LONDON METROPOLITAN UNIVERSITY

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Module Title

Level 5 – Network operating system

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Logbook 3

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Student Name: Birat Adhikari

London Met ID: 23048781

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Submitted To: Prasant Adhikari

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

IP Address

An IP address is like the digital address of a device on a network. It helps devices find and talk to each other, like sending and receiving data. There are two types: IPv4, which looks like 192.168.1.1, and IPv6, which is longer and designed for more devices. Some IP addresses are used only inside private networks, while others are public and can be accessed over the internet (Rooney, 2010). Web server (IIS) feature

The Web Server (IIS) role in Windows Server 2012 provides a robust, modular, secure, and flexible platform for reliably hosting websites, services, and applications. IIS 8 enables users to share information across the Internet, intranets, and extranets. As a unified web platform, IIS 8 combines features such as IIS itself, ASP.NET, FTP services, PHP, and Windows Communication Foundation (WCF).

Here are some key advantages of using IIS 8:

- Enhanced web security through a minimized server footprint and automatic isolation of applications.
- Seamless deployment and operation of ASP.NET, classic ASP, and PHP web applications on the same server.
- Application isolation with unique worker process identities and default sandbox configurations, reducing security vulnerabilities.
- The ability to customize IIS by adding, removing, or replacing components with tailored modules.
- Improved website performance through dynamic caching and advanced compression mechanisms.

Practical Applications of IIS

System administrators can leverage the Web Server (IIS) role to manage multiple websites, web applications, and FTP sites. Some notable features include:

- Using IIS Manager for feature configuration and website administration.
- Allowing website owners to upload and download files via File Transfer Protocol (FTP).
- Ensuring website isolation to prevent interference between websites hosted on the same server.
- Configuring web applications developed with various technologies, including classic ASP, ASP.NET, and PHP.
- Automating administrative tasks with Windows PowerShell for efficient web server management.
- Organizing multiple web servers into a server farm for centralized management through IIS.
- Maximizing performance on NUMA-enabled hardware to fully utilize its capabilities.

2. Objective

The main objective of this workshop is to host static websites in guest OS which is windows server 2022 and access it from host OS as well as from other computer devices within the same LAN.

Another objective of this workshop is to enable remote desktop features in windows server 2022 and access it from host OS.

3. Required Tools and Concepts

i. System requirements-:

First off all your system must fulfil the sufficient storage and processing power to run VMware or virtual Box smoothly at least 8 GB of ram and 50 GB if storage is recommended with multi core processor.

ii. Virtualization Software-:

Then you need to install virtualization tool that allows to create virtual machine on the system.

iii. Windows Server 2022 ISO File-:

A copy of windows server 2002 ISO file which is available in the Microsoft official website.

iv. Website to host-:

Download a template using www.free-css.com and extract it. Create a folder in C drive and copy all the extracted files in that folder.

4. Steps of Replicate

Step 1: Open VMware work station click on edit virtual machine settings and network adapter settings and check the bridged and replicate physical network connection state.

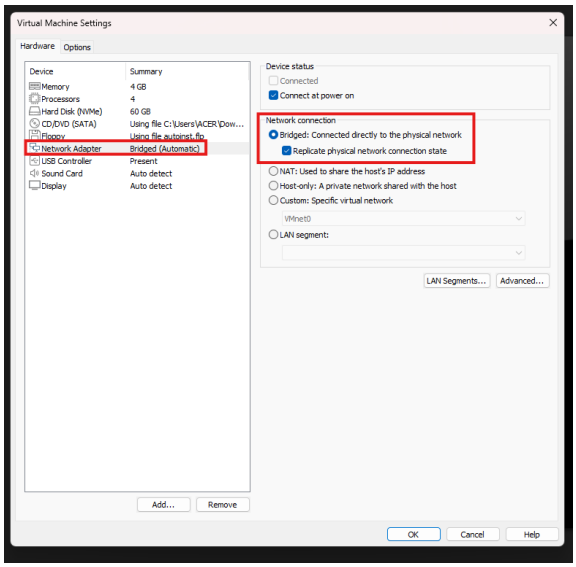

Figure 1:changing bridged connection directly to the physical network

Step 2: As like from last workshop place your website files in Local Disk C drive in Windows Server 2022 as on following picture.

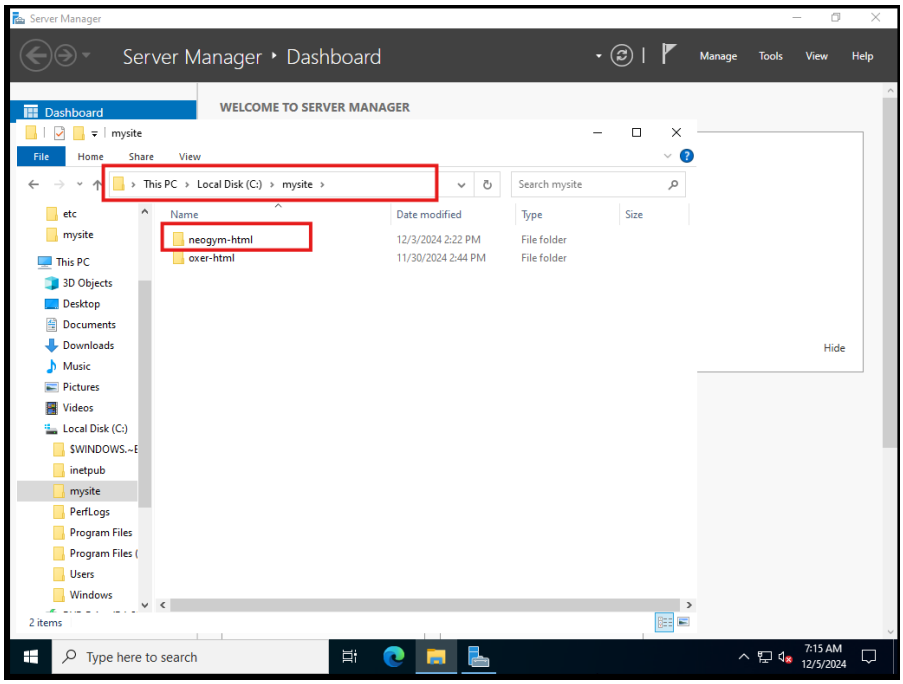

Figure 2: place your website file

Step 3: Open run and type “inetmgr”. It will open our Internet Information Service from where we can setup hosting.

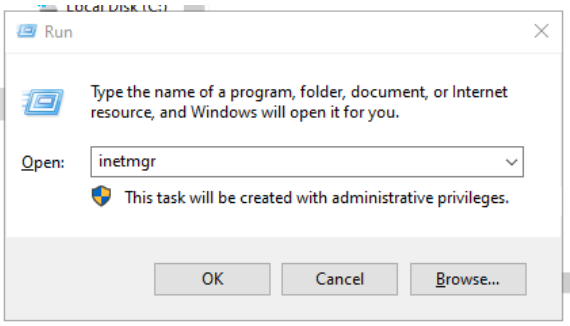

Figure 3:hit windows + r and type the command

Note: “Expand the server name and right click on “Sites” and click on the “Add Website” option like in the last workshop.”

Step 4: open windows defender firewall with advance security and configure inbound rules.

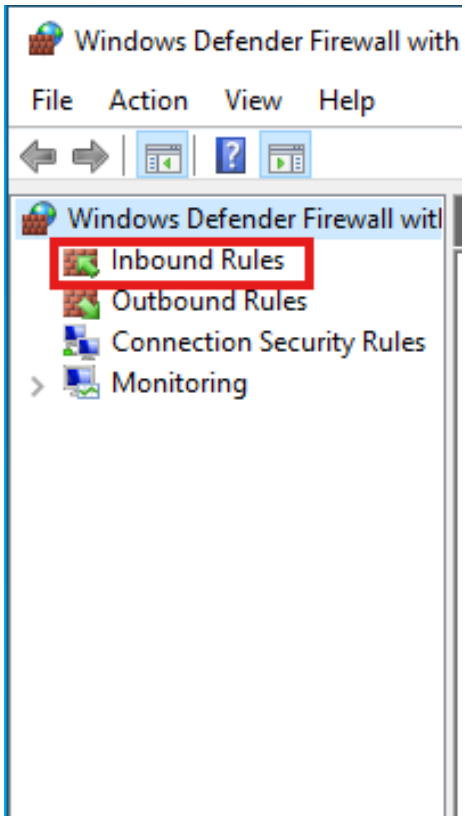

Figure 4: select inbound rules

Step 5: open windows defender firewall with advance security and configure inbound rules.

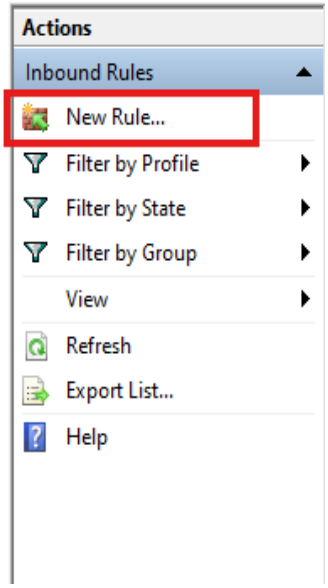

Figure 5:add new rule

Step 6: New window will open and it will ask to select one rule type then select “Port” and hit enter.

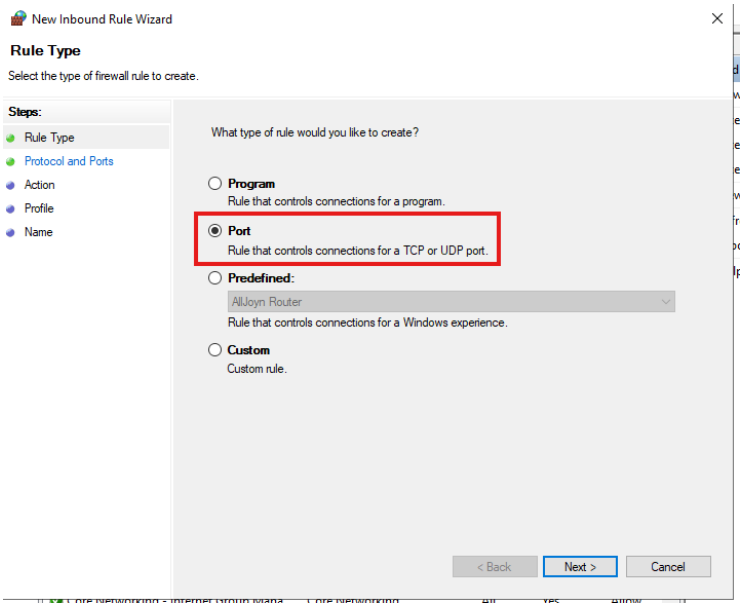

Figure 6: select rule type as port

Step 7: Apply rule type to TCP and select port number to specific port number.

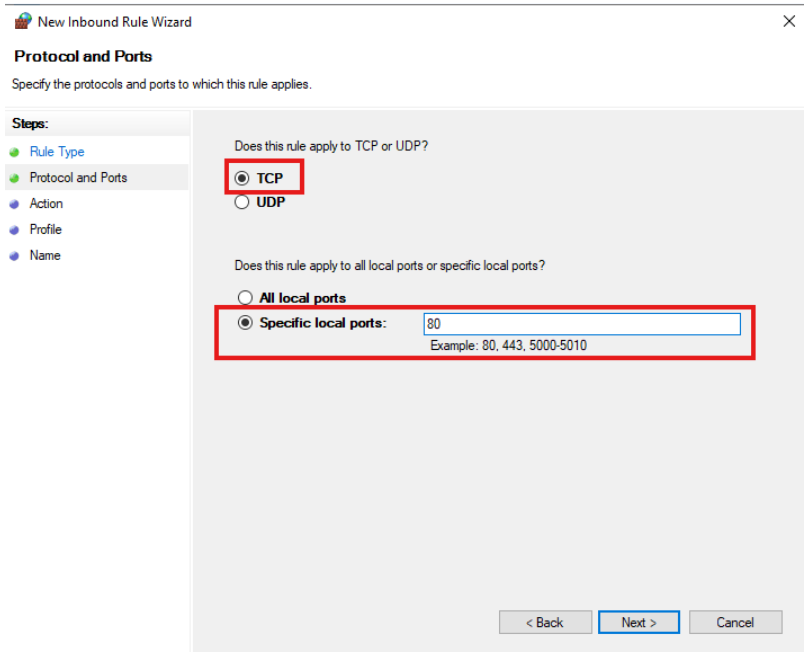

Figure 7:apply rule to TCP and for specific port number

Step 8: Specify the connection to be taken when connection matches the connection of "Allow the connection".

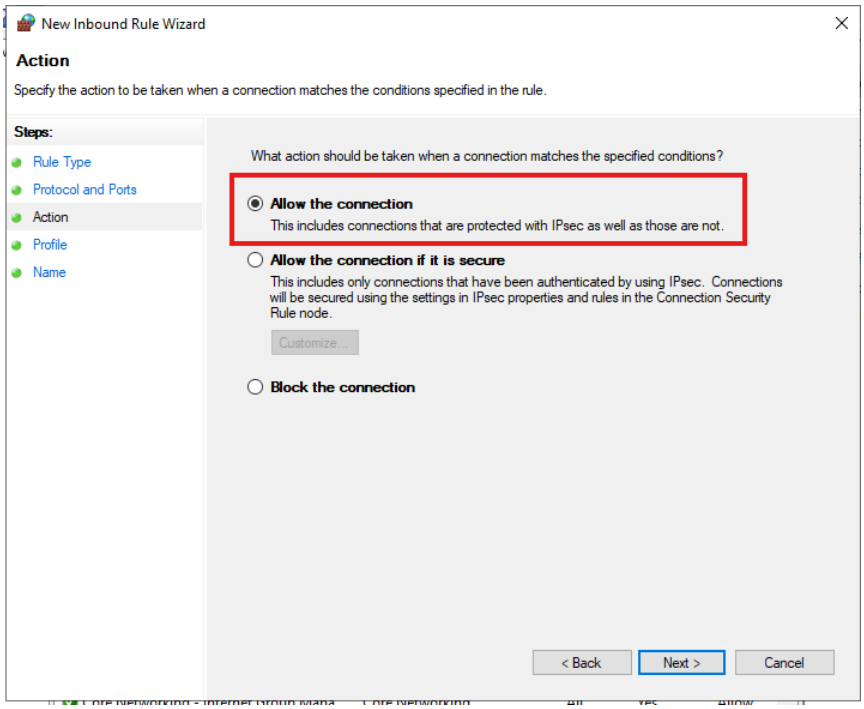

Figure 8: specify the action to be taken when a connection matches the conditions

Step 9: Apply rule to all profiles

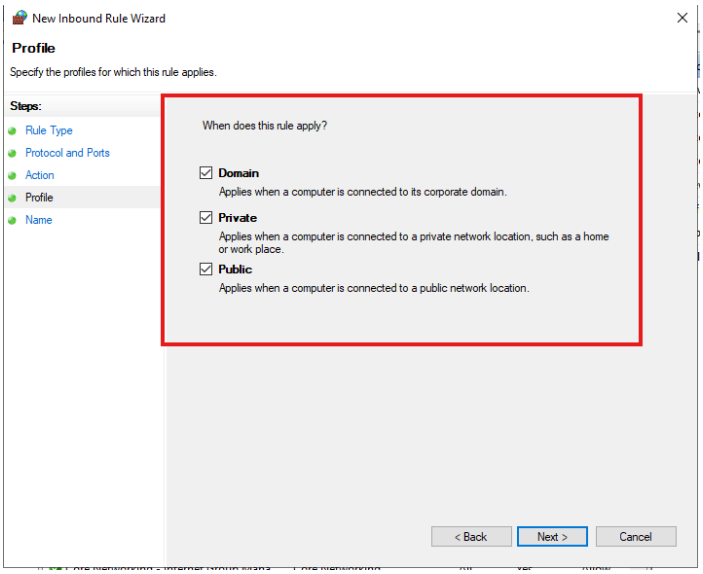

Figure 9:apply rule to all profiles

Step 10: Give name to the specific rule “Allow HTTP”

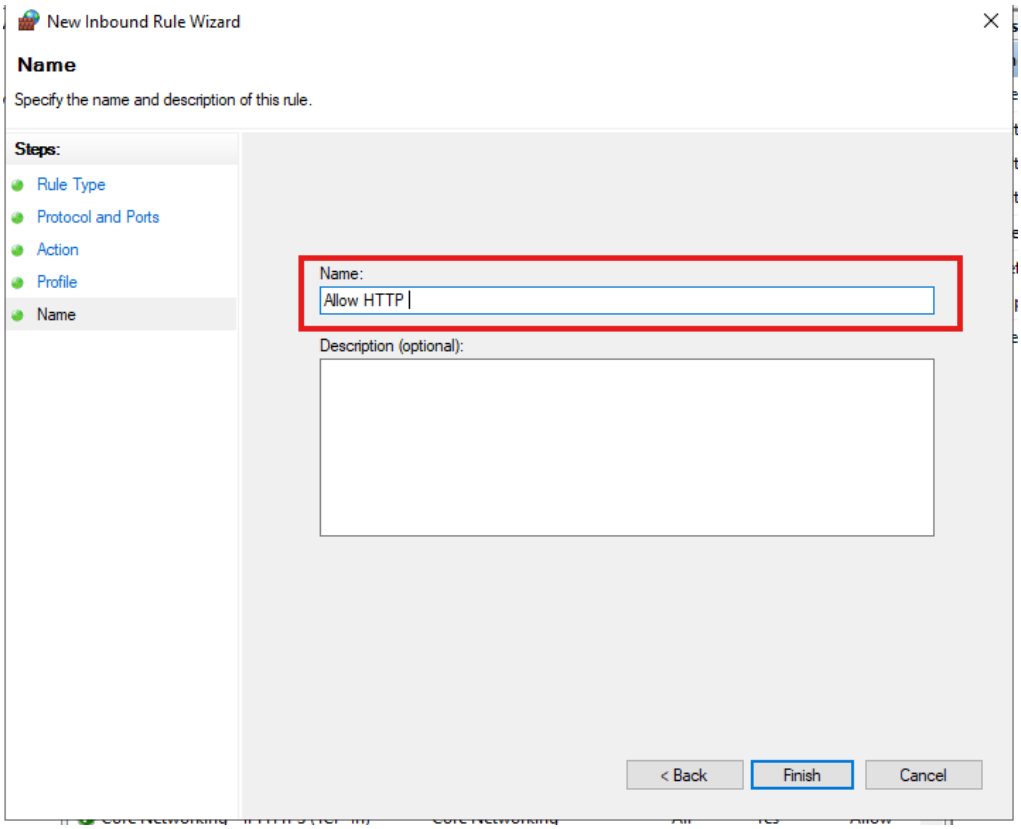

Figure 10:give name to rule

Step 11*:* Check if the rule is added or not

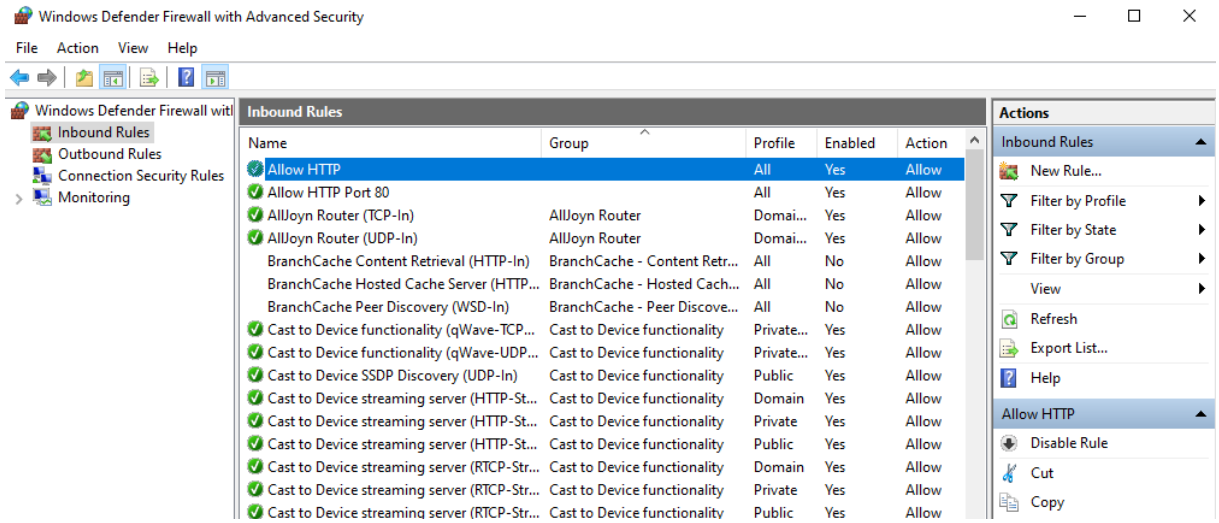

Figure 11:check if the rule is added or not

Step 12*:* Open control panel, network and sharing centre and click to change adapter settings.

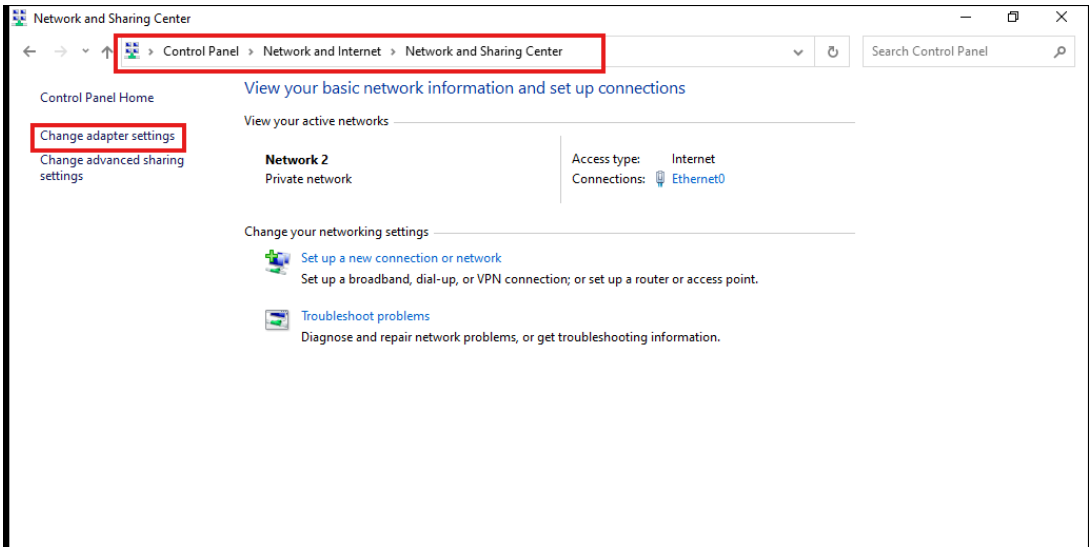

Figure 12:open change adapter settings

Step 13*:* Select internet protocol version 4(TCP/IPv4) click to properties and change the static IP to dynamic

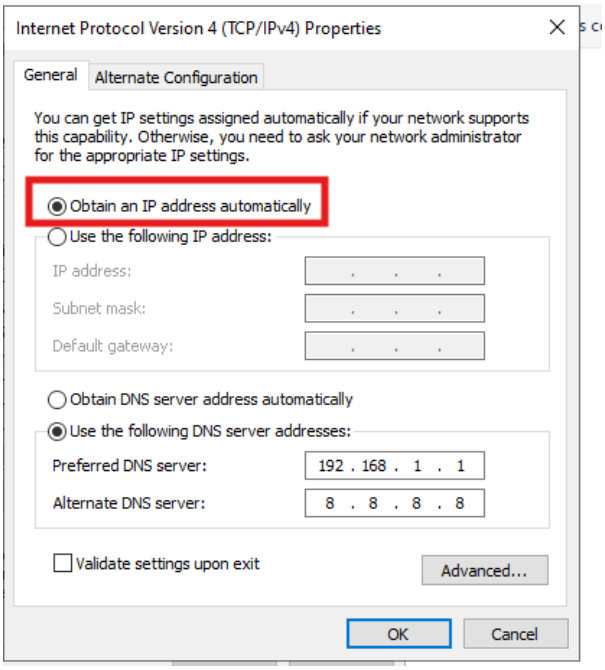

Figure 13:change static IP to dynamic

Step 14*:* Now we need to add details of our website as follows:

- Under Site name give any name you desire
- Under Physical path give path to the folder where our website files are located
- Under IP address select the given IP address from the drop down option.

[Note: Whenever you change your network, like from home to college, your IP address will be changed and need to change it in order to get access]

Leave other options as default and click on "**Ok**"

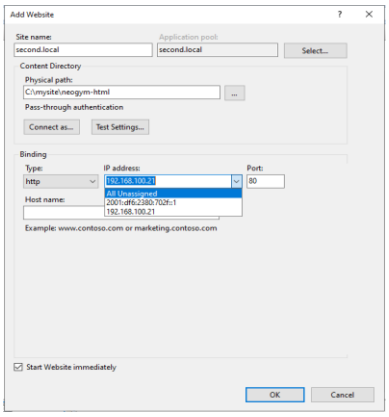

Figure 14:enter the necessary data

Step 15*:* Now we can see our site name on the list. Now let's browse our site by clicking on "Browse" followed by your IP address on the right side. This will open our website in browser.

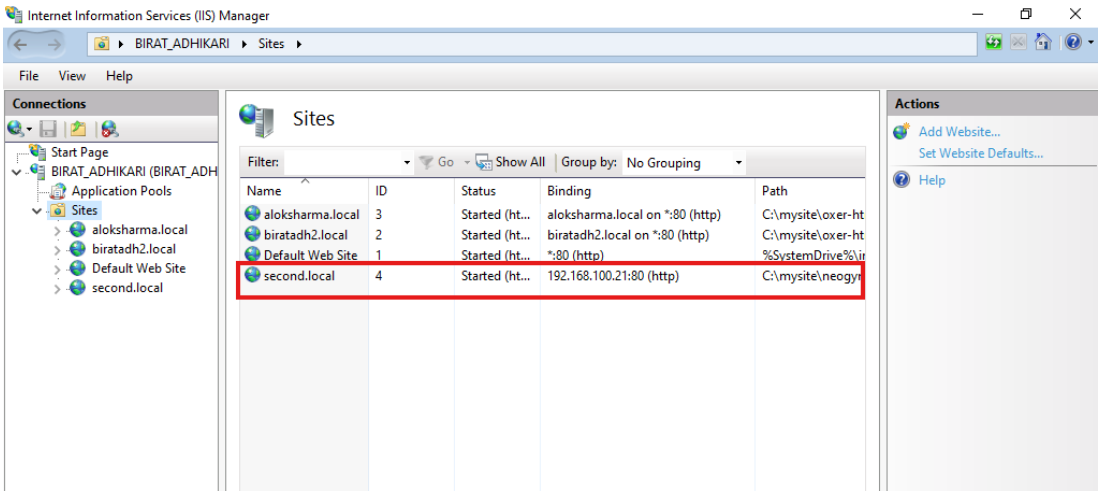

Figure 15:website added window

Step 16*:* now type the IP address of the website in the guest OS also in host OS

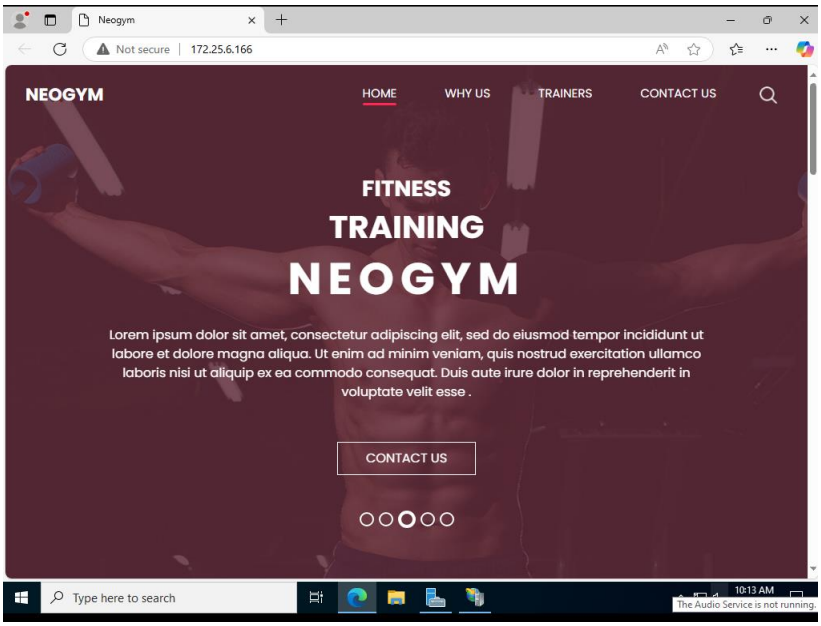

Figure 16:check the website

Now let's connect our windows server from Host OS also using remote connection.

Step 17*:* Now start our Windows Server 2022 and see your IP address of your Guest OS.

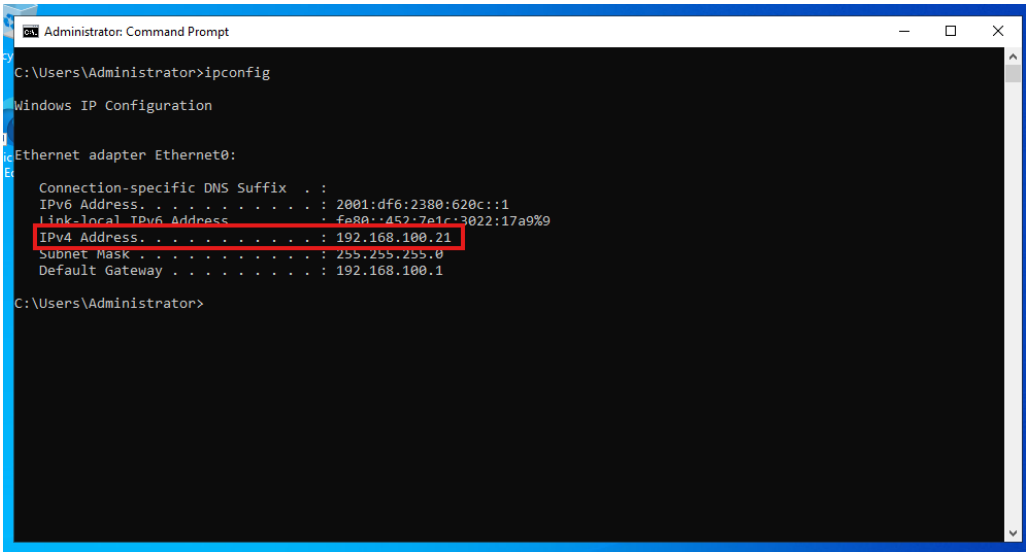

Figure 17:checking IP of Guest OS

Step 18*:* Open Remote Desktop Connection from Host OS and insert IP of Guest OS and click on Connect.

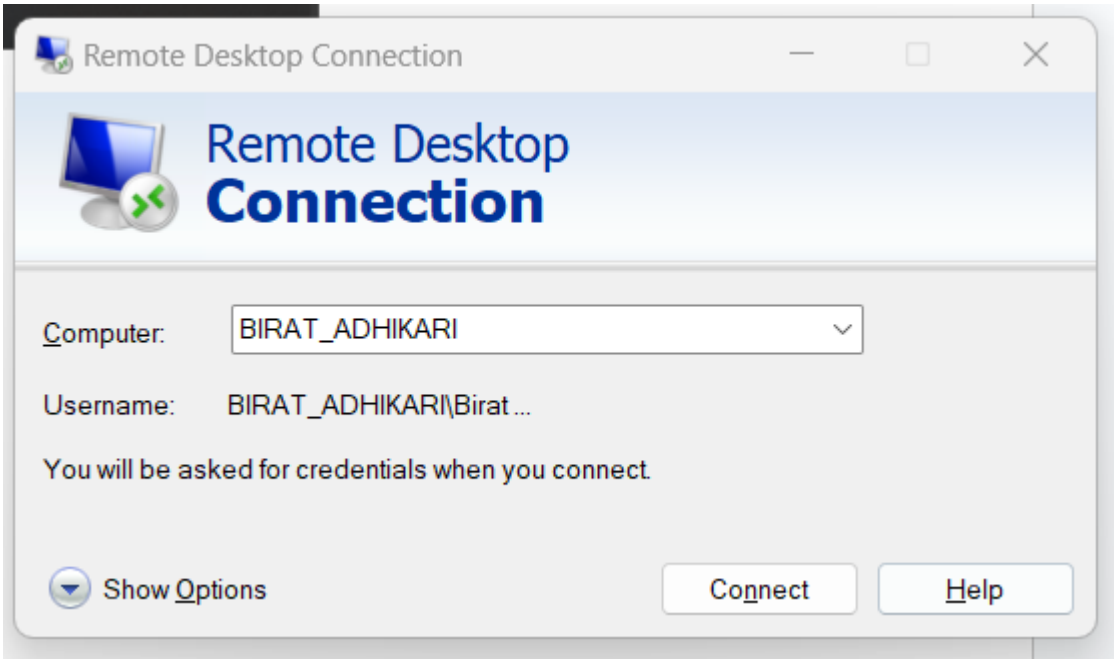

Figure 18:enter username of guest OS

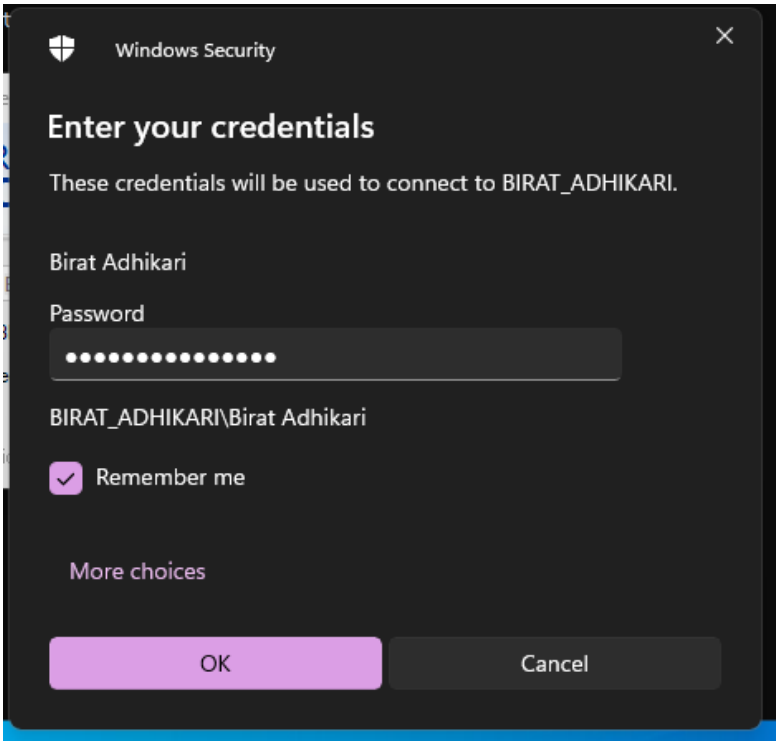

Figure 19:enter essential credential required for windows security system

Step 19*:* Now you can access the guest OS remotely

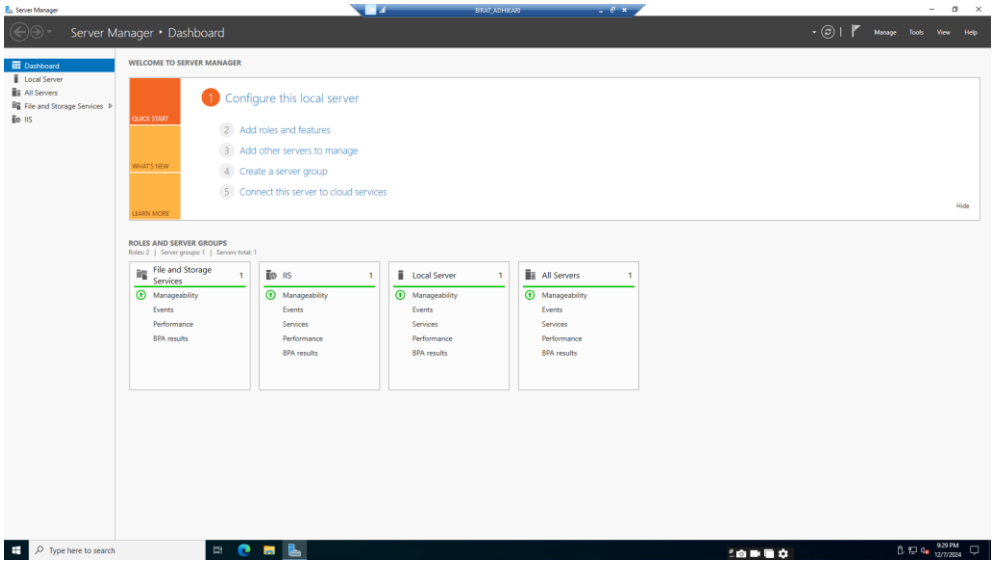

Figure 20:remotely accessed computer

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5. References

Microsoft, 2024. *Installing PowerShell on Windows*. [online] Available at: https://learn.microsoft.com/en-us/powershell/scripting/install/installing-powershell-onwindows?view=powershell-7.4 [Accessed 23 November 2024].

Rooney, T., 2010. Introduction to IP address management (Vol. 17). John Wiley & Sons.