BAHIRDAR UNIVERSITY

Bahir Dar Institute of Technology

Faculty of Computing

Department of Software Engineering

OSSP Project - Individual Assignment

Operating System: BackBox Linux

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1- Installation of BackBox Linux in Virtual Environment

a. Introduction

BackBox Linux is an Ubuntu-based distribution designed for penetration testing and security auditing.

  - It comes with a wide array of security tools for analysis, forensics, exploitation, and vulnerability assessment.

  - It provides a lightweight, fast, and customizable environment using the XFCE desktop environment. --This project involves installing BackBox on a virtual machine to explore its features and filesystem support

b. Objectives-

To install BackBox Linux on VirtualBox

To explore the filesystem and understand virtualization.

To document the installation process, challenges, and solutions.

c. Requirements

-----Hardware-------

CPU: Dual-core or better-

RAM: Minimum 2 GB (4 GB recommend)-

Storage: At least 20 GB

------ Software------

VMware Workstation window
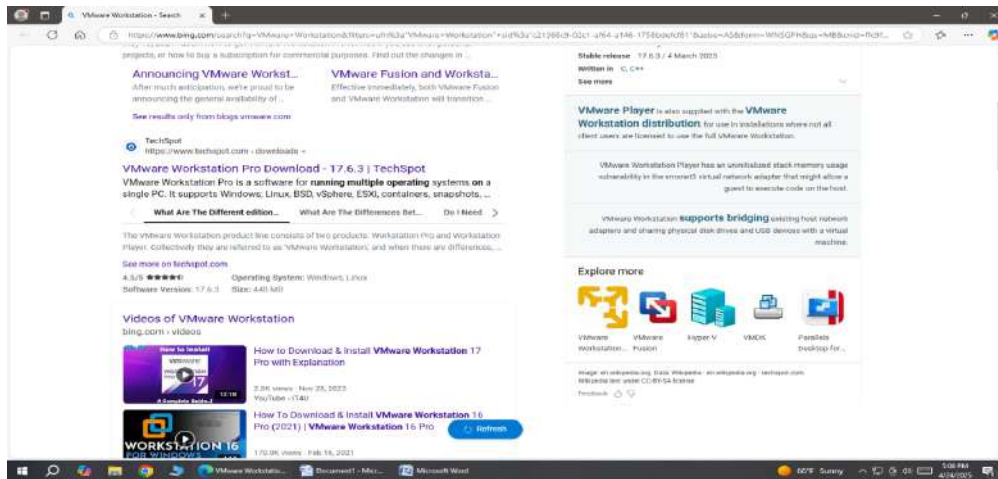
BackBox Linux ISO image

d. Installation Steps

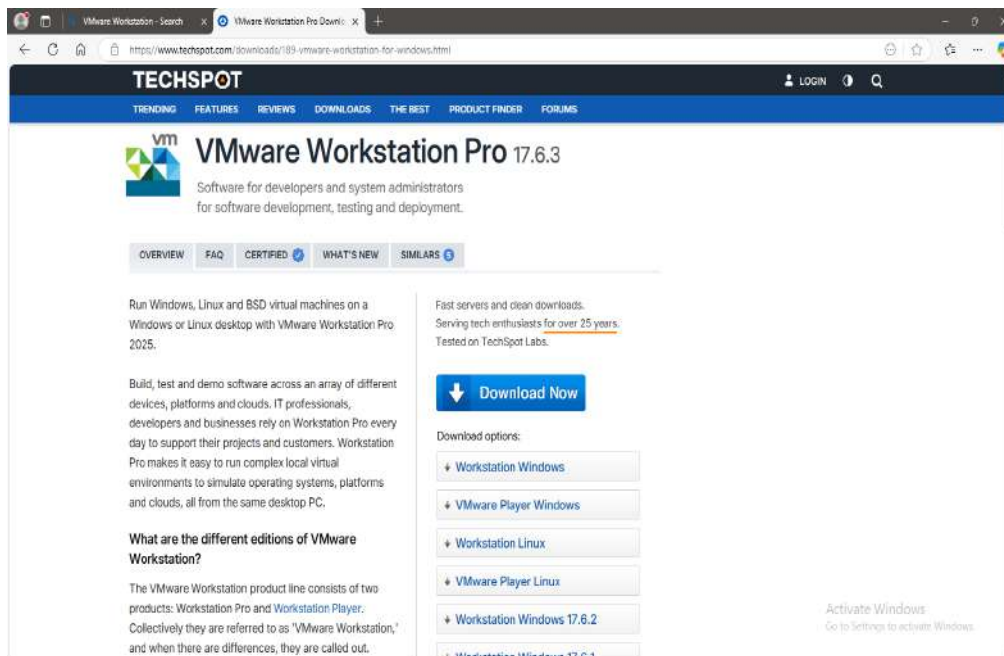Step1   :first check I fyour computerhas the necessary requirements to

download backbox linus operating system

Step 2: Download VMware workstation 17

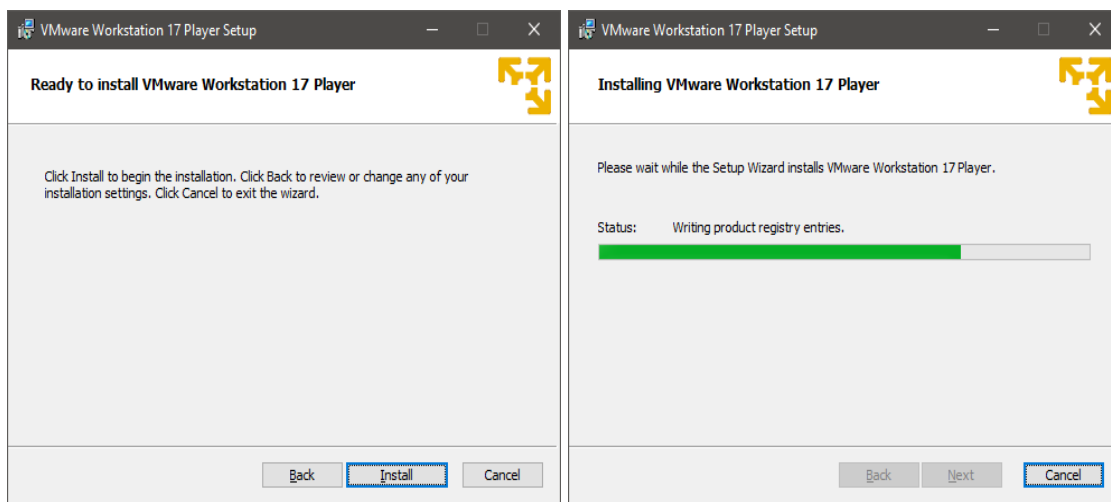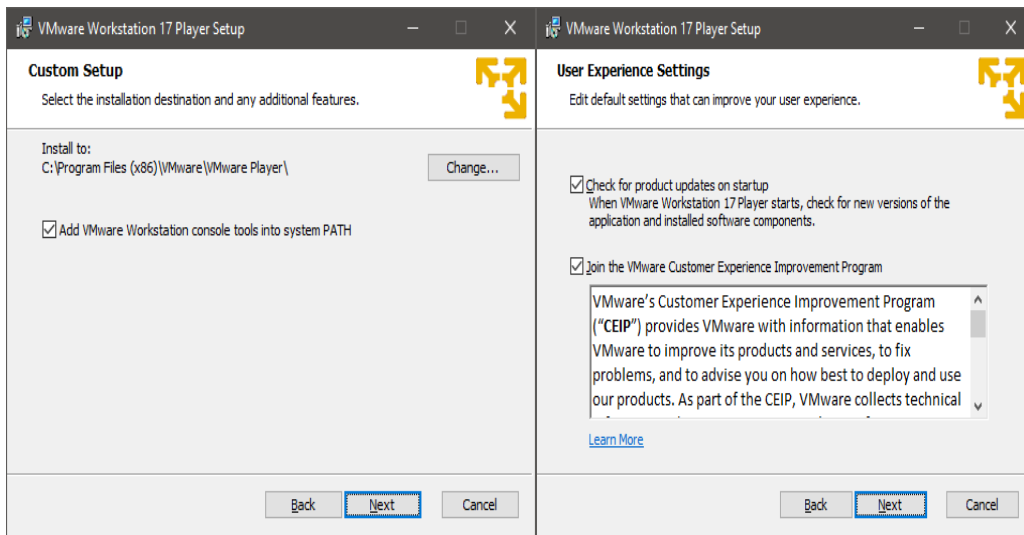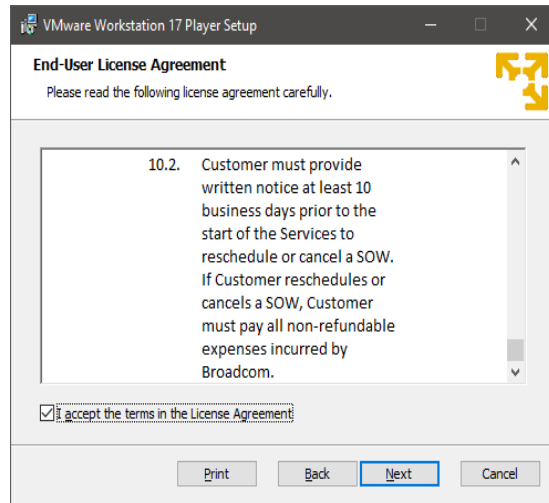Type in the search bar 'VM ware workstation' and click on the techspot as shown below
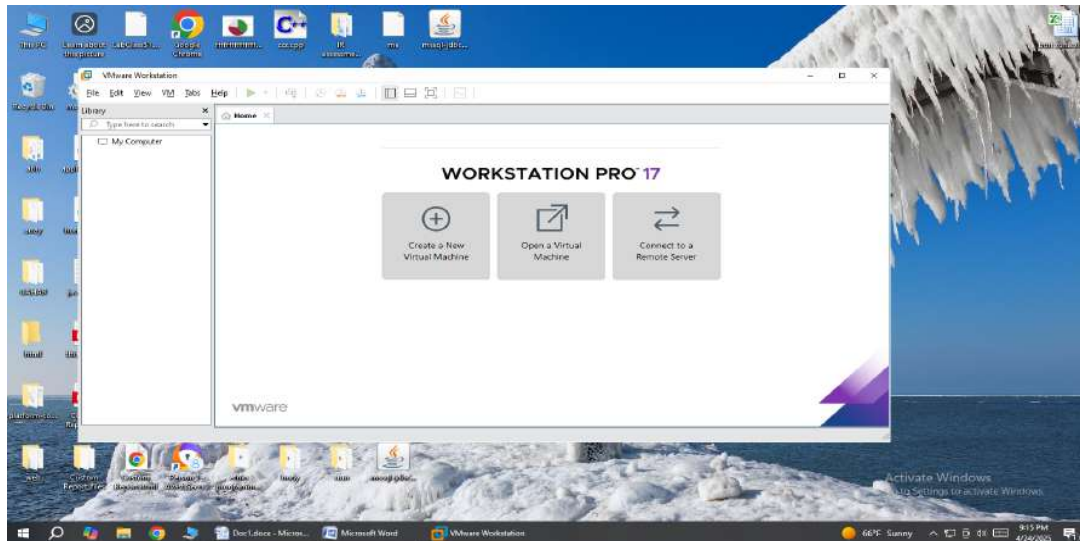

Then after that we choose for what to download whether it is Windows or macOs then we download

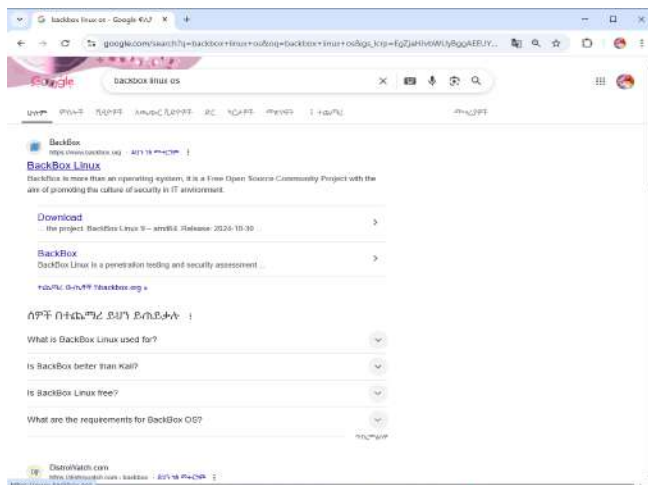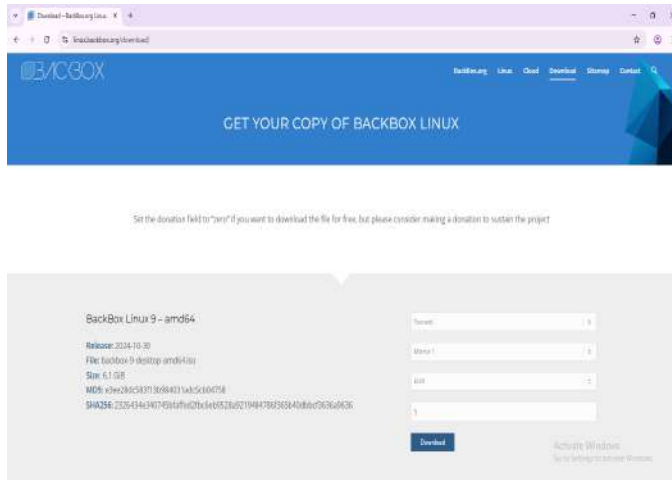¬Then we install the VMware workstation following this steps

New Virtual Machine Wizard

vmware
WORKSTATION PRO™
17

Welcome to the New Virtual Machine Wizard

What type of configuration do you want?

● Typical (recommended)
Create a Workstation 17.5 or later virtual machine in a few easy steps.

○ Custom (advanced)
Create a virtual machine with advanced options, such as a SCSI controller type, virtual disk type and compatibility with older VMware products.

Help   < Back   Next >   Cancel

VMware Workstation 17 Player Setup

End-User License Agreement

Please read the following license agreement carefully.

10.2.   Customer must provide written notice at least 10 business days prior to the start of the Services to reschedule or cancel a SOW. If Customer reschedules or cancels a SOW, Customer must pay all non-refundable expenses incurred by Broadcom.

☑ I accept the terms in the License Agreement

Print   Back   Next   Cancel

VMware Workstation 17 Player Setup

Custom Setup

Select the installation destination and any additional features.

Install to:
C:\Program Files (x86)\VMware\VMware Player\   Change...

☑ Add VMware Workstation console tools into system PATH

Back   Next   Cancel

VMware Workstation 17 Player Setup

User Experience Settings

Edit default settings that can improve your user experience.

☑ Check for product updates on startup
When VMware Workstation 17 Player starts, check for new versions of the application and installed software components.

☑ Join the VMware Customer Experience Improvement Program

VMware's Customer Experience Improvement Program ("CEIP") provides VMware with information that enables VMware to improve its products and services, to fix problems, and to advise you on how best to deploy and use our products. As part of the CEIP, VMware collects technical

Learn More

Back   Next   Cancel

VMware Workstation 17 Player Setup

Ready to install VMware Workstation 17 Player

Click Install to begin the installation. Click Back to review or change any of your installation settings. Click Cancel to exit the wizard.

Back   Install   Cancel

VMware Workstation 17 Player Setup

Installing VMware Workstation 17 Player

Please wait while the Setup Wizard installs VMware Workstation 17 Player.

Status: Writing product registry entries.

Back   Next   Cancel

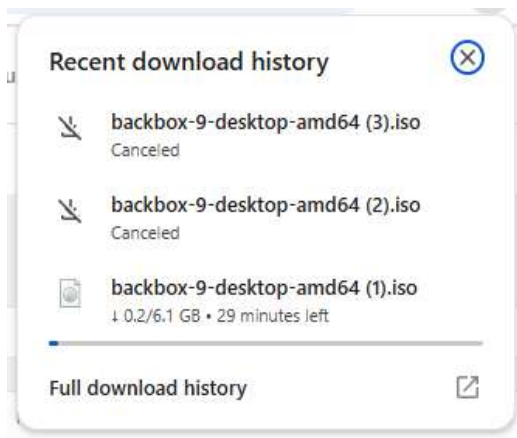After we install it then when we open it.It look like this

Step3: DownloadXubuntuOS

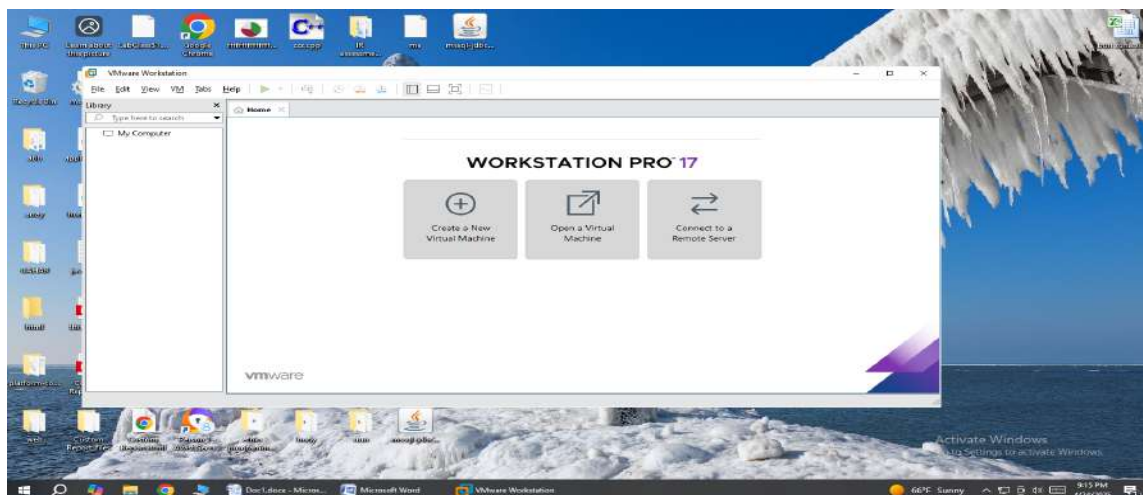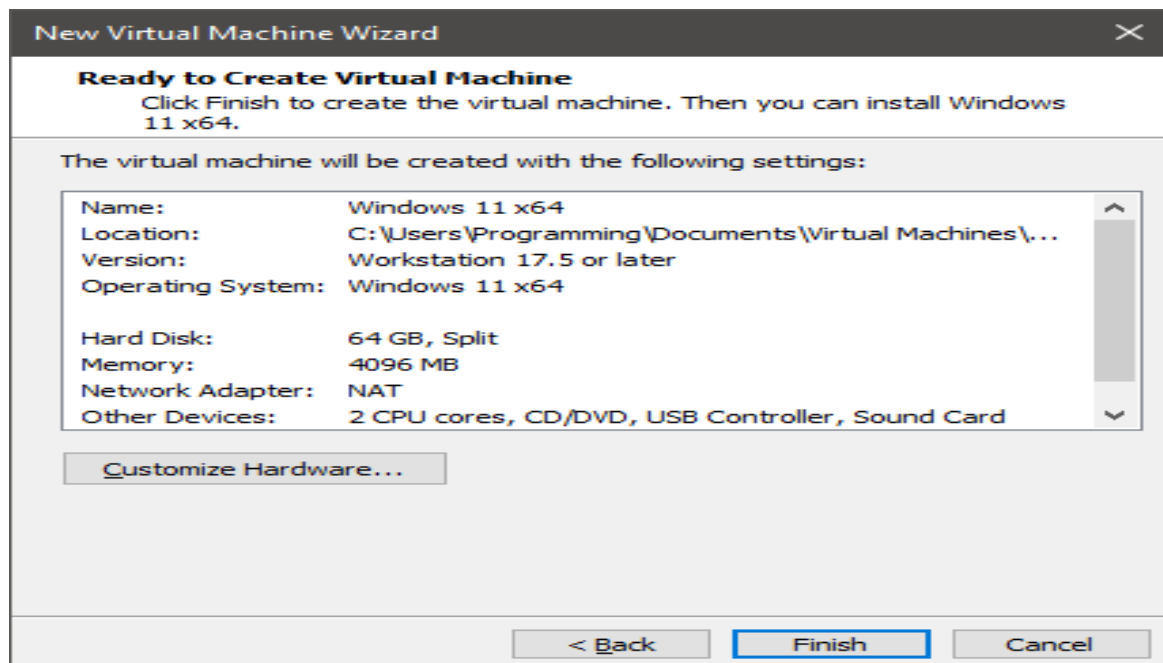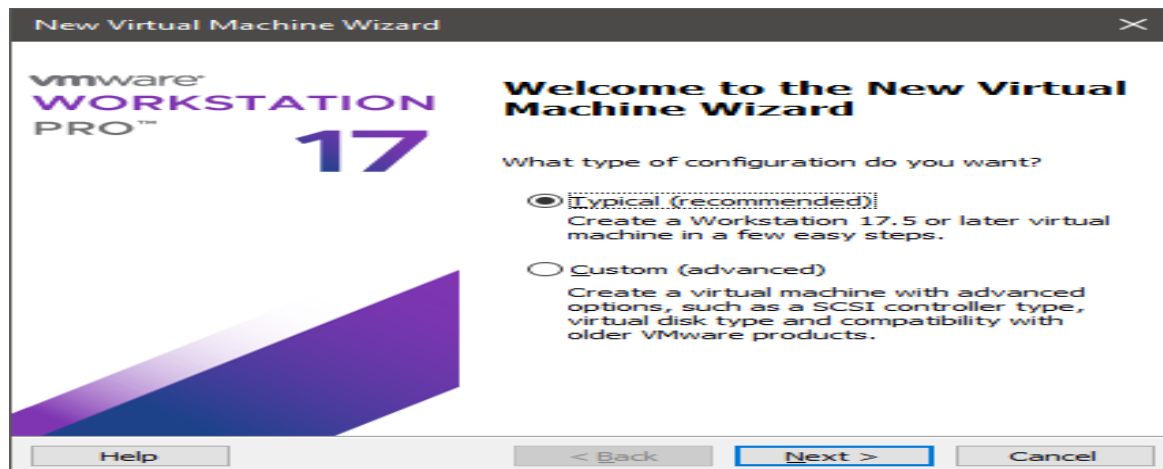Type in 'Backbox linux os' in the search bar and visi t the first website that comes

Then download the os on VM ware workstation 17

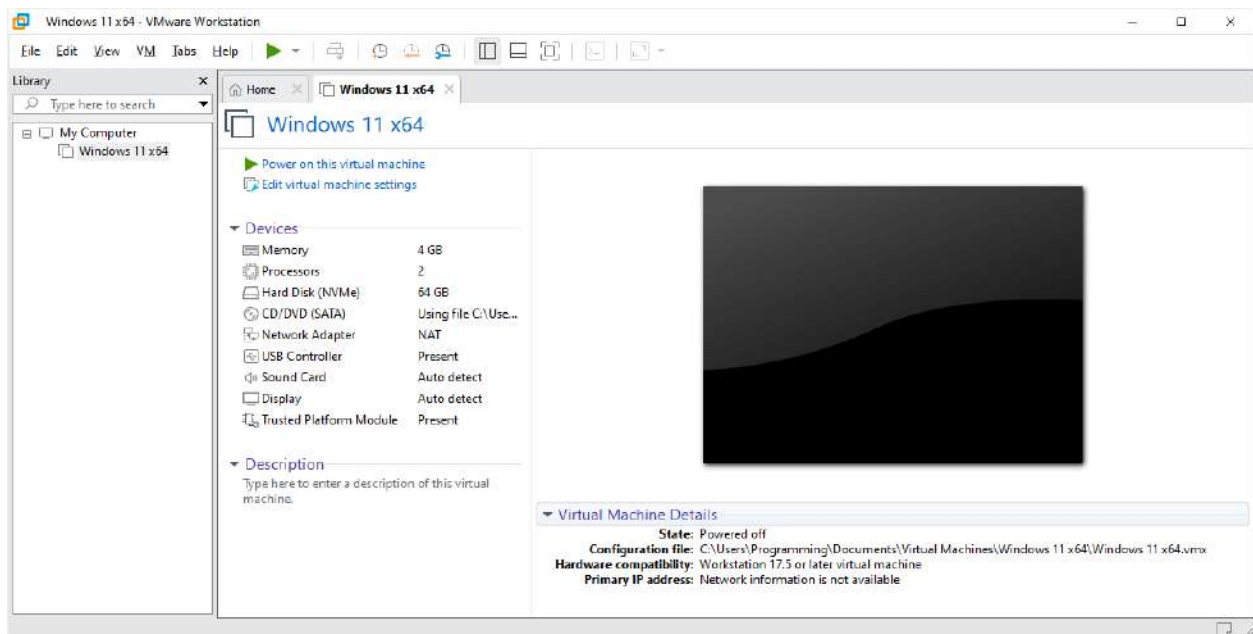Step4: Instal Backbox linux on VMware workstation 17

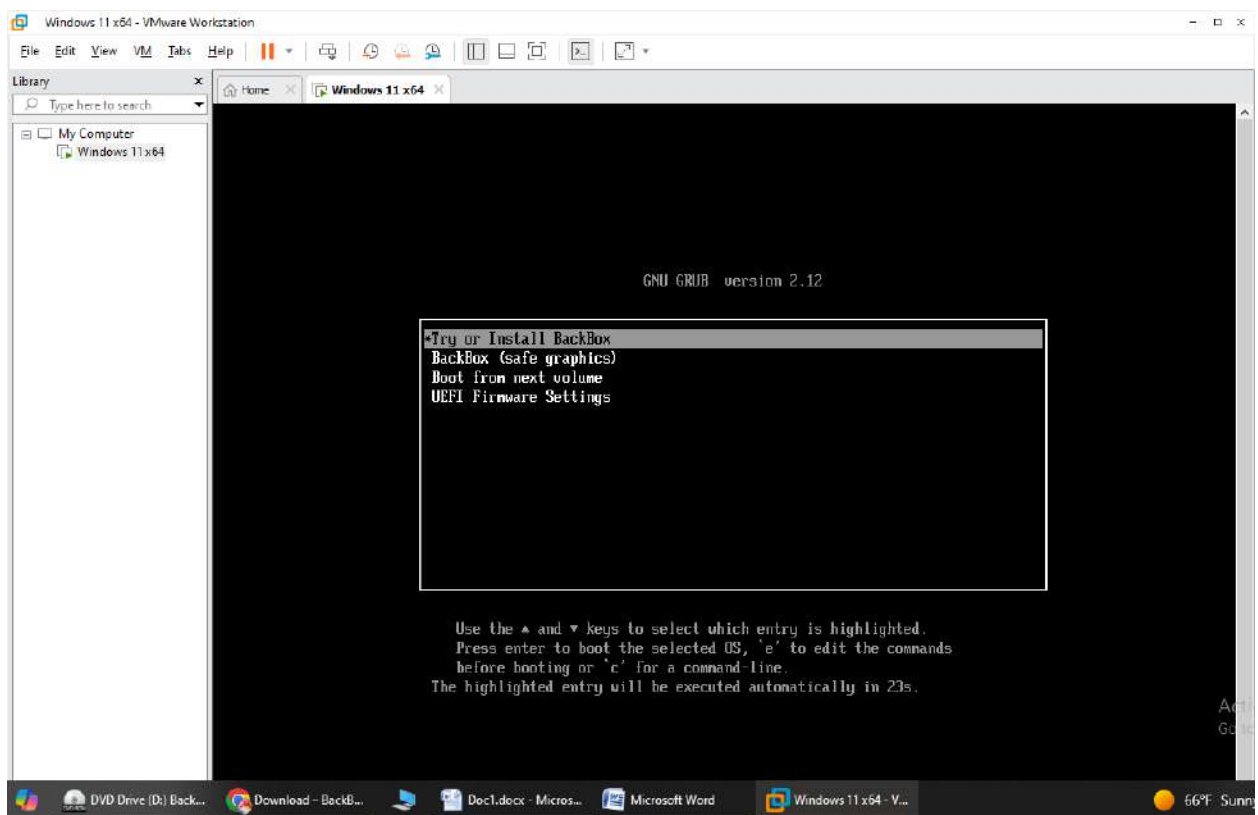 Open VMware and click on create anew virtual machine following the steps below In the photo
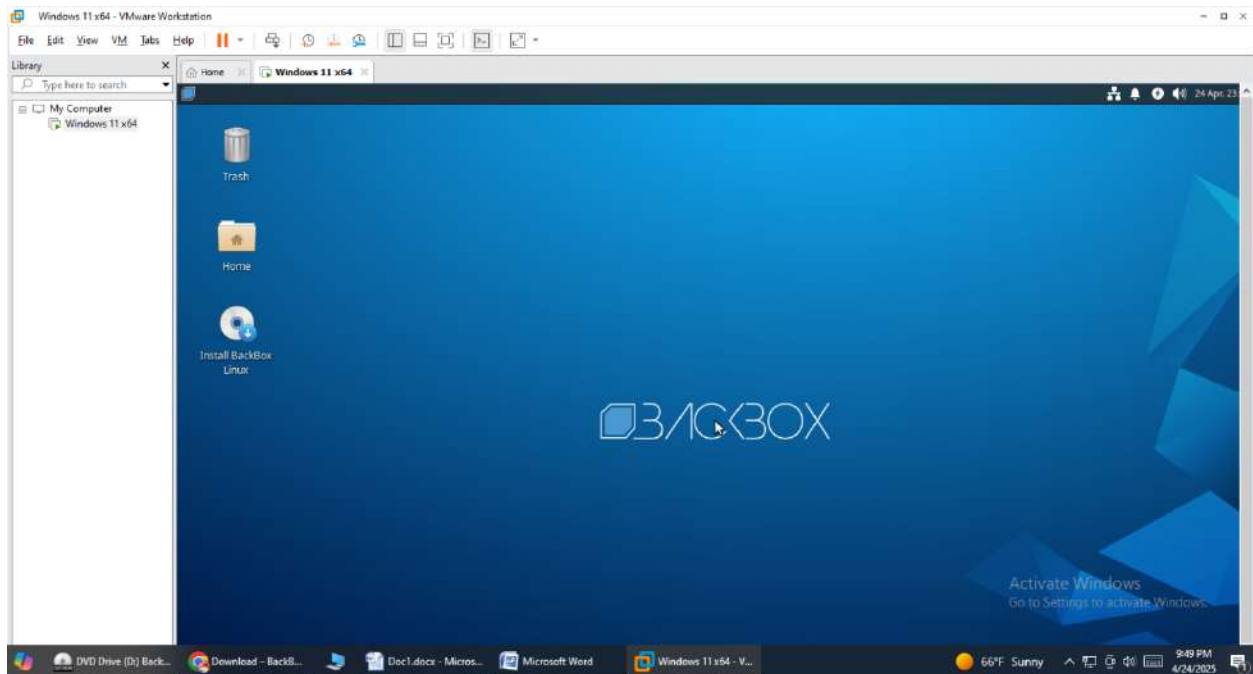
When we click on "customizehardware" we can customize and remove the usb and sound then we will turn off the accelerate 3Dgraphics then we close it
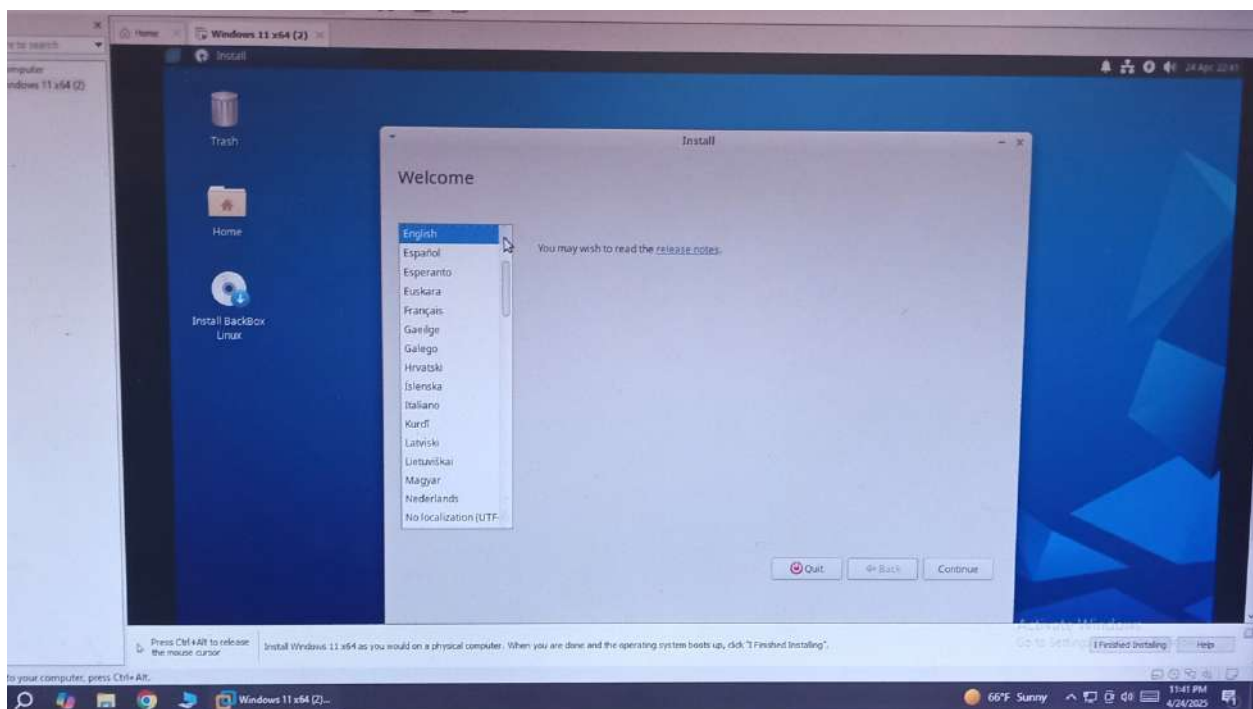
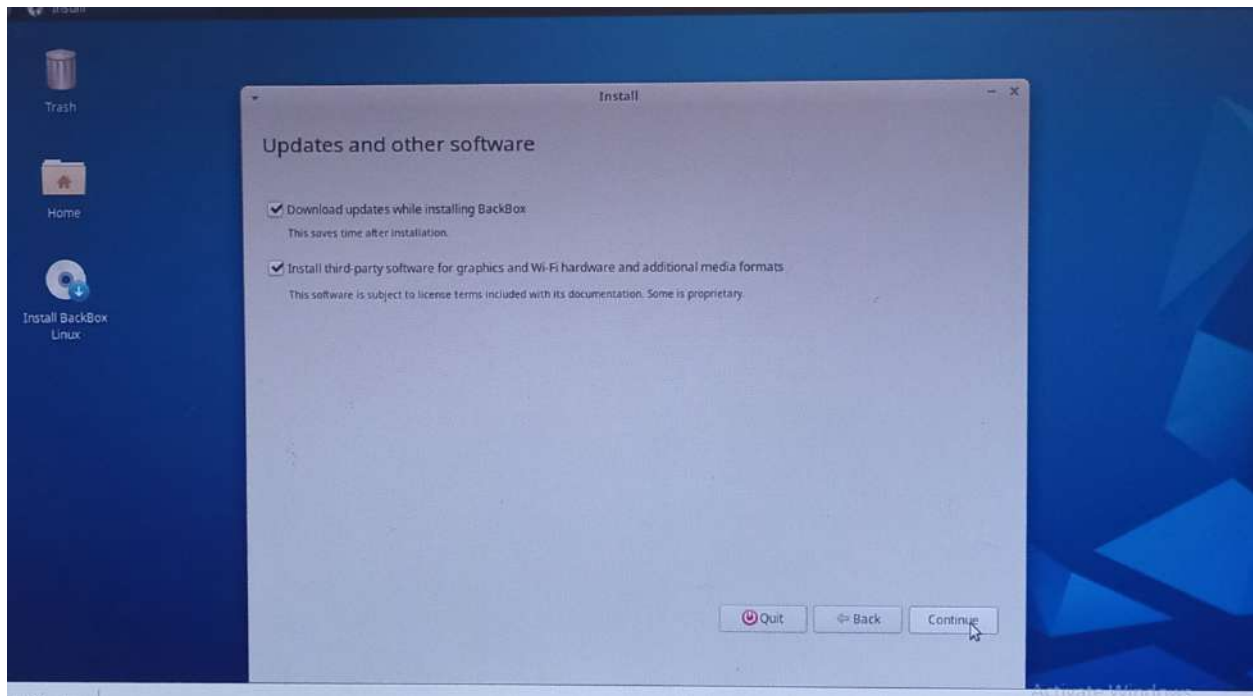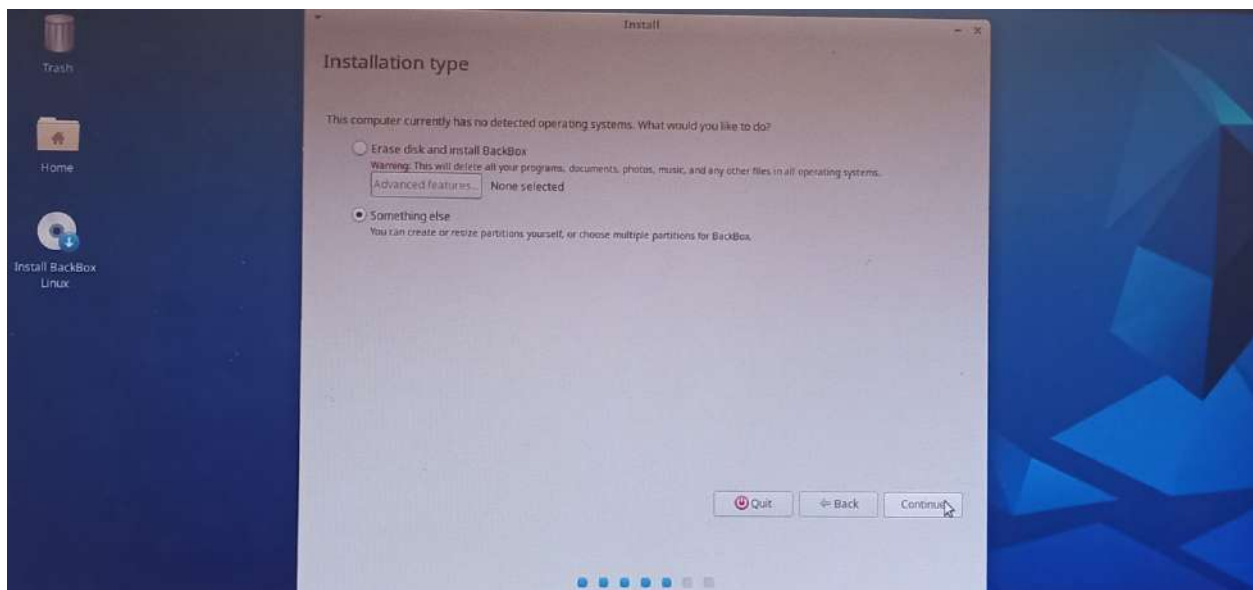Then display it by clicking the green triangle above

Then we install it by following the below image steps

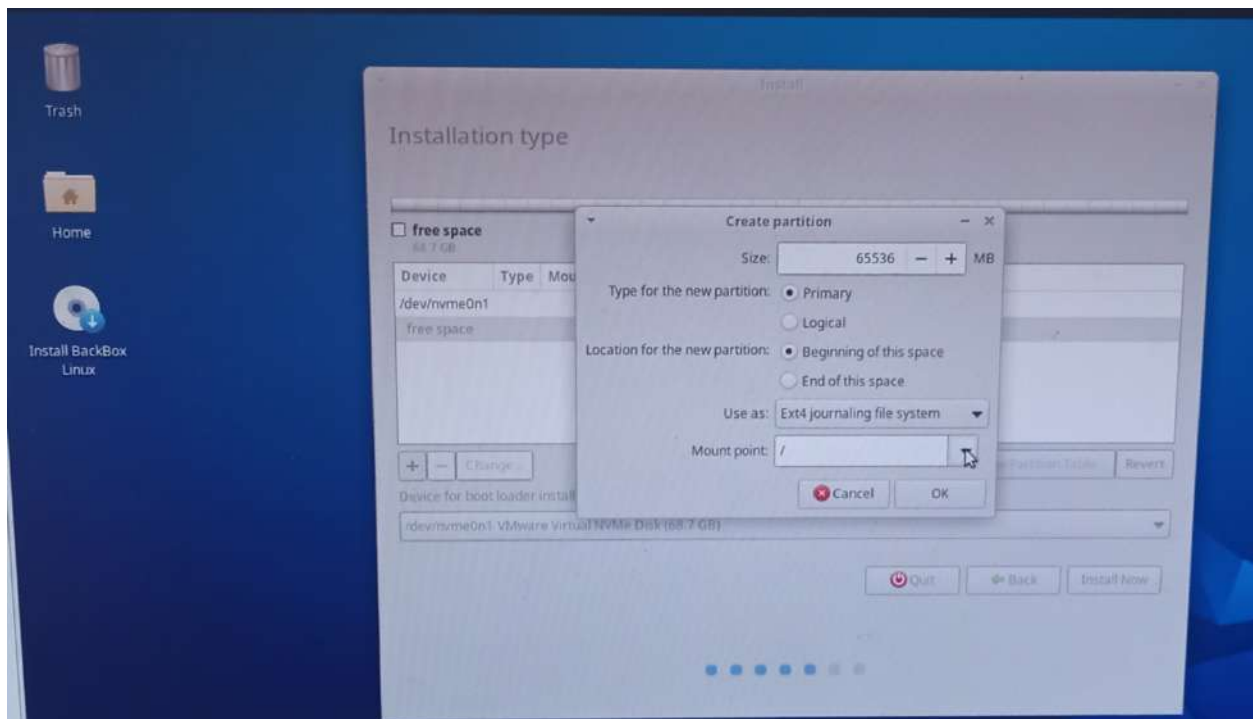---I chose an English language which I prefer in installing process

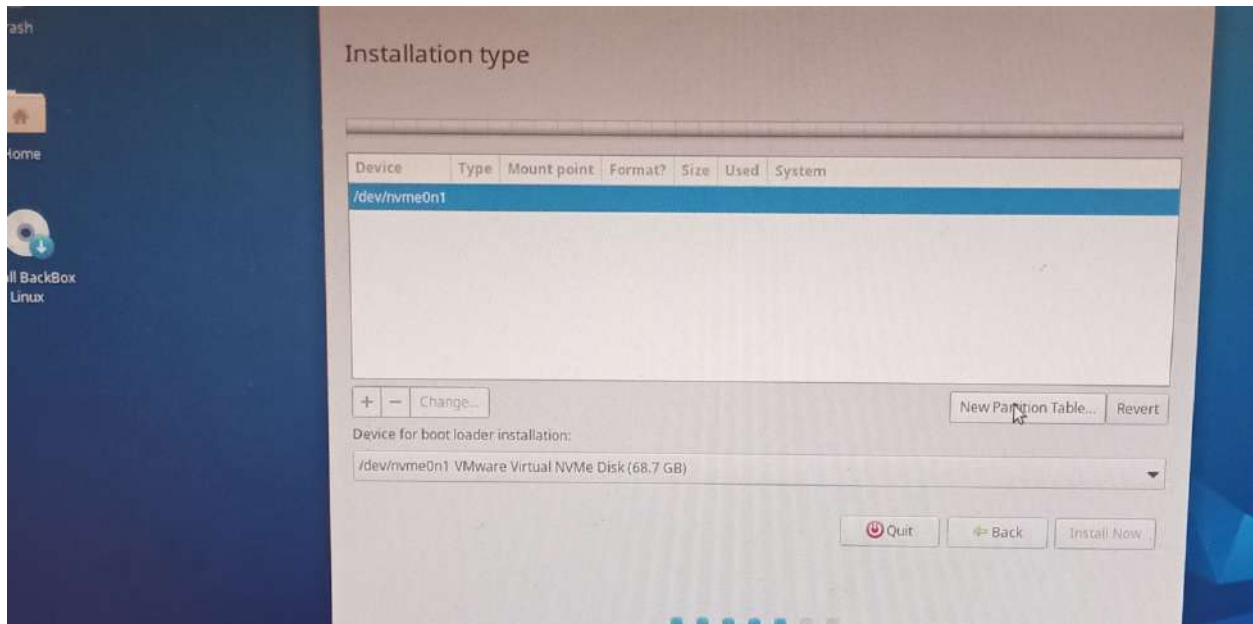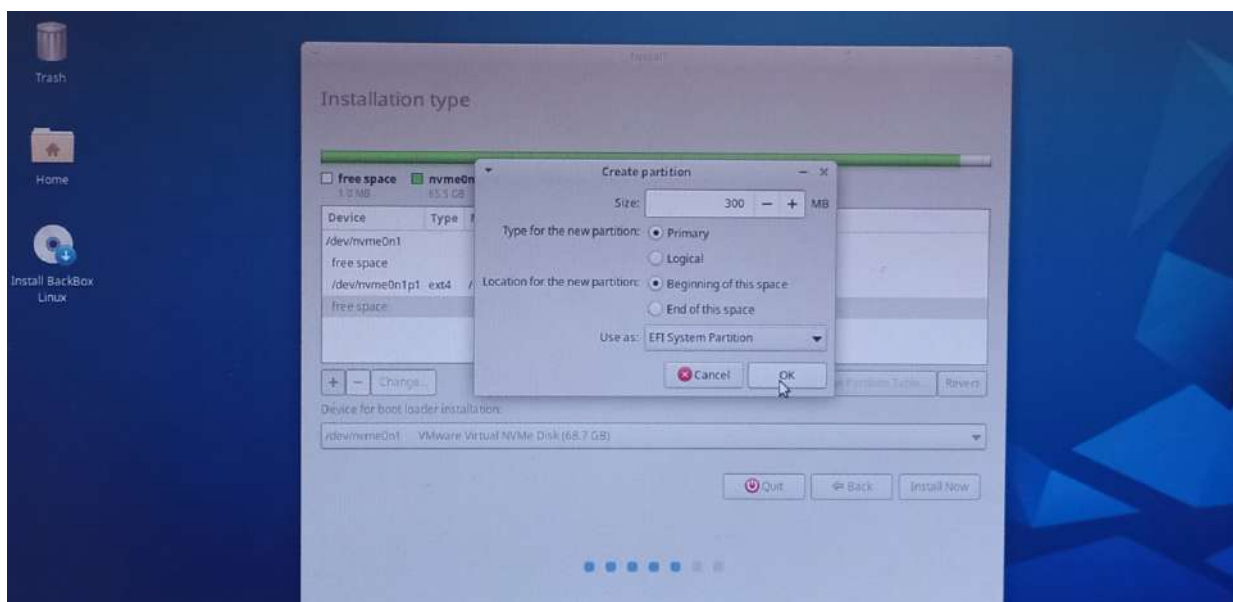---then I tick both as you can seeand continues my process

----Here I insert all the inputs required and wanted to make the installation easier by googling and using Wikipedia and tech spot as a guide..

Installation type

Device	Type	Mount point	Format?	Size	Used	System
/dev/nvme0n1						

+   −   Change...

New Partition Table...   Revert

Device for boot loader installation:

/dev/nvme0n1 VMware Virtual NVMe Disk (68.7 GB)

Quit   Back   Install Now

Installation type

☐ **free space**
68.7 GB

Create partition

| Size: | 65536 | − | + | MB |

Type for the new partition: ● Primary
  ○ Logical

Location for the new partition: ● Beginning of this space
  ○ End of this space

Use as: Ext4 journaling file system ▾

Mount point: /

✖ Cancel   OK

Device	Type	Mou
/dev/nvme0n1		
free space		

+   −   Change...

Device for boot loader install

/dev/nvme0n1 VMware Virtual NVMe Disk (68.7 GB)

Quit   Back   Install Now

Install

Installation type

free space	nvme0n1p1 (ext4)	nvme0n1p2 (ext4)	free space
1.0 MB	65.5 GB	299.9 MB	2.9 GB

Device	Type	Mount point	Format?	Size	Used	System
/dev/nvme0n1						
free space			☐	1 MB		
/dev/nvme0n1p1	ext4	/	☑	65534 MB	unknown	
/dev/nvme0n1p2	efi		☐	299 MB	unknown	
free space			☐	2883 MB		

+ − Change...   New Partition Table... Revert

Device for boot loader installation:

/dev/nvme0n1   VMware Virtual NVMe Disk (68.7 GB)

Quit   Back   Install Now

Install

Something else

free space	nvme0n1p1 (ext4)	nvme0n1p2 (ext4)	free space
1.0 MB	65.5 GB	299.9 MB	2.9 GB

Device	Type	Mount point	Format?	Size	Used	System

Write the changes to 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:
/dev/nvme0n1

The following partitions are going to be formatted:
partition #1 of /dev/nvme0n1 as ext4
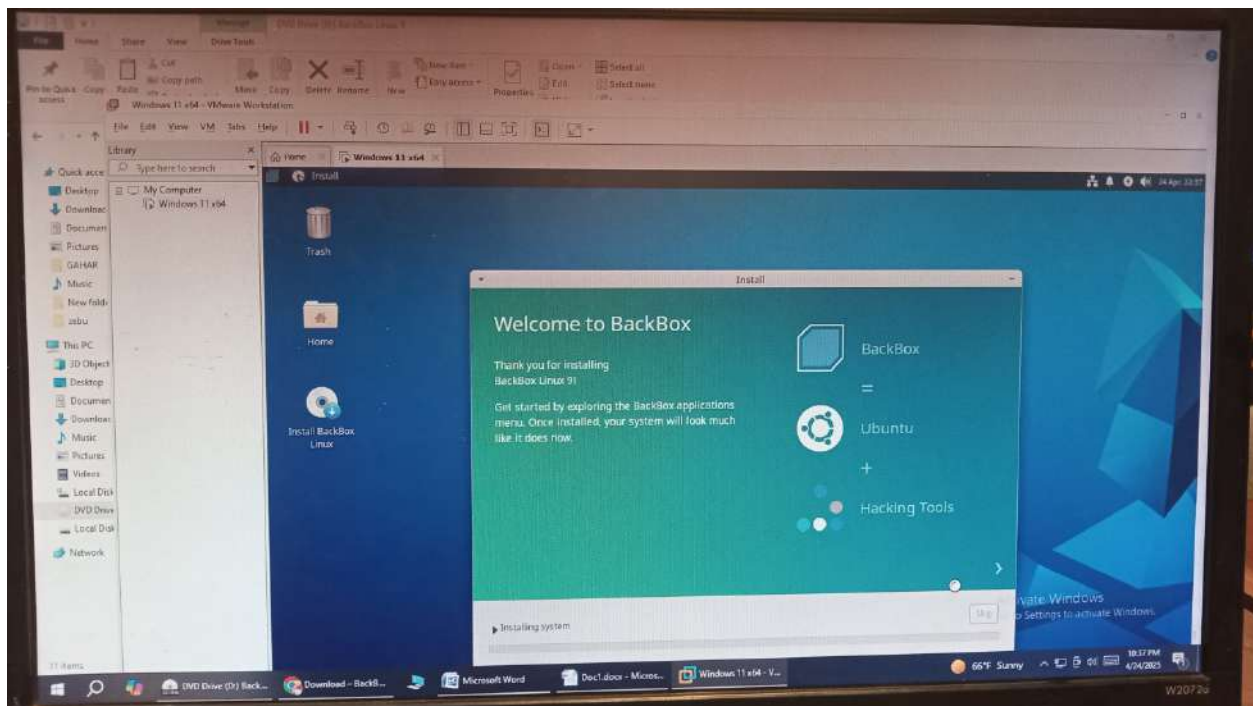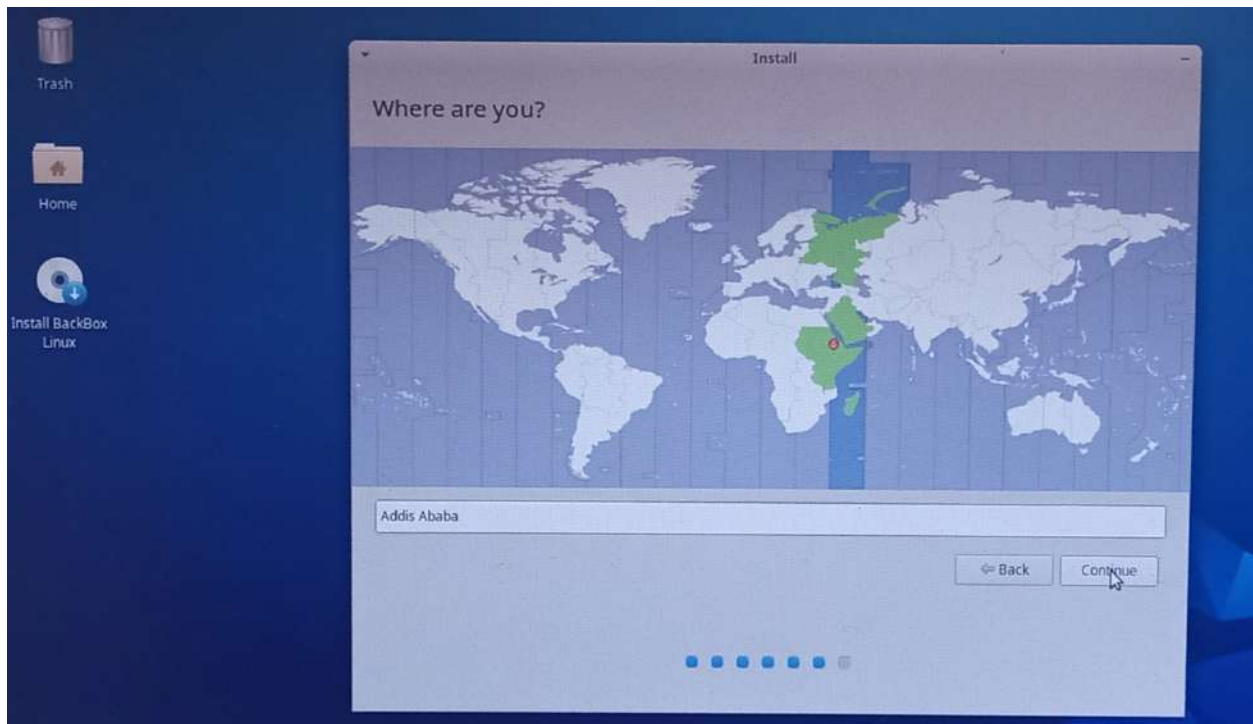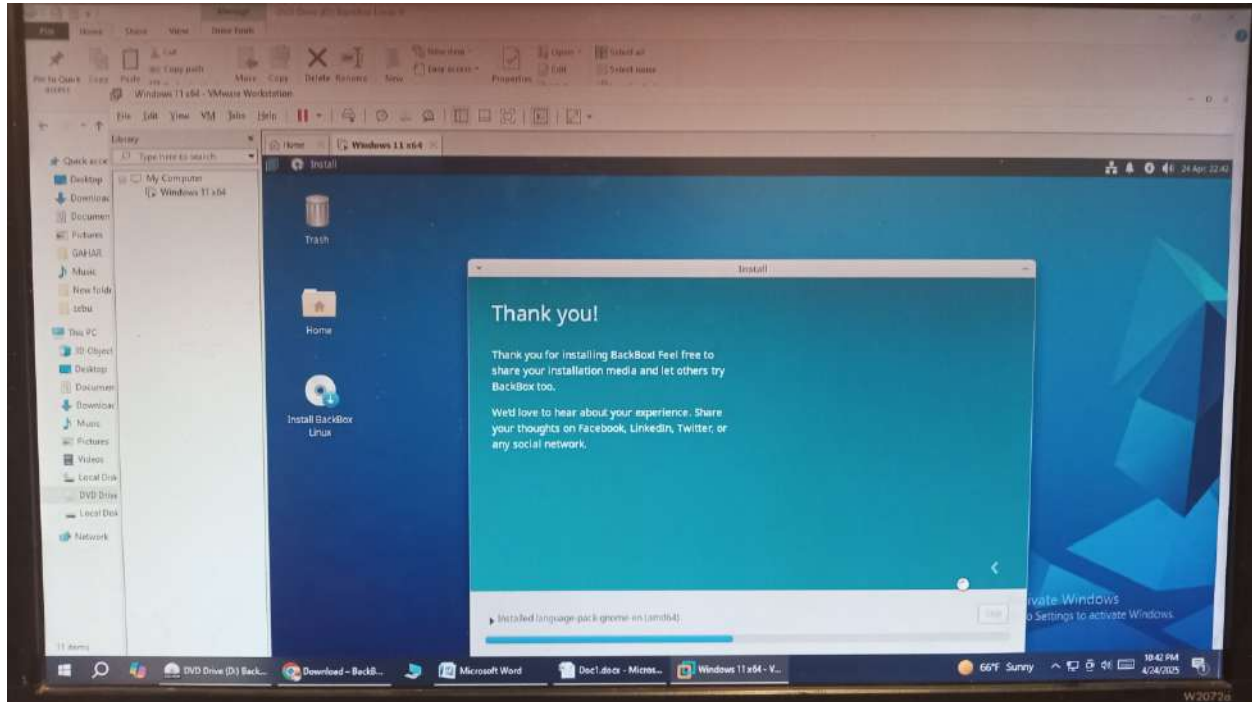partition #2 of /dev/nvme0n1 as ESP

Go Back   Continue

------------------And here our operating system is finally installed and ready to use after all the above interesting and tiresome processes…….

e. Issues Faced

-- Had a low screen resolution-

--The internet connection was a bit slow and couldn't download it faster

--My PC didn't support virtualization cause it was old and I heard that installing an os might erase all my files

---After completing some 3 or 4 steps the laboratory desktop started to slowdown and not fully functioning due to this I was so hard to take screenshoots at the same time working in the operating system so I used my phone to take photos of the installation process of the backbox linux operating system, please understand

 Solution

--changed the network

--changed a PC and went to the lab and installed the backbox linux operating system

g. Filesystem Support

 BackBox uses ext4 by default, which is reliable, supports journaling, and is efficient for most

Linux

environments. It also supports FAT32, exFAT, and NTFS for external drives.

h. Advantages and Disadvantages

---- Advantages:-

- Lightweight and fast

- Comes with many pre-installed security tools

- Stable Ubuntu base and etc

---- Disadvantages:-

 Not user-friendly for beginners

- Requires manual updates for newer tools and etc

 i. Conclusion

 BackBox is an excellent OS for cybersecurity education and ethical hacking practices.

--Its Ubuntu based makes it compatible and easy to maintain.

j. Future Outlook

 Future work could include testing penetration tools in a networked lab setup or comparing BackBox with other security distros like Kali Linux.--

2: What, Why, and How of Virtualization

 ----What is Virtualization?

 Virtualization is the process of creating a virtual instance of computer hardware platforms, operating systems,storage devices, and network resources. It allows one physical machine to run multiple operating systems concurrently.

 -----Why Use Virtualization

- Saves cost by reducing physical hardware

- Improves hardware utilization

- Enables safe testing and development environments

- Enhances disaster recovery and backup

- Forms the foundation for cloud computing

------How Virtualization Works

1. Host Machine: Physical hardware

2. Hypervisor: Software that manages VMs

3. Guest OS: OS installed inside the VM Backbox Virtualization

4. Virtual Resources: CPU, RAM, and Disk emulated for each VM

Example: Running BackBox Linux on VirtualBox with Windows as the host OS.-

References

 ----https://www.techspot.com

 ----https://www.ibm.com:WhatIsVirtualization?

----https://www.ibm.com:WhatIsVirtualization?

----https://www.ibm.com:WhyIsVirtualization?

  ------https://www.geeksforgeeks.org:Virtualization

------Wikipedia

---------Google   and so on…..

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THANK YOU!!