informatics
college • pokhara

Module Code & Module Title

Level 5 – CT5052NP

Assessment Type

Logbook Four

Semester

2023/24 Spring/Autumn

Student Name: Subanta Poudel

London Met ID: 20048736

College ID: NP04CP4S210115

Assignment Due Date: November 30, 2024

Assignment Submission Date: November 30, 2024

Submitted To: Prasant Adhikari

Word Count (Where Required): 800

Contents

Table of Figures

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 form 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)

Internet Information Services (IIS) provides a request processing architecture to enable sites to use protocols other than HTTP and HTTPS, using Windows Process Activation Service (WAS). It is a flexible, secure and manageable web server developed by Microsoft for hosting websites, services, and applications. It a webserver engine that can be customized by adding or removing modules. (Microsoft, 2024)

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** form the dropdown menu.
- Click **OK** and start virtual machine.
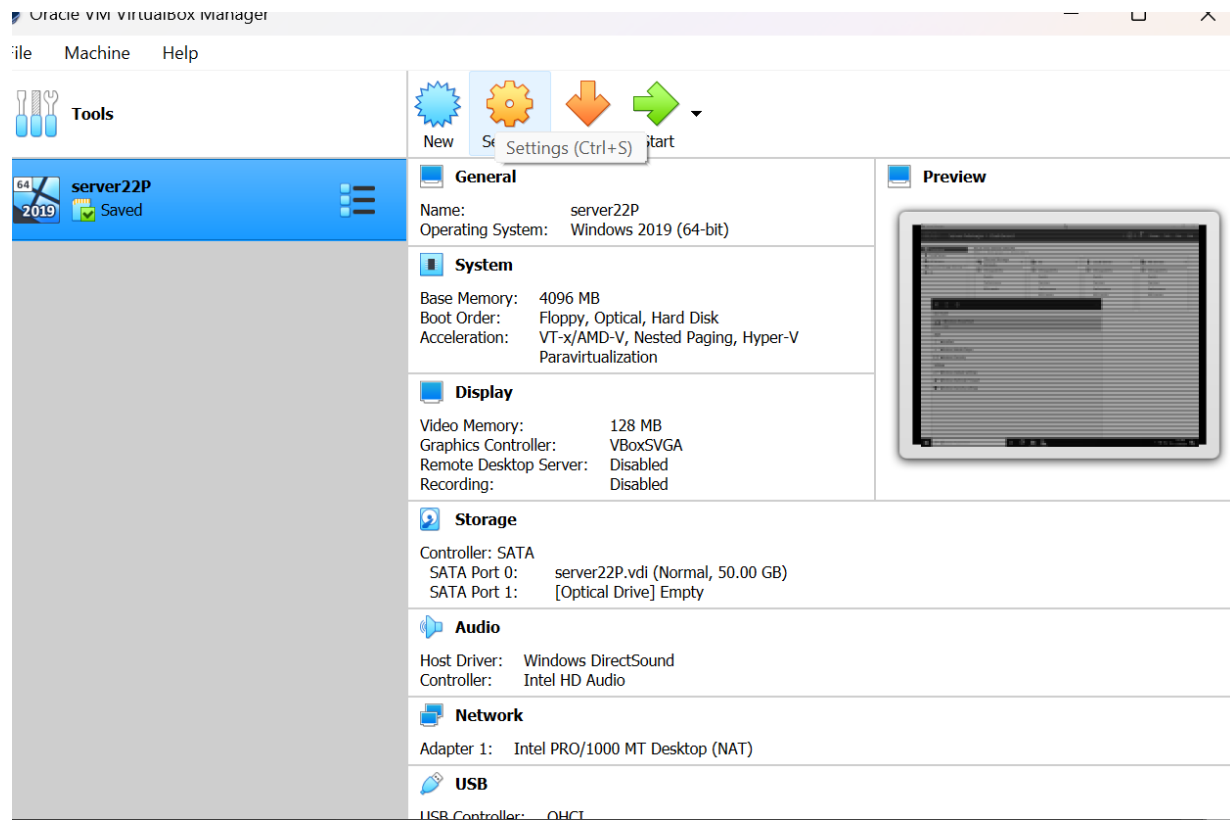
Figure 1: VM VirtualBox Manager Dashboard
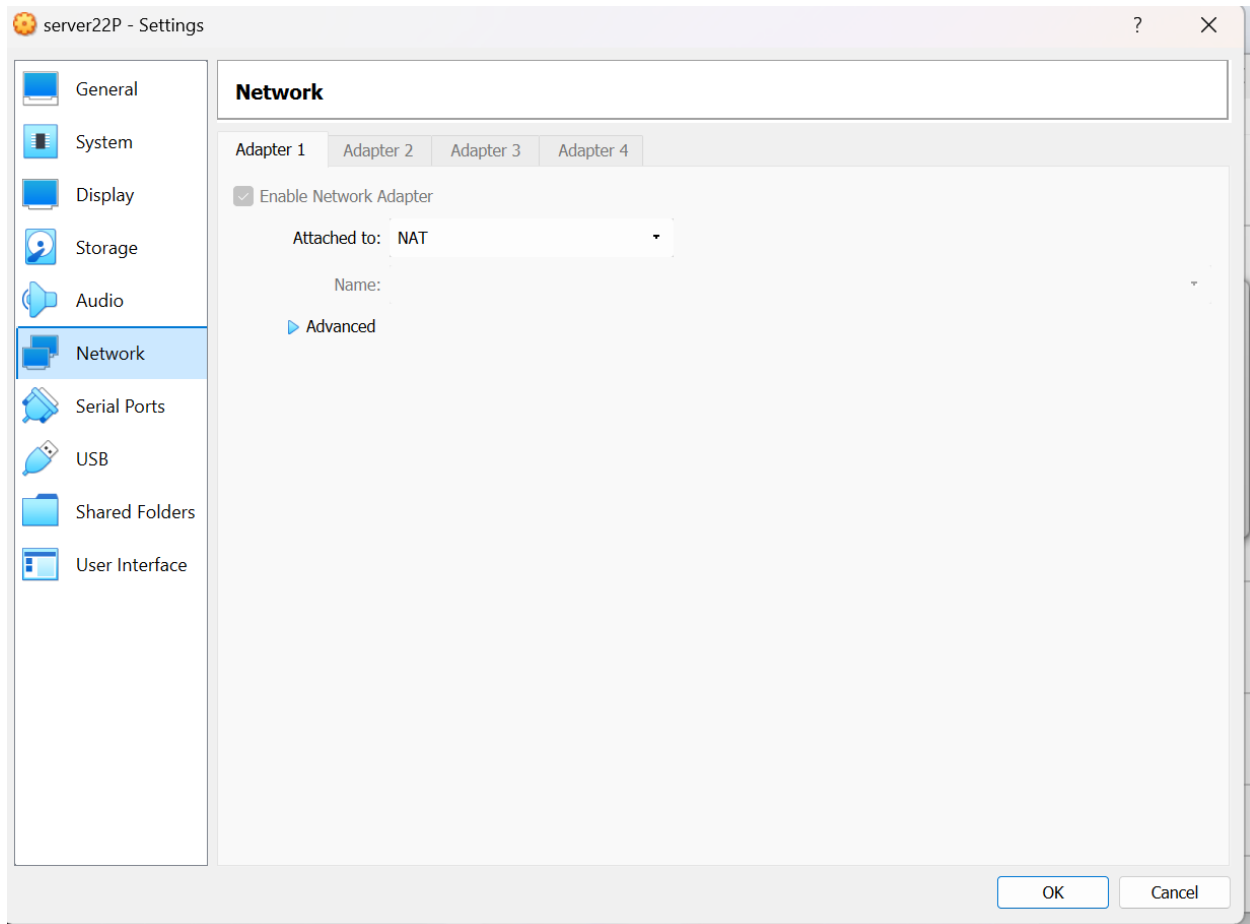
Figure 2: VirtualBox Manager, Setting>Network
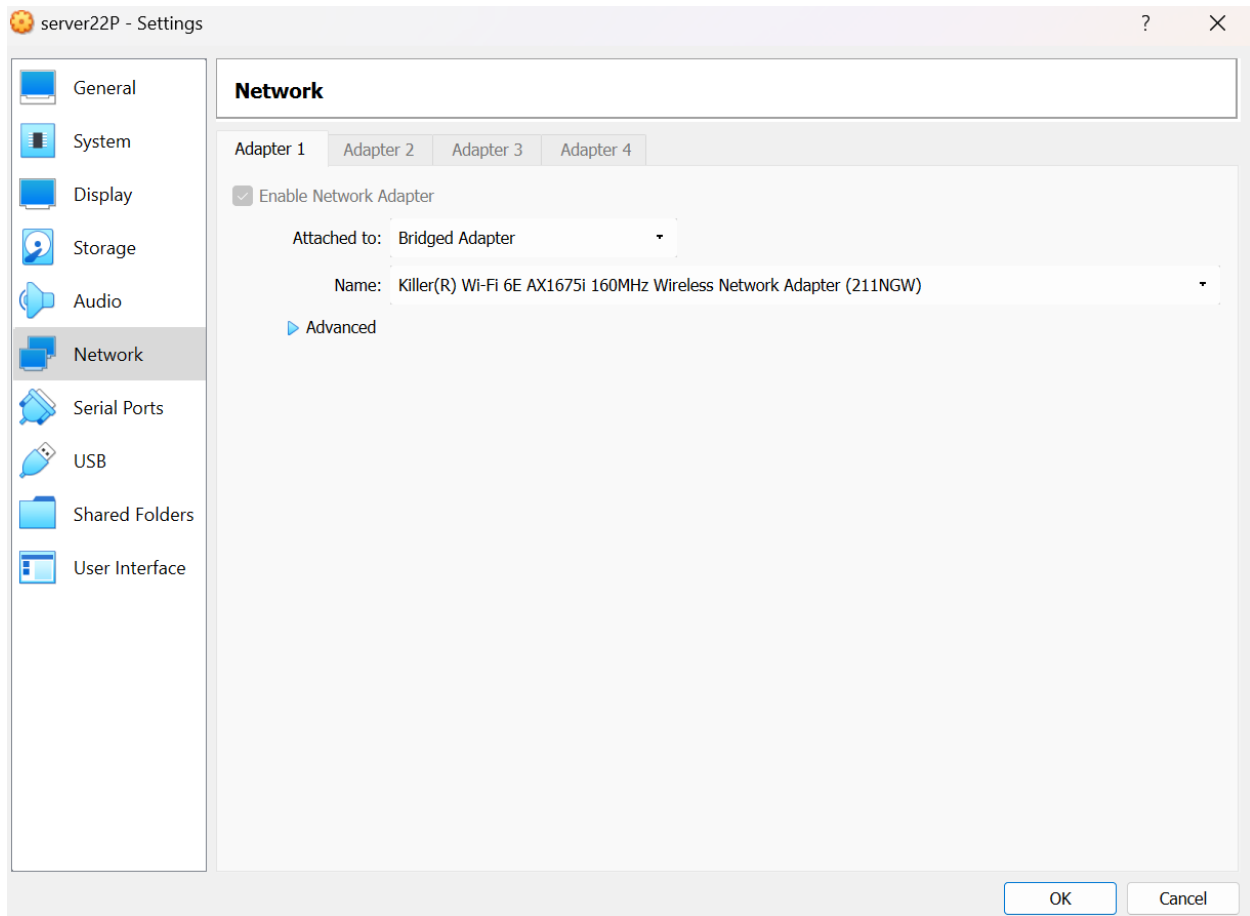
Figure 3: After Enabling Network Adapter, and choosing Bridged Adapter

b. Prepare Website Files

- Place the static website files in a folder on the **C**: drive of the Windows Server 2022 VM.
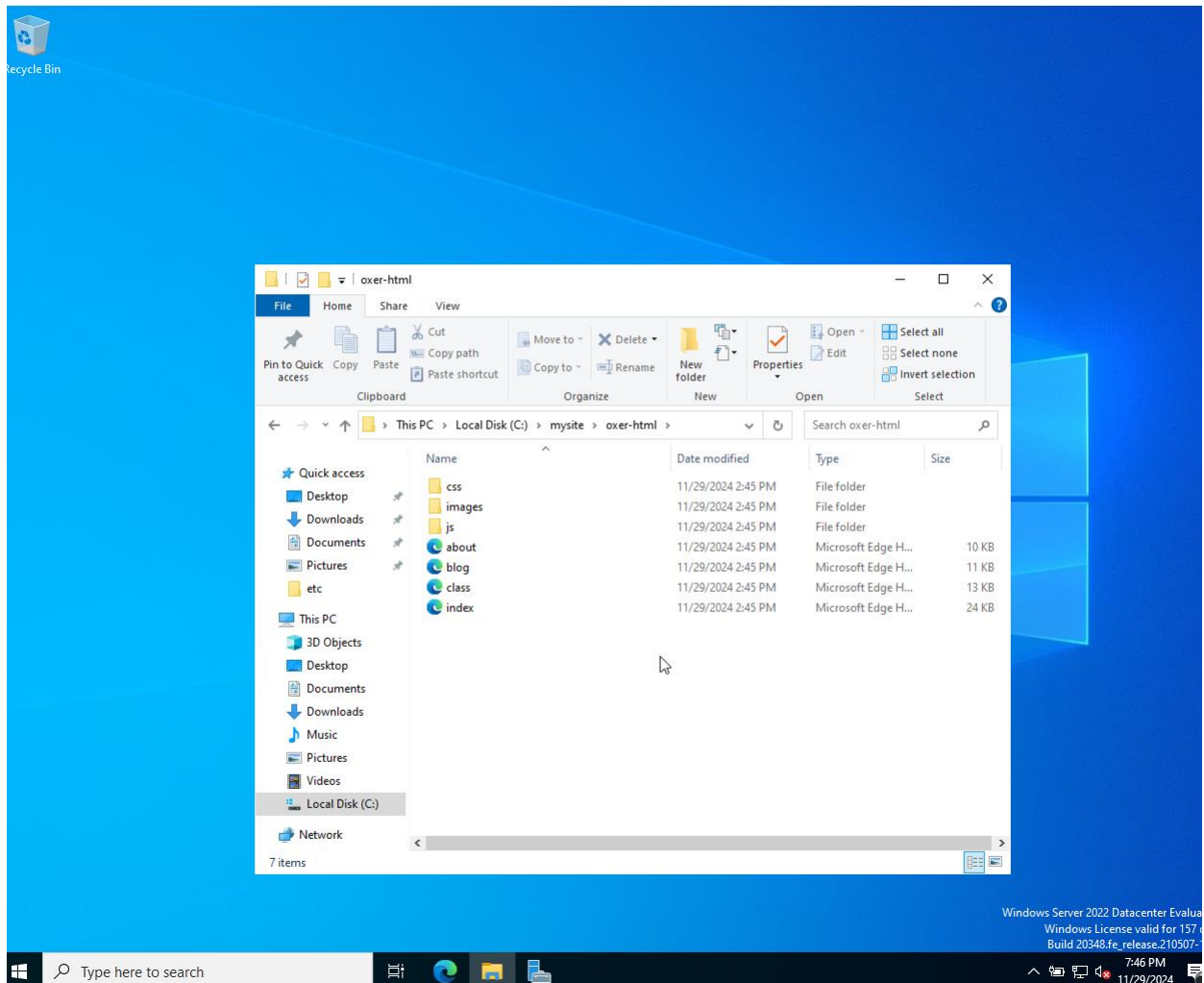
Figure 4: Preparing files in C: drive for website

c. Open IIS (Internet Information Services)

- Search for *inetmgr* by pressing *Win + R*, and press Enter to open IIS Manager
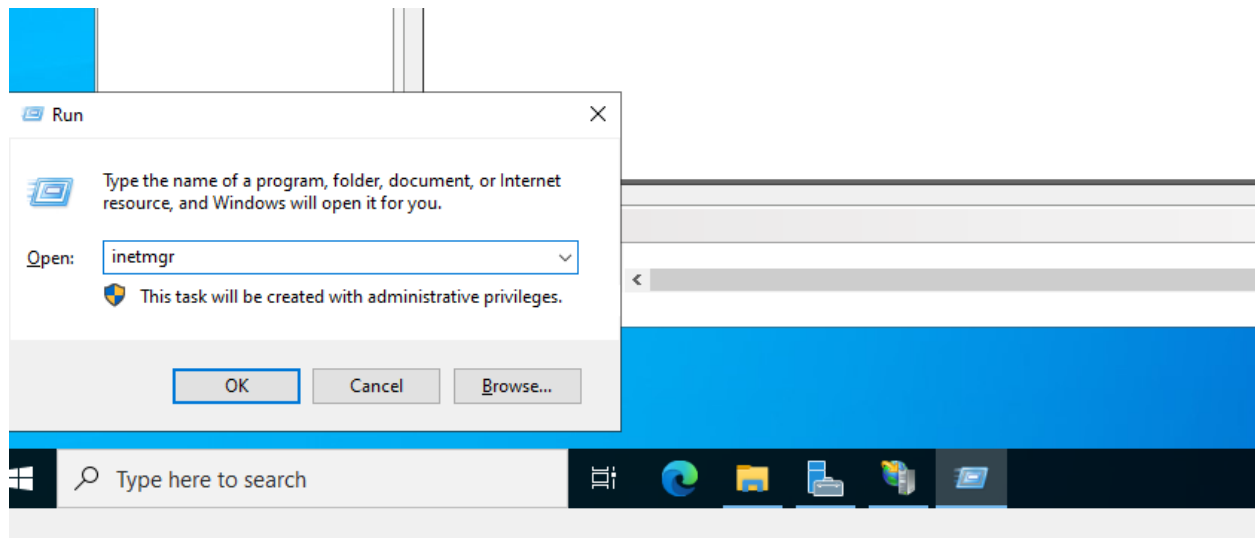
Figure 5: Searching for inetmgr in run

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:
  - **Site Name**: name of the website
  - **Physical Path**: Browse to the folder where static website files are located.
  - **IP Address**: Select the server's IP address form the dropdown menu.
  - Leave other settings as default and click **OK.**
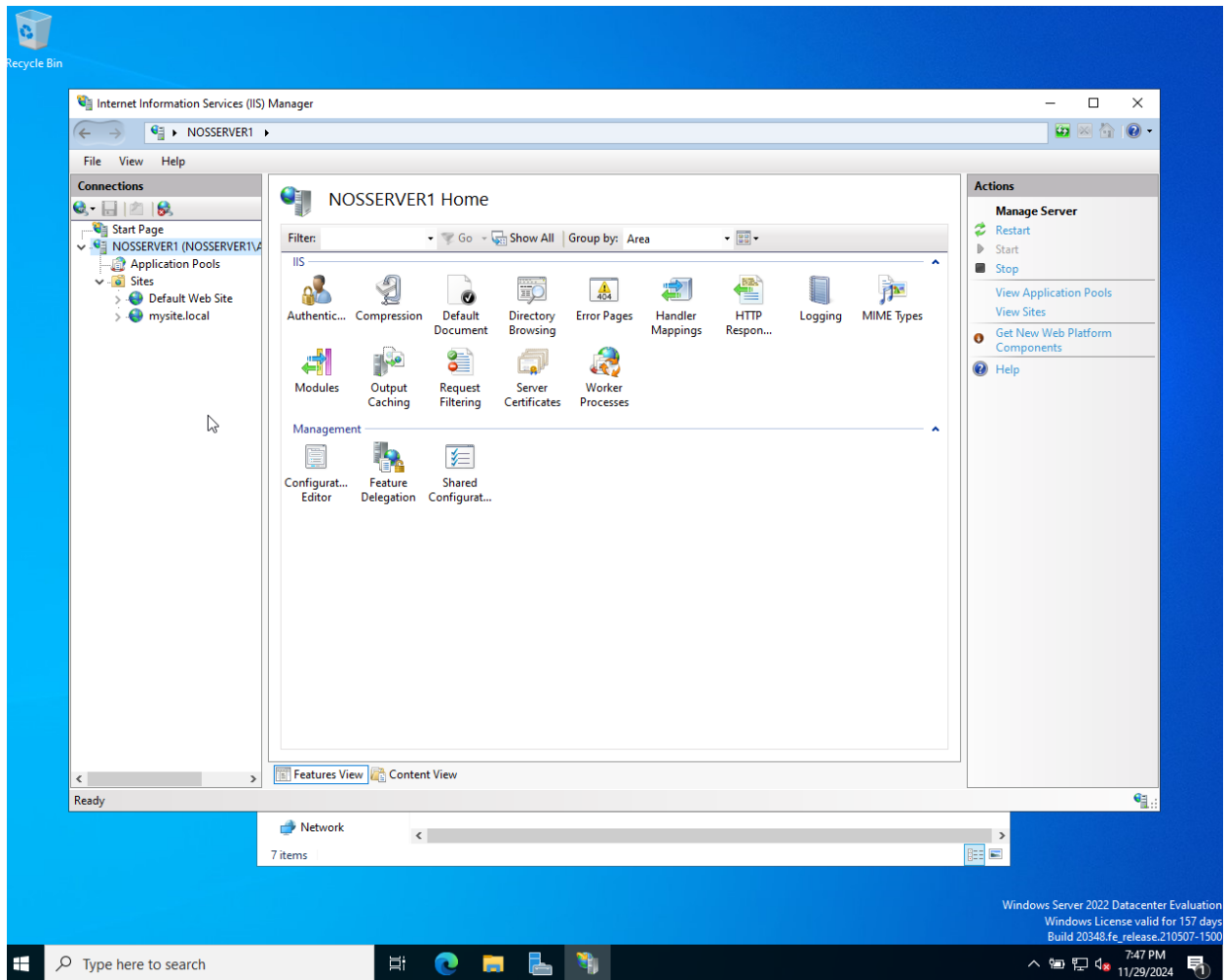
Figure 6: Opening IIS manager
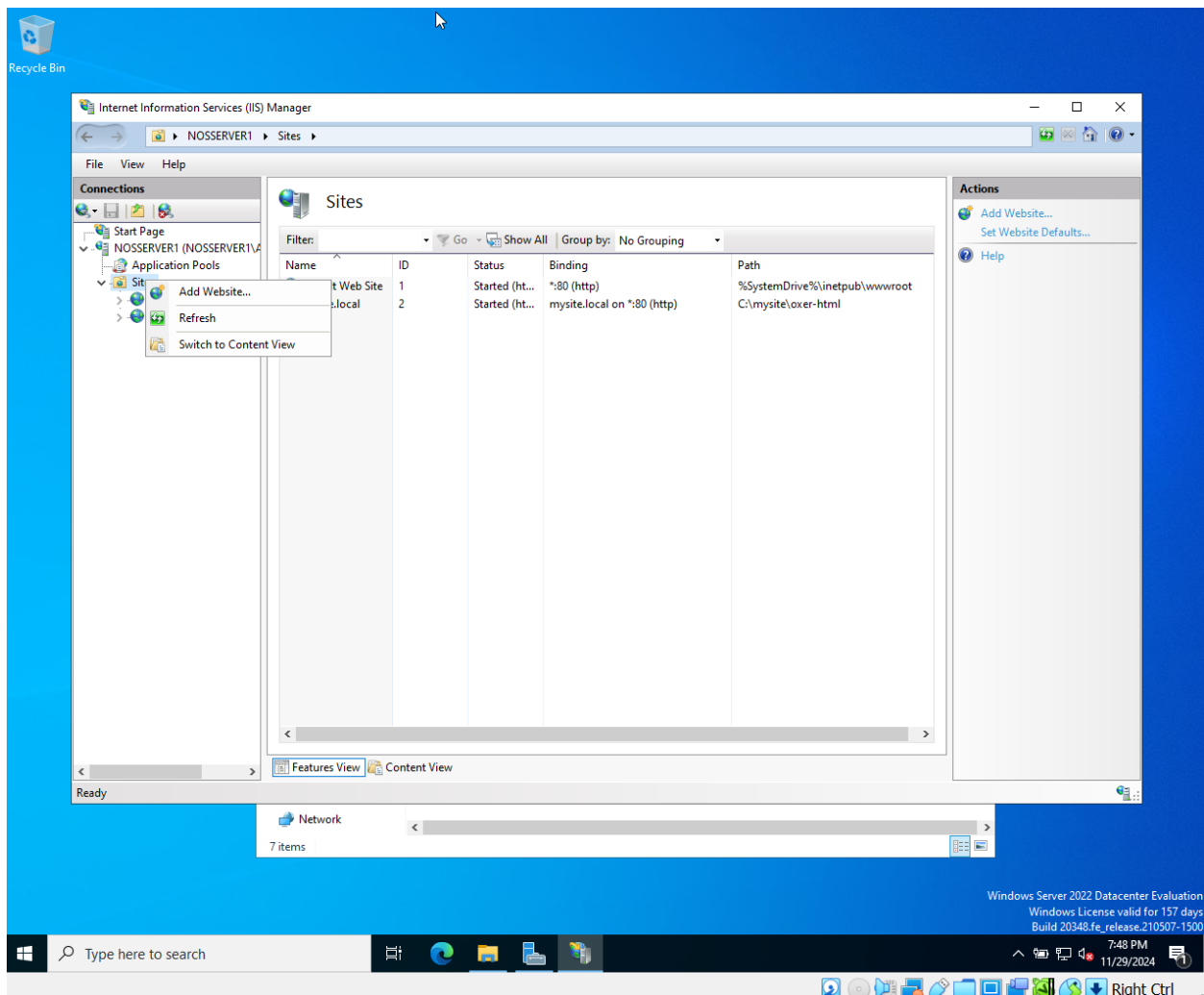
Figure 7: Expanding the server > sites
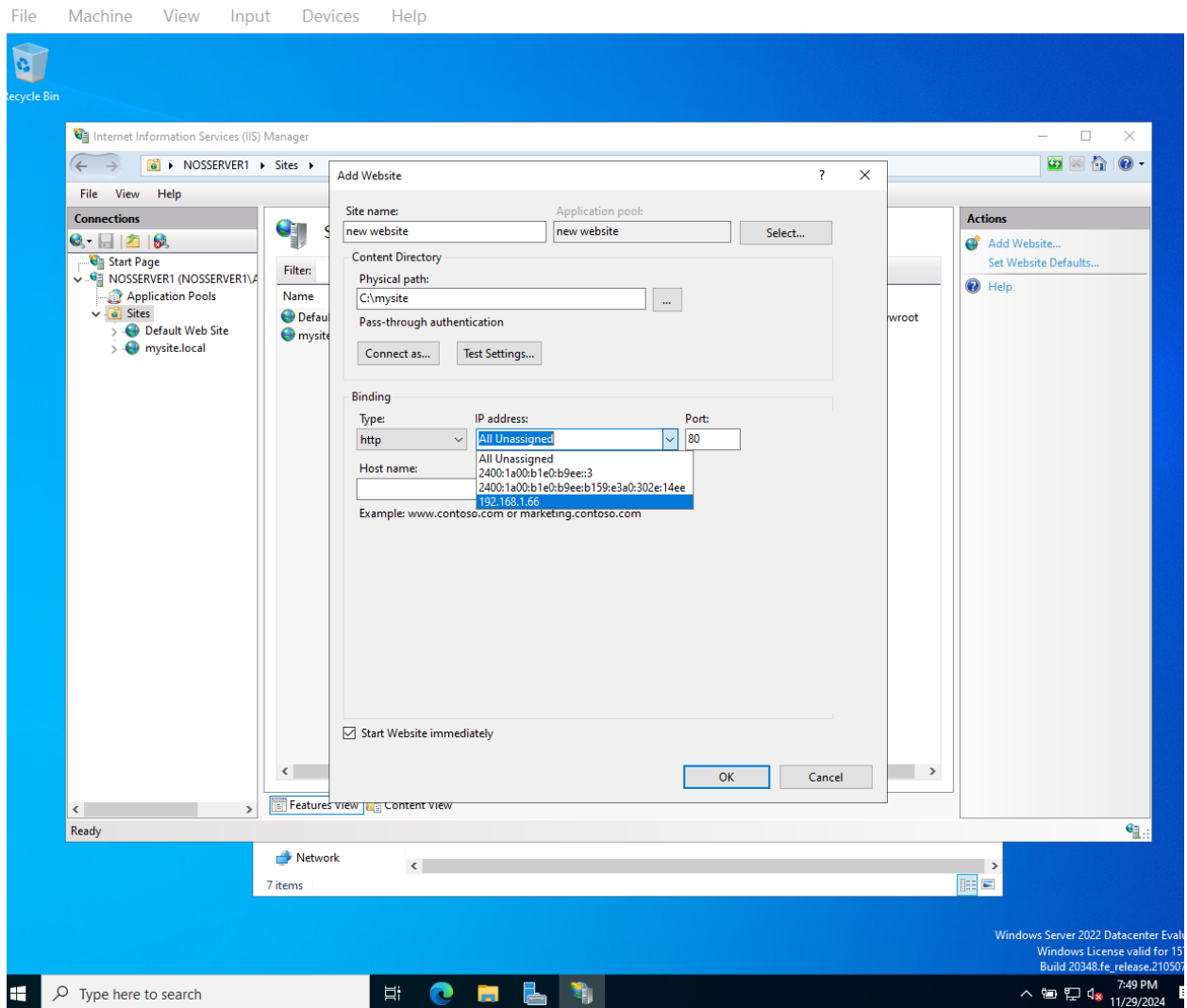
Figure 8: Add Website window, and choosing appropriate settings

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.
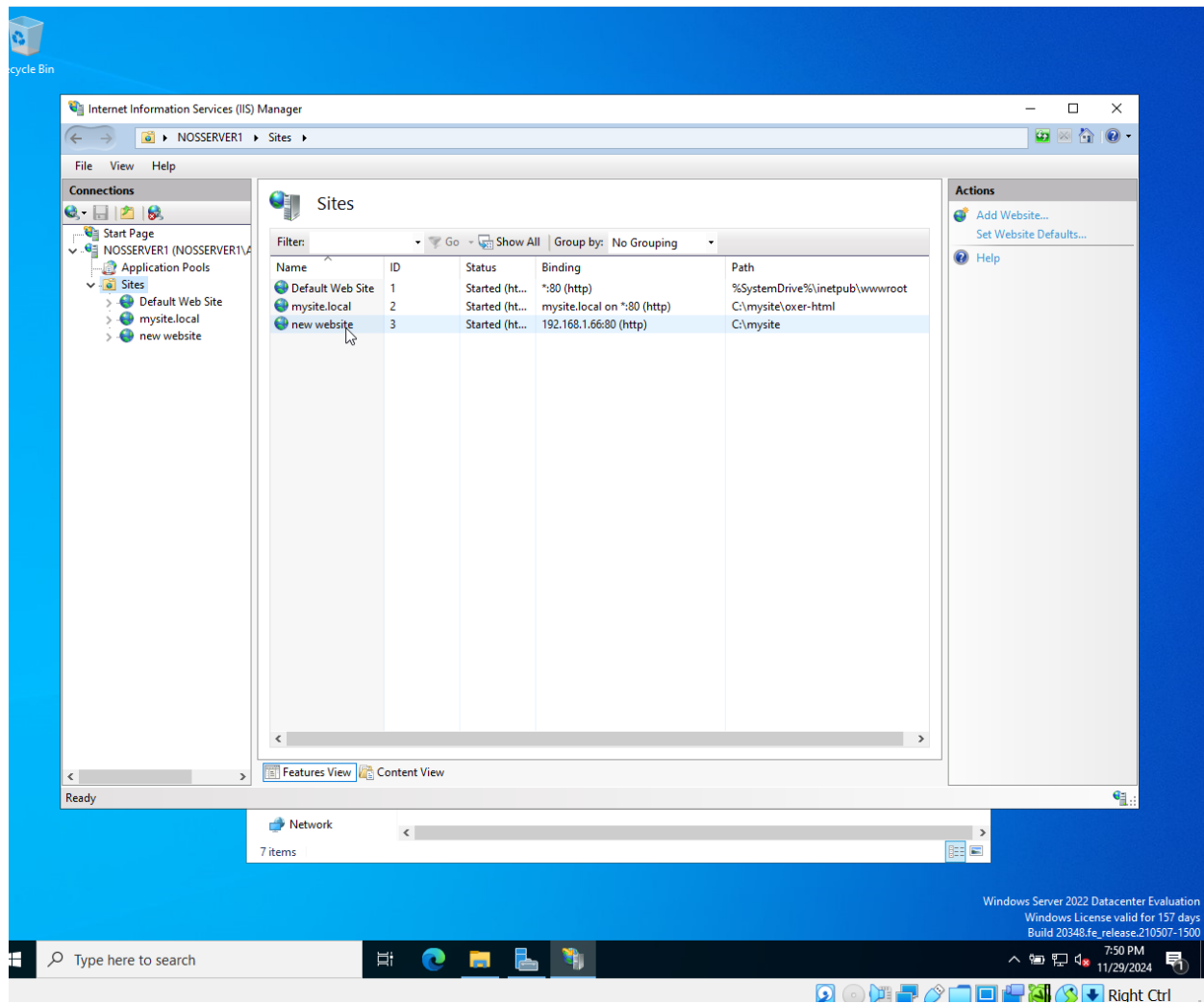
Figure 9: Sites Window, after adding new website
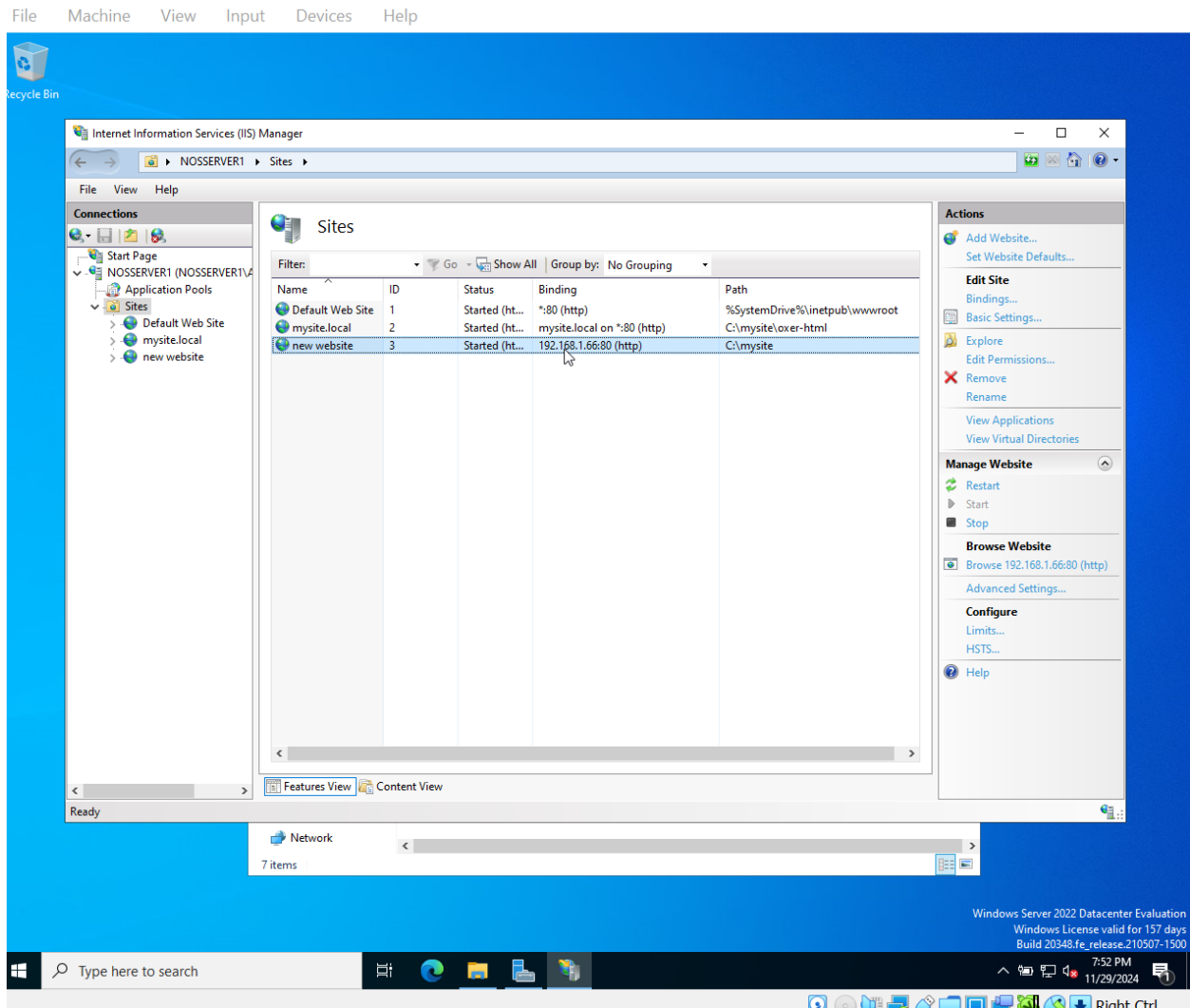
Figure 10: new website, attributes and quick action panel, and clicking on Browse website form IP address
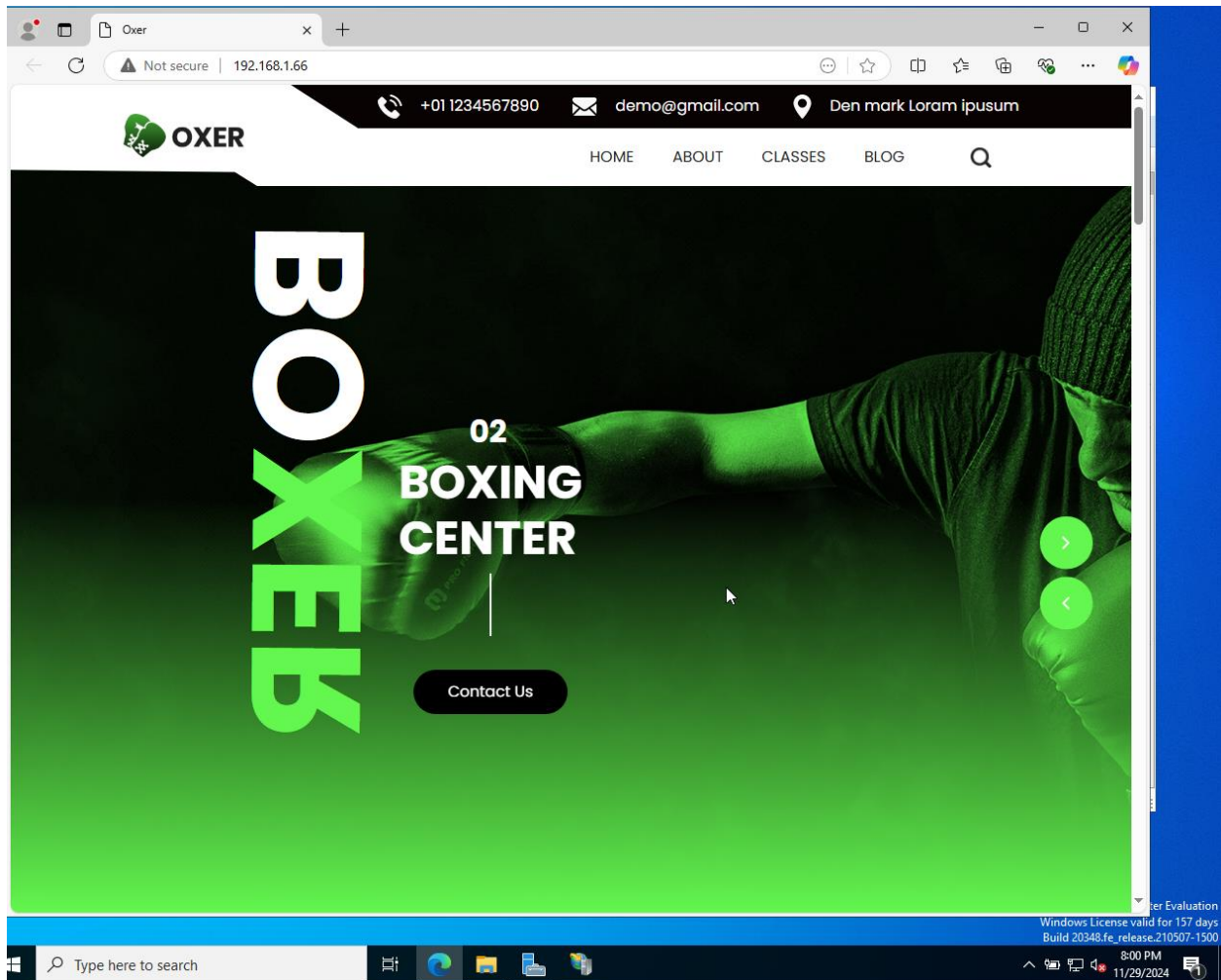
Figure 11: the website being open in the default browser

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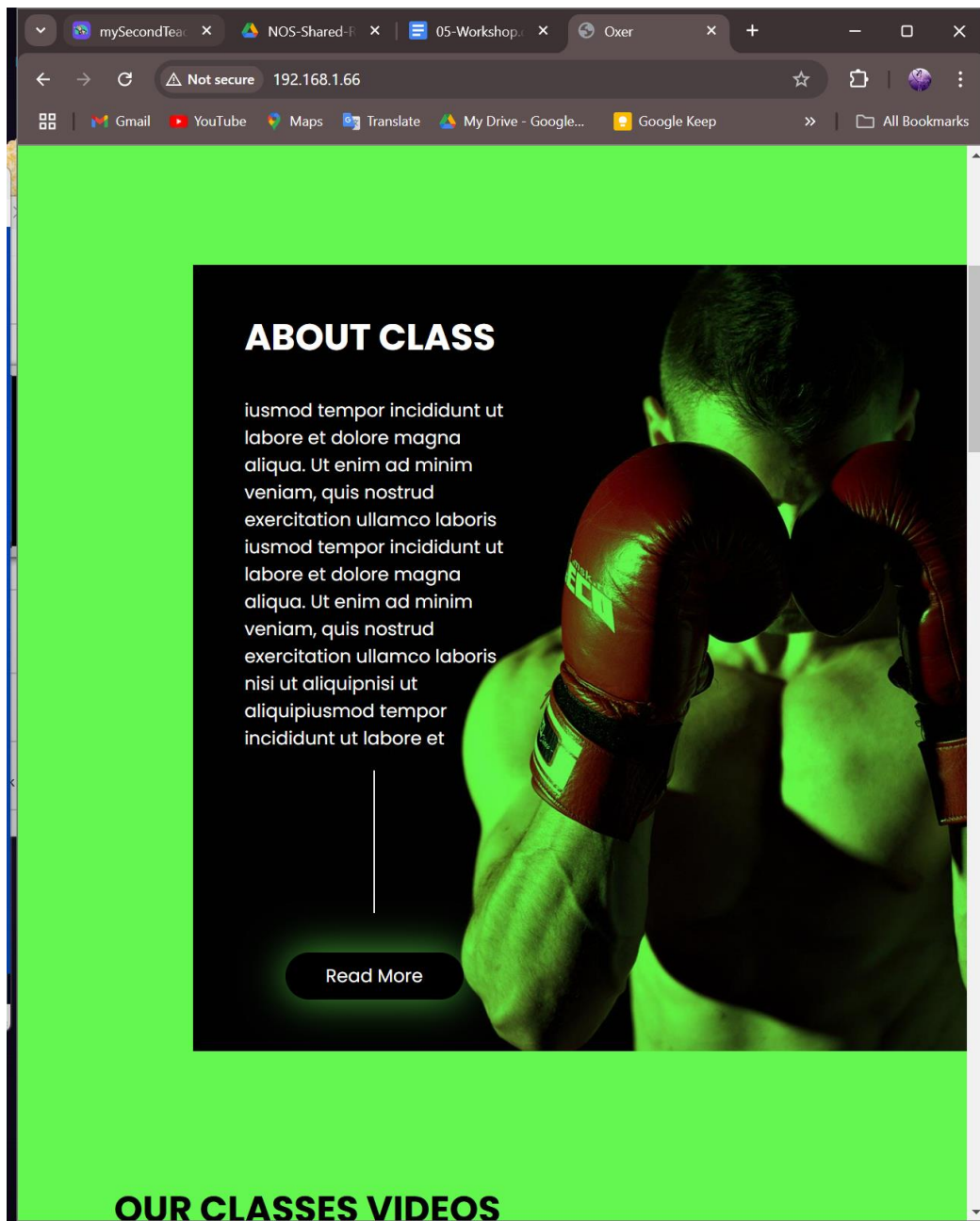
Figure 12: The Website being open in the Host OS, by entering the Guent IP address

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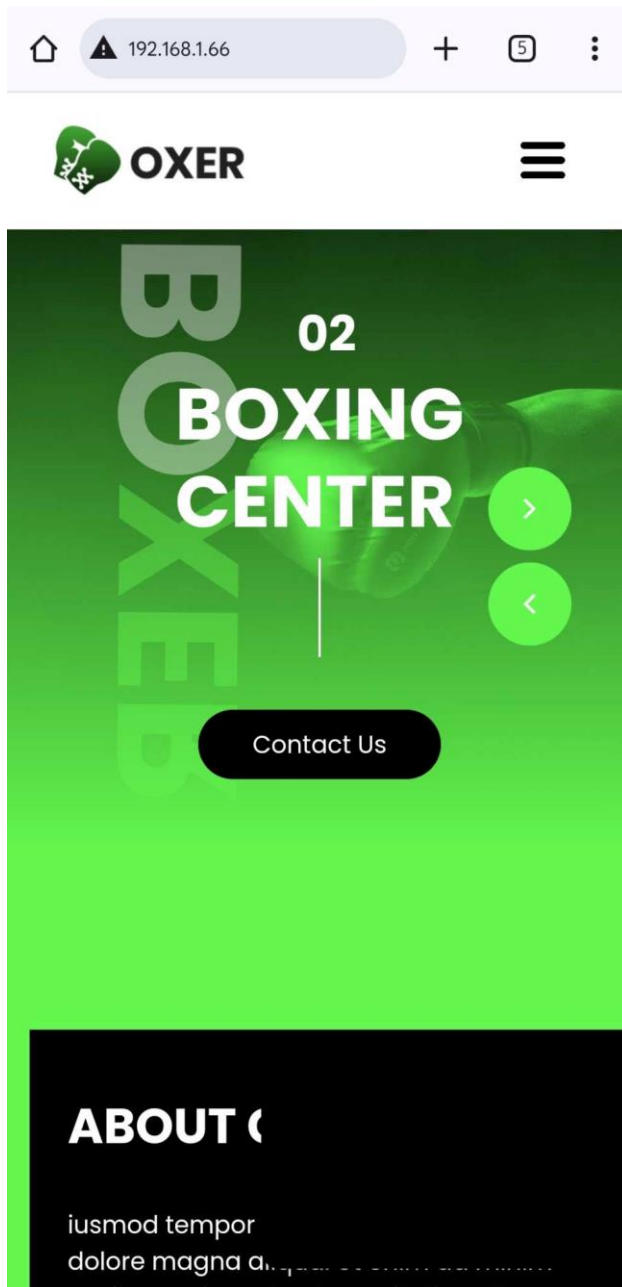
Figure 13: the website being open after insuring that the smartphone is in the same network as the server

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.
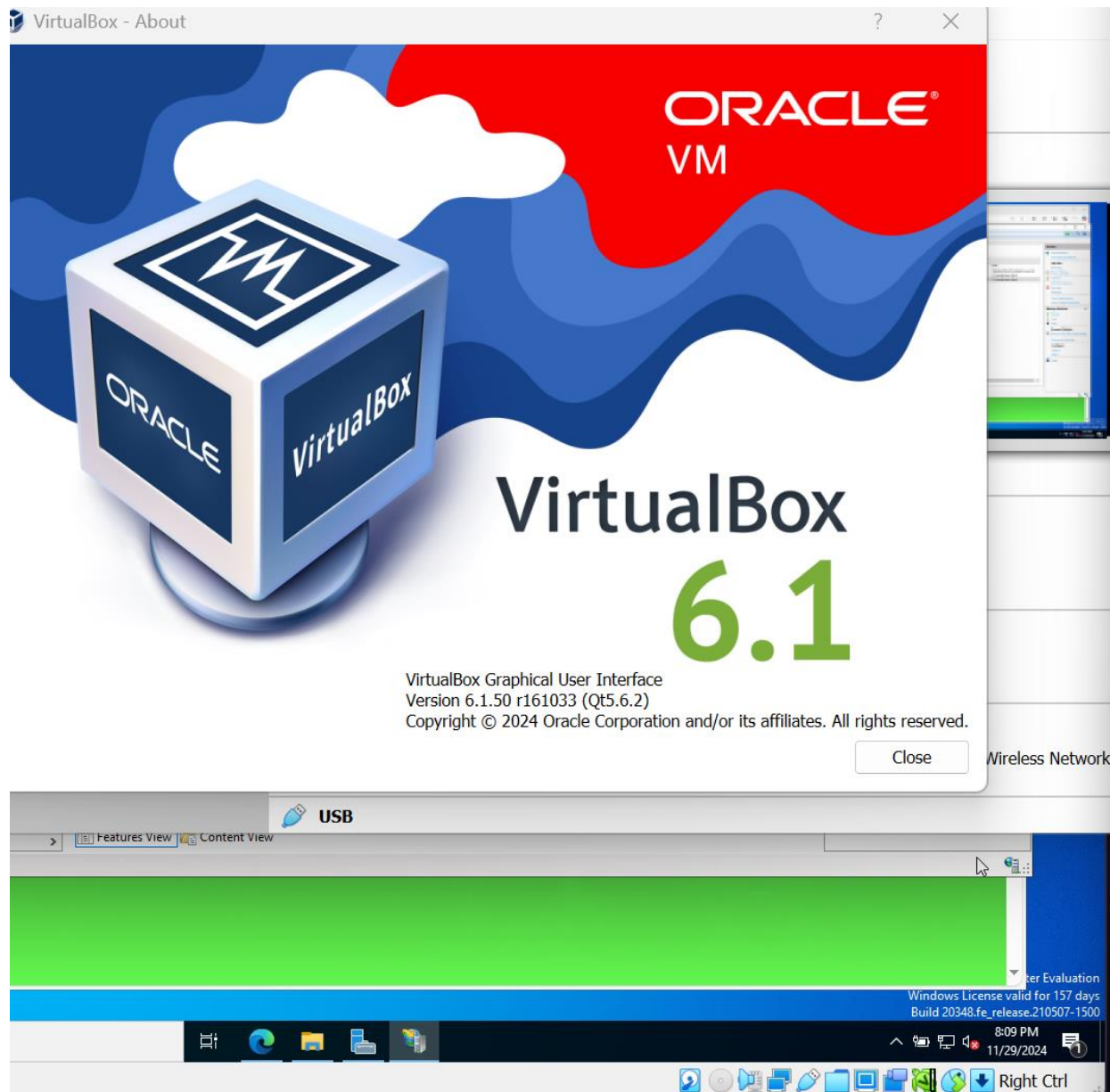
Figure 14: Looking up the VirtualBox version

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 15downloading 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

lease, lend, re-distribute, or encumber the Product, (c) remove or alter any proprietary legends or notices contained in the Product, or (d) decompile, or reverse engineer the Product (except to the extent permitted by applicable law).

(3) The Product is not designed, licensed or intended for use in the design, construction, operation or maintenance of any nuclear facility and Oracle and its licensors disclaim any express or implied warranty of fitness for such uses.

(4) No right, title or interest in or to any trademark, service mark, logo or trade name of Oracle or its licensors is granted under this Agreement.

§ 4 Termination. The Agreement is effective on the date you receive the Product and remains effective until terminated. Your rights under this Agreement will terminate immediately without notice from Oracle if you materially breach it or take any action in derogation of Oracle's and/or its licensors' rights to the Product. Oracle may terminate this Agreement immediately should any part of the Product become or in Oracle's reasonable opinion likely to become the subject of a claim of intellectual property infringement or trade secret misappropriation. Upon termination, you will cease use of and destroy all copies of the Product under your control and confirm compliance in writing to Oracle. Neither termination of this Agreement nor any deletion or removal of the Product shall limit any obligations you may have to Oracle, or any rights and/or remedies that Oracle may have with respect to any past or future infringing use of the Product (including but not limited to any use of the Product outside the scope of the license provided in the Agreement). Sections 3-9, inclusive, will survive termination of the Agreement.

§ 5 Disclaimer of Warranty. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, ORACLE PROVIDES THE PRODUCT "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED. WITHOUT LIMITING THE FOREGOING, ORA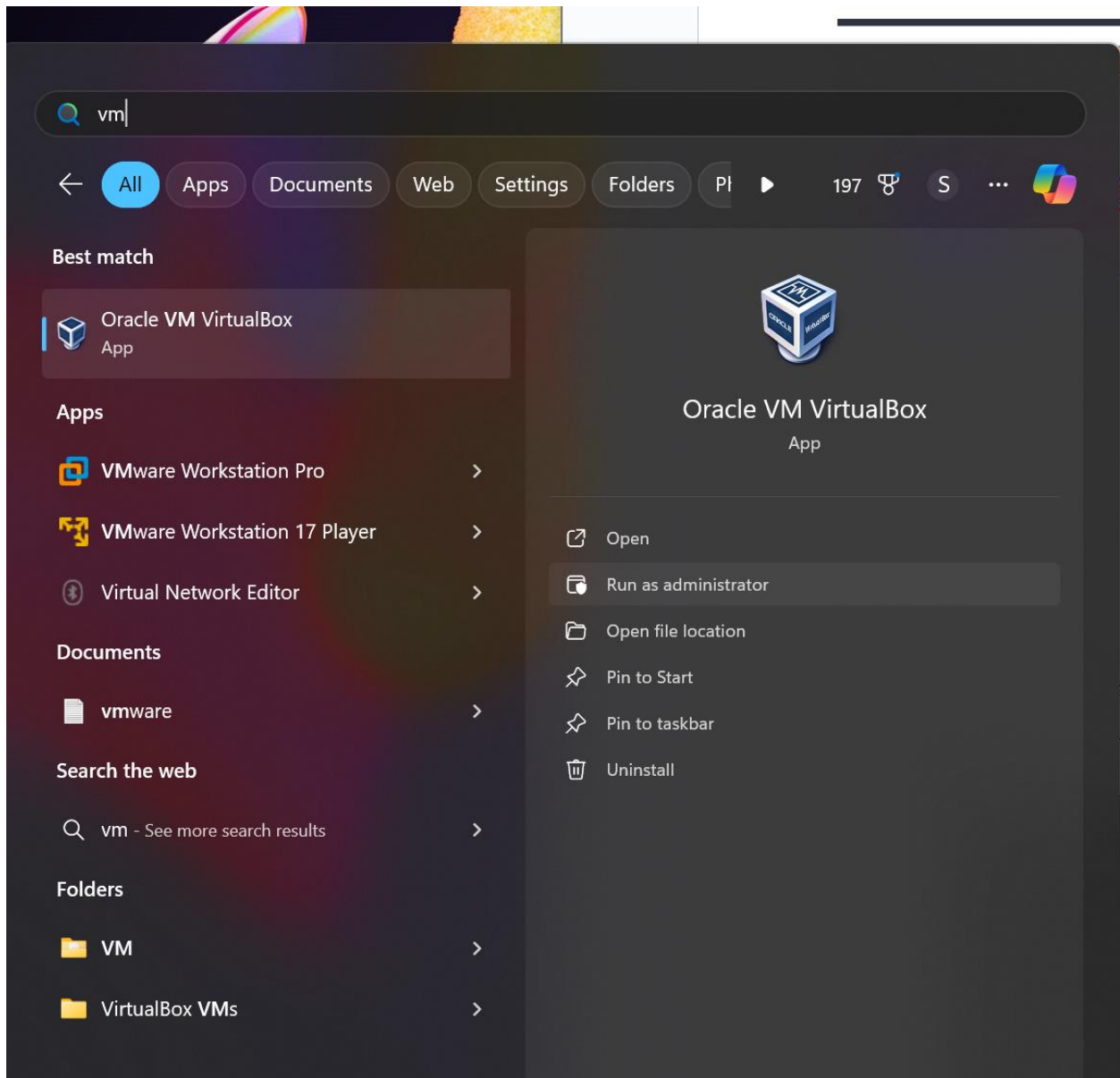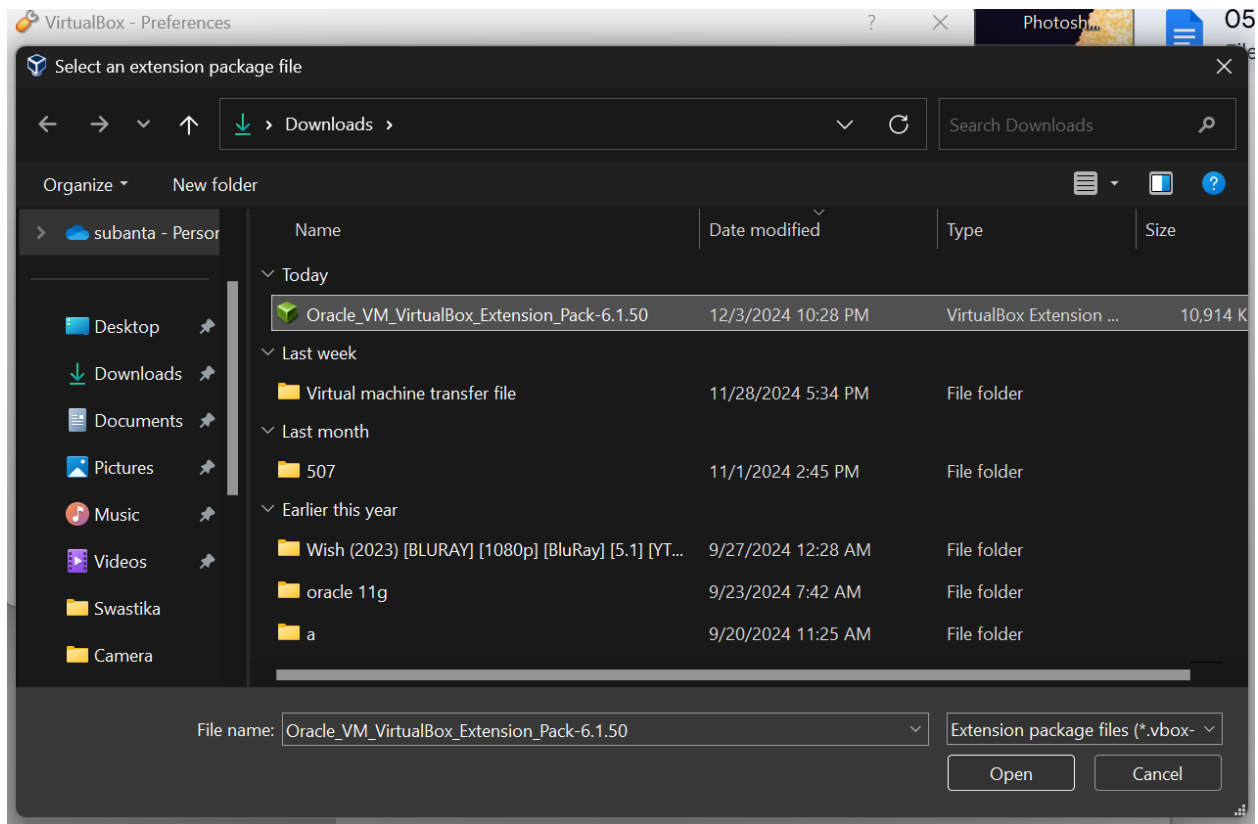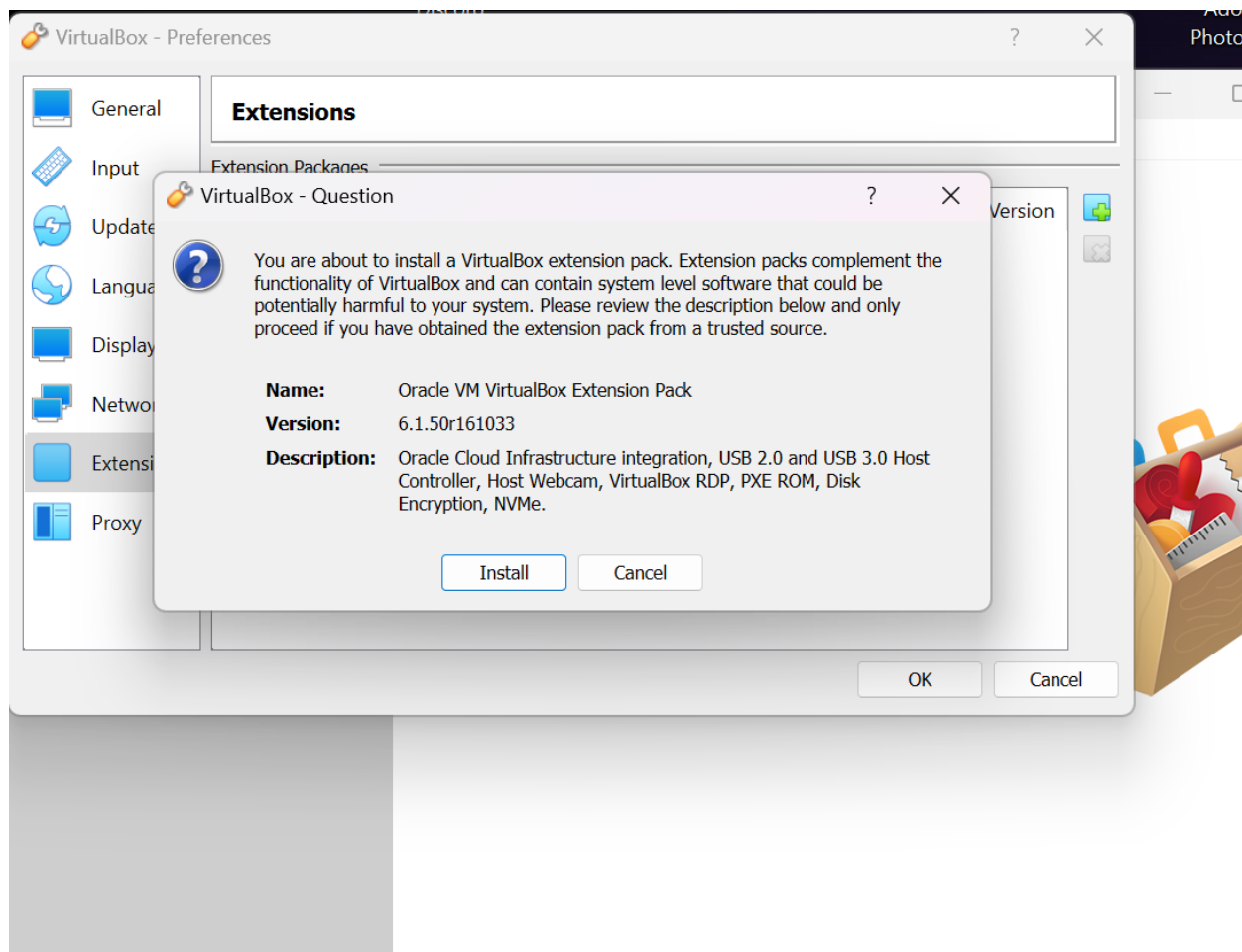CLE SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, TITLE, AND NON-INFRINGEMENT. The entire risk as to the quality and performance of the Product is with you. Should it prove defective, you assume the cost of all necessary servicing, repair, or correction.

§ 6 Limitation of Liability. TO THE EXTENT NOT PROHIBITED BY APPLICABLE LAW, IN NO EVENT WILL ORACLE OR ITS LICENSORS BE LIABLE FOR ANY LOST REVENUE, PROFIT, DATA, OR DATA USE, OR FOR SPECIAL, INDIRECT, CONSEQUENTIAL, INCIDENTAL OR PUNITIVE DAMAGES, HOWEVER CAUSED REGARDLESS OF THE THEORY OF LIABILITY, ARISING OUT OF OR RELATED TO THE USE OF OR INABILITY TO USE THE PRODUCT, EVEN IF ORACLE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. In no event will Oracle's liability to you, whether in contract, tort (including negligence), or otherwise, exceed the amount paid by you for the Product under this Agreement.

§ 7 Separately Licensed Third Party Technology. The Product may contain or require the use of third party technology that is provided with the Product. Oracle may provide certain notices to you in the Product's documentation, readmes or notice files in connection with such third party technology. Third party technology will be licensed to you either under the terms of this Agreement or, if specified in the documentation, readmes or notice files, under Separate Terms. Your rights to use Separately Licensed Third Party Technology under Separate Terms are not restricted in any way by this Agreement. However, for clarity, notwithstanding the existence of a notice, third party technology that is not Separately Licensed Third Party Technology shall be deemed part of the Product and is licensed to You under the terms of this Agreement. "Separate Terms" refers to separate license terms that are specified in the Product's documentation, readmes or notice files and that apply to Separately Licensed Third Party Technology. "Separately Licensed Third Party Technology" refers to third party technology that is licensed under Separate Terms and not under the terms of this Agreement.

§ 8 Export. Export laws and regulations of the United States and any other relevant local export laws and regulations apply to the Product. You agree that such export laws govern your use of the Product (including technical data) provided under this Agreement, and you agree to comply with all such export laws and regulations (including "deemed export" and "deemed re-export" regulations). You agree that no data, information, and/or Product (or direct product thereof) will be exported, directly or indirectly, in violation of these laws, or will be used for any purpose prohibited by these laws including, without limitation, nuclear, chemical, or biological weapons proliferation, or development of missile technology.

§ 9 U.S. Government End Users. Oracle programs, including the Product, any operating system, integrated software, any programs installed on hardware, and/or documentation, delivered to U.S. Government end users are "commercial computer software" pursuant to the applicable Federal Acquisition Regulation and agency-specific supplemental regulations. As such, use, duplication, disclosure, modification, and adaptation of the programs, including any operating system, integrated software, any programs installed on the hardware, and/or documentation, shall be subject to license terms and license restrictions applicable to the programs. No other rights are granted to the U.S. Government.

§ 10 Miscellaneous. This Agreement is the entire agreement between you and Oracle relating to its subject matter. It supersedes all prior or contemporaneous oral or written communications, proposals, representations and warranties and prevails over any conflicting or additional terms of any quote, order, acknowledgment, or other communication between the parties relating to its subject matter during the term of this Agreement. No modification of this Agreement will be binding, unless in writing and signed by an authorized representative of each party. If any provision of this Agreement is held to be unenforceable, this Agreement will remain in effect with the provision omitted, unless omission would frustrate the intent of the parties, in which case this Agreement will immediately terminate. This Agreement is governed by the laws of the State of California, USA, and you and Oracle agree to submit to the exclusive jurisdiction of, and venue in, the courts of San Francisco or Santa Clara counties in California in any dispute arising out of or relating to this Agreement. Upon 45 days written notice, Oracle may audit your use of the Product to confirm that you are in compliance with the terms of this Agreement. You agree to cooperate with Oracle's audit and provide reasonable assistance and access to information. Any such audit shall not unreasonably interfere with your normal business operations. You agree to pay within 30 days of written notification any fees applicable to your unlicensed use of the Product. You agree that Oracle shall not be responsible for any of your costs incurred in cooperating with the audit. If a legal action or proceeding is commenced by either party in connection with the enforcement of this Agreement, the prevailing party shall be entitled to its costs and attorneys' fees actually incurred in connection with such action or proceeding.

I Agree | I Disagree
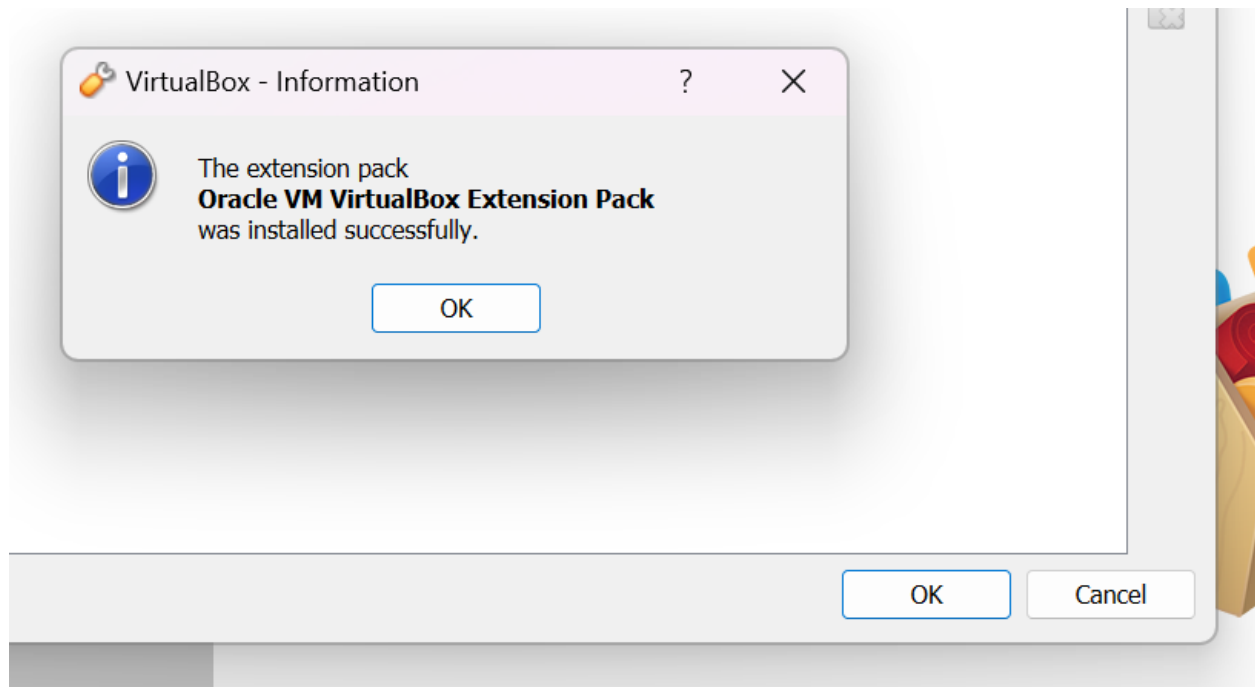
Figure 20: VirtualBox License terms

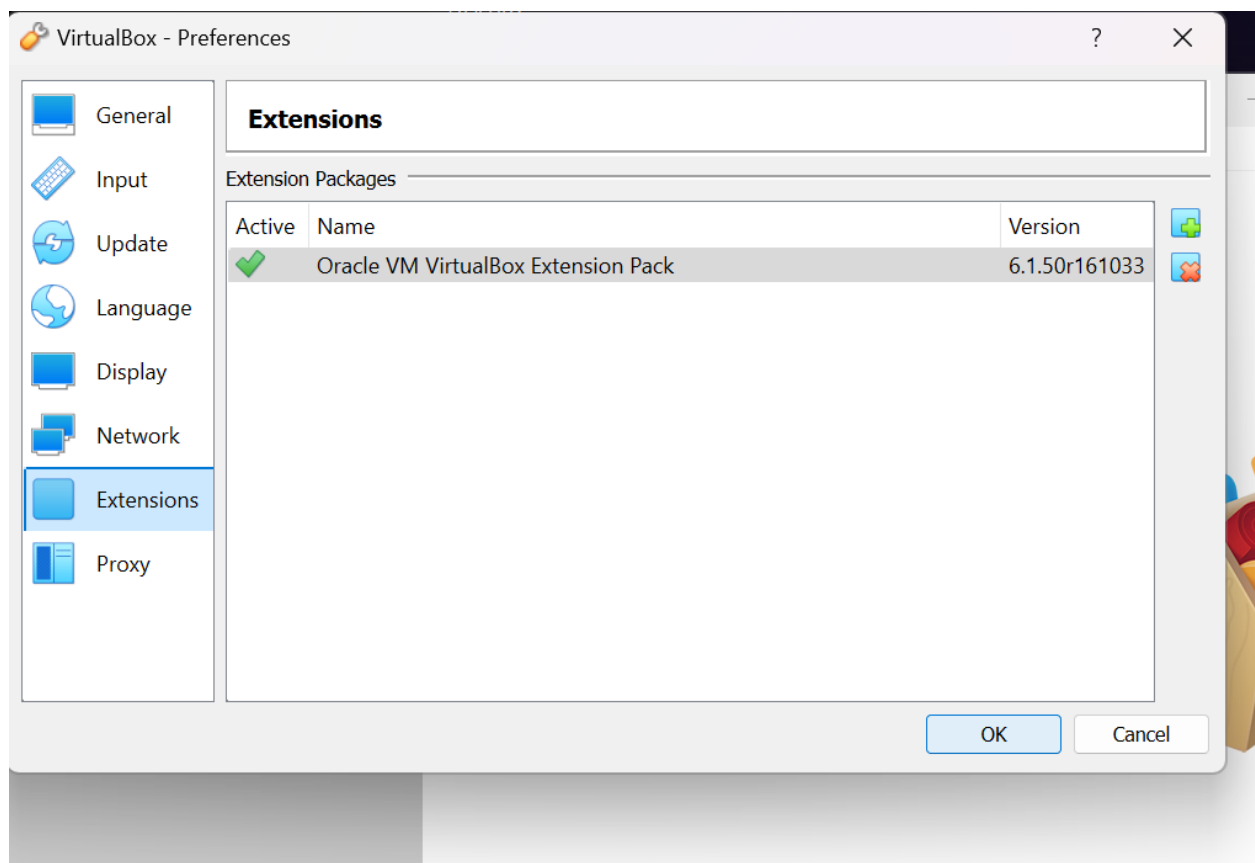*Figure 21: VirtualBox Information pack after being installed*

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**.
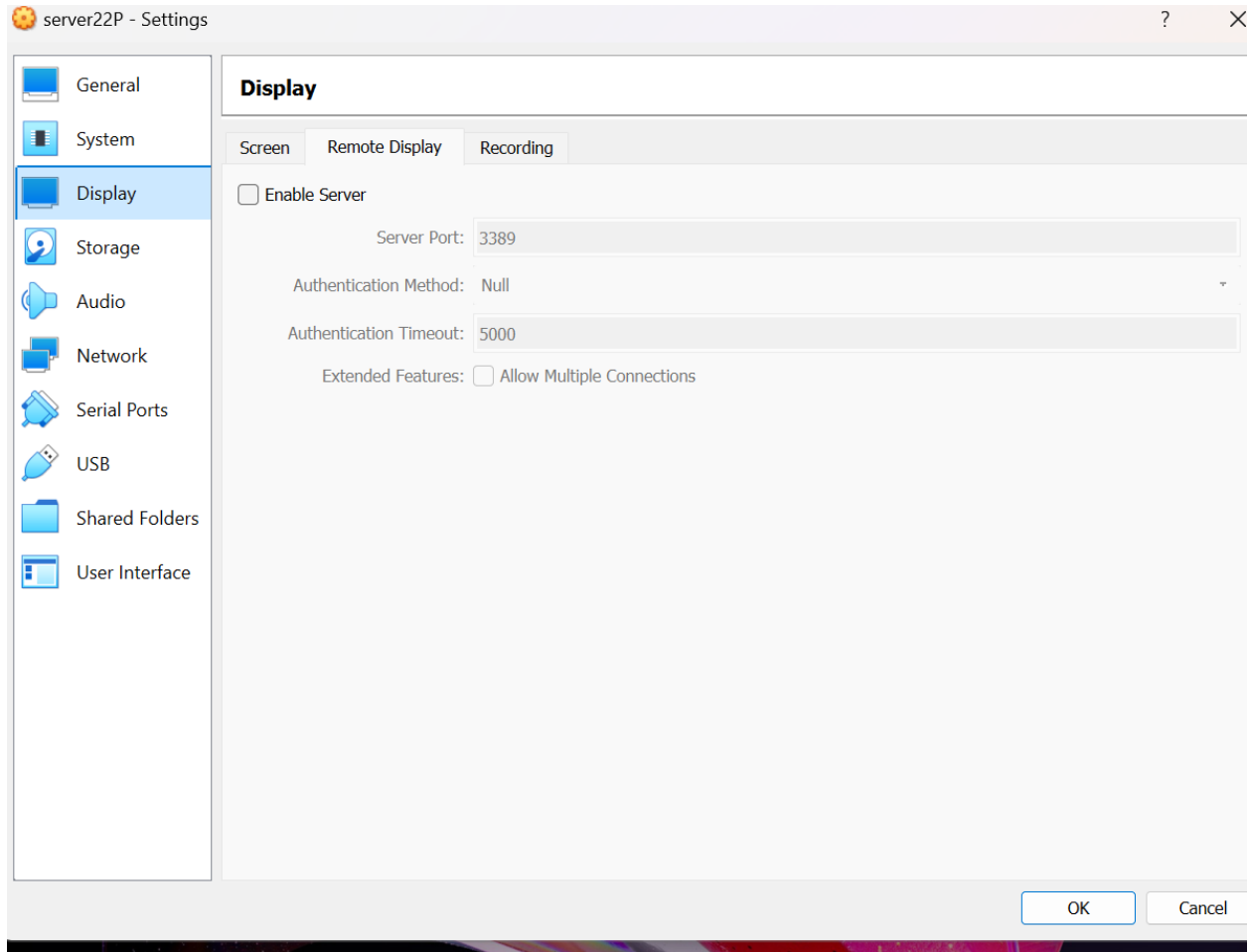- Check **Enable Server** and click OK.

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

c. Find the IP Address of the Guest OS

- Stat the Windows Server 2022 VM and check the IP address using the *ipconfig* command in the Command Prompt.
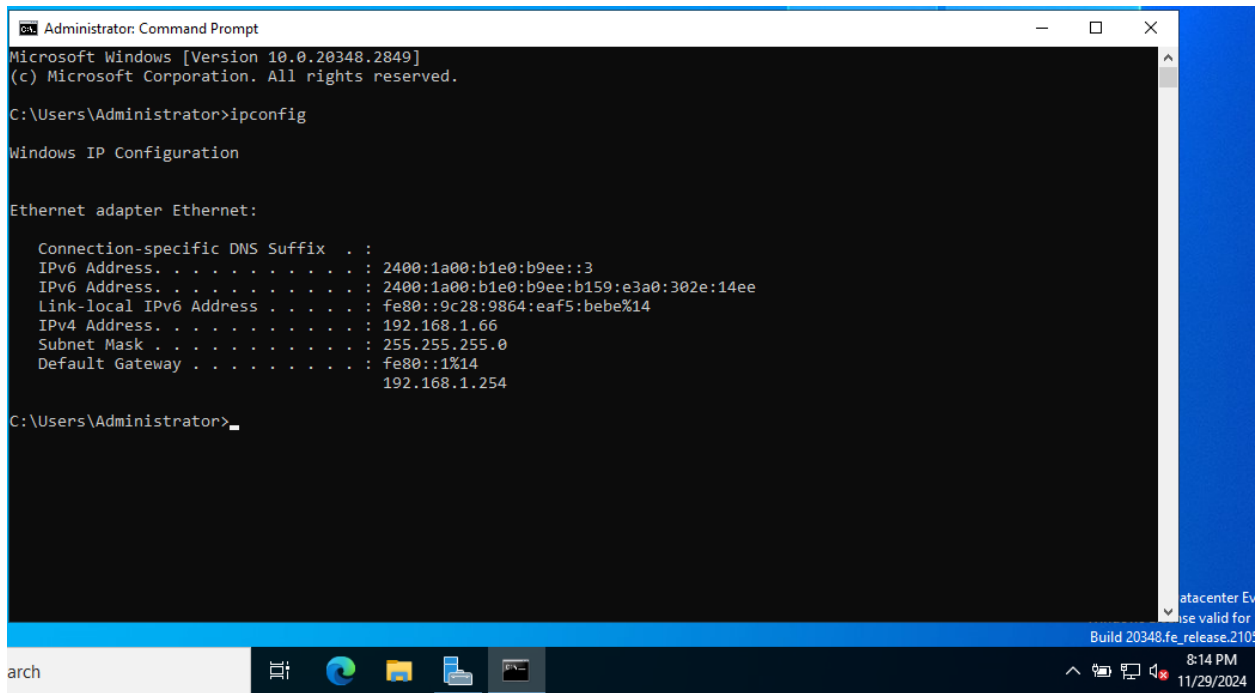
Figure 24: Opening Command Prompt and typing ipconfig to look for IP address

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.
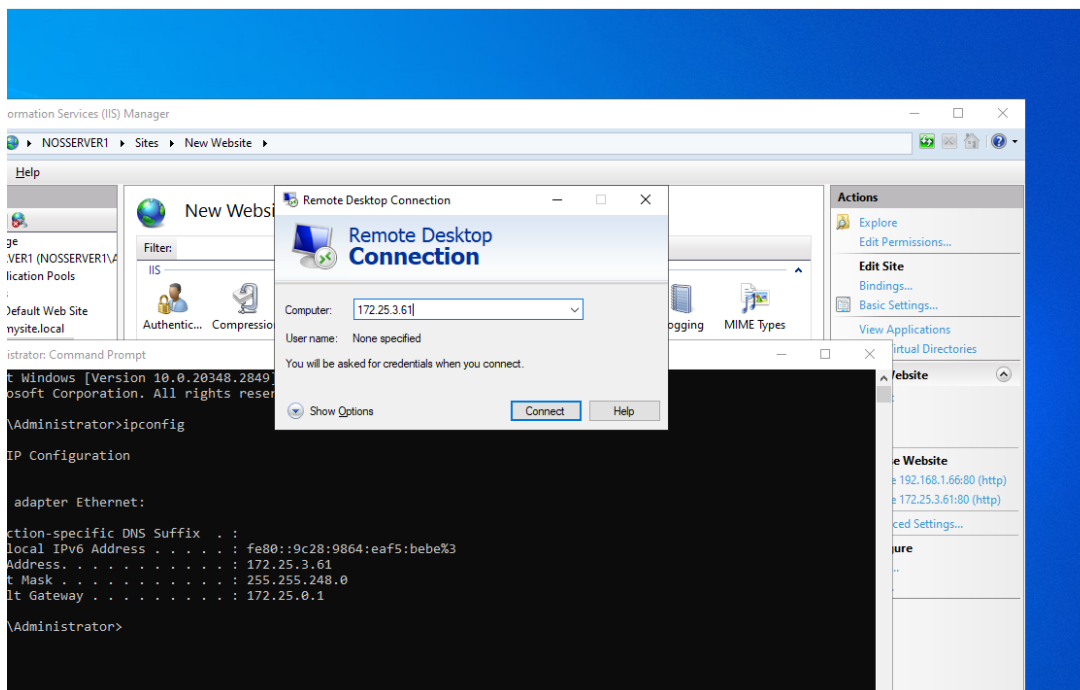
Figure 25: Opening Remote Desktop Connection in the VM to enable remote connection
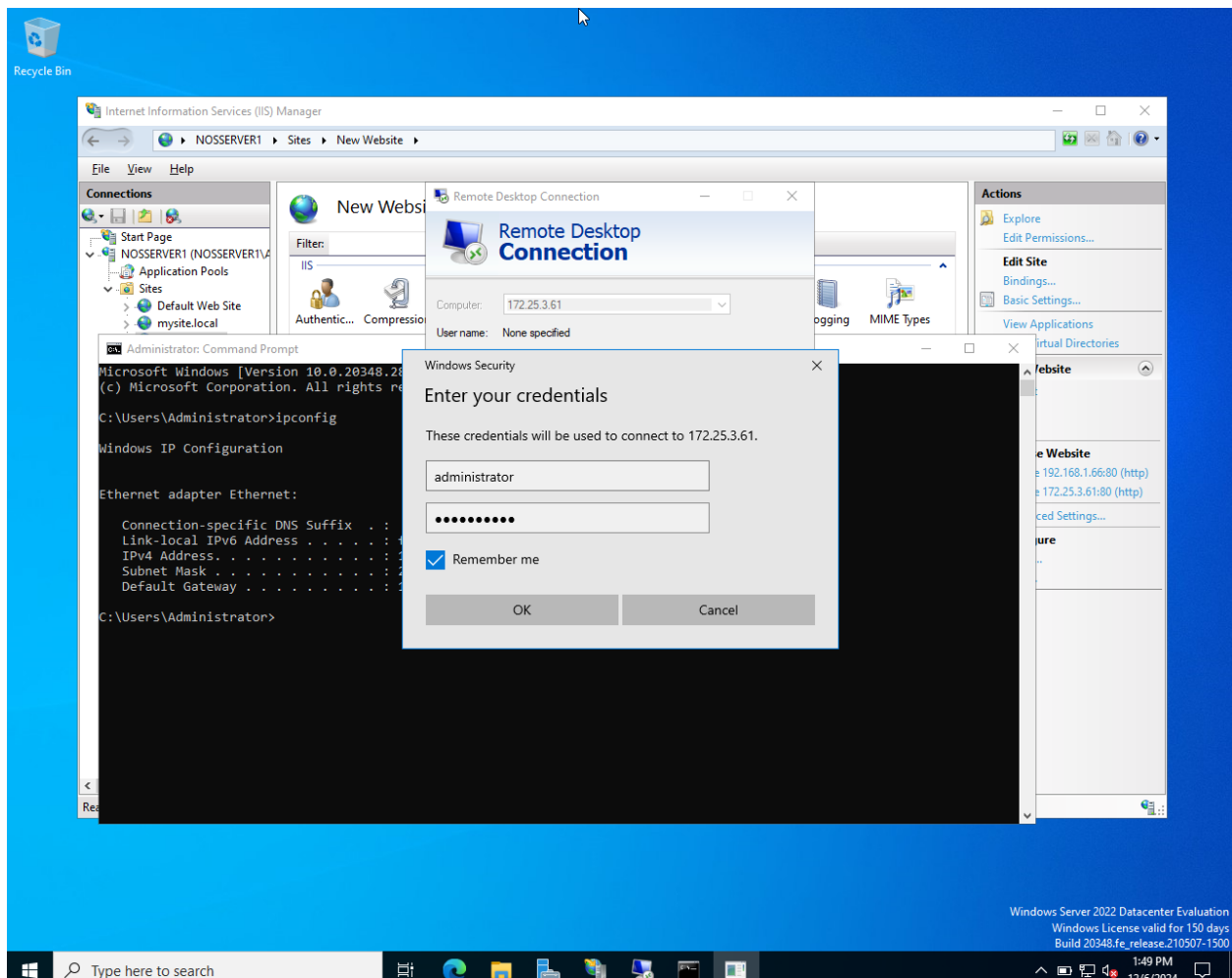
Figure 26: entering the credentials for remote desktop
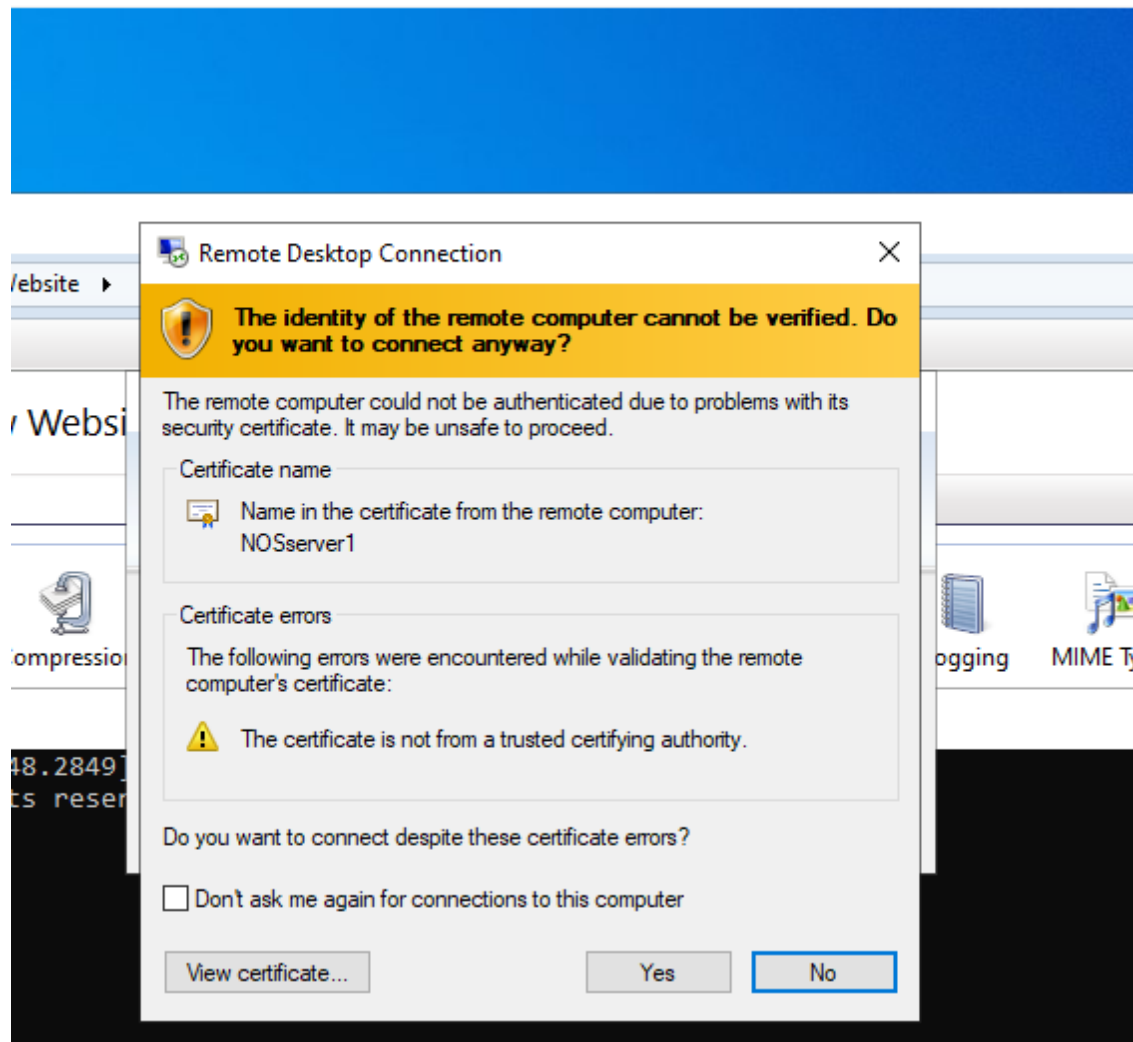
Figure 27: successfully establishing a remote connection
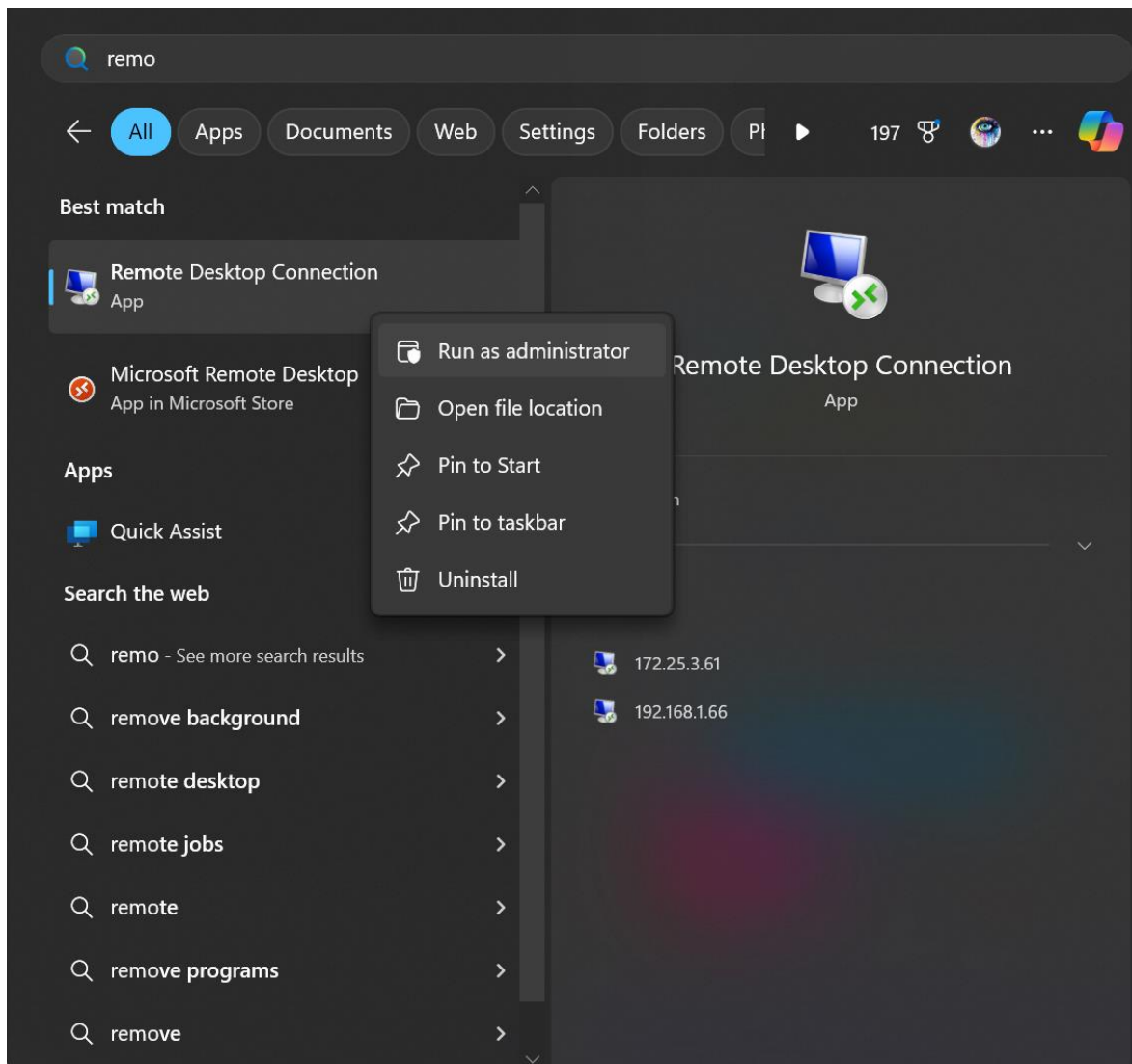
Figure 28: opening remote desktop in host OS
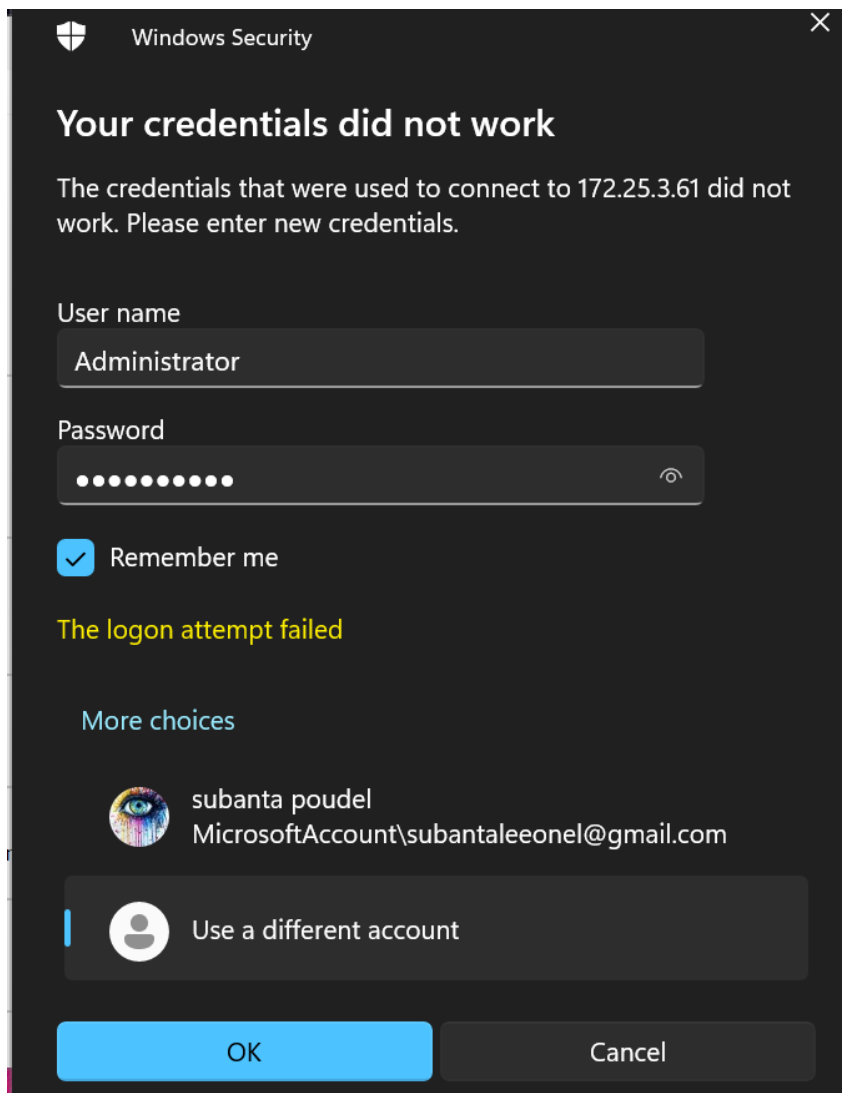
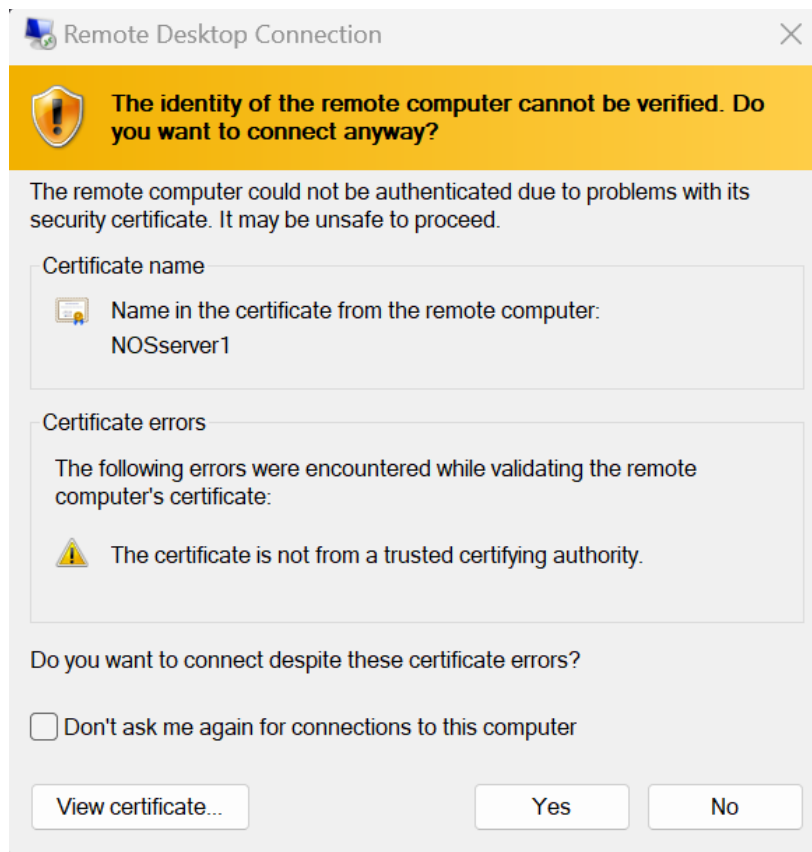*Figure 29: entering credentials in the host OS remote desktop with guest credentials*
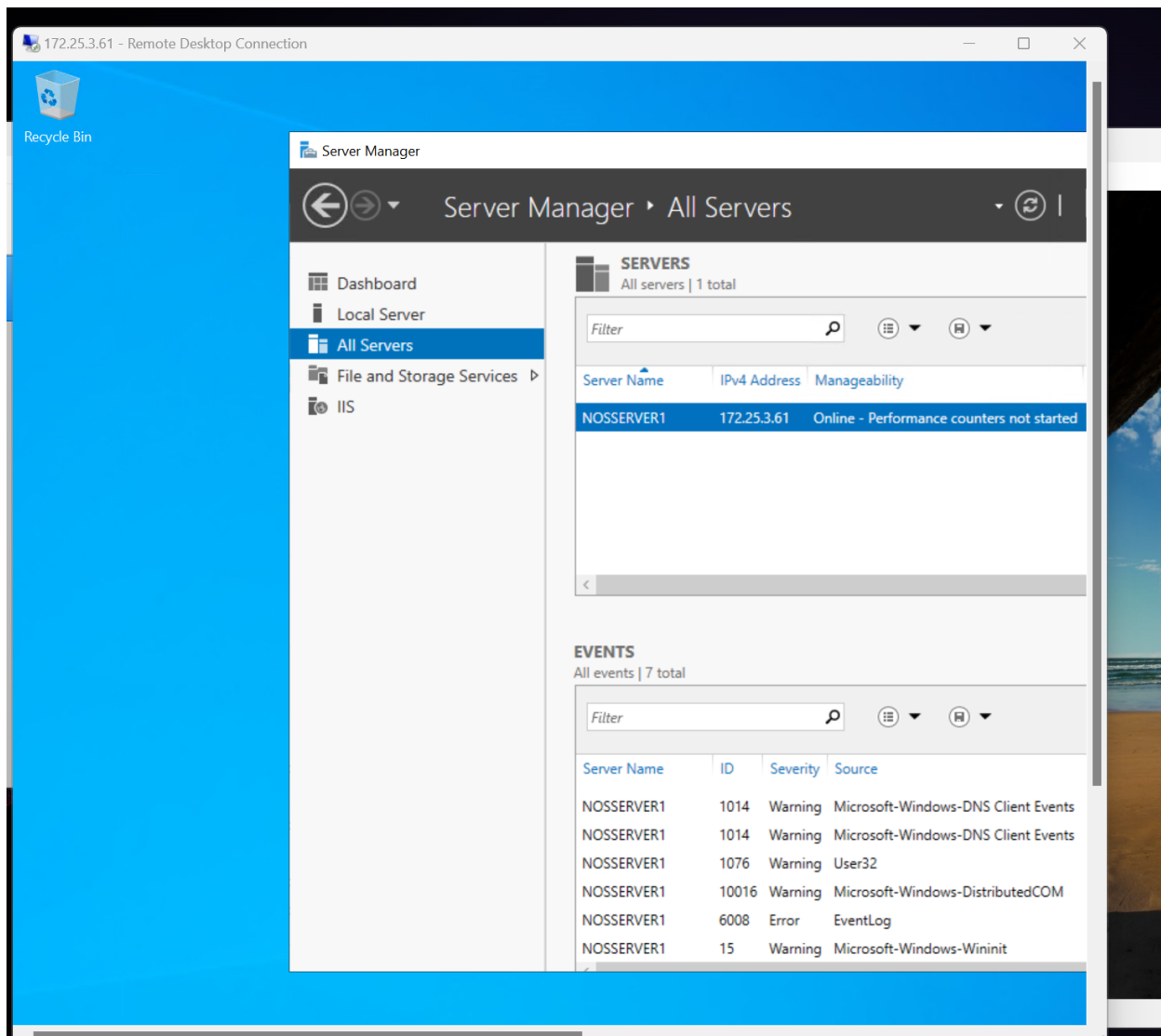
Figure 30: Connecting to the remote computer

Figure 31: Opening Guest OS in the Remote desktop of the host OS

OBSERVATIONS

1. The static website was successfully hosted on Windows Server 2022 and accessed form 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

Broadcom. (2019, 05 31). *VMware Workstation Pro*. Retrieved from https://docs.vmware.com/en/VMware-Workstation-Pro/17/com.vmware.ws.using.doc/GUID-BAFA66C3-81F0-4FCA-84C4-D9F7D258A60A.html

cloudflare. (n.d.). *RDP*. Retrieved from https://www.cloudflare.com/learning/access-management/what-is-the-remote-desktop-protocol/#:~:text=The%20Remote%20Desktop%20Protocol%20(RDP)%20is%20a%20protocol%2C%20or,the%20most%20commonly%20used%20protocol.

Microsoft. (2024, November). *Microsoft Learn Challenge*. Retrieved November 2024, from https://learn.microsoft.com/en-us/iis/get-started/introduction-to-iis/introduction-to-iis-architecture