Bahir Dar University

Bahir Dar Institute of Technology

Faculty of Computing department of software engineering

Course name: Operating system and system programming

Title:linux lite

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1 Installation of Linux Lite in Virtual Environment

1.1 Introduction (Background & Motivation)

Linux Lite is a Linux distribution based on Ubuntu LTS created by a team of programmers led by Jerry Bezencon.Created in 2012, it uses a customized implementation of Xfce as its desktop environment, and runs on the main Linux kernel.

The distribution aims to appeal to Linux beginners and Windows users, by trying to make the transition from Windows to Linux as smooth as possible. To achieve this, the distribution tries to conserve many of the visual and functional elements of Windows, to create an experience that can be perceived as familiar by Windows users. Additionally, the distro sets out to "dispel the myth that Linux is hard to use", by trying to offer a simple and intuitive desktop experience.

It is a lightweight, user-friendly, and open-source Linux distribution based on Ubuntu. Designed to be simple and efficient, it is an excellent choice for users transitioning from Windows or those with older hardware. Linux Lite combines ease of use with powerful features, making it a popular choice for both beginners and experienced users.

Background:

Based on Ubuntu LTS:

- Linux Lite leverages the stability and long-term support of Ubuntu LTS, making it a reliable and well-maintained choice.

Created by a team:

- The development of Linux Lite is led by Jerry Bezencon and a team of programmers, ensuring a dedicated and focused approach.

Born in 2012:

- The distribution's origins can be traced back to 2012, indicating a history of refinement and improvement.

Custom Xfce Desktop:

- Linux Lite uses a customized version of the Xfce desktop environment, known for its lightweight and efficient design.

Motivation:

Bridging the gap:

- The core motivation is to ease the transition from Windows to Linux for users who may be hesitant to switch.

Beginner-friendly:

- Linux Lite is designed with beginners in mind, offering a simpler and more intuitive interface than some other Linux distributions.

Dispel the myth:

- The distribution aims to demonstrate that Linux can be easy to use and accessible to a wider audience.

Lightweight and efficient:

- Linux Lite prioritizes a lightweight design, making it suitable for older or less powerful hardware.

Unix philosophy:

- The development team adheres to the Unix philosophy of writing programs that do one thing and do it well, leading to a streamlined and efficient operating system.

1.2 Objectives

Linux Lite is a lightweight Linux distribution based on Ubuntu, designed to be simple, fast, and user-friendly, especially for users transitioning from Windows. Its objectives can be summarized as follows:

1. Ease of Use
   - Provide a familiar interface for Windows users.
   - Minimize the learning curve for new Linux users.
2. Lightweight and Efficient
   - Run efficiently on older or low-spec hardware.
   - Use minimal system resources while maintaining performance.
3. Out-of-the-Box Functionality
   - Pre-installed software for daily tasks (office, media, internet, etc.).
   - Includes proprietary drivers and codecs where needed (e.g., for Wi-Fi or media playback).
4. Security and Stability
   - Based on Ubuntu LTS (Long Term Support), ensuring stability.
   - Regular security updates and patching.
5. User Empowerment
   - Offer tools like Lite Tweaks and Lite Software to manage and customize the system easily.
   - Provide comprehensive documentation and community support.
6. Accessibility and Affordability
   - Free to download and use.
   - Designed to be accessible to all, regardless of financial status or technical background.
7. Low Barrier to Entry
   - Simple installation process.
   - Friendly Welcome screen and help manual for new users.

1.3 Requirements

Before installing Linux Lite, it is essential to ensure that your system meets the minimum requirements of hardware and software. Here are the key system requirements for Linux Lite to ensure that it runs smoothly on most modern hardware:

Processor:

- 1 ghz processor (Intel or AMD). A dual-core processor or higher is recommended for better performance, especially for multitasking or running resource-intensive applications.

RAM:

- 1 GB of memory is the minimum requirement, but 2 GB or more is recommended for optimal performance, particularly if you plan to use multiple applications simultaneously or work with large files.

Storage:

- 10 GB of free disk space is required for installation. However, if you plan to store large files or install additional software, consider using a larger SSD for faster performance and more storage capacity.

Graphics:

- A graphics card capable of 1024x768 resolution is the minimum requirement. For a better visual experience, especially with high-resolution displays, a dedicated graphics card is recommended.

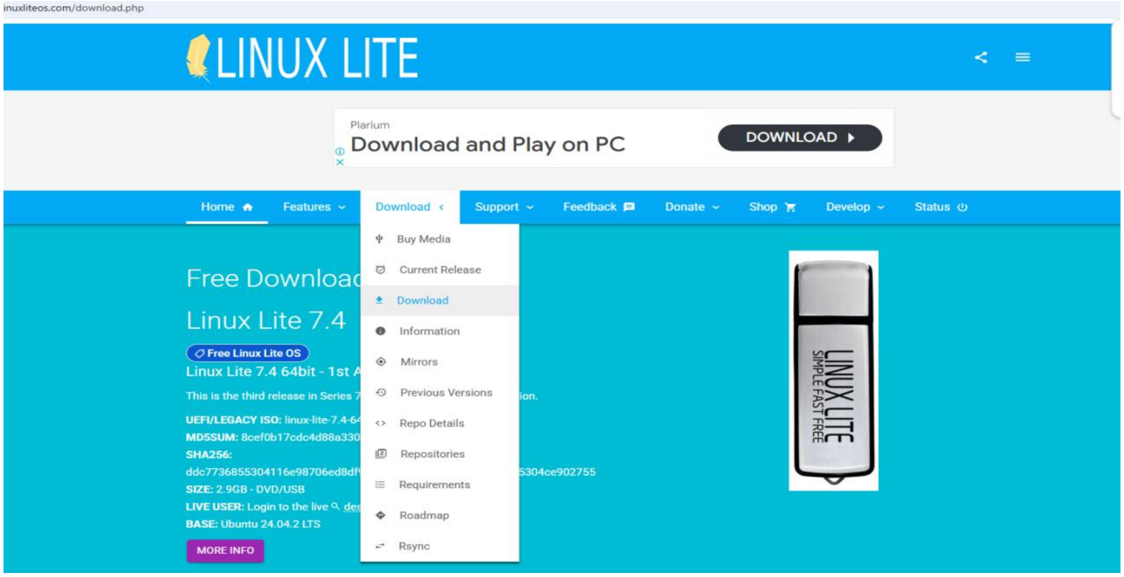
Internet:

- An active internet connection is necessary for downloading updates, installing additional software, and accessing online services.

1.4 Installation Steps

Step 1: Download Linux Lite ISO

1. Visit https://www.linuxliteos.com
2. Go to the **Download** page.
3. Download the latest .iso file (e.g., linux-lite-6.6-64bit.iso).



Free Download

Linux Lite 7.4

Linux Lite 7.4 64bit - 1st A

This is the third release in Series 7 ion.

UEFI/LEGACY ISO: linux-lite-7.4-64

MD5SUM: 8cef0b17cdc4d88a330

SHA256: ddc7736855304116e98706ed8df 5304ce902755

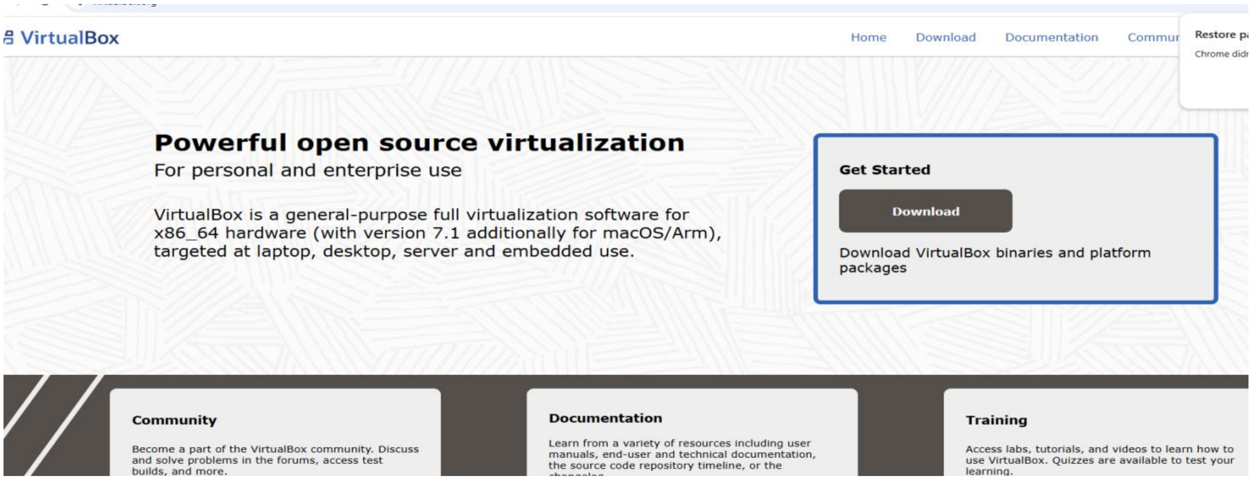
SIZE: 2.9GB - DVD/USB

LIVE USER: Login to the live des

BASE: Ubuntu 24.04.2 LTS

Step 2: Install VirtualBox

1. Go to https://www.virtualbox.org
2. Download and install the version for your OS (Windows/macOS/Linux).



Powerful open source virtualization

For personal and enterprise use

VirtualBox is a general-purpose full virtualization software for x86_64 hardware (with version 7.1 additionally for macOS/Arm), targeted at laptop, desktop, server and embedded use.

Get Started

Download VirtualBox binaries and platform packages

Community

Become a part of the VirtualBox community. Discuss and solve problems in the forums, access test builds, and more.

Documentation

Learn from a variety of resources including user manuals, end-user and technical documentation, the source code repository timeline, or the

Training

Access labs, tutorials, and videos to learn how to use VirtualBox. Quizzes are available to test your learning.

Step 3: Create a New Virtual Machine

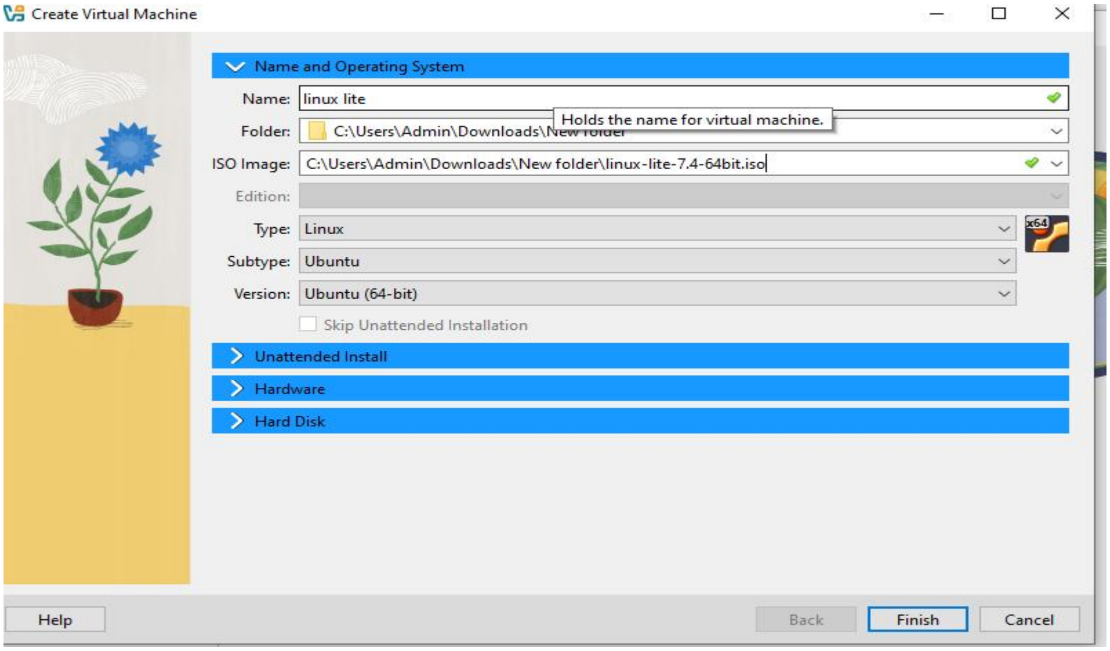
1. Open **VirtualBox**.
2. Click **New** or press Ctrl + N.

➢ In the dialog:

✓ Name: Linux Lite

✓ Type: Linux

✓ Version: Ubuntu (64-bit)



Create Virtual Machine

Name and Operating System

Name: linux lite

Holds the name for virtual machine.

Folder: C:\Users\Admin\Downloads\New folder

ISO Image: C:\Users\Admin\Downloads\New folder\linux-lite-7.4-64bit.iso

Edition:

Type: Linux

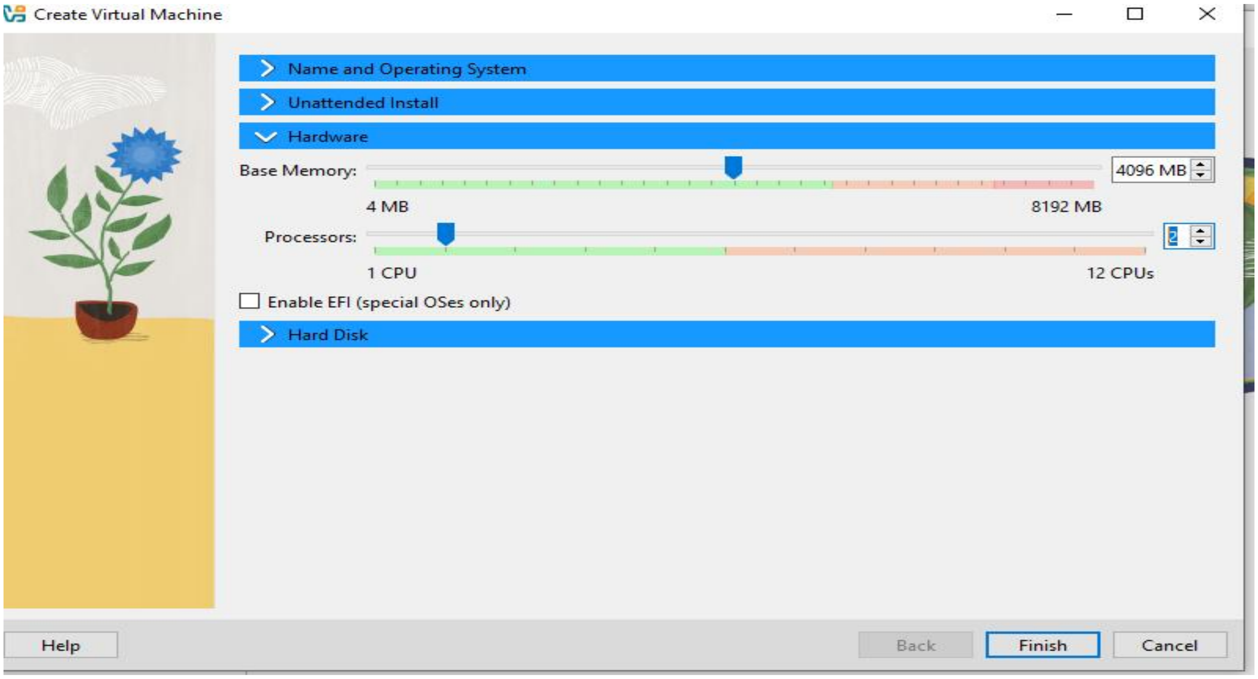
Subtype: Ubuntu

Version: Ubuntu (64-bit)

□ Skip Unattended Installation

Step 4: Allocate Memory (RAM)

1. Minimum: **2048 MB** (Recommended: 4096 MB)
2. Click **Next**



Create Virtual Machine

Hardware

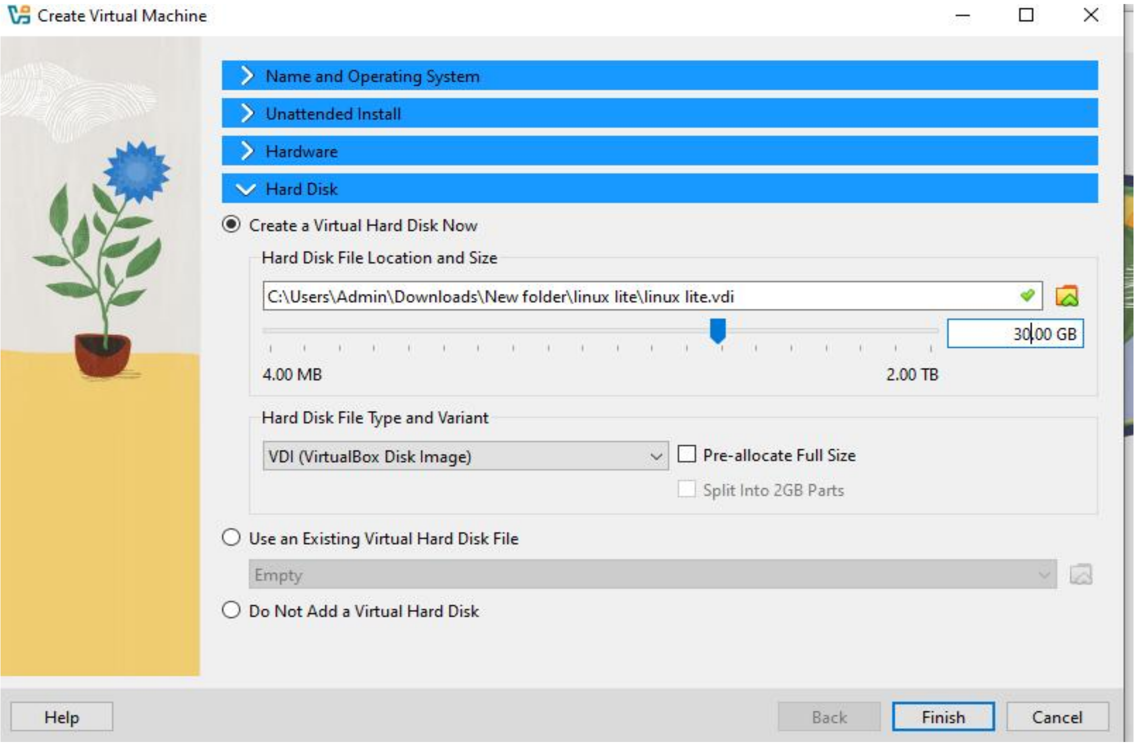
Base Memory: 4096 MB (4 MB – 8192 MB)

Processors: 2 (1 CPU – 12 CPUs)

□ Enable EFI (special OSes only)

Step 5: Create a Virtual Hard Disk

1. Size: **30 GB or more**
2. Click **Finsh**



Create Virtual Machine

● Create a Virtual Hard Disk Now

Hard Disk File Location and Size

C:\Users\Admin\Downloads\New folder\linux lite\linux lite.vdi

30.00 GB

4.00 MB — 2.00 TB

Hard Disk File Type and Variant

VDI (VirtualBox Disk Image)

□ Pre-allocate Full Size

□ Split Into 2GB Parts

○ Use an Existing Virtual Hard Disk File

Empty

○ Do Not Add a Virtual Hard Disk

Step 6: Adjust VM Settings

Select the created VM, click **Settings**

Under **System**:

✓ Uncheck **Floppy** in Boot Order.

Under **Processor**:

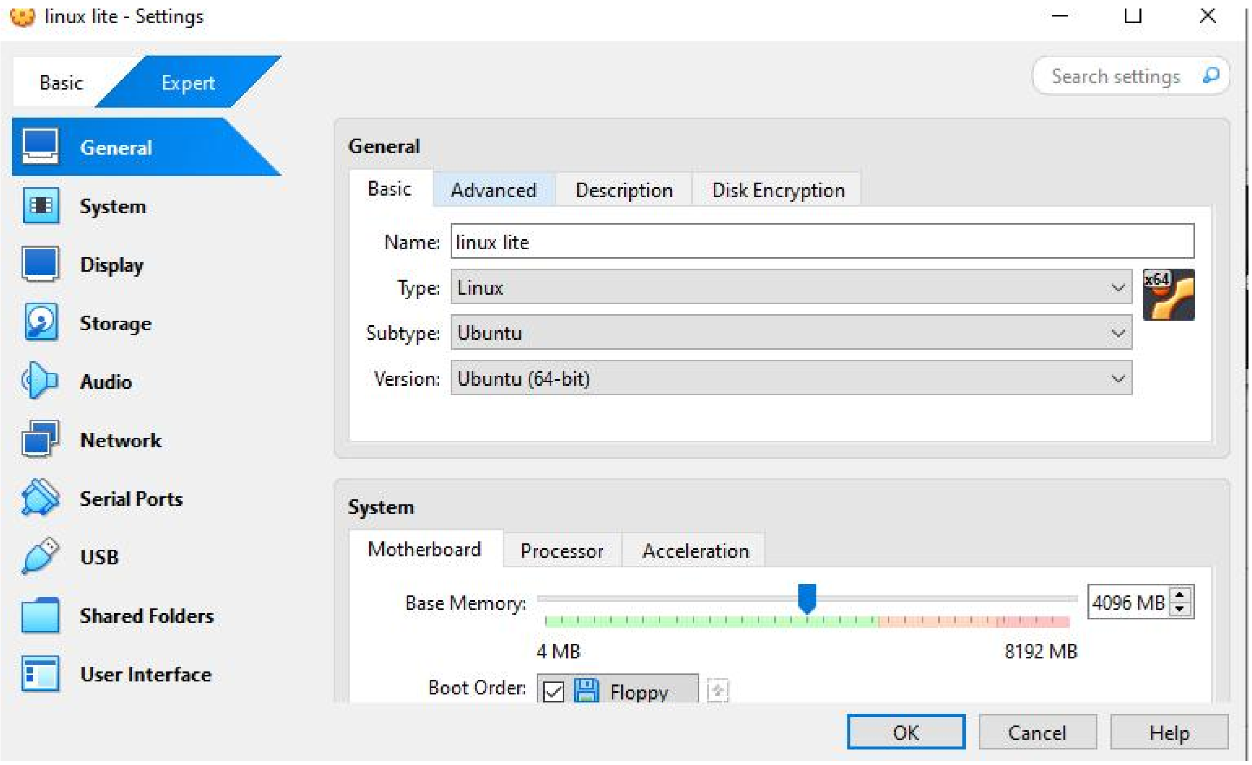
✓ Set CPUs to **2 or more**.

Under **Display**:

✓ Set **Video Memory** to **128 MB**

Under **Storage**:

✓ Select **Empty** under Controller: IDE
✓ Click **Disk Icon → Choose a disk file**
✓ Select your downloaded **Linux Lite ISO**


linux lite - Settings

General

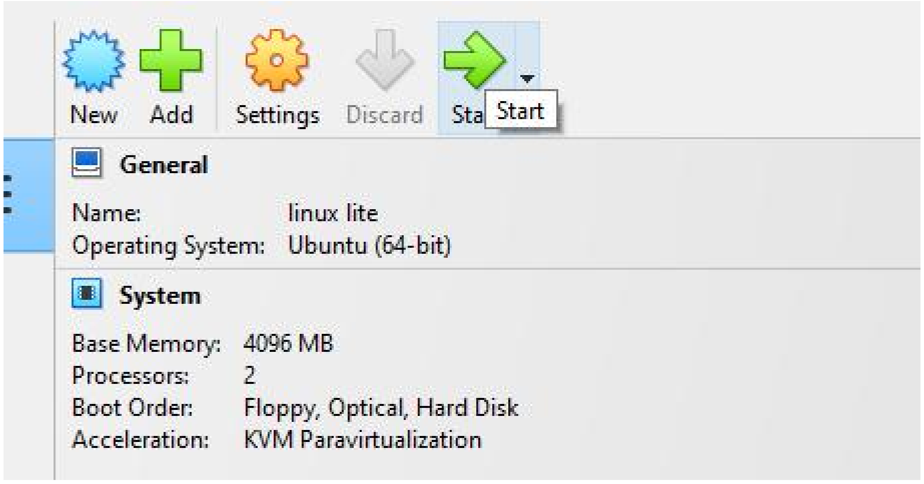
Name: linux lite
Type: Linux
Subtype: Ubuntu
Version: Ubuntu (64-bit)

System

Base Memory: 4096 MB
Boot Order: ☑ Floppy

Step 7: Start the VM

1. Click **Start**
2. Boot into the **Live Linux Lite** session.



General

Name: linux lite
Operating System: Ubuntu (64-bit)

System

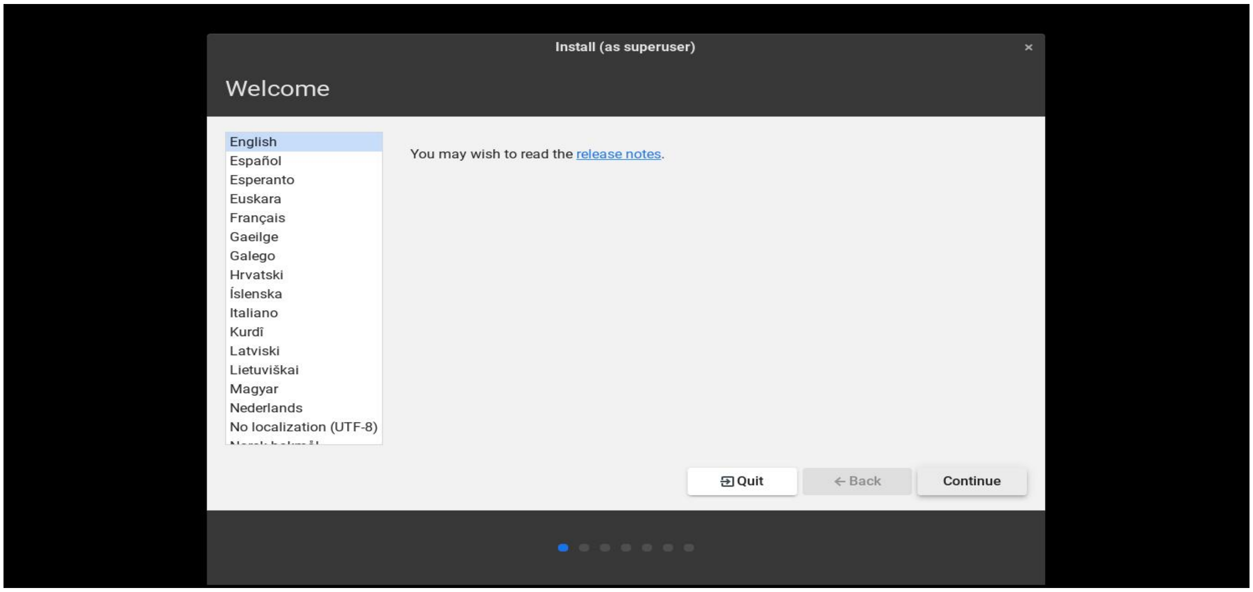
Base Memory: 4096 MB
Processors: 2
Boot Order: Floppy, Optical, Hard Disk
Acceleration: KVM Paravirtualization

Step 8: Install Linux Lite

1. Double-click **Install Linux Lite** on the desktop.
2. Follow the installer:

➢ Key Screens:

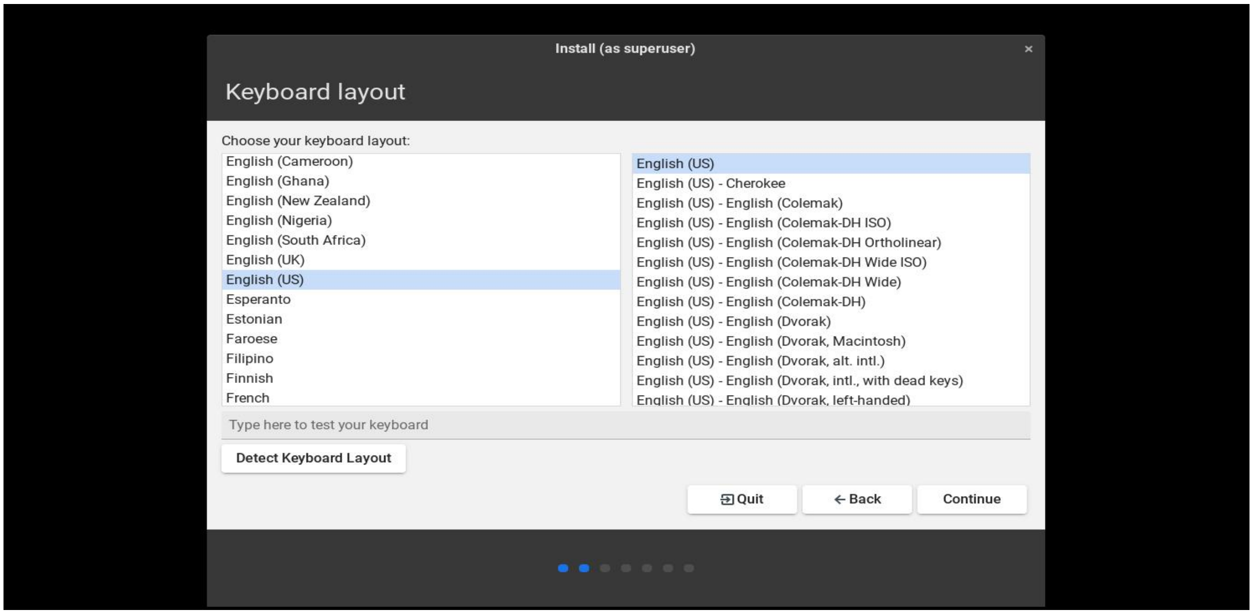
- ✓ Select **Language**



- English
- Español
- Esperanto
- Euskara
- Français
- Gaeilge
- Galego
- Hrvatski
- Íslenska
- Italiano
- Kurdî
- Latviski
- Lietuviškai
- Magyar
- Nederlands
- No localization (UTF-8)

You may wish to read the release notes.

- ✓ Choose **Keyboard Layout**

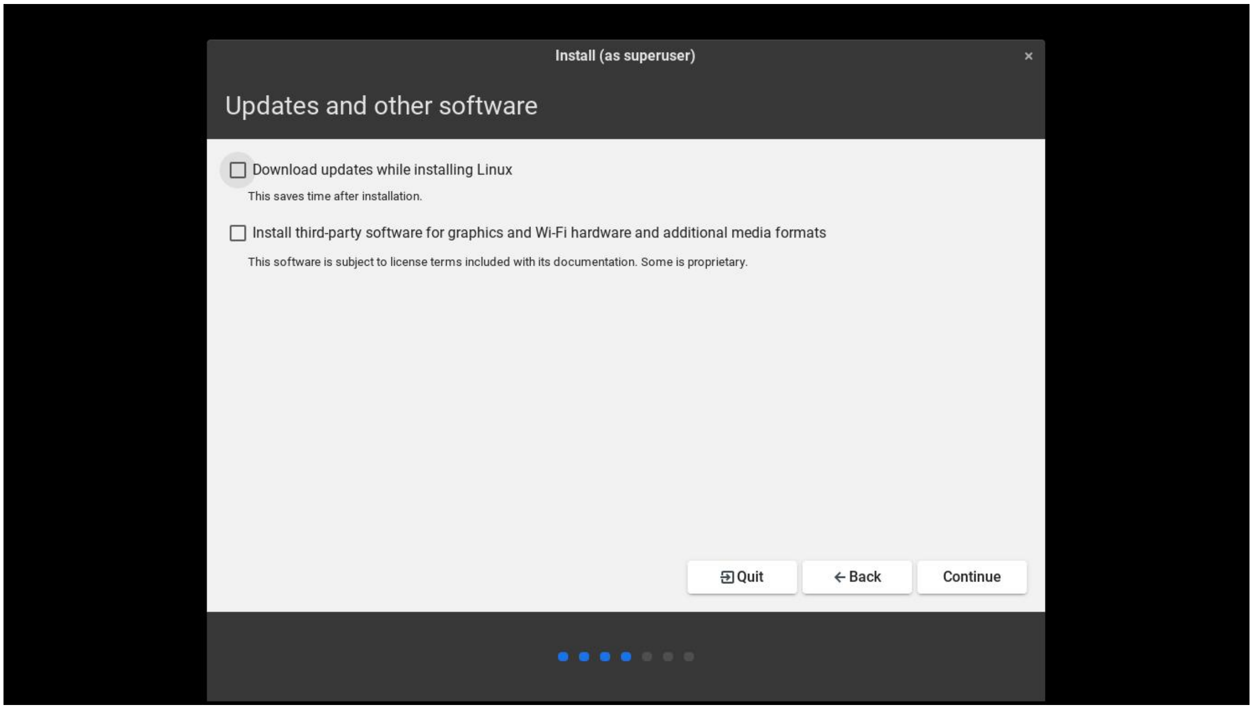


Choose your keyboard layout:

English (Cameroon)	English (US)
English (Ghana)	English (US) - Cherokee
English (New Zealand)	English (US) - English (Colemak)
English (Nigeria)	English (US) - English (Colemak-DH ISO)
English (South Africa)	English (US) - English (Colemak-DH Ortholinear)
English (UK)	English (US) - English (Colemak-DH Wide ISO)
English (US)	English (US) - English (Colemak-DH Wide)
Esperanto	English (US) - English (Colemak-DH)
Estonian	English (US) - English (Dvorak)
Faroese	English (US) - English (Dvorak, Macintosh)
Filipino	English (US) - English (Dvorak, alt. intl.)
Finnish	English (US) - English (Dvorak, intl., with dead keys)
French	English (US) - English (Dvorak, left-handed)

Type here to test your keyboard

- ✓ **Install third-party software** (optional)


Install (as superuser)

Updates and other software

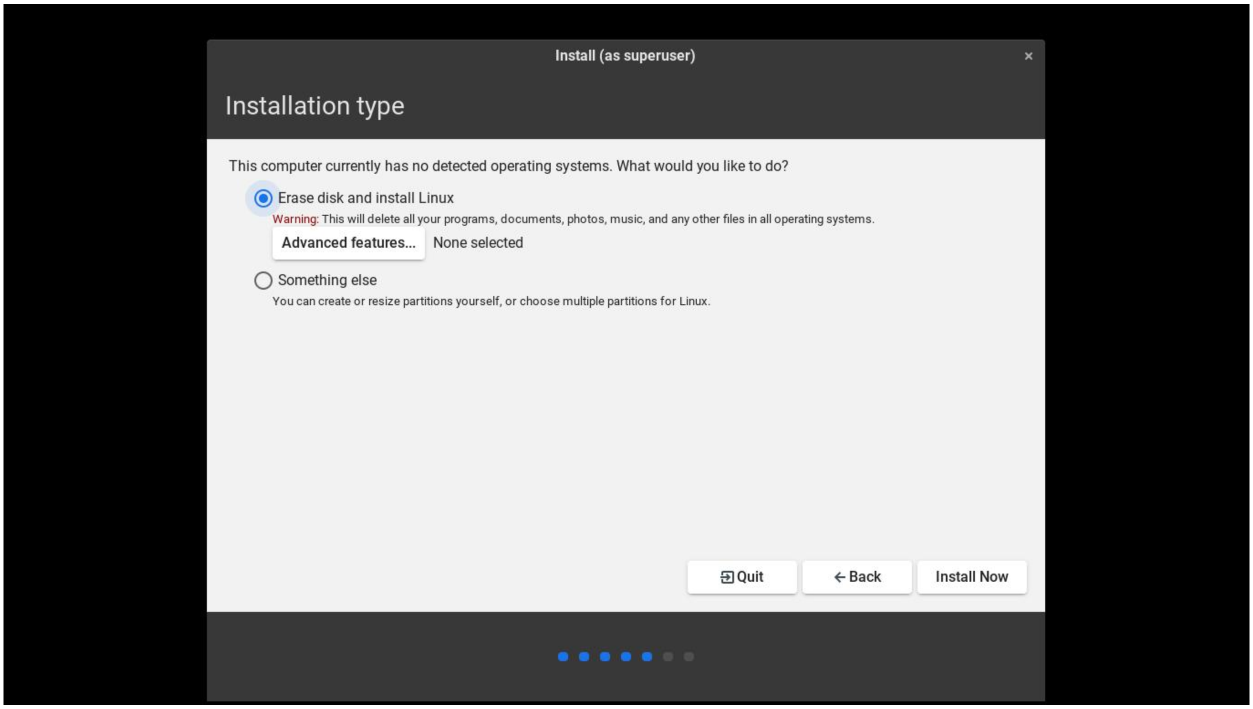
□ Download updates while installing Linux

This saves time after installation.

□ Install third-party software for graphics and Wi-Fi hardware and additional media formats

This software is subject to license terms included with its documentation. Some is proprietary.

- ✓ Installation Type: Choose **Erase disk and install Linux Lite**


Install (as superuser)

Installation type

This computer currently has no detected operating systems. What would you like to do?

● Erase disk and install Linux

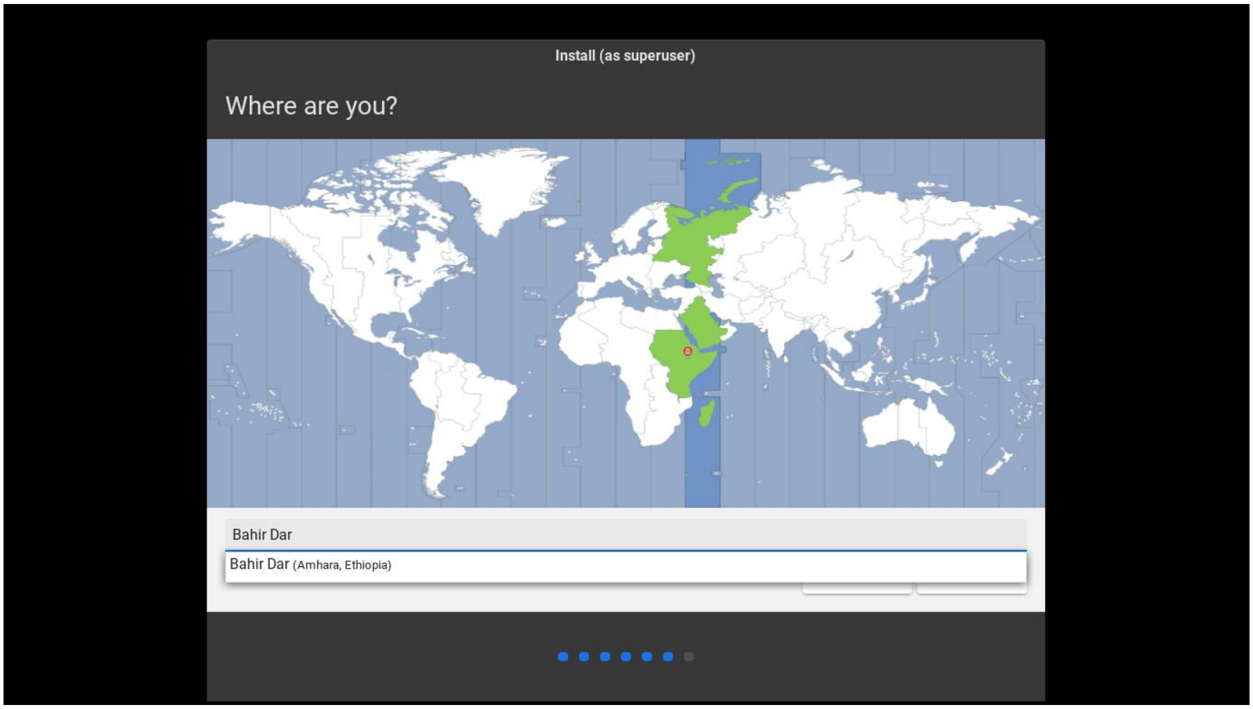
Warning: This will delete all your programs, documents, photos, music, and any other files in all operating systems.

Advanced features... None selected

○ Something else

You can create or resize partitions yourself, or choose multiple partitions for Linux.

- ✓ Set **Time Zone**



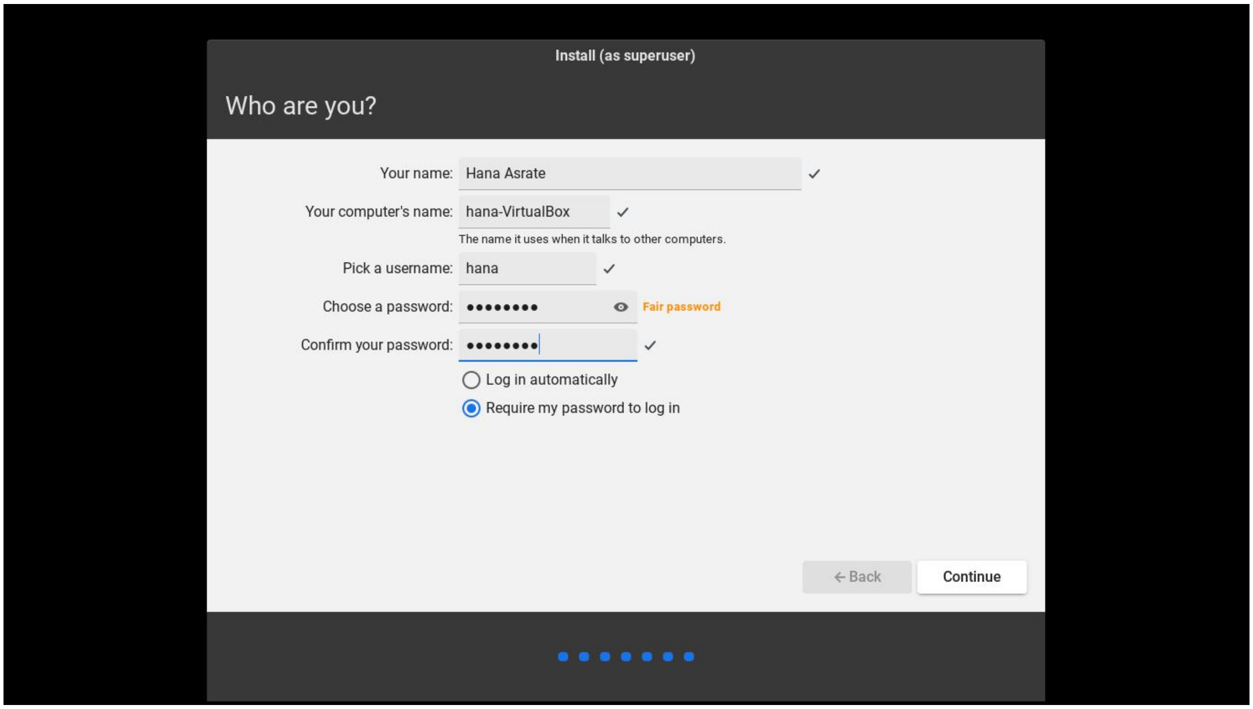
Install (as superuser)

Where are you?

Bahir Dar

Bahir Dar (Amhara, Ethiopia)

✓ Enter **Username & Password**



Install (as superuser)

Who are you?

Your name: Hana Asrate ✓

Your computer's name: hana-VirtualBox ✓

The name it uses when it talks to other computers.

Pick a username: hana ✓

Choose a password: •••••••• Fair password

Confirm your password: •••••••• ✓

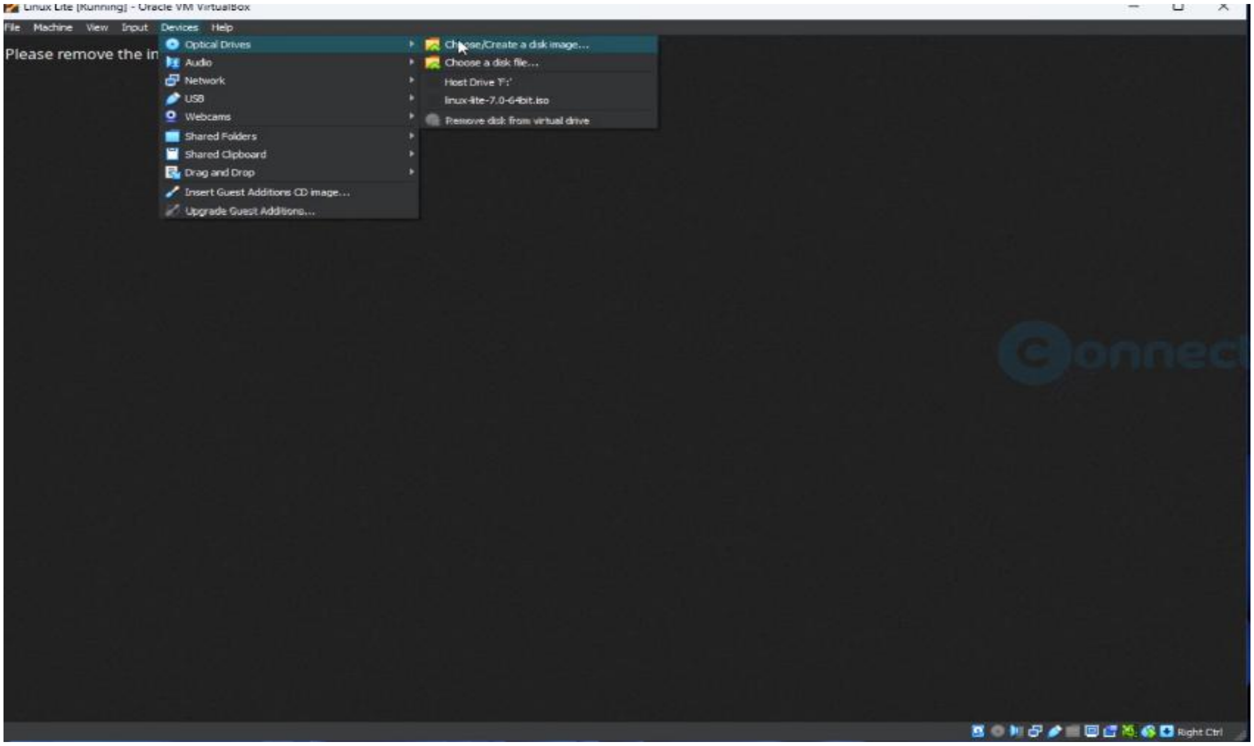
○ Log in automatically

● Require my password to log in

Step 9: Remove ISO After Install

- When prompted to remove installation media:

1. Go to **Devices > Optical Drives > Remove disk from virtual drive**
2. Press **Enter** to reboot.

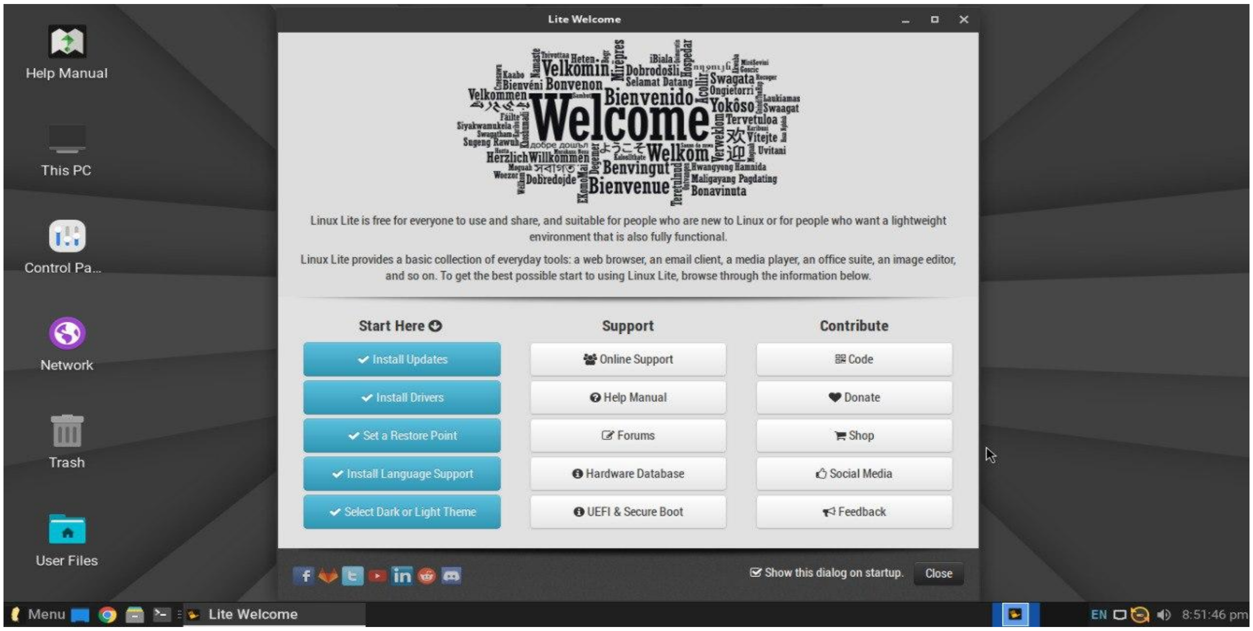


Linux Lite [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Optical Drives
Audio
Network
USB
Webcams
Shared Folders
Shared Clipboard
Drag and Drop
Insert Guest Additions CD image...
Upgrade Guest Additions...
Choose/Create a disk image...
Choose a disk file...
Host Drive 'F:'
linux-lite-7.0-64bit.iso
Remove disk from virtual drive
Right Ctrl

Please remove the in

Step 10: First Boot & Updates

1. Log in with your credentials.
2. Open **Terminal** and run:



Linux Lite is free for everyone to use and share, and suitable for people who are new to Linux or for people who want a lightweight environment that is also fully functional.

Linux Lite provides a basic collection of everyday tools: a web browser, an email client, a media player, an office suite, an image editor, and so on. To get the best possible start to using Linux Lite, browse through the information below.

☑ Show this dialog on startup.

1.5 Issues (Problems Faced)

- **Problem1**

System Freeze During Installation
During the installation of Linux Lite using VirtualBox, the system frequently became unresponsive at the stage where files were being copied and configured. The progress bar stopped moving, and mouse and keyboard input were no longer responsive in the virtual machine.

- **Problem2**

Couldn’t Find Screenshots Taken During Linux Lite Installation in VirtualBox

When trying to document the installation process of Linux Lite inside a VirtualBox VM, I attempted to take screenshots but couldn't find them afterward. It was unclear where VirtualBox saves screenshots or how to transfer files out of the VM

1.6 Solutions

- **Solution for problem 1:**

When I see the system freeze during installation—where the installer gets stuck while copying files and the virtual machine stops responding—I do my research on the internet to understand the cause. I found that this issue usually happens because the virtual machine doesn't have enough resources allocated, such as RAM or CPU power. It can also occur if the VM window is minimized or if the host system is under heavy load. To fix it, I shut down the VM, open the settings in VirtualBox, and increase the RAM from 1024 MB to at least 2048 MB. I also enable 2 CPUs in the processor settings and make sure hardware virtualization (VT-x/AMD-V) is turned on. After these adjustments, I restart the installation and avoid minimizing the VM during the process. With these changes, the installation completes successfully without freezing.

- **Solution for problem 2:**

After searching, I found that VirtualBox provides a feature called **Shared Folders**, which allows files (like screenshots) to be exchanged between the **host machine (Windows)** and the **guest machine (Linux Lite)** easily.

Here’s solution I get:

Step 1: Create a Shared Folder on Windows

Step 2: Add the Shared Folder in VirtualBox

Step 3: Install Guest Additions in Linux Lite

Step 4: Access Shared Folder in Linux Lite

1.7 Filesystem Support

Here's a summary of the filesystem support for Linux Lite, including common filesystem types such as NTFS, FAT32, exfat, ext4, Btrfs, ZFS, HFS+, and APFS, with a brief explanation of why each is supported or not:

Filesystem Support in Linux Lite

1. NTFS (New Technology File System)

- Supported? Yes, with additional drivers.
- Why? NTFS is primarily used in Windows environments. Linux systems can read and write NTFS partitions using the NTFS-3G driver. While NTFS support is functional, it is not the native Linux filesystem, and performance can sometimes be slower compared to native Linux filesystems.

2. FAT32 (File Allocation Table 32)

- Supported? Yes.
- Why? FAT32 is an older filesystem commonly used in flash drives, external hard drives, and SD cards. It is supported by nearly all operating systems, including Linux, and is suitable for drives that need to be used across different platforms (Windows, macos, Linux). However, it has a file size limitation of 4GB, which is a significant downside for larger files.

3. Exfat (Extended File Allocation Table)

- Supported? Yes, with additional drivers.
- Why? Exfat is an extended version of FAT32, designed for large file support (over 4GB) and is widely used in modern flash drives and SD cards. Linux supports exfat through the exfat-fuse driver, which enables reading and writing to exfat-formatted drives.

4. Ext4 (Fourth Extended File System)

- Supported? Yes.
- Why? Ext4 is the default filesystem for most Linux distributions, including Linux Lite. It is reliable, high-performing, and supports large volumes and files. Ext4 provides excellent performance and features, including journaling, making it the most common choice for Linux-based systems.

5. Btrfs (B-tree File System)

- Supported? Yes.
- Why? Btrfs is a newer filesystem that aims to provide advanced features such as snapshots, compression, and better error recovery. It is still considered experimental for some use cases, but it's supported in Linux for users who need its features, particularly for managing large data volumes and servers.

6. ZFS (Zettabyte File System)

- Supported? Yes, with additional installation.
- Why? ZFS is a high-performance filesystem originally developed by Sun Microsystems for Solaris and is used in systems that require advanced features like high storage capacities, data integrity, and snapshots. Linux supports ZFS, but it requires the installation of ZFS on Linux (zol). Note that ZFS is not open-source and is not included in the official Linux kernel due to licensing concerns, so it requires a third-party package.

7. HFS+ (Mac OS Extended)

- Supported? Yes, partially.
- Why? HFS+ is the native filesystem for older macos devices. Linux can read and write to HFS+ volumes, but it requires the hfsprogs package for full read/write support. However, HFS+ is not as well-supported as other Linux filesystems, and the performance might not be optimal compared to ext4.

8. APFS (Apple File System)

- Supported? No (read-only).
- Why? APFS is the filesystem used by modern macos and ios devices. While Linux does not have full support for APFS, there are some read-only tools available, such as apfs-fuse, which allow Linux systems to read APFS volumes. However, writing to APFS volumes is not natively supported.

1.8 Advantage and Disadvantage

Advantages of Linux Lite:

Lightweight and Resource-Friendly:

- Linux Lite is designed to be lightweight, requiring minimal system resources to run smoothly, even on older hardware.

Easy to Use:

- It boasts a user-friendly interface and is considered beginner-friendly, particularly for those transitioning from Windows.

Cost-Effective:

- Linux Lite is free to use and doesn't require any license fees, making it a cost-effective alternative.

Customizable:

- Users can customize the desktop environment to their preferences, offering a degree of control over the operating system's appearance and functionality.

Open Source:

- As an open-source operating system, Linux Lite benefits from a large community of developers and users who contribute to its development and support.

Stable and Secure:

- Linux Lite is known for its stability and robust security features, making it a reliable choice for everyday use.

Reviving Old Hardware:

- Linux Lite can breathe new life into older computers and laptops, extending their lifespan and usefulness.

Disadvantages of Linux Lite:

Limited Software Availability:

- While Linux Lite offers a good selection of applications, some users may encounter limitations in finding specific software, particularly for niche or specialized tasks.

Potential Compatibility Issues:

- While Linux Lite generally has good hardware compatibility, some older or less common devices might experience compatibility issues or require specific drivers, according to a Quora thread.

Steeper Learning Curve for Some:

- While user-friendly, Linux Lite may still present a steeper learning curve for users unfamiliar with Linux-based operating systems, according to a Reddit post.

Lower Market Share:

- Compared to more popular operating systems like Windows or macos, Linux Lite has a smaller market share, which can impact software availability and support.

Lack of Standardization:

- Linux distributions, including Lite, may have some differences in their configuration and file structures compared to more mainstream operating systems, leading to some inconsistencies for users accustomed to Windows or macos.

1.9 Conclusion

The installation and usage of Linux Lite provide a user-friendly experience for both new and experienced users, offering a stable and fast operating system for everyday computing needs. By supporting a wide range of filesystems, including ext4, NTFS, FAT32, exfat, and more, Linux Lite ensures compatibility across various devices and platforms. Its ability to work with popular filesystems, combined with advanced features like Btrfs and ZFS, makes it a solid choice for those seeking a robust system for personal or professional use.

Additionally, the Linux Lite community, with its active support forum and continuous updates, ensures that the system is always improving. By maintaining a focus on stability and ease of use, Linux Lite stands as an excellent choice for users transitioning from other operating systems, especially those coming from Windows.

1.10 Future Outlook / Recommendations

➢ Enhanced Filesystem Support and Integration

While Linux Lite currently supports a wide range of filesystems, future updates could improve the integration of ZFS and Btrfs for broader usage, particularly for users requiring advanced storage features such as snapshots, data integrity, and compression. Fully integrating APFS support for macos users would also be a valuable enhancement.

➢ Improved Software Ecosystem and Compatibility

Even though Linux Lite provides a solid software repository, expanding compatibility with more proprietary applications (especially for design, gaming, and productivity) would make it even more appealing to a broader audience. Additionally, better compatibility with Wine and Proton could allow more Windows applications to run seamlessly on Linux Lite.

➢ Performance Optimizations for Modern Hardware

As new hardware and technologies emerge, continuous optimization of Linux Lite's performance, particularly for nvme ssds, multi-core processors, and high-resolution displays, would ensure that it remains competitive with other modern operating systems. Linux Lite's support for newer graphics drivers and hardware acceleration could further enhance the experience for users in demanding tasks like gaming or multimedia production.

➢ User Experience Enhancements

To improve the user experience, further refinement of the graphical user interface (GUI) and system customization options could be beneficial. Providing an even more streamlined and accessible interface for beginners, along with advanced tools for power users, will ensure that Linux Lite remains a versatile and attractive choice for a wide range of users.

➢ Community Growth and Documentation

The expansion of the Linux Lite community and user resources (such as more detailed documentation, tutorials, and video guides) could further enhance the support system for both new and experienced users. Encouraging active community participation through forums and feedback can also ensure that the system evolves to meet users' needs.

➢ Final Recommendations

For anyone looking to transition to Linux, especially those familiar with Windows, Linux Lite remains one of the best choices due to its ease of use, efficient design, and solid performance. As the system continues to evolve, embracing the above-mentioned recommendations would help solidify its position as a leading lightweight Linux distribution suitable for a wide range of users, from home desktops to educational and business environments.

2 Virtualization in Modern Operating Systems

2.1 What is Virtualization?

Operating System-based Virtualization is also known as Containerization. It is a technology that allows multiple isolated user-space instances called containers to run on a single operating system (OS) kernel. Unlike traditional virtualization, where each virtual machine (VM) requires its own OS, OS-based virtualization allows the sharing of the same OS while providing separate environments for running applications.

2.2 Why Use Virtualization?

Resource Efficiency:

- Operating system based virtualization allows for greater resource efficiency as containers do not need to emulate a complete hardware environment, which reduces resource overhead.

High Scalability:

- Containers can be quickly and easily scaled up or down depending on the demand, which makes it easy to respond to changes in the workload.

Easy Management:

- Containers are easy to manage as they can be managed through simple commands, which makes it easy to deploy and maintain large numbers of containers.

Reduced Costs:

- Operating system based virtualization can significantly reduce costs, as it requires fewer resources and infrastructure than traditional virtual machines.

Faster Deployment:

- Containers can be deployed quickly, reducing the time required to launch new applications or update existing ones.

Portability:

- Containers are highly portable, making it easy to move them from one environment to another without requiring changes to the underlying application.

Testing and Development:

- Virtualization lets users test other operating systems, software, or configurations in isolated environments without impacting the host system. This is particularly useful for developers and testers

- The host OS kernel is shared among all containers, unlike full virtualization (e.g., VMs) where each VM has its own kernel.
- The kernel enforces isolation between containers using namespaces (for process, network, filesystem isolation) and cgroups (control groups) for resource allocation (CPU, memory, disk I/O, network).
- cgroups limit and prioritize resource usage (CPU, memory, disk, network) per container.
- The kernel ensures that a container cannot exceed its allocated resources (unless explicitly allowed).
- Namespaces prevent processes in one container from seeing or interfering with processes in another.
- Programs inside a container cannot access resources outside unless explicitly granted (e.g., mounted volumes, network ports).
- The overhead comes from kernel-level isolation mechanisms (namespaces, cgroups), but it’s minimal compared to full virtualization.

3. mkdir() System Call Implementation in Linux Lite

3.1 What is mkdir()?

The mkdir() function is a system call used in UNIX-like operating systems to create a new directory. It is defined in the POSIX standard and is available via the following C headers:

```
#include <sys/stat.h>
#include <sys/types.h>
```

This function provides low-level access to the filesystem and is typically used in C programs for tasks that require directory creation.

3.2 How to Implement mkdir() in linux lite

- **Step-by-Step: Implement mkdir() in Linux Lite**

1. Open the Terminal

- Press Ctrl + Alt + T or search for **“Terminal”** in the start menu.

2. Write the C Program

1. Create a new file:

```
nano mkdir_example.c
```

2. Paste the following code:

```
#include <stdio.h>
#include <sys/stat.h>
#include <sys/types.h>
```

```
int main() {
    const char *path = "/home/yourusername/testdir";

    // Try to create the directory with owner-only permissions
    if (mkdir(path, 0700) == 0) {
        printf("Directory created successfully.\n");
    } else {
        perror("mkdir failed");
    }

    return 0;
}
```

Note : Replace /home/yourusername/testdir with your real username and desired directory path.
0700 = read/write/execute permission for you only.

3. Save and exit:

- Press Ctrl + O → Enter to save
- Press Ctrl + X to exit nano

3. Compile the C Program

- Use gcc (the GNU Compiler) to compile it:

```
gcc mkdir_example.c -o mkdir_example
```

- This creates an executable file named mkdir_example.

4. Run the Program

- Now run it with:

```
./mkdir_example
```

- If the directory is created, it will print:

```
Directory created successfully.
```

- If there's an error (e.g., directory already exists), it will print something like:

```
mkdir failed: File exists
```

5. Check If the Directory Exist

- Check with:

```
ls /home/yourusername/
```

- You should see the new directory listed (e.g., testdir).

- **Optional: Use User Input Instead of Hardcoding**

You can modify the program to ask the user for a folder name:

```
#include <stdio.h>
#include <sys/stat.h>
#include <sys/types.h>
int main() {
    char path[100];
    printf("Enter the directory path to create: ");
    scanf("%s", path);
    if (mkdir(path, 0700) == 0) {
        printf("Directory created successfully.\n");
    } else {
        perror("mkdir failed");
    }
    return 0;
}
```

References

- https://en.wikipedia.org/wiki/Linux_Lite
- https://thelinuxshop.co.uk/linux-lite-system-requirements-p-600.html

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- https://en.wikipedia.org/wiki/Linux_Lite
- https://www.youtube.com/watch?v=o6Nhgvk9-_A