

# Install Guide

## Before you begin

The following points may seem a little scary. Don't be afraid: in almost all cases, nothing bad happens. For your security though, we will be assuming the worst case scenario. Please check the following points:

- Make sure you have signed the document at the welcome desk, stating with your signature that you take the responsibility for your hardware and data.
- Please rethink whether you have backed up any important data. You will be re-partitioning your hard drive. If anything goes wrong with that (which is unlikely but possible), any data not on your backup is lost!
- If at some point in time you feel uncomfortable and don't know how to proceed, ask for help please. Our helpers wear colored bracelets for showing their "special abilities". These are:
  - green = OpenSUSE expert
  - red = WLAN, graphics, firmware expert
  - yellow = UEFI expert
  - white = Mac expert
- Lenovo Users: Please check, whether your laptop type number ends with ..40 (e.g. T440). If so, make sure your BIOS is up to date. Ask for help if you don't know.

## Install procedure

(If you don't want to use OpenSUSE, go and download whatever you want (e.g. Ubuntu) and place the installer onto your USB drive. A simple and free tool for doing that on Windows is "Lili Live USB Creator". If you need a USB key, ask at the welcome desk (please tell them that you're going to format it).)

1. Windows 8 / 8.1 / 10: Disable Fast Boot. If you don't know how to do that, ask for help.  
Mac OS X: If you want to keep that OS and run Linux in parallel, you have to resize the system. Therefore start into OS X. Go to /Applications/Utilities and open the "Disk Utility". Select the tab "Partition". On the left side there is a white rectangle with some blue threshold indicating the space consumed by Mac OS X. Click and hold the lower right corner of that rectangle and draw the cursor upwards, to shrink the volume. The text on the right will give you information about the freed memory. Once you are satisfied, click "Apply" to confirm the shrinking operation. Now we install rEFInd, a software, which eases booting USB keys and later the Linux system. Browse the web for <http://www.rodsbooks.com/refind/getting.html> and scroll down a bit to click the link "A binary zip file". Wait a moment for the download. Then go to the Download folder and extract the file. Open a Mac terminal and type "cd <where you extracted the archive>" and then type "./refind-install". On success, plug in the USB key and move on.
2. Go to your BIOS:
  - Mac OS X: Skip this point.
  - Win 8 or later: Press Restart while holding the Shift-key. Wait for the blue screen to come up, then pick "Advanced Options" → "UEFI Firmware Settings" → Restart
  - Old style BIOS: Make sure your computer is off. Turn it on. While the brand's logo is displayed, hit the key to pause startup (typically Esc on a HP or Enter on Lenovo), then select to go to the BIOS options.  
 Now look for boot options. You have to either choose UEFI or Legacy boot (whatever your Windows is). **Strictly avoid hybrid modes!!!** To find out what you have to choose, simply pick one and check if Windows boots. If not, it was the other option. If available, turn off CSM if you have UEFI.
3. Boot from the USB key.
  - Mac OS X: Hold the "Options" key (labeled with "Alt") on the keyboard during startup and select the USB key in the menu.
  - Win 8 or later: Start up Windows, then press Restart while holding the Shift-key. Wait for the blue screen to come up, then choose "Use a device" and select your USB key (it may be labelled in a weird way, find the right option by trying).
  - Old style BIOS: Make sure your computer is off. Plug it in and start up your computer. If the computer boots on your existing system, turn it off again and try pressing something like F9 on HP or Enter on Lenovo while starting up (while your Laptop's logo is displayed), then

- select the correct boot option. If you still don't get to the installer screen, ask us for help.
4. The OpenSUSE boot screen should now show up. You can change your language later, just use your arrow keys to select "Installation" and hit the Enter key. The system start may take up to several minutes.  
Always remember: If you feel unsure about anything, go ahead and ask a helper.
  5. You now see the license agreement. Above it, select your language and your keyboard layout (note that "German" and "German (Switzerland)" are not the same! Then click "Next".
  6. Maybe "Network Settings" pops up here (else skip this point). We recommend you use the Ethernet (meaning: plug the LAN cable), click Edit and ensure the IP method is set to DHCP.
  7. "Installation Options": If you have a good internet connection right now, recommend that you check "Add Online Repositories Before Installation" in order to have all updates installed together with the system. Don't check the box about separate media.

## Preparing the Harddisk

8. "Suggested Partitioning":
  - New install: If you want to delete everything on your disk (!), select "Create Partition Setup", pick your hard drive, "Use Entire Disk". Press "Edit Proposal Settings" and change "File System for Root Partition" from BtrFS to ext4. BtrFS is cool but if you don't know what you're doing you risk to fill up your hard disk with unnecessary duplicate data. If you want to be able to put your computer to sleep (Standby), check "Enlarge Swap for Suspend".  
Last, choose whether you want your files on a different partition ("home") than the system.
    - Using a separate home partition makes your data more independent from your system (e.g. for backups) but you will have a fixed size for both partitions
    - Putting both on the same partition gives you more flexibility as your system and files share the same space.
  - Windows: If you want to keep your existing Windows this is the advanced part of the installation. You can easily destroy your disk at this step, so read it through first and if you feel unsure, call for help now.  
Select Expert Partitioner. Click "Rescan Devices" to load the current disk configuration. To modify your disk, you must open "Hard Disks" in the left hand side. Look for the hard disk you want to install on (typically sda) and click it. You now have to find out what your kind of partition table you have: in "Overview", look at "Disk Label". If it says "MSDOS", you have an MBR table, otherwise GPT.
    - MBR only: You can only create up to 4 primary partitions. Click "Partitions" to see what you have already. If there are already 4, you have to delete one. On HP, the victim would be HP\_TOOLS as contains only a recovery environment (it reinstalls Windows in case of emergency, but you can do that from a USB key too, so let's get rid of it).  
Now resize your Windows - it's usually the largest partition on the disk and formatted as NTFS. Select it and click "Resize". Select custom size and subtract the amount of space you want to free for your Linux., confirm.
  - Mac OS X: Proceed here if you want to keep your Mac OS. Note that wrong settings here might erase your hard drive, so if you feel uncertain, consider asking for help to double check it. Choose the "Expert partitioner". If you get a warning here that openSUSE might not start up because no FAT partition has been found as /boot/efi, that's ok, accept the warning. If not, you will find a partition in the table of size ~200MB, formatted as FAT and mounted as /boot/efi. Right click on it and edit the settings to not mounting the partition into the system. This should clear the entry "Mount point" of the partition's line.

We will now create the partitions needed for OpenSUSE. You can choose to have your files on the system or on a separate partition. See above (instructions for using the entire disk) to read about the advantages of each. The following steps assume you want to use a different home partition: back at the list of partitions on sda, click "Add partition". We recommend at least 20 GB for your system partition. Set Role to "Operating System" and format the partition as ext4. The mount point is "/". Press finish. Then add another partition, at least as large as the total amount of RAM you have (this is required for hibernate - you can make it smaller if you don't ever use that feature). The role is SWAP, leave the rest as it is, finish. Finally, add yet another partition with role "Data and ISV applications", format ext4 and mount point "/home/" (skip this if you don't want a separate home partition). Finally:

- GPT only: In the partition list, look for a partition called "EFI Boot" and click it. Press Edit → Mount partition as: "/boot/efi/", finish.

## Installation Preferences

9. Select your time zone. If you have Windows installed on the side, uncheck "Hardware Clock Set to UTC". Next.
10. If you have chosen to install updates right away, you shall now choose your repos. Check the following: Leave the first two checked and also check "Update Repository (Non-OSS) as well as "Main Update Repository".
11. Accept the license once again clicking "Next".
12. Now choose your Desktop Environment. If you don't know what to choose here, follow our recommendation to choose XFCE: Select "Other" and then in the appearing menu "XFCE-Desktop". Then go on clicking "Next".
13. Enter your username and a new password. Leave the first two checkboxes as they are. Uncheck "Automatic Login" if you want to enter your password after every reboot to login.
14. You're facing a summary screen.
  - **Mac OS X:** In the first line the summary will tell you something like "System startup" and tell you about GRUB-EFI as bootloader. Click on the "System startup" link. In the opened window, select the tab "Bootloader Options" and go to the dropdown menu "Bootloader". There you must select "Don't install bootloader" (or so). In the lower right corner, click "Apply". Now your summary screen should have some two entries like "Do NOT install bootcode into MBR" and "Install bootcode into / partition". If not, consider asking for help. This is the point of no return, so make sure your setup is the way you want it. When you click on "**Install**", your disk will be re-partitioned immediately. This is the critical part. Make sure your computer will not power off. While this is running, you can already configure your future system. Follow the assistant until it only shows information about how awesome your system is going to be. Feel free to chat with cool people, have a drink, have fun!
15. **Installation done! :-)** Now, **reboot** and boot your Linux system for the first time. Note that the first start-up might take 50% longer. If you have trouble booting, ask us for help.

## Configuration

16. On your new system, **check if WLAN, Bluetooth, graphics, special keyboard buttons, sound and battery** estimation work. Go to the system settings ("Yast") and adjust Linux to your needs. Why should you do that now? Because you can ask us if you have any questions or special wishes. There's a lot of magic we can do with your computer, just ask us to do it... For further software suggestions flip this sheet.

## Network and Updates

17. **Connecting to eth / eth-5 / eduroam:** Set the "Authentication" field (usually 2<sup>nd</sup> from top) to "Tunneled TLS" and "Inner Authentication" to "MSCHAPv2". Fill in your ETH credentials into "User Name" and "Password" in the bottom (for the eduroam network, type yournethusername@ethz.ch as username). Leave the other fields as they are. Confirm that you don't want to use a CA certificate.
18. If you haven't chosen to install updates during installation, install them now. Click on "OpenSUSE" in the lower left corner, "Settings" → "Yast" → "Online Updates". Select all available updates and press "Accept" to start updating.
19. For ETH **VPN:** No need to download the Cisco client, it's natively supported. In XFCE you have to use the Software Manager to install "NetworkManager-vpnc" and the suggested fellow packages (showing up yellowishly). You can now use the Wifi Button to setup a new vpnc connection ("Edit connections"). Gateway: sslvpn.ethz.ch, then your ETH credentials, Group name: ETHZ-spezial. Don't set a CA-file. For Group password, visit the official ETH site: either search for "eth vpn" and click on the link "VPN für Linux", or visit [https://www1.ethz.ch/id/servicedesk/guide/vpn/VPN\\_Linux\\_DE\\_](https://www1.ethz.ch/id/servicedesk/guide/vpn/VPN_Linux_DE_), then scroll down to "On Board Client auf Ubuntu 12" on page 2.

## More Software

20. If you want, you can set up the Packman repository to get proprietary software (e.g. mp3 plugin) within the package manager. To do that, Open up Yast → Software Repositories → Add (bottom left) → Community Repositories → Packman Repository → Ok → Trust → Ok. You can now install the package "lame" which is the mp3 plugin.

21. For some popular video formats, it is necessary to install some packages which are not included in the default setting. If you plan to watch videos, this point is highly recommended. And you will have your (maybe) first shell experience. Open a terminal (XFCE: right click on empty desktop and select "Open terminal". Perform the following steps (omitting the leading \$ and # sign (these indicate that the following is meant as a shell command)):

```
$ sudo su
# zypper addrepo -f http://packman.inode.at/suse/openSUSE\_Leap\_42.1/ packman
# zypper addrepo -f http://opensuse-guide.org/repo/openSUSE\_Leap\_42.1/ dvd
# zypper install k3b-codecs ffmpeg phonon-backend-vlc phonon4qt5-backend-vlc vlc-codecs
flash-player libdvdcss2
# zypper remove phonon-backend-gstreamer phonon4qt5-backend-gstreamer
```

These lines add two repositories to your system, which contain the needed packages. Then it installs the listed packages and removes some conflicting packages. After the procedure, open some video file in VLC player and make sure it plays fine.

22. Our experienced XFCE users recommend installing a more fancy menu than the default one. To install, open a shell (see 21. for instruction how) and type  
\$ sudo -i zypper install xfce4-panel-plugin-whiskermenu  
After that right click on the panel (the bar at the screen's margin) and go to "Panel" and then "Add item". Now drag and drop the whiskermenu into the position you want it to be.

## Final Tests

23. If you have a Dual-Boot setup, now reboot to start your old operating system and test if it boots. Typically, the other OS will notice some changes and perform sanity checks. Give it some time to get used to your new Linux :-)

That's it! We hope your new system will make you happy. Come to our advanced course to learn more about your new system, or to one of our social gatherings called "Stammtisch".

If you don't intend keeping this page, please bring it to the welcome desk for reuse. Goodbye. Have a good night! :-)

## Useful software

This list should help you to find a corresponding program to the ones, you might have used on other operating systems. These programs are either included by your Linux installation by default or can be installed using the package manager (zypper) or the "Software Center".

### Office

MS Word.....LibreOffice Writer, AbiWord  
 MS Excel.....LibreOffice Calc, Gnumeric  
 MS Powerpoint.....LibreOffice Impress  
 MS Access.....LibreOffice Base  
 MS Visio .....Freemap\*, vym, Labyrinth\*  
 MS Project .....Planner  
 EndNote ..... JabRef\*, Zotero\*  
 Adobe Reader ..... Evince, Okular, Foxit  
 Adobe Acrobat Pro ....PDFEdit\*, Scribus, PDF-Shuffler\*,  
 Foxit  
 MikTeX .....TeXLive, TeXstudio  
 Adobe InDesign, MS Publisher .....Scribus  
 Notepad/Editor .. gedit, KWrite, nano, vim, emacs, Kate  
 Mind Mapping ..... Freemind\*

### Graphics

Adobe Photoshop .....GIMP  
 Adobe Illustrator, CorelDRAW .....Inkscape  
 3D-Design.....Blender  
 Adobe Lightroom.....Darktable  
 Scanning.....SimpleScan, Xsane  
 OCR text recognition...OCRGui\* using Tesseract / GOOCR

### Scientific

MatLab.....Octave  
 S.....R  
 SPSS.....PSPP  
 Calculator.....gnome-calculator, kcalc, bc  
 ArcGIS.....GRASS GIS\*, QGIS\*

### Multimedia

Windows Media Player .....VLC, smplayer\*, totem  
 iTunes, Winamp .....Rhythmbox, Amarok, Clementine  
 Audiograbber, CD Rippers.....Sound Juicer, K3b,  
 cdparanoia  
 Adobe Audition , Audio Editors.....Audacity, SoX  
 CDBurnerXP, Nero Burning ROM .....K3B, Brasero  
 AnyDVD, DVD Copy / Ripper Handbrake\*, K3B, Brasero  
 Adobe Premiere Pro ...Avidemux\*, OpenShot\*, Kdenlive  
 Cinema 4D, 3D-Animation .....Blender  
 AutoCAD.....FreeCAD\*

### Internet

Internet Explorer, Safari..Firefox, Chromium, Epiphany,  
 Konqueror  
 MS Outlook, Apple Mail. Thunderbird, Kontact, Evolution  
 Instant Messengers.....Empathy, Pidgin  
 mIRC.....Hexchat, irssi  
 Mibbit.....KiwiIRC\*  
 eMule.....aMule\*  
 µTorrent.....Transmission, Deluge, rtorrent, qBittorrent  
 P2P filesharing.....aMule\*, BitTorrent, Syncthing\*,  
 Transmission  
 Voice over IP, Skype.....Empathy, Ekiga, tox.im  
 RSS News Reader.....Liferea, Sage (Firefox Extension)  
 Internet Relay Chat.....Quassel\*  
 FTP Client.....FileZilla, gftp

### Files & Archives

Explorer/Finder....Dolphin, Thunar, Nautilus , PCManFM  
 Winrar.....FileRoller, Ark

### System

Task Manager gnome-system-monitor, htop, KsysGuard  
 Multiple file renaming...Bulk Rename, Dolphin (built-in)  
 Manage disks and partitions.....Gparted  
 Check disk usage.....Baobab, df

### Virtualisation

VMWare.....VirtualBox, KVM

### Development

Visual Studio / Xcode.....Eclipse\*, Qt Creator, KDevelop

### Speed up your workflow

Program StarterSynapse, Lancelot, Kickoff, Gnome Do,  
 Kupfer  
 Multiple clipboard.....Glipper, Klipper, CopyQ

Software marked with a '\*' is not available in the official openSUSE repositories.  
 Visit [software.opensuse.org](http://software.opensuse.org) to check if it's available in one of the community repos.

If you have any questions, don't hesitate to ask a helper!

:-)

Have fun with your new Linux!