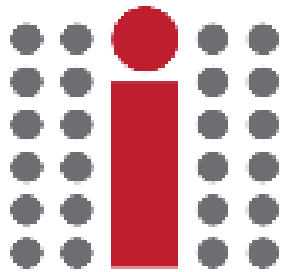




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Introduction

Virtualization is the key piece of technology used for running Windows Server 2022 in our local machine. The windows server os is emulated through UTM hypervisor to allocate resources as a new virtual machine. By using such simulating tools non native operating system can be operated parallel to native system operating system as separate machine virtually. Oracle VirtualBox, Parrallel Desktop, Vmware, UTM, etc are some software tools used for creating isolated enviroment with its own resources allocated by user.

Windows Server 2022 is a operating system by Microsoft for server level operation for services like web hosting, file transfer, manage network and other cloud services. Windows Server is designed to build infrastructre of interconnected application and programs through network and other cloud based services like web hosting, file sharing, storage, Windows comes with layers of security providing robust platform for web services to personal uses and businesses.(Microsoft, n.d.)

Microsoft has designed windows server 2022 operating system with various web based features and protocols to perform numerous type of connection across network, it provides desktop experiences as well as powershell to run the operation in safe CLI enviroment. Furthermore, this version of Windows Server makes significant improvements to Windows containers, such as smaller image sizes for faster download, simplified network policy implementation and containerization tools for .NET applications.

Similarly, Remote Desktop Protocol (RDP) was used in this workshop to connect to Windows Server operating system remotely from hostOS and this technology remains a key tool for managing servers from remote location without requiring physical access to network. Although alternatives to native remote service from Microsoft like third-party remote management tools exist, but RDP's native integration with Windows Server makes it efficient and reliable.

This workshop demonstrates the setup of a static website hosted on Windows Server 2022 and accessible through local devices, alongside configuring remote desktop access for server management. Here I have used Windows App downloaded from App Store in macOS to run remote desktop in hostOS.

Objective

The objectives of this workshop are:

- Is to deploy and host a static website on a Windows Server 2022 as guest OS using Internet Information Services (IIS) on a virtual machine.
- To configure and enable remote desktop access to the Windows Server 2022 guest OS from the host OS.
- To ensure accessibility of the hosted website from various devices within the same local area network (LAN).

Required Tools and Concepts

Following tools are required to static web hosting and make remote desktop connection.

Hardware:

- 1.4ghz 64bit processor
- 8GB RAM recommended
- 64GB storage minimum requirement
- Network Access
- Physical personal computer

Software:

- Windows Server 2022 ISO file for creating the guest OS.
- Hypervisor to run OS in virtual environment.
- VirtualBox Extension Pack or Windows app

Concepts:

Understanding of network basics LAN, IP addresses, and network adapters,

- Internet Information Services (IIS)
- Remote Desktop Protocol (RDP)

Steps to Replicate:

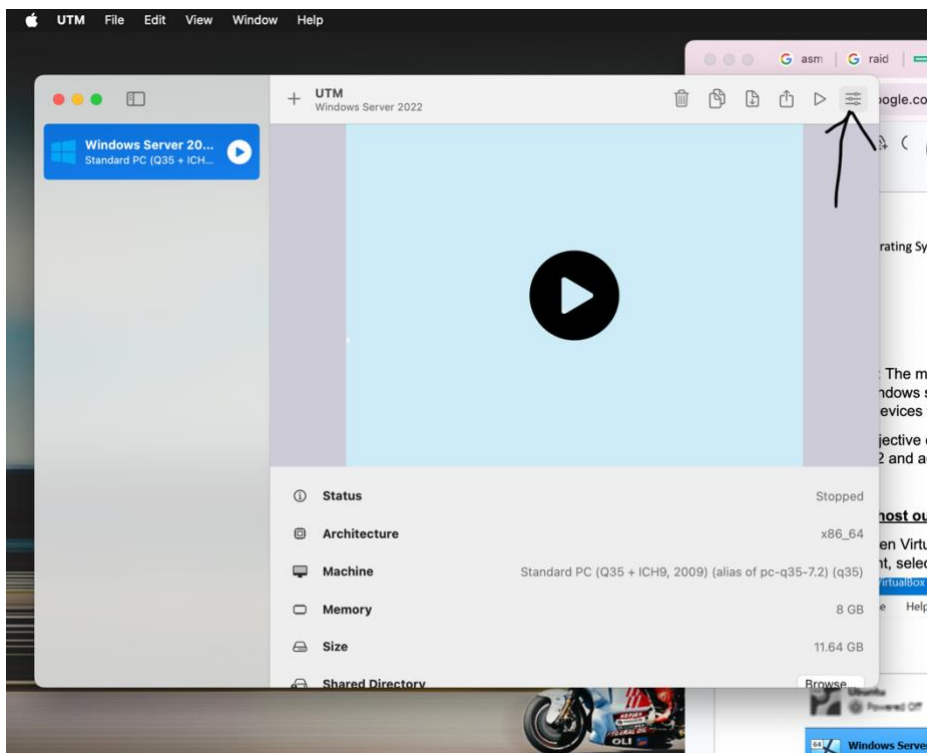
Workshop Steps in short:

Hosting a Static Website:

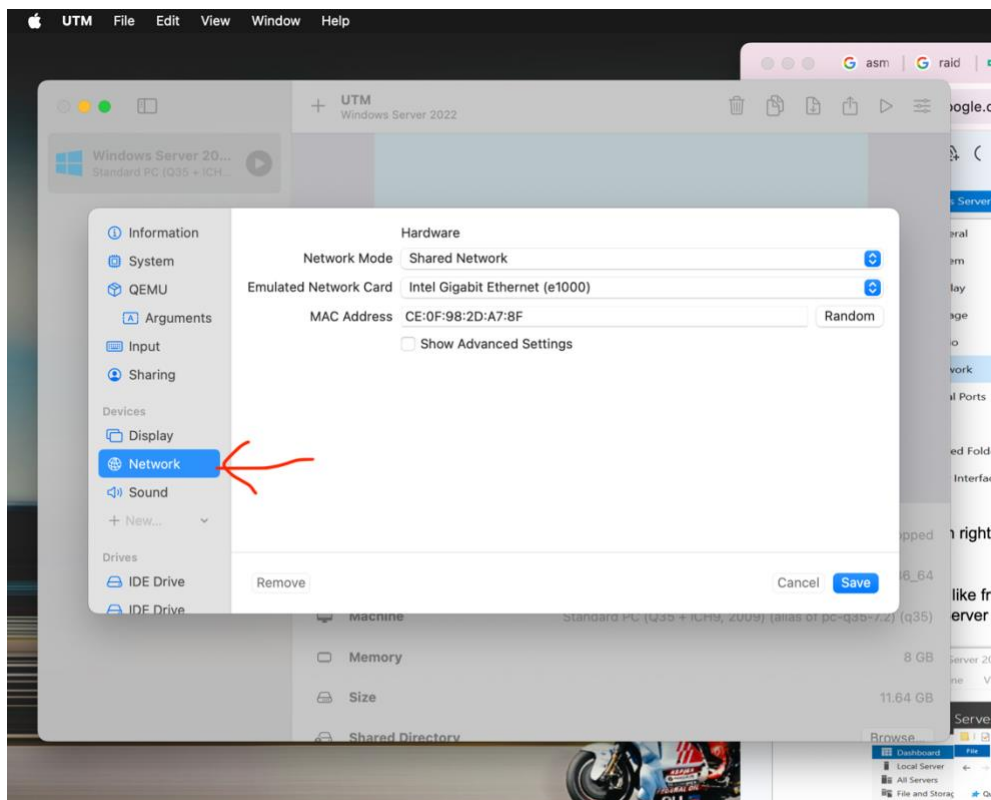
- Configured the VirtualBox network to use a *Bridged Adapter* to enable direct LAN communication to the network
- Deployed the static website files in the drive of the guest OS.
- Used IIS Manager (inetmgr) to create a website entry, setting the site name, physical file path, and appropriate IP address.
- Verified the website's accessibility by browsing it using the guest OS, host OS, and other devices within the same LAN, such as a smartphone.

Remote Desktop Configuration:

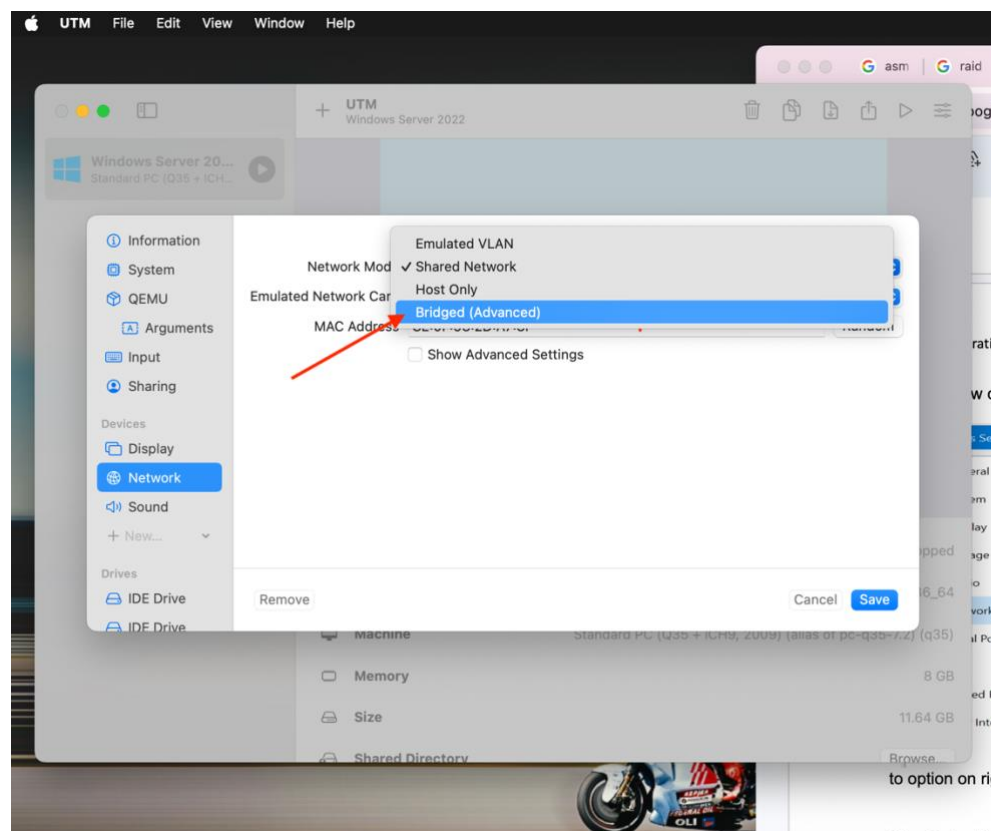
- Installed the appropriate VirtualBox Extension Pack for advanced functionality.
- Enabled the Remote Display Server feature in the VirtualBox settings.
- Established a Remote Desktop Connection to the guest OS by using the guest OS IP address from the host OS.



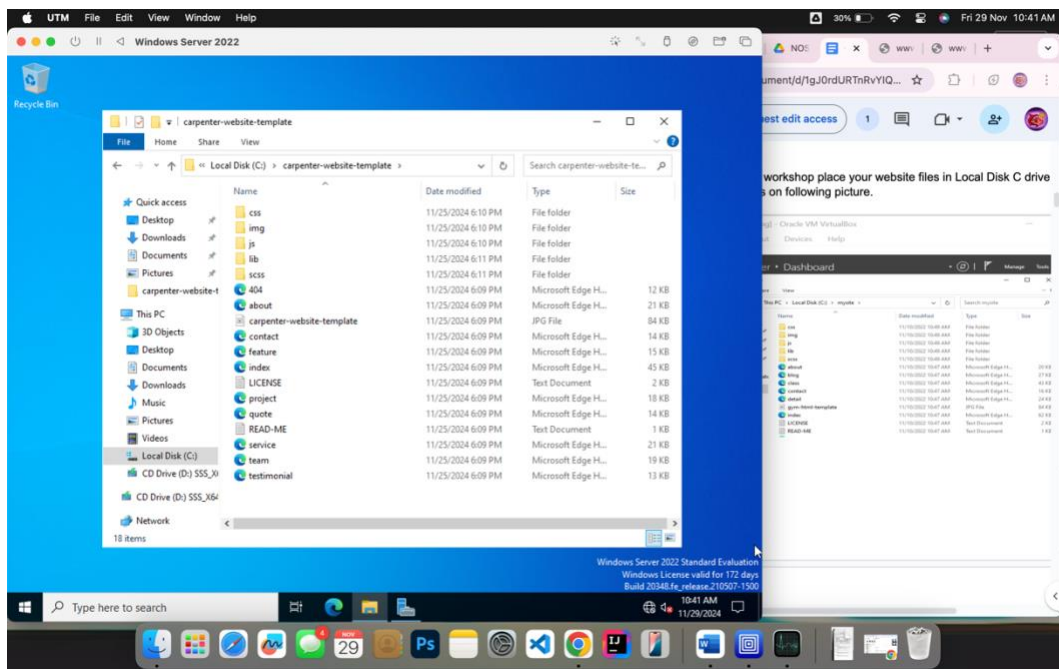
Step 1: Go to virtual machine settings



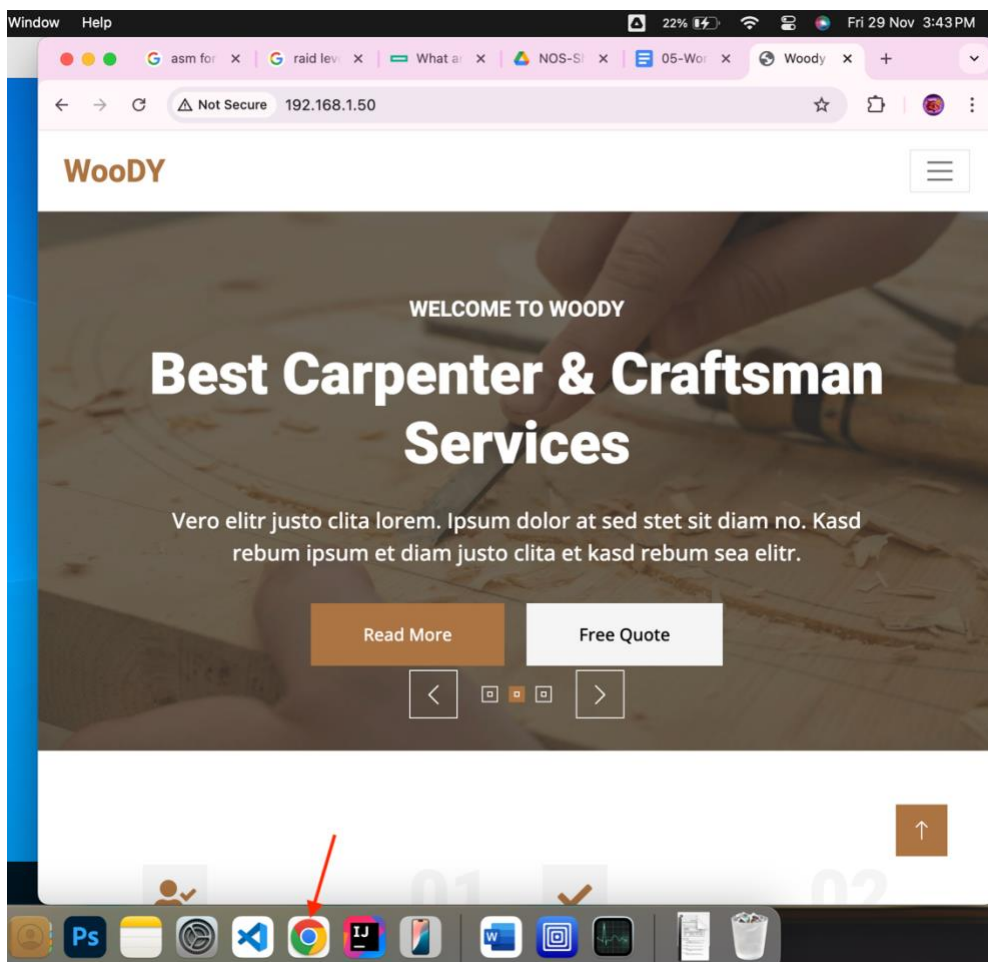
Step 2: Navigate to Network settings



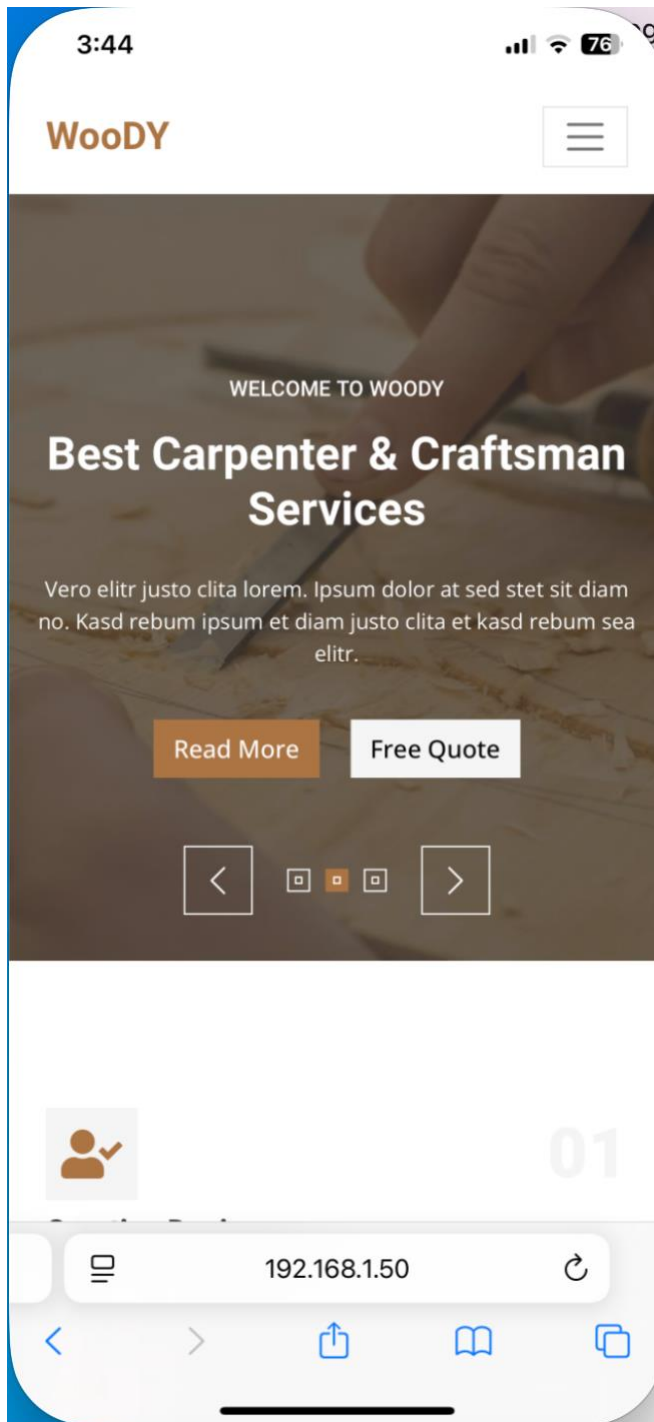
Step 3: Change network mode to Bridged(advanced)



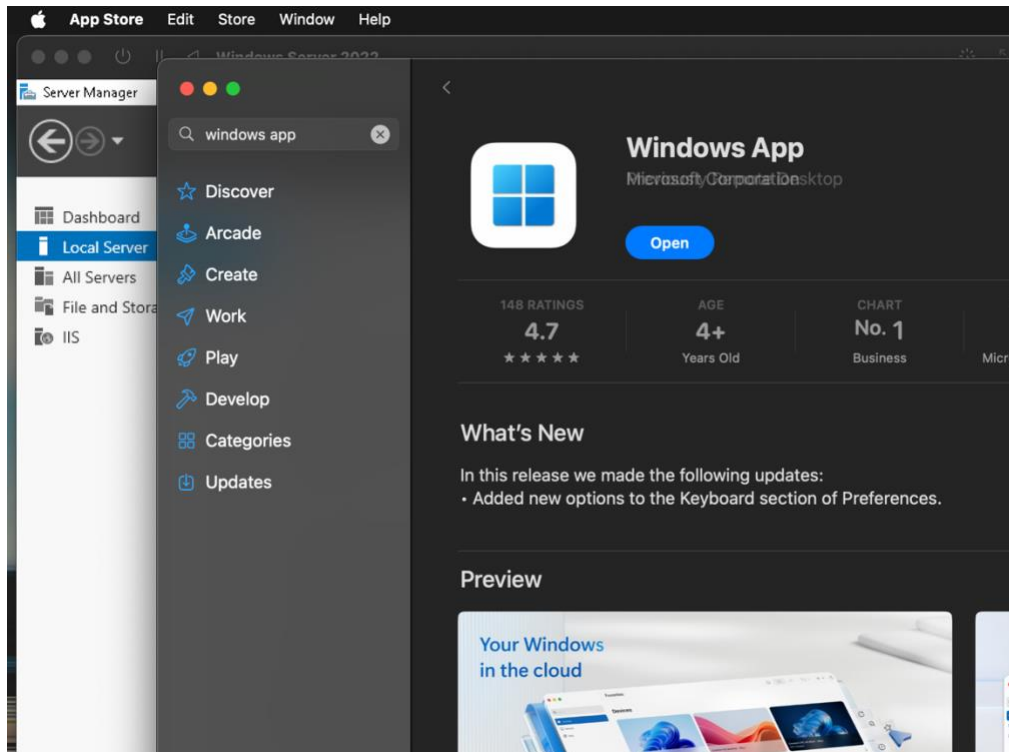
Step 5: verifying the web files in C: drive



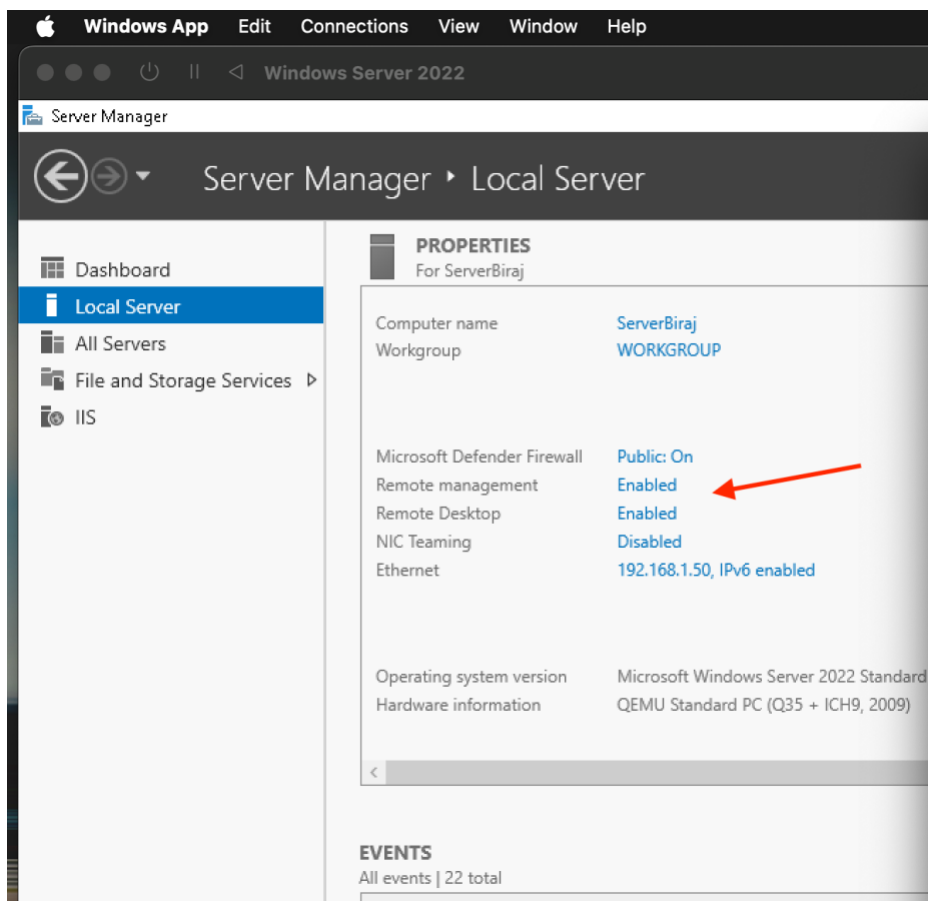
Step 4: loading web page from HostOS chrome browser



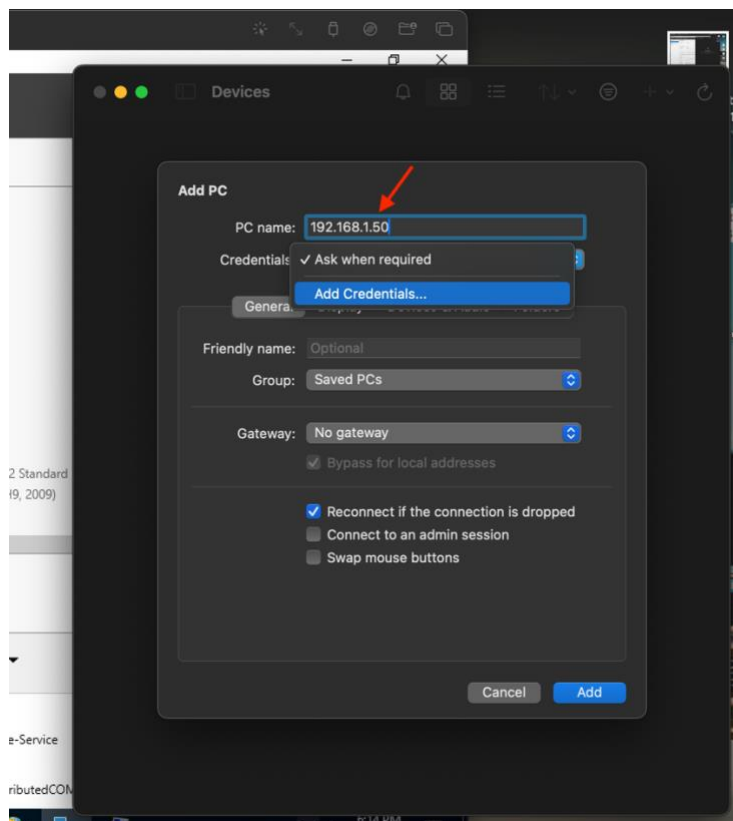
Step 6: accessing the web page from phone's Safari browser



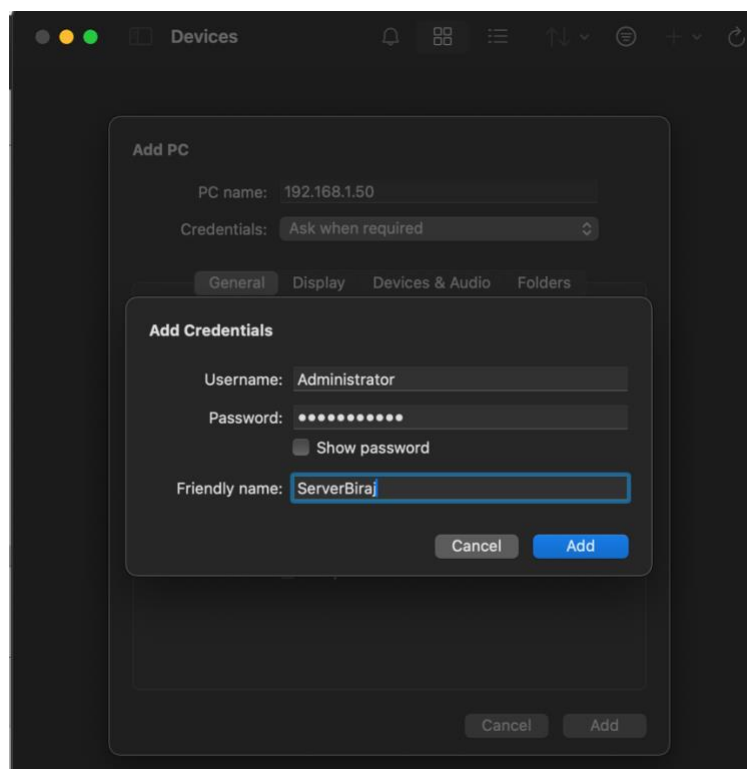
Step 7: download Windows App from App Store



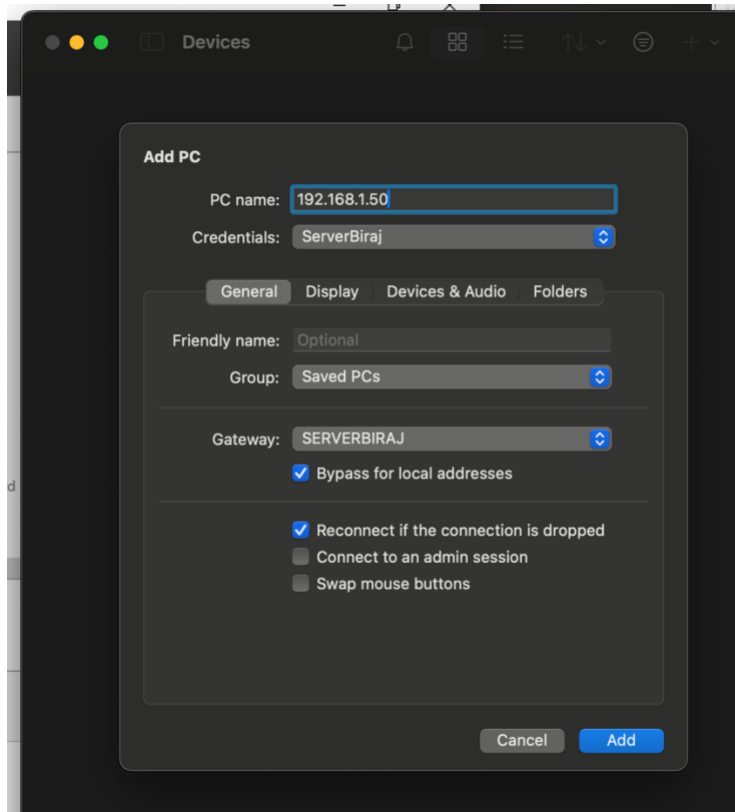
Step 8: make sure Remote Management and Remote Desktop features are enabled and get the IP address of the port



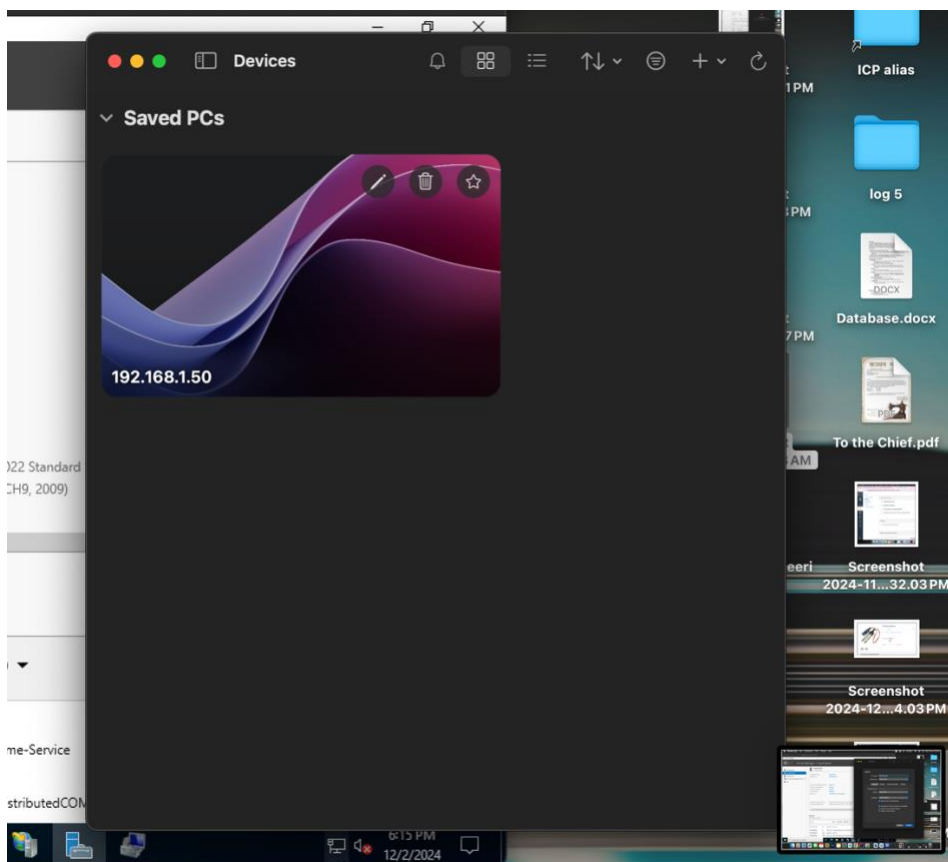
Step 9: in the windows app, go to Add PC option and enter details accordingly



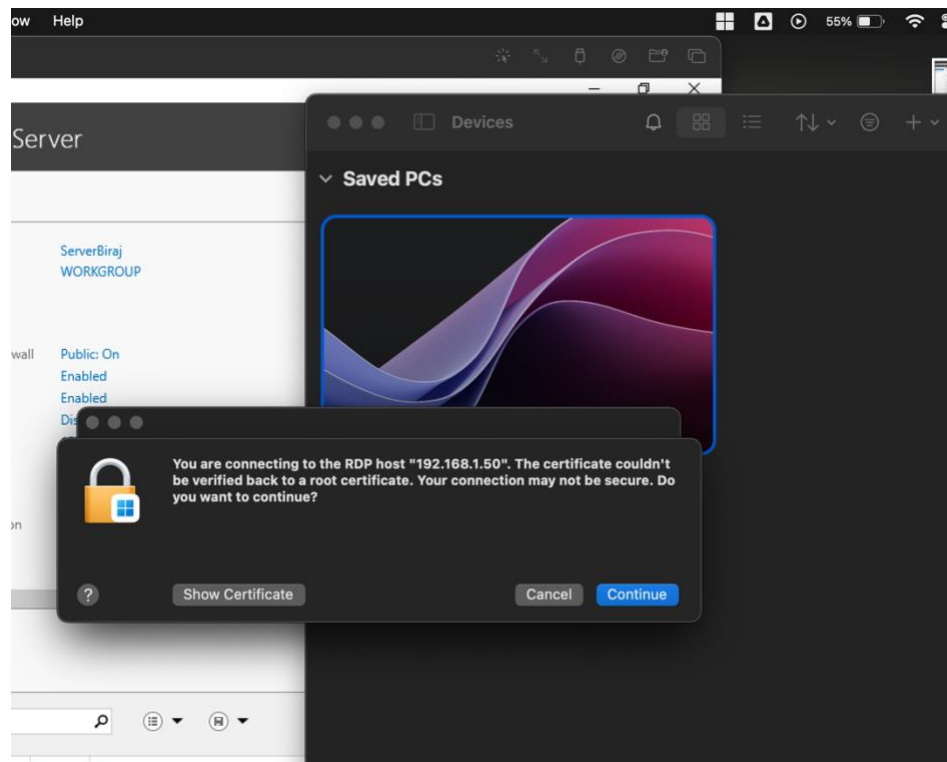
Step 10: Inserting logging in details of User in the guestOS



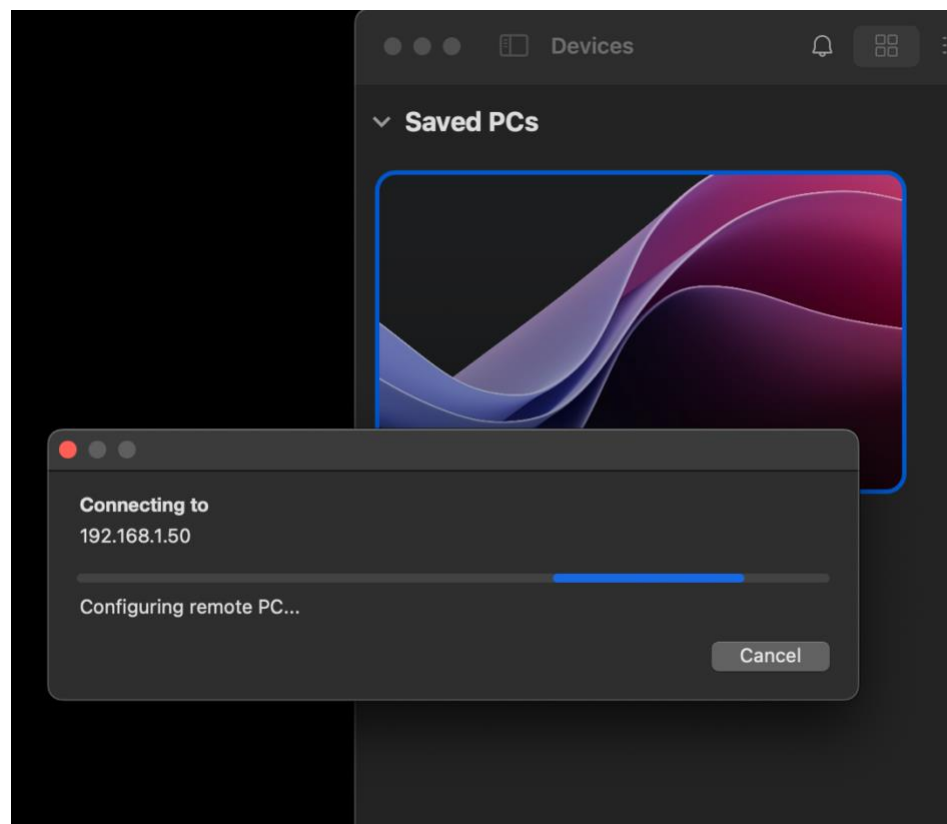
Step 11: add the pc after details are inserted



Step 12: a new interface appears, click the interface with the IP



Step 14: agree to connect to the PC



Step 13: establishing the connection

Conclusion

This workshop focuses on deployment of static website hosting using Windows Server 2022. The server operating system was ran on our devices with use of hypervisor on a isolated virtual enviroment. Additionally, enabling the web hosting and configuring Remote Desktop features which allows for seamless remote management of the server, showcasing the versatility of VirtualBox in simulating real-world IT scenarios.

These knowledge and skills are fundamental for modern day network administration services and web hosting tasks, providing a strong base for more advanced configurations in the future. We hosted the website local to our network and browsed the content through local network in our phone's browser. Further in the workshop we use Remote Desktop Protocol native to Microsoft's operating system, using the RDP we remotly accessed the Windows Server running in isolated enviroment through network.

References

Microsoft. (n.d.). *Evaluation center*. From Microsoft.com: <https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2022>