BAHIRDAR INSTITUTE OF TECHNOLOGY

FACULITY OF COMPUTING

DEPARTMENT OF SOFTWARE ENGINEERING

course title: ossp

Name : Elshaday Mulugeta

Id : 1601366

SUBMITTED TO: WENDIMU BAYE

Introduction

Background

openSUSE is a free and open-source Linux operating system that's built for people who want power, stability, and control over their computers. Whether you're a developer, system admin, or just someone who loves tech, openSUSE gives you two great options: Leap, which is super stable and great for serious work, and Tumbleweed, which stays up-to-date with the latest software and features. It's backed by a strong community, comes with awesome tools like YaST for easy system management, and gives you full freedom to customize your setup however you like.

Using openSUSE as an operating system has several important benefits, especially for developers, system administrators, and Linux enthusiasts.

Motivation

As we all know there are various types of operating systems. I believe that as much as possible we have to experience them through our study . My motivation behind this project is using the opportunity that i get to know and experience os on virtual environment and . As a software engineering student, I recognize the importance of gaining hands-on experience with diverse operating systems, especially those used in development and server environments.

openSUSE stands out as a powerful, stable, and versatile Linux distribution, known for its professional-grade tools and strong community support. Using it through VirtualBox allows me to explore its features without affecting my host system. It also helps me simulate real-world scenarios where virtual machines are used for testing, development, and deployment.

This assignment provides an excellent opportunity to strengthen my skills in system administration, package management, and shell scripting. I also look forward to learn

more about the YaST configuration tool, openSUSE's unique and powerful system management utility.

Generally, this experience will deepen my technical competence and broaden my adaptability, which are crucial qualities for my future career in software engineering .

Objectives

-Install openSUSE in a virtual environment like oracle virtualbox

-Understand OS-level file management.

-Implement and test systemcalls like`fdatasync()`

Requirements

Hardware:

-CPU : Dual coreprocessor or better

-RAM : Minimum 4 GB

-Disk : Atleast 25 GB freespace

Software:

-Virtual Box or VMware

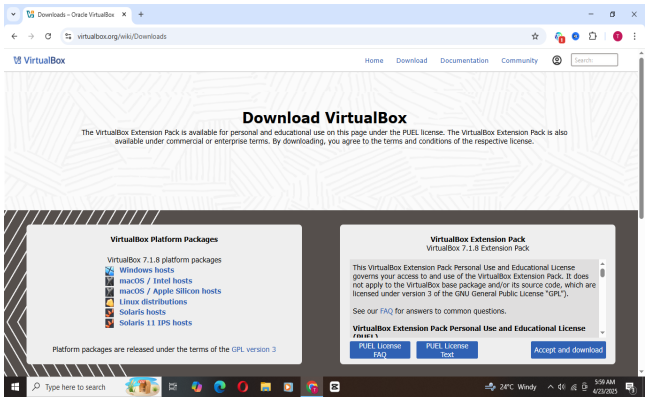
-openSUSE Leap ISO

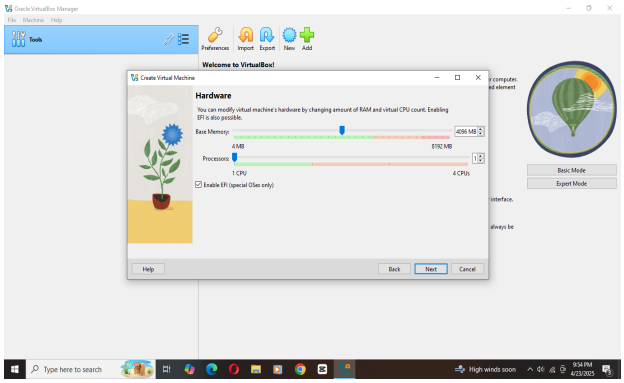
-GCC (GNU Compiler Collection)

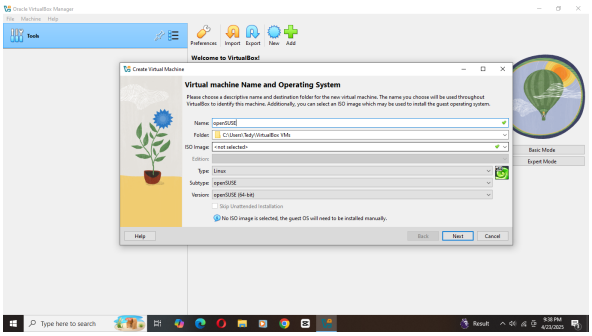
- Exellent wifi (internet connection)

Installing Oracle VirtualBox (After Downloading):

Step 1: .after successful download oracle VirtualBox , i opend it and it popup like this and one thing to rember chose the appropriate platform packeg from the listed i chose windows host.







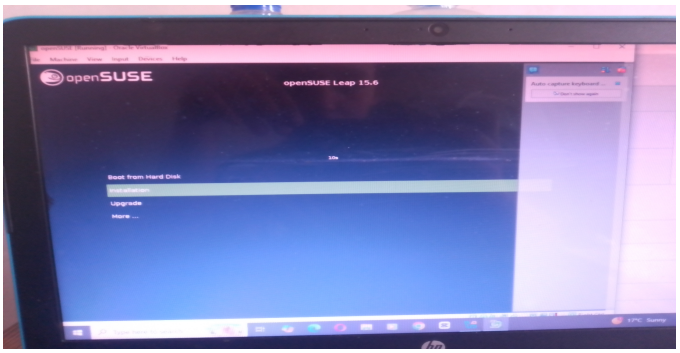
Step 2: seting up opensuse on virtualboxs

- after downloading openSUSE LEAP from the official website , go to virtualbox and click new then

create virtual machine(i inserted the information like name of the os in my case openSUSE after this other spaces filled automatically

then adjusted memory 4096 mb

and checked the box "create a virtual hard disk now" and check other boxs as needed abd we finally reach to button 'create' then we finish loading openSUSE on vitual environment.



step 3 .virtualization before start running the os

Turn on Virtualization

Go into your BIOS (tap F2 or Del at startup) and make sure VT-x or AMD-V is enabled.

VM Settings in VirtualBox

System :Motherboard: Give it at least 4GB RAM.

System : Processor: 2 CPUs if possible

Display: Bump video memory to 128MB

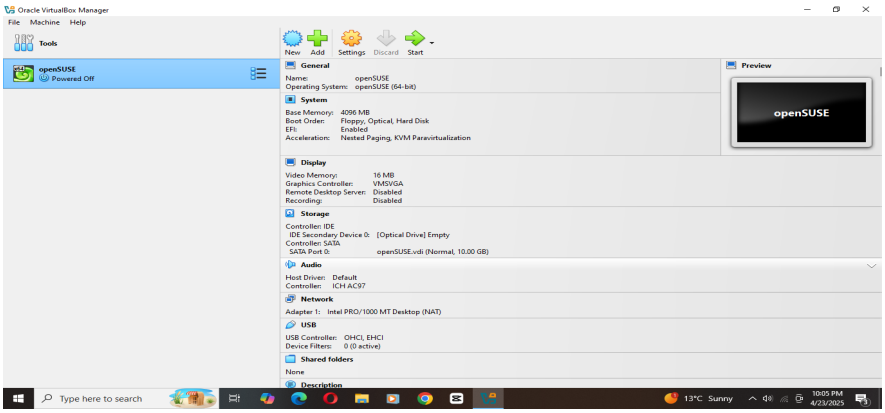
Storage: Make sure the openSUSE ISO is loaded.

Network: NAT is fine for internet; Bridged if you want it on the same network as your host.

A setup window will open.

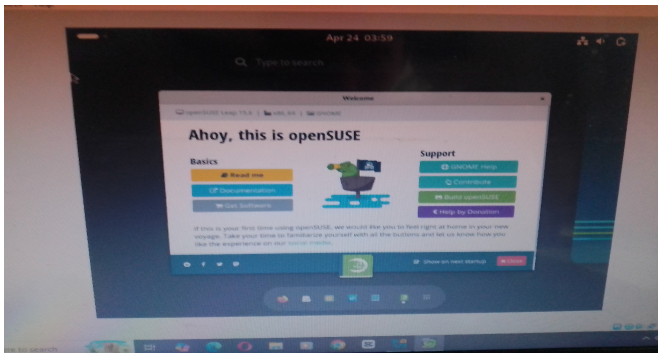
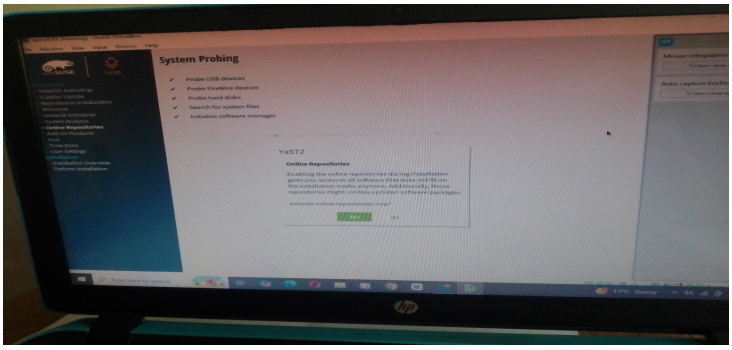
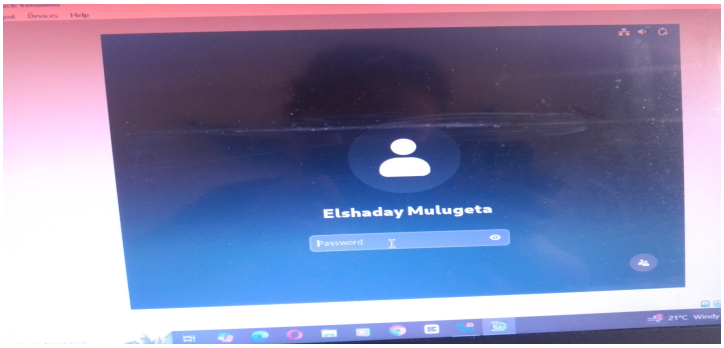
Click Next through the steps.

Keep the default settings unless you want to change something finally click install.



step4. start working on OpenSUSE

create user account using my fullname and i gave it strong password

- got in to terminal and done instalation and updates

- Then started implementation of the system call fdatasync().