INSTALLATION OF KALI LINUX VM

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INTRODUCTION

Virtual machines (VMs) provide a secure and flexible way to run multiple operating systems on a single physical device. Kali Linux, a specialized distribution for cybersecurity and penetration testing, is often deployed in virtual environments to ensure safe experimentation. UTM is a macOS-native virtualization tool that simplifies the process of running Kali Linux on Apple devices, including those with M1/M2 chip

OBJECTIVE

- Demonstrate how to install Kali Linux as a virtual machine using UTM
- Identify the hardware and software requirements
- Provide an overview of UTM and its features
- Outline the installation steps and post-installation configuration

SCOPE

- Installation of UTM on macOS
- Downloading and configuring Kali Linux ISO
- Creating and running a Kali Linux VM
- Overview of UTM's capabilities
- System requirements and supported operating systems

HARDWARE AND SOFTWARE

- **Host Device** - Apple MacBook(M3
- **Host OS** - MacOS 12
- **Virtualisation** - UTM
- **Guest OS**- Kali Linux(ARM64 or x64ISO)
- **Storage** - 64GB
- **RAM** - 6GB

SPECIFIC TOOL : UTM

UTM (Universal Turing Machine) is a free and open-source virtualization software designed for macOS. It uses QEMU under the hood and provides a user-friendly interface for creating and managing virtual machines.

FEATURES OF UTM

- Native support for Apple Silicon (M1/M2)
- Emulation and virtualization modes
- Shared clipboard and folder access
- USB and network device passthrough
- Snapshot and save state functionality
- Simple graphical interface for VM setup

SYSTEM REQUIREMENTS

Requirement	Minimum Specification
Host OS	macOS 12.0 or later
Procesor	Apple M1/M2
RAM	4GB(8GB recommended)
Disk Space	20GB minimum
Kali Linux ISO	ARM64(forM1/M2) or x64(intel)
UTM Version	Latest stable release

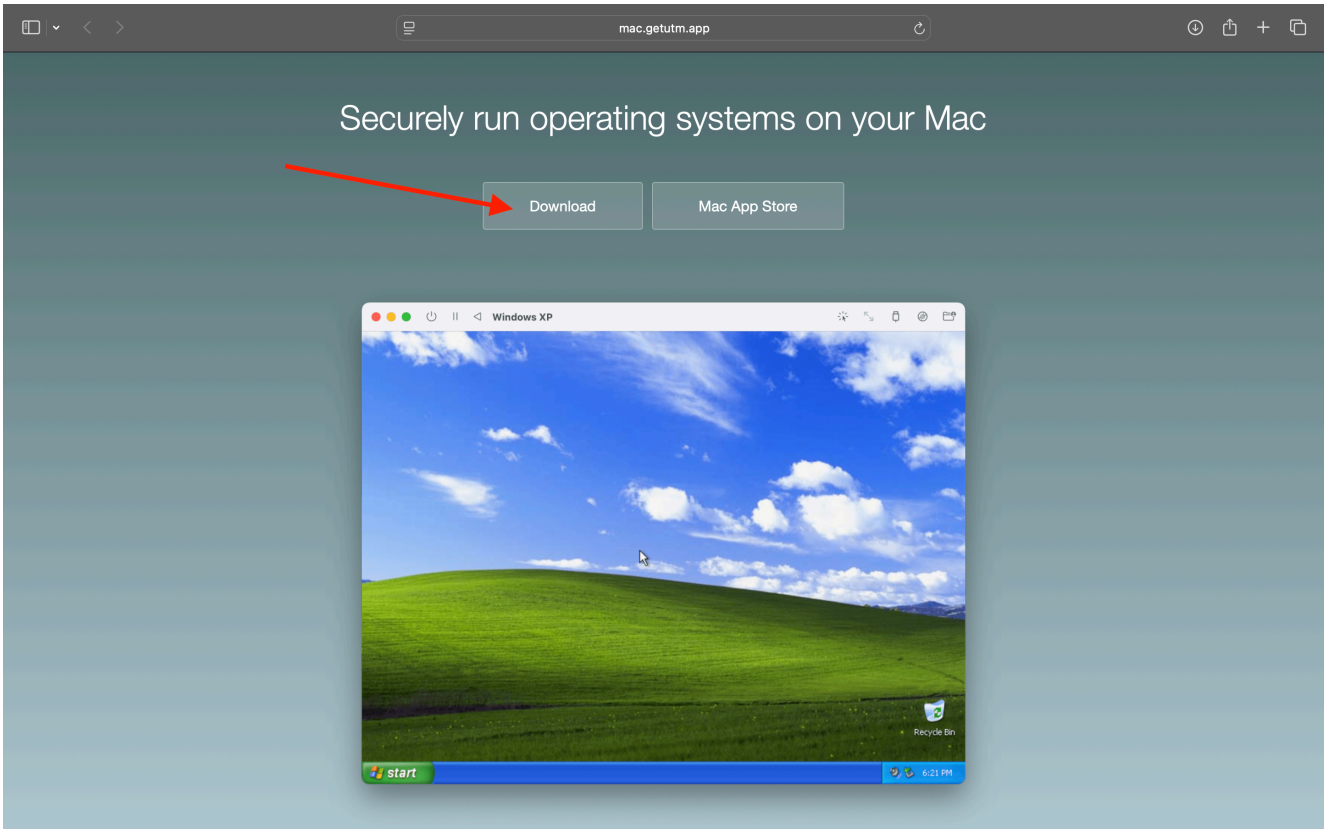
Supported Operating Systems in UTM

UTM supports a wide range of guest operating systems, including:

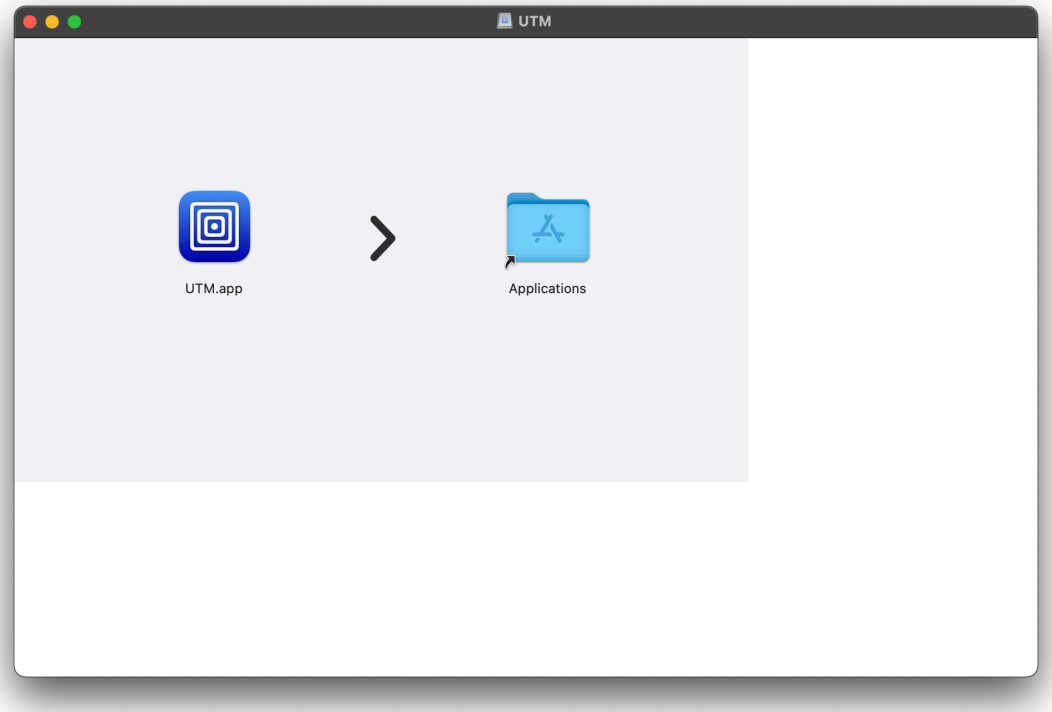
- Linux distributions: Kali, Ubuntu, Fedora, Arch
- Windows: XP to Windows 11
- macOS (older versions via emulation)
- BSD variants
- Android (experimental builds)

INSTALL VIRTUAL MACHINE

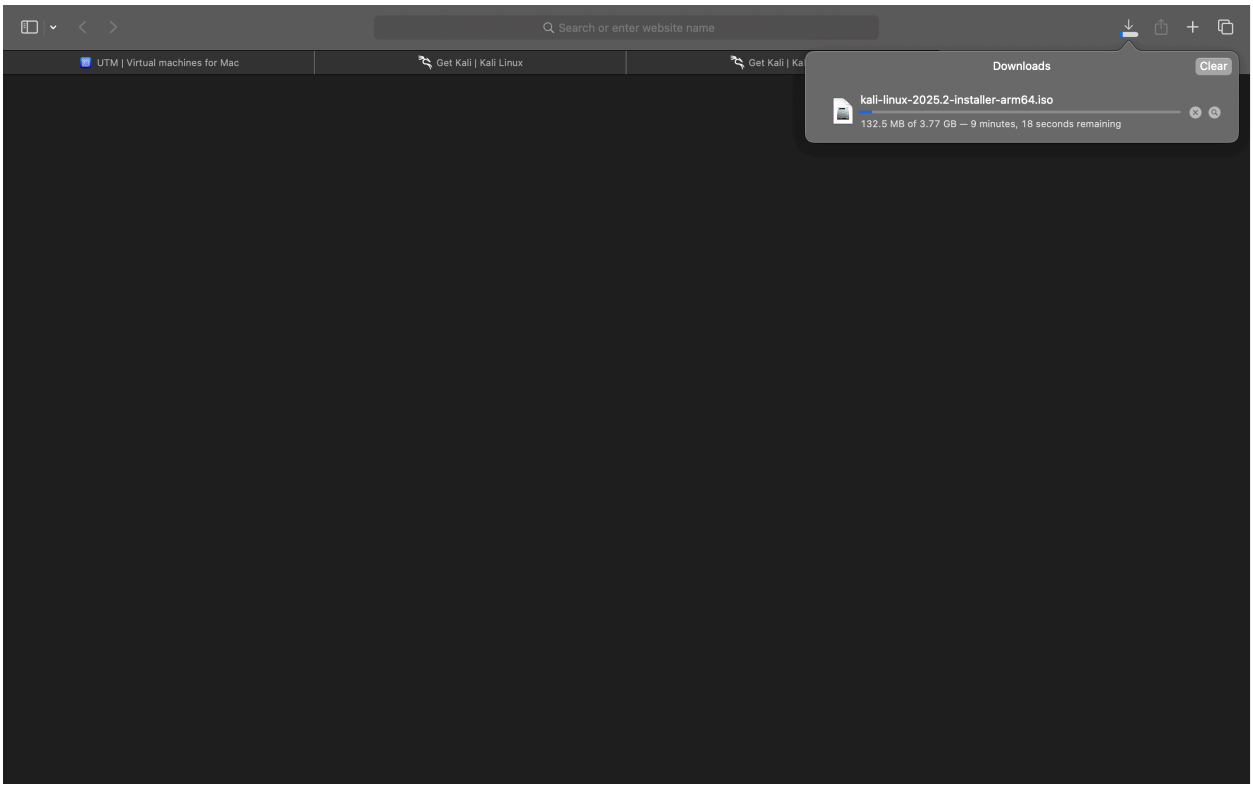
1. Download UTM from https://mac.getutm.app



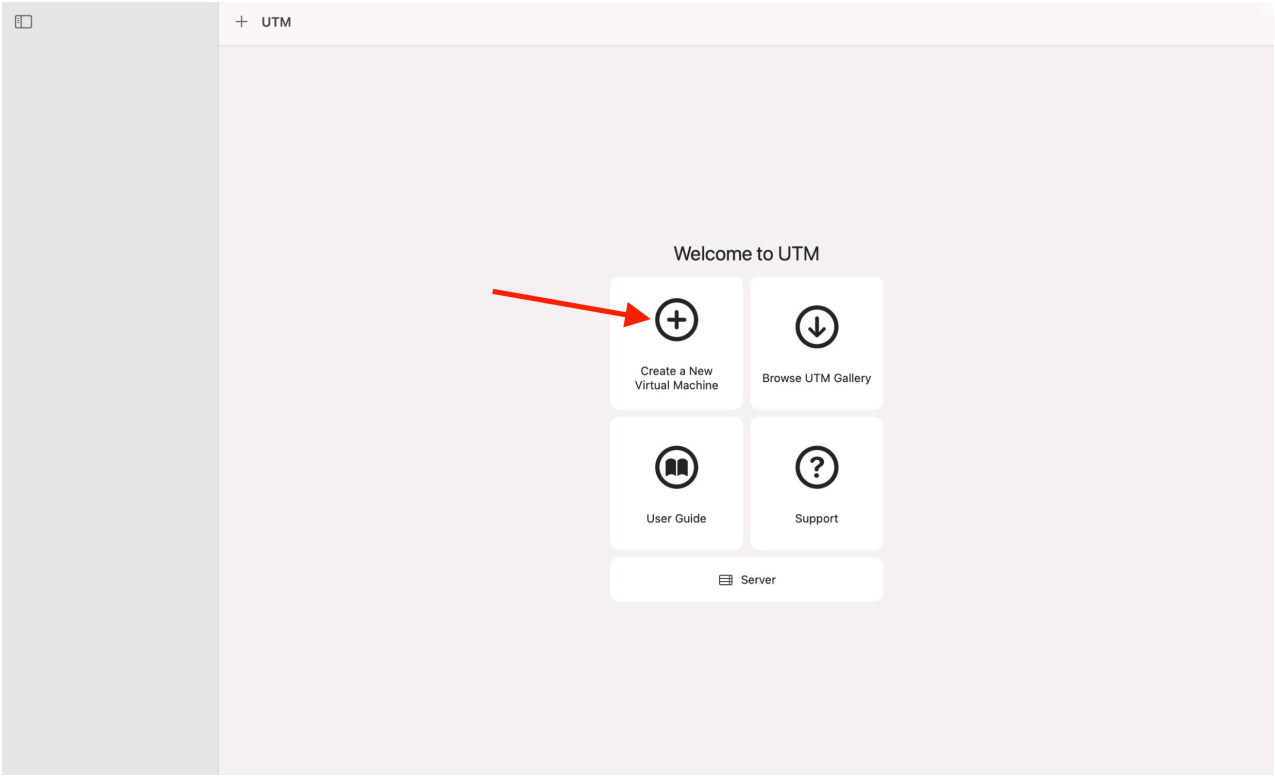
2. Install UTM by dragging the .dmg into applications



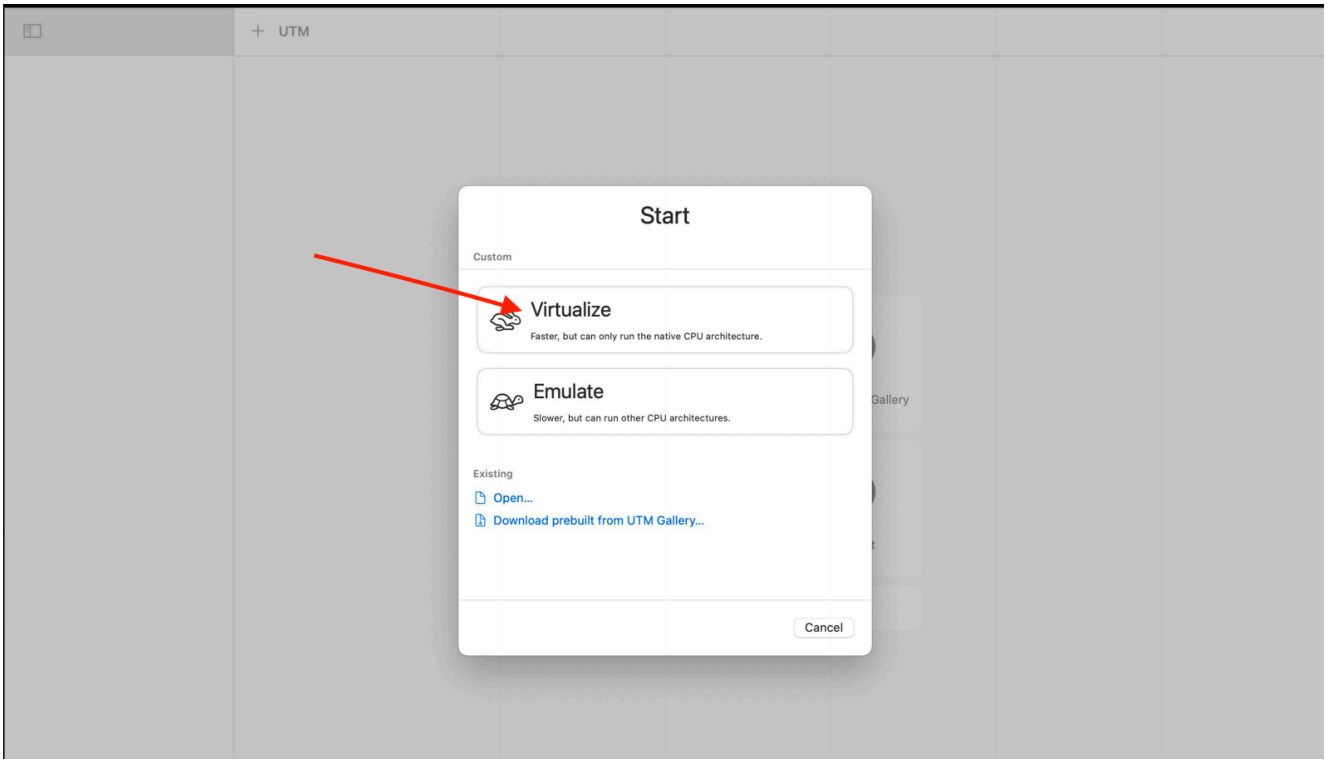
3. Download current stable version of Kali Linux ISO from https://cdimage.kali.org/current/kali-linux-2025.2-installer-arm64.iso



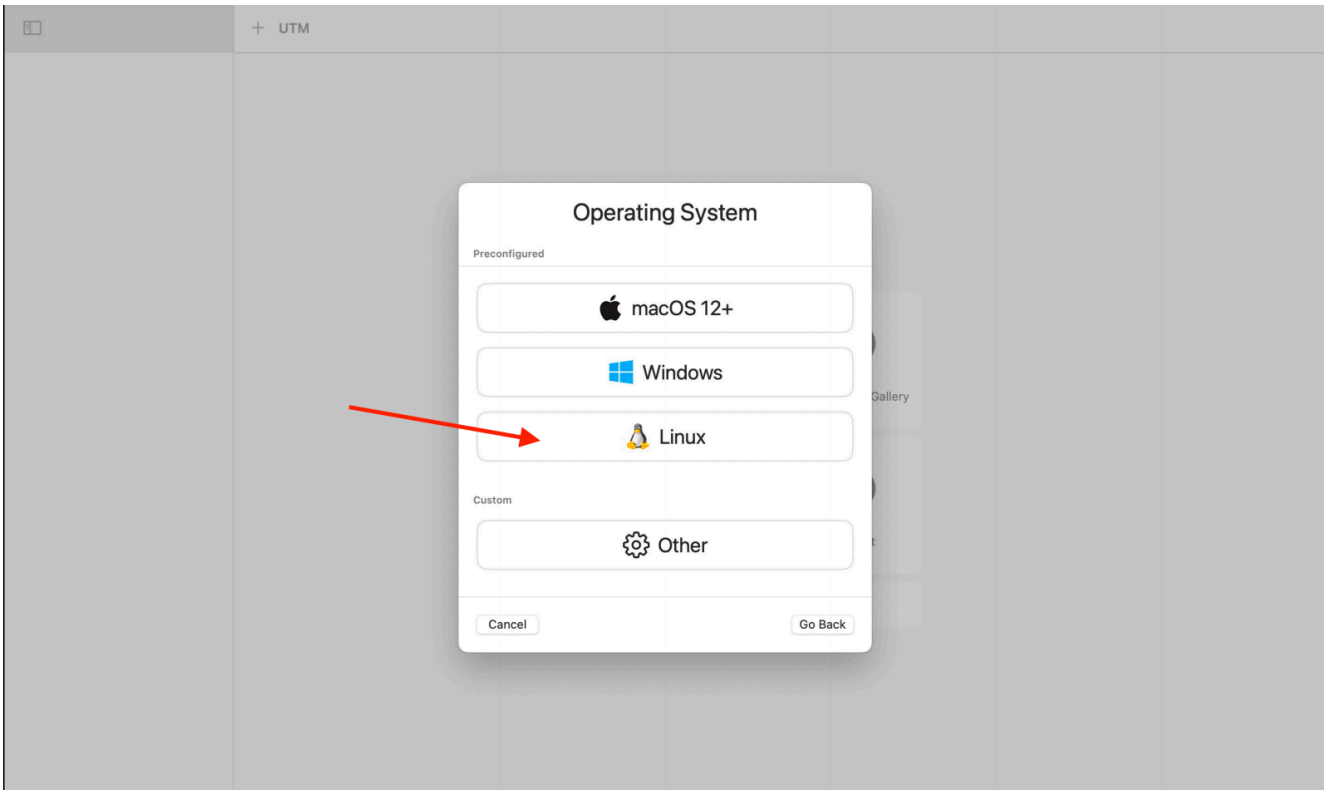
4. Open UTM and click on '+' (Create New Virtual Machine)



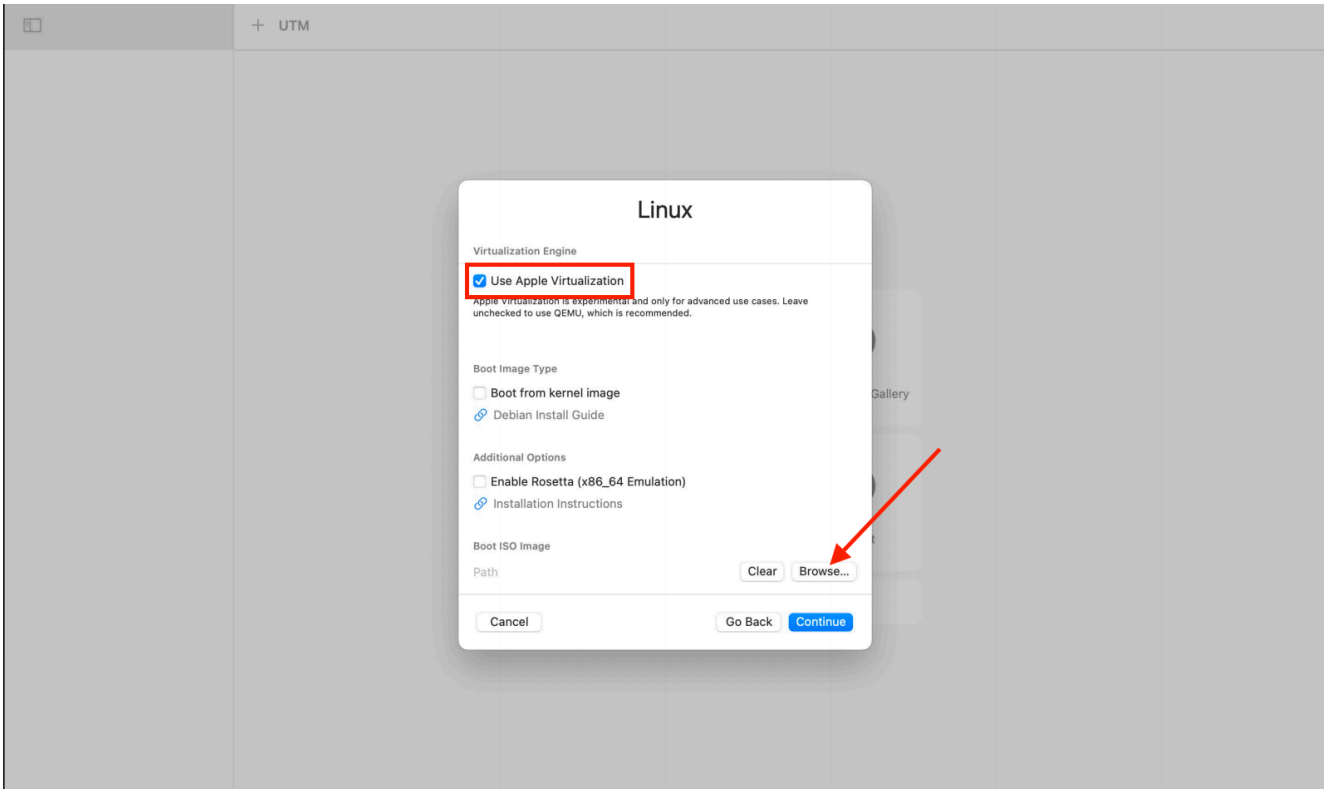
5. Choose "Virtualize" (not Emulate - this uses native Apple Silicon performance)



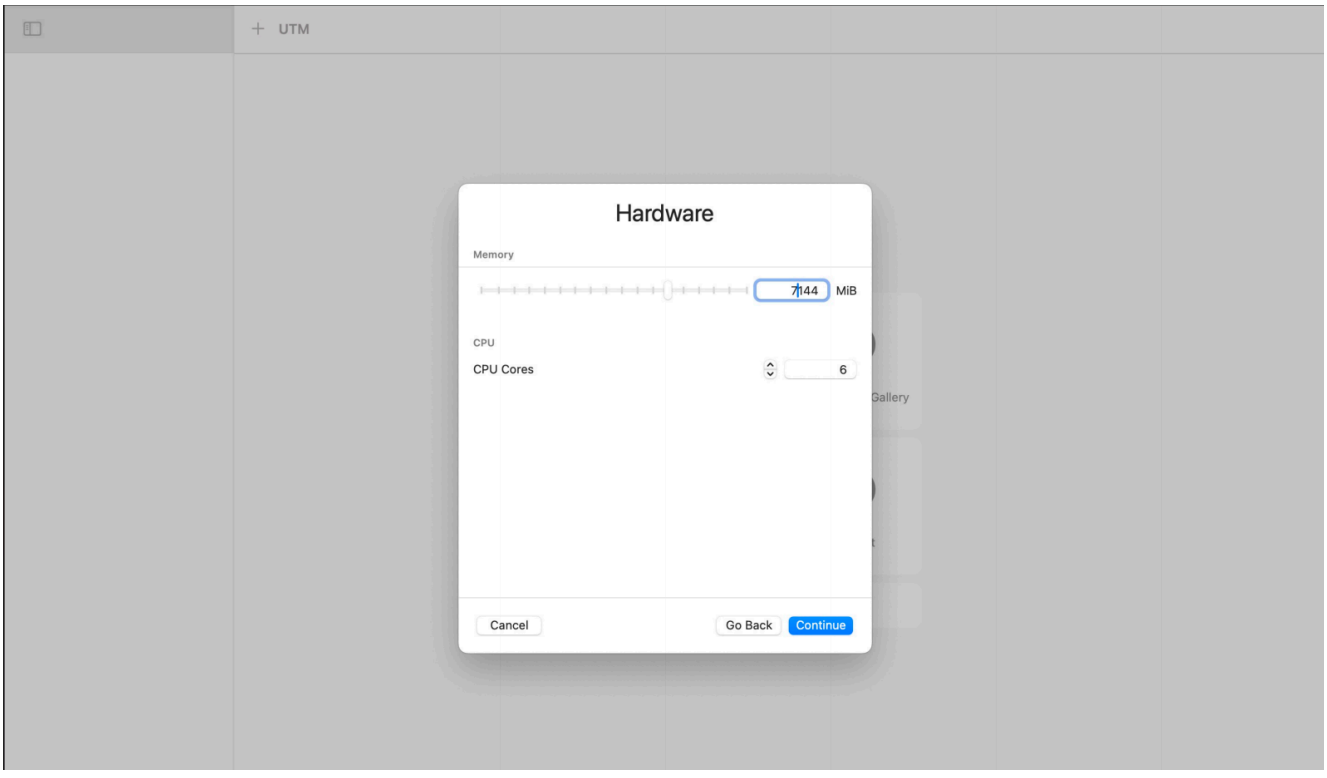
6. Select ”Linux”



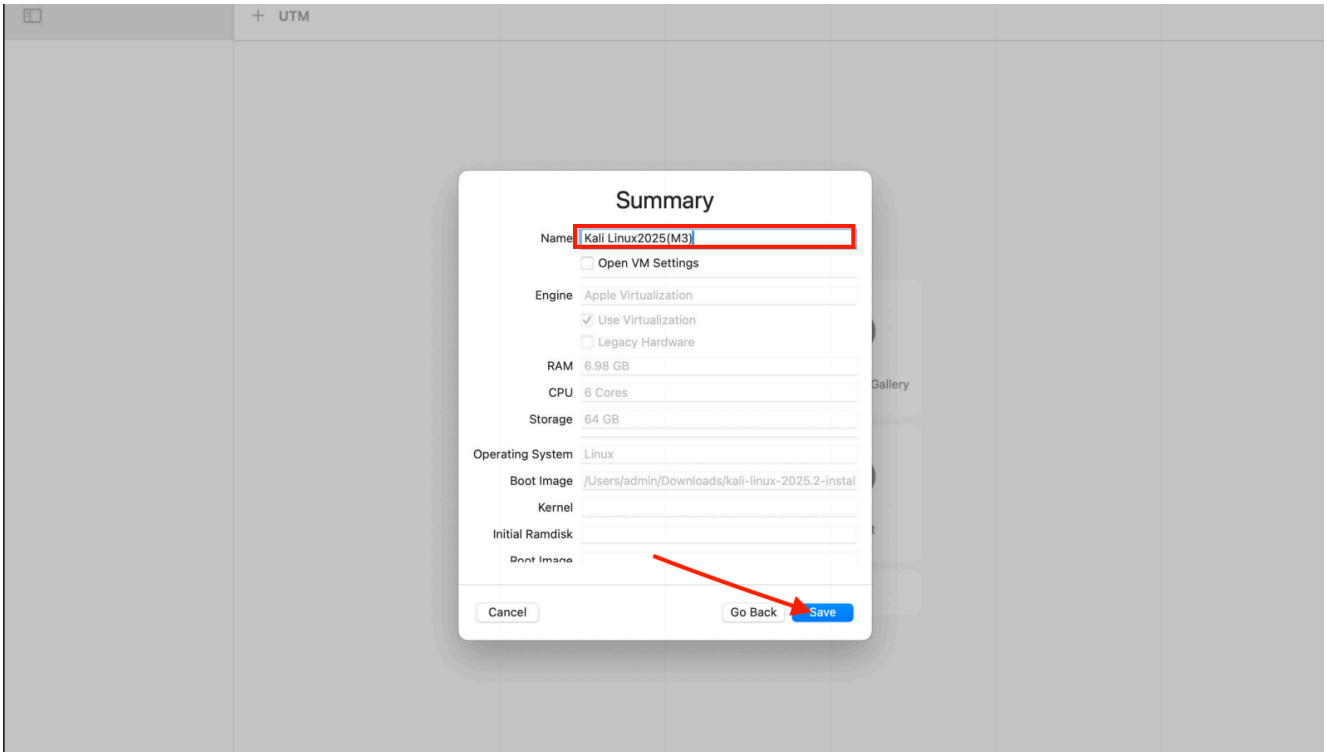
7. Enable "Use Apple Virtualization" (Critical for performance) and click on browse to select your Kali Linux ISO file



8. Configure VM settings

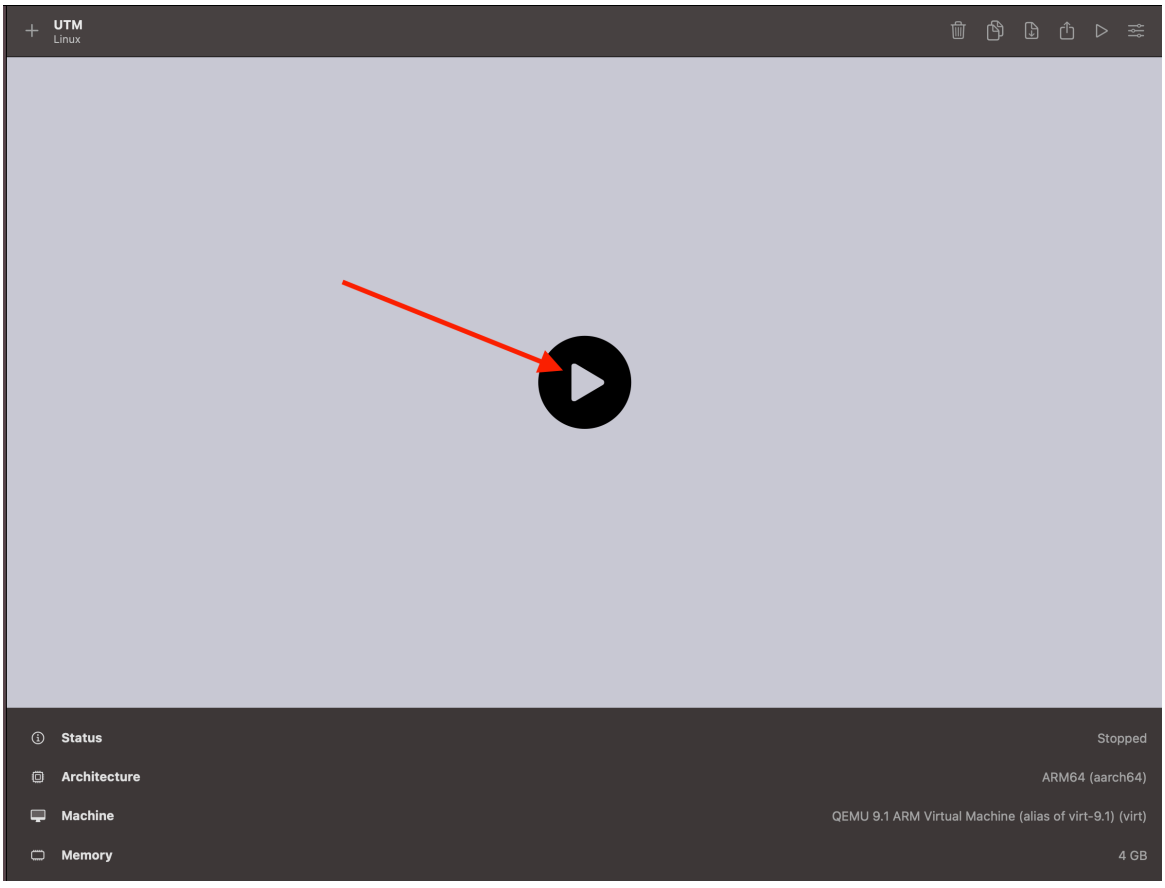


9. Name your Kali Linux and click on ‘’’save’’



Install Kali Linux

Step 1 : Click the play button to start your VM

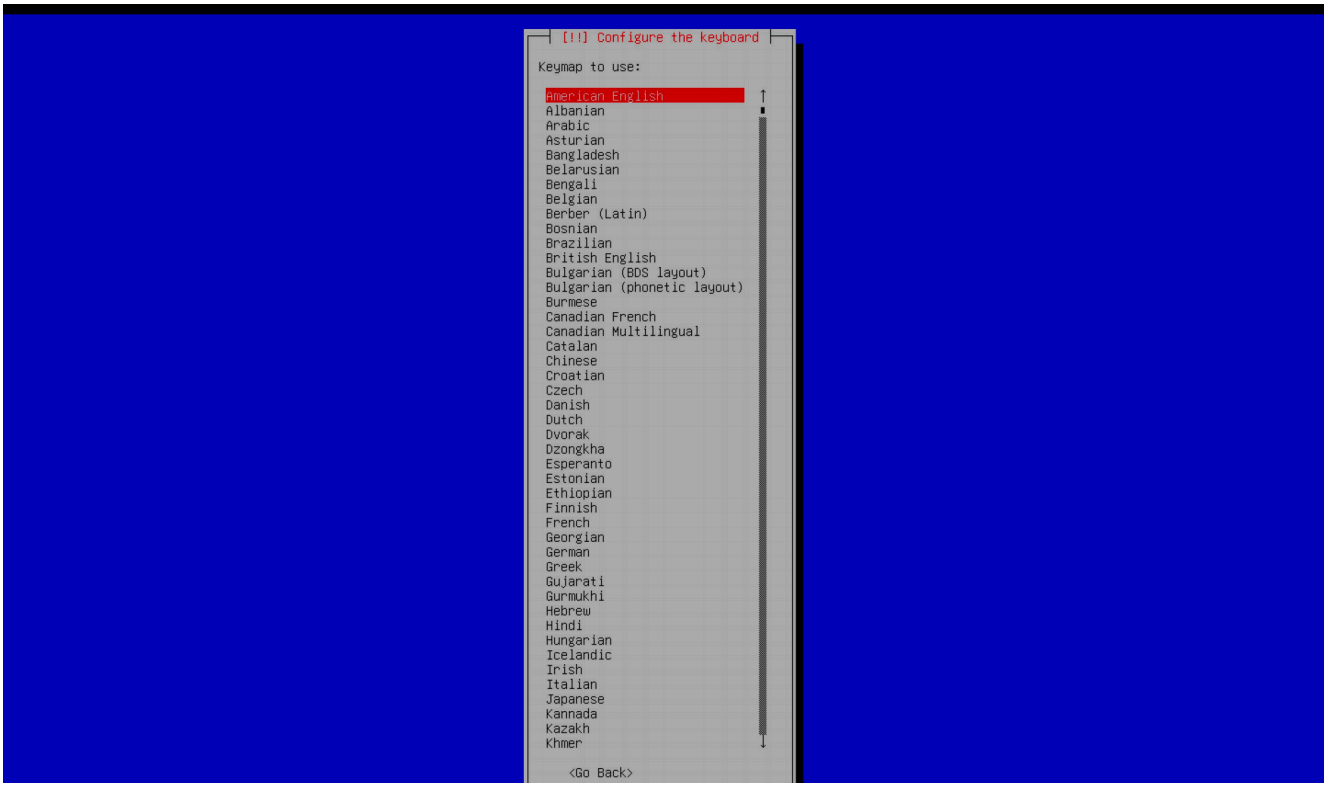


Step 2 : Boot Menu: Select "Install" (not "Graphical Install" for stability)

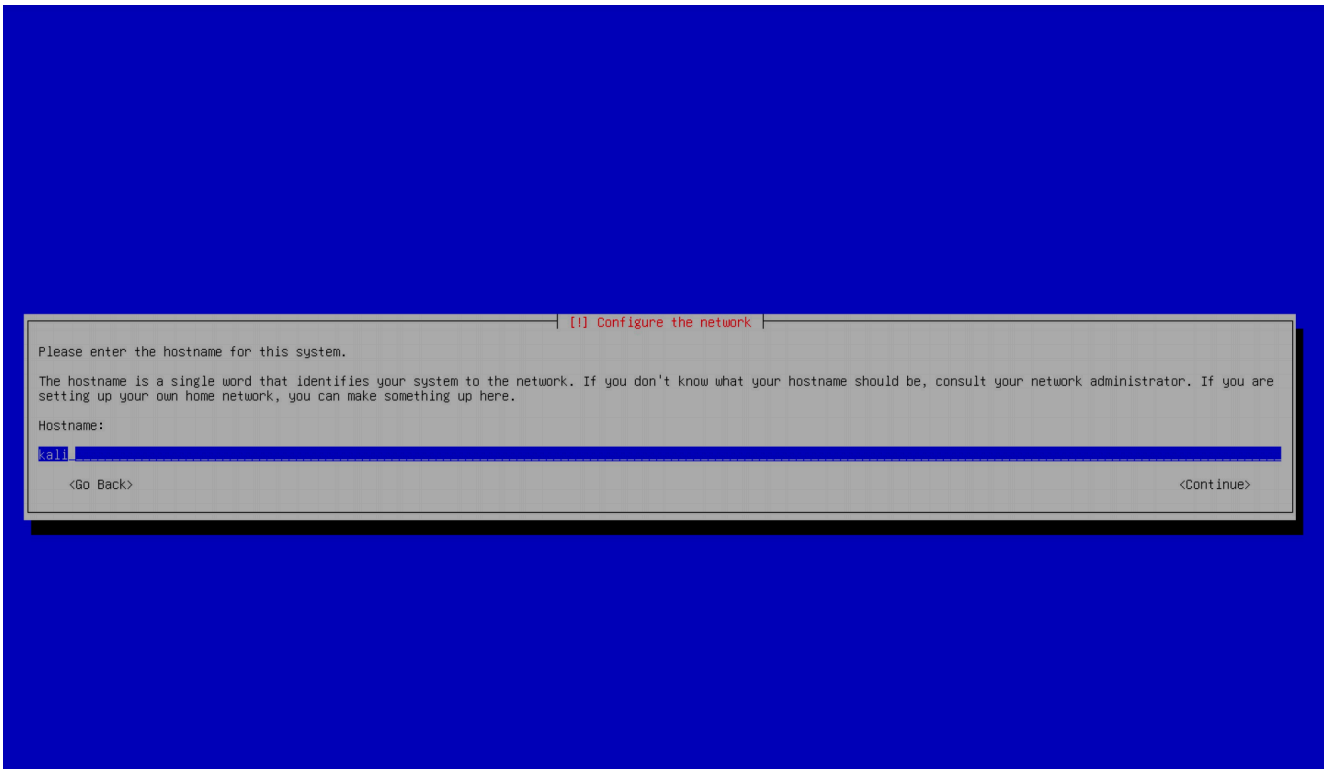
Step 3 : Select “ English “

Step 4 : Select “India”

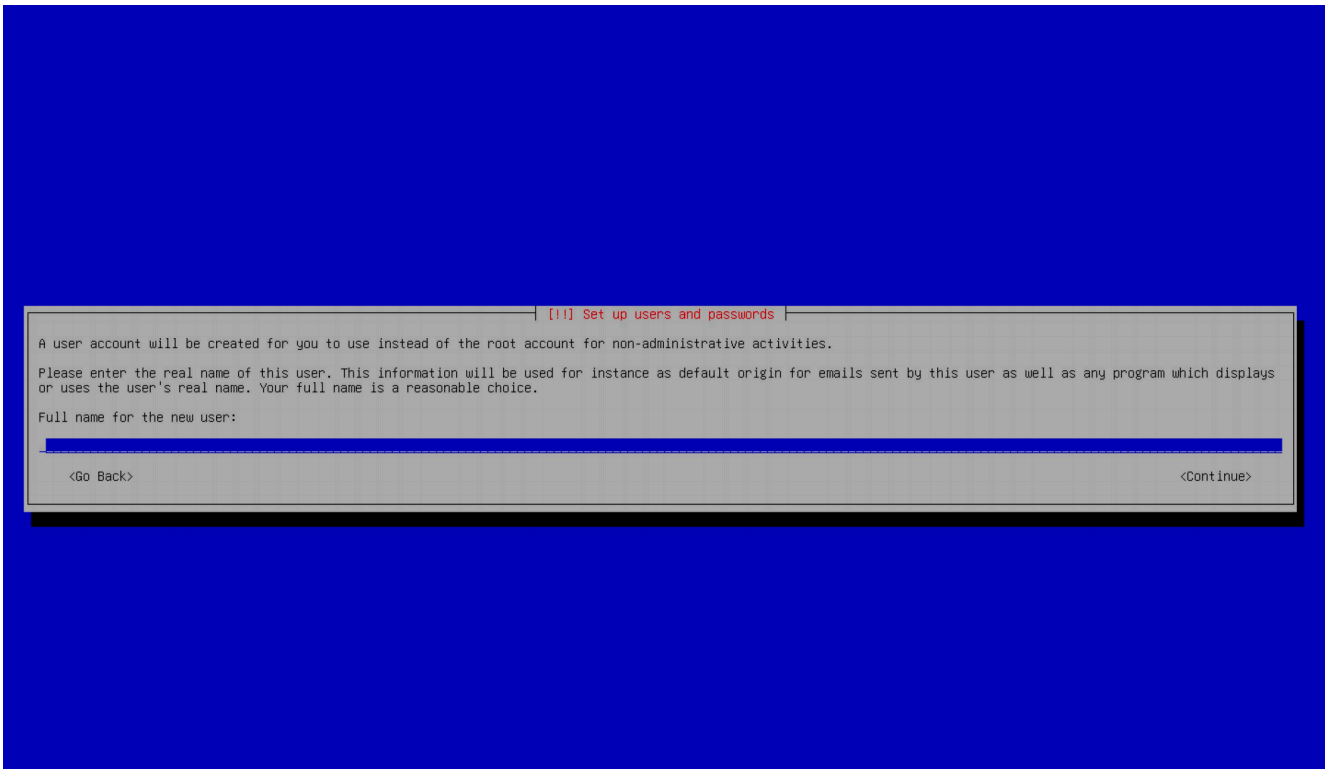
Step 5 : Select “ American English “

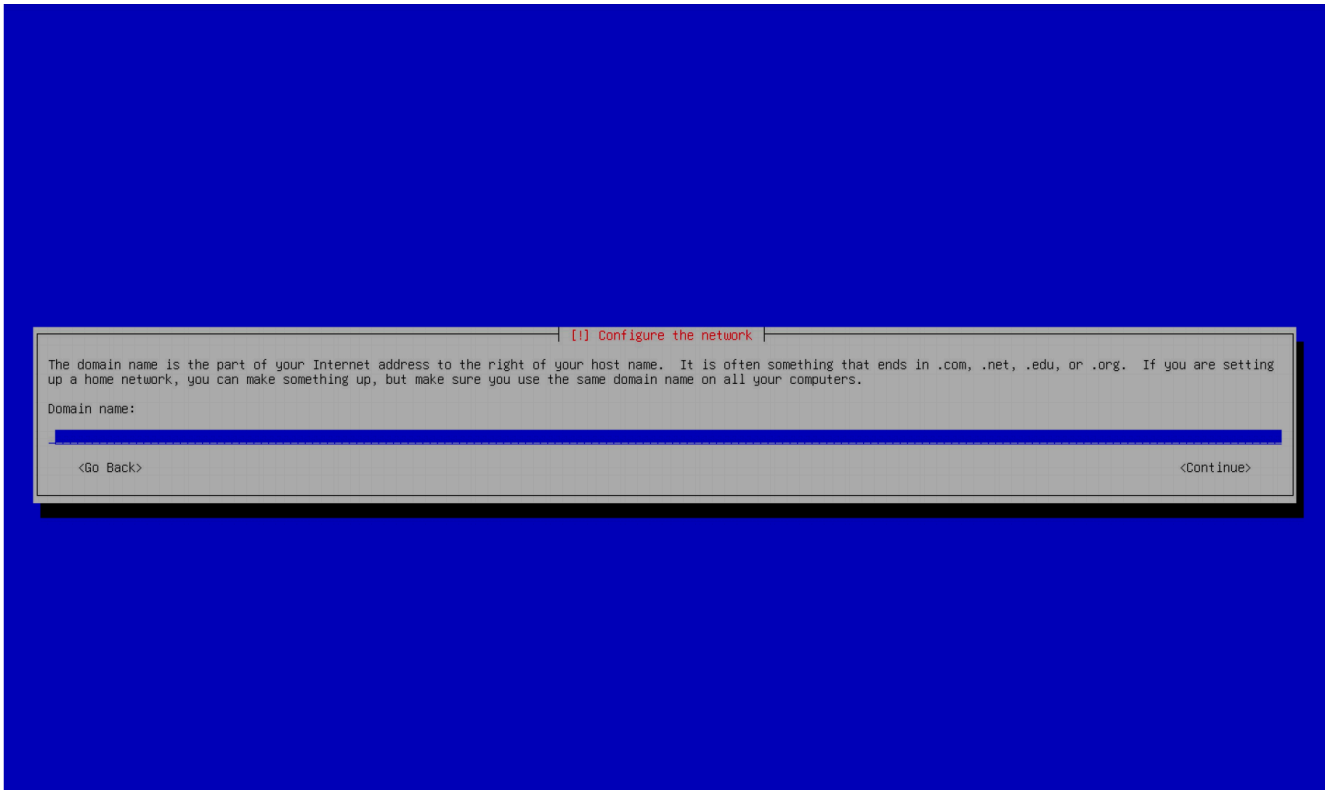


Step 6 : Write hostname kali (recommended)

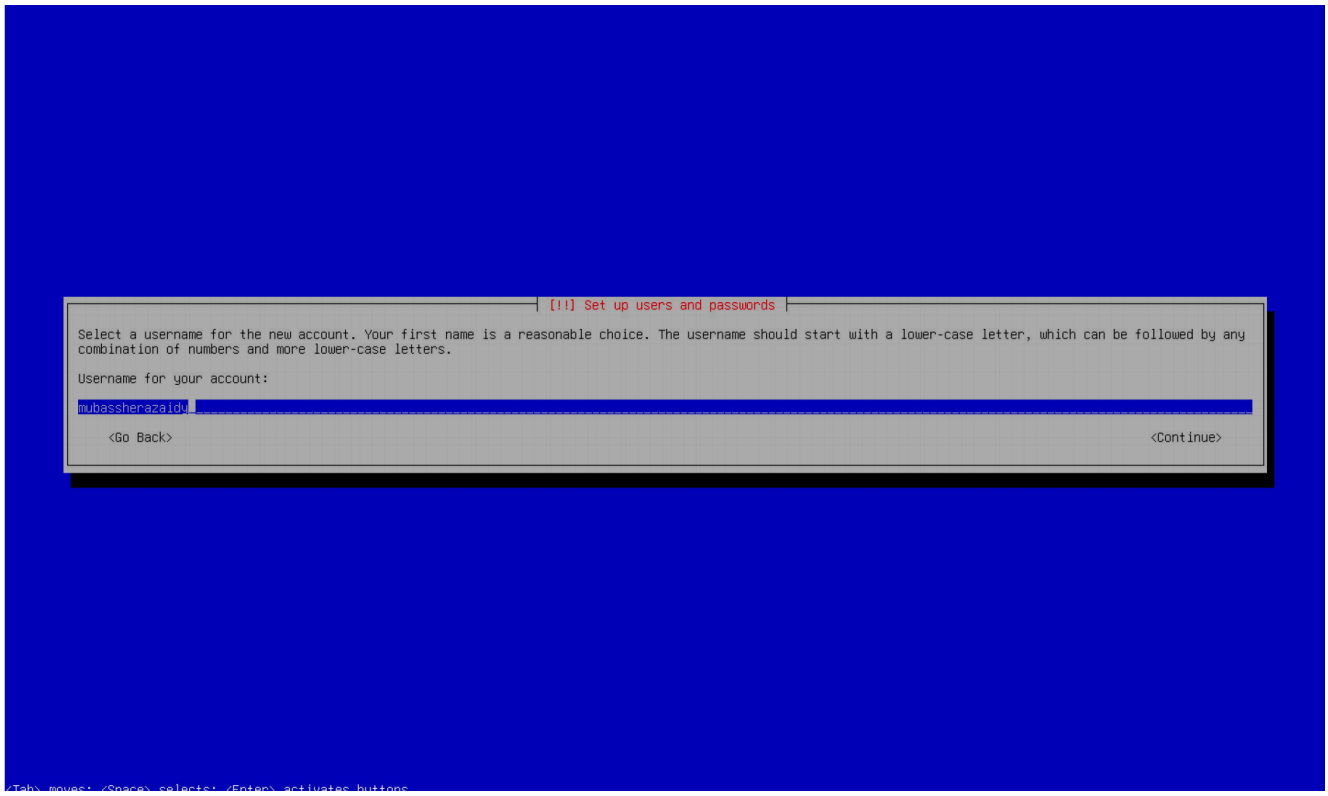


Step 7 : Write your full name

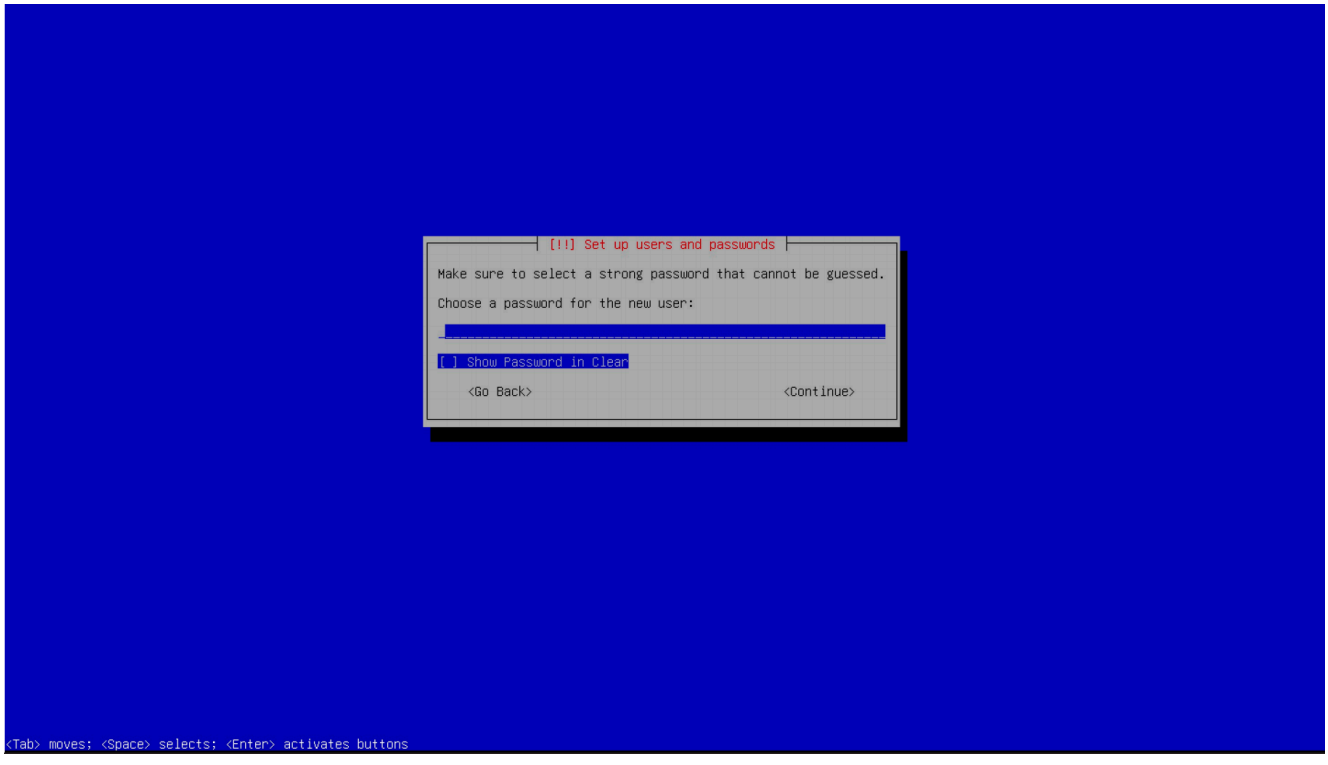




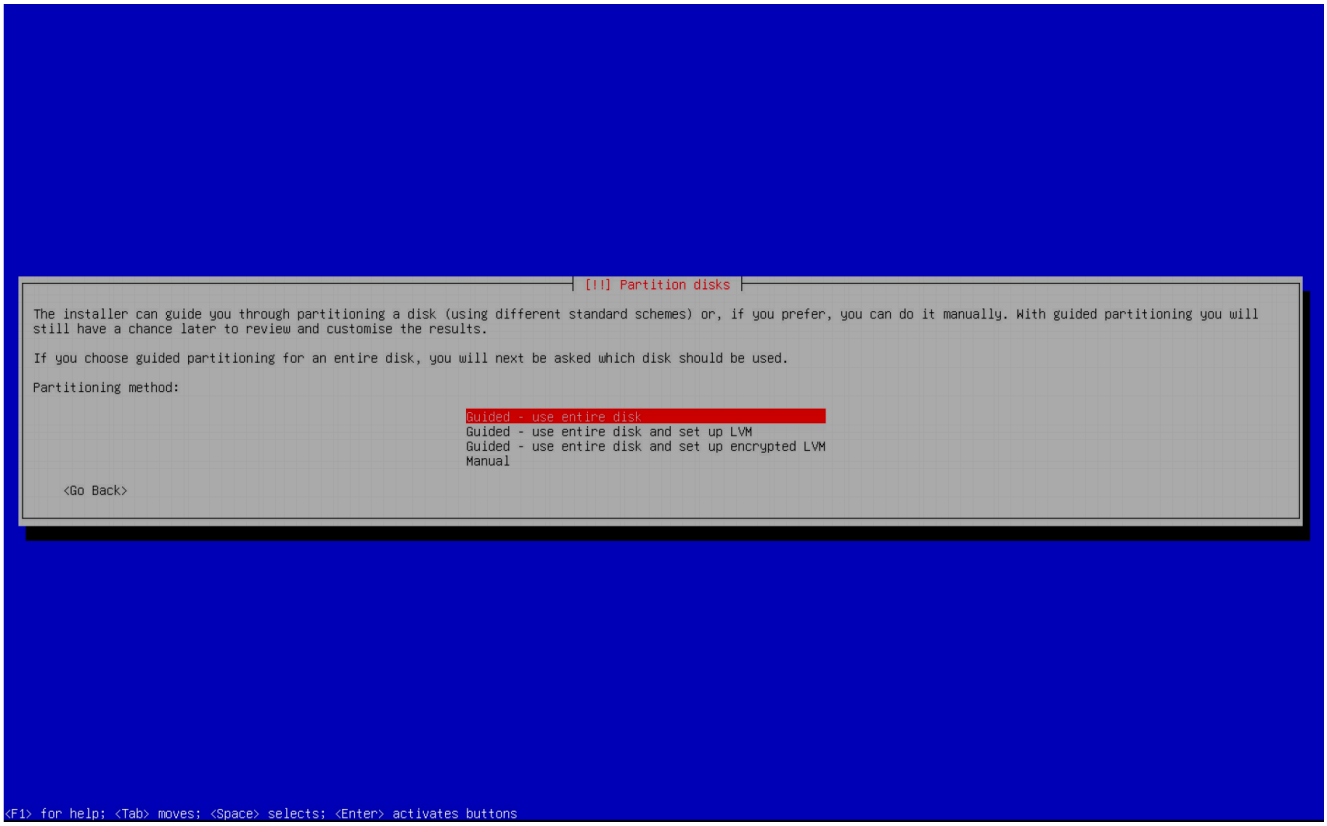
Step 8 :Write your username



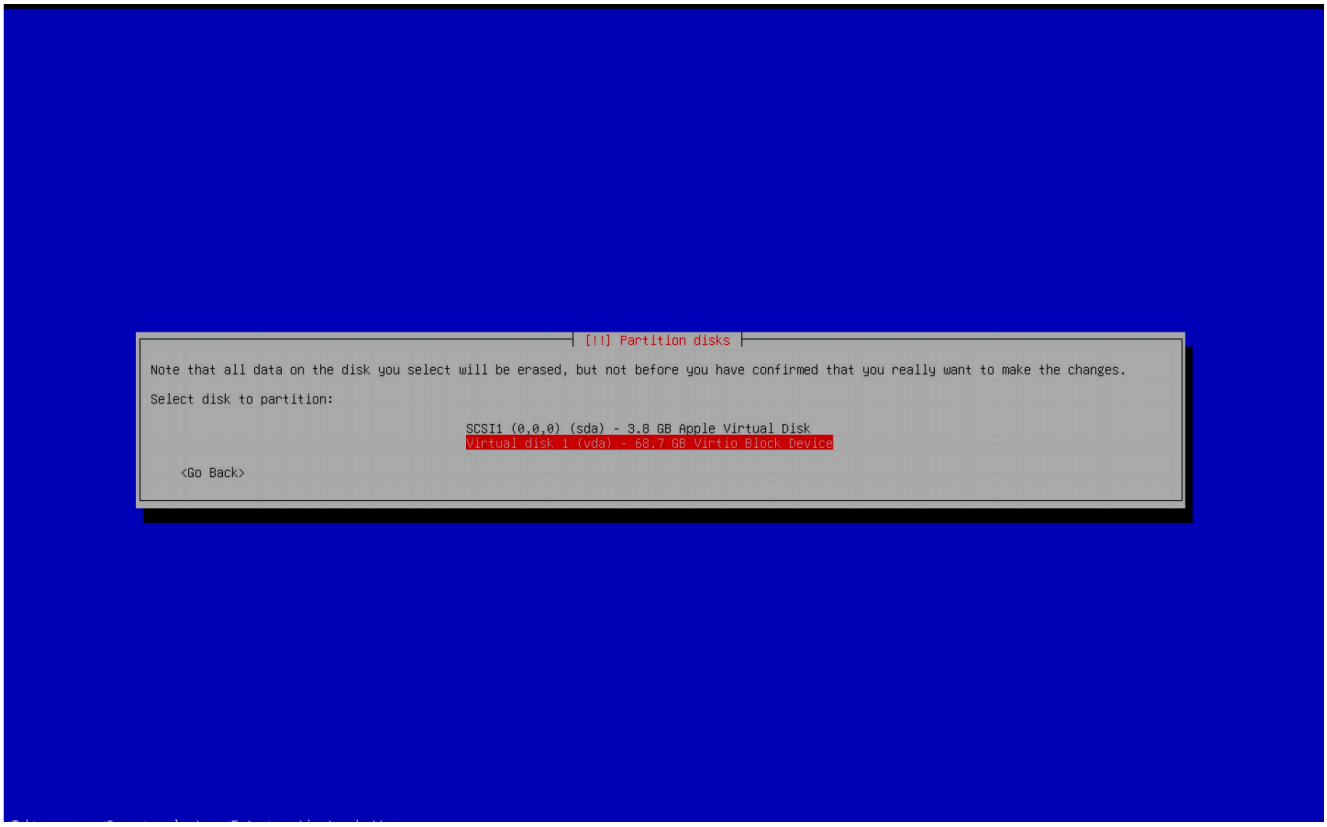
Step 9 : Write your password



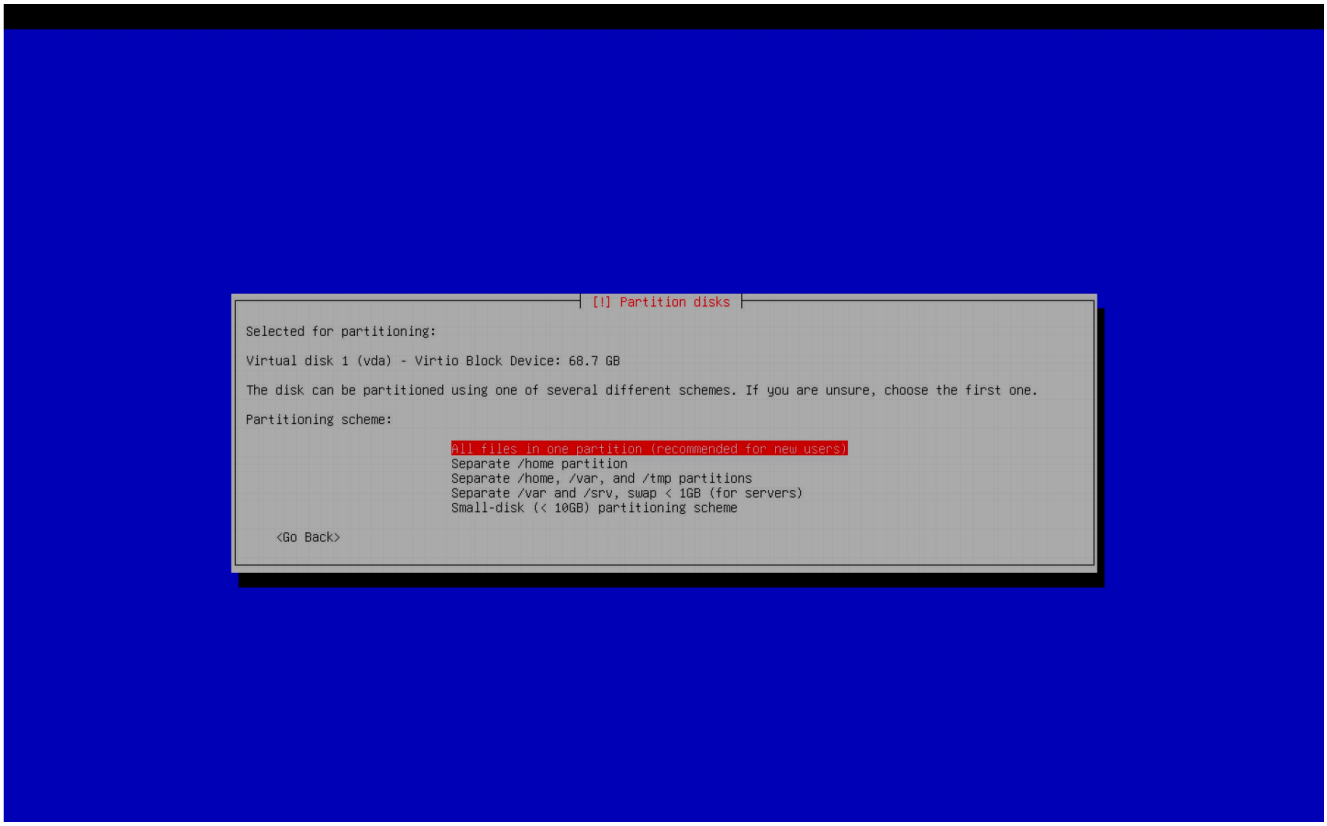
Step 10 : Select “Guided- use entire disk’’



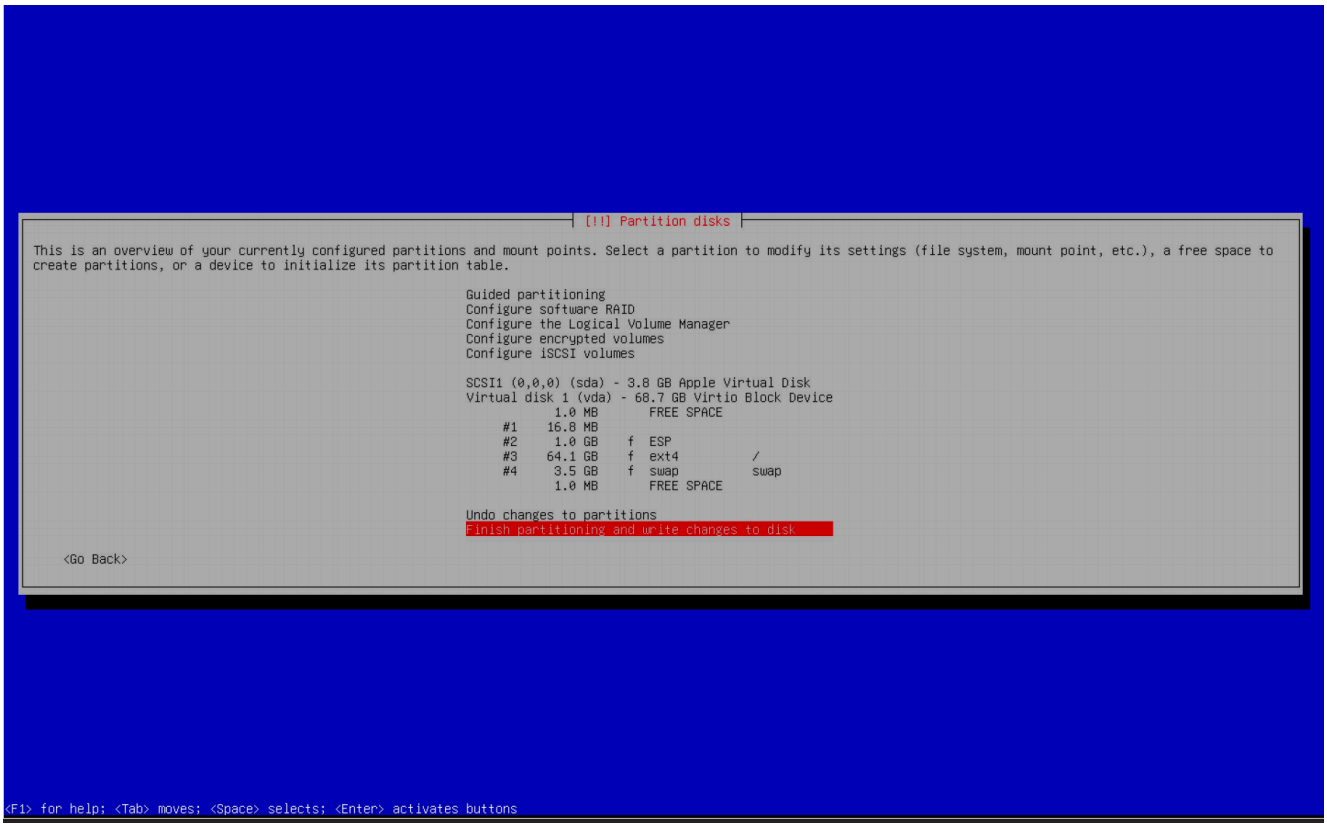
Step 11 : Select the “virtual disk”



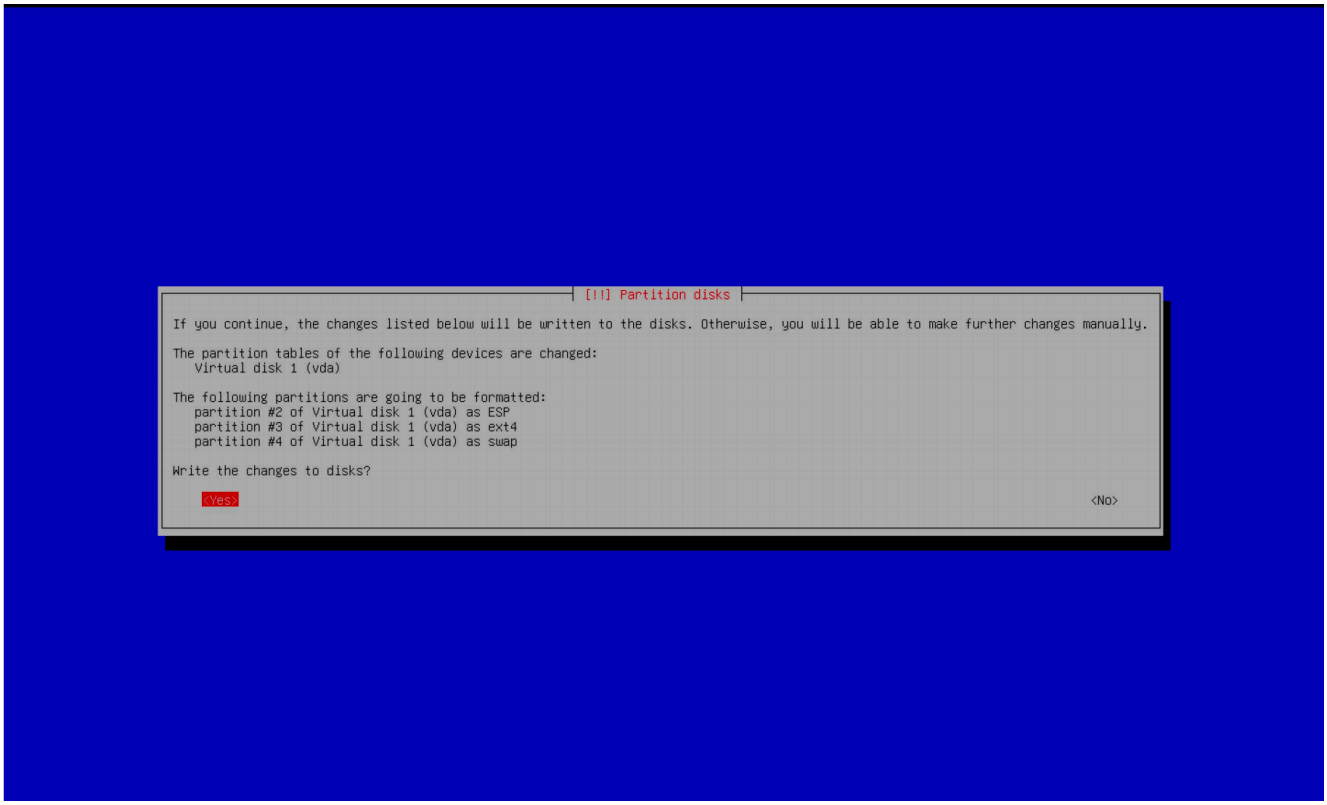
Step 12 : Select “All files in one partition”

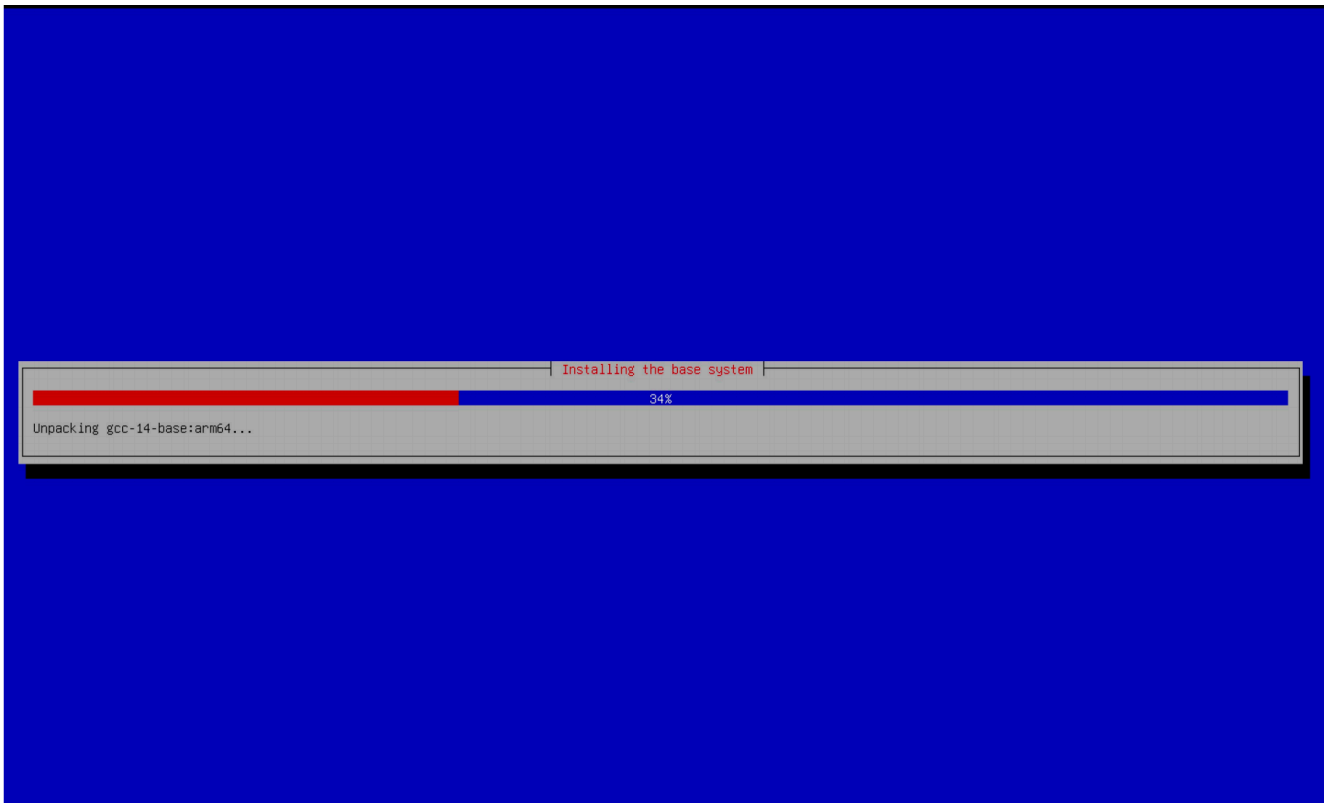


Step 13 : Select the ‘’Finish partitioning and write changes to disk “

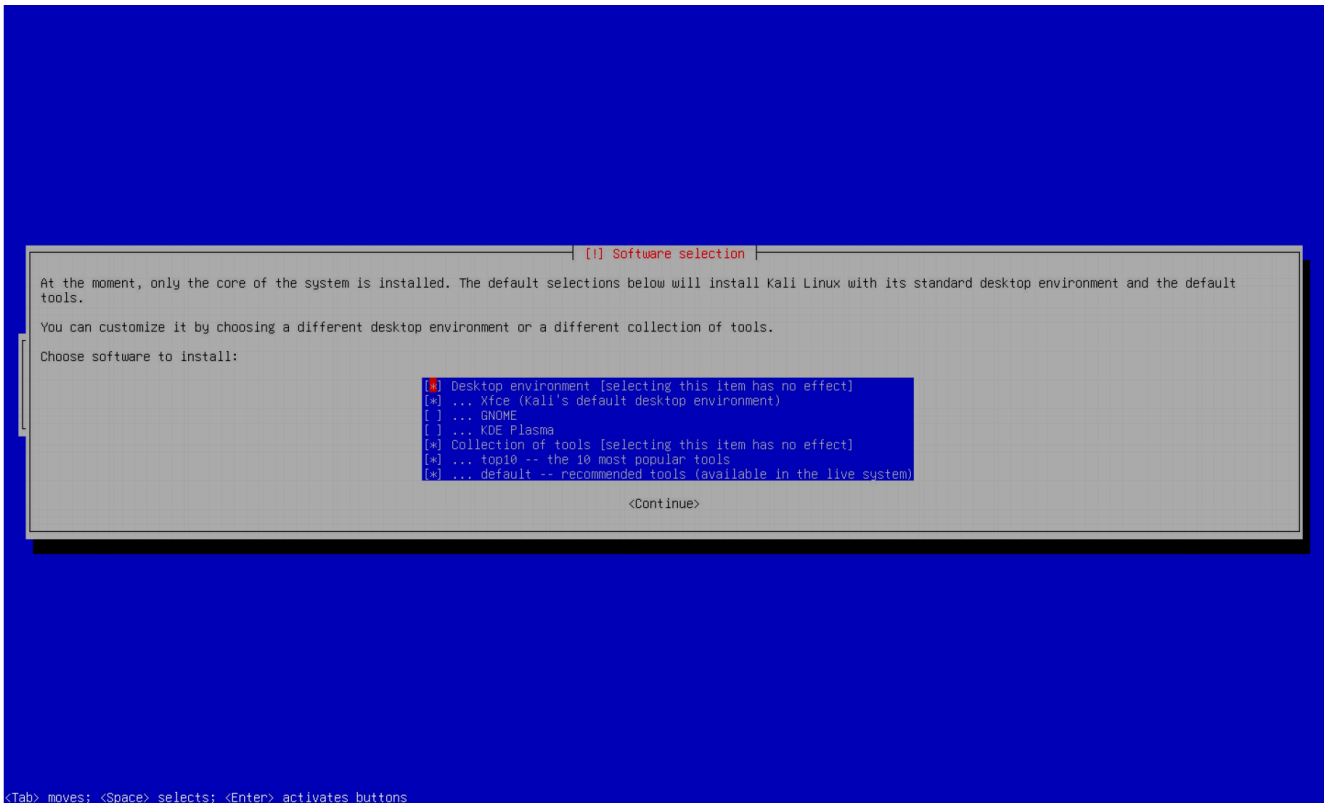


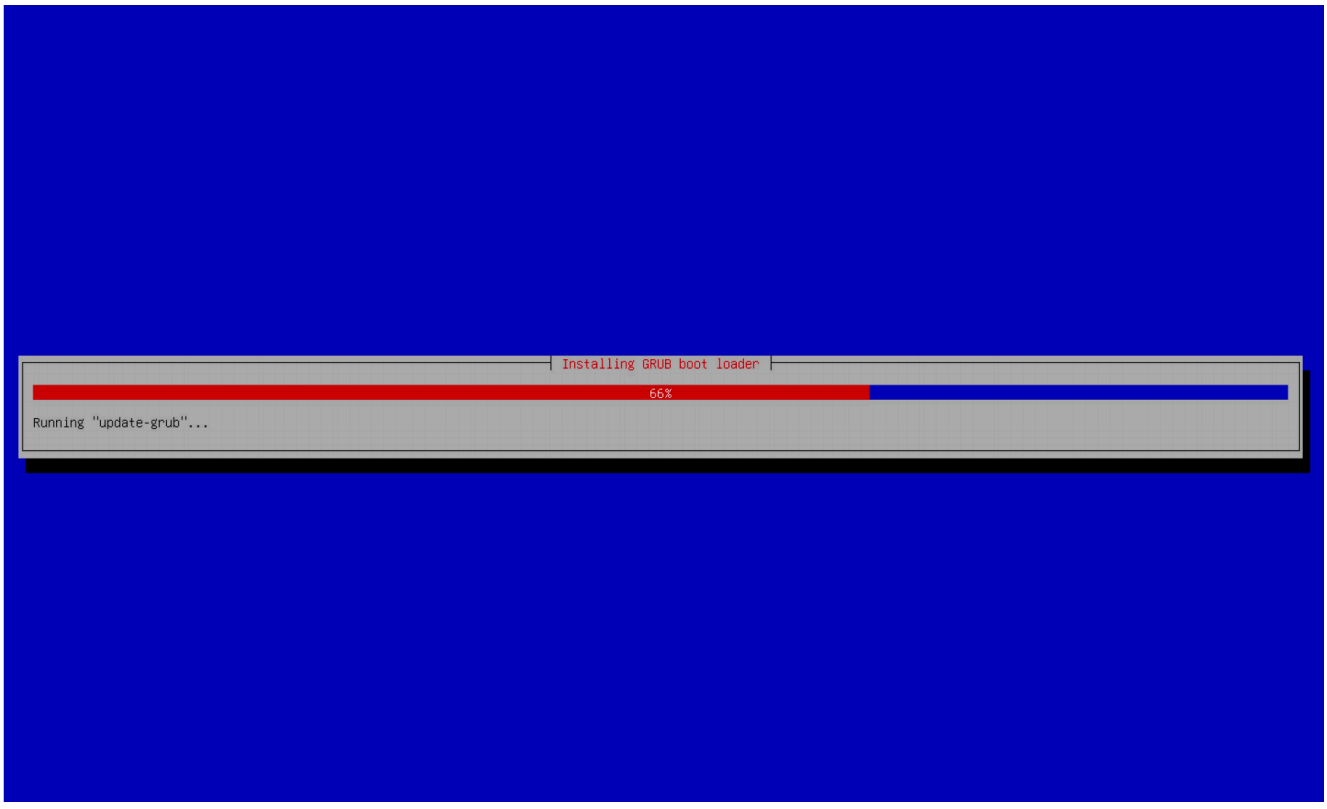
Step 14 : Click on “Yes”



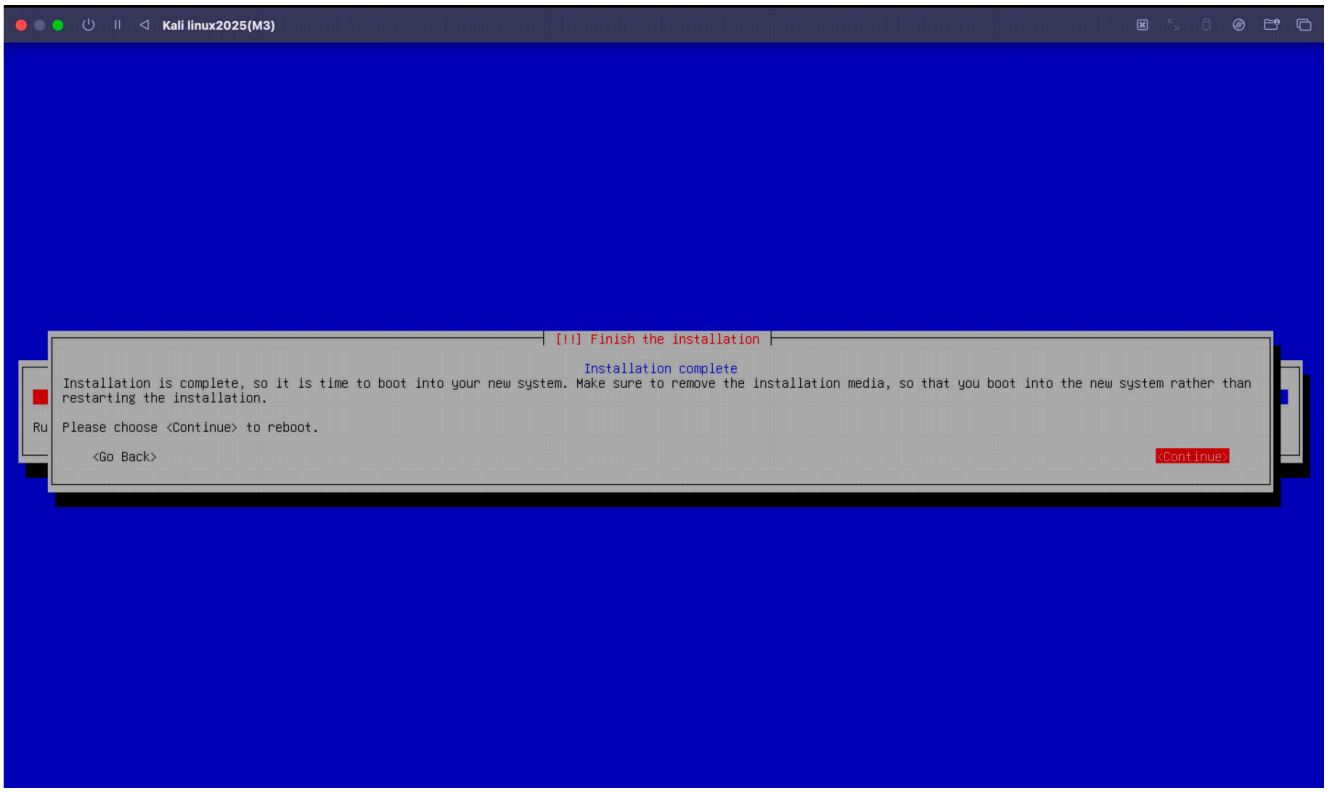


Step 15 : Select “default”

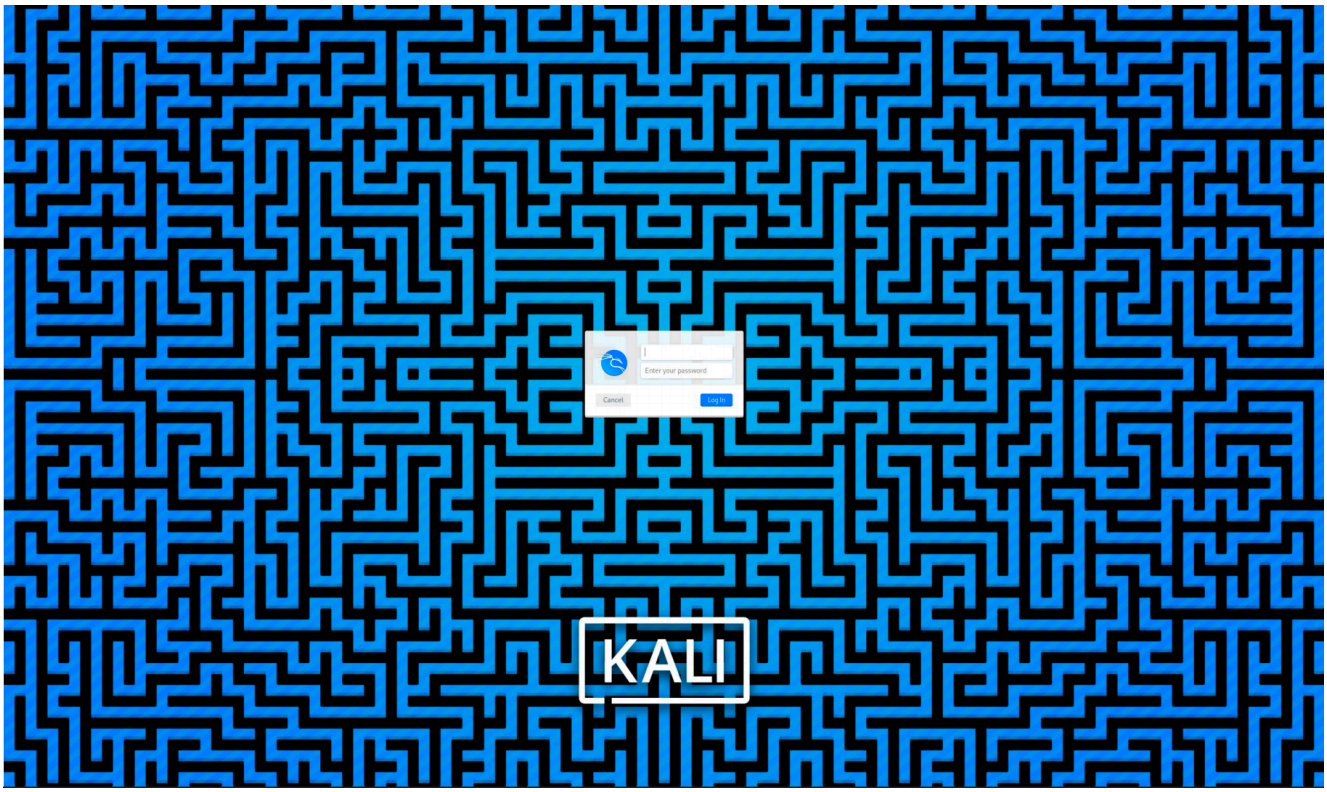




Step 16 : Click on “continue”



Step 17 : Login to your system



Result

The installation of Kali Linux on macOS using UTM was successfully completed. The virtual machine booted without errors, and Kali Linux ran smoothly with the allocated resources.

Conclusion

Using UTM to install Kali Linux on macOS offers a secure, efficient, and user-friendly virtualization solution. UTM's native support for Apple Silicon and its simple interface make it an excellent choice for cybersecurity professionals, students, and hobbyists who want to explore Kali Linux without dual-booting or complex setups.