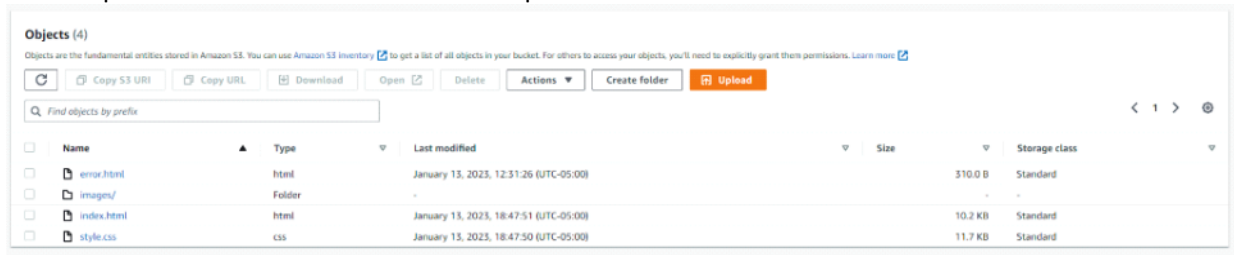


KEY

Monday, February 20, 2023 8:39 PM

Important Headings are Underlined and Bold:

- A bullet point indicates a note and NOT a step



The screenshot shows the Amazon S3 'Objects' console. At the top, there's a header 'Objects (4)' and a description: 'Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 Inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)'. Below this is a toolbar with buttons: 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', 'Actions', 'Create folder', and 'Upload'. A search bar 'Find objects by prefix' is also present. The main area is a table with columns: 'Name', 'Type', 'Last modified', 'Size', and 'Storage class'. The table contains four rows: 'error.html' (html, 310.0 B, Standard), 'images/' (Folder, -, -), 'index.html' (html, 10.2 KB, Standard), and 'style.css' (css, 11.7 KB, Standard).

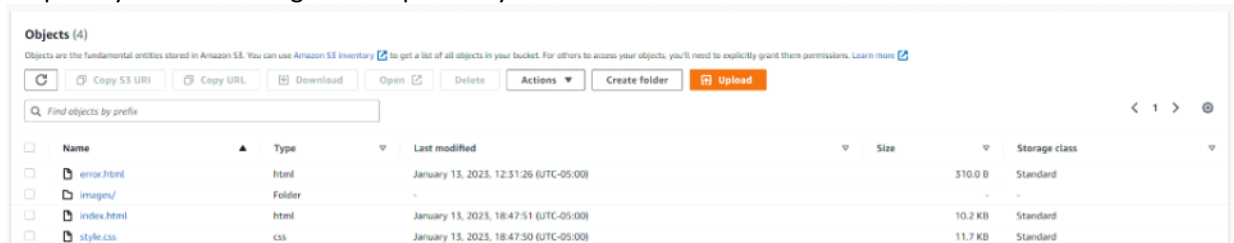
Name	Type	Last modified	Size	Storage class
error.html	html	January 13, 2023, 12:31:26 (UTC-05:00)	310.0 B	Standard
images/	Folder	-	-	-
index.html	html	January 13, 2023, 18:47:51 (UTC-05:00)	10.2 KB	Standard
style.css	css	January 13, 2023, 18:47:50 (UTC-05:00)	11.7 KB	Standard

- Bullet points may have images along with them to help visually
 - Bullet points may also have sub-bullet points for a more in-depth explanation

Headings in Bold Also Indicate Important Steps:

1. Steps are numbered, every new page starts with Step 1 and so on
 - a. Steps may have sub-steps to add more information

2. Steps may also have images to help visually



This is a duplicate of the screenshot above, showing the Amazon S3 'Objects' console with a table of objects: error.html, images/, index.html, and style.css.

3. **bold** word in steps indicate a button
4. *Italicized* words in steps indicate input fields or options
5. Keyboard Input in Courier New Font
6. Underlined words indicate files
7. Menu navigation is indicated by the pipe symbol and italic words: *Start / Programs / MS Word*
8. Numbers referencing other steps will be in red(1...2...3)
9. Code will be in a textbox in COURIER NEW font

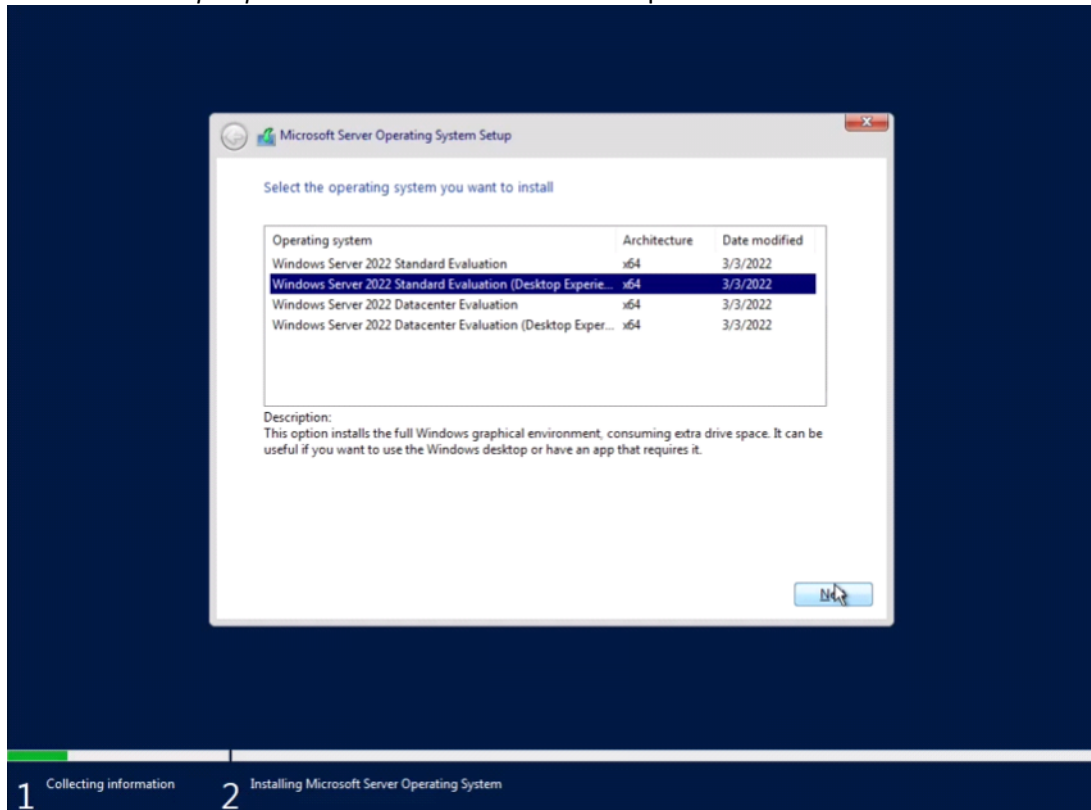
```
#include <stdio.h>

int main(void)
{
    printf("Hello World in C:");
    return 0;
}
```

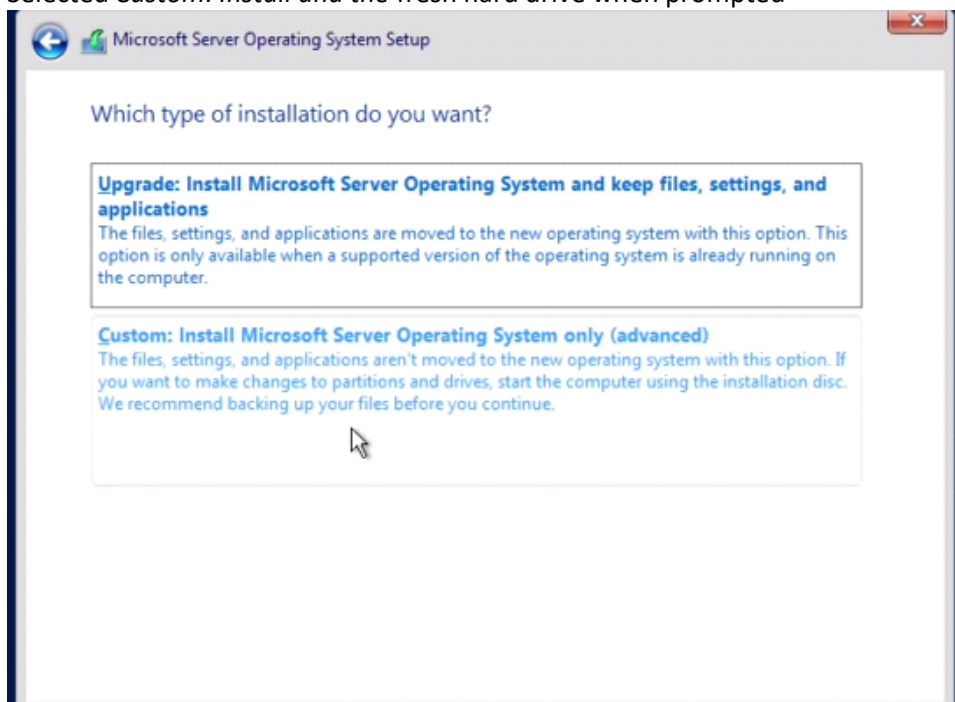
Initial Installation Steps

Monday, February 20, 2023 10:55 PM

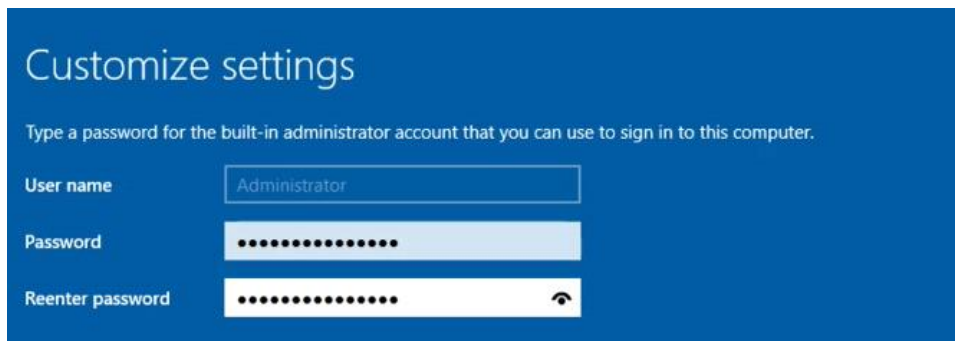
1. Selected *Desktop Experience* on the initial screen setup



2. Selected *Custom: Install and the fresh hard drive* when prompted



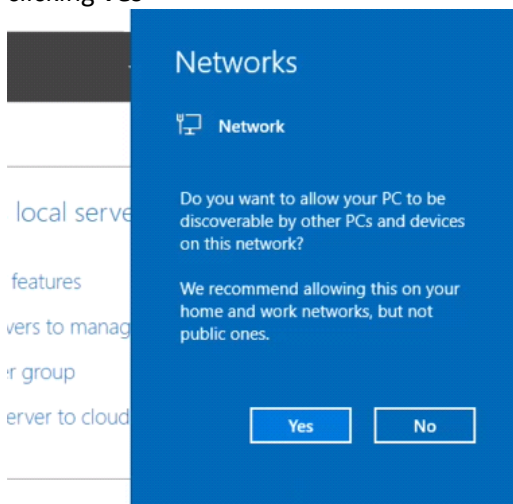
3. In the Customize Settings screen, filled out the password field for the administrator account



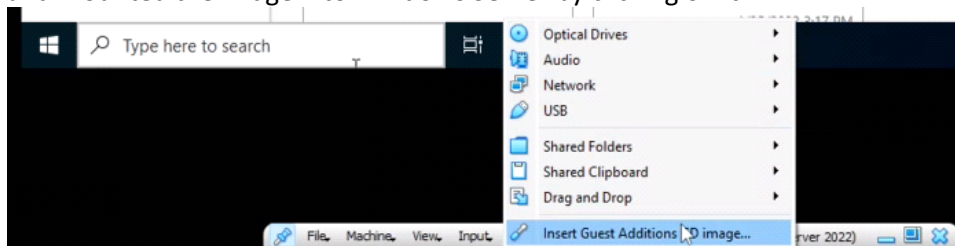
4. Let Windows boot up and logged into the Administrator account created in the last step







5. When prompted, allowed PC to be discoverable by other PC's and devices on the network by clicking **Yes**



6. In the Virtual box task bar at the bottom, navigated to *Devices | Insert Guest Additions CD Image* and mounted the image into Windows Server by clicking on it



7. Opened File Explorer in Windows and ran the amd64 executable file that was mounted
 - a. This is the equivalent to VMWare Tools which helps makes the VM run smoother

	VBoxWindowsAdditions	10/11/2022 7:06 AM	Application	267 KB	—
	VBoxWindowsAdditions-amd64	10/11/2022 7:44 AM	Application	17,849 KB	
	VBoxWindowsAdditions-x86	10/11/2022 7:25 AM	Application	10,677 KB	
	windows11-bypass	10/4/2021 8:48 AM	Registration Entries	1 KB	

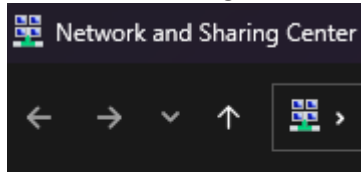
Setting up the Network

Wednesday, February 22, 2023

12:49 PM

Renamed Ethernet Adapters:

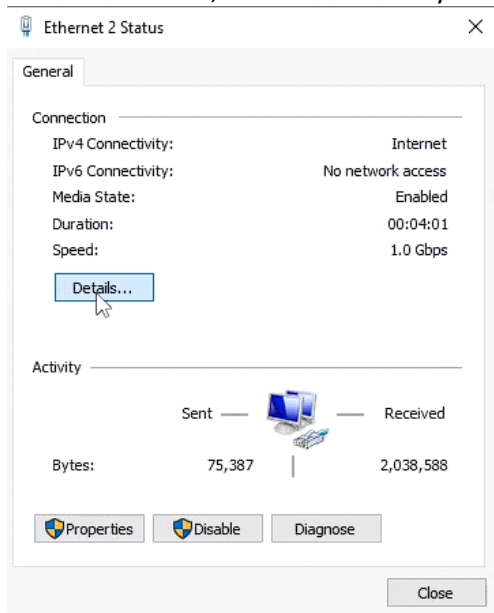
1. Opened File Explorer and right-clicked the *Network* tab and clicked on *Properties* to open Network Sharing Center
2. In Network Sharing Center, clicked on *Change Adapter Settings*



[Control Panel Home](#)

[Change adapter settings](#)

3. Verified which adapter was my home network and which adapter was the internal network by right clicking the adapter and navigating to *Status / Details*
 - In this case, Ethernet 2 was my home network and Ethernet 1 provided the internal network

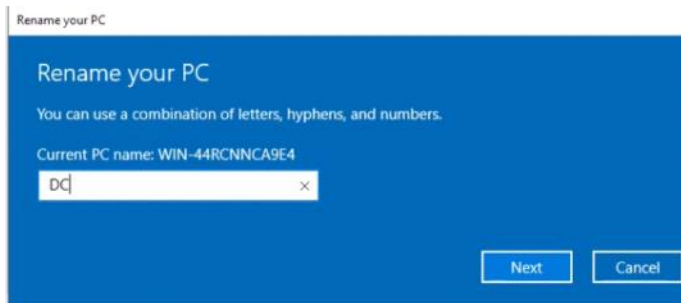


4. Closed windows and right clicked the adapters again, then renamed Ethernet 1 to `HOME` and Ethernet 2 to `INTERNAL`

Renamed PC:

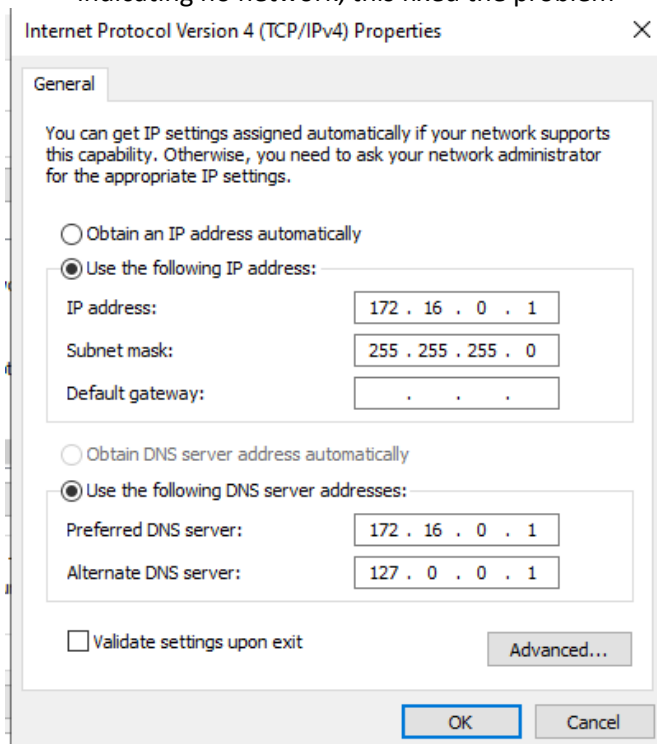
1. Used Windows Key + S to search for `About PC`
2. Clicked on *Rename this PC*
3. Renamed PC to `DC` and restarted computer





Configured INTERNAL Network:

1. Configured the INTERNAL IPV4 properties to the following values:
 - a. No default gateway since the DC itself will be used as the default gateway
 - b. Added both the DC's IP address and loopback address in DNS Server since Windows kept indicating no network, this fixed the problem

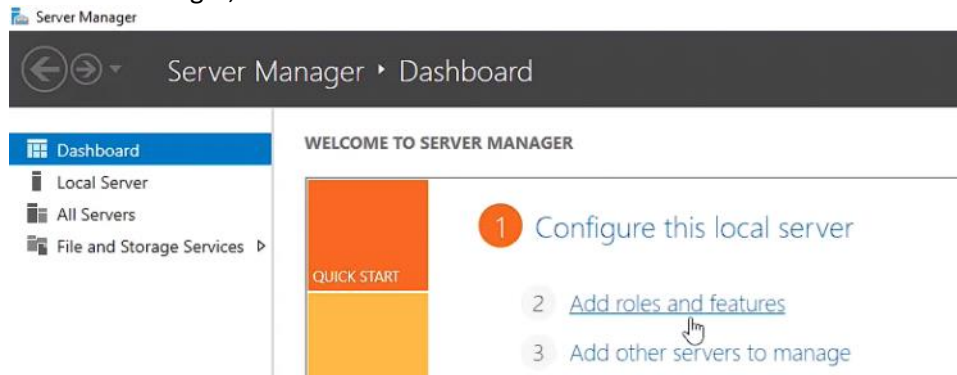


Creating a Domain

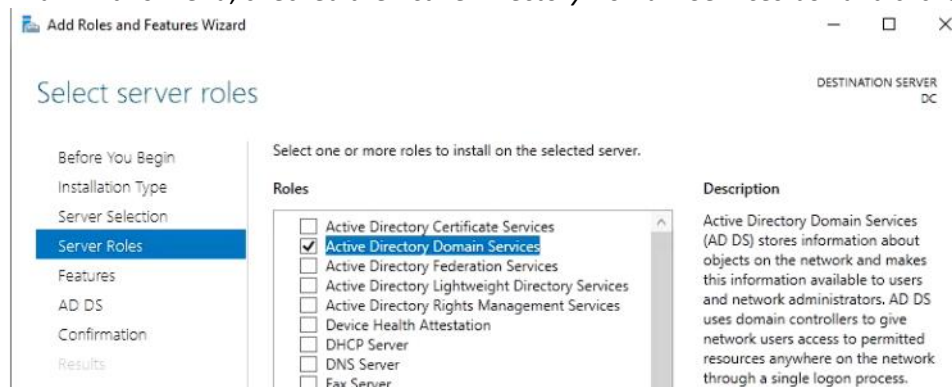
Wednesday, February 22, 2023 1:34 PM

Installed Active Directory Domain Services:

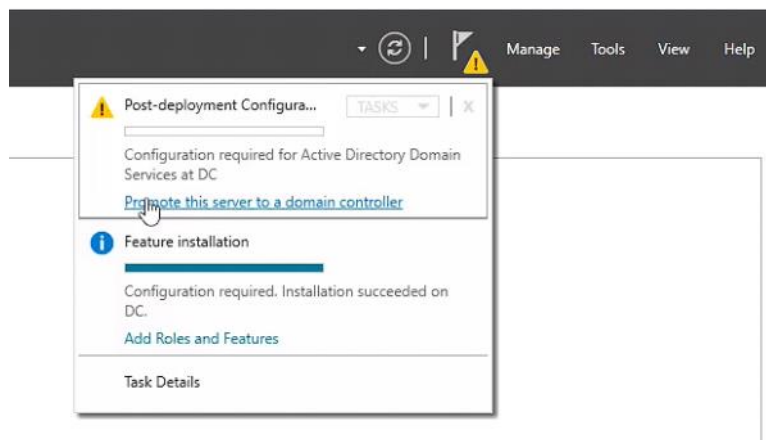
1. In Server Manager, clicked on *Add Roles and Features*



2. Clicked on **Next** until the Server Roles sub-menu is present
 - a. In this menu, checked the *Active Directory Domain Services* box and clicked on **Next**



3. Kept on clicking **Next** until the Confirmation screen is present
 - a. Proceeded to click **Install**
4. Once installation was finished, clicked the Flag in the top menu and clicked *Promote this server to a domain controller*



5. In the Deployment Configuration screen, selected *Add a new forest* and set *Root domain name* as `maindomain.com`

a. Proceeded to click on **Next**

The screenshot shows the 'Active Directory Domain Services Configuration Wizard' window. The title bar includes standard window controls (minimize, maximize, close). The main title is 'Deployment Configuration'. On the left is a navigation pane with the following items: 'Deployment Configuration' (highlighted in blue), 'Domain Controller Options', 'Additional Options', 'Paths', 'Review Options', 'Prerequisites Check', 'Installation', and 'Results'. The main content area is titled 'Select the deployment operation' and contains three radio button options: 'Add a domain controller to an existing domain', 'Add a new domain to an existing forest', and 'Add a new forest' (which is selected). Below this, it says 'Specify the domain information for this operation'. There is a label 'Root domain name:' followed by a text input field containing 'maindomain.com'. In the top right corner, the text 'TARGET SERVER DC' is displayed.

6. In the Domain Controller Options screen, filled out the DSRM field with the Admin's password and clicked on **Next**

The screenshot shows the 'Domain Controller Options' screen. It has a title 'Type the Directory Services Restore Mode (DSRM) password'. Below this are two password input fields. The first is labeled 'Password:' and the second is labeled 'Confirm password:'. Both fields contain masked characters (dots). Below the password fields is a link that says 'More about domain controller options'. At the bottom of the window, there are two buttons: '< Previous' and 'Next >'. The 'Next >' button is highlighted in blue.

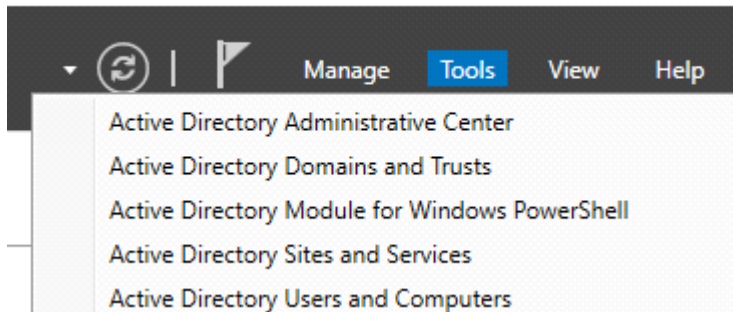
7. Clicked on **Next** until the Installation sub-menu
- a. Clicked on **Install** to finish Domain Services Configuration

Creating an Admin Account

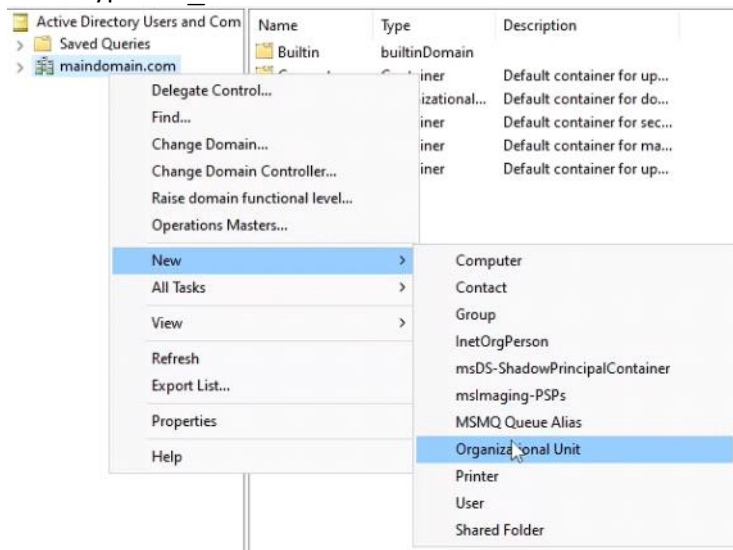
Wednesday, February 22, 2023

1:53 PM

1. In Server Manager, navigated to *Tools / Active Directory Users and Computers*



2. Right-Clicked domain and navigated to *New / Organizational Unit*
 - a. Typed in `_ADMINS` and clicked **OK** to create an Admins OU



3. Right-clicked newly created OU and navigated to *New / User*
 - a. Filled out the fields with the following information:
 - b. Used `a-` to signify that this is an admin account
 - c. Clicked on **Next**

New Object - User

Create in: maindomain.com/ADMINS

First name: Initials:

Last name:

Full name:

User logon name:

User logon name (pre-Windows 2000):

< Back **Next >** Cancel

4. In the following screen, filled out the password field for this admin account and checked/unchecked the appropriate boxes and clicked on **Next**

New Object - User

Create in: maindomain.com/ADMINS

Password:

Confirm password:

☐ User must change password at next logon

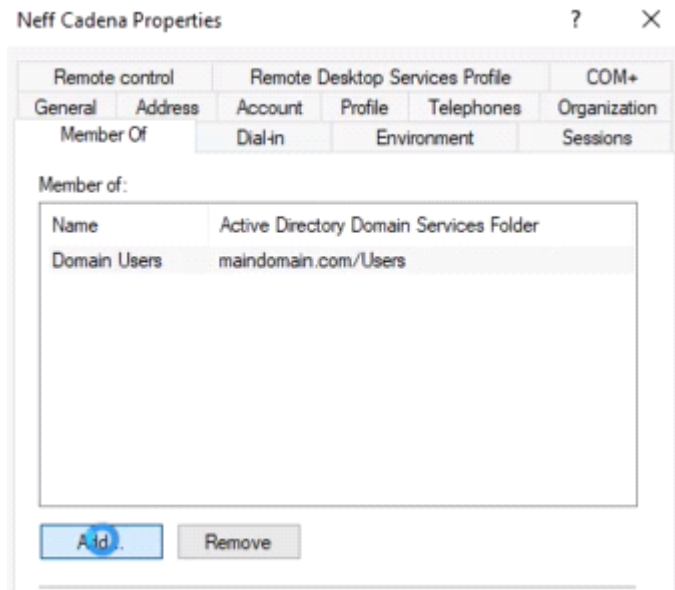
☐ User cannot change password

☒ Password never expires

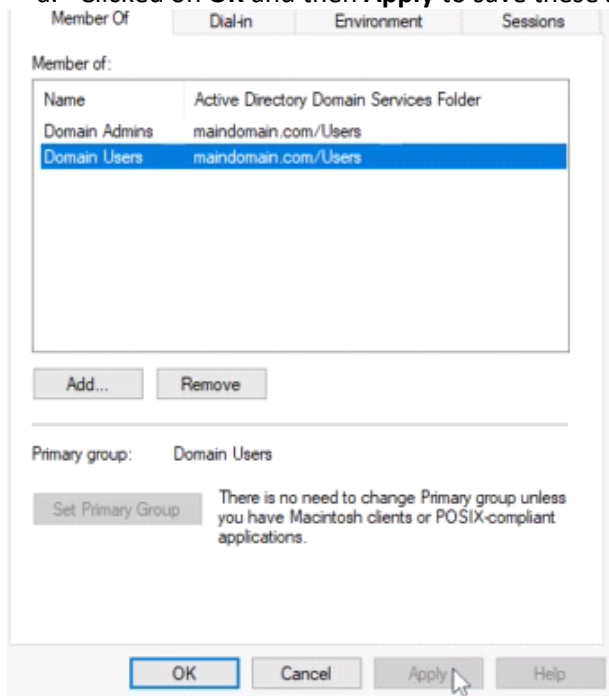
☐ Account is disabled

< Back **Next >** Cancel

5. Right-clicked on newly created account and clicked on **Properties**
6. Navigated to Member Of tab and clicked on **Add**



7. In the field, typed in Domain Admins and clicked on **Check Names**
 - a. Clicked on **OK** and then **Apply** to save these settings



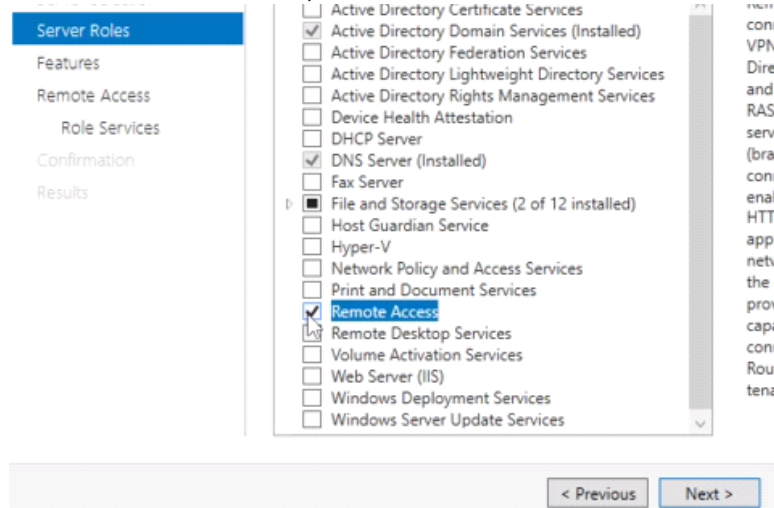
Installing RAS and NAT

Wednesday, February 22, 2023 2:11 PM

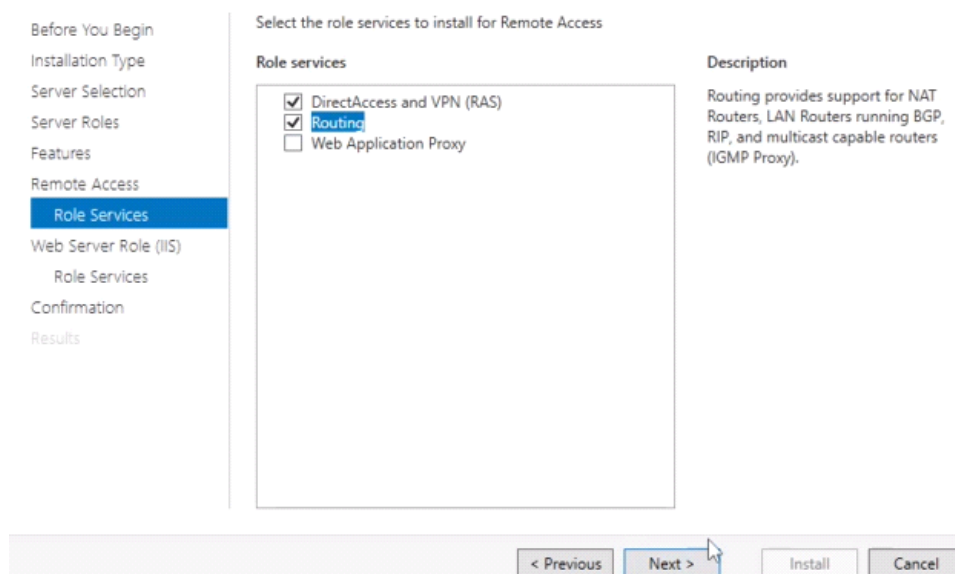
- Used to allow clients network access through the domain controller

Installing the Feature:

1. In Server Manager, clicked on *Add Roles and Features*
2. Clicked **Next** until the Server Roles sub-menu is present
3. In the Server Roles menu, checked the *Remote Access* role and clicked on **Next**



4. Clicked **Next** until the Role Services sub-menu is present
 - a. Checked the *DirectAccess and VPN(RAS)* and *Routing* boxes in this menu and clicked on **Next**

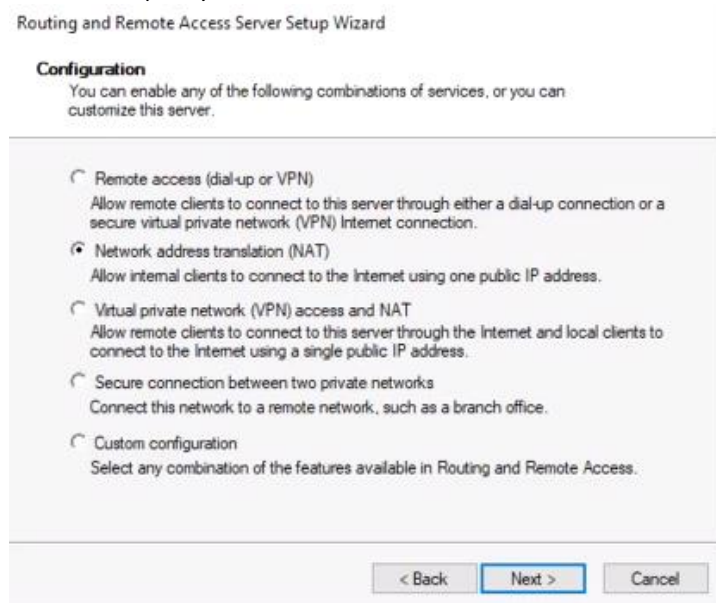


5. Proceeded to click on **Next** until the confirmation page
 - a. Reviewed selected features and clicked on **Install**

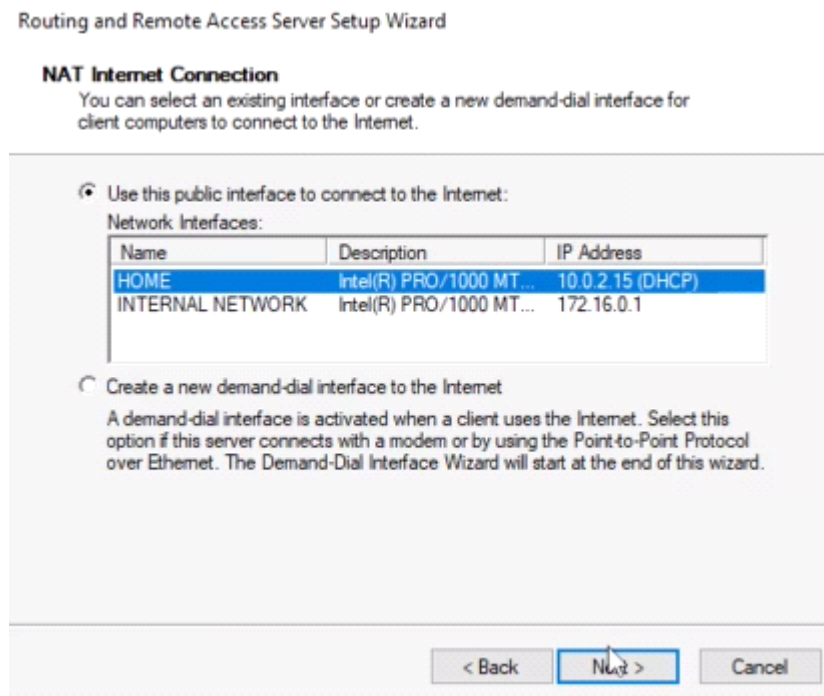
RAS and NAT Configuration:

1. In Server Manager navigated to *Tools / Routing and Remote Access*

2. Right-clicked domain and selected *Configure and Enable Routing and Remote Access*
3. In the wizard, clicked on **Next** and in the Configuration menu selected *Network Address Translation(NAT)* and clicked on **Next**



4. In the NAT Internet Connection menu, selected *Use this public interface to connect to the internet*
 - a. Selected the *HOME* interface in the menu and clicked on **Next**
 - b. This option may not be available immediately, restart the tool if such thing occurs



5. In the final window, clicked on **Finish** to exit out of the wizard

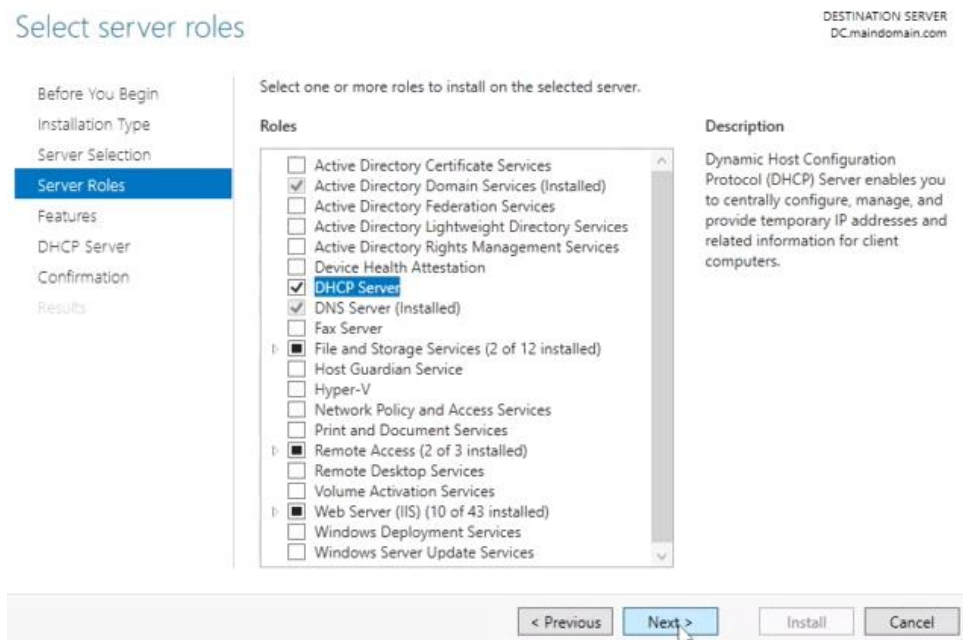
DHCP Setup

Wednesday, February 22, 2023 7:33 PM

- Used to provide temporary IP addresses to client machines

Installing the Feature:

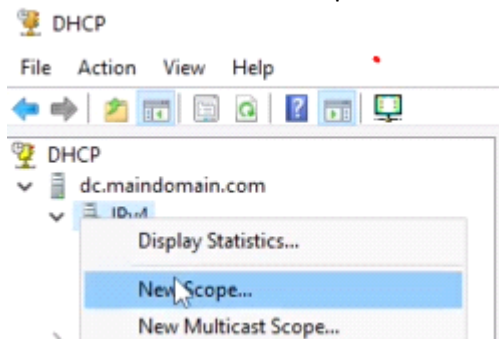
1. In Server Manager, clicked on *Add Roles and Features*
2. Clicked **Next** until the Server Roles sub-menu is present
3. Selected *DHCP Server* under the Roles menu and clicked on **Next**



4. Proceeded to click on **Next** until the confirmation page
 - a. Reviewed selected features and clicked on **Install**

DHCP Configuration:

1. In Server Manager navigated to *Tools / DHCP*
2. Selected domain and in drop-down menu right-clicked IPV4 and selected *New Scope*



3. In the wizard, clicked on **Next**

4. In the Scope Name window, named scope the IP address range of 172.16.0.100-200 and added a description

a. Proceeded to click on **Next**

New Scope Wizard

Scope Name
You have to provide an identifying scope name. You also have the option of providing a description.

Type a name and description for this scope. This information helps you quickly identify how the scope is to be used on your network.

Name: 172.16.0.100-200

Description: DHCP Server for Clients

< Back Next > Cancel

5. In the IP Address Range window, filled out the fields with the following values:

a. Clicked on **Next**

New Scope Wizard

IP Address Range
You define the scope address range by identifying a set of consecutive IP addresses.

Configuration settings for DHCP Server

Enter the range of addresses that the scope distributes.

Start IP address: 172 . 16 . 0 . 100

End IP address: 172 . 16 . 0 . 200

Configuration settings that propagate to DHCP Client

Length: 20

Subnet mask: 255 . 255 . 255 . 0

< Back Next > Cancel

6. Clicked on **Next** in the Add Exclusions and Delay window

7. In the Lease Duration window, selected the appropriate lease time and clicked on **Next**

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope

Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days: 8 Hours: 0 Minutes: 0

Lease Duration

The lease duration specifies how long a client can use an IP address from this scope

Lease durations should typically be equal to the average time the computer is connected to the same physical network. For mobile networks that consist mainly of portable computers or dial-up clients, shorter lease durations can be useful. Likewise, for a stable network that consists mainly of desktop computers at fixed locations, longer lease durations are more appropriate.

Set the duration for scope leases when distributed by this server.

Limited to:

Days: Hours: Minutes:

< Back

Next >

8. In the Configuration DHCP Options windows selected *Yes, I want to configure these options now* and clicked on **Next**

New Scope Wizard

Configure DHCP Options

You have to configure the most common DHCP options before clients can use the scope.



When clients obtain an address, they are given DHCP options such as the IP addresses of routers (default gateways), DNS servers, and WINS settings for that scope.

The settings you select here are for this scope and override settings configured in the Server Options folder for this server.

Do you want to configure the DHCP options for this scope now?

- ☒ Yes, I want to configure these options now
- ☐ No, I will configure these options later

< Back

Next >

Cancel

9. In the Router window, added the INTERNAL NIC's IP address which is the DC's IP address too
- a. Clicked on **Add** to add the IP address to the table and clicked on **Next**

New Scope Wizard

Router (Default Gateway)

You can specify the routers, or default gateways, to be distributed by this scope.



To add an IP address for a router used by clients, enter the address below.

IP address:

Add

Remove

Up

Router (Default Gateway)

You can specify the routers, or default gateways, to be distributed by this scope.



To add an IP address for a router used by clients, enter the address below.

IP address:

Add

Remove

Up

Down

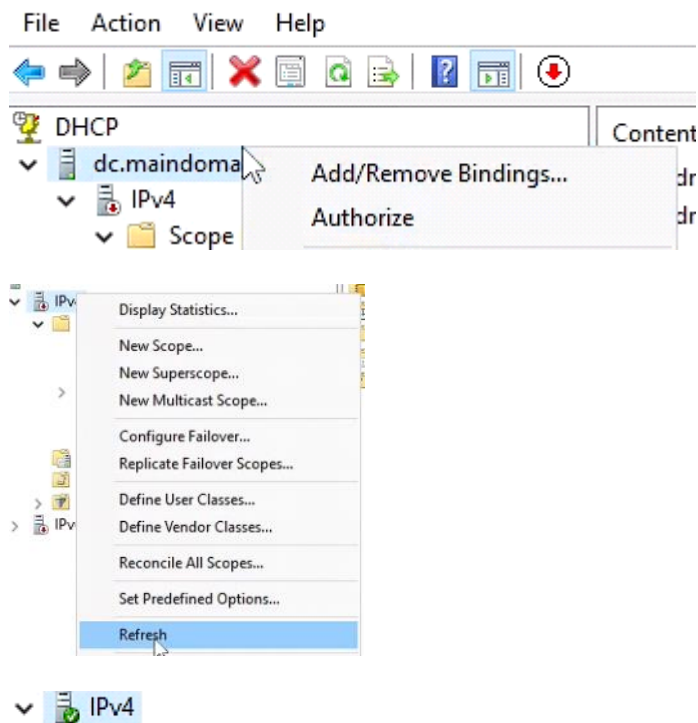
< Back

Next >

Cancel

10. In the Domain Name and DNS Servers window clicked on **Next**
11. In the WINS Server window clicked on **Next**
12. Selected *Yes, I want to activate this scope now* in the Activate Scope window
 - a. Clicked on **Next** and then **Finish** to exit the wizard
13. Back in the DHCP management window, right-clicked domain and clicked on **Authorize**
 - a. Right-clicked **IPv4** and clicked on **Refresh** to see the up-to-date settings
 - b. IPv4 should now have a green check mark

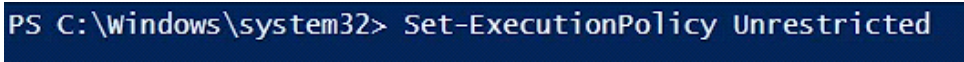
DHCP



Using a PowerShell Script to add Many Users

Wednesday, February 22, 2023 8:08 PM

Enabled Script Execution in PowerShell:

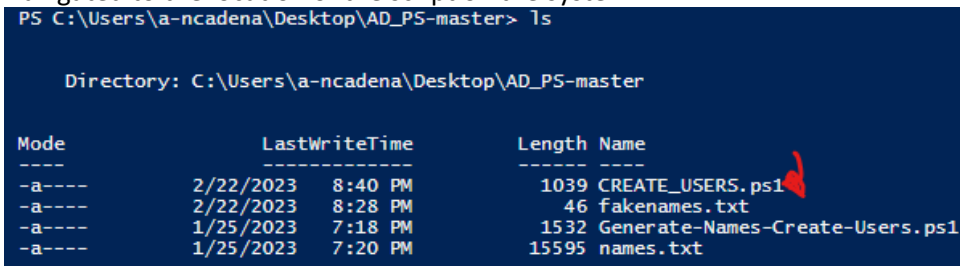
1. In Windows Server, searched for PowerShell ISE in the Windows search bar
 - a. Right-clicked program and clicked on **Run as Administrator**
2. In the terminal typed `Set-ExecutionPolicy Unrestricted`


```
PS C:\Windows\system32> Set-ExecutionPolicy Unrestricted
```
3. In the pop-up window selected the *Yes to All* option
4. Scripts can now run without restrictions

Executed the Create Users Script:

- CREATE_USERS script located at the bottom

1. In the PowerShell ISE program, navigated to *File / Open*
 - a. Searched for the CREATE_USERS script and clicked on **Open**
2. Navigated to the location of the script on the system



```
PS C:\Users\A-ncadena\Desktop\AD_PS-master> ls

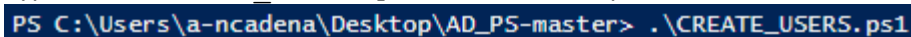
Directory: C:\Users\A-ncadena\Desktop\AD_PS-master

Mode                LastWriteTime         Length Name
----                -
-a----          2/22/2023   8:40 PM             1039 CREATE_USERS.ps1
-a----          2/22/2023   8:28 PM              46 fakenames.txt
-a----          1/25/2023   7:18 PM             1532 Generate-Names-Create-Users.ps1
-a----          1/25/2023   7:20 PM             15595 names.txt
```

3. Edit the following variables to your use case

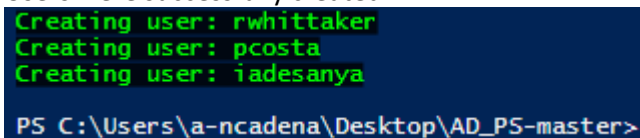
```
# ----- Edit these Variables for your own Use Case ----- #
$PASSWORD_FOR_USERS = "password"
$USER_FIRST_LAST_LIST = Get-Content .\names.txt
# -----
```

4. Typed in `./CREATE_USERS.ps1` to execute script

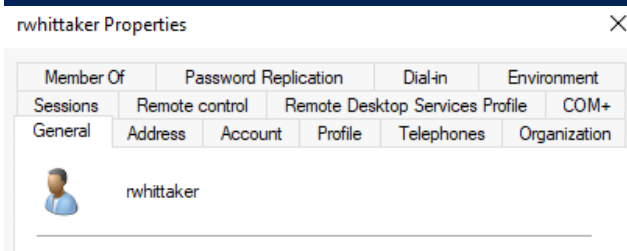


```
PS C:\Users\A-ncadena\Desktop\AD_PS-master> .\CREATE_USERS.ps1
```

5. Users were successfully created




```
Creating user: rwhittaker
Creating user: pcosta
Creating user: iadesanya
PS C:\Users\A-ncadena\Desktop\AD_PS-master>
```



rwhttaker Properties

Member Of	Password Replication	Dial-in	Environment
Sessions	Remote control	Remote Desktop Services Profile	COM+
General	Address	Account	Profile
	Telephones	Organization	

 rwhttaker

First name: Initials:

Last name:

Display name:

Description:

Office:

Telephone number:

E-mail:

Web page:

6. Script also forced users to change password on initial login



7. CREATE USERS Script:

```
# ----- Edit these Variables for your own Use Case ----- #
$PASSWORD_FOR_USERS    = "password"
$USER_FIRST_LAST_LIST = Get-Content .\names.txt
# -----#

# ----- Format Variable -----#
$TextInfo = (Get-Culture).TextInfo
```

```
# -----#

# --- Both ChangePasswordAtLogon and PasswordNeverExpires will NOT
execute together, choose one, delete the other, and then
execute --- #

$password = ConvertTo-SecureString $PASSWORD_FOR_USERS -
AsPlainText -Force

New-ADOrganizationalUnit -Name _USERS -
ProtectedFromAccidentalDeletion $false

foreach ($n in $USER_FIRST_LAST_LIST) {
    $first = $n.Split(" ")[0].ToLower()
    $last = $n.Split(" ")[1].ToLower()
    $username = "$($first.Substring(0,1))$($last)".ToLower()
    Write-Host "Creating user: $($username)" -BackgroundColor
    Black -ForegroundColor Green

    New-AdUser -AccountPassword $password `
        -GivenName $TextInfo.ToTitleCase($first) `
        -Surname $TextInfo.ToTitleCase($last) `
        -DisplayName $TextInfo.ToTitleCase("$first $last")
    ,
        -Name $username `
        -EmployeeID $username `
        -ChangePasswordAtLogon $true `
        -PasswordNeverExpires $true `
        -Path "ou=_USERS,$(([ADSI]`").distinguishedName)"
    ,
        -Enabled $true
}

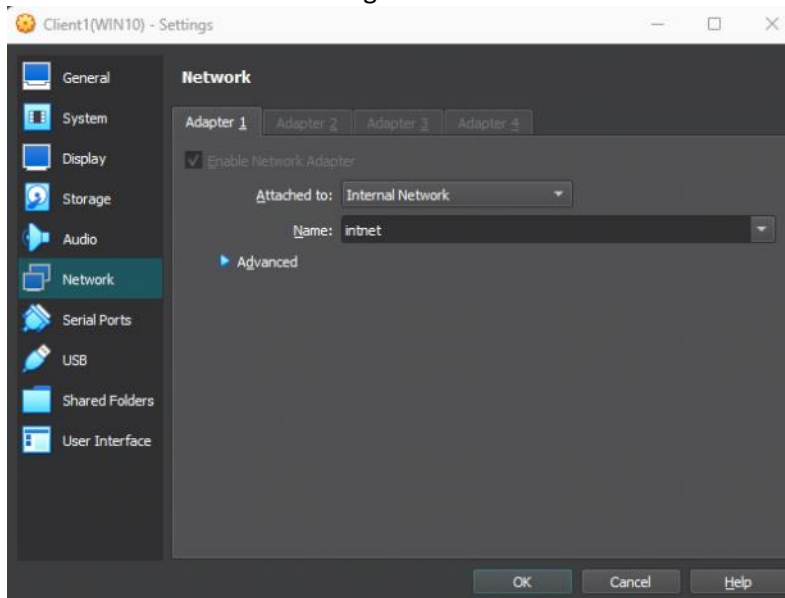
```

Adding a Windows 10 Client to Domain

Wednesday, February 22, 2023

10:32 PM

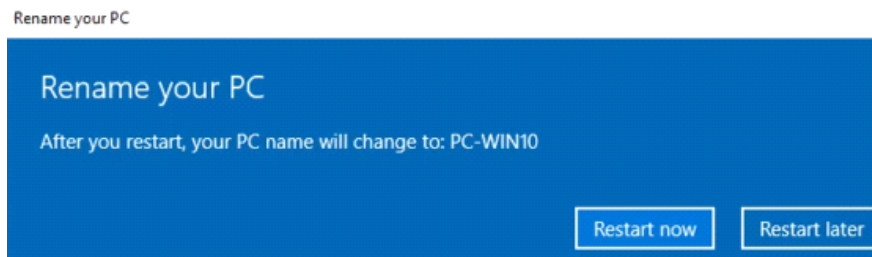
1. In VirtualBox Manager, right-clicked the Windows10 VM and clicked on **Settings**
2. Navigated to Network and changed adapter to *intnet* which connects one to the internal network adapter from the DC
 - a. Clicked **OK** to exit settings



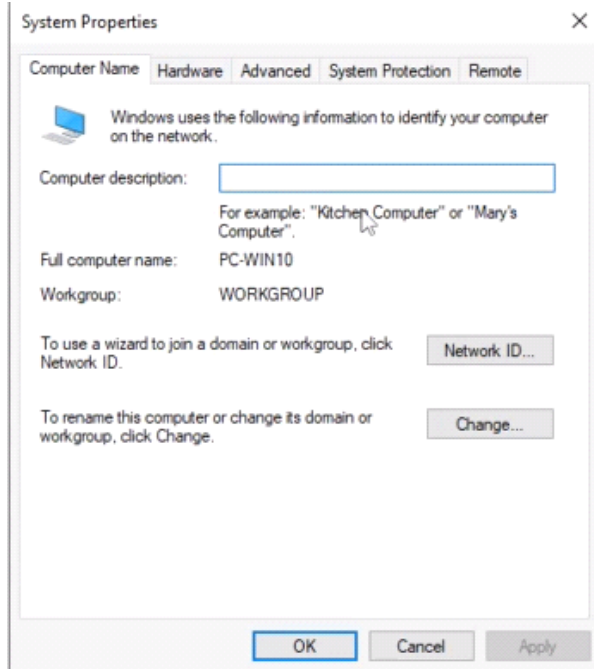
3. Double-clicked VM to turn it on and went through Windows setup
4. Once logged in as a regular user, clicked **Yes** on the pop-up where it asks if PC wants to be discoverable on the network
 - a. Proceeded to install [Guest Editions CD Image](#) for a better experience



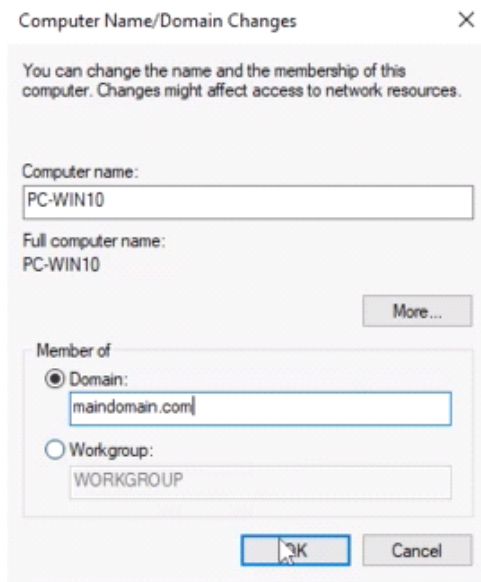
5. Renamed PC to an appropriate name and clicked on **Restart now**



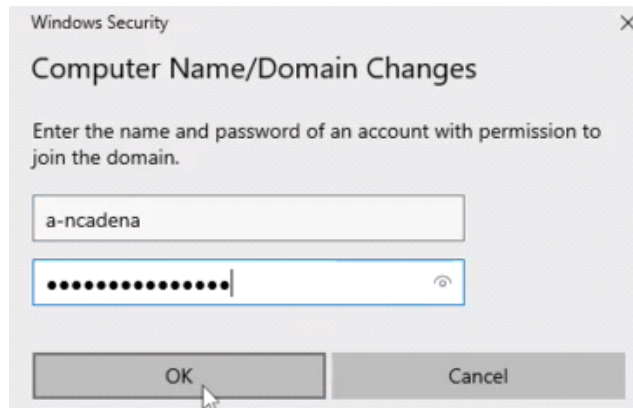
6. Navigated to *About Your PC* / *Rename this PC(advanced)* to access system properties



7. Clicked on **Change** to change the computer's domain
a. In Domain field, typed in `maindomain.com` and clicked **OK**



8. In the Windows Security prompt, entered admin credentials and clicked **OK**



9. Windows 10 client was successfully added to the domain

