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Introdution

An Operating System (OS) is system software that manages computer hardware and software resources and provides common services for computer programs. Linux Mint is a modern, open-source operating system based on Ubuntu Linux. It is designed to be easy to use, stable, and efficient, especially for users transitioning from Microsoft Windows.

The motivation for selecting Linux Mint is its long-term support (LTS), strong community backing, security, low hardware requirements, and excellent performance in both physical and virtual environments.

## Objectives

To understand the installation and configuration of Linux Mint

To practice operating system installation using virtualization technology

To gain hands-on experience with Linux filesystems

To understand the concept of virtualization in modern operating systems

To analyze the advantages and disadvantages of Linux Mint

To improve technical and troubleshooting skills

## Requirements

### Hardware Requirements

Component

Minimum

Recommended

CPU

1 Core

2+ Cores

RAM

2 GB

4 GB

Storage

20 GB

30+ GB

Architecture

**64-bit**

**64-bit**

## **. Hardware**

**Processor: Intel / AMD (Virtualized)**

**RAM: Allocated from host system**

**Storage: Virtual Hard Disk (VDI)**

**Network: NAT Adapter**

## **Software**

**Oracle VM VirtualBox**

**Linux Mint Cinnamon ISO**

**VirtualBox Guest Additions**

## **Installation Steps**

**Install Oracle VM VirtualBox**

**Download Linux Mint ISO (64-bit)**

**Create a new virtual machine**

**Name the VM: Desalegn Gedif**

**Select OS Type: Linux → Ubuntu (64-bit)**

**Allocate RAM and CPU**

**Create virtual hard disk**

**Attach Linux Mint ISO**

**Start the VM**

**Select Install Linux Mint**

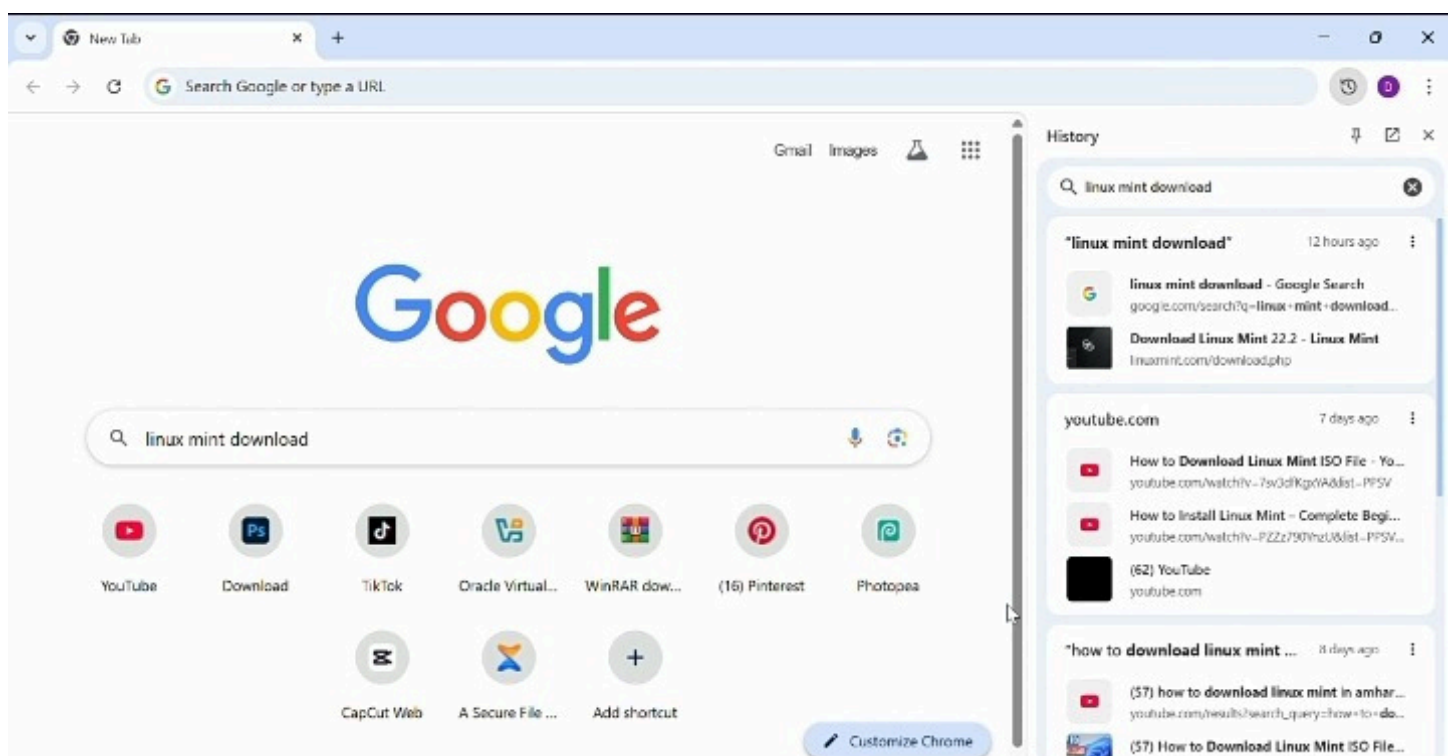
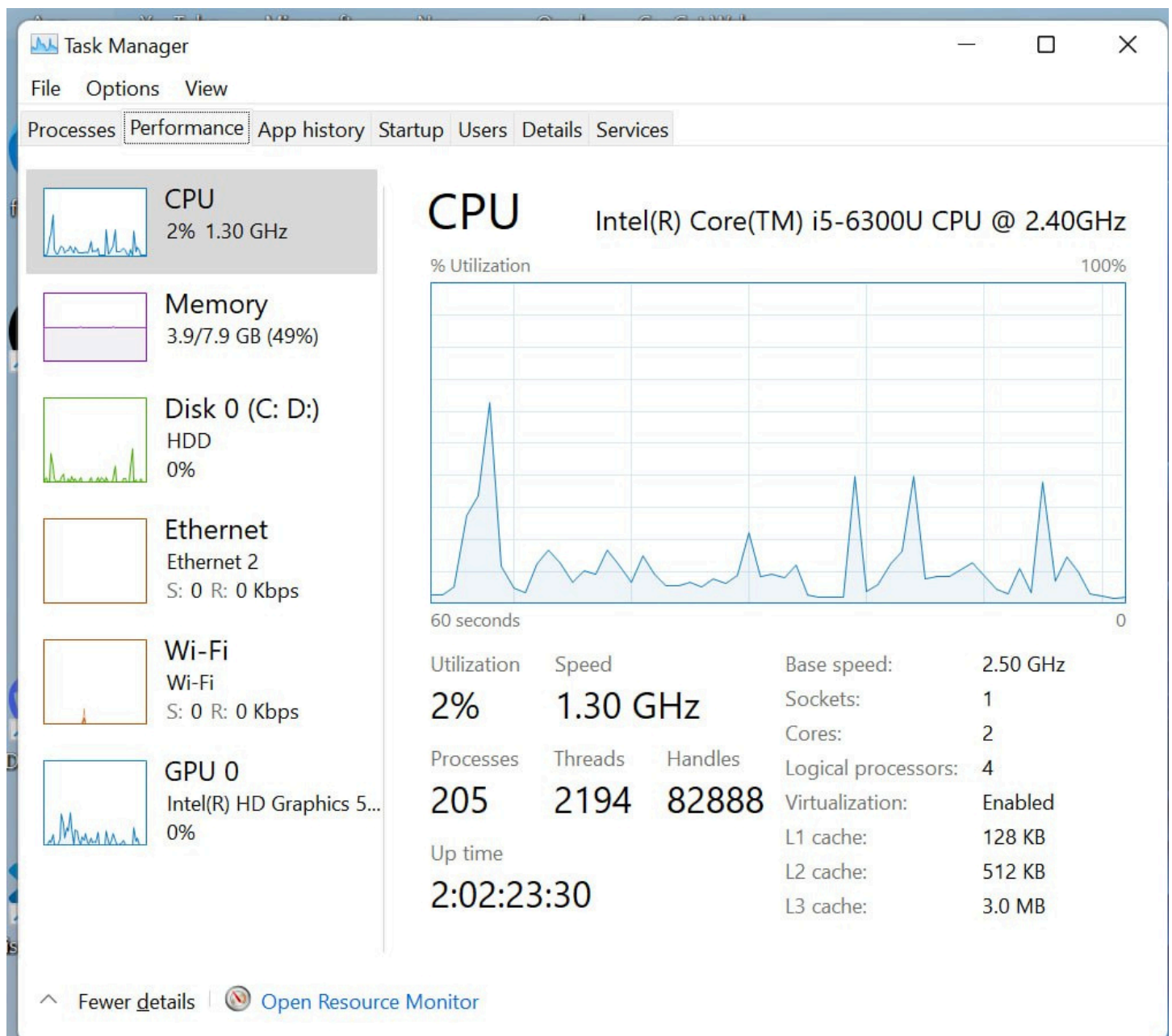
**Choose language and keyboard layout**

**Select Erase disk and install Linux Mint**

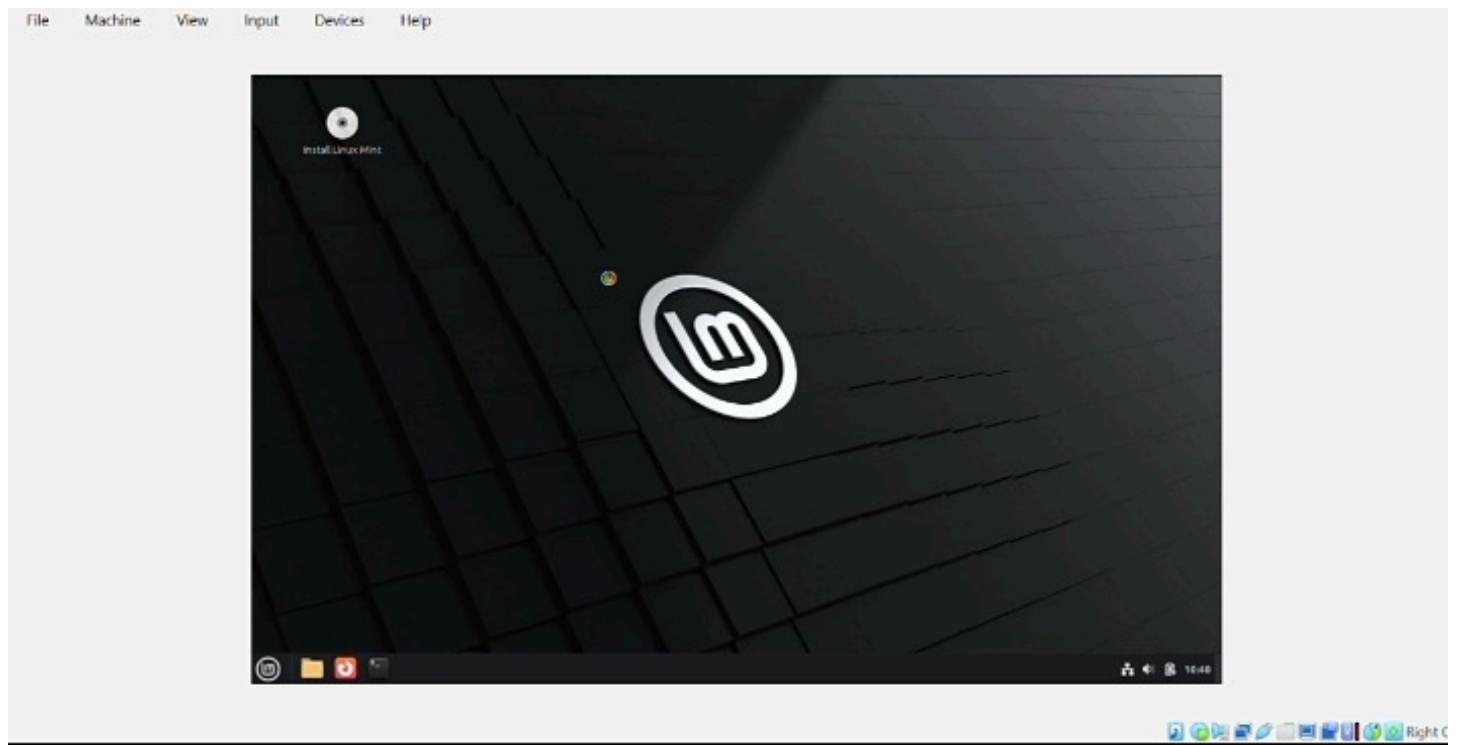
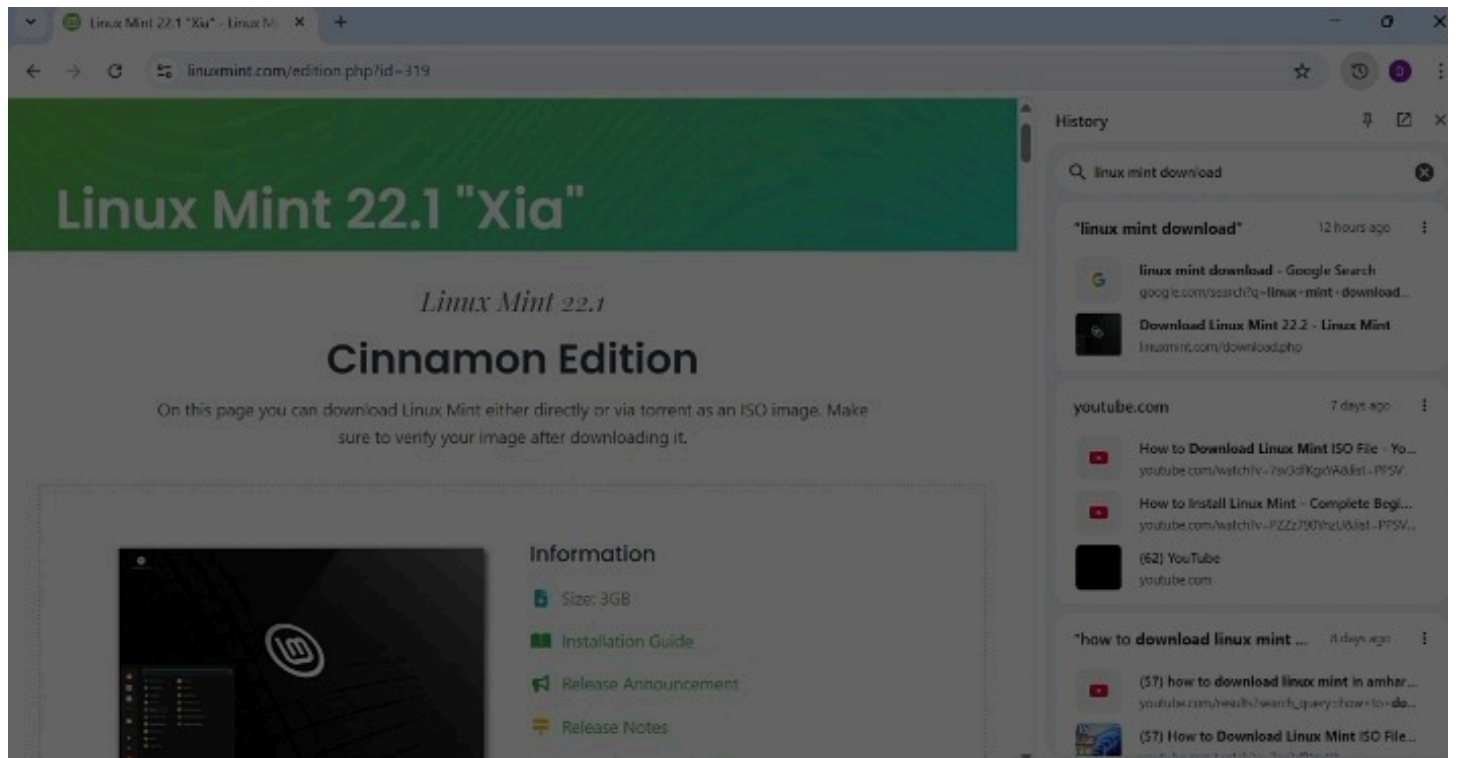
**Create user account using Desalegn Gedif**

**Finish installation and reboot**

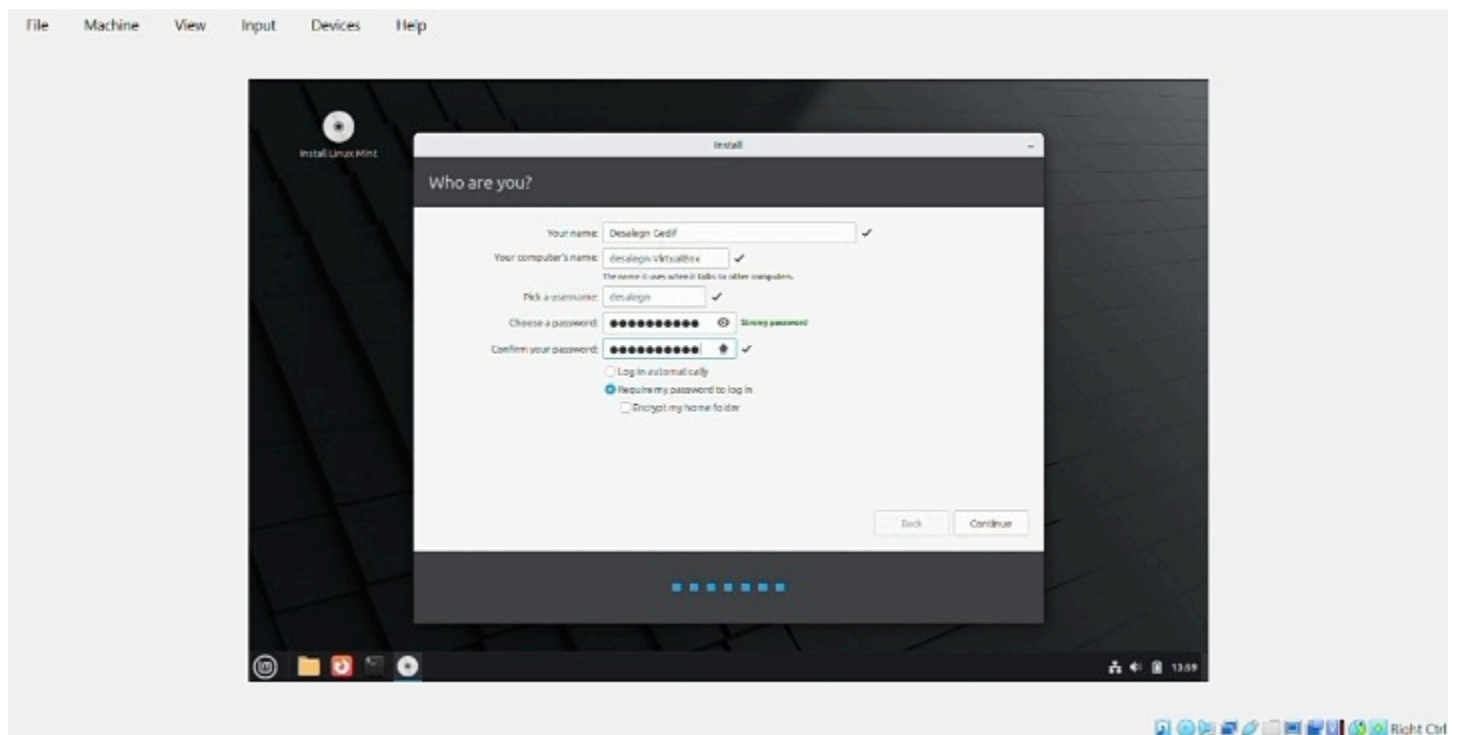
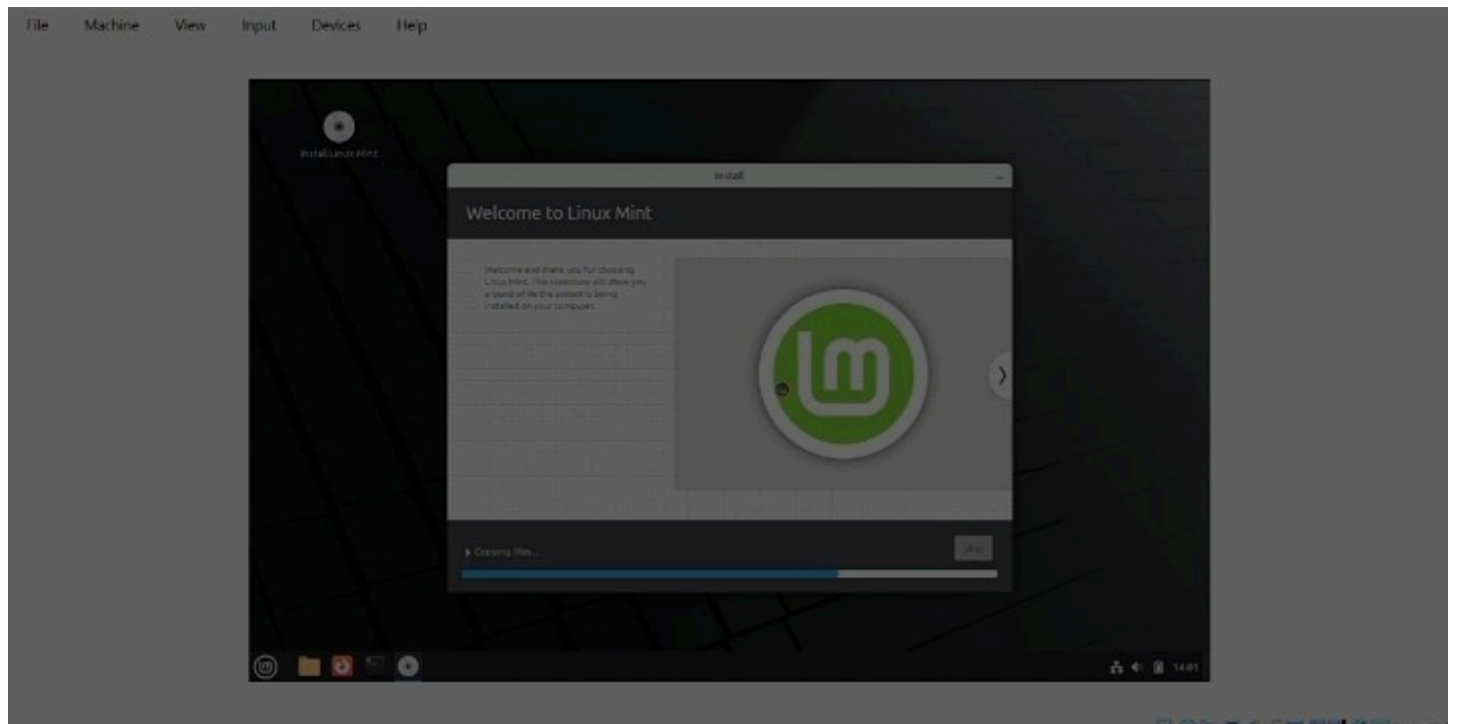
**SOME screenshots about installation**

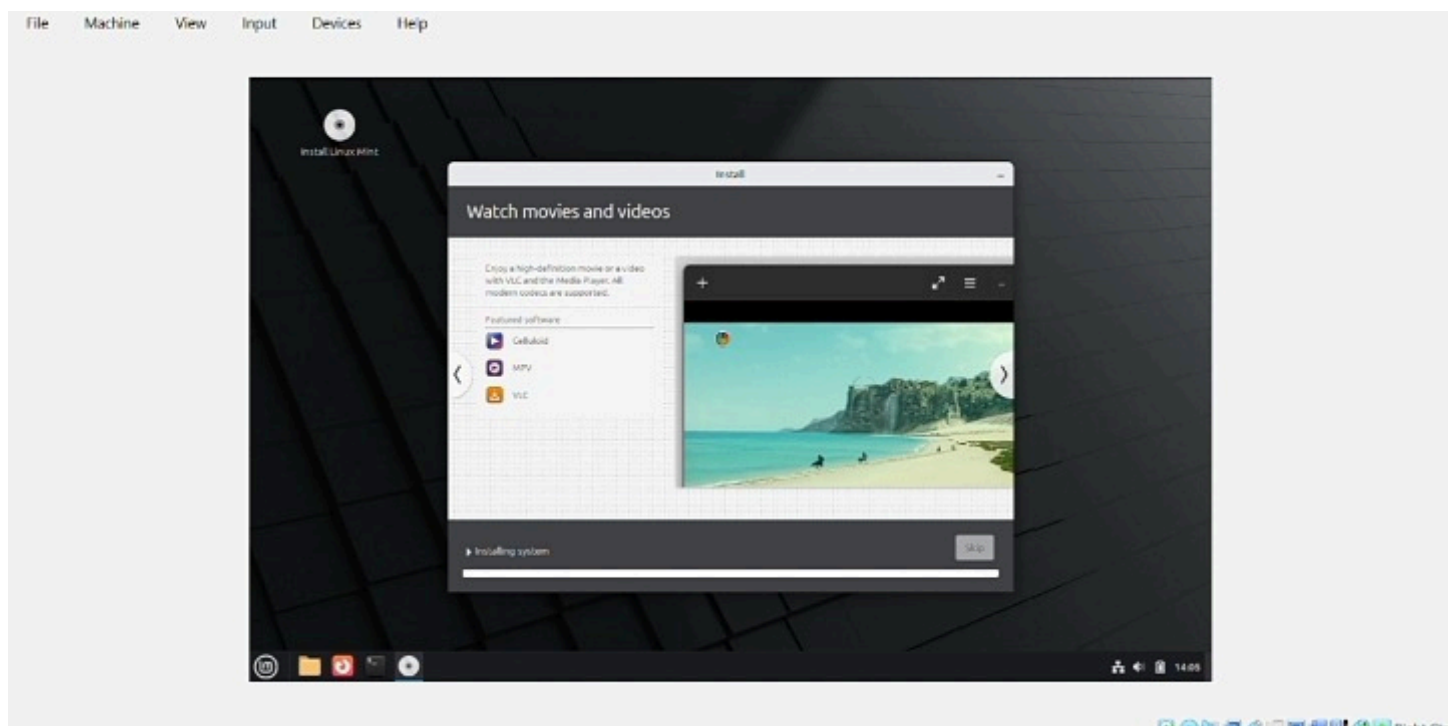
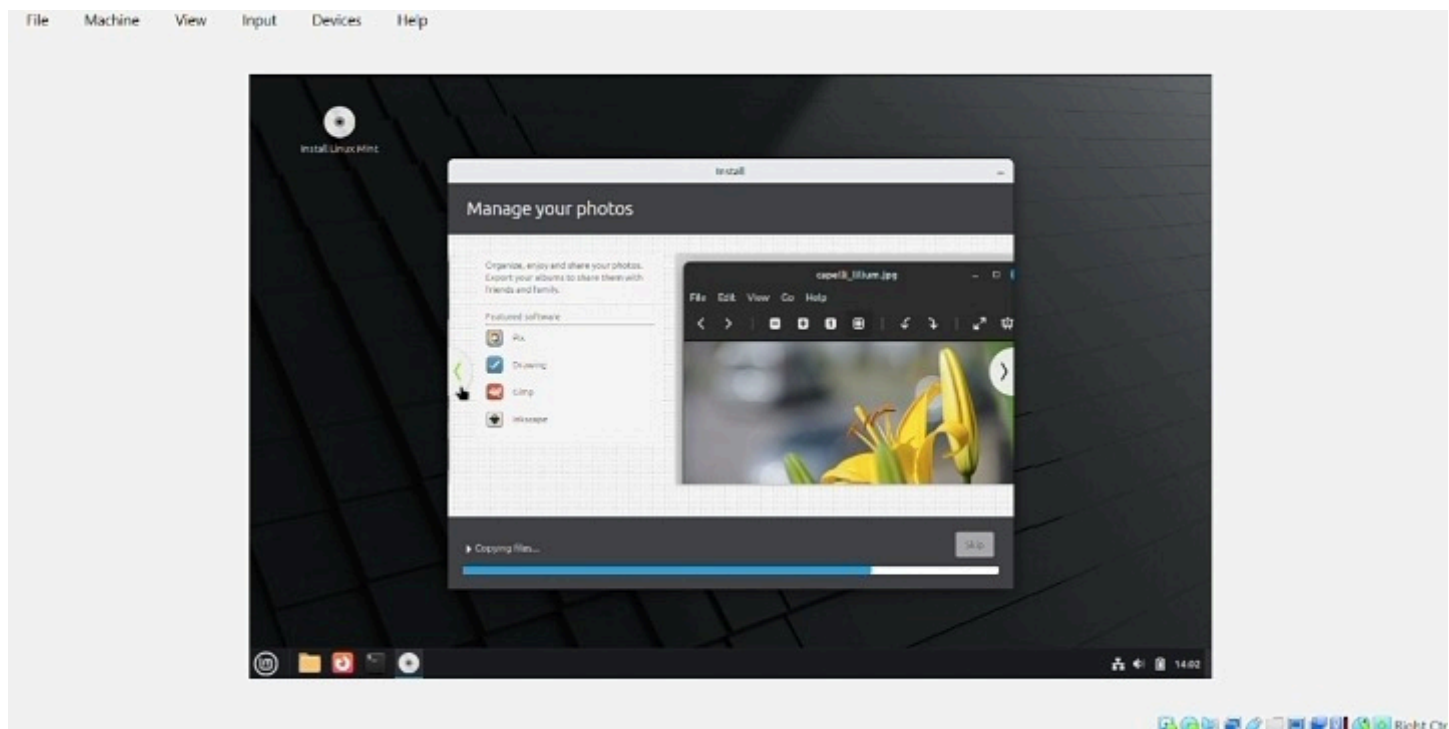




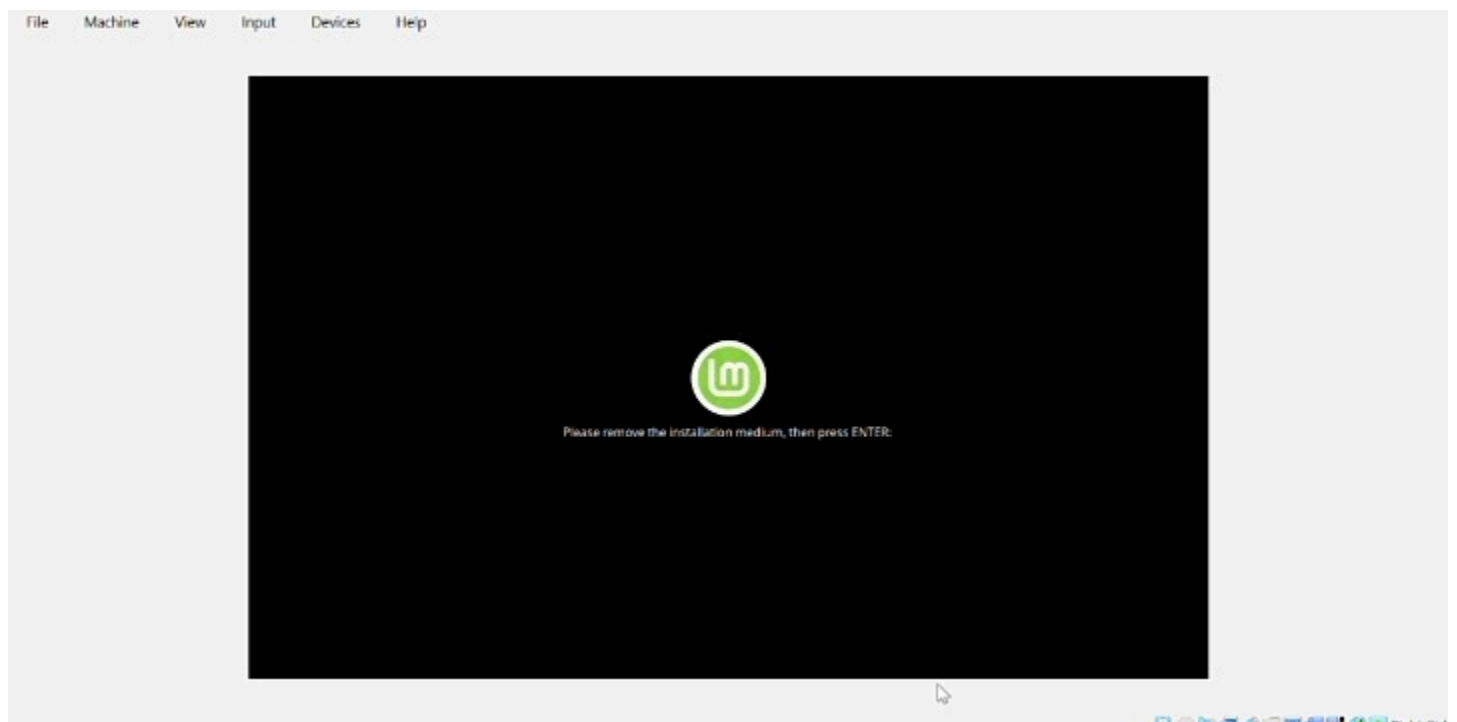
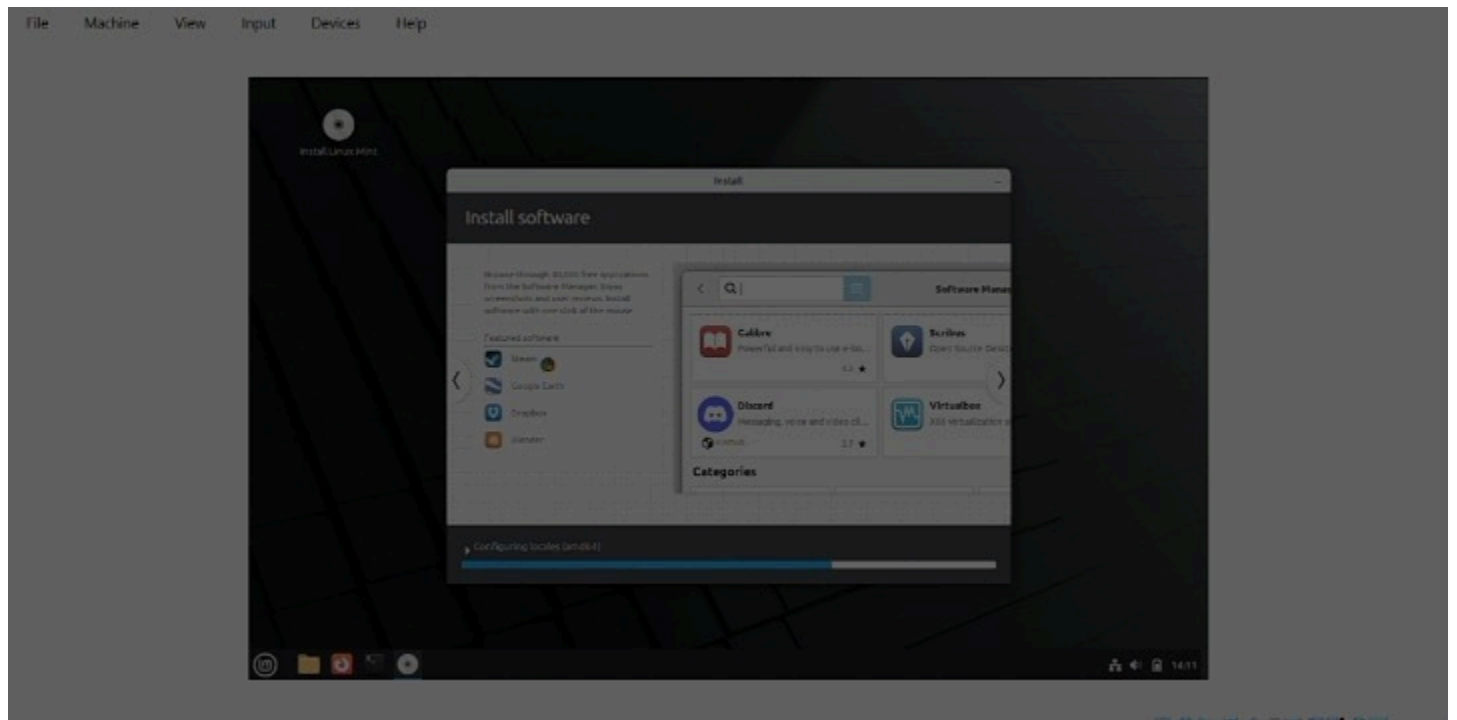


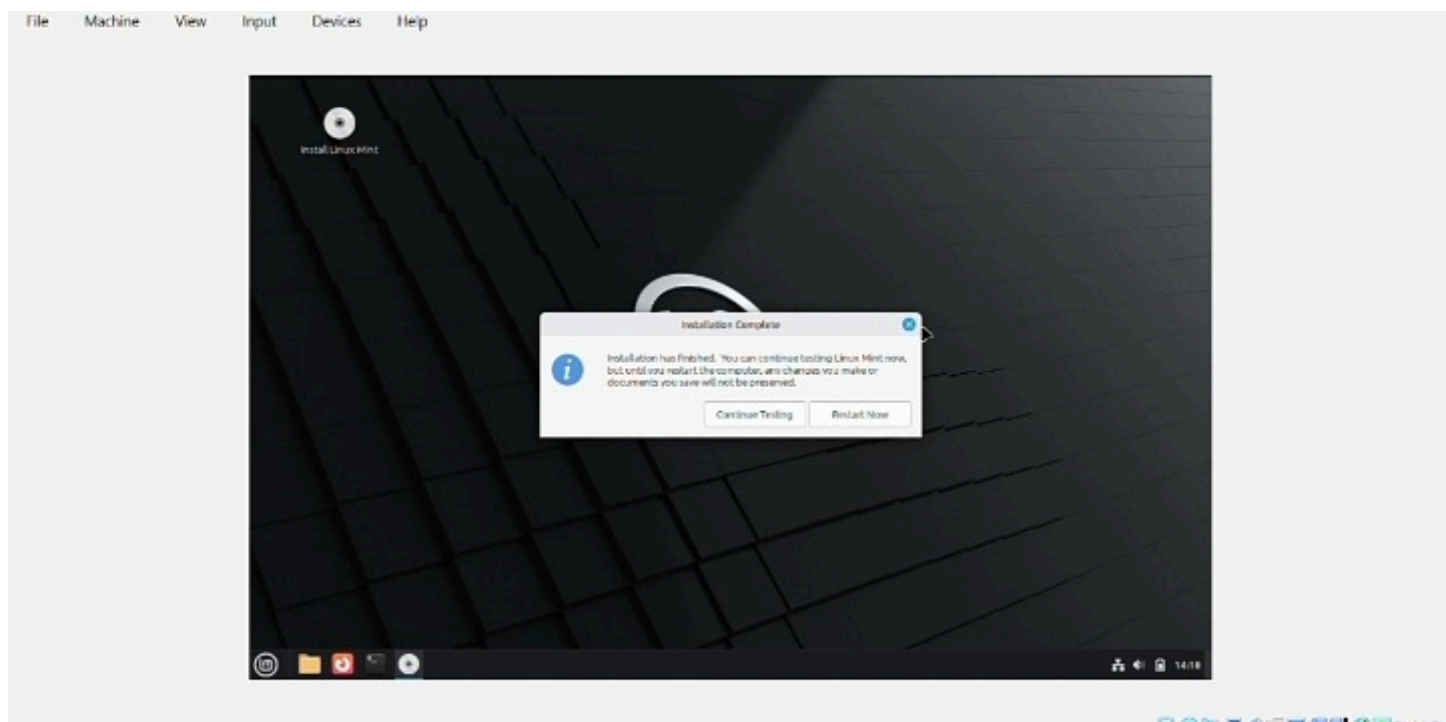
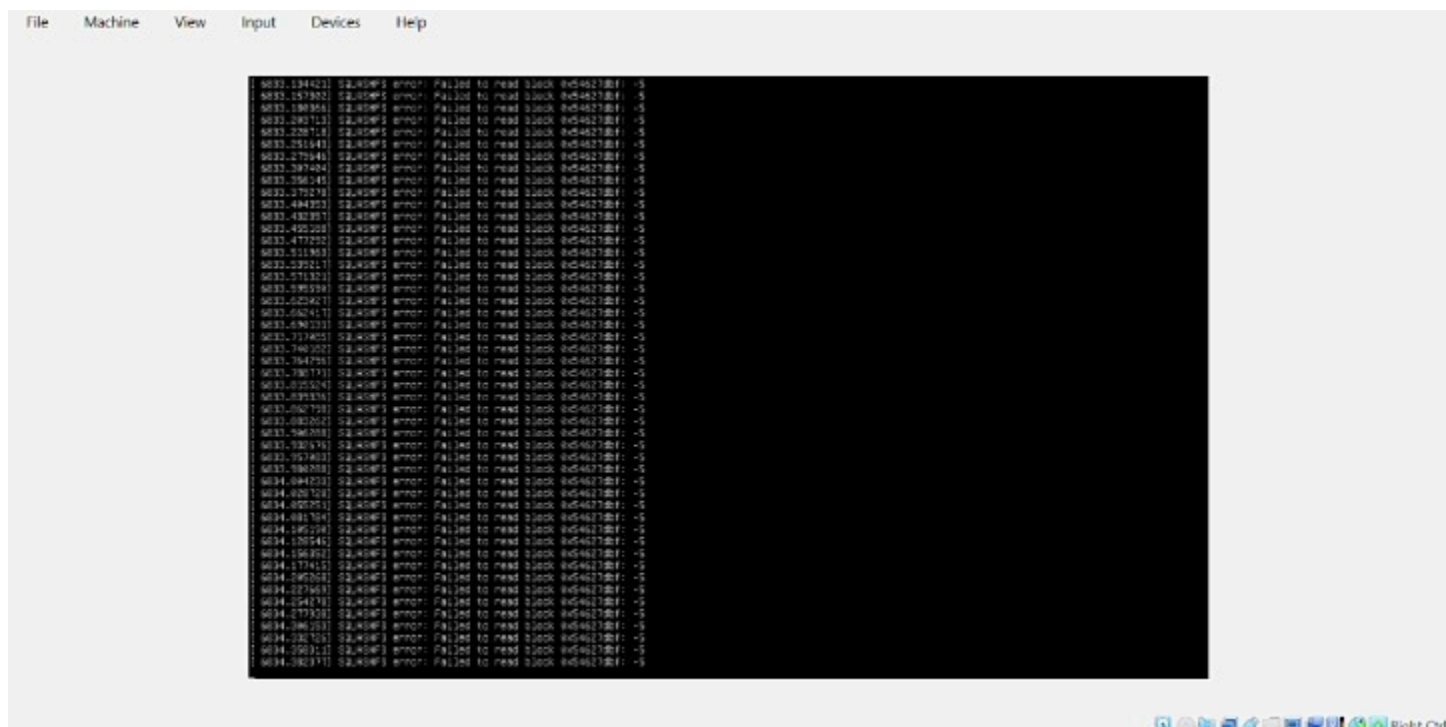


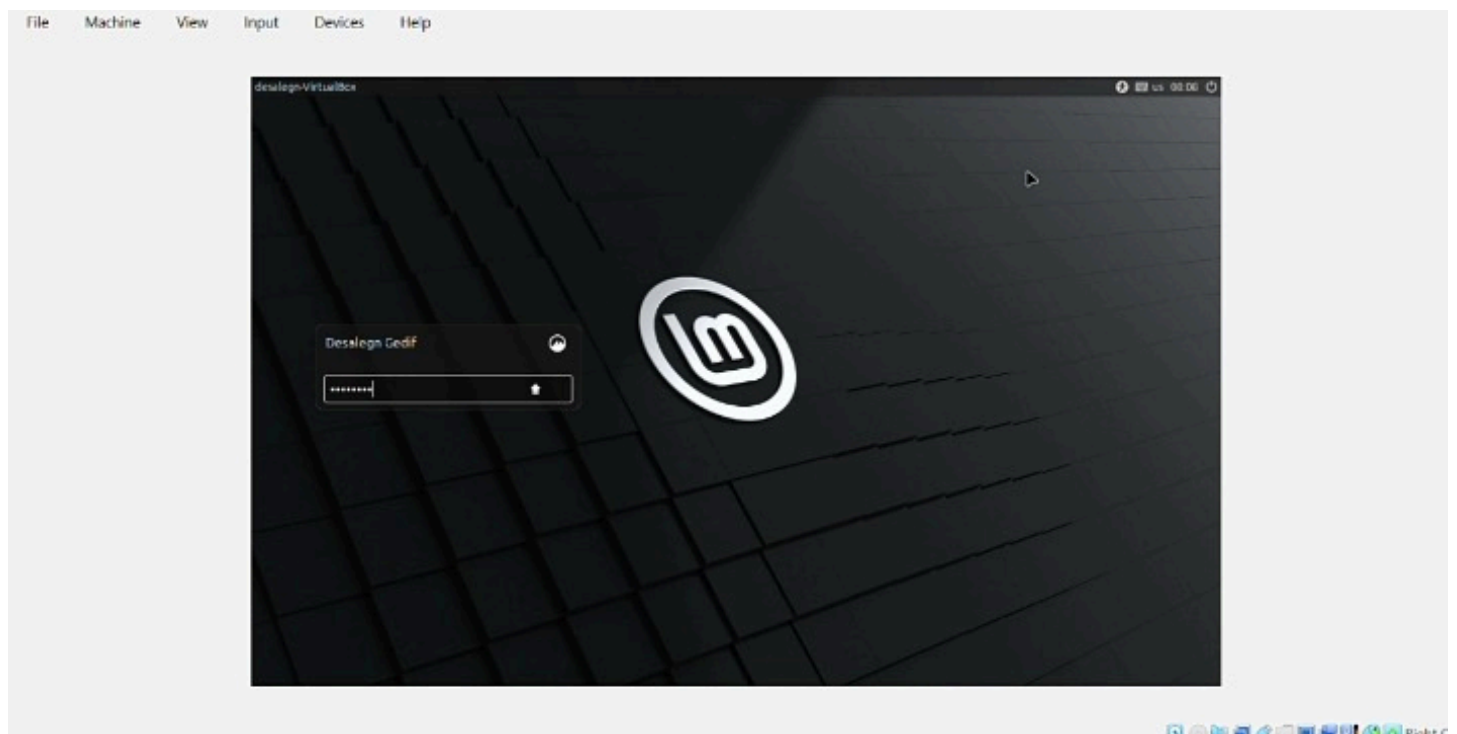












## Filesystem Support

Linux Mint supports:

**ext4 (default)**

**Btrfs**

**FAT32**

**exFAT**

**NTFS**

**Reason for ext4: Stable, fast, journaling support, large file handling.**

## Advantages and Disadvantages

### Advantages

**Free and open-source**

**Secure and stable**

**Low hardware requirements**

**Strong community support**

### Disadvantages

**Limited proprietary software**

**Less gaming support**

**Learning curve for beginners**

## **Virtualization in Modern Operating Systems**

**What:** Running multiple OSs on one machine

**Why:** Cost saving, testing, efficiency

**How:** Using a hypervisor like VirtualBox

## **Historical Development of Linux Mint**

**Released in 2006**

**Based on Ubuntu**

**Designed for desktop users**

**Popular in education and enterprise**

## **Future Outlook / Recommendation**

**Improved Wayland support**

**Better driver compatibility**

**Enhanced package management**

**Increased enterprise adoption**

## **Conclusion**

**Linux Mint is a reliable, secure, and easy-to-use operating system. It is suitable for students, developers, and professionals, especially when used in a virtualized environment. Successfully installed Linux Mint in a virtualized environment. Gained practical insight into OS installation, partitioning, and GUI setup. Virtualization provides a safe, flexible platform for learning and testing**

**THE END THANK YOU**