

Computer Systems Assignment

by Alin Astefanei

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Introduction to computer systems (ACCA4021)

Operating system install and setup

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Alin Ilie Astefanei (2404824)

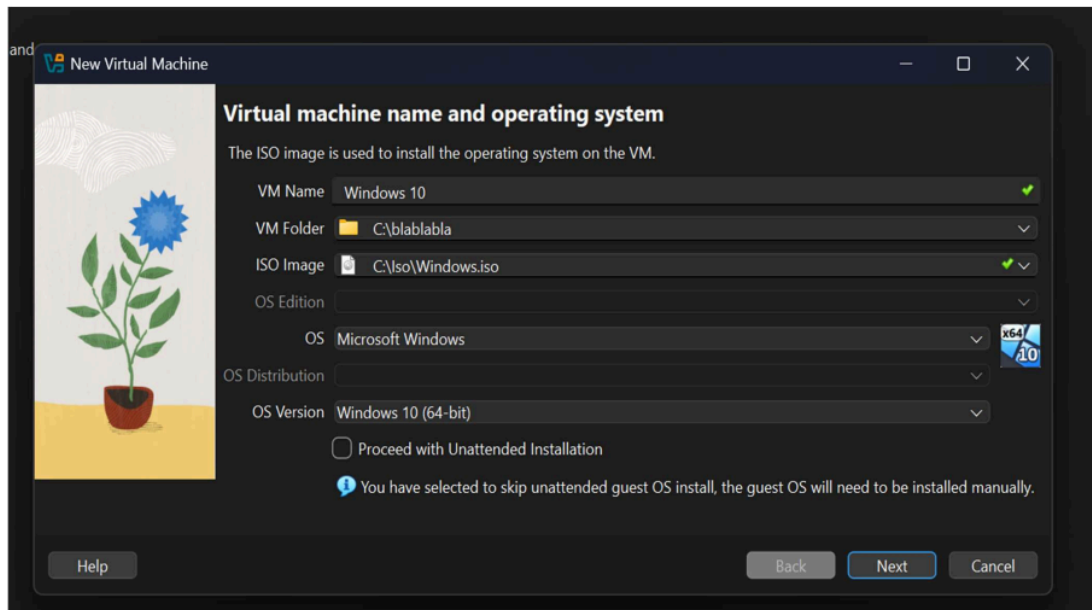
1. Introduction

This report explains the process of setting up and configuring a Windows 10 virtual machine using Oracle VirtualBox. The aim of the task was to demonstrate how a virtual operating system can be installed and customised, including setting up system storage, checking hardware drivers, and installing basic office software.

Virtualisation allows a computer to run an operating system inside another system, which is useful for testing, learning, and safely experimenting without affecting the main computer. In this assignment, a Windows 10 virtual machine was created, configured with appropriate system resources, and then customised by partitioning the virtual hard drive and installing additional software.

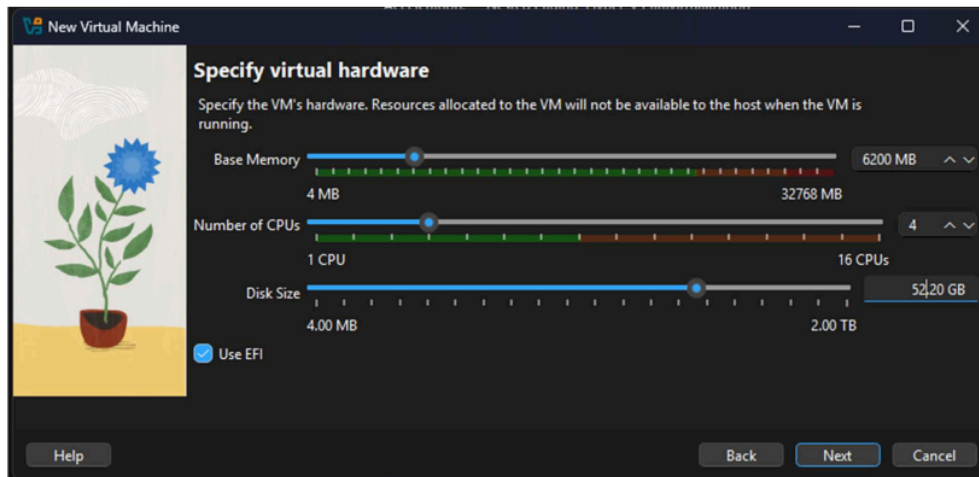
The report also includes evidence of driver configuration for key hardware components such as the network and sound adapters, as well as the installation of an office productivity suite and the creation of a test document stored on a separate drive.

2.Virtual machine setup



A new virtual machine was created using Oracle VM VirtualBox. **Windows 10 (64-bit)** was selected as the operating system due to its stability and compatibility. The virtual machine was allocated **6 GB of RAM** to ensure smooth performance while maintaining system efficiency on the host machine. A **50 GB** dynamically allocated virtual hard disk was also created to provide sufficient storage without using unnecessary physical disk space. **Four processor cores** were assigned to improve performance and responsiveness and made sure **3D Acceleration** was used for graphical performance and responsiveness.

These settings were chosen to balance performance and resource usage, ensuring the virtual machine operates efficiently while simulating a real computer environment

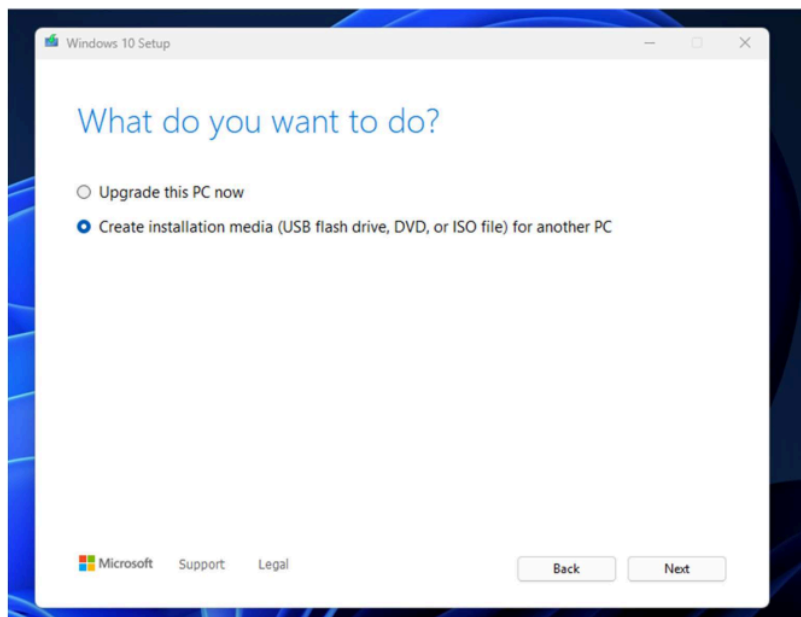


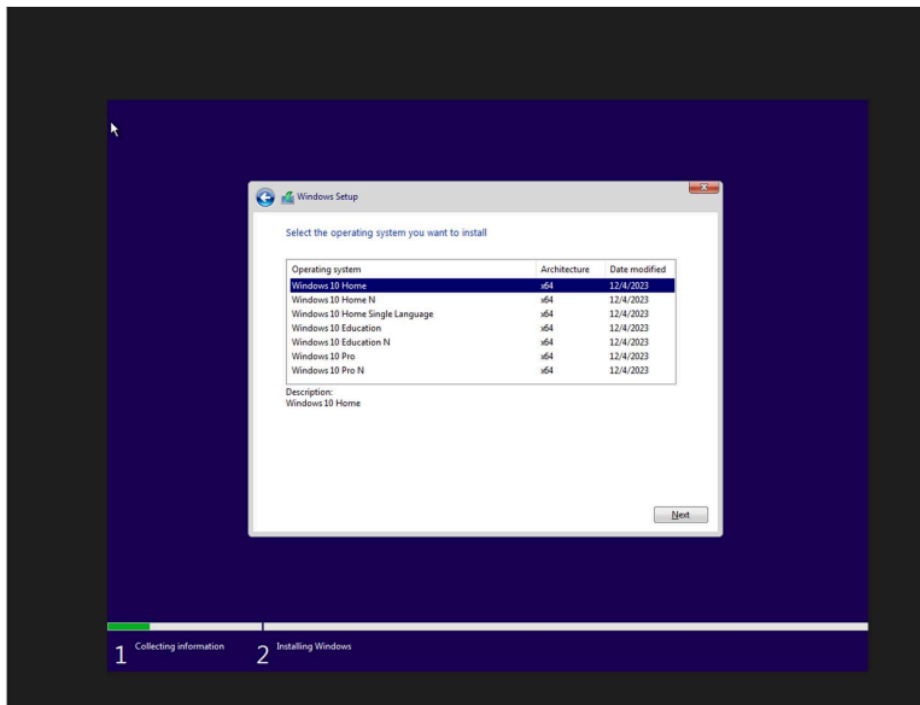
3. Windows installation

Create Windows 10 installation media

To get started, you will first need to have a licence to install Windows 10. You can then download and run the media creation tool. For more information on how to use the tool, see the instructions below.

[Download Now](#)

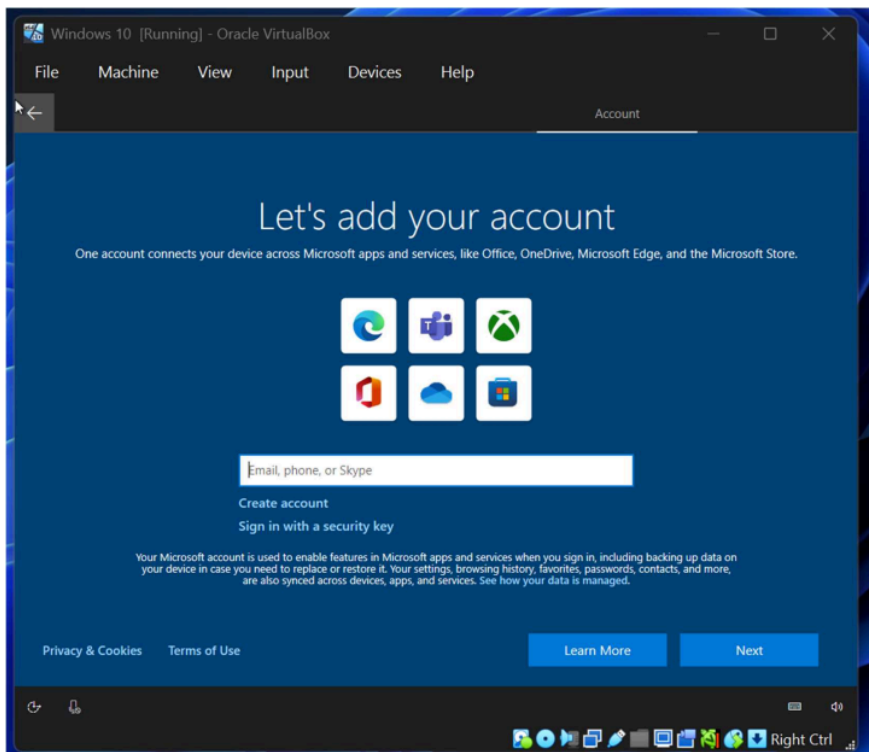
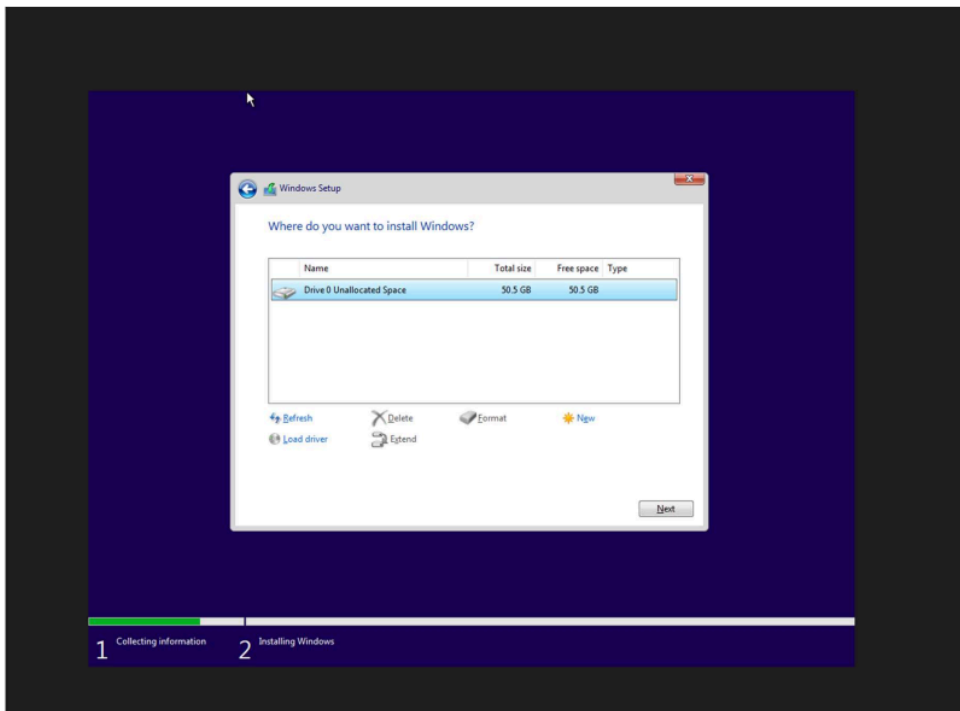




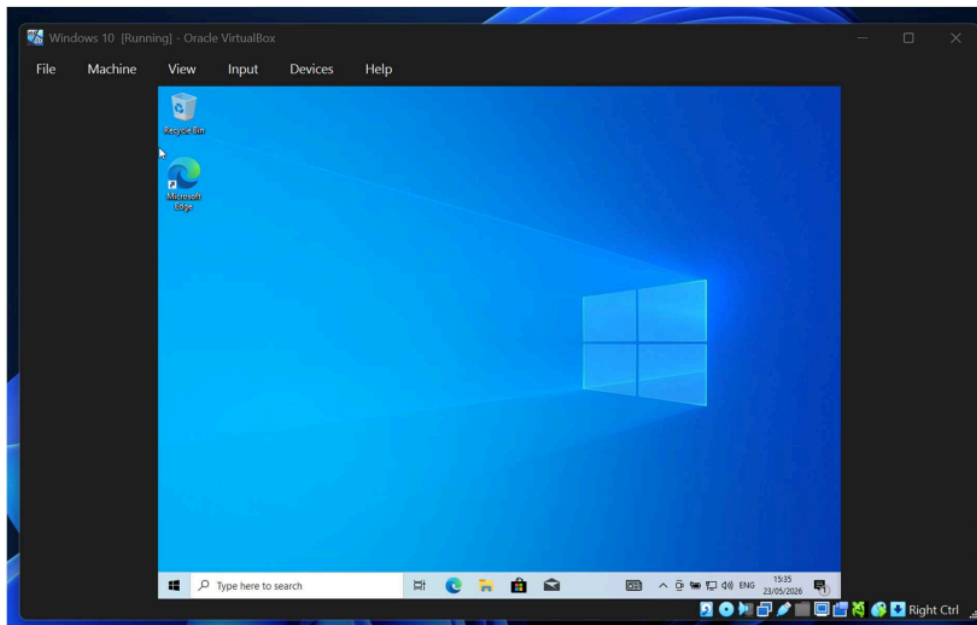
The

Windows 10 operating system was installed on the virtual machine using an ISO image file mounted in Oracle VM VirtualBox. After starting the virtual machine, the Windows setup process was launched, and the installation was carried out using the “Custom Install” option. This allowed Windows to be installed directly onto the virtual hard disk that was created during the virtual machine setup.

During installation, Windows automatically created the required system partitions and copied all necessary system files. The installation process took several minutes to complete and required basic configuration steps such as language selection, keyboard layout, and user account setup. Once the installation was finished, the virtual machine restarted and booted into the Windows 10 desktop environment successfully.

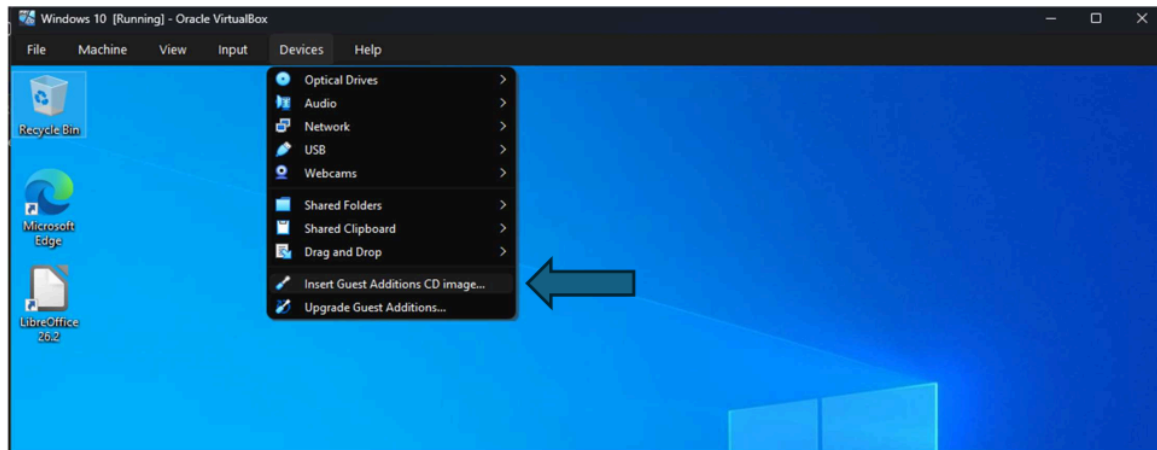


Windows 10 Home was selected for this virtual machine because it provides a stable and lightweight version of Windows that is suitable for general use and educational purposes. It includes all the essential features required for this assignment, such as file management, application installation, and system configuration tools.

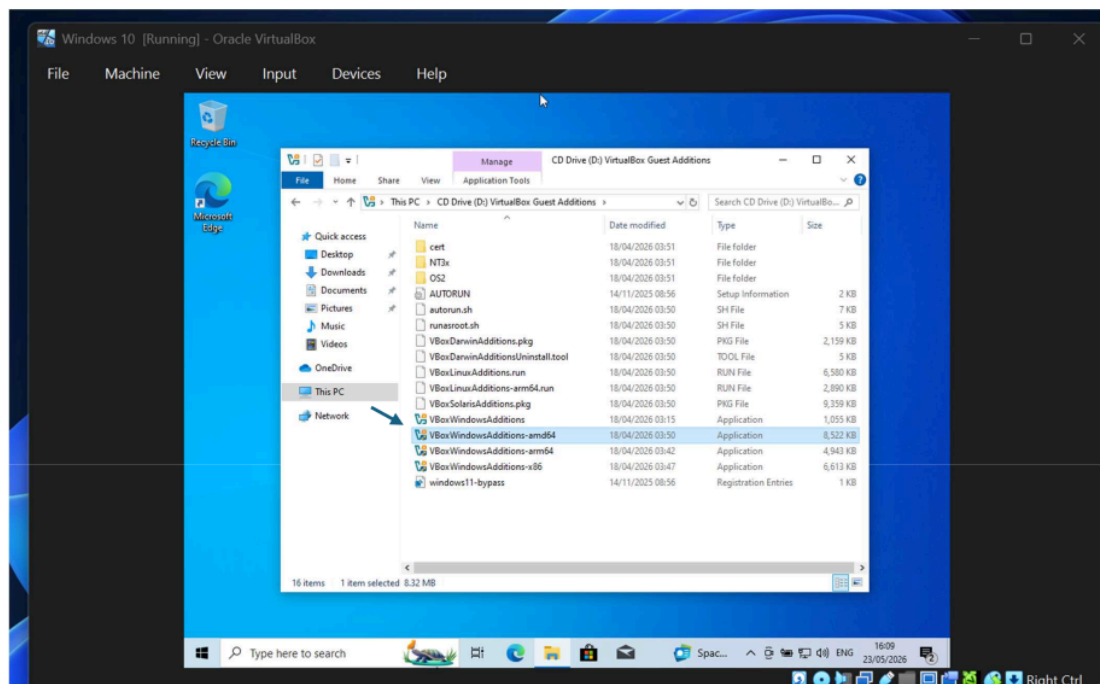


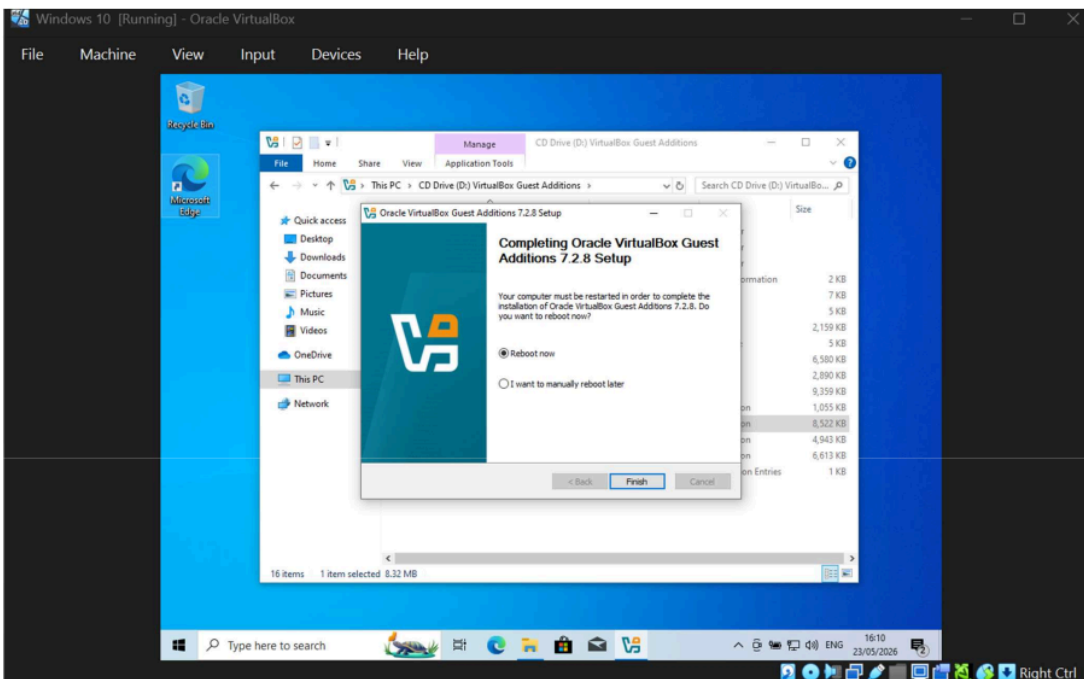
4.VirtualBox Guest additions

After installing Windows 10, VirtualBox Guest Additions was installed to improve the performance and usability of the virtual machine. This software package is provided by Oracle VM VirtualBox and is installed inside the guest operating system.



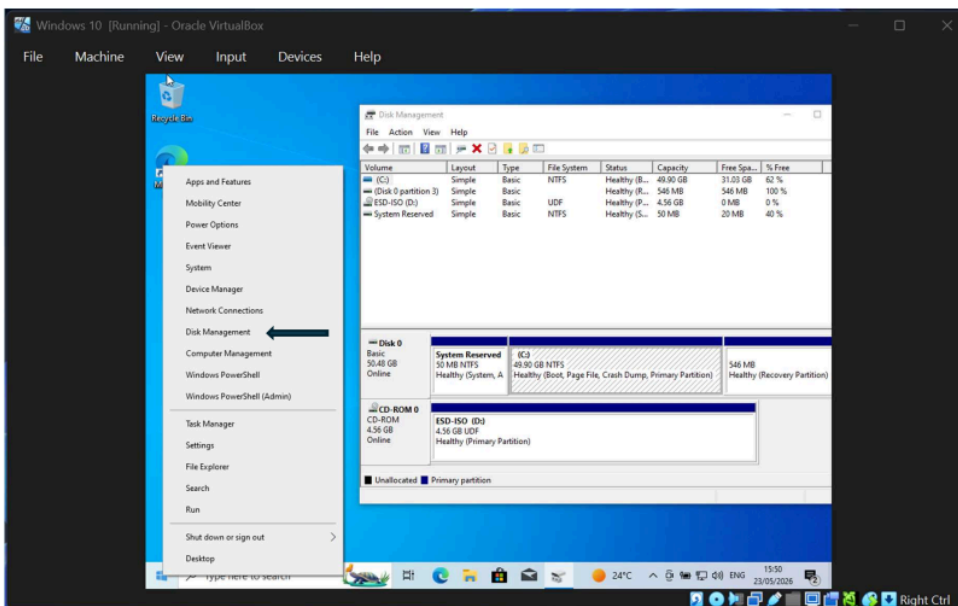
The installation was completed by selecting “Insert Guest Additions CD Image” from the VirtualBox menu and running the installer inside Windows. After installation, the virtual machine was restarted to apply the changes.

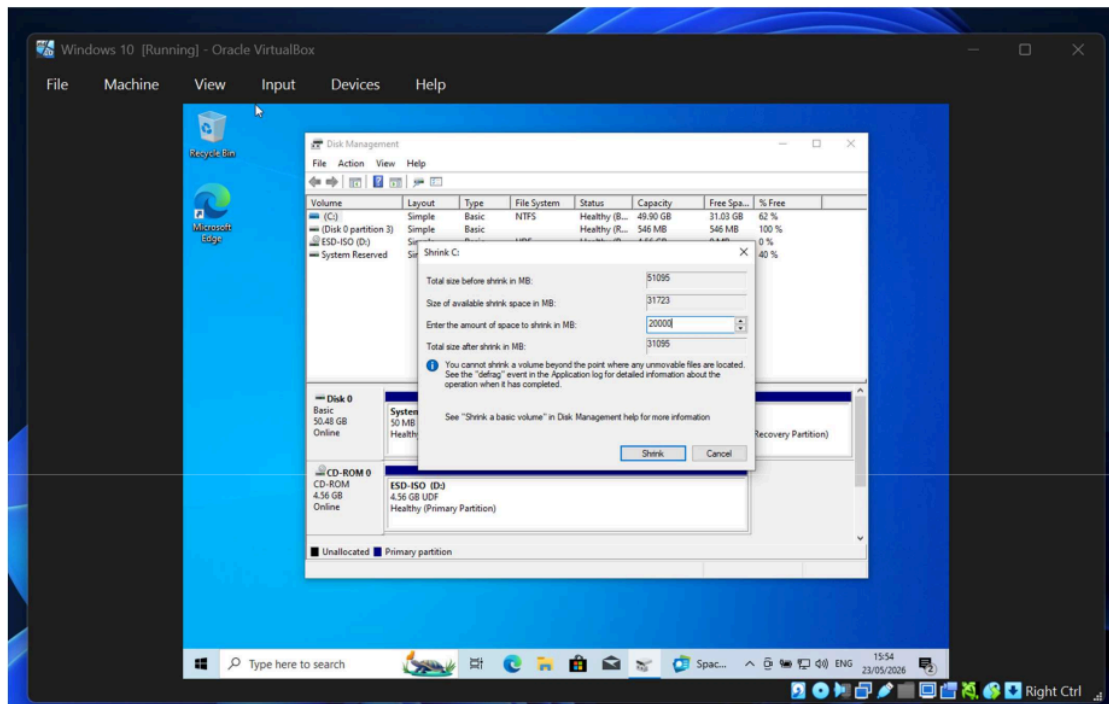
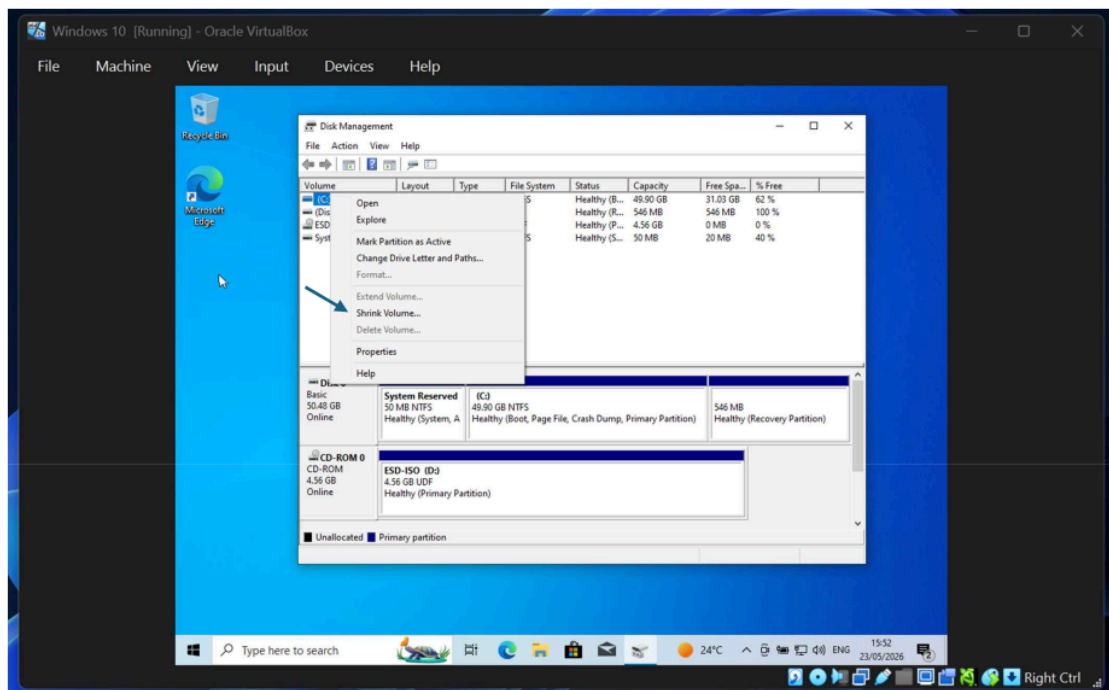




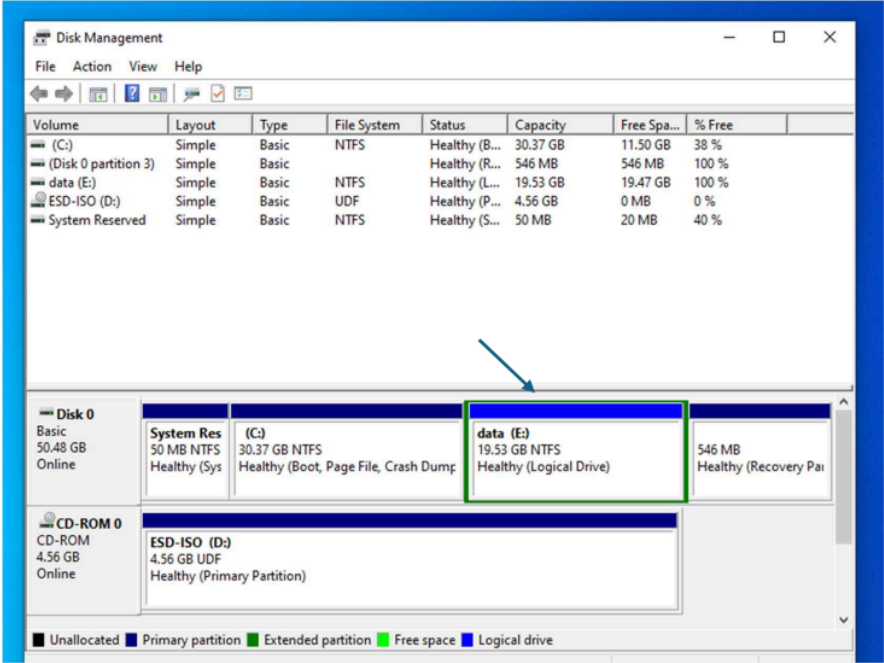
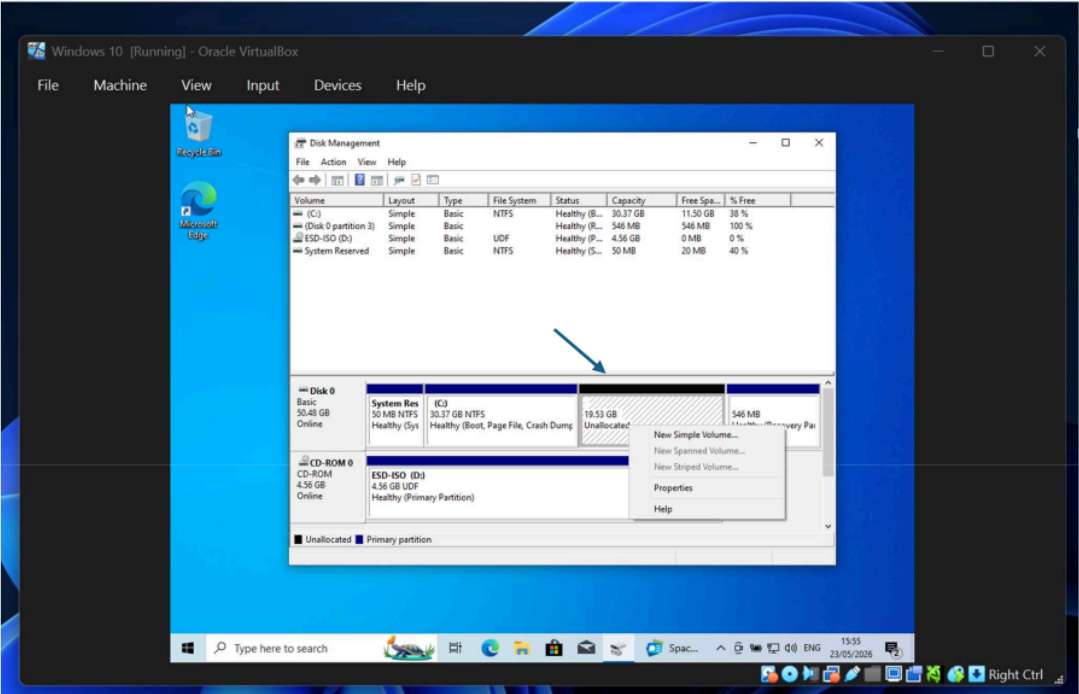
5. Disk Portioning

The virtual hard disk was partitioned inside the Windows 10 operating system using the Disk Management tool. The purpose of this process was to split the original system drive (C:) into two separate partitions to improve data organisation and storage management.





Initially, the virtual machine contained a single C: drive that stored both the operating system and user data. To create an additional partition, the C: drive was reduced in size using the “Shrink Volume” option in Disk Management. Approximately 20 GB of space was removed from the C: drive, creating unallocated space on the disk.

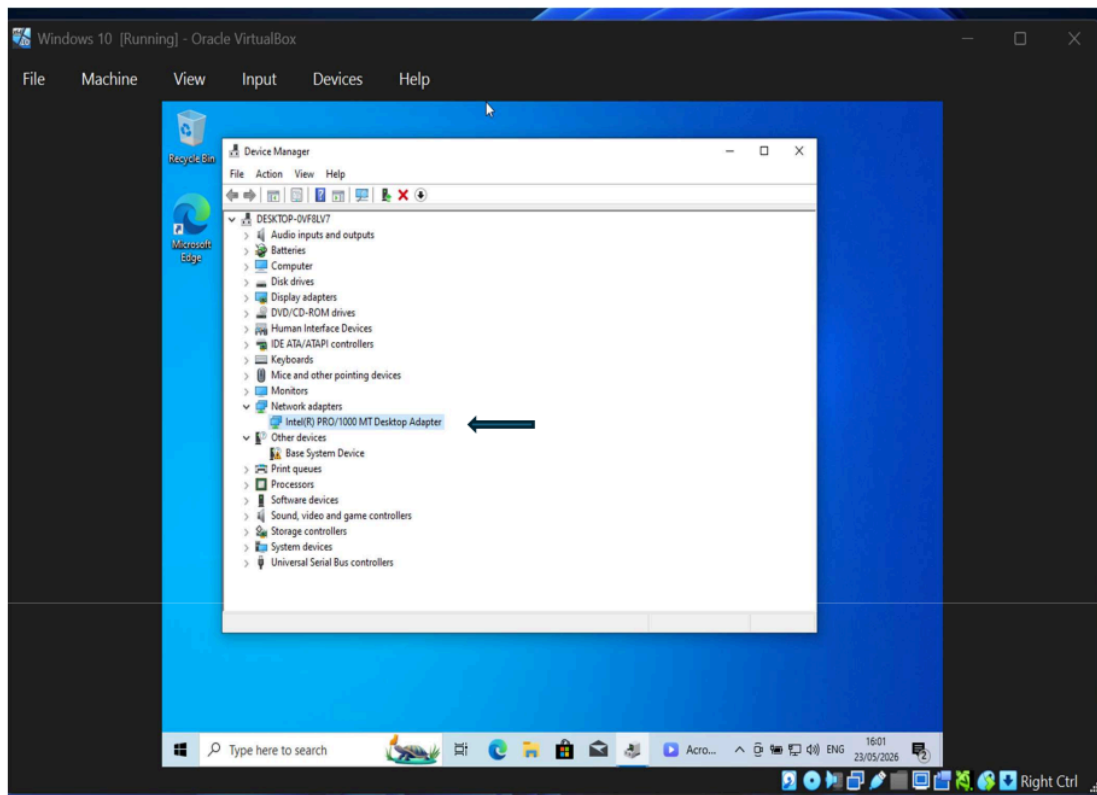


This unallocated space was then used to create a new simple volume. During this process, the new partition was formatted using the NTFS file system and assigned the drive letter E: This resulted in two separate drives: C: for the operating system and E: for user files and documents.

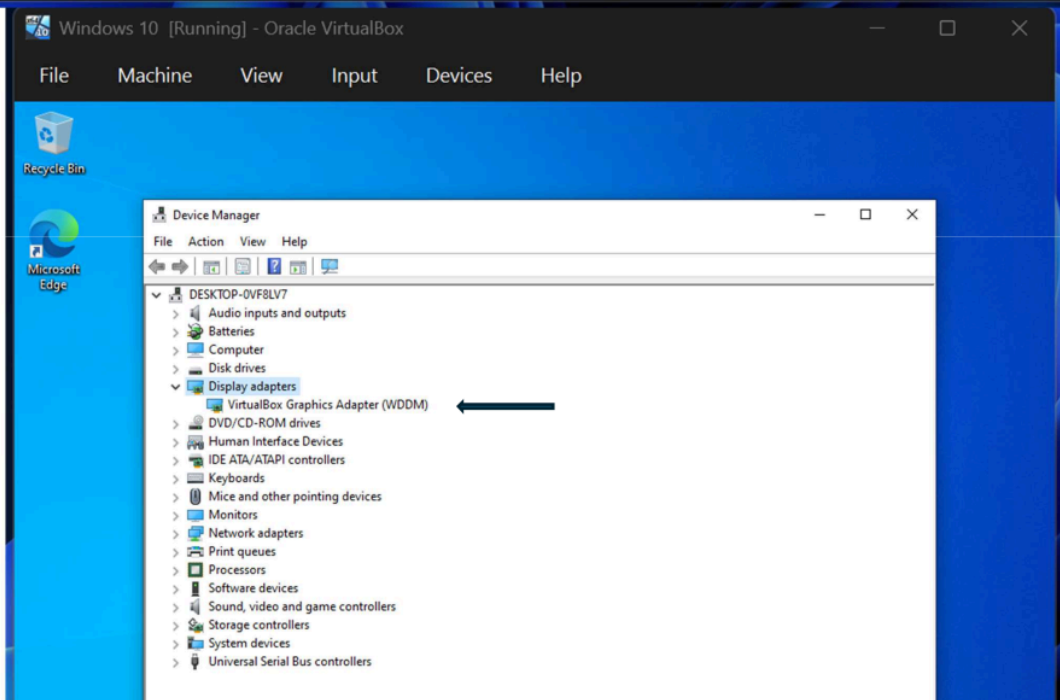
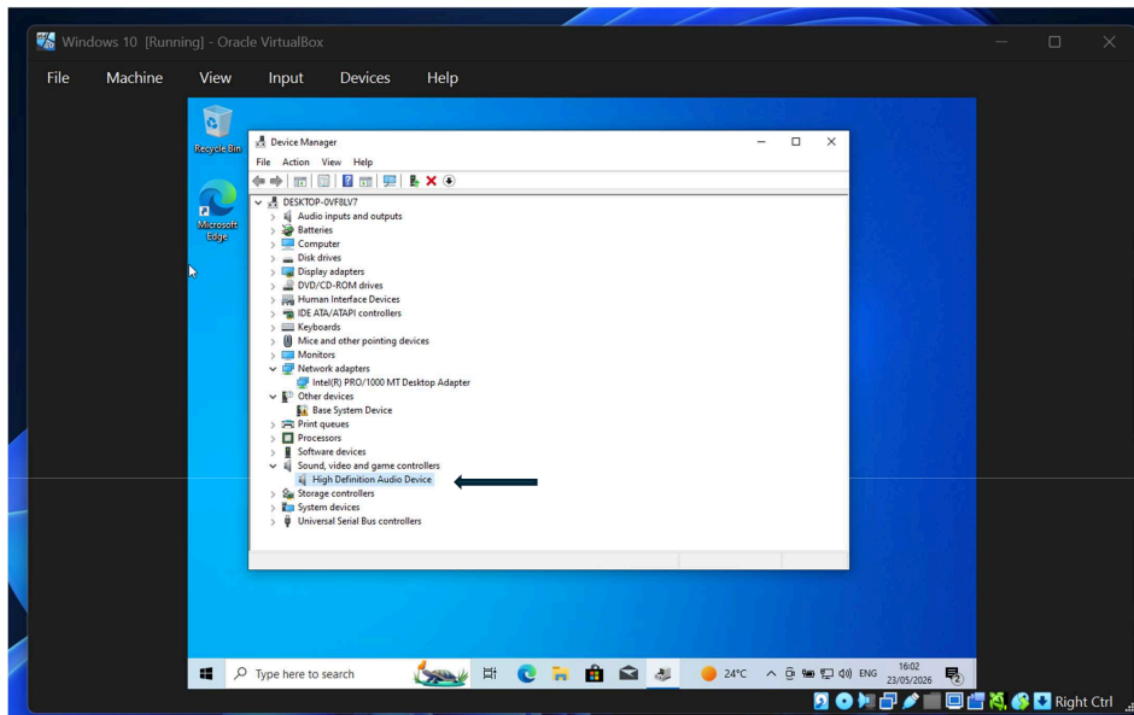
This setup improves file organisation by separating system files from personal data, making the system easier to manage and reducing the risk of data loss during system maintenance.

6.Driver Configuration

The driver configuration for the virtual machine was verified using the Device Manager tool within Windows 10. This was done to ensure that key hardware components such as the network adapter and sound device were correctly installed and functioning.



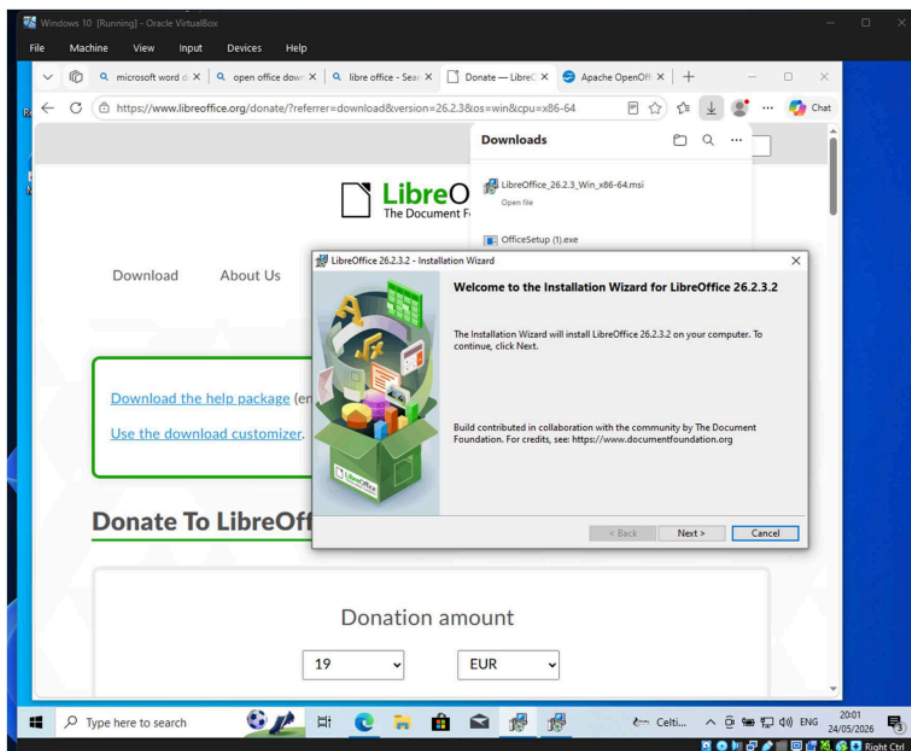
For network connectivity, the virtual machine used a virtual network adapter provided by Oracle VM VirtualBox. In Device Manager, this appeared as an Intel PRO/1000 MT network adapter. The network connection was configured using NAT (Network Address Translation) mode in VirtualBox, which allows the virtual machine to access the internet through the host system without requiring manual network configuration.



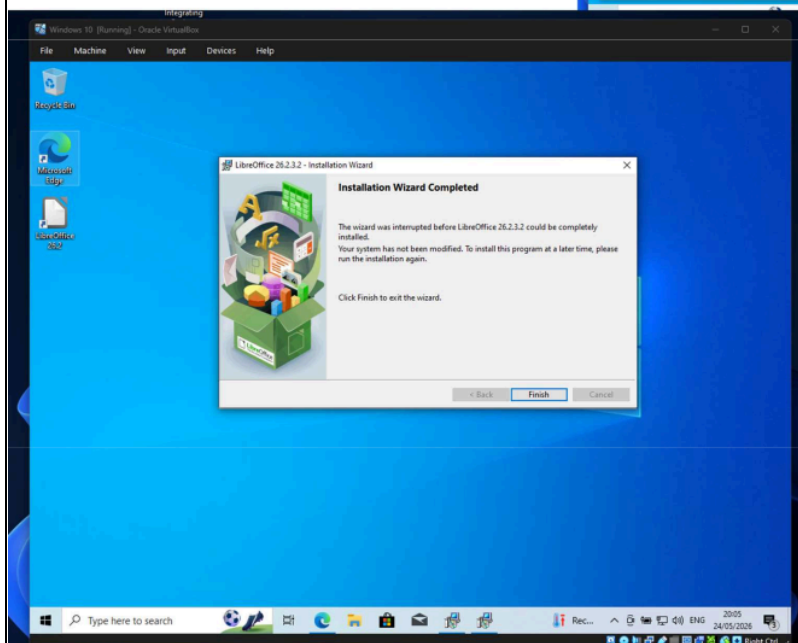
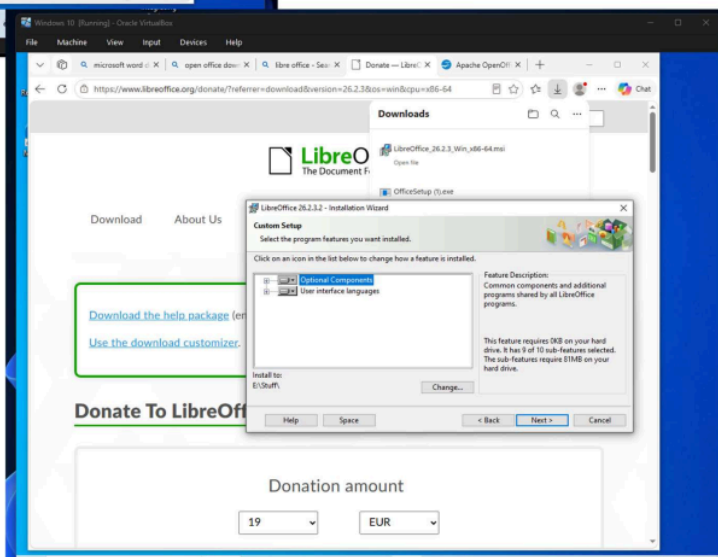
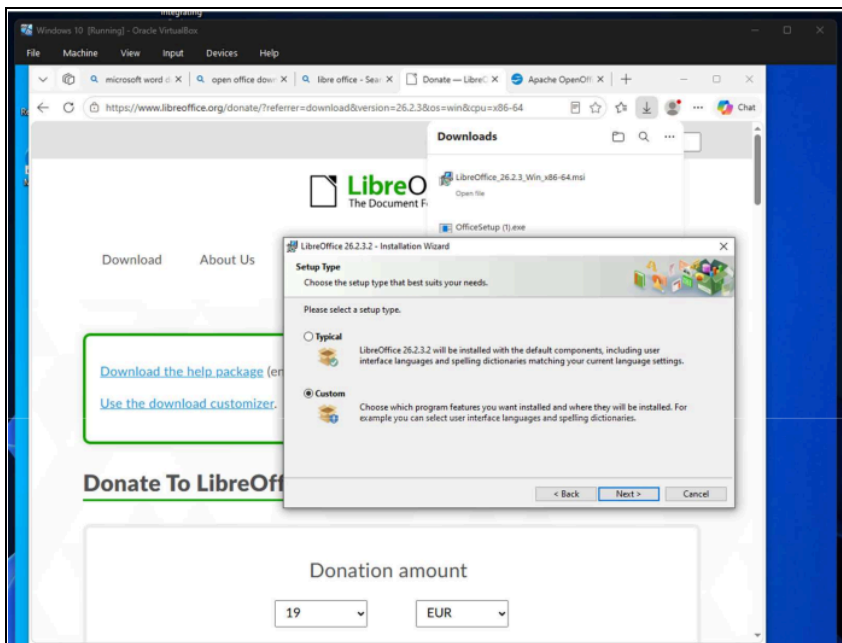
For audio support, the system detected a High-Definition Audio Device. This indicates that the virtual sound driver was correctly installed and enabled, allowing the virtual machine to produce audio output through the host system.

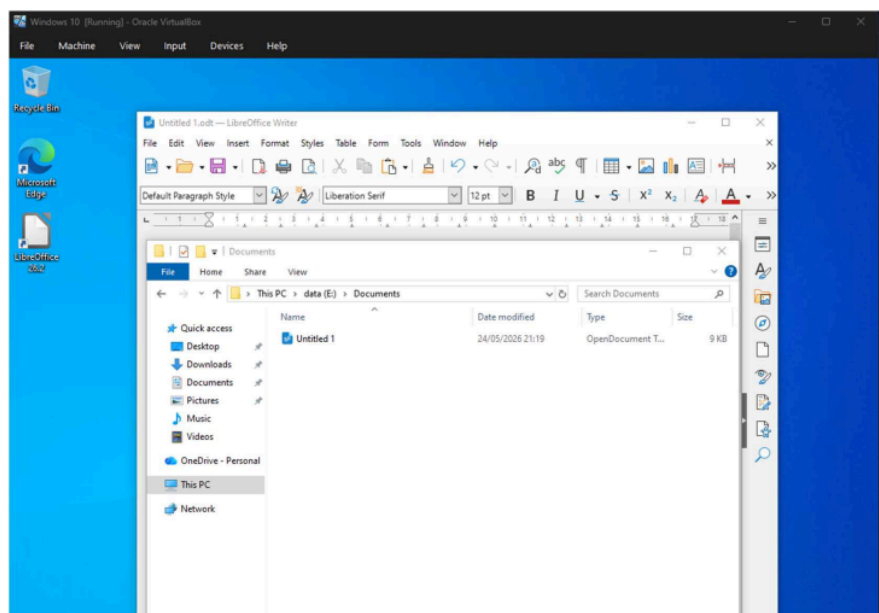
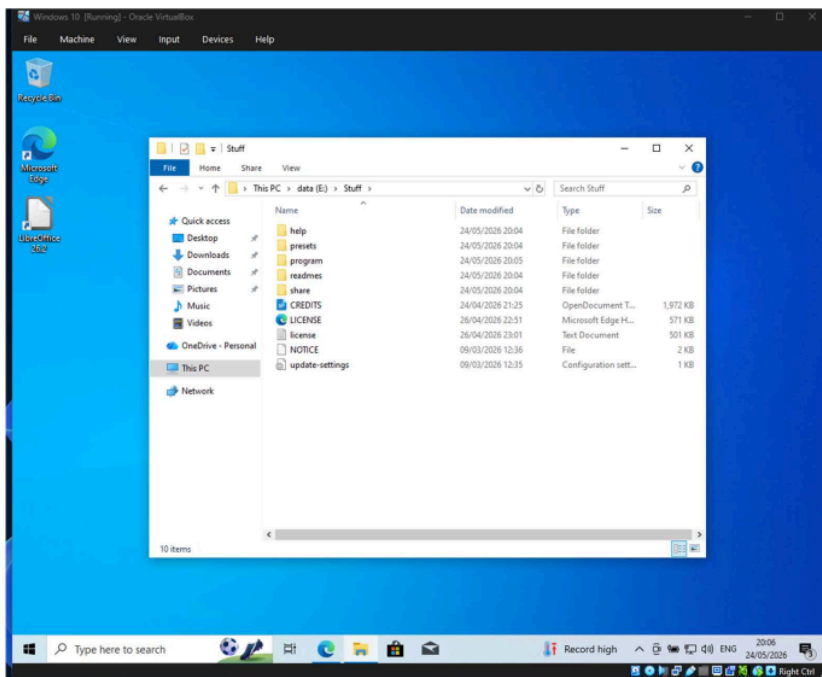
7.Office software installation

An office productivity suite was installed inside the Windows 10 virtual machine to allow the creation and editing of documents. For this assignment, **LibreOffice** was used as it provides a free and fully functional alternative to Microsoft Office.



The software was downloaded inside the virtual machine using a web browser and installed using the default installation settings. During installation, no advanced configuration was required, and the setup process was completed by following the standard installation wizard.





Once installed, LibreOffice Writer was opened and used to create a sample document. This document was saved to the secondary partition (E:) created earlier in the assignment. Saving files to the E: drive ensures that user data is separated from the operating system, improving organisation and reducing the risk of data loss if the system drive is modified. The installation was successful, and the software was fully functional within the virtual machine environment.

8. Conclusion

In conclusion, the assignment successfully demonstrated the installation and configuration of a Windows 10 virtual machine using Oracle VM VirtualBox. The virtual machine was configured with appropriate system resources, and the Windows operating system was installed successfully within the virtual environment.

Computer Systems Assignment

GRADEMARK REPORT

FINAL GRADE

58/100

GENERAL COMMENTS

The practical work in this submission is solid

The report is well-structured, well-written, and avoids first-person throughout, which shows good academic register

The single most damaging gap is the complete absence of references: the entire 15 marks for Criterion 1 are lost because there is no reference list and no in-text citations anywhere.

The second priority is figure numbering: every screenshot must carry a caption (e.g. "Figure 3 - Disk Management showing C: and E: partitions") and be referenced by number in the body text before it appears.

Engagement with Literature Skills

There are no references anywhere in this submission - no reference list, no bibliography, and no in-text citations in the body text. The document ends at the conclusion with no subsequent section. This is a complete absence of evidence for this criterion at every level.

0/15

Knowledge and Understanding Skills

explains the purpose of most key settings: 6 GB RAM for performance-efficiency balance, dynamic disk allocation to avoid wasting host storage, 4 CPU cores for responsiveness, NAT networking mode correctly

described as allowing internet access through the host without manual configuration, and the partition rationale (separating system files from user data) is accurately and clearly stated. LibreOffice is justified as a free alternative to commercial suites. Understanding is generally accurate and goes beyond simple listing,

15/25

Practical Application Skills

The image log confirms all core practical work was completed. Part 1 is well-evidenced: VM creation wizard (images 1-2 showing 6200 MB RAM, 4 CPUs, 52.20 GB disk), sequential installation screenshots from OS selection through OOBÉ to the running desktop (images 5-8), Guest Additions installation fully shown (images 9-11), and the partition outcome is clearly confirmed by the Disk Management full-window screenshot showing C: at 30.37 GB NTFS and data (E:) at 19.53 GB NTFS Healthy (Logical Drive) with the shrink and new-volume steps also shown (images 12-16). Part 2 is mostly evidenced: the Intel PRO/1000 MT Desktop Adapter is clearly visible in Device Manager (images 17-18) and the NAT configuration is explained in text; the sound device node is present in the Device Manager tree (image 19) but the Sound, video and game controllers section is not expanded so the specific High-Definition Audio Device is not visually confirmed. LibreOffice installation is comprehensively documented through four screenshots including completion (images 20-23). Data files saved to E: drive are confirmed (image 25 shows LibreOffice Writer with a document in E:\Documents). The two file-location requirements that are not met: the installer save location before running (typically Downloads) is not shown or stated, and the LibreOffice program files directory is not identified.

38/50

Transferable Skills for Life and Professional Practice

The report has a basic form of a title page (module name, assignment title, student name and ID), a

table of contents with eight numbered and named sections, and consistently numbered sections throughout the body - the structural bones are present. Writing is predominantly in the third person and passive voice, which is appropriate for Level 4 academic work.

The critical failing is that none of the 25 screenshots carry a figure number or descriptive caption; images are embedded in the text with no label and the body text never references a specific figure by number. A table of figures is required when four or more figures are used and is absent. RAM, ISO, and NTFS are used without first-use expansion, though the count is below the five-abbreviation threshold that requires a glossary table. The title page has no date and no programme name. Spelling and grammar are broadly clean throughout.

5/10

Total: 58/100

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