Module Code & Module Title

Level 5 – CT5052NP Network Operating System

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Logbook Report-2

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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Introduction

This project mainly focuses on installing a windows server 2022 and running the server on a virtualization software such as VMWare or VirtualBox using a ISO file. In this project , We are using VirtualBox software for virtualization. Virtualization software allows simulate physical hardware in a virtual environment which enables the installation of various OS without any dedicated hardware.

Working with virtual machines gives us a hand-on experience which helps us to understand server setup ,disk management , memory allocation and many other necessary things.

System VMs emerged during the 1960s and early 1970s5 and were the origin of the term virtual machine. At that time, mainframe computer systems were very large, expensive, and usually shared among numerous users; with VM technology, different user groups could run different operating systems on the shared hardware. As hardware became less expensive and much of it migrated to the desktop, interest in these original system VMs faded. Today, however, system VMs are enjoying renewed popularity as the large mainframe systems of the past have been replaced by servers or server farms shared by many users or groups. (James E. Smith)

Objective

The specific goals of this lab is to gain hand-on experience in installing windows server 2022 in a virtual environment using VirtualBox and configure it. Throughout this project we'll learn how to install windows server using an ISO file and how to setup a virtual machine and allocate memories and other resources like CPU and Storage which will help us to understand basic concepts of server installation , configuration and management.

Required Tools and Concepts

While doing this project many software and other resources like VirtualBox ,windows server iso file etc have been used . The description of these resources are given below :

1.Windows server

Figure 1 Windows Server 2022

Windows Server is a line of Microsoft operating systems (OSes) comprised of extremely powerful machines. Windows Server was first launched in April 2003. It's typically installed on heavy-use servers serving as a backbone for most IT companies, applications, and services. The server handles the administrative group-related activities on a network. It organizes, stores, sends, and receives files from devices connected to a network. (Resources : IT-Glossary, n.d.)

Secured-core server builds on technologies such as Windows Defender System Guard and Virtualization-based Security to minimize risk from firmware vulnerabilities and advanced malware. (Windows Server 2022, n.d.)

2. Oracle VirtualBox

Figure 2 Oracle VirtualBox

Oracle VirtualBox, the world's most popular open source, cross-platform, virtualization software, enables developers to deliver code faster by running multiple operating systems on a single device. IT teams and solution providers use VirtualBox to reduce operational costs and shorten the time needed to securely deploy applications on-premises and to the cloud. (VirtualBox : Oracle.com, n.d.)

3. Virtualization

Virtualization is a technology that allows you to create multiple "virtual" versions of operating systems ,servers or storage devices on a single physical hardware. It's like your computer hosting several mini-computers inside it , each acting as a independent machine.

Steps to replicate

There's a type of algorithm t o perform virtualization in VirtualBox .The followed steps are described and shown below:

1.Open VirtualBox

First of all, We've to open the virtualization software (VirtualBox). After you've opened VirtualBox , you've to click on the add button on the top right of the screen.

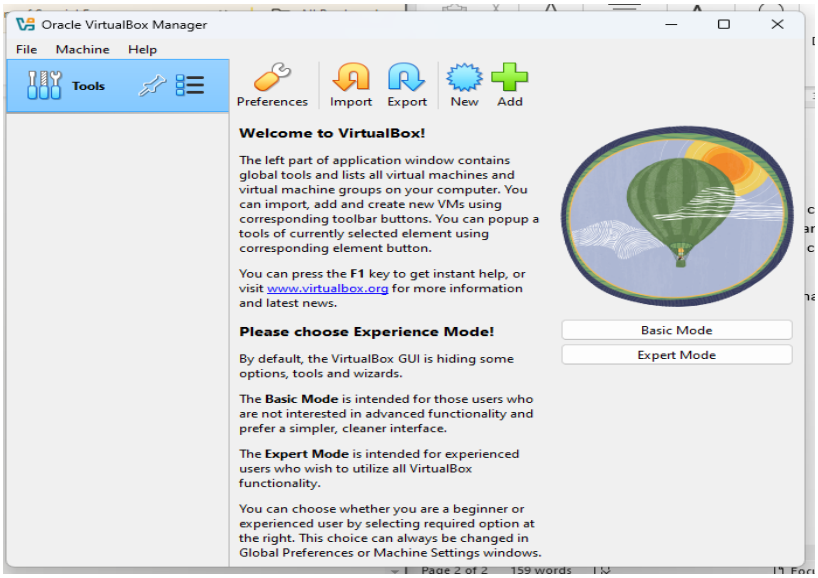

Figure 3 Open VirtualBox

2.Determining virtual machine name and selecting OS

After you clicked the add button, you'll see a screen where you are asked to determine the virtual machine name and operating system .There you've to select the windows server 2022 iso file (which you've downloaded before) below in the place of ISO image.

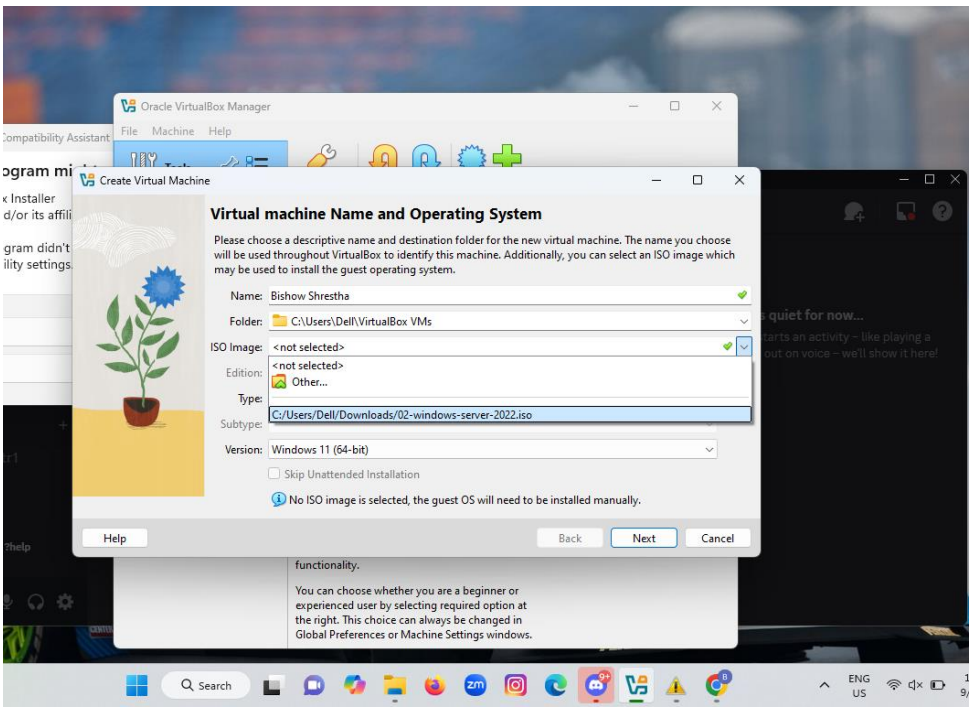

Figure 4 Selecting ISO image for OS.

3.Username and password setup for guest OS installation

After you selected the ISO file and click the next button ,you'll be asked to setup your own username, password and host name .

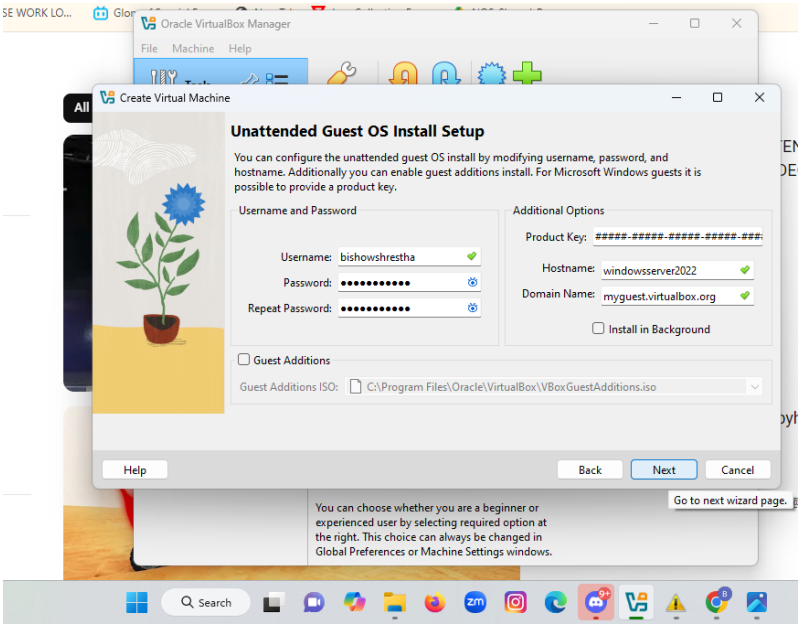

Figure 5 Username ,Password and Host setup

4.Hardware setup

After you update your username , password and hostname you've to do the hardware setup i.e. RAM and CPUs. You can put any numbers you want according to the quality of performance you want from it.

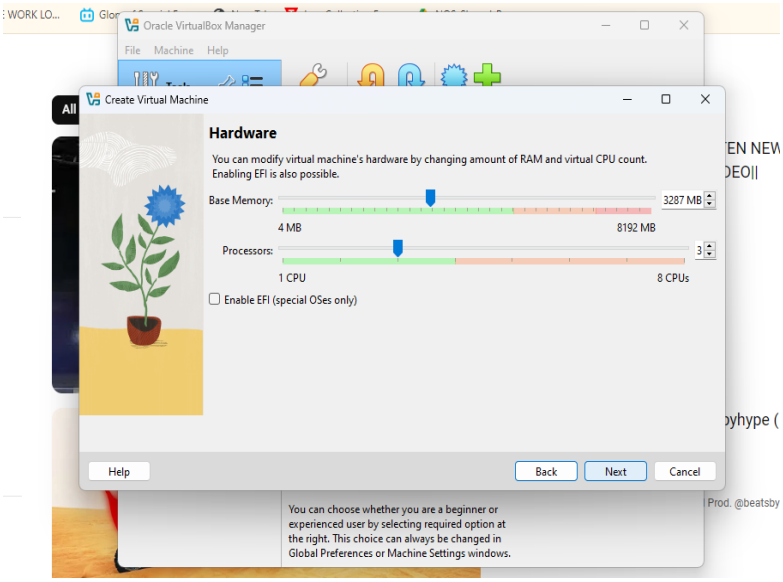

Figure 6 Hardware setup

5. Virtual Hard Disk Setup

As the RAM and CPU of virtual machine is updated, you've to create a hard disk with the amount of space memory you need.

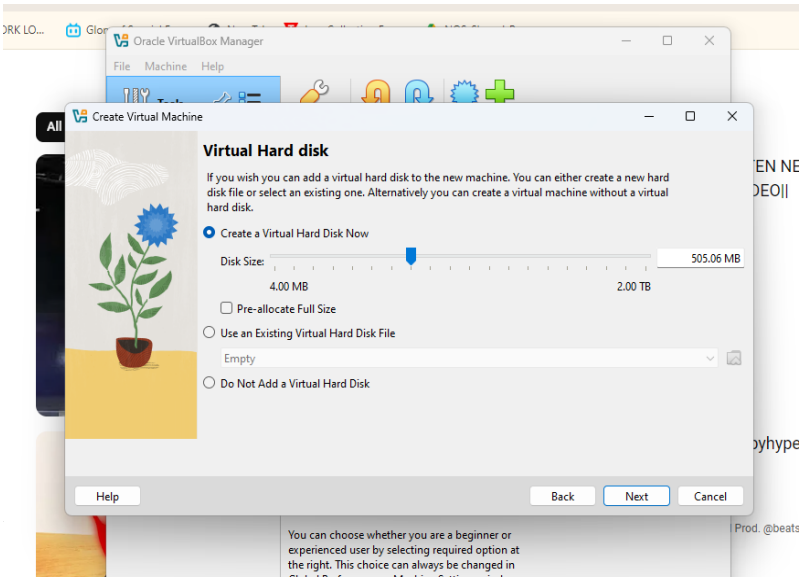

Figure 7 Creating Virtual Hard disk

6.Overall Summary of Virtual Machine

At the end, you're provided a summary of the virtual machine you've just created which consist every information about the machine.

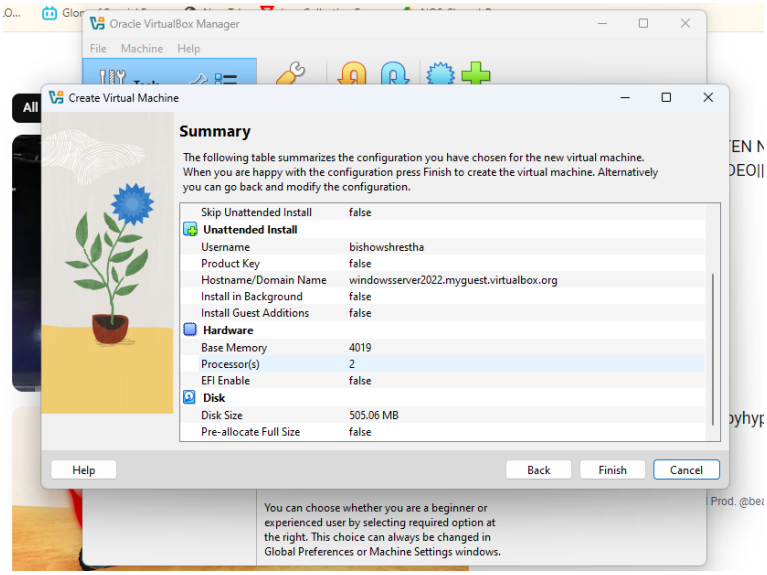

Figure 8 Summary of virtual machine

7. Starting the virtual machine

The virtual machine is successfully created now you've to start the virtual machine.

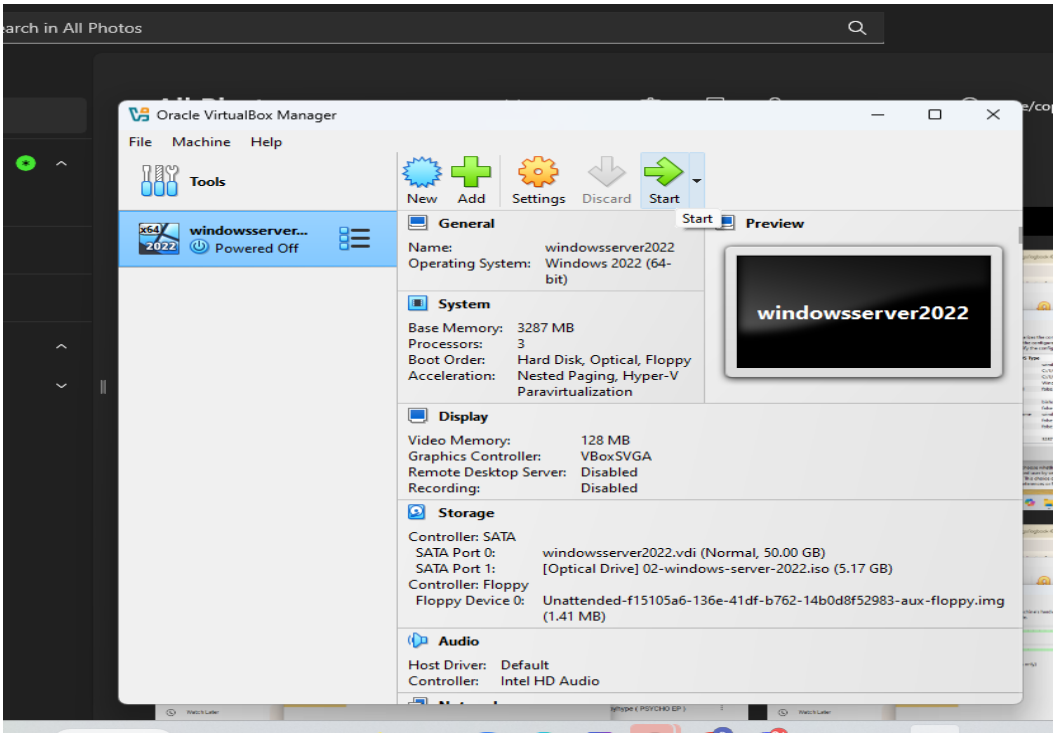

Figure 9 Starting the virtual machine

8. Working virtual machine

The virtual machine is successfully working .

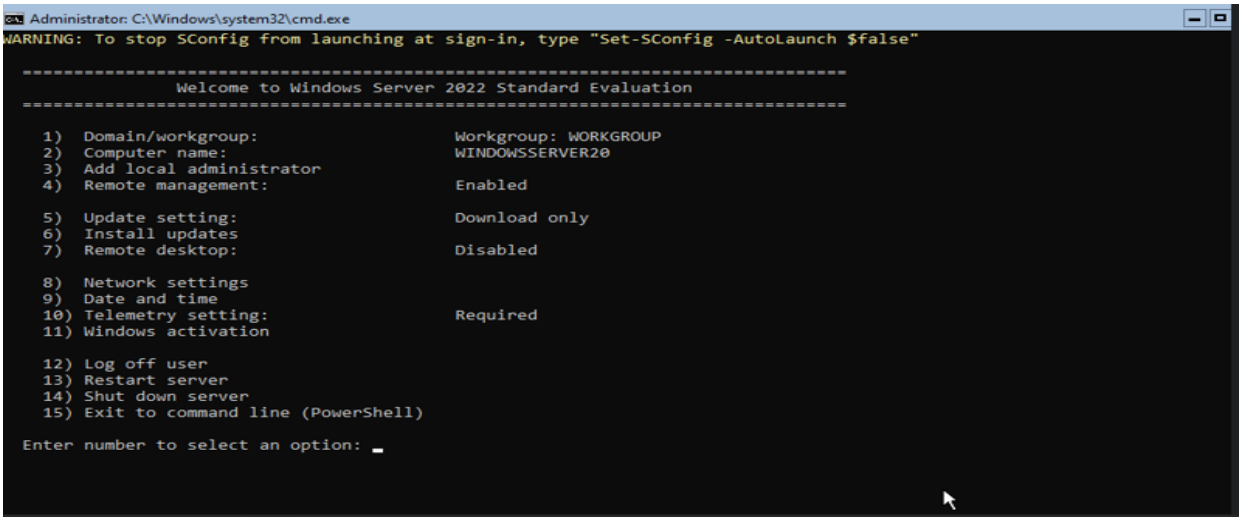

Figure 10 Working virtual machine

Conclusion

Conclusively, This lab project has been very useful for me. I've gained a hands-on experience with installing and configuring a server in a virtual environment. By setting up the virtual machine and installing the server , I've known the insights about the server installment , resource allocation and other basic tasks related to system management. I've also learned that virtual machines can be used for virus detection in software applications.

Bibliography

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