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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 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

Bridged Network Adapter allows a virtual machine to connect directly to a physical network through the host's network adapter. Which creates an independent presence for virtual machines on the same network, separating it from the host system. Allowing the virtual machine to communicate with other devices on the same network, and vice versa, as if it were a standalone physical machine. Bridged networking supports both wired and wireless connections and often is used to provide the virtual machine with full network access, leveraging the host's physical network interface. (Broadcom, 2019)

Remote desktop Protocol (RDP) is a protocol, or technical standard, for using a desktop computer remotely. Developed by Microsoft, RDP is compatible with most Windows operating systems and can also be used on macOS, making it a versatile and popular choice for remote connectivity. (cloudflare, n.d.)

OBJECTIVE

- a. Host a static website on a Guest OS (Windows Server 2022) and make it accessible from the Host OS and other devices on the same LAN.
- b. Enable and configure Remote Desktop on Windows Server 2022 for remote access from the Host OS.

STEPS

Part 1: Hosting a Static Website

a. Configure VirtualBox Network Settings

- Open **VirtualBox** and selecting the Virtual machine.
- Click on **Settings > Network**.
- Under **Attached to**, select **Bridged Adapter** from the dropdown menu.
- Click **OK** and start virtual machine.

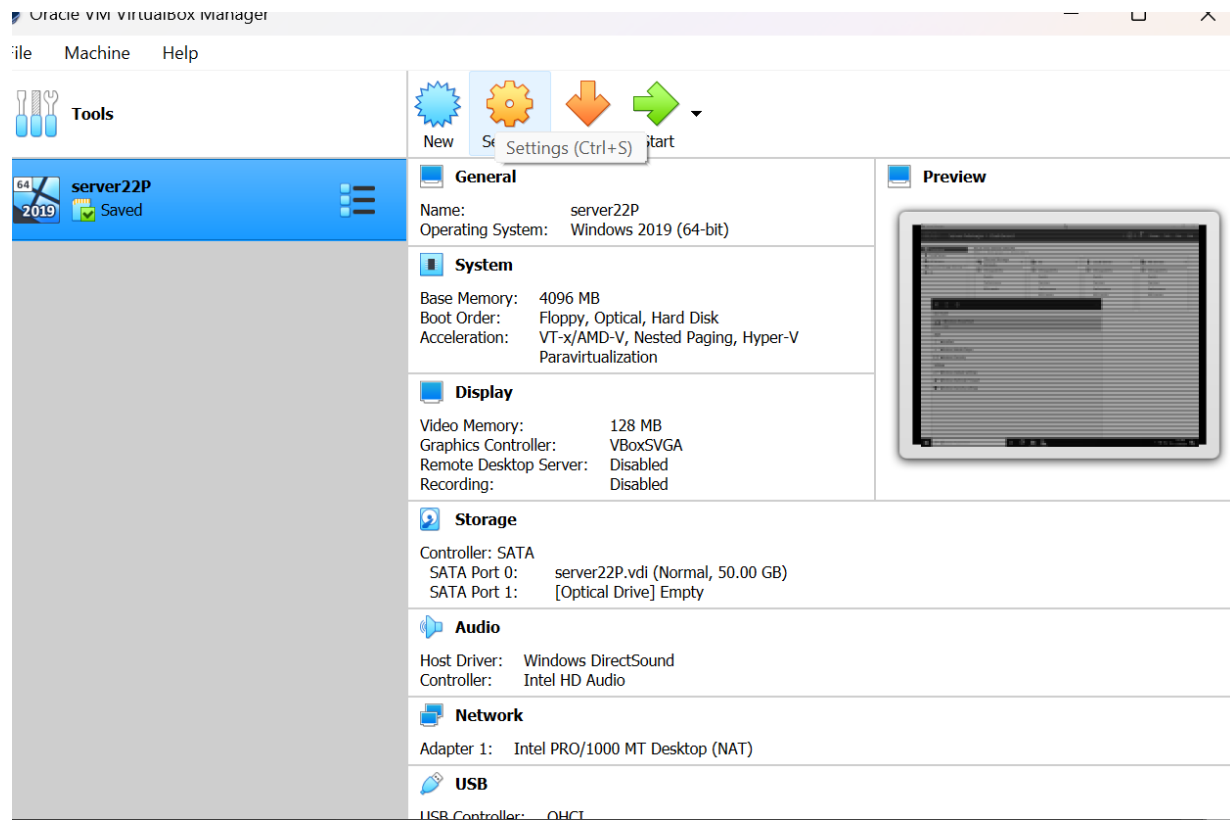


Figure 1: VM VirtualBox Manager Dashboard

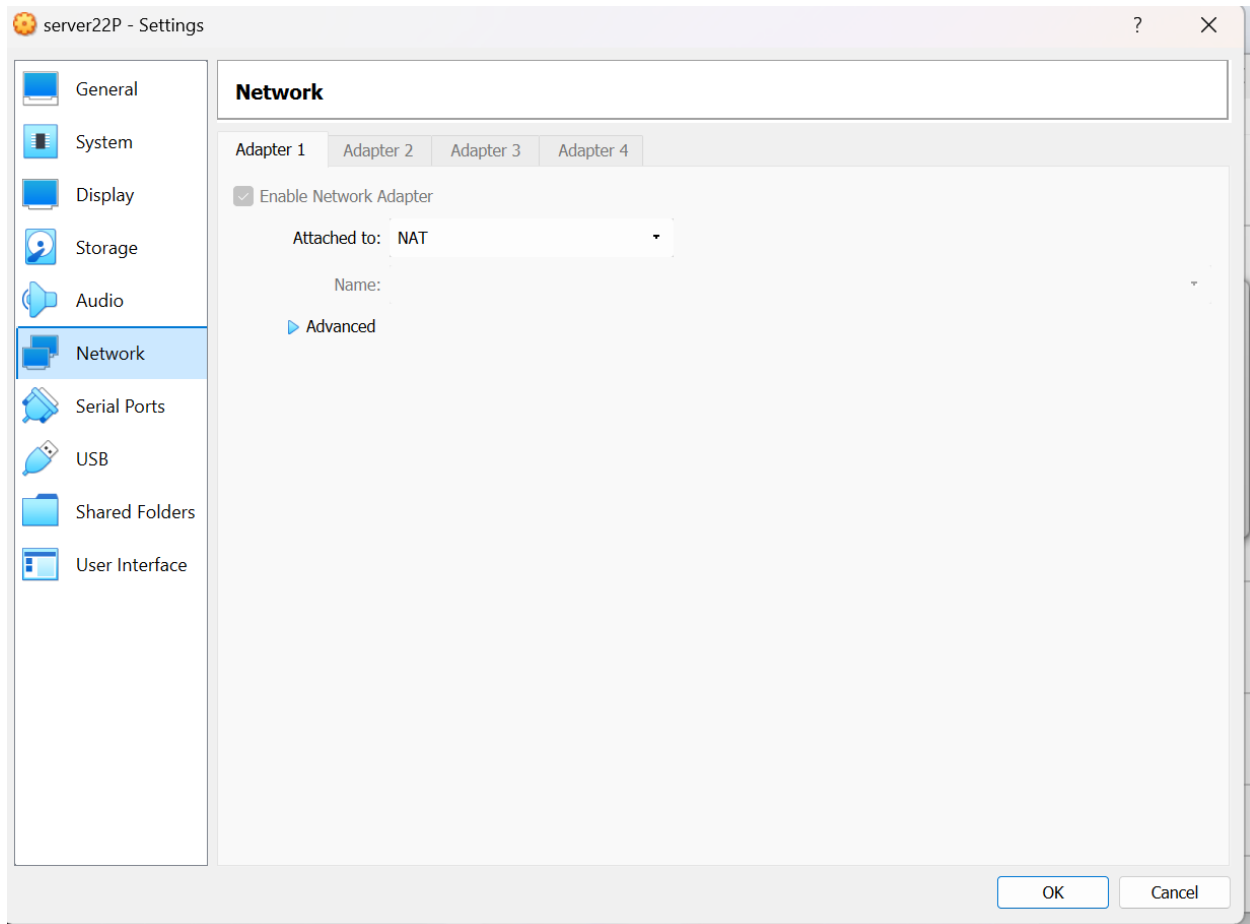


Figure 2: VirtualBox Manager, Setting>Network

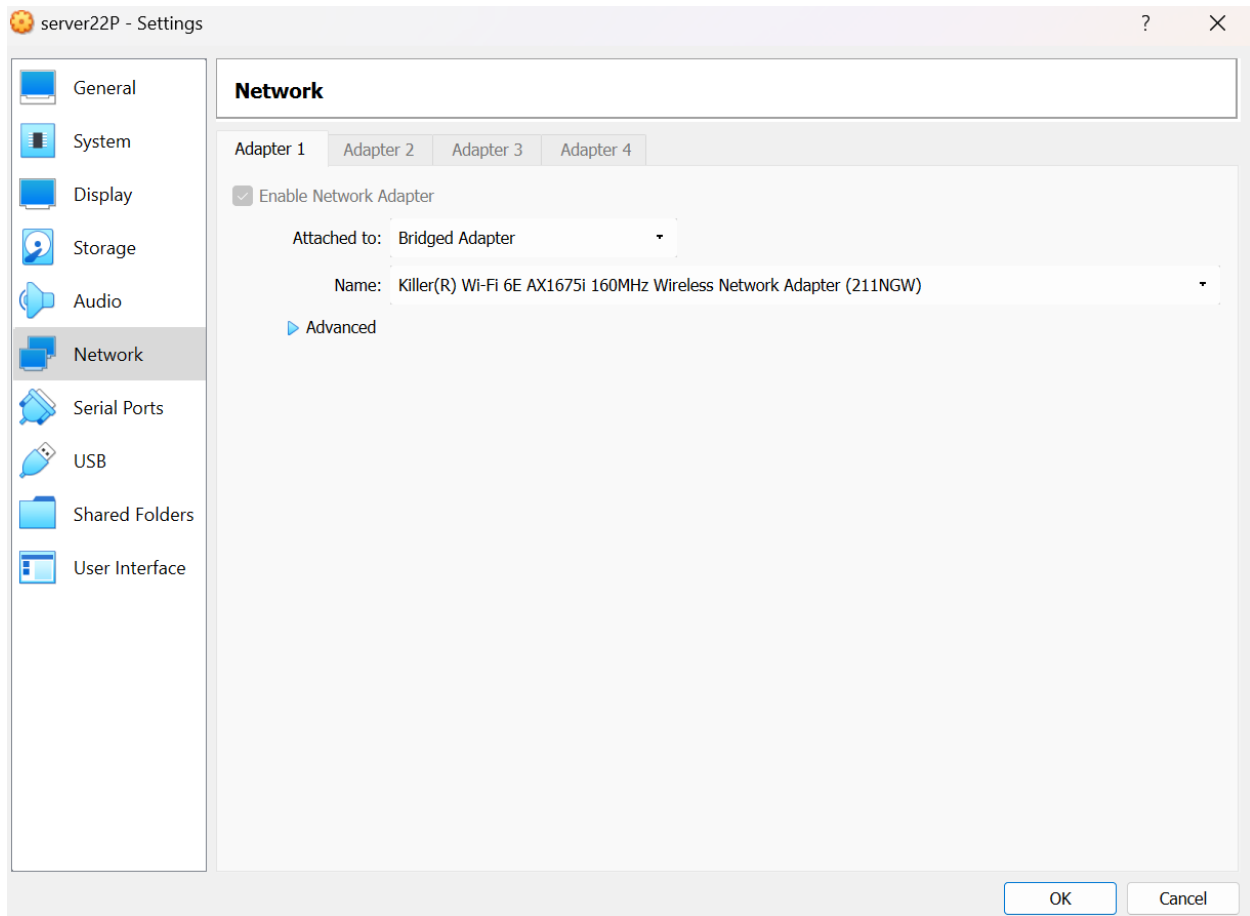


Figure 3: After Enabling Network Adapter, and choosing Bridged Adapter

b. Prepare Website Files

- Place the static website files in a folder on the **C:** drive of the Windows Server 2022 VM.

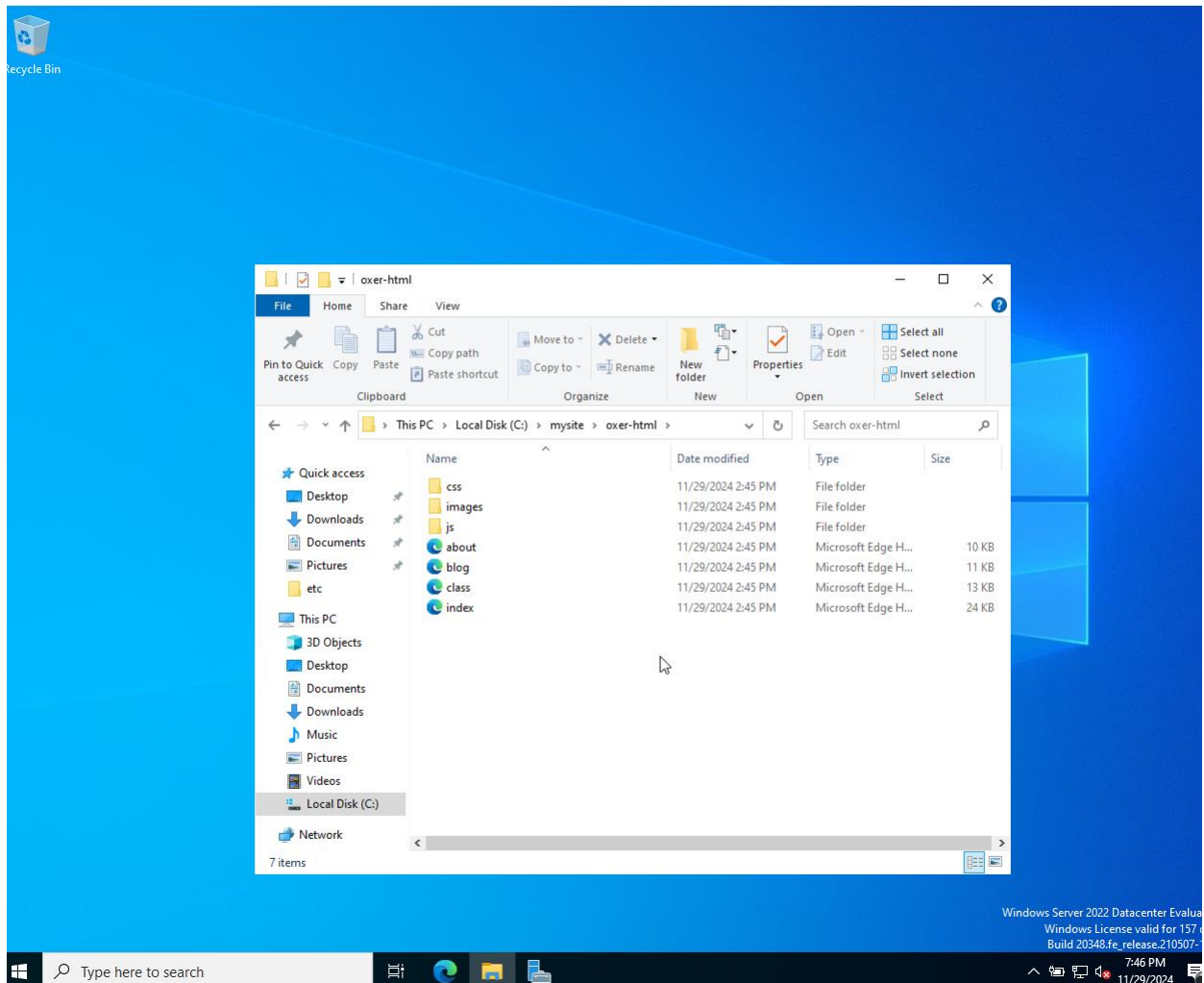


Figure 4: Preparing files in C: drive for website

c. Open IIS (Internet Information Services)

- Search for **inetmgr** by pressing **Win + R**, and press Enter to open IIS Manager

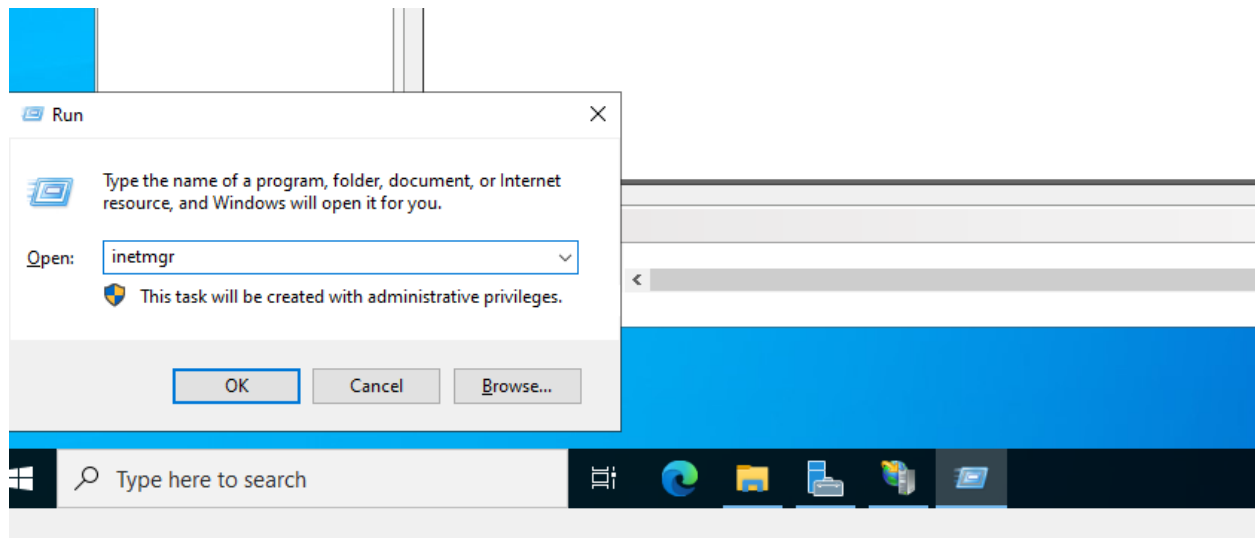


Figure 5: Searching for inetmgr in run

d. Add a New Website

- In IIS Manager, expand the server's name from the left-hand pane.
- Right-click **Sites** and select **Add Website**.
- In the **Add Website** dialog:
 - o **Site Name**: name of the website
 - o **Physical Path**: Browse to the folder where static website files are located.
 - o **IP Address**: Select the server's IP address from the dropdown menu.
 - o Leave other settings as default and click **OK**.

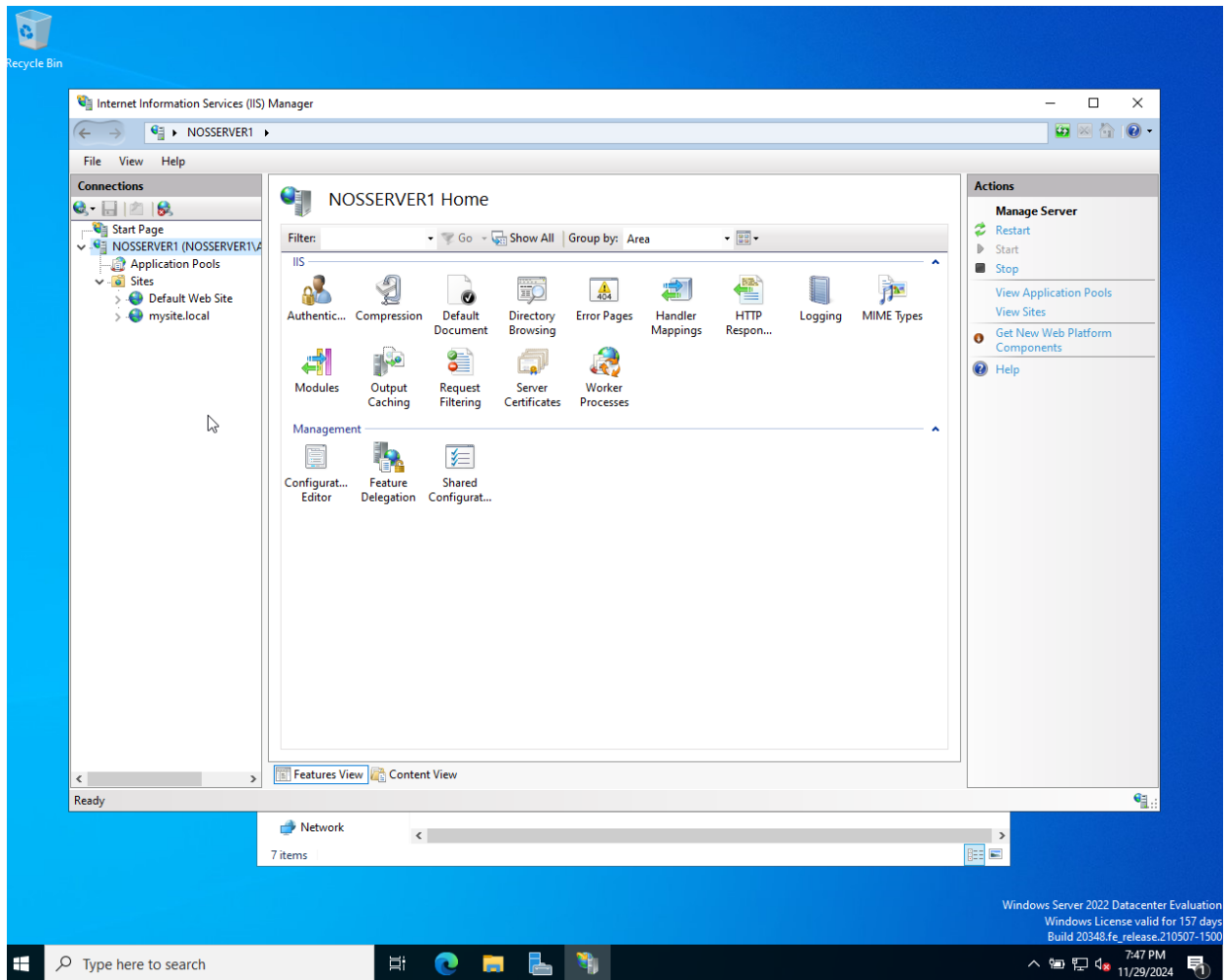


Figure 6: Opening IIS manager

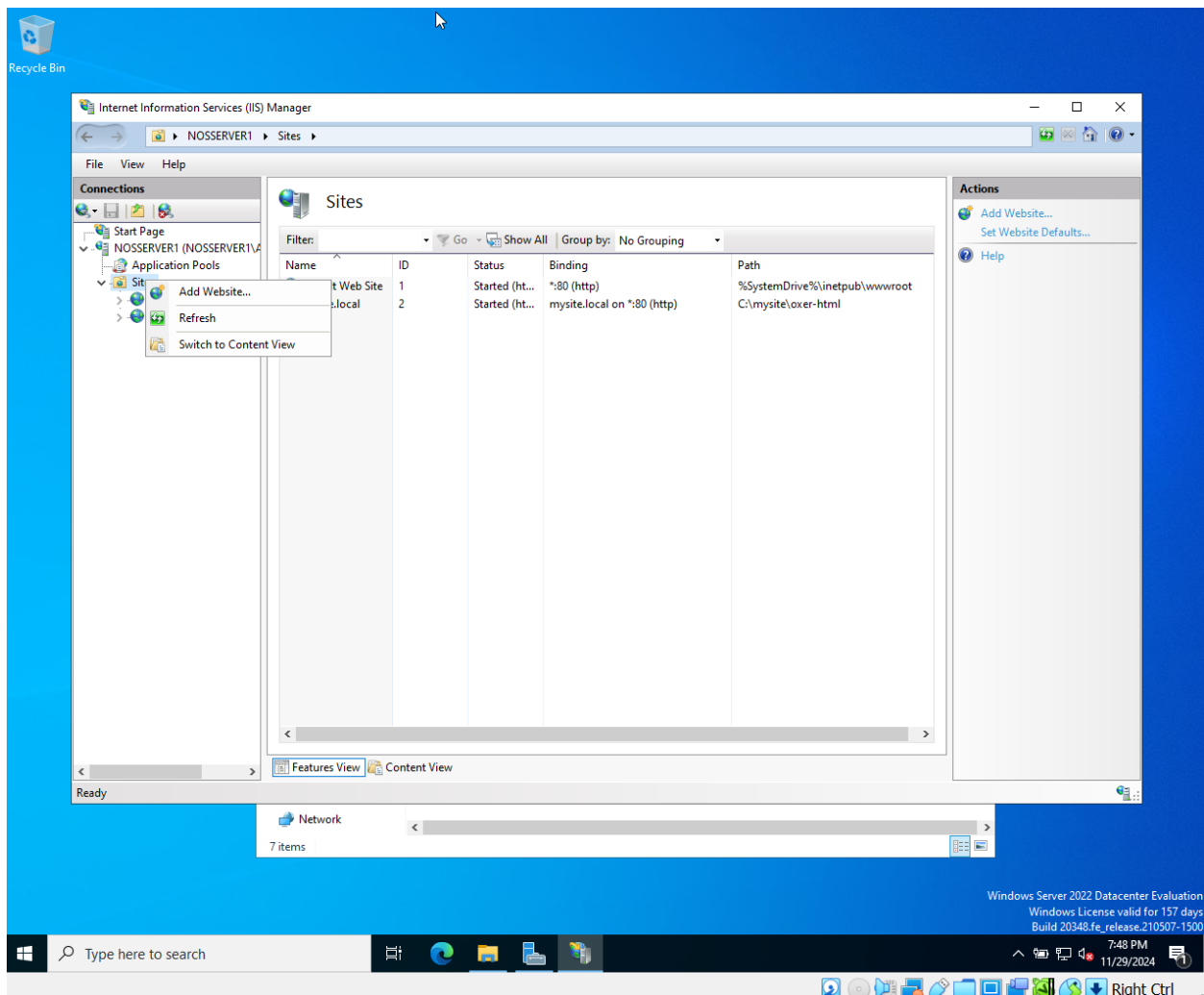


Figure 7: Expanding the server > sites

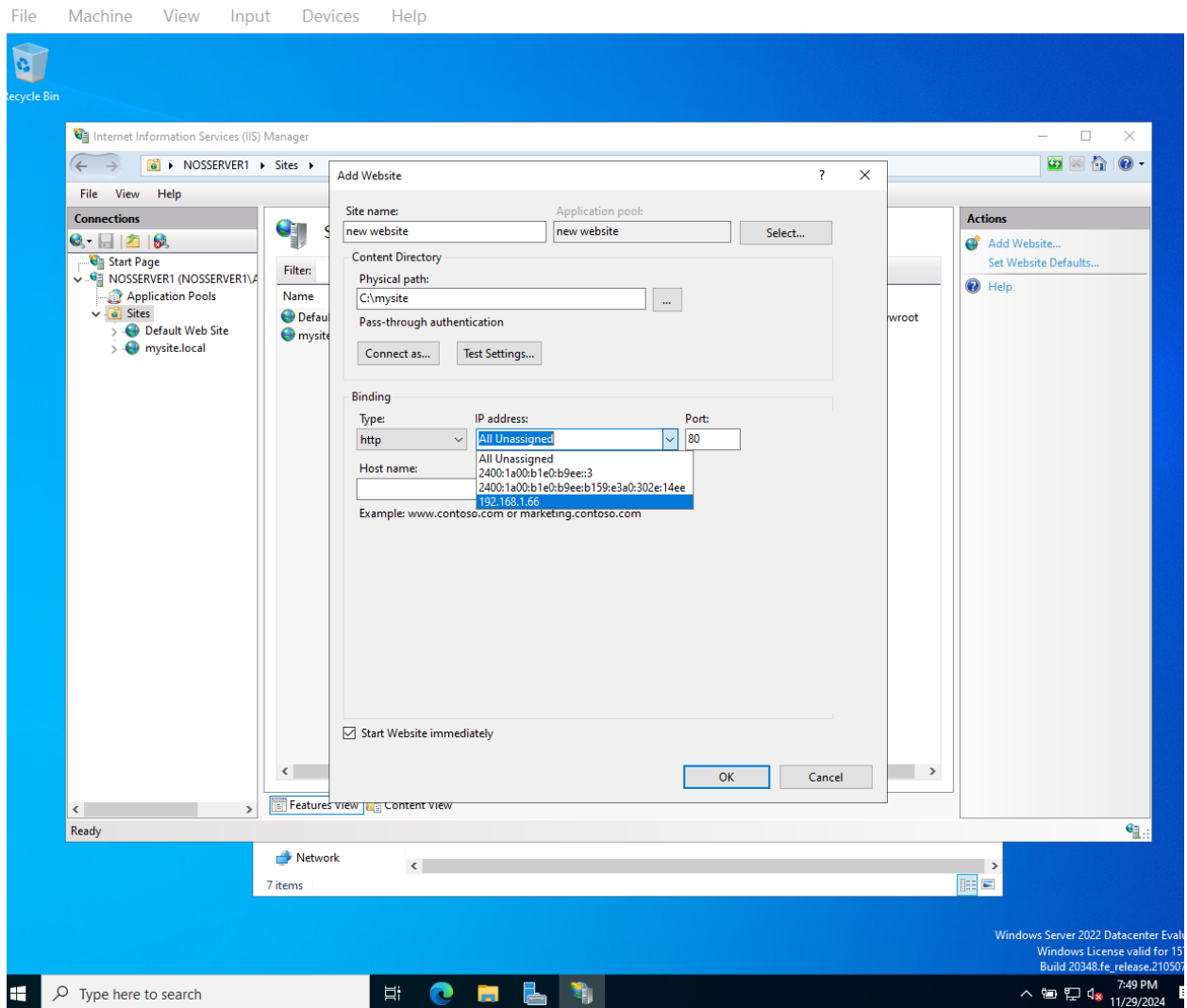


Figure 8: Add Website window, and choosing appropriate settings

e. Browse and Test Your Website

- In IIS Manager, the new website should appear under Sites.
- Click **Browse** next to site's IP address in the right-hand panel.
- This will open the website in the browser.

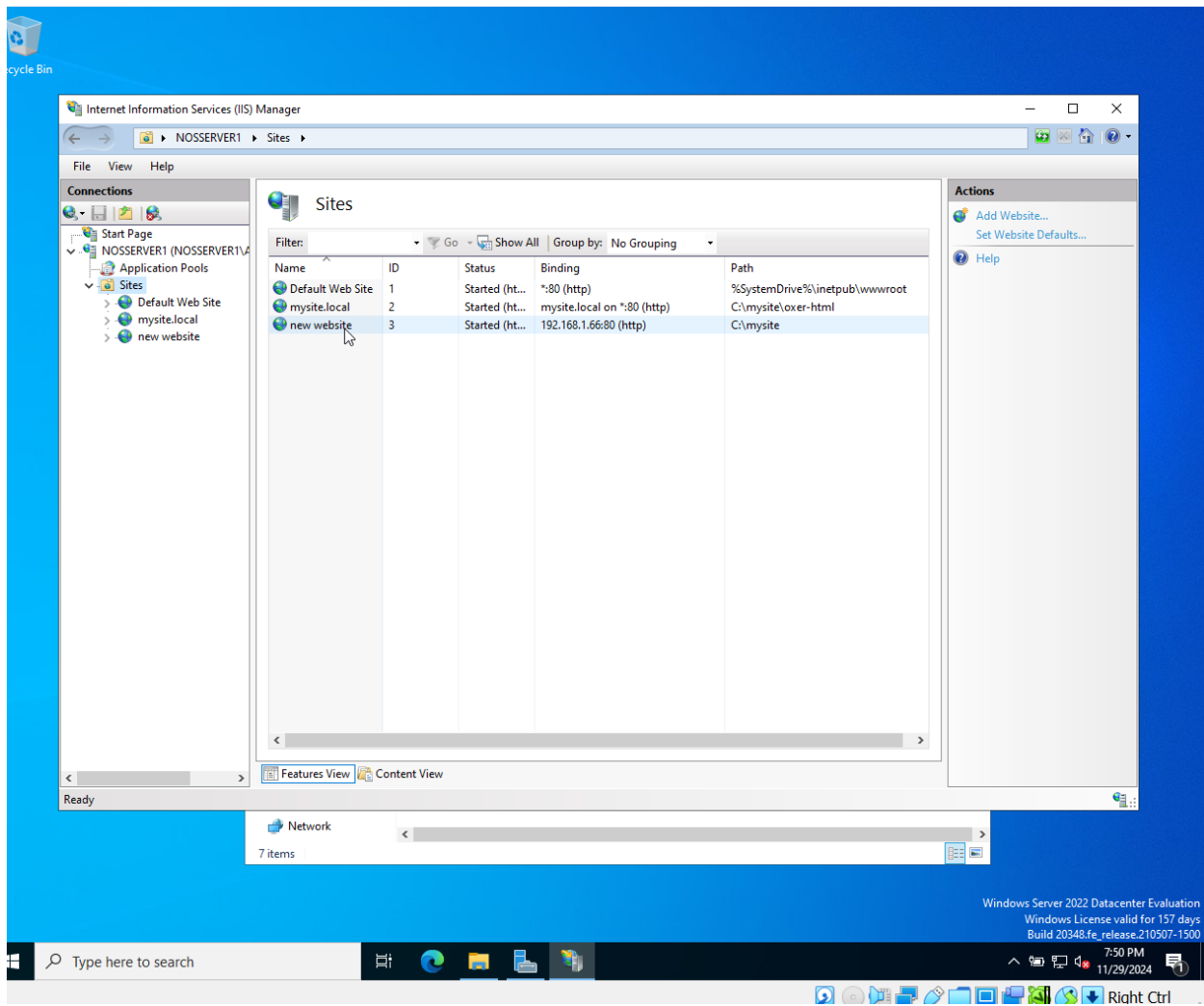


Figure 9: Sites Window, after adding new website

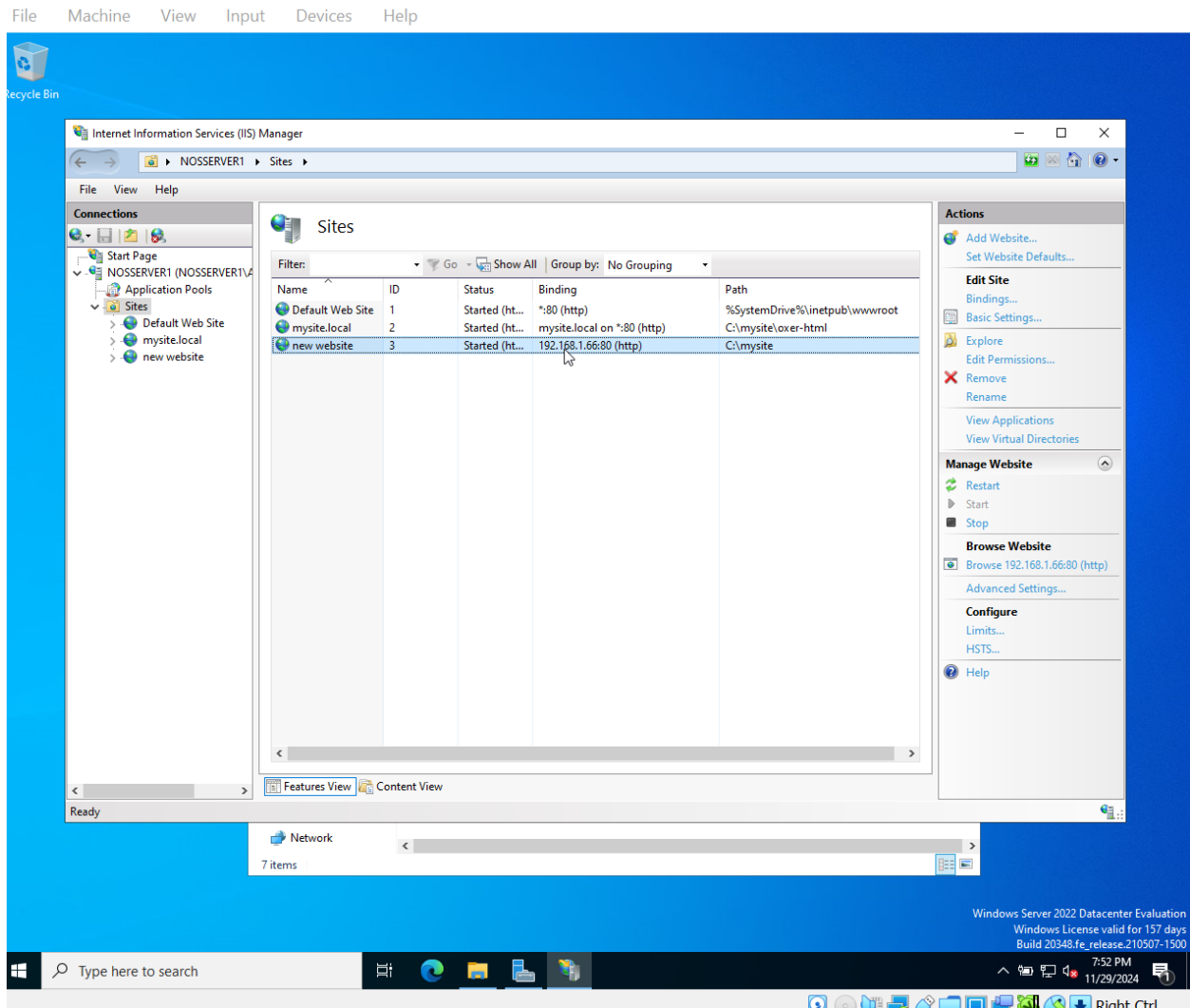


Figure 10: new website, attributes and quick action panel, and clicking on Browse website form IP address

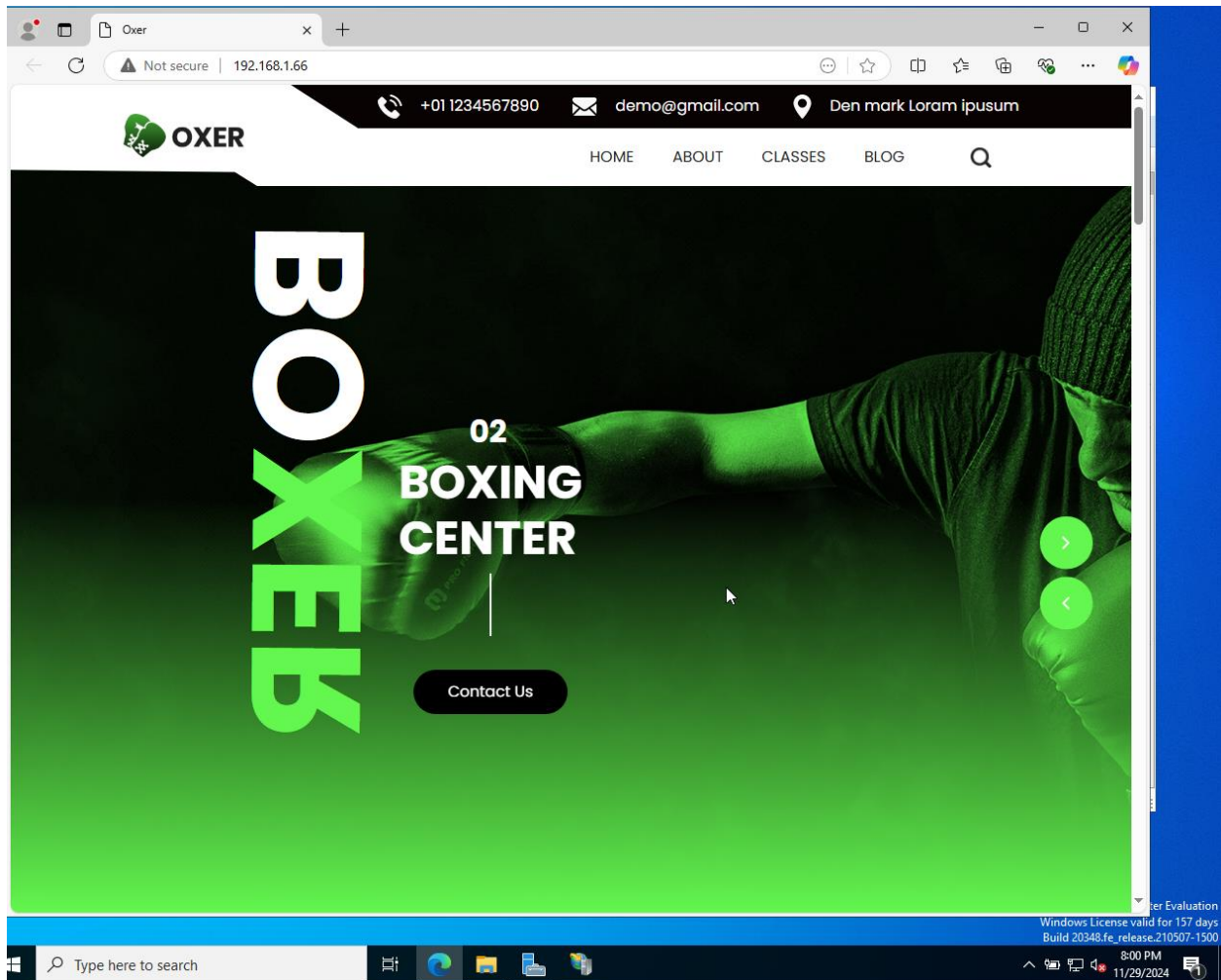


Figure 11: the website being open in the default browser

f. Access the Website from Host OS

- On the Host OS, open a browser and enter the IP address of the Guest OS.
- Verify that the website is accessible.

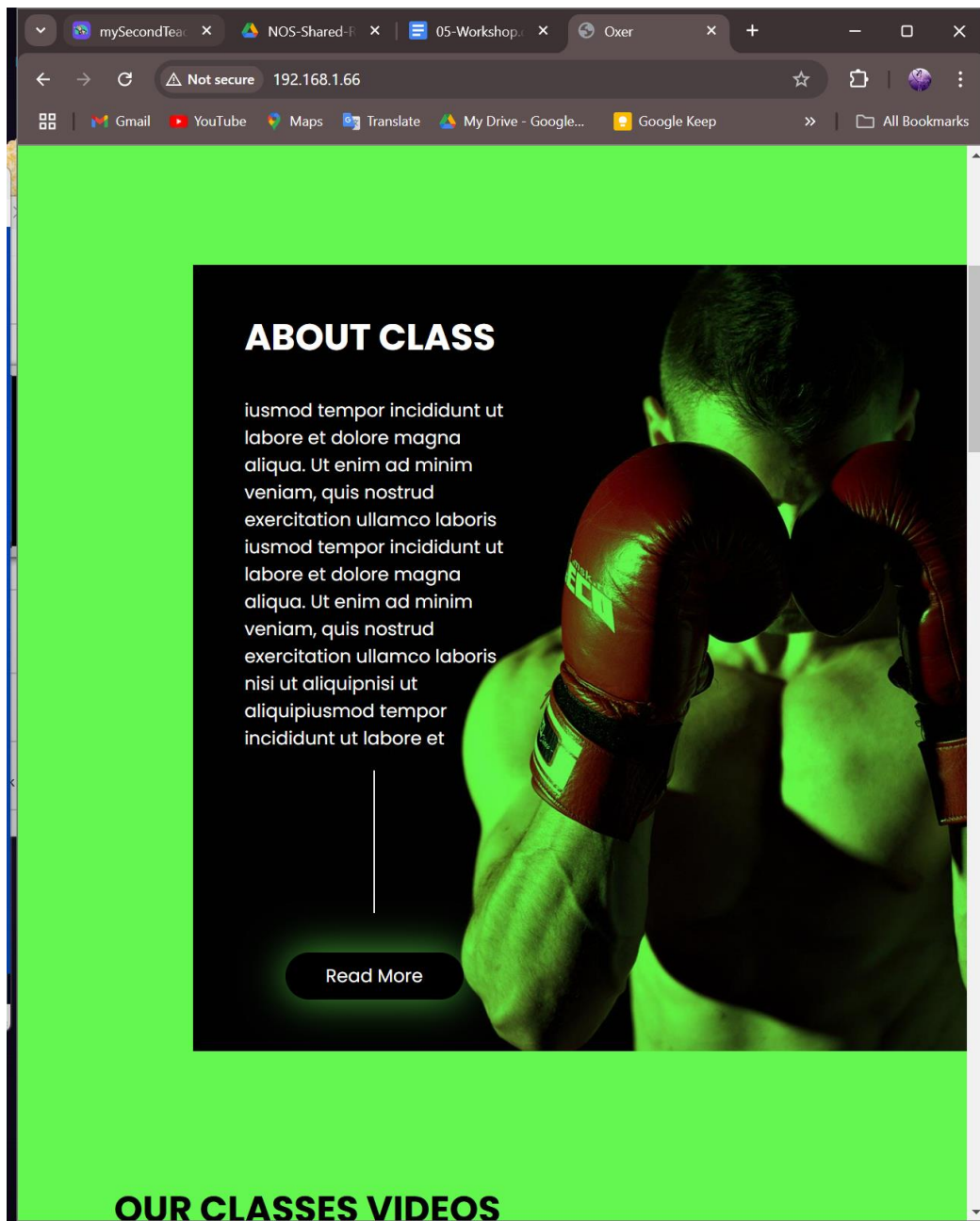


Figure 12: The Website being open in the Host OS, by entering the Guent IP address

g. Access the Website form Other Devices

- Ensure the smartphone or other devices are on the same network as the server.
- Open a browser on the device and type the IP address of the Guest OS.
- Confirm the website loads successfully.

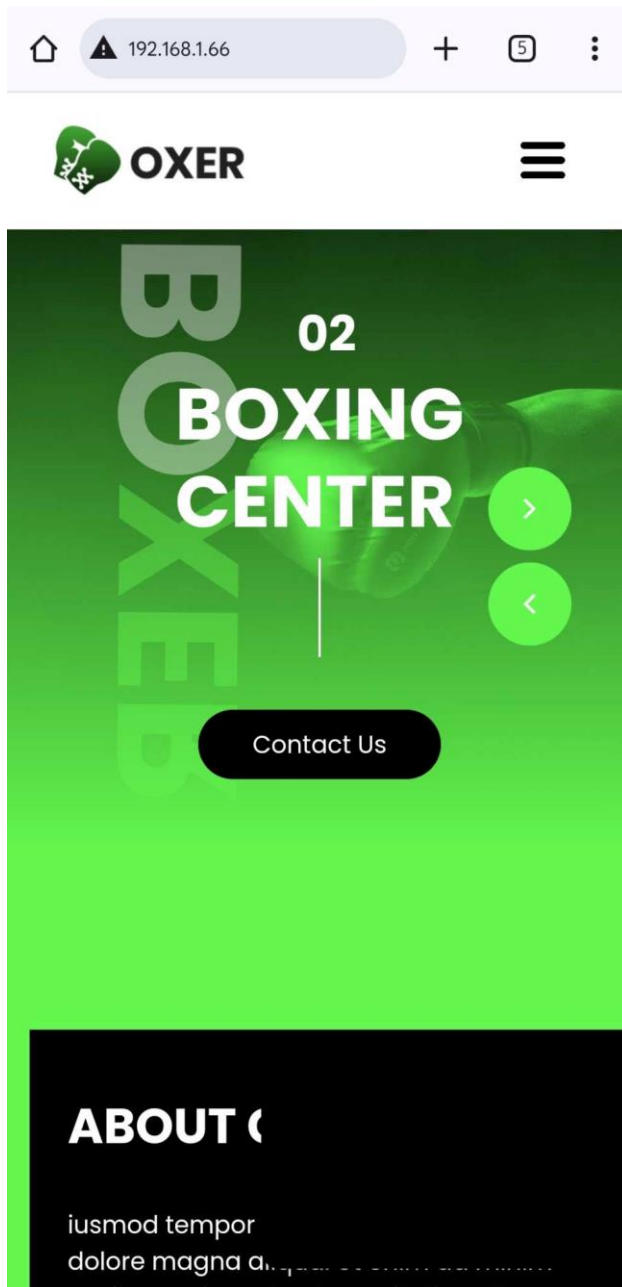


Figure 13: the website being open after insuring that the smartphone is in the same network as the server

Part 2: Enabling Remote Desktop on Windows Server 2022

a. Install VirtualBox Extension Pack

- Identify the VirtualBox version by clicking **Help > About VirtualBox**.
- Download the corresponding Extension pack from [VirtualBox Downloads](#).
- Close all VirtualBox VMs, run VirtualBox as Administrator, and go to **Tools > preferences > Extensions**.
- Click the + icon, select the downloaded extension pack, and click Install.



Figure 14: Looking up the VirtualBox version

Index of /virtualbox/6.1.50

Name	Last modified	Size
Parent Directory		
MD5SUMS	16-Jan-2024 16:40	2.4K
Oracle_VM_VirtualBox_Extension_Pack-6.1.50-161033.vbox-extpack	12-Jan-2024 10:44	11M
Oracle_VM_VirtualBox_Extension_Pack-6.1.50.vbox-extpack	12-Jan-2024 10:44	11M
SDKRef.pdf	12-Jan-2024 10:44	2.8M
SHA256SUMS	16-Jan-2024 16:40	3.3K
UserManual.pdf	12-Jan-2024 10:44	4.8M
VBoxGuestAdditions_6.1.50.iso	12-Jan-2024 10:44	62M
VirtualBox-6.1-6.1.50_161033_el6-1.x86_64.rpm	12-Jan-2024 10:51	102M
VirtualBox-6.1-6.1.50_161033_el7-1.x86_64.rpm	12-Jan-2024 10:51	94M
VirtualBox-6.1-6.1.50_161033_el8-1.x86_64.rpm	12-Jan-2024 10:51	94M
VirtualBox-6.1-6.1.50_161033_el9-1.x86_64.rpm	12-Jan-2024 10:51	91M
VirtualBox-6.1-6.1.50_161033_fedora32-1.x86_64.rpm	12-Jan-2024 10:51	91M
VirtualBox-6.1-6.1.50_161033_fedora33-1.x86_64.rpm	12-Jan-2024 10:51	92M
VirtualBox-6.1-6.1.50_161033_fedora35-1.x86_64.rpm	12-Jan-2024 10:51	91M
VirtualBox-6.1-6.1.50_161033_fedora36-1.x86_64.rpm	12-Jan-2024 10:51	91M
VirtualBox-6.1-6.1.50_161033_openSUSE132-1.x86_64.rpm	12-Jan-2024 10:51	94M
VirtualBox-6.1-6.1.50_161033_openSUSE150-1.x86_64.rpm	12-Jan-2024 10:52	87M
VirtualBox-6.1-6.1.50_161033_openSUSE153-1.x86_64.rpm	12-Jan-2024 10:52	87M
VirtualBox-6.1.50-161033-Linux_amd64.run	12-Jan-2024 10:44	111M
VirtualBox-6.1.50-161033-OSX.dmg	12-Jan-2024 10:44	123M
VirtualBox-6.1.50-161033-Solaris.p5p	12-Jan-2024 10:44	120M
VirtualBox-6.1.50-161033-SunOS.tar.gz	12-Jan-2024 10:44	122M
VirtualBox-6.1.50-161033-Win.exe	12-Jan-2024 10:44	107M
VirtualBox-6.1.50.tar.bz2	12-Jan-2024 10:44	159M
VirtualBoxSDK-6.1.50-161033.zip	12-Jan-2024 10:44	11M
virtualbox-6.1_6.1.50-161033~Debian~bookworm_amd64.deb	11-Jan-2024 20:47	92M
virtualbox-6.1_6.1.50-161033~Debian~bullseye_amd64.deb	11-Jan-2024 20:47	92M
virtualbox-6.1_6.1.50-161033~Debian~buster_amd64.deb	11-Jan-2024 20:47	92M
virtualbox-6.1_6.1.50-161033~Debian~stretch_amd64.deb	11-Jan-2024 19:41	92M
virtualbox-6.1_6.1.50-161033~Ubuntu~bionic_amd64.deb	11-Jan-2024 20:47	92M
virtualbox-6.1_6.1.50-161033~Ubuntu~focal_amd64.deb	11-Jan-2024 20:47	92M
virtualbox-6.1_6.1.50-161033~Ubuntu~jammy_amd64.deb	11-Jan-2024 20:47	92M

download.virtualbox.org

Figure 15 downloading the correct version of extension file for the version installed

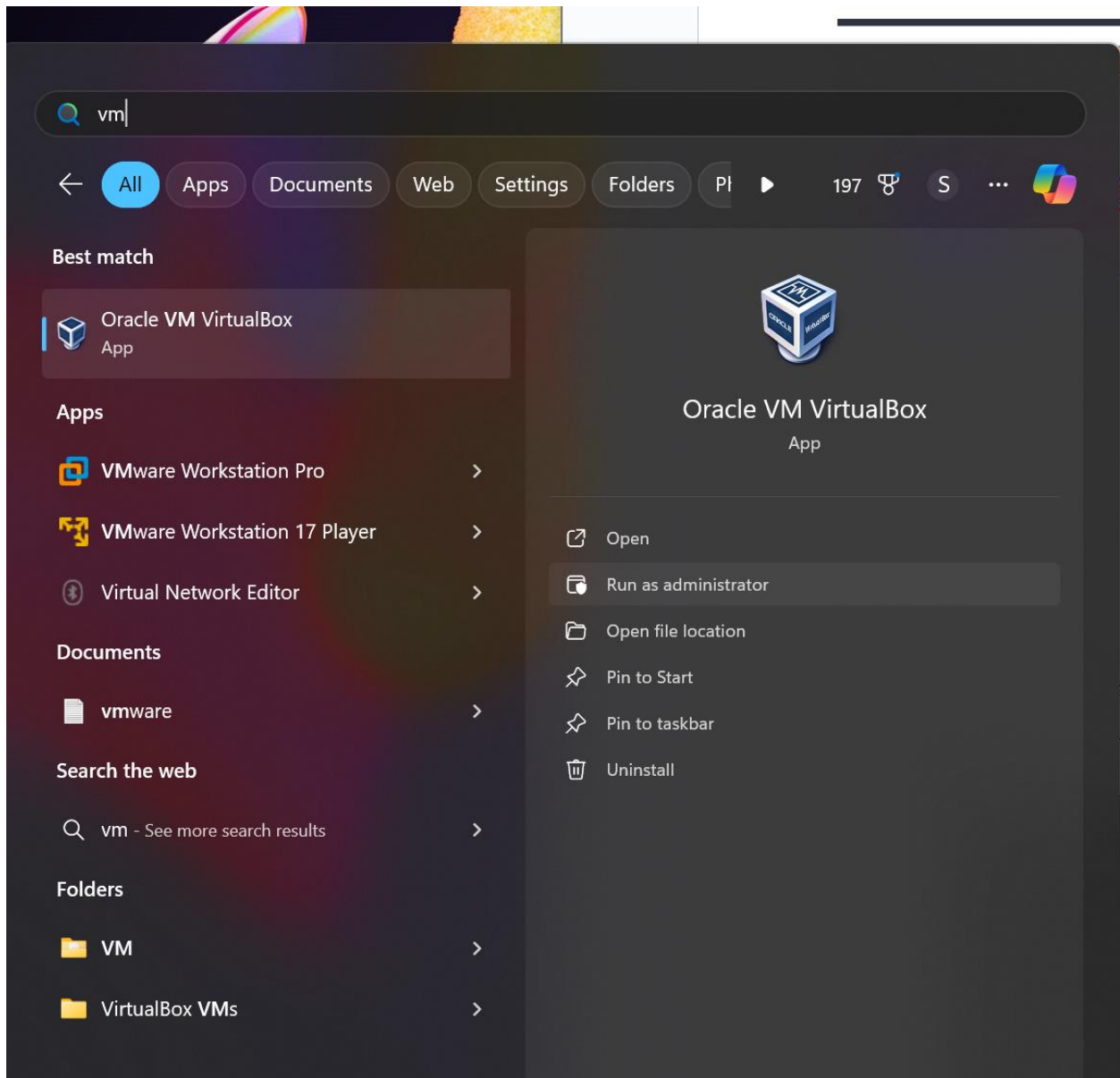


Figure 16: Opening VirtualBox as an administrator after closing all VMs

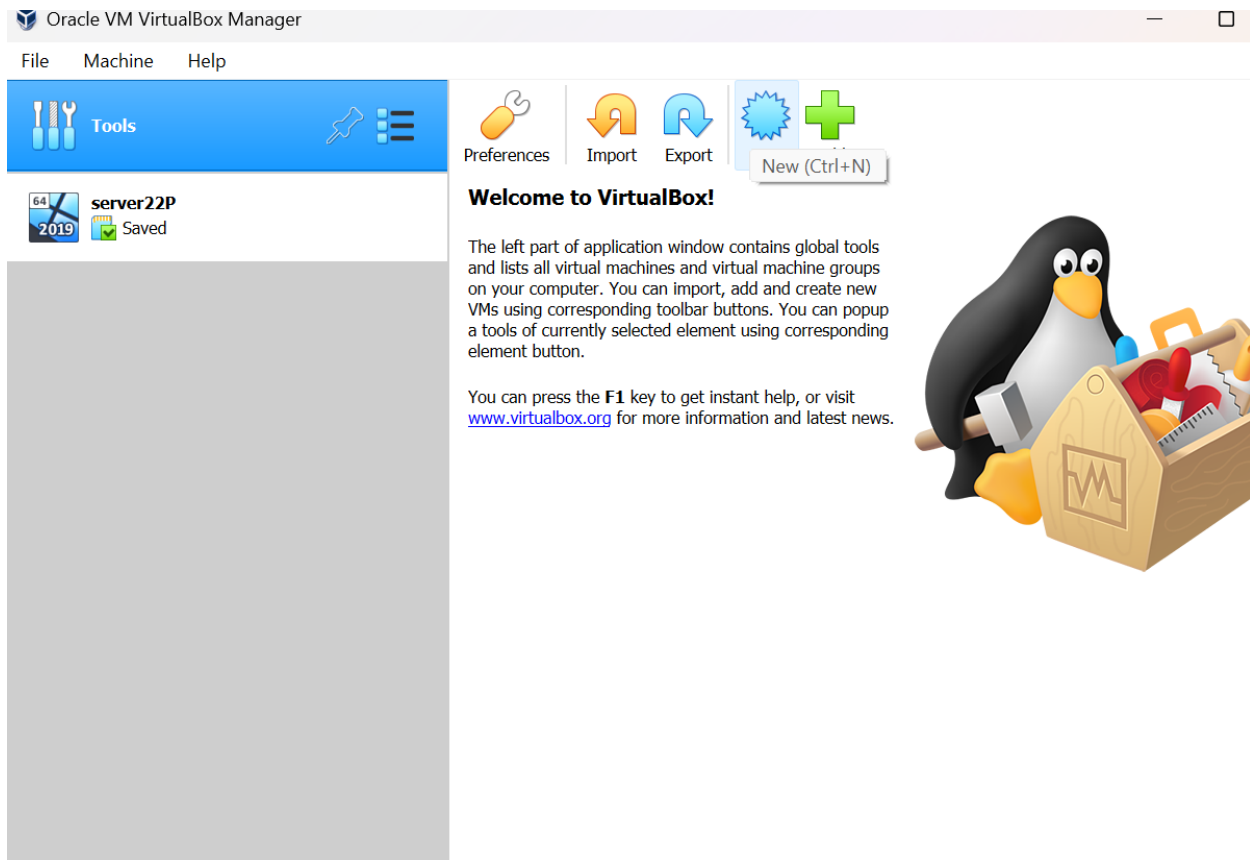


Figure 17: VirtualBox Manager and opening Preferences

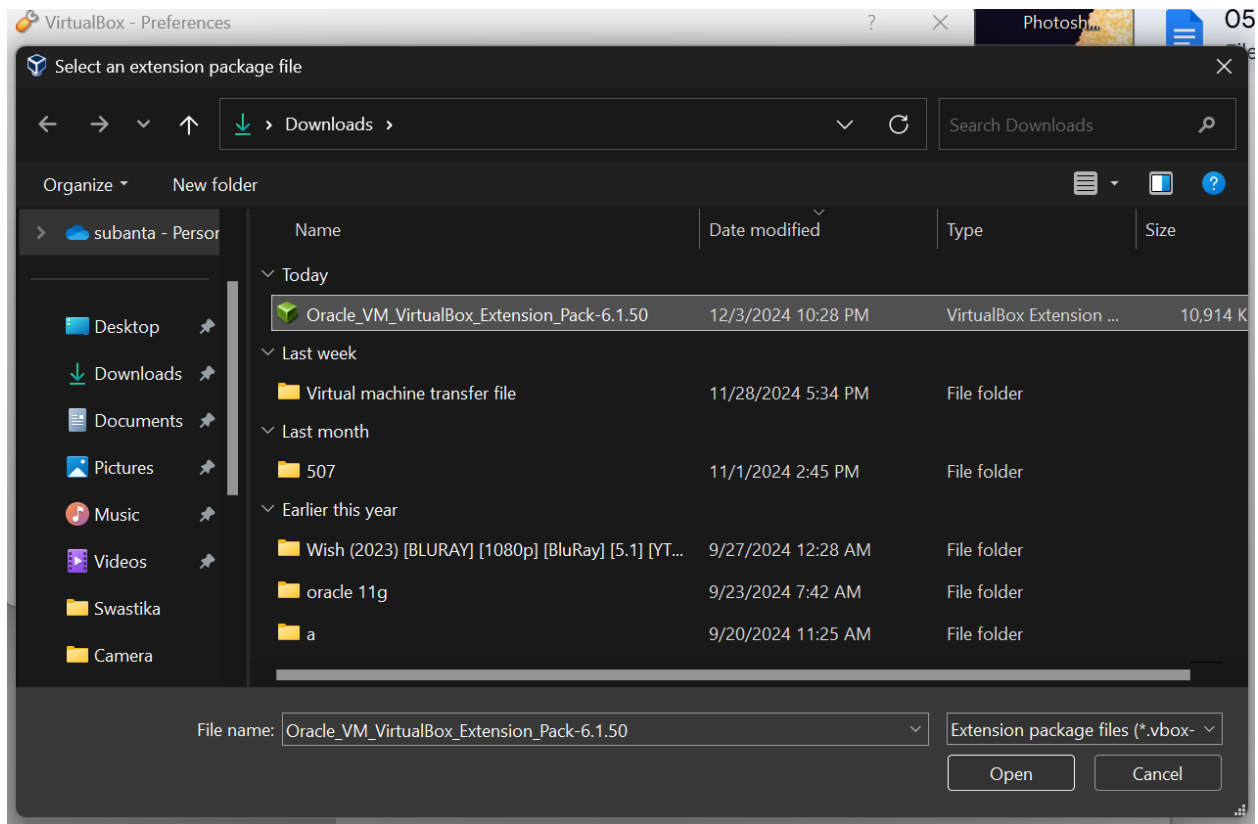


Figure 18: Choosing an extension package file for installation

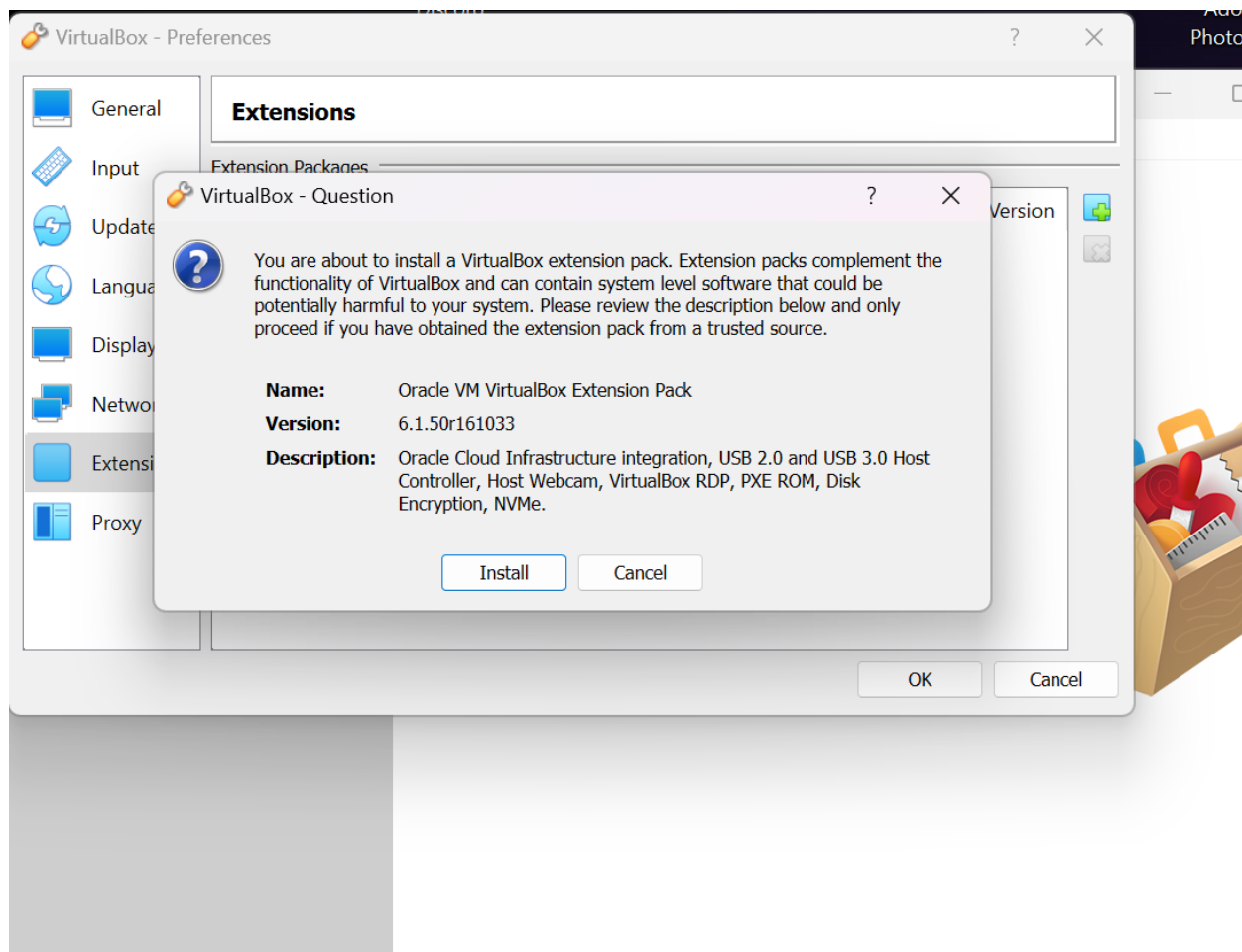


Figure 19: VirtualBox Installation Question



Figure 20: VirtualBox License terms

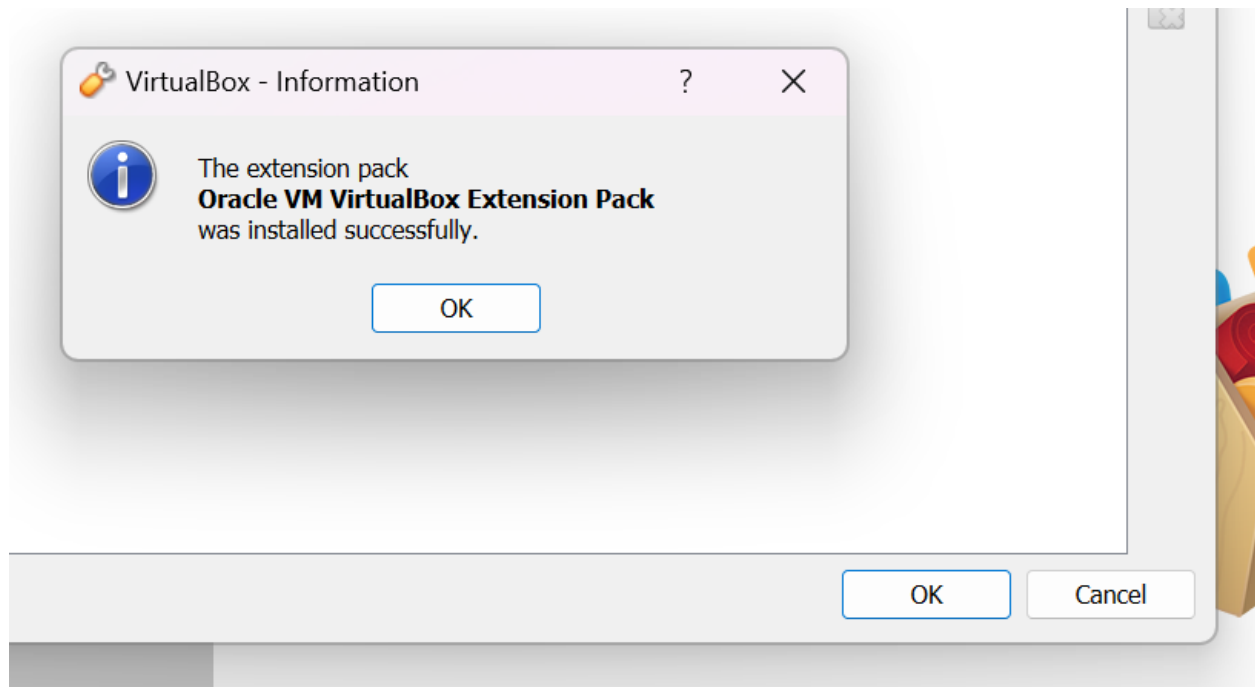


Figure 21: VirtualBox Information pack after being installed

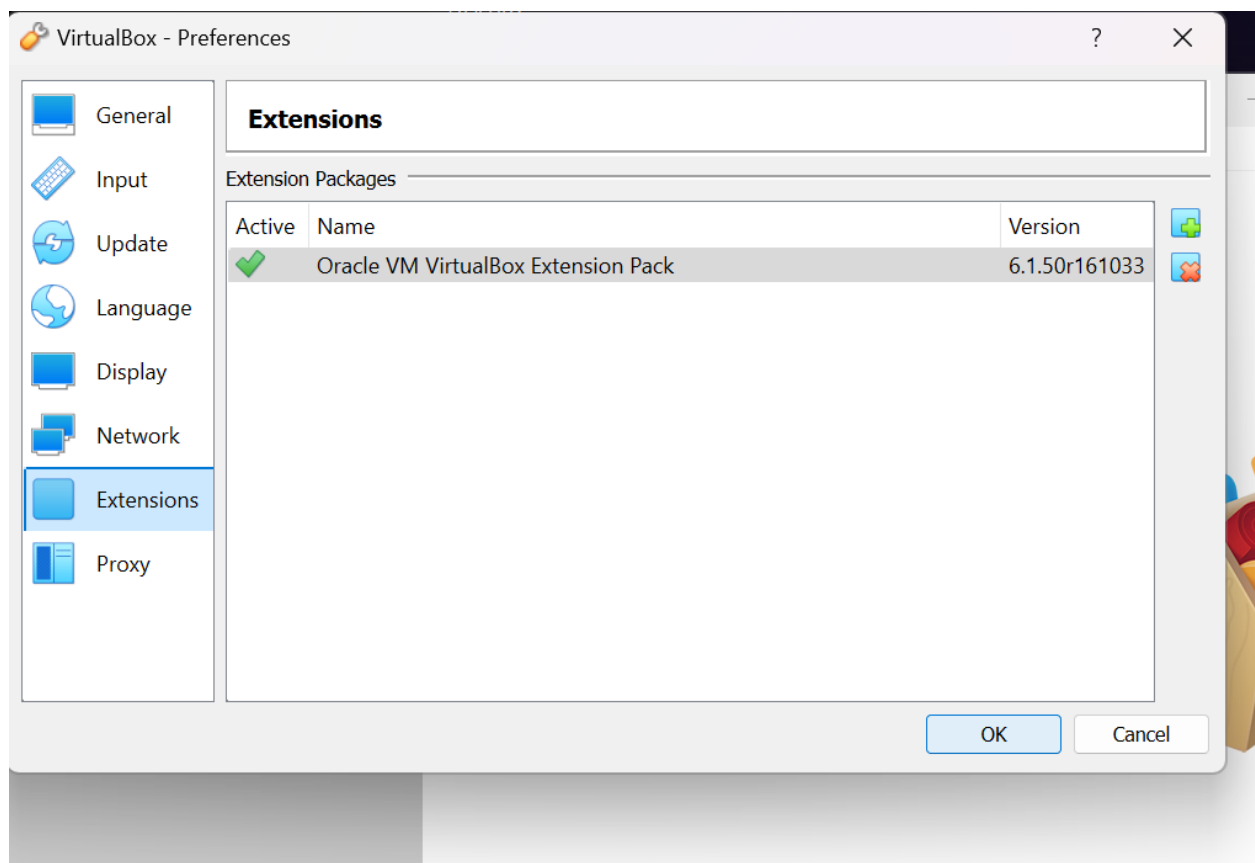


Figure 22: Extensions pack after the installation is completed

b. Enable Remote Display in VirtualBox

- In VirtualBox, select your Windows Server 2022 VM.
- Go to **Settings > Display > Remote Display**.
- Check **Enable Server** and click OK.

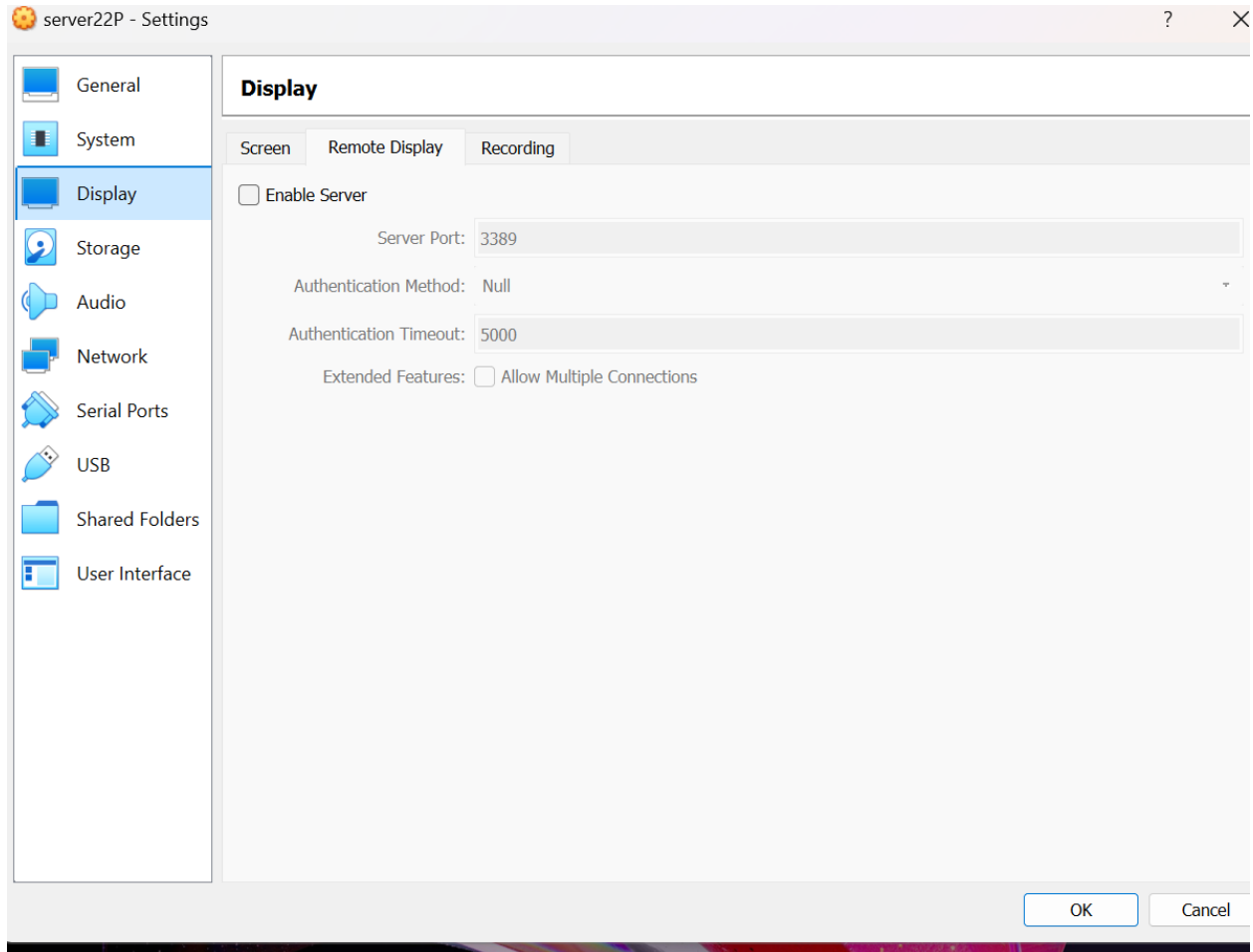


Figure 23: Opening Settings > Display > Remote Display and enabling Server for remote access

c. Find the IP Address of the Guest OS

- Start the Windows Server 2022 VM and check the IP address using the `ipconfig` command in the Command Prompt.

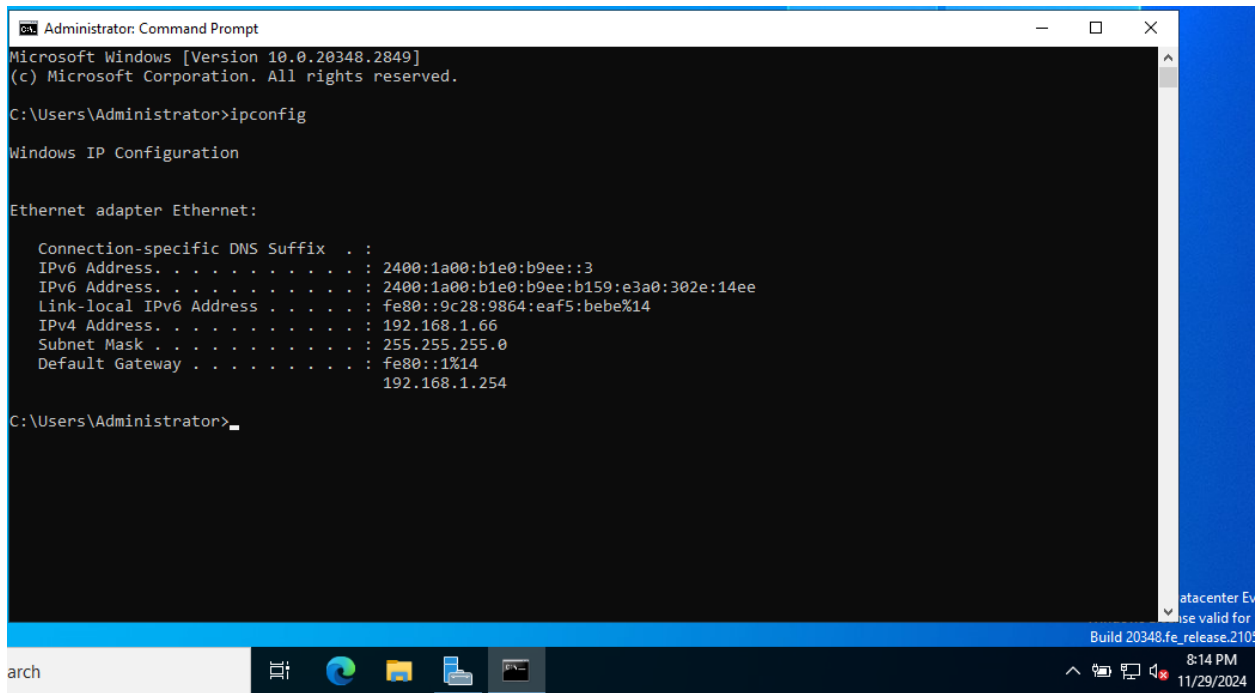


Figure 24: Opening Command Prompt and typing ipconfig to look for IP address

d. Access the Guest OS via Remote Desktop

- On the Host OS, open Remote Desktop Connection (**mstsc**).
- Enter the IP address of the Guest OS and click Connect.
- Enter the Guest OS login credentials when prompted.

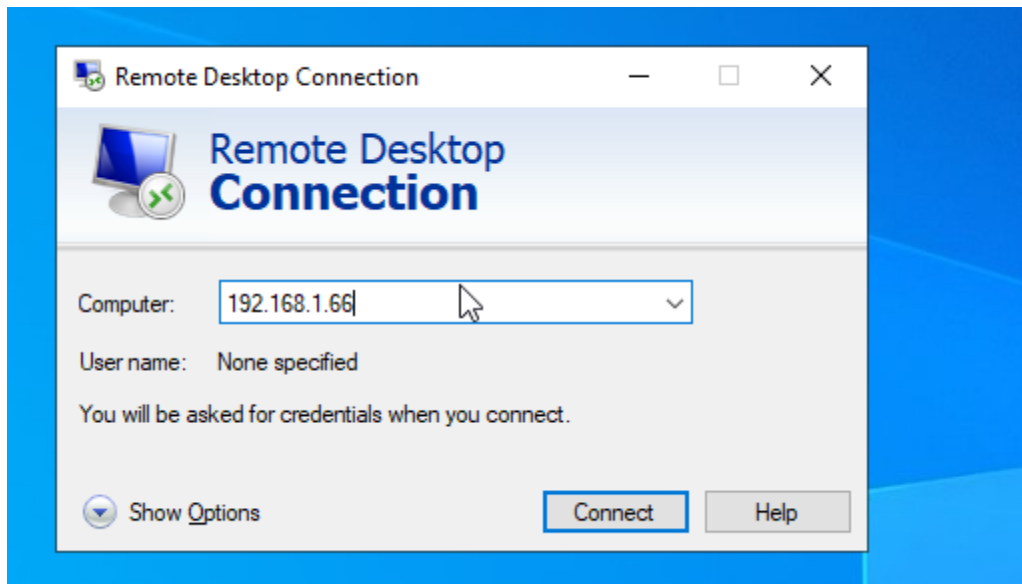


Figure 25: Opening Remote Desktop Connection in the VM to enable remote connection

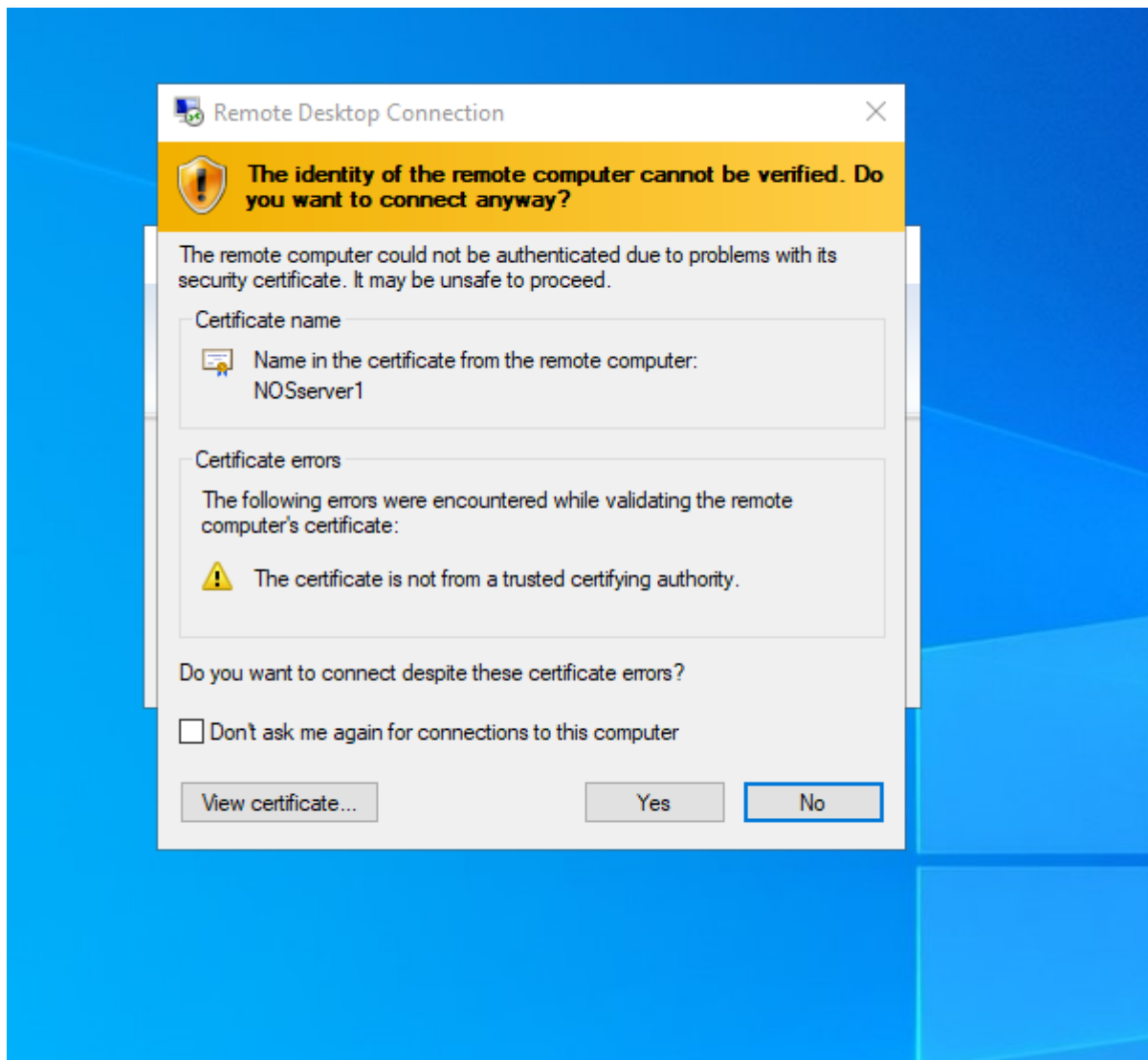


Figure 26: successfully establishing a remote connection

OBSERVATIONS

1. The static website was successfully hosted on Windows Server 2022 and accessed from the Host OS and other devices within the same LAN.
2. Remote Desktop Connection was successfully enabled, allowing access to the Guest OS from the Host OS.

SUMMARY

In this log, we covered

1. Hosting a static website on a Windows Server 2022 virtual machine using ISS and making it accessible within the same network.
2. Enabling Remote Desktop access by configuring Virtual Box and the Guest OS settings.

The steps provided valuable insights into configuring network settings, hosting websites, and managing remote access in a virtualized environment. This setup is suitable for web development, testing, and server management scenarios.

References

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