

WORKSTATION 4

PXE Process in detail Labdoo Hub Zurich

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I. Purpose of this document

This document is intended to simplify the PXE process in the Labdoo Hub Zurich laboratory. It can be used as an instruction document. The target audience are the new Labdoo helpers who want to support Labdoo in the PXE process.

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1 PXE Process

1.1 Connecting the device with the LAN cable to the PXE Server

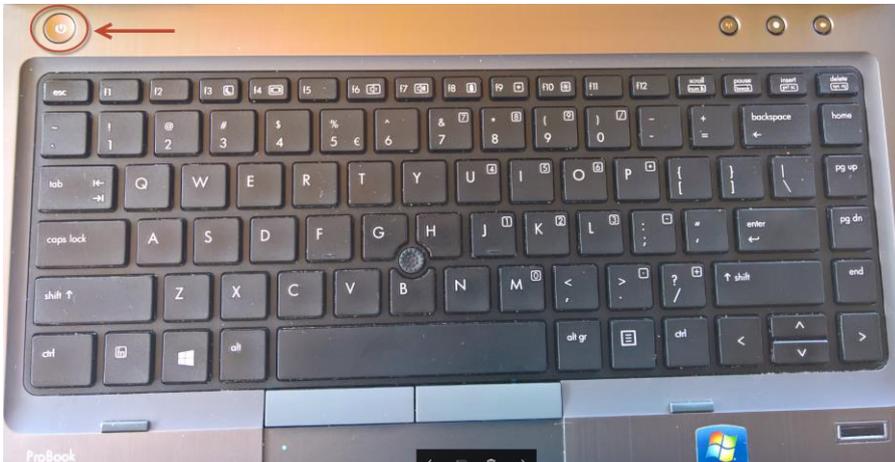
In order to start the PXE process, one must ensure that the LAN cable is connected to the device.
Note: The device is not connected to the Internet despite the LAN cable is connected to the server.

1.2 Connect the device with the correct power adapter and start

The device is now connected to the correct power adapter. From this moment on, the device and the power adapter are considered as one unit (that means, the device and power supply are passed together to workstation 5). New devices from the same manufacturer must be connected with their own power supply. With this measure, we ensure that each device has a suitable and functioning power adapter.

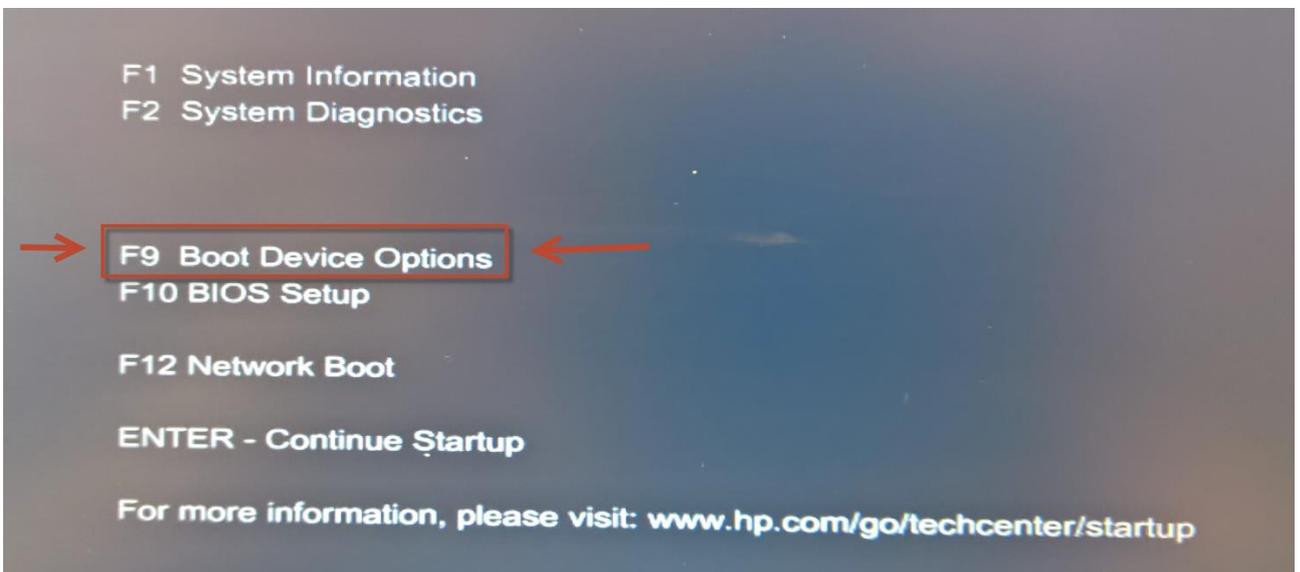


Starting the device:



1.3 Accessing the Boot Menu

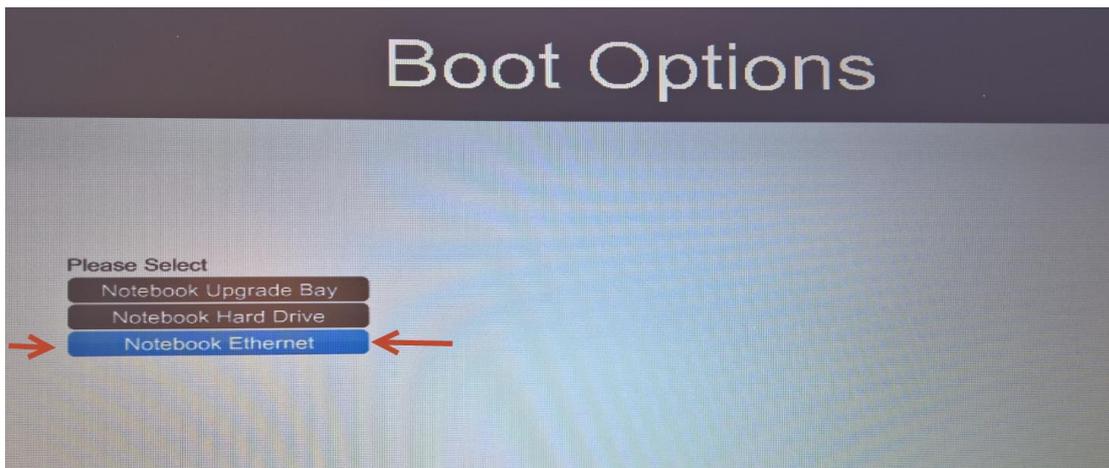
The Boot Menu can often be accessed by pressing the «F9» key. Depending on the device model, however, "F12" or another key may also be required.



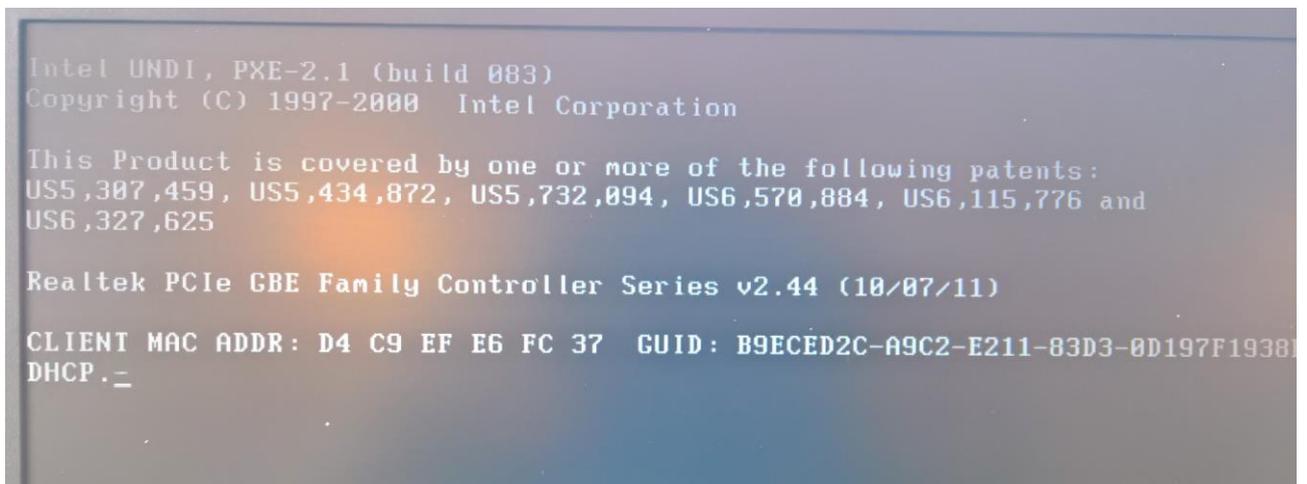
1.4 Boot Menu Options

In the Boot Menu Options there are different Selections offered. To start the PXE process, the network card must be selected. Different names are used for this selection option, for example "Notebook Ethernet" or "Network Controller" etc.

Note: If there is no Notebook Ethernet option (or similar), the Bios Setup must be called up to enable this option.



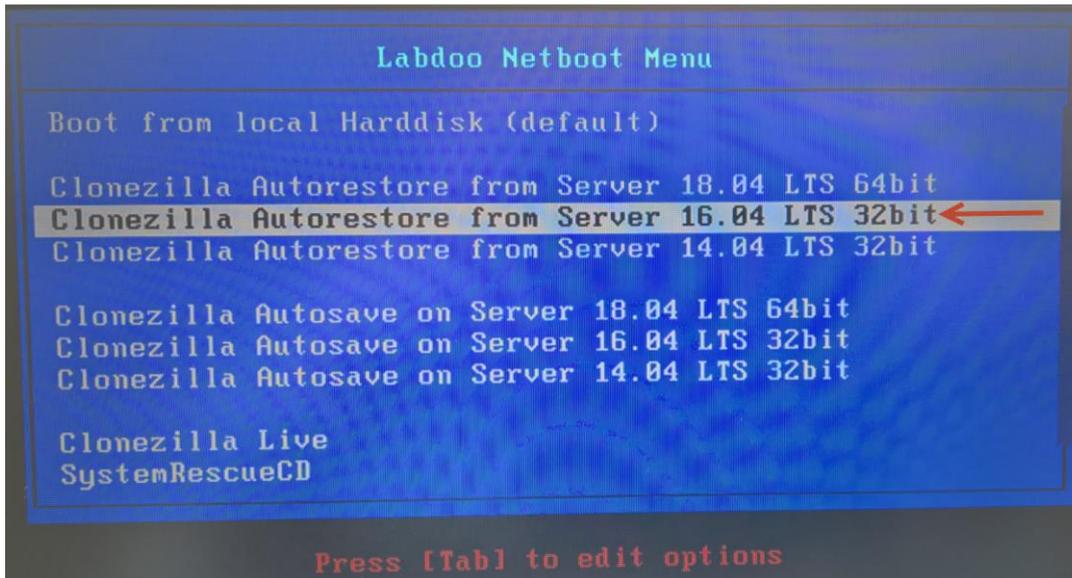
The device goes into PXE mode and searches via network cable for an available server (from which the device receives an IP address via DHCP).



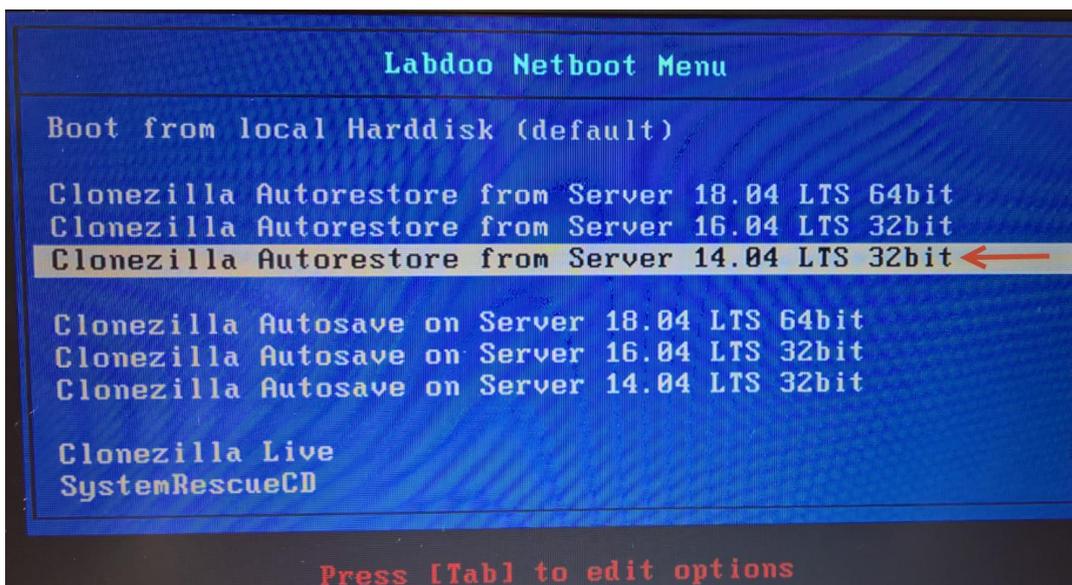
1.5 Labdoo Netboot Menu Options

After a few seconds, the Labdoo Netboot Menu appears. In this menu you should select the option «**Clonezilla Autorestore from Server 16.04.LTS 32bit**» (standard for most devices -> see also minimum specifications).

Note: Autorestore from Server 18.05 LTS 64 bit will not be available until spring 2018.



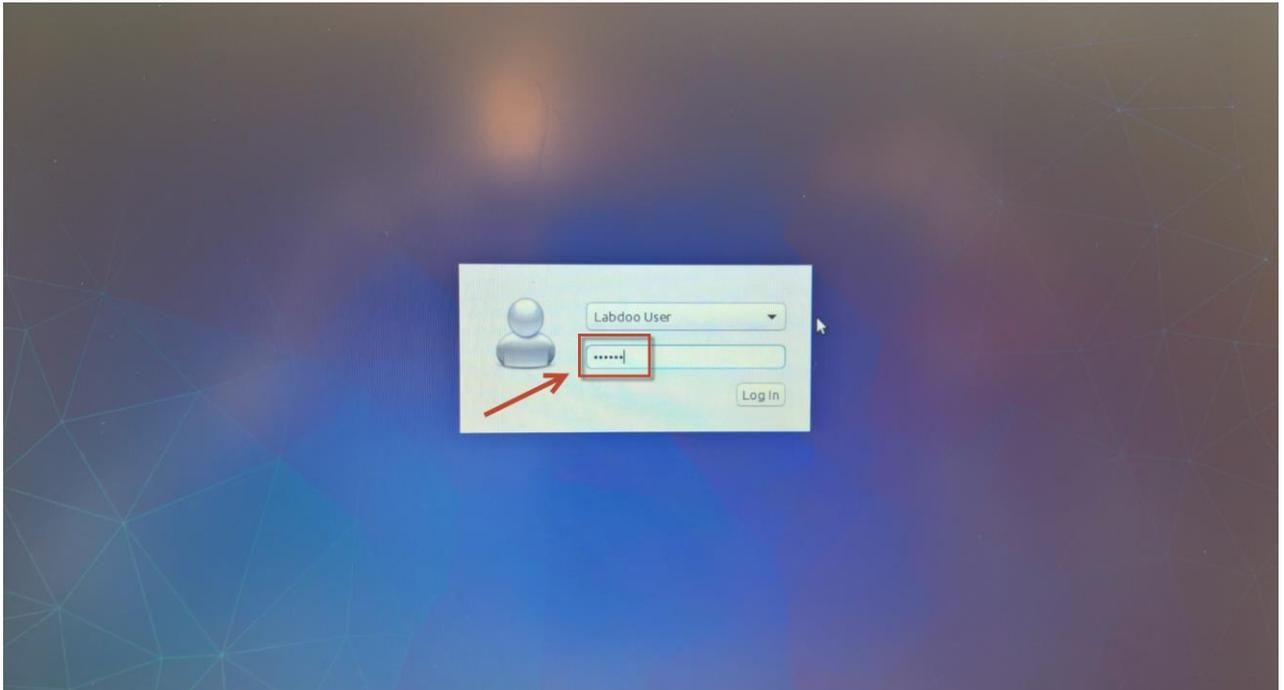
For older devices with low resource specifications (Windows XP generation) it is better to select the older and resource-saving «**Clonezilla Autorestore from Server 14.04 LTS 32bit**».



1.7 Finalizing the PXE Process

The end of the PXE process is indicated by the appearance of the login window. The new operating system (Lubuntu) is installed and can be started with a password.

The administrator password is: **labdoo**



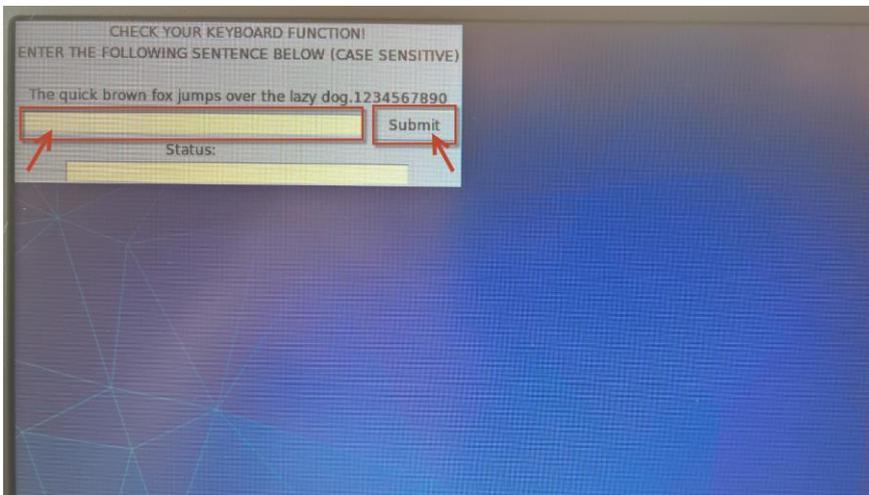
2 Technical data Collecting from Device

Technical data must be collected per device. These data are displayed after executing an automatic startup script. The script only starts once directly after the PXE process and then deletes itself. If you log on again, the operating system starts normally.

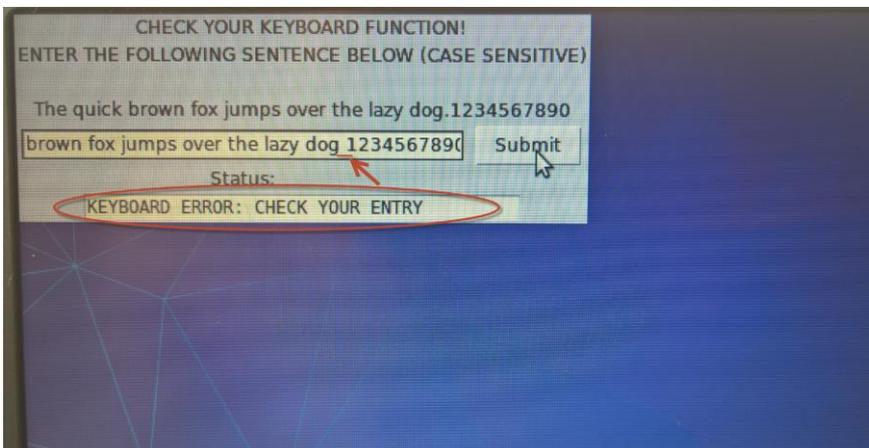
2.1 Keyboard functionality (part of Quality Assurance)

After logging in, the functionality of the device keyboard is checked with the help of a so called Pangramm. A sentence shall be written in which each letter occurs exactly once. The sentence must be entered in the free field and confirmed with «Submit».

This sentence contains following: **The quick brown fox jumps over the lazy dog.1234567890**

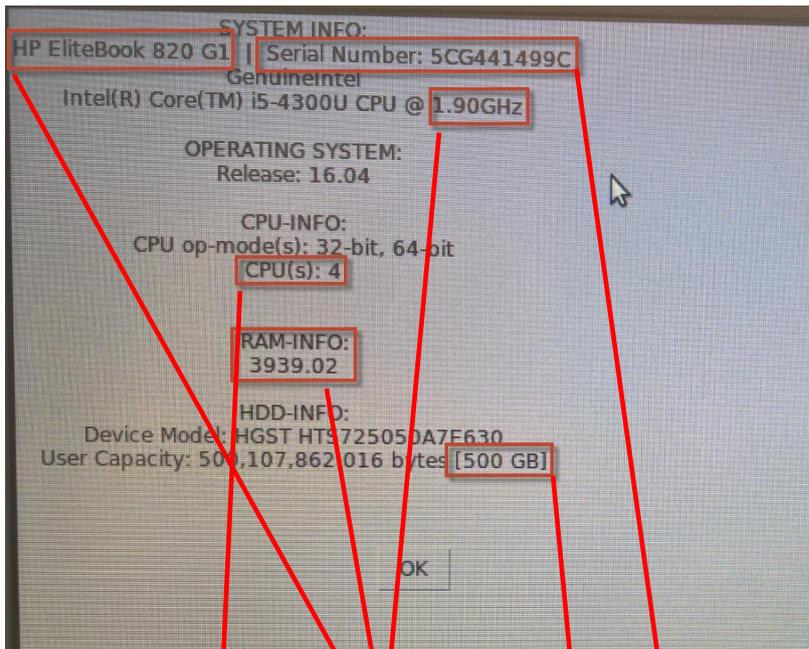


If the keyboard is defective or you make a typing error, you will be informed about this error in the status field "Keyboard Error: Check your entry". The process can only continue if the sentence is 100% correctly entered (including upper and lower case as well as the point and the following numbers).



2.2 Collecting technical data

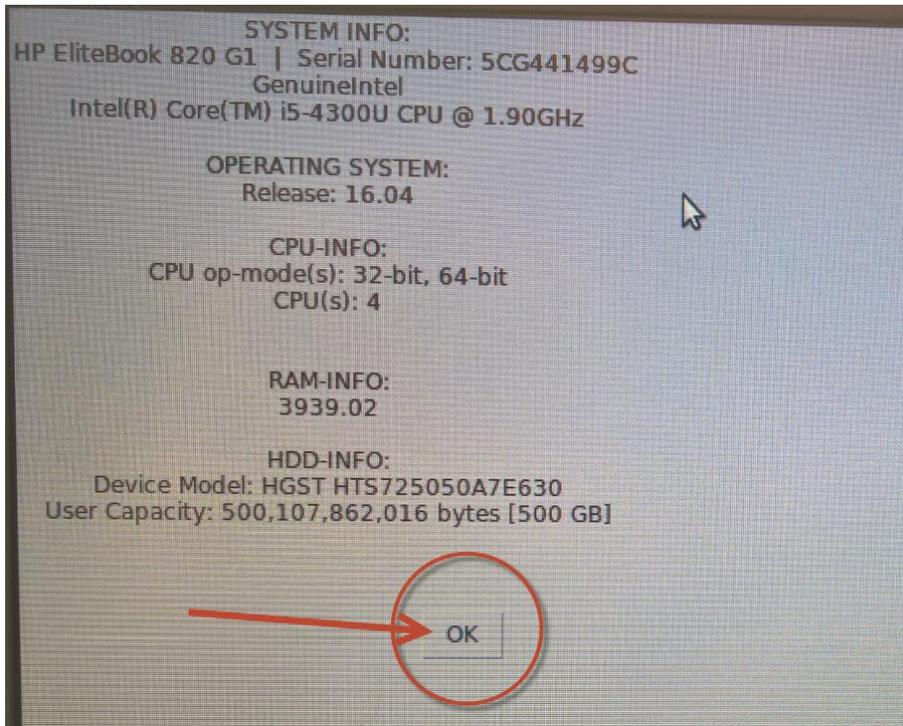
The start script displays all relevant technical device data. The required technical data is now transferred to the Labdoo Process Slip (by handwriting).



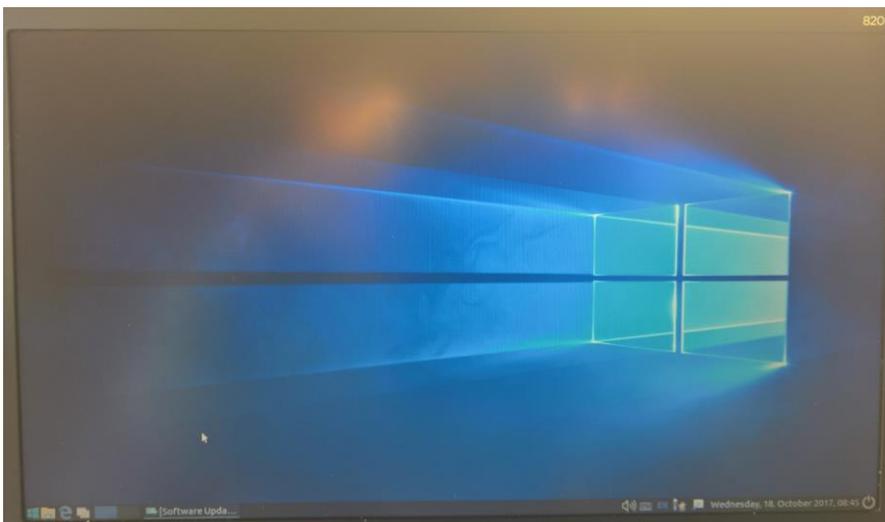
The above data is added into the Labdoo Process Slip.

Labdoo Process Slip		Labdoo.org	
Labdoo Process Slip, Version 03 / 28.09.2017 / RoFL			
BASIC INFORMATION			
Device entry Date			
Donators Name			
Donators e-mail			
Manufacturer & type	HP EliteBook B20 G1		
Serial Number (Please write clearly)	5CG441499C		
Keyboard language	QWERTZ <input type="checkbox"/> QWERTY <input type="checkbox"/> OTHER <input type="checkbox"/>		
Weight			
Donators country wish or EcooVillage			
TECHNICAL INFORMATION			
CPU	//	MHZ	//
RAM	//	HD	//
4	//	1900	//
	//	4096	//
	//	500	//
Tag Nr	//	Comment	
<input type="checkbox"/> Must Shred executed: Date: Initials:			

After the technical data has been noted on the Labdoo Process Slip, the process is completed by clicking on the OK button. The operating system starts.



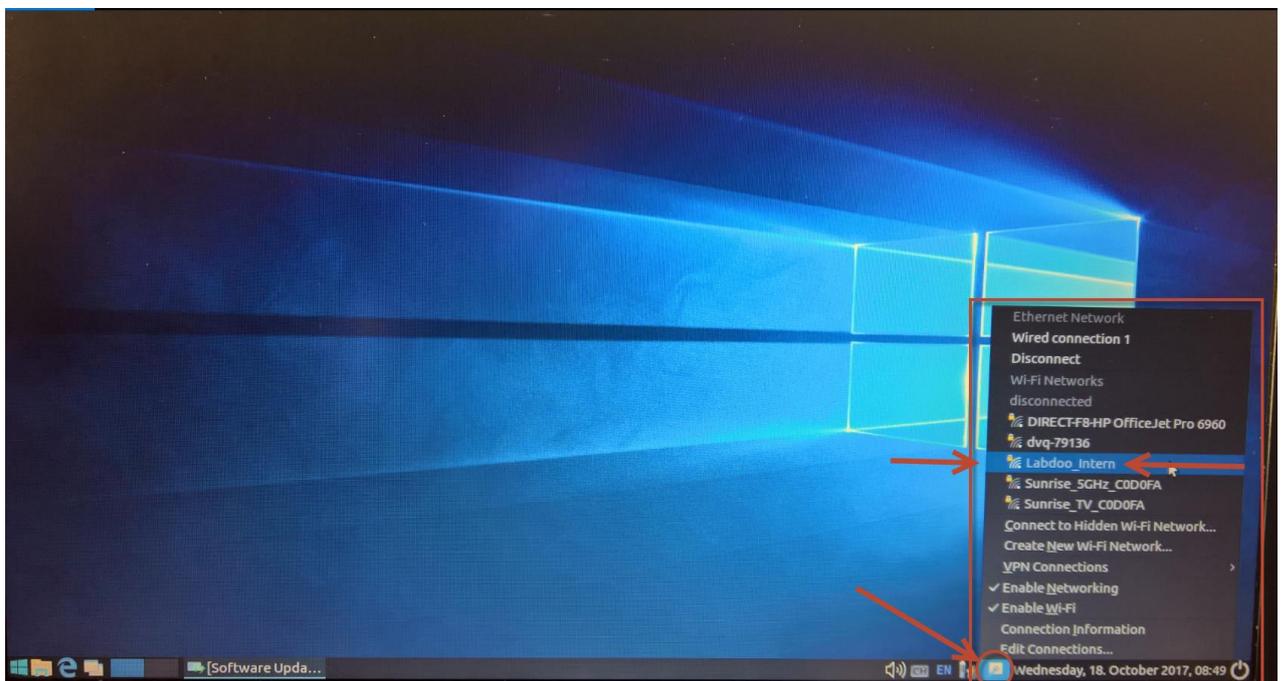
Note: We have added a "Windows Look & Feel sheme" to the Lubuntu operating system. Thus, the Lubuntu operating system feels like a Windows 10 operating system. The aim is to reduce the fear of use with an unknow operating system (Lubuntu) and to prevent that another operating system is beeing installed (Windows) with the result that many of the educational software will be destroyed.



3 Quality Assurance

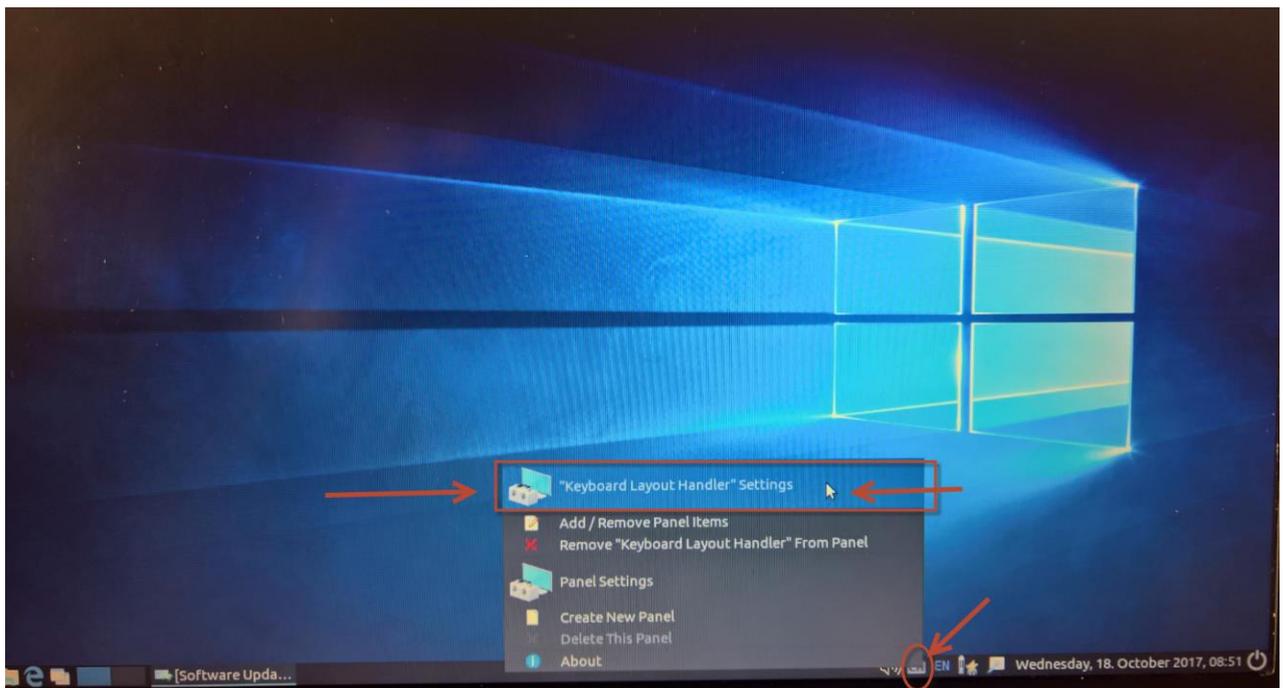
3.1 WLAN Functionality

The WLAN functionality is important feature for many schools and organizations. Therefore, we check its functionality. This can be checked easily. While clicking on the "Wired connections active" button, the available WLAN networks will be displayed. If the WLAN Network appears in the windows the WLAN driver is properly installed. That's all.

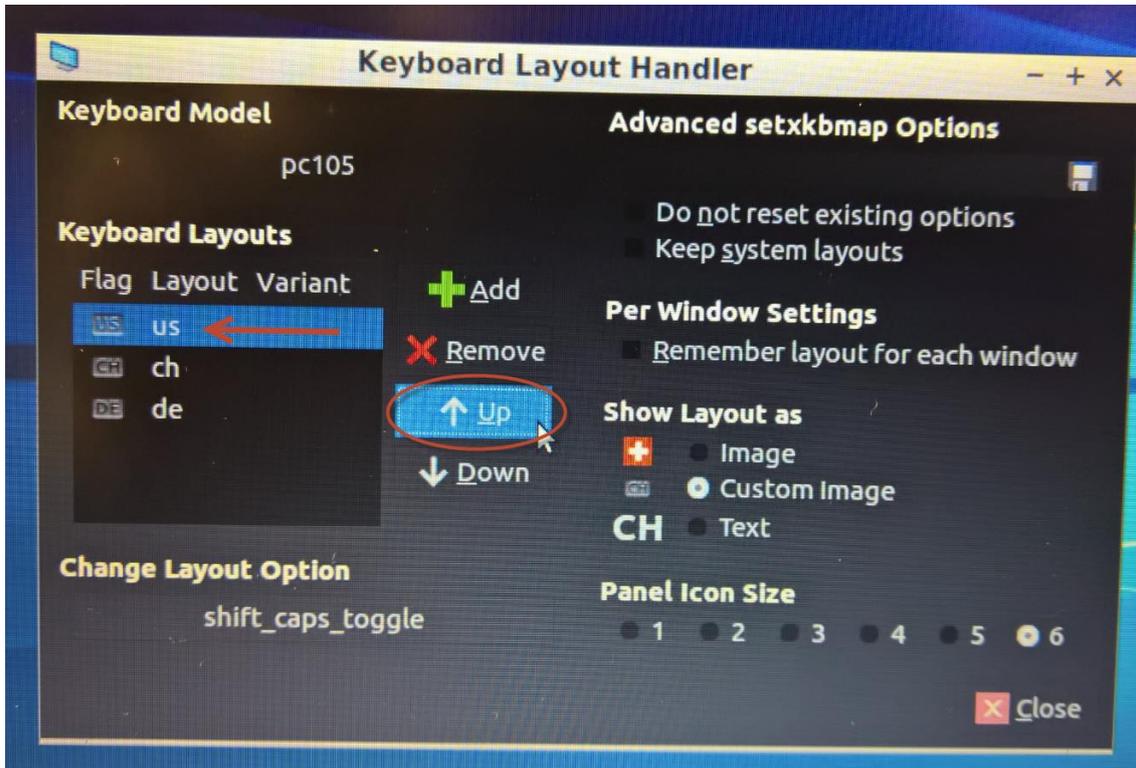


3.2 Setting the keyboard according to country specification

The device keyboard settings can be adjusted in the menu «Keyboard Layout Handler Settings». If the device has a US keyboard (QWERTY), these settings must be adjusted (as in Switzerland the keyboard default setting is set to QWERTZ). After rights-clicking on the button «CH» (see red arrow) a menu appears. Selecting the option «Keyboard Layout Handler Settings» brings you the keyboard settings.



To adjust to a US keyboard, you need to check that the "Keyboard Layout" is set to "US". The keyboard layout "US" must be placed in the first position. If this is not the case, the «US» keyboard setting must be positioned to the first position using the «UP» switch.

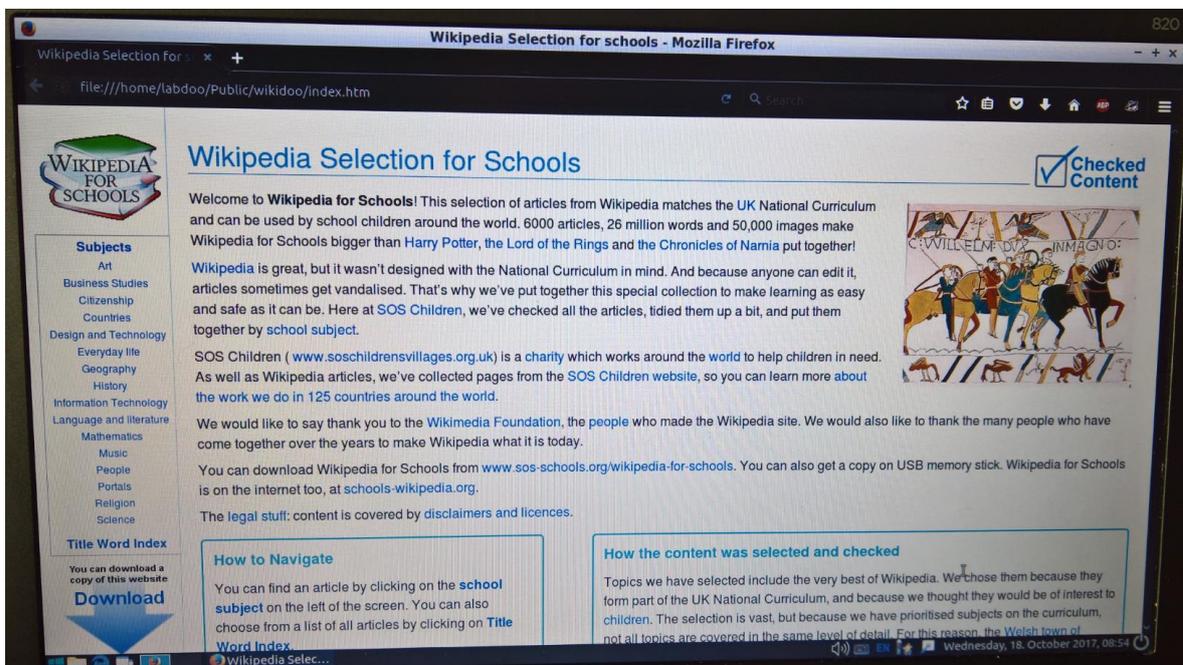
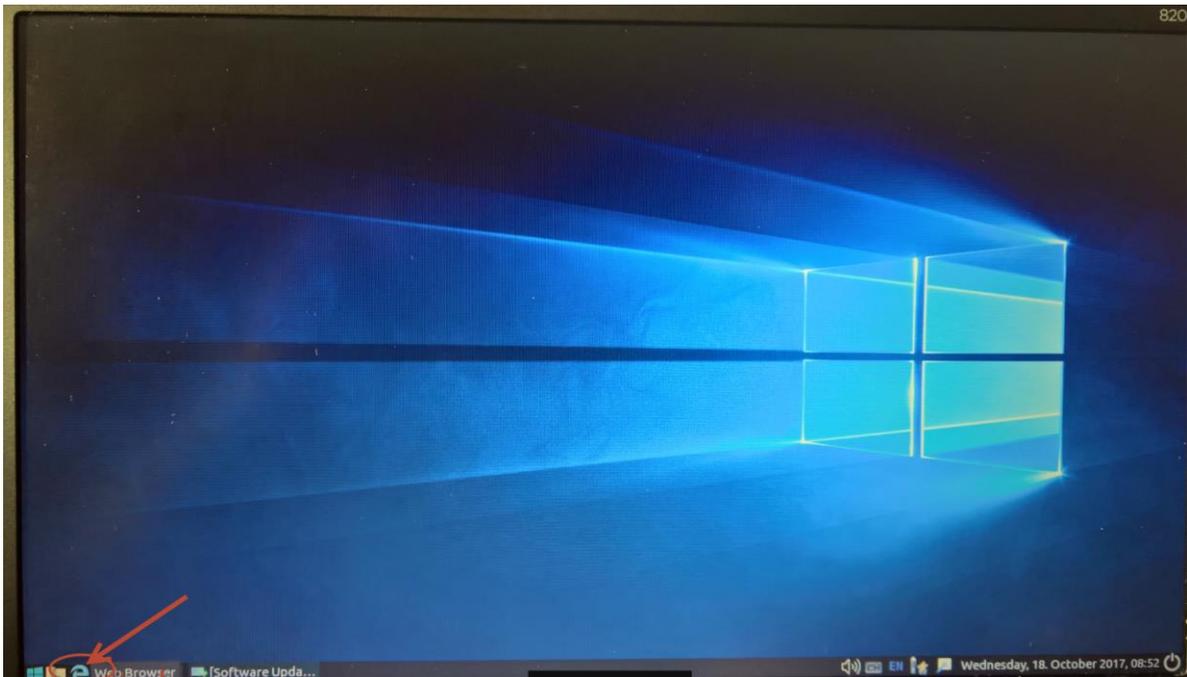


Example of a US keyboard (QWERTY)



3.3 Starting the Web Browser

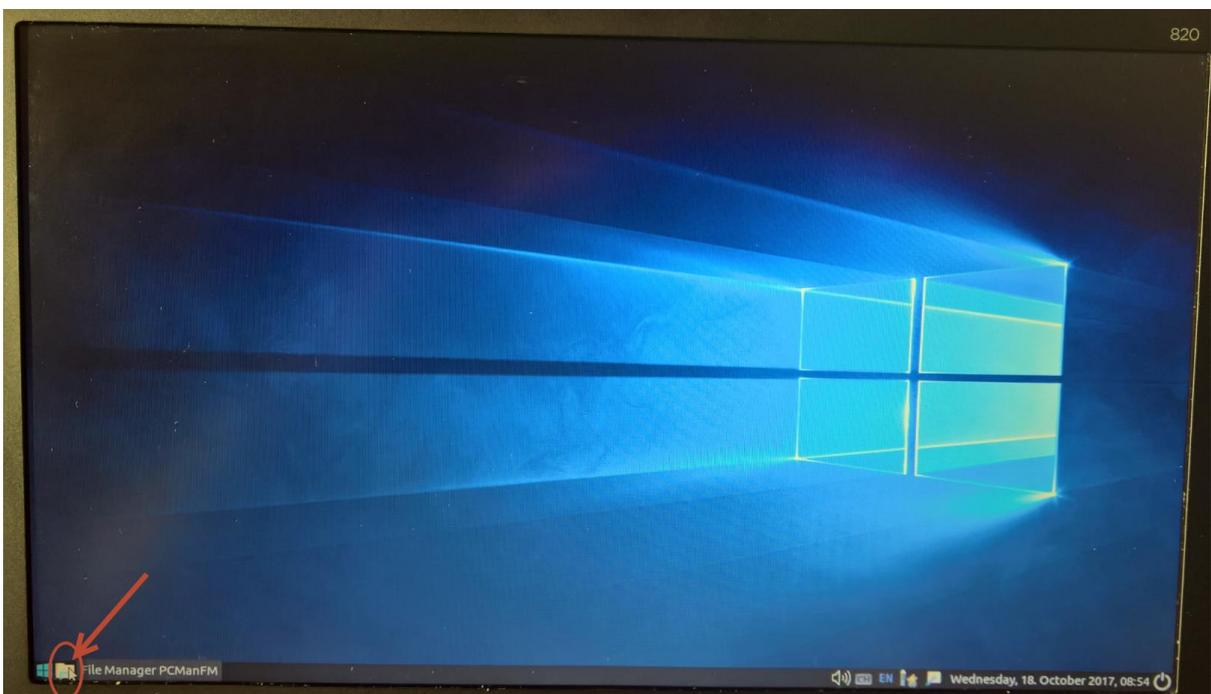
After clicking on the blue "Edge" button, (see red arrow) the Web browser will be opened displaying, "Wikipedia Selections for Schools". If so, the Web Browser is working properly.



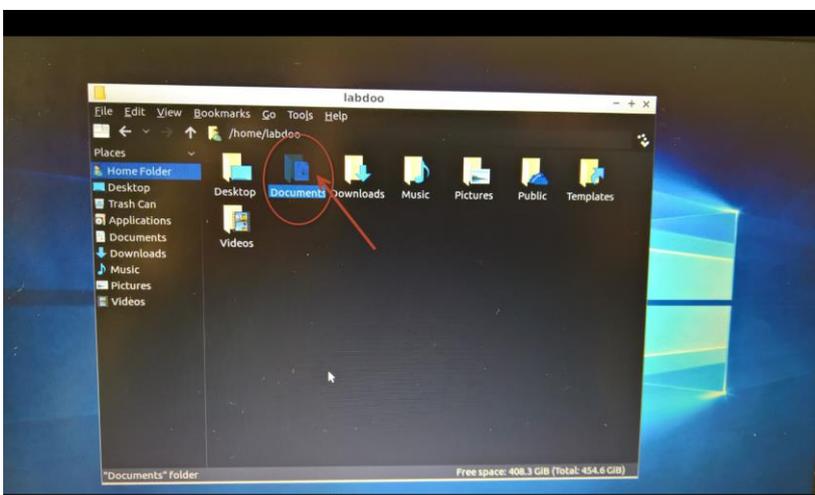
3.4 Functionality of the Sound Driver

The sound functionality of each device is important for many schools and organizations. Therefore, we check its functionality. This can be checked easily. We select a video file and start it. If the video has a sound, the audio driver is installed correctly.

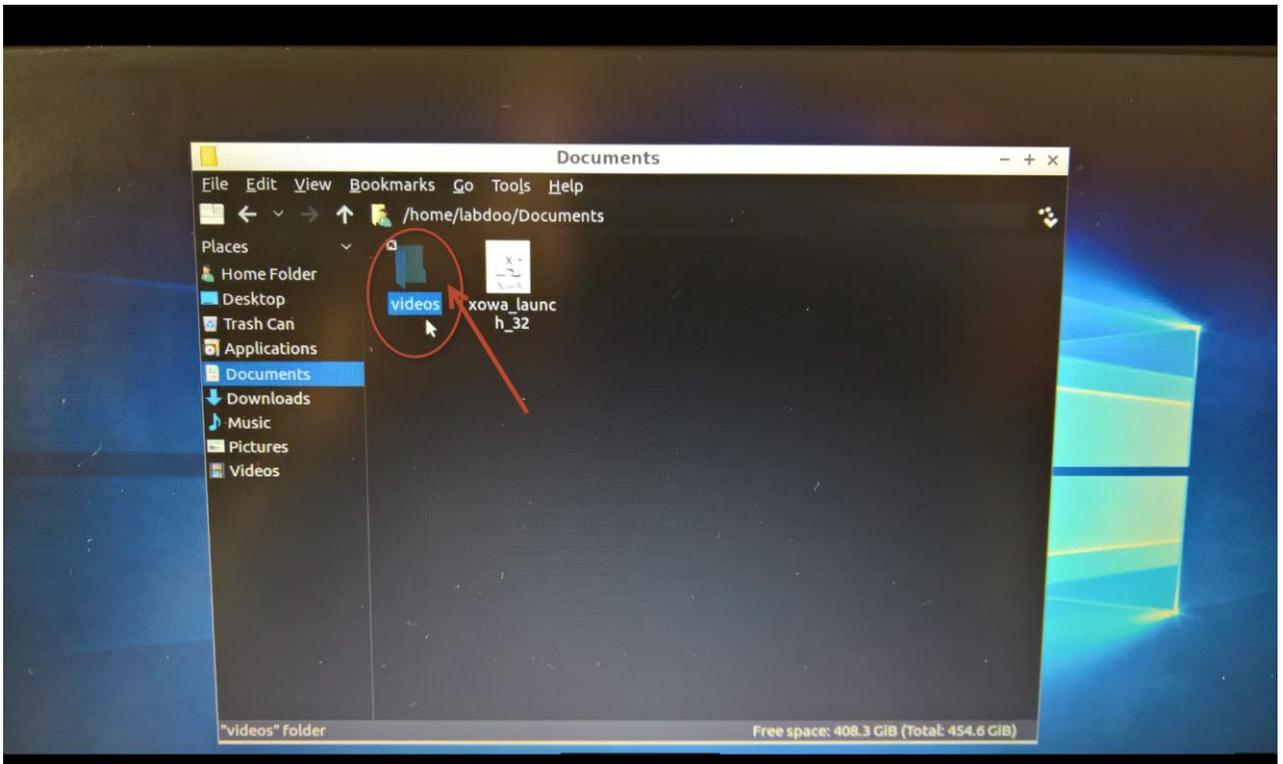
By clicking on the "File Manager button" (see red arrow) we start the File Manager. Using the following path: [/home/labdoo/ Documents / Video](#) brings you the video database. Click on any Video and check if the sound appears.



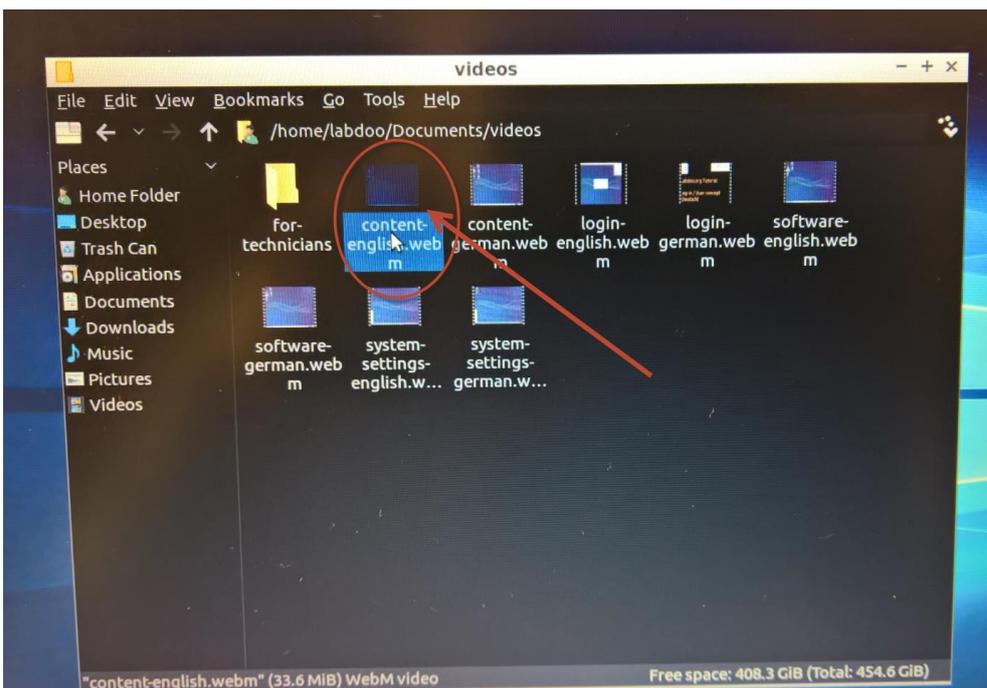
Select the folder «Documents»



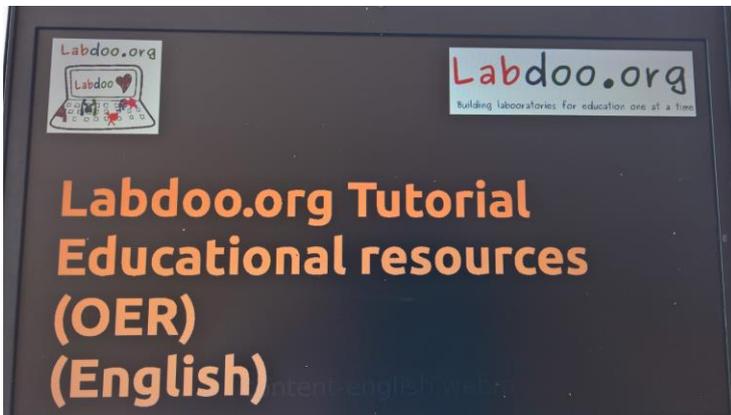
Select the folder «Videos»



Select video «content English web»



If the video sound appears the sound driver is installed correctly.



4 Log out and shut down the device

After Quality Assurance is finalized, the device is ready for the next workstation. The device is shut down and transferred to "Workstation 5" together with the power adapter.

