LAB 01

CIS4367.01 – Computer Security

Jaleel Rogers

1 Abstract

Lab 01 focuses on setting up the two Virtual Machines (VMs), Parrot OS and Windows Server 2019 using a VM manager, VirtualBox. Both VMs are linked through a NAT network. Using the NAT network Parrot OS and Windows Server users communicate to each VM using their own respective IP address for both VMs and the 'ping' command to send packets between VMs.

2 Tasks

2.1 Task 1: NAT Network Settings

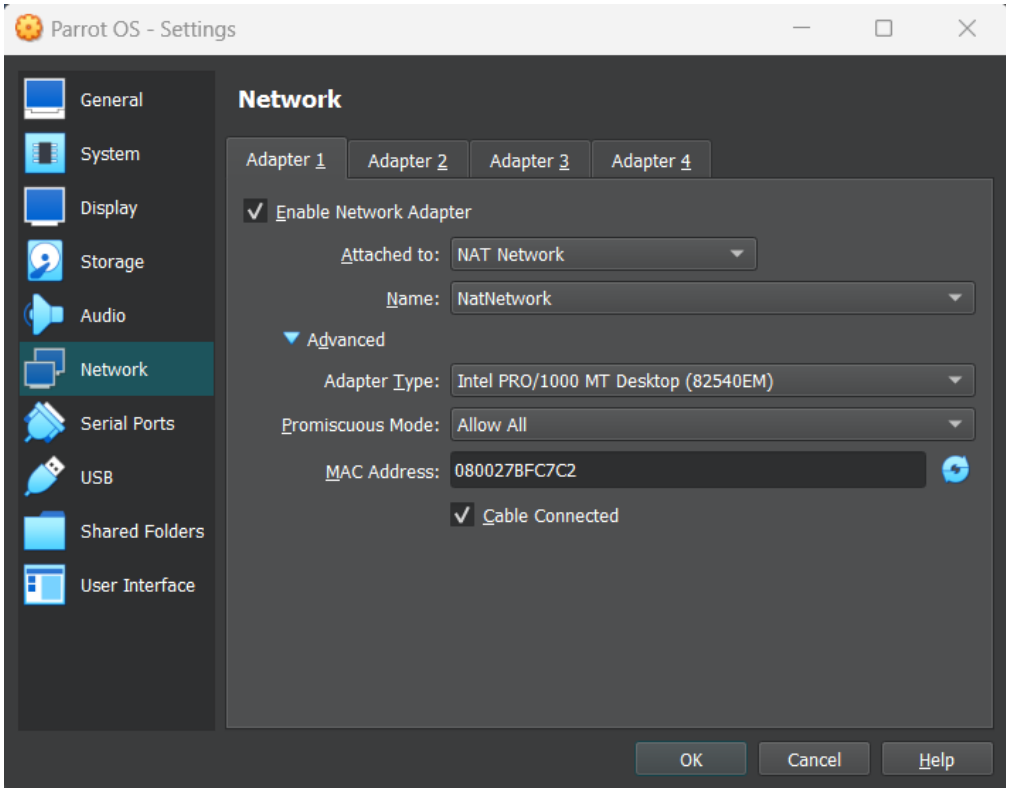

Figure 1 - Network Settings for Parrot OS

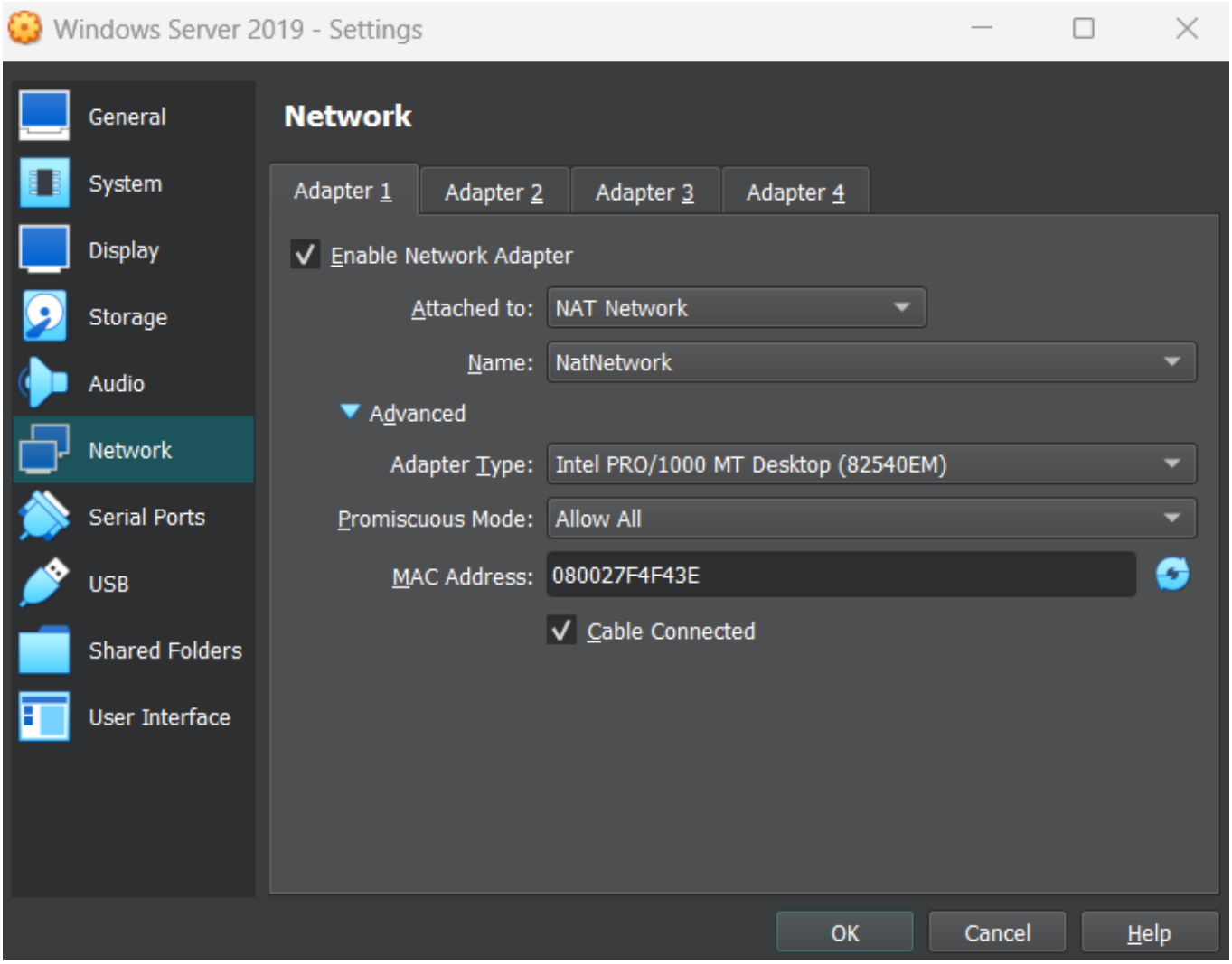

Figure 2 - Network Settings Windows Server 2019

For Figures 1 & 2, I configured 'Promiscuous Mode' to 'Allow All' to make it easier for traffic to pass between the VMs along with internet access.

2.2 Task 2: VM Settings

Figure 3 - VirtualBox Home Screen

Figure 3 shows the home screen of VirtualBox. I can run both Parrot OS and Windows Server 2019 simultaneously without error.

2.3 Task 3: Parrot VM

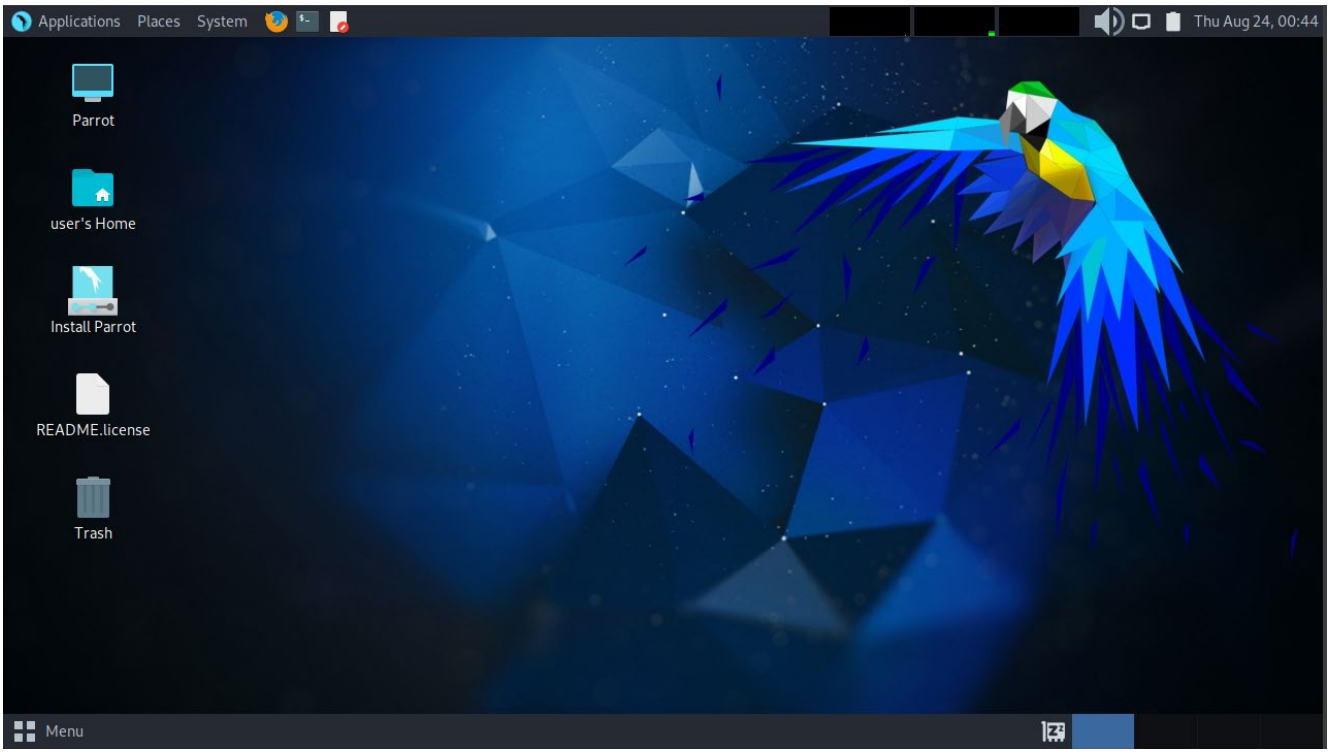

Figure 4 - Parrot OS

Figure 4 shows the home screen of Parrot OS. This is after I installed all updates using 'Install Parrot', and exe file and most of the optional files to install for Parrot OS.

2.4 Task 4: Windows VM

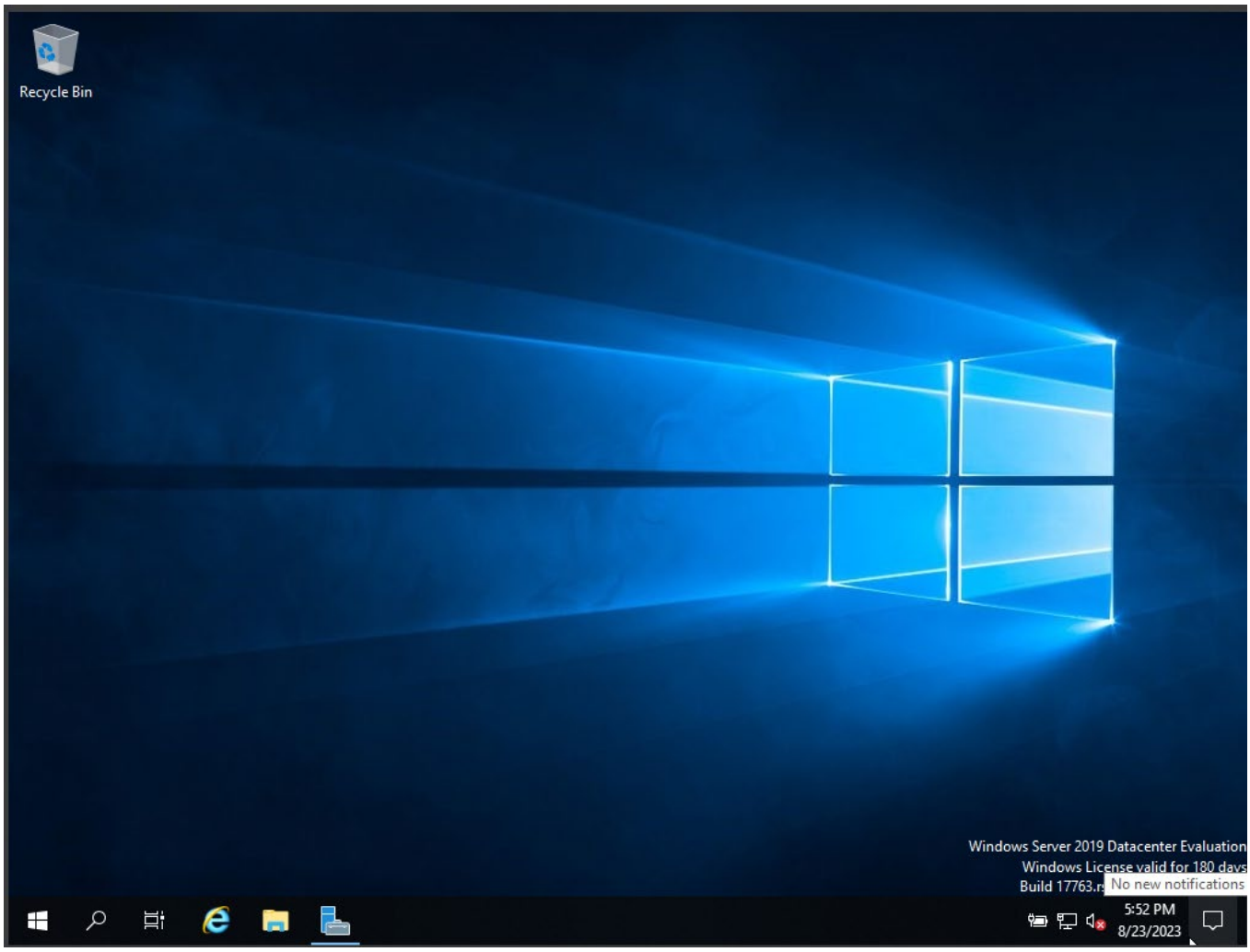

Figure 5 - Windows Server 2019

Figure 5 shows the home screen of Windows Server 2019.

2.5 Task 5: Windows & Parrot IP

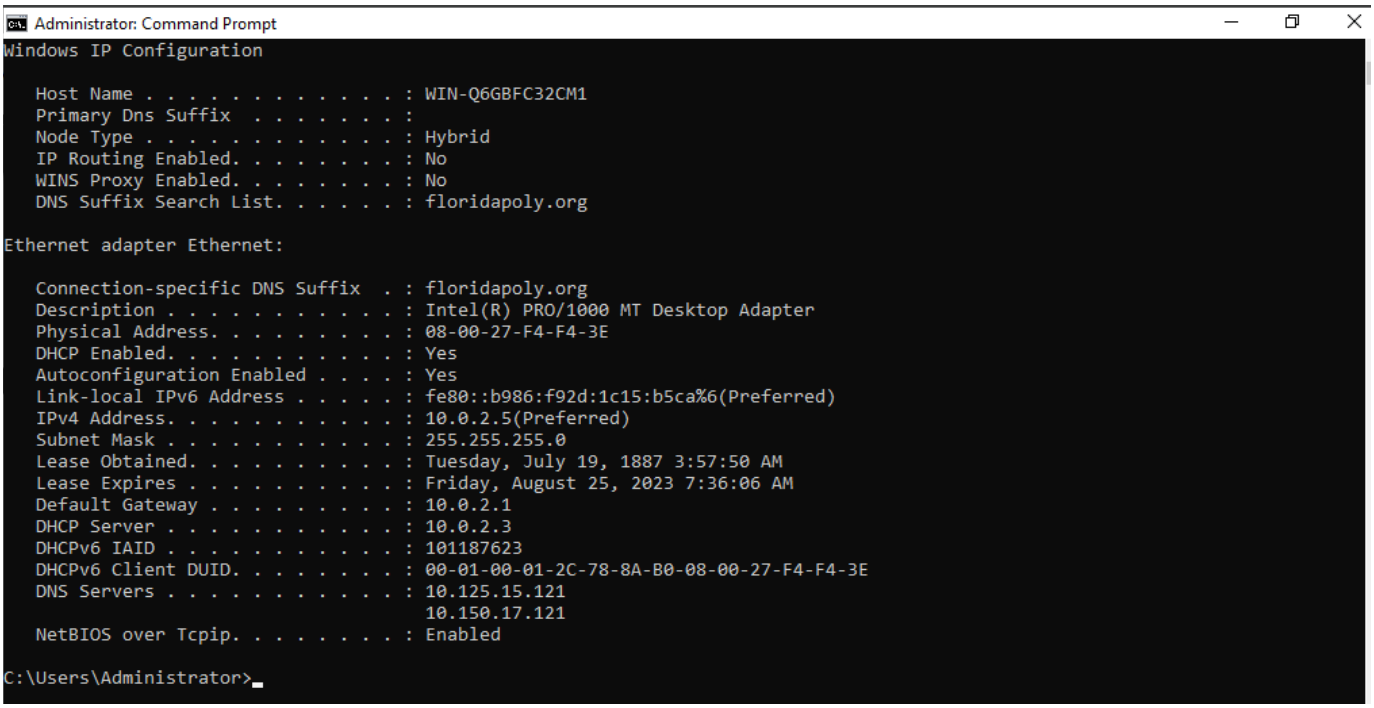

Figure 6 - IP Address of Windows

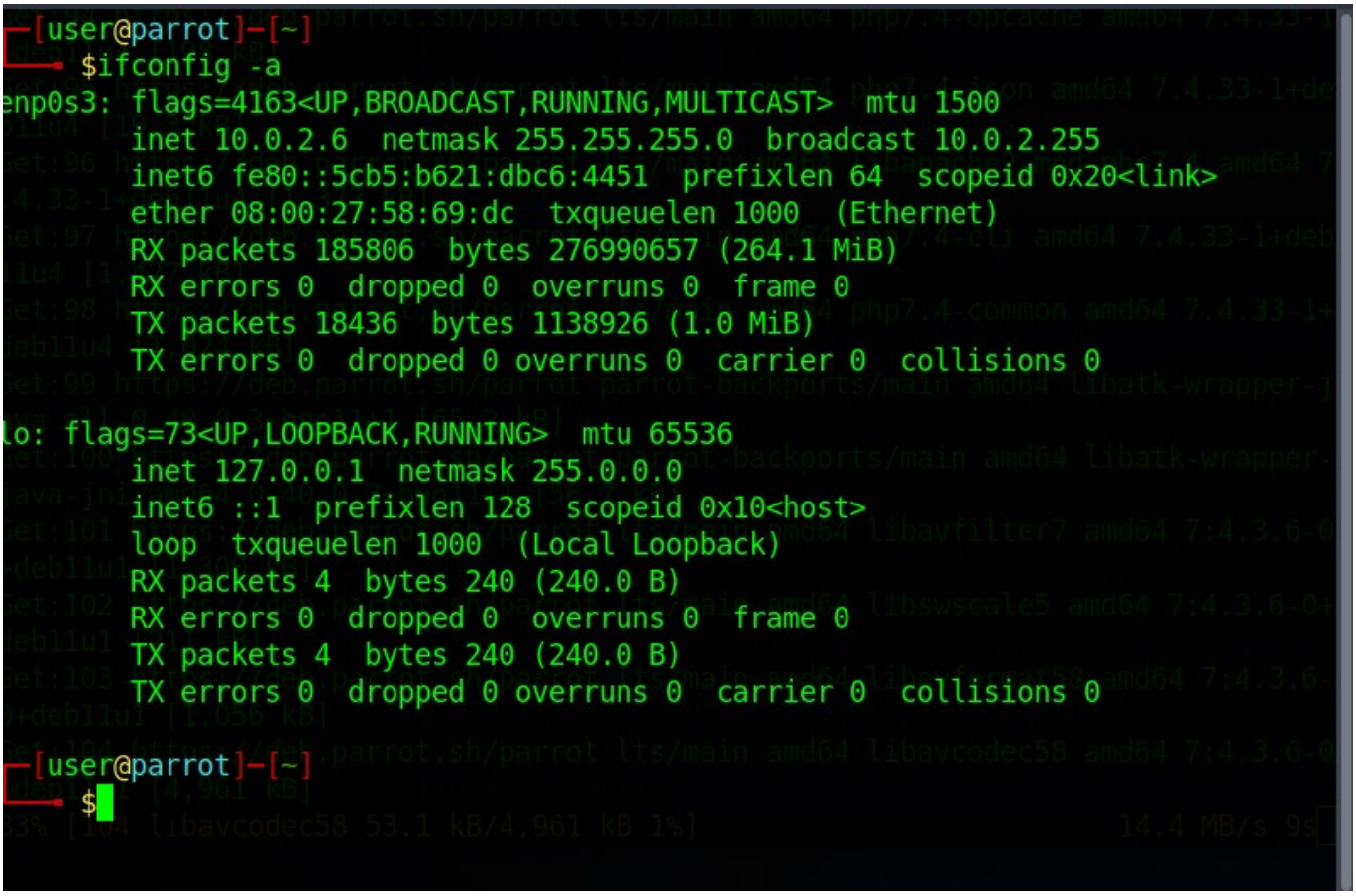

Figure 7 - IP Address of Parrot OS

For Windows Server 2019, I used the Command Prompt to send commands directly to the OS, while with Parrot OS, I used the Terminal to send commands directly to its OS. Command Prompt uses Batch Scripting while Terminal uses Bash Scripting, so commands between them are somewhat different and occasionally have the same commands.

The first command I used was ifconfig -a (Terminal) and ipconfig (Command Prompt). The commands are used to display and manage the network interfaces of its respective OS, which is shown in Figure 6 and Figure 7. Primarily, I am looking for the IP addresses of both VMs to communicate between the two VMs.

2.6 Task 6: Ping Parrot & Windows

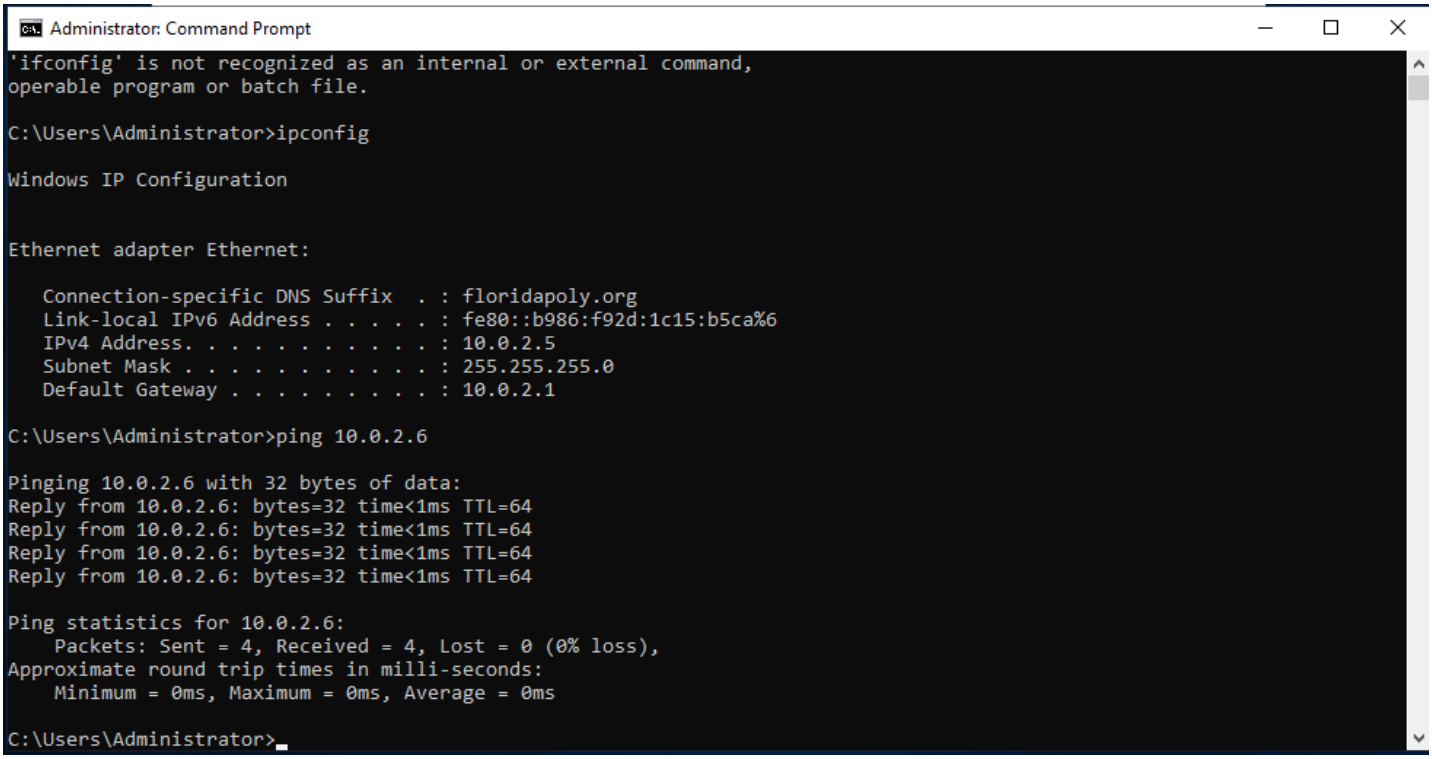

Figure 8 - 'ping' Command in Windows

```
┌─[user@parrot]─[~]
└──╼ $ping 10.0.2.5
PING 10.0.2.5 (10.0.2.5) 56(84) bytes of data.
64 bytes from 10.0.2.5: icmp_seq=1 ttl=128 time=0.368 ms
64 bytes from 10.0.2.5: icmp_seq=2 ttl=128 time=0.360 ms
64 bytes from 10.0.2.5: icmp_seq=3 ttl=128 time=0.316 ms
64 bytes from 10.0.2.5: icmp_seq=4 ttl=128 time=0.347 ms
64 bytes from 10.0.2.5: icmp_seq=5 ttl=128 time=0.360 ms
64 bytes from 10.0.2.5: icmp_seq=6 ttl=128 time=0.314 ms
64 bytes from 10.0.2.5: icmp_seq=7 ttl=128 time=0.325 ms
64 bytes from 10.0.2.5: icmp_seq=8 ttl=128 time=0.342 ms
64 bytes from 10.0.2.5: icmp_seq=9 ttl=128 time=0.523 ms
64 bytes from 10.0.2.5: icmp_seq=10 ttl=128 time=0.768 ms
64 bytes from 10.0.2.5: icmp_seq=11 ttl=128 time=0.477 ms
64 bytes from 10.0.2.5: icmp_seq=12 ttl=128 time=0.515 ms
64 bytes from 10.0.2.5: icmp_seq=13 ttl=128 time=0.487 ms
64 bytes from 10.0.2.5: icmp_seq=14 ttl=128 time=0.542 ms
64 bytes from 10.0.2.5: icmp_seq=15 ttl=128 time=0.445 ms
64 bytes from 10.0.2.5: icmp_seq=16 ttl=128 time=0.515 ms
64 bytes from 10.0.2.5: icmp_seq=17 ttl=128 time=0.487 ms
64 bytes from 10.0.2.5: icmp_seq=18 ttl=128 time=0.529 ms
64 bytes from 10.0.2.5: icmp_seq=19 ttl=128 time=0.292 ms
64 bytes from 10.0.2.5: icmp_seq=20 ttl=128 time=0.596 ms
64 bytes from 10.0.2.5: icmp_seq=21 ttl=128 time=0.373 ms
64 bytes from 10.0.2.5: icmp_seq=22 ttl=128 time=0.300 ms
64 bytes from 10.0.2.5: icmp_seq=23 ttl=128 time=0.283 ms
64 bytes from 10.0.2.5: icmp_seq=24 ttl=128 time=0.299 ms
64 bytes from 10.0.2.5: icmp_seq=25 ttl=128 time=0.279 ms
```

Figure 9 - 'ping' Command in Parrot OS

Using the IP addresses of both VMs, I used the ping command to send packets between Parrot OS and Windows Server 2019 to test the response, reachability, and troubleshooting of the VMs. Figures 8 & 9 show the successful results of the VMs pinging each other.

2.7 Task 7: Join the Cybersecurity Club

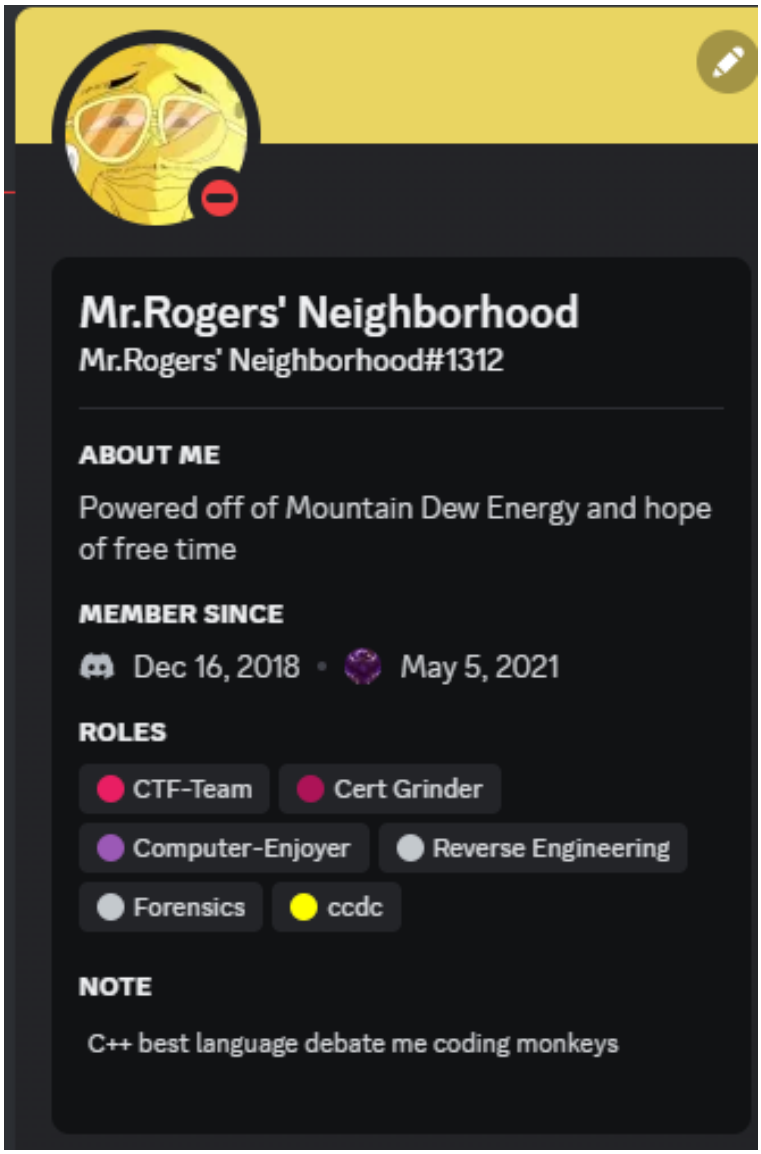

Figure 10 - Discord Profile

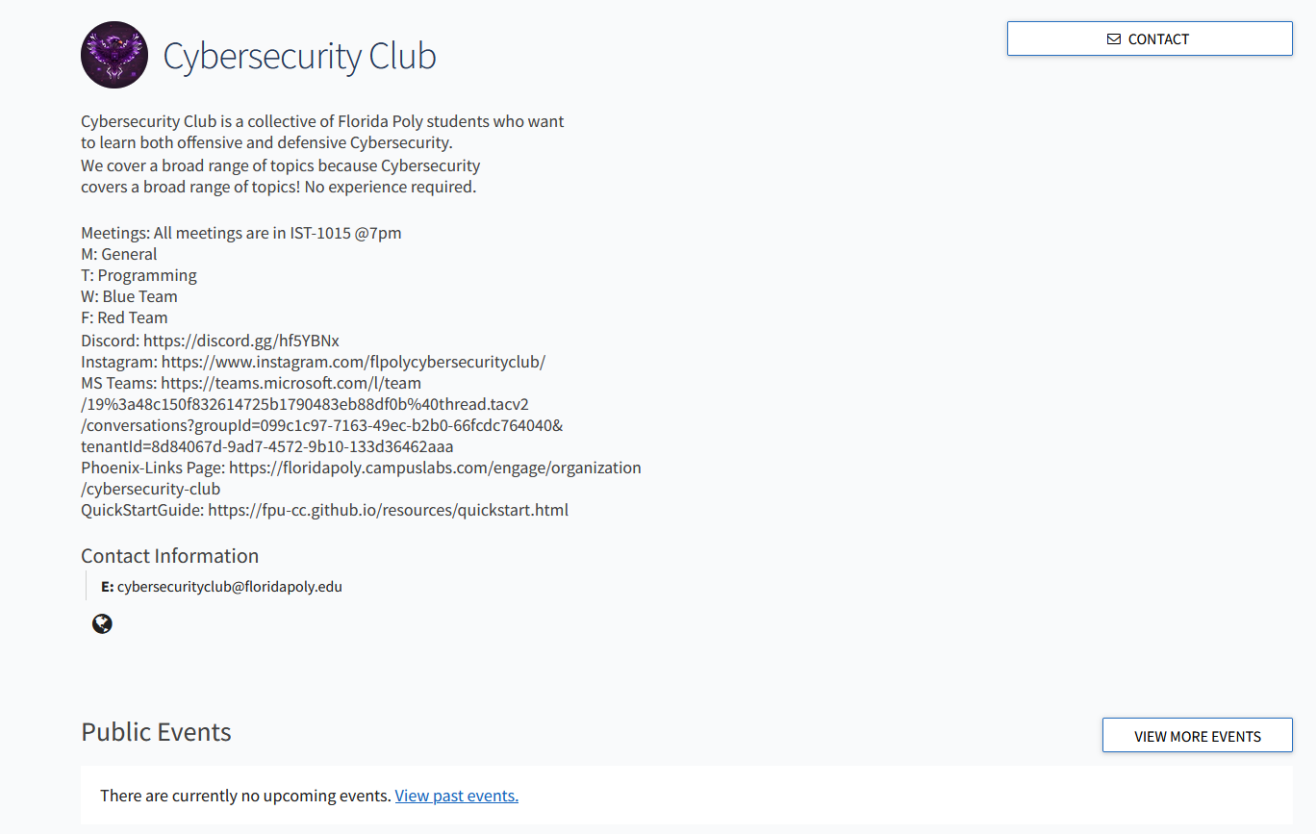

Figure 11 - Cybersecurity Club

Figures 11 & 12 are information regarding my joining the Cybersecurity Club. Most university clubs have a Discord where we organize meetings and different events/divisions within the club. Figure 11 shows that I joined the club in 2021. Figure 12 shows the club's contact information, including its Discord Server. This site is called PhoneixLink, and it's the official method of

registered student organizations at the university to record attendance or show events. Officially, no meeting date has been decided yet.

3 Issues or problems

I mainly had two issues. The first issue was with the Windows 2019 Server. To use the ping command, you must turn off the firewall using 'netsh advfirewall set allprofiles state off'. The second issue I had was the conflicting information in Parrot OS about my storage. When downloading the optional upgrades throughout the time of 'sudo apt full-upgrade -y', I was given an error that my storage was full. GParted and a disc analyzer software that notified me what process is taking up the most storage and allocating storage notified me that I had additional storage. My solution was to stop using the command.

4 Conclusions

The lab output would be the IP address of the two VMs and the packets sent to each VM. The result is that VMs can communicate with each other. This lab taught me more about multitasking with multiple VMs, not including my host OS. I was always used to using one VM for a specific task and not more than one.

5 References

Ufidon, & Wang, X. (n.d.). *comsec/labs/lab01 at main · ufidon/comsec*. GitHub. https://github.com/ufidon/comsec/tree/main/labs/lab01