

Easy Guide: Setting Up Debian on VirtualBox

(This guide has been written with the assumption that the reader is a student in the Computer Science department) (images are not from IUT computers)

1. What This Guide Is For

This guide will walk you through setting up Debian on a virtual machine using a program called VirtualBox. Think of a virtual machine (VM) as a “computer inside your computer”; it lets you try things out without worrying about changing anything on your main system. Here, we’re using Debian, a version of Linux, which is popular for learning and exploring.

2. Getting Started with VirtualBox

First, find VirtualBox on your computer. To do this, go to your **Applications** menu, look for **System Tools**, and then open **Oracle VM VirtualBox**.

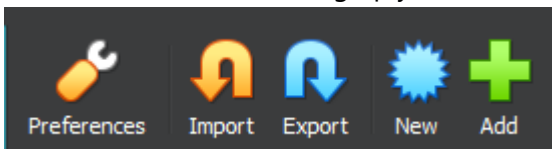


Once VirtualBox opens, you’ll see a window where you can create and manage virtual machines.

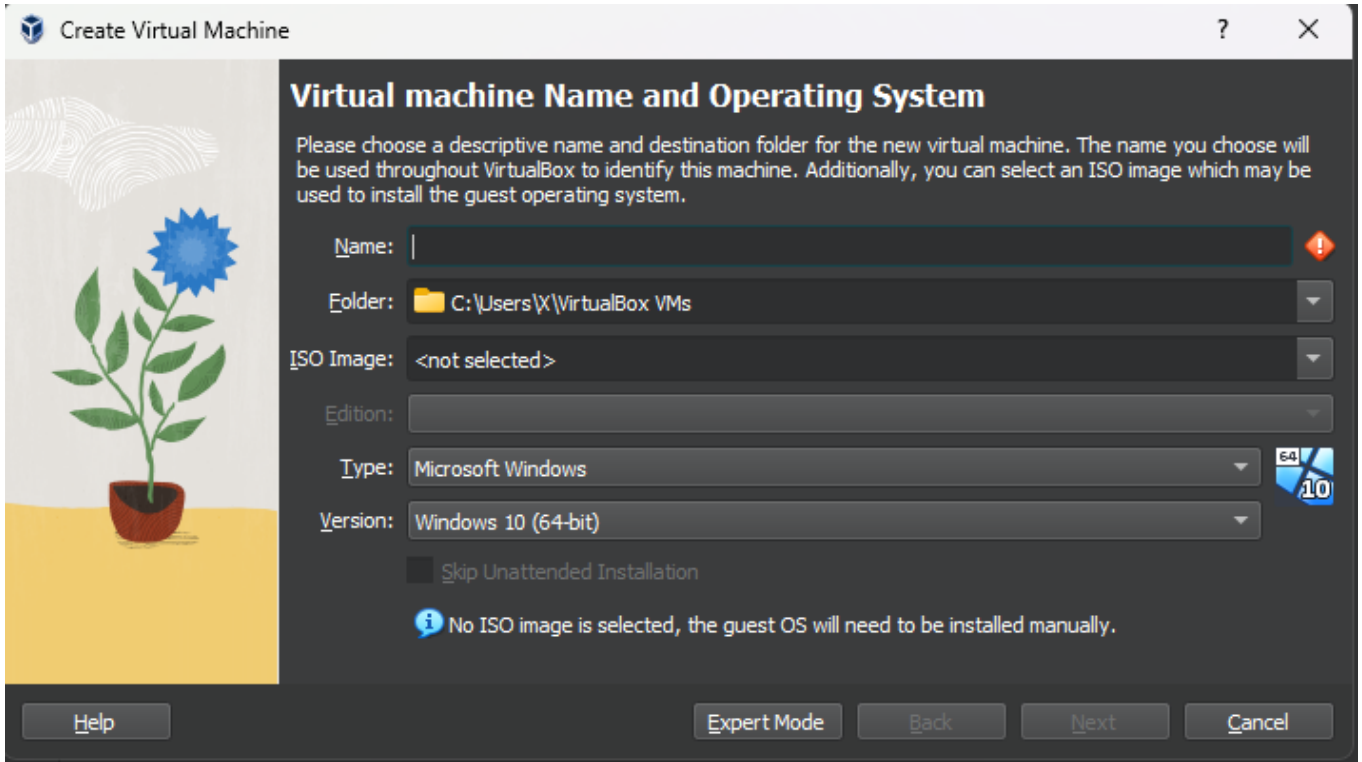
3. Setting Up Your Virtual Machine

Here’s how to create your VM (that’s short for virtual machine!):

1. **Click “New”** to start setting up your VM.

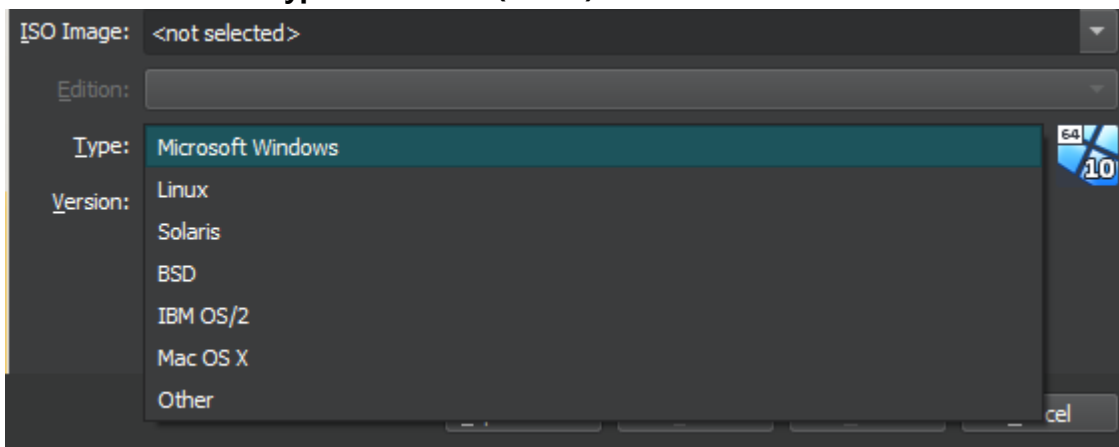


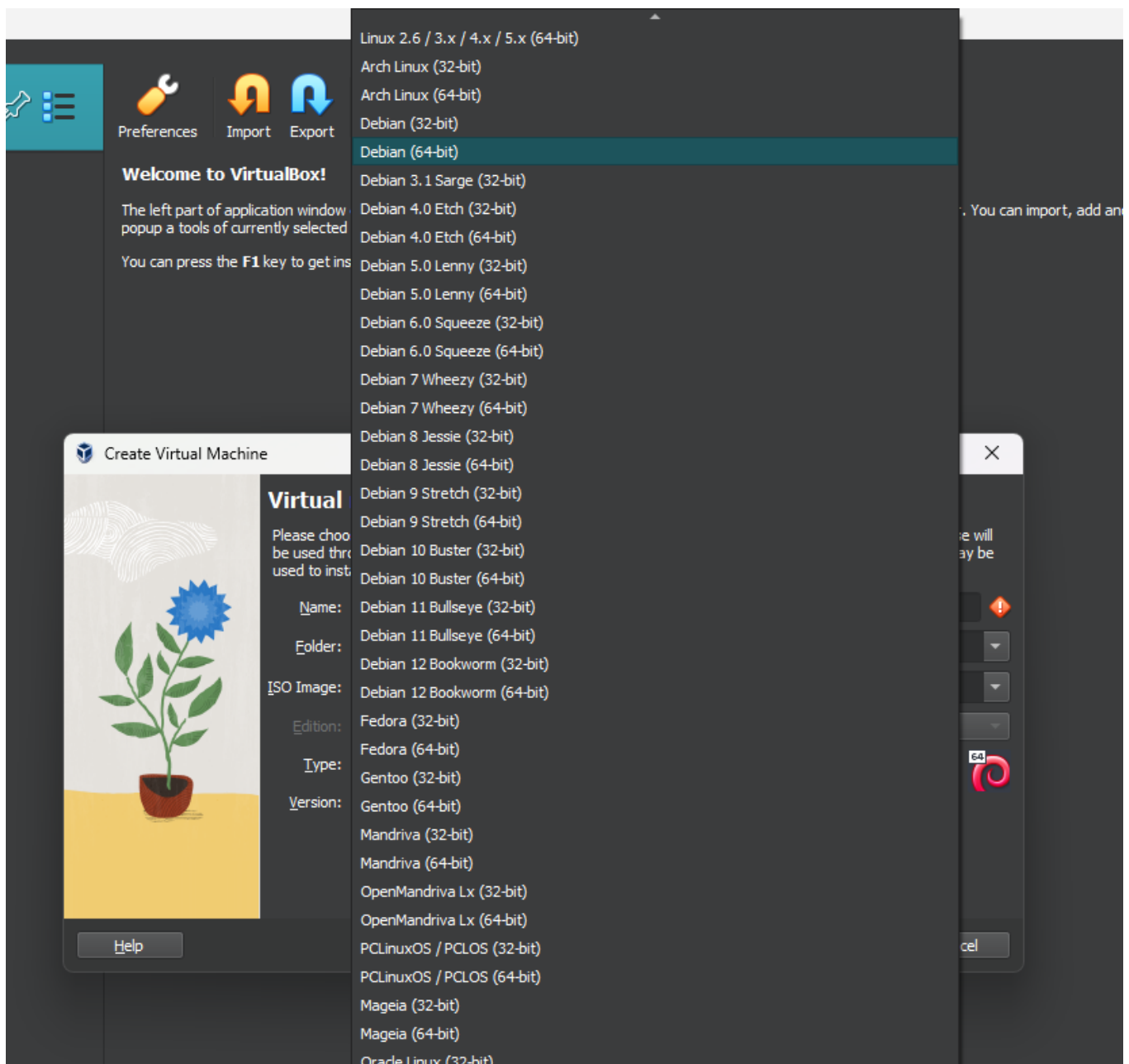
2. **Name the VM:** You can use your name or a fun nickname so you'll recognize it easily.



3. **Set the location:** Choose where the VM will be saved. Use the folder `/usr/local/virtual_machine/infoetu` (this helps avoid storage problems).

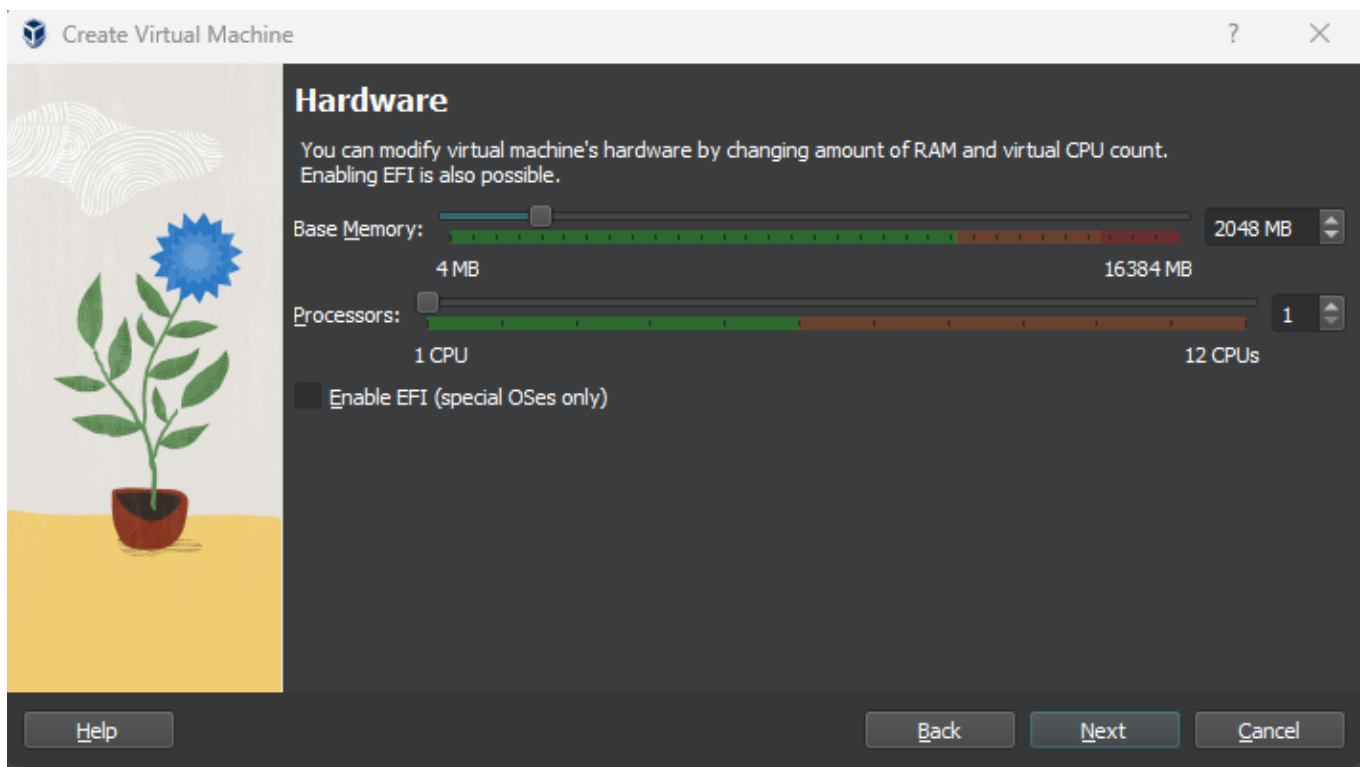
4. **Choose Linux as the type** and **Debian (64-bit)** as the version.





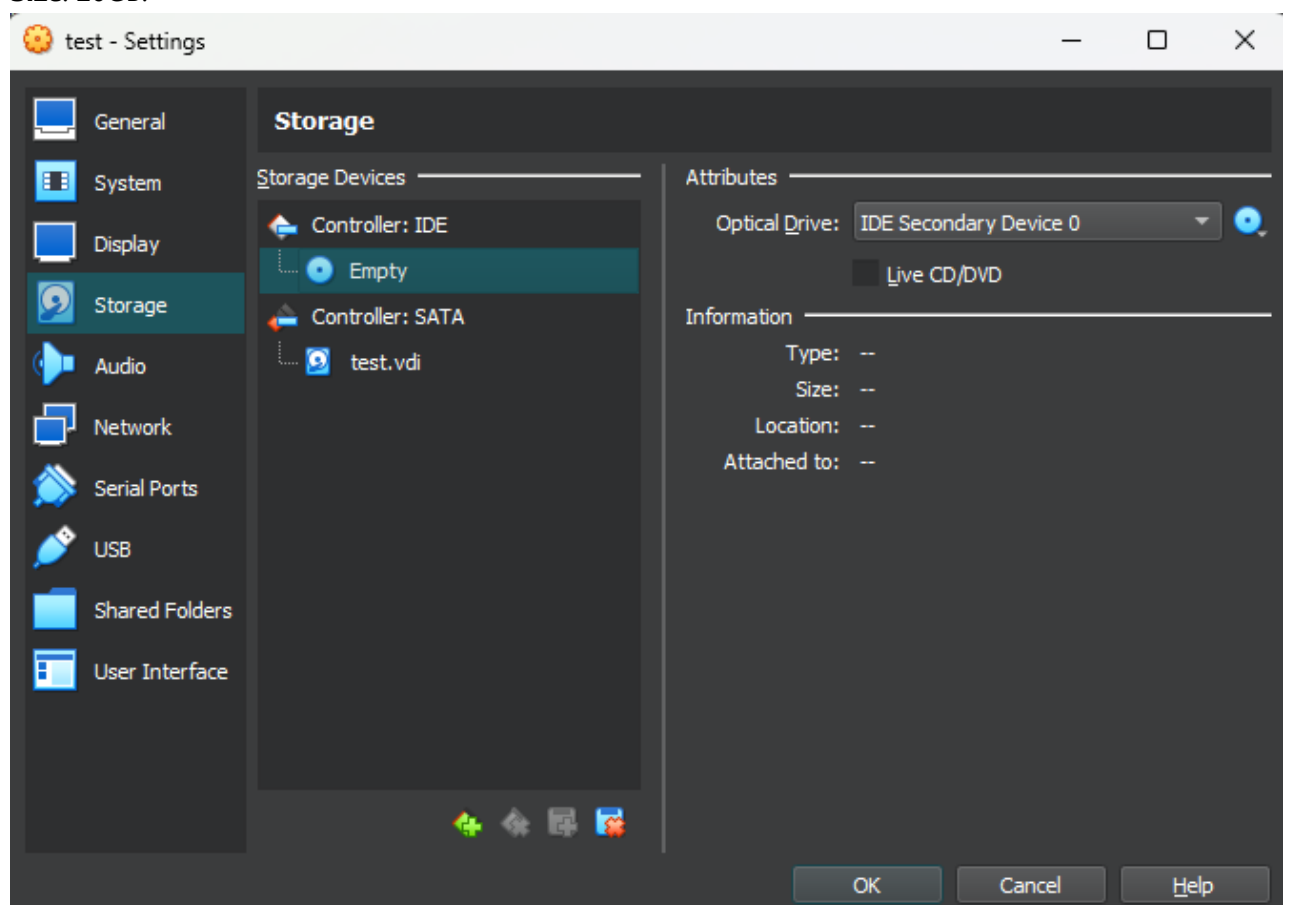
5. Set hardware basics:

- **Memory (RAM):** Pick 2048 MB (that's 2GB).
- **CPU:** Choose 1 processor.



6. **Create a virtual hard disk** for the VM:

- **Size:** 20GB.



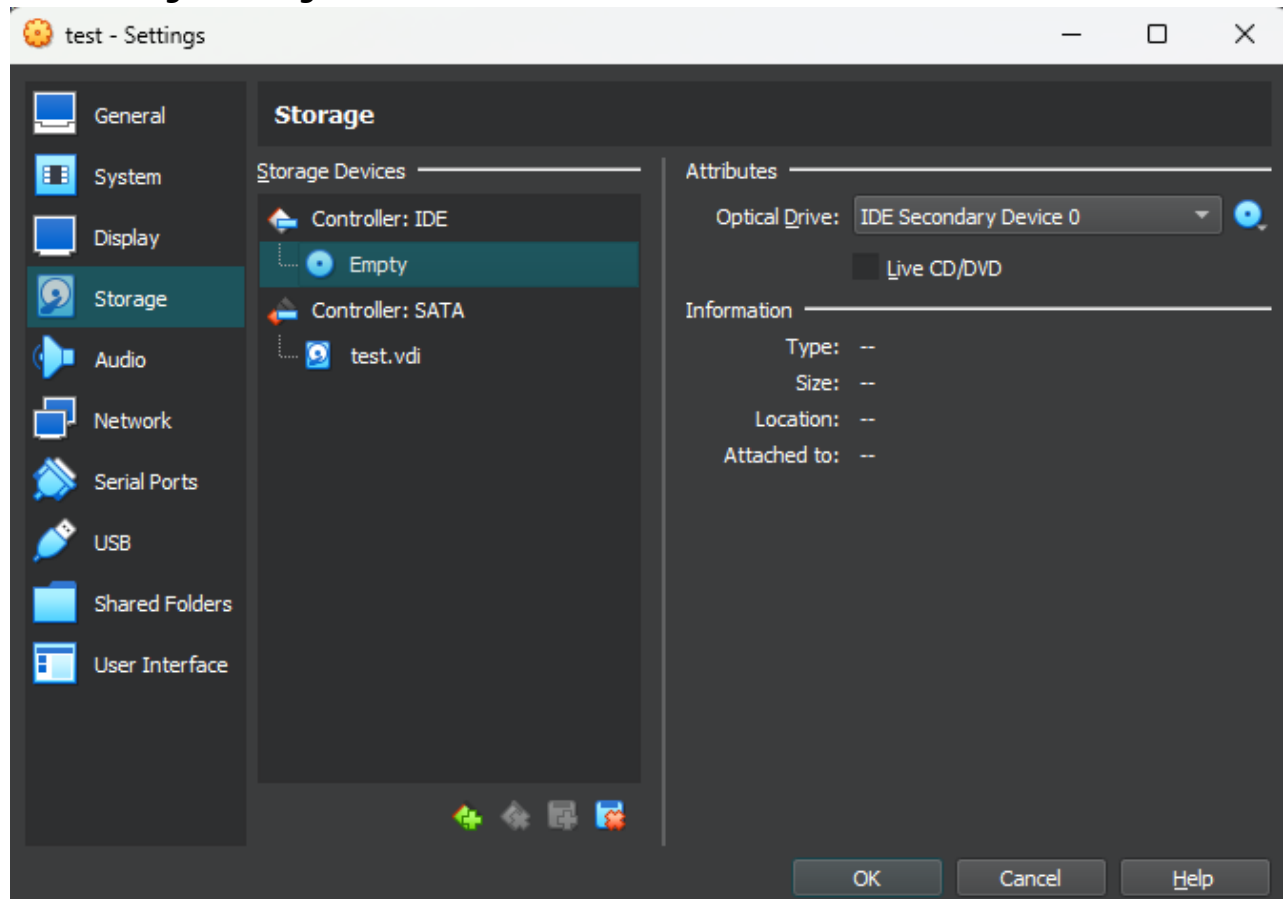
Once you're done, click **Finish** to create your VM.

4. Installing Debian on the Virtual Machine

With the VM created, it's time to add Debian:

1. Insert the Installation Disk (virtually):

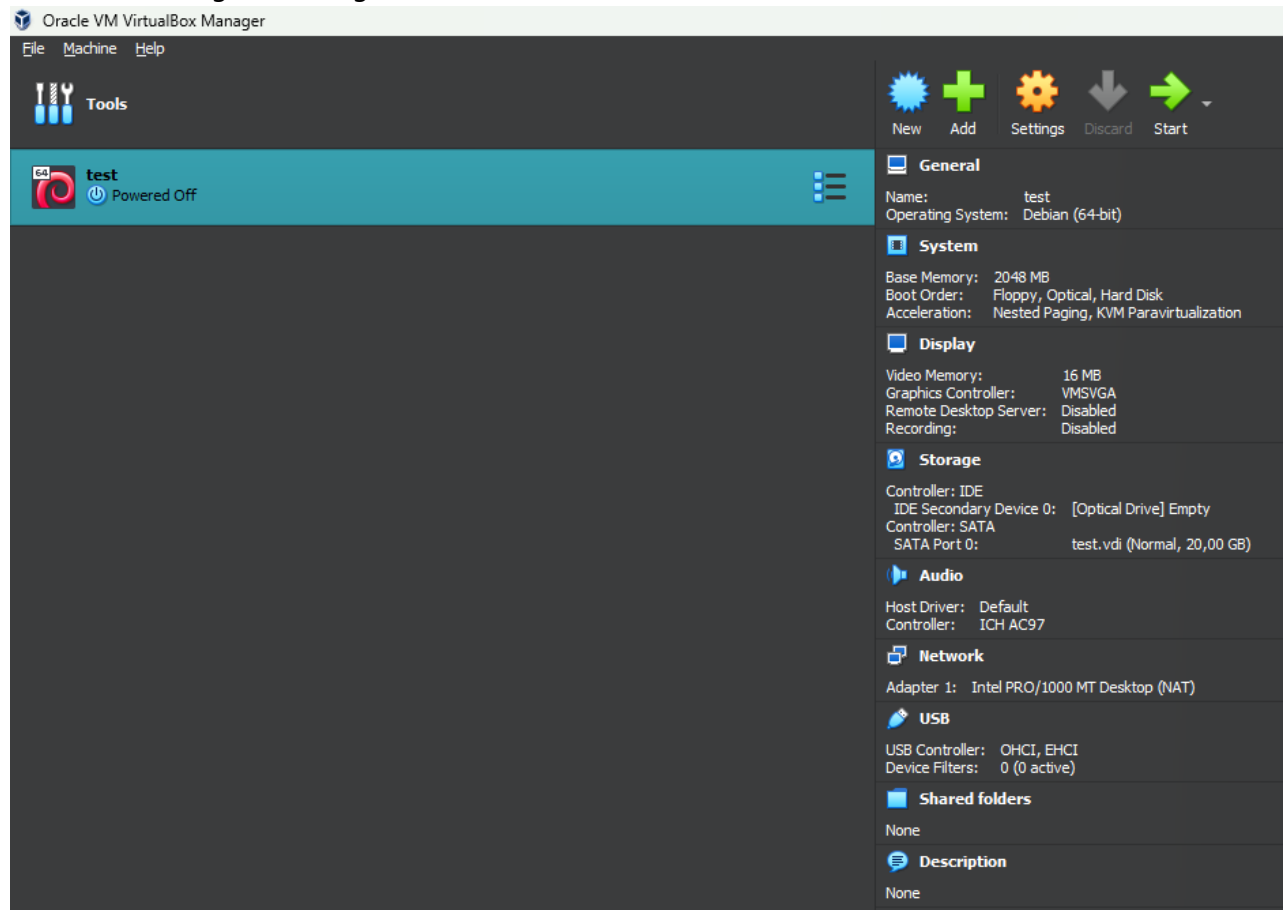
- Go to **Settings > Storage** in the VM.



- Click the empty CD icon and pick **mini.iso** from **/home/public/iso/mini.iso**.

2. Start the VM:

- Click **Start** to begin installing Debian.



- While installing, VirtualBox might take over your mouse and keyboard. Press **Right Ctrl** if you need to go back to your regular computer.

5. Installing Debian Step-by-Step

Debian's installer will guide you through a few steps:

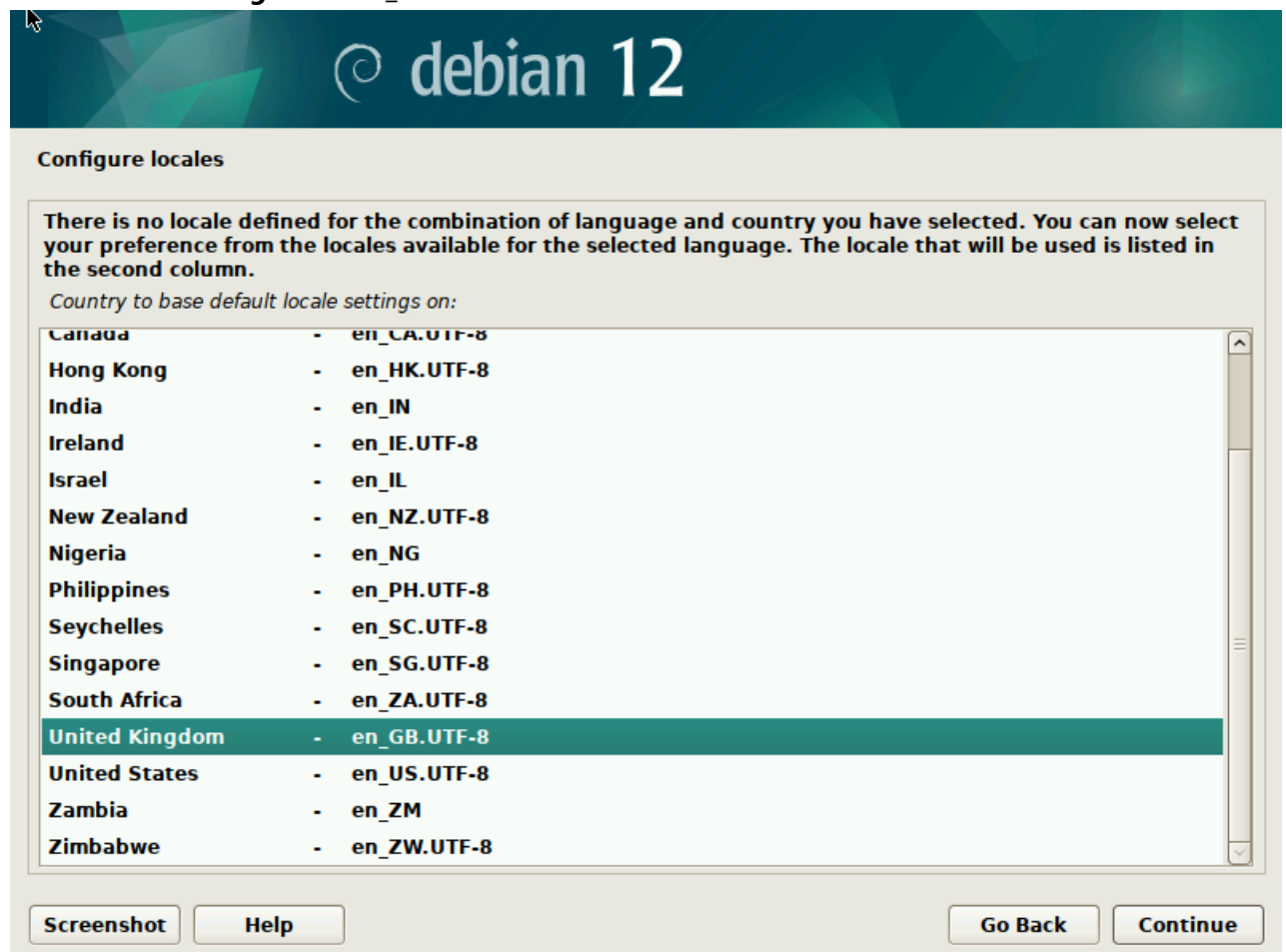
1. Language and Region:

- Choose **English** as the language and **Other > Europe > France** as the location.

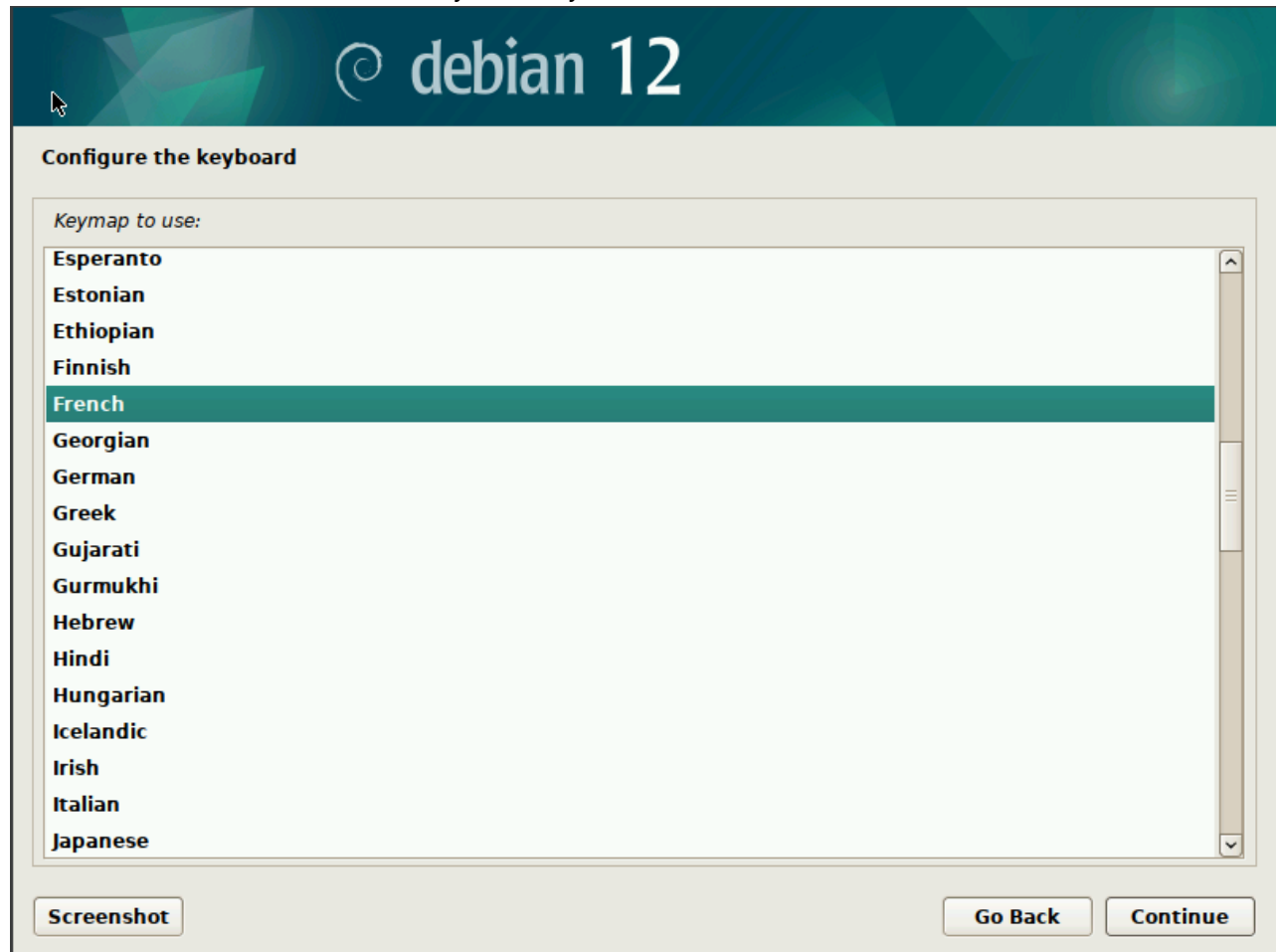


2. Set Up the Keyboard:

- Choose **United Kingdom - en_GB.UTF-8** for the locales.

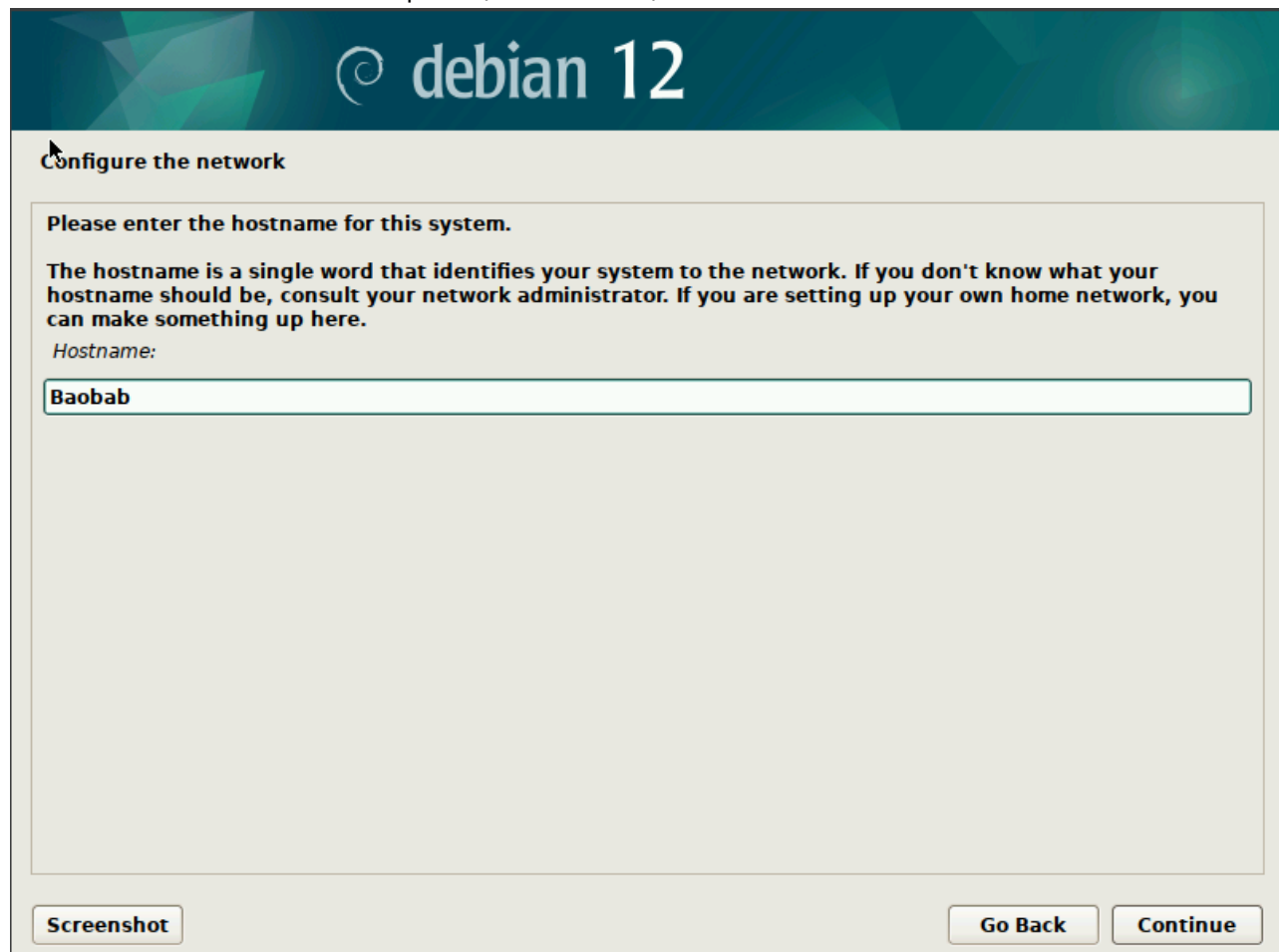


- Choose **French (AZERTY)** for the keyboard layout.



3. Naming Your Machine:

- Enter a name for the virtual computer (like "Baobab").




4. Network Setup:

- Leave the network domain blank, and choose a server nearby (for example, **debian.polytech-lille.fr**).



6. Creating User Accounts

1. **Root User:** This is a special user with full control. Create a password, make it strong and keep it safe.



Set up users and passwords

You need to set a password for 'root', the system administrative account. A malicious or unqualified user with root access can have disastrous results, so you should take care to choose a root password that is not easy to guess. It should not be a word found in dictionaries, or a word that could be easily associated with you.

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

The root user should not have an empty password. If you leave this empty, the root account will be disabled and the system's initial user account will be given the power to become root using the "sudo" command.

Note that you will not be able to see the password as you type it.

Root password:

☐ Show Password in Clear

Please enter the same root password again to verify that you have typed it correctly.

Re-enter password to verify:

☐ Show Password in Clear

Screenshot

Go Back

Continue

2. **Standard User:** Set up a regular account (add a name, login, and password). Using this account for everyday tasks helps keep your system safe from accidental changes.



Set up users and passwords

A user account will be created for you to use instead of the root account for non-administrative activities.

Please enter the real name of this user. This information will be used for instance as default origin for emails sent by this user as well as any program which displays or uses the user's real name. Your full name is a reasonable choice.

Full name for the new user:

[Screenshot](#)[Go Back](#)[Continue](#)

Set up users and passwords

Select a username for the new account. Your first name is a reasonable choice. The username should start with a lower-case letter, which can be followed by any combination of numbers and more lower-case letters.

Username for your account:

Set up users and passwords

A good password will contain a mixture of letters, numbers and punctuation and should be changed at regular intervals.

Choose a password for the new user:

●●●●●●●●

☐ Show Password in Clear

Please enter the same user password again to verify you have typed it correctly.

Re-enter password to verify:

●●●●●●●●

☐ Show Password in Clear

Screenshot

Go Back

Continue

7. Preparing the Disk

For storage setup:

1. **Partitioning:** Use the guided option and pick **Guided - use entire disk > All in one partition**. This is a simple setup.

Partition disks

This is an overview of your currently configured partitions and mount points. Select a partition to modify its settings (file system, mount point, etc.), a free space to create partitions, or a device to initialize its partition table.

Guided partitioning**Configure iSCSI volumes**

SCSI3 (0,0,0) (sda) - 21.5 GB ATA VBOX HARDDISK

Undo changes to partitions

Finish partitioning and write changes to disk

Screenshot

Help

Go Back

Continue

Partition disks

If you choose guided partitioning for an entire disk, you will next be asked which disk should be used.

Partitioning method:

Guided - use entire disk

Guided - use entire disk and set up LVM

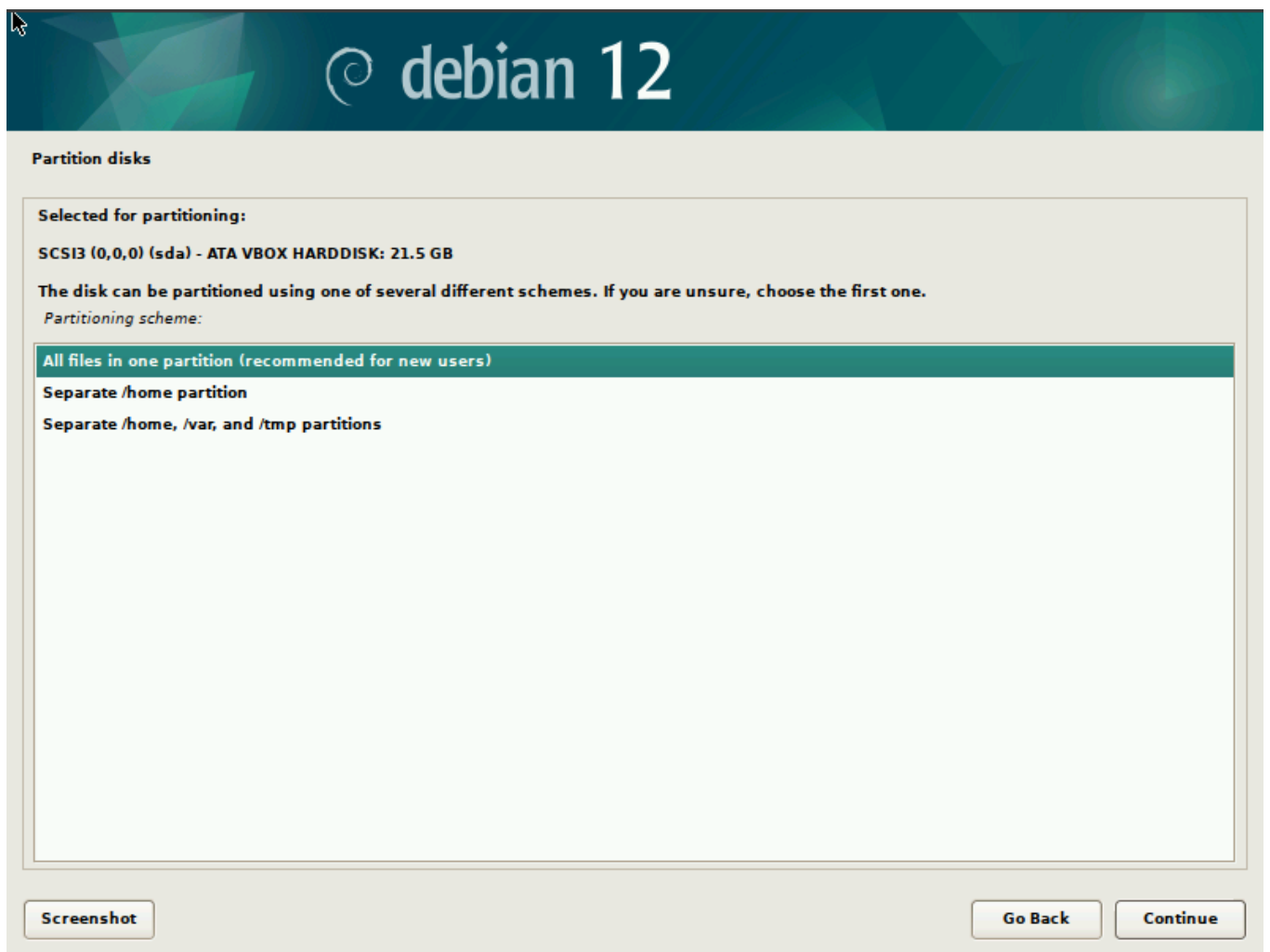
Guided - use entire disk and set up encrypted LVM

Manual

Screenshot

Go Back

Continue



2. **Confirm:** Once it's set, confirm. Note: this will erase any data on the virtual disk (don't worry, this doesn't affect your main computer).

Partition disks

This is an overview of your currently configured partitions and mount points. Select a partition to modify its settings (file system, mount point, etc.), a free space to create partitions, or a device to initialize its partition table.

Guided partitioning

Configure software RAID

Configure the Logical Volume Manager

Configure encrypted volumes

Configure iSCSI volumes

SCSI3 (0,0,0) (sda) - 21.5 GB ATA VBOX HARDDISK

>	#1	primary	20.4 GB	f	ext4	/
>	#5	logical	1.0 GB	f	swap	swap

Undo changes to partitions

Finish partitioning and write changes to disk

Screenshot

Help

Go Back

Continue

Partition disks

If you continue, the changes listed below will be written to the disks. Otherwise, you will be able to make further changes manually.

The partition tables of the following devices are changed:
SCSI3 (0,0,0) (sda)

The following partitions are going to be formatted:
partition #1 of SCSI3 (0,0,0) (sda) as ext4
partition #5 of SCSI3 (0,0,0) (sda) as swap

Write the changes to disks?

☐ No

☒ Yes

Screenshot

Continue

8. Finishing the Installation

Almost done!

1. **Choose Software:** Select the "MATE" desktop environment and "SSH server."



The image shows the 'Software selection' window from the Debian 12 installer. The window has a header with the Debian logo and 'debian 12'. Below the header, the title 'Software selection' is displayed. The main content area contains a message: 'At the moment, only the core of the system is installed. To tune the system to your needs, you can choose to install one or more of the following predefined collections of software.' followed by the instruction 'Choose software to install:'. A list of software collections is shown with checkboxes. The 'standard system utilities' option is highlighted with a green bar. At the bottom, there are two buttons: 'Screenshot' and 'Continue'.

Software selection


At the moment, only the core of the system is installed. To tune the system to your needs, you can choose to install one or more of the following predefined collections of software.

Choose software to install:

- ☒ Debian desktop environment
- ☐ ... GNOME
- ☐ ... Xfce
- ☐ ... GNOME Flashback
- ☐ ... KDE Plasma
- ☐ ... Cinnamon
- ☒ ... MATE
- ☐ ... LXDE
- ☐ ... LXQt
- ☐ web server
- ☒ SSH server
- ☒ standard system utilities

Screenshot Continue

2. **Install the Bootloader:** Install GRUB to help Debian start up. Pick the main disk **/dev/sda**.



Install the GRUB boot loader

It seems that this new installation is the only operating system on this computer. If so, it should be safe to install the GRUB boot loader to your primary drive (UEFI partition/boot record).

Warning: If your computer has another operating system that the installer failed to detect, this will make that operating system temporarily unbootable, though GRUB can be manually configured later to boot it.

Install the GRUB boot loader to your primary drive?

☐ No

☒ Yes

Screenshot

Go Back Continue



Install the GRUB boot loader

You need to make the newly installed system bootable, by installing the GRUB boot loader on a bootable device. The usual way to do this is to install GRUB to your primary drive (UEFI partition/boot record). You may instead install GRUB to a different drive (or partition), or to removable media.

Device for boot loader installation:

Enter device manually

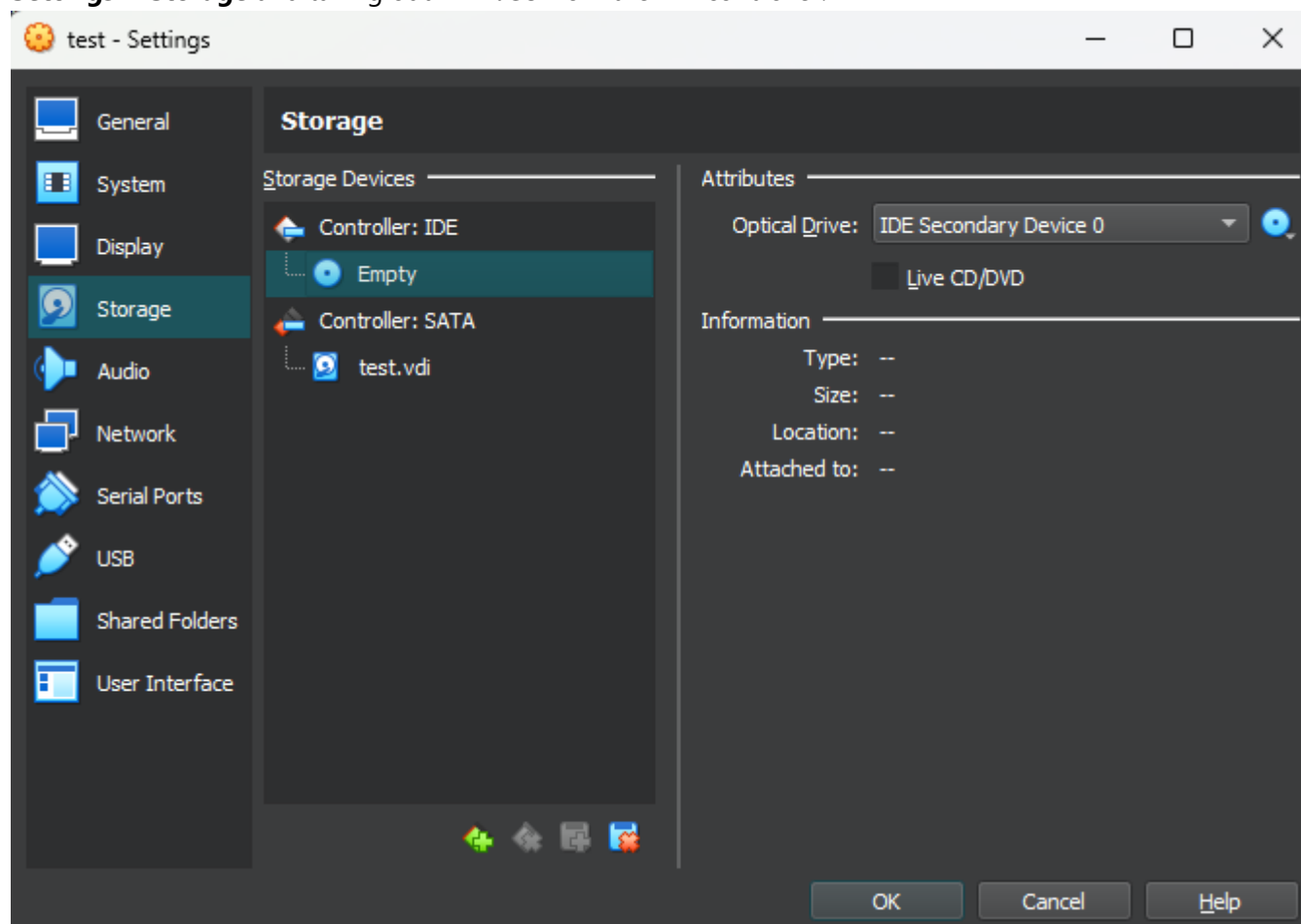
`/dev/sda (ata-VBOX_HARDDISK_VB0ade427e-799516fc)`

Screenshot

Go Back Continue

9. Getting Ready to Use Debian

When the installation finishes, you can start using Debian. First, remove the virtual installation disk by going to **Settings > Storage** and taking out **mini.iso** from the IDE controller.



Finish the installation*Installation complete*

Installation is complete, so it is time to boot into your new system. Make sure to remove the installation media, so that you boot into the new system rather than restarting the installation.

Please choose **<Continue>** to reboot.

Screenshot**Go Back****Continue**

File Machine View Input Devices Help

GNU GRUB version 2.06-13+deb12u1

*Debian GNU/Linux

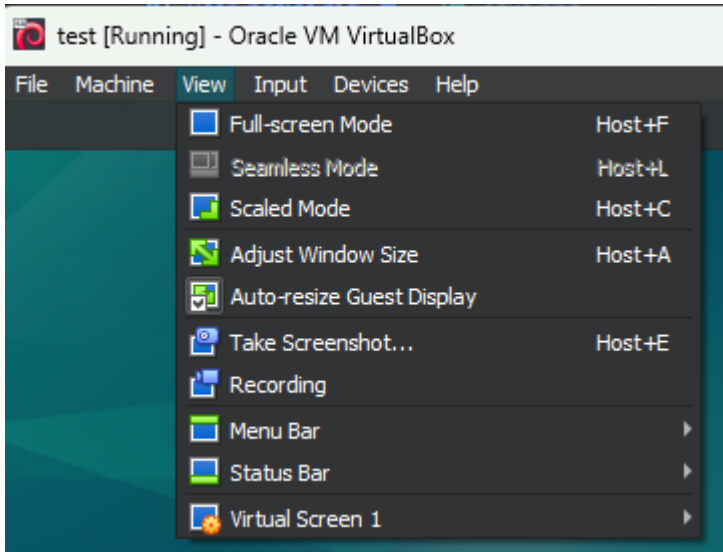
Advanced options for Debian GNU/Linux

Use the **↑** and **↓** keys to select which entry is highlighted.
Press **enter** to boot the selected OS, **`e'** to edit the commands
before booting or **`c'** for a command-line.

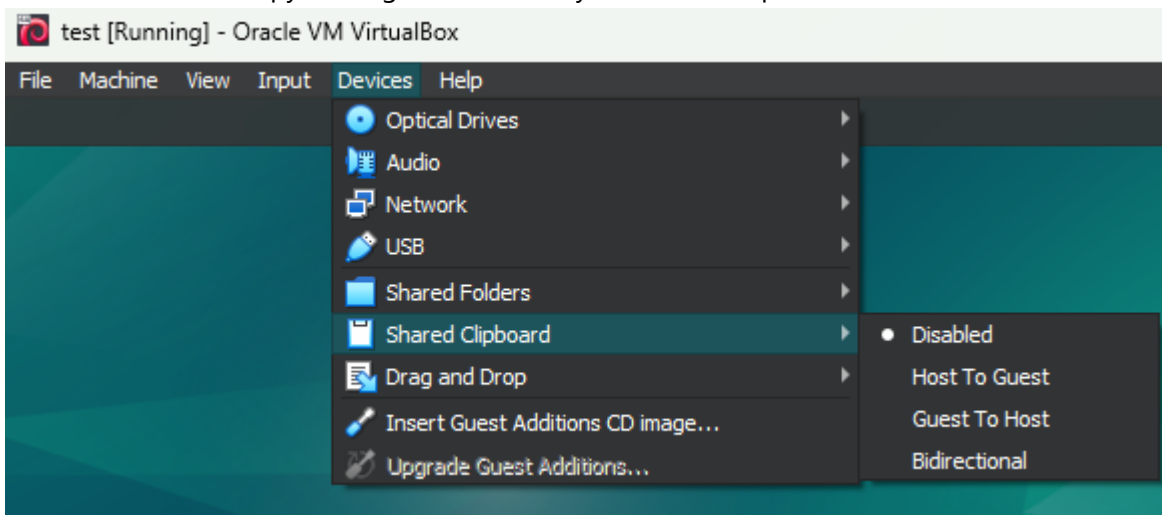
10. Setting Up Extras

To make things smoother, try these optional settings:

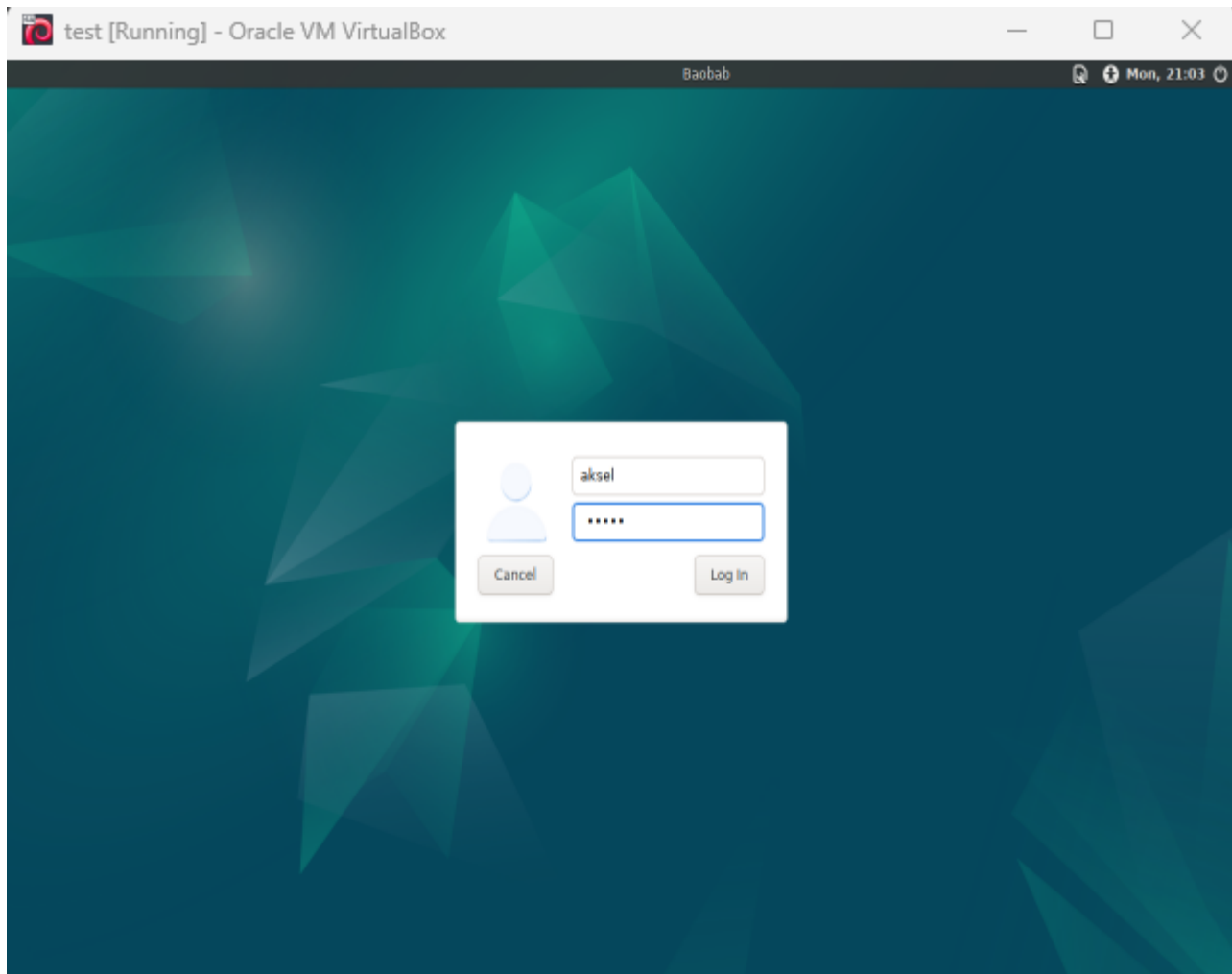
1. **Screen Size:** In VirtualBox, go to **View > Auto-resize Guest Display** to make the screen adjust automatically.



2. **Enable Copy and Paste:** Go to **Devices > Shared Clipboard > Bidirectional** and **Devices > Drag and Drop > Bidirectional** to copy or drag files between your main computer and VM.

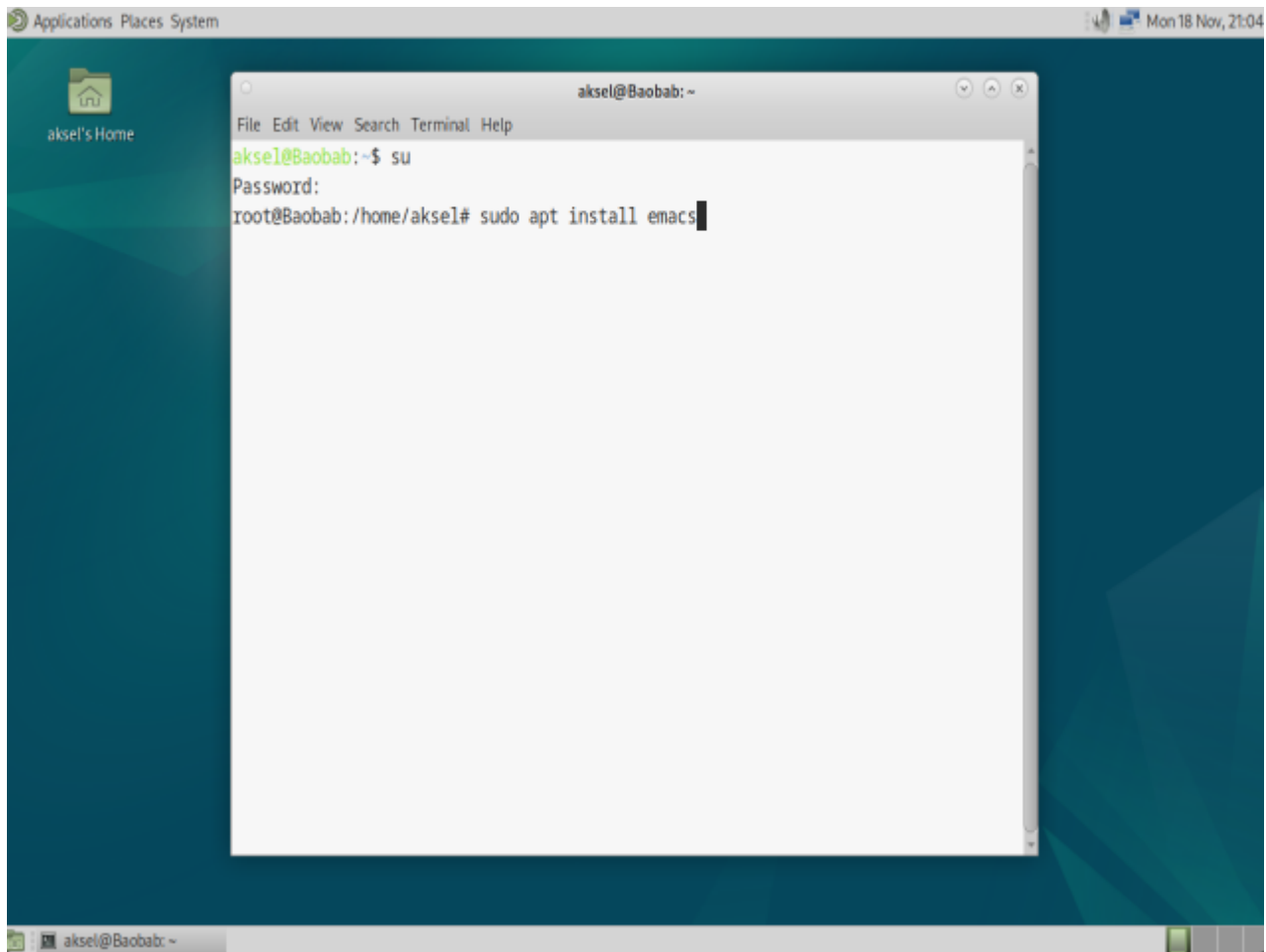


11. Installing Software on Debian



Debian comes with a tool called **APT** for managing software. To install a new program (like **emacs**), open the terminal (CTRL + ALT + T) and type:

```
su # then log with root password
sudo apt install emacs
# Do you want to continue? [Y/n] -> y
```



12. Congratulations!

You've set up Debian on a virtual machine! Now you can explore, learn commands, and practice without changing anything on your main computer. This setup is a safe way to get comfortable with Linux, try out new software, and even learn about system management.

