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# LabInt/NML

## Environment preparation





# Virtual lab material

- ▶ To work @home you need
  - ▶ Two/Three **PCs/laptops** that can boot from USB (or boot into linux)
    - ▶ At least 4GB di ram
    - ▶ May use a laptop and a phone/tablet - but more complicated
  - ▶ A switch/AP, and rj45 ethernet cables
    - ▶ May also work with 3G/4G and Wifi - but more complicated
  - ▶ An internet connection
- ▶ Rationale:
  - ▶ KISS principle: Keep It Simple Stupid (or KIS,S)



- ▶ We will use a custom Linux distribution for the lab
  - ▶ Lab20.04.iso - 3.82GB with all (good for NML and LabInt)
  - ▶ Lab20.04NoConda.iso - 1.2GB with all but Anaconda (only for LabInt)
- ▶ A stripped-down Ubuntu 20.04 with additional packages
  - ▶ ethtool, gnuplot, iperf, iperf3, nmap, nttcp, openbsd-inetd, quagga, wireshark, ...
  - ▶ [For NML - anaconda for python/ML]
- ▶ Any distro works as well - provided you install the software
- ▶ Our distro works well with limited memory system
  - ▶ 2+GB for GUI (Graphical User Interface) version
  - ▶ 512+MB for CLI (Command Line Interface) only
- ▶ You can work with Android/iOS/MacOS/Raspberry/Windows/BYOD

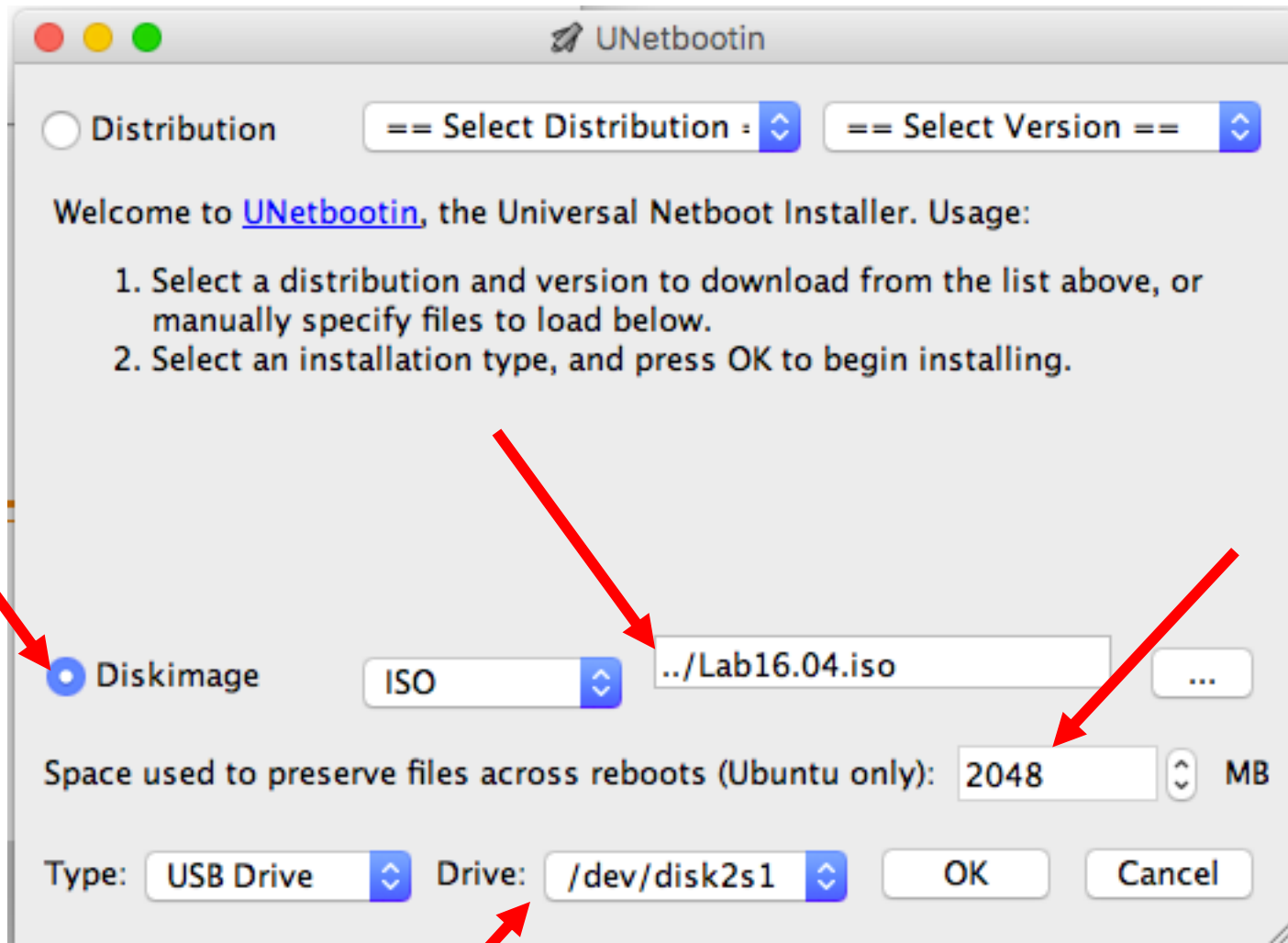


# Pendrive preparation

- ▶ Get a >8GB pendrive
  - ▶ Mandatory for in person lab - bring it ALWAYS with you
  - ▶ Useful for booting BYOD at home
- ▶ Insert pendrive and **format it**
- ▶ Use **unetbootin** or equivalent to prepare the pendrive
  - ▶ <https://unetbootin.github.io>
- ▶ Select Diskimage -> ISO
- ▶ Use the Lab2004 [NoConda] .iso file as ISO image
  - ▶ <https://www.dropbox.com/s/m67ona4zkg7zvjs/lab20.04.iso>
  - ▶ <https://www.dropbox.com/s/hnj5urrx5vxng0i/LabInt20.04NoConda.iso>
- ▶ Create a **persistent file** of 2048MB or bigger
- ▶ Select the pendrive USB disk letter
- ▶ Click OK
- ▶ At the end, replace the default `syslinux.cfg` and `grub.cfg` on the pendrive with the custom one



# Pendrive preparation



UNetbootin

☐ Distribution    == Select Distribution ==    == Select Version ==

Welcome to [UNetbootin](#), the Universal Netboot Installer. Usage:

1. Select a distribution and version to download from the list above, or manually specify files to load below.
2. Select an installation type, and press OK to begin installing.

☒ Diskimage    ISO    ../Lab16.04.iso    ...

Space used to preserve files across reboots (Ubuntu only): 2048 MB

Type: USB Drive    Drive: /dev/disk2s1    OK    Cancel

Four red arrows point to the following elements: the 'Diskimage' radio button, the 'ISO' dropdown menu, the file path text field, and the 'Drive' dropdown menu.



- ▶ Link with the custom ISO to create a pendrive (1.2GB)  
<https://www.dropbox.com/s/hnj5urrx5vxng0i/LabInt20.04NoConda.iso>
- ~~Link to the custom `syslinux.cfg` and `grub.cfg` configuration~~  
<https://www.dropbox.com/s/6v4xofbmebasoaj/isolinux.cfg>  
<https://www.dropbox.com/s/199n5u4srofnkru/grub.cfg>  
[Not needed if using VM - see later]
- ▶ Link to the UNedtbootin app  
<https://unetbootin.github.io>
- ▶ Alternatives to Unedtbootin
  - ▶ Rufus (windows only - faster)
  - ▶ BalenaEtcher
  - ▶ younameit