

Systems Administration and Maintenance

Final Requirement

Technical Documentation

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1. Introduction

This document presents the technical documentation for the Systems Administration and Maintenance (SAM) Final Requirement. The setup is based on the following real-world business scenario:

Selected Business Scenario: Mini Hotel/Pension House (Zaixiang Mini Hotel Makati City)

Ziaxiang Mini Hotel Makati City is a mini-hotel located in Makati City, Philippines that specializes in very affordable accommodation services for business travelers, tourists, and local guests. The facility operates as a small-to-medium sized hospitality business with limited but essential IT infrastructure requirements, focusing on guest management, reservations, billing, and administrative operations through a centralized Windows Server-based network system.

Zaixiang Mini Hotel is a mini-hotel that is located in Makati City, Philippines that specializes in very affordable accommodation services for travelers, tourists and local guests. The Mini Hotel facilitates as a small size hospitality business with an IT Infrastructure for the IT Admin that handles Hotel guest Database, IT Support for employees, and installation of hardware and software. The Front Desk handles welcoming guests, checking in guests, and sometimes doing cleaning services, and lastly the Manager Office handles salary cheques, accounting and finance roles. The IT infrastructure contains one Windows Server and two Windows 7 client work stations; they are all connected through a star topology with a central switch in the middle.

Configuring an IT infrastructure is a must for Mini-Hotel because it makes the hotel's process much faster rather than using paper-based operations that can take too long and can be lost. The Mini Hotel needs a Windows Server setup with a AD DS to control access for the hotel staff, proper domain name resolution using DNS for internal network resources, and automatic IP addressing using the DHCP Server to reduce manually configuring IPs. A File Sharing Service system is also created for role-specific folders, Remote access for remote client PC troubleshooting. This is to help the Mini Hotel to support daily operations such as guest check-ins, reservations, billings and support.

2. Objectives

The main objectives of this setup are as follows:

1. To install and configure Windows Server as the central server of the network.
2. To set up Active Directory Domain Services (AD DS) for centralized user management.
3. To configure DNS for proper domain name resolution within the network.
4. To configure DHCP for automatic IP address assignment to client machines.
5. To set up File Services for shared folder access across the domain.
6. To enable Remote Desktop access for remote administration.
7. To demonstrate client-server connectivity and successful domain login.

3. Network Topology Diagram

The following diagram illustrates the network topology used in this setup, showing the relationship between the server, client machines, and network devices.

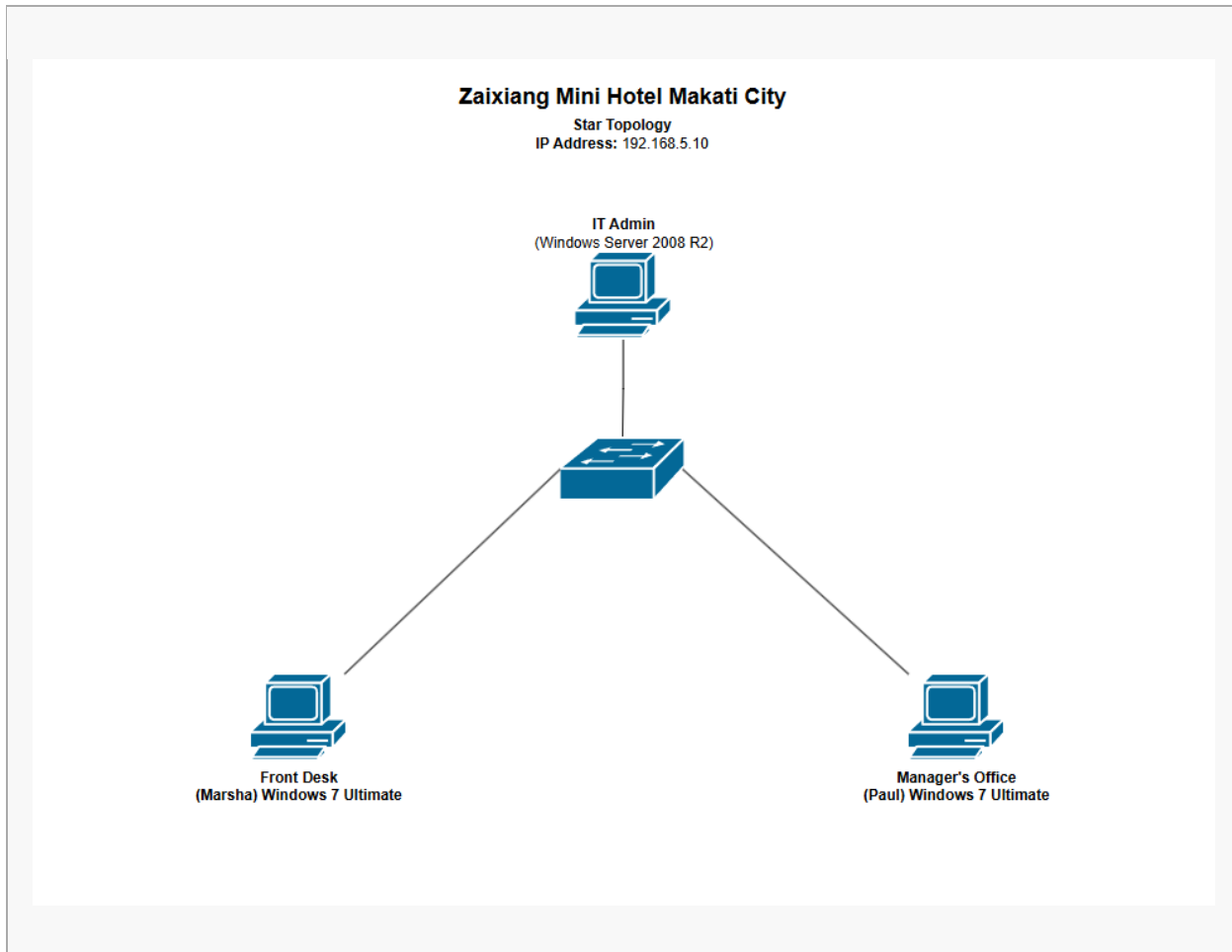


Figure 1: Network Topology Diagram

The Zaixiang Mini Hotel in Makati City operates a small business network built on a star topology. With a central switch serving as a primary hub connecting all the devices. The IP address 192.168.5.10 uses the private Class C range, which is typically used in small business environments. The IP address uses the subnet 255.255.255.0 and a default gateway of 192.168.5.1 to manage routing. Three key devices are connected to this central switch: an IT Admin workstation running Windows Server 2008 R2 that manages the mini hotel operations, a Front Desk workstation operated by Rhiannon running Windows 7 Ultimate for guest check-ins, and a Manager's Office workstation operated by Paul also running Windows 7 Ultimate for administrative tasks and financial tasks. All devices are connected directly to the central switch using Ethernet cables.

4. Hardware and Software Requirements

4.1 Hardware Requirements

Component	Server Specifications	Client Specifications
Processor	<i>Ryzen 7 3700x</i>	<i>Ryzen 7 3700x</i>
RAM	<i>4 GB</i>	<i>4 GB</i>
Storage	<i>16 GB SSD/HDD</i>	<i>16 GB SSD/HDD</i>
Network	<i>1 NIC minimum of 100 Mbps</i>	<i>1 NIC, minimum of 100 Mbps</i>
Platform	<i>Oracle Virtual Machine</i>	<i>Oracle Virtual Machine</i>

4.2 Software Requirements

Software	Version / Edition	Purpose
Windows Server	<i>Windows Server 2008 R2 x64</i>	Server operating system
Windows 7	<i>Windows 7 Ultimate x64</i>	Client operating system
Active Directory	Included with Server	Domain management
DNS Server	Included with Server	Name resolution
DHCP Server	Included with Server	IP address assignment
File Services	Included with Server	Shared folder management

5. Step-by-Step Installation Procedures

The following sections describe the complete installation and configuration process performed for this setup.

5.1 Windows Server Installation

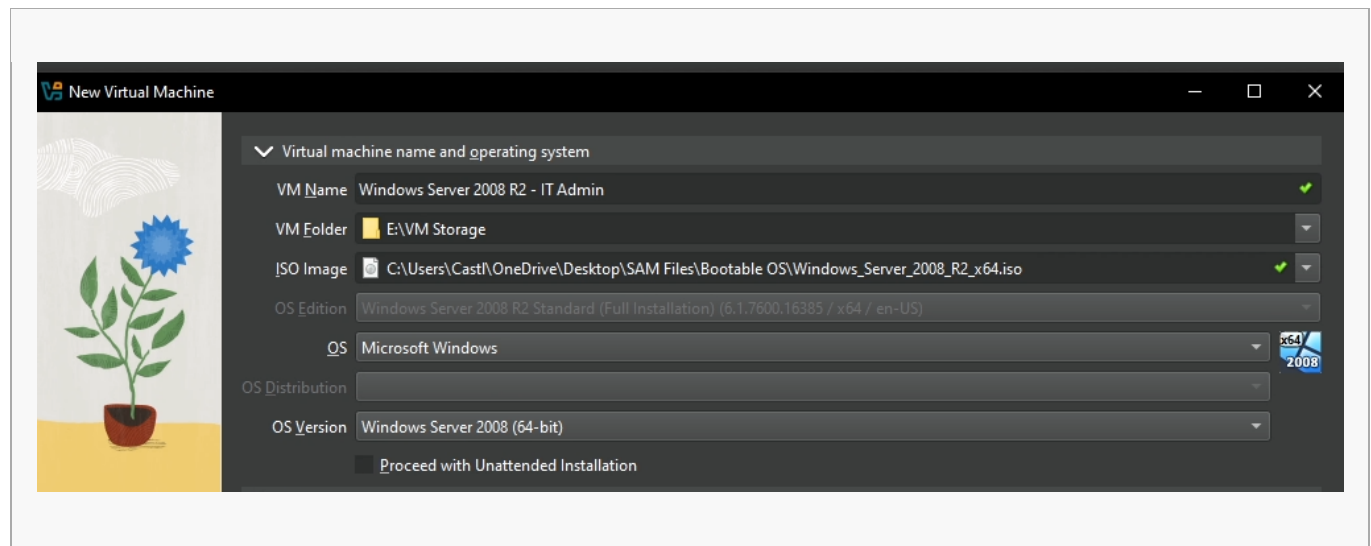


Figure 1: Setting up virtual machine for Windows Server 2008 R2

We must first configure the virtual environment for the Windows Server, first we are going to name it “Windows Server 2008 R2 - IT Admin” and store it in the *E:\VM Storage* Folder. Then we use a Windows Server 2008 R2 ISO image that we got from the internet and we will route it to a specified path. We should also set the OS edition to Windows Server 2008 R2 Standard (full installation, 64-bit, English). Lastly, uncheck the unattended installation option since it is enabled in default. Disabling this allows us to deploy the OS automatically without requiring manual input of username, password, and the product key since we don't have it available.

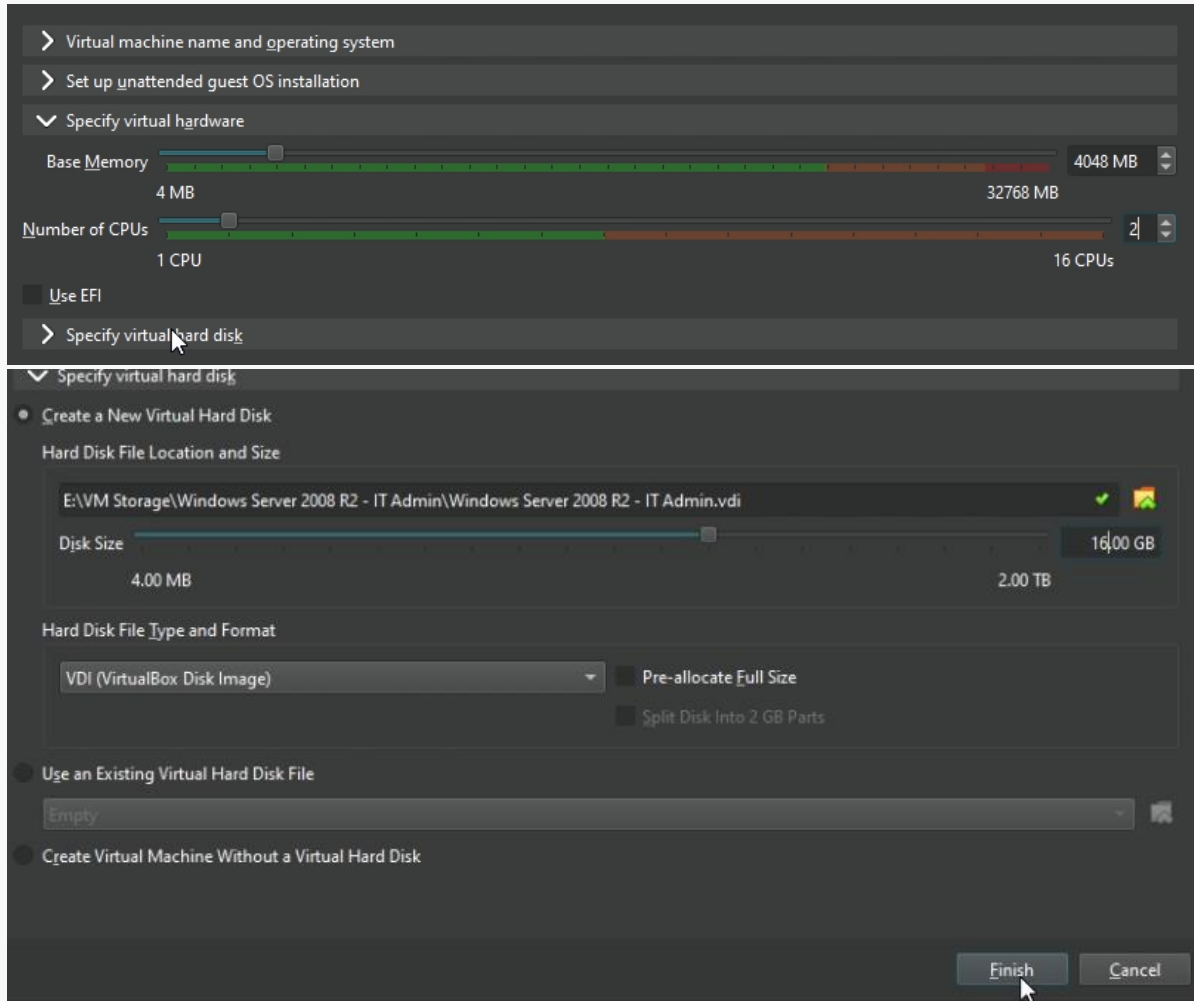


Figure 2: Specify Virtual Hardware and Virtual Hard Disk

In the virtual hardware, we allocated around 4048 MB or approximately 4 GB of base memory and 2 CPU cores, providing adequate resources for running the OS. The virtual hard disk is configured as a new VDI (VirtualBox Disk Image) file named "Windows Server 2008 R2 - IT Admin.vdi," located in the E:\VM Storage folder, with a disk size of 16 GB. After configuring all of that, click Finish and start the Virtual Machine.

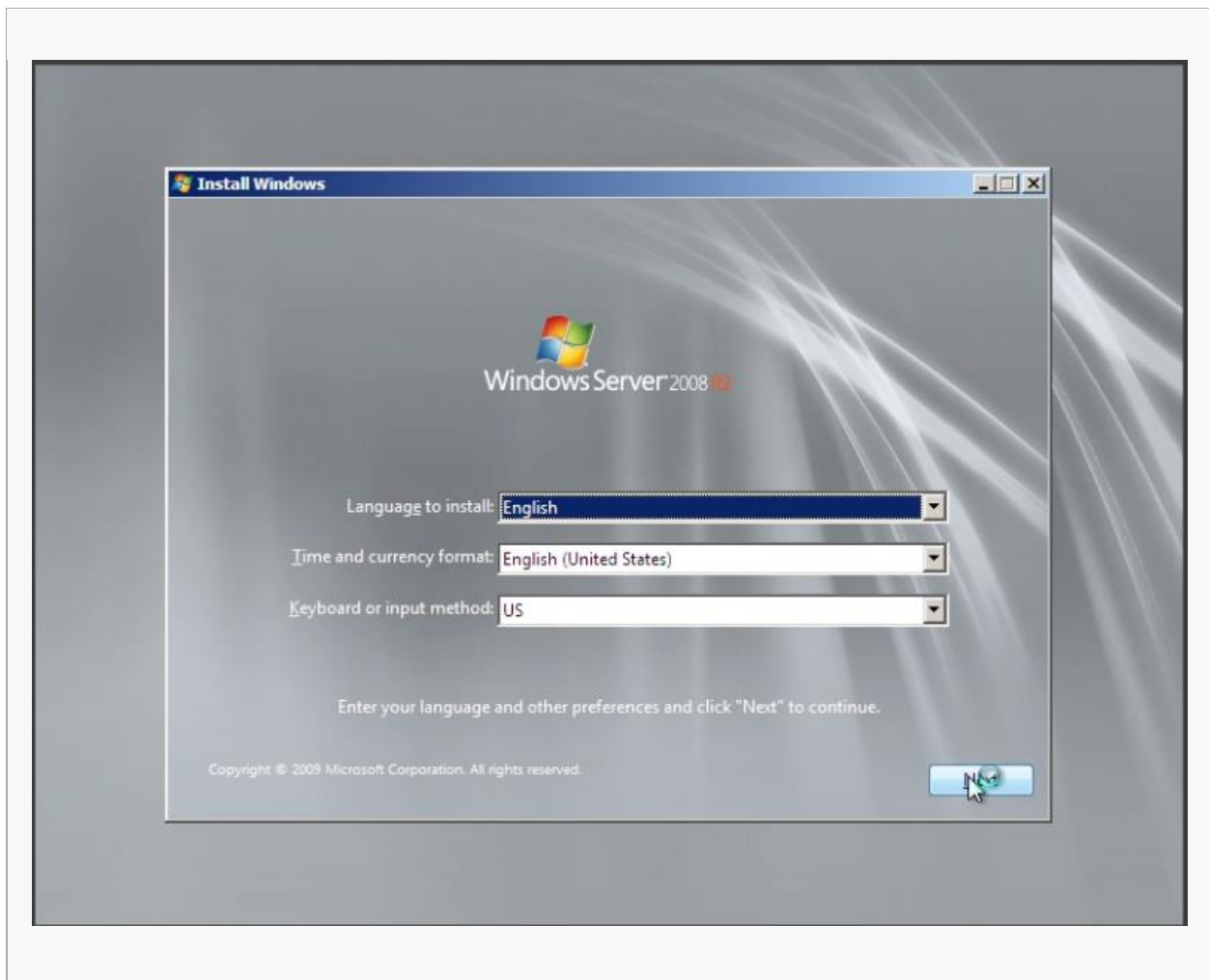


Figure 3: Windows Server Installation: Setting Up Language, Time and Currency, and Keyboard Input

After booting the VM, it will go to the Installation Screen, the default language is set to English, the time and currency is configured as English (United State), and the keyboard input method is set to US. These regional preferences are selected before clicking “Next” to precede with the Windows Server 2008 Setup.

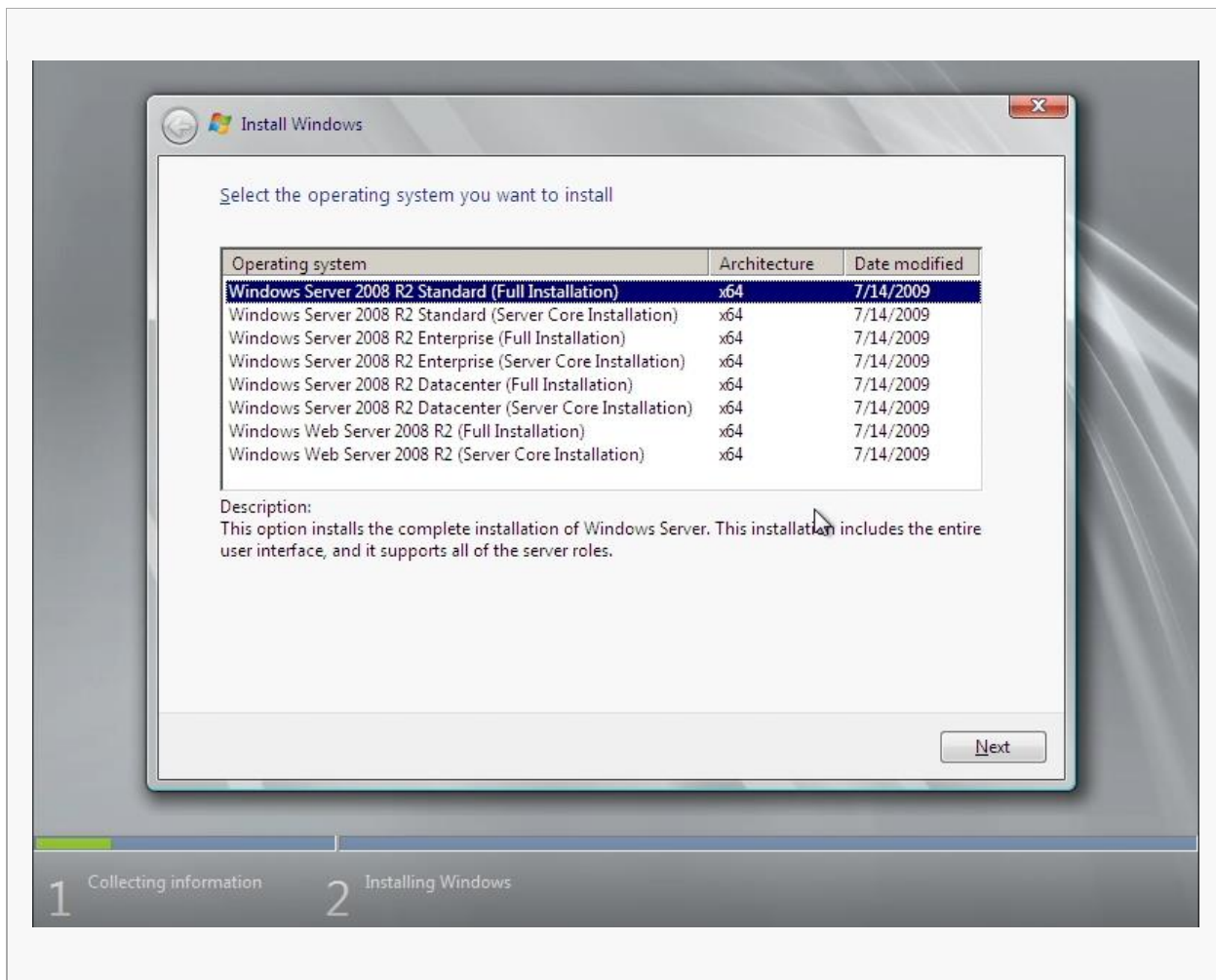


Figure 4: Windows Server Installation: Selecting the Proper OS to Install

After clicking Next, the installation prompts you to select an operating system to install, where the required option is Windows Server 2008 R2 Standard (Full Installation) with x64 architecture.

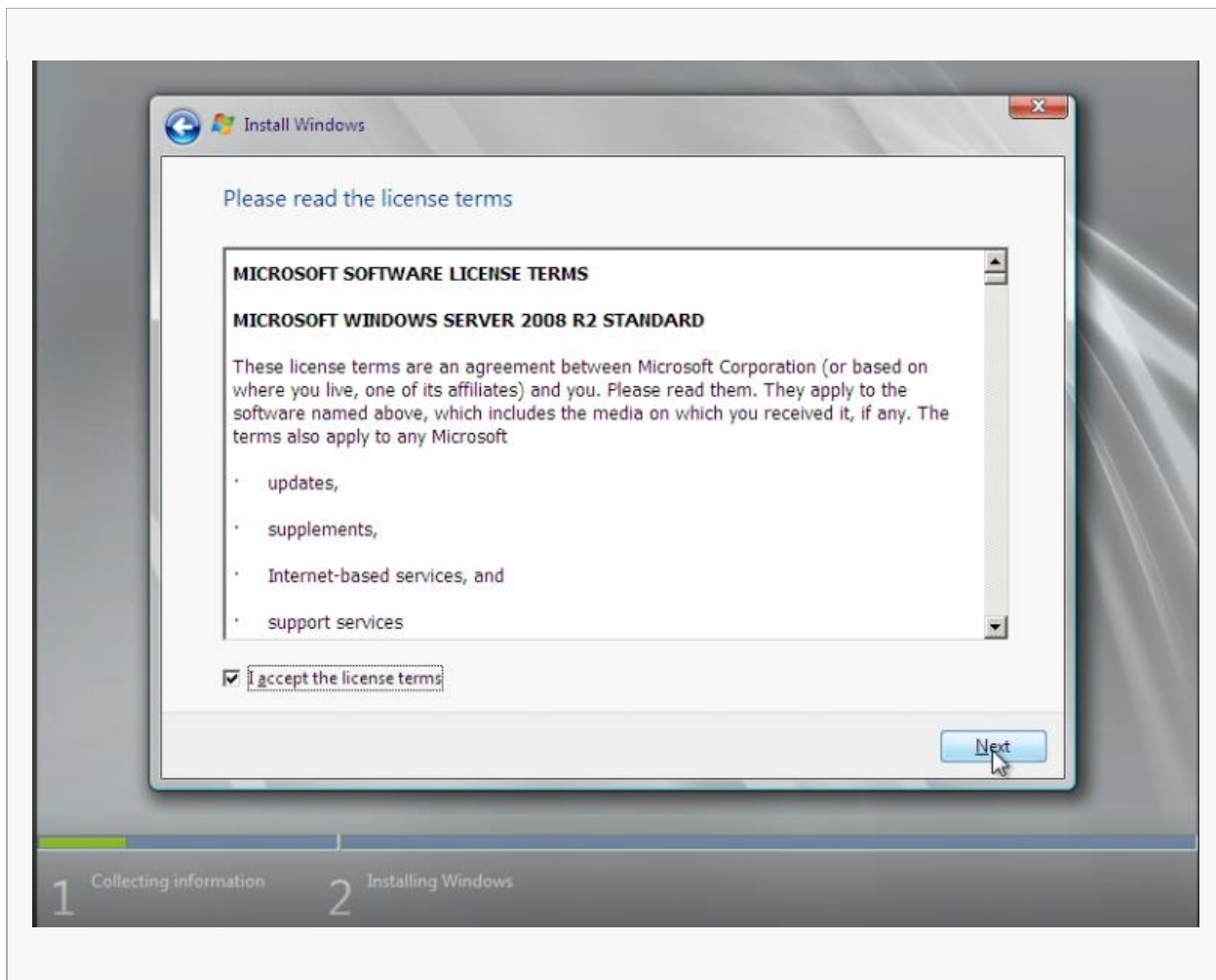


Figure 5: Windows Server Installation: Accepting License Terms

After clicking next, it will bring you to Microsoft License and Terms Agreement, click on the checkbox to “Accept the License Terms” and Click Next.

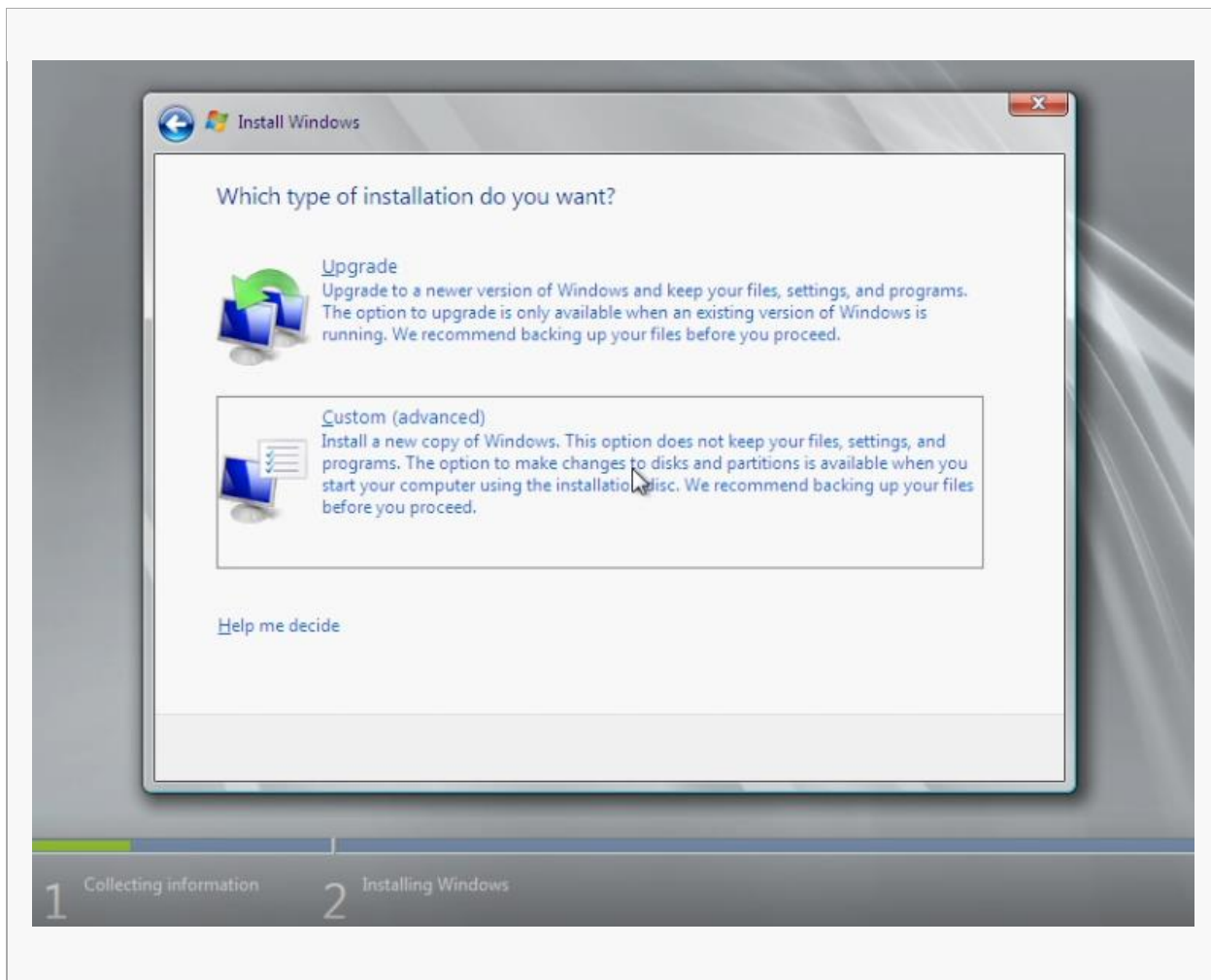


Figure 6: Windows Server Installation: Type of Installation

After clicking next, it will proceed to the type of installation. Since this is a fresh installation of the Windows Server, Click "Custom (Advanced) to proceed.

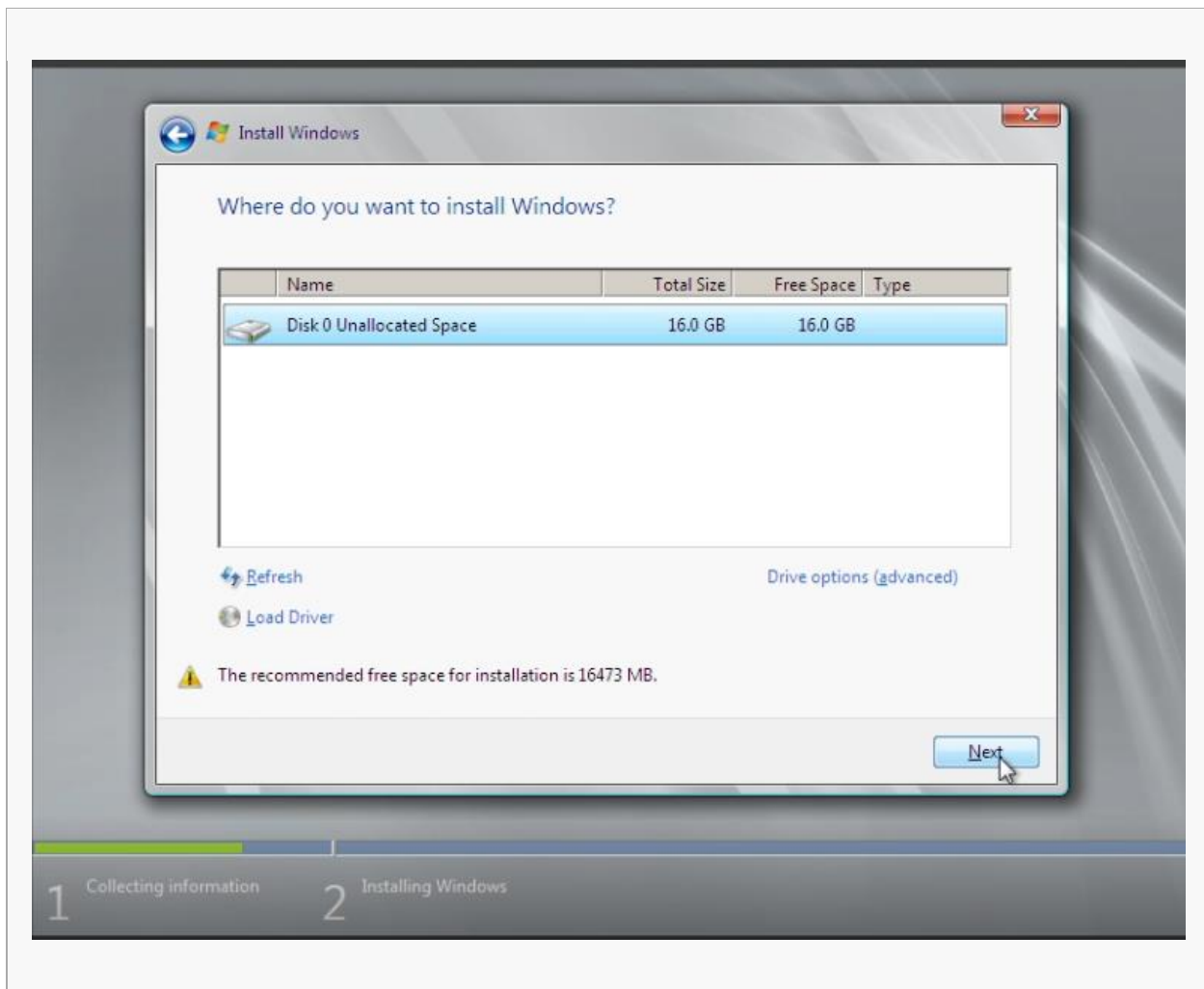


Figure 7: Windows Server Installation: Installing Windows to a Partitioned Disk

After proceeding, it will bring us to where are you going to install the Server OS, since we have partitioned 16 GB from our SSD, it will show up here as “Disk 0 Unallocated Space with a total Size and Free Space of 16 GB”. After choosing and clicking that, we can proceed to the next step.

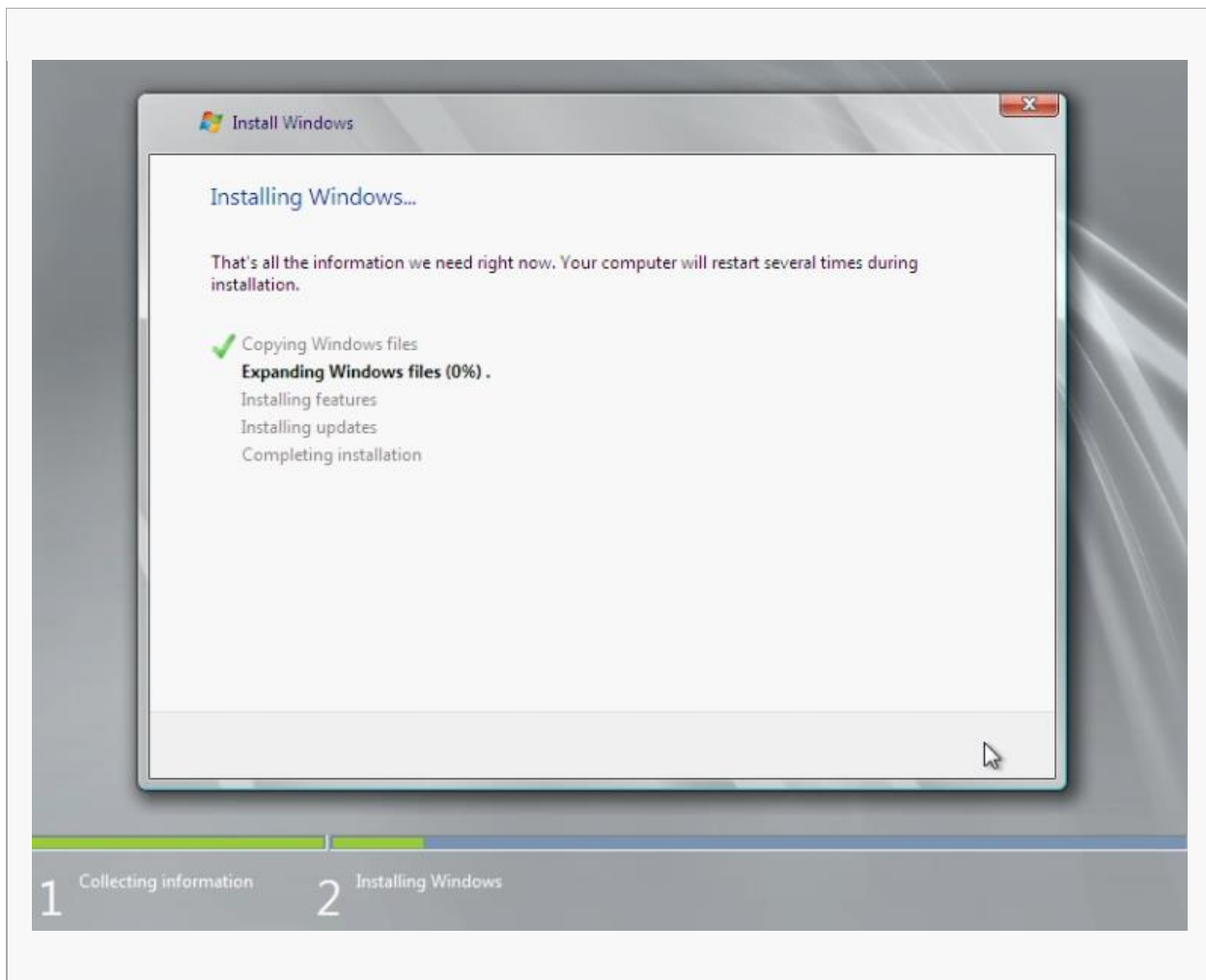


Figure 8: Windows Server Installation: Installing Windows and Waiting

After setting up where to install the OS, the Windows Server is now installing to your machine. It will take awhile to install depending on what type of Storage device you have, it's either SSD or HDD. HDD can take a long time to install meanwhile SSD can be done within 10 minutes.

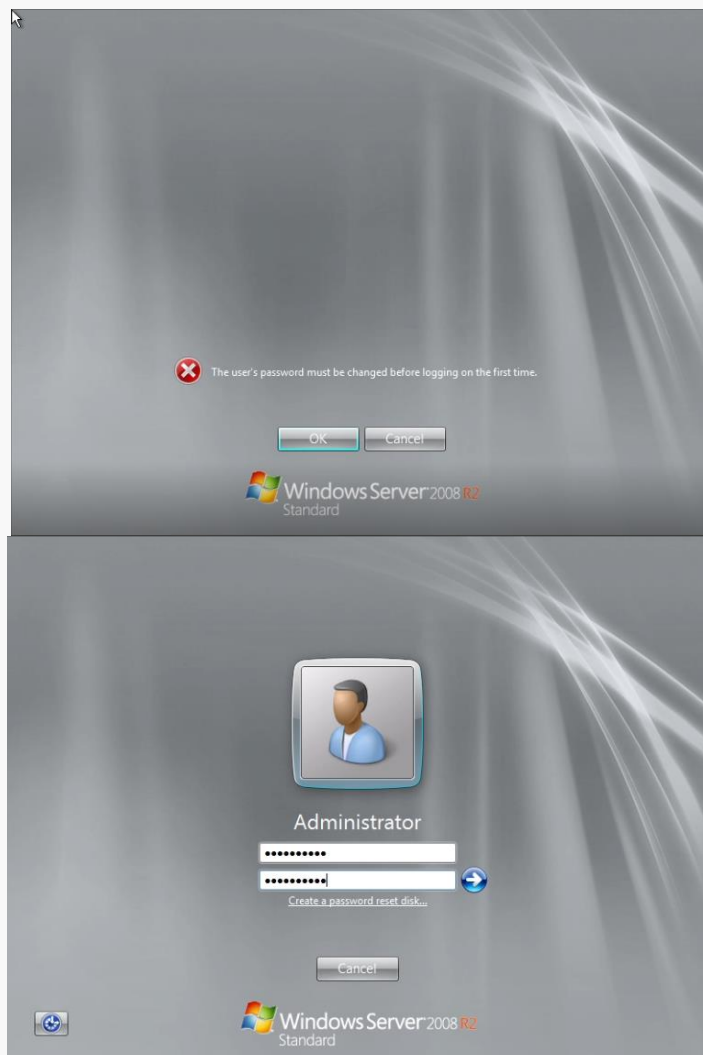


Figure 9: Windows Server Installation — Assigning an Administrator Password

After the OS is done installing, it will prompt you to create a password to safeguard the Administrator account. A strong password is important to avoid getting breached by social engineers, or exploiters.

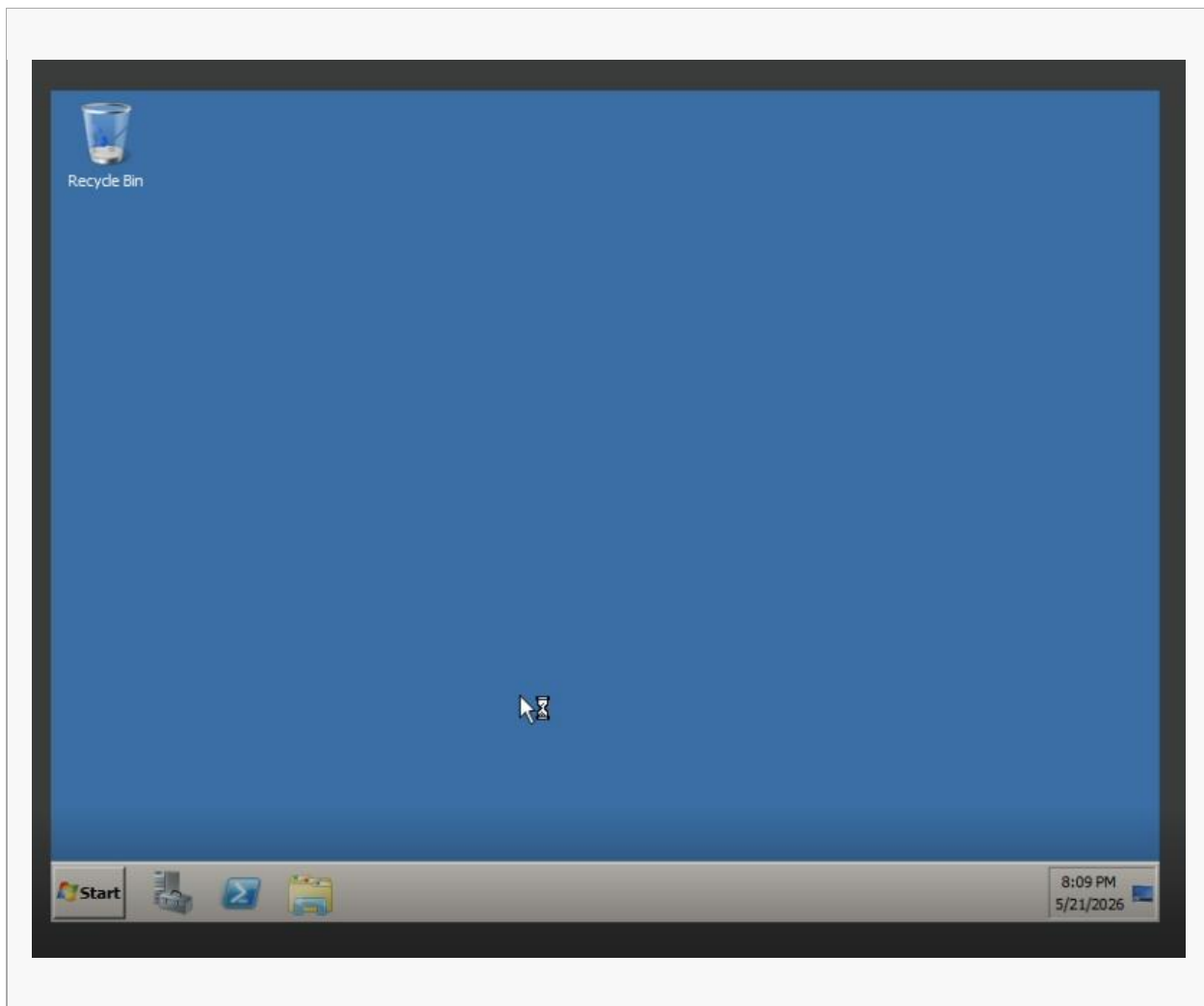


Figure 10: Windows Server Installation — Setup Complete

After typing a password, the setup is complete for the Windows Server 2008 R2, it will bring you to its blue desktop background. You can now start configuring the client PCs and managing server side tools for your business.

5.2 Windows 7 Ultimate Client Installation

For the Windows 7 Ultimate Installation, there are 2 Client PCs, these are the:

- Paul Manager's Office Windows 7 Client
- Marsha Front Desk Windows 7 Client

Both client machines follow the identical procedure for installing the operating system.

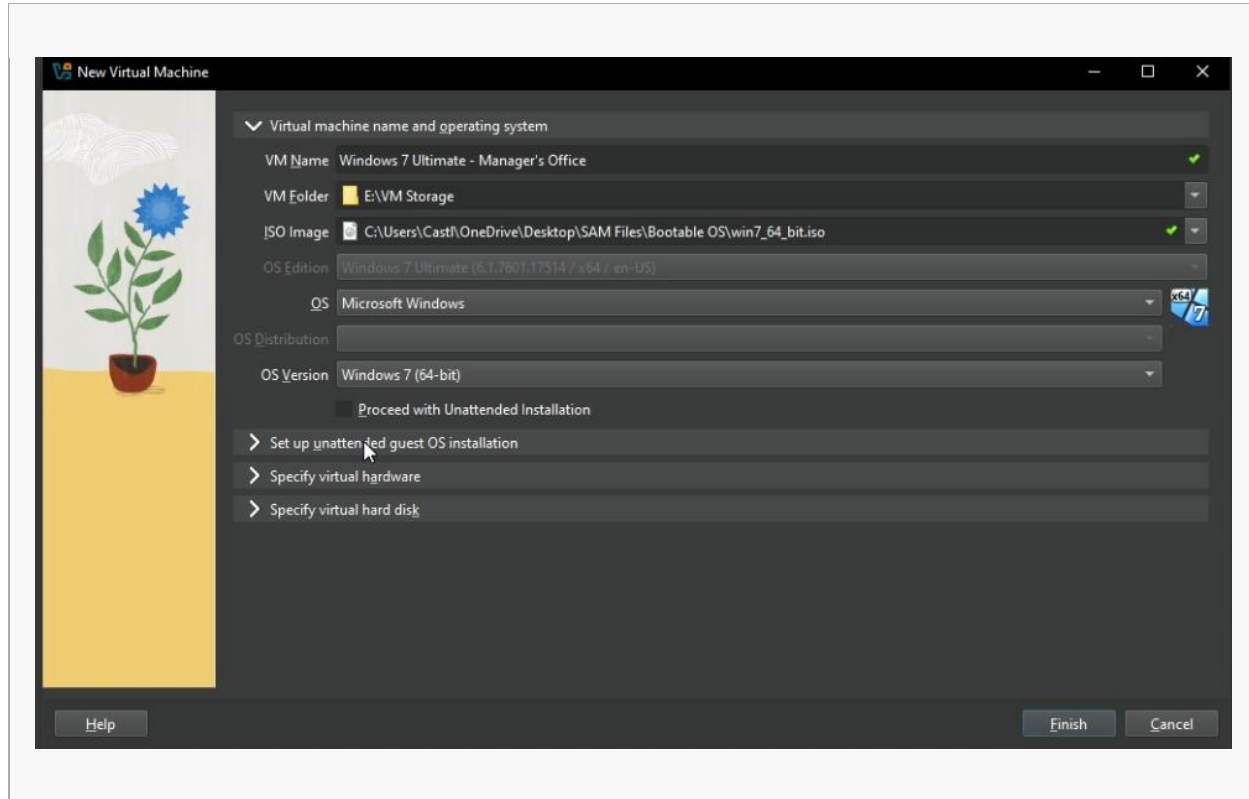


Figure 11: Windows 7 Ultimate Installation — Setting up the Virtual Machine

We must first configure the virtual environment for the Windows 7 Ultimate, first we are going to name it “Windows 7 Ultimate - Manager’s Office and Windows 7 Ultimate - Front Desk” and store it in the *E:\VM Storage* Folder. Then we use a Windows 7 ISO image that we got from the internet and we will route it to a specified path. We should also set the OS edition to Windows 7 (64-bit). Lastly, uncheck the unattended installation option since it is enabled in default. Disabling this allows us to deploy the OS automatically without requiring manual input of username, password, and the product key since we don't have it available.

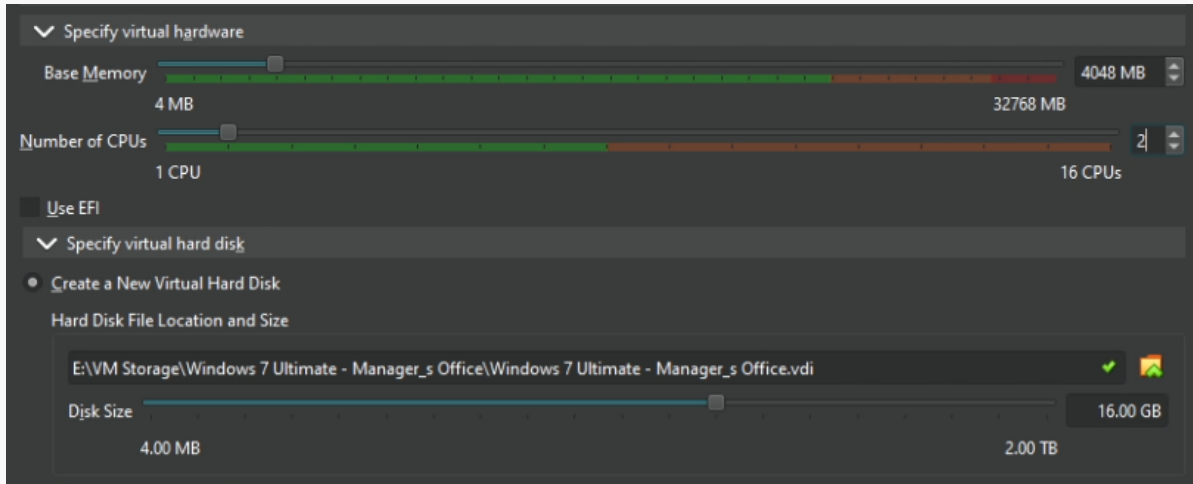


Figure 12: Windows 7 Ultimate Edition - Allocating Virtual Hardware and Hard Disk

In the virtual hardware, we allocated around 4048 MB or approximately 4 GB of base memory and 2 CPU cores, providing adequate resources for running the OS. The virtual hard disk is configured as a new VDI (VirtualBox Disk Image) file named "Windows 7 Ultimate - Manager's Office," located in the E:\VM Storage folder, with a disk size of 16 GB. After configuring all of that, click Finish and start the Virtual Machine.



Figure 13: Windows 7 Ultimate Installation: Selecting Language, Time and Currency, and Keyboard Input

After booting the VM, it will go to the Installation Screen, the default language is set to English, the time and currency is configured as English (United State), and the keyboard input method is set to US. These regional preferences are selected before clicking “Next” to proceed with the Windows 7 installation.



Figure 14: Windows 7 Ultimate Installation - Install Now Button

After clicking next, Click Install Now to proceed with the steps.

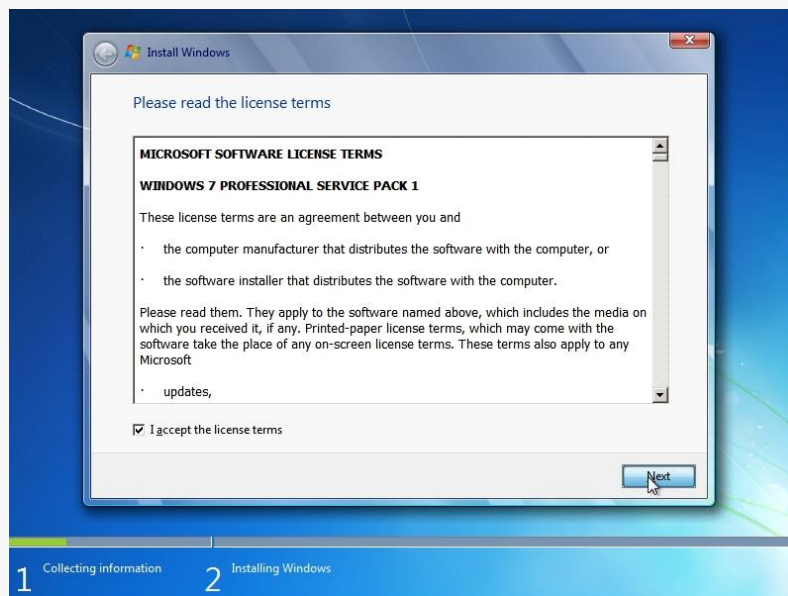


Figure 15: Windows 7 Ultimate Installation: Accepting the Terms

After clicking Install Now, it will bring you to Microsoft License and Terms Agreement, click on the checkbox to “Accept the License Terms” and Click Next.

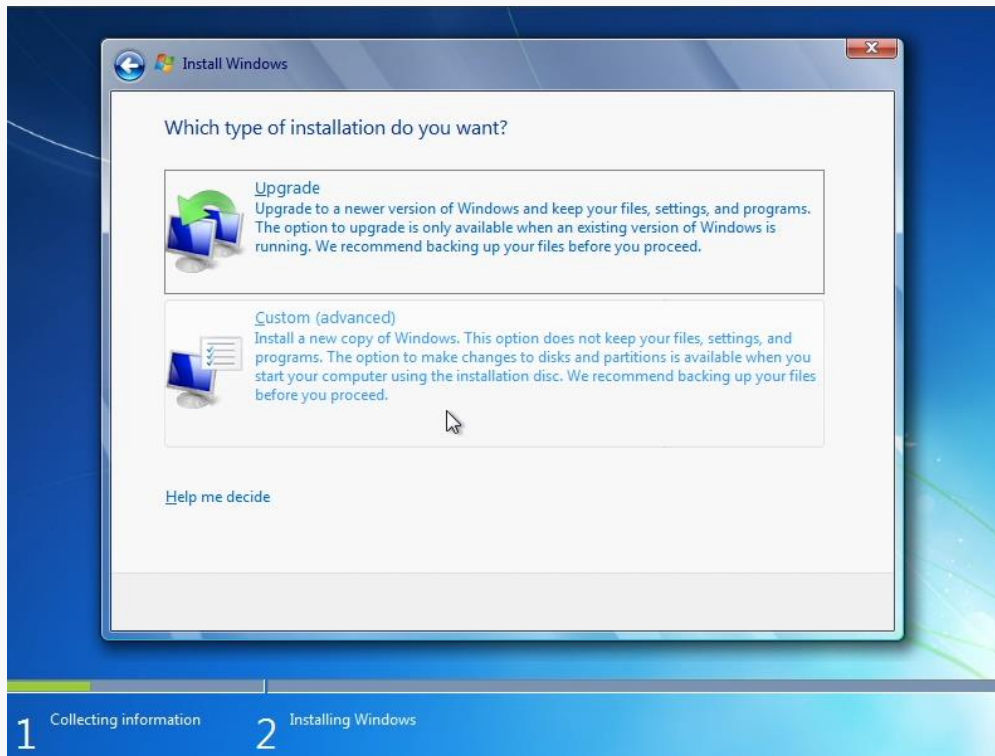


Figure 16: Windows 7 Ultimate Installation: Custom Installation of Windows to a Drive

After clicking next, it will proceed to the type of installation. Since this is a fresh installation of the Windows Server, Click “Custom (Advanced) to proceed.

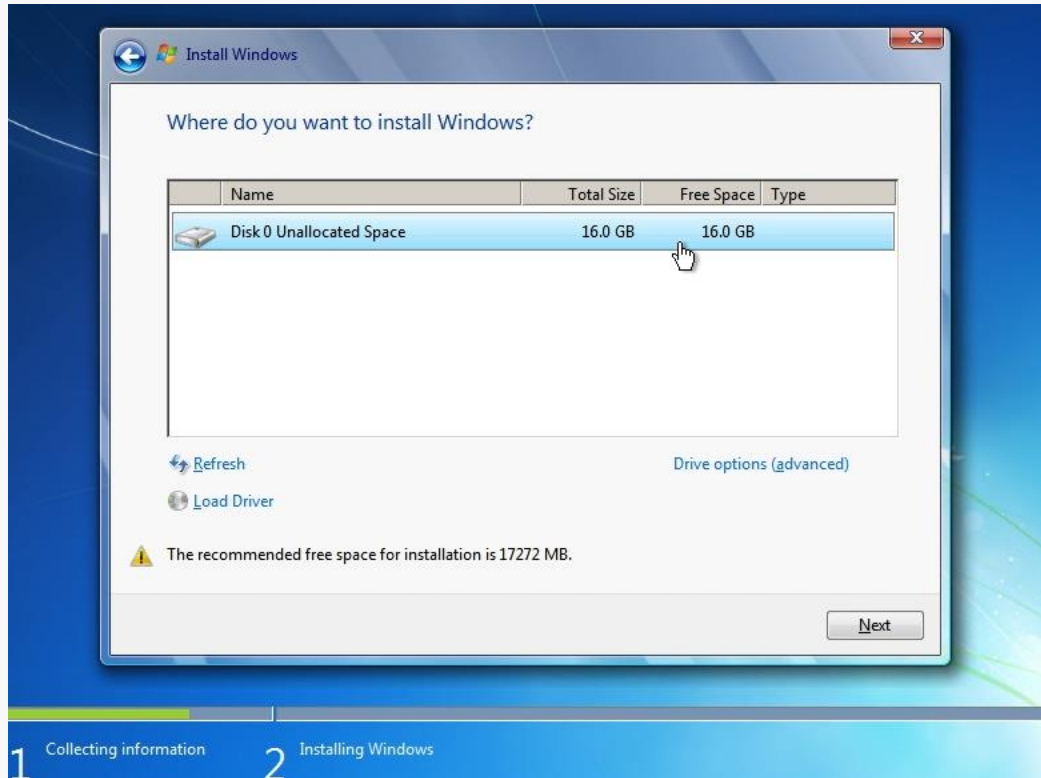


Figure 17: Windows 7 Ultimate Installation: Selecting where to install windows

After proceeding, it will bring us to where are you going to install the Server OS, since we have partitioned 16 GB from our SSD, it will show up here as “Disk 0 Unallocated Space with a total Size and Free Space of 16 GB”. After choosing and clicking that, we can proceed to the next step.

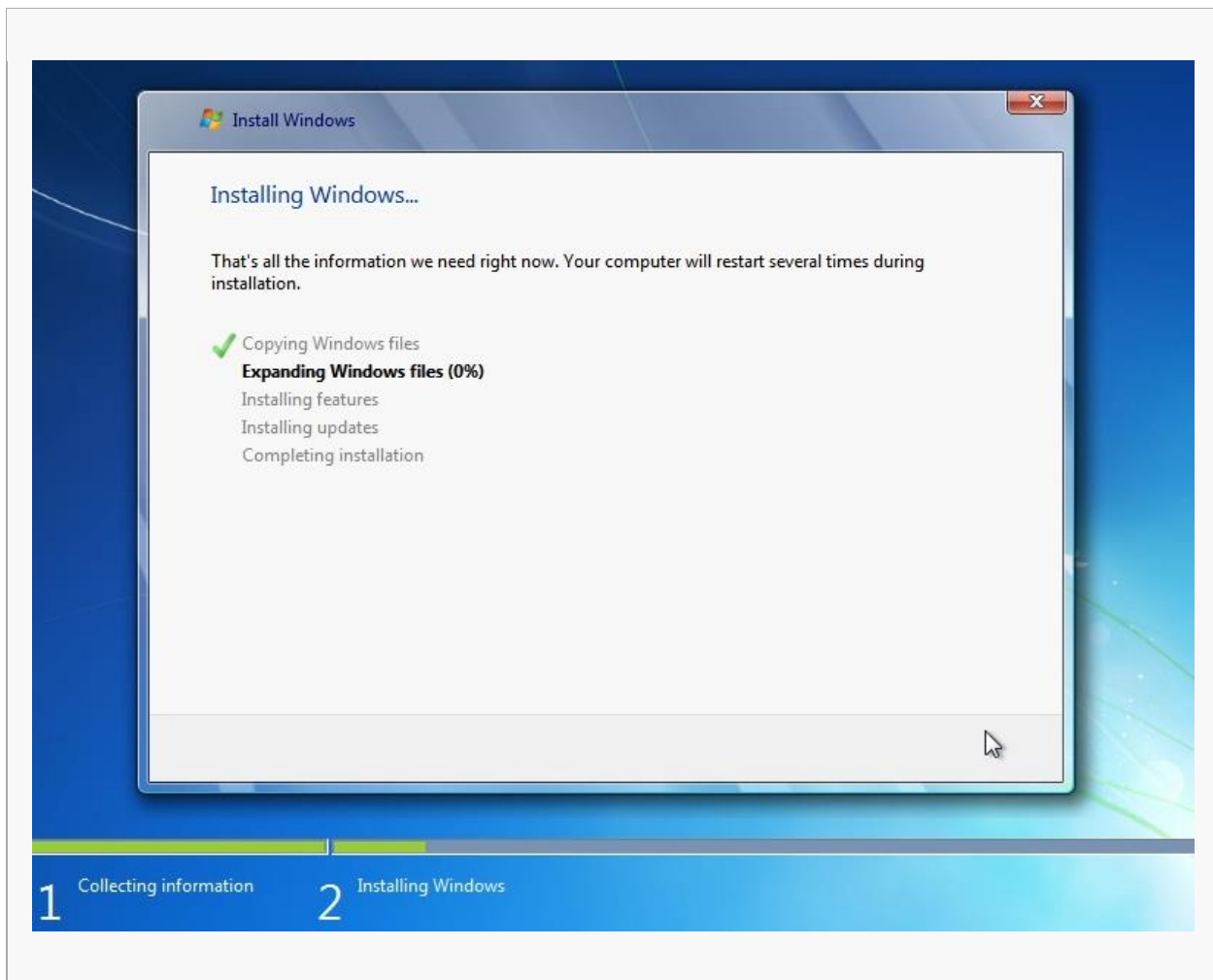


Figure 18: Windows 7 Ultimate Installation - Installation Waiting

After setting up where to install the OS, the Windows Server is now installing to your machine. It will take awhile to install depending on what type of Storage device you have, it's either SSD or HDD. HDD can take a long time to install meanwhile SSD can be done within 10 minutes.



Figure 19: Windows 7 Ultimate Installation: Setting up Username and Computer Name

Your machine will restart several times before the installation is complete. After restarting, you will be prompted to choose a username for your account and the name for your computer for it to be distinguishable on the internal network. After typing the Username and Computer name, click next.

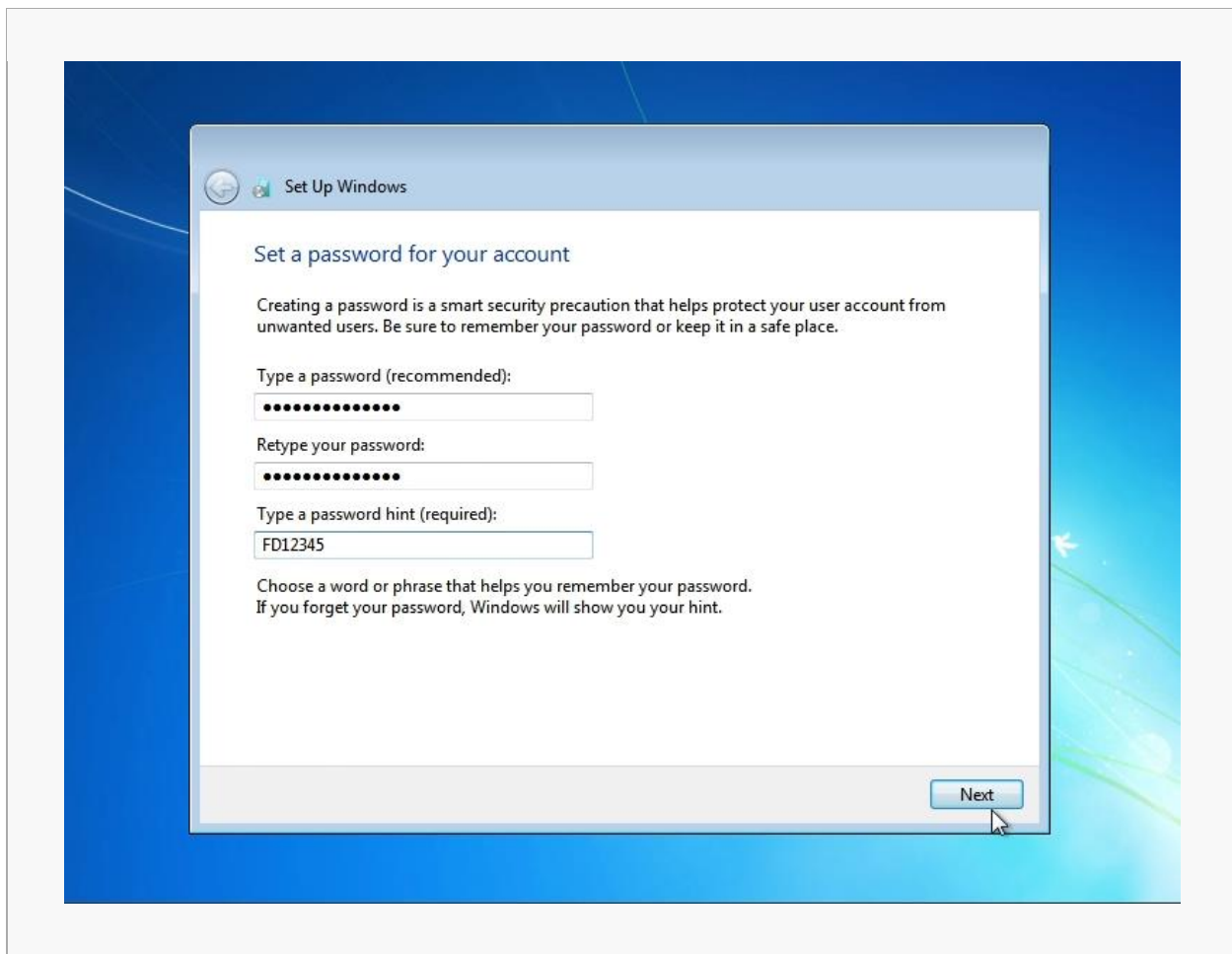


Figure 20: Windows 7 Ultimate Installation: Creating a Password

After the OS is done installing, it will prompt you to create a password to safeguard the Client account. A strong password is important to avoid getting breached by social engineers, or exploiters. Click on next after setting up the password.

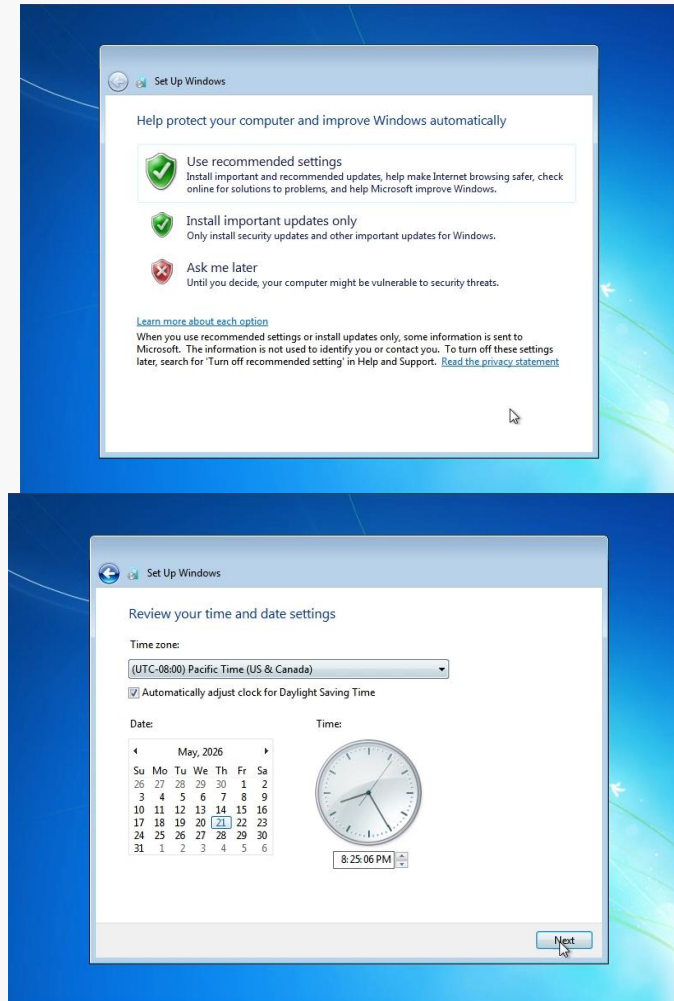


Figure 21: Windows 7 Ultimate Installation: Setting up Windows and Time and Date

After setting up the password, choose the recommended settings. Set your timezone to your current timezone and the date today.

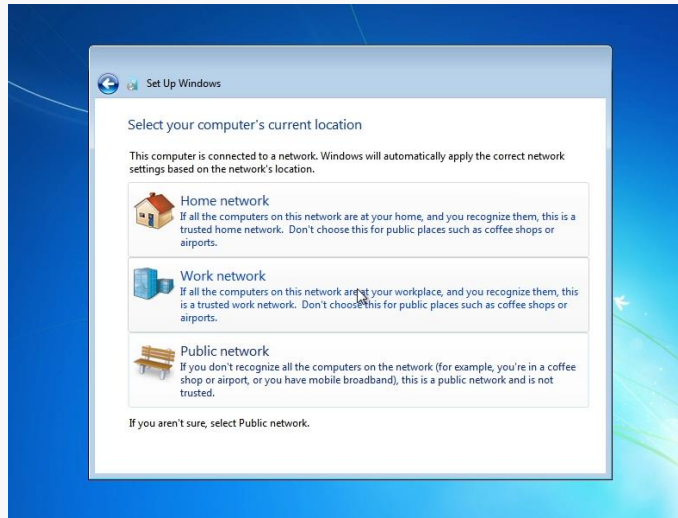


Figure 22: Windows 7 Ultimate Installation - Selecting Computer's Current Location

After setting up the recommended settings and the timezone, Click on Work Network since we are working in a working environment of a Mini Hotel.

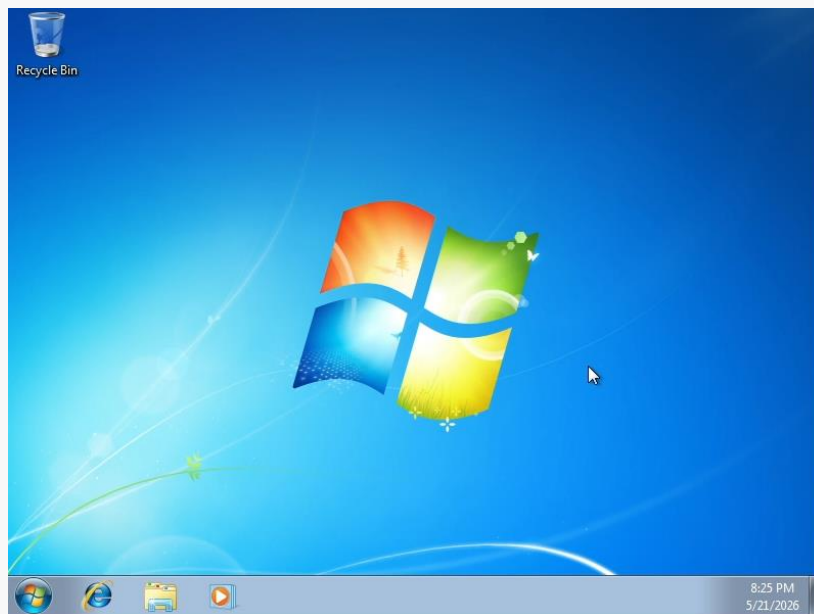


Figure 23: Windows 7 Ultimate Installation Complete

After setting everything up, it will log you in to your Desktop in which you will see the Iconic Windows 7 Wallpaper. **Do note, repeat all these steps for Windows 7 Ultimate - Front Desk it's the same installation before proceeding to configure the Static IP address.*

5.3 Static IP Configuration

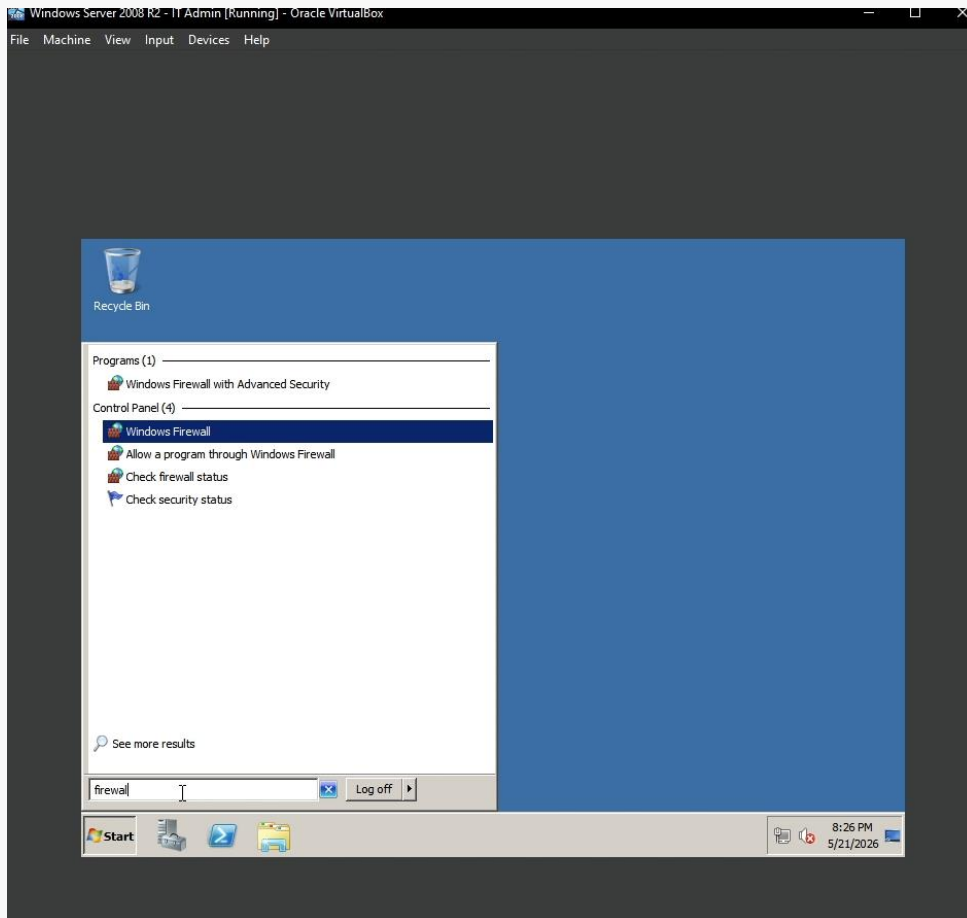


Figure 24: Static IP Configuration — Disabling Firewall

We must first disable the firewall so that the Client PC and the Server PC can ping each other, to disable the firewall go to the start menu of the Windows Server OS, type in the search bar Firewall, and navigate to Windows Firewall.

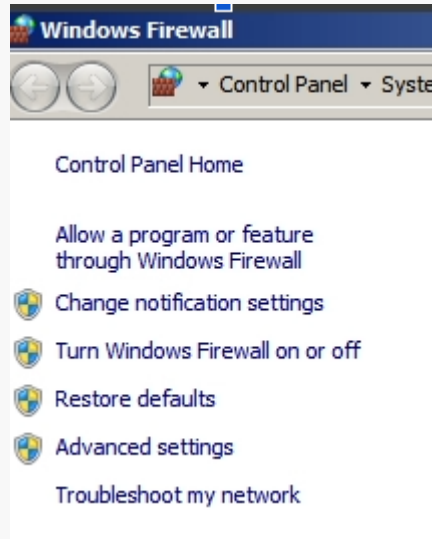


Figure 25: Static IP Configuration — Disabling Firewall First

Navigate to the left side of the Control panel, and click on “Turn Windows Firewall on or off”.

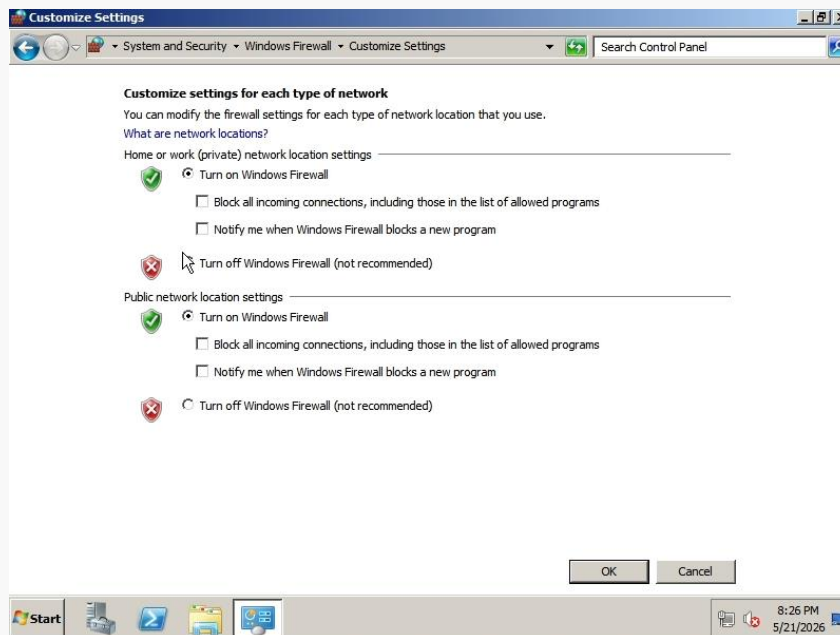


Figure 26: Static IP Configuration — Disabling Firewall on the Windows Server

Click on Turn off Windows Firewall on both Home or Work, and Public Network location settings. Why do we need to disable the firewall? This is to ensure that the PCs can communicate with each other because there are scenarios that the firewall blocks incoming ping to clients to server, or server to client when testing the ping connectivity.

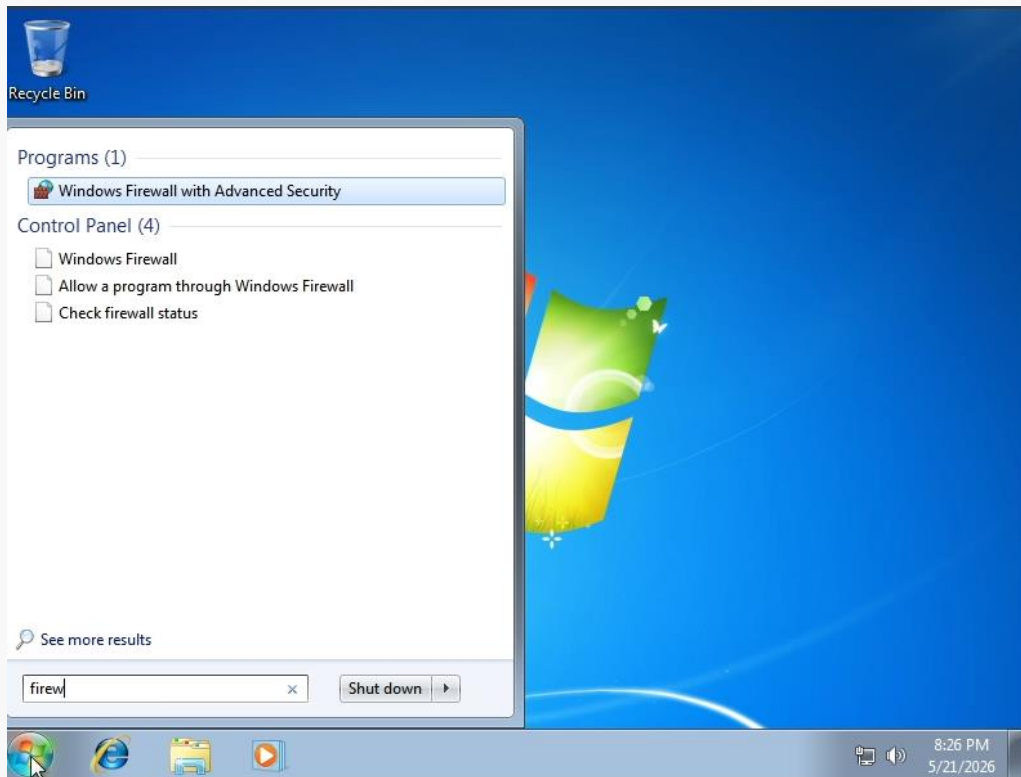


Figure 27: Static IP Configuration — Disabling the Firewall on the 2 Client PCs

to disable the firewall on the 2 Client PCs, go to the start menu of the Windows Server OS, type in the search bar Firewall, and navigate to Windows Firewall.

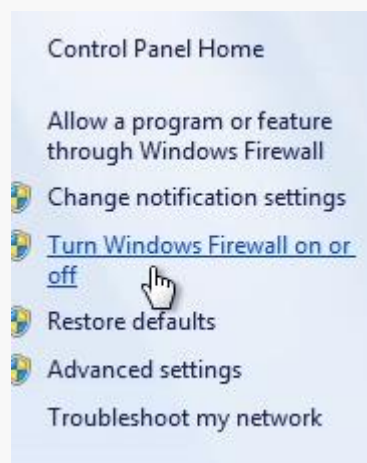


Figure 28: Static IP Configuration — Turning off Firewall

Navigate to the left side, and click on Turn Windows Firewall on or off.

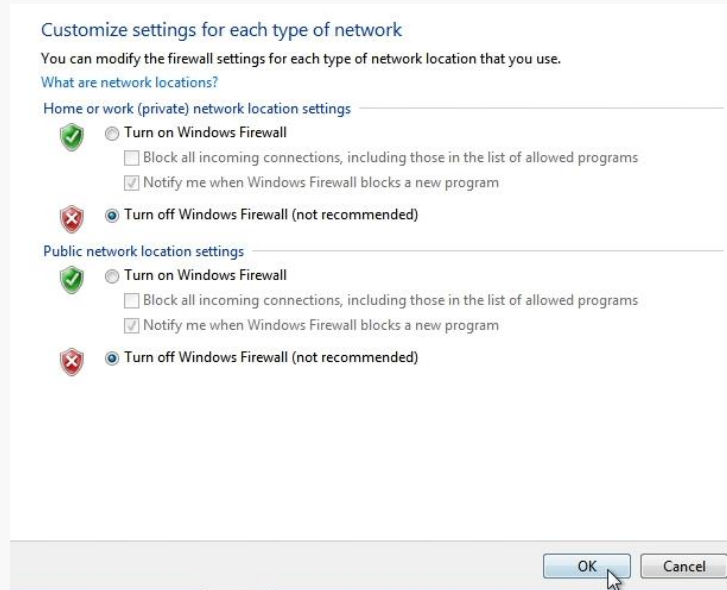


Figure 29: Static IP Configuration — Turning off the Firewall on the 2nd Client

Click on Turn off Windows Firewall on both Home or Work, and Public Network location settings.

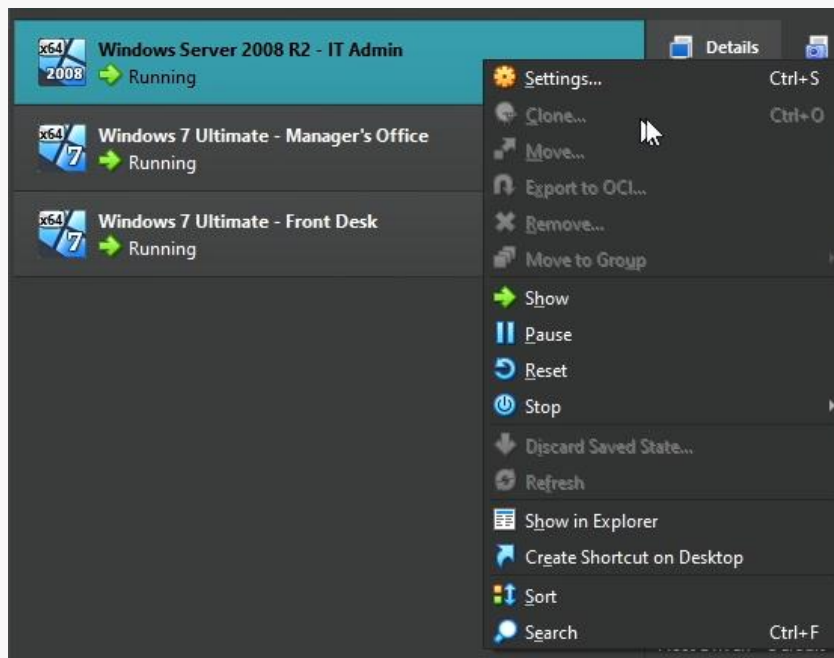


Figure 30: Static IP Configuration — VM Network Settings

On the Oracle VirtualBox Manager, right-click Windows Server 2008 R2 - IT Admin, and click on Settings.

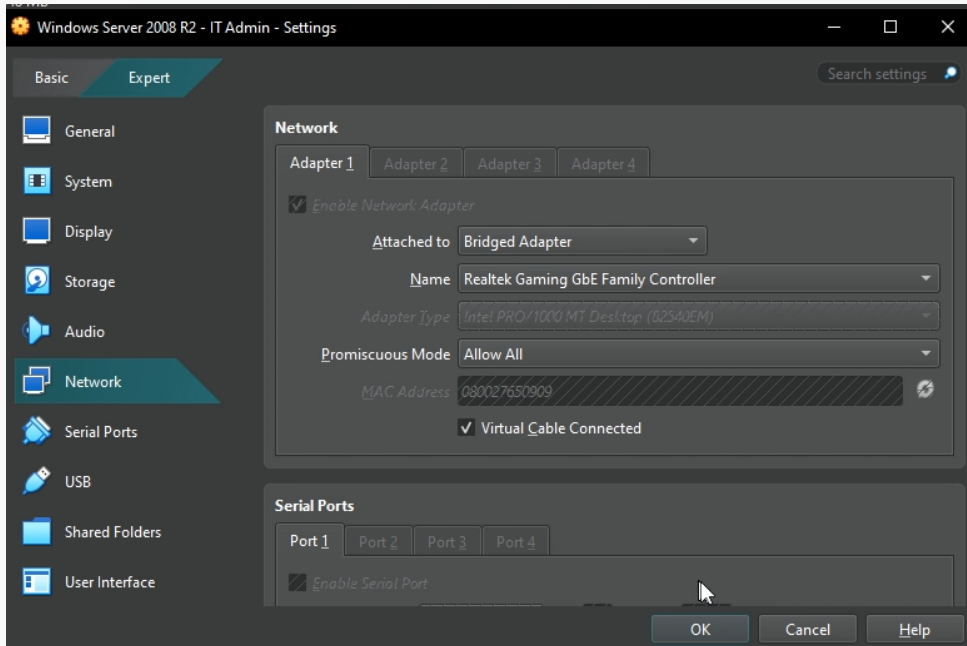


Figure 31: Static IP Configuration — Change Attach to NAT to Bridge Adapter

Navigate to Network, change Attach To NAT to Bridge Adapter and Allow All in Promiscuous Mode and click OK.

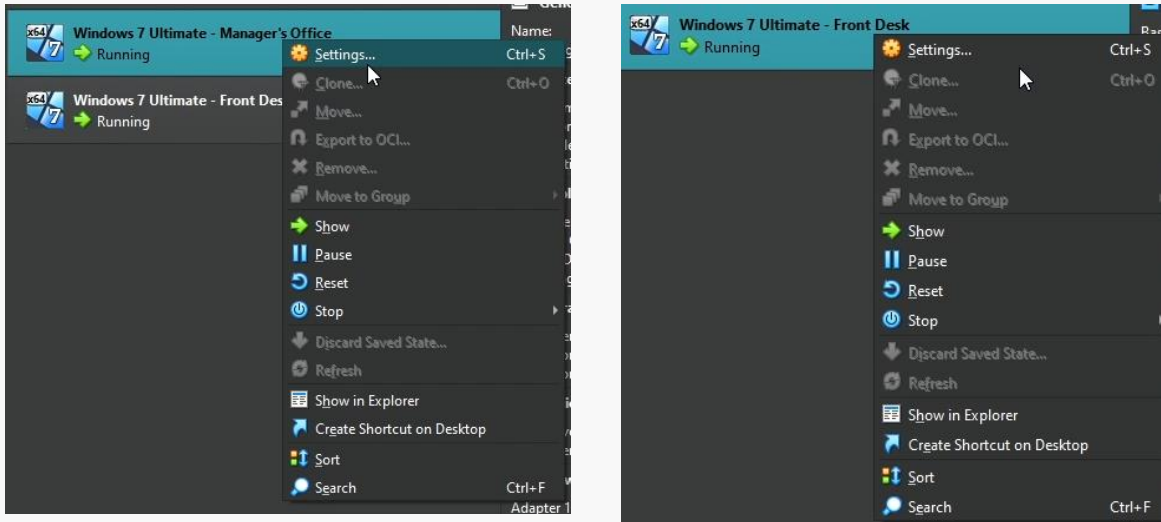


Figure 32: Static IP Configuration — VM Network Settings of Manager's Office and Front Desk

On the Oracle VirtualBox Manager, right-click Windows 7 Ultimate Manager's Office and Front Desk, and click on Settings.

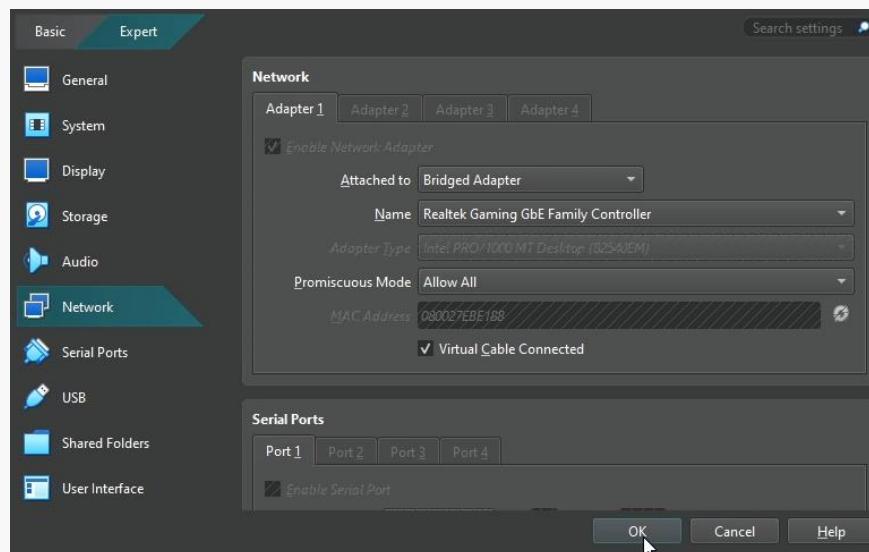


Figure 33: Static IP Configuration — Changing NAT to Bridge Adapter and Allow All in Promiscuous Mode

Navigate to Network on both client PCs, change Attach To NAT to Bridge Adapter and Allow All in Promiscuous Mode and click OK.

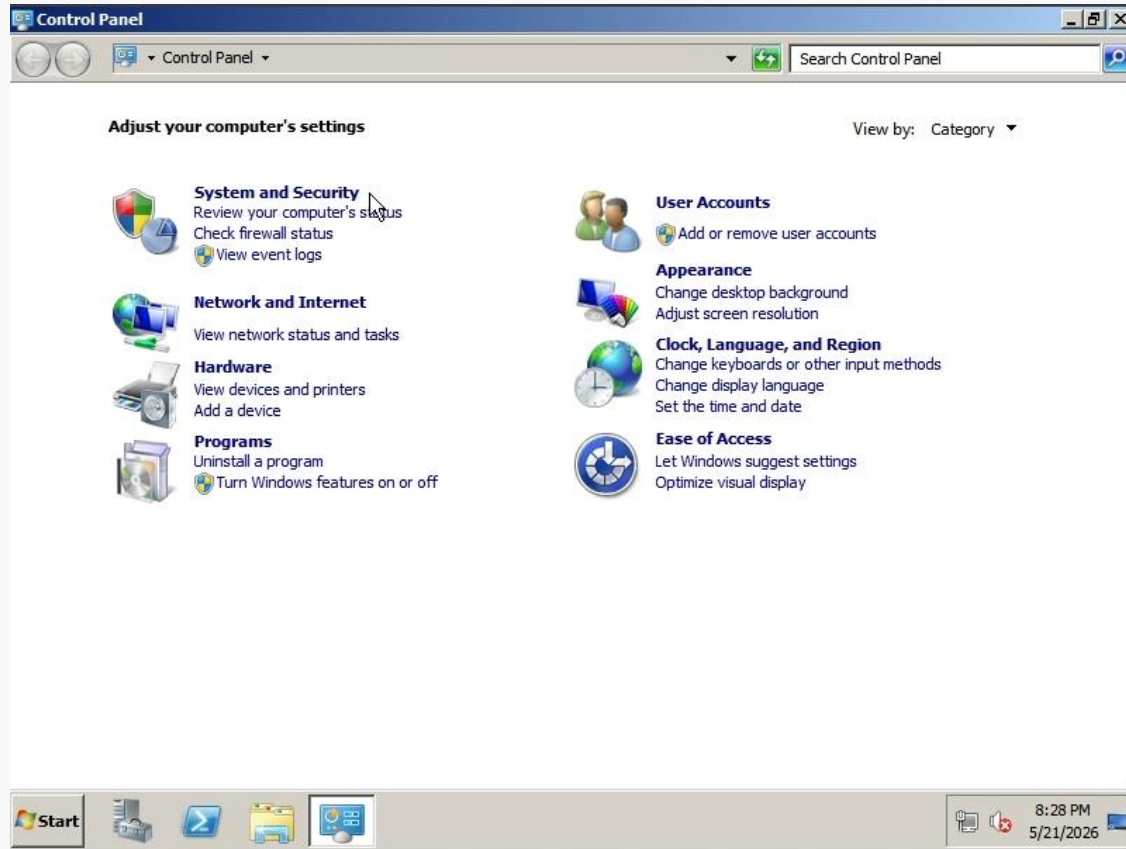


Figure 34: Static IP Configuration — Navigating to Control Panel for IP Configuration

Click on the Start Menu with the Windows Logo on it, and on the search bar type in Control Panel, and after Typing Control panel you will be presented the UI of the Control Panel, Click on View network status and task to proceed.

Control Panel Home
[Change adapter settings](#)
 Change advanced sharing settings

Figure 35: Static IP Configuration — Change adapter settings

On your left side of the control panel, find Change adapter Settings, and click.



Figure 36: Static IP Configuration — Properties of the Windows Server Network

Right click on Local Area Network, and select Properties.

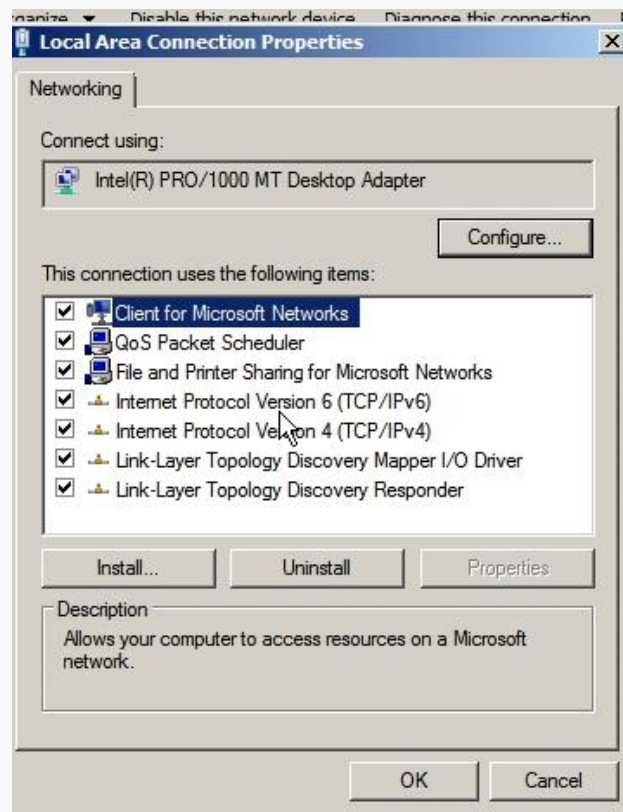


Figure 37: Static IP Configuration — Windows Server IPv4 Properties

At the Local Area Connection Properties, navigate to the Internet Protocol (TCP/IPv4) and click on it.

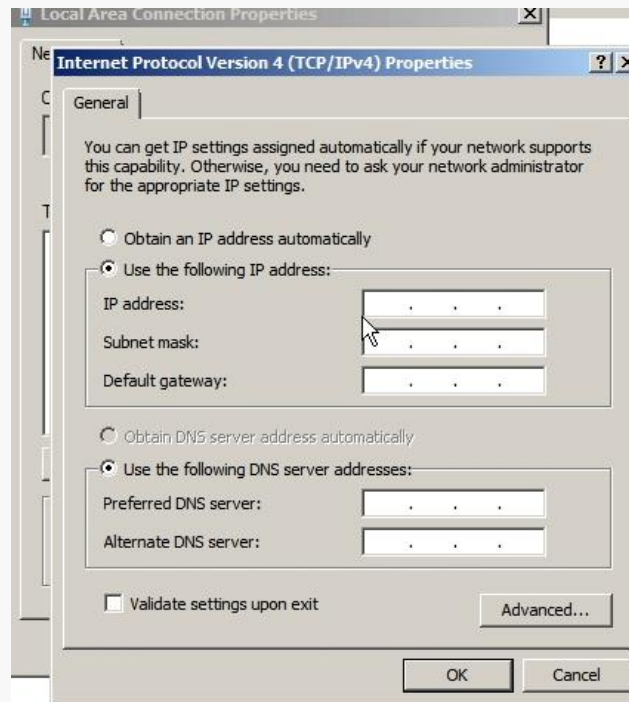


Figure 38: Static IP Configuration — Setting up Static IP for Windows Server

Select “Use the following IP Address” since we are doing Static IP Configuration. We will use the following static IP addresses on the table below.

	IP Address	Subnet Mask	Default Gateway	Preferred DNS Serer
IT Admin	192.168.5.10	255.255.255.0	192.168.5.1	192.168.5.10
Paul - Manager's Office	192.168.5.20	255.255.255.0	192.168.5.1	192.168.5.10
Marsha - Front Desk	192.168.5.30	255.255.255.0	192.168.5.1	192.168.5.10

Figure 39: Static IP Configuration — The Static IP Table

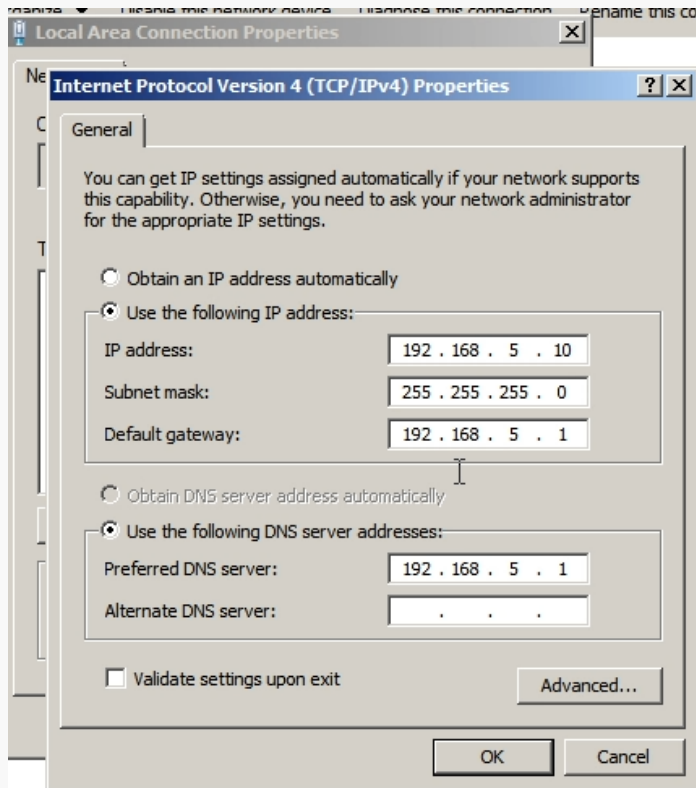


Figure 40: Static IP Configuration — Static IP Configuration on the Windows Server

For the Windows Server, we used the IP Address 192.168.5.10, for the Subnet Mask we used 255.255.255.0, for the Default Gateway we used 192.168.5.1, and for the Preferred DNS server we used 192.168.5.10. After setting up the static IP, click OK.



Figure 41: Static IP Configuration — Static IP Configuration on Windows 7 Ultimate - Manager's Office

In your Windows 7 Ultimate - Manager's Office, click on the Start Menu, and on the search bar, type in the Control Panel and click on it.



Figure 42: Static IP Configuration — View network status and task

On your Control Panel, Click on view network status and task.

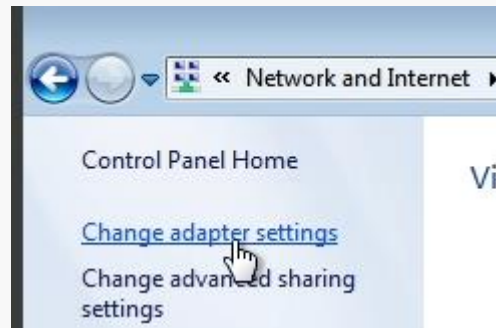


Figure 43: Static IP Configuration — Change Adapter Settings

Navigate to the left side of the control panel and select Change adapter settings.

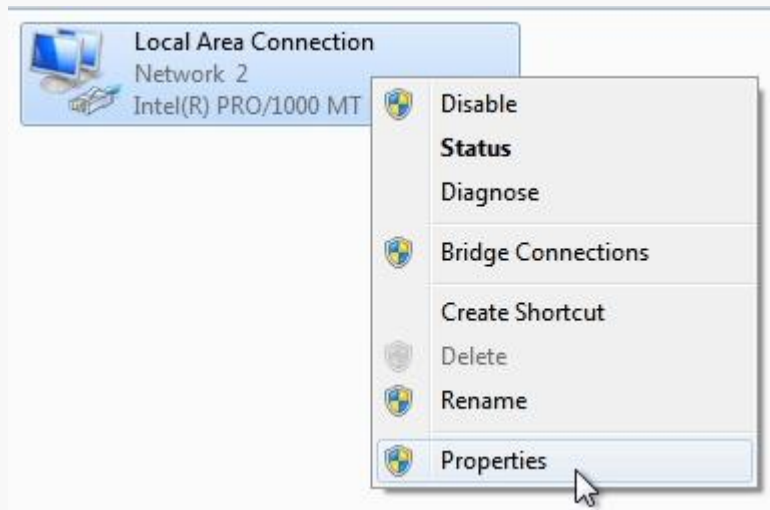


Figure 44: Static IP Configuration — LAN Properties

Right click on Local Area Connection, and choose Properties.

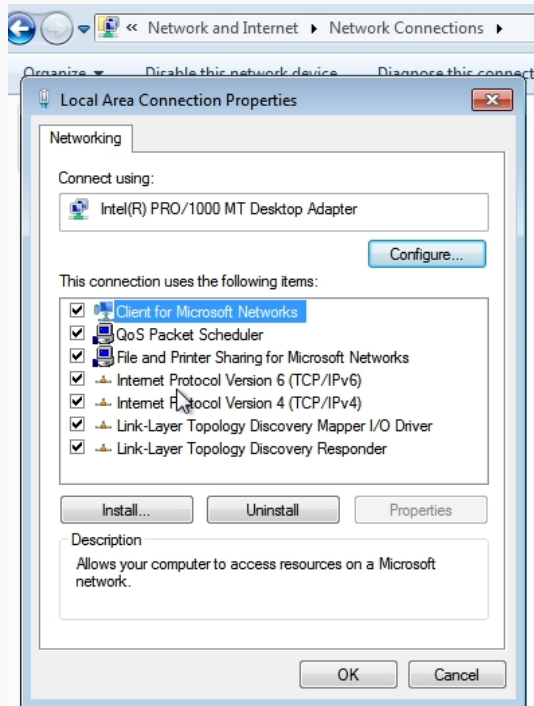


Figure 45: Static IP Configuration — Local Area Connection Properties

At the Local Area Connection Properties, navigate and choose Internet Protocol Version 4(TCP/IPv4).

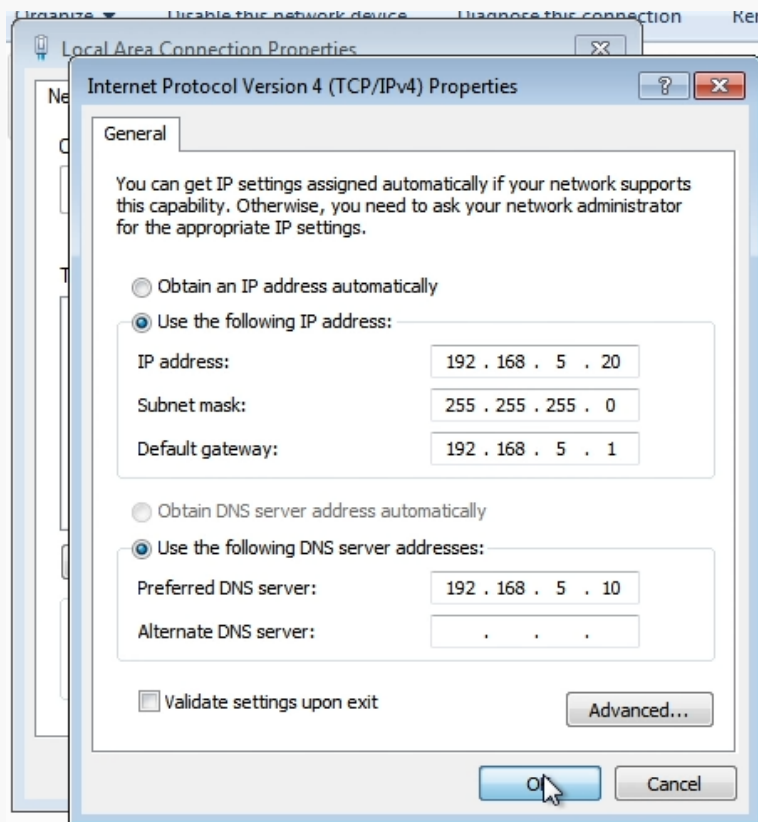


Figure 46: Static IP Configuration — Static IP Configuration for Client Manager's Office

Click on Use the following IP address to set the IP address to Static and at the IP Address type in 192.168.5.20, for the Subnet Mask use 255.255.255.0, for the Default Gateway, use 192.168.5.1 and on the Preferred DNS Server, use 192.168.5.10. And after configuring the IP address for the Manager's Office click OK to confirm the configuration.



Figure 47: Static IP Configuration — Static IP Configuration for Client Front Desk

In your Windows 7 Ultimate -Front Desk, click on the Start Menu, and on the search bar, type in the Control Panel and click on it.



Figure 48: Static IP Configuration — View Network Status and task

On your Control Panel, Click on view network status and task.

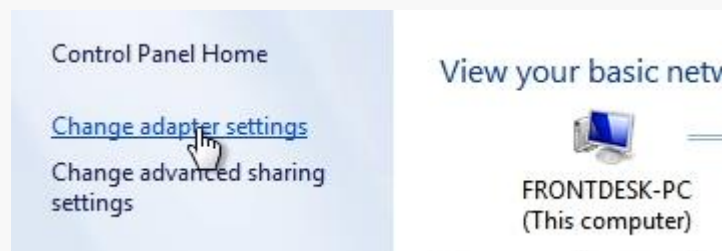


Figure 49: Static IP Configuration — Change adapter settings

Navigate to your left side of the control panel and click “Change adapter settings”.

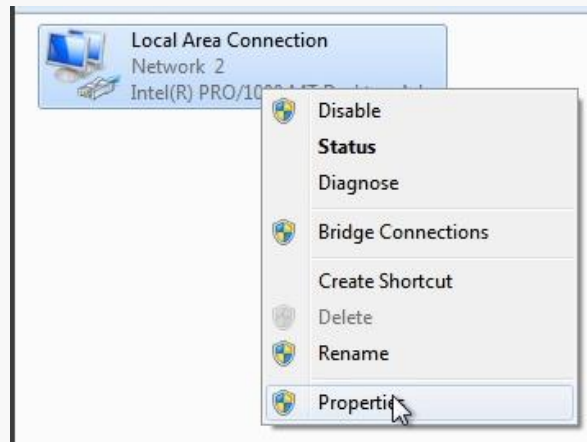


Figure 50: Static IP Configuration — Properties

Right click Local Area Connection and click on Properties.

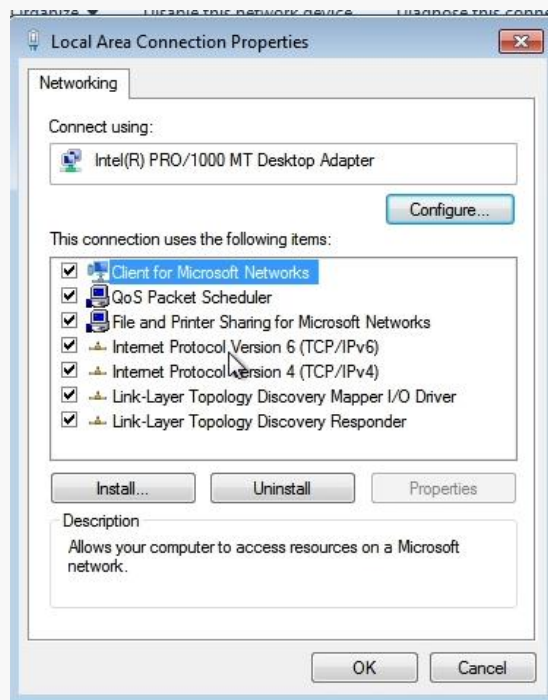


Figure 51: Static IP Configuration — IPv4 Properties of Front Desk PC

At the Local Area Connection Properties, go to Internet Protocol Version 4 and click on it.

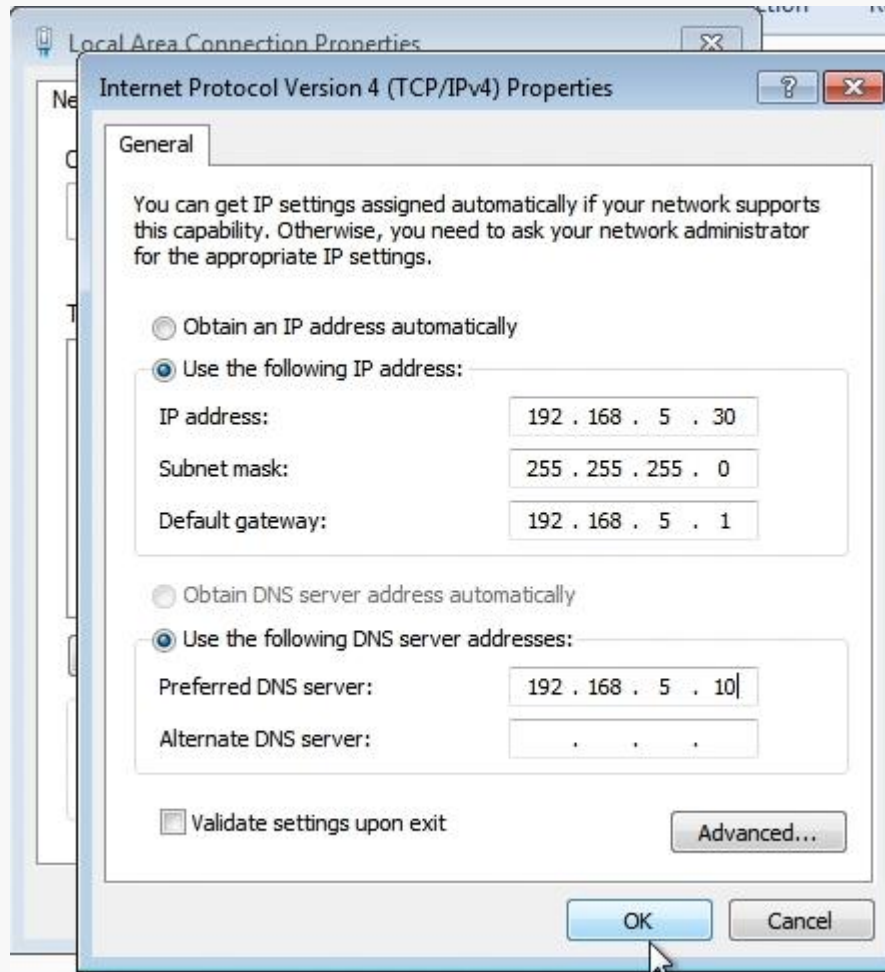


Figure 52: Static IP Configuration — Static IP Configuration for Front Desk

Click on Use the following IP address to set the IP address to Static and at the IP Address type in 192.168.5.30, for the Subnet Mask use 255.255.255.0, for the Default Gateway, use 192.168.5.1 and on the Preferred DNS Server, use 192.168.5.10. And after configuring the IP address for the Front Desk click OK to confirm the configuration.

**See Testing and Validation for Static IP Configuration Test Pings*

5.4 AD DS Setup

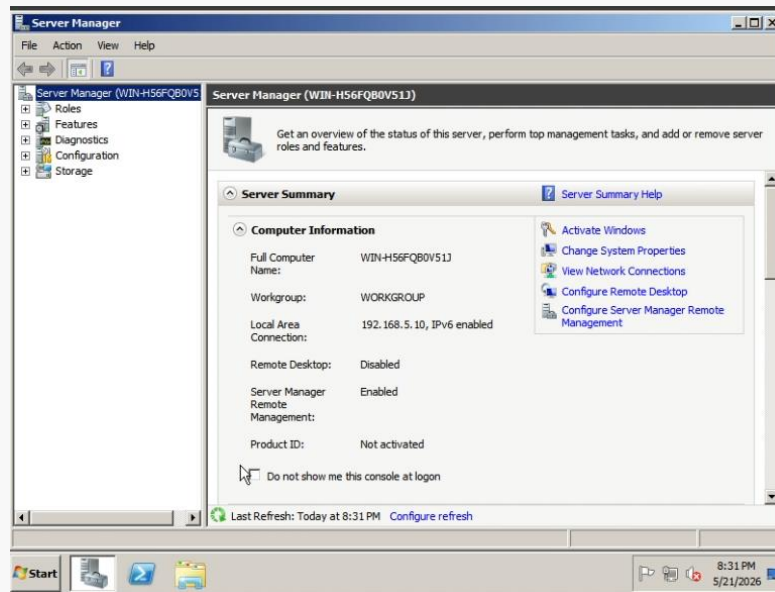


Figure 53: AD DS Setup — Server Manager at Windows Server

At your Windows Server PC, go to Server Manager, and at the left side of your screen click on Roles.

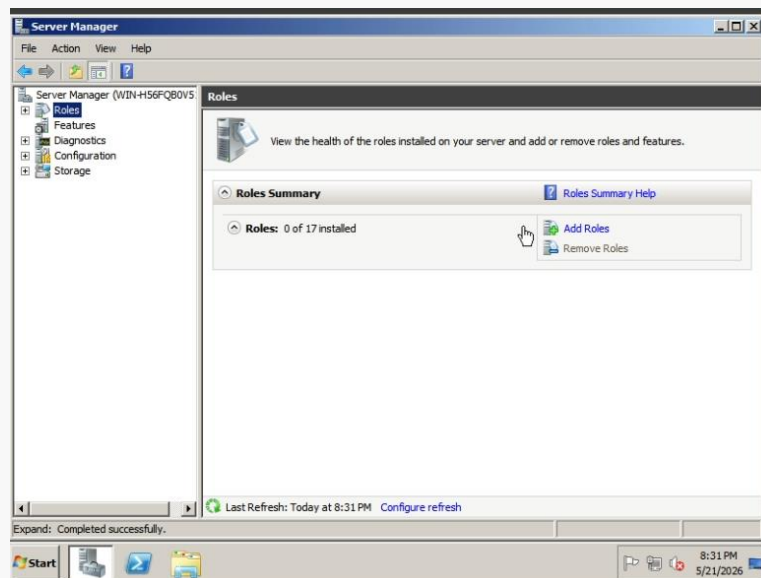


Figure 54: AD DS Setup — Add Roles

And to your right side, you will see Add Roles, Click on it to start the installation of server components.

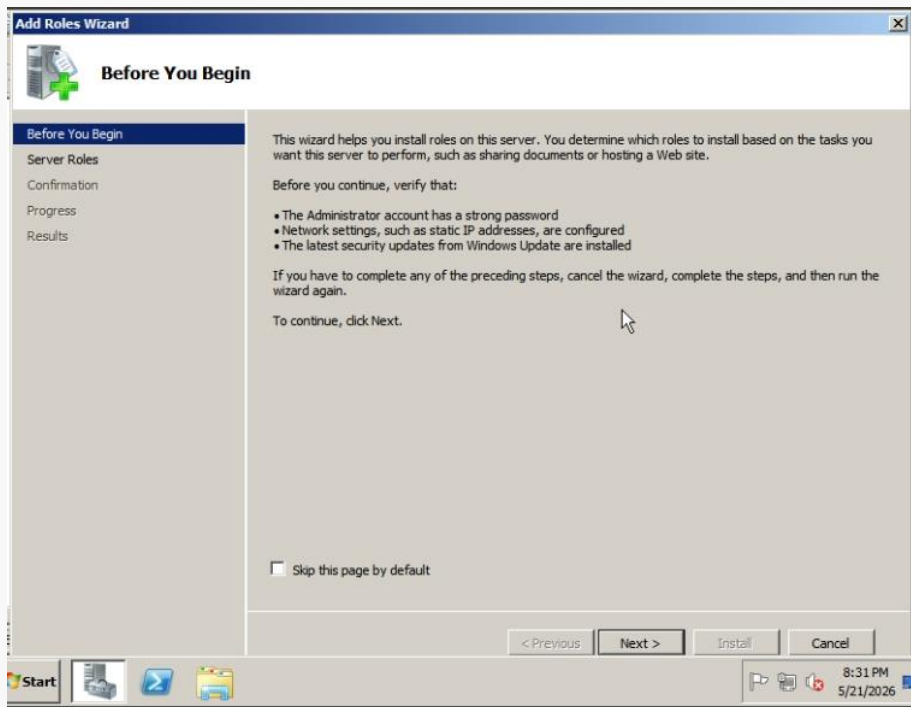


Figure 55: AD DS Setup — Add Roles Installation Wizard

After clicking “Add Roles, you will see a Wizard Installer for Adding Roles, you can skip the page by default or just click next.

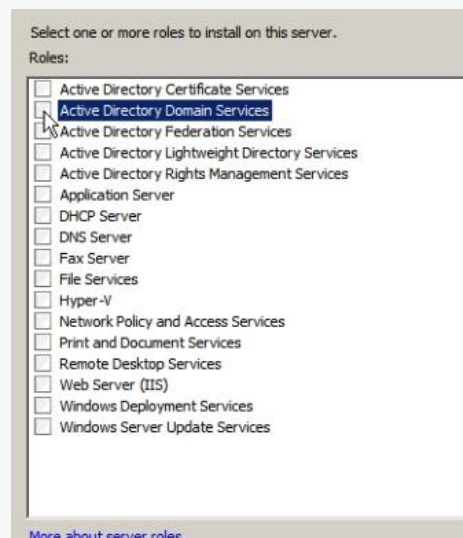


Figure 56: AD DS Setup — Select AD DS

In Selecting Server Roles, navigate to “Active Directory Domain Services to install.

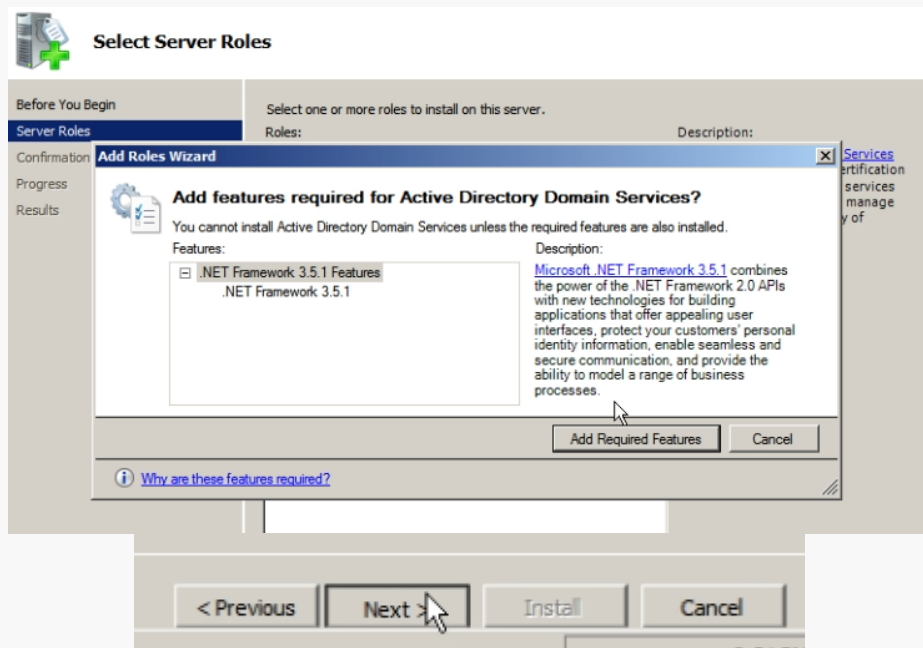


Figure 57: AD DS Setup — Adding required features for AD DS

After clicking AD DS, it will ask you to add the required features. Press “Add Required Features” to proceed. After that, click Next to proceed for the installation.

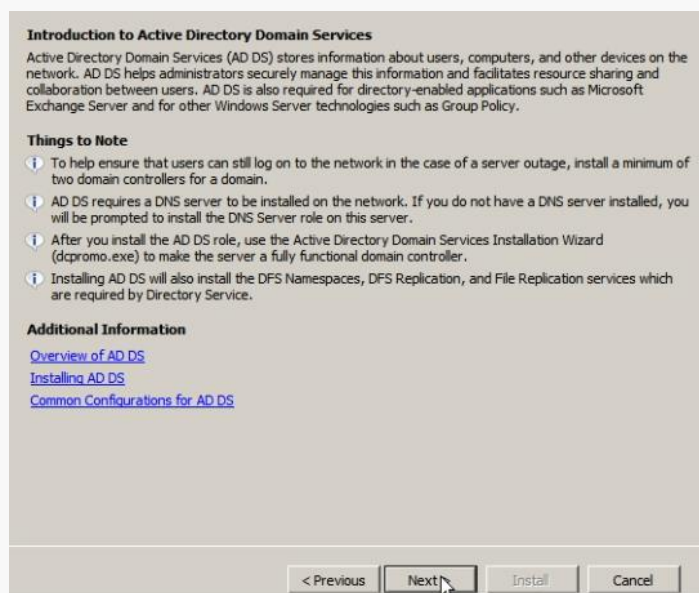


Figure 58: AD DS Setup — Introduction to AD DS

After reading those, click next.

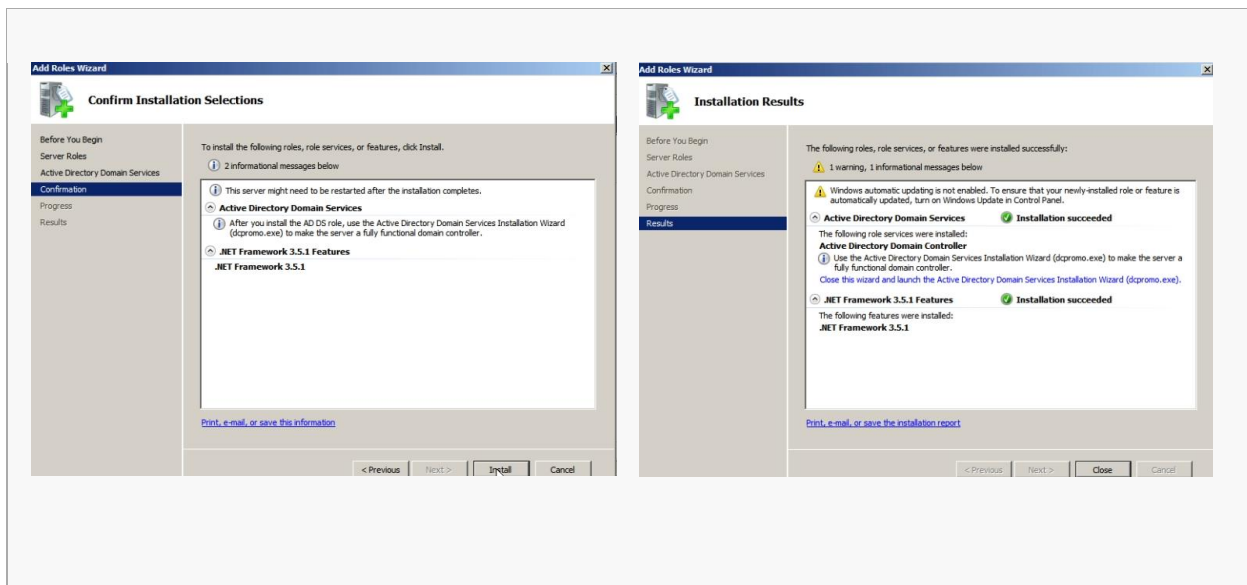


Figure 59: AD DS Setup — Confirming Installation and Installation Results

After confirming Installation Selections, click install. And wait for it to finish installing. After installing it, the Installation results will pop-up show that the installation of the AD DS is successful.

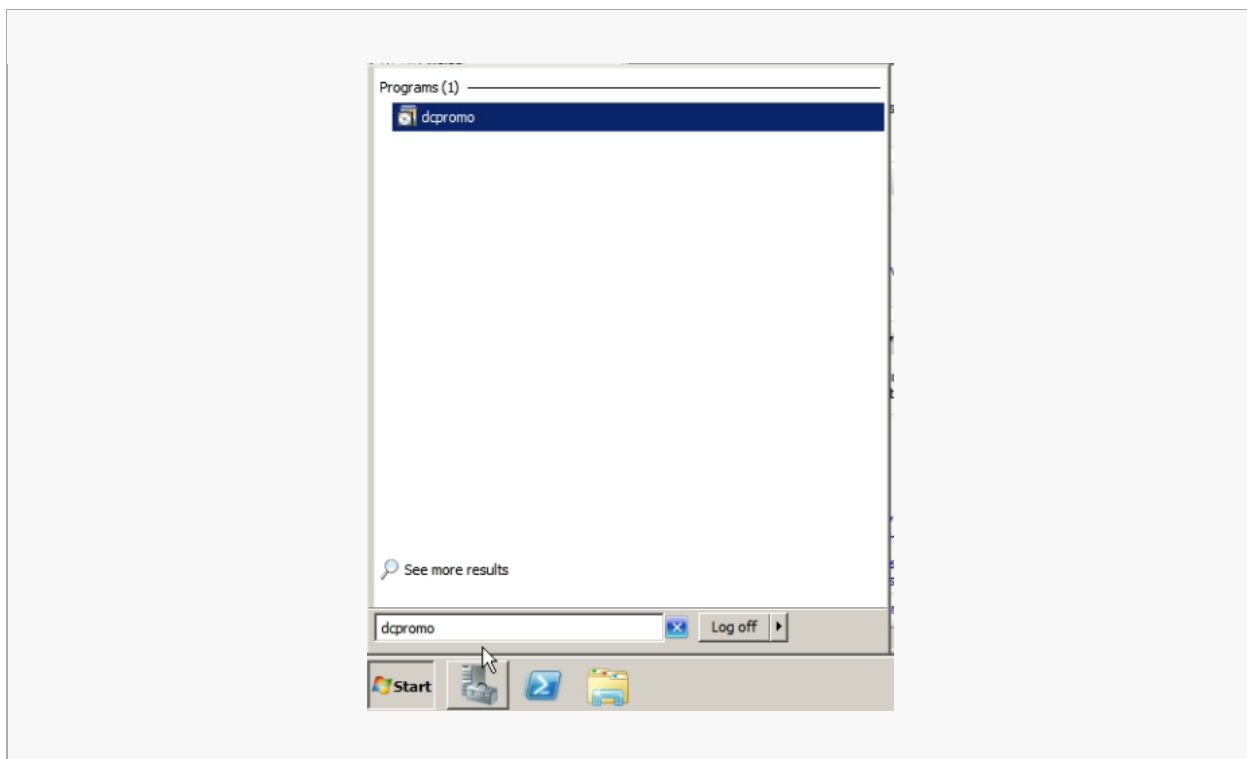


Figure 60: AD DS Setup — dcpromo

After installing AD DS, go to your start menu and type on the search bar “dcpromo” and click enter.



Figure 61: AD DS Setup — AD DS Installation Wizard

After entering “dcpromo” you will see the Active Directory Domain Services Installation Wizard, This is where you make the Server an Active Directory Domain Controller. Now click next to proceed.

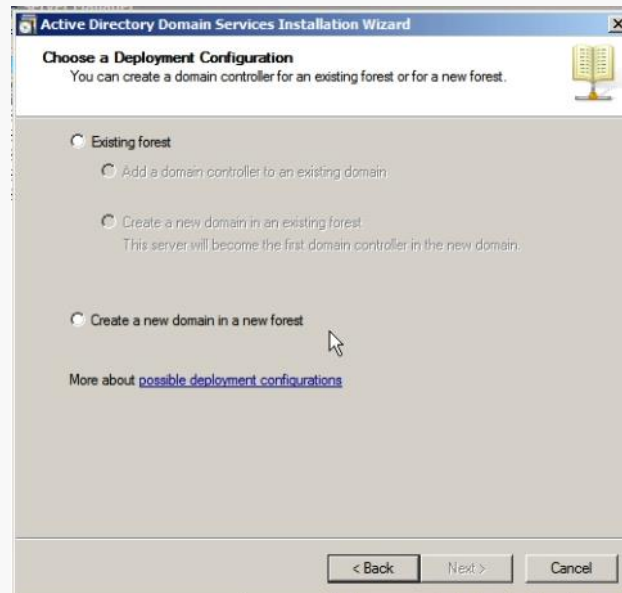


Figure 62: AD DS Setup — Choosing Deployment Configuration

Here we are given 2 choices, click on “Create a New Domain In a New Forest” and click next.

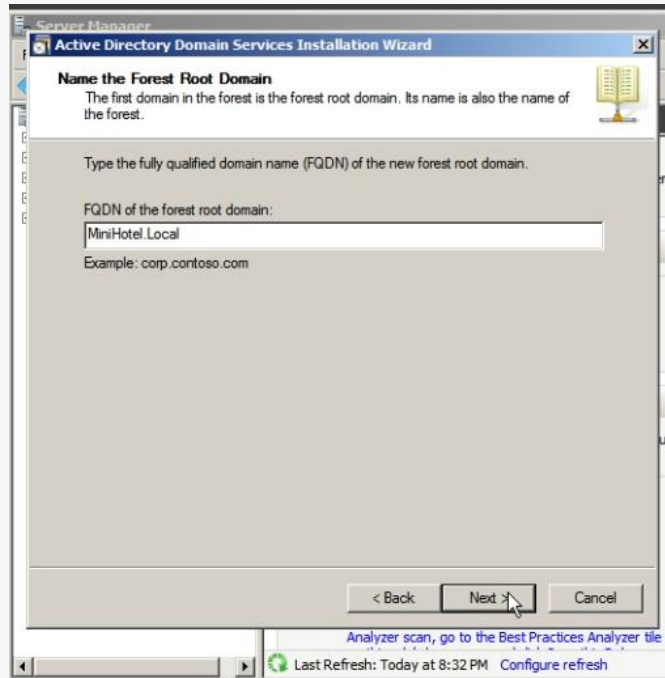


Figure 63: AD DS Setup — Naming the Forest Root Domain

Here we are going to create our Forest Root Domain. We must type the full domain name for our new forest root domain. Here in this figure, we assigned our Domain Name as “MiniHotel.Local” with CamelCasing. After typing the name of our domain, click Next. When clicking next it will check whether the new forest name is already in use. In our case, it is not since it is a fresh install of Windows Server.

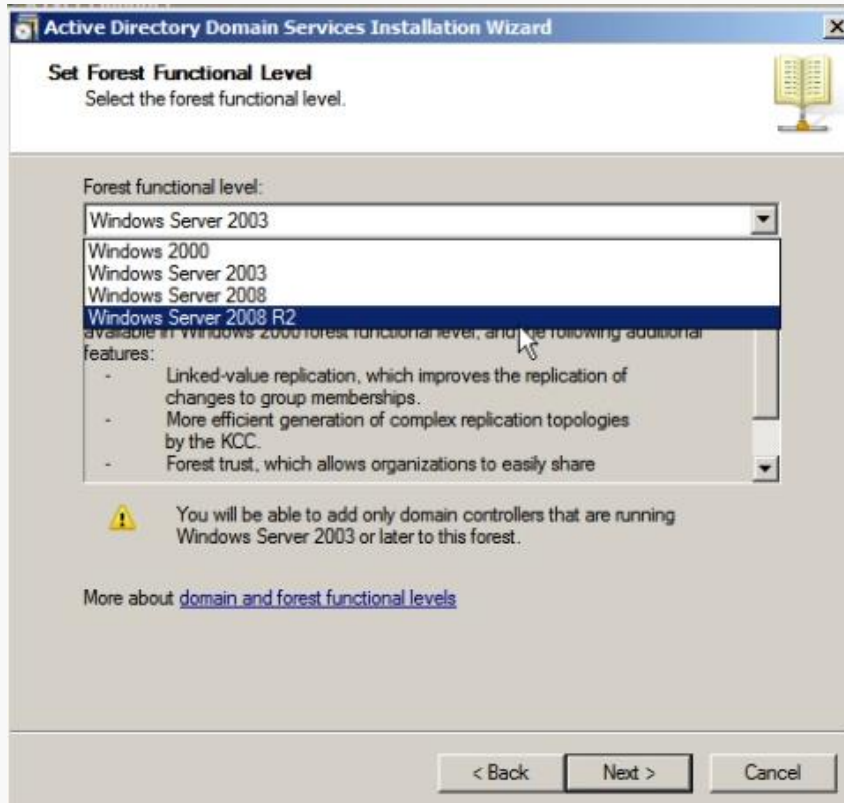


Figure 64: AD DS Setup — Setting Forest Functional Level

After checking if the domain name is not taken yet, it will bring us to Set the Forest Functional Level. By default it is Windows Server 2003, but we must change it to Windows Server 2008 R2 since it is compatible with our current OS System. After that, click Next.

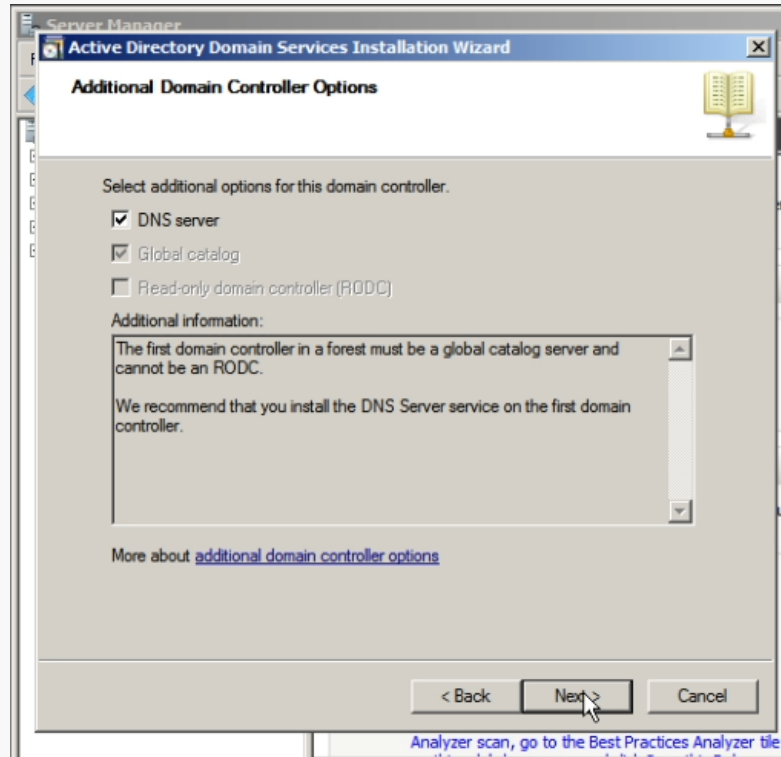


Figure 65: AD DS Setup — Adding Additional Domain Controller Options

After choosing the Forest Functional Level, in the Additional Domain Controller Options, we see that the DNS Server and Global Catalog is checked defaultly, just click Next to proceed. And it will start examining it, waiting for it to finish.

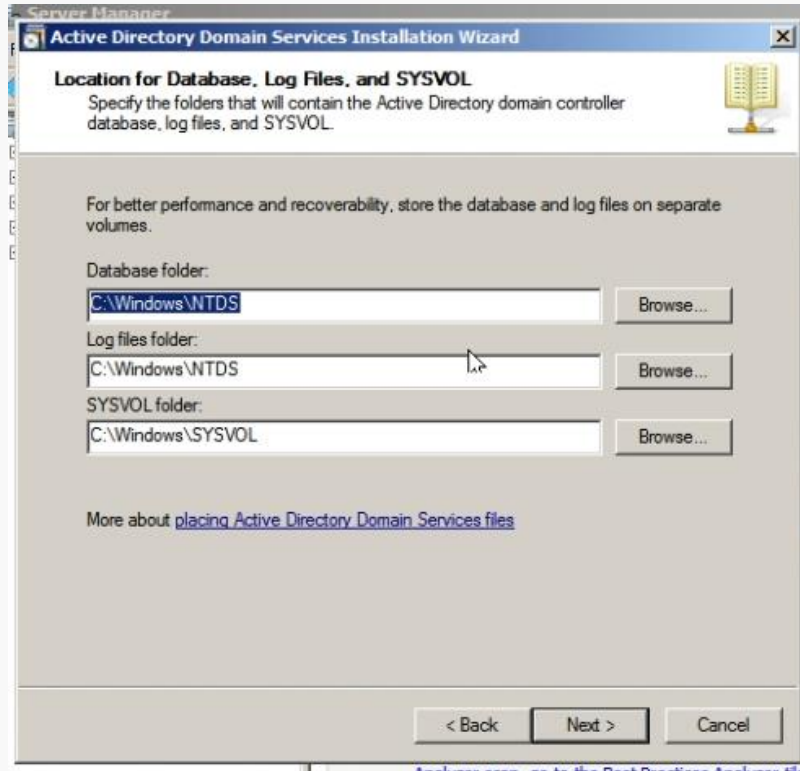


Figure 66: AD DS Setup — Location for Database, Log Files, and SYSVOL

After it's finished examining the contents, we are prompted to confirm the location of the Database Folder, Log Files Folder, and the SYSVOL Folder. After confirming, click next.

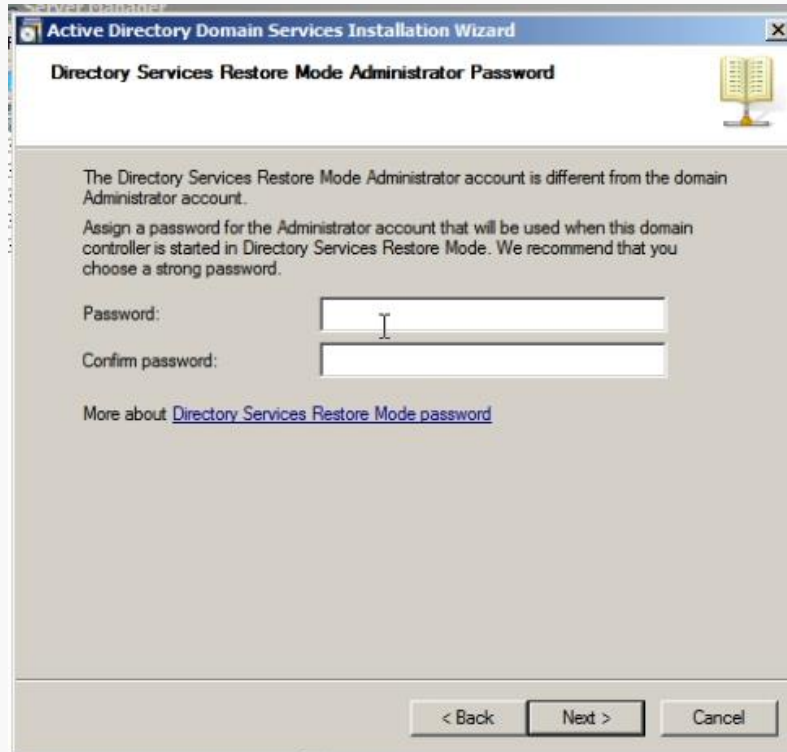


Figure 67: AD DS Setup — Directory Services Restore Mode Administrator Password

Here we are now prompted to the Directory Service Restore Mode Administrator password. This is different from the domain Administrator account. The DSRM Administrator is a local fallback account used exclusively to repair or recover a corrupted Active Directory (AD) database. Type in a strong password to protect the DSRM Admin just in case of any emergency. After that, click next.

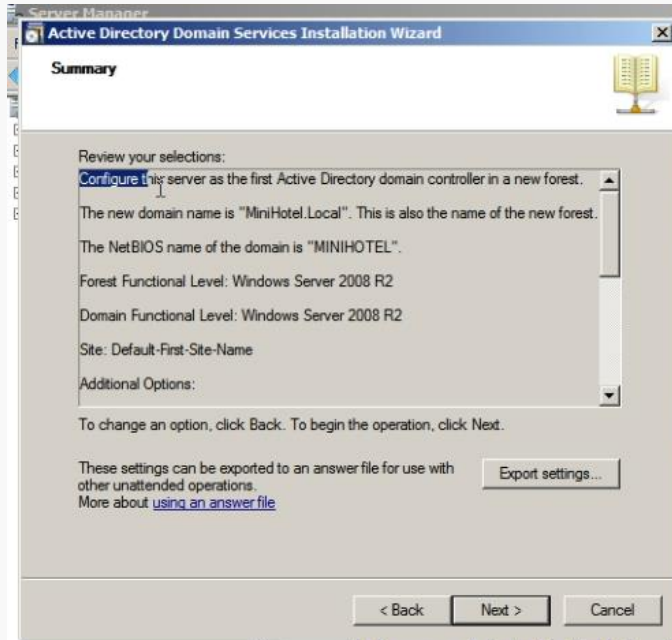


Figure 68: AD DS Setup — Summary of the Installation

After reviewing the installation summary, click on Next to proceed for the installation.

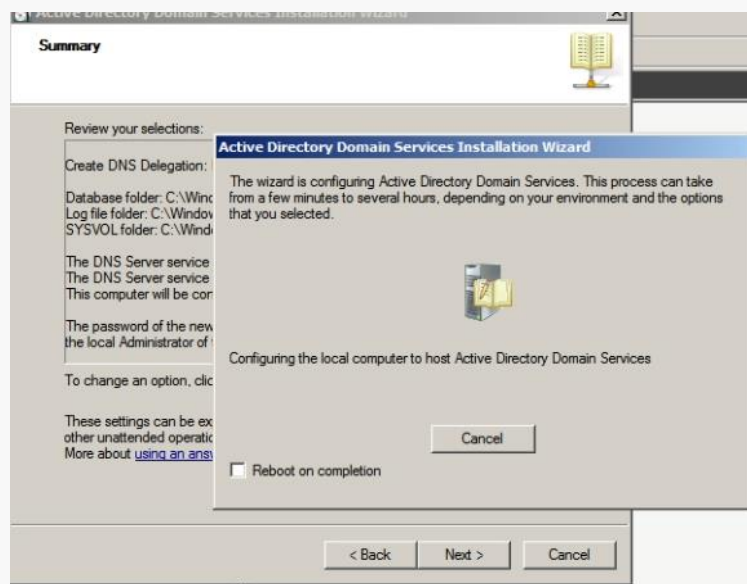


Figure 69: AD DS Setup — AD DS Installation Wizard configuring the AD DS Configuration

Wait for the AD DS Installation Wizard to complete. And do not forget to check “Reboot on completion”.

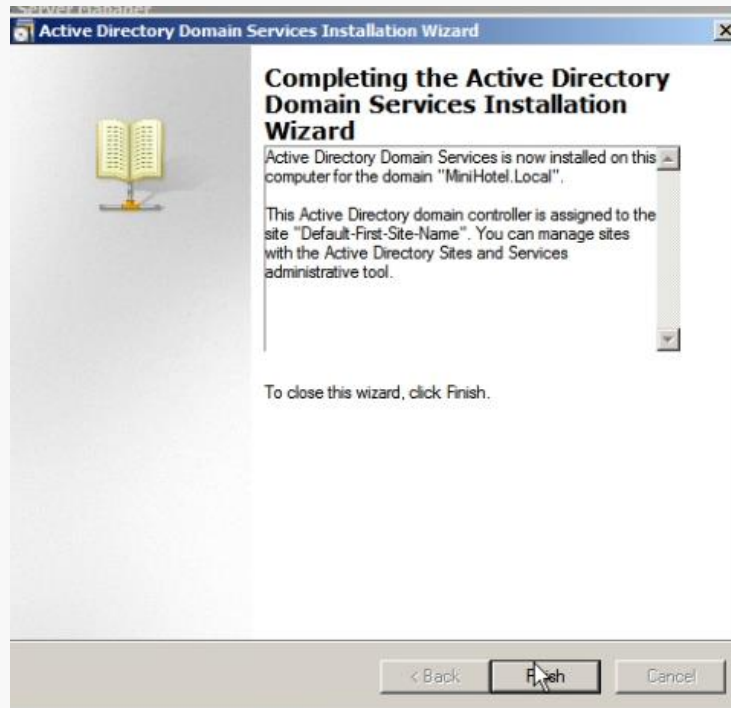


Figure 70:AD DS Setup — AD DS Installation is Complete

After successfully installing AD DS, click finish and wait for your PC to Restart.

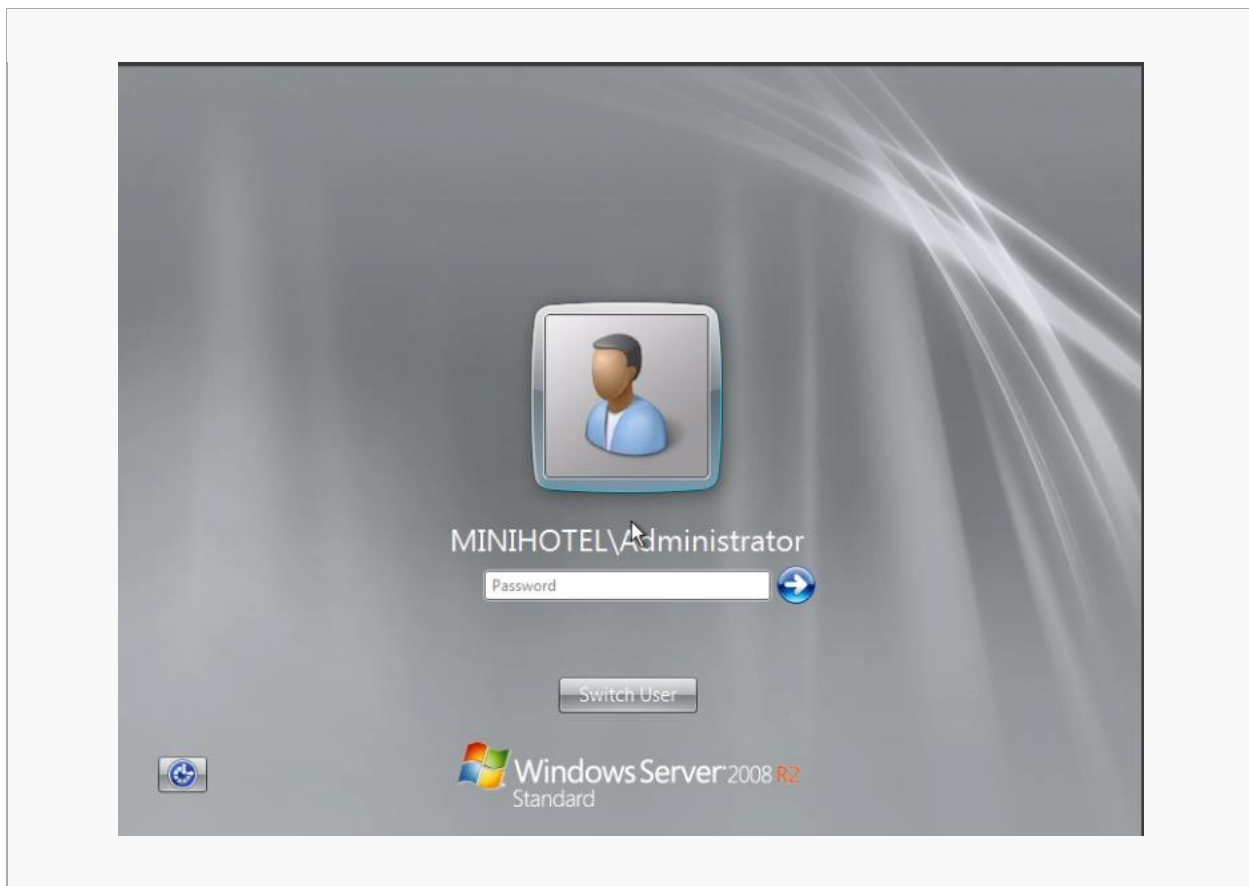


Figure 71: AD DS Setup — Logging in to your Administrator account after restarting

After restarting you are prompted to login, still use your SAME PASSWORD ON YOUR INITIAL SETUP DURING THE INSTALLATION OF THE OS to login to you Administrator account. Congratulations you have now successfully installed AD DS in your server now to check it.

5.5 DNS Setup

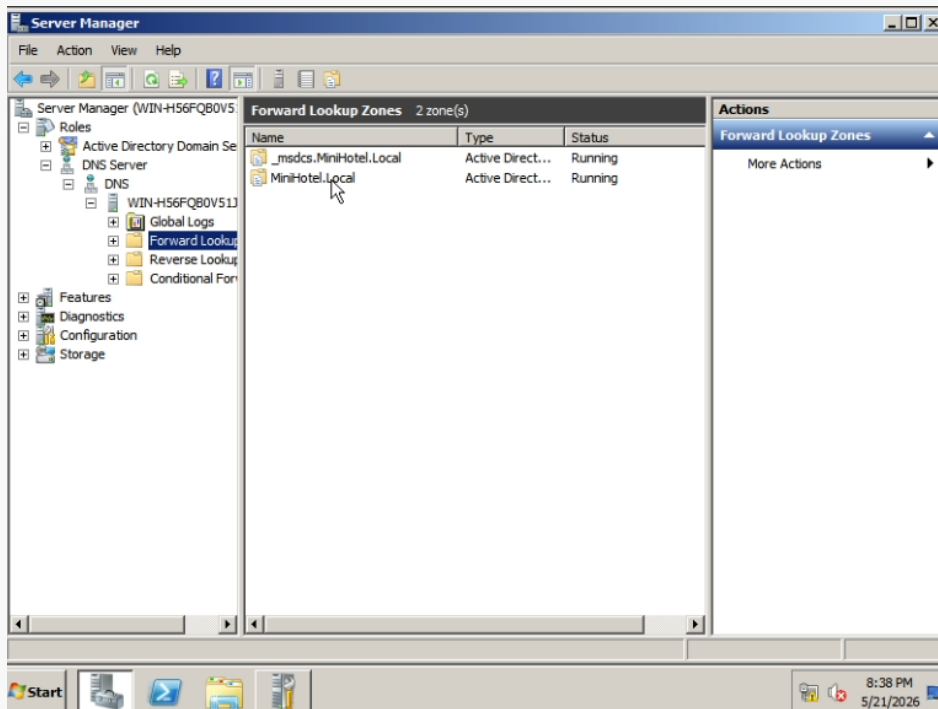
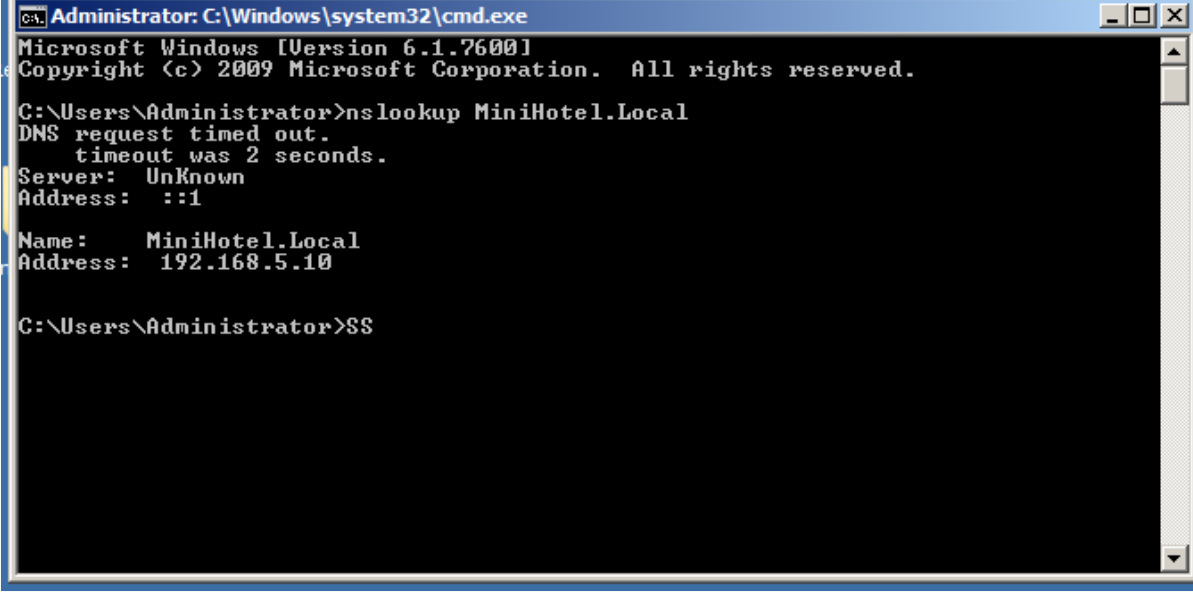


Figure 72: DNS Setup — Checking DNS if it's in the Forward Lookup Zones

To check that the DNS is installed on your server, go to Server Manager, uncollapse Roles, and you will see your DNS server on the right side, now to verify that your domain name is registered too, uncollapse DNS, and uncollapse the Name of your Server mine is WIN-H56FQB0V51J and navigate to Forward Lookup and select it. On your workspace in the middle, you will see 2 Forward lookup zones. This confirms that your DNS is installed successfully.



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>nslookup MiniHotel.Local
DNS request timed out.
    timeout was 2 seconds.
Server:    Unknown
Address:   ::1

Name:      MiniHotel.Local
Address:   192.168.5.10

C:\Users\Administrator>SS
```

Figure 73: DNS Setup — nslookup Test

You can also check the DNS using nslookup. Just go to the start menu and type cmd and press enter. and when you are at the cmd, type nslookup [Your Domain Name] to check.

5.6 DHCP Configuration

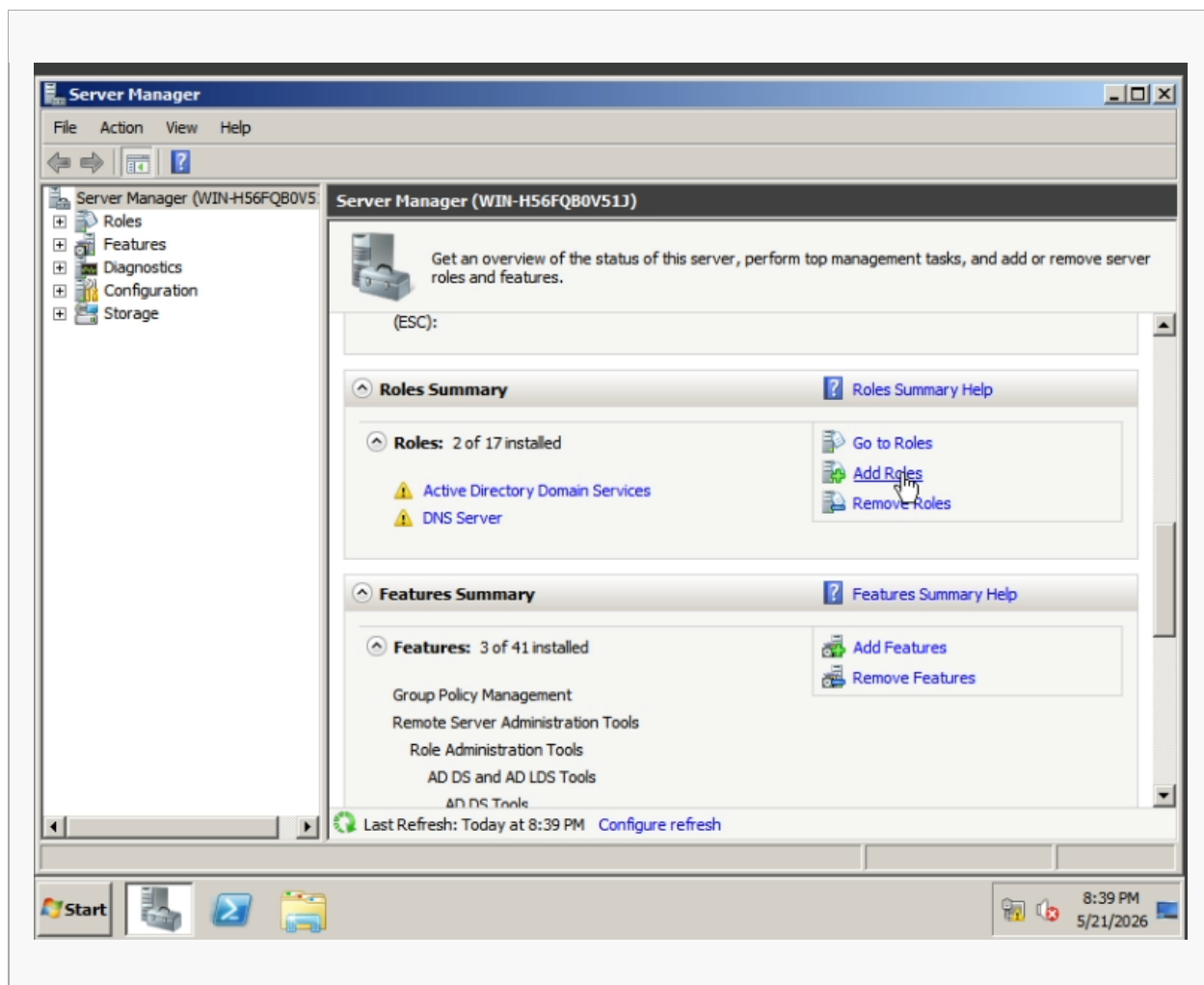


Figure 74: DHCP Configuration — Adding Roles

To install a DHCP server on your Server, go to Server Manager again, and click Roles and click Add Roles.

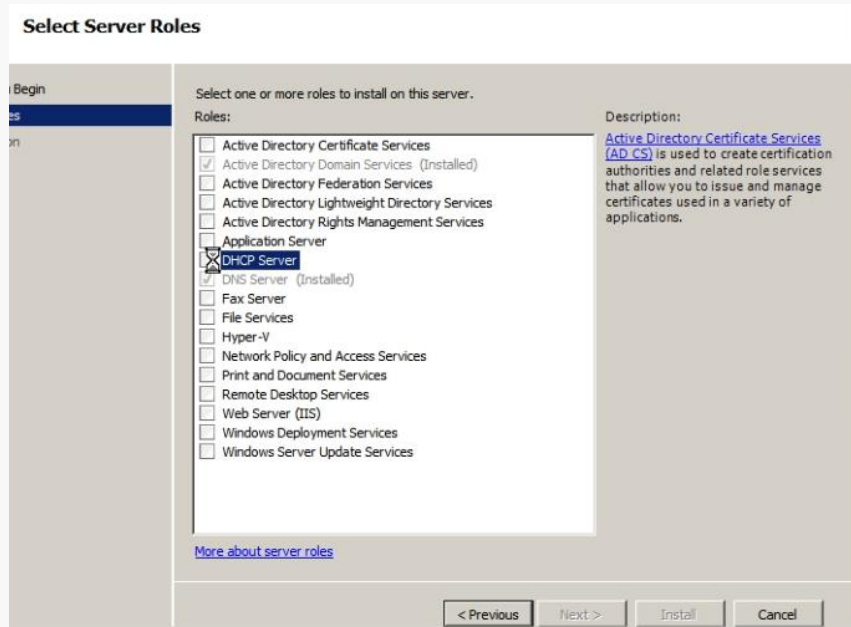


Figure 75: DHCP Configuration — Installing DHCP Server

In the Server Roles Wizard, choose DHCP Server and click next.

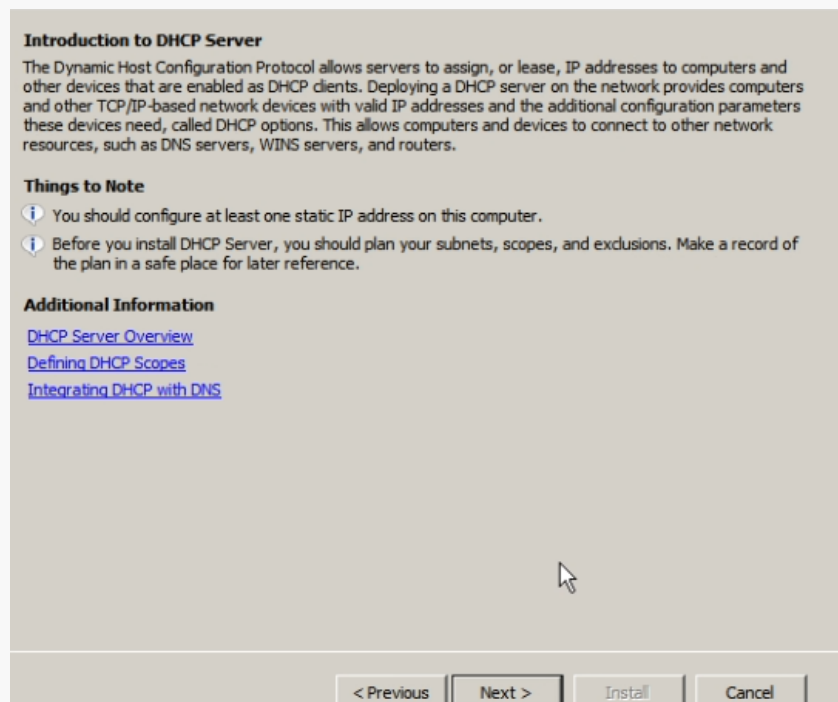


Figure 76: DHCP Configuration — Active Scope and Client Lease

After reading what DHCP Server does, click next.

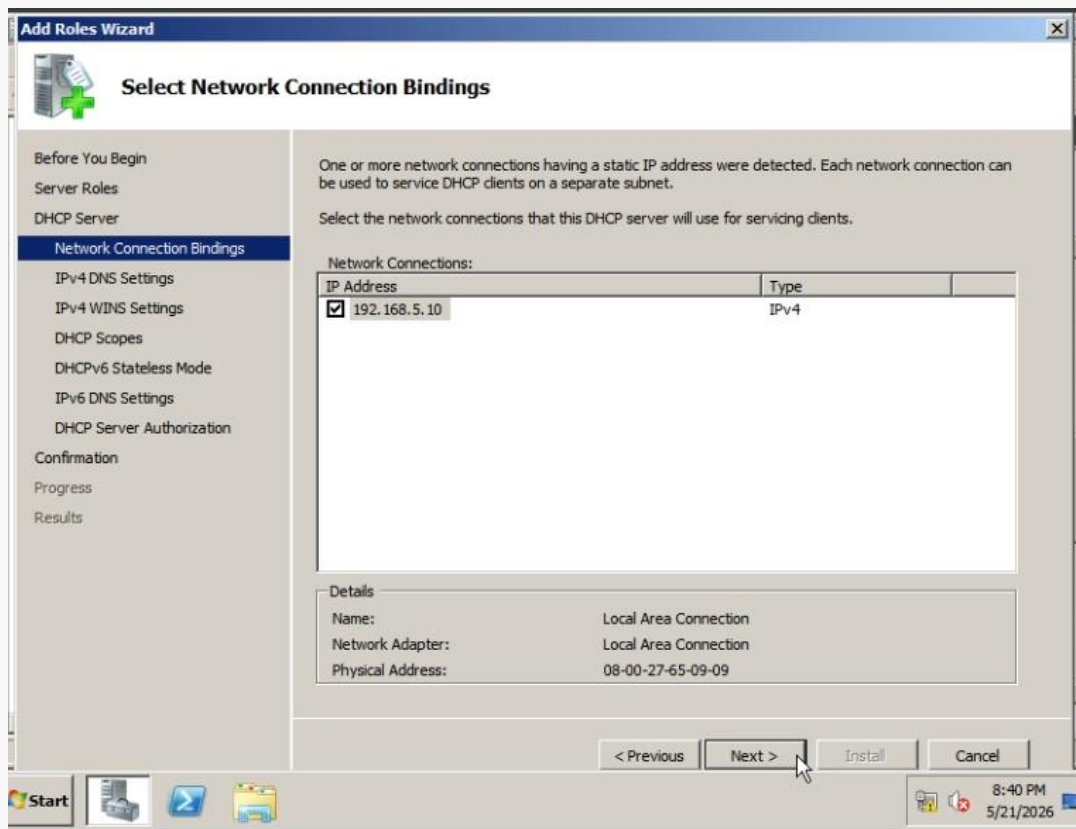


Figure 77: DHCP Configuration — Selecting Network Connection Bindings

After clicking next, you are prompted to Select Network Connection Binding. Your Server IP Address is already selected by default. Just click next.

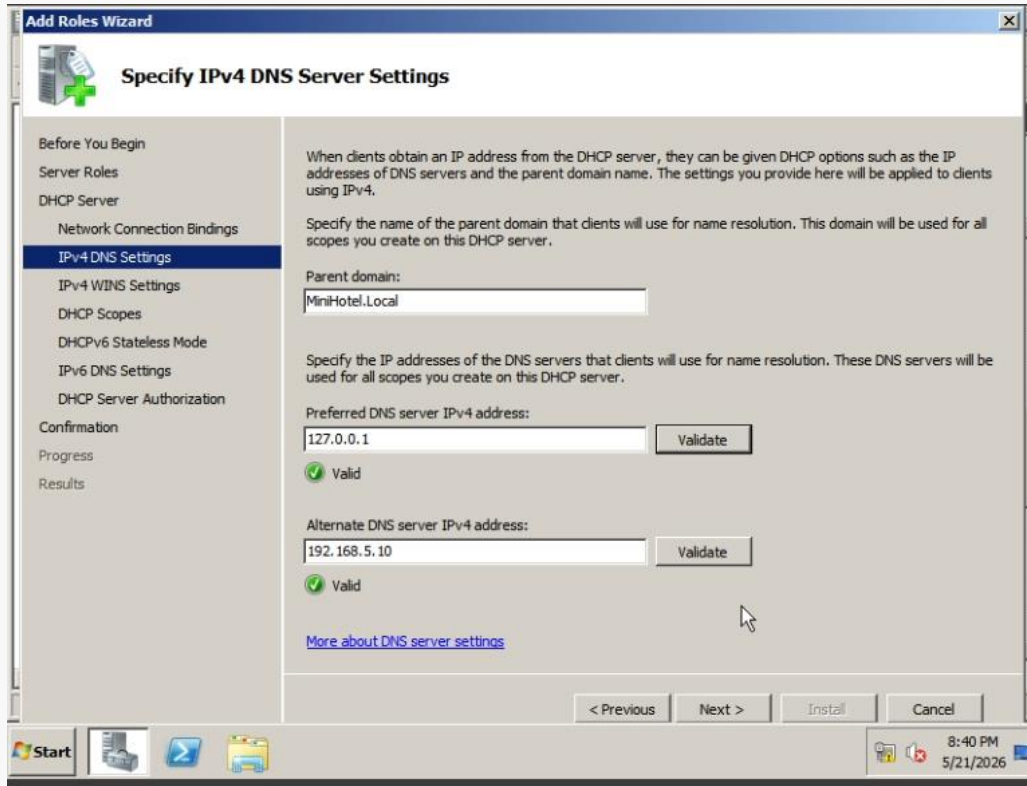


Figure 78: DHCP Configuration — Specifying and Verifying IPv4 DNS Server Setting

After clicking next, you are going to specify the IPv4 DNS Server Setting next. the Preferred DNS Server IPv4 Address and the Alternate DNS Server IPv4 Address should be both valid. The preferred DNS server IPv4 Address has already a default IPv4 of 127.0.0.1 and for the Alternate DNS server IPv4 address, type in 192.168.5.10. Both IPv4 should be valid. After confirming that both IPv4s are valid, click next.

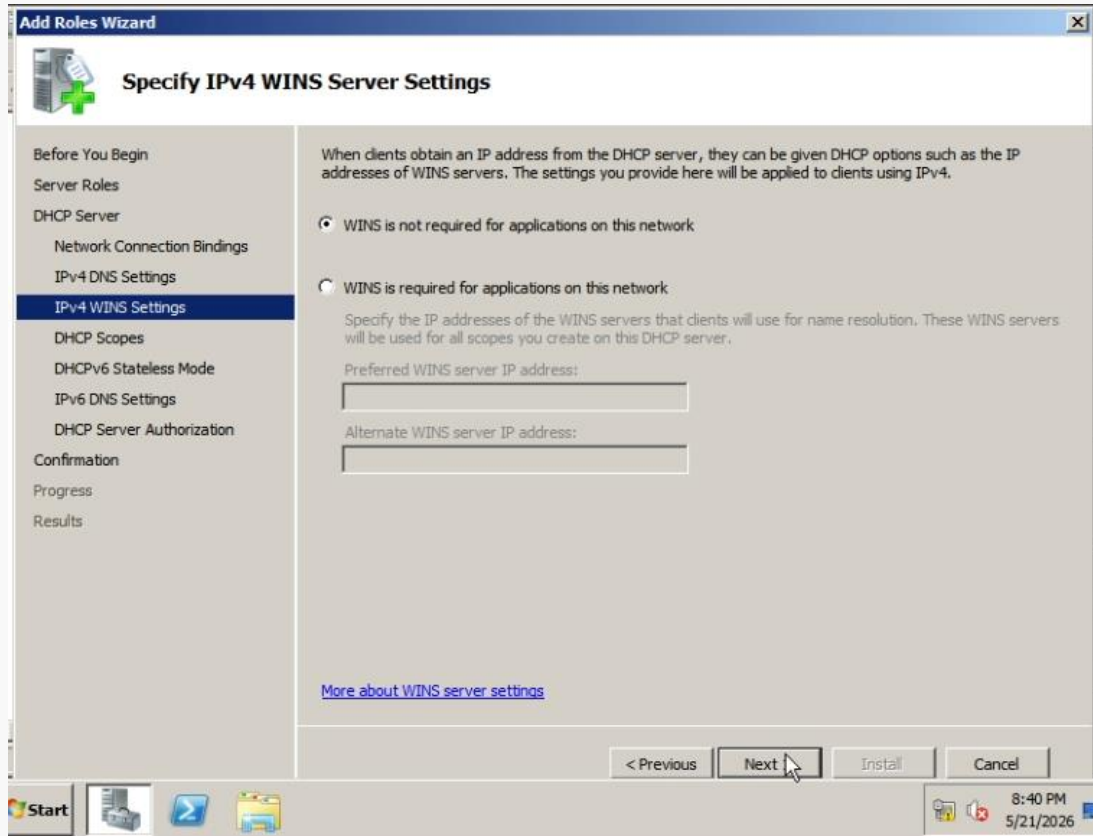


Figure 79: DHCP Configuration —WINS is not Required

After clicking next, you are prompted to specify the IPv4 WINS Server Setting, the “WINS is not required for application on this network” is defaultly selected, just click next.

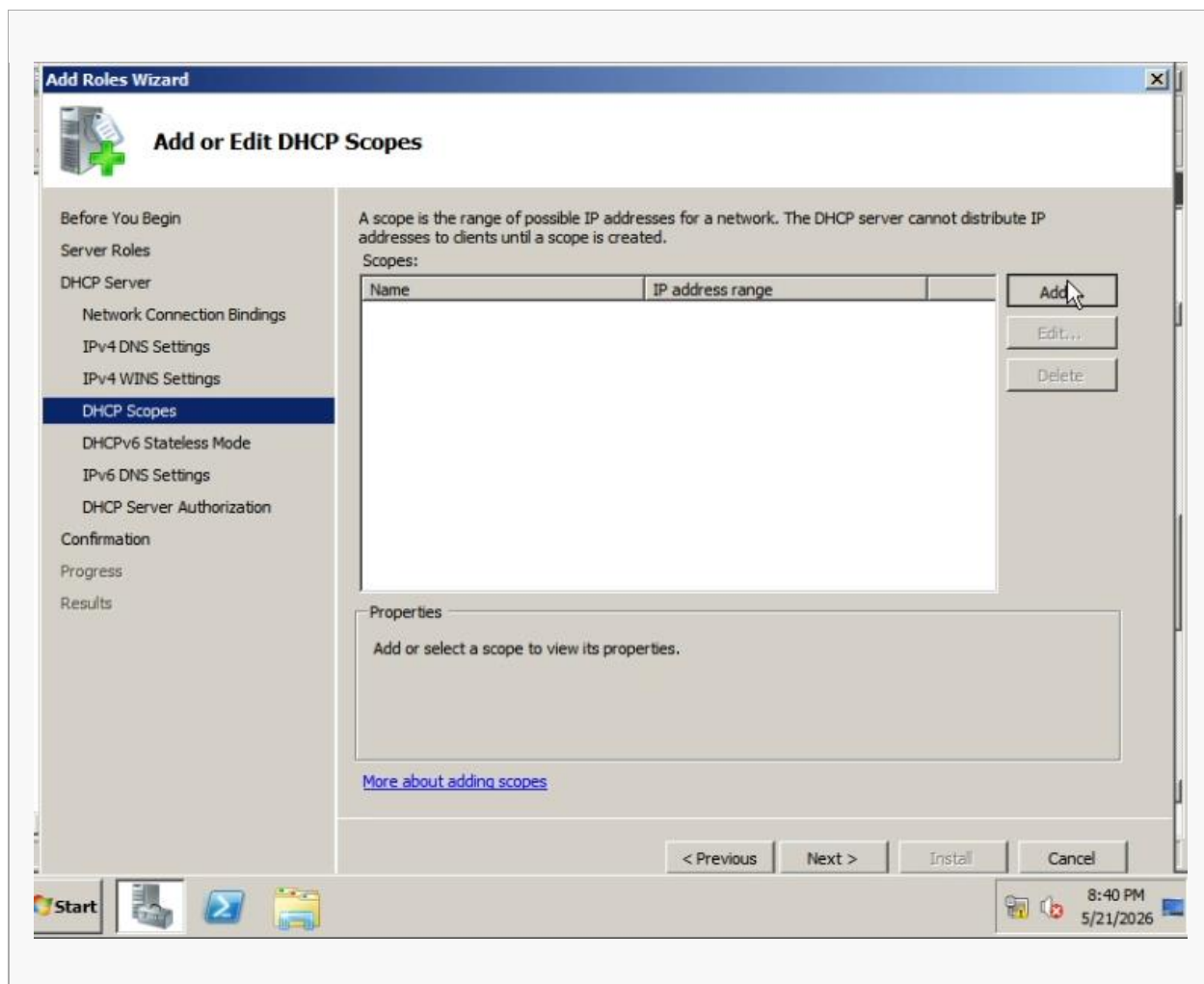


Figure 80: DHCP Configuration — Adding DHCP Pool

After clicking next, you are prompted to Add or Edit DHCP scopes. On the right side of the UI, click Add.

A scope is a range of possible IP addresses for a network. The DHCP server cannot distribute IP addresses to clients until a scope is created.

Configuration settings for DHCP Server

Scope name: Mini Hotel DHCP Pool

Starting IP address: 192.168.5.15

Ending IP address: 192.168.5.100

Subnet type: Wired (lease duration will be 8 days)

☒ Activate this scope

Configuration settings that propagate to DHCP client

Subnet mask: 255.255.255.0

Default gateway (optional):

OK Cancel

Figure 81: DHCP Configuration — Adding Scopes

After pressing add scope, we are prompted to configure some settings for the DHCP Server. For the scope name we typed in Mini Hotel DHCP Pool, in the Starting IP Address, we put 192.168.5.15, and on the ending IP address we typed 192.168.5.100. Subnet type is set to wired. After configuring the scope settings, click on OK and NEXT.

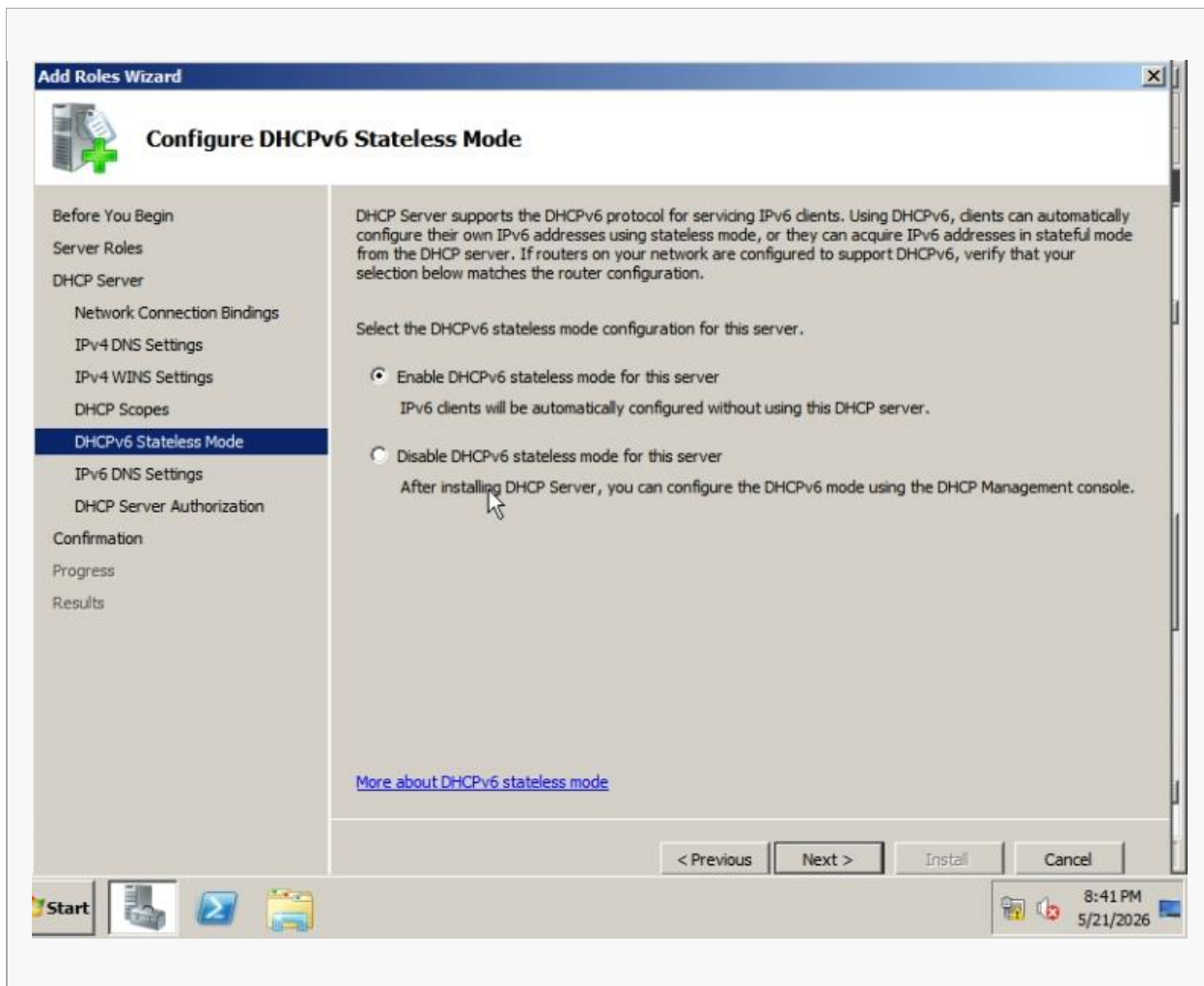


Figure 82: DHCP Configuration — Disable DHCPv6 Stateless Mode

After clicking Next, we are prompted to configure DHCPv6 Stateless Mode, since DHCP Stateless Mode is not on the criterion, we are going to choose “Disable DHCPv6 Stateless Mode for this server”. After that, click Next.

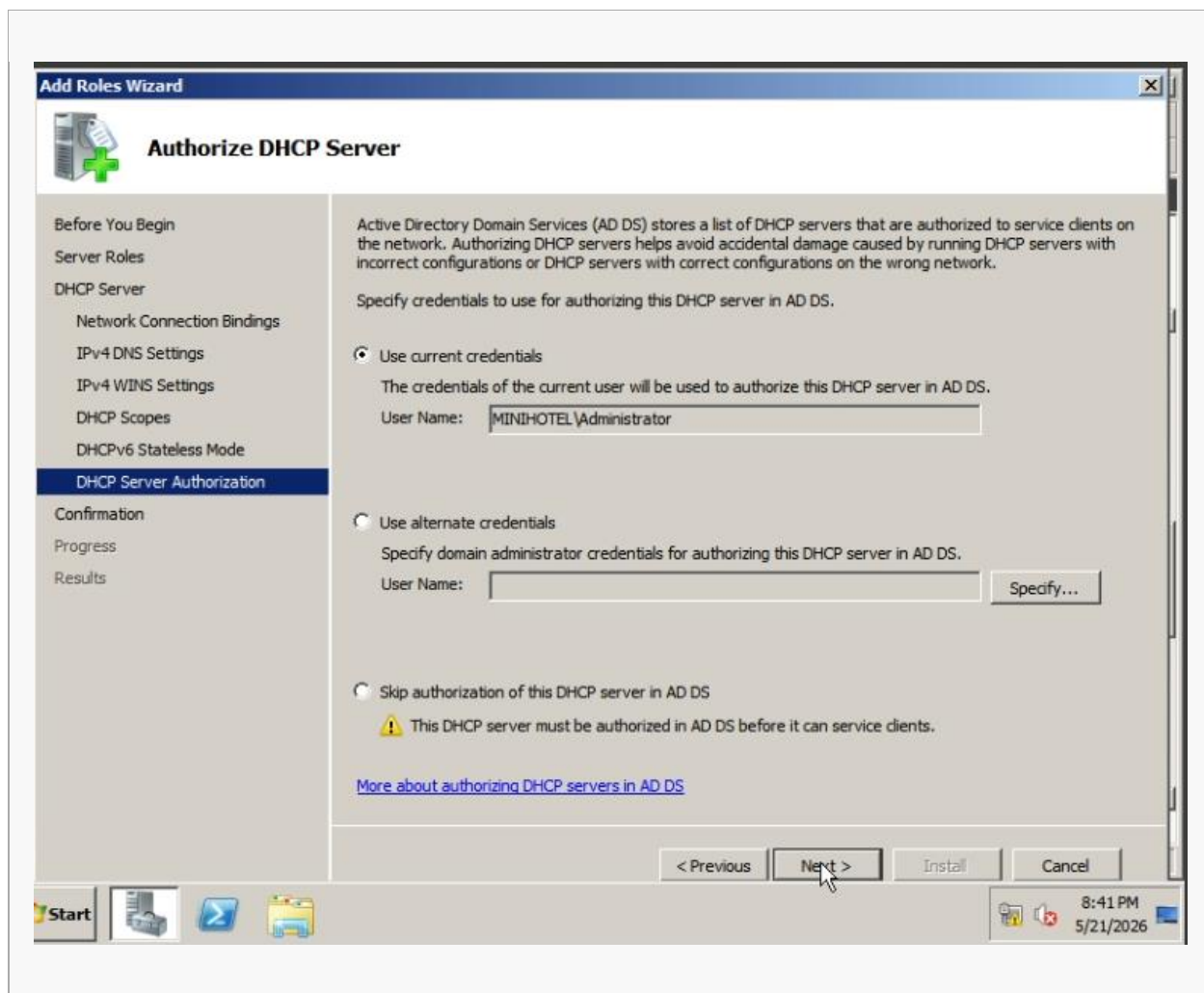


Figure 83: DHCP Configuration — Authorizing DHCP Server

Here in Authorized DHCP Server, Use current credentials is defaultly selected, click Next.

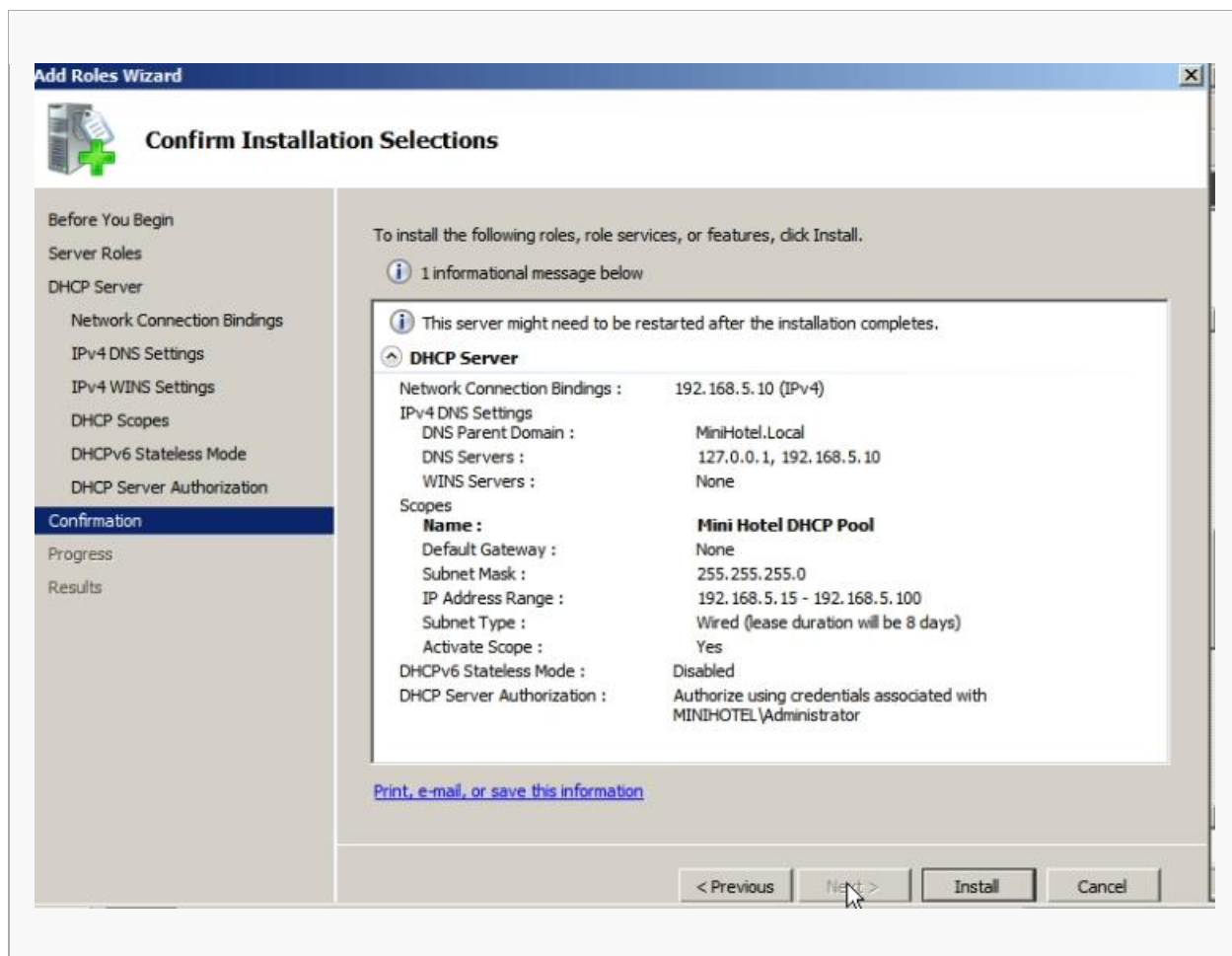


Figure 84: DHCP Configuration — Confirming the Installation of the DHCP Server

After confirming all of the details in the summary of DHCP installation, click install. And wait for it to finish installing.

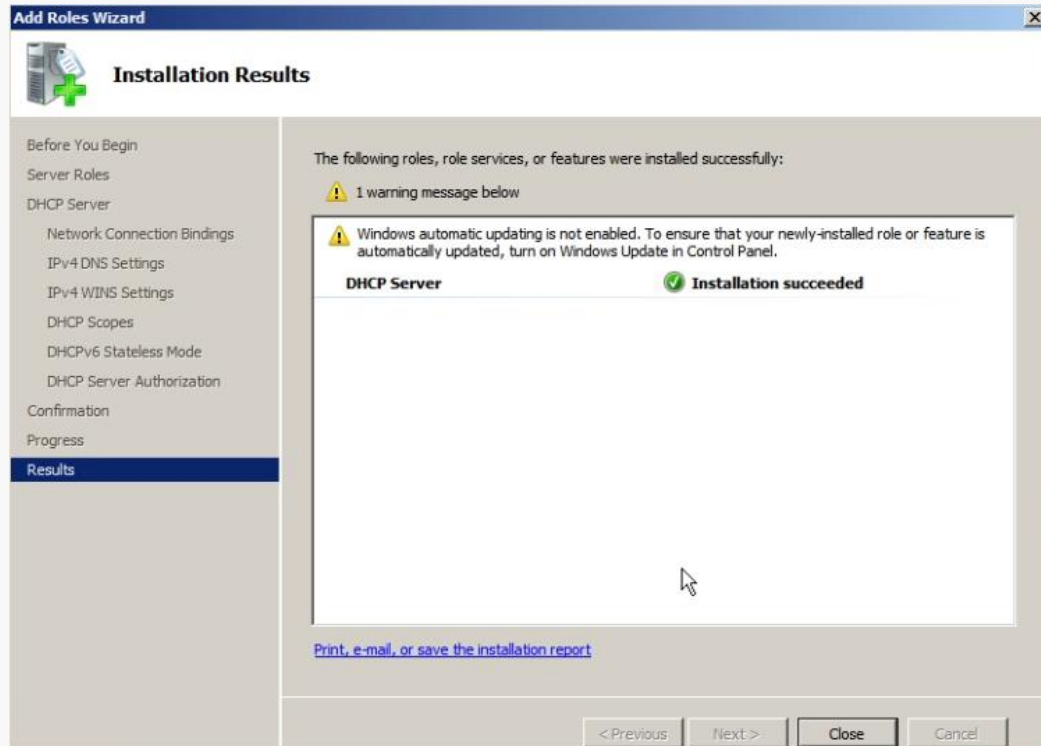


Figure 85: DHCP Configuration — Installation Results

After it's done installing, It will show you the Installation results wherein Installation of the DHCP Server is a success.

5.8 Domain Setup

**Domain Setup and Client Join Domain are configured first so that it follows the logical flow of File sharing and so that it will be tested using real-world scenarios e.g Manager Folder, and Front Desk Folder.*

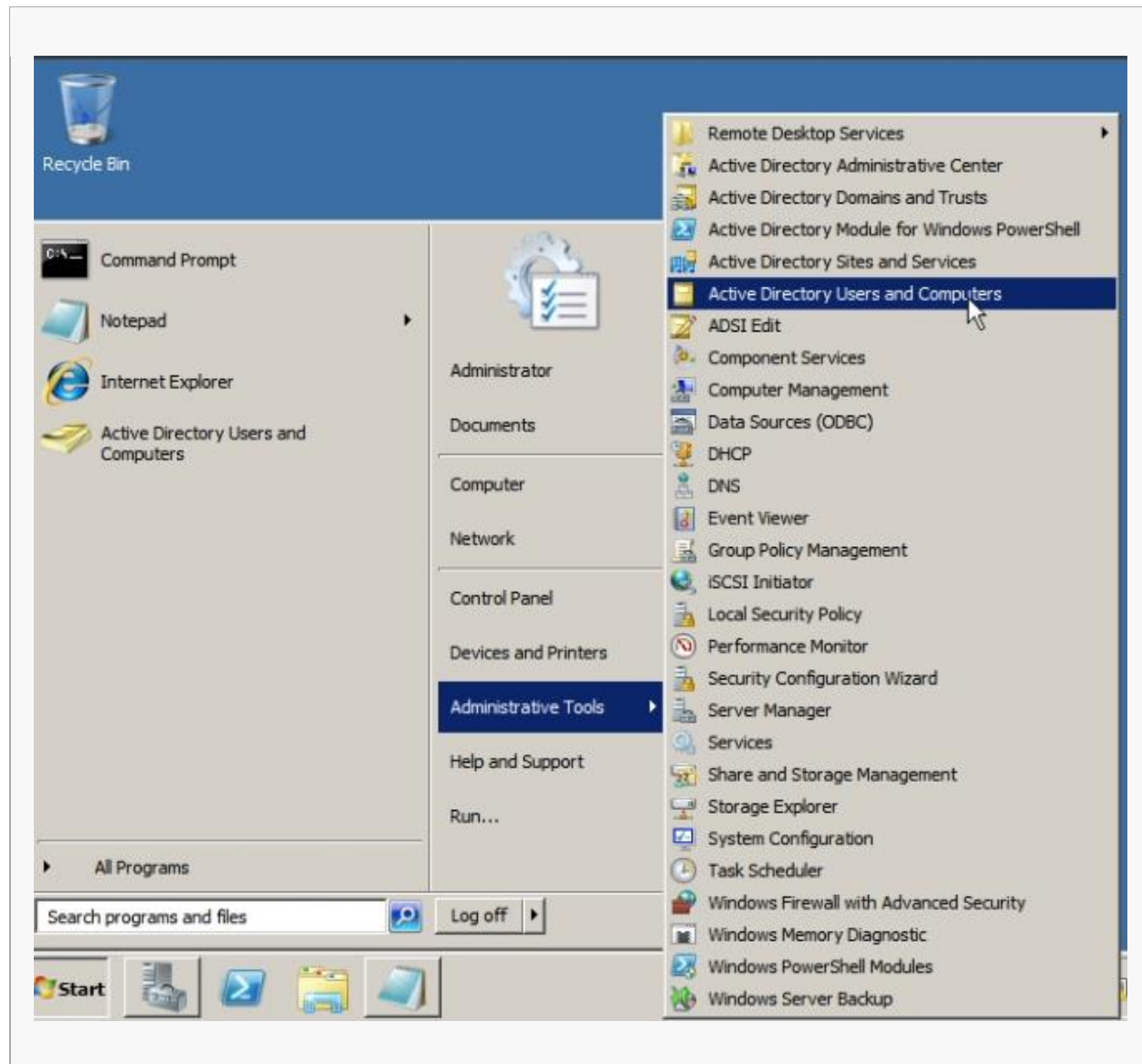


Figure 86: Domain Setup — Users and OUs in Active Directory

We must first configure the Domain Setup, Click on Start Menu, navigate to the right, hover to Administrative Tools, and find “Active Directory Users and Computers” and click on it.

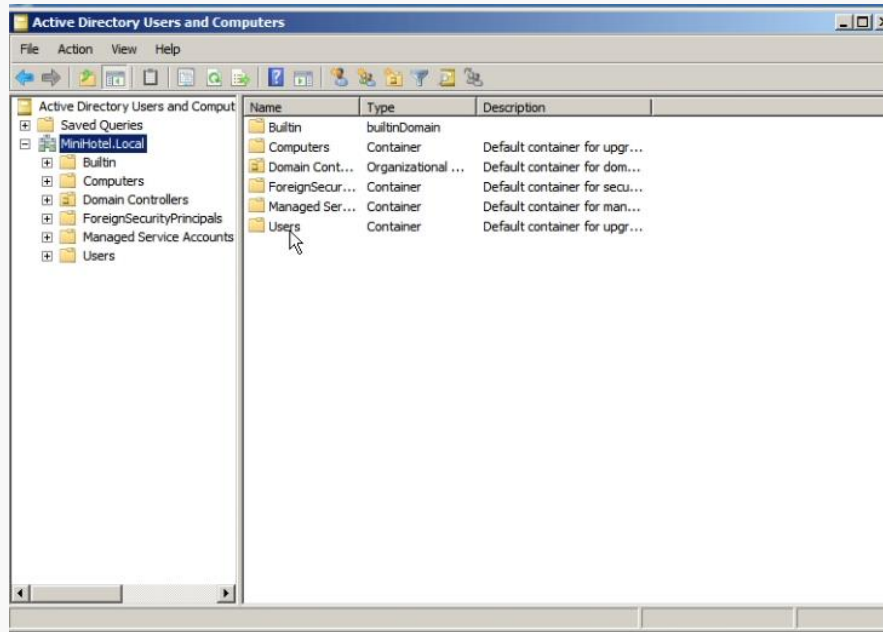


Figure 87: Domain Setup — Navigating to Users

Click on MiniHotel.Local and navigate to Users.

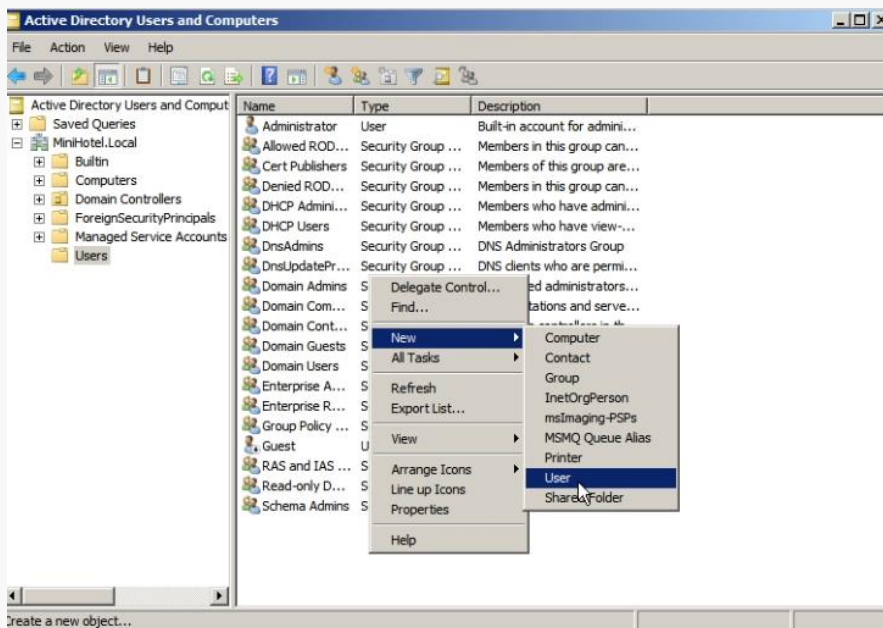


Figure 88: Domain Setup — Creating a New User

Inside the Users, right click, navigate to New, and select User.

New Object - User

Create in: MiniHotel.Local/Users

First name: Paul Initials:

Last name:

Full name: Paul

User logon name: PaulManager @MiniHotel.Local

User logon name (pre-Windows 2000): MINIHOTEL\ PaulManager

< Back Next > Cancel

Figure 89: Domain Setup — Creating a User Domain for Paul the Manager

Now we are prompted to New Object - User. The first user domain that we are going to create is for Paul. Fill up the details with the First name only if you want or complete it with a Last Name. And this is very important, Save the User Login Name or else you cannot join a user to a domain. After configuring the Setup, Click Next.



Figure 90: Domain Setup — Creating a Password for Paul's Account in Manager

Uncheck "User must change password at next login" since this can cause problems when the user logs in. In the password, be sure to have a minimum 13 characters together with alphabets, numbers, capitalization, and symbols. After setting up the password click next.



Figure 91: Domain Setup — Successfully created Paul's Manager Domain Account

After setting up, the following user will be created as Paul and User Login Name PaulManager@MiniHotel.Local.

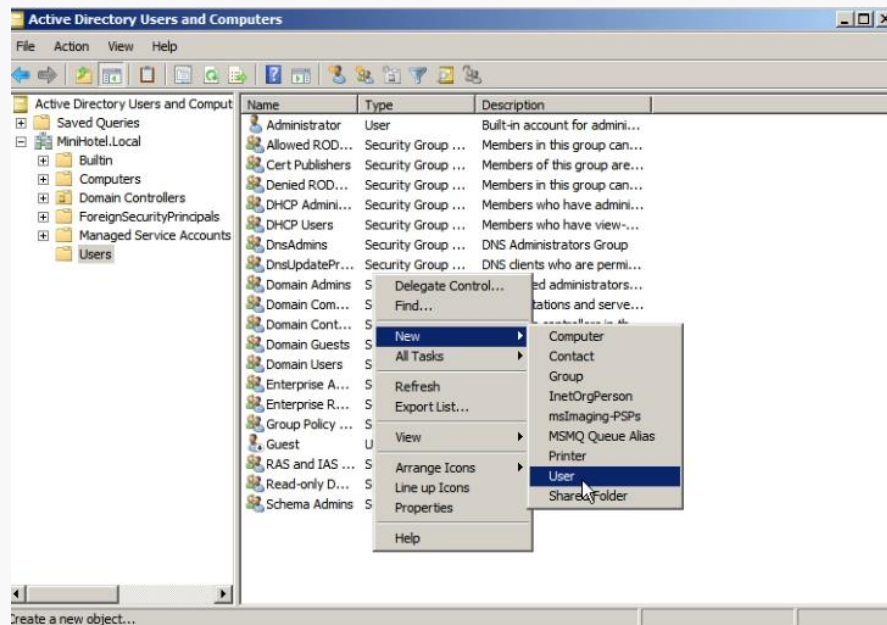


Figure 92: Domain Setup — Creating a New Domain account for Marsha, Front Desk

After creating Paul Manager's Domain account, we go back once again to Users to create a Domain Account for Marhsa our Front Desk.

The screenshot shows the 'New Object - User' dialog box in the Active Directory Users and Computers console. The 'Create in' field is set to 'MiniHotel.Local/Users'. The 'First name' field contains 'Marsha', and the 'Full name' field also contains 'Marsha'. The 'User logon name' field contains 'MarshaFrontDesk', and the domain dropdown is set to '@MiniHotel.Local'. The 'User logon name (pre-Windows 2000)' field contains 'MINIHOTEL\MarshaFrontDesk'. The 'Next >' button is highlighted.

Figure 93: Domain Setup — Creating a Domain for Marsha

Same as Paul, Fill up the details with the First name only if you want or complete it with a Last Name. And this is very important, Save the User Login Name or else you cannot join a user to a domain. After configuring the Setup, Click Next.

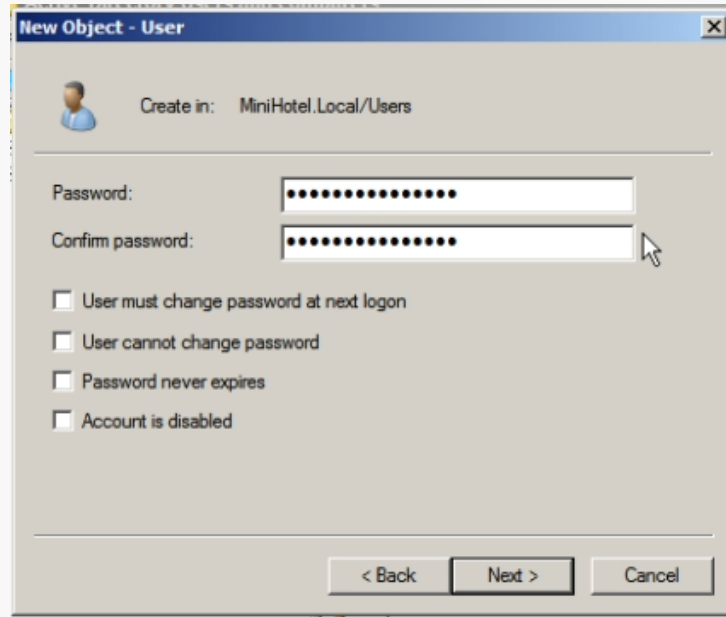


Figure 94: Domain Setup — Creating a Password for Marsha's Domain Account

Same configuration as Paul has, Uncheck "User must change password at next login" since this can cause problems when the user logs in. In the password, be sure to have a minimum 13 characters together with alphabets, numbers, capitalization, and symbols. After setting up the password click next.

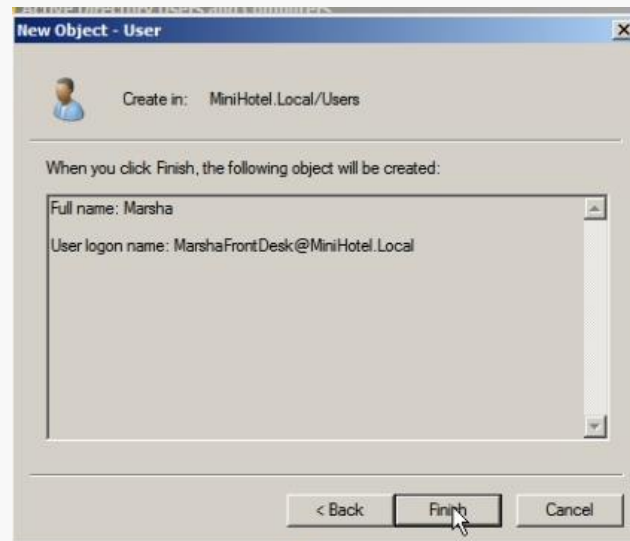


Figure 95: Domain Setup — Successfully Created Marsha's Domain Account

After setting up, the following user will be created as Marsha and User Login Name MarshaFrontDesk@MiniHotel.Local.

5.9 Client Domain Join

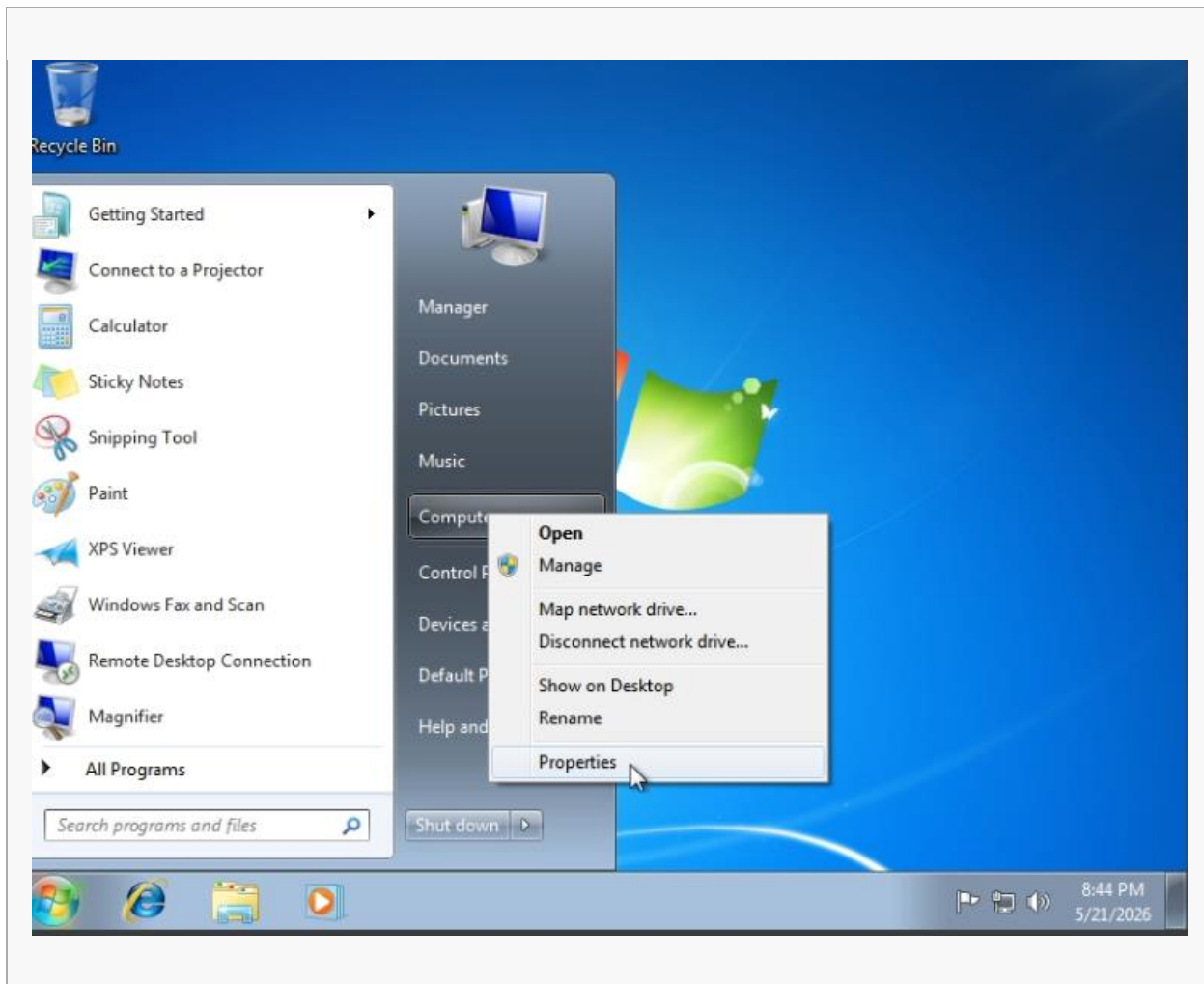


Figure 96: Client Domain Join — Navigating to Properties

On Windows 7 Ultimate - Manager's Office PC, go to Start Menu, navigate to the right, Right-Click Computer, and navigate down and click properties.

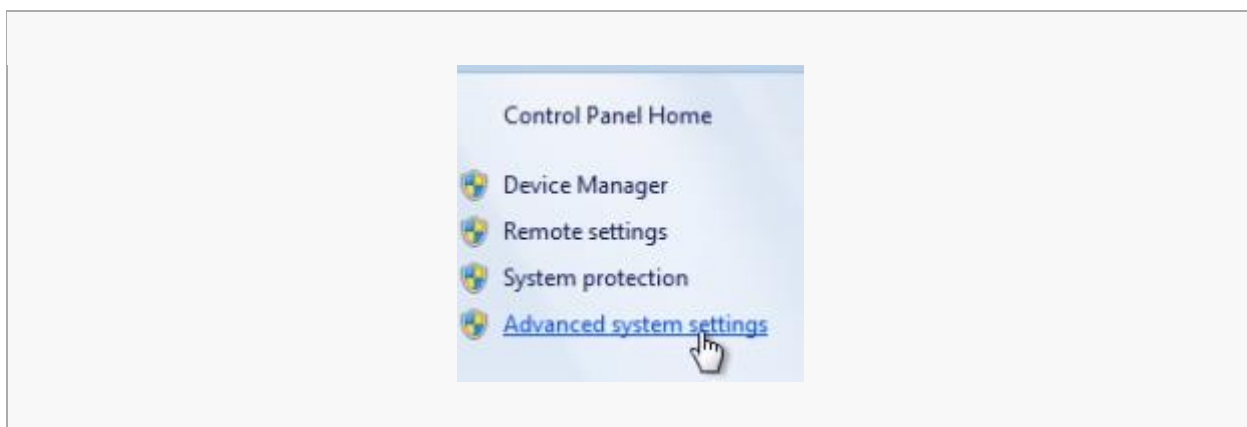


Figure 97: Client Domain Join — Advanced System Settings

At the Right side of the Control Panel, Click Advance System Settings.

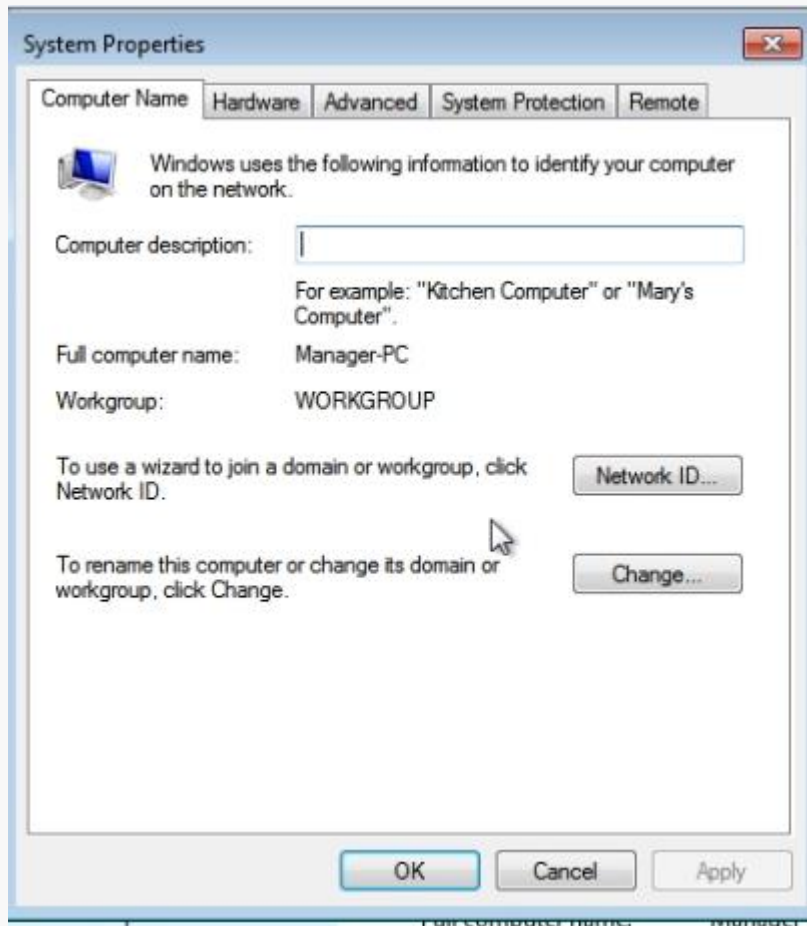


Figure 98: Client Domain Join — Navigating in Change

On System Properties go to Computer name, and click Change.

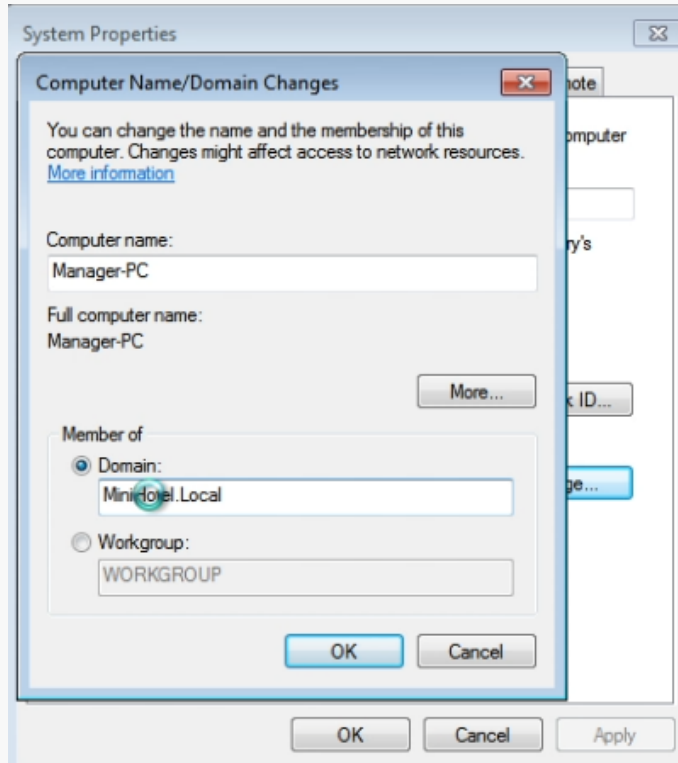


Figure 99: Client Domain Join — Joining the Domain of MiniHotel.Local

In Computer Name/Domain Changes, navigate below and at the Member of option, choose Domain and type MiniHotel.Local. And Enter.

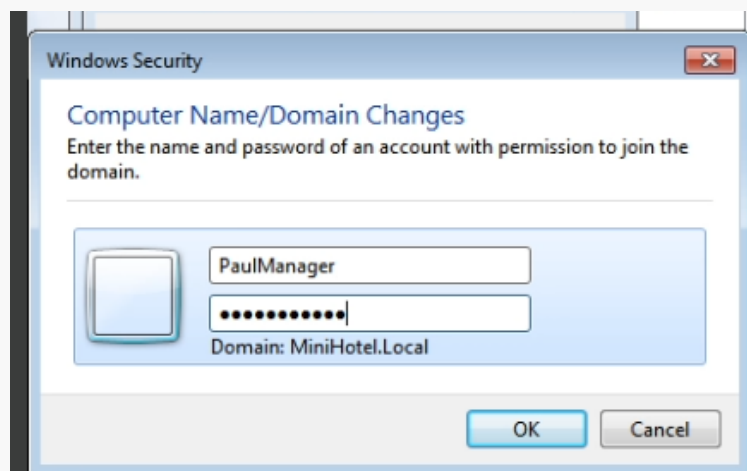


Figure 100: Client Domain Join — Entering PaulManager's Credentials

After verifying that you are within the range of the Domain name, you are prompted to enter the Username and the Password of an account with permission to join the domain. We configured Paul First so In our username, we Put PaulManager and the Password for the Domain. After that click OK.

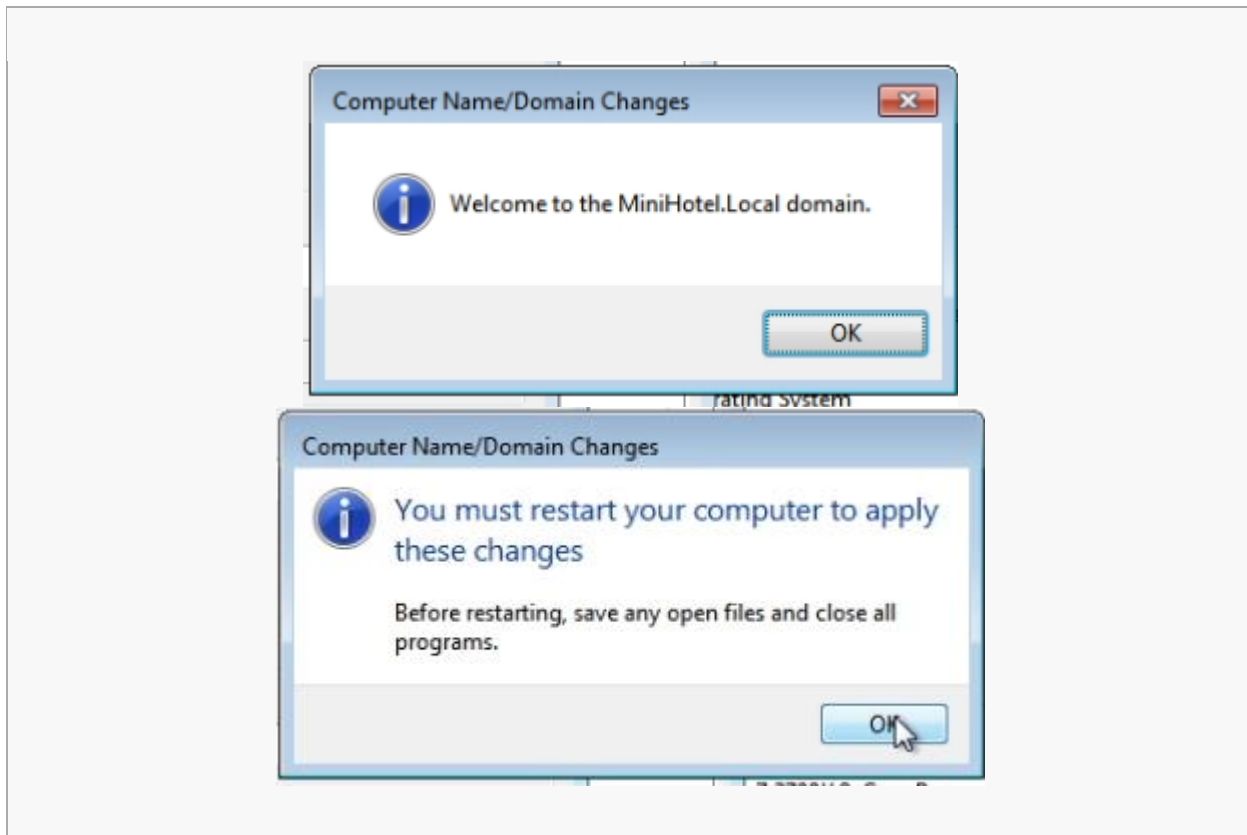


Figure 101: Client Domain Join — Restarting to Join the Domain

After entering the right credentials for Paul the Manager, we are welcomed to the MiniHotel.Local Domain. To apply the changes, we are going to restart our computer.



Figure 102: Client Domain Join — Switch User, This is not our Account

This is not yet the Domain that we joined, click switch User. And navigate to Other User.



Figure 103: Client Domain Join — Logging in Using the Domain Account's Credentials

Type the Credentials for Paul Manager and the Password to login to the Domain Account.

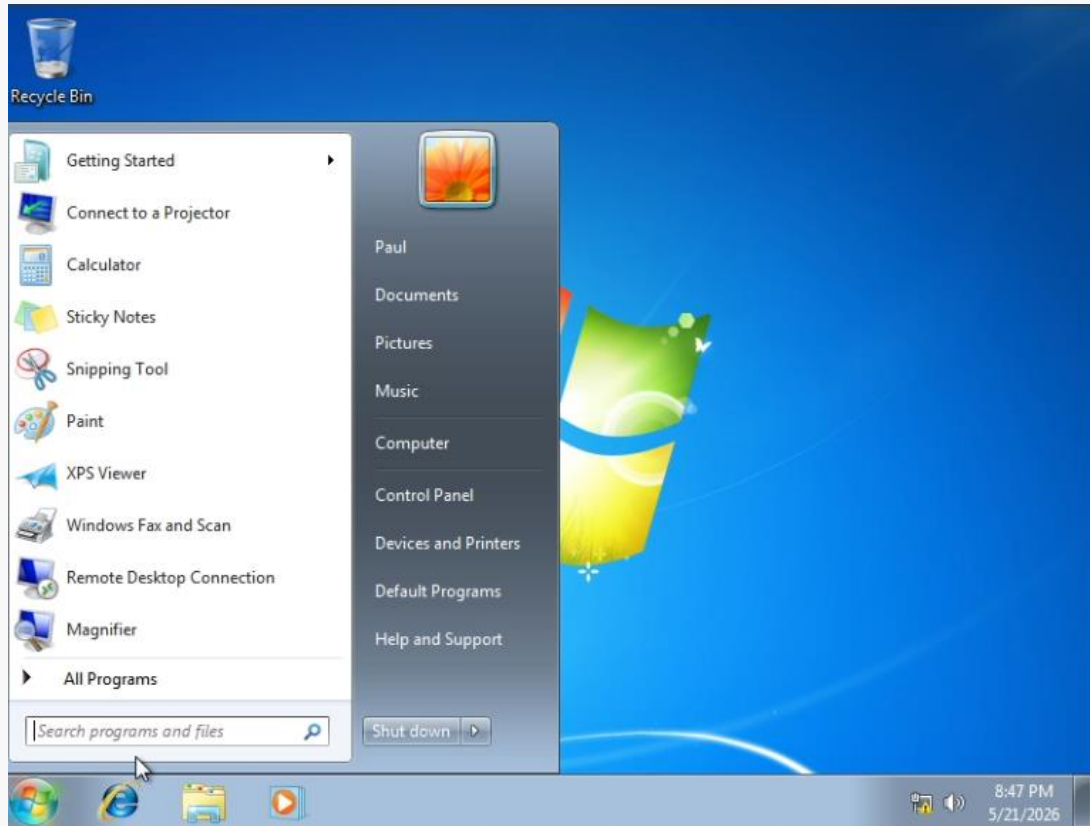


Figure 103: Client Domain Join — Successful Login with Domain Account using Paul's Credentials

Congratulations and you have successfully logged into your domain account. Now we will repeat the steps for Marsha, our Front Desk.



Figure 104: Client Domain Join — Start Menu and Properties

On Windows 7 Ultimate - Front Desk PC, go to Start Menu, navigate to the right, Right-Click Computer, and navigate down and click properties.

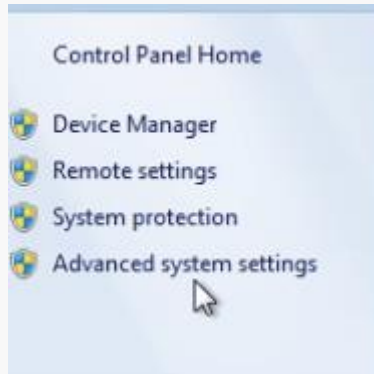


Figure 105: Client Domain Join — Advanced System Settings

At the Right side of the Control Panel, Click Advance System Settings.

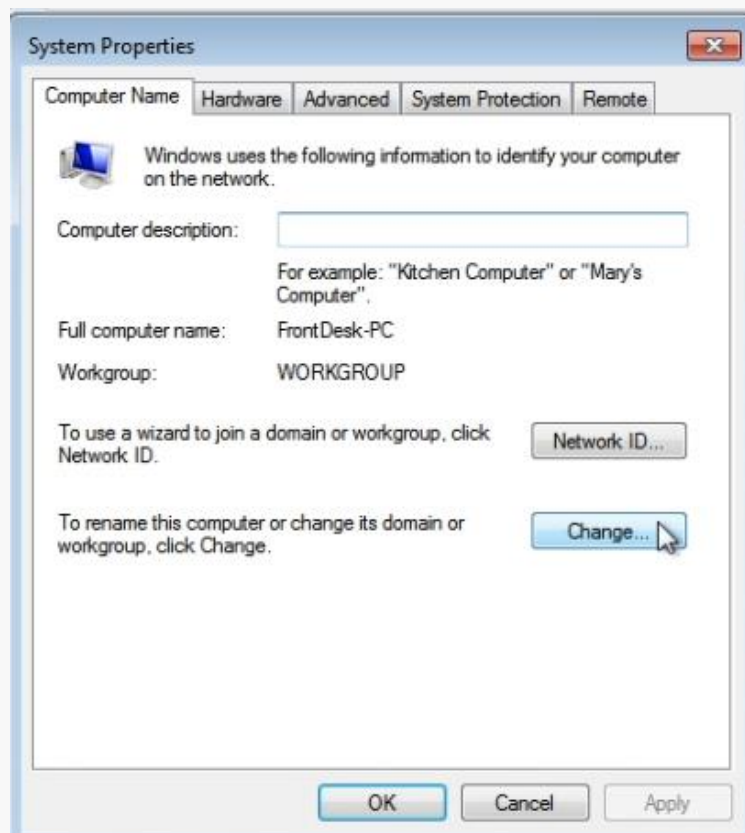


Figure 106: Client Domain Join — Navigate to Computer name and Change

On System Properties go to Computer name, and click Change.

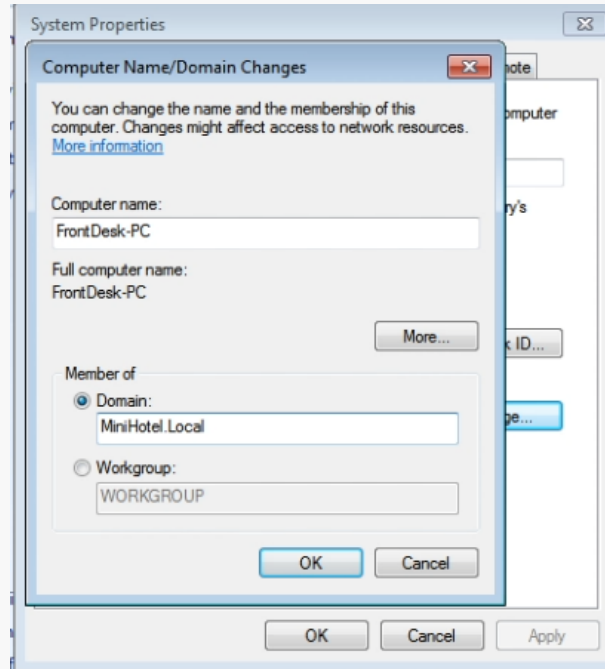


Figure 107: Client Domain Join — Joining the MiniHotel.Local

In Computer Name/Domain Changes, navigate below and at the Member of option, choose Domain and type MiniHotel.Local. And Enter.

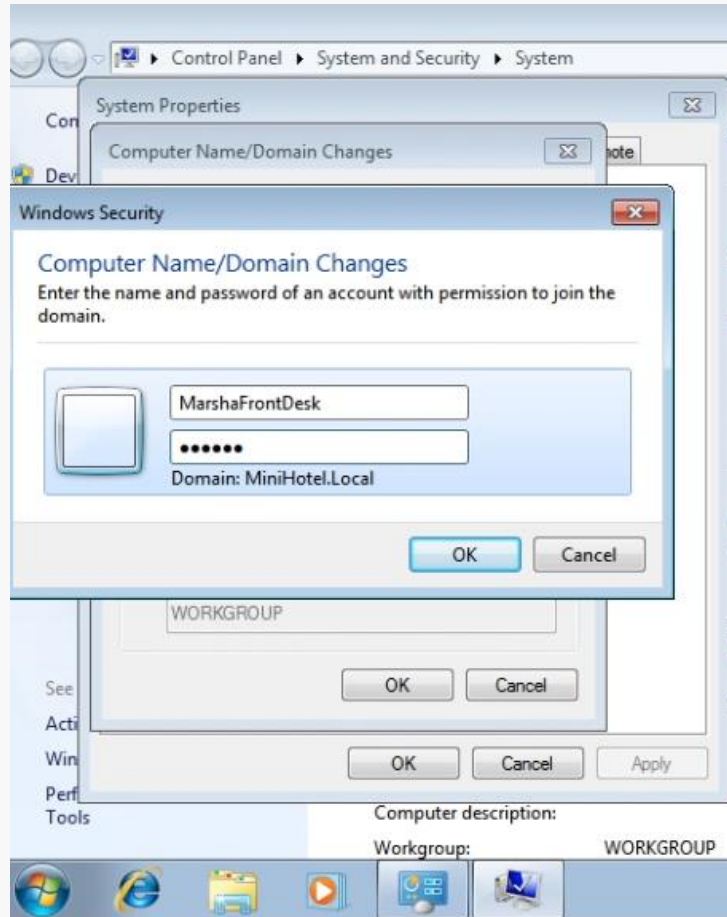


Figure 108: Client Domain Join — Inputting Marsha's Credentials

After verifying that you are within the range of the Domain name, you are prompted to enter the Username and the Password of an account with permission to join the domain. We configured Marsha First so In our username, we Put MarshaFrontDesk and the Password for the Domain. After that click OK.

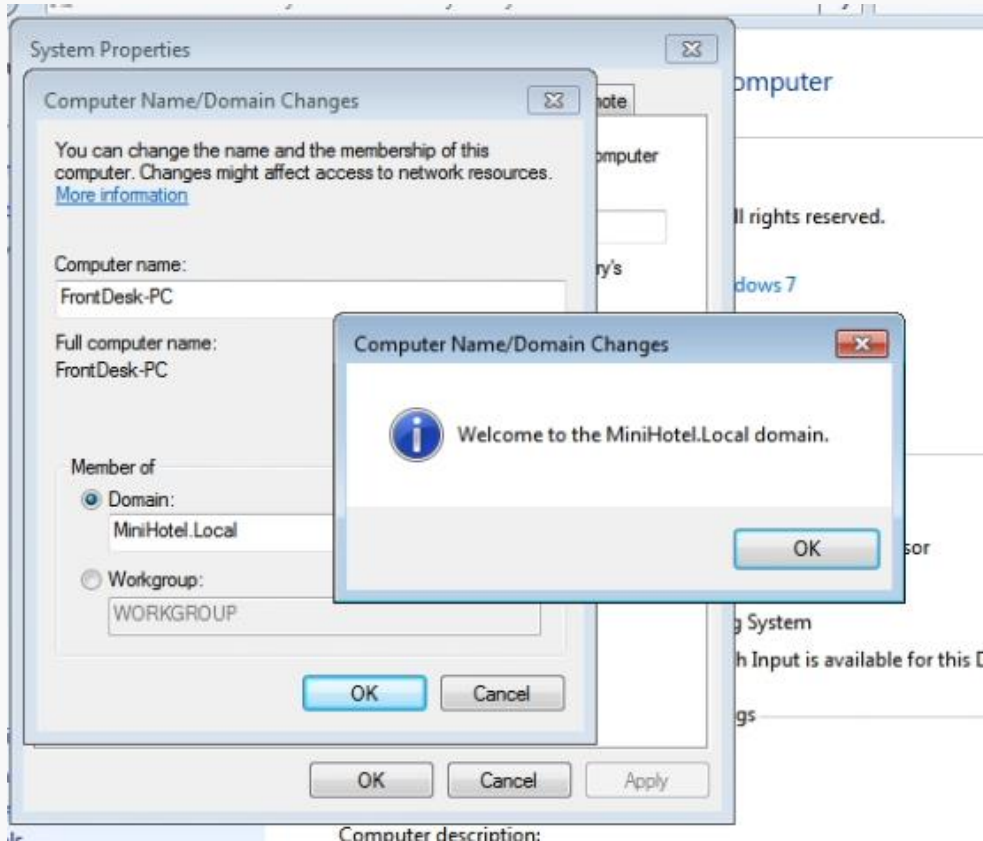


Figure 109: Client Domain Join — Successfully Joined MiniHotel.Local

Marsha Front Desk has been successfully added to the MiniHotel.Local

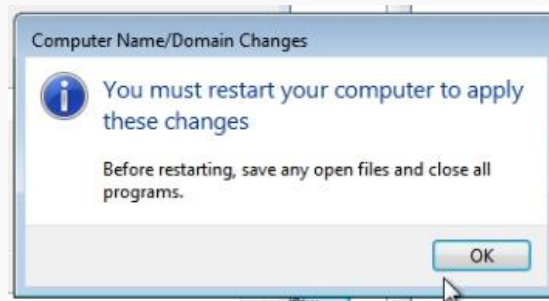


Figure 110: FClient Domain Join — Restarting to Apply Changes

After entering the right credentials for Marsha our Front Desk, we are welcomed to the MiniHotel.Local Domain. To apply the changes, we are going to restart our computer.



Figure 111: Client Domain Join — Navigate to Other Users

This is not yet the Domain that we joined, click switch User. And navigate to Other Users.



Figure 112: Client Domain Join — Logging in using Marsha Front Desk Domain Credentials

Type the Credentials MarshaFrontDesk and the Password to login to the Domain Account.

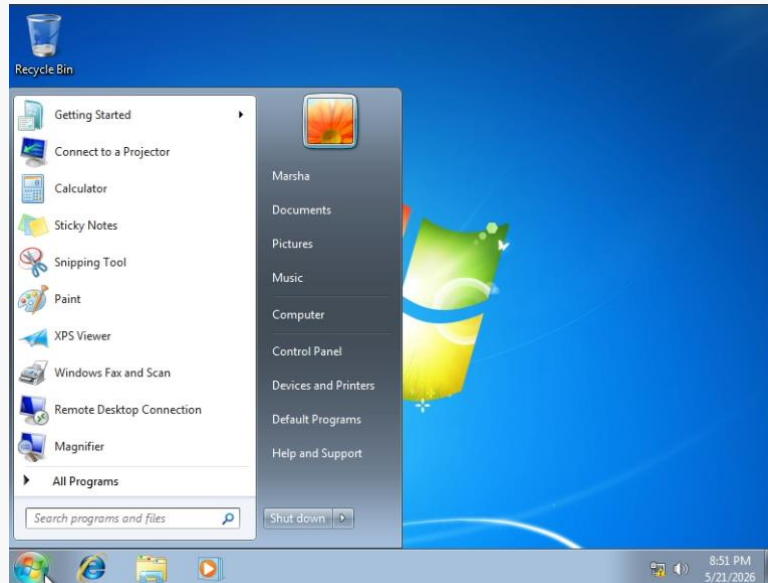


Figure 113: Client Domain Join — Successfully Login using the Domain Credential of Marsha Front Desk

Congratulations and you have successfully logged into your domain account. And completed the setup for Joining User accounts in a Domain.

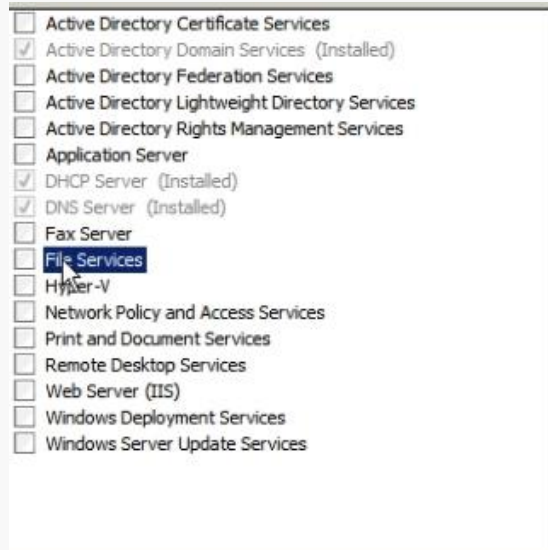


Figure 115: File Services Configurations - Selecting File Services

Select File Services in the Select Server Roles Menu and Click next.

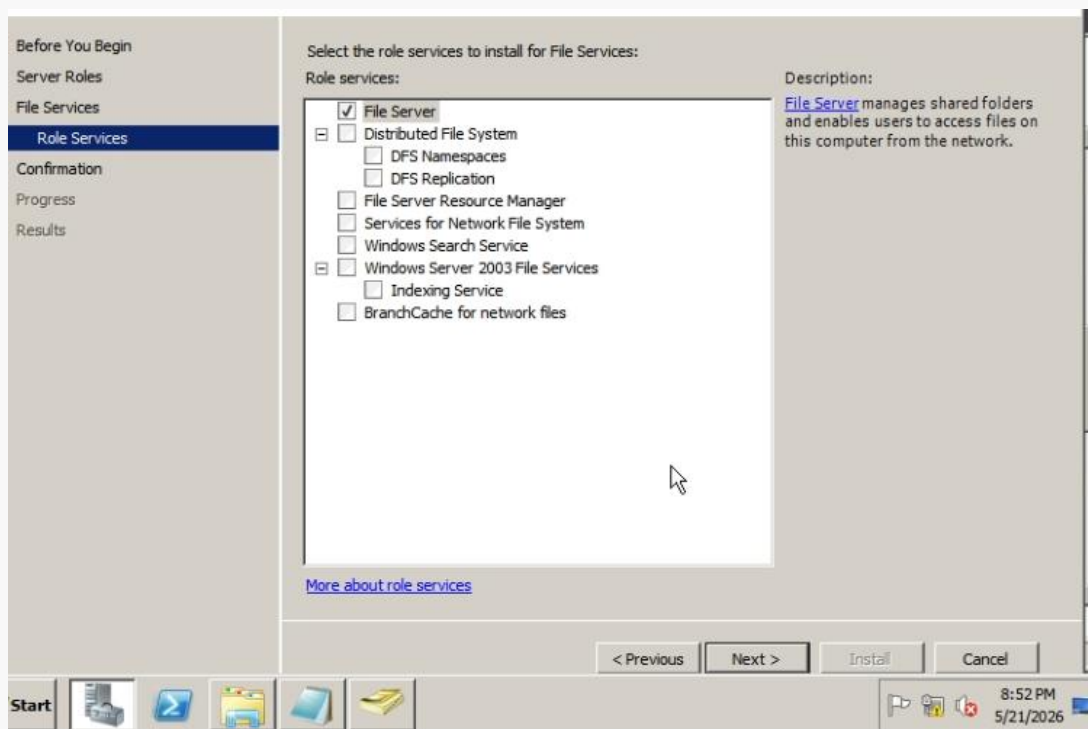


Figure 116: File Services Configurations - Selecting File Services

File Server is selected by default here, click Next.

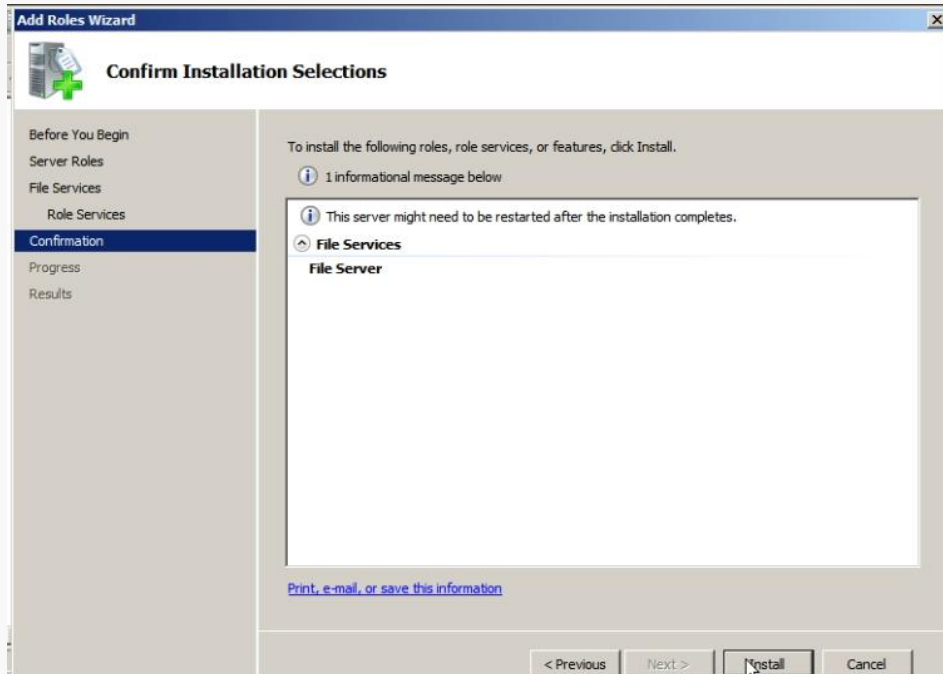


Figure 117: File Services Configurations - Installing File Services

After you confirm that File Services is the only feature to install, click install.

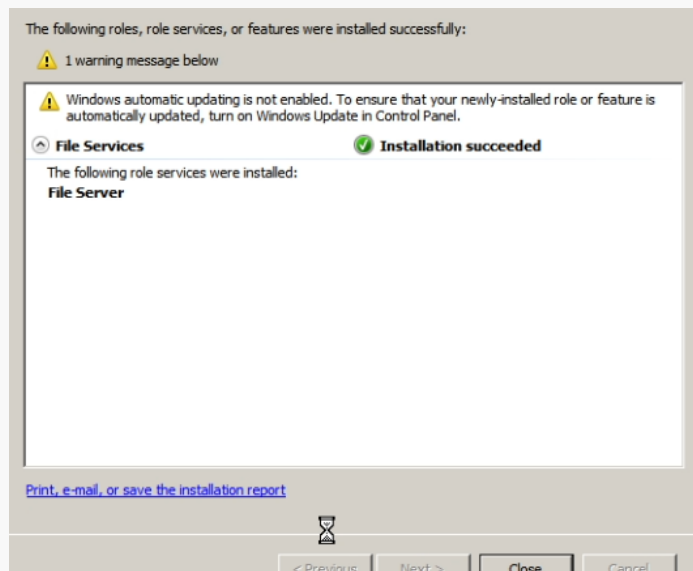


Figure 118: File Services Configurations - Successfully Installed File Services

File Services installation is a success and click close.

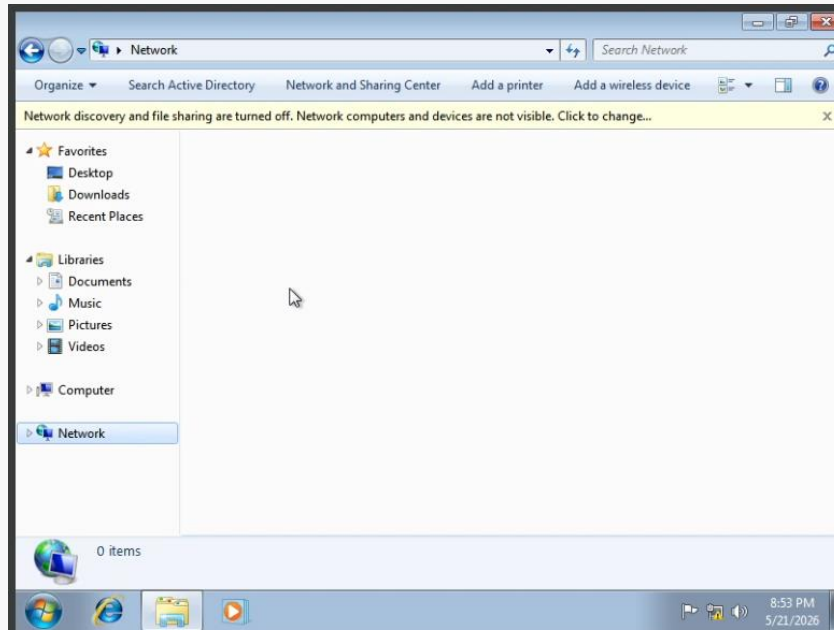


Figure 119: File Services Configurations - Enabling Network Discovery and File Sharing in Paul's PC

In our Paul Manager PC, navigate to File Explorer, and on the right side of the screen, click Network, and inside the network, on the top of it, there's a notification that Network discovery and file sharing are turned off. Click it to change.



Figure 120: File Services Configurations - Entering the Admin's Credentials

Type the Username and the Password of the administrator to allow Network sharing and access folders within the network.

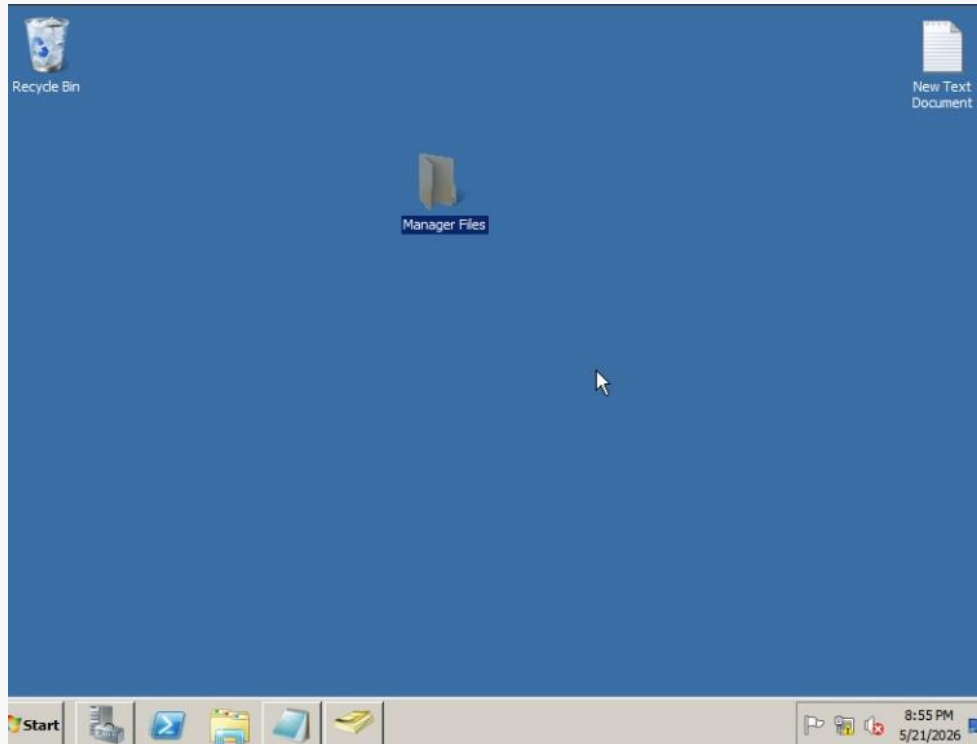


Figure 121: File Services Configurations - Making a Folder

Back in our Windows Server, Make a Folder and name it to Manager Files.

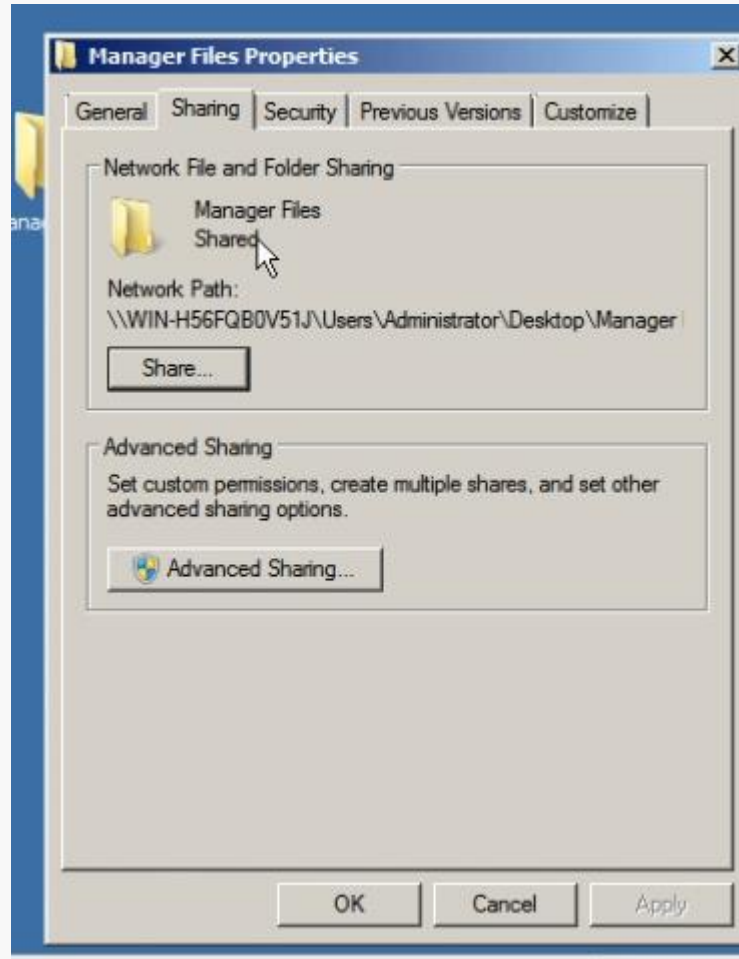


Figure 122: File Services Configurations - Selecting Share

Right click the Folder, Click on Properties, and it will bring you to Manager Files Properties. Go to the Sharing Tab, and click Share...

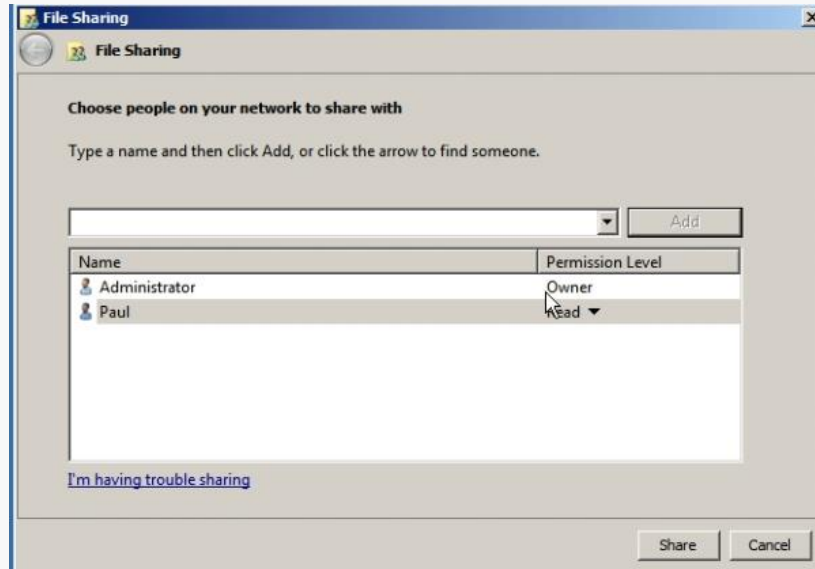


Figure 123: File Services Configurations - Adding Paul to the File Sharing List

In the File Sharing, Type Paul in the text bar, and edit his permission level to Read/Write.

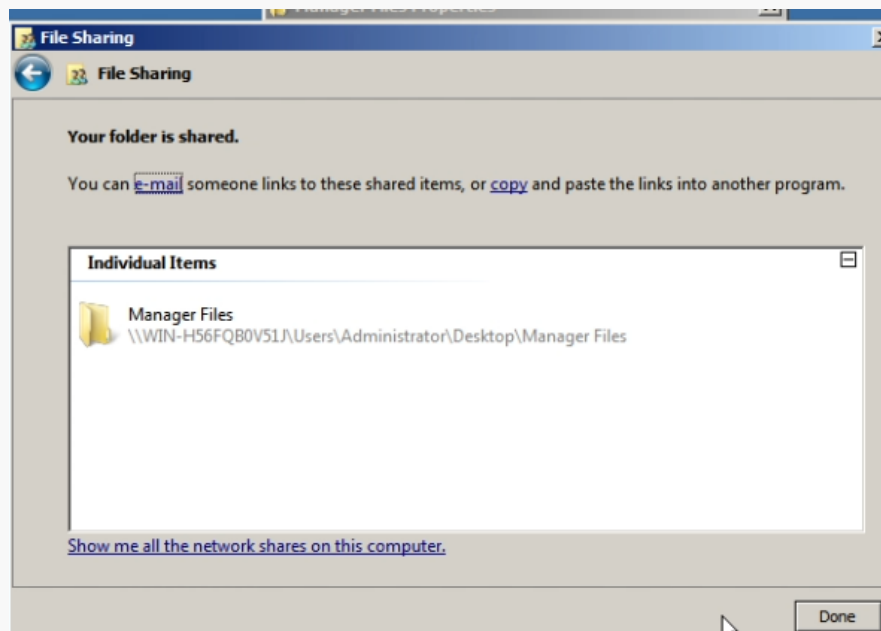


Figure 124: File Services Configurations - Confirmation that the folder is shared

After clicking Share, your folder is already shared to a user named Paul in our Domain.

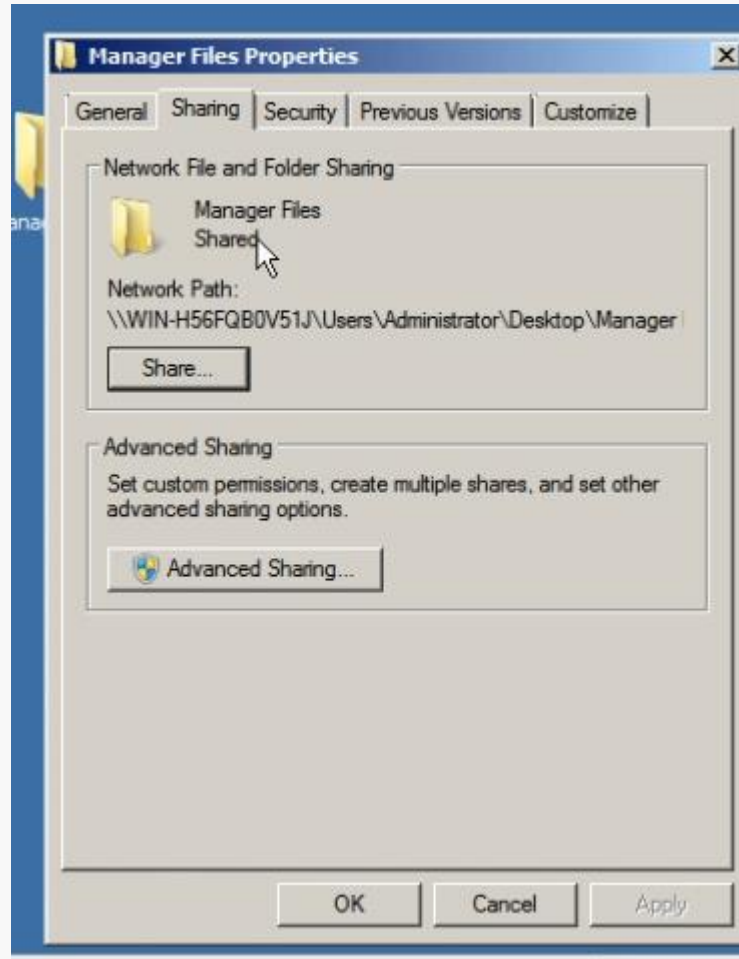


Figure 125: File Services Configurations - Advance Sharing

Back in the Manager Files Properties, after Sharing, go to Advance Sharing.

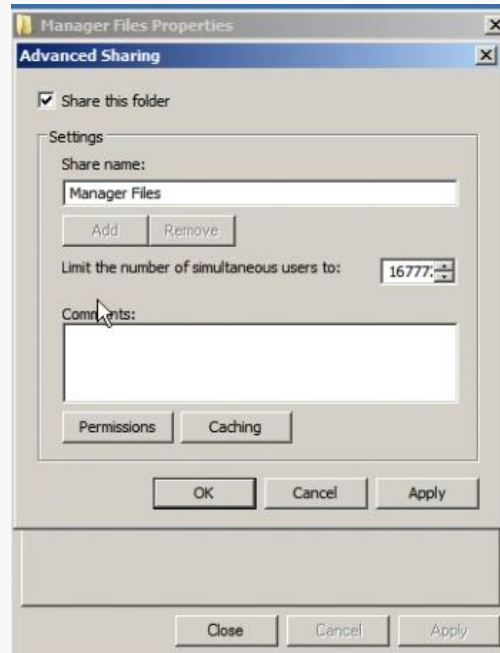


Figure 126: File Services Configurations - Select Share this Folder and Click permissions
Inside the Advance Sharing Window, Check “Share this Folder”. And click on Permissions.

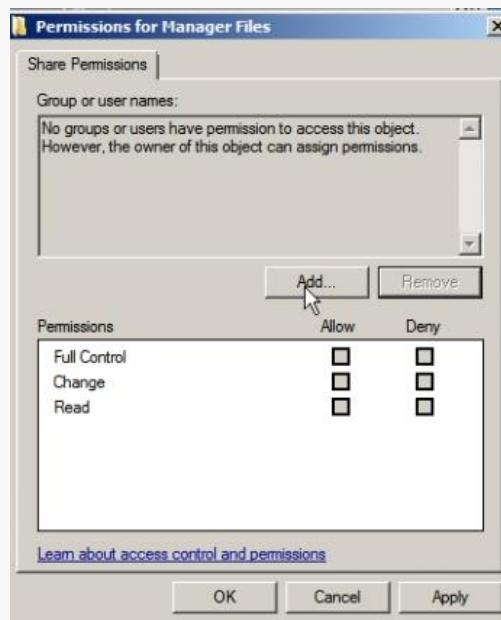


Figure 126: File Services Configurations - Removing Everyone
Select and remove Everyone. And click on Add.

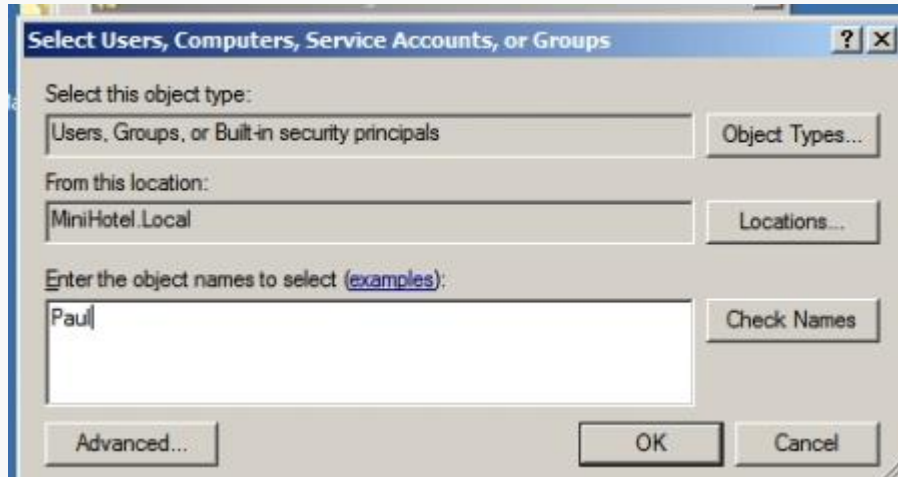


Figure 127: File Services Configurations - Adding Paul

After clicking Add, you will see Select Users, Computers, Service Account, or Groups. In “Enter the object names to select” Type Paul there. And click Ok.

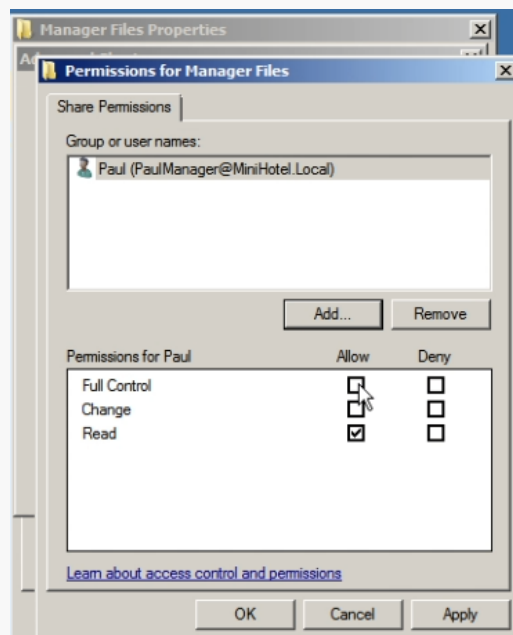


Figure 128: File Services Configurations - Editing Permissions for Paul

After clicking OK, we can see here that Paul(PaulManager@MiniHotel.Local) is added in User names above. Now, we need to edit Paul’s permission to Allow Full Control on the Manager Files since he is the manager. Click Apply to Apply the changes.

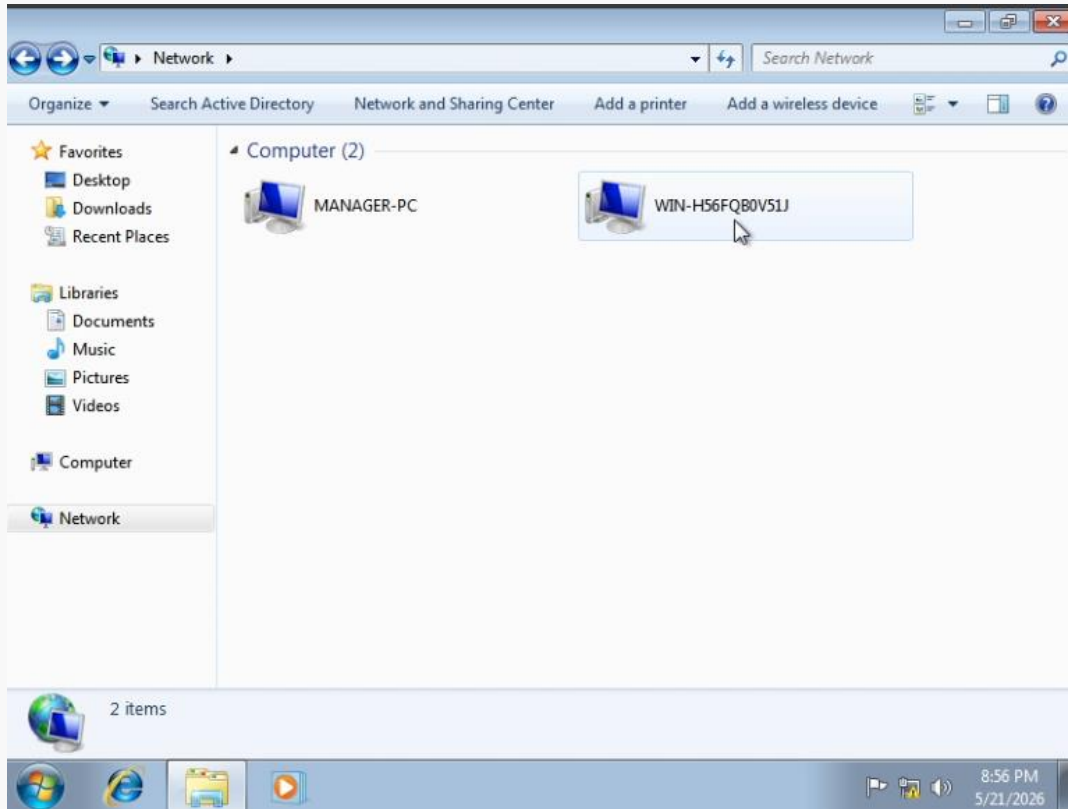


Figure 129: File Services Configurations - We can now see the IT Admin's Computer

In Paul's Manager Computer, refresh your Network, and we will see the IT Admin's Computer on our Network.

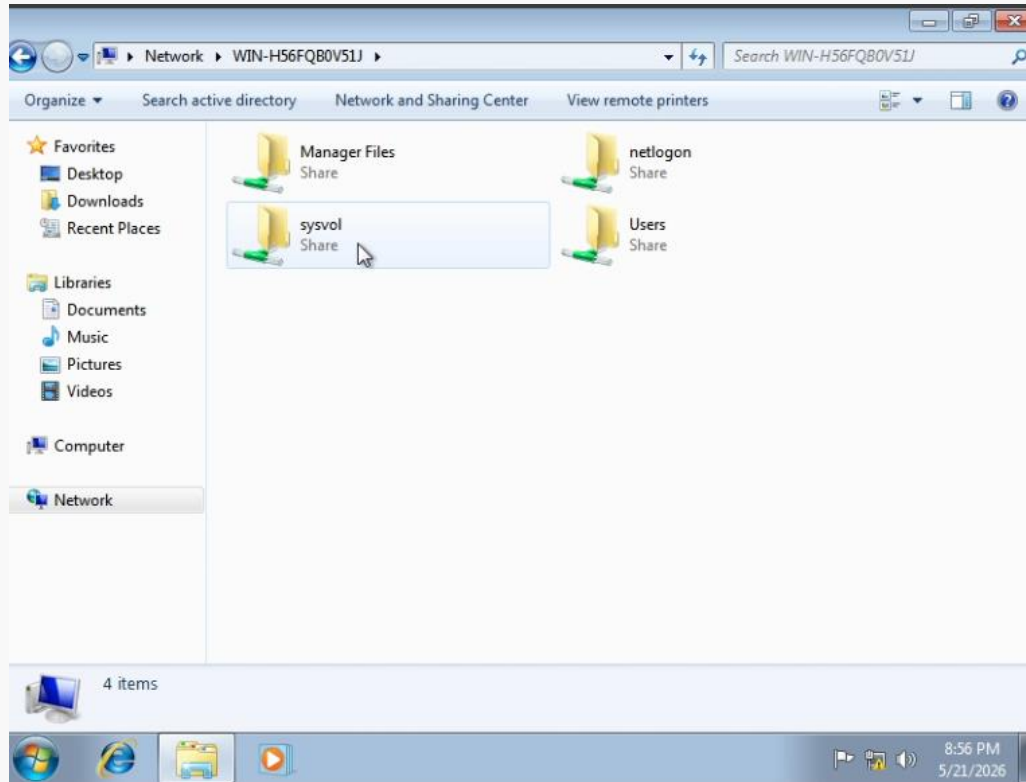


Figure 130: File Services Configurations - Accessing the Manager Files

After clicking the IT Admin's Computer, we can now see the Manager Files Folder, Click on it so we can Read/Write the contents within that folder.

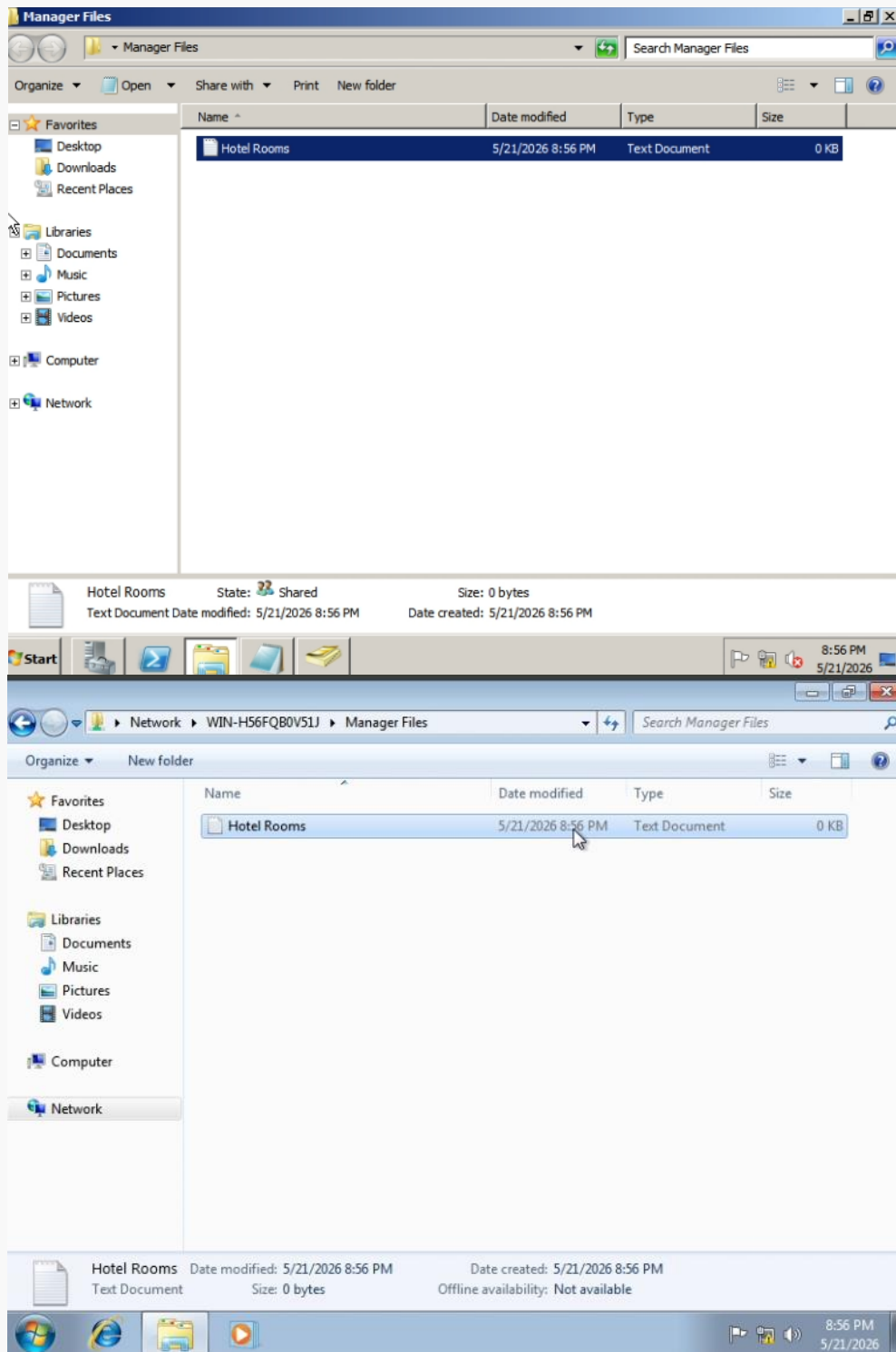


Figure 131: File Services Configurations - Accessing the Manager Files on both PCs

As we can see here we can see the Text file named Hotel Rooms on our end.

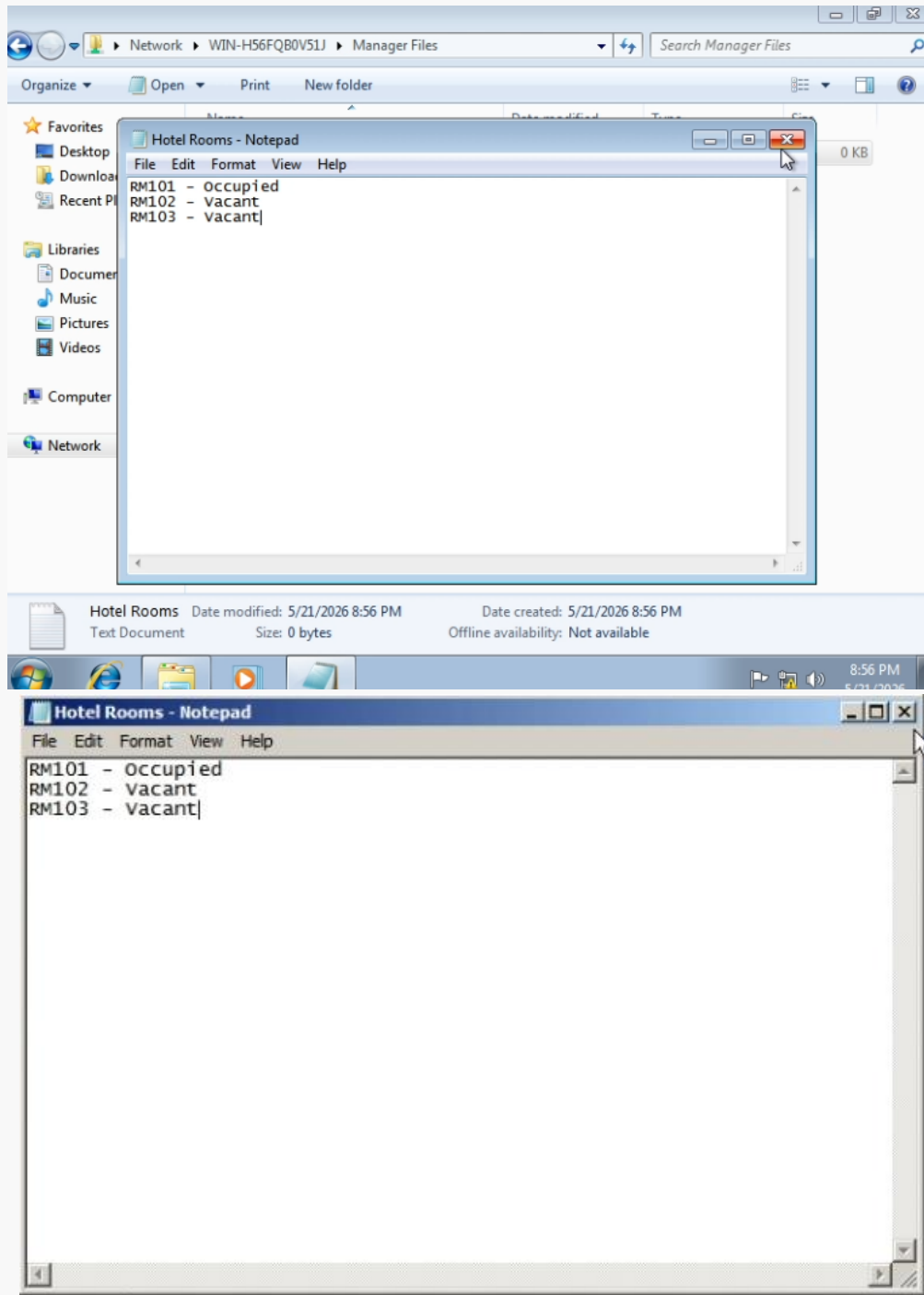


Figure 132: File Services Configurations - Accessing the Manager Files and Writing and Saving

As we can see here on the figure above, we can Read, and Write files on our Manager Files Folder using. Now it's just the same setup as Marsha's PC.

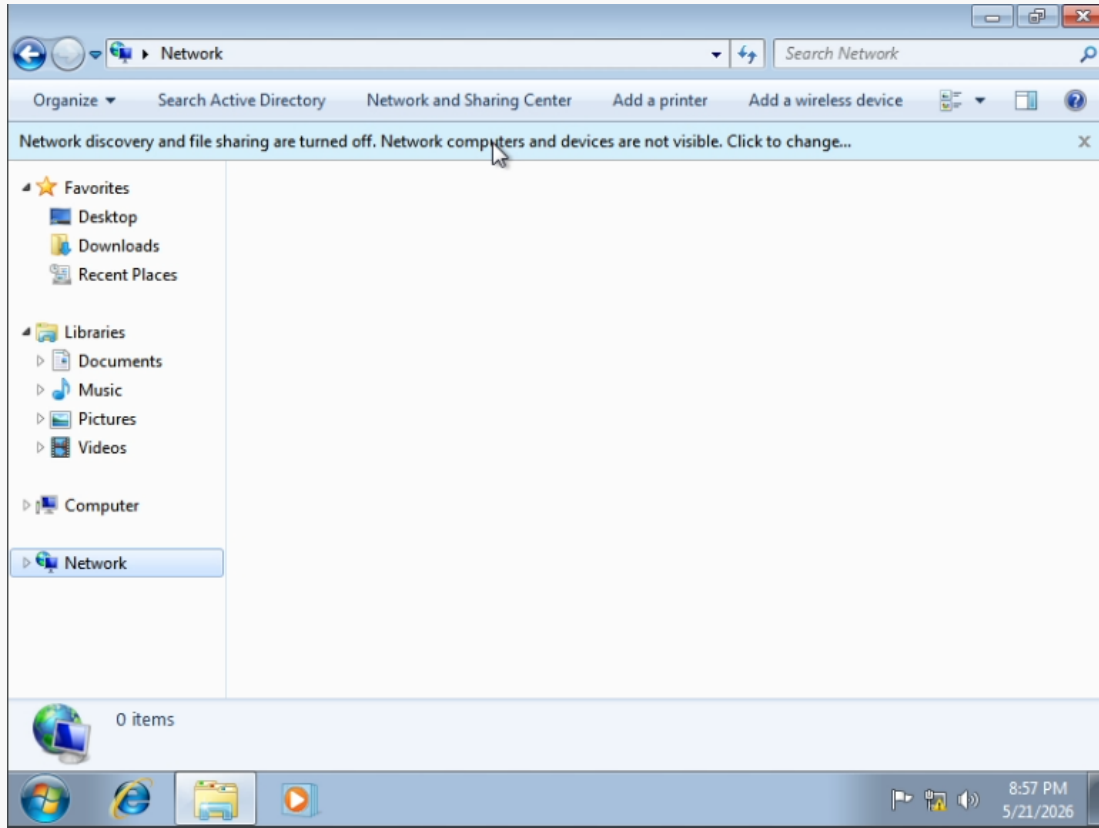


Figure 133: File Services Configurations - Enabling Network Discovery and File Sharing on Marsha's PC

At Marsha's Front Desk PC, go to File Explorer, navigate to Networks, click on it. Inside the network, there's a popup above that Network discovery and file sharing is turned off, click on it.



Figure 134: File Services Configurations - Using the Credential of the Administrator to Enable Sharing

Type the Username and the Password of the administrator to allow Network sharing and access folders within the network.

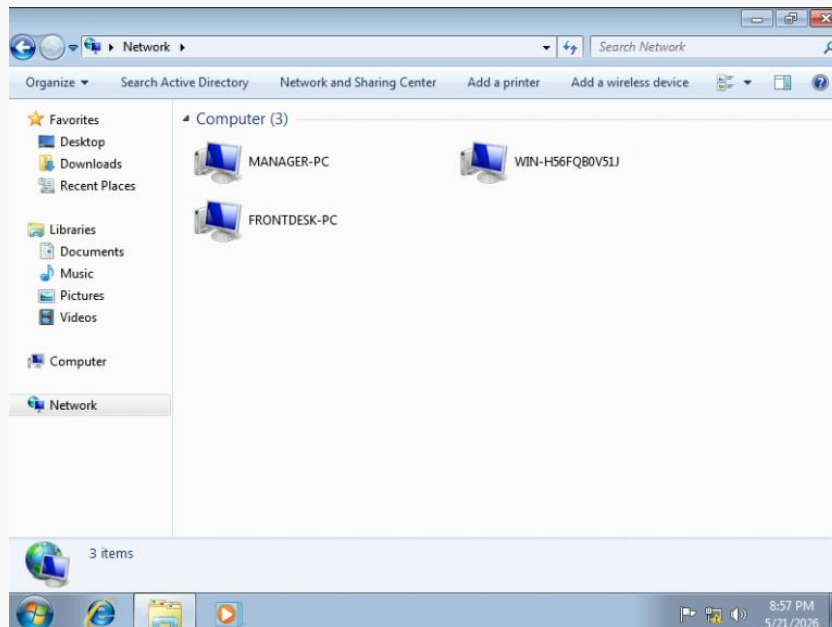


Figure 135: File Services Configurations - We can now access IT Admin's PC not it's not done yet
After setting up, we can already see the IT Admin's PC. But we are not done yet.

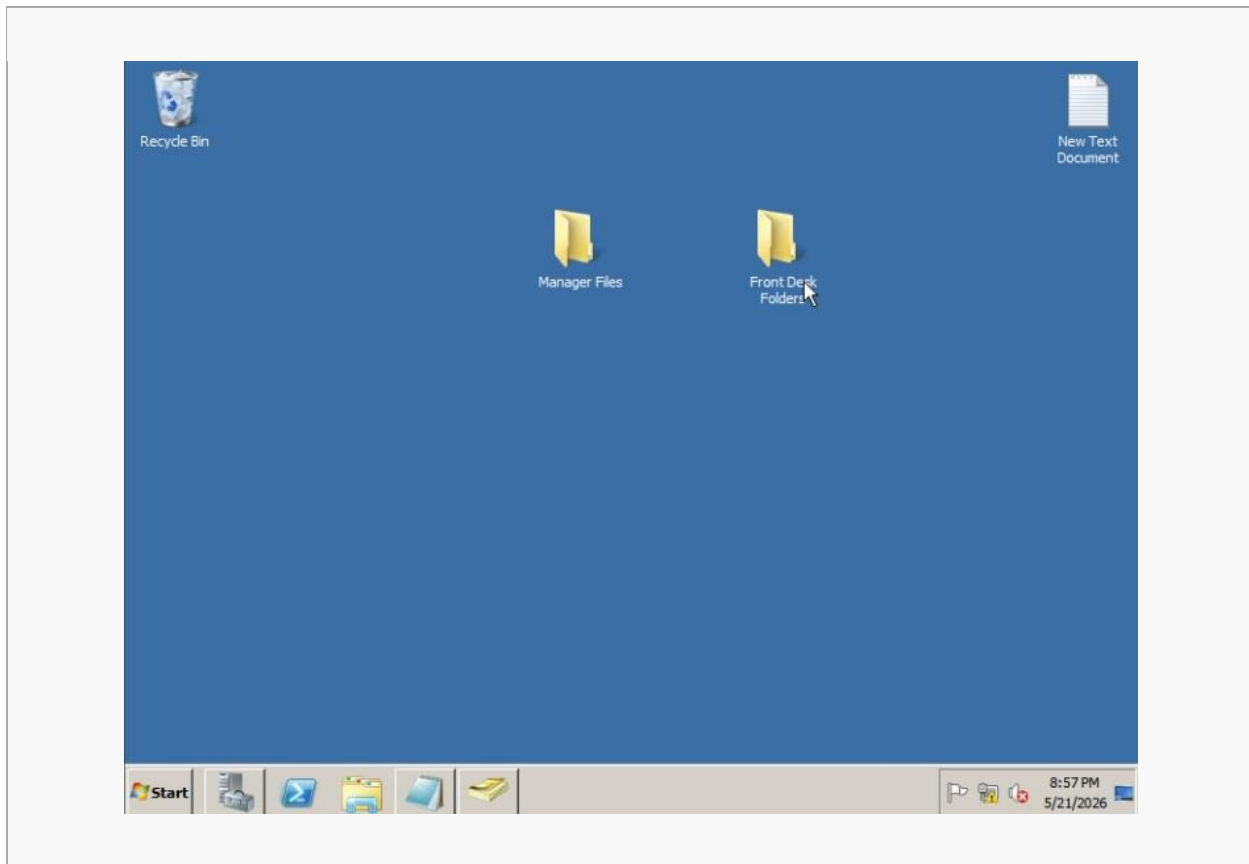


Figure 136: File Services Configurations - Creating a Folder For the Front Desk

Back in our Windows Server, right click the desktop, and click New Folder. Name the New Folder into Front Desk Files. And right click the folder, and click Properties.

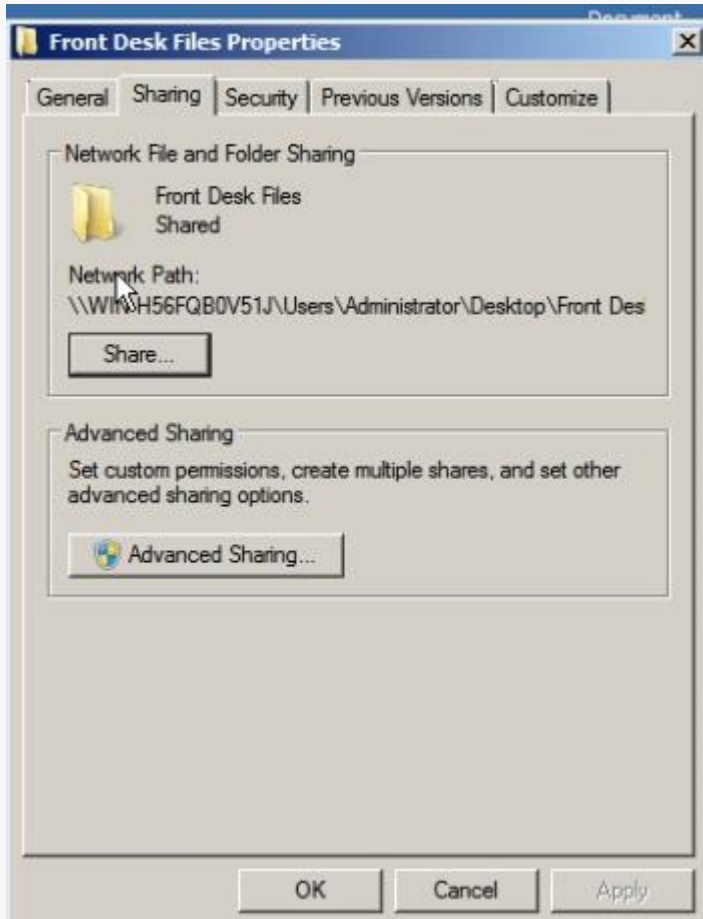


Figure 137: Remote Desktop — At the Front Desk Properties Enable Share

At the Front Desk Files Properties, click Sharing, and Click Share...

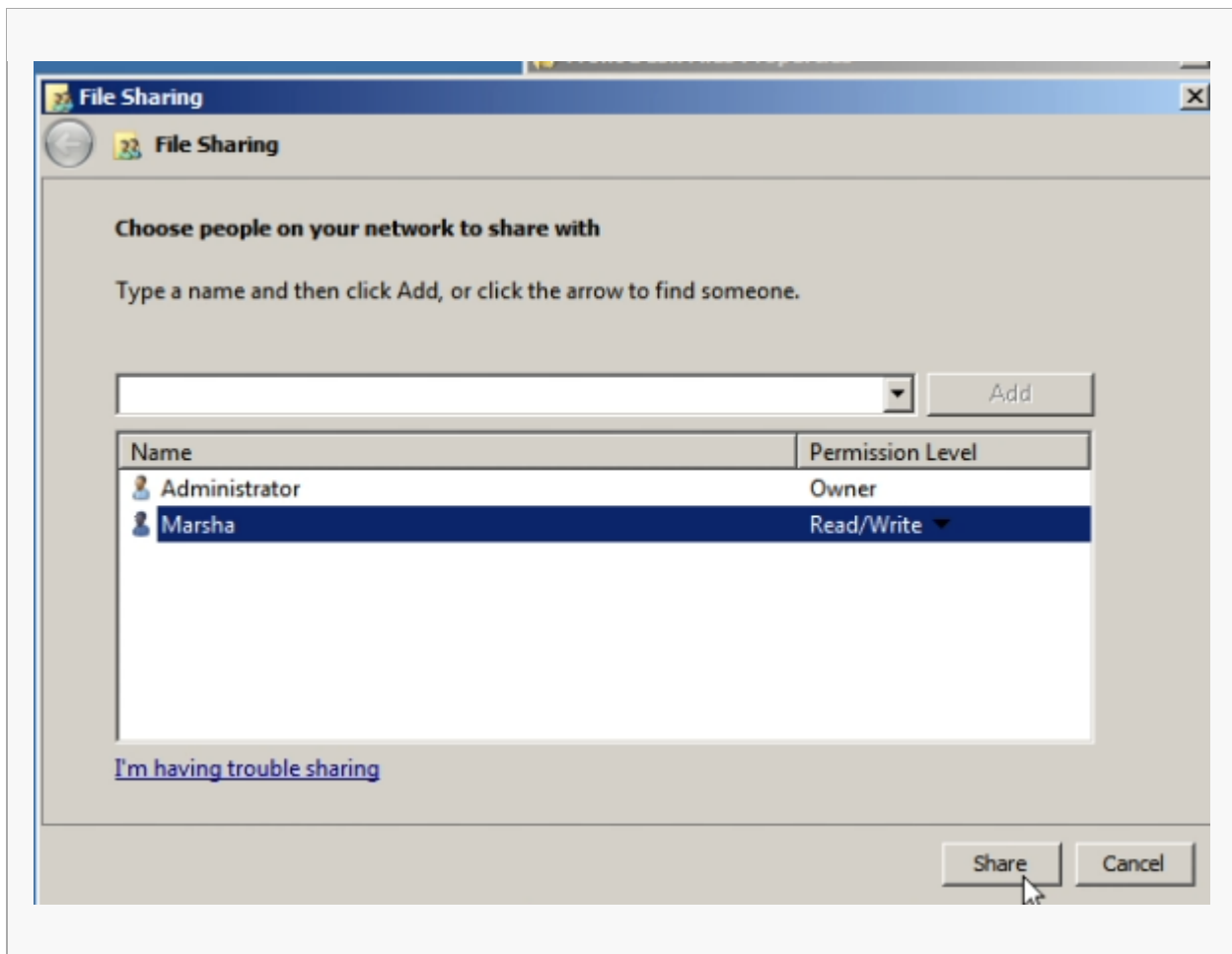


Figure 138: File Services Configurations - Adding Marsha's Name and Permission Levels
Type in Marsha's Name and edit her Permission level to Read/Write.

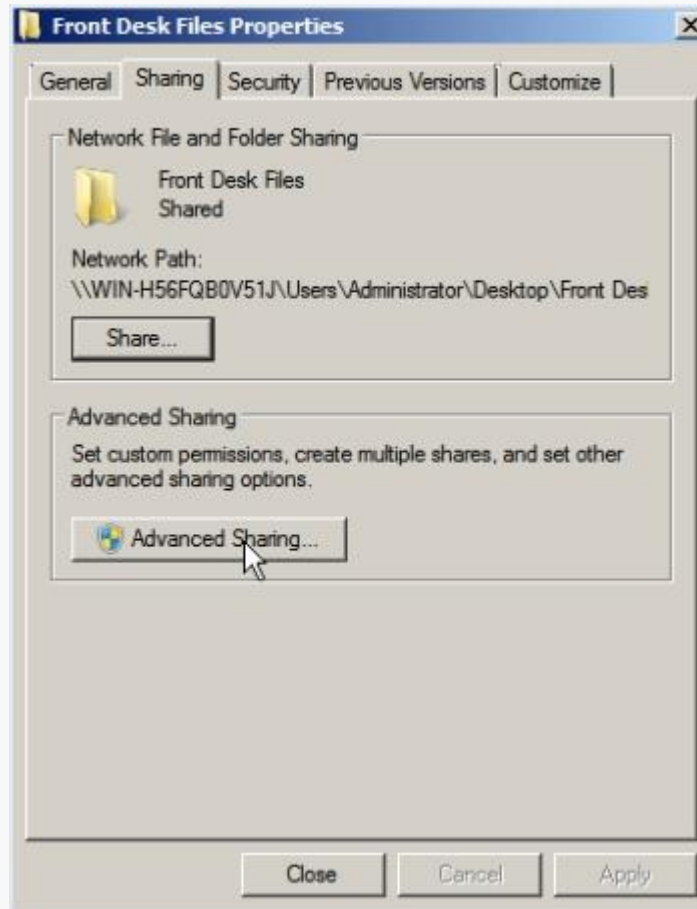


Figure 139: File Services Configurations - Click Advance Sharing

Back in the Front Desk Files Properties, Click Advanced Sharing...

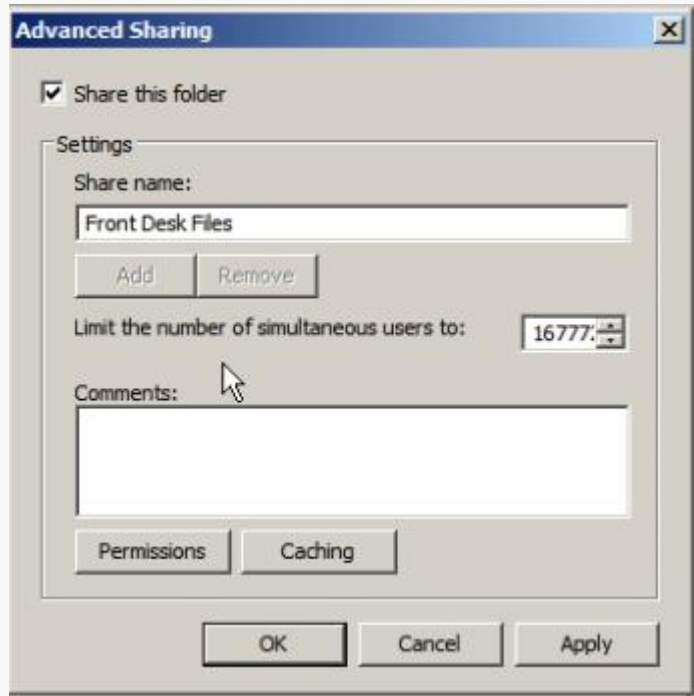


Figure 140: File Services Configurations - Share this Folder and Clicking Permissions
Inside Advance Sharing, click Share this folder, and navigate to Permissions.

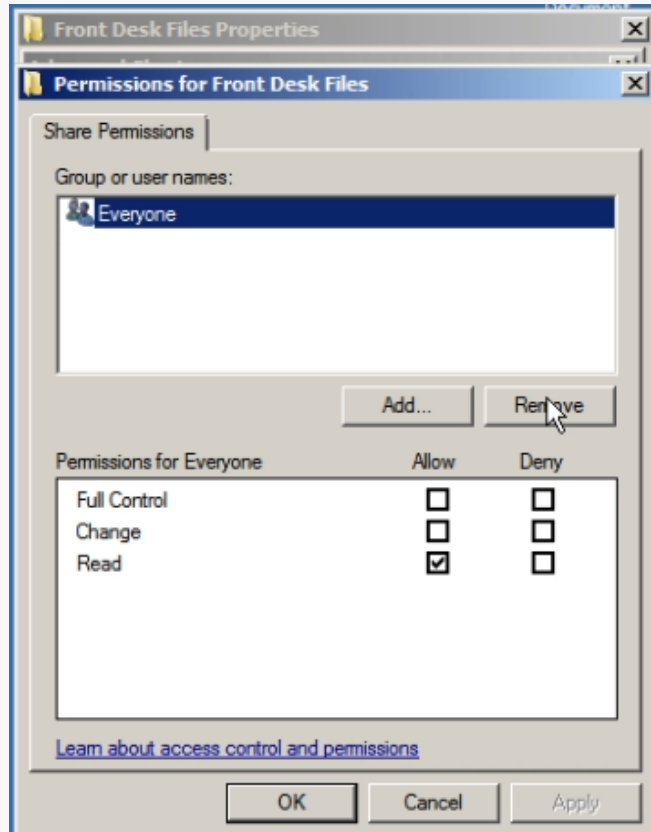


Figure 141: File Services Configurations - Removing Everyone and Clicking Add

Remove Everyone. And click on Add...



Figure 142: File Services Configurations - Adding Marsha's Name

In Select Users, Computers, Service Accounts, or Groups, Select Marsha. And Click OK.

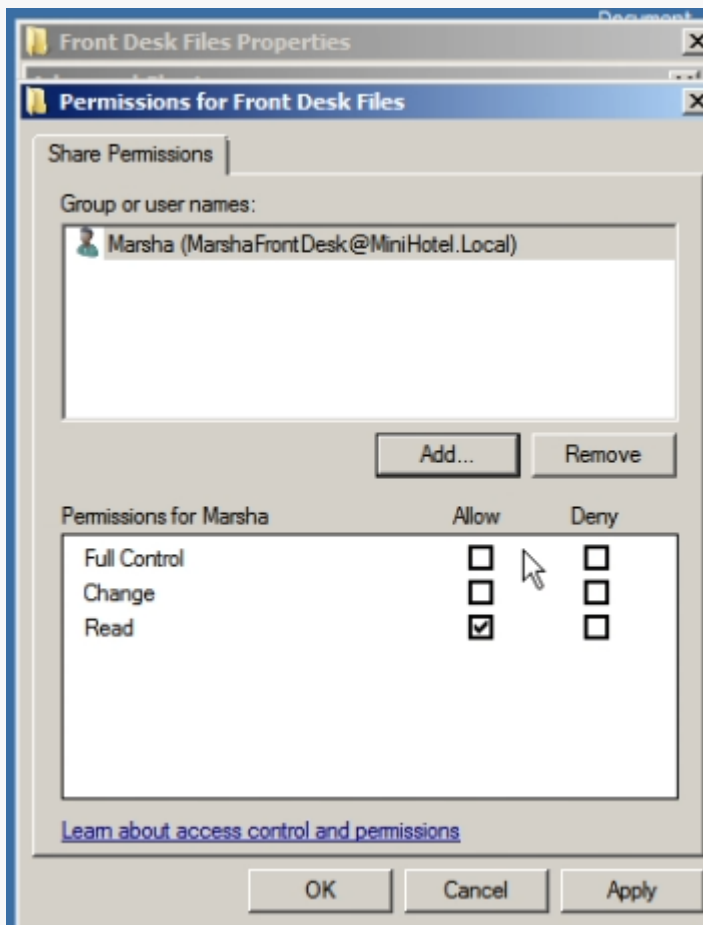


Figure 143: File Services Configurations - Editing permission level for Marsha

After clicking OK, we can see here that Marsha(MarshaFrontDesk@[MiniHotel.Local](#)) is added in User names above. Now, we need to edit Marsha's permission to Allow Full Control on the Front Desk Files since she is the Front Desk. Click Apply to Apply the changes.

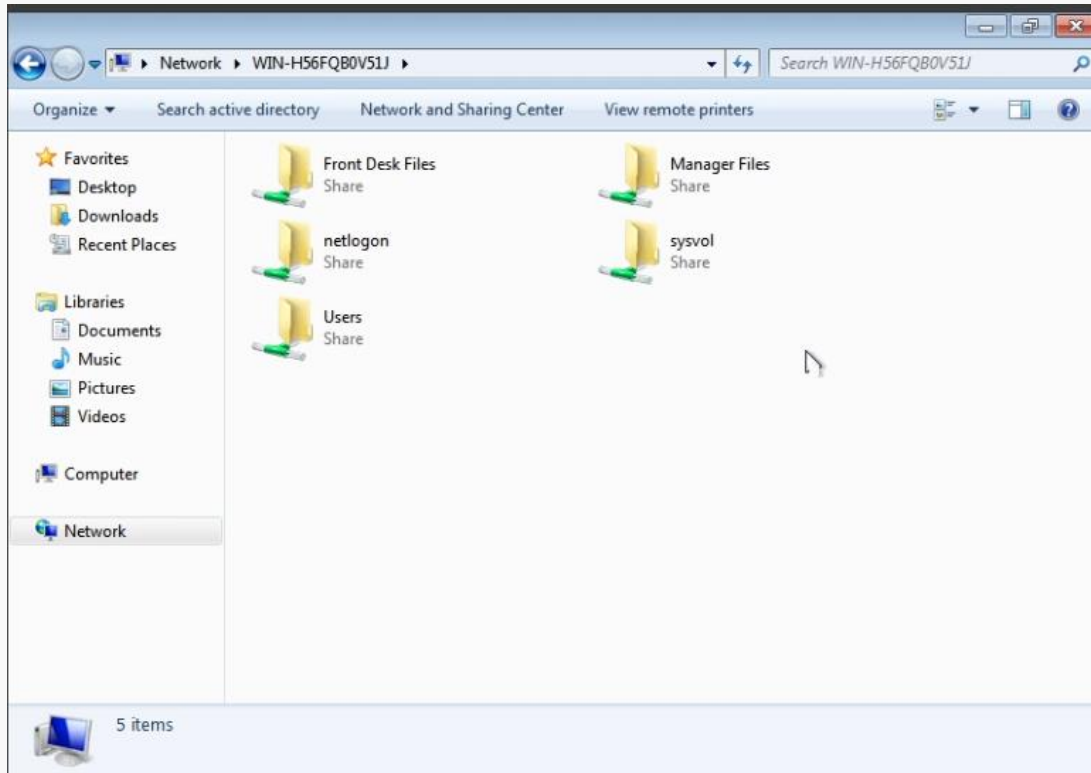


Figure 144: File Services Configurations - Accessing the Shared Folder

After clicking the IT Admin's Computer, we can now see the Front Desk Files Folder, Click on it so we can Read/Write the contents within that folder.

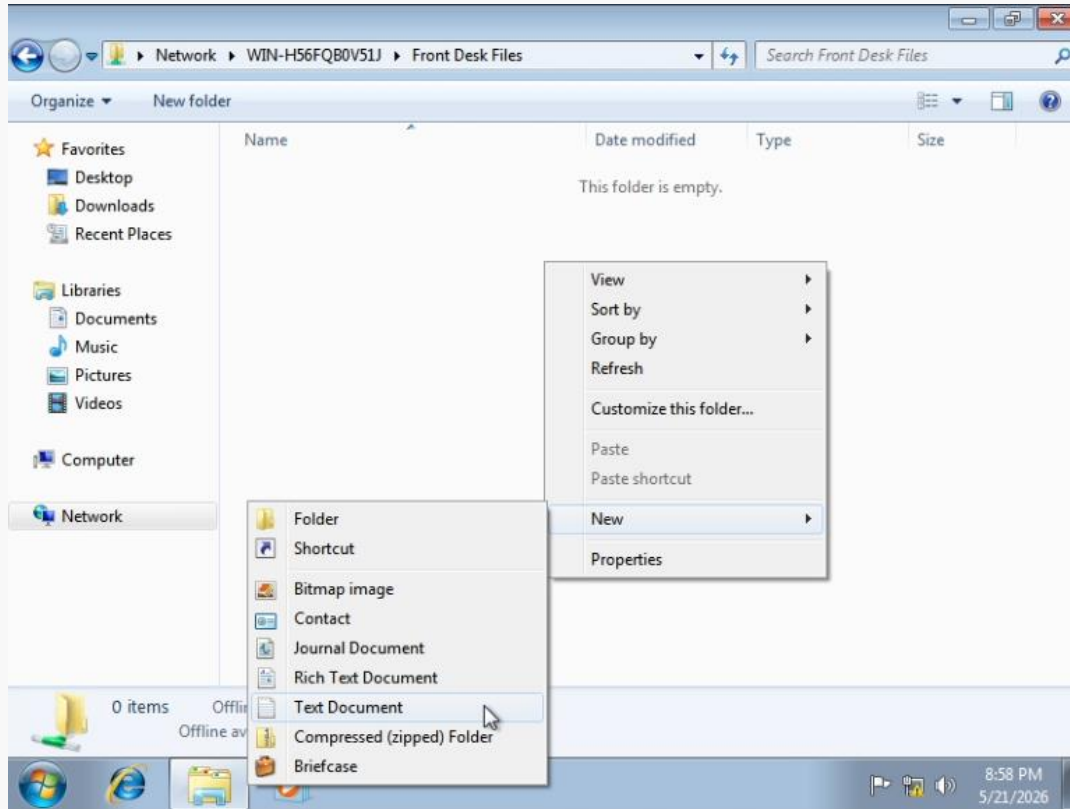


Figure 145: File Services Configurations - Inside the Front Desk Files

Navigate to Front Desk Files, right click, navigate to New and create a Text Document. Name it Customers.

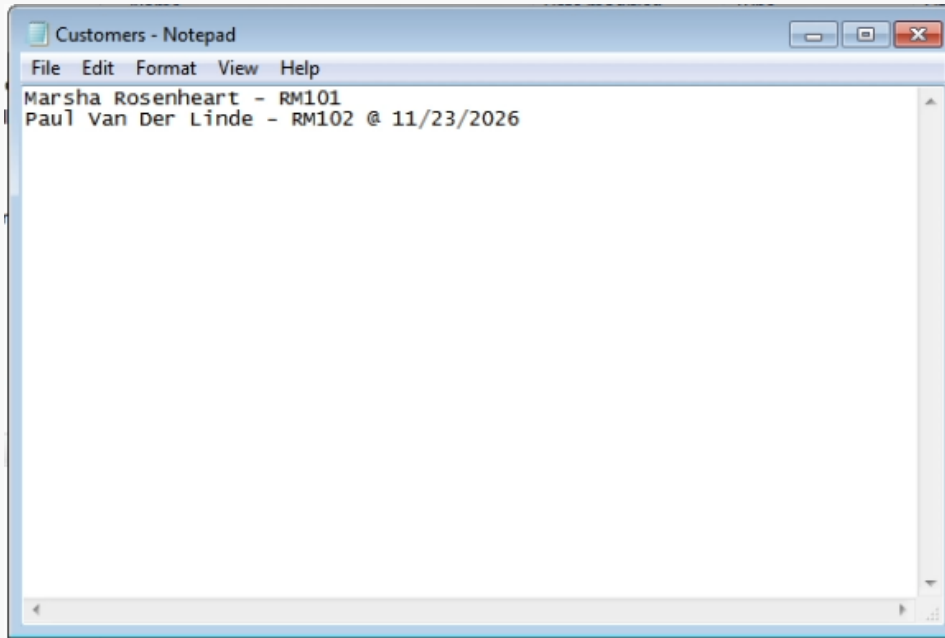


Figure 146: File Services Configurations - Writing inside the Front Desk Files

In Marsha's Front Desk PC, since we have full control of the folder, we can write inside the Customer Text File.

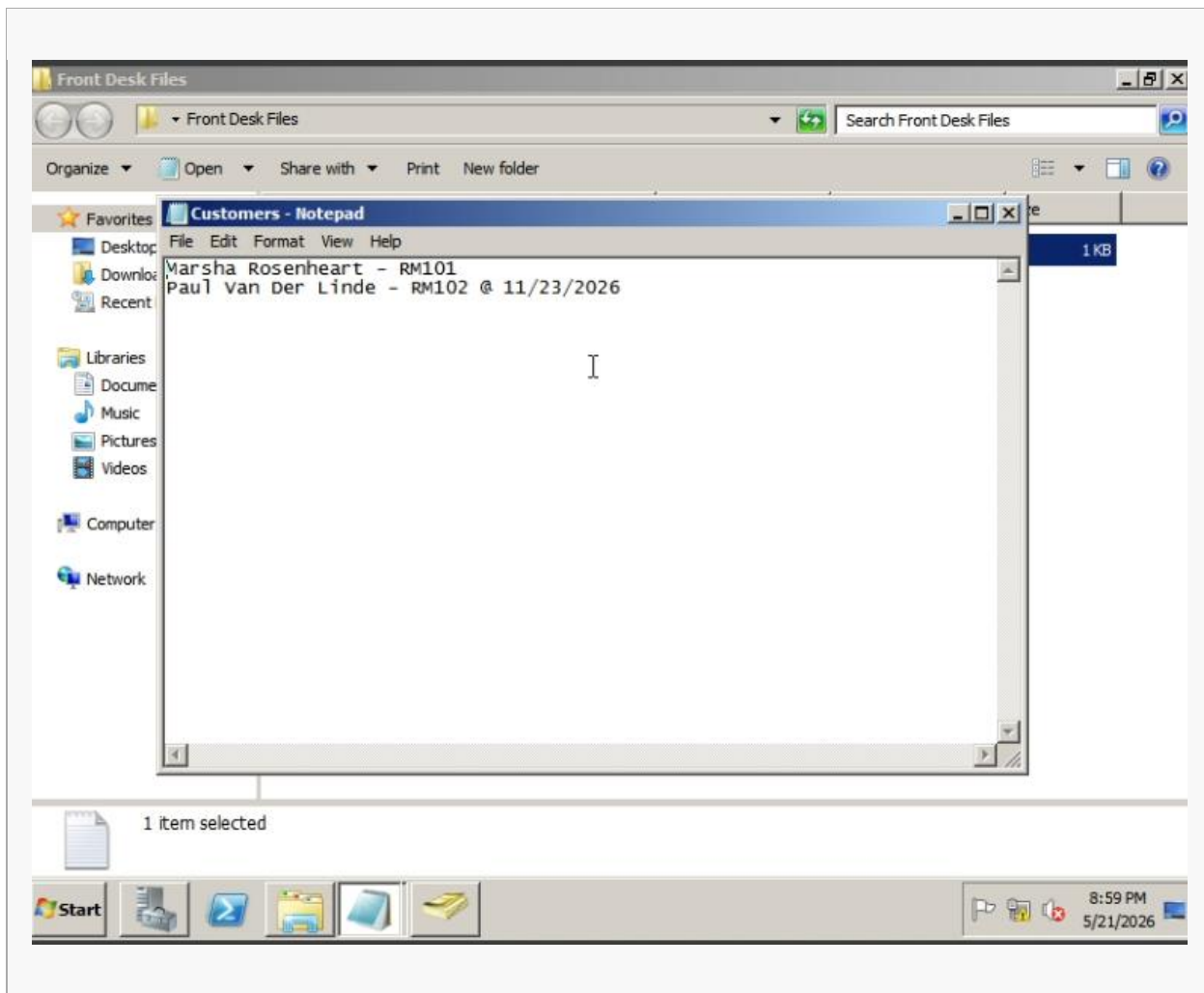


Figure 147: File Services Configurations - Seeing the File in the side of the Admin

Back in our IT Admin Server PC, we can see that the Text that was written on Marsha Front Desk PC has been saved and the IT Admin can read it. Congratulations you have completed the File Sharing within the Network.

5.11 Remote Desktop Configuration

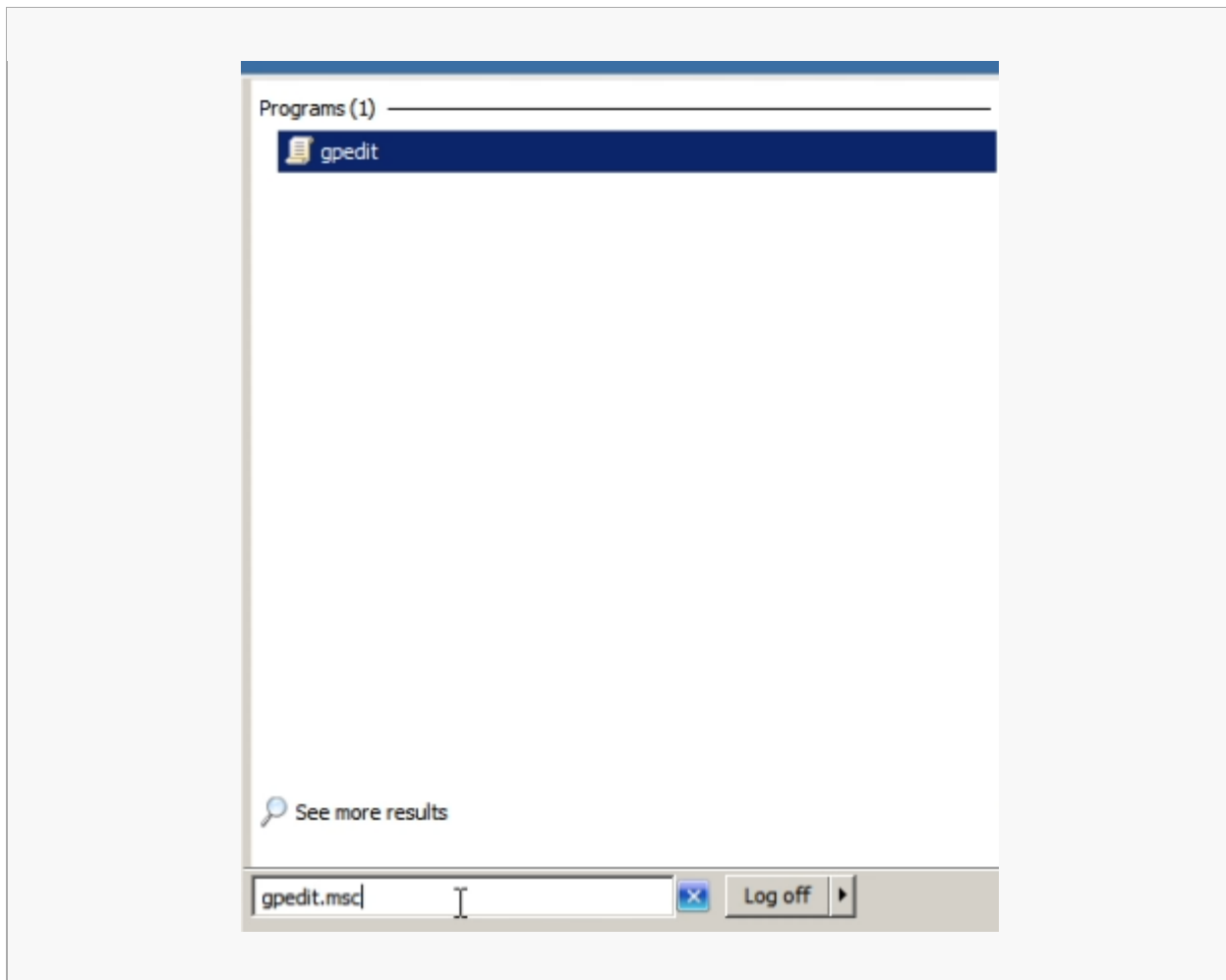


Figure 148: Remote Desktop — gpedit.msc

To start Remote Desktop Connection, first we must go to the Start Menu and type in the search bar gpedit.msc.

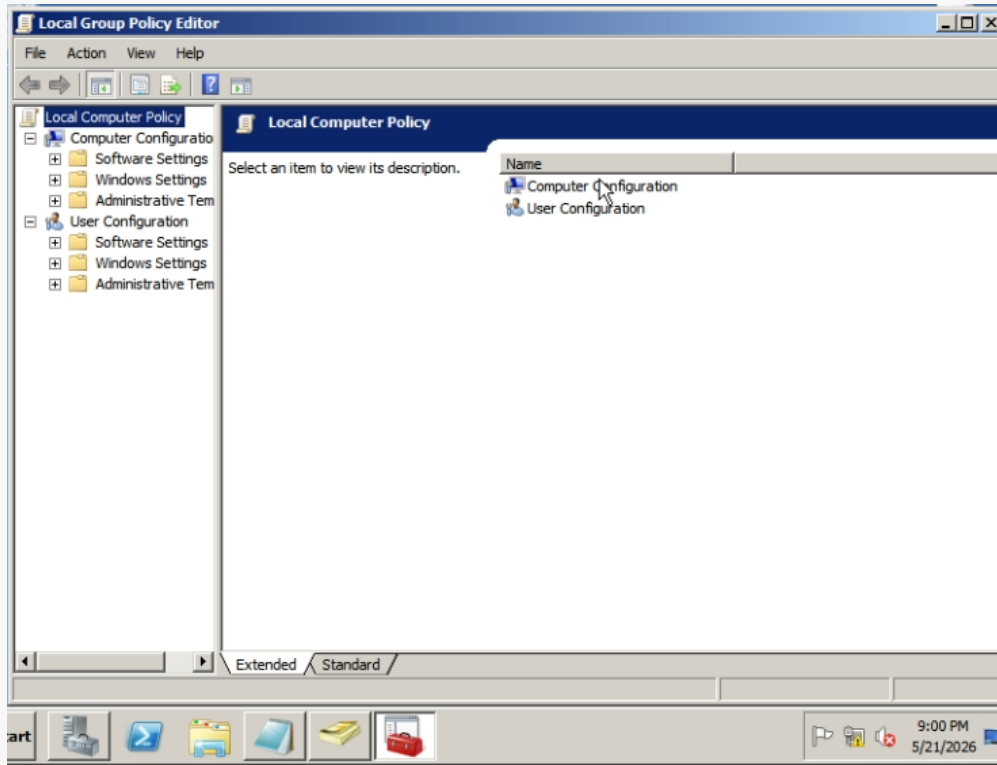


Figure 149: Remote Desktop — Navigating inside Local Computer Policy

Inside the Local Group Policy Editor, Go to Computer Configuration

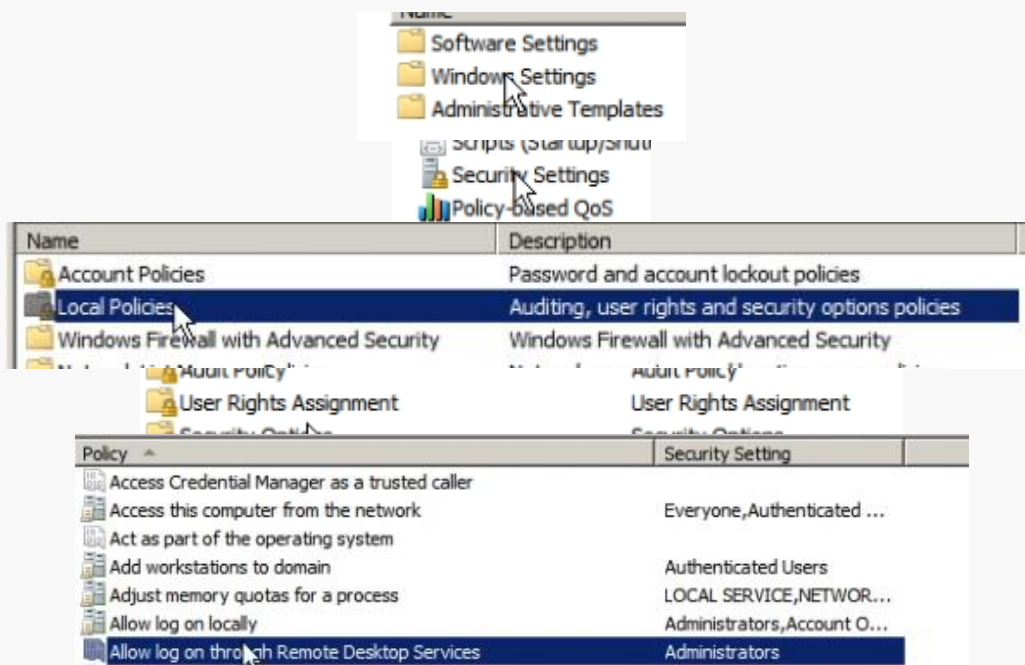


Figure 150: Remote Desktop — Allowing Log On Through Remote Desktop Services

Navigate to Windows Settings > Local Policies > Users Right Assignment > and click Allow Log on through Remote Desktop Services.

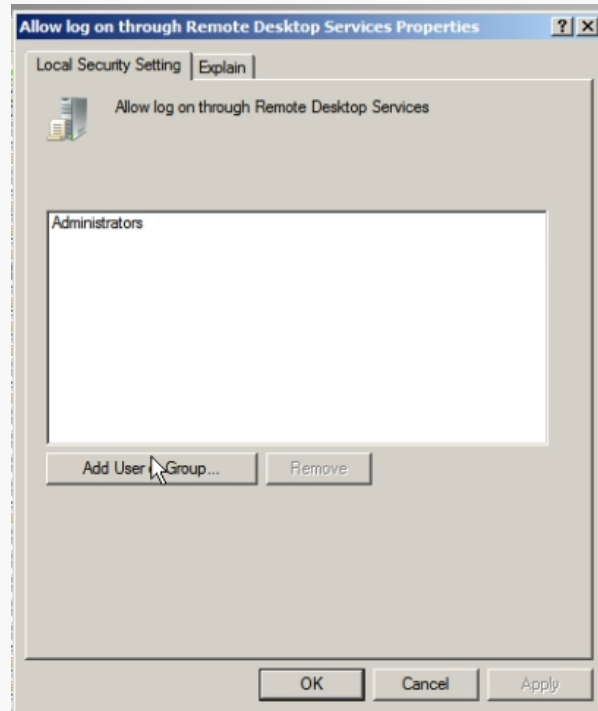


Figure 151: Remote Desktop — Adding users

In “Allow log on through Remote Desktop Services Properties” to go Add Users or Group... to Add users who can Remote Desktop.



Figure 152: Remote Desktop — Adding Marsha and Paul's Names

Type in Marsha's and Paul's name in "Object names to select". And click OK.

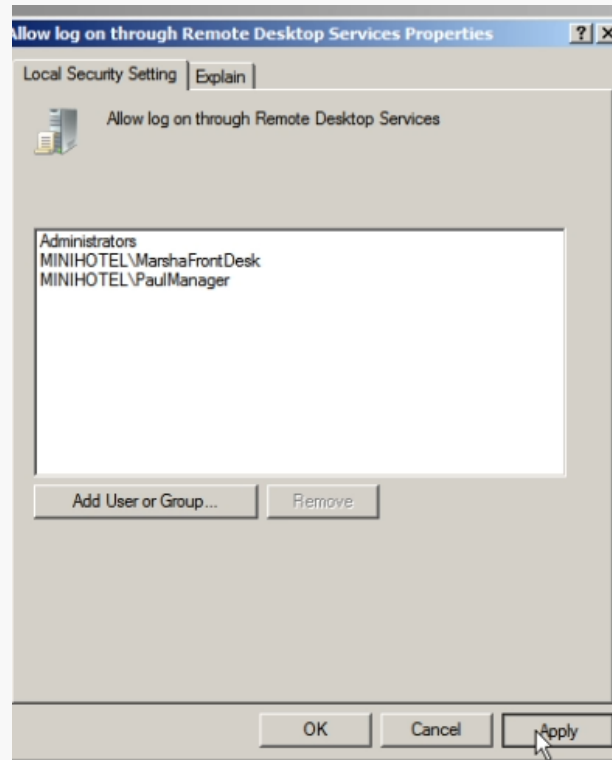


Figure 153: Remote Desktop — Verifying the Names

After putting their names and verifying if everything is alright, click Apply and OK.



Figure 154: Remote Desktop — Allowing Remote Access

Now back to the Desktop of Windows Server, go to Start Menu and search for Allow Remote access to your computer and press enter.

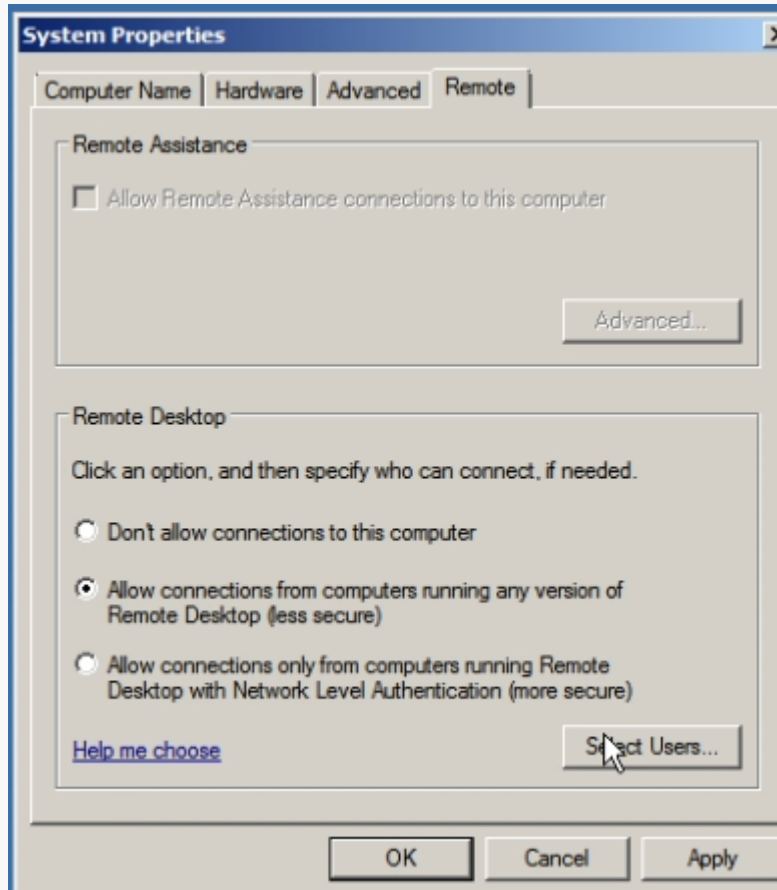


Figure 155: Remote Desktop —Allowing Connections from Computers and Selecting Users

In the System Properties, under there we have Remote Desktop, Click the Option “Allow connections from computers running any version of Remote Desktop” and after that go to Select Users...

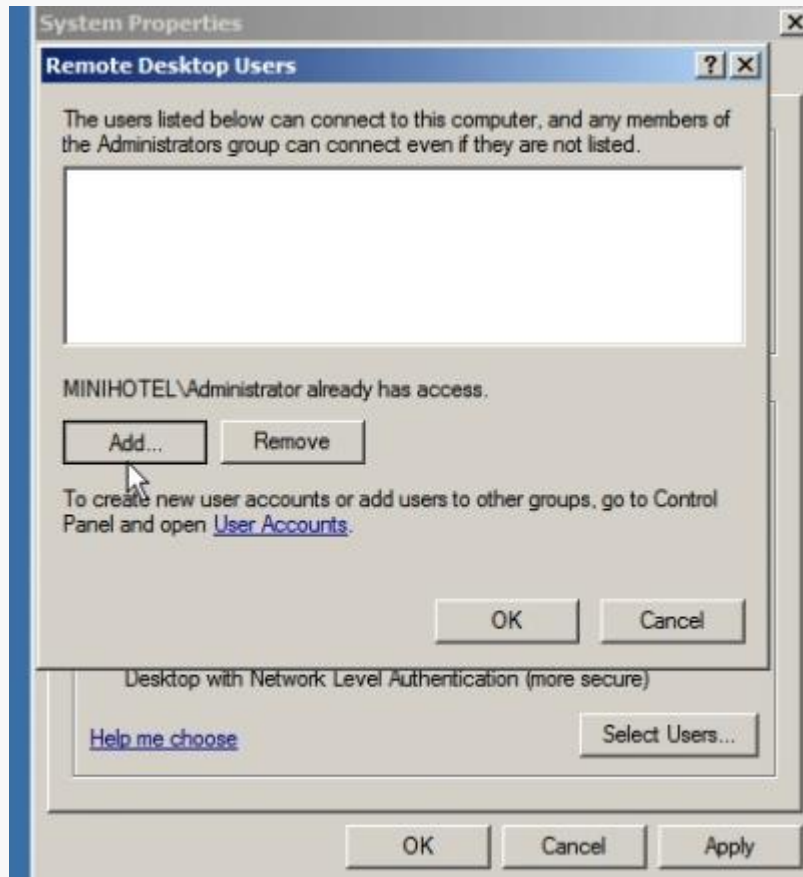


Figure 156: Remote Desktop — Adding Users to Remotely access

After pressing Select Users, go to Add. To Add Users.

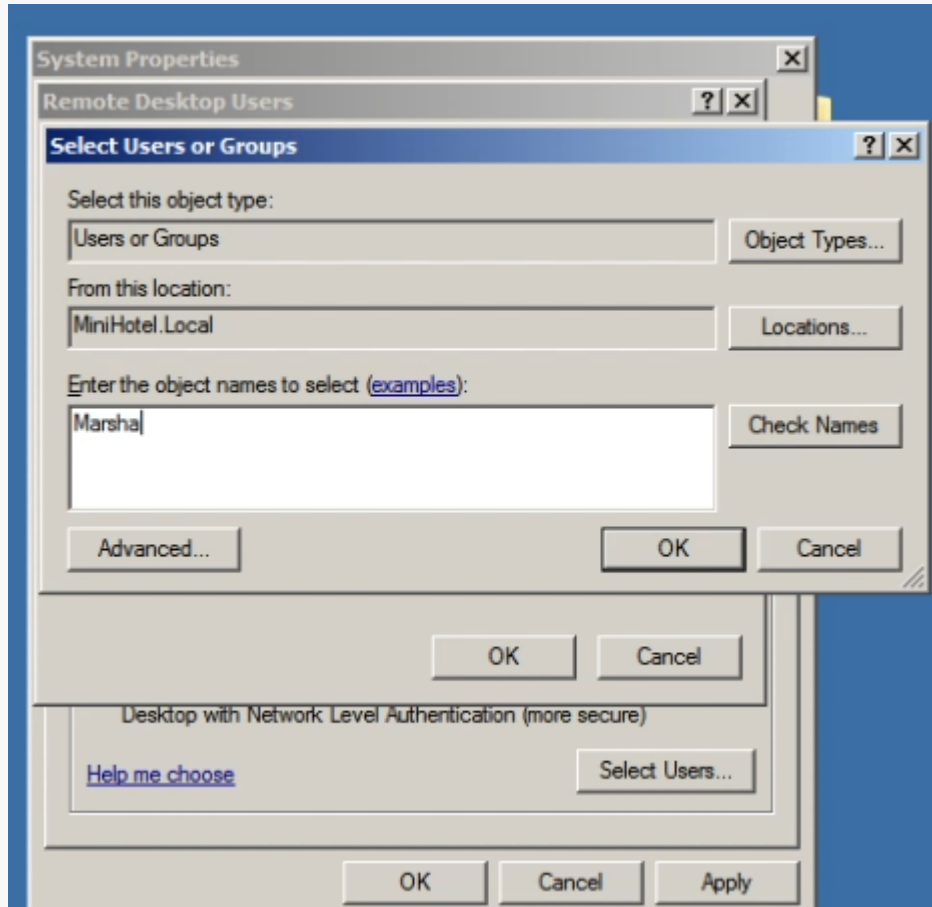


Figure 157: Remote Desktop — Adding Paul and Marsha's Names

Type in Marsha and Paul's Name in the Object names to select.

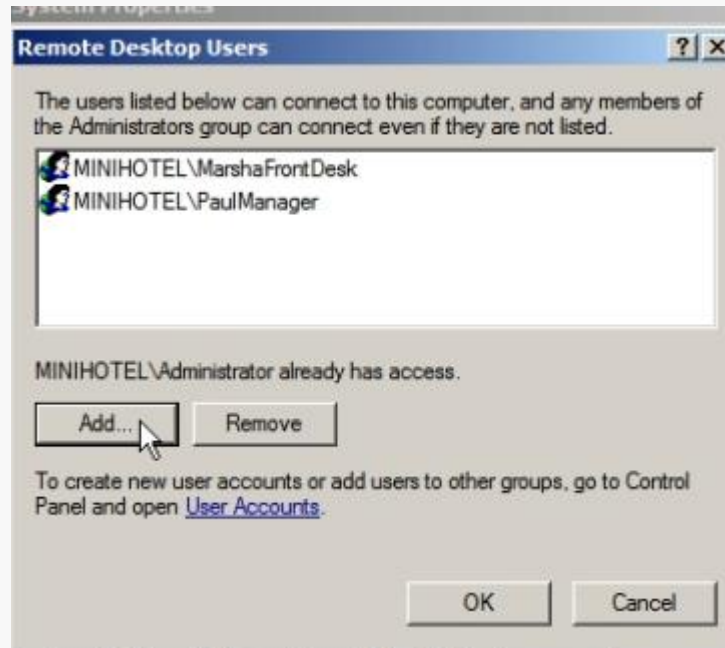


Figure 158: Remote Desktop — Adding Their Names and Verifying
After adding both of their names, click OK.

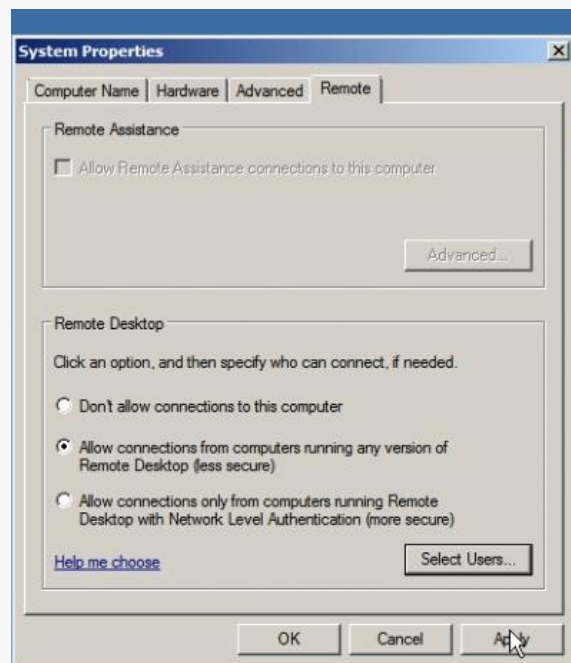


Figure 159: Remote Desktop — Applying Changes
Click Apply to Apply the changes that you made and after that click OK.

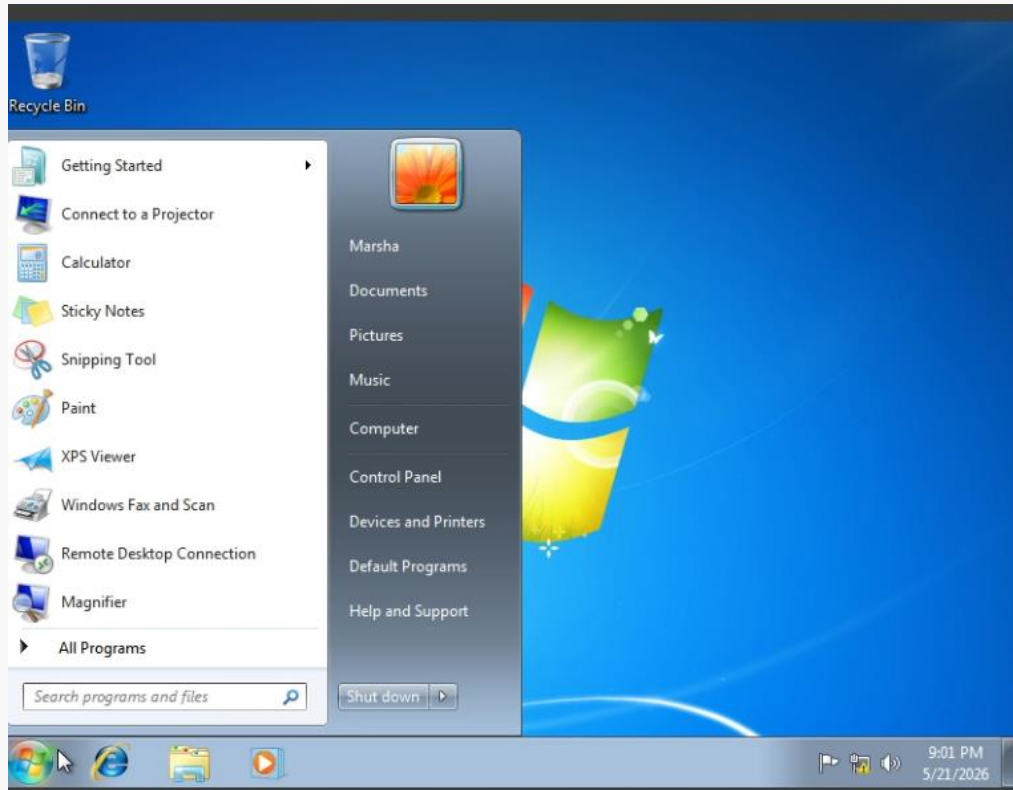


Figure 160: Remote Desktop — Searching Remote Desktop Connection

Now go to a Client PC, I chose Marsha Front Desk PC, as my remote access origin. Click on the Start Menu, and search Remote Desktop Connection to start.



Figure 161: Remote Desktop — Typing the IP Address of the Remote Host

Enter the IP Address of the PC that you will remote access to.



Figure 162: Remote Desktop — Typing your Credentials

Finally Enter your Credentials such as your Domain name Password that was given to you.



Figure 163: Remote Desktop — Waiting to Connect

Wait for the RDC to connect to 192.168.5.10.

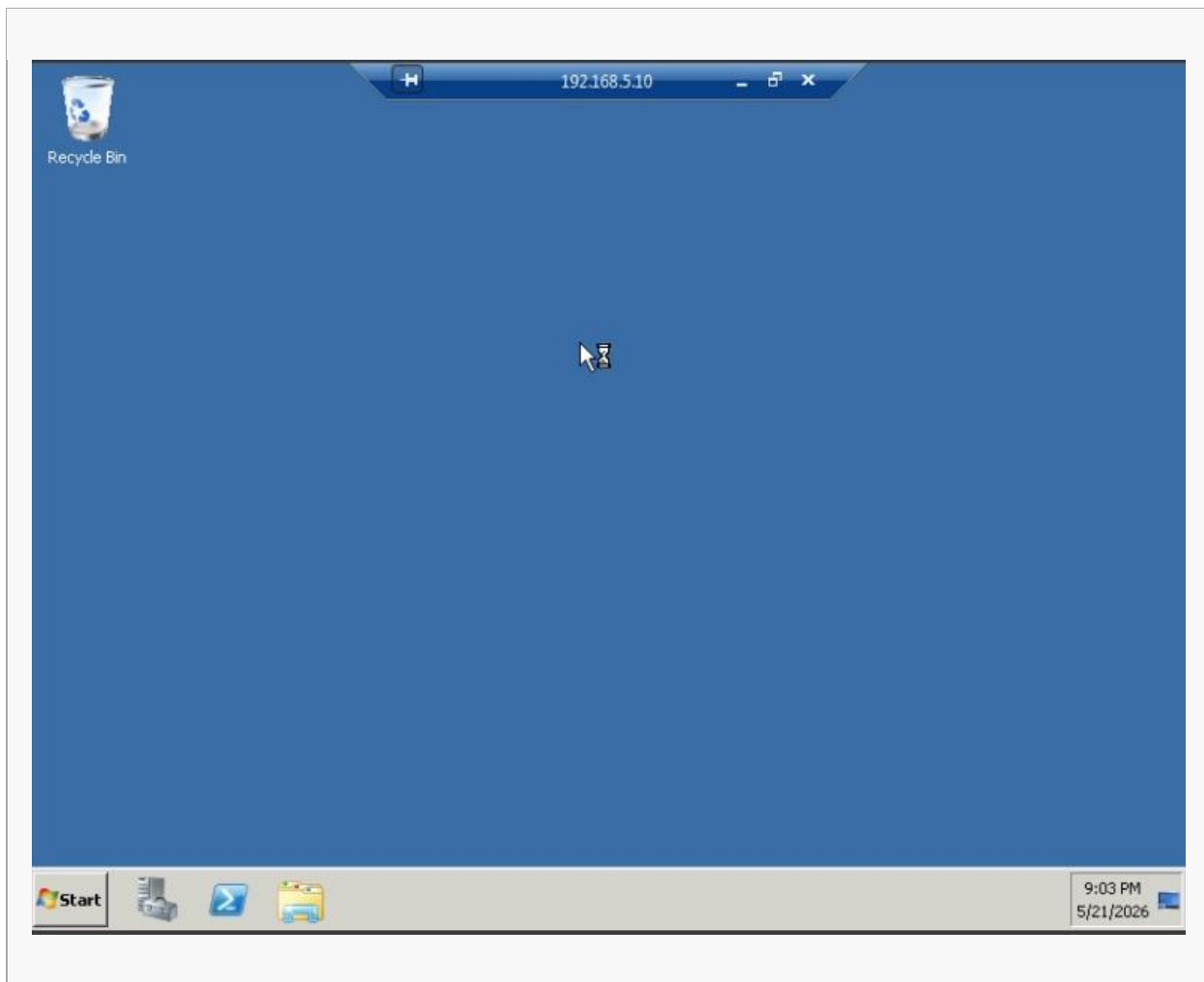


Figure 164: Remote Desktop — Successful Remote Session from Client

Congratulations you Successfully Remote Access from Client to a Windows Server Client.

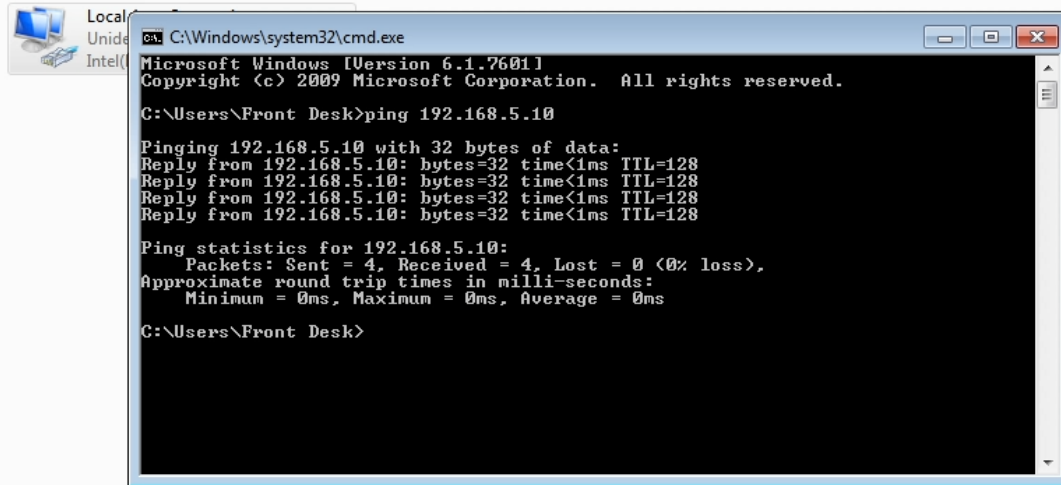
6. Testing and Validation

The following tests were performed to validate the complete server setup and client-server connectivity.

#	Test Performed	Expected Result	Status	Remarks
1	Static IP configuration	IP address applied correctly	Completed/Valid	Static IP Addresses have Ping Each other successfully
2	DNS resolution (nslookup)	Domain name resolves to server IP	Completed/Valid	Domain name is installed and it resolves to the Server IP
3	DHCP lease assignment	Client receives IP from DHCP pool	Completed/Valid	Both Client PCs has received their respective IP from the DHCP Pool
4	Client domain join	Client successfully joins domain	Completed/Valid	Both Client PCs have joined the domain successfully
5	Domain user login	User logs in with domain account	Completed/Valid	Both Client PCs login successfully using the domain user account
6	Shared folder access	Client can access shared folder	Completed/Valid	Both Client PCs can access their respective folders.
7	Remote Desktop connection	Remote session opens successfully	Completed/Valid	Marsha Front Desk PC can Remote Access successfully.
8	Ping connectivity	Server and client ping each other	Completed/Valid	All PCs within the Network that are in the same subnet can Ping Each other inside the Network.

7. Screenshots with Captions

The following screenshots document the key configurations and **test results of the setup.**



```
C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\Front Desk>ping 192.168.5.10

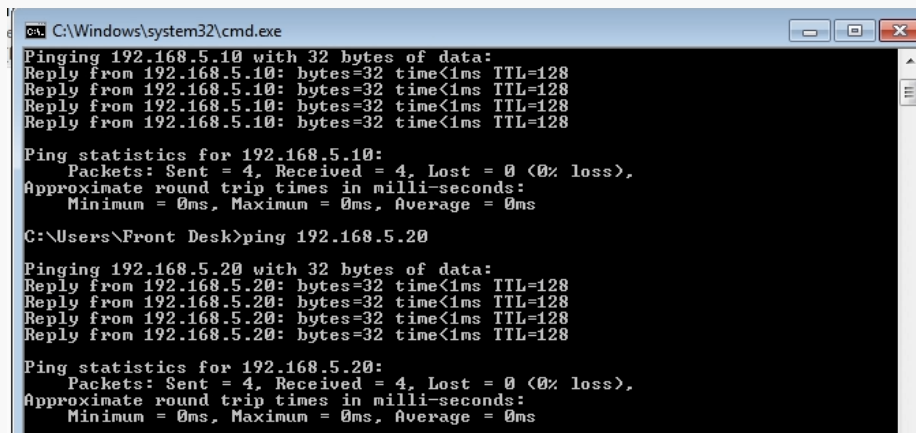
Pinging 192.168.5.10 with 32 bytes of data:
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Front Desk>
```

Figure 165: Screenshot 1 test performed #1 Client PC Front Desk Pinging IT Admin Server PC (Static IP Connectivity)

The Front Desk PC with the Static IP of 192.168.5.30 successfully pinged the IT Admin PC with the Static IP of 192.168.5.10.



```
C:\Windows\system32\cmd.exe
Pinging 192.168.5.10 with 32 bytes of data:
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128
Reply from 192.168.5.10: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Front Desk>ping 192.168.5.20

Pinging 192.168.5.20 with 32 bytes of data:
Reply from 192.168.5.20: bytes=32 time<1ms TTL=128
Reply from 192.168.5.20: bytes=32 time<1ms TTL=128
Reply from 192.168.5.20: bytes=32 time<1ms TTL=128
Reply from 192.168.5.20: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.20:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Figure 166: Screenshot 2 test performed #2 Client PC Front Desk Pinging PC Client of the Manager's Office (Static IP Connectivity)

The Front Desk PC with the Static IP of 192.168.5.30 successfully pinged the PC Client of Manager's Office with the Static IP Address of 192.168.5.20.

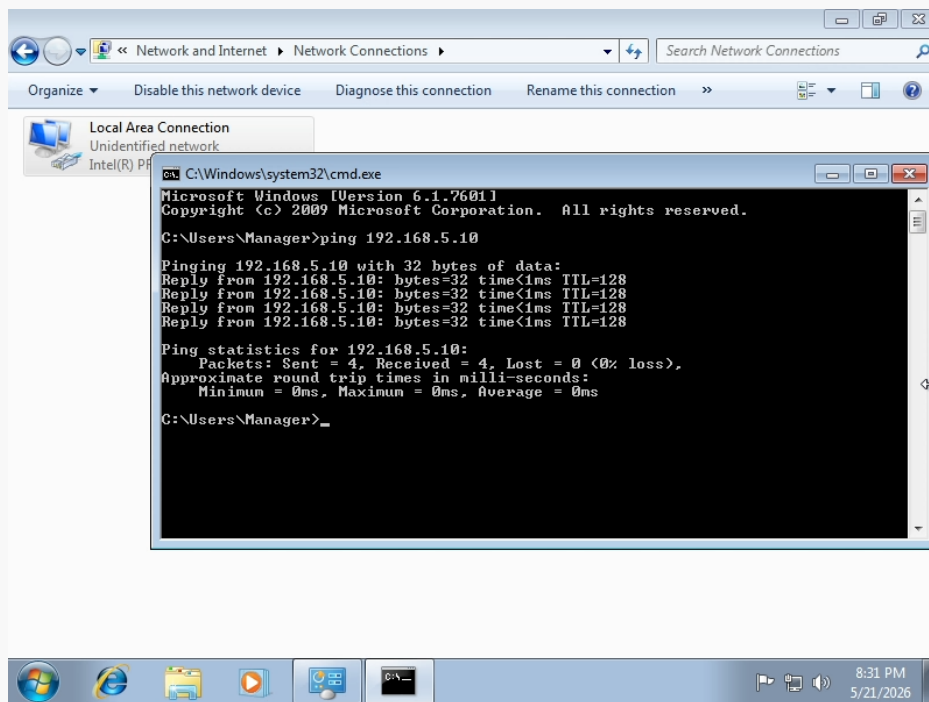


Figure 167: Screenshot 3 test performed #3 Client PC Manager's PC Pinging IT Admin Server PC (Static IP Connectivity)

The Manager's PC with the static IP of 192.168.5.20 successfully pinged the IT Admin Server PC with the static IP Address of 192.168.5.10.

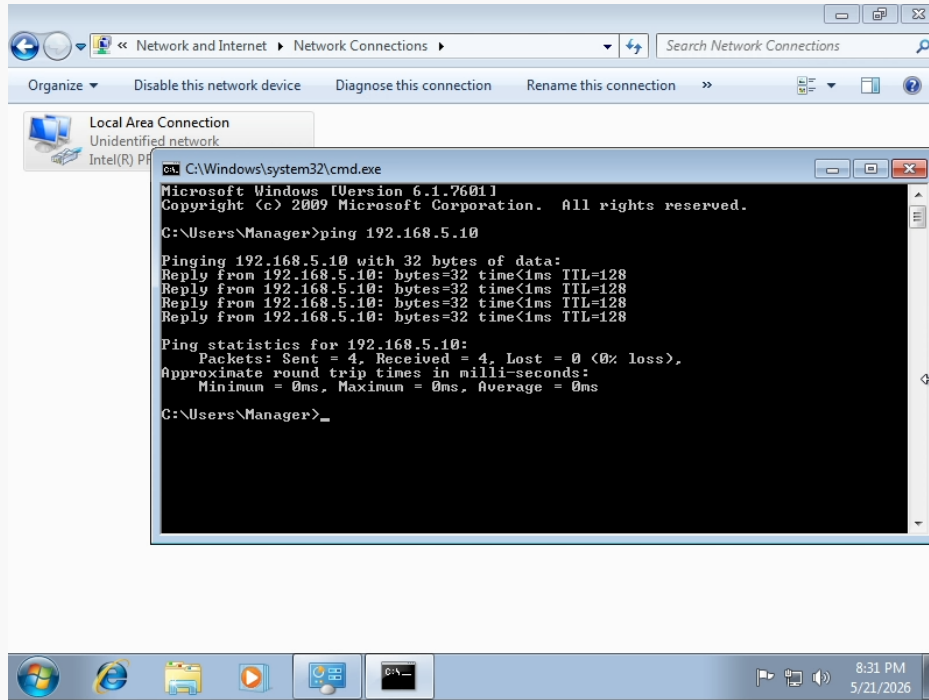


Figure 168: Screenshot 4 test performed #4 Client PC Manager's PC Pinging IT Admin Server PC

The Manager's PC with the static IP of 192.168.5.20 successfully pinged the IT Admin Server PC with the static IP Address of 192.168.5.10.

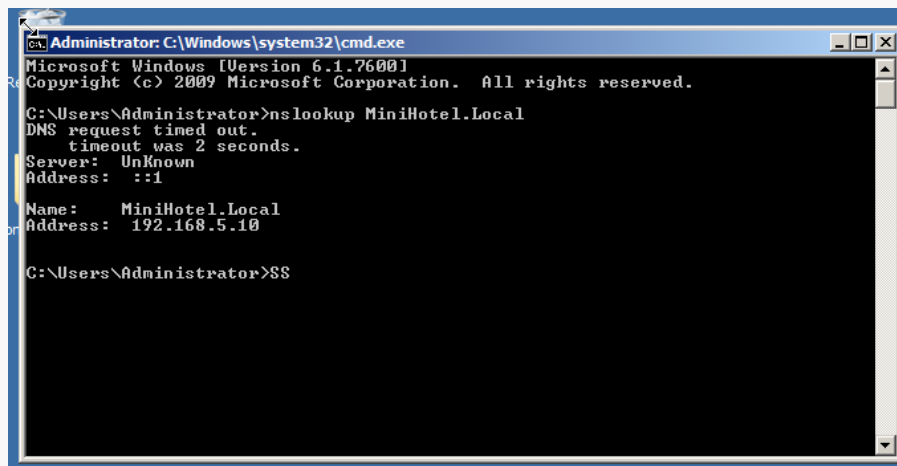


Figure 169: Screenshot 5 test performed #5 Testing if DNS has been registered

DNS server is installed and successfully resolves the MiniHotel.Local domain to the server IP.

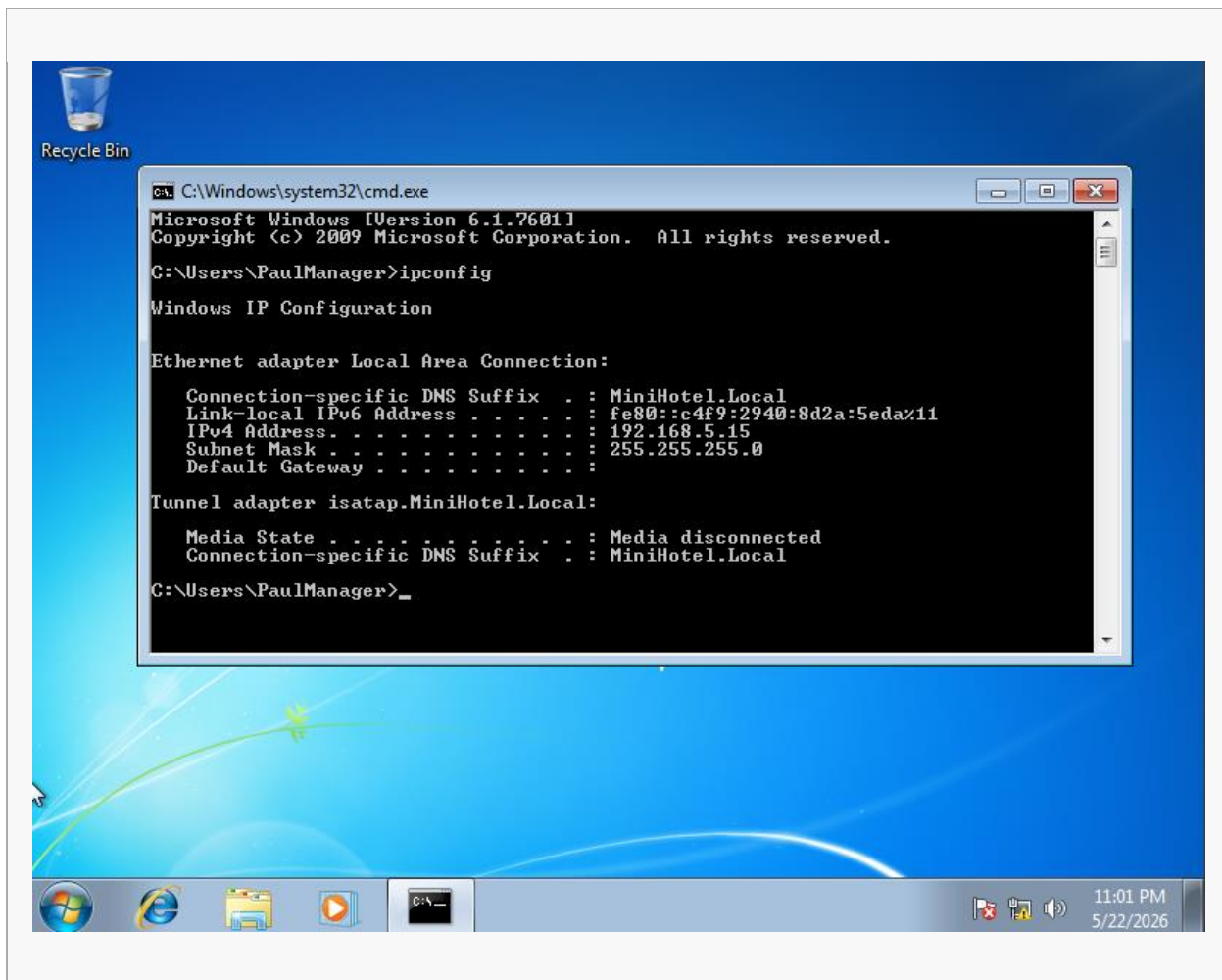


Figure 170: Screenshot 6 test performed #6 Client PC Manager's PC Pinging IT Admin Server PC

The Paul Manger PC has received the IP Address from the DHCP Server from the IT Admin's Windows Server 2008 R2. This confirms that the DHCP Server is up and running.

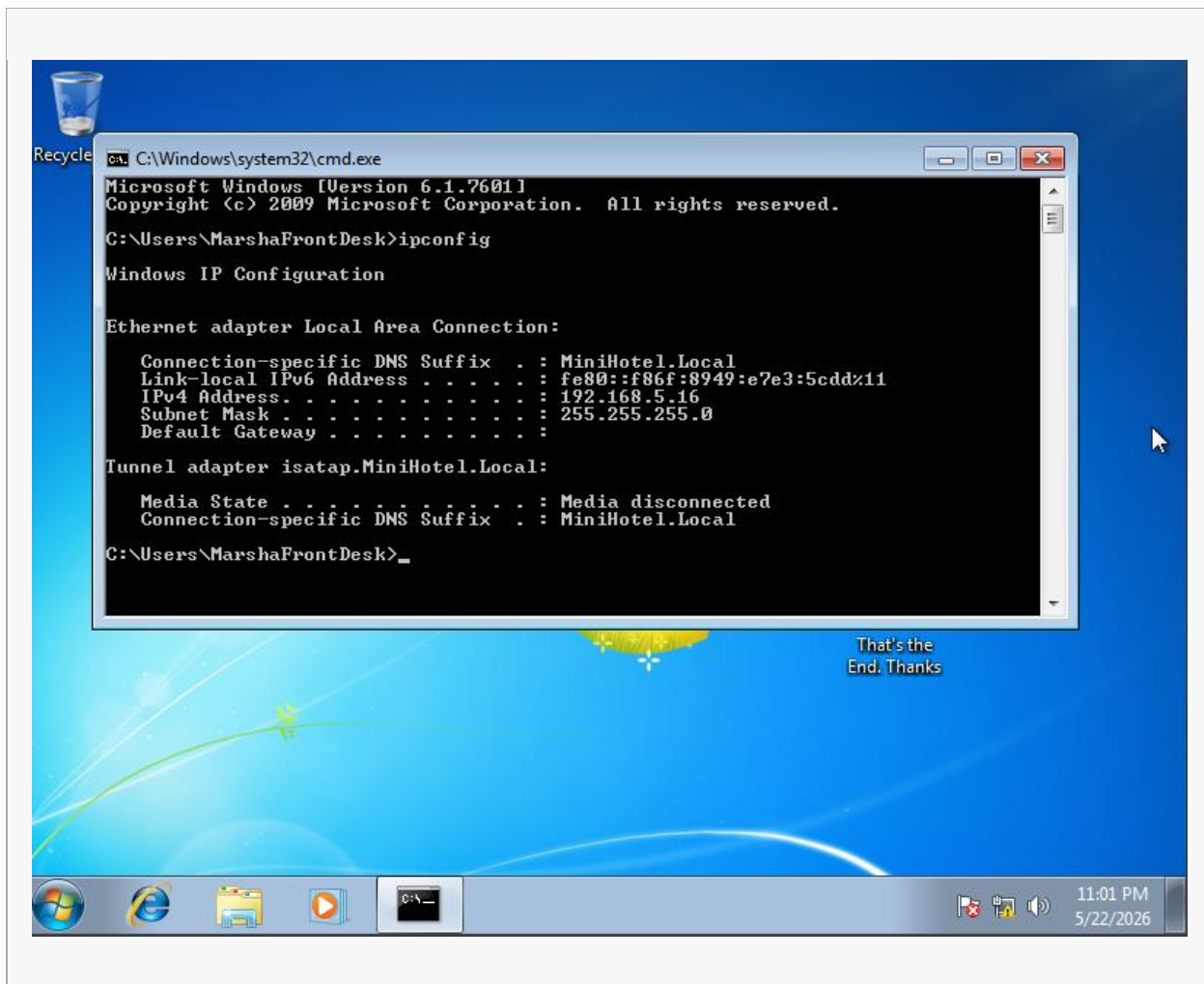


Figure 171: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC

The Marsha Front Desk PC has received the IP Address from the DHCP Server from the IT Admin's Windows Server 2008 R2. This confirms that the DHCP Server is up and running.

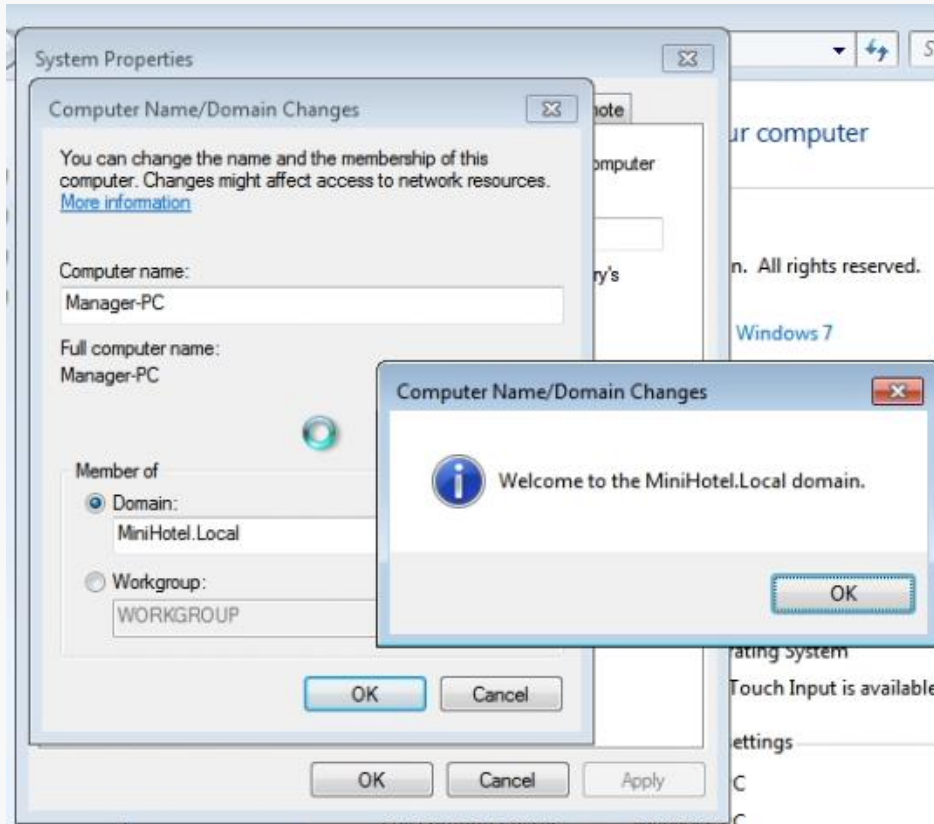


Figure 172: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
Paul Manager PC Client has successfully joined the MiniHotel.Local domain.

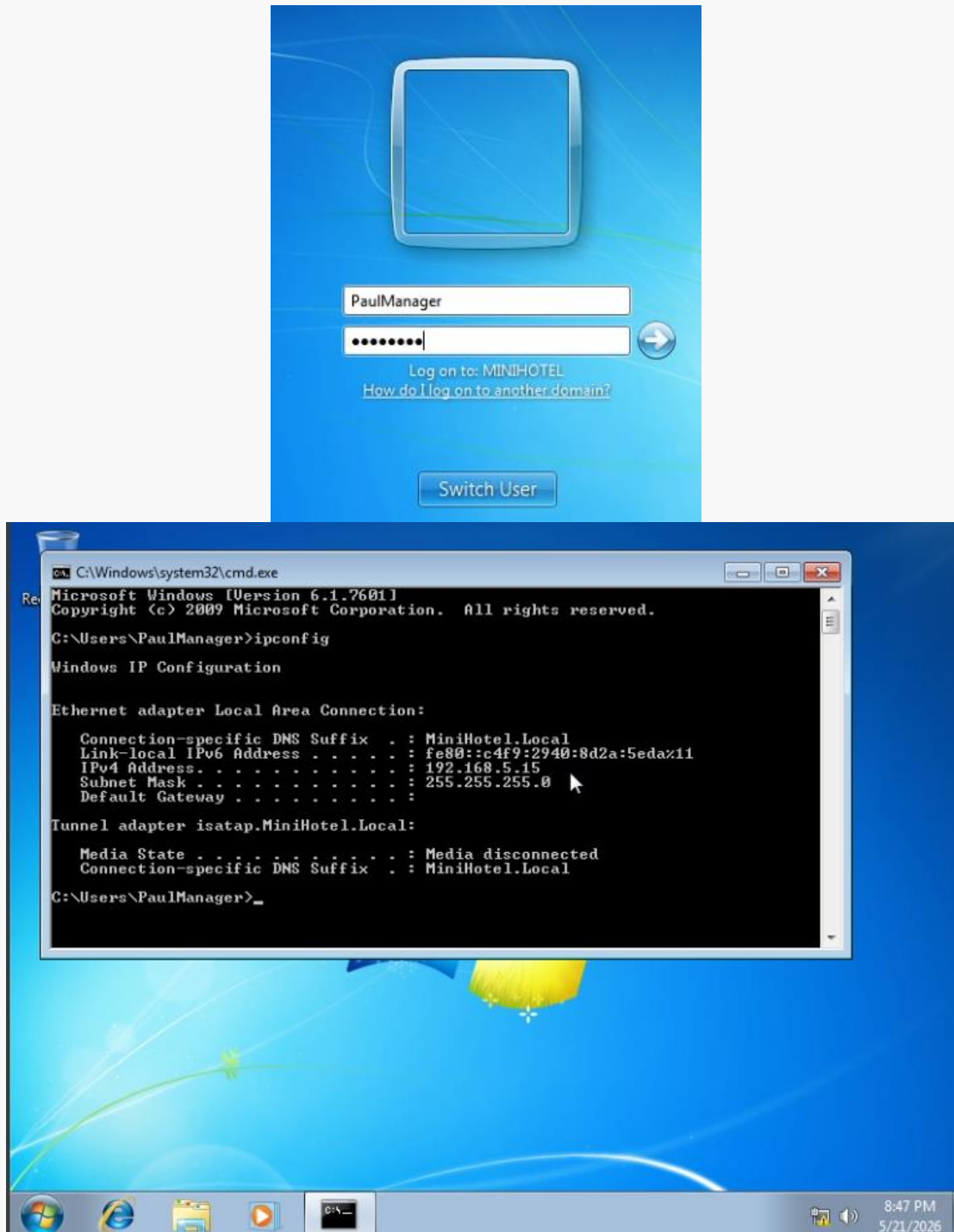


Figure 173: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC

Paul Manager PC client's credentials are used to login to the domain user account. And it has been a success.

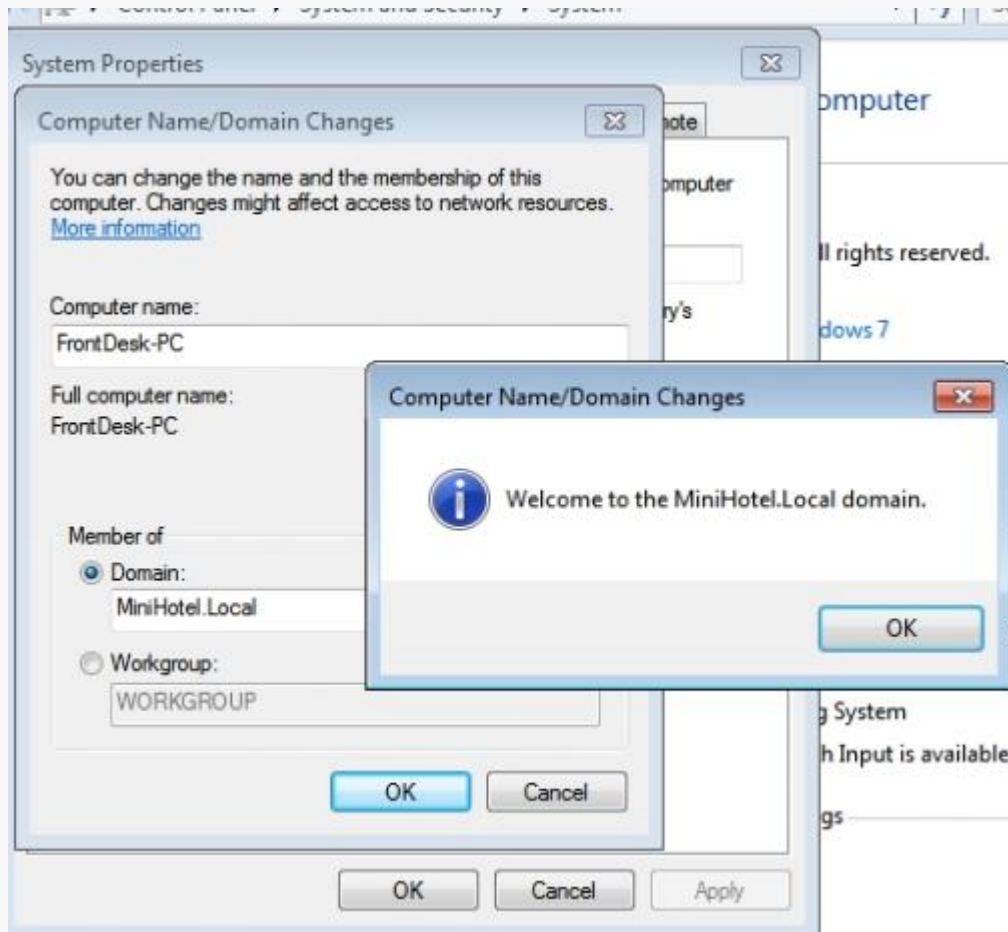


Figure 174: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
Marsha Front Desk PC Client has successfully joined the MiniHotel.Local domain.

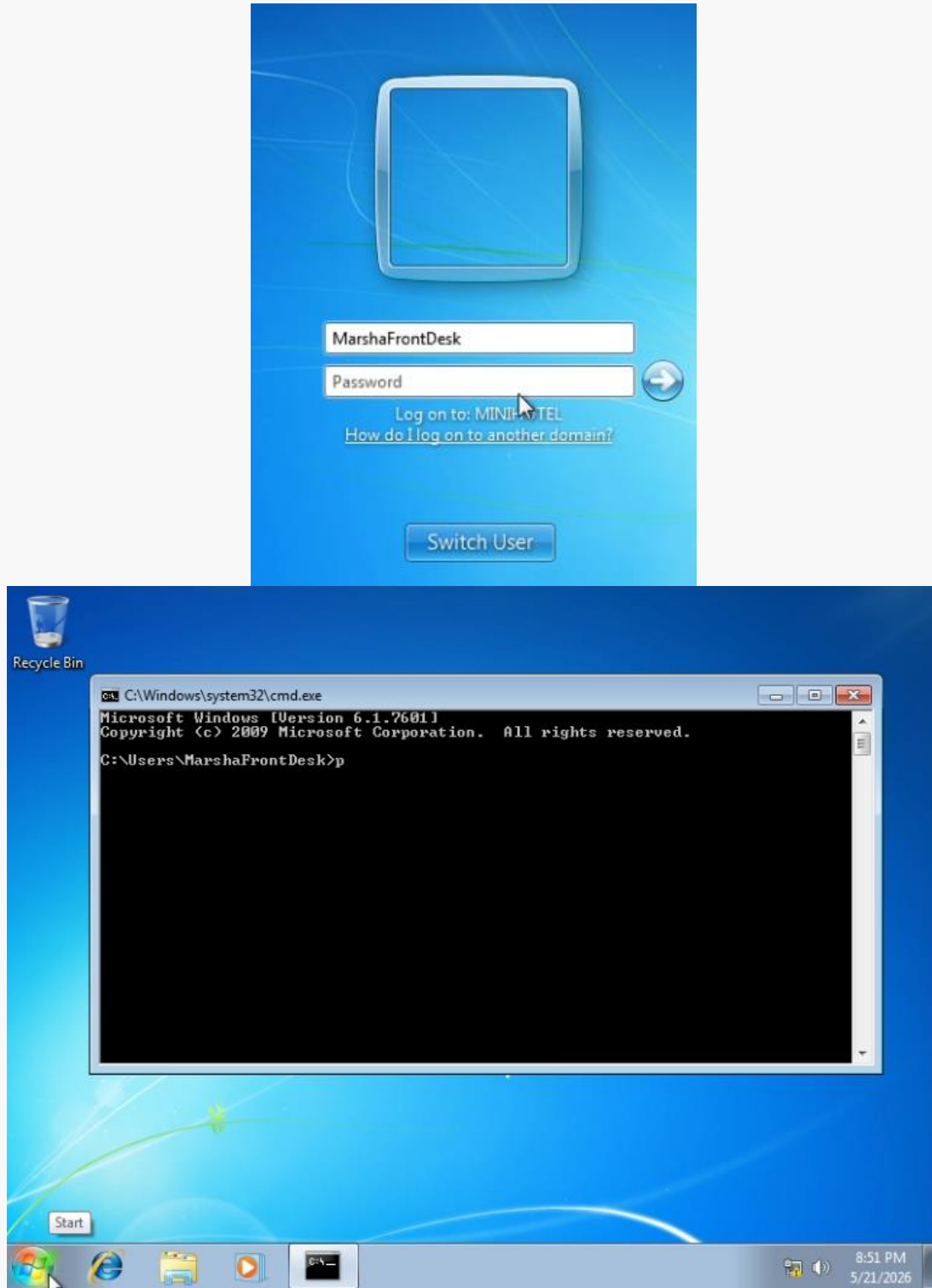


Figure 175: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC

Marsha Front Desk PC client's credentials are used to login to the domain user account. And it has been a success.

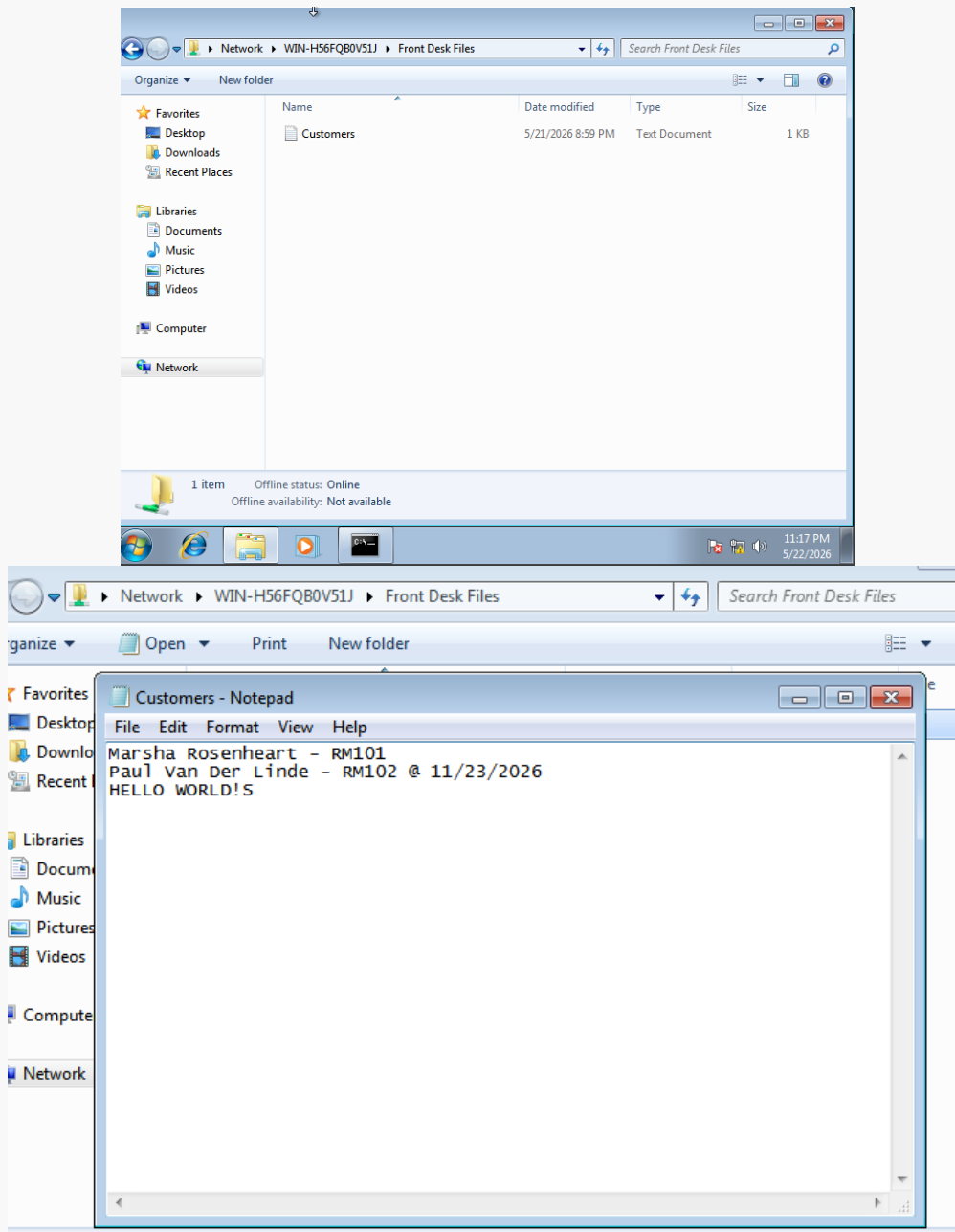


Figure 176: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC

Marsha Front Desk PC can access the shared folder provided by the IT admin. She can Read the Notepad and Write also. The test was a success.

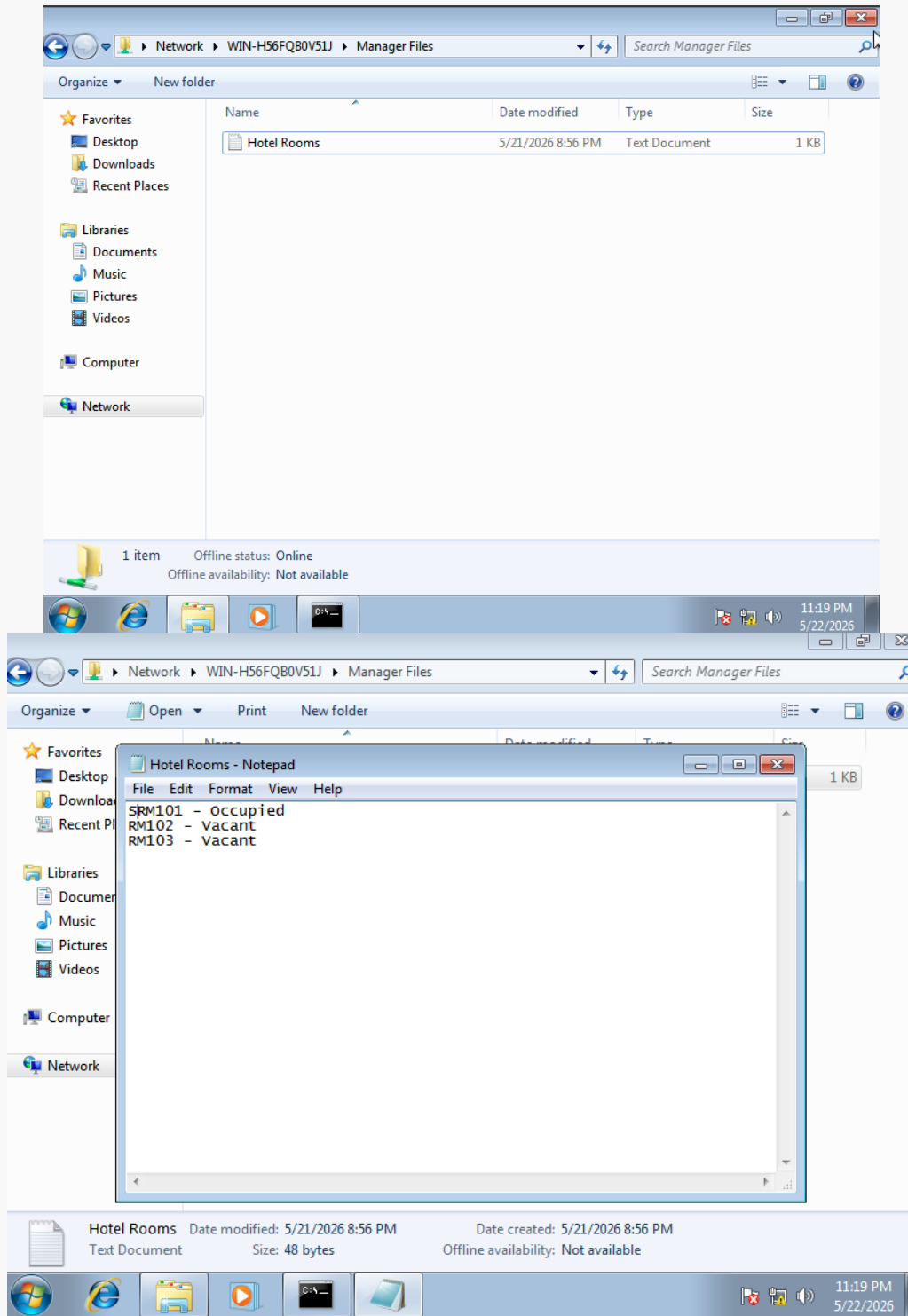


Figure 177: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC

Paul Manager PC can access the shared folder provided by the IT admin. He can Read the Notepad and Write also. The test was a success.

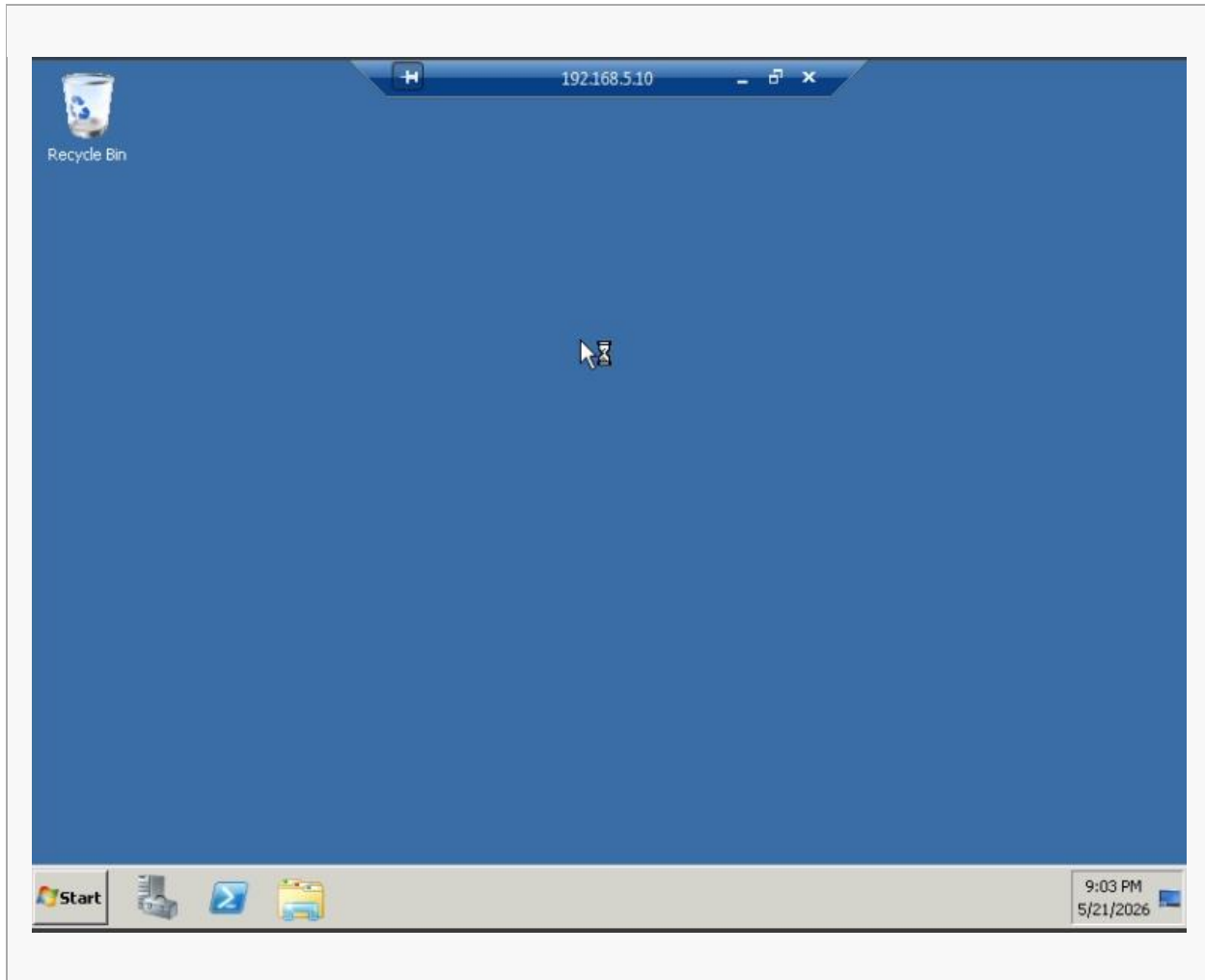


Figure 178: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
The remote session from the Marsha Front Desk Client to IT Admin Server is a success.

The image displays two separate screenshots of Windows command prompt windows, each titled "C:\Windows\system32\cmd.exe". Both windows show the output of a ping command directed at the IP address 192.168.5.10.

The top window's prompt is "C:\Users\MarshaFrontDesk>". It shows four successful replies from 192.168.5.10, each with 32 bytes of data, a time of less than 1ms, and a TTL of 128. The ping statistics indicate that 4 packets were sent and received, with 0% loss, and the round trip times are all 0ms.

The bottom window's prompt is "C:\Users\PaulManager>". It also shows four successful replies from 192.168.5.10, each with 32 bytes of data, a time of less than 1ms, and a TTL of 128. The ping statistics are identical to the top window, showing 4 packets sent and received with 0% loss and 0ms round trip times.

Figure 179: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
MarshaFrontDesk PC and PaulManager PC can ping the IT Admin Server PC.

```
C:\Windows\system32\cmd.exe
Connection-specific DNS Suffix . : MiniHotel.Local
Link-local IPv6 Address . . . . . : fe80::f86f:8949:e7e3:5cdd%11
IPv4 Address. . . . . : 192.168.5.16
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

Tunnel adapter isatap.MiniHotel.Local:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : MiniHotel.Local

C:\Users\MarshaFrontDesk>ping 192.168.5.15

Pinging 192.168.5.15 with 32 bytes of data:
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.15:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\MarshaFrontDesk>

C:\Windows\system32\cmd.exe
Connection-specific DNS Suffix . : MiniHotel.Local
Link-local IPv6 Address . . . . . : fe80::c4f9:2940:8d2a:5eda%11
IPv4 Address. . . . . : 192.168.5.15
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

Tunnel adapter isatap.MiniHotel.Local:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . : MiniHotel.Local

C:\Users\PaulManager>ping 192.168.5.16

Pinging 192.168.5.16 with 32 bytes of data:
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.16:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\PaulManager>S
```

Figure 180: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
Marsha FrontDesk PC and Paul Manager PC can ping each other.

```
C:\Users\Administrator>ping 192.168.5.15

Pinging 192.168.5.15 with 32 bytes of data:
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128
Reply from 192.168.5.15: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.15:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Administrator>$

C:\Users\Administrator>ping 192.168.5.16

Pinging 192.168.5.16 with 32 bytes of data:
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128
Reply from 192.168.5.16: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.5.16:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\Users\Administrator>$
```

Figure 181: Screenshot 7 test performed #7 Client PC Manager's PC Pinging IT Admin Server PC
The IP Admin Server PC can ping Marsha's PC and Paul's PC.

8. Conclusion

The Senior System Administrator Mark, and his Junior System Admins Joseph Tolentino, and Matie Corpuz successfully implemented a fully functional Windows Server-based network infrastructure for Zaixiang Mini Hotel in Makati City. The following server roles and services were installed and configured properly. Windows Server 2008 R2 is installed first; this will be the core operating system of the whole IT Infrastructure, and 2 Windows 7 Ultimate client PCs were installed for the Front Desk and the Manager's Office. Active Directory Domain Services is installed for centralized user and domain management, DNS Server for internal name resolution of the MiniHotel.Local domain, DHCP is installed for automatic assignment of IP Addresses without needing to manually configure IP addresses for the client machines. The Two Windows 7 Ultimate Machine, the Manager's Office for Paul, and Front Desk for Marsha, were also successfully joined to the domain. File Services for role-based shared folder access, and Remote Desktop Services for remote administration. All of these were also tested before calling the installation a success.

After the successful installation of a Basic IT Infrastructure, the setup addresses the IT needs for the Zaixiang Mini Hotel business scenario. A Centralized user management via AD DS allows the hotel to grant Paul and Marsha domain user accounts with appropriate access levels, ensuring that front desk operations remain separate from managerial and financial functions. The File Services configuration provides dedicated shared folders which are the "Manager Files" for Paul and "Front Desk Files" for Marsha both of which have full control permissions assigned to each respective user, enabling secure storage of guest reservations, billing records, and administrative documents. This setup cannot be done without the thanks of the DHCP Server, this simplifies the network configuration by assigning IP addresses in the IP Pool to the Client PCs. Remote technical support can also be done with this current setup, Remote Desktop allows the IT administrator to remotely access the server from either client workstation for maintenance and troubleshooting.

There are several challenges that were encountered but resolved during the setup, first one is PCs cannot ping each other even if it is correctly configured. This happens because of the enabled Firewall, the only way to fix this is to disable the Firewall on all machines. After navigating through the Control panel on the way to disabling the firewall, we tried pinging it again and ping connectivity was successfully established between all PCs.

Another problem that we encountered while setting up, was after joining the Domain, in each action that needed Administrative access, after logging in, the Windows 7 PC virtual desktop crashes.

The only way to fix this is to quickly shutdown the virtual machine and start it up again. This happened maybe thrice but it was mitigated fast.

Last problem that was encountered was MiniHotel.Local in Marsha's Front Desk PC, was not connecting, after checking it using ipconfig in the cmd, I have learned that the IP Address is still static, so I changed it to automatically receive IP addresses from the DHCP Server and that fixed our problem.

While setting and finishing the configuration of the IT Infrastructure, we have learned a lot of valuable lessons here. We learned how to install and configure Windows Server 2008 R2 as the Mini Hotel's central server, we also have installed and configured 2 Windows 7 Ultimate PC Client for the Manager's Office and the Front Desk. After installing them, we manually configured their IP addresses so that they can ping each other in the same network. We also have learned how to install and set-up the Active Directory Domain Services (AD DS) for central user management, allowing us administrators to manage user accounts, permissions, and securing the domain. We also have to learn how to configure and verify the DNS to ensure proper domain name resolution and to test it we have to use nslookup to verify if the DNS is configured properly. DHCP is also installed for automatic IP address assignment to client computers.

We also learned how to configure File Services for shared folder access across the network. We also have learned about joining users in a domain. This allows the client PCs to connect and to communicate with the main central server, and by configuring and joining the domain, users were able to login to their respective accounts. We also learned about Remote Desktop for remote administration and troubleshooting. Lastly, This technical document helps us to plan, configure, and work as a team while building an IT Infrastructure with the Team.

9. References

List all references used in APA format. Include official Microsoft documentation, textbooks, and online resources consulted during the setup.

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- [4] Holme, D., Ruest, D., Ruest, N., & Kellington, J. (2008). MCTS self-paced training kit (Exam 70-640): Configuring Windows Server 2008 Active Directory (2nd ed.). Microsoft Press. <https://network.serversetup.co/e-book/microsoft/windows-server/2008r2/70-640-Configuring.Windows.Server.2008.R2.Active.Directory-Second.Edition.pdf>