



Module Code & Module Title

CT505NP – Computer Networking System

Assessment Type

Logbook

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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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1. Introduction

VirtualBox is a popular, free and open-source virtualization software that allows to run multiple operating systems on a single computer. It's like having multiple computers within one, each with its own operating system and software. Many IT experts use VirtualBox to explore cutting-edge technologies. This tool enables them to experiment, build, showcase, and launch their software and databases on virtual machines, directly on their personal computers (Kuhn, et al., 2015).

The capability to run multiple virtual machines simultaneously has made VirtualBox a popular tool for individuals and organizations alike. It enhances development efficiency, speeds up application deployment, and facilitates robust software testing in diverse environments. Furthermore, it reduces operational costs by minimizing the need for physical server infrastructure.

Advantages:

- **Free and Open Source:** VirtualBox is completely free to use and has an open-source license, making it accessible to everyone.
- **Cross-Platform Compatibility:** It runs on various host operating systems, including Windows, macOS, and Linux, which makes it versatile for different users.
- **Multiple OS Support:** We can run different operating systems simultaneously, allowing for easy testing and development across platforms.
- **Guest Additions:** These enhancements improve performance and usability, providing better graphics, seamless mouse integration, and shared folders between host and guest.
- **Customizable Resources:** We can allocate specific amounts of CPU, RAM, and disk space to each VM, optimizing performance based on your needs.
- **Networking Options:** VirtualBox offers various networking configurations, allowing to set up NAT, bridged, or host-only networking as required.
- **User-Friendly Interface:** It has an intuitive graphical user interface that makes it easy for users to create and manage virtual machines.

Disadvantages:

- **Performance Overhead:** Running a virtual machine can lead to reduced performance compared to running an OS natively, especially if the host machine has limited resources.
- **Limited 3D Graphics Support:** While VirtualBox does support 3D acceleration, it may not perform as well as other virtualization solutions, which can be a drawback for graphic-intensive applications.

- **Complex Configuration:** For advanced features and optimal performance, some users may find the configuration process complex and time-consuming.
- **Not Ideal for Production Environments:** VirtualBox is primarily designed for personal use, testing, and development, and may not be the best choice for production-level virtualization.
- **Compatibility Issues:** Some operating systems or applications may not work perfectly in a virtual environment, leading to potential compatibility issues.
- **Limited Support for USB Devices:** While it does support USB devices, the functionality may not be as robust as in other virtualization platforms.

2. Objectives

The main objective of this log is to Learn about VirtualBox which has some key objectives that can really help. First, it helps to understand virtualization, which is important in tech today.

3. Required Tools and Concepts

The required tools and concepts are:

- **Processor:** Needs an x86-type processor (like Intel or AMD).
- **Storage:** Minimum 1GB RAM required, but 4GB RAM is recommended.
- **VirtualBox:** Oracle VM VirtualBox
- **Windows Requirement:** Windows Server 2022 ISO file

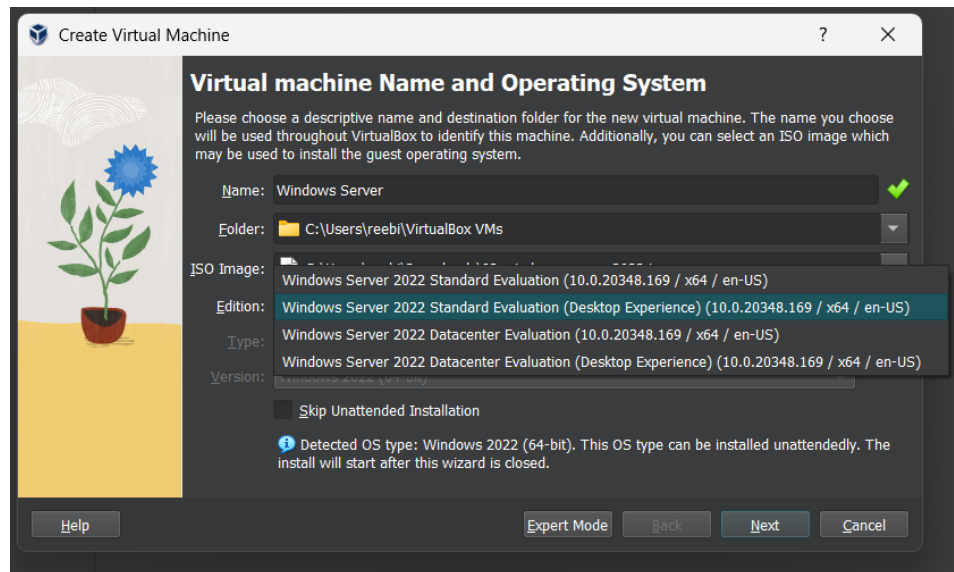


Figure 1 Selecting Desktop Experience Edition

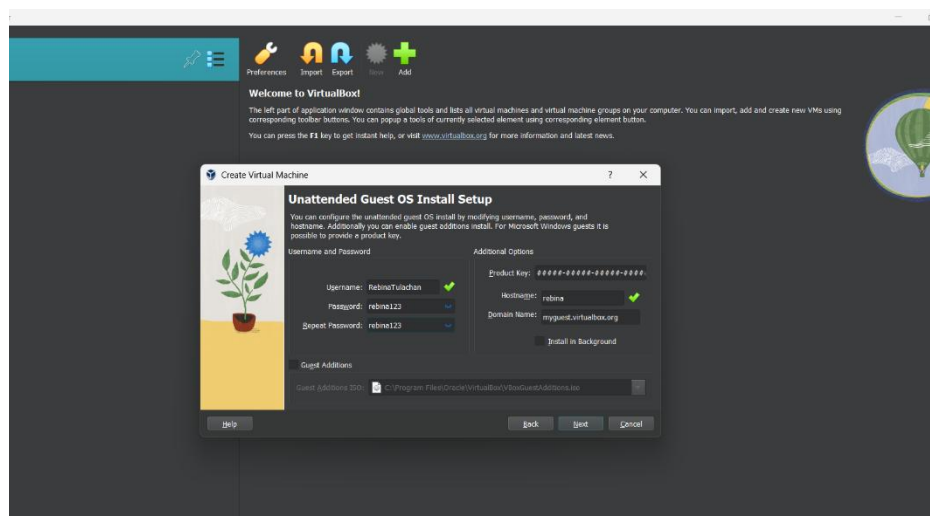


Figure 2 Allocating Hostname and password

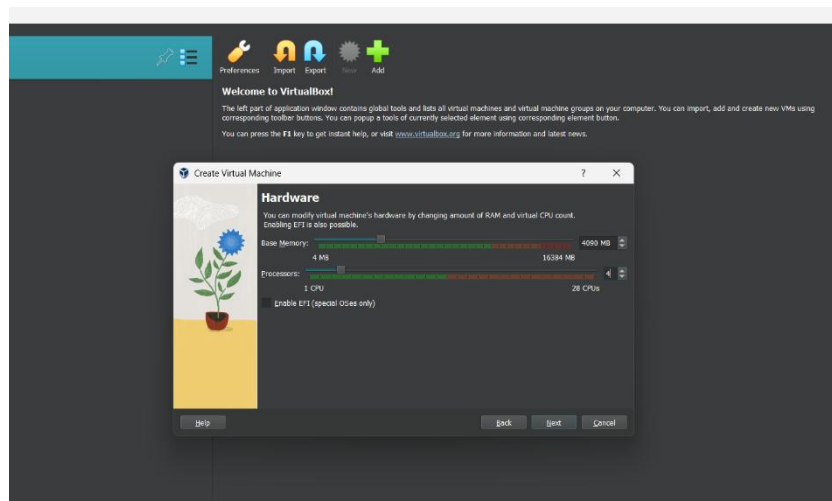


Figure 3 Providing ram and CPU

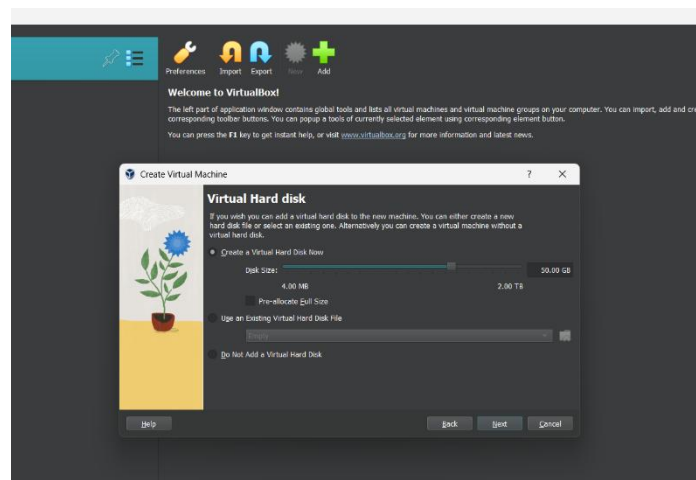


Figure 4 Partitioning memory

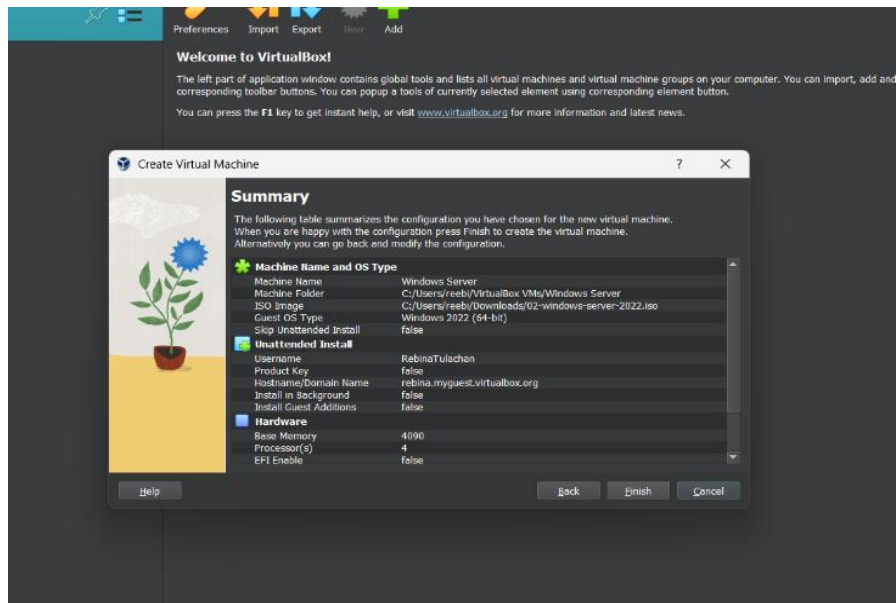


Figure 5 Information

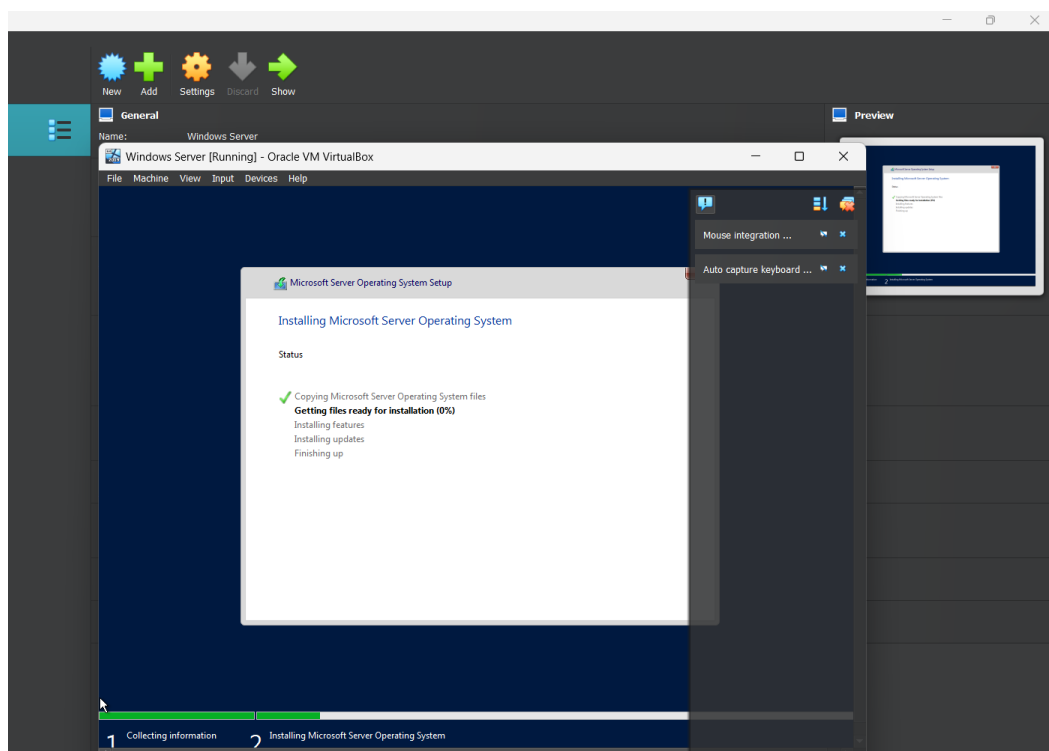
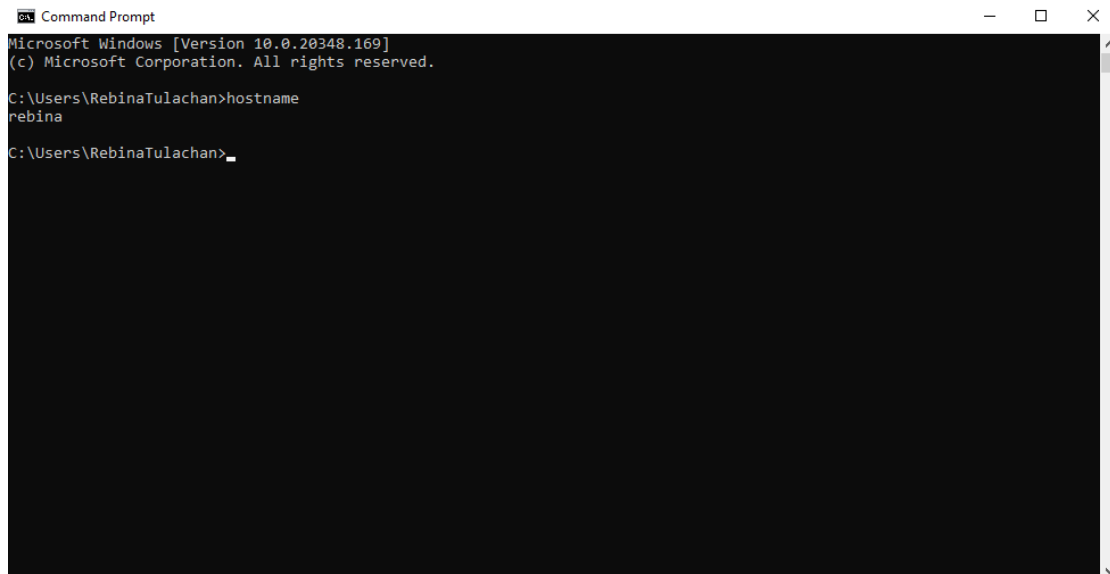


Figure 6 : Installation of OS, features, and updates

A screenshot of a Windows Command Prompt window. The title bar reads 'Command Prompt'. The window content shows the following text: 'Microsoft Windows [Version 10.0.20348.169]', '(c) Microsoft Corporation. All rights reserved.', 'C:\Users\RebinaTulachan>hostname', 'rebina', and 'C:\Users\RebinaTulachan>'. The prompt is at the end of the last line.

```
Microsoft Windows [Version 10.0.20348.169]
(c) Microsoft Corporation. All rights reserved.

C:\Users\RebinaTulachan>hostname
rebina

C:\Users\RebinaTulachan>
```

Figure 7 Displaying hostname in CMD

4. Conclusion

In summary, virtualization allows us to utilize multiple hardware resources on a single physical machine. Oracle VirtualBox is a robust and flexible virtualization tool. We can learn how to create virtual machines using VirtualBox, install operating systems, and explore its various features.

5. References

Kuhn, D., Kim, C. & Lopuz, B., 2015. *Linux and Solaris Recipes for Oracle DBAs..* s.l.:s.n.