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Course: CMIT 320 | Network Security

Institution: University of Maryland Global Campus (UMGC)

Lab Title: Creating a Virtual Machine and Installing Ubuntu Using Hyper-V

Objective

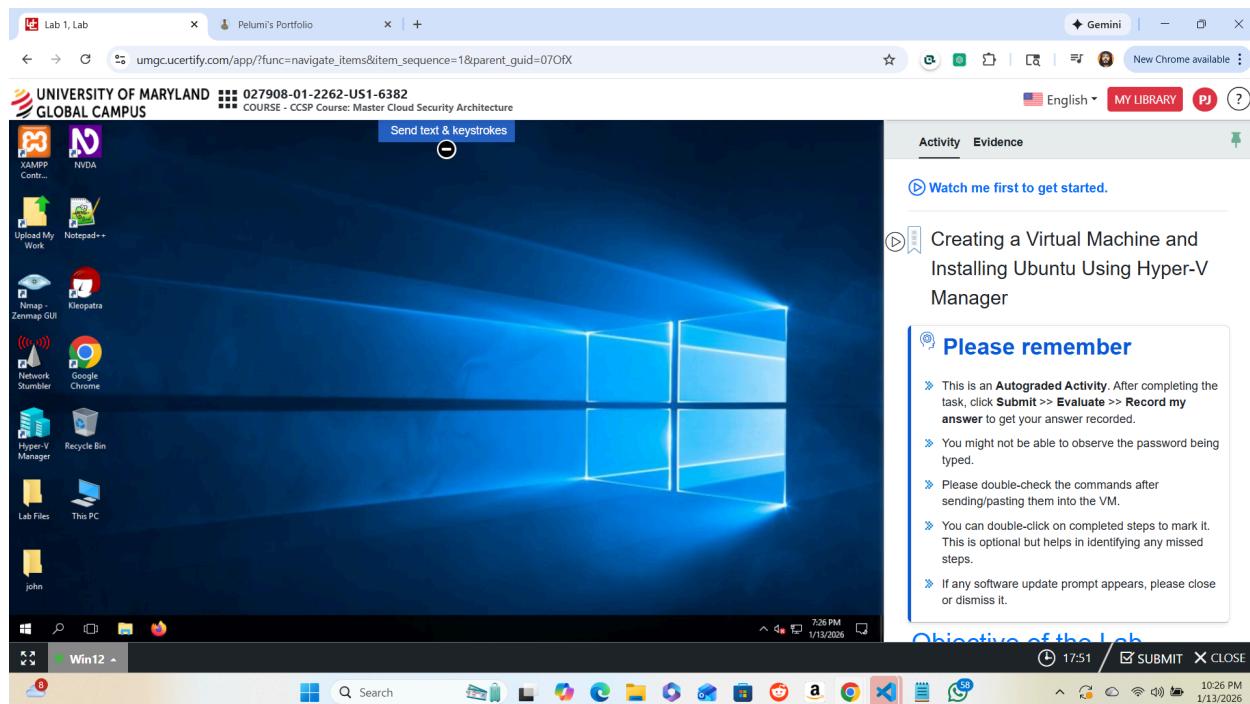
The objective of this lab was to create a virtual machine using Hyper-V Manager and install the Ubuntu Linux operating system. This lab focused on understanding virtualization concepts, configuring virtual networking, and preparing a Linux-based environment for future cloud and security-related tasks.

Tools & Environment Used

- uCertify Virtual Lab (Windows Host)
- Hyper-V Manager
- Ubuntu Linux ISO
- Internal Virtual Switch (Student-Switch)

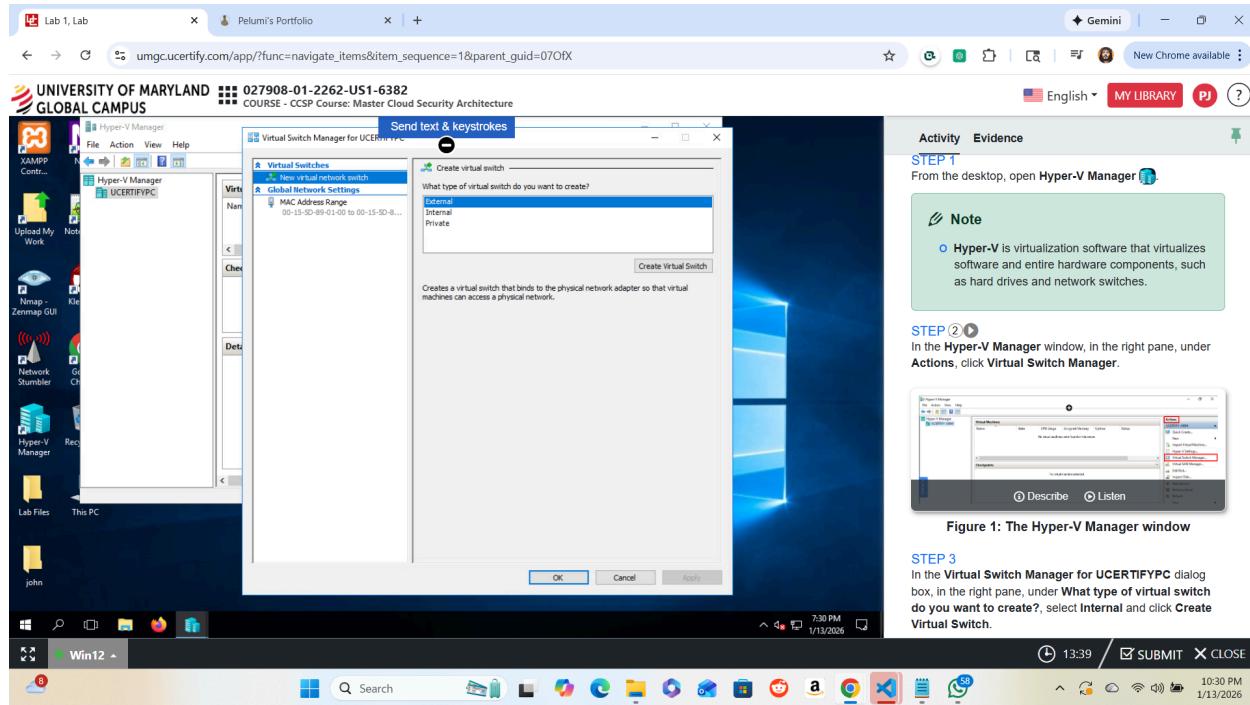
Lab Overview

Hyper-V is a virtualization platform that allows multiple operating systems to run on a single physical machine by virtualizing hardware resources such as memory, storage, and networking. In this lab, Hyper-V was used to deploy Ubuntu Linux in a controlled environment, reinforcing foundational skills required for cloud security architecture.



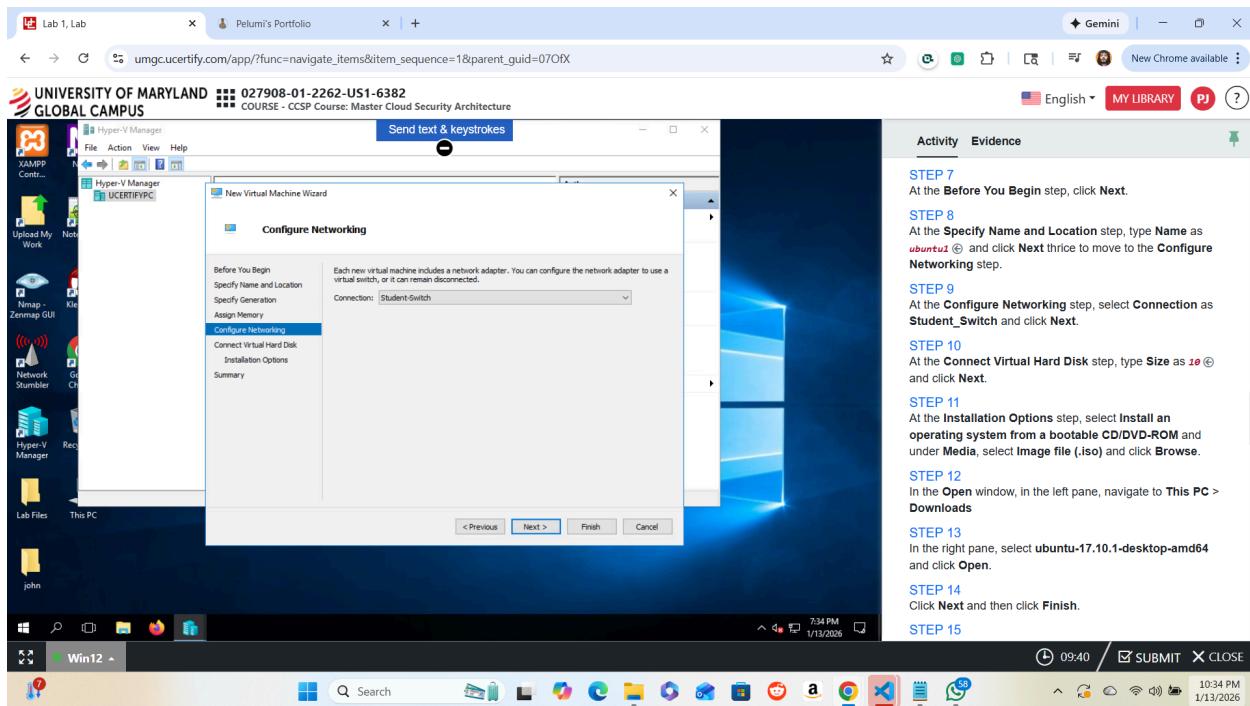
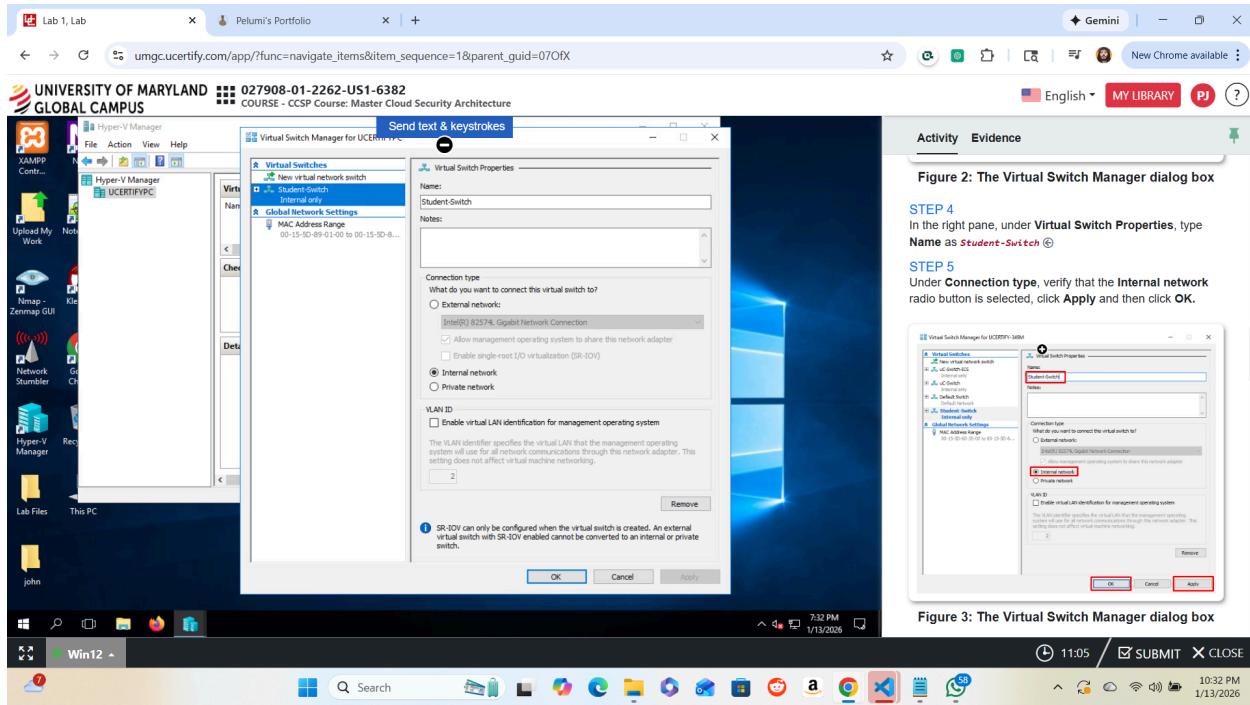
Step 1: Accessing Hyper-V Manager

Hyper-V Manager was launched from the Windows desktop. This tool is used to create, configure, and manage virtual machines and virtual networking components.



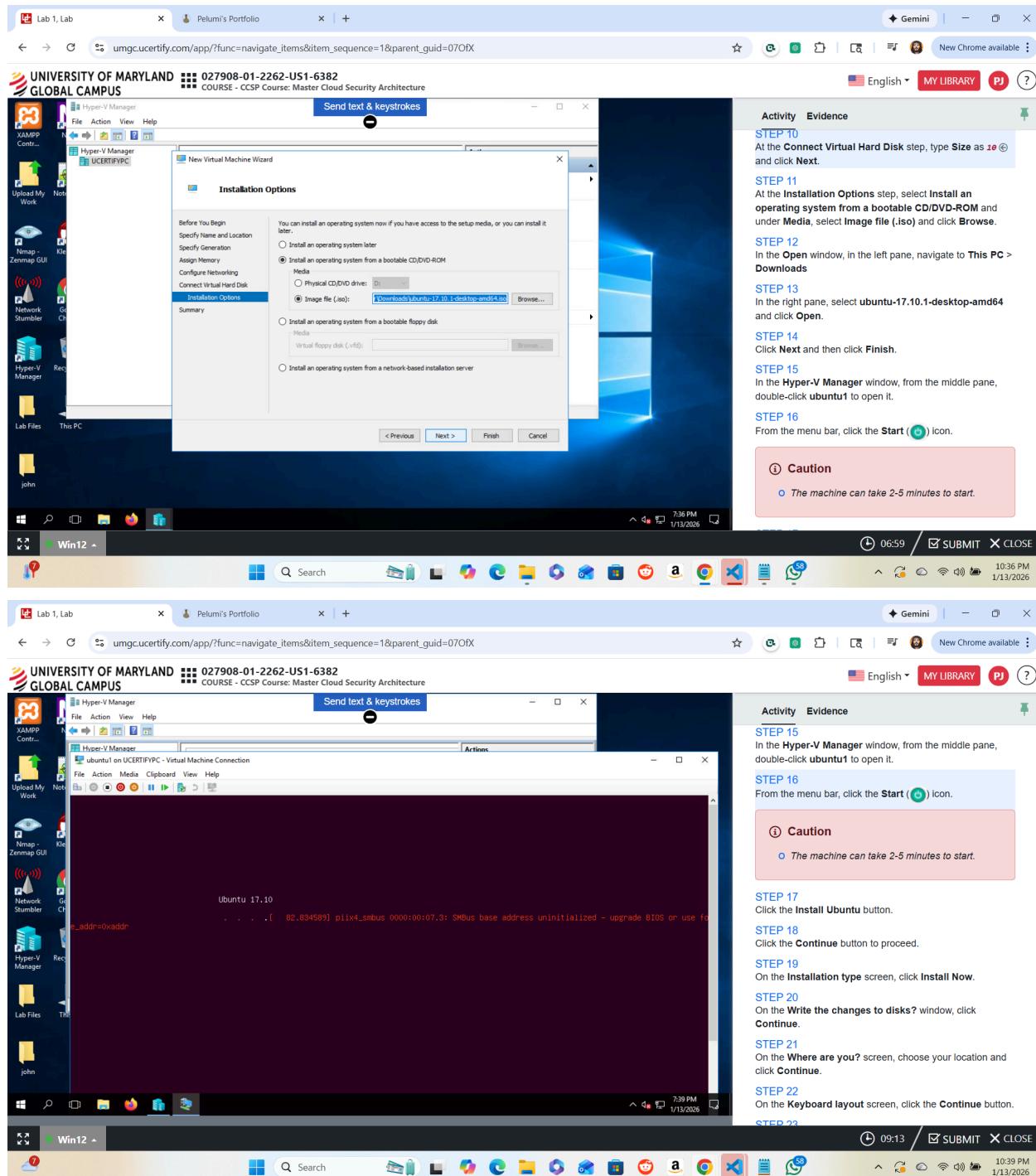
Step 2: Creating a Virtual Switch

The Virtual Switch Manager was opened, and a new internal virtual switch named Student-Switch was created. This configuration allowed communication between the host system and the virtual machine while keeping the environment isolated from external networks.



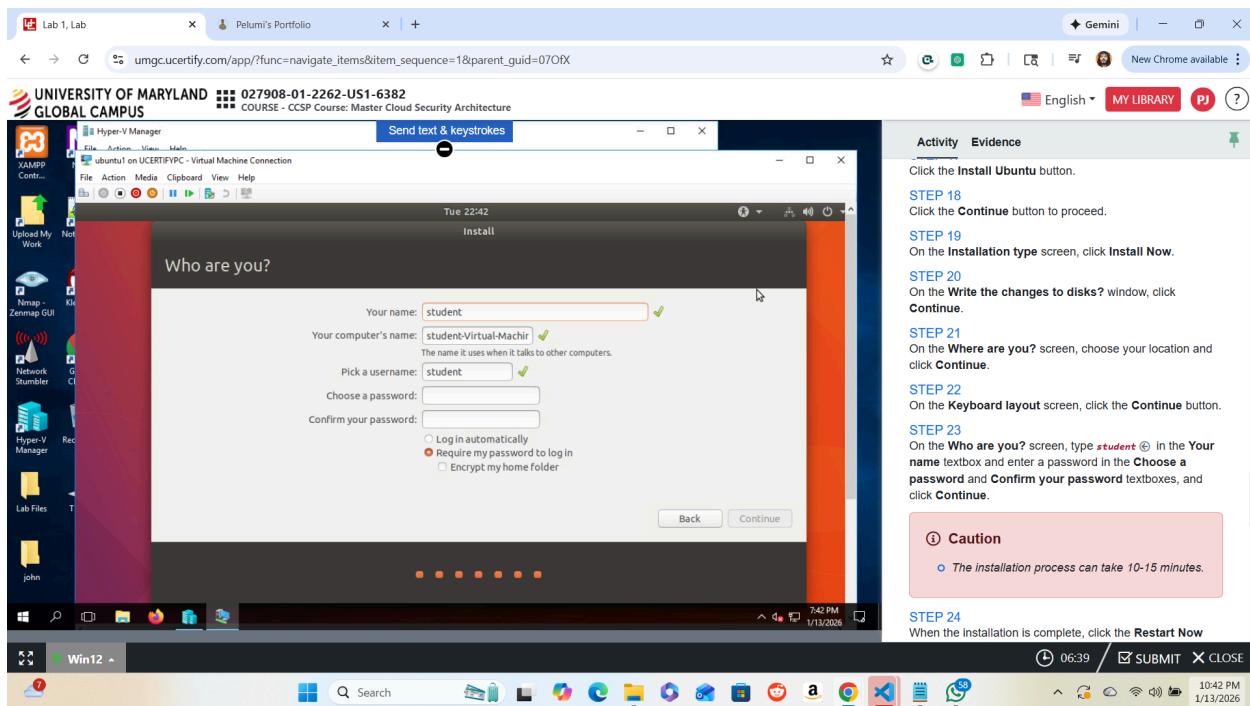
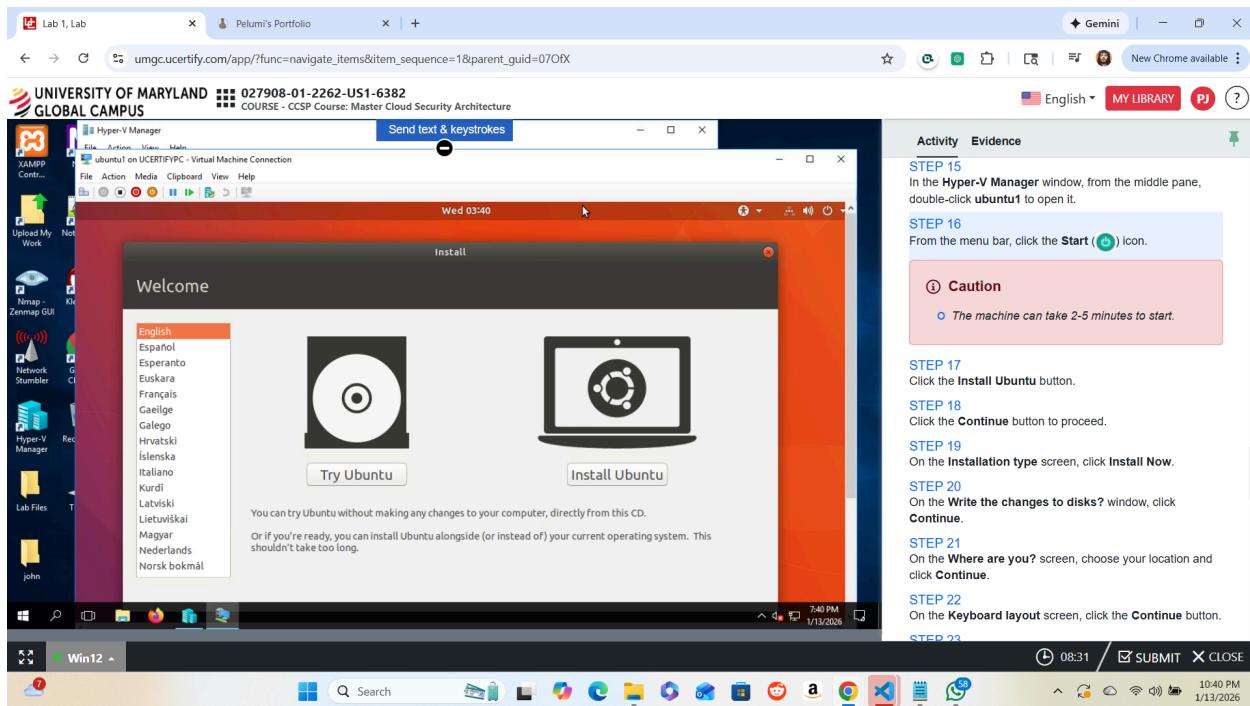
Step 3: Creating the Virtual Machine

The New Virtual Machine Wizard was used to create a virtual machine named ubuntu1. Memory and storage were allocated according to lab requirements, and the network adapter was connected to the Student-Switch.



Step 4: Installing Ubuntu

The virtual machine was started, and the Install Ubuntu option was selected. The installation process included selecting the language and keyboard layout, confirming disk changes, and creating a user account named student with a password.



Step 5: Completing Installation

After installation was completed, the virtual machine was restarted. The system successfully booted into the Ubuntu desktop environment, confirming a successful installation.

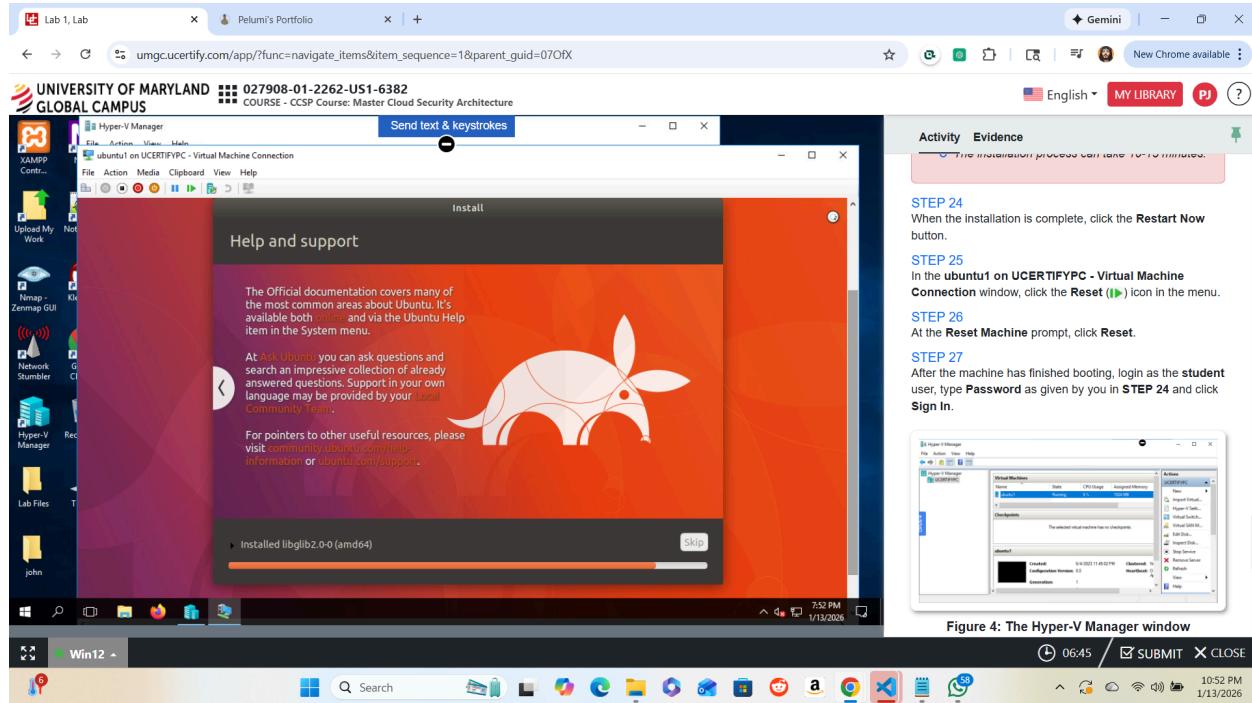


Figure 4: The Hyper-V Manager window

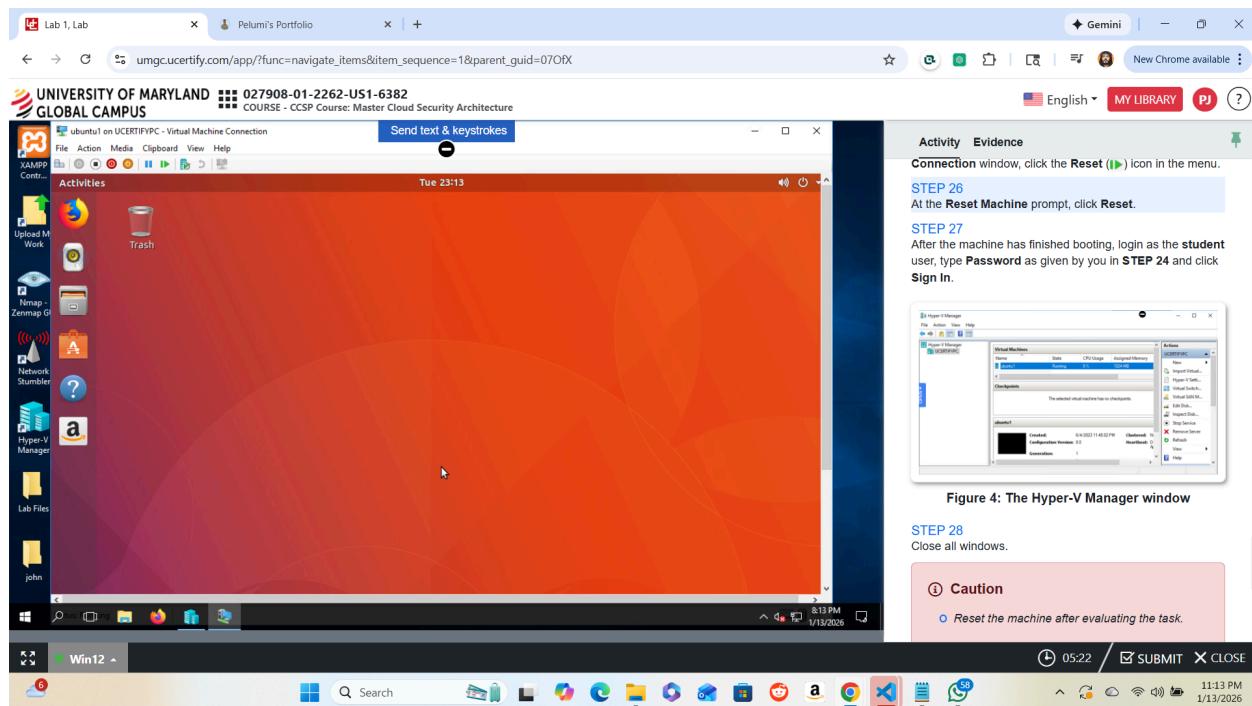
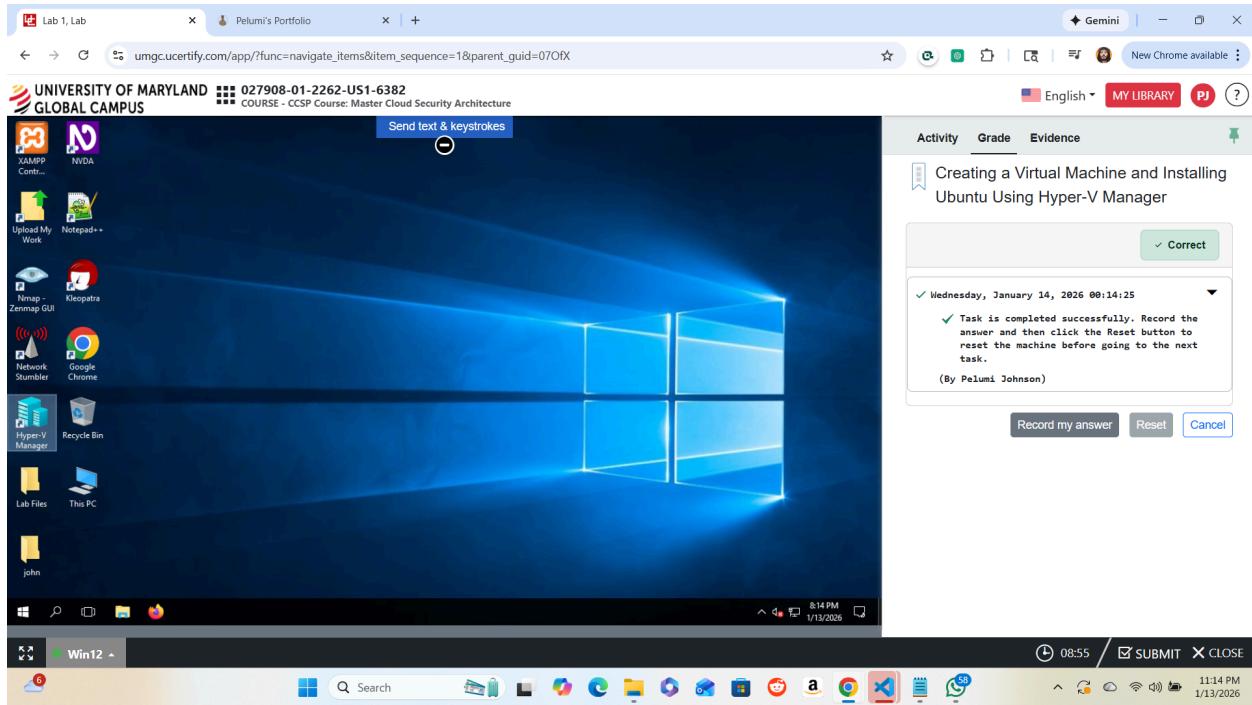


Figure 4: The Hyper-V Manager window



Results

- A virtual machine was successfully created using Hyper-V
- Ubuntu Linux was installed without errors
- Internal virtual networking was correctly configured
- The system was ready for future cloud and security labs

Conclusion

This lab demonstrated how virtualization can be used to deploy a Linux operating system in a controlled environment. Creating and configuring a virtual machine using Hyper-V provided essential hands-on experience with virtualization concepts that are foundational to cloud security architecture.

Key Takeaways

- Virtualization enables efficient use of hardware resources
- Hyper-V provides flexible virtual networking options
- Linux virtual machines are essential for cloud and security training