

# Installing Linux

January 2021

# Introduction

This document demonstrates how a PC can be set up as dual-boot system by installing Linux into a separate partition.

Depending on the hardware the process can be fast and straightforward, or present some obstacles.

The types of problems you can face change over time and cannot all be covered in a simple document. Please contact helpdesk or search the Internet for solutions.

# Requirements

- A computer with a working operating system and Internet connection  
*usually this is the computer where you are going to install Linux*
- A flash drive to copy Linux on  
*you will boot Linux from there and then install it to your computer*
- Optionally an external hard disk to back up your data first (recommended)  
*this must be different from the flash drive*



# Main steps for installing Linux

1. Make a backup of your data (recommended)
2. Prepare a bootable Linux flash drive
3. In Windows, make room on the hard disk for the Linux installation
4. Turn off Secure Boot in the UEFI settings (recommended)
5. Boot from the USB drive and install Linux

# Step 1: Backup

Unless you don't have any important data on the PC yet, copy the data from your user directories to an external hard disk (**not** to the flash drive to be used as Linux installation media).

It's unlikely that files get deleted if you pay attention, but it's possible.



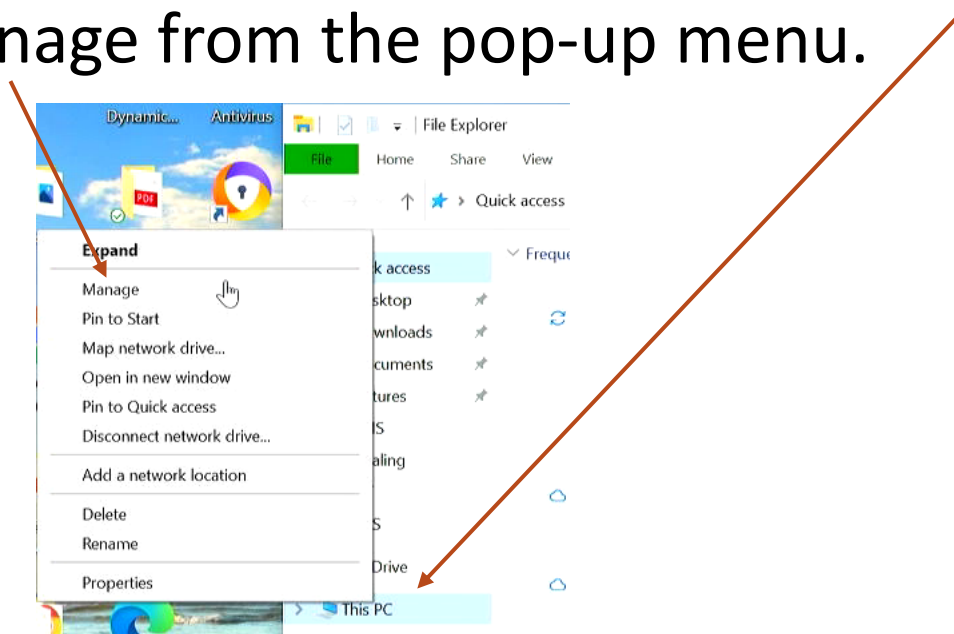
# Step 2: Prepare a flash drive



1. Download an ISO image from a Linux distribution of your choice  
*we recommend Mint as it's installed on our PCs as well*
  - Linux Mint: <https://www.linuxmint.com/download.php>
  - Ubuntu: <https://ubuntu.com/download/desktop>
2. Install a program for writing the ISO image to the flash drive
  - Rufus for Windows: <https://rufus.ie/>
  - Usb-creator-gtk for Linux: `sudo apt install usb-creator-gtk`
3. Run the program to prepare the flash drive  
**Note:** All data on the flash drive will be overwritten!

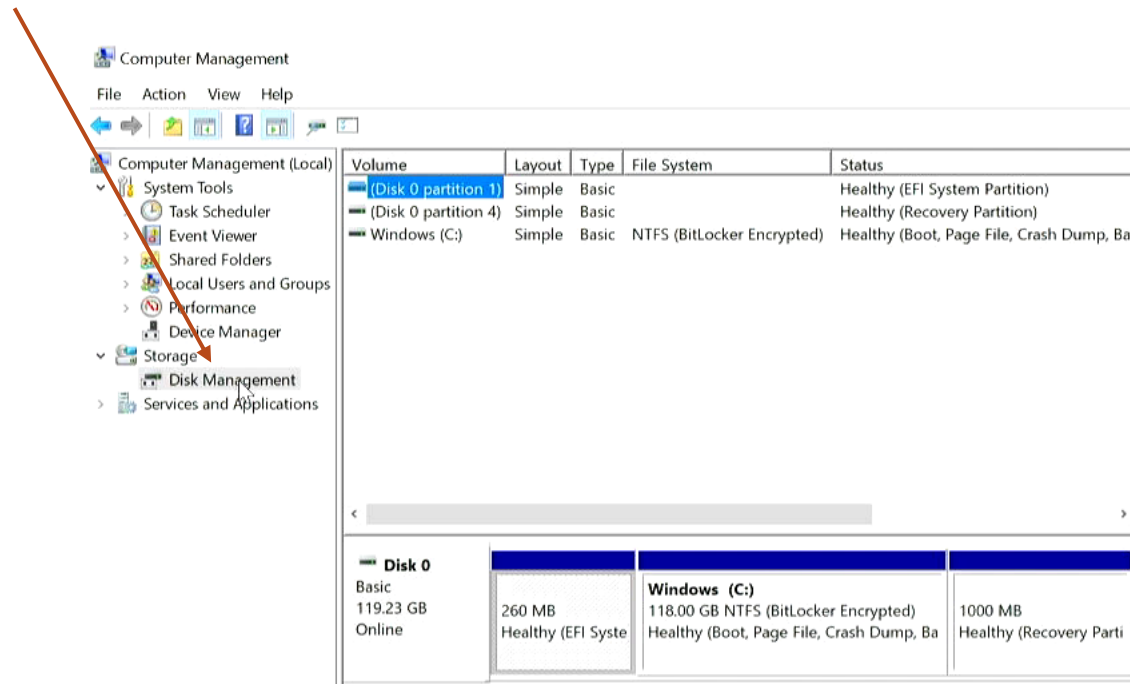
# Step 3: Preparing the internal hard disk

1. In Windows, open the File Explorer, right-click on “This PC” and choose the option Manage from the pop-up menu.



# Step 3: Preparing the internal hard disk

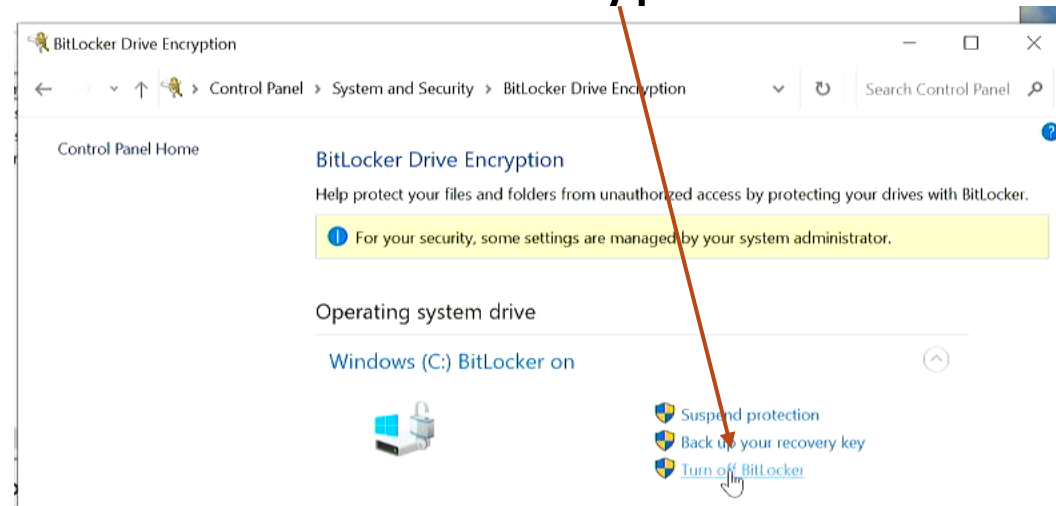
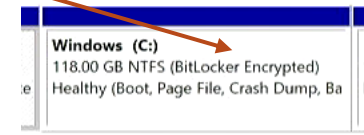
## 2. Open Disk Management





# Step 3: Preparing the internal hard disk

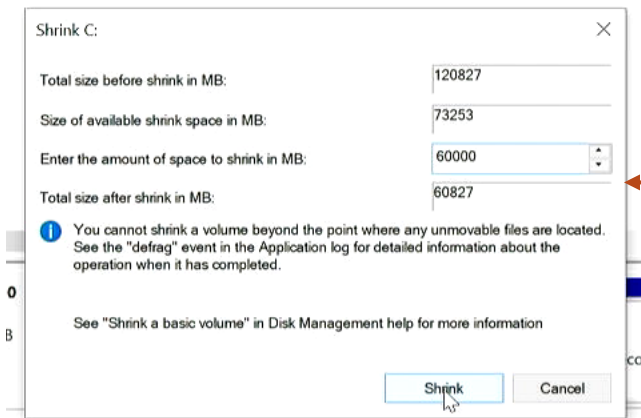
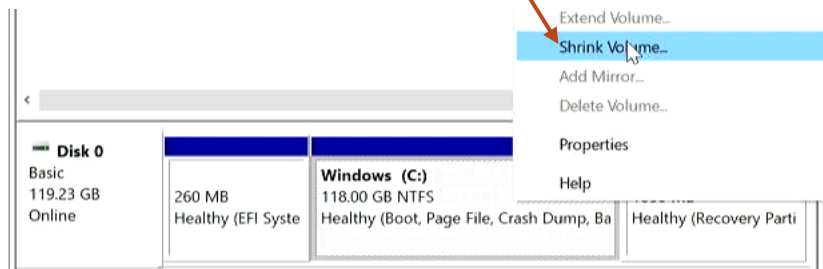
3. Check whether the C: partition is encrypted
4. If it isn't, skip to next slide
5. Otherwise, open the Control Panel (from the Start menu)
6. Search for BitLocker and turn encryption off



# Step 3: Preparing the internal hard disk

## 7. Shrink the C: drive to make room for Linux

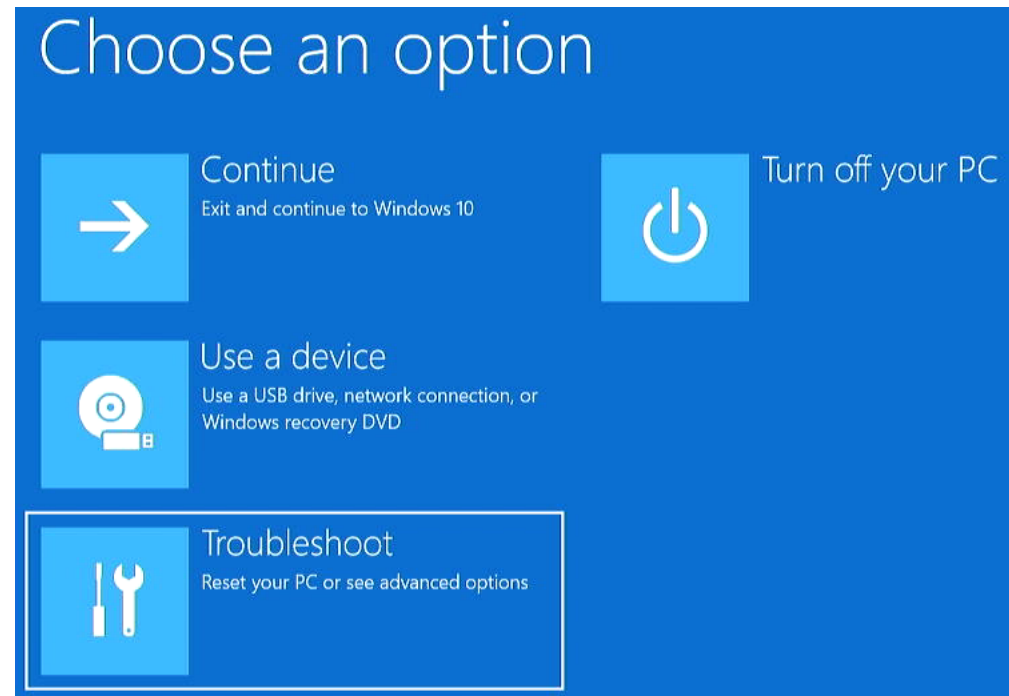
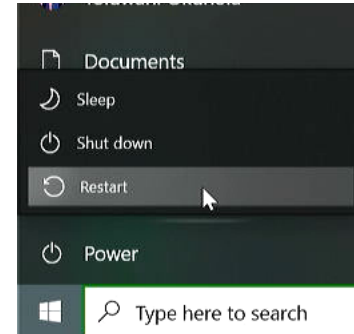
- The more you will use Linux, the more space you should assign
- Don't assign less than 15 GB (15000 MB) to Linux
- You might not be able to free up enough space if the disk is almost full



Here:  
60000 MB for Linux  
60827 MB for Windows

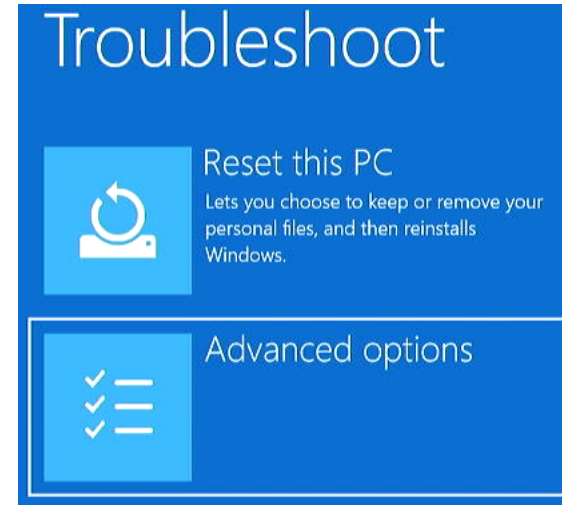
# Step 4: UEFI settings

1. Hold down the Shift key while clicking on Restart (in the Start menu under the Power options)
2. Wait for the computer to restart  
Choose the Troubleshoot option



# Step 4: UEFI settings

3. Choose Advanced options



4. Choose UEFI Firmware Settings



5. Restart

Restart to change UEFI firmware settings

Restart

## Step 4: UEFI settings

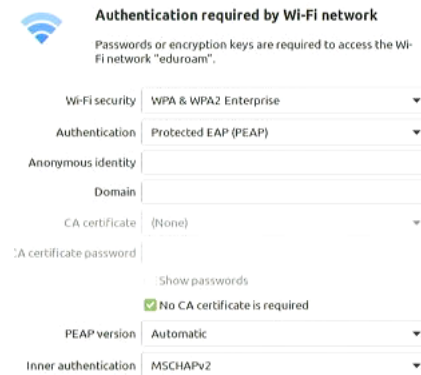
6. Disable Secure Boot (usually under the Security settings)
7. If you see a setting for SATA mode, and it's not set to AHCI but to RST or something else, the Linux installer might not be able to see the hard disk. It will provide you with a link to instructions to solve the issue.
8. Exit saving the change made

# Step 5: Install Linux

1. Insert the Linux flash drive
2. Start the computer and press Enter if prompted and/or F12 for the boot menu
3. Select the USB disk for booting
4. When given the choice, select Try Linux Mint (or Ubuntu, etc.)

# Step 5: Install Linux

5. It's recommended to connect to Wifi already. If Linux doesn't see the Wifi interface, there will be more work to do at the end (identifying the hardware and finding the right software)



**Authentication required by Wi-Fi network**  
Passwords or encryption keys are required to access the Wi-Fi network "eduroam".

Wi-Fi security	WPA & WPA2 Enterprise
Authentication	Protected EAP (PEAP)
Anonymous identity	
Domain	
CA certificate	(None)
CA certificate password	
<input type="checkbox"/> Show passwords	
<input checked="" type="checkbox"/> No CA certificate is required	
PEAP version	Automatic
Inner authentication	MSCHAPV2

6. For eduroam, your username should be of the form ...@ictp.it

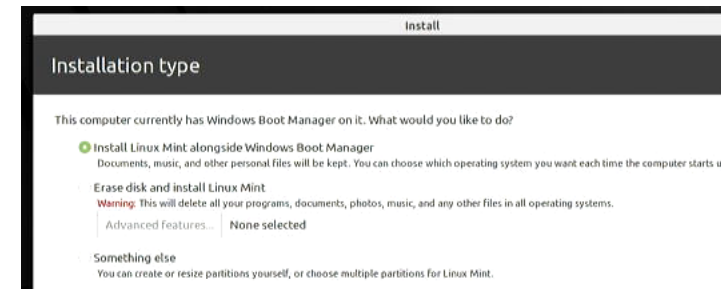
# Step 5: Install Linux

7. Start the installer
8. Select preferred language, keyboard layout, and installation of third-party software
9. Be sure to choose the option

## **Install Linux alongside Windows**

Other options will cause your existing Windows to be deleted.

If the option is not provided, there is some problem and you should not proceed with the installation. Contact the helpdesk.





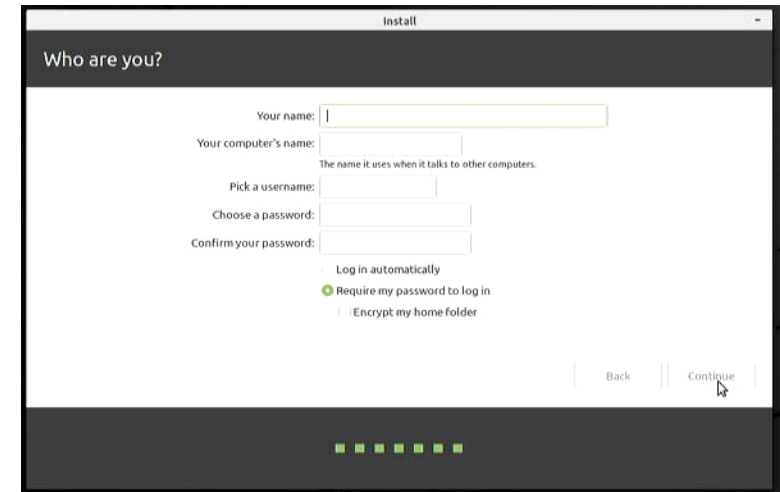
# Step 5: Install Linux

10. When prompted, select the right time-zone

11. Enter your name, username and password as preferred.

We suggest to keep your laptop username identical to your ICTP username.

The password can be different.



12. The installation should not take more than five minutes. When it's finished, restart the computer; you should get a boot menu that allows you to choose between Windows and Linux