Brilliant LABS
LABOS Créatifs

INSTALLATION OF LINUX MINT OPERATION SYSTEM

SUMMARY

An operating system is required to run your computer. It is thanks to it that you can see icons, interact with the mouse and keyboard or even surf the Internet. It is the link between the components of your computer and you.

There are several operating systems on the market. Maybe you've heard of Windows? It is an operating system developed by Microsoft. There is also the OS X operating system developed by Apple and the Ubuntu (Linux) operating system developed by Canonical.

The primary advantage of Linux operating systems is that they are completely free. Therefore, the others are paying in most cases.

While it is interesting to know how to use your operating system, it is equally important to know how to install one. In cyber security, when something goes wrong with our computer, it is very often related to the operating system. Several causes can exist such as: a virus, a part that no longer works, too much spyware and so on. In these moments, it often becomes necessary to reinstall the operating system and start again on a new basis.

In this edition, we would like to introduce you to this activity by offering you the possibility to learn how to install the Linux Mint operating system. This skill will be very useful for your discovery of the world of cybersecurity.

So, enjoy your discovery and continue to act in a cyber-secure way!

TABLE OF CONTENT

ACTIVITY PLAN

In this activity we want to focus on the installation of an operating system called Linux Mint. Here's what on the menu.

Main Goals

Goal #1: To be able to install an operating system.
Goal #2: To discover what is a partition.
Goal #2: To reflect on the roles of partitions in cyber security.

Tools Needed

Tool #1: Virtual Box
Tool #2: Linux Mint Virtual CD

VERIFICATION OF THE NECESSARY TOOLS

For this activity, you will need the software VirtualBox.

https://www.virtualbox.org/wiki/Downloads

You will also need the virtual cd of Linux Mint

https://www.linuxmint.com/download.php

VIRTUAL MACHINE PREPARATION

To be able to install the Linux Mint operating system, we will use virtualization. This concept allows us to create a simulated environment in our computer which will allow us to proceed with the installation without damaging our computer.

Let's start by starting Virtual Box and prepare the virtual environment.
You will need the following information:

1) 2GB of RAM (ram)
2) 2 processors (cpu)
3) 20 GB of hard disk drive space

If you need help with the creation of the virtual machine, please consult the guide *Creation of a Virtual Machine in Cyber Security*.
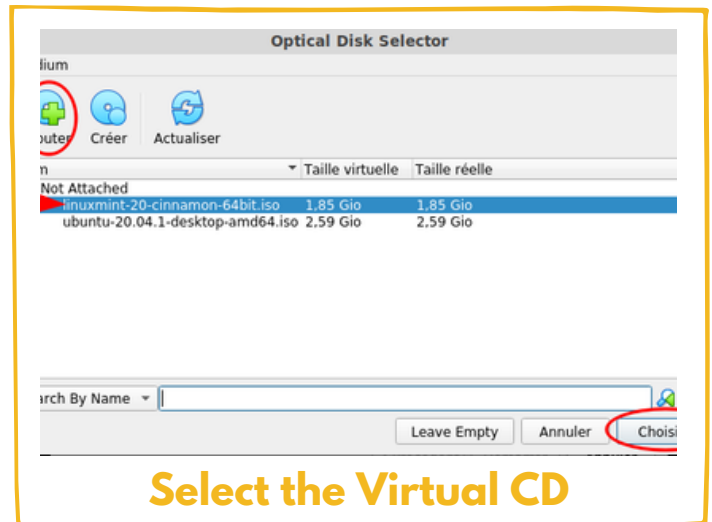
INSERT THE VIRTUAL CD

To install our operating system, we will need the installation cd. You can download the cd at the following address:

https://www.linuxmint.com/download.php

A virtual cd is a file with the .iso extension.

When it is done, insert the virtual cd into your virtual machine. To do so, start your virtual machine and select your virtual cd.

Insert the Virtual CD

Select the Virtual CD
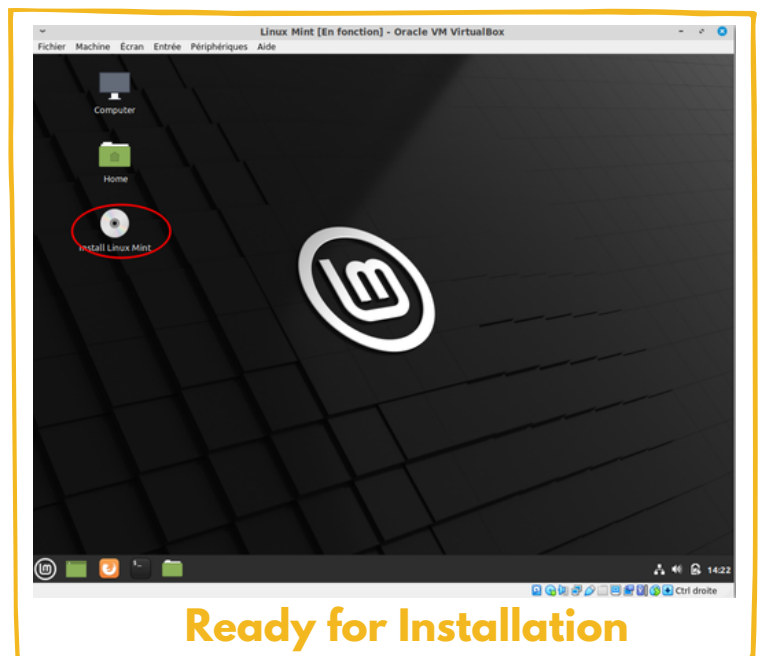
INSTALLATION STARTUP

Starting the installation is very easy. When you start your virtual machine, pay attention to the instructions, we will guide you with the help of the images. Press the Enter key to start the installation.

Installation Startup

Be patient at this stage, it may take about 2 minutes to start up.

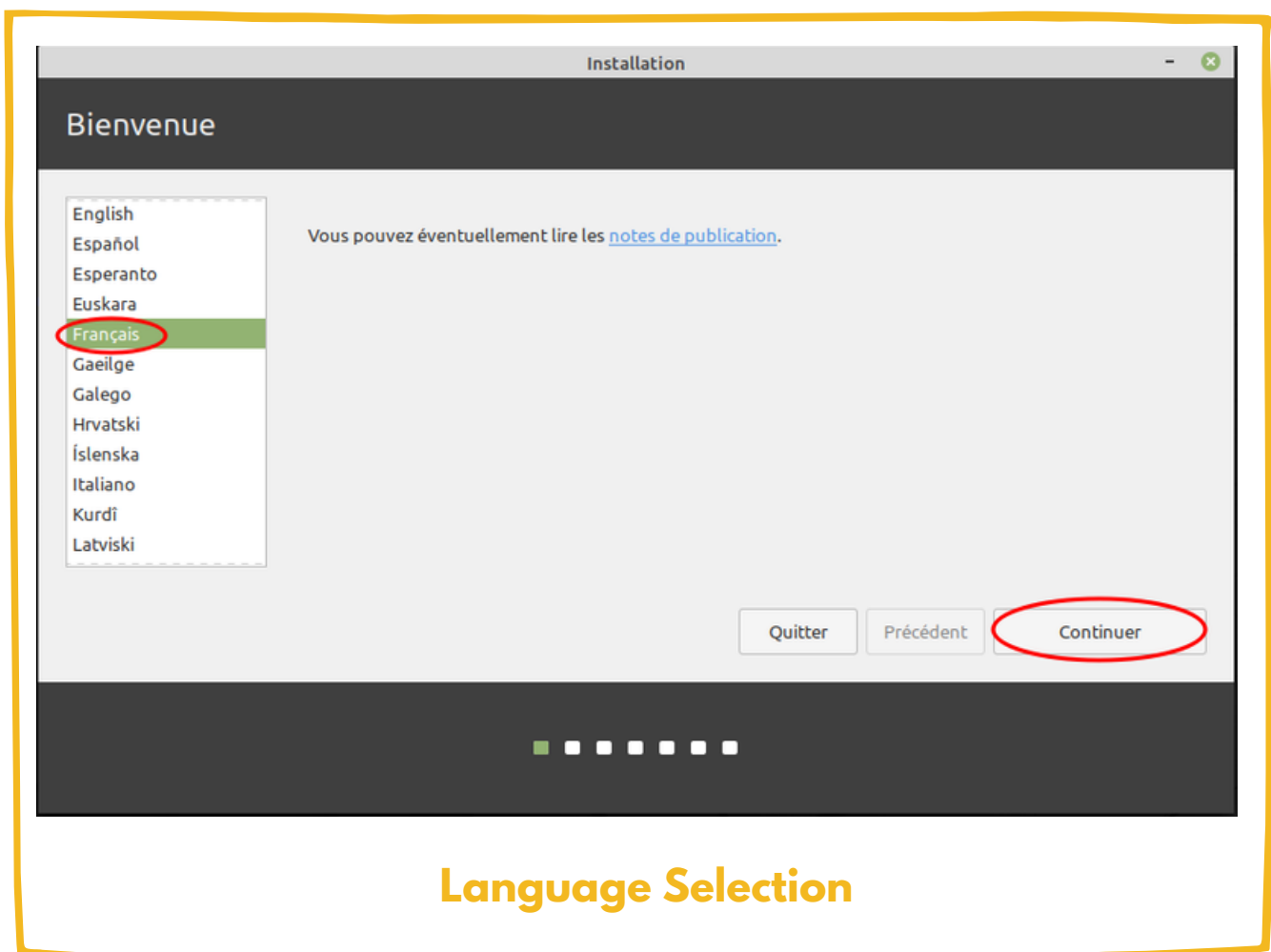The system may take a little time to boot up. When this is completed, the image on the right should appear.

You are now in the virtual environment and this is where you can start the installation.

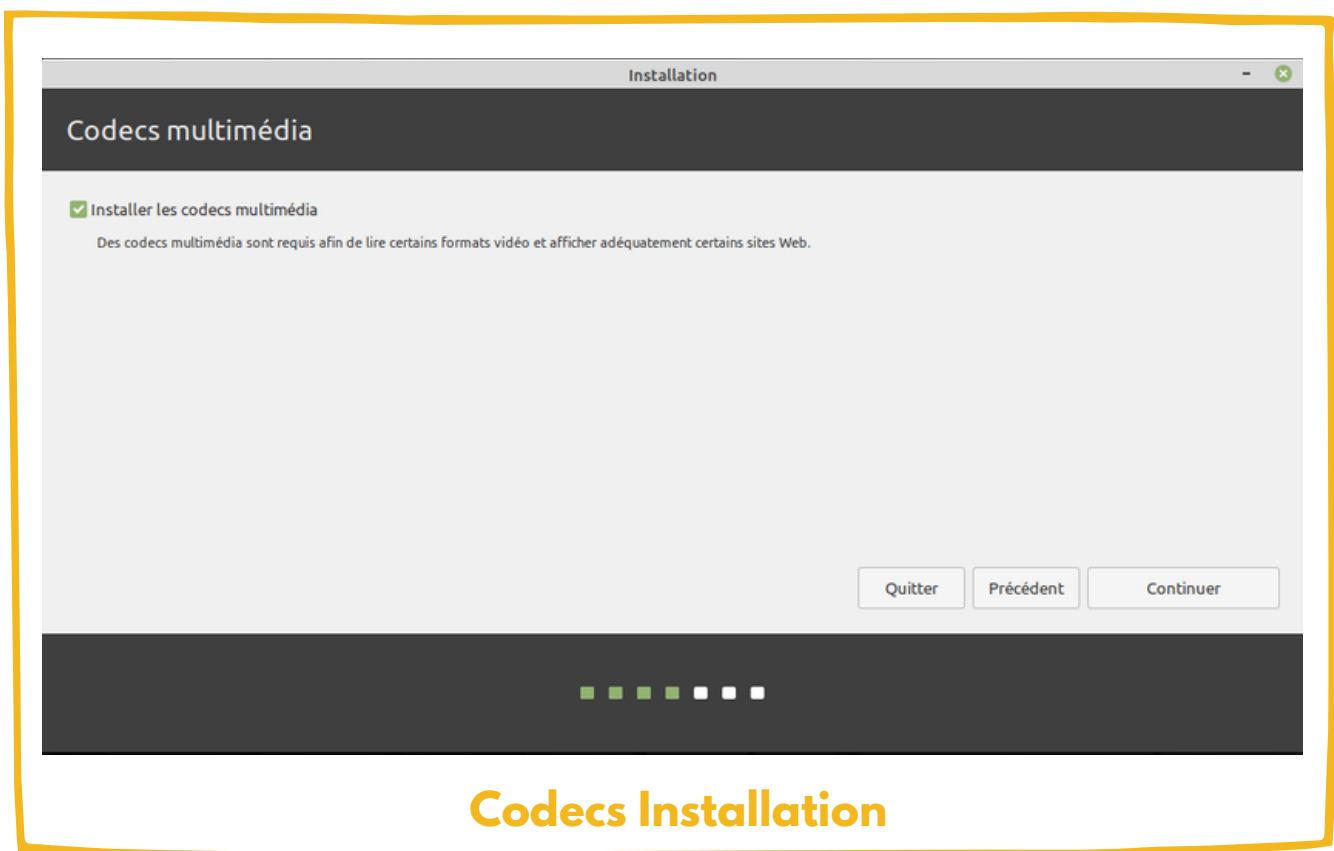Double-click on the small white cd.

Ready for Installation

LANGUAGE

The first step is to select the installation language. By default, English is selected, click on Continue or choose the desired language.
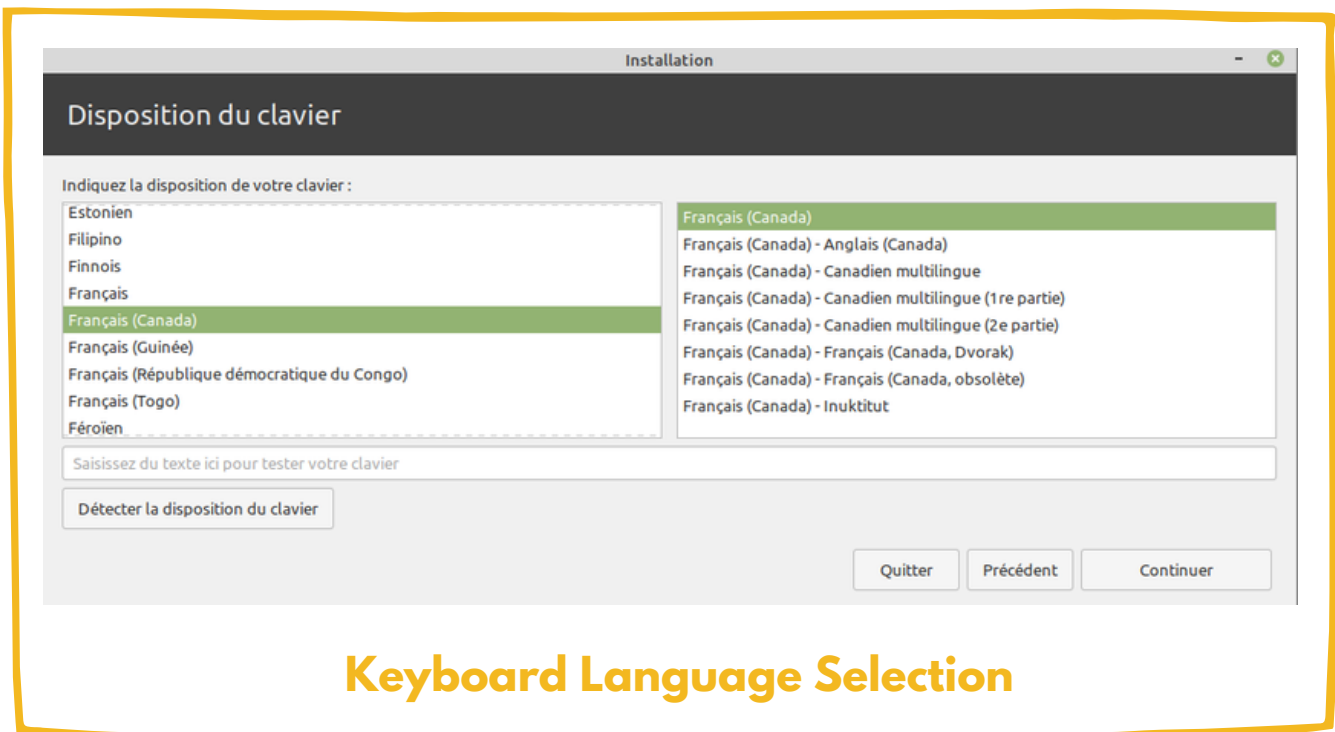

Language Selection

MULTIMEDIA CODECS INSTALLATION

Multimedia codecs will allow the operating system to play music or videos on the Web. You can install it, so click in the box and click Continue.
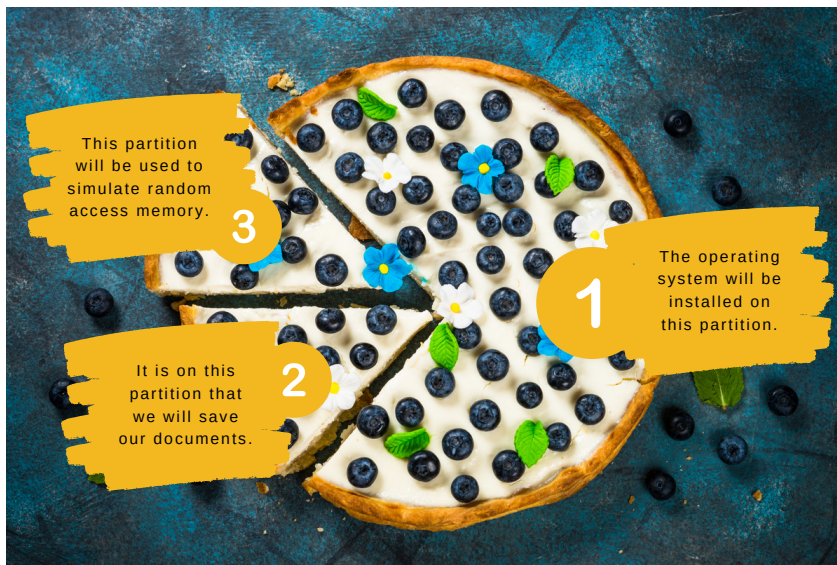
Codecs Installation

KEYBOARD LANGUAGE

To get the accents on your keyboard, you should select French (Canada) for the keyboard language. If you don't need any accents, leave it as English and then click on Continue.

Keyboard Language Selection

CREATION OF PARTITIONS

The concept of partition is very important in cyber security. Imagine a pie like the one in the figure below. Each portion has a different size. And each portion will be distributed to a different person who is a little hungry or very hungry.

It's a little bit the same idea when you install an operating system. But instead of using the term portion, we use the term partition. Your operating system will be installed on your hard drive. Now you will have to separate it, a bit like the pie, into 3 partitions.
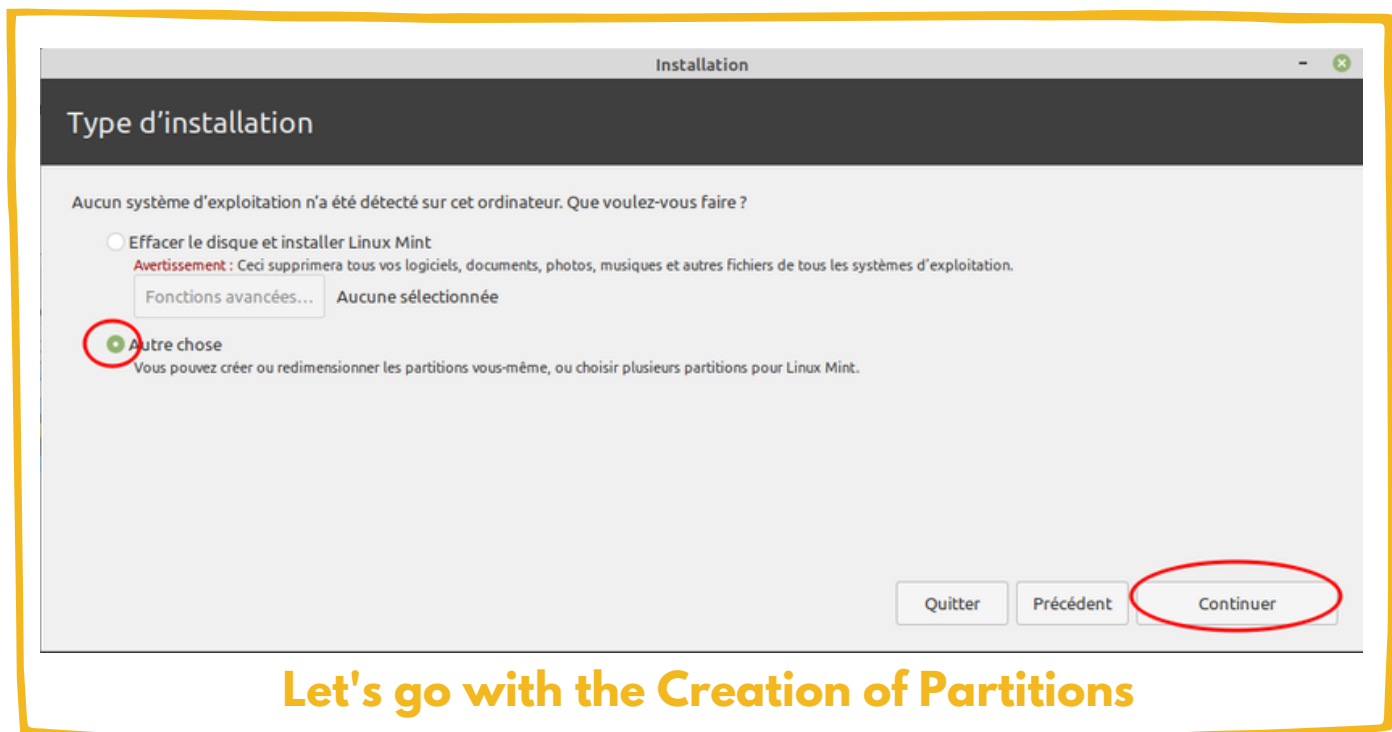

This partition will be used to simulate random access memory. **3**

The operating system will be installed on this partition. **1**

It is on this partition that we will save our documents. **2**

1 Symbol : /
Name : Root Partition

2 Symbol : /home
Name : Home Partition

3 Symbol : None
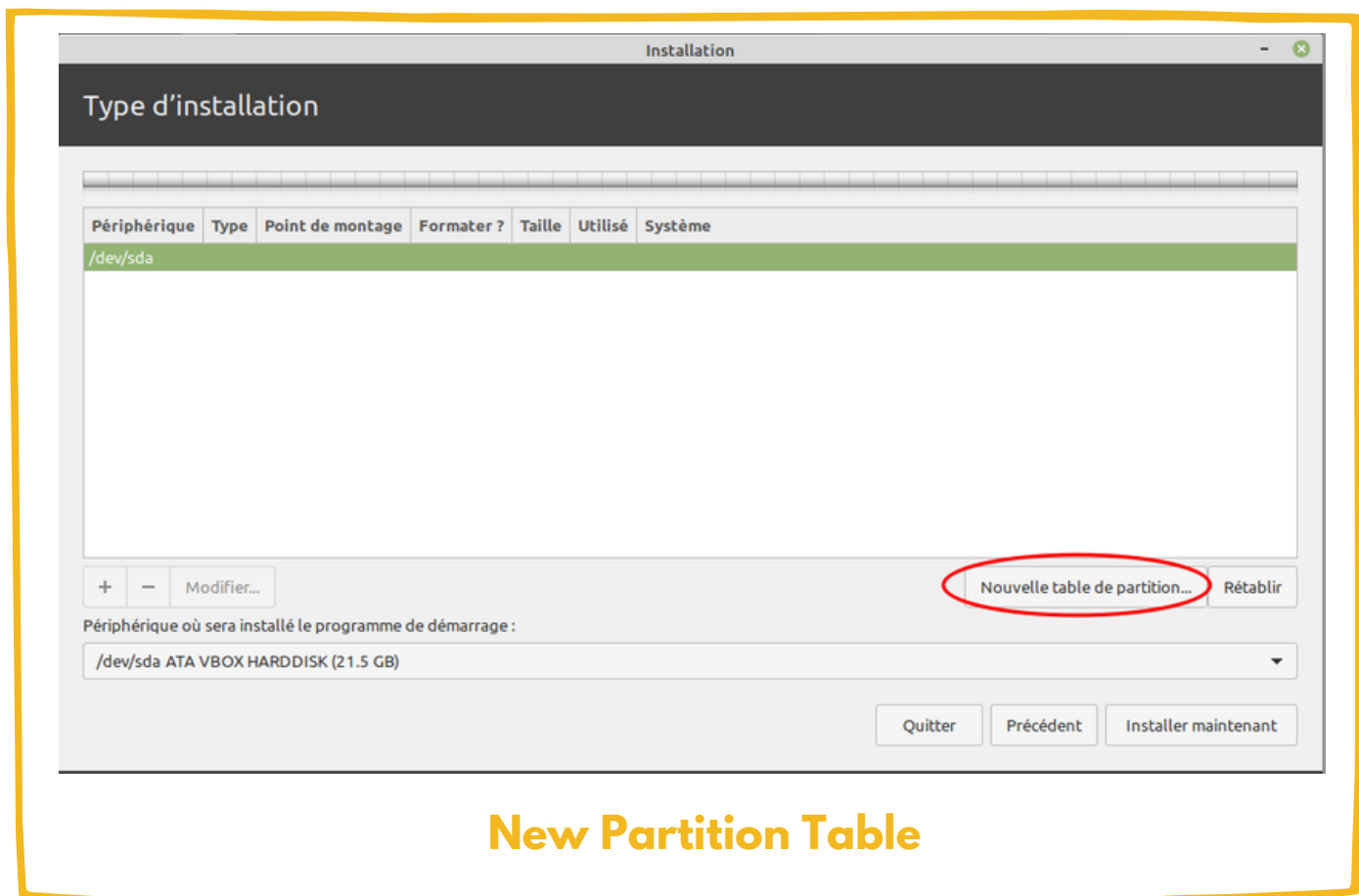Name : Swap Partition

The Idea of Partitions

CREATION OF PARTITIONS #2

Now that you understand that you need to create at least 3 partitions, select Something else and click Continue.

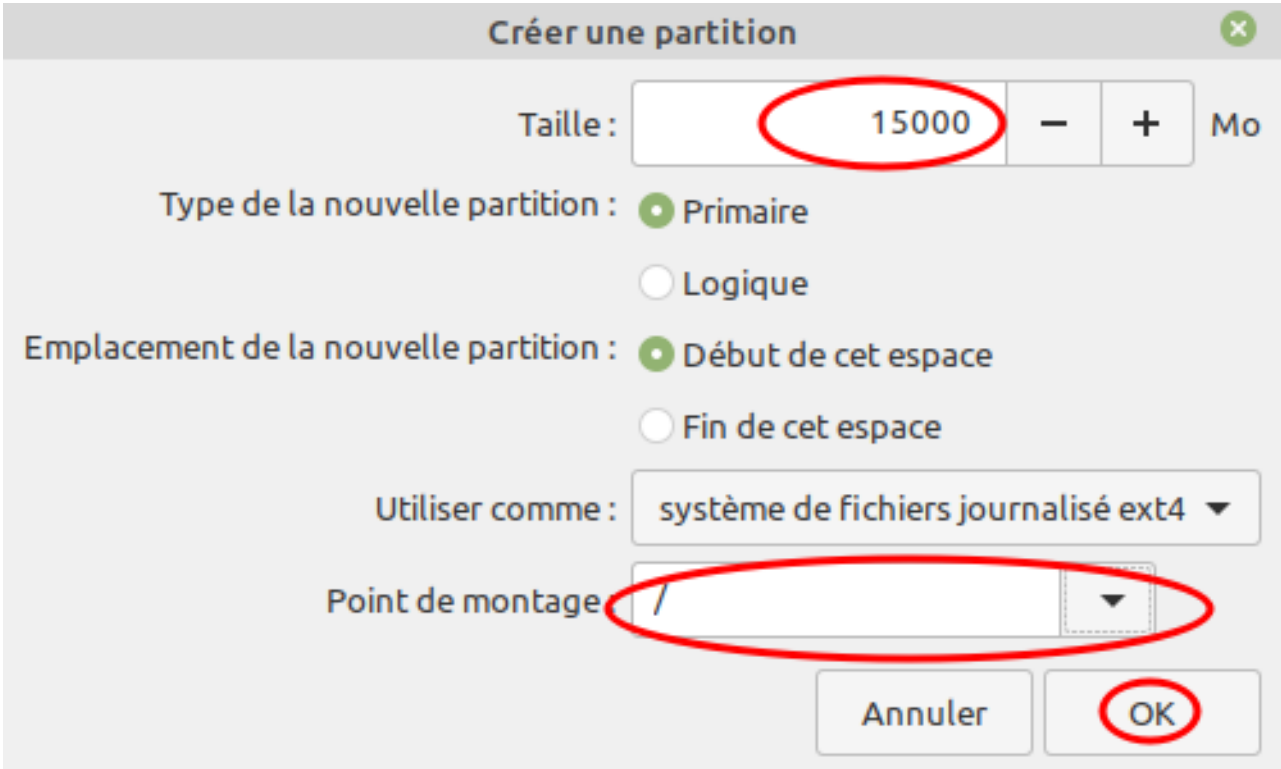**Let's go with the Creation of Partitions**

CREATION OF PARTITION #3

A bit like the pie that has been placed on a table, we have to prepare the hard drive to host the partitions Click on New Partition Table.

New Partition Table

CREATION OF PARTITION #4

The first partition you can create is the Root partition. This partition will host the operating system. It is on this partition that the operating system will be installed.

It is important to assign sufficient space to it, as it will also receive security updates on a regular basis, so this must be anticipated. We will assign it 15 GB and select the / symbol to specify that it is the Root partition. When this is done, click on Ok.
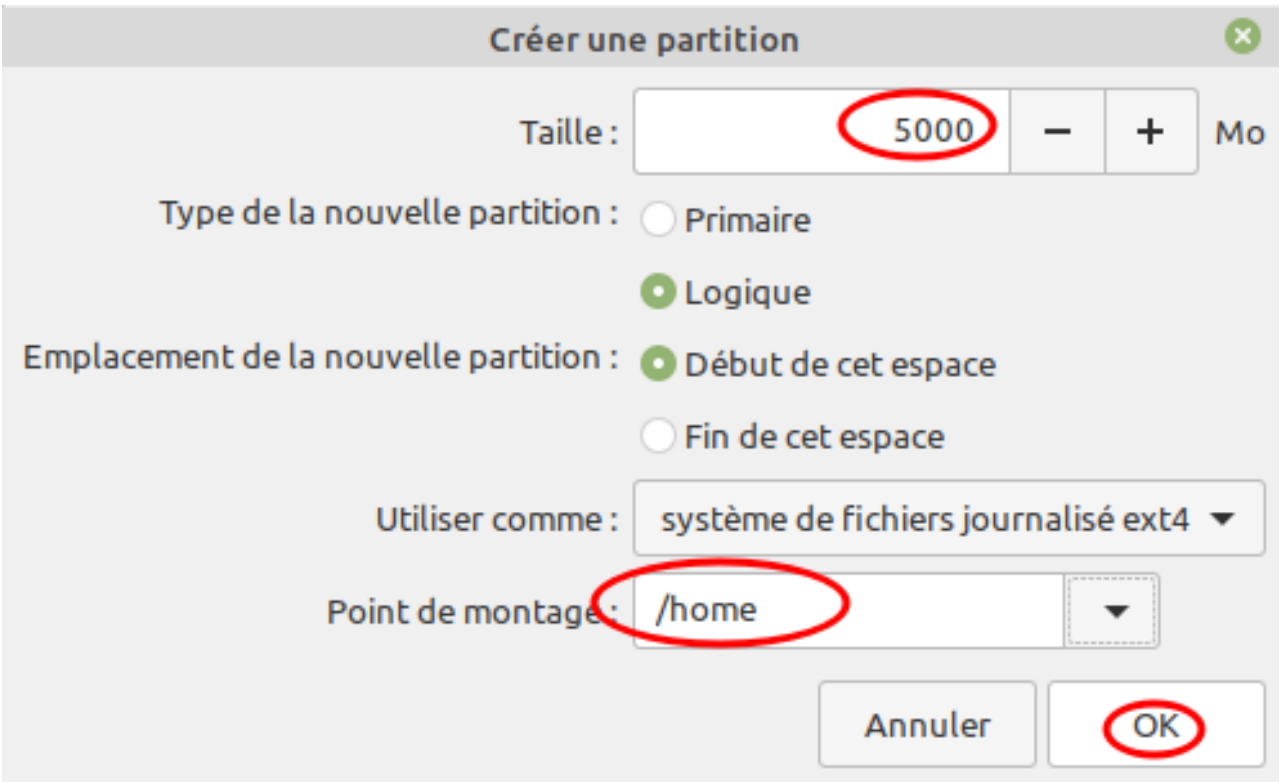
The Root Partition

CREATION OF PARTITION #5

The second partition you can create is the Home partition. This partition will host all your personal files. It is on this partition your working documents can be saved.

This partition will not receive security or other updates. However, it is important to assign enough space to it to be able to back up all our personal files. For the activity, we will assign 5 GB to it. In reality, it would be a good idea to assign many more. When this is done, click on Ok.

The Home Partition

CREATION OF PARTITION #6

The third and last partition you can create is the Swap partition. This partition will not host any specific files. However, if needed this partition could be used to simulate random access memory.

We will assign the rest of the available space to it. And we will use this partition as a swap partition. So, no symbol to select, but rather a partition type. When this is done, click Ok.
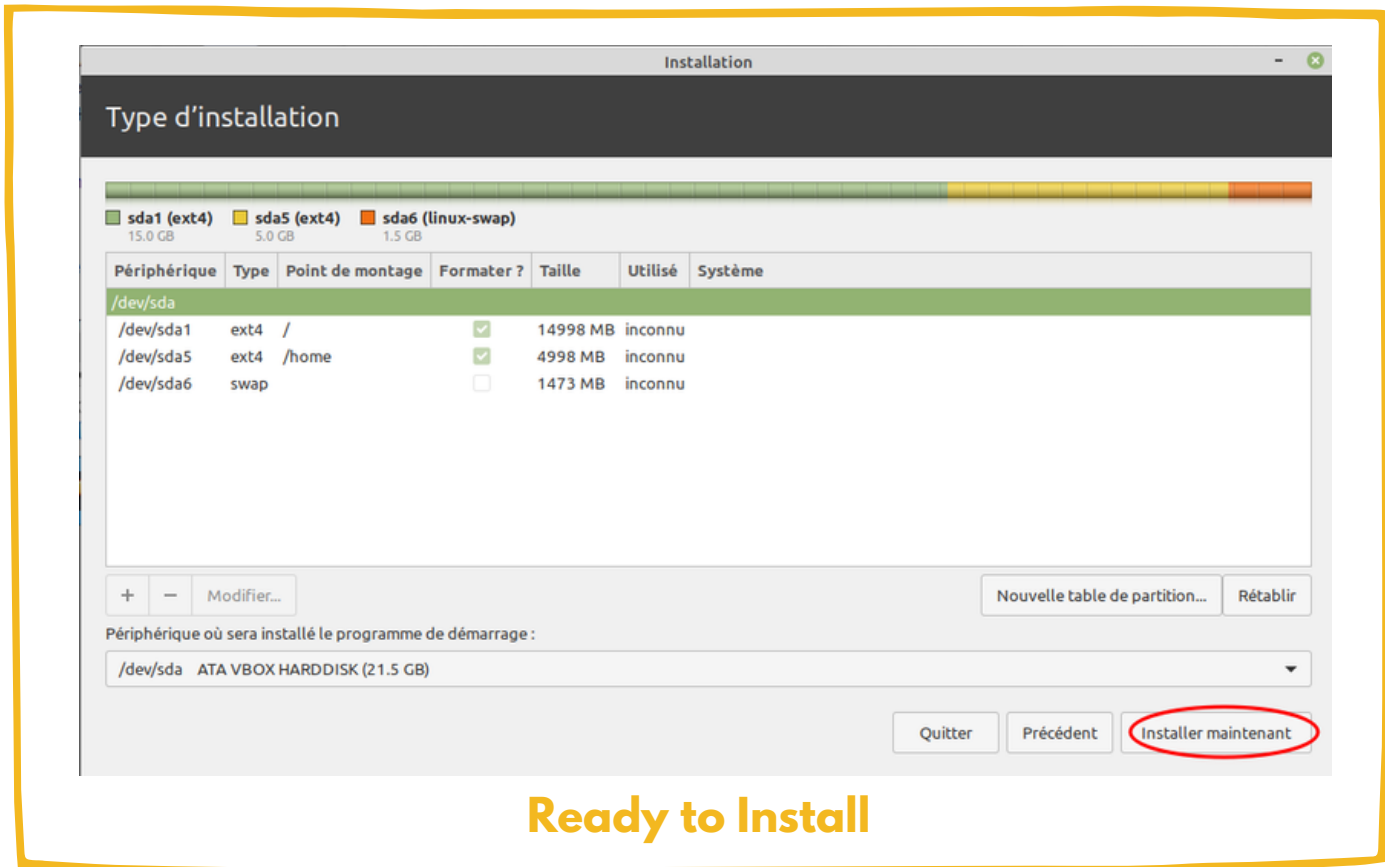

The Swap Partition

SUMMARY OF CREATED PARTITIONS

When all three partitions are created, you should get a result similar to the image below.

Quickly, we can confirm that our Root (/), Home (/) and Swap partitions are created. In addition, a small check mark appears in the Format box. This means that the partitions will also be deleted. In our case, this is not a problem, because we have not saved anything on our hard disk yet. So the installation tool will be able to create the partitions, assign the necessary space and format the partitions. When you are ready, click Install Now.
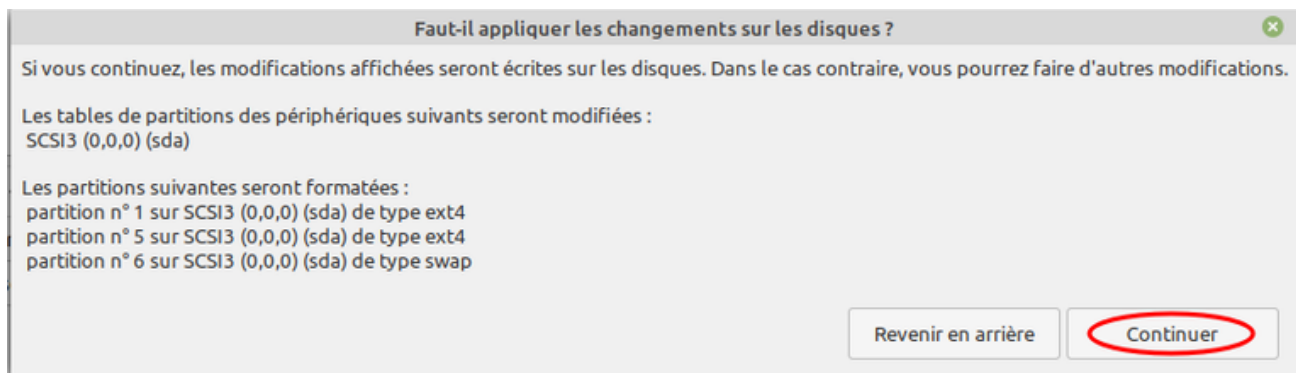

Ready to Install

CONFIRM THE CHANGES

Before you can continue, the installation tool will ask you to confirm the changes. This is important because when there are changes on the hard disk, there is also the possibility of losing data. So, a reminder is welcome!

Make sure that the partitions to be modified are indeed the ones you want. If they are not, click Back. Otherwise, click Continue.
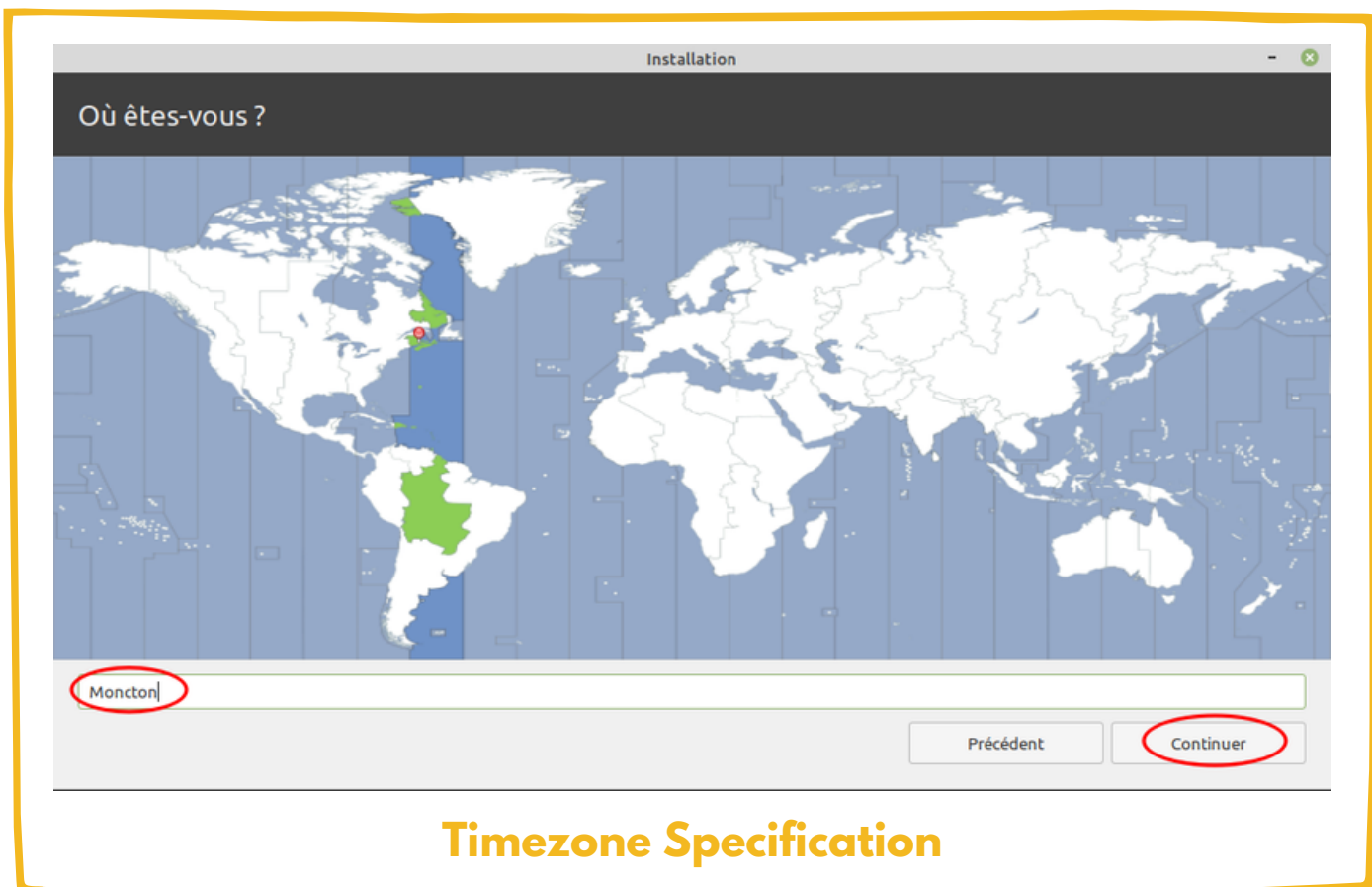

Faut-il appliquer les changements sur les disques ?

Si vous continuez, les modifications affichées seront écrites sur les disques. Dans le cas contraire, vous pourrez faire d'autres modifications.

Les tables de partitions des périphériques suivants seront modifiées :
SCSI3 (0,0,0) (sda)

Les partitions suivantes seront formatées :
partition n° 1 sur SCSI3 (0,0,0) (sda) de type ext4
partition n° 5 sur SCSI3 (0,0,0) (sda) de type ext4
partition n° 6 sur SCSI3 (0,0,0) (sda) de type swap

Revenir en arrière   Continuer

CONFIRM THE CHANGES

TIMEZONE SPECIFICATION

Now you need to specify the time zone. This will allow the operating system to keep the virtual computer's clock up to date.

If you are not sure which time zone you are in, you can enter the name of a city. For example, Moncton or Halifax are two cities in the same time zone, i.e. the Atlantic region.

When this is done, click Continue.

Timezone Specification

USER CREATION

To be able to use the operating system, you will have to create a new user for yourself. It is possible to create a new one during the installation and you will be able to create others once you are in the operating system. For now, create a user and specify a password.

You also have the possibility to start a session automatically, without specifying the password. This is a personal choice. We, on the other hand, are cyber security lovers, so we will specify a password.

When the necessary information is entered, click Continue.

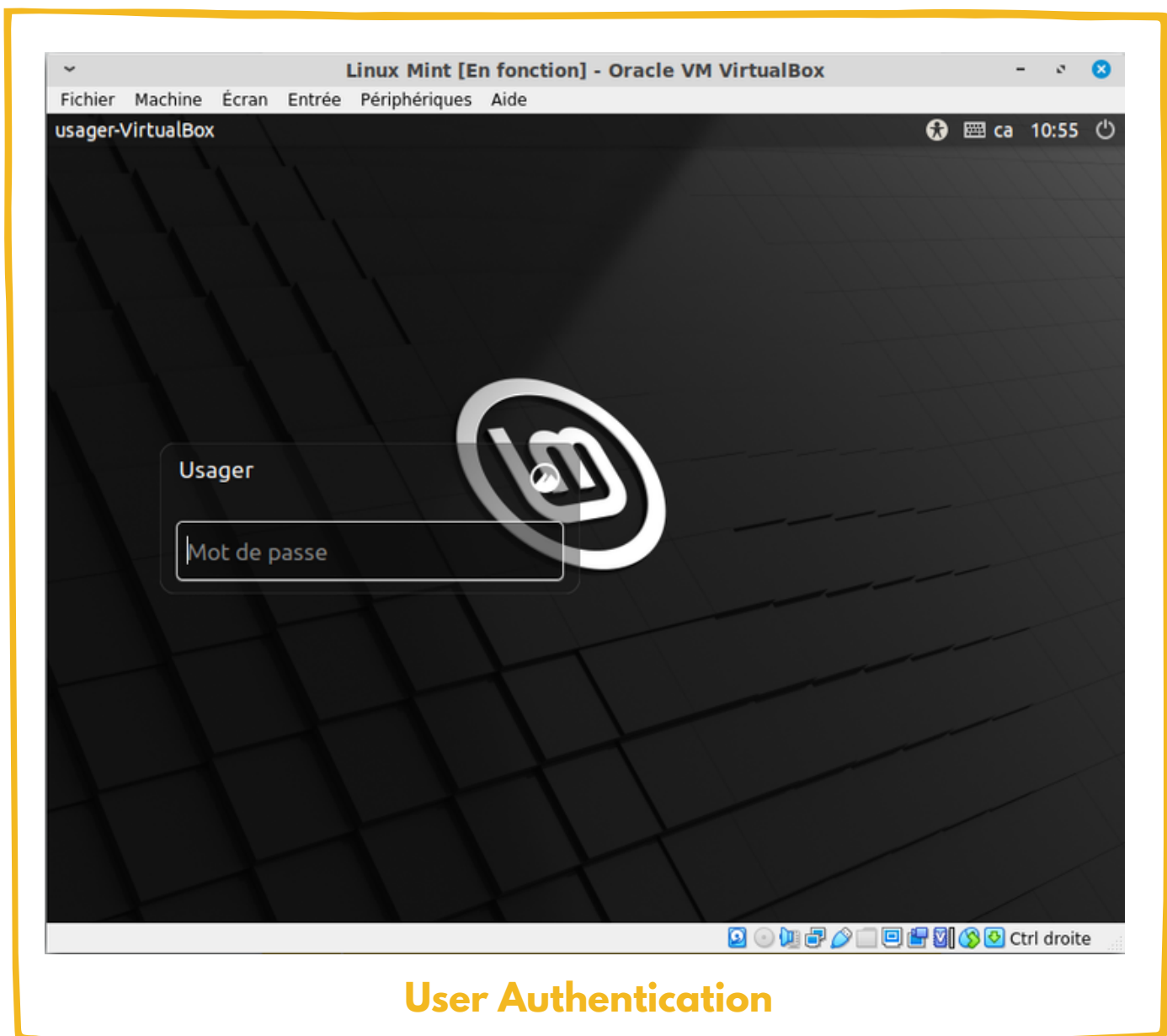**Create a User and Assign a Password**

INSTALLING

It's now over, not so bad! Now all you have to do is wait a few minutes. The installation tool will save the files and your virtual computer will soon be ready to use. When it's done, click Restart Now.

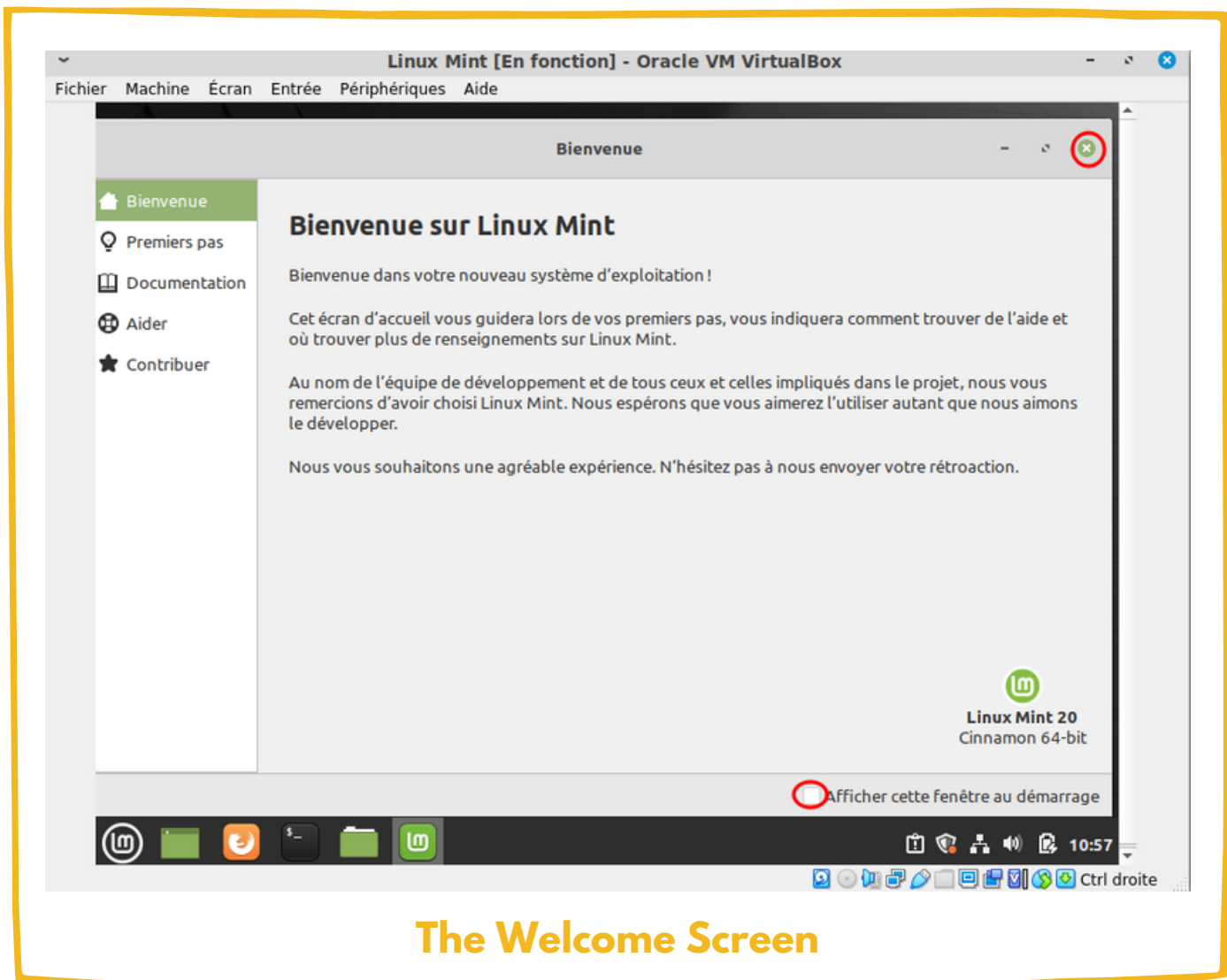**Installation of files**

Restart the Virtual Computer

USER AUTHENTICATION

Congratulations, you have successfully installed your first Linux Mint operating system. Now all you have to do is enter your password - the one you chose when you created your user account - and press Enter.
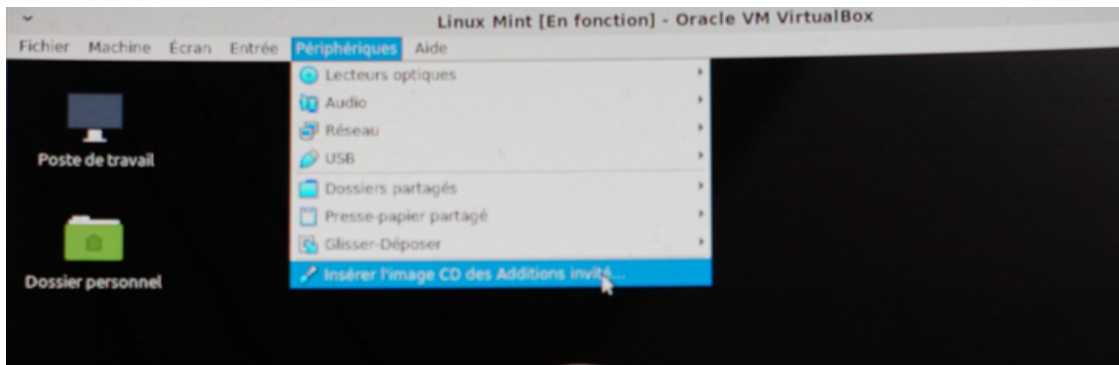

User Authentication

WELCOME SCREEN

If you see the welcome screen appear, you can read it or close it. We will have other activities that will concern the use of the operating system.
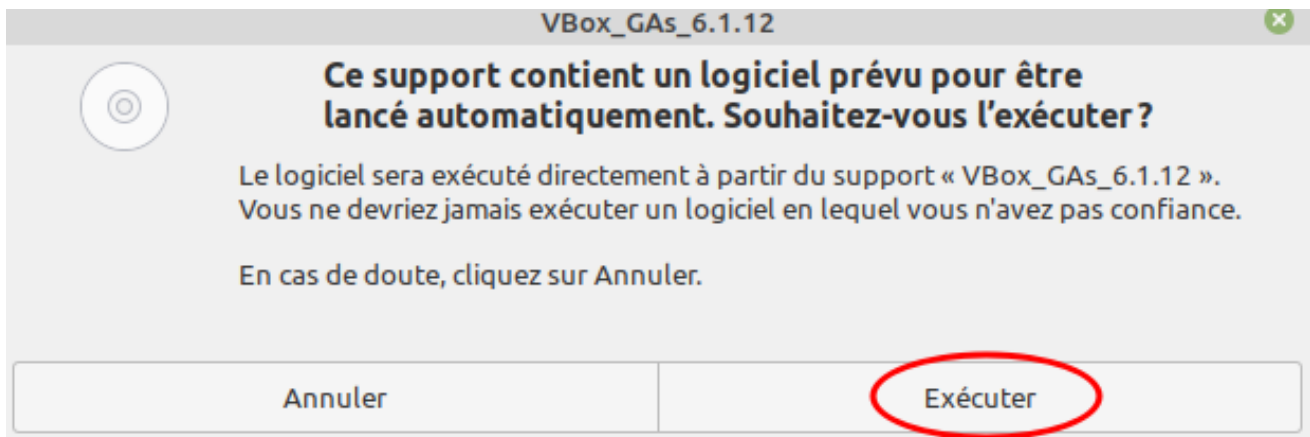

The Welcome Screen

GUEST TOOLS INSTALLATION

The last thing to do is to install the guest tools. These tools will allow you to change the screen resolution and other features that are not available at the base.

In the menu at the top of the window, click Device and then click Insert Guest Additions CD Image. A window appears, click Run. When the installation is complete, reboot the virtual computer.

Insertion of Guest Tools CD

Start the Installation of the Guest Tools CD

PARTITIONS AND CYBER SECURITY

What can you tell me about the usefulness of partitions in the field of cybersecurity?

Reason 1 :

Reason 2 :

Reason 3 :