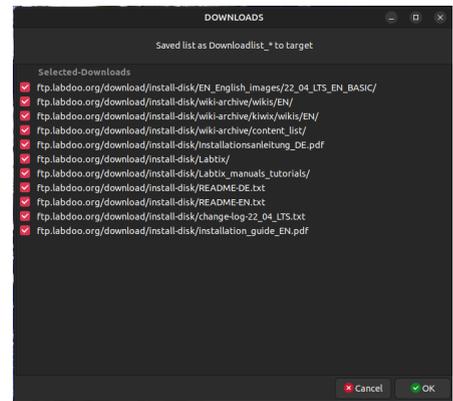
Selection of wiki languages for browser-based content



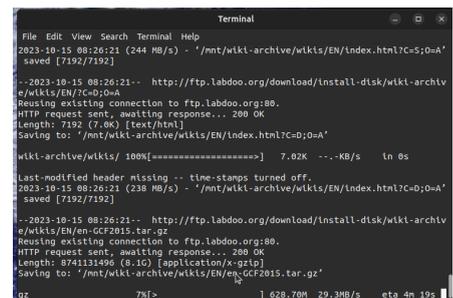
Selection of wiki languages for Kiwix



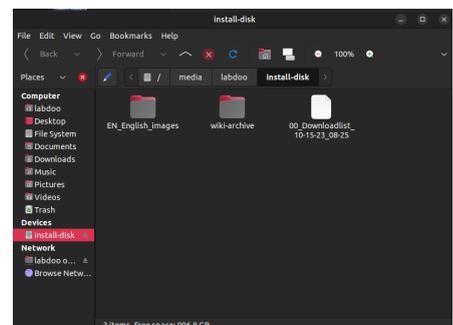
Display of the selected content for confirmation



Display of the download and progress in the terminal



Display of the download and the download list



After closing the final “READY” dialog, the existing files and folders in the target folder or disk are displayed in the terminal. This is used to check the contents of the target folder or disk.

Pressing “Enter” in the terminal ends the script and the working folder is cleaned up. While the script is running, it is possible to mount or unmount disks or shares using a file manager. It is not necessary to end the script.

If an external disk has been formatted, it must be removed from the device once after the script has ended and then reconnected in order to make it available to the system.

While the script is running, some auxiliary files are created in the working folder (or on the desktop in Labtix) which are deleted during the run. Some dialog windows allow you to abort the script and then delete these files. If the script hangs, for example because the connection to the server is interrupted, you can end it by closing the terminal in which the script is running. Some auxiliary files may be retained. To delete these, call the script again and end the "README" dialog with "Cancel". The work folder is cleaned up.

In rare cases, auxiliary files of the stream editor used sed with the name sed\* appear in the working folder. These files cannot be edited, but disappear as soon as you close and reopen the file manager or restart the desktop in Labtix.

If you want to repeat the project, we recommend copying the resulting download list to a suitable location so that it is available at any time and/or can be passed on.

### Building a control file (content\_list)

The control files are pure text files that can be edited with any editor. Text processing is unsuitable for this!!!

Example EN\_BS\_80.txt (shortened):

=====

```
# Control file for automated post-installation of content, requires Labtix 2.09 or higher
# Control file for automated post-installation of content, requires Labtix 2.09 or higher
```

```

#####lang_1
EN

#_80 = min. needed disk-size, 80 GB

#####wikis_1
en-afristory.tar.gz
en-algebra2go.tar.gz

#####kiwix_1
askubuntu.com_en_all_*.zim
ifixit_en_all_*.zim
wikibooks_en_all_maxi_*.zim

# Create new Firefox Tab for users labdoo and student to path labdoo/home/Public/wikis/EN (html file already exists
in all Labdoo images)

#####homepages_1
file:///home/labdoo/Public/wikis/EN/index-tutorials-en.html|file:///home/labdoo/Public/manuals/index-
manuals.html|https://start.ubuntu-mate.org/|file:///home/labdoo/Public/wikis/EN/index-en.html

#####lang_2
BS

# adds Bosnian content to an installation

# path /Public/kiwix/wikis

#####wikis_2

#####kiwix_2
phet_bs_*.zim
wikibooks_bs_all_maxi_*.zim

#####homepages_2
file:///home/labdoo/Public/wikis/EN/index-tutorials-en.html|file:///home/labdoo/Public/manuals/index-
manuals.html|https://start.ubuntu-mate.org/|file:///home/labdoo/Public/wikis/EN/index-en.html
=====

```

It is important to adhere to the syntax of the tags (e.g. #####kiwix\_2) so that the install scripts can evaluate the control file correctly. If you want to create your own control files, you will find many existing examples in the /install-disk/wiki-archive/content\_list folder. These can be adapted to your own projects.

## 2 - Click Installation Method

Tags:

[2-clicks](#)  
[spacefm](#)  
[filemanager](#)  
[clone](#)  
[cloning](#)  
[image](#)

This section describes how to use the file manager SpaceFM (Labtix 1) or zzzFM (Labtix 2) to clone images with just 2 clicks.

### Labtix 2

## Labtix 2 - die Labdoo Installationsumgebung (Deutsch, 2022)



<https://youtu.be/Q7WMvF1QXX8>

### Labtix 1

## Labtix 1 - Image clonen mit 2 Klicks (Deutsch, 2018)



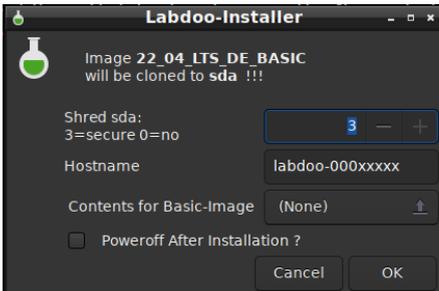
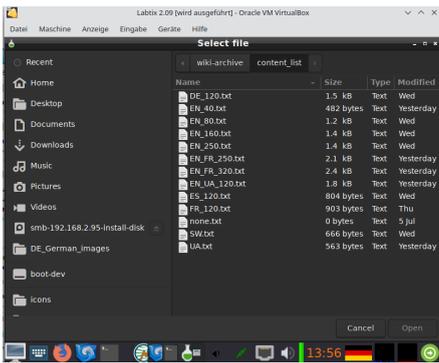
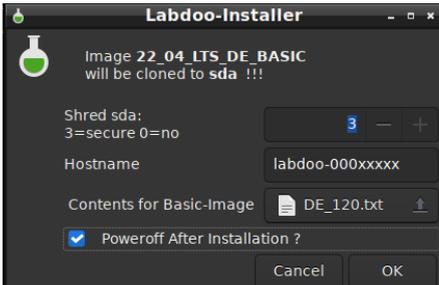
<https://www.youtube.com/watch?v=DkmrV3tvt-U>

**For Labtix 2: Sometimes the screen is very dark after booting and the screen cannot be brightened or darkened using the function keys. Then move the mouse to the upper left corner, if necessary "flying blind", click there and then tap on the arrow key to the right. Each time you press the arrow key, the monitor should get a little brighter.**

- 
- Double-click to start the file manager SpaceFM (Labtix 1) oder zzzFM (Labtix 2).
  - Mount the drive on which the images for cloning are located.
    - für Labtix 1 und 2: For external USB drives: plug it in, the drive appears with a - in front of it, then click on the entry and the "-" becomes a "+".
    - **Labtix 1:** On a server: Plugins→MountShare→Scan and manually enter the IP address of the server, if necessary select Share from the list, User and Passwort→Mount.
    - **Labtix 2:** Connect to the network, via LAN it is sufficient to plug in the LAN cable, for WLAN with Connman system tray, then open file manager zzzFM → in the input area (preset /home/labdoo/) den Enter the path to the server, e.g. smb://192.168.1.1/install-disk, if necessary enter the password in the terminal window. smb is the protocol required for Windows servers. First it tries to establish a connection for the user **guest**, then for the user **labdoo**. Or you can enter a local user like this: smb://user@192.168.1.1/install-disk and then the password in the terminal window.
    - The drive / server is now mounted, i.e. the computer has access to it.
  - Open the folder with the images.
  - Right click on the folder containing the image to be installed.
  - Click the displayed functions list on
    - Labtix 1: Labdoo Image Installer
    - Labtix 2: labdoo-legacy-installer or labdoo-UEFI-installer (depending on system settings and boot)
  - in the next window
    - Labtix 1: leave the "shred sda" tick (disk will be overwritten 3 times) or remove it (disk will not be deleted),
    - Labtix 2: Enter the path to the target disk, e.g. sda, nvme1n or similar → set the number of delete runs,
    - optional: enter the host ID if you already know it (otherwise it can be changed after the restart)
  - The image will now being copied to the internal hard disk sda.
  - At the end GParted opens for control to display the finished partition on sda. The whole hard disk should be

available. Close GParted. In rare cases the automatic adjustment of the partition does not work. Then it can be adjusted manually.

- The window with the installation's confirmation will appear, confirm with "ok" and close.
- The installation will be confirmed in the terminal, then close with "Enter".
- The installation is complete. Labtix can be shut down with "Poweroff" or "Save Poweroff" and the computer can be restarted.

<p><b>Select your BASIC-image and content package</b></p>	
<p><b>Select the content package</b></p>	
<p><b>(Example) Content package chosen and power off after installation activated</b></p>	

## Installed tools for Labtix

Tags:  
[labtix](#)  
[tools](#)

**Labtix comes with a number of useful tools preinstalled:**  
 (partly smaller deviations between the Labtix versions possible)

Application	Description
Arandr	A tool for configuring the screen layout. Very useful when your device has the internal monitor removed and an external display is connected.
Audacious	CD/DVD drive functionality test
Avahi network scanner	scans the network (please connect first) and shows e.g. the path to a server or similar.
Backlight Brightness	Sometimes the screen is too dark and cannot be made brighter with the keyboard (function keys). Then you can change the brightness with Backlight Brightness. Works most of the time, but not always.
battery-plugin	in the panel gives you information about the status of the battery when you mouse over it. The plug-in can be activated with a right mouse click and "Battery Monitor Settings", if not already done.

Conky	A tool for displaying system information on the desktop. The output window is in the upper right corner. The configuration file is in Labtix 1: <code>/etc/conky/conky.conf</code> , in Labtix 2: <code>~/conky.rc</code> . In Labtix 2 with even more information, such as battery status, etc.
Firefox esr	is the "enterprise version" of Firefox, which is not updated as often. For example, Firefox can be used during installation to research the web. It can also display pdf files. By default it doesn't collect cookies and doesn't store data to avoid bloating Labtix with unnecessary data in persistence mode.
Gparted	a great tool for disk partitioning, file system repair and partition copying.
Gsmartcontrol / DiskCheck	a tool to read the S.M.A.R.T data from a hard drive to see if the hard drive is healthy. If yours is "red" in the registers, you should use a different hard drive. Tip: If a Seagate disk shows thousands of reallocation reallocation events in the Attributes tab, the drive is not damaged. These hard drives have different firmware specifically for Lenovo computers that uses the memory bit for reallocation events for other purposes.
hard info	gives you extensive information about the hardware and software of the computer.
ISO Snapshot	a tool to create an ISO snapshot of the system. All changes to the system are saved in the snapshot. While running ISO snapshot, mark the directories NOT to be added to the snapshot, except for the "Desktop" directory which contains the .desktop files. You should move existing snapshots to a directory that you do not want to include in the snapshot. The snapshot is saved in <code>/home/snapshot</code> . If the snapshot is created on a non-persistent system (e.g. boots from CD-ROM), it should be saved on another device. If there is not enough disk space to save the snapshot, the save path can be e.g. to another USB stick. The snapshot can be installed to a USB stick using UNetbootin or burned to a CD-ROM or DVD-ROM using the IG Burn Tool plugin in SpaceFM.
Keyboard layout handler	With the <b>Keyboard Layout Handler</b> on the right side of the panel you can change the keyboard layout with a left mouse click. To make a permanent change, right click and use the "Keyboard Layout Handler Settings". The top keyboard layout in the list is preassigned at startup. With a left mouse click you can go through the pre-installed keyboard layouts (German, US English, French, Spanish).
Live USB Maker (Labtix 2)	to copy Labtix to other USB sticks.
Magnify	Magnifier on/off
Onboard	show/hide monitor keyboard.
SimpleScreenRecorder (Labtix 2 only)	Tool to record videos of the session, e.g. for training purposes.
Psensor	A tool to control the temperatures of CPU, GPU and others.
SpaceFM (Labtix 1) / zzzFM (Labtix 2)	is a file manager for the usual file actions and for integrating external devices. It has plugins to e.g. mount shares and burn CDs or DVDs. SpaceFM/zzzFM is highly configurable and can be modified with additional plugins. The trash can is disabled to prevent accumulation of too much data in persistence mode. If required, the trash can can be added as a plugin. It should not be removed as it is part of the desktop environment!
Speaker Test	Speaker test right / left.
UNetbootin (Labtix 1)	a tool to create bootable USB sticks. Start Unetbootin, enable "Diskimage", select the ISO snapshot (should be in <code>/home/snapshot</code> ) and select the target USB drive. The USB stick should be formatted with fat32 and it should be mounted (use SpaceFM for this). After installation on a thumbdrive, Gparted should be used to check if the boot flag is set correctly!
wipefs	Fast deletion of the file system (but does not replace overwriting with random numbers).
Xfburn	to burn Labtix from CDs/DVDs.

For more information, please use the man pages of the help function in the terminal (e.g. "man gparted" or type "psensor --help" there and press (enter)) or use the Internet.

### Desktop Settings:

The Labtix desktop environment is based on openbox with the additional lxpanel. If you right-click on the desktop, you can select "Desktop Settings" to make changes to the desktop. To install new program launchers on the desktop, copy them from `/usr/share/applications` to the desktop. To move icons on the desktop, use "Shift + Drag". Please note that in some cases SpaceFM moves the items out of the folder. If so, please copy it back.

# Troubleshooting

Tags:

[troubleshooting](#)

[labtix](#)

[labtix 2](#)

We may need some tools for troubleshooting that make it easier for us to fix errors when installing or starting computers:

- Labtix on a USB stick :-),
- Labtix on USB stick, installed with "dd" with the Live USB Maker,
- Labtix on DVD,
- a finished standard Labdoo installation on a hard drive to test whether a device can / wants to boot with Labdoo,
- a finished legacy Labdoo installation on a hard drive to test whether a device can / wants to boot with Labdoo legacy,
- Super Grub 2 Disk (link) as a starting aid for Labtix or Labdoo,
- Clonezilla-Live or Parted Magic to install if nothing else works,
- Boot Repair Disk ( link ) to fix boot problems with Labdoo.
- optional: USB adapter for SATA to be able to "plug in" a hard drive externally,
- optional: USB hub for USB / USB-C slots if a laptop doesn't have enough slots

You don't have to create all of these tools directly. It is enough to create them when needed. But the more problem cases you have worked on, the more complete this tool collection becomes.

**The easiest way can often be to install a hard drive with a finished Labdoo installation in a "problem" computer. This saves time and nerves!!!**

## Computer remains "dead":

When plugging in the power supply, the DC indicator light does not light up or the computer beeps:

- Power supply defective or not suitable? Make sure you have the correct DC plug.
- No RAM memory installed?
- Battery deeply discharged? If possible, try starting without a battery or powering the computer for a while. Depending on the device, it can take a few minutes to an hour until the device is bootable!

## UEFI not accessible:

- Win 10 or 11 is started in installation mode and the UEFI is not accessible: remove the hard drive and delete it externally.
- If Windows is already installed and boots to the login screen: Click the power icon, click the "Restart" option with Shift/Shift key >>"Advanced options">> "Troubleshoot" >> "UEFI settings" . In the UEFI then put the Labtix stick first in the boot settings, deactivate secureboot if necessary.
- Common keys to get into UEFI: ESC, F1 (Lenovo), F2, F10, F12 (Dell), Del . Depending on the setting in the UEFI, the "Fn" key must be pressed at the same time.
- Some devices (some Lenovo or Sony) have their own button to boot into UEFI, sometimes quite hidden. A search on the Internet can be informative.
- If Labtix boots into the UEFI boot menu: Boot Rescue Menu >> Reboot into BIOS/UEFI Setup. Labtix may have to be booted via the computer's boot menu.
- If you have one, try a Labtix DVD and boot into the UEFI using the Boot Rescue Menu (see above).
- Boot into the UEFI boot menu with a Xubuntu USB Live stick. This contains the "UEFI Firmware Settings" option. Is also possible with some other \*buntus. You may have to boot via the computer's boot menu.
- Sometimes it helps to consistently remove all drives and don't overlook the SD card slot.
- On some devices, removing the CMOS battery can force an error message from which access to the UEFI is often possible. Similarly, some devices have a reset button on the bottom that can be reached through a small hole.

## Labtix does not boot into the Grub boot menu:

- Secureboot switched off in UEFI?
- USB boot not possible, e.g. by excluding USB boot in UEFI
- Some devices only boot Labtix in UEFI mode, others only in legacy mode, so it makes sense to try it out. The same applies to the installed images.
- "USB-always power on" activated in UEFI?
- A common problem is the poor connectivity of some USB sticks in USB sockets. If you pull the stick approx. 1mm outwards, the stick may have better contact. If the LED on the stick (if present) lights up or flashes, the contact should be OK.
- Use Labtix DVD?
- Use Labtix on a stick installed in Labtix with the Live USB Maker with the "dd" option?
- The device simply does not want to start with the bootloader used by Labtix or ignores it due to the computer firmware used (e.g. on some Acer laptops). If the device accepts the SuperGrub2Disk bootloader (from USB or

- CD), Labtix can be started using SuperGrub2Disk. <https://www.supergrubdisk.org>
- If all else fails, you can install a hard drive in the device on which you have installed Labdoo.
  - If only Win 10 or 11 stubbornly boots, the only solution is to remove the hard drive to start Labtix and/or get into the UEFI. The hard drive should then be erased using an external USB adapter and checked for errors using DiskCheck in Labtix.
  - (for Labdoo Germany) ...and if all else fails, then send the IT donation to the central post office <https://platform.labdoo.org/de/hub?h=119075>

### Labtix hangs when booting:

- If Labtix hangs when booting, it is worth trying out the boot options "failsafe" (driver problems), "nomodeset" (graphics driver problems) or acpi=off (power management problems),
- A network search with the computer type, "Linux" and "Boot options" can lead to success in special cases,
- If the boot process hangs with the message "waiting for devs to be fully populated ..." you can cancel this process with Ctrl + C,
- sometimes a device just won't boot with Labtix. Alternatively, an image can be installed with Parted Magix or Clonezilla Live. The content can then be installed from Labdoo.
- There is always the option of installing a hard drive pre-installed with Labdoo.

### Installation aborts:

- Destination disk damaged? Check with check disk.
- Contact to the install disk or the server used is not stable? Or files do not exist on the specified paths?
- The Labdoo images use a block size of 4096 bytes. This can cause problems with a few SSDs/NVMEs. Unfortunately, the only solution is to replace the hard drive.
- The target hard drive could be too small for the selected image and content.
- In general you should carry out an installation with a freshly booted Labtix. If the installation scripts were aborted or hard drives or shares were added or deleted in Labtix, artifacts in the operating system may prevent the installation scripts from running correctly.
- Some hard drives have write and/or read protection. The values in Disk-Check then look normal, but no partitions can be deleted or created. The only quick solution here is to replace the hard drive.

### MacBooks:

Note: Labdoo Germany accepts MacBooks as IT donations. Labdoo Switzerland does not.

- If Labtix does not boot (which is the rule), hold down the Alt key immediately after pressing the power button until a selection of bootable media appears.
- The computer's NVRAM may need to be deleted first:
  - Power button, then hold down "Alt", "P", "Cmd", "R" at the same time for approx. 30 seconds,
- In Labtix, pay attention to the clock frequency, if necessary limit it to approx. 2 Ghz with Cpubower-Gui to avoid overheating during the installation of Labdoo. Use the temperature\_workaround in Labdoo!
- MacBooks with the T2 chip are unfortunately not compatible with Labdoo. The same applies to the new MacBooks with ARM processors.

### Labdoo does not boot:

- Try booting via the computer's boot menu. Common keys: Esc, F9, F12 on tablets/convertibles Power + Vol" + " or Vol"-. If necessary, together with the Fn key.
- Use Gparted in Labtix to check whether the installation on the hard drive looks correct:
  - Standard installation: grub2core.img, efi partition and Linux partition present and extended to the entire drive?
  - Legacy installation: Linux partition present and extended to the entire drive?
- "Boot flag" and efi flag (standard installation only) set?
- Check the hard drive again with Disk Check in Labtix. By deleting hard drives with "shred" when installing Labdoo, they can be damaged if they were already on the brink anyway.
- The boot mode may need to be changed in UEFI. Sometimes Labtix only boots in UEFI mode on the same device, but Labdoo boots in Legacy or CMS mode or vice versa
  - Move Labdoo up in the boot order in the UEFI,
  - look in the boot menu of the computer to see whether the Labdoo installation appears there and whether it can be started from there,
- Start Labdoo using Super Grub 2 Disk (<https://www.supergrubdisk.org>). Connect to the Internet. Open a terminal with "Ctrl" + "Alt" + "T" and reinstall the bootloader with the command "sudo grub-install". This may cause Labdoo's bootloader to be entered into the computer's firmware.
- Start the computer with "Boot Repair Disk" ( link ), establish an internet connection and follow the instructions. Can solve one or two UEFI problems.

### Get more messages:

In its default setting, Labdoo does not display the kernel boot messages during booting, but rather the Mate boot logo ("plymouth"). However, if booting or shutting down hangs or takes a long time, you can use the boot messages to diagnose possible sources of error.

To display the boot messages while Plymouth is displayed: press **"ESC" + "F1"**

If you want to show all messages:

- After switching on, use the shift key to make Grub's boot menu visible. If necessary, try several times, the default time window is 3 seconds!
- If you are in the boot menu and the first entry is activated, press the "E" key to enter editor mode. Find the line with `linux /boot/vmlinuz....` and replace `quiet splash` with `noplymouth`. The American keyboard layout applies!
- Boot with F10.

The most recent boot messages can be used to search for errors on the Internet. When searching, always specify the device used.

The changed settings only apply once, so they have to be changed every time you boot.

When the computer boots into Labdoo, the "dmesg" command in the terminal displays the boot messages.

Problems are usually displayed in red.

### Secure boot activated and cannot be deactivated

Important note: Labtix does not boot with Secureboot!!! However, the Grub boot menu appears and the message "secureboot" appears at the bottom left. However, it is often possible to access the UEFI in order to deactivate Secureboot via the **Boot Rescue Menu >> Reboot into BIOS/UEFI Setup** entries.

On some computers, Secureboot can only be deactivated if an administrator password has previously been set in the UEFI.

There is a small trap with some Acer computers: if you deactivate Secureboot and set the boot mode to "UEFI", Secureboot is automatically activated again!

If the computer's UEFI is protected with an unknown password and Secureboot is activated, it is still worth trying to install. As a rule, all \*buntus like Ubuntu Mate, the basis of the Labdoo images, can be installed easily with Secureboot.

Since Labdoo images are installed through cloning, the installation step in which the Ubuntu secureboot certificate is entered into the computer's firmware is no longer necessary. This means that, depending on the computer firmware or the secure boot settings, the computer is prevented from booting Labdoo. Nevertheless, it is worth a try to have the certificates subsequently entered into the firmware. Unfortunately, this doesn't always work.

### Installation of Labdoo:

- The quickest way to work is to install a hard drive pre-installed with Labdoo.
- Does the computer still have to be installed, e.g. because of a soldered hard drive
  - Installation with Clonezilla in Parted Magic, then install contents in Labdoo.
  - If the Labdoo installation does not boot: see "Labdoo does not boot".

Once Labdoo has been made to boot (unfortunately this is not always possible), an update must be carried out:

- Connect to the Internet and open a terminal with "Ctrl" + "Alt" + "T" and enter the following commands one after the other:
  - `sudo apt update >>>` check for updates,
  - `sudo apt upgrade >>>` run the updates.
  - If asked, answer yes and provide the Labdoo admin password. During the update you should be asked whether you want to create a secureboot password. This must be answered in the affirmative and entered accordingly. Write on a piece of paper and keep it safe :-)) . It may be that if there are changes to the hardware (e.g. new WiFi card) the password will be requested!
  - Restart Labtix once, then enter `sudo apt autoremove >>>` in the terminal to remove unnecessary files.

### For very inflexible devices:

Unfortunately, this type of installation is not trivial, which is why the procedure can only be outlined superficially. If you really want to give it a go, you'll have to search online from time to time to get further:

- Install a hard drive pre-installed with Labdoo in the device,
- Install Xubuntu on the device in parallel. During the installation, the kernel or its secure boot certificate is entered into the UEFI partition and the firmware of the computer.
- In the corresponding window, select the option "Install Xubuntu alongside Ubuntu",
- during Xubuntu installation, set the partition size for Xubuntu to approximately 12 Gb,
- After installation, set the default boot entry of the Grub bootloader to the partition with Labdoo. Unfortunately it's not entirely trivial; it's best to use the Internet to find out,
- After booting into Labdoo for the first time, update the system once as described above.

**...and if nothing works, send the IT donation to the central post office... ;) (Labdoo Germany only)**

## Labtix boot setting and persistence

Tags:

[persistence](#)  
[custom boot](#)  
[individual](#)  
[setting](#)

Labnix has two boot menus. Once the menu for legacy boot and the menu for UEFI boot. Whether you boot into the legacy or UEFI boot menu depends on the settings in the UEFI. On many devices, both options can be selected via the computer's boot menu.

### Legacy boot menu from Labnix:

Set the desired options using the corresponding function keys (e.g. F2 for language or F4 for kernel boot options) and, if desired, set them up permanently with F8. A reset is possible at any time with F8 > Reset. Alternatively, you can also enter it directly in the "Boot Options" line. After the next reboot, the boot menu contains the menu entry "Custom..."

### Labnix UEFI boot menu:

The UEFI boot menu contains the "Advanced Options" entry through which options can be set up and saved using submenus.

### Persistence mode

In persistence mode, all your changes are saved, such as . Network connections, Firefox bookmarks, changes within the Labnix environment, etc. . Installing programs and saving files is also possible.

- To do this, press **F5 in the Labnix grub menu in legacy mode and select "persist\_all"**,
- then press **F8 and select "save"**,
- then you boot e.g. "antix-21 x64-base ...",
- When asked for the rootfs persistence file, press "Enter" for the default size,
- When asked for the homefs persistence file, press "Enter" for the default size,
- If you are asked for the live USB swap file, select "n" for "no",
- The question "Do you want to copy the files to the home persistence device?" answered with "y" for "yes",
- The question "Please choose auto-save mode" answered with "2" for semi-automatic,

If you wanted to use changes via persistence, you should not boot toram and remove the stick, because then Labnix cannot save your changes when you shut down.

Using the **ISO Snapshot** and **Live USB Maker** tools in Labnix, a new bootable stick can be created that includes all changes. The Netbootin we previously recommended for creating live USB sticks uses the fat32 file system, which limits the maximum persistence size to 4 GB. The Live USB Maker uses ext4 as the file system and therefore allows for greater persistence. If the Live USB stick was created with the dd program or the "dd" option of the Live USB Maker, it is not possible to permanently set up boot options and set up persistence. The corresponding options do not appear in the boot menus.

## Terminal commands

Tags:

[labnix](#)  
[command](#)  
[terminal](#)  
[shell](#)

### Helpful terminal commands

Even if, contrary to popular opinion, the use of a terminal in Linux is not absolutely necessary, it does offer some advantages. Terminal commands give you output faster than pushing the mouse. Terminal commands can be controlled and linked in a variety of ways using arguments and are therefore the method of choice for more complex problem solving.

To open a terminal, click on the icon at the bottom left of the bottom menu bar or press Ctrl + Alt + t on the keyboard.

If a command is refused with the note "permission denied" or root rights are required, type "sudo" before the command used, e.g. "sudo zzzfm"

For further information use the --help option e.g. "apt --help" or the man pages "man apt"

Application	Description
<b>acpi (-V)</b>	Information about the power system such as battery status, battery status, etc.
<b>(sudo) apt</b>	Package manager Application: sudo apt update >> Creates the required package database sudo apt install mousepad >> installs the program "mousepad" for example Only useful in persistence mode. The device must be connected to the Internet.
<b>dd</b>	Bit-accurate copying Example:

	<code>dd /path/to/ISO /path/to/USB stick bs=1M &gt;&gt; bit-precise copying of an ISO file to a USB stick</code>
<b>eject -T</b>	ejects CDs or DVDs if the button on the drive is defective.
<b>grep</b>	filters the output of commands <code>acpi -V   grep -i battery &gt;&gt; Show only the lines of acpi -V that contain the word "battery"</code>
<b>(sudo) inxi</b>	System information <code>sudo inxi -v 5 &gt;&gt; Information with verbosity level 5 (1-8 possible)</code> <code>inxi -B &gt;&gt; Battery information</code> <code>sudo inxi -M &gt;&gt; information about the system</code> <code>inxi -m &gt;&gt; Information about the memory (RAM)</code> sudo is only needed if information that inxi collects requires root privileges.
<b>iwconfig</b>	Displays information about WLAN connections.
<b>lsblk</b>	list block devices such as hard drives and their partitions.
<b>lspci</b>	lists all discovered PCI devices <code>lspci   grep -i Network ( or "Wireless" or "WLAN" ) &gt;&gt; displays WLAN devices</code>
<b>lsusb</b>	lists all detected USB devices.
<b>rftkill</b>	Tool for radio modules such as Wifi, Bluetooth etc. <code>rftkill list all &gt;&gt; lists the states of all radio modules</code> <code>rftkill unblock all &gt;&gt; unblocks all soft-blocked devices</code> "softblocked" = switched off by the operating system "hardblocked" = blocked by a switch or the UEFI  Unlock a hard-blocked device: <ul style="list-style-type: none"> <li>• Looking for a hardware switch for Wifi,</li> <li>• looks for a function key for Wifi, usually together with the Fn key on the keyboard,</li> <li>• checks whether the device is blocked in the UEFI/BIOS.</li> </ul>
<b>(sudo) shred</b>	Tool to securely wipe devices or partitions  Use: <code>sudo shred /dev/sdX -v -f -n 2 &gt;&gt; overwrites sdX 2 times</code> Shred overwrites every single byte of the target device, which can take a very long time. Make sure that the correct target hard drive is specified when entering the command!
<b>sudo</b>	Command to get root permissions  There is no sudo password set up in Labtix, so entering a password is not required.
<b>wipefs</b>	Quick deletion of file systems  Use: <code>sudo wipefs -a -f /dev/sdX &gt;&gt; wipes the file system of sdX</code> Make sure that the correct target hard drive is specified when entering the command! This is not a safe method for wiping devices, but rather a quick and non-complete solution if you want to reset an installed system. Uses the shred command to securely delete
<b>xkill</b>	Tool to close windows that don't respond  Use: Open a terminal, type "xkill" and press "Enter". The mouse cursor is displayed as a skull. Left-click the skull in the window you want to close. Xkill only closes windows. In some cases, processes started by the terminated window continue to run in the background. Don't click on the desktop, if there is also a window!!!
<b>xrandr</b>	Tool for setting the graphical (X) server  <code>xrandr --output eDP-1 --scale 0.5x0.5 &gt;&gt; reduces the height and width resolution of the output eDP-1 by a factor of 0.5. Very useful if the screen has a very high resolution.</code>

This is how you get the name of the actual output:  
xrandr | grep primary

# Clonezilla - Clone Images (for experienced users only)

Tags:

[installation](#)

[clonen](#)

[image](#)

[images](#)

[install](#)

[clonezilla](#)

## Choose the appropriate Labdoo images for cloning

We recommend Clonezilla only for experienced users. The Labdoo Installer tools, auto-deploy or 2-click Installer included in Labtix are more suitable. You can find a Clonezilla on the Labtix desktop (double click on the icons to start it).

## Clonezilla - how to clone a computer using Clonezilla?

### Cloning from an External USB Hard Drive (2018)

Clonezilla and GParted - Cloning using an external USB disc-driv...



### Cloning from a local server (2017)

PartedMagic / Clonezilla: how to clone a Labdoo laptop. Part 1 (...)



Double-click on the **Clonezilla** icon. Labdoo Images for Cloning are complete images of ready-to-run systems.

Therefore choose the selection **image - Image**. Labdoo always sets images (not device!) based on versions online.

→ **device-image** (Labdoo always sets images online, so choose this option)

→ **select the storage medium** on which the image is located, if necessary with paths and passwords. For external USB disks/sticks this is usually sdb. In Linux the disk drives that start with sda (usually system disk) are named with ascending letters. Pay attention to the instructions on the screen, only plug in USB drives on request and wait for about 5 seconds.

→ Select **Expert Mode** (we always recommend this mode). The image "remembers" the size of the disk where it came from. For example, if the image came from a 60 GB disk, but is about to be installed on a 40 GB disk, the hint "Target disk too small" appears in Beginner Mode and aborts. **In Expert mode you can later check the -icds option, which overrides this check (see below).**

→ Select **"Restoredisk"** to restore an image.

→ Select **the image that suits best to your CPU**(important is PAE / nonPAE or 32 / 64 Bit, suitable for the CPU)

→ confirm the **target hard disk** (in most cases sdb or sdc)

→ in "Expert Mode" go to the **-icds option** from the list and confirm with the space bar ("do not check if target disk is smaller than source disk"), then mark with the space bar (\*)

→ **only for Images based on Ubuntu 22.04 LTS and later:** in "Expert Mode" go to the **-k1 option** from the list and confirm with the space bar, then mark with the space bar (\*)

→ Confirm the following entries either with "Enter" or with "Y" (Yes)

→ The installation should start and take about 15 - 60 minutes. Afterwards all data, including operating system, software, settings, learning content etc. are already installed.

In addition to the queries and entries, log lines (white font), notes (green), warnings (yellow) and error messages (red) will appear in the Clonezilla window. Apart from the red error messages, everything else is usually uncritical. And even with the red hints you can ignore the message "unable to find..." towards the end of the cloning process.

## Labtix 1 [archive]

Tags:

[labtix](#)  
[labtix 1](#)  
[installation](#)

The Labtix 1 version of the Labtix installation tool is no longer being developed. For current images Labdoo recommends the current version Labtix 2 <https://platform.labdoo.org/de/content/installation-mit-labtix>.

Labtix 1 is still able to process older 32 bit images. However, these are no longer maintained.

Based on Antix 17 (2017), you get a complete set of refurbishment and installation tools. Labtix 1 runs on 32 bit and 64 bit CPUs. The drivers included in Labtix 1 work best on older hardware (ca. 2008 - 2018, difficult to delimit exactly, best you try it out).

You need for Labtix 1

- at least a 2 GB USB stick or a CD (750 MB) to install and run Labtix 1 on it,
- 1 GB RAM (besser mehr, speziell wenn ihr den Persistenzmodus nutzen möchtet).

Version	until Ubuntu 20.04 LTS	from Ubuntu 22.04 LTS
Labtix 1	✓	✗
Labtix 2	✓	✓

Labtix comes with various tools and installation tools <https://platform.labdoo.org/de/content/vorinstallierte-tools-labtix>.

Most of them can be found directly on the desktop. You have to decide for yourself which tool suits you best:

- **"2-click" installer - from the file manager SpaceFM (up to Labtix 1.02) / zzzFM (from Labtix 2.0) clone images with 2 clicks. From Labtix 2.0 the standard installation procedure.**
- Labdoo Installer - with graphical user guidance (only Labtix 1)
- autodeploy and content installer - comprehensive, terminal-based installation tool that also automates the deployment of additional content in multiple languages

On the Labtix desktop, you will find a Docs folder containing manuals in PDF format. However, we recommend that you first watch the individual steps and tools as a YouTube video tutorial.

### Labtix 1

## Labtix 1 - Image clonen mit 2 Klicks (Deutsch, 2018)



<https://www.youtube.com/watch?v=DkmrV3tvt-U>

### Nur für Labtix 1

#### Labdoo Installer - the compact installation tool with graphical user interface (English)

## Labdoo installer Tool (Deutsch)



- Start by double click **Labdoo Installer**,
- 2 windows open; the terminal shows whether it is 32 and/or 64 bit CPU; the 2nd window shows the hard disk on which is installed (in most cases. **sda**. Confirm by **ok**.
- in the next window:
  - shred = Number of deletion runs (from 0 to 3 possible, 3 preset)
  - Target Disc sda (may not be mounted)
  - Display the size of the hard disk (just for info, to better choose the appropriate image)
  - Choose Image → click on the triangle next to home → Select **Other..** → then navigate to(!) the folder where the unpacked image is located (just marking the folder is not enough); confirm with "Open".
  - optional: Enter Host\_ID, if already known (but can also be entered after restarting the computer)
  - click "OK" to start the installation.

In Labtix 2 this function has been integrated into the file manager zzzFM. A separate script could be dispensed with.

[Archiv, outdated / veraltet]

#### **autodeploy and content installer - the comprehensive, terminal-based, script-driven installation tool (German)**

the new version (since September 2018 part of Labtix,) also automates the deployment of learning content to multiple language (not seen in video)

autodeploy Installationstool (Deutsch)



Manual (pdf) <http://ftp.labdoo.org/download/install-disk/labdoo%20autodeploy%20and%20...>

## Labdoo Installer: Clone with the Graphical User interface

Tags:  
[installer](#)  
[gui](#)

### Only Labtix 1, not needed in Labtix 2

**Labdoo Installer - the compact installation tool with graphical interface**

Labtix 1 - Labdoo installer (English, 2018)



- Start the Labdoo Installer with a double click on the the Labtix desktop's icon.
- 2 windows will open. The terminal shows if it is 32 or 64 bit CPU. The second window displays the hard disk to be installed (in most cases sad). Confirm with ok.
- in the next window:
  - shred = number of erase runs (from 0 to 3 possible, 3 pre-set)
  - Target Disc / Target Drive sda (must not be mounted)
  - Display of the hard disk's size (only for your information, to be able to select the matching image)
  - Select image →click on the triangle aside "home"→Select **Other...**→then navigate into(!) the foldercontaining the unzipped image (just marking the folder is not enough, you have to open it); confirm with "Open",
  - optional: Enter Host-ID, if already known (but it can also be entered after restarting the computer)
  - start the instalation by clicking "OK".