

# INSTALLATION MANUAL

*Escuelas Linux 8.2*



# INSTALLATION MANUAL



*Version 8.2*

*By Alejandro Díaz Infante, 2023*

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## I. Requirements

Escuelas Linux can be installed on computers with at least 40 GB of free hard disk space. It shouldn't be installed on computers with less than 512 MB of RAM. The specific edition of Escuelas Linux that you should download depends on the RAM amount and/or the Windows version that a computer has.

### **How to know how much RAM a computer has?**

To find that in Windows XP:

1. Open the Control Panel.
2. Double-click the System icon.
3. On the General tab, it displays the amount of RAM installed.

To find it in Windows 7 and Vista:

1. Press the Windows key, type Properties, and then press Enter.
2. In the System Properties window, the Installed memory (RAM) entry displays RAM's total amount installed in the computer.

For Windows 8, 10 and 11:

1. Press the Windows key, type ram, and select the View RAM info option in the search results.
2. In the System Properties window, look for "Installed memory (RAM)" in Windows 8 or "Installed RAM" in Windows 10 and 11.

On each procedure, you can also confirm which Windows version you are using. Once you know the amount of RAM and the Windows version, you can choose which Escuelas Linux edition would be suitable to download.

## 2. Download a suitable edition of Escuelas Linux

### **If your computer has between 512 and 700 MB of RAM:**

Follow the steps documented in the section “Installation of Escuelas Linux LowMem” on page 100.

If the computer has more than 700 MB of RAM, it requires you to download some Escuelas Linux ISO image, available at <https://osdn.net/projects/escuelaslinux/releases/>, in either its 32-bit or 64-bit architectures.

When you choose an ISO image, you should consider RAM’s amount on the computer and/or its Windows version.

### **If the computer has more than 700 MB of RAM and less than 3 GB:**

Get Escuelas Linux 32-bit, by downloading the files `escuelaslinux-8.2-english-32.zo1` and `escuelaslinux-8.2-english-32.zip`. However, if a computer has Windows 8, 10 or 11 factory preinstalled as a UEFI system, you should download the files `escuelaslinux-8.2-english-64.zo1` and `escuelaslinux-8.2-english-64.zip`, even when the computer has less than 3 GB of RAM (for example, 2 GB). To know if your Windows 8/10/11 is a UEFI system, read the instructions on page 16.

### **If a computer has more than 3 GB of RAM:**

Download the files `escuelaslinux-8.2-english-64.zo1` and `escuelaslinux-8.2-english-64.zip`

As Escuelas Linux also has support for the Spanish language, you can find the files that would be required to install in that language, if you need it:

1 `escuelaslinux-8.2-espanol-64.zo1` and `escuelaslinux-8.2-espanol-64.zip`

2 `escuelaslinux-8.2-espanol-32.zo1` and `escuelaslinux-8.2-espanol-32.zip`

You already noticed that each architecture and language contains two files, one with .z01 extension and the other one with .zip. You'll need to download both files.

Once you have downloaded both files, do the steps required in your operating system to decompress ONLY the file with the .zip extension. If you do this in Windows or Escuelas Linux systems, you will obtain a big ISO file, named escuelaslinux-8.2...iso.

**Note:** some Windows systems are configured to hide the file extensions, so the two downloaded files appear with the same name, and you could not know which one has the .zip extension and which one has the .z01. If this is a problem, search on the Internet how to show known extensions for the file manager on the Windows version you are using.

On macOS, you would need to download an app named *The Unarchiver*, and uncompress ONLY the file with the .z01 extension.

If at other Linux distributions you can't uncompress the .zip on your file manager to obtain the .iso image, then you should open a terminal and type the following commands:

```
cd {path and folder name where the zip and z01 files are located} [enter]
```

```
zip -s- escuelaslinux*zip -O todo.zip [enter]
```

```
unzip todo.zip [enter]
```

### 3. Process the ISO image

You should process your selected ISO image to an 8 GB USB stick. You could use a USB stick with more storage capacity, but doing so would waste the free space available, as the USB stick could only be used to install Escuelas Linux.

**Note:** because of the current size of Escuelas Linux, it is no longer possible to use CDs to install. Furthermore, in our previous versions, we recommended using the Unetbootin app to process ISO images to USB sticks, but from our 6.0 version, you should not use that app, as it has ceased to work fine for our purposes.

Remember that your USB stick's contents will be entirely erased when using the suggested app to process the ISO image, so you should not keep any important file in it.

#### **If you already have Escuelas Linux installed**

Open Menu → Applications → Utilities → *Balena Etcher*

#### **If you have Windows or macOS**

Download and use *Balena Etcher*, available at <https://www.balena.io/etcher/>

Once in Etcher, choose the ISO image you want to process, as well as the 8 GB USB stick in which you want to put the Escuelas Linux ISO.

## 4. Hard disk partitioning

**Note:** The steps described in this section are only for computers without a Linux operating system installed. It is assumed that you want to have both operating systems: Windows and Linux. If you already have a Linux system that you wish to replace with Escuelas Linux, do the steps described on page 19 if you have a UEFI system, or on page 25 if your system is Legacy. Then follow the steps documented from 28 to 32.

To install Escuelas Linux is necessary to reduce the Windows partition size to create free hard disk space for the Linux partition.

### Steps to create free hard disk space for Linux, in computers with Windows XP installed

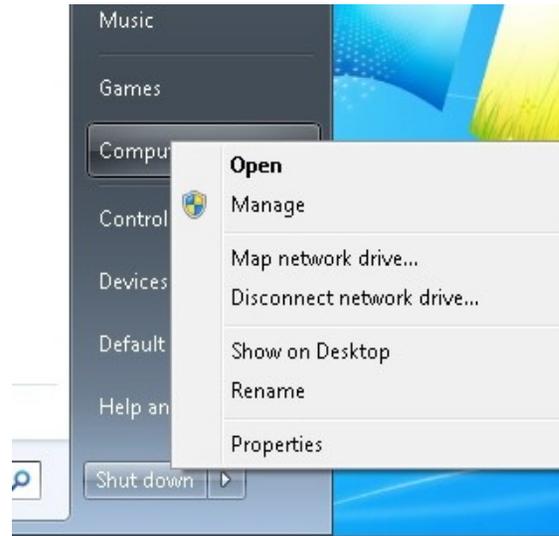
The procedure to shrink a partition on Windows XP is mostly safe, but sometimes it could destroy the Windows partition and the files on it, so we'd suggest back up important files to avoid data loss. If possible, have available a Windows XP setup CD and other programs that a user wants to have reinstalled if needed.

Do the following preparations on Windows XP:

1. Click the “Start” button, select “Accessories,” and next, choose “Command prompt.”
2. Type `chkdsk /f`, and to the question that appears, click Y (Yes).
3. Restart the computer, and wait to finish the disk check until you enter Windows again.
4. Once you returned to Windows, shut down the computer, put the Escuelas Linux USB stick, and go to page 25.

## Steps to create free hard disk space for Linux in computers with Windows Vista, 7, 8, 10 or 11

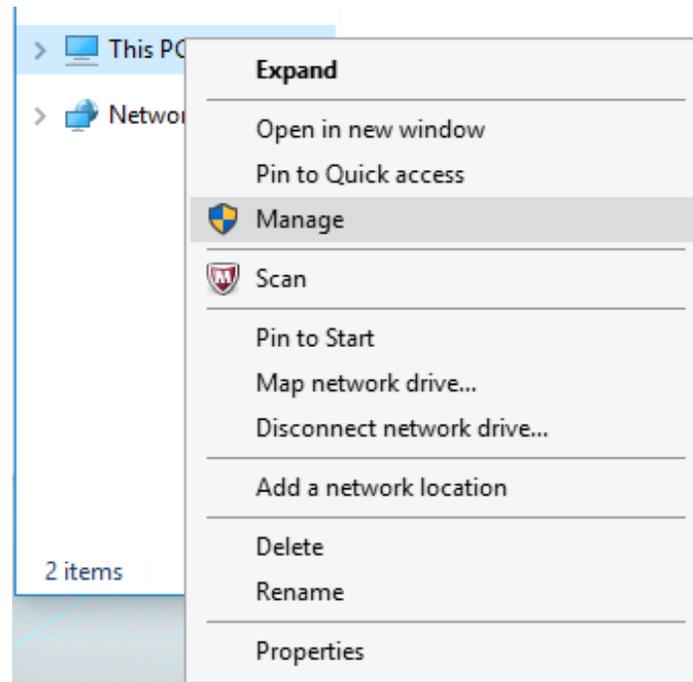
1. If a computer has Windows Vista or Windows 7, click on the Start button, and then click with the right/alternate mouse button on the “Computer” word, choose “Manage.”



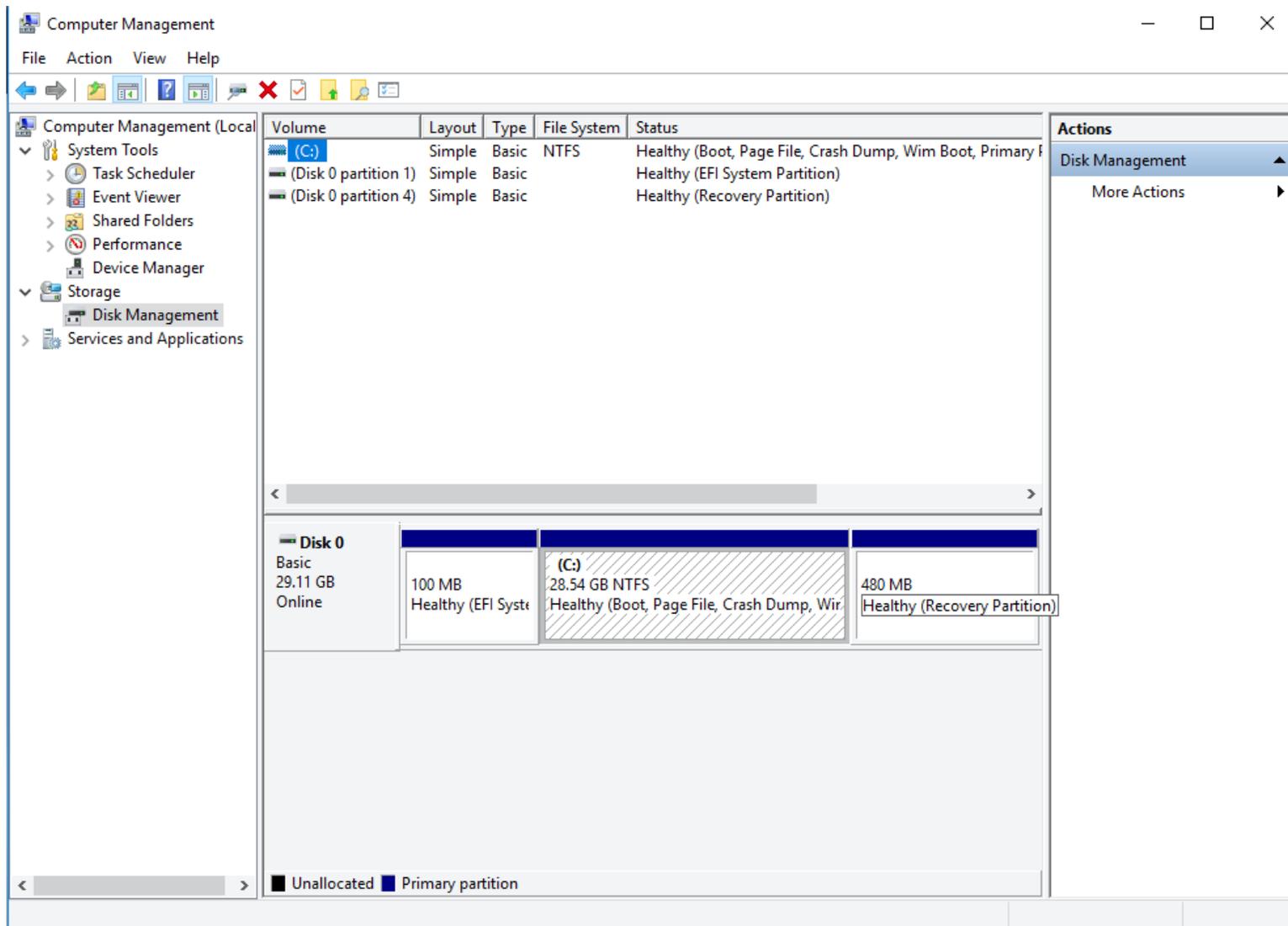
2. If a computer has Windows 8, go to the Desktop...



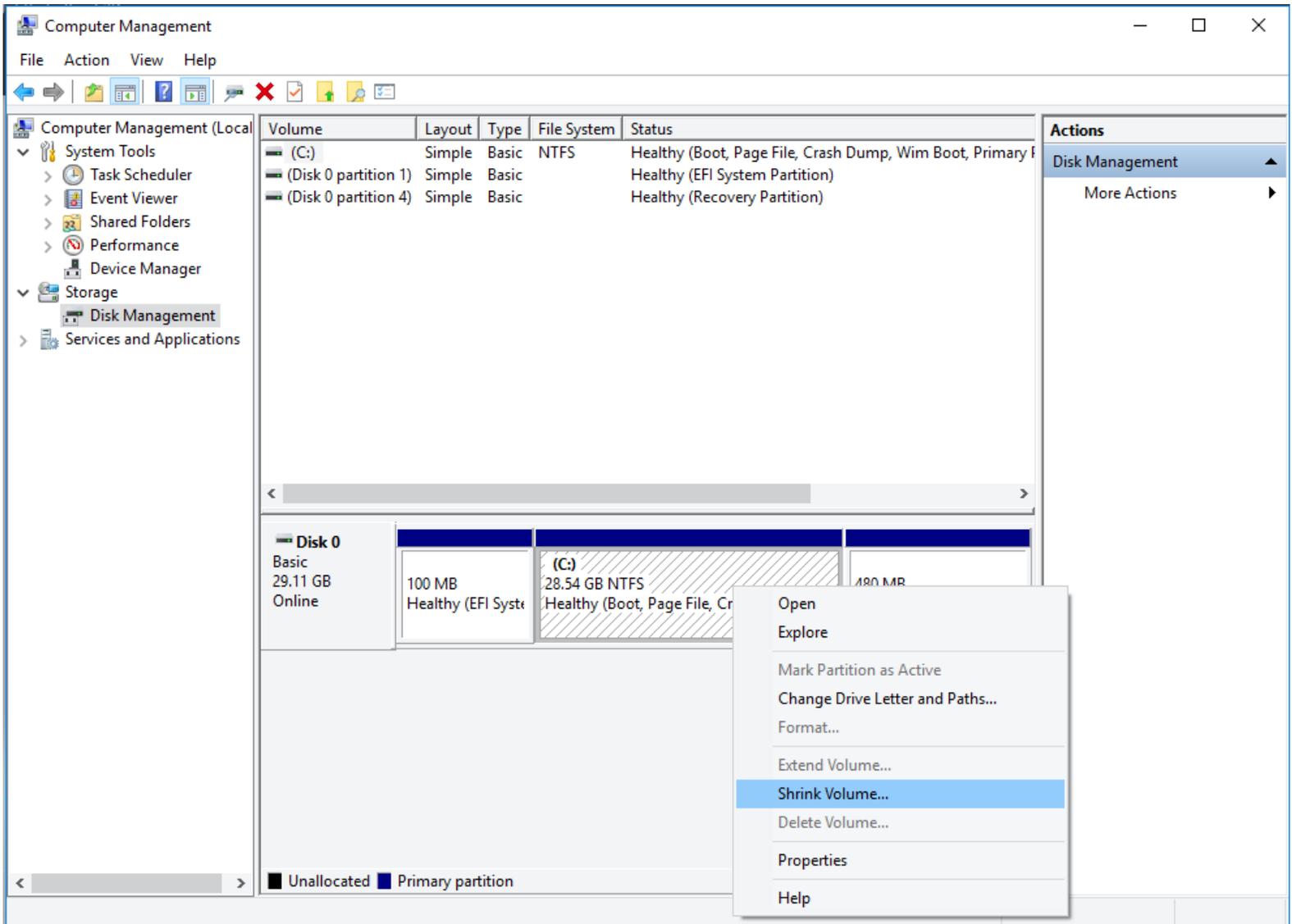
On Windows 8, 10 or 11, click on the Windows File Manager icon.



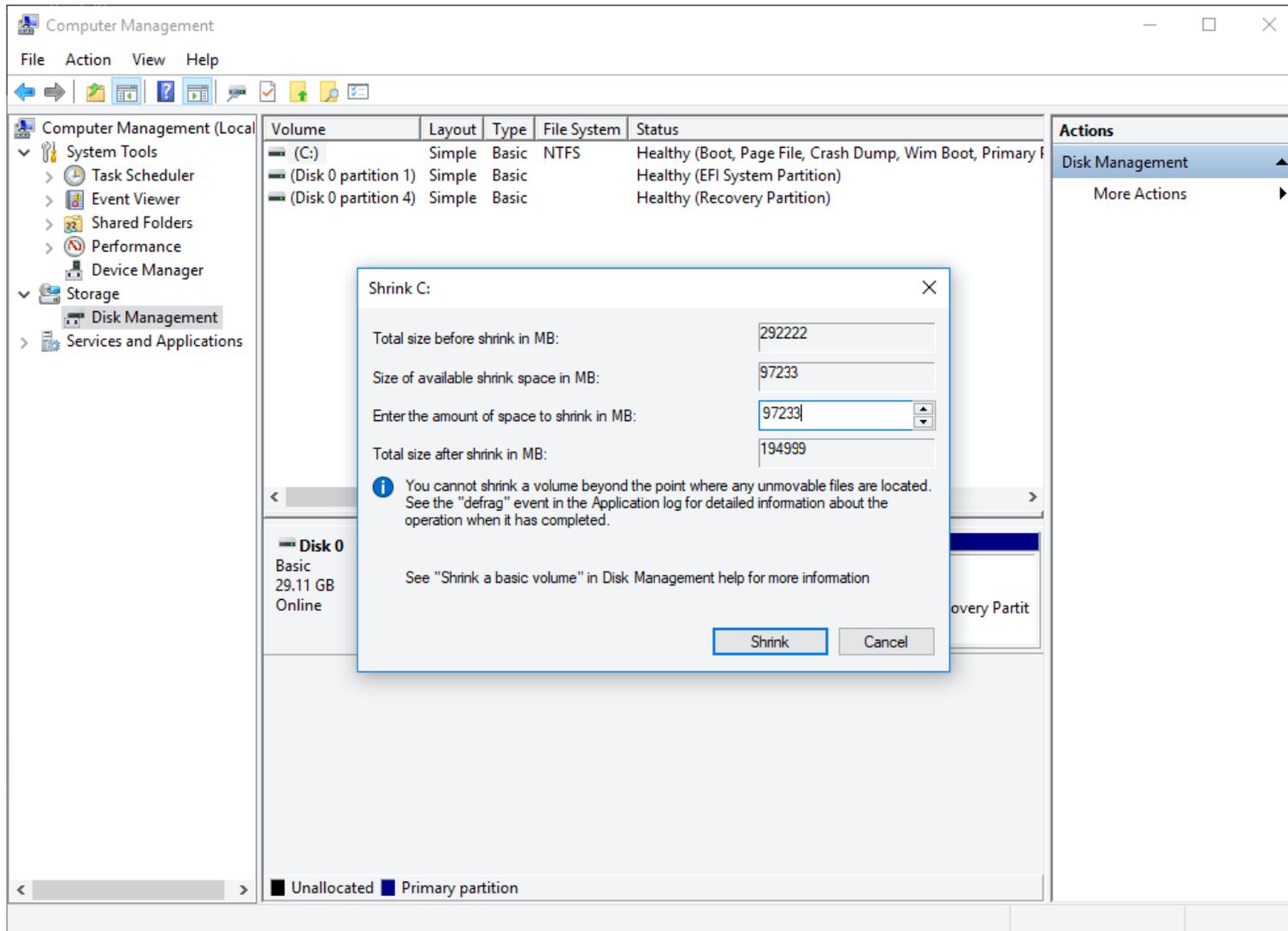
Click with the right/alternate mouse button on “This PC,” and choose “Manage.” On Windows 11 you may need to click first on “Show more options” to have the “Manage” entry visible on the next right/alternate click on “This PC.”



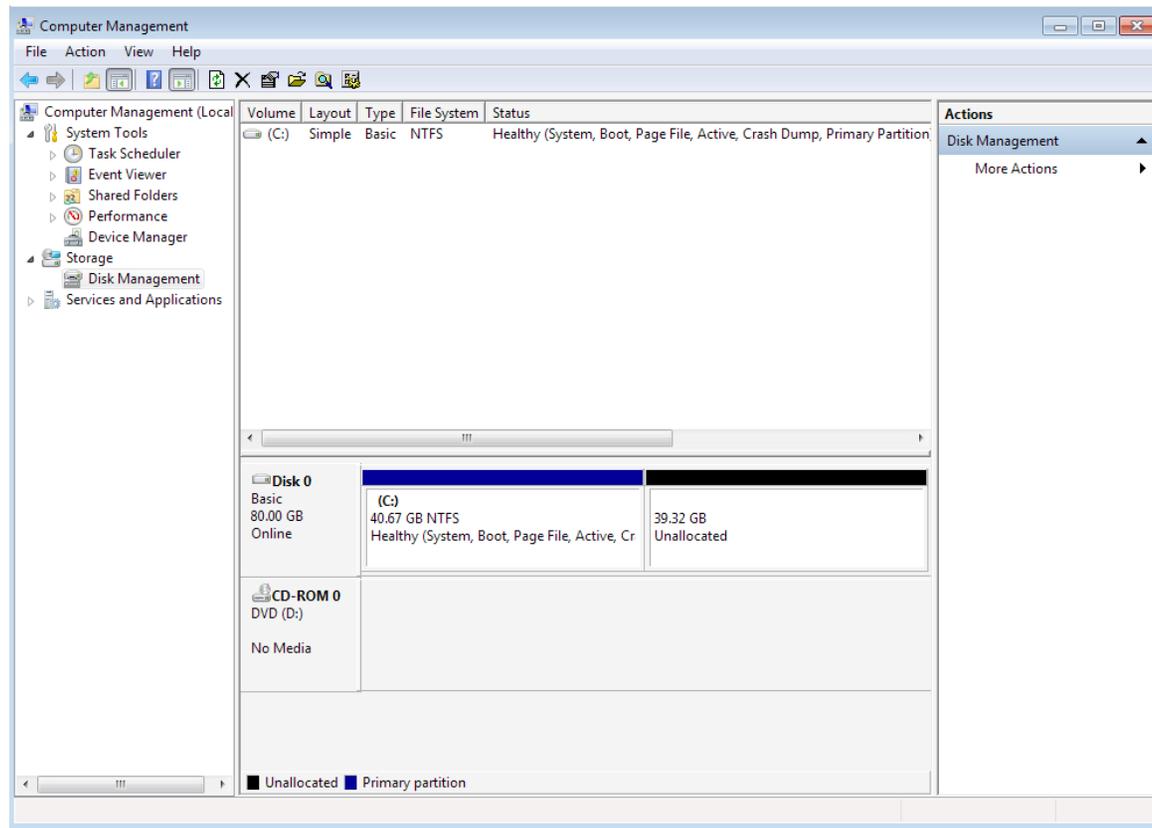
2. Click on “Disk management” and choose the main or the bigger Windows partition (it usually has the letter **C:**)



3. Click with the right/alternate mouse button on the Windows partition, and choose “Shrink Volume...”



4. At the dialog box, type the amount in MB that you wish to reduce from the Windows partition. The minimal amount is around 40,000 MB (40 GB.) If possible, we'd suggest using half of the total hard disk space.



5. Once you have free, not assigned space on your hard disk, close all the open programs in Windows, put the Escuelas Linux USB stick, and reboot the computer.

**Note:** If Windows offers you a tiny hard disk space when you ask it to resize its partition (even when you have enough free hard disk space), we suggest the use of EaseUS Partition Master, available at <https://www.easeus.com/partition-manager/epm-free.html>

## 5. Determine if your computer is UEFI or Legacy

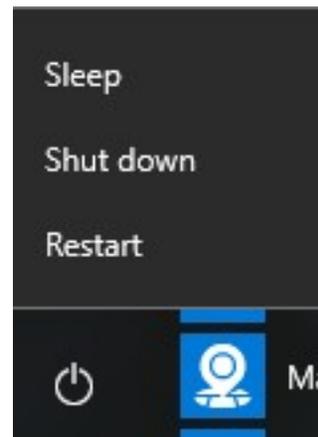
If a computer has Windows XP, Vista, or 7, it is Legacy system; you can go right now to page 25.

If a computer has Windows 8, 10 or 11, you'll need to verify what it is.

### Check if your computer is Legacy or UEFI



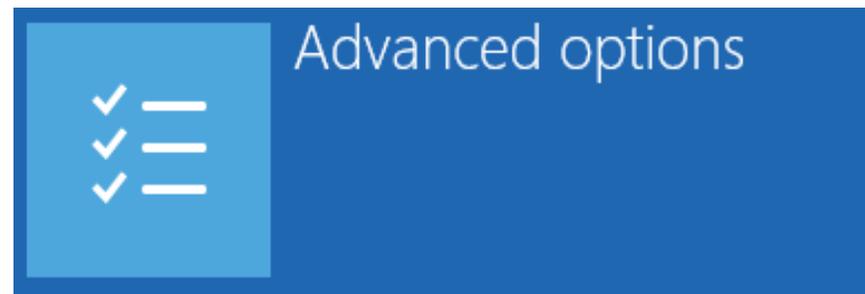
On Windows, click on the “Shutdown” button



While pressing SHIFT key, click on “Restart.”



Click on "Troubleshoot."



Next, click on "Advanced Options."



Next, click on “UEFI Firmware Settings” (if your computer does not have that option, shut it down and do the procedures documented from page 25)



Click on the “Restart” button.

## 6. Boot Escuelas Linux on computers with Windows 8, 10 or 11 as a UEFI system

**Note:** You can ONLY do this procedure with the 64-bit edition of Escuelas Linux. The 32-bit edition is not adequate for this procedure.



At restart, a dialog may appear to configure your UEFI computer, and it is different among computer brands. In this example (an HP model), we chose “BIOS Setup”...



In the “Security” menu, choose “Secure Boot Configuration.”



Next, **we put at “Disable” the option “Secure boot.”** This action should be enough for most cases but, if you try to boot Escuelas Linux and does not work, you may try the following additional steps.

You could make sure that “Legacy compatibility” is disabled. In other BIOS, make sure that any option related to “Legacy Mode” is disabled. In other BIOS the legacy compatibility is named “OS Mode Selection,” in which you should make sure it is set to “UEFI OS.” Also, in some BIOS the option “Protected Signatures” should be put to “Disabled.”

In other BIOS could be necessary to do some additional steps:

## Key Management

Choose the option Key Management, still having Enabled the “Secure Boot” option.

## Clear Secure Boot Keys

Choose “Clear Secure Boot Keys.” Next, you can now set Secure Boot to “Disabled.”

On some BIOS in which the Secure Boot option is set to “enabled,” but you cannot change that setting, it could be necessary to assign an admin password to disable the secure boot setting.



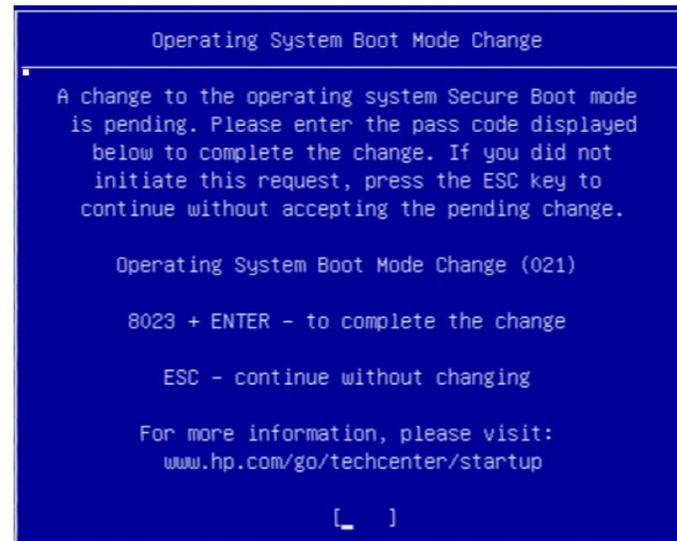
Next, put the Escuelas Linux boot USB stick, and save the changes on the BIOS. (In the computer brand we use as an example, it is on the menu “File” → “Save Changes and Exit.”)

At computer restart, click once or several times the key on your computer that lets you choose a boot device, just when the computer brand's logo is visible.

On computers varies which one is the boot device key. Here are some typical examples:

HP	F9
Dell	F12
Asus	F8
Lenovo	F12

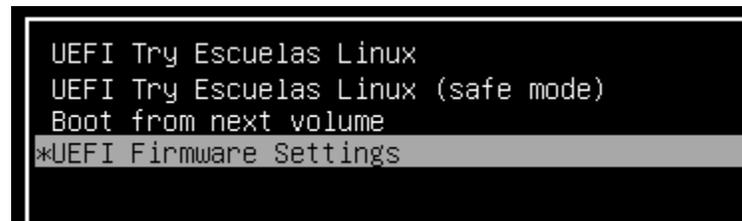
Note: if you don't know which is the key that lets you select a booting device, in Windows 8 or higher you can insert the Escuelas Linux USB stick, maintain pressed the SHIFT key while clicking on "Restart," then click on "Use a device" to select your USB stick as the boot option.



On the HP computer used here as an example, the key is F9. In this model will appear a message asking you to type four random numbers and press the [enter] key to confirm that you want to boot without Secure Boot enabled.



Choose the device with which you want to boot your computer. In the example shown above, we selected a USB stick of the KINGSTON brand that includes the word UEFI. This USB stick was previously prepared for booting with the procedure described on page 8.



If a screen like the one shown above appears, with only black and white colors, that means that your USB stick has been correctly detected as a UEFI boot device. You can select “UEFI Try Escuelas Linux.”

If a screen with several colors appears, that means that your USB stick has been detected in CSM or Legacy mode, which is not useful to boot computers with UEFI preinstalled Windows 8, 10 or 11. You should check again the boot options to solve this issue, mainly check that you select a USB booting device that includes the word “UEFI” as part of its name.

## 7. Boot Escuelas Linux in Legacy mode

Boot process in computers with Windows XP, Vista, and 7, even in computers with Windows 8, 10 or 11 that ARE NOT UEFI systems

1. Place your Escuelas Linux USB stick in your computer, and turn it on. When appears the brand logo of your computer, press once or many times your boot key. Some standard boot keys are:

HP	F9
Dell	F12
Asus	F8
Lenovo	F12

These are not the only boot keys and can even change from one model to another of the same manufacturer.

### **For the 64-bit edition:**

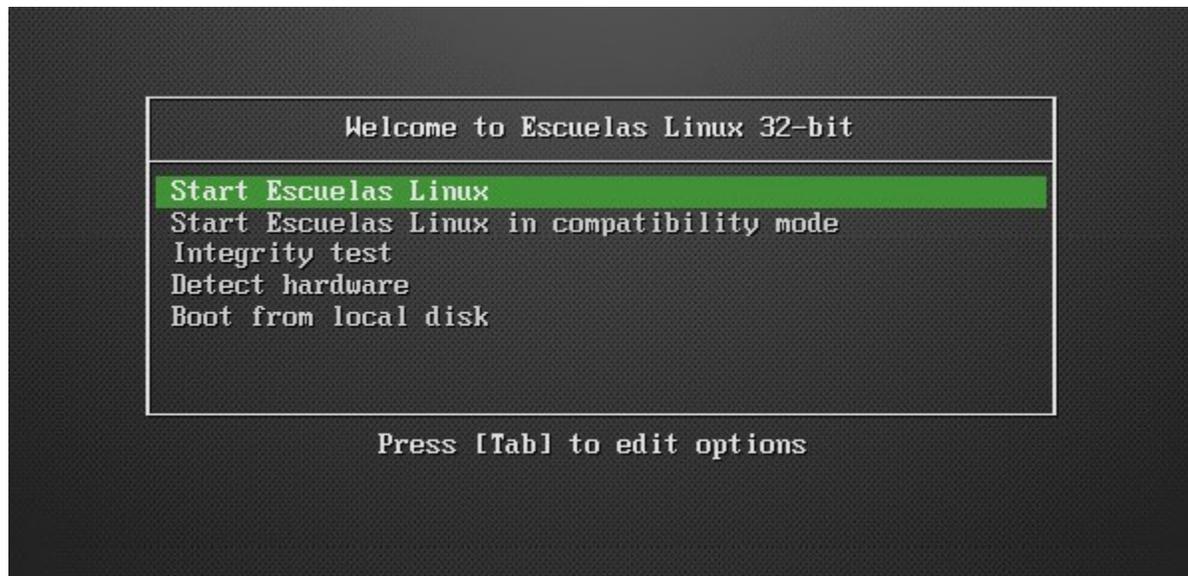
2. If the boot key lets you choose your USB stick, a screen like the one shown below will appear. You can boot a live session with “Legacy/BIOS Boot Escuelas Linux”.



**Note:** if a black background screen with only white characters appears, it means that you are booting in UEFI mode. You should turn your computer off and then turn it on, this time choosing, after pressing the boot key, an option for your USB stick that has not the word “UEFI.” If you are not sure about your computer is Legacy or UEFI, check that by following the procedure shown on page [16](#).

***For the 32-bit edition:***

The following screen will appear. You should select “Start Escuelas Linux”.



Either on the 32-bit or the 64-bit editions, if you find a problem launching the graphical environment, reboot and choose “Safe Graphics Mode” (64-bit) or “Compatibility mode” (32-bit). If that does not work either, reboot and while having selected the first item of the menu, press the TAB key, delete the two final hyphens, type `nomodeset` and then [CTRL-X]

```
> /casper/umlinuz.efi file=/cdrom/preseed/custom.seed boot=casper initrd=/casper/initrd.lz quiet splash nomodeset_
```

After a few seconds, the Escuelas Linux installer will start.

## 8. Escuelas Linux installation



If you accessed via “UEFI Try Escuelas Linux” or with the “Boot/Start Escuelas Linux” Legacy menu, you would see a screen like the one shown above.

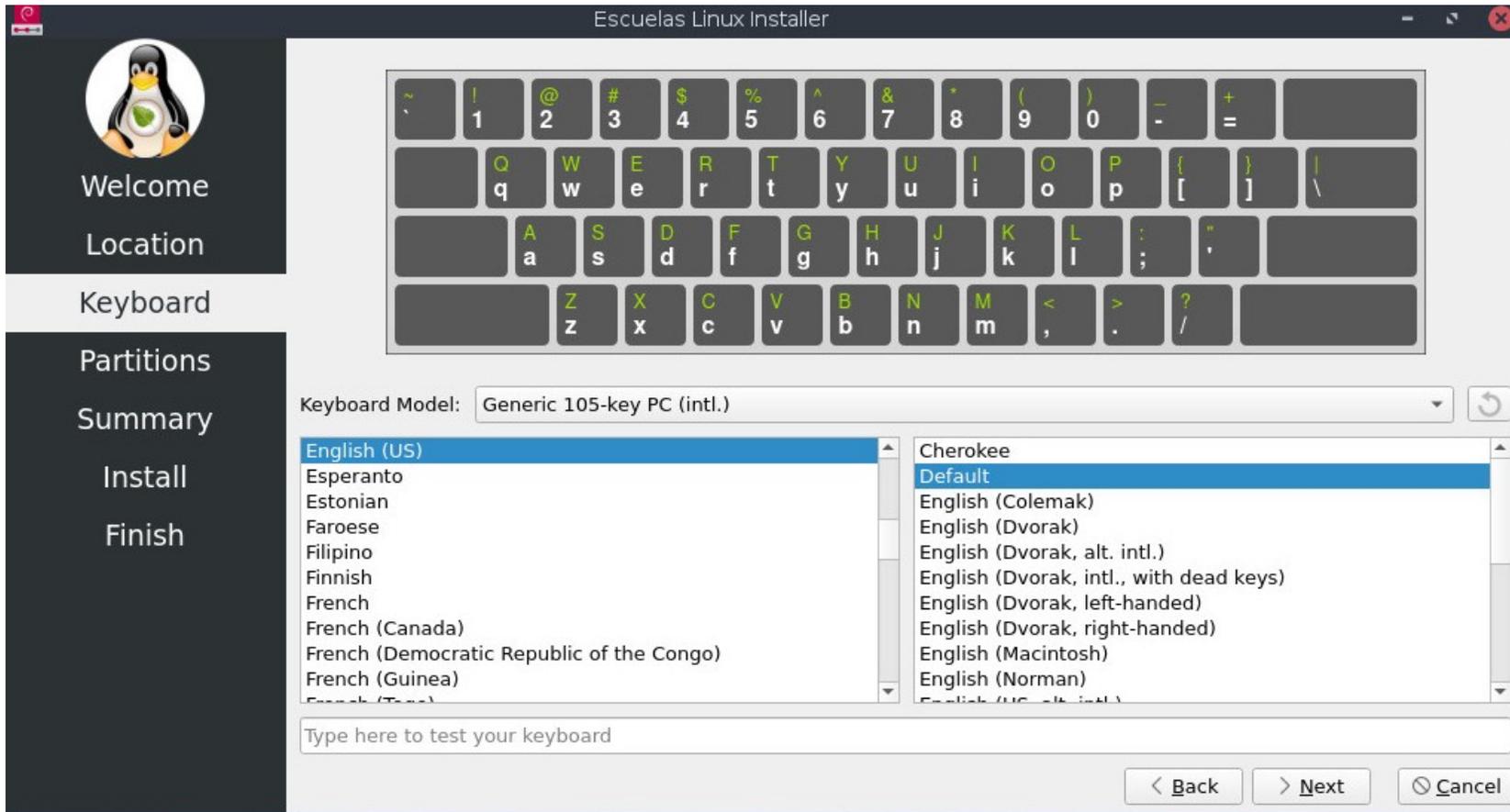
Click only once on “Install Escuelas Linux” (the icon at the bottom of the screen with the disk and a purple arrow). It can take a little while to open the installation program; please be patient. If the “Install Escuelas Linux” icon is not visible, click on the desktop and select Applications → System → Install Escuelas Linux.



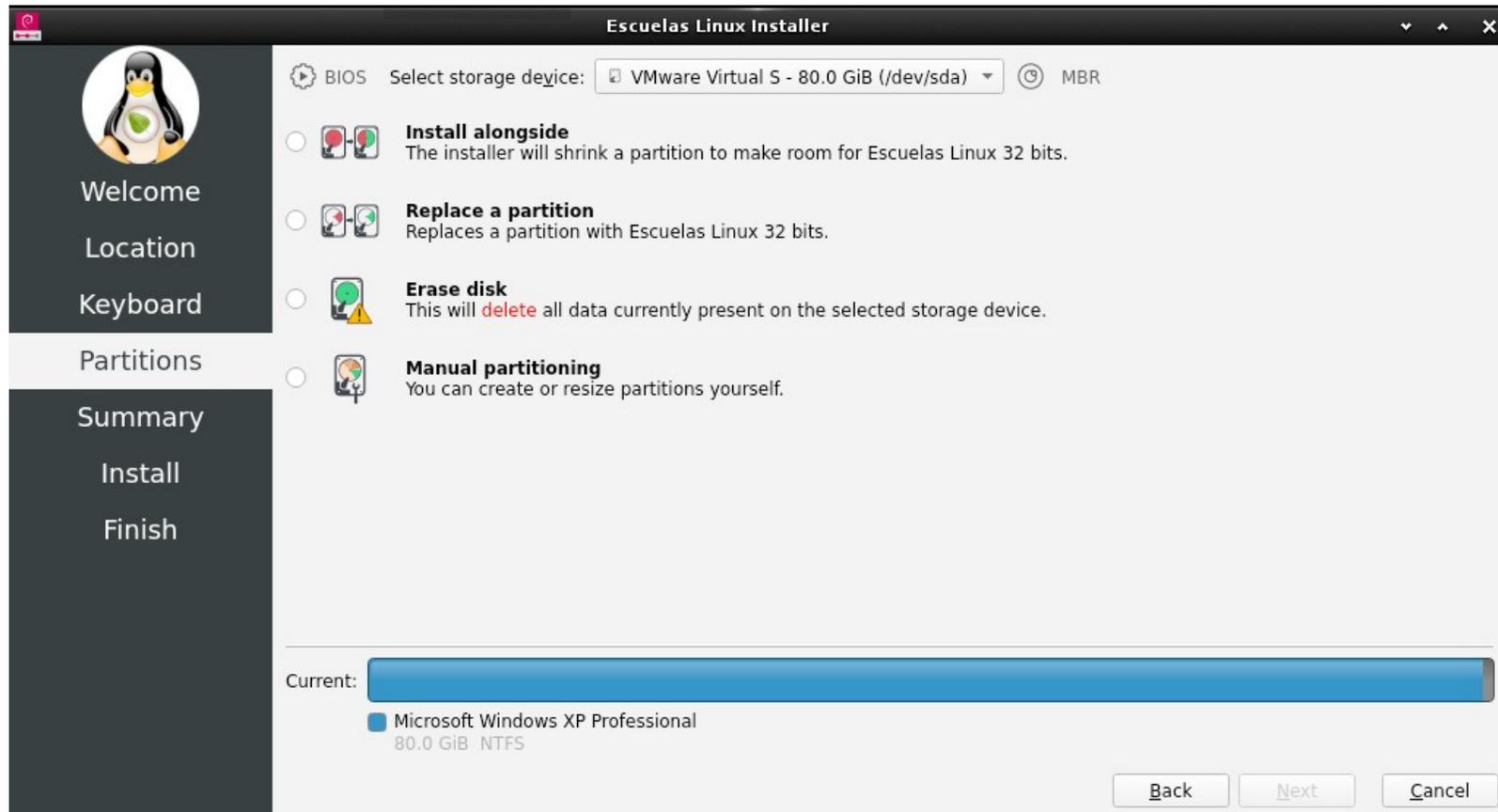
When the installer opens, click on the “Next” button.



Click on your geographical zone, then on the “Next” button.



Select the layout of your keyboard, then on the “Next” button to continue.



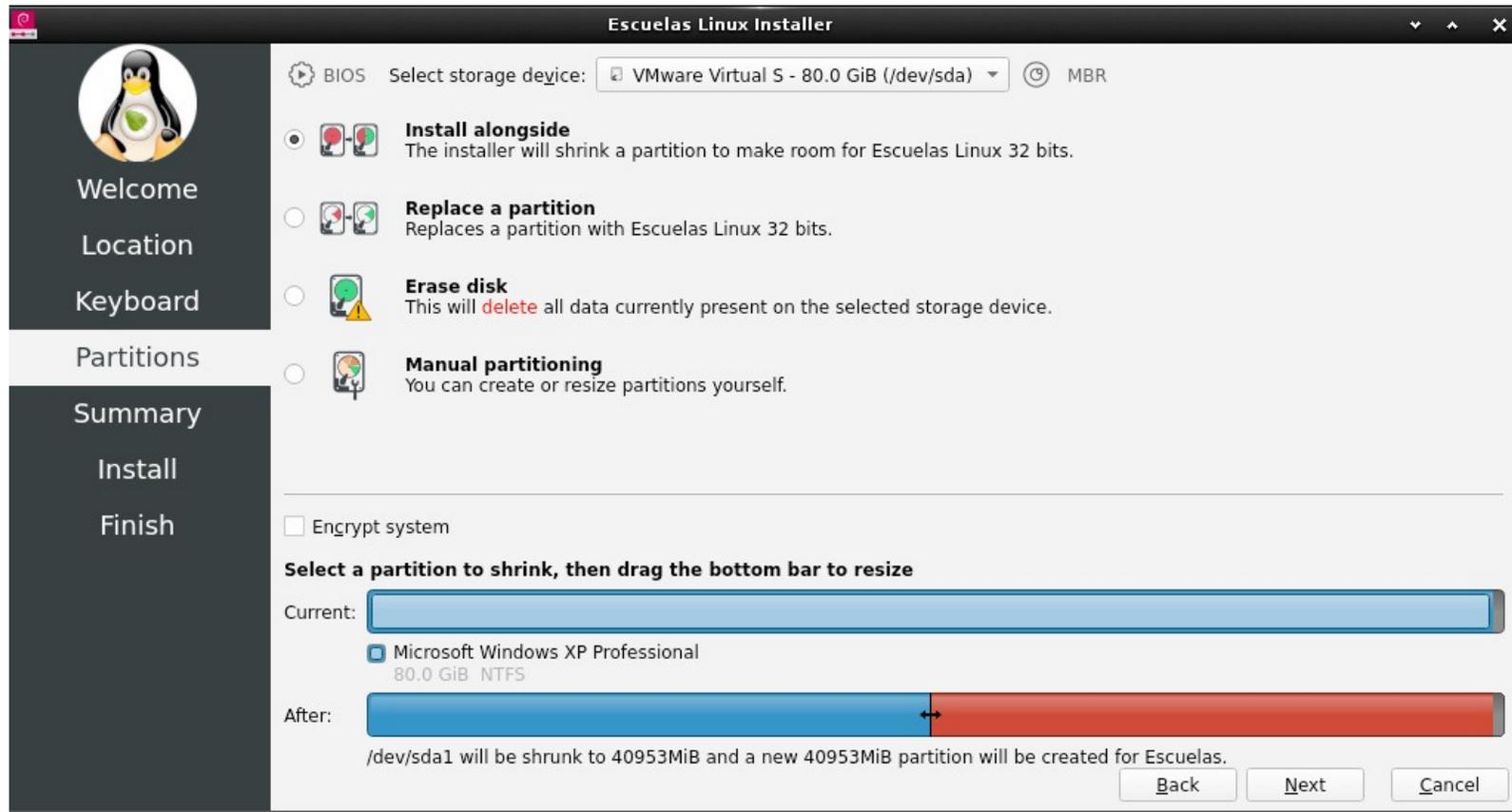
If you have a computer with Windows XP, choose “Install alongside,” click on the “Next” button, and go to the following page of this Manual.

If you have a computer with Windows Vista or Windows 7 to 11, select “Install alongside” click “Next” and go to page [35](#).

If you have a computer with another Linux distribution previously installed, and you want to remove it, pick “Manual partitioning” click on “Next” and go to page [38](#).

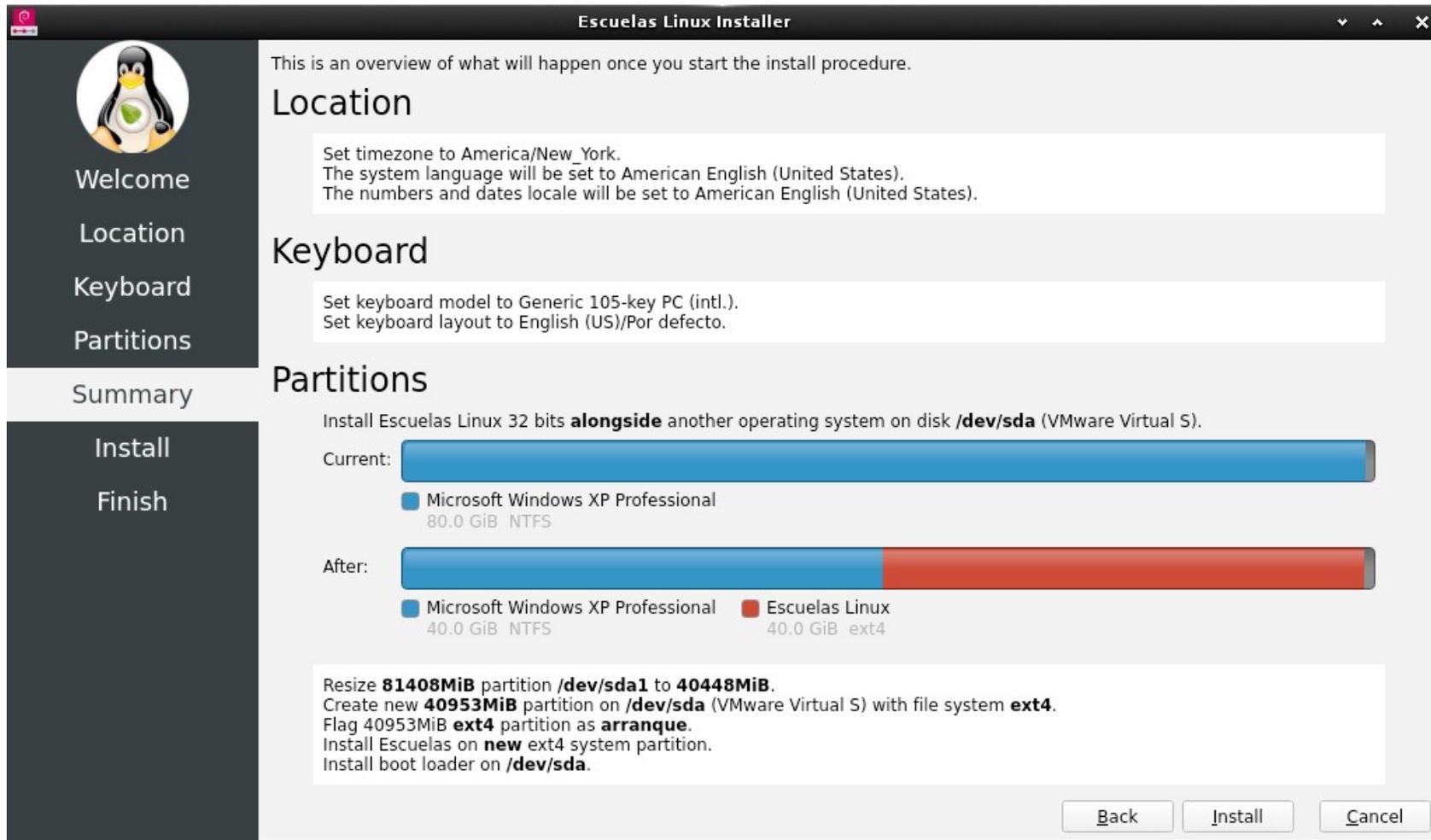
## a) Setup procedure on computers that have Windows XP

**Note:** there is a slight risk of losing Windows XP, so if you have important files and hadn't backup them, it's better to click on the "Cancel" button to abort this process, and backup your data.



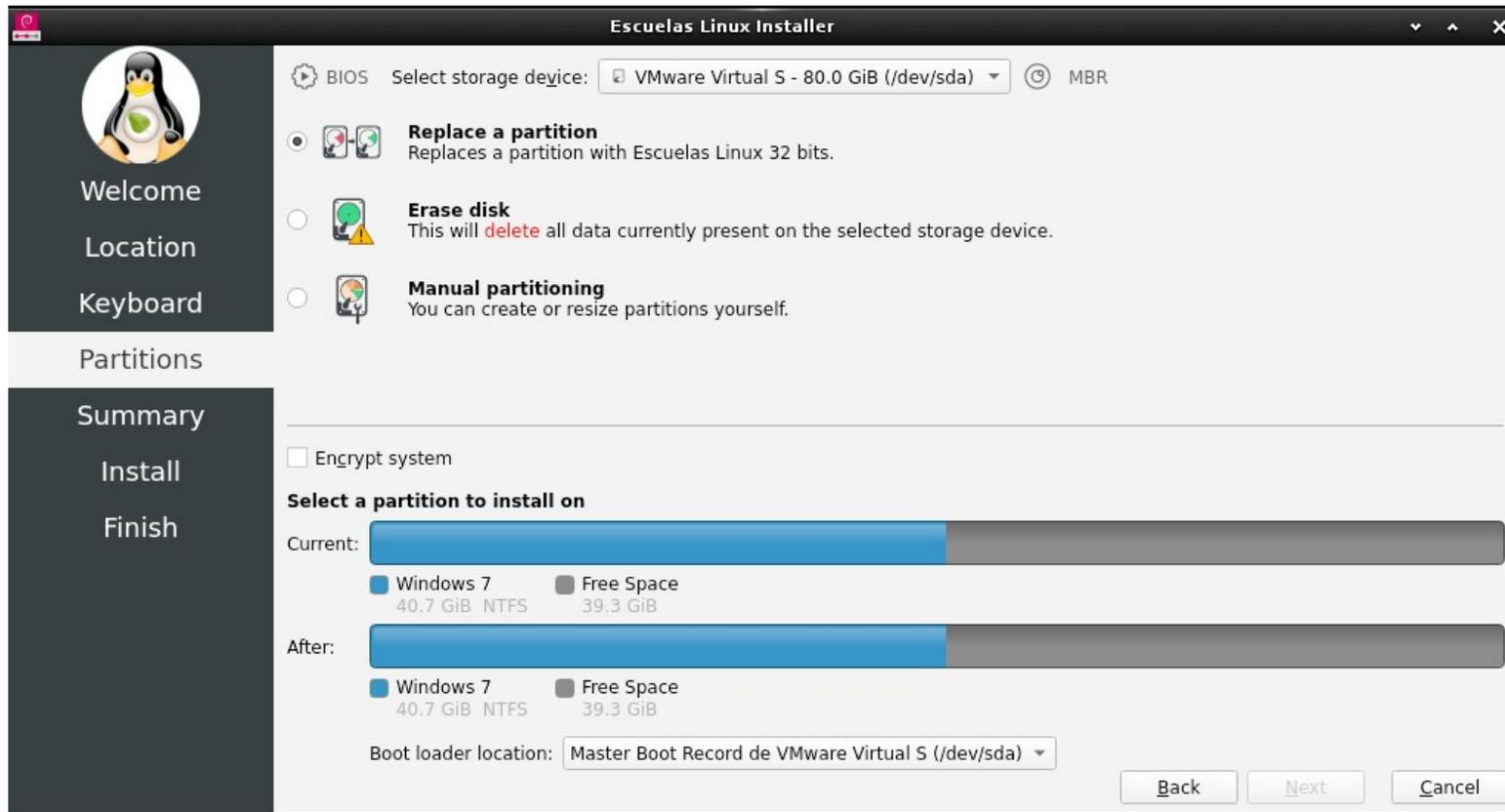
Click on the "Current" bar. When you do it, the "After" bar would suggest how to partition the disk. The minimal size required for Escuelas Linux is 40 GB, but we recommend letting the system have around half of the space available for Windows, and the other half for Escuelas Linux.

Click on the "Next" button.

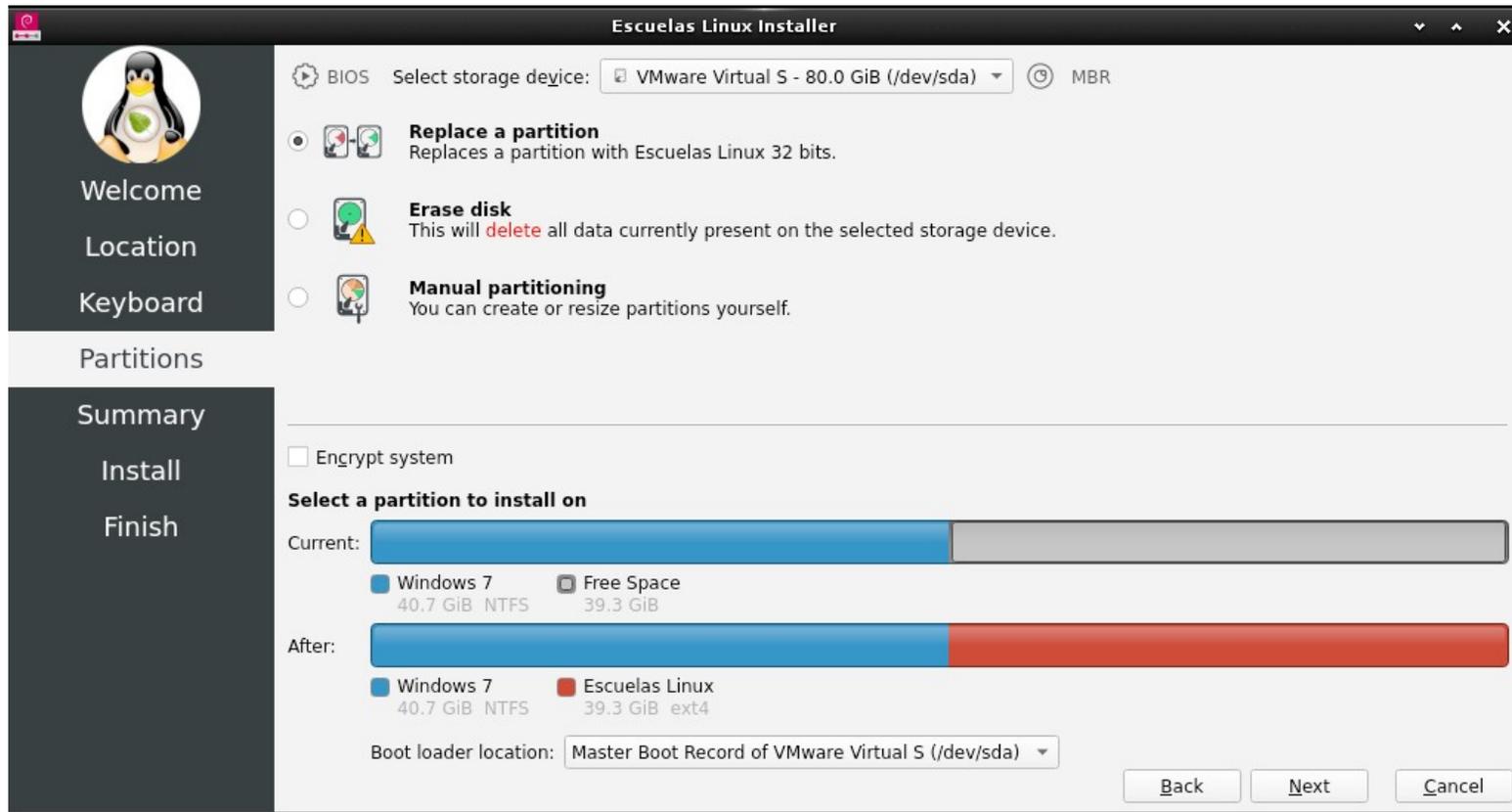


A summary of the selected installation options appears. Click on “Install” and go to page 47.

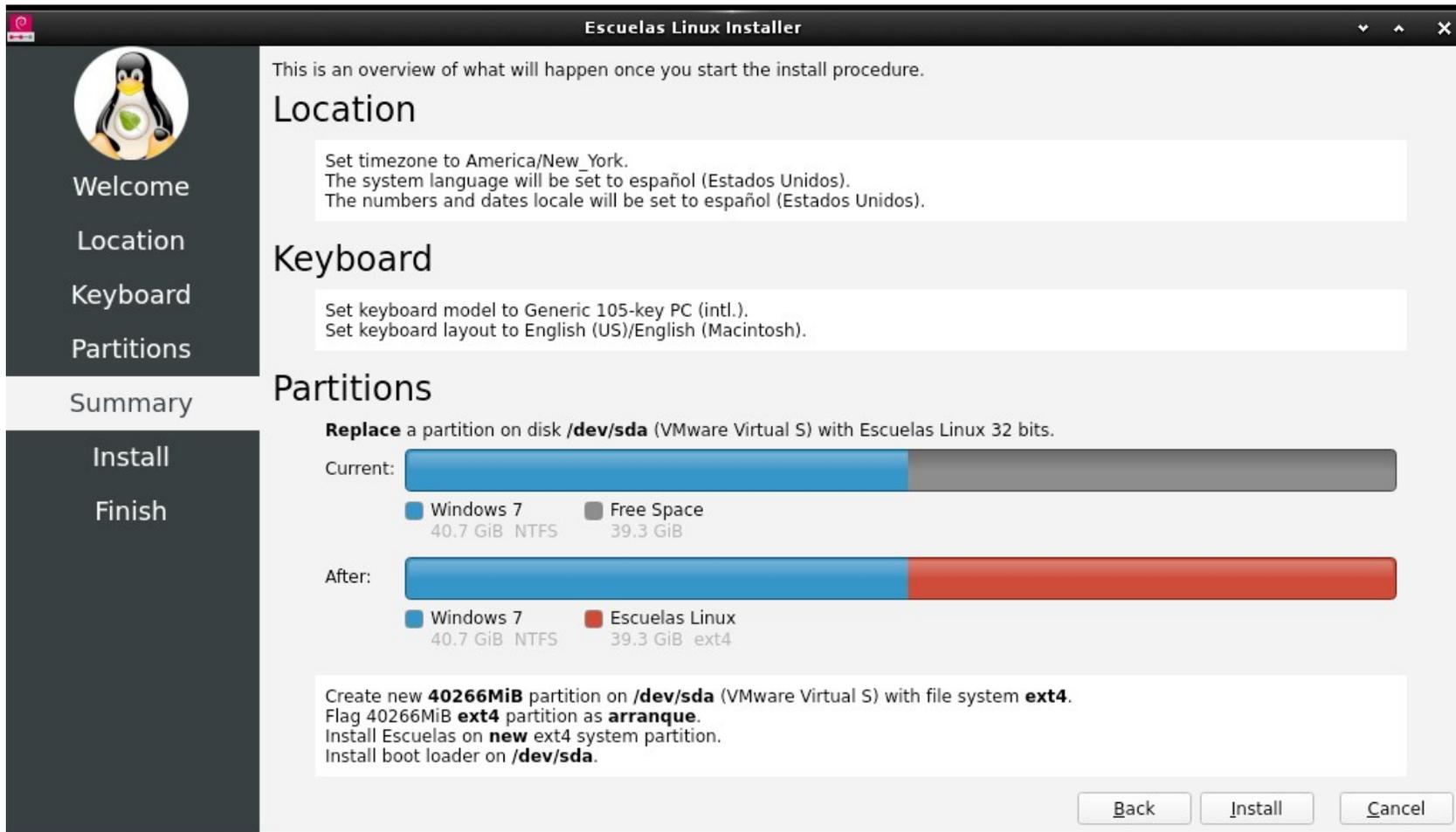
b) Setup procedure for computers that have **Windows Vista or Windows 7 to 11**



Click on “Replace a partition”, and then on the “Current” bar, click on the gray half located to the right.



On the “After” bar will appear in red color the space reserved for Escuelas Linux. Click on the “Next” button.



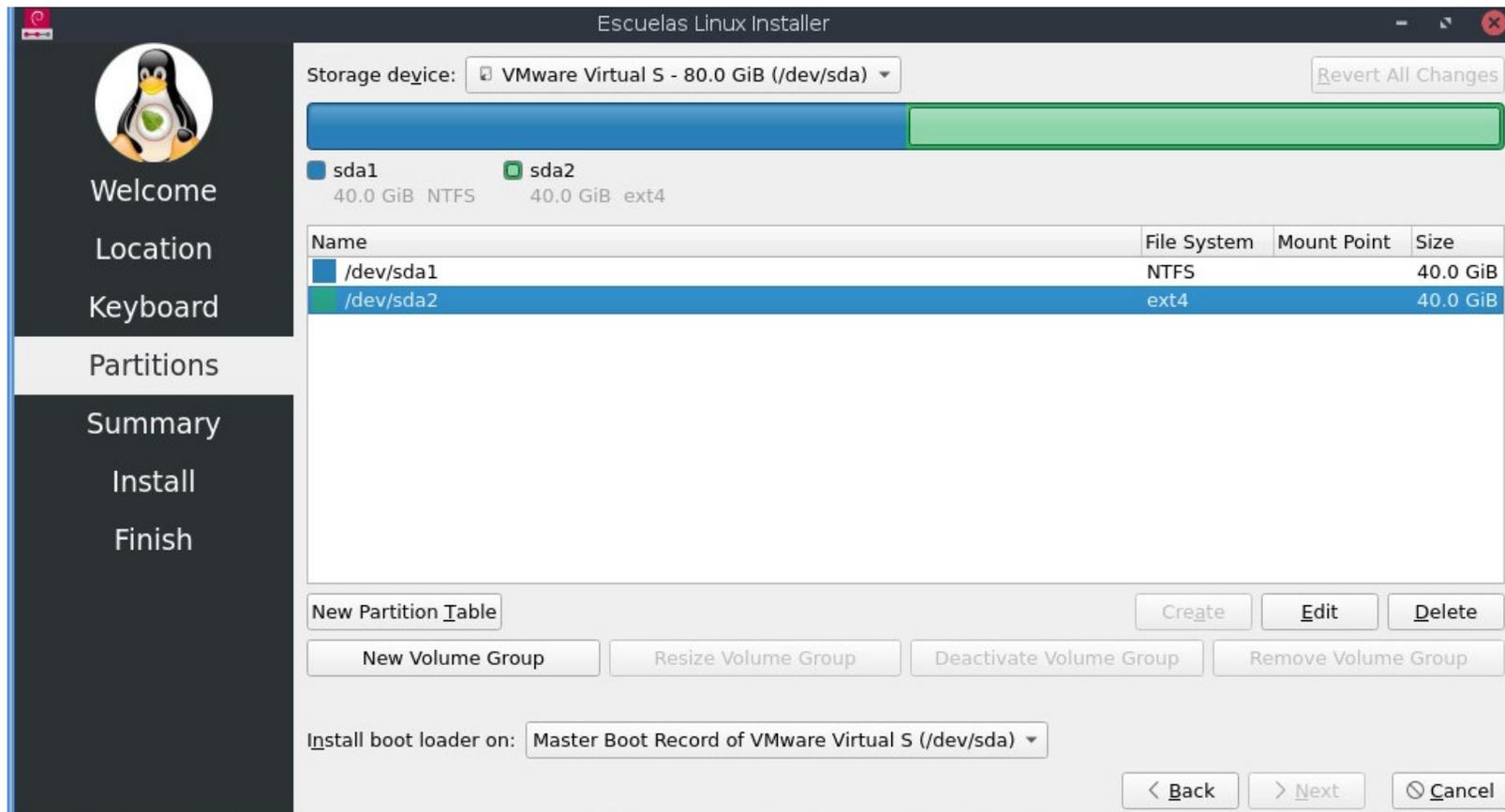
A summary appears showing all the selected configurations. Click on the “Install” button and go to page 47.

### c) Setup procedure for computers in which there is already some Linux system

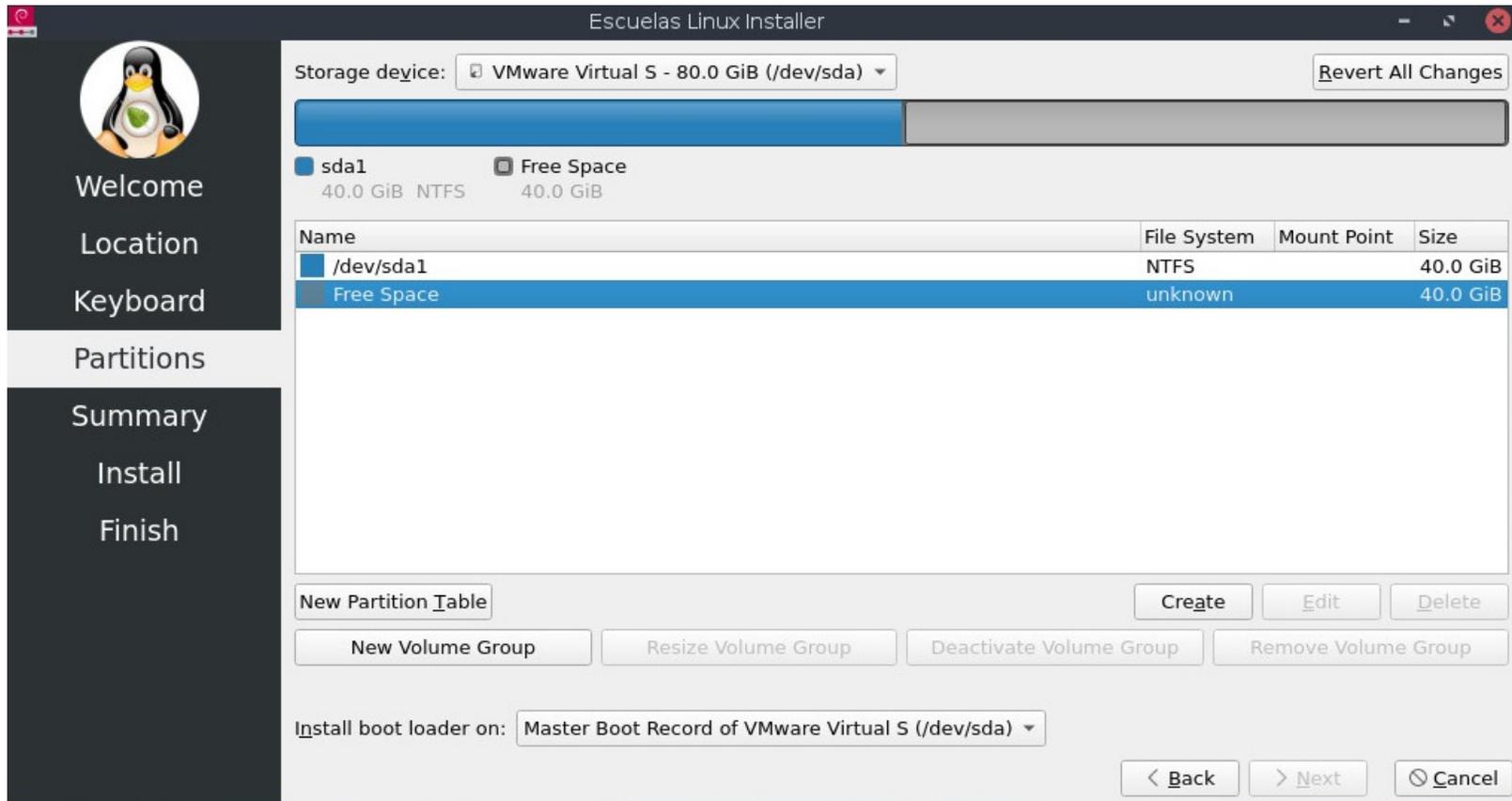
**Note:** this procedure erases the data on the Linux partition. If you have important files in that partition, cancel this procedure by clicking on the “Cancel” button, start your Linux system already installed, and backup your files to restore them later.



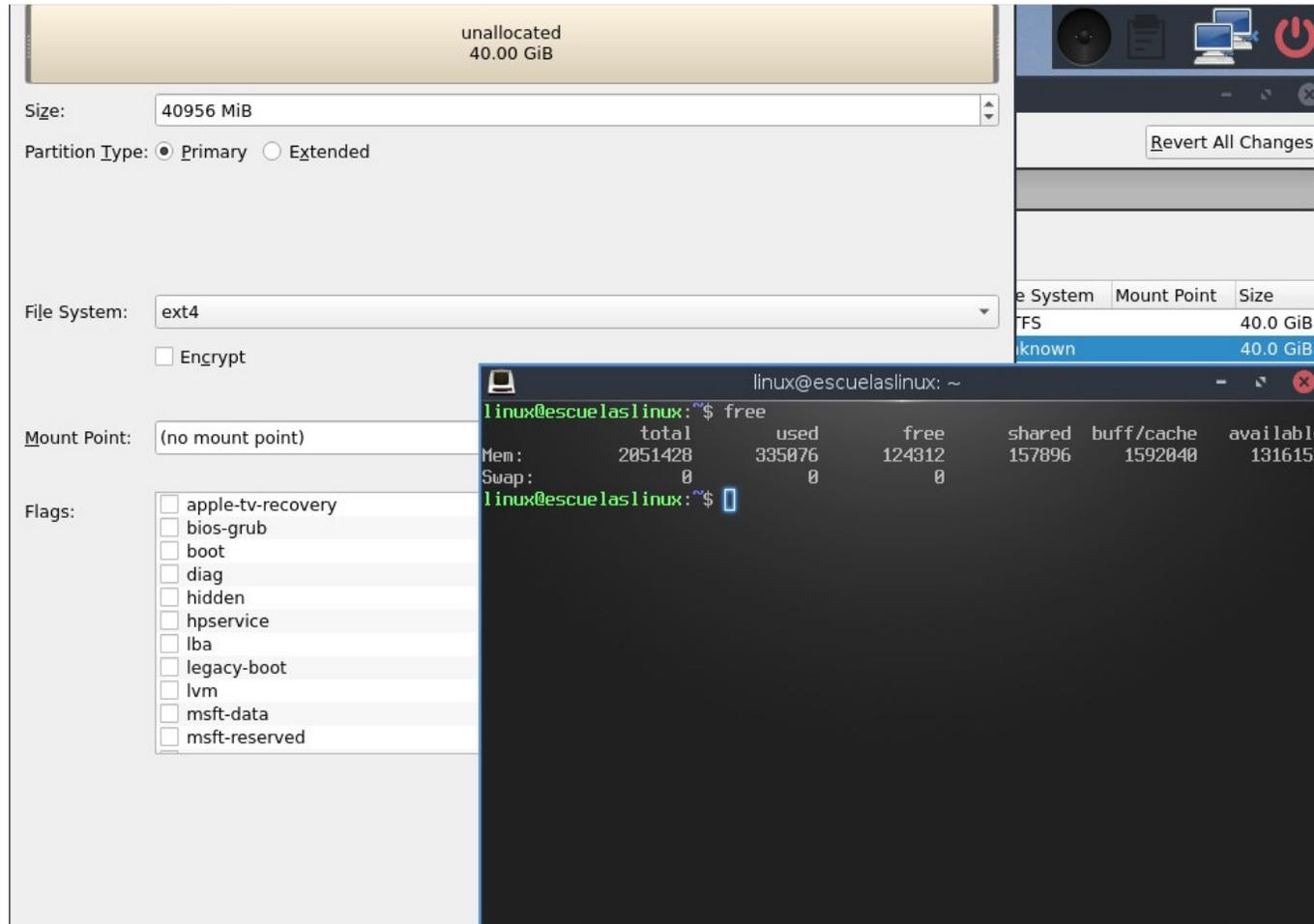
Click on “Manual partitioning,” then on the “Next” button.



Click on the partition that has an “ext4” File System, then on the “Delete” button.



This creates a “Free Space” section. Click on it and next on the “Create” button.

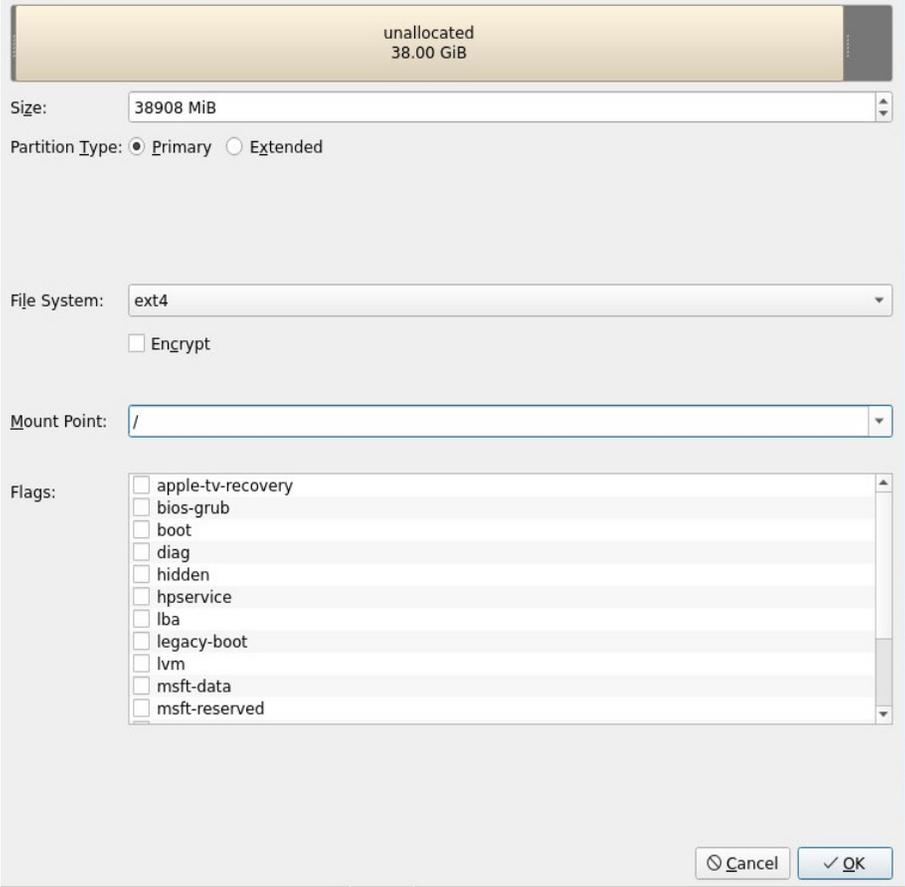


If there is no swap partition on your 32-bit system (a sort of virtual memory), you should calculate its size to create it later. If your system is a 64-bit one, merely follow the steps described about the EXT4 partition and skip the swap-related ones.

To create the Swap partition, open Terminology (the icon with a black screen at the right in the dock) and type `free` [enter]. This would show you the total amount of RAM in your system. The example shown above has 2051428, that is, around 2 GB.

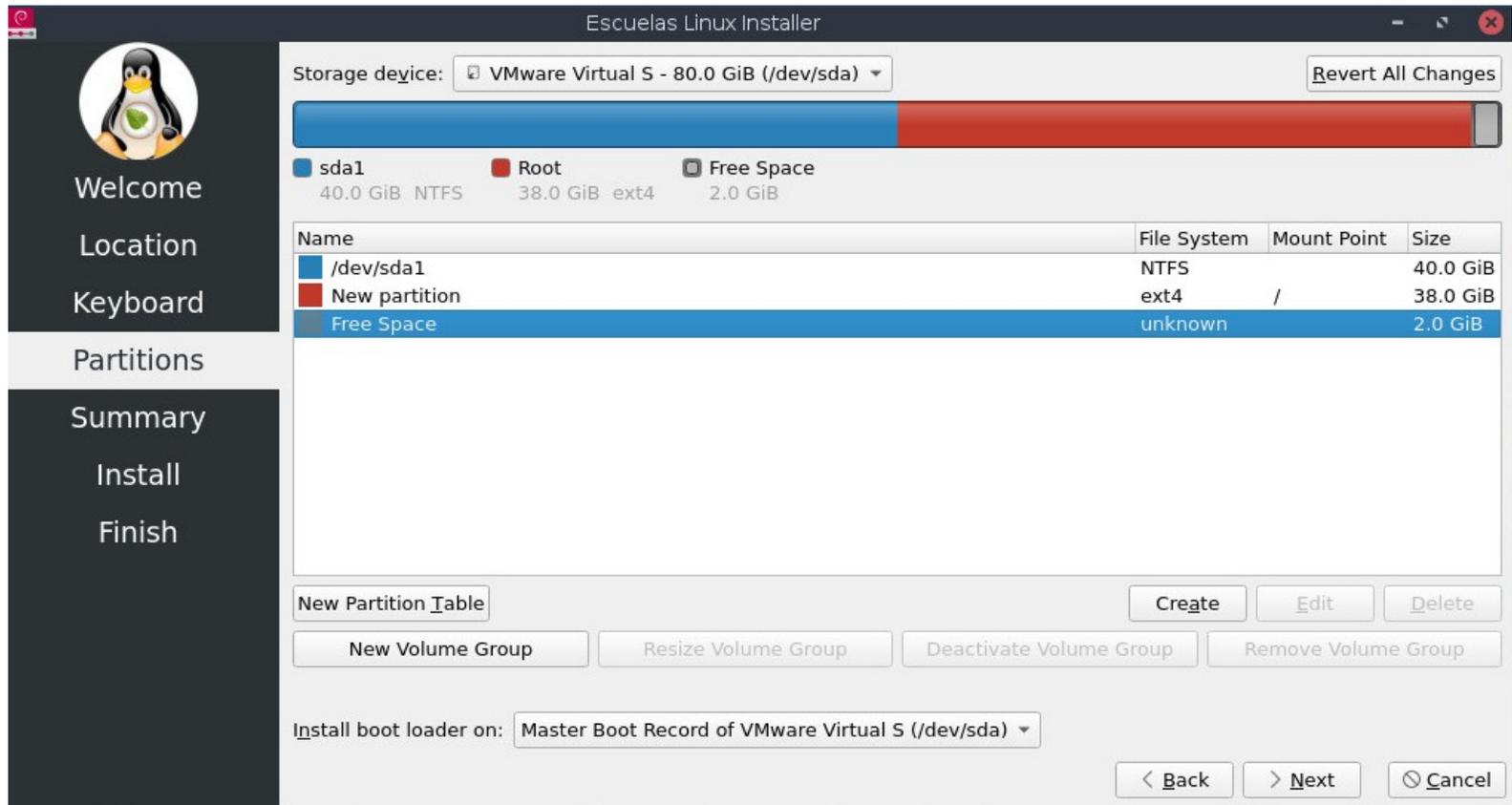
We should round that amount. If you have 1 GB, that means that you have 1024 MB; if you have 2 GB, you would have 2048 MB.

In this example, we have an ext4 partition with 40956 MB. We should have some free space for the swap partition, at the same size as the available RAM. As we have here 2 GB of RAM, then  $409256 - 2048 = 38908$ .

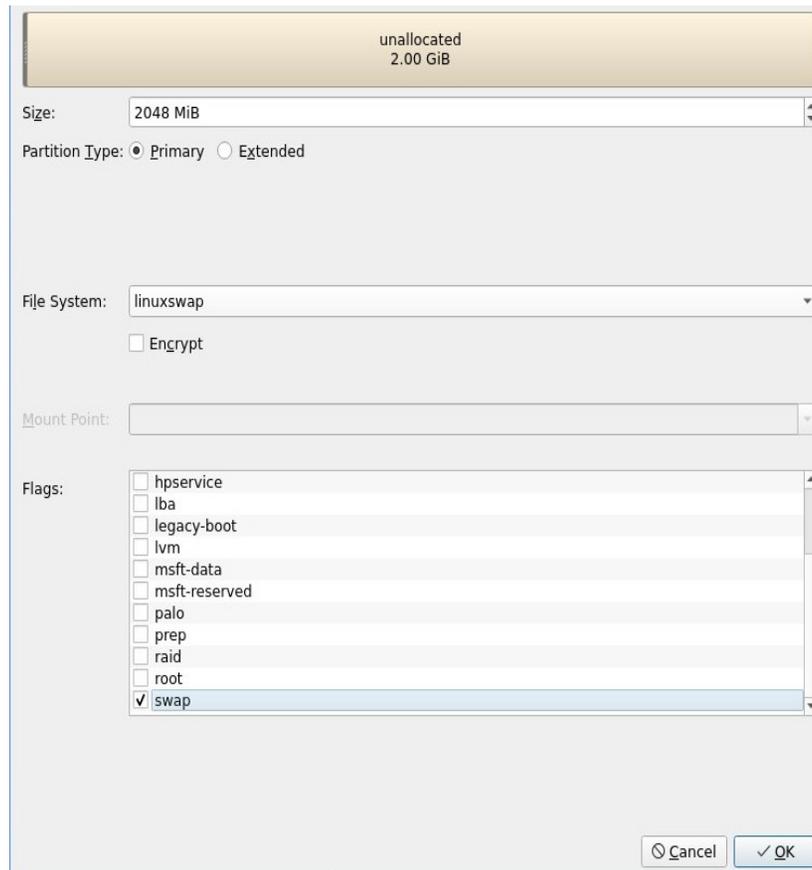


The screenshot shows a window for creating a new partition. At the top, a bar indicates 'unallocated 38.00 GiB'. Below this, the 'Size' is set to '38908 MiB'. The 'Partition Type' is set to 'Primary'. The 'File System' is set to 'ext4', and the 'Encrypt' checkbox is unchecked. The 'Mount Point' is set to '/'. A list of 'Flags' is shown with checkboxes for: apple-tv-recovery, bios-grub, boot, diag, hidden, hp-service, lba, legacy-boot, lvm, msft-data, and msft-reserved. At the bottom right, there are 'Cancel' and 'OK' buttons.

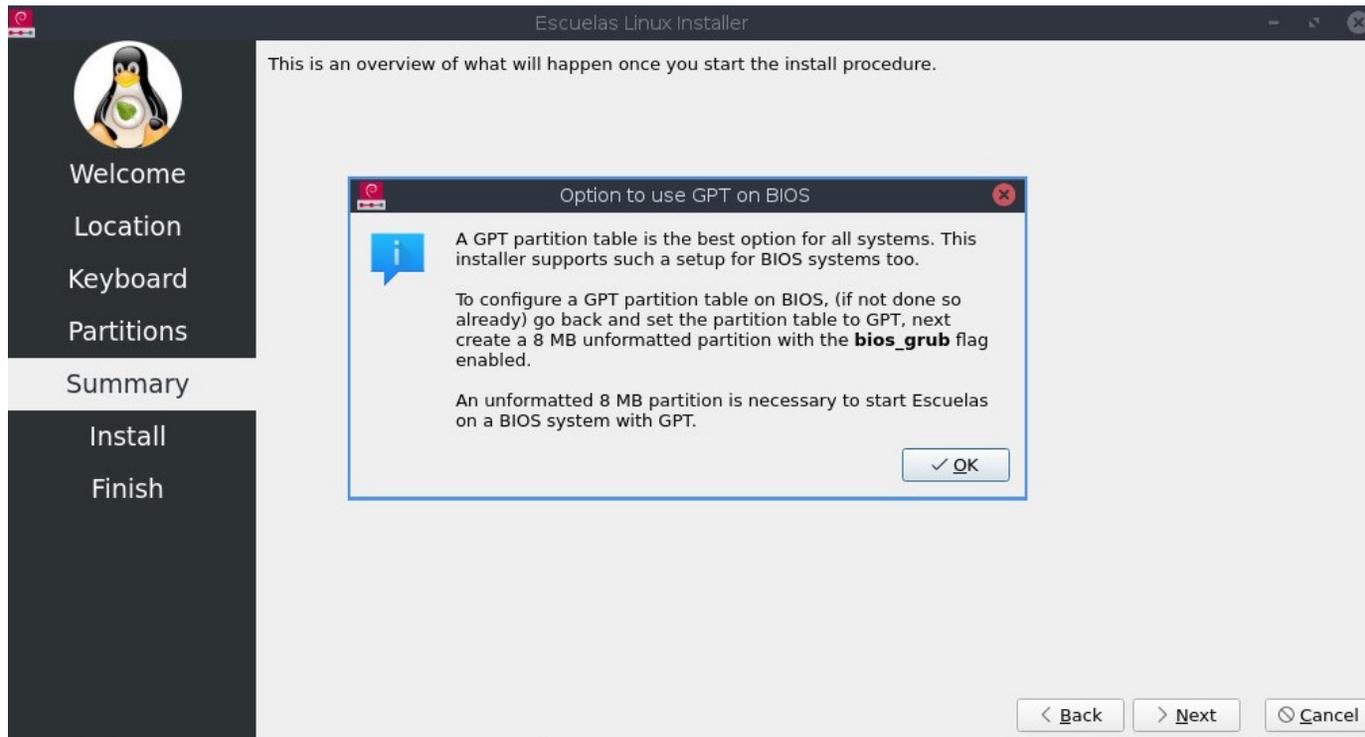
In this example, we set to 32958 the partition size, then we set the File System to “ext4”, and the Mount Point to “/”. Click “OK”.



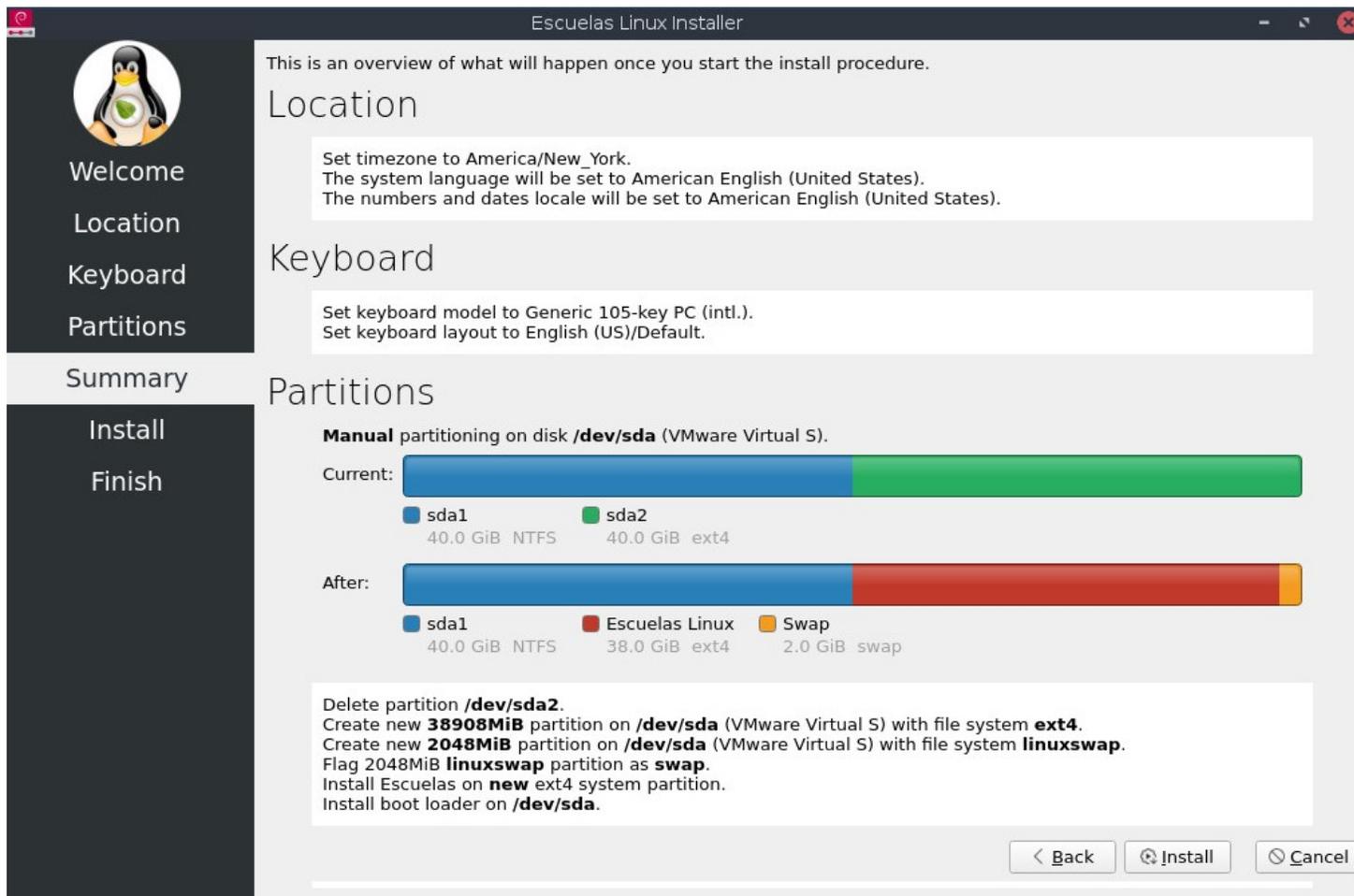
Again click on the “Free Space” that is left, and click on the “Create” button.



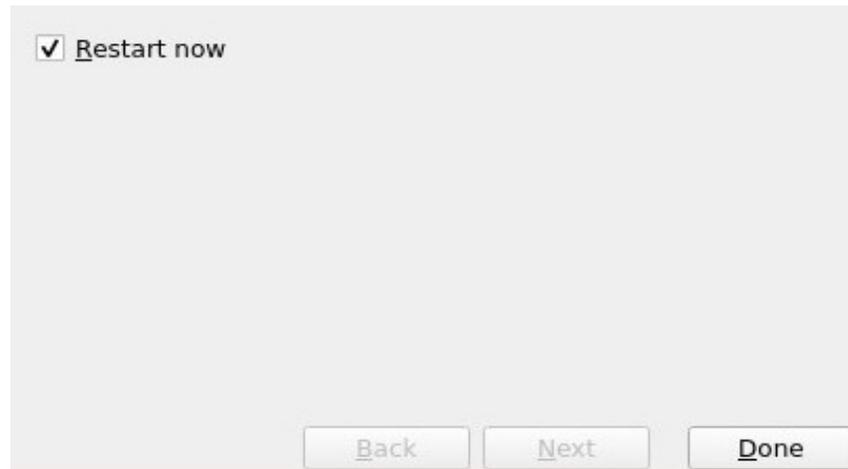
On the free space left available on disk (2048 MB in this example), set the file system to “linuxswap”, and mark the “swap” flag. Click on “OK”, and then on the “Next” button.



The advice message shown above might appear. Click on the “OK” button.



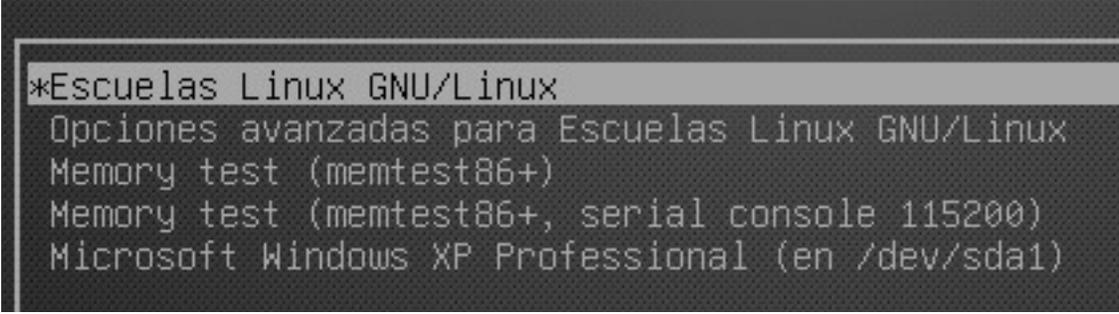
Appears a summary of the selected configurations. Click on the “Install” button.



When copying and configuration is over, click on the “Done” button.

**Note:** after restarting, on some systems may only once appear a screen asking the user password. The password is the word *linux*. You can type it, or restart the system to get rid of that screen.

## 9. Fixing possible issues



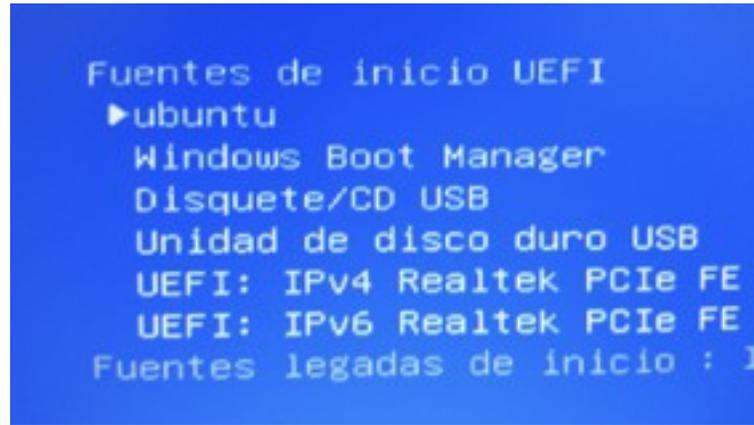
```
*Escuelas Linux GNU/Linux
Opciones avanzadas para Escuelas Linux GNU/Linux
Memory test (memtest86+)
Memory test (memtest86+, serial console 115200)
Microsoft Windows XP Professional (en /dev/sda1)
```

When turning the computer on, a menu should appear similar to the one shown above (it could initially appear as “Ubuntu” or “Debian”). You should be able to access now your Linux system. In the screenshot shown above, the Windows OS's access is done by pressing the down arrow key until the fifth line, and press [enter] on the line where it says “Windows...” However, things are not always that simple...

- WHEN THE COMPUTER IS TURNED ON, IT GOES DIRECTLY TO WINDOWS, WITHOUT LETTING YOU CHOOSE “ESCUELAS LINUX”

We are aware of two possible solutions:

1. Go to your computer BIOS (for example, in HP computers the key is F10 when is just turned on and the HP logo is visible. Other computer brands have other BIOS access key, such as F2 or DEL). At the boot order section, put in the first place the one named “ubuntu,” for example:



Save the changes done in the BIOS. When rebooting your computer, should appear the boot menu. Select the one in which is written “Windows...” and once in Windows, reboot your computer. If once again appear the menu to select your OS, the problem is fixed. Select “Escuelas Linux” and continue the installation procedure from page 54.

2. If once again you entered Windows without being able to select Linux, you could do the following steps on a UEFI system:

**Note:** the steps shown below could change from one computer model to another. Do them at your own risk, and be aware that you could end up with a system without Windows or Linux access if something fails.

In Windows OS, press the sequence Windows key+X, and in the menu that appears, select “Command prompt admin.”

Type the following command, as shown below, with uppercase and lowercase letters:

```
bcdedit /set {bootmgr} path \EFI\ubuntu\grubx64.efi [Enter]
```

If you are using Windows 10 or 11 with PowerShell, you’ll need to type apostrophes around the bootmgr word, as shown:

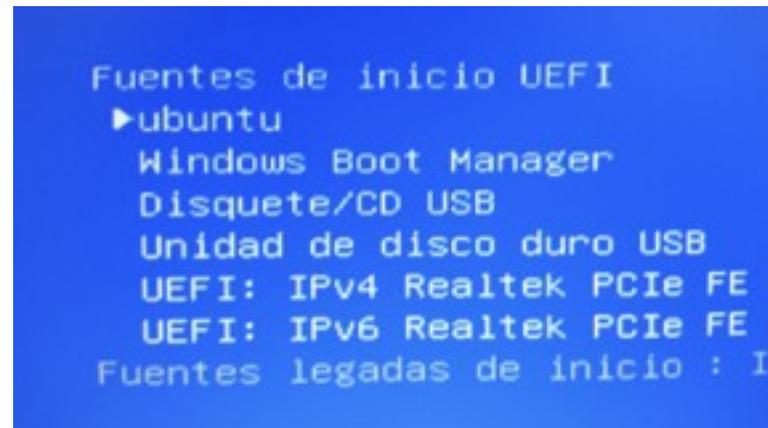
```
bcdedit /set '{bootmgr}' path \EFI\ubuntu\grubx64.efi [Enter]
```

**Note:** If you are using an HP 1105, 19 or 205, power off your computer, turn it on, and when the HP logo appears, promptly press F9. Choose “ubuntu” as the UEFI device to boot. It will cause the appearance of an error message, one about failing to load a boot disk. Don’t worry, press CTRL-ALT-DEL to reboot the computer and, once again, press F9 when the HP logo appears. Now select “Windows Boot Manager.” The GRUB menu (that is, the menu that lets you pick which operating system you want to use) should

appear and appear now in every boot of your computer.

Reboot your computer. The boot menu should be visible. Select “Ubuntu” or “Escuelas Linux.”

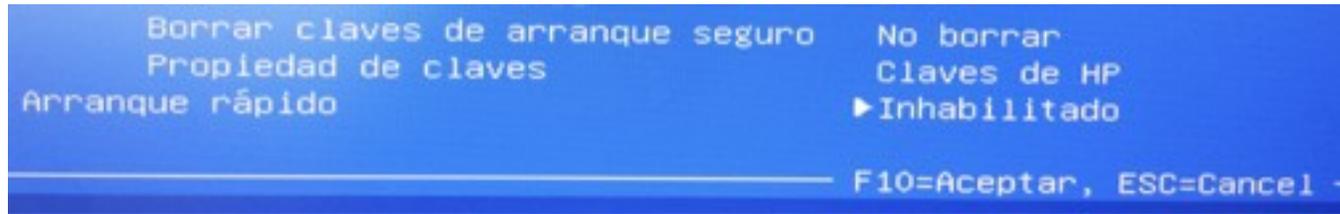
If a message appears saying that the computer could not find a device to boot, turn off your computer, access your BIOS, and in the boot order put in the first place the one that says “ubuntu.” For example:



Save the changes and reboot your computer. Should appear the boot menu.

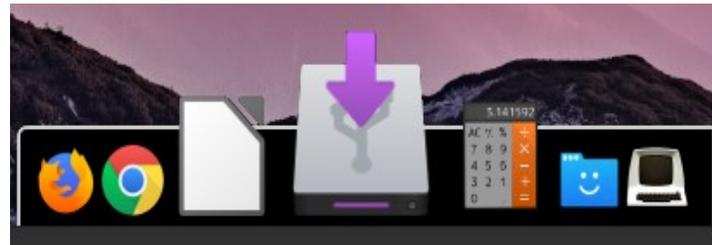
- WHEN ACCESSING THE FIRST LINE OF THE BOOT MENU (ESCUELAS LINUX), IT STAYS “FROZEN,” AND NOT DOING ANYTHING.

One possible cause (even without selecting the “Escuelas Linux” menu) is that the USB boot stick is still in the computer. Remove it and boot your computer again.



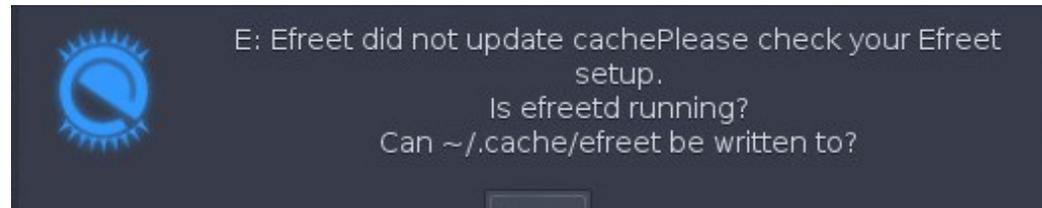
If that does not solve the problem, go to your computer BIOS (for example, in the HP computers, the key is F10 when it is turning on and the HP logo is visible. In some other brands, the BIOS key is F2). Find some option named “Fast Boot” or “Fast Bios Mode,” disable it and save the changes.

- AFTER THE COMPUTER RESTART, STILL APPEARS THE “INSTALL ESCUELAS LINUX” ICON:



That means that your computer is reading again from your booting USB, as it would be the first device to boot by default. If so, click on the “Power Off”. Once your computer shut down, remove your USB stick, and turn on your computer again, to be able to boot from your hard disk.

If this error message appears:



Do not worry. It is a harmless message that may appear on the first boot of an installed system. Just click on the Close button, and that message will not appear again.



If you end with a system similar to the one shown above... It's all right! You installed Escuelas Linux successfully.

## - IF YOU DON'T SEE THE GRUB

On some computers happens that, after turning them on, appear a message from the display with an error message, such as “Out of Range,” “Input not supported,” etc. After a few seconds, it will boot Linux, but without letting you see the GRUB menu (that is, the menu that enables you to select if you want to boot either Linux or Windows). In such cases, you should do the following steps:

Open Terminology 

```
sudo su [Enter]
```

Type your password [Enter]

```
cd /etc/default/ [Enter]
```

```
leafpad grub [Enter]
```

On the line that says:

```
#GRUB_GFXMODE=640x480
```

Please change it to say

```
GRUB_GFXMODE=text
```

Click File → Save, and close Leafpad.

Next, on the Terminology window already opened, type this command:

```
update-grub [Enter]
```

The above steps should fix the problem.

## 10. Deactivate “System Setup” or “Windows Recovery” from the GRUB menu

In all computers with Windows installed, the GRUB menu will appear, which lets you choose which operating system you would like to boot.

However, in UEFI computers also appears in the GRUB menu an option named “System setup,” which is a program to access your computer BIOS. To avoid potential dangers -mainly in public access settings- we recommend removing that menu entry to prevent that somebody could easily access your BIOS.

Do the following steps::

Open Terminology 

```
cd /boot/grub/ [Enter]
```

```
sudo leafpad grub.cfg [Enter]
```

Type your password [Enter]

A window will open showing some lines.

```
-  
7 ### BEGIN /etc/grub.d/30_uefi-firmware ###  
3 menuentry 'System setup' $menuentry_id_option 'uefi-firmware' {  
  )      fwsetup  
  ) }  
1 ### END /etc/grub.d/30_uefi-firmware ###  
,
```

Find the line that says “System setup,” and type the # character at the beginning. Next, type that character at the beginning of the next two lines, as shown below.

```

7 ### BEGIN /etc/grub.d/30_uefi-firmware ###
3 #menuentry 'System setup' $menuentry_id_option 'uefi-firmware' {
) #     fwsetup
) #}
1 ### END /etc/grub.d/30_uefi-firmware ###
,

```

Click on File → Save, and close Leafpad and Terminology. With those steps, the “System setup” entry will not appear in the GRUB menu.

If in your grub.cfg file there is an entry named “Windows Recovery,” you should comment it too, because the access to that entry with the GRUB menu could be dangerous, as it not only restores Windows, could also delete the Linux partition and the GRUB info. The result would be that access to Windows or Linux would be no longer possible.

Locate the line that has “Windows Recovery...” and put the # symbol from that line to the } character, as shown here:

```

1 #menuentry 'Windows Recovery Environment (loader) (na /dev/sda1)' --class windows
2 #     insmod part_msdos
3 #     insmod ntfs
4 #     set root='hd0,msdos1'
5 #     if [ x$feature_platform_search_hint = xy ]; then
6 #         search --no-floppy --fs-uuid --set=root --hint-bios=hd0,msdos1 --hint-efi=h
7 #     else
8 #         search --no-floppy --fs-uuid --set=root AA7CB5D17CB59911
9 #     fi
10 #     parttool ${root} hidden-
11 #     drivemap -s (hd0) ${root}
12 #     chainloader +1
13 #}

```

## 11. Change password, or have it asked to access the system

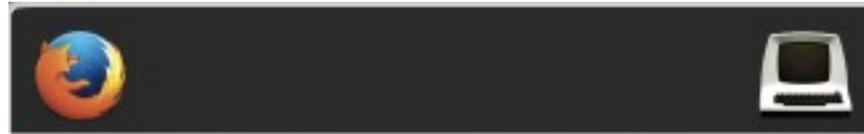
The default password in Escuelas Linux is the word *linux*. To change it:

1. Open Terminology 
2. Type `passwd [enter]` (no characters are going to be visible, it is normal)
3. Type the current password `linux [enter]`
4. Type your new password `[enter]`
5. Type again your new password `[enter]`

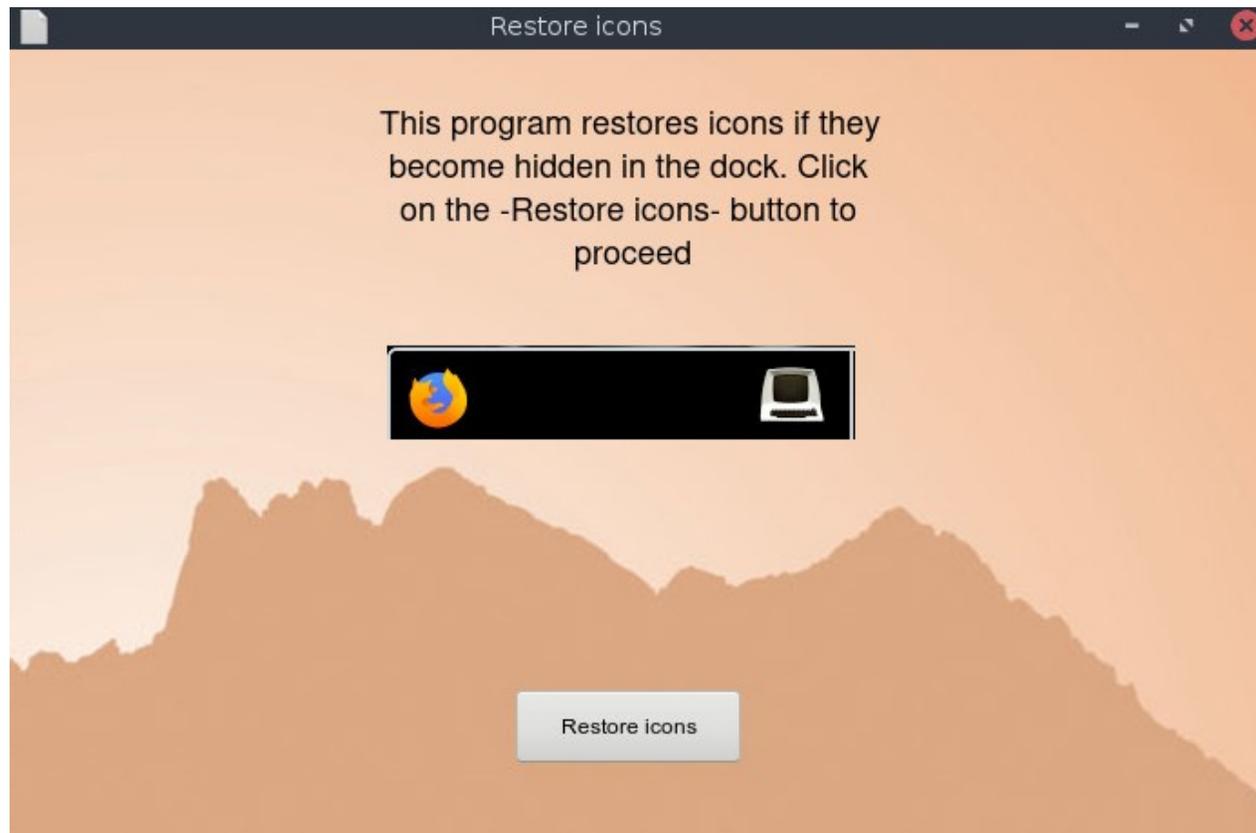
If you want Escuelas Linux to ask for a password to be able to access the system:

1. Open Terminology 
2. Type `cd /etc/lightdm [enter]`
3. Type `sudo leafpad lightdm.conf [enter]`
4. Type your password `[enter]`
5. Delete the word `linux` located at the line `autologin-user`
6. Click File → Save, close Leafpad and Terminology

## 12. Reactivate hidden icons on the dock



Sometimes the icons on the dock could get hidden, but the apps are still there, and you can click on its space to open the associated program. Nevertheless, you could not see some icons, only empty spaces on the dock. To fix that, run Menu → Applications → System → Restore Icons. This app runs some internal steps required to restore the lost icons.



### 13. Restore the desktop or the default state of all programs

Linux is an ideal operating system for public environments because a user can only modify and do whatever he/she wants in his/her own home folder -named *linux* in Escuelas Linux-. All the files and folders elsewhere are protected, so you don't have to worry for changes that caused a problem (assuming, of course, that your own admin password is not flying around.)

However, some students modify the desktop, delete folders or configuration files in his/her own account, or sometimes the students could change the appearance of some programs' functions drastically, leaving them partially or entirely unusable.

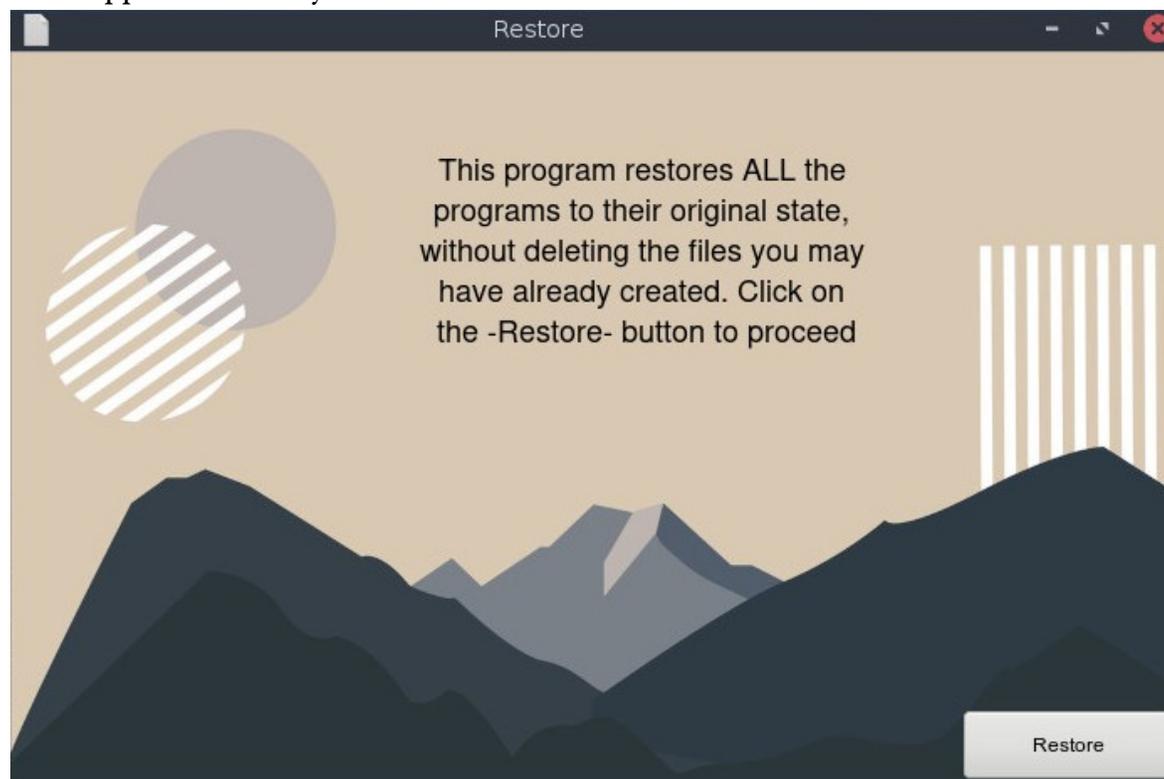
What to do in those cases? Very simple:

If some user changes the Escuelas Linux desktop, you only need to restart the computer to restore the default desktop. It's that simple.

**Note:** the Escuelas Linux desktop or theme can be modified in any way while it is in use, but it comes back to its original state on every computer restart. If you wish that your users could be able to modify the desktop as they please -and get those changes preserved-, open Menu → Applications → System → **Unlock Desktop**

If later, after you decided to unlock the Escuelas Linux desktop, you determine that you want the default desktop back again, open Menu → Applications → System → **Lock Desktop**

What we talked about on the previous page is only about the desktop. But, if a user changes any program (LibreOffice, GIMP, Firefox, etc.), those changes are preserved, even after restarting the computer. When you need to restore the programs or apps to their original state, open Menu → Applications → System → RestoreUser.



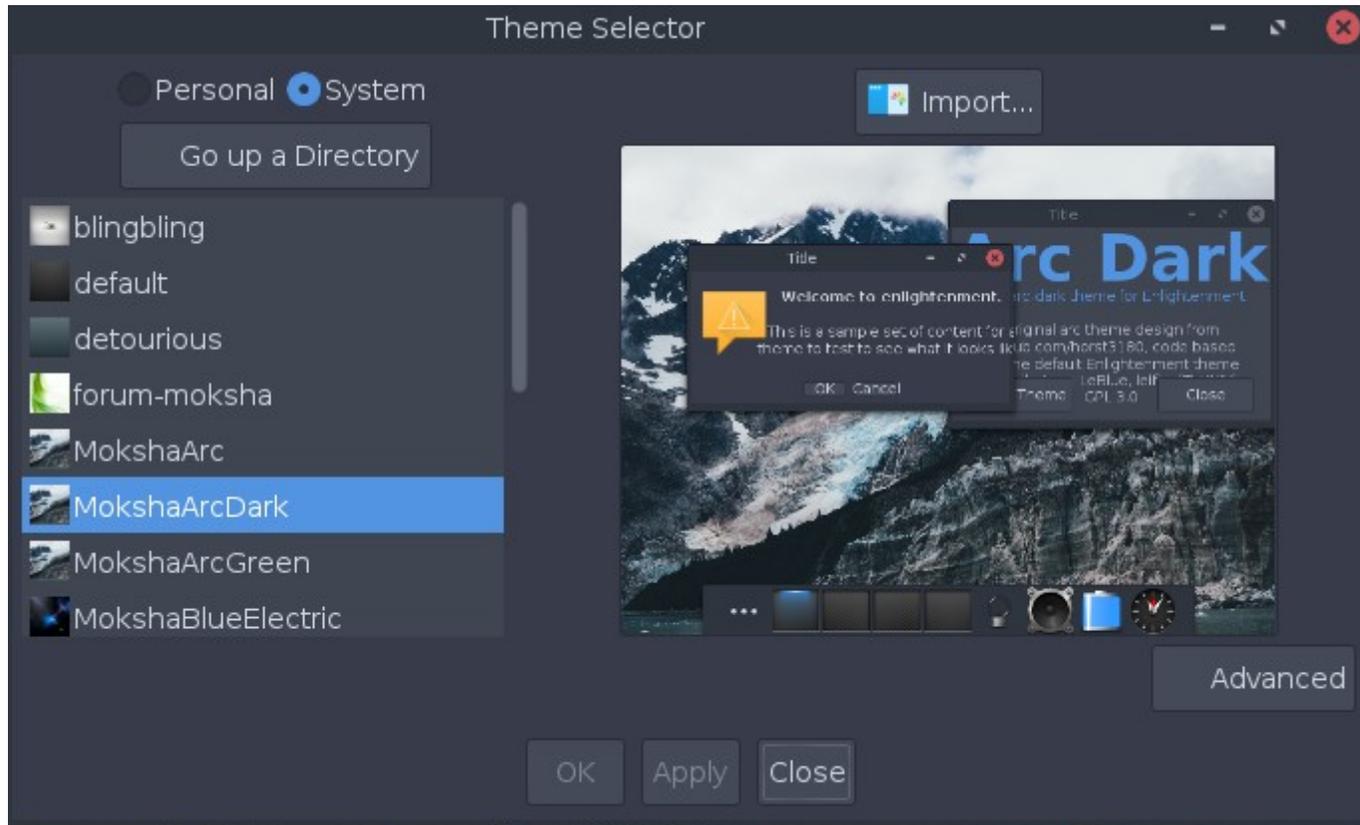
In this way, you can run our app that let you restore all the programs to our default state without deleting the files previously created by the users. This action only takes some seconds and avoids a lot of headaches for the administrators of computer classrooms. If something is wrong or misconfigured in any program, merely run RestoreUser; there is no need to find who did something or to know which configuration was modified.

If you are going to start a new school cycle, you don't need to go to every folder to find and delete the files created by the former users. In this case, you can run Menu → Applications → System → ReinstallUser, to automatically delete all the files created by the former users and, at the same time, restore all programs to their default state, as if Escuelas Linux was just installed.

## 14. Theme activation

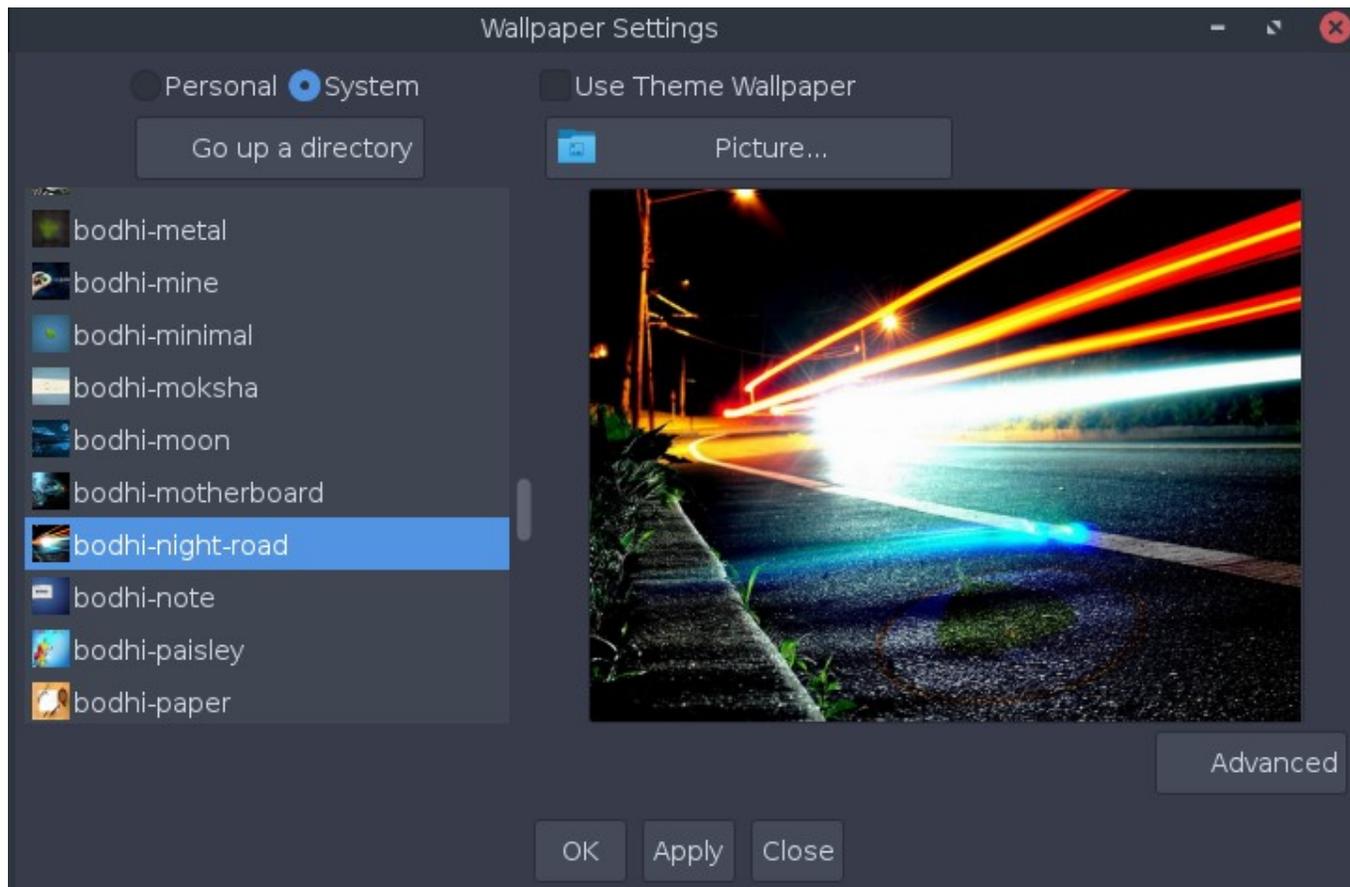
You can dress your Desktop in different ways, using themes.

Open Menu → Settings → Theme



Choose any theme that you like, and click “Apply” to see it in action.

You can also pick your own desktop image. Click on menu → Settings → Wallpaper...



And click on “Use Theme Wallpaper.” You can choose any image you want, either the ones included in the system (and viewable on the left of this dialog box), or select your own image; in that case, you should click on the “Personal” button and select it from the “Picture...” button.

We should mention that the changes you made will not be preserved. When the computer reboots, the system will be back to its original state because Escuelas Linux has a default configuration for public environments. You can use “Unlock Desktop” (as seen on page 58) if you desire no restrictions for anyone to modify the desktop. Go to the next page if you want to know how to apply your own changes to the desktop and decide if you want your users to be able to do permanent changes on your custom desktop.

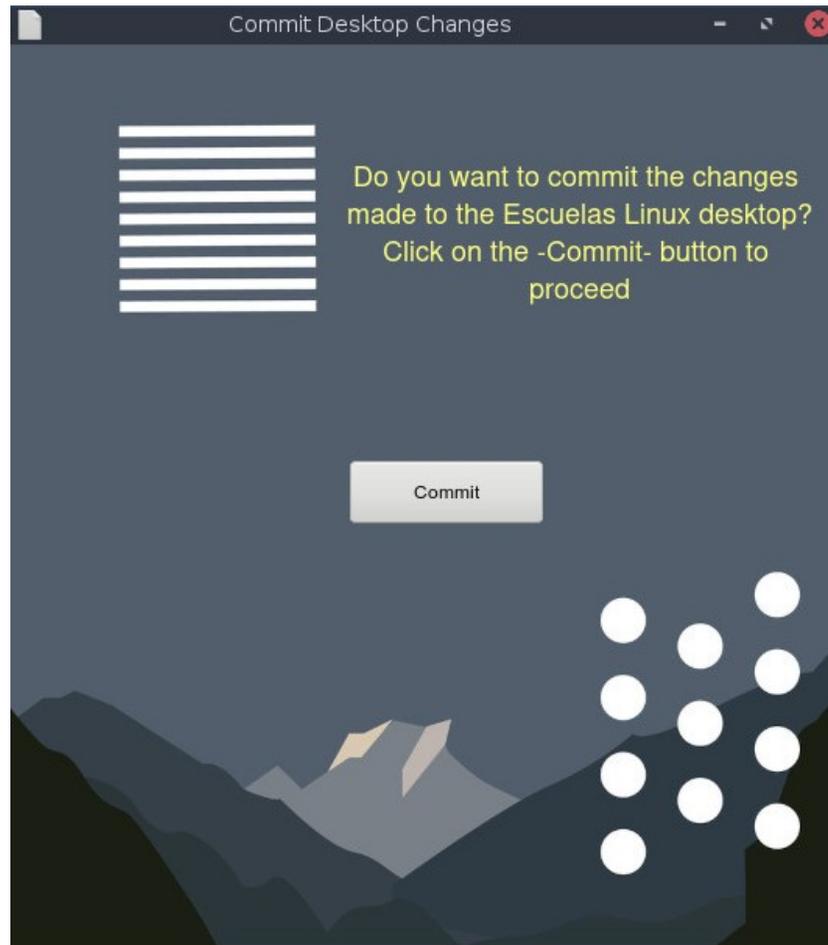
## 15. Commit permanent changes to the Escuelas Linux default desktop

If you desire any change to the default desktop environment (for example, which apps should appear in the dock, your own wallpaper, the theme, the icon set used, etc.), there are two possible ways:

a) If the computer is private and not used by the public:

Open Menu → Applications → System → **Unlock Desktop**. Click on the “Unlock” button, type your password, and press OK. Close this app when finished. This procedure will make permanent any change you do in Moksha, our desktop environment.

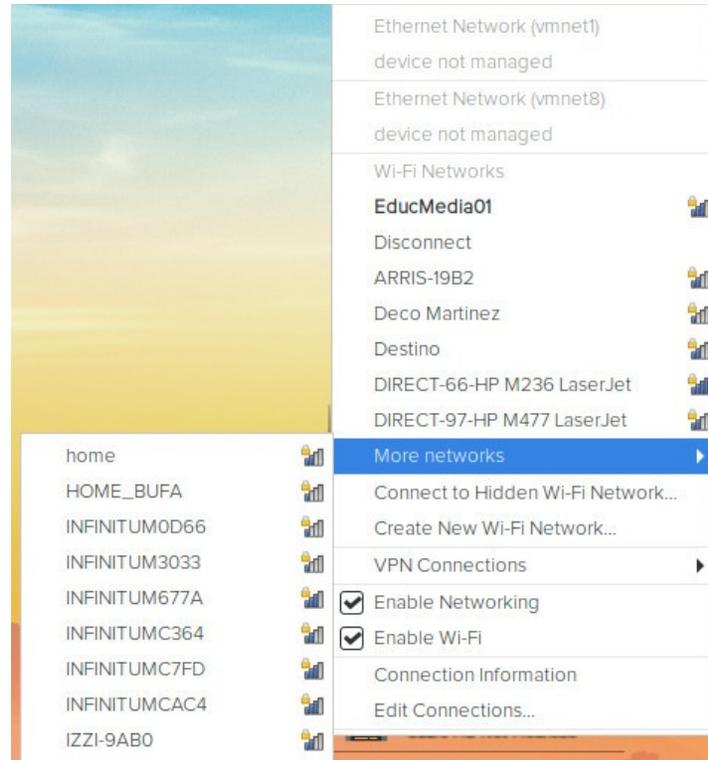
b) If a computer is for public access, and you'd like to preserve the custom changes you made -but not letting other users apply permanent changes on the desktop-, there is a solution: use our app **Commit Desktop Changes**, located at menu → Applications → System:



In this way, the recent changes to the desktop would be permanent, and the changes on the desktop made subsequently by other users would disappear when the computer restarts.

## 16. Wi-Fi use

1. Click on the network icon located near the upper right.
2. Will appear the Wi-Fi networks available. Click on the one you'd like to use, and type your Wi-Fi access password.

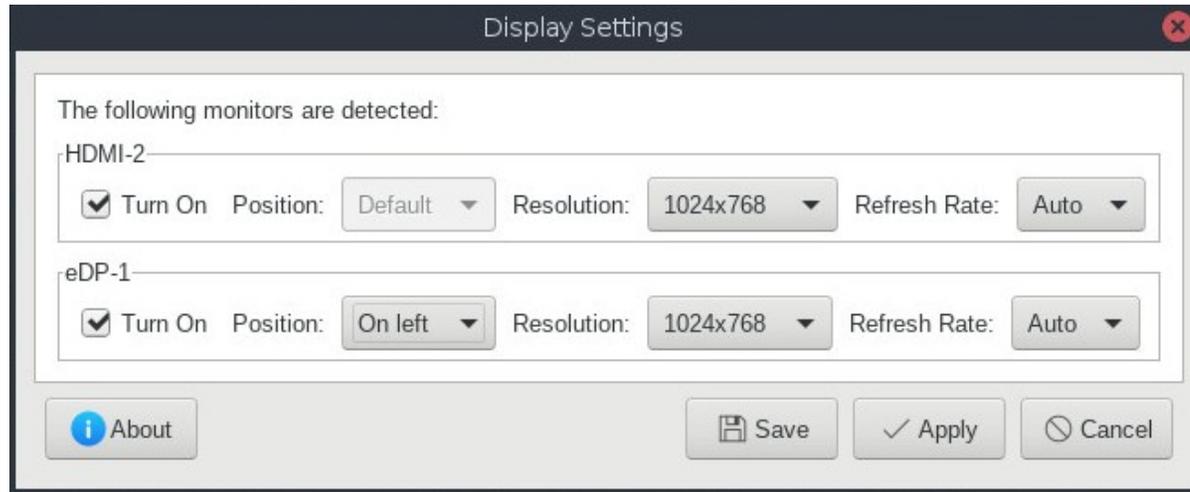


## 17. Connect external projectors

This section describes how to connect from a computer to a VGA external projector, although the procedure is very similar to connect any other external display device.

We suggest plugging the devices when they're still off and turn on the external projector first; after that, turn on the computer.

If the default resolution is not adequate, you can click on menu → Applications → Settings → LXRandR (Monitor settings). Click on the “Advanced” tab, if available.



Choose your best screen resolution, taking care that both devices (such as laptops and external projectors) have the same screen resolution if you want to see the same on both devices. For example, a typical screen resolution for a 4:3 display still is "1024 x 768". The best one for a 1080p display is 1920 x 1080. At "Position," you can use options such as "On left" or "On right" to make independent screens appear, or you can select the "Default" position in all screens to project the same.

If you changed the screen resolution and the Moksha Desktop is misadjusted or moved, click on Menu → About the Operating System → Reset Moksha, to refresh and adjust the graphical interface. We also suggest opening the menu → Applications → Settings → ARandR, if you need an app capable of more advanced or custom options. When you click on its Layout → Moksha menu, you can even save your chosen configuration without the hassle of having to do it every time you enter Escuelas Linux. You can always remove or change your saved configuration on the `/home/linux/.e/e/applications/startup/startupcommands` file.

Don't forget to open Menu → Applications → System → Commit Desktop Changes, to make permanent the changes on a locked desktop .

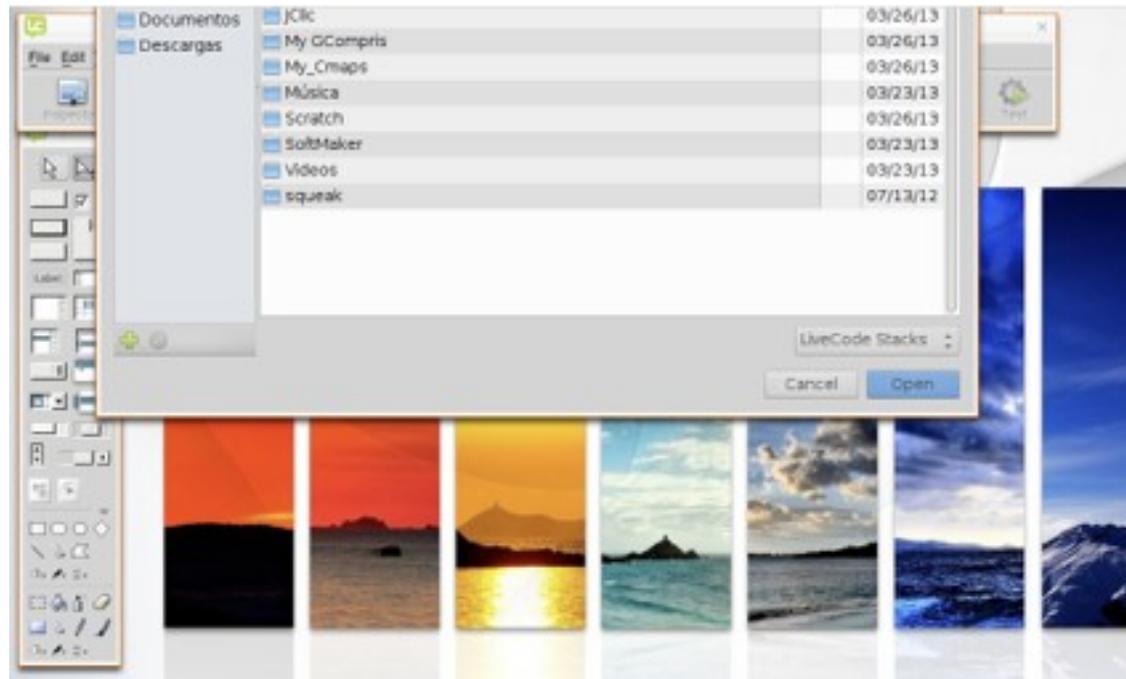
## 18. Making good use of the screen

In Escuelas Linux, if you maximize a window, it will occupy all the screen, which in our opinion it lets you focus at the program being used.

If you want to use another program, you could unmaximize the window to open the menu, which will appear when you click on the desktop. However, you can use other more practical methods to open the apps:

1. If you move the mouse cursor all the way down to the bottom part of the screen, in the middle, the dock will appear, showing the selected apps, ready to be opened.
2. When you have more than one program opened on the same desktop, you can use ALT-TAB to bring any open app to the front.
3. You can use CTRL-ALT-[Right key] or CTRL-ALT-[Left key] to move around in any of the 12 virtual desktops available.
4. You can open the menu and choose “Quick Launcher” to type the first letters of the program you would like to launch in the Virtual Desktop you are.

## Out of screen dialog boxes



When you open a dialog box in some programs -such as the open or save dialog- it is shown outside the screen's borders.

If this happens, you can maintain pressed the ALT key and, with the mouse cursor above the dialog box, drag it below to see it all. You can also resize the dialog box by moving it and dragging the cursor mouse on its edges. Once you have a dialog box on the desired size, it will preserve that size the next time you use it.

## 19. Installation on a virtual machine

Maybe some users could have some issues with the Escuelas Linux installation process: a complicated procedure on some Windows 8/10/11 computers, be afraid to mess something, have devices that are hard to configure, or even find that there are no Linux drivers for some devices. In those scenarios could be useful to install Escuelas Linux inside a virtual machine (that is, to use special software to run Escuelas Linux as if it were an app inside a Windows or macOS system).

We document here how to setup Escuelas Linux on Vmware, UTM or VirtualBox, although it is also possible to use other virtualization programs.

**Note:** the use of virtualization has two disadvantages: it requires a relatively new computer, capable of running two operating systems at the same time and, if the host system (Windows or OS X) ran into some problem, making it unusable, the Escuelas Linux virtual machine would be affected, too. Also, running in a virtual machine may be slower than running in a native setup.

### **Do I choose Vmware, UTM or VirtualBox?**

VMware is a virtualization software that, at least in our experience, works faster and more efficiently than other alternatives, and it can be used without cost in non-commercial settings. Nevertheless, it is closed source software, so it would not be suitable for environments in which the use of Free and/or Open Source Software is mandatory.

UTM is an intuitive graphical interface of the QEMU app, but it is only available on Apple computers.

VirtualBox is an Open Source virtualization software, although it may not be as fast as VMware, and it is currently an asset from Oracle. That corporation had some controversial confrontations with some Free Software communities.

The choice to use VMware, UTM or VirtualBox (or even other virtualization programs not documented here) is entirely up to you.

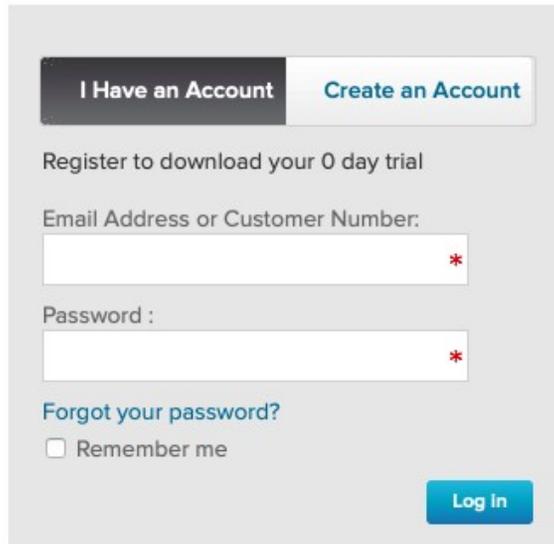
## 19a. Installation on VMware

### **Download VMware Player (if you are using Windows or Linux)**

1. Download an ISO image as requested on page 6.
2. Go to [https://my.vmware.com/en/web/vmware/downloads/info/slug/desktop\\_end\\_user\\_computing/vmware\\_workstation\\_player/16\\_0](https://my.vmware.com/en/web/vmware/downloads/info/slug/desktop_end_user_computing/vmware_workstation_player/16_0) and click on “Go to downloads.”
3. Download the VMware edition that matches the operating system you are using (Windows or Linux) and, once the download is complete, do the steps required to install VMware on your system. Remember that the use of VMware Player is free of cost for non-commercial environments.

### **Download VMware Fusion (if you are using macOS for Intel)**

1. Download an ISO image as requested on page 6.
2. Go to <https://my.vmware.com/web/vmware/evalcenter?p=fusion-player-personal>
3. Access your VMware account by typing your e-mail address and password, and then click on the “Log In” button. If you do not have an account, click on “Create an account,” and type the requested info.



A registration form with two tabs: "I Have an Account" (selected) and "Create an Account". Below the tabs, it says "Register to download your 0 day trial". There are two input fields: "Email Address or Customer Number:" and "Password :", both with red asterisks indicating required fields. Below the password field is a link "Forgot your password?" and a checkbox "Remember me". A "Log In" button is at the bottom right.

4. Once you are on this web page with your own account, click on the “Register” button, located on the “License & Download” tab.



[Register](#)

**You have not registered for this product.**

5. Once your product was registered, you will have access to a page in which you can see your license key. Click on the “Manually Download” button.

COMPONENT	LICENSE KEYS
VMware Fusion Player – Personal Use	

## Download Packages

VMware Fusion - Binaries
VMware Fusion Player – Personal Use License - Binaries

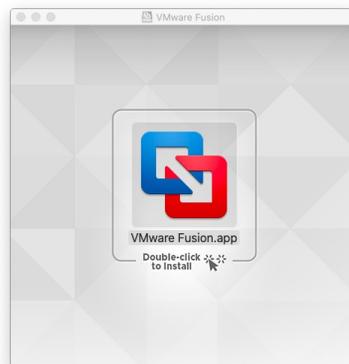
---

VMware Fusion 12.0.0 (for Intel-based Macs)  
2020-09-14 | 12.0.0 | 611.94 MB | dmg

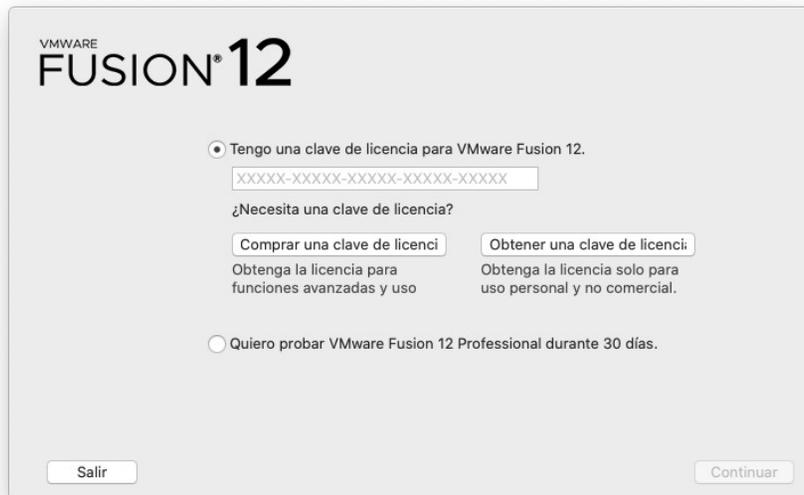
VMware Fusion 12.0.0 (for Intel-based Macs)

[Manually Download](#)

6. Once downloaded the dmg file, double-click on it to begin the installation of VMware Fusion.



7. When you start VMware Fusion for the first time, type your license key mentioned previously. If you do not have it, click on “Obtain a license key.”

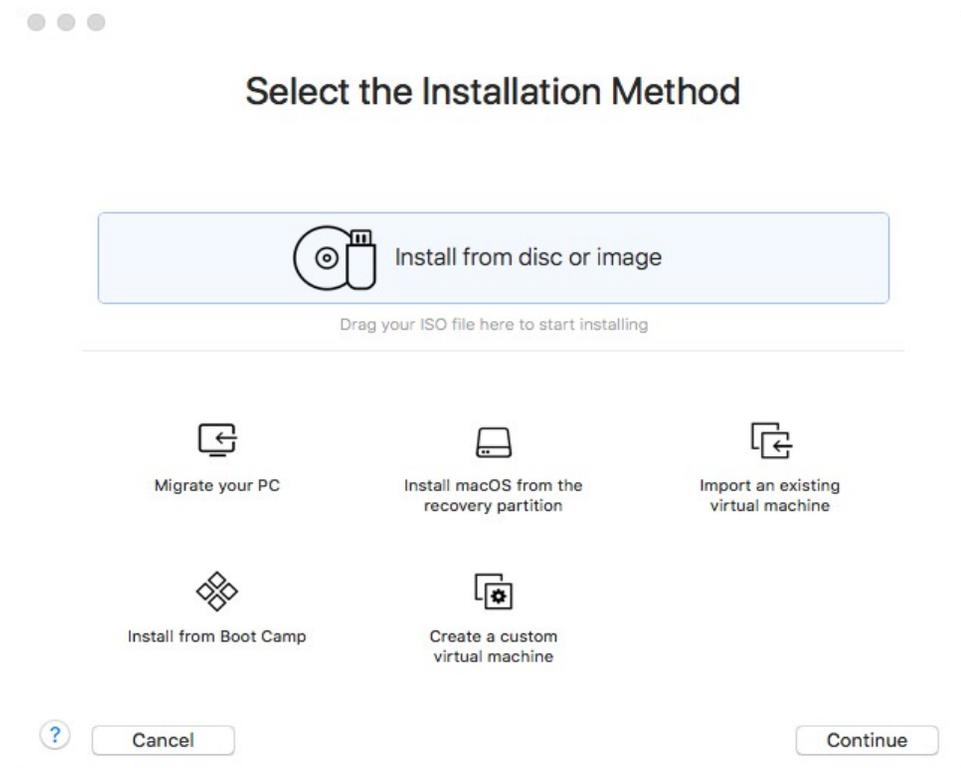


## Install Escuelas Linux on VMware Fusion for Intel-based MacOS

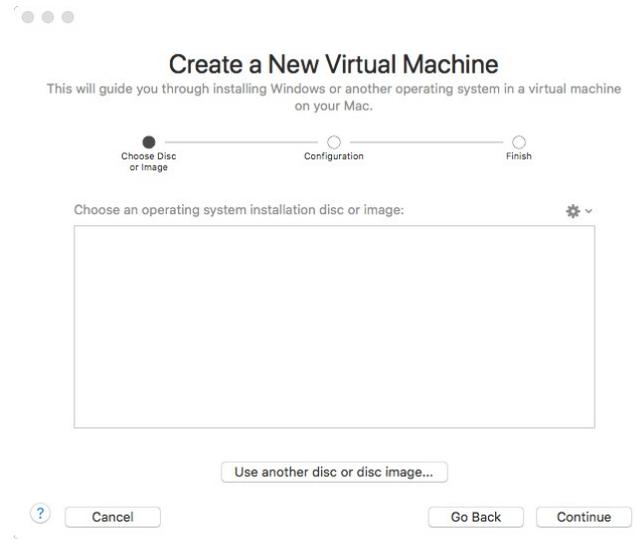
On the Virtual Machine Library, click on the “Add virtual machines and folders” and click “New...” You can bring the Library window by clicking on Window → Virtual Machine Library; you can also create the virtual machine on File → New...



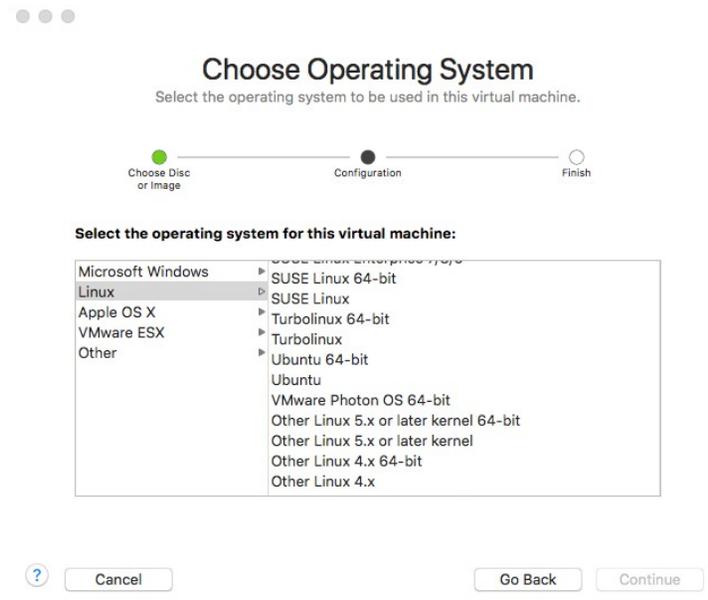
Select “Install from disc or image” and click “Continue.”



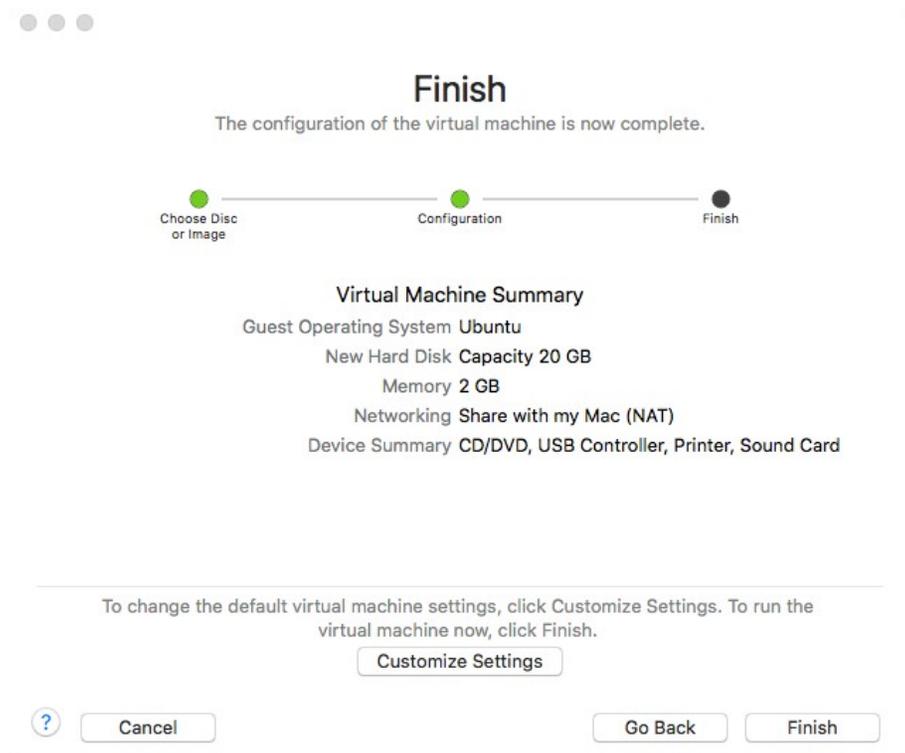
Click on “Use another disc or disc image...” and select the Escuelas Linux ISO image you want to use. Click on “Continue.”



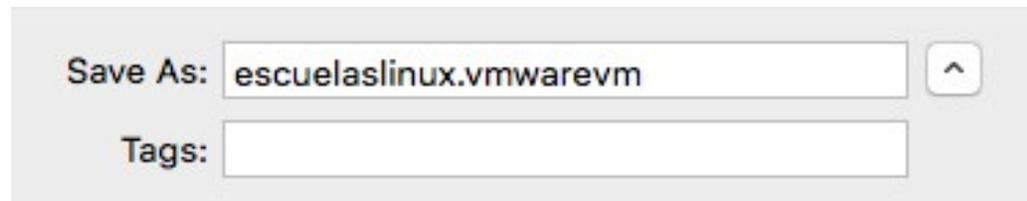
Select “Debian 11” if you are using the 32-bit edition, or “Ubuntu 64” if you are using the 64-bit one. Click “Continue.”



Click on “Customize Settings.”



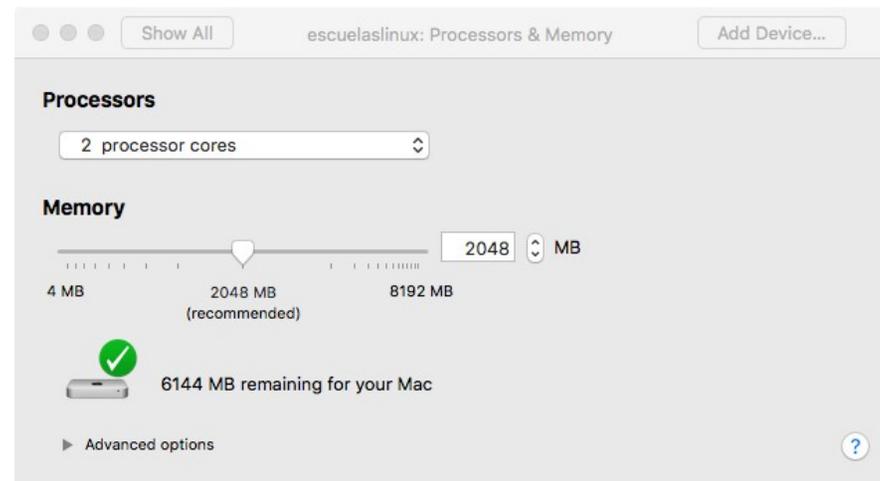
Type some name for your virtual machine (say, “escuelaslinux”) and click on the “Save” button.



On “System Settings,” click on “Processors and memory.”



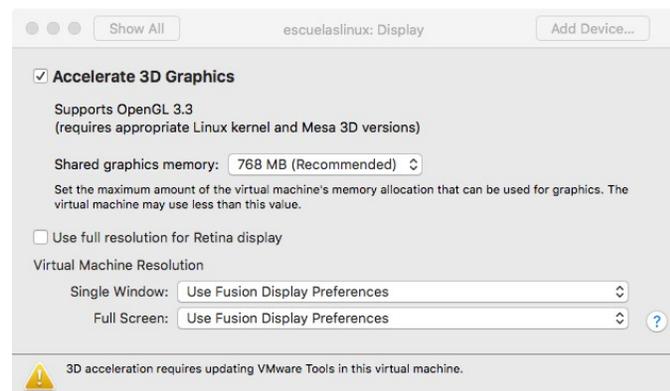
On “Processors,” decide the amount you would like to use for the virtual machine; we suggest using half of the total amount. You also can leave the recommended amount of RAM, but remember that the minimal amount for Escuelas Linux 32-bit edition is 700 MB, and for a 64-bit one is 2048 MB.



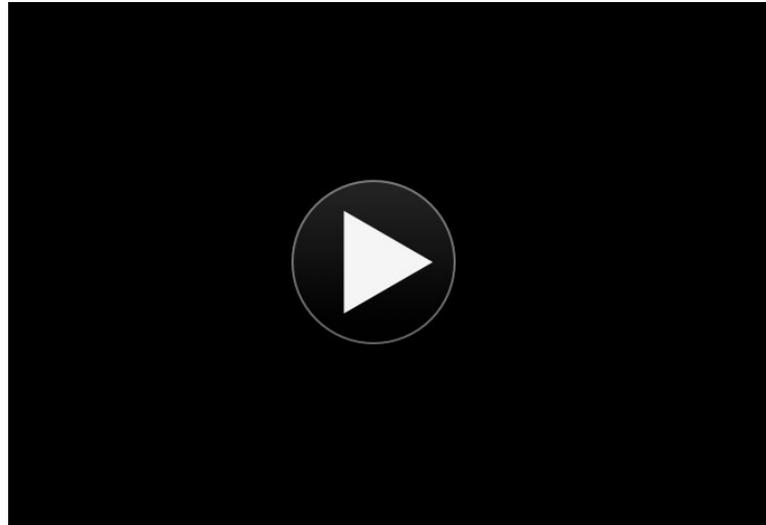
Click on “Show All” and choose “USB & Bluetooth.” Click on “Advanced USB options,” in “USB Compatibility,” pick the USB version available on your computer. Generally speaking, if you have USB ports with a blue color input, they could be 3.0, otherwise, they could be 2.0



Pulse en “Show All” and choose “Display.” You can leave “Accelerate 3D Graphics” as is, if you have a GPU able to handle 3D protocols, such as Mesa 3D. Next, close this window.



Click on the Start button to begin the installation of Escuelas Linux.



Next, follow the steps from page 28. In both cases, you should select “Erase disk” when that option appears; don’t worry, it means to erase the virtual disk, not your computer’s hard disk.

When you use Escuelas Linux on VMware Fusion, you can make our system run in full-screen mode by pressing Ctrl-Cmd-Enter. To dismiss full-screen mode, you can press the same keys.

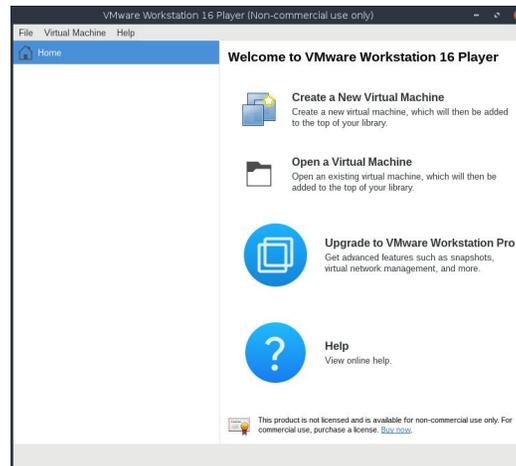
You can choose any screen resolution by merely dragging the borders of the window that displays our operating system.

If you need a specific screen resolution for your Escuelas Linux virtual machine, click on menu → Applications → Settings → ARandR. When you click on Layout → Moksha, you can even save your chosen configuration without the hassle of having to do it every time you enter Escuelas Linux. You can always remove or change your saved configuration on the `/home/linux/.e/e/applications/startup/startupcommands` file.

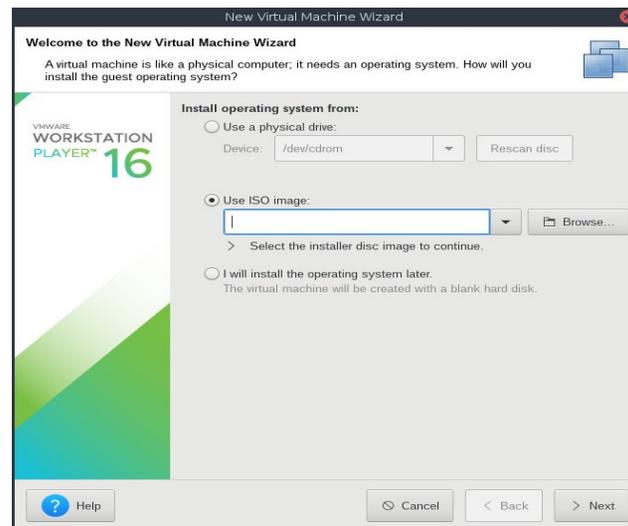
Don’t forget to open Menu → Applications → System → Commit Desktop Changes, to make permanent on a locked desktop the changes done with ArandR.

## Installation of Escuelas Linux on VMware Player for Windows or Linux

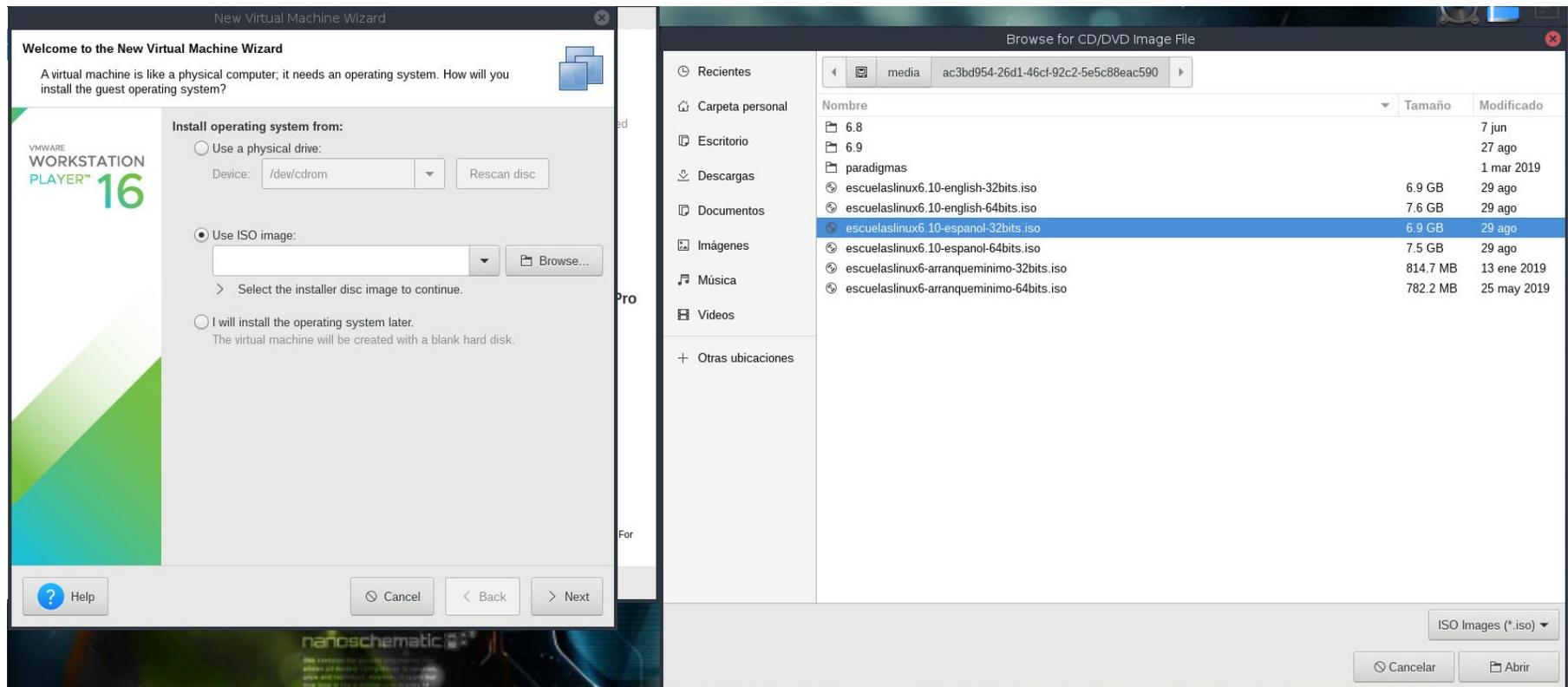
Click on “Create a New Virtual Machine”



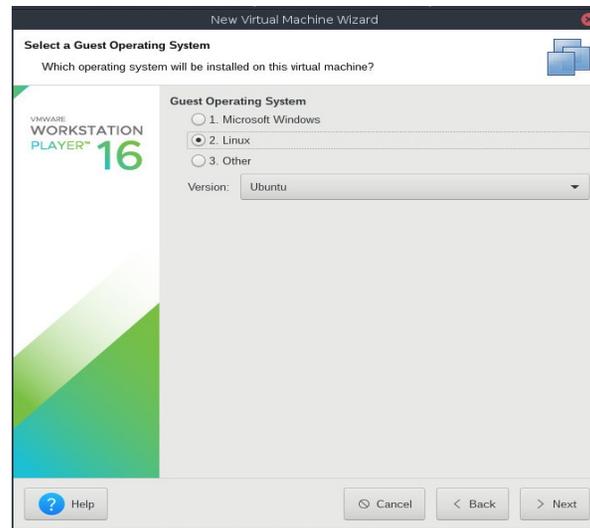
Click on the “Browse...” button. You may need to move the “Browse” window to the right, as it could appear below other VMware windows.



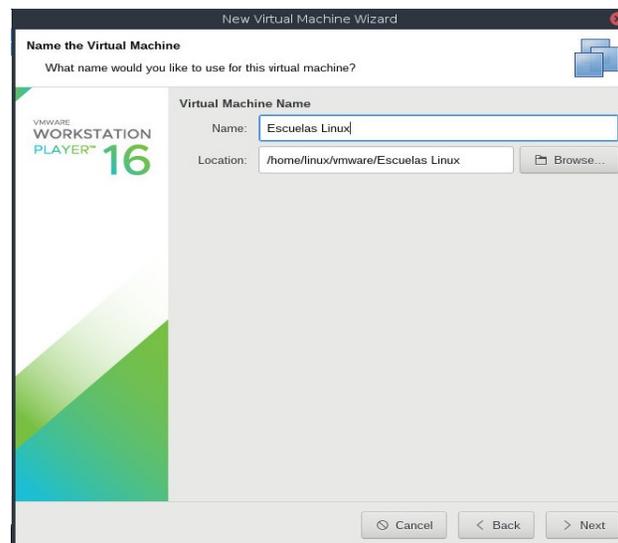
Choose the Escuelas Linux ISO image that you would use, click on the “Open” button, and then on the “Next” one.



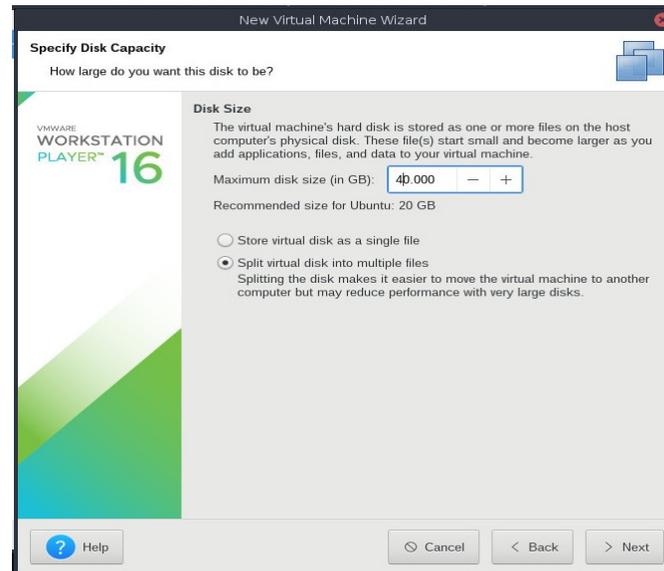
Select “Linux” and then select “Debian 11” if you are using a 32-bit image, or “Ubuntu 64” if you are using a 64-bit one. Click on the “Next” button.



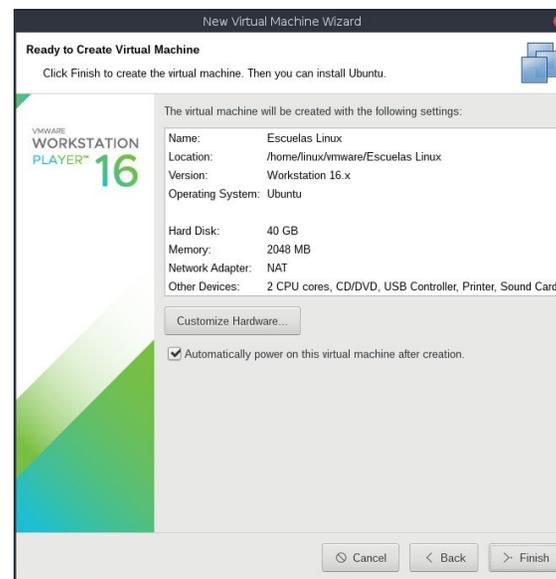
Type a name for your virtual machine (for example, “Escuelas Linux”), and click on the “Next” button.



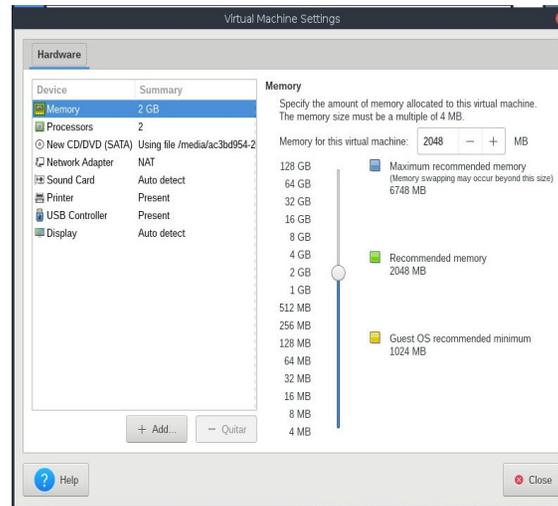
Set the size of your virtual disk to *at least* 50 GB (50 000) for 64-bit, or 40 GB (40 000) for 32-bit. Click on the “Next” button.



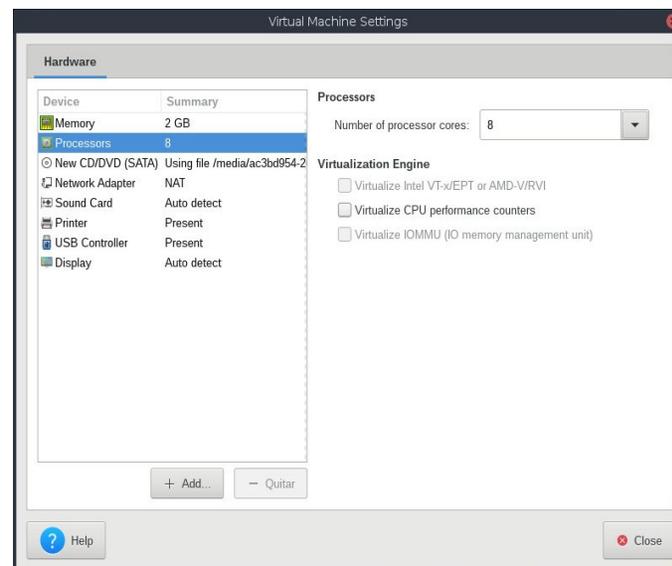
Click on “Customize Hardware...”



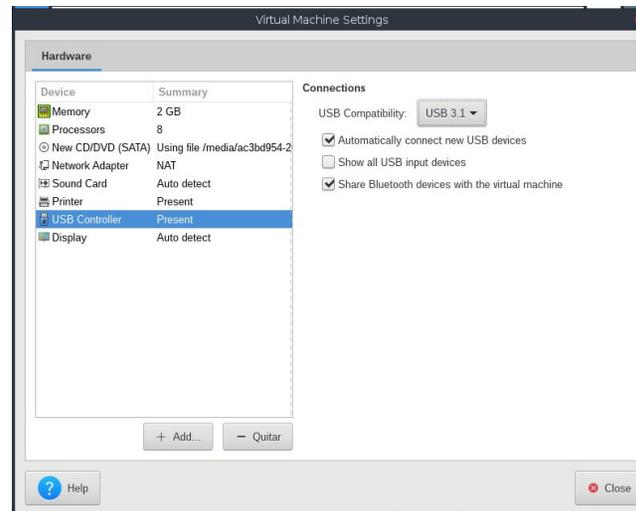
On the “Memory” section, you can use the suggested amount of RAM or specify your own. Remember that the minimal amount for Escuelas Linux 32-bit is 700 MB, and the minimal amount for the 64-bit edition is 2 GB (2048 MB)



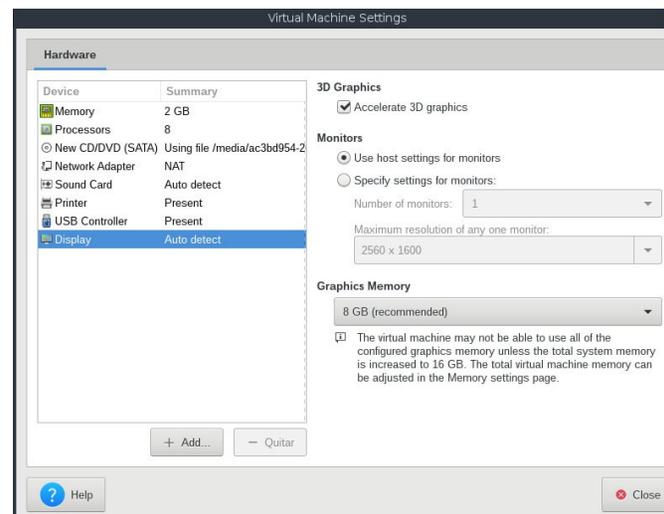
On “Processors,” pick the amount that you want to use for your virtual machine. It would be desirable to choose all the available processors in your system.



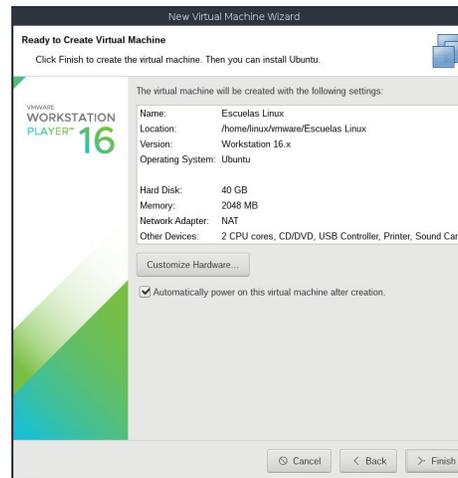
On “USB Controller,” you should set the USB compatibility to the USB port version available on your computer. Generally speaking, if you have USB ports with a blue input, they are 3.1, otherwise they might be 2.0 ports.



On “Display,” you can leave “Accelerate 3D Graphics” if you have a GPU capable of using 3D protocols, such as OpenGL. Click on the “Close” button.



Click on the “Finish” button.



All this should begin the installation of Escuelas Linux. Nevertheless, on some computers this could fail. If it shows an error message mentioning VT-x, you should access your computer BIOS, and activate VT-x. As the BIOS interfaces are different among computers, it’s a bit difficult to say where you could find VT-x, but usually it is on the screen “Chipset,” “Northbridge,” “Advanced Chipset Control,” “Advanced BIOS,” “Security” or “Advanced CPU Configuration.” You can look for “Intel VT-x” or other names such as “Virtualization extensions” or “Virtualization technology.”

Next, follow the steps from page 28. In both cases, you should select “Erase disk” when that option appears; don’t worry, it means to erase the virtual disk, not your computer’s hard disk.

When you use Escuelas Linux on VMware Player, you can make our system run in full-screen mode by pressing Ctrl-Alt-Enter. To dismiss full-screen mode, you can press the same keys.

You can choose any screen resolution by merely dragging the borders of the window that displays our operating system.

If you need a specific screen resolution for your Escuelas Linux virtual machine, click on menu → Applications → Settings → ARandR. When you click on Layout → Moksha, you can even save your chosen configuration without the hassle of having to do it every time you enter Escuelas Linux. You can always remove or change your saved configuration on the `/home/linux/.e/e/applications/startup/startupcommands` file.

Don’t forget to open Menu → Applications → System → Commit Desktop Changes, to make permanent on a locked desktop the changes done with ArandR.

## 19b. Installation on UTM

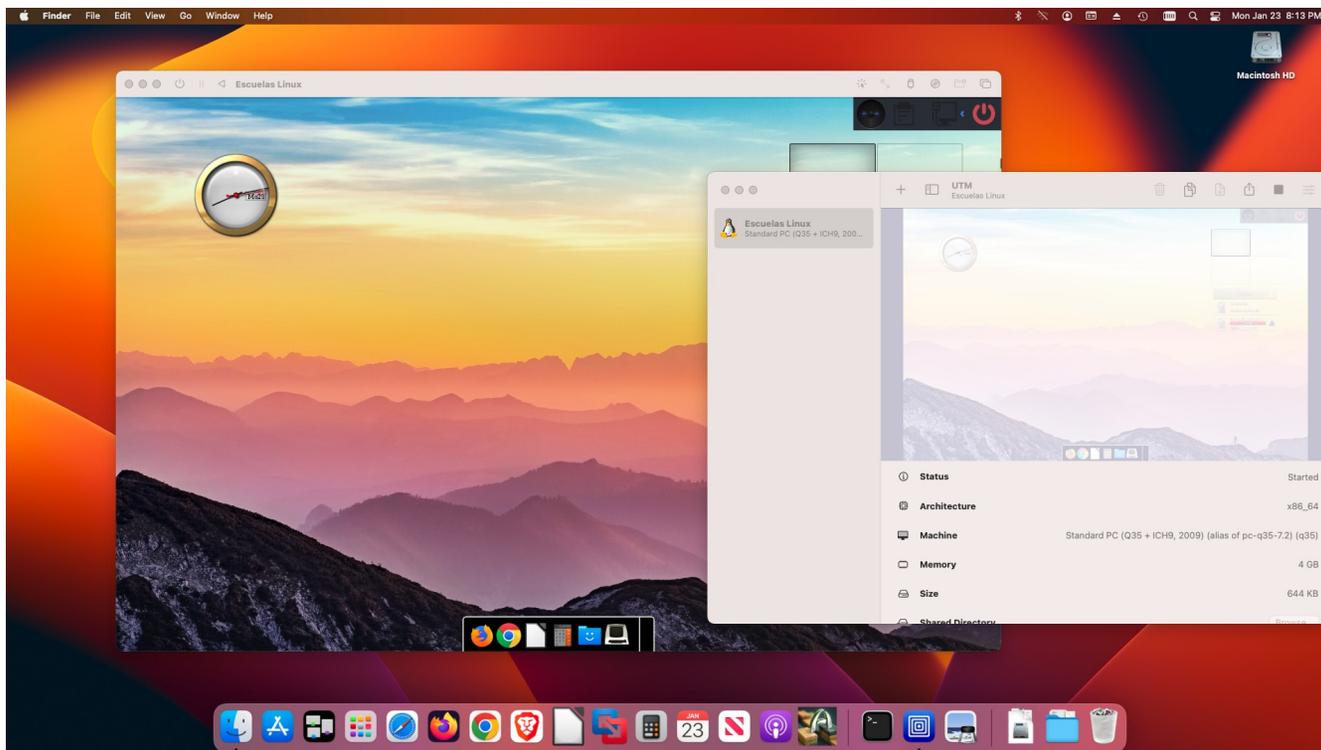
Is it possible to run Escuelas Linux on Apple computers that have an M1 or M2 processor?

Of course!

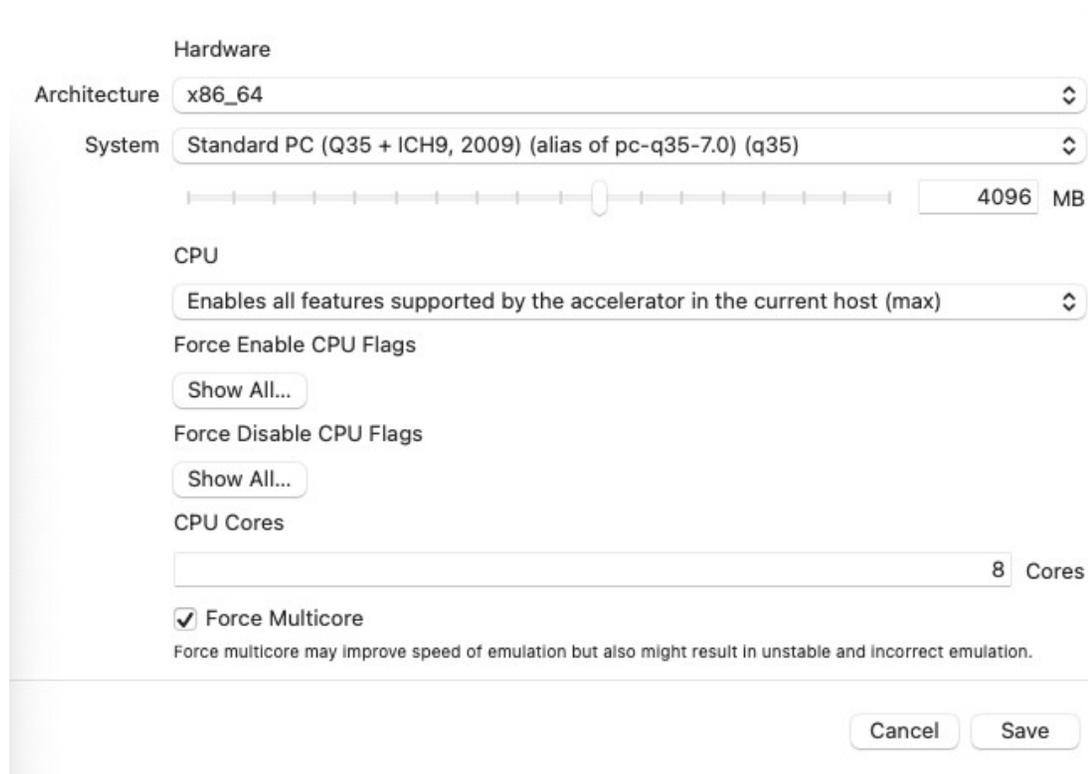
Since November 2020, Apple computers include their own SoCs based on the ARM architecture. Since Escuelas Linux is a distribution designed for x86 and x86-64, it might seem impossible or very complicated to execute this set of instructions on a different architecture. But it is possible to do it with the open source program UTM.

UTM is a graphical interface to the QEMU virtualizer and emulator, making it easy to use.

In the following image we have Escuelas Linux 64-bit running without any issue inside UTM.



The parameters that were used for this emulation are those shown in the following image:



We'd like to point that it is an emulation and not a virtualization, so Escuelas Linux is usable, but not particularly fast.

UTM can be downloaded from:

<https://mac.getutm.app/>

## 19c. Installation on VirtualBox

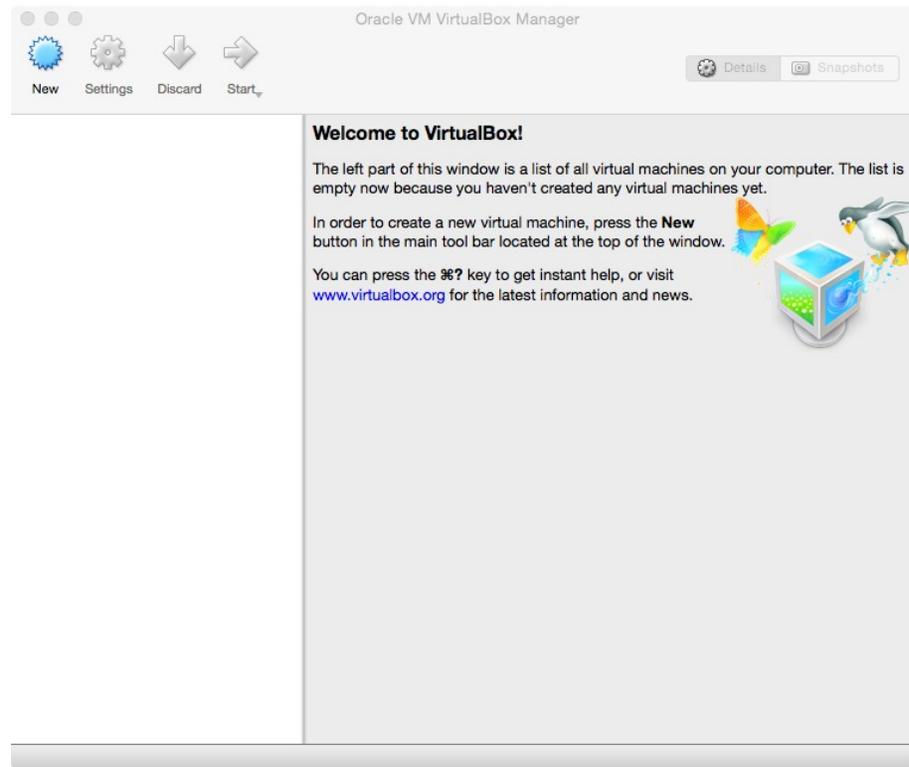
### Download VirtualBox

1. Download an ISO image as suggested on page 6.
2. Go to [www.virtualbox.org](http://www.virtualbox.org) and click on the “Downloads” link. To have better integration, if you virtualize a Escuelas Linux 64-bit, we propose that you click on “VirtualBox older builds,” then on “VirtualBox 6.1” and choose, on the 6.1.38 version, the OS and architecture where you want to use VirtualBox. Here we will show an example using VirtualBox in a Mac, so we downloaded “OS X hosts.”

- **VirtualBox 6.1.38** (released September 02 2022)
  - [Windows hosts](#)
  - [macOS / Intel hosts](#)
  - [Solaris hosts](#)
  - [Solaris 11 IPS hosts](#)
  - **Linux Hosts:**
    - [Oracle Linux 9 / Red Hat Enterprise Linux 9](#)
    - [Oracle Linux 8 / Red Hat Enterprise Linux 8](#)
    - [Oracle Linux 7 / Red Hat Enterprise Linux 7 / CentOS 7](#)
    - [Oracle Linux 6 / Red Hat Enterprise Linux 6 / CentOS 6](#)
    - [Ubuntu 22.04](#)
    - [Ubuntu 20.04](#)

We recommend also downloading the “Extension Pack,” to have better support for USB devices in our future virtual Escuelas Linux machine.

Once downloaded VirtualBox, run the setup file in your operating system. After installing, open VirtualBox.



Install the Extension Pack, too. To do it, double-click on its file, the one with .extpack extension, previously downloaded.

## Install Escuelas Linux in VirtualBox

Click on the “New” button.



And configure your next virtual machine with the parameters as shown below. Pick “Debian 32-bit” or “Ubuntu 64-bit,” according to the ISO architecture you downloaded. In this example we are using the 64-bit image. Click on the “Continue” button.



**Nombre y sistema operativo**

Seleccione un nombre descriptivo y una carpeta destino para la nueva máquina virtual y seleccione el tipo de sistema operativo que tiene intención de instalar en ella. El nombre que seleccione será usado por VirtualBox para identificar esta máquina.

Nombre:

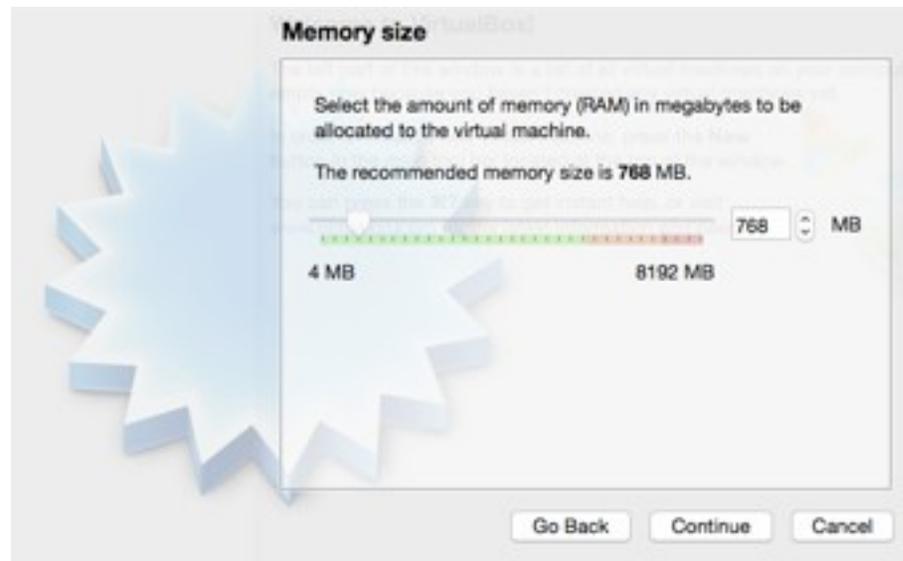
Carpeta de máquina:

Tipo:  

Versión:

Modo experto < Anterior **Siguiente >** Cancelar

A dialog box will appear, proposing an amount of RAM to be used by the virtual machine. You can accept the recommended amount, although the minimum required by Escuelas Linux to run is 700 MB. For the 64-bit version, 2 GB or more would be suitable. Click on “Continue.”



Select “Create a virtual disk now,” and click on the “Create” button.



Select “VirtualBox Disk Image,” and click “Continue.”



Select “Dynamically allocated,” and click “Continue.”



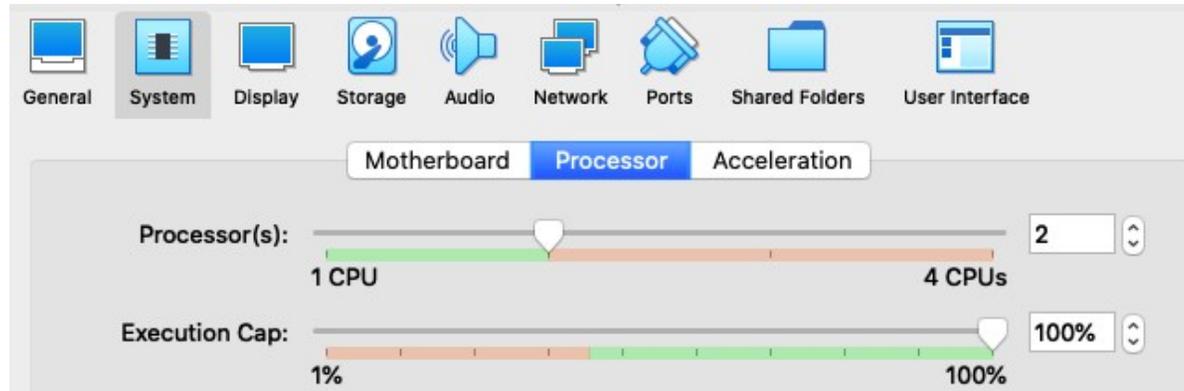
Define a disk space of at least 50 GB for 64-bit, or 40 GB for 32-bit in your virtual machine, and click “Create.”



Click on the “Settings” button.



On “System,” “Processor,” pick the max amount of processors that your system would allow.



On “Ports,” “USB,” choose the USB version available on your computer. Click “OK.”



Click on the “Start” button.



Click the button that has a folder icon, then “Add,” and select the ISO file you are going to use (“escuelalinux...iso”); it will be located in the directory were you previously downloaded and processed those files, as requested on page 6.



Click the “Start” button.

This procedure should begin the installation of Escuelas Linux. Nevertheless, on some computers this could fail, and they could show an error message that contains, among other lines, the following:

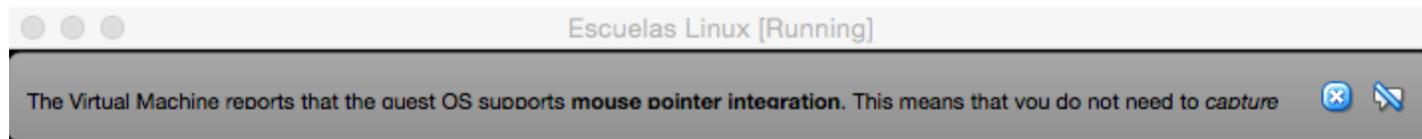
*VT-x is disabled in the BIOS for all CPU modes (VERR\_VMX\_MSR\_ALL\_VMX\_DISABLED)*

or

*VT-x is not available*

If such an issue appears, you should access your computer BIOS and activate VT-x there. As each BIOS interface is different among computers, it’s a bit difficult to say where you could find VT-x. Still, usually it is on the screens “Chipset,” “Northbridge,” “Advanced Chipset Control,” “Advanced BIOS,” “Security” or “Advanced CPU Configuration.” You can also look for “Intel VT-x,” or other names such as “Virtualization extensions” or “Virtualization technology.”

**Note:** During the use of VirtualBox will appear some popup messages at the top of the window. If you do not need to see those messages, you can click on the icon of a dialog globe with a diagonal line to stop the appearance of those messages.



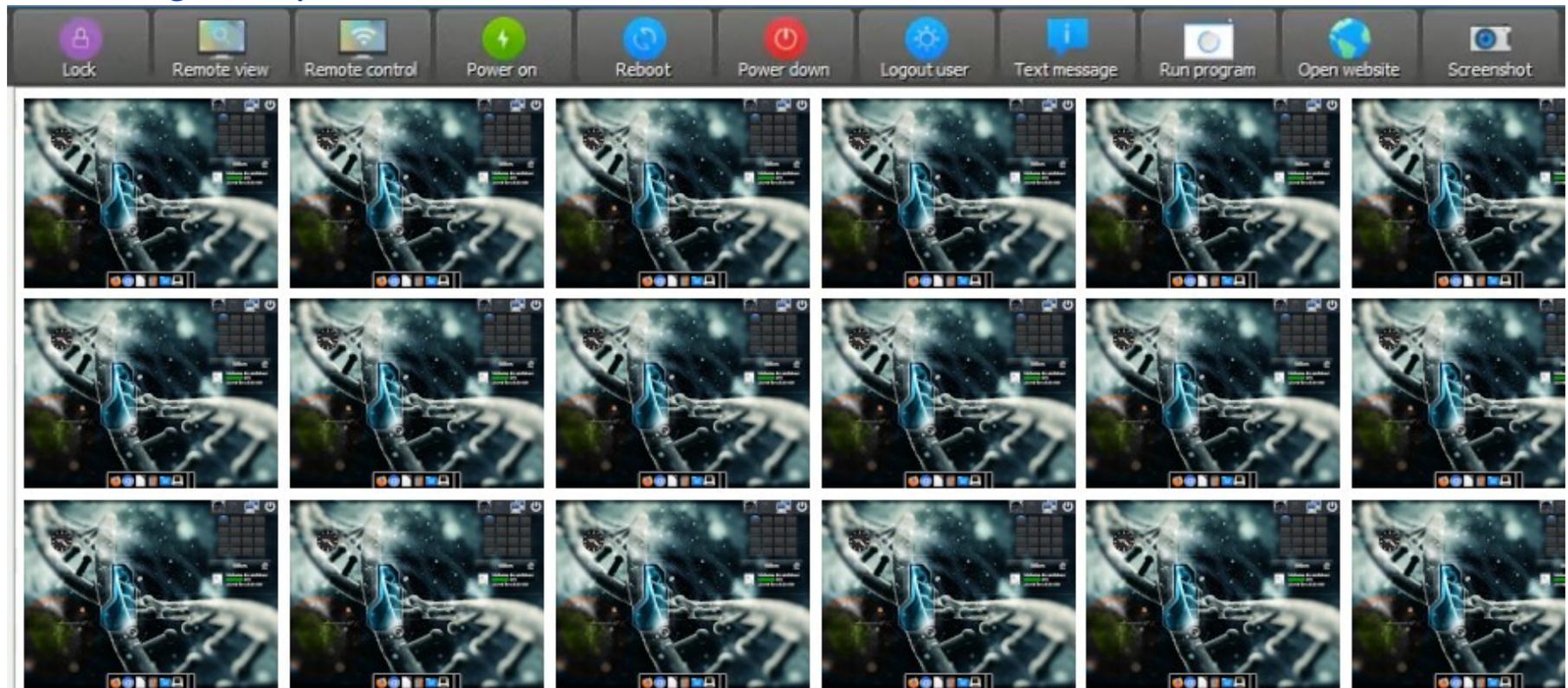
Next, follow the steps shown from page 28. On both cases, you should select “Erase disk” when that option appears -don’t worry, it means to erase a virtual disk, not your computer’s real disk-.

When you use Escuelas Linux on VirtualBox, you can make our system run in full-screen mode by pressing CMD key + F (in Mac systems) or right CTRL key + F (in Windows systems). To dismiss full-screen mode, you can press the same keys.

You can choose another screen resolution for your Escuelas Linux virtual machine when you click on menu → Applications → Settings → ARandR. When you click on Layout → Moksha, you can even save your chosen configuration without the hassle of having to do it every time you enter Escuelas Linux. You can always remove or change your saved configuration on the `/home/linux/.e/e/applications/startup/startupcommands` file.

Don’t forget to open Menu → Applications → System → Commit Desktop Changes, to make permanent on a locked desktop the changes done with ArandR.

## 20. Configure Veyon on Escuelas Linux



Veyon is a useful program for computer classrooms that have a local network because it lets you, among other things:

- See what's going on in every student's computer.
- Take remote control of the computers to help students.
- See a live demo of the procedures or presentations shown on any of the computers.
- Block one or some computers to attract the attention on the teacher.

- Send text messages to the students.
- Shut down all the computers from the server.

In Escuelas Linux, setting up Veyon is easy.

First, you'll need to install the Veyon software for the server, that is, the teacher or admin computer in which it is possible to have control over the student computers.

1. Put the Escuelas Linux USB.
2. Open Terminology.
3. Type `cd /media/EscuelasLinux/veyonServer[enter]` (notice the use of uppercase and lowercase). If you are using Escuelas Linux LowMem, the path would be: `cd /media/[your device name]/escuelaslinux-8.2-32/veyon-Server [enter]`
4. Type `sudo bash ./install [enter]`
5. Reboot the computer when the script finish.

When you finish these steps, you'll have a working Veyon server available at Menu → Applications → Internet → Veyon Master.

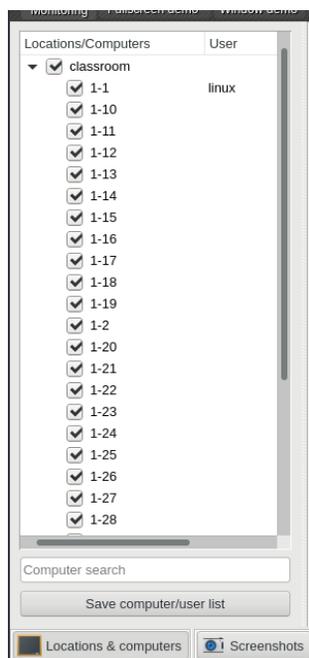
Next, you need to do the following steps in the student computers that are going to be "clients":

1. Put the Escuelas Linux USB.
2. Open Terminology.
3. Type `cd /media/EscuelasLinux/veyonClient[enter]` (notice the use of uppercase and lowercase)
4. Type, for example, `sudo bash ./veyon 1-3 [enter]`
5. Type your password [enter]
6. Reboot the computer when the script finish.

In the above example, the number 1 is the number of a computer classroom, and the number 3 means a number for some computer. Then, if you have 20 computers at computer classroom 1, it is necessary to assign one identifier to each computer in this notation; 1-1, 1-2, 1-3, 1-4, 1-5 ... 1-20, or if you are configuring the computer students in a second classroom, the notation to each one would be 2-1, 2-2, 2-3, etc.

If a student computer is not visible on Veyon Master, you should check on the student monitor that an icon with an eye (The Veyon logo) is visible around the upper right corner. If it is not there, you should click on the Power Off button → Close Session, and access the system again to have the Veyon logo visible.

Finally, when you open Veyon Master in the computer that acts as the server, you should click on "Locations & computers," and then click on the "classroom" checkbox to activate all client computers' view. Alternatively, you could also click on individual computer check boxes to select which ones you desire to see.



**Note:** The default configuration offered by Escuelas Linux is a classroom with 30 computers but, of course, at the server computer you can add or eliminate client computers, by opening Menu → Applications → Internet → Veyon Configurator.

## 21. Installation of Escuelas Linux LowMem

Escuelas Linux series 6 introduced the feature of running our distribution in Live USB mode, so anyone can try Escuelas Linux by merely running it from a USB stick. Nevertheless, this feature had a collateral effect: additional RAM requirements. It was not possible anymore to install Escuelas Linux in computers between 512 and 700 MB of RAM. To solve this issue, Escuelas Linux LowMem (Low Memory) is a special 32-bit edition to be installed in low RAM computers, using the same “classical” procedure that was used in old Escuelas Linux versions.

### I. Requirements

Escuelas Linux LowMem can be installed in relatively old computers with between 512 and 700 MB of RAM, even those with 1 GB but that fails to install with our normal `escuelaslinux-8.2-english-32.iso` image. The computer must have at least 40 GB of free hard disk space. It is not possible to install in computers with less than 512 MB of RAM.

Escuelas Linux LowMem installation requires four files:

- One bootable ISO image, named "escuelasLinux-8-arranqueMinimo-32.iso" (which means "escuelasLinux-8-minimalBoot-32.iso." Don't worry; this LowMem edition has full English language support.) This image should be processed with the Balena Etcher app (available at [www.balena.io/etcher](http://www.balena.io/etcher)) to have a bootable USB stick of at least 2 GB (see page 8). Alternatively, you can process this ISO image to get a bootable DVD (if you have Escuelas Linux already installed on some computer, that can be done with the K3B app, using the menu Tools → Burn Image.) It is not possible anymore to create bootable CDs because of the ISO image's current size.
- One compressed file, named `escuelaslinux-8.2-32.tar.gz`, is used to install and configure our package selection. This file must be uncompressed to obtain the `escuelaslinux-8.2-32` folder.
- The `linux.tar.gz` and `software.tar.gz` files, both files after downloaded, must be moved into the `escuelaslinux-8.2-32` folder. The resulting `escuelaslinux-8.2-32` folder must be copied to a USB stick or external hard disk with at least 5.5 GB of available space.

The four files can be downloaded from <https://osdn.net/projects/escuelaslinux/releases/p17275>

## II. Initial procedure

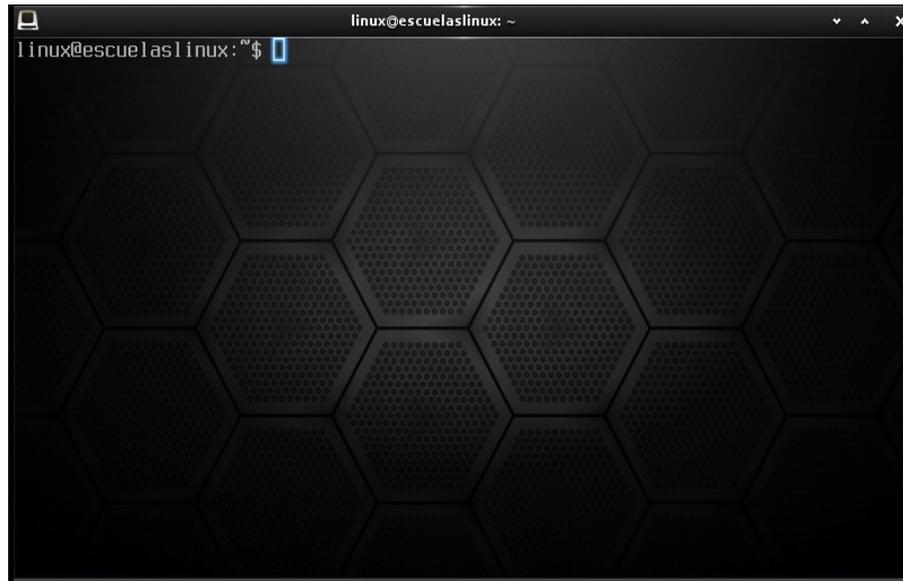
Do the booting and the initial installation in your computer, after you processed the `escuelasLinux-8-arranqueMinimo2-32.iso` to a USB stick or DVD. The installer icon is  and the procedures are similar to the ones described in sections 4 to 8.

Once you have the minimal base system already installed on the computer hard disk, connect the USB stick or external hard disk; it should have the “`escuelaslinux-8.2-32`” folder, obtained by decompressing the “`escuelaslinux-8.2-32.tar.gz`” file and moving the `linux.tar.gz` and `software.tar.gz` files into it.

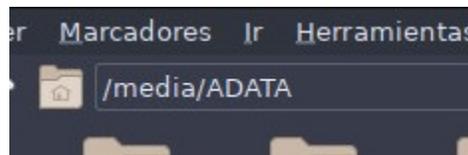
Click on any part of the desktop or in the menu icon with an arrow pointing up () , and select Sitios (Places) → (name of your USB o external hard disk) to mount your installation medium. It would help if you not close the window that appears, which is a file manager.

## III. Installation of the Escuelas Linux packages through the command line

Click on the Terminology icon () or, if it is not visible, select menu → “Aplicaciones” → “Sistema” → “Terminology.” A black window will appear:



Notice that at the top section of the file manager window is visible the path to the content of the USB stick or external hard disk. For example, in our system, it looks like this:



It shows the word “media,” followed by the name of our device, “ADATA.” This means the path to the installation program is `/media/ADATA`

Then, for this example, in Terminology we should type the following text, using uppercase and lowercase as shown:

```
cd /media/ADATA/escuelaslinux-8.2-32 [Enter]
```

```
sudo bash ./execProg [Enter]
```

Type the password `linux` [Enter] (Remember that no text is going to be displayed while typing the password)

Of course, replace “ADATA” for the name of your own USB stick or external disk. For example, if your external disk were named “John,” the first command line would be typed as:

```
cd /media/John/escuelaslinux-8.2-32 [Enter]
```

If the name of your USB stick or external disk has one or more spaces, you’ll need to put quotation marks enclosing the path. For example, if an external disk is named “JOHN DOE,” the command line for that would be:

```
cd “/media/JOHN DOE/escuelaslinux-8.2-32”[Enter]
```

After you type `sudo bash ./execProg` will begin the packages installation and the custom Escuelas Linux configuration, a process that could take around one hour. When this process finishes, a Spanish language message will appear: “Instalación de Escuelas Linux finalizada” (The installation of Escuelas Linux has finished).

Next, restart your computer. A few moments after you did it, an image with some mountains should appear as the background.

**Note:** After restarting, on some systems appears a login screen only once. The password is the word *linux*. You can type it, or restart the computer.

**Note:** if there is no mountains image as the background, open menu → Applications → System Tools → Restaura Íconos. Click on the "Restaura Iconos" (Restore Icons) button, type the password and wait a few seconds. Reboot again when this app announces that you can do it.

If the Escuelas Linux initial setup screen would appear again, in which the “Instalar Escuelas Linux” icon is visible at the bottom dock (the fourth icon from left to right)...



This means that your computer is reading from the boot DVD or USB stick; If this happened, click on the button located at the bottom right and select "Power Off." Once you turn on the computer again, remove your boot DVD or USB stick, to boot from the hard disk.



If you end with a system that looks like the one shown above... It's all right! You already installed Escuelas Linux in its Spanish setup. Let's now convert the operating system to the English language. Go to the next page to know how to do it.

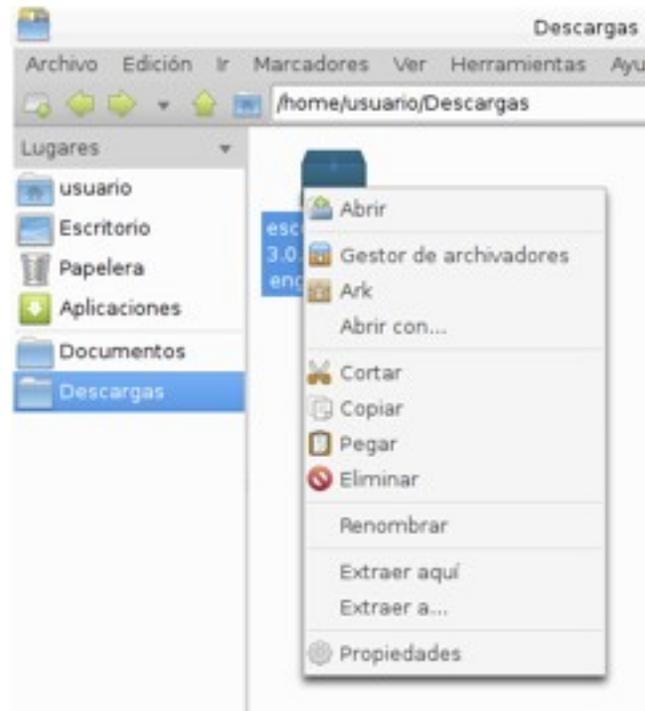
#### IV. Installing Escuelas Linux LowMem English edition

When the computer reboots, you will have a working Escuelas Linux system installed, but it still uses Spanish language. If you intend to use the English edition of Escuelas Linux, do the following steps.

1. Download the `escuelasLinux-8.2-english-32.tar.gz` package.
2. In this example, we will assume that you downloaded the English language package using either Firefox or Chromium in your recently installed Escuelas Linux system. If you did so, the package will be located in the “Descargas” (Downloads) folder.

**Note:** if you intend to use the downloaded `.tar.gz` package for other computers, we'd suggest copying that compressed file to a USB stick or external hard disk; the current home user directory is going to be completely erased and replaced by an all-English language one, erasing the downloaded `.tar.gz` package too.





3. Go to the “Descargas” (Downloads) directory, and right/alternate click on the tar.gz package. Choose “Extraer aquí” (Extract here)
4. Once the contents of the .tar.gz package are extracted, double-click on the “escuelasLinux-8.2-english-32” folder that appears, and then double-click on the InstallEscuelasLinux icon.



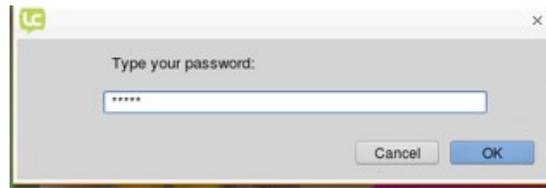
A dialog box will appear:



5. Click on the “Ejecutar” (Execute) button to run the program.



6. Next, click on the “Install Now!” button.



7. Type the word `linux`, and click “OK.”

In this way, the installation of Escuelas Linux LowMem English edition will begin. The computer will reboot automatically when the process finishes.



When you finish installing the Escuelas Linux English language package, if you end with a system that looks similar to the one shown in the screenshot above... Congratulations! You successfully installed it.

## 22. Activate Bluetooth support

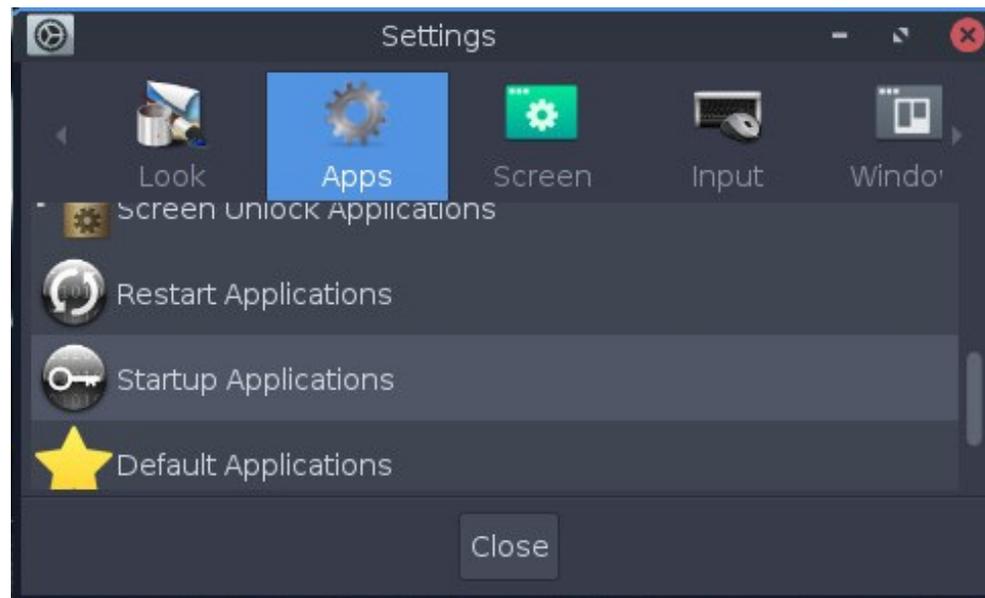
1. Insert your Escuelas Linux USB stick.

2. Open Terminology and type:

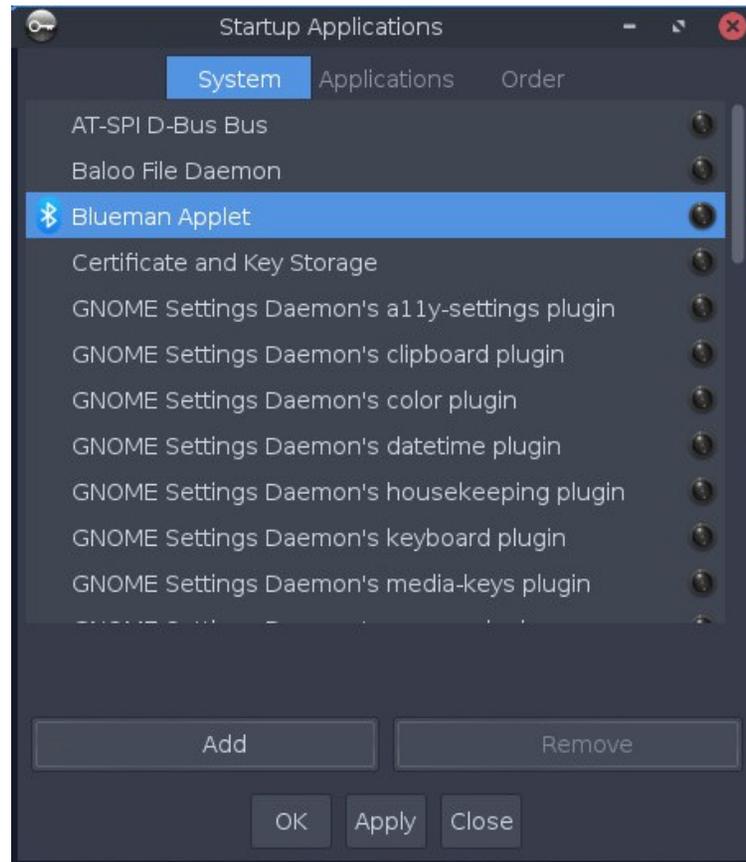
```
cd /media/EscuelasLinux/drivers/bluetooth[enter]
```

```
sudo bash ./install[enter]
```

3. Once installed these support packages, open menu → Settings → Settings Panel.



On the “Apps” tab, select “Startup Applications.”



Click on “Blueman Applet,” then click “Add,” press “OK,” next on “Close.”

If you have a locked desktop (which is the default state on Escuelas Linux), you will need to open menu → Applications → System → Commit Desktop Changes, and use it to make permanent this change on your desktop.



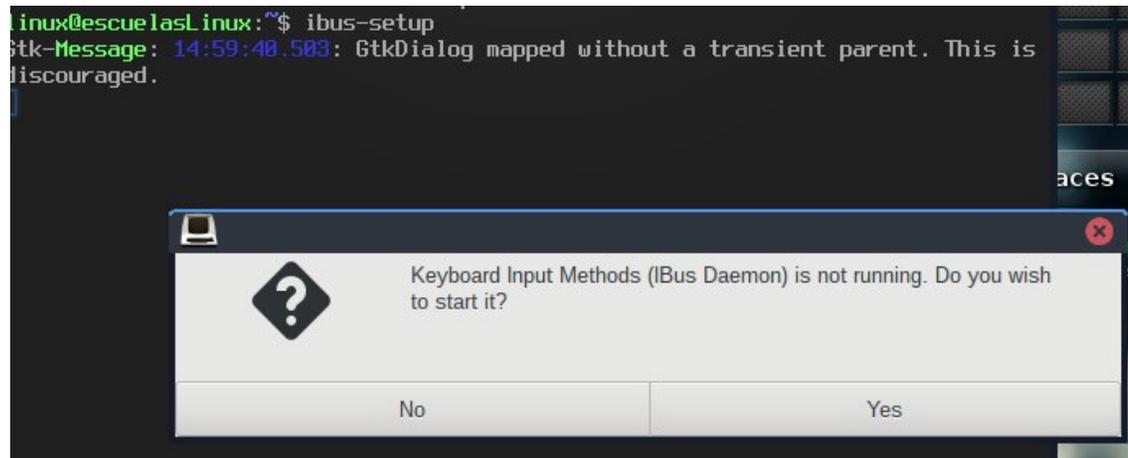
Reboot the computer. A Bluetooth icon should appear on the upper right side of the screen, and you can use it to configure your Bluetooth connections.

## 23. Activate keyboard layout switcher

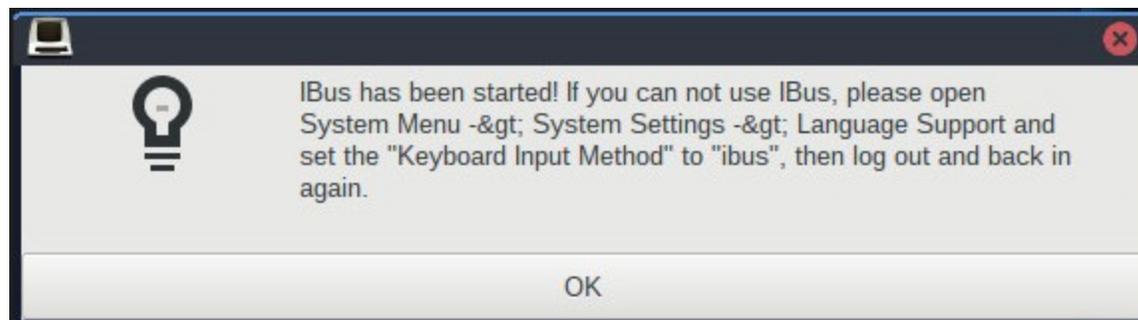
If you use more than one keyboard, it could be useful to access the desktop to select the desired keyboard easily.

1. Open Terminology and type

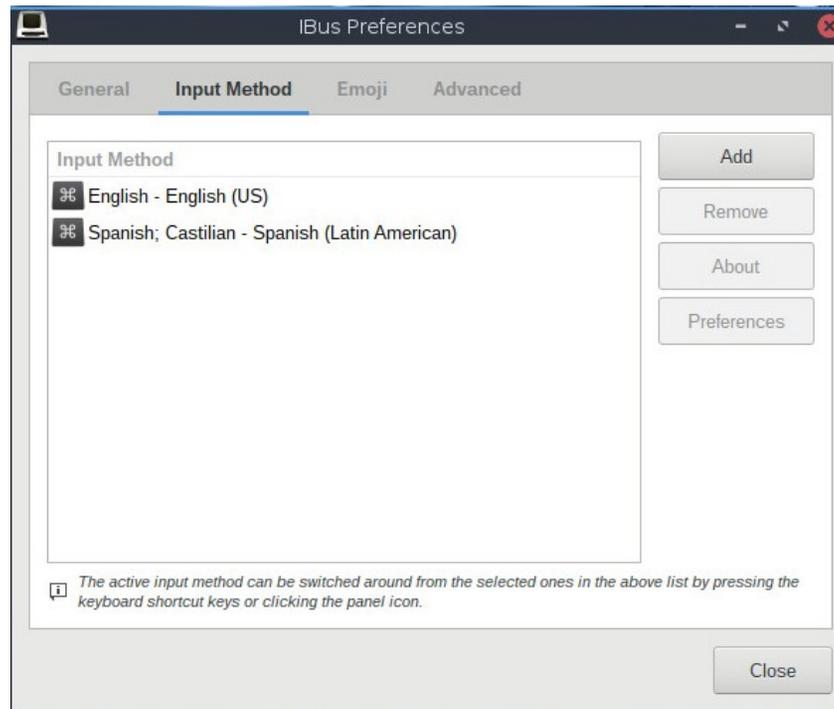
```
ibus-setup [enter]
```



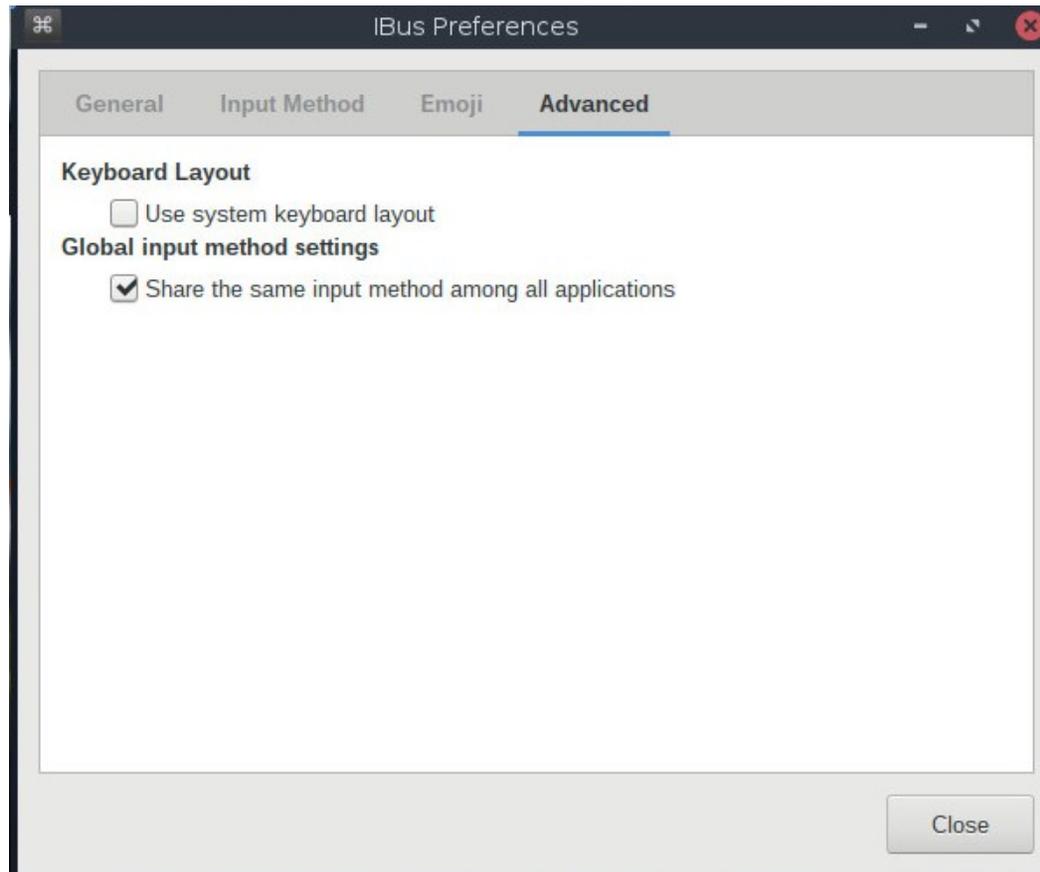
This dialog box will appear. Click on “Yes.”



Next, click on “OK.”



On the “Input Method” tab, click the “Add” button to aggregate any desired keyboard layout.

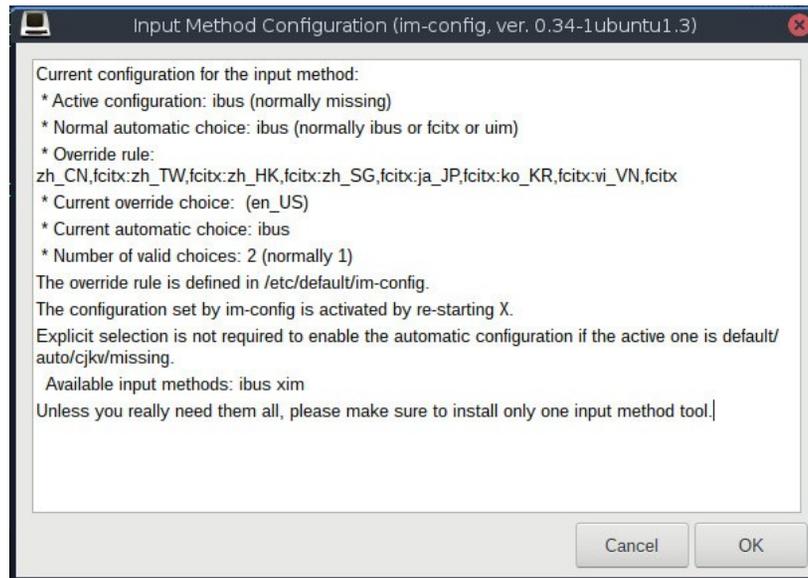


On the “Advanced” tab, remove the checkmark on “Use system keyboard layout.” Once done, click on “Close.”

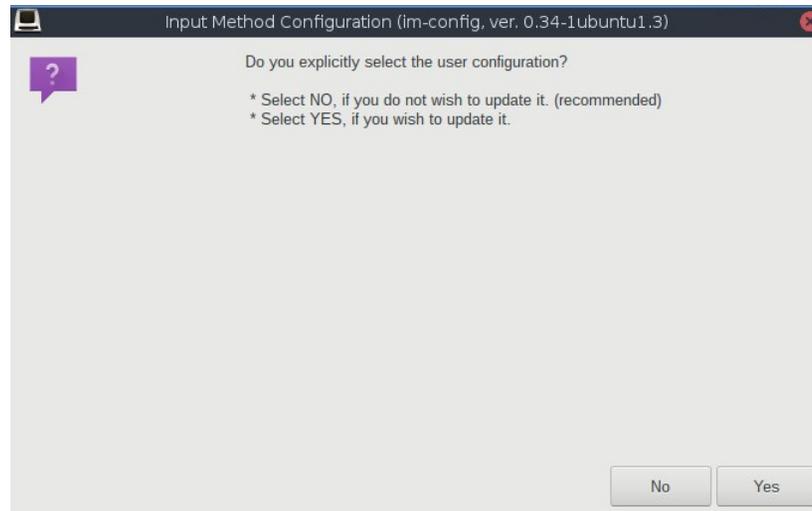
2. Next, on Terminology type:

```
im-config[enter]
```

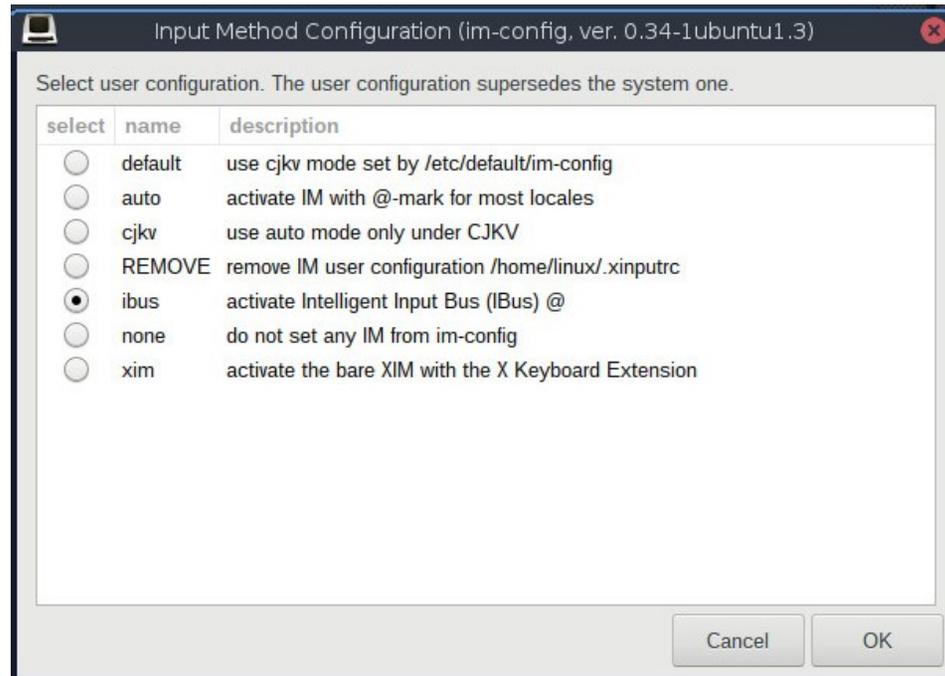
This dialog box is going to appear



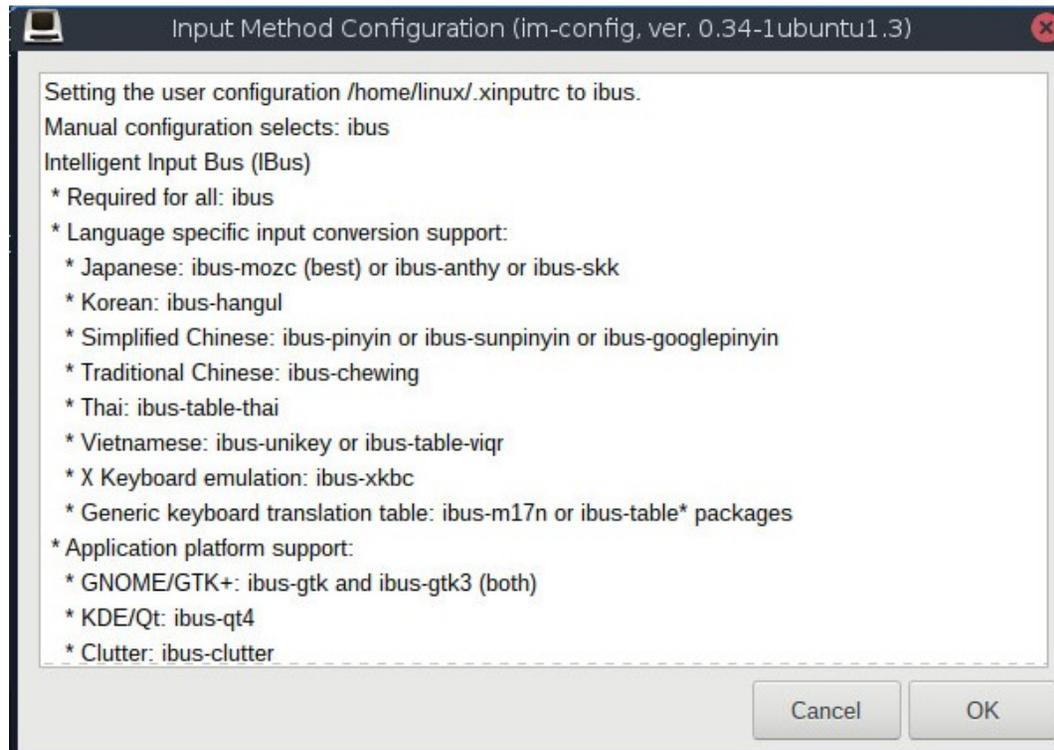
Click on “OK.”



In this dialog box, click “Yes.”



Next, select “ibus” and click “OK”



Click “OK” to accept this configuration. Reboot your computer.



A keyboard icon should now be available on the upper right side of the desktop. You can click on it to select your desired keyboard.

## 24. Downgrade your Linux kernel on 32-bit

Escuelas Linux includes in its 32-bit edition the kernel 3.16 to enable certain old drivers. To date, we know that kernel 3.16 is required to enable some SiS video cards, as documented here:

<https://sourceforge.net/p/escuelaslinux/blog/2019/03/how-to-configure-escuelas-linux-in-computers-with-sis-661-741-760-662-or-761-video-cards/>

Insert your Escuelas Linux USB stick, open Terminology and type:

```
cd /media/EscuelasLinux/kernel[tab] [enter] (pressing [tab] is going to autocomplete the name of the kernel directory)
sudo bash ./install[enter]
```

After the installation finishes, you can reboot your computer to use the new kernel.