Active Directory Lab Build

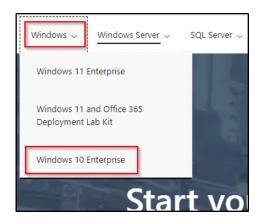
Thursday, May 16, 2024 11:05 PM

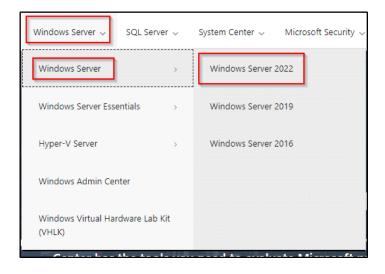
Downloading Necessary ISO's

Thursday, May 16, 2024 11:05 PM

First go to this page: https://www.microsoft.com/en-us/evalcenter

Then we'll need to download Windows 10 Enterprise and Windows Server 2022:





Links:

 $\underline{\text{https://www.microsoft.com/en-us/evalcenter/evaluate-windows-10-enterprise}}$

https://www.microsoft.com/en-us/evalcenter/evaluate-windows-server-2022

To download Windows 10 Enterprise and Server 2022, just fill anything on this forms:

Evaluate Windows 10 Enterprise

Windows 10 Enterprise is designed to address the needs of large and midsize organizations by providing IT professionals with:

- · Advanced protection against modern security threats
- Flexible deployment, update, and support options
- · Comprehensive device and app management and control

Windows 10, version 21H2 makes it easier to protect your endpoints, detect advanced attacks, automate response to emerging threats, and improve your security posture. It also helps you streamline deployment and updates—and deliver enterprise-ready devices to your users straight from the manufacturer.

Learn more about the features of Windows 10.

Register for your free trial today
Complete the form below.
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* Country/Region Country/region *
* Company size Company size
* Job role
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Questions/Comments
Download now

And hit download.

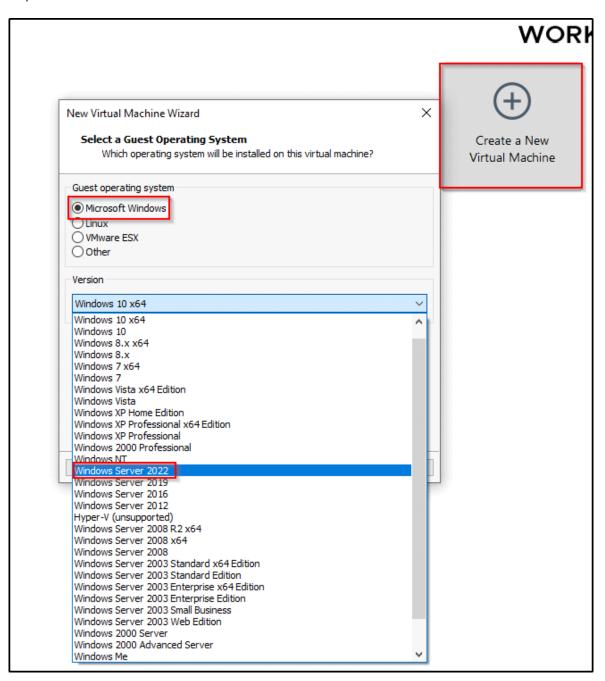
Setting Up the Domain Controller

Thursday, May 16, 2024 11:20 PM

★ IF ANY STEP ISN'T SHOWN HERE, KEEP IN MIND THAT YOU SHOULD LEAVE IT AS DEFAULT AND HIT NEXT OR INSTALL.

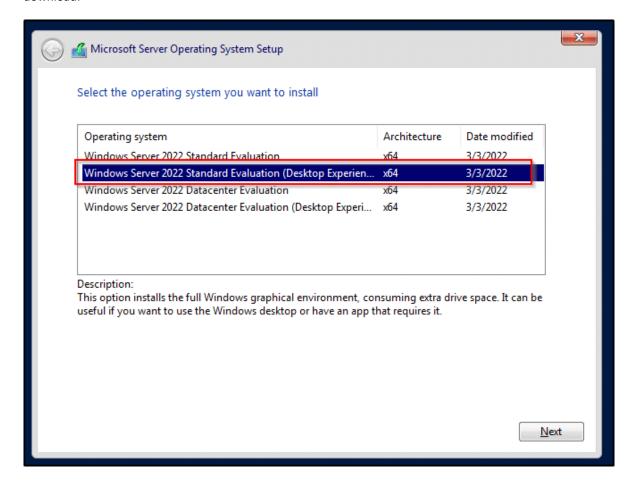
Step 1: On Vmware, create a new virtual machine

Step 2: Choose Microsoft Windows > Windows Server 2022:

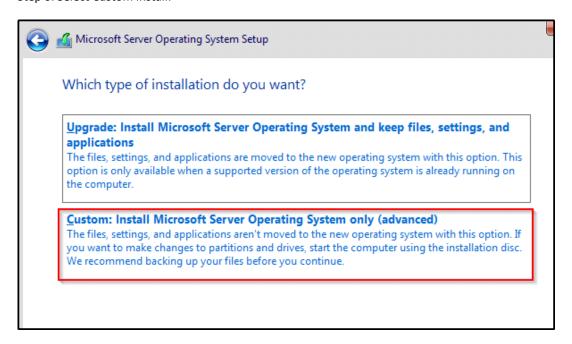


Step 3: Choose the ISO file that we downloaded.

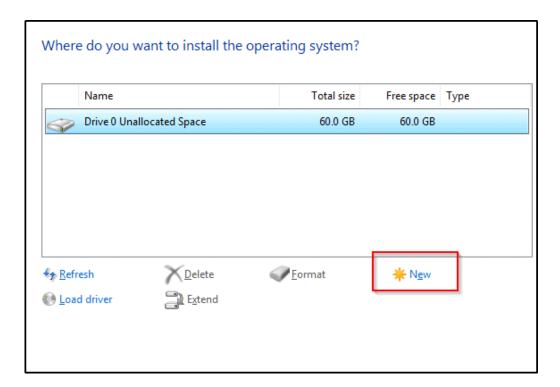
Step 5: Once the machine is powered on, select the Standard Evaluation (Desktop Experience) version to download:



Step 6: Select Custom Install:

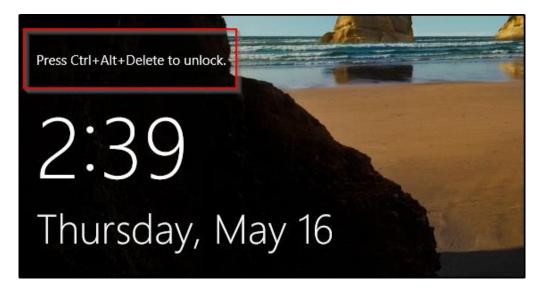


Step 7: Press on NEW>Apply and click Next:

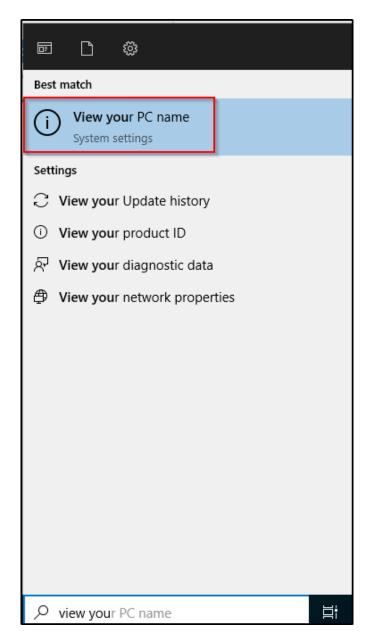


Step 8: Now we'll have to set up a password, for our lab we're going to use a weak password, for example: Password123@

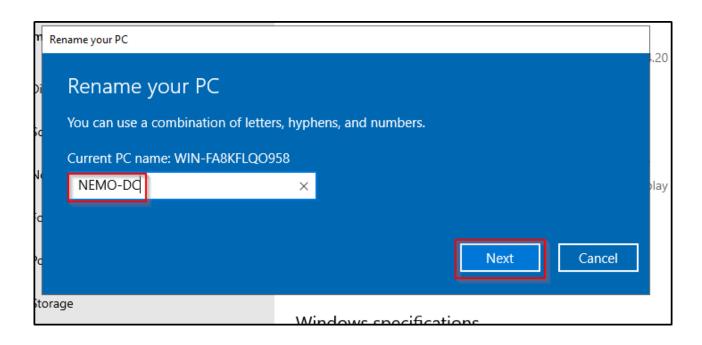
Step 9: And once all steps are completed, we can get started by pressing (CTRL+ALT+DELETE):



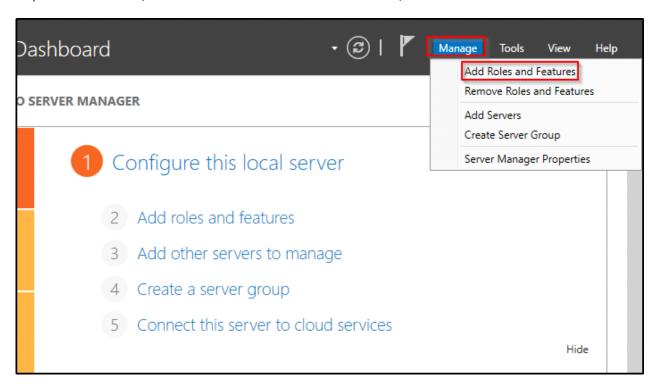
Step 10: Go to start and type:



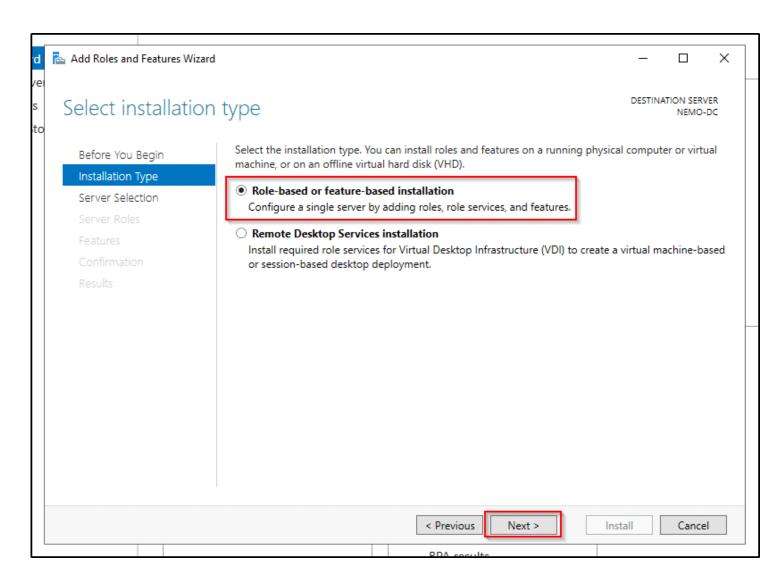
And change it to whatever name you want, so we can easily identify which is the Domain Controller and Reboot the machine:



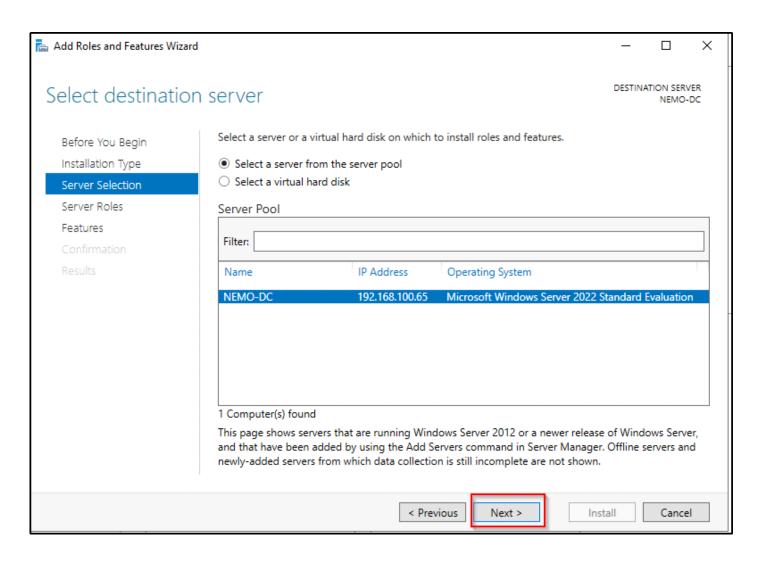
Step 11: Once rebooted, now we want to make this a Domain Controller, to do so click on:



Step 12: And then:

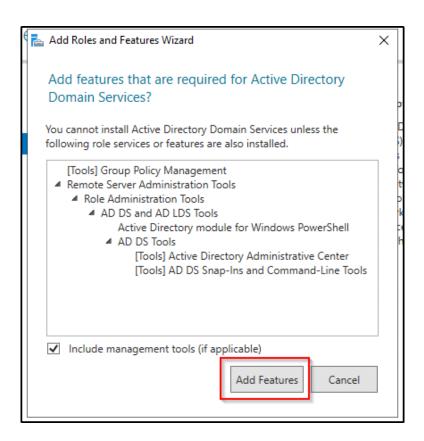


Step 13: Here leave everything on default and click next:

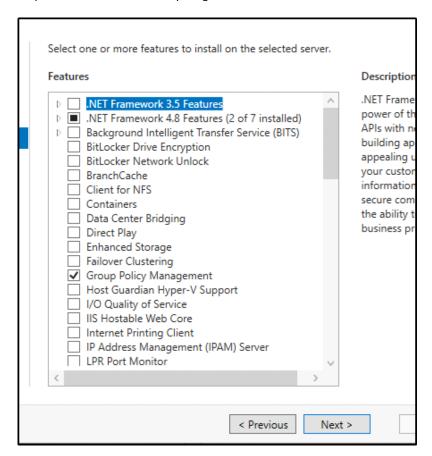


Step 14: Now we'll need to select AD DS and hit Next:

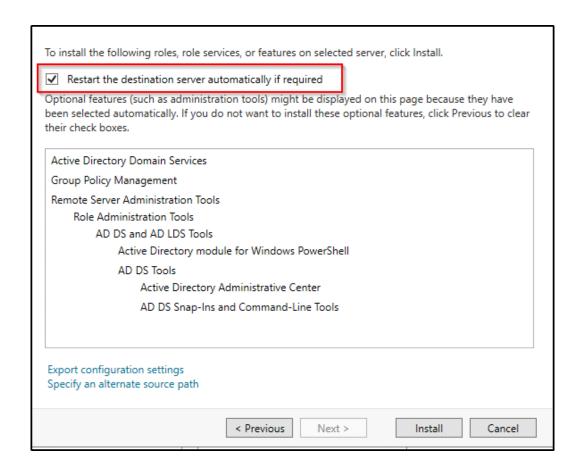




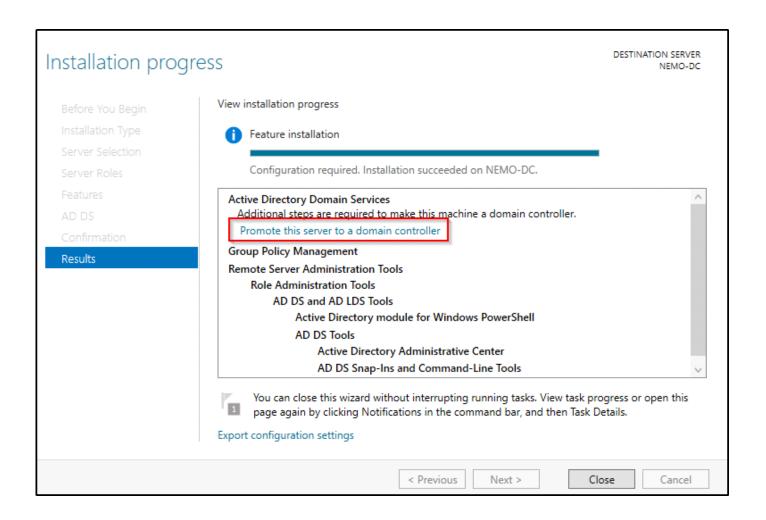
Step 15: Here we'll leave everything on default:



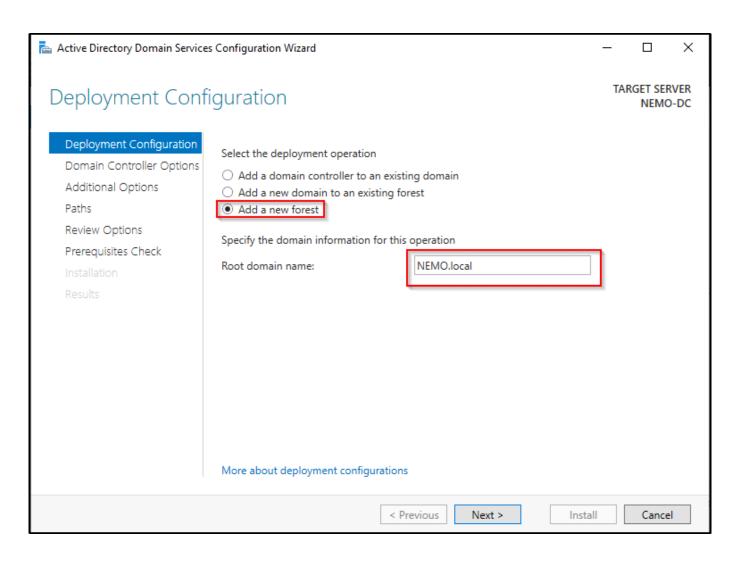
Step 16: We need to check this box here and click Install:



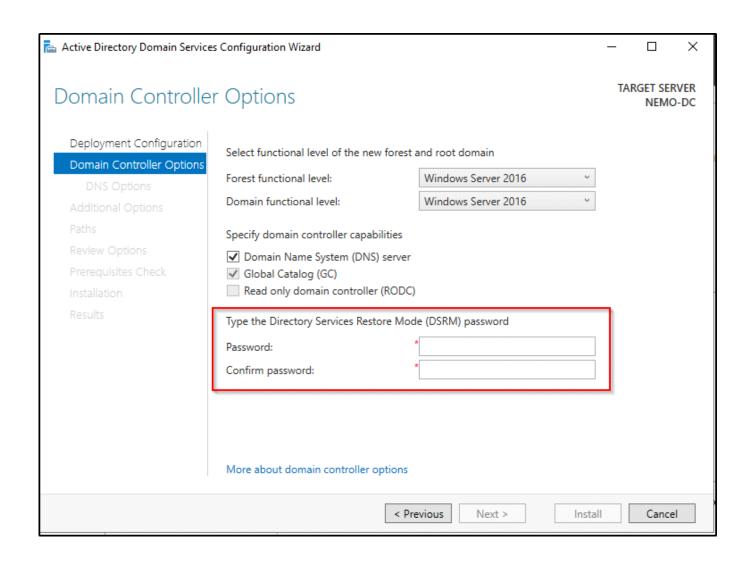
Step 17: Before closing the setup, let's click on:



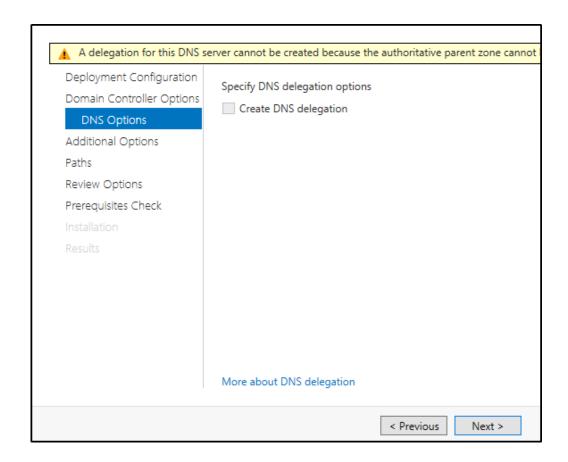
Step 18: Here we need to Add a new forest since we don't have an existing domain or forest:



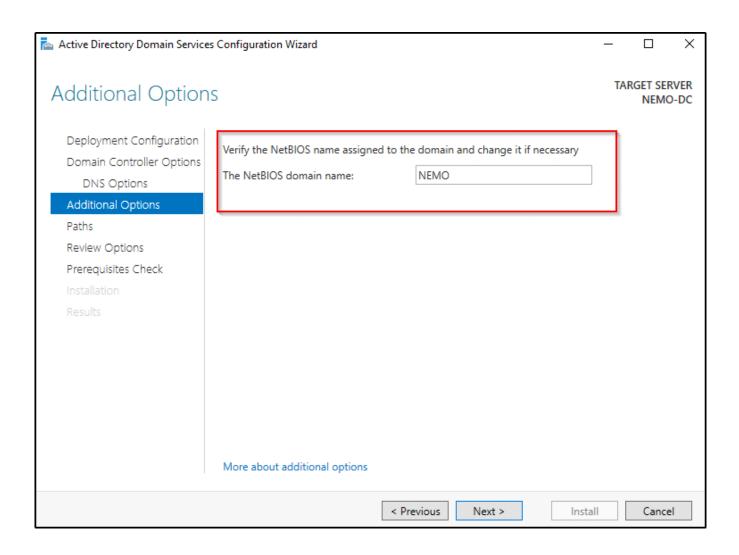
Step 19: Now here, we can use the same password that we created:



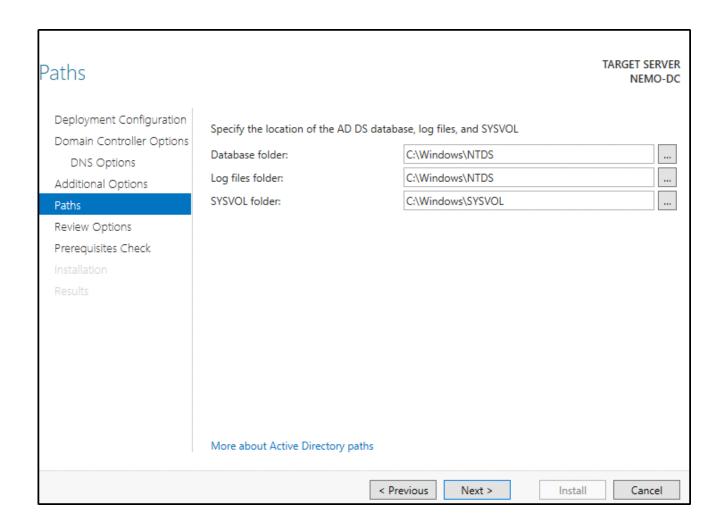
Step 20: Here we can just hit Next:



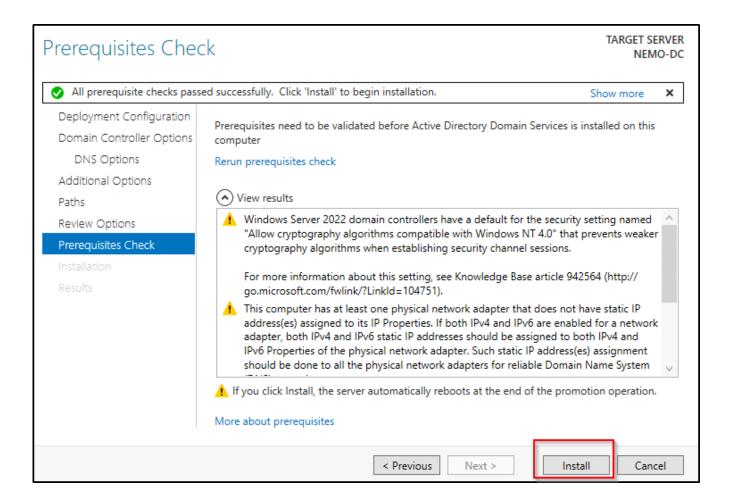
Step 21: Now on this step, we just have to wait until the system gives us the name automatically, so don't write anything:



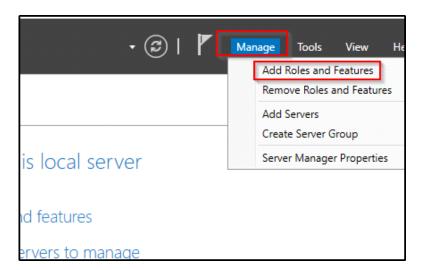
Step 22: Leave it as default here:



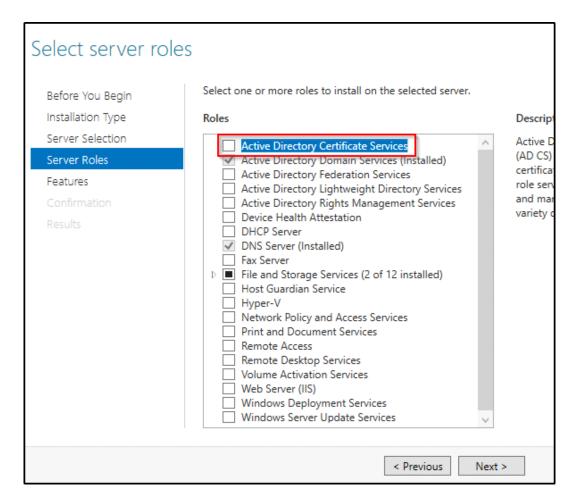
Step 23: Hit install, and it will require to reboot the system:



Step 24: Once rebooted, now we need to also setup Certificate Services:

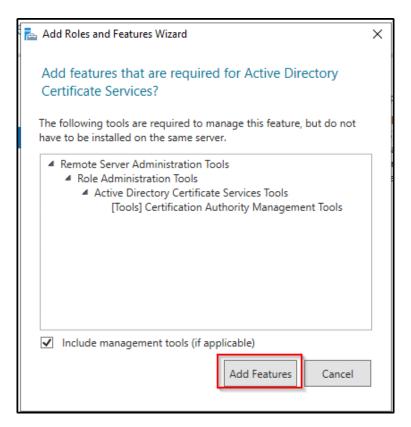


Step 25: Hit Next, until you see this one:

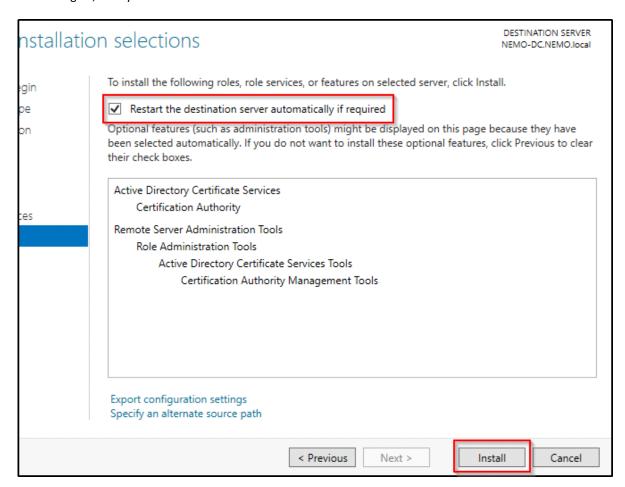


Certificate Services are used to verify identities in a Domain Controller

Select Add Features:

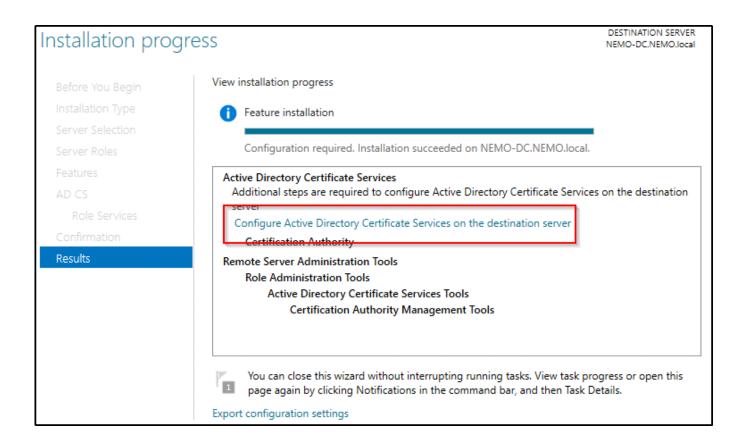


Hit Next again, until you see this one:

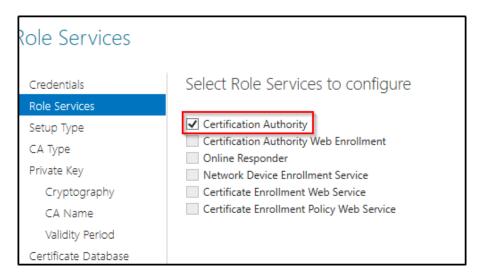


Check Restart and hit Install

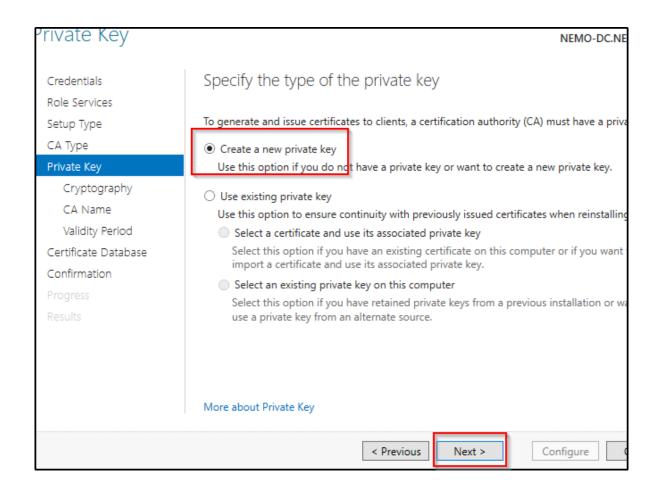
Step 26: Now again press on Configure:



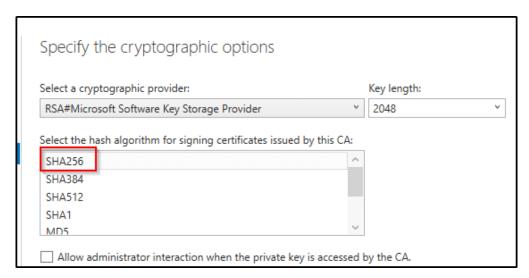
Step 27: Make sure to check Certification Authority:



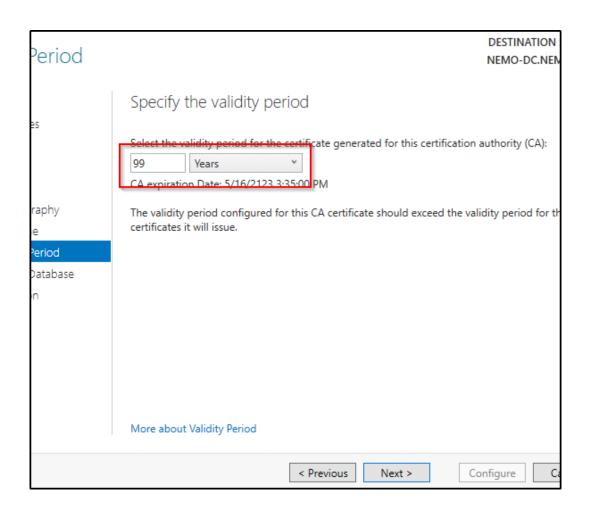
Step 28: Now let's create a new private key, since we don't have it:



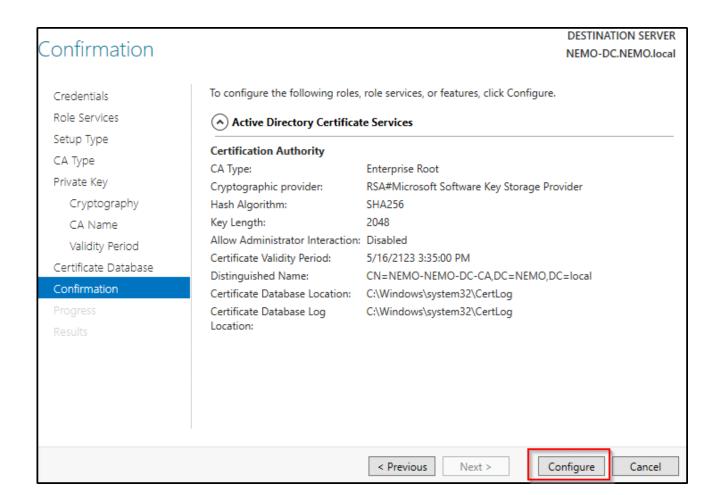
Step 29: Select SHA256 as default:



Step 30: In case we're keeping this lab long term, change it to 99 years:



Step 31: And lastly, hit Configure, and Reboot the Server:



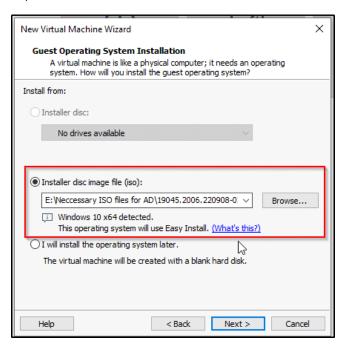
Setting Up the User Machines

Saturday, June 8, 2024 2:58 PM

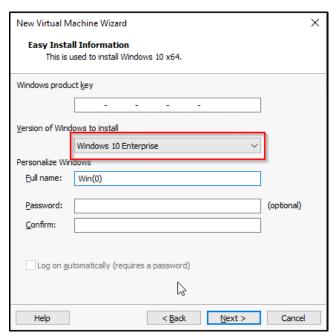
For this lab, we will need 2 user machines, so the steps below are the same

Step 1: On Vmware press Create a New Virtual Machine

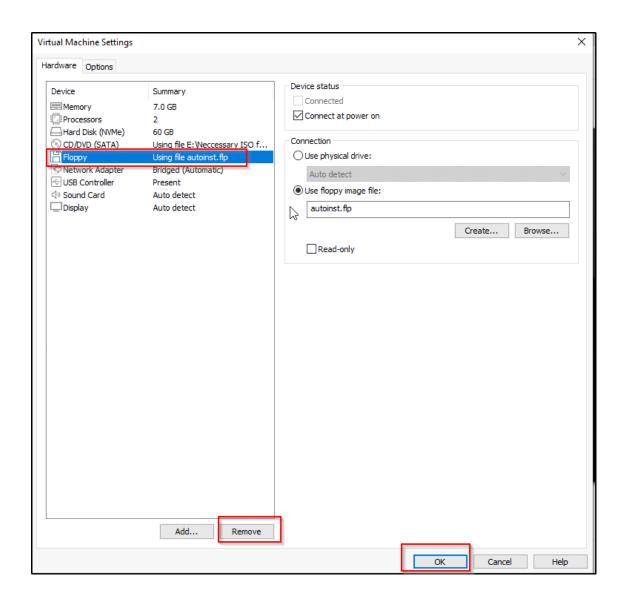
Step 2: Choose the ISO file:



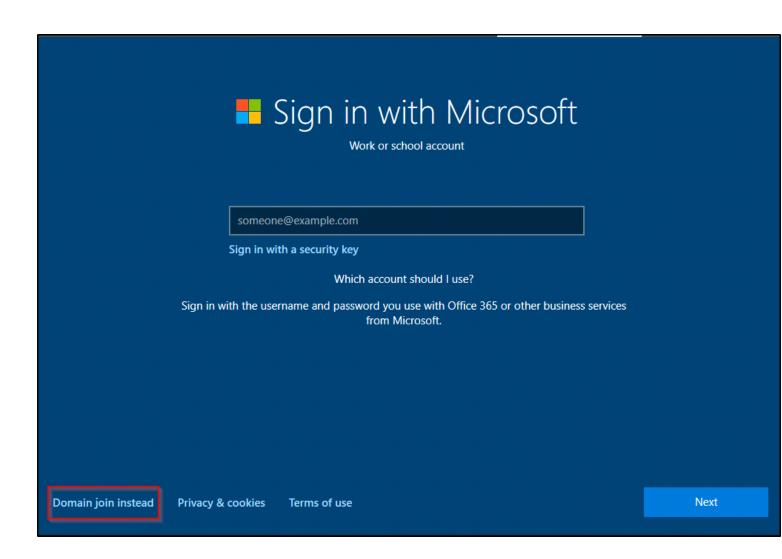
Step 3: Now here all we need to do is select the Windows 10 Enterprise and hit next:



Step 4: This is the most important part, when you create the new machine this way, a floppy disk will appear here, so we need to remove it otherwise we will face an error while installing:



Step 5: After powering on the machine the setup is straightforward, just like we would install windows 10 usually. But here we will need to select "Domain join instead":



Step 6: After setup is completed, we need to rename the PC like we did with Domain Controller.

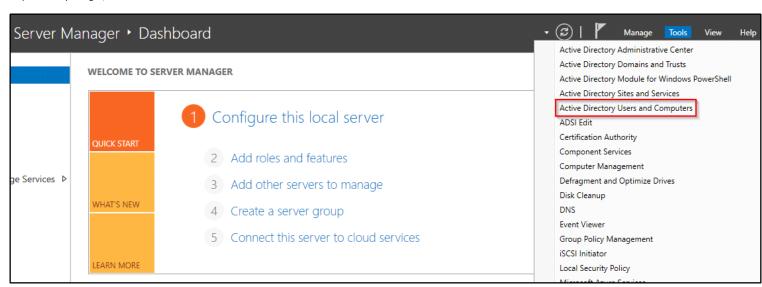
Setting Up Users, Groups, and Policies

Sunday, June 9, 2024 12:28 PM

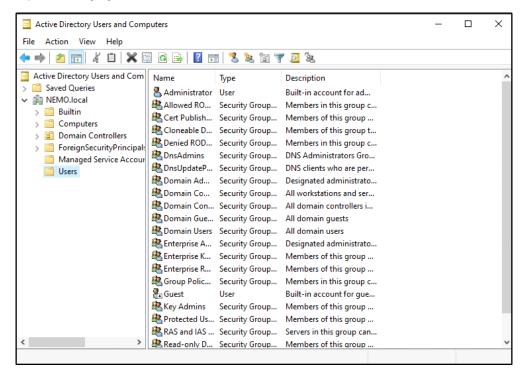
We're going to create some users, groups and some policies

Creating users:

Step 1: When you log in, click here:

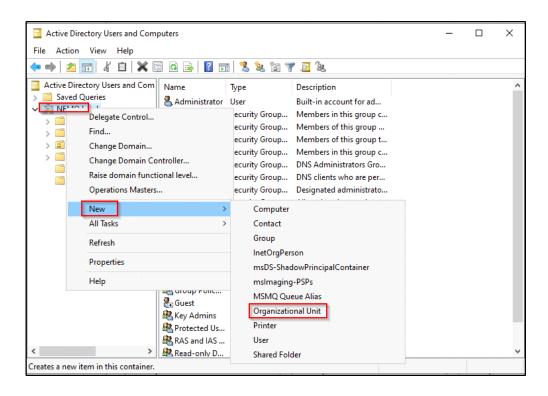


Step 2: Now we're going to see a lot of users here:

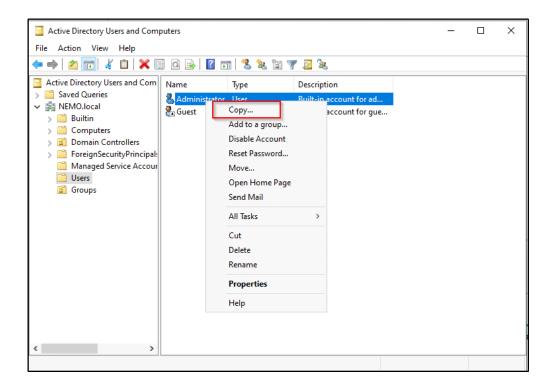


Step 3: Let's clean this up a bit, let's create an Organizational Unit (OU) named Groups and store all these usernames there except: Administrator and Guest

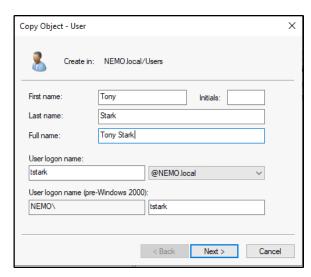
 $\label{thm:convergence} \textit{First right click on NEMO.} local then \textit{select New then Organizational Unit and name it Groups:} \\$

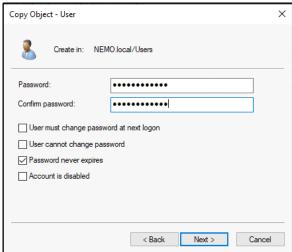


Step 4: Now let's create a domain admin, to do so we can right click on current Administrator and click Copy. This will copy all the privileges that the account has:



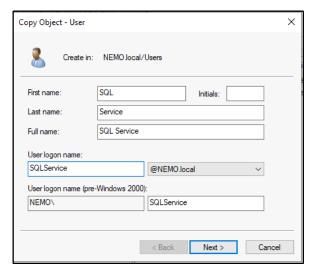
And let's give the name as Tony Stark, and the initials as tstark:

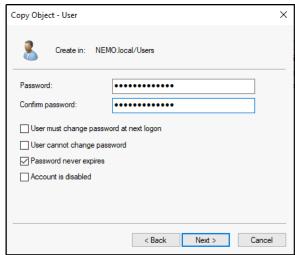




Password: Password1234

Step 5: Now let's duplicate the Administrator account again, so we can create a Service Account that is a domain administrator (they're used to run a service):



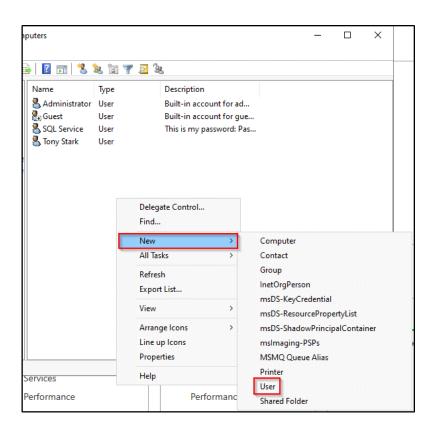


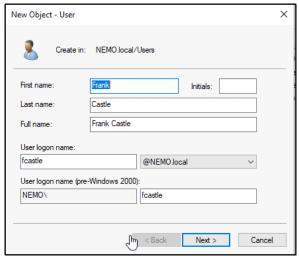
Password: Password12345

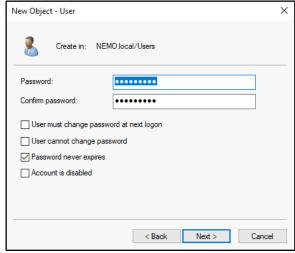
Step 6: If we double click on SQL Service now, we will see something like description, NEVER EVER EVER put your password there, since a simple user can read it to, this is something a lot of domain administrators do:



Step 7: Now let's create 2 simple users, to do so right click anywhere inside the users, New > User:





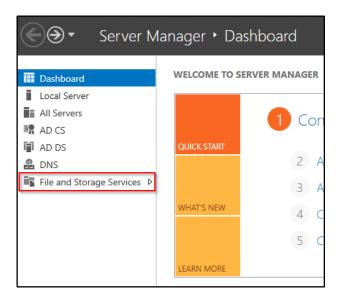


Password: Password1

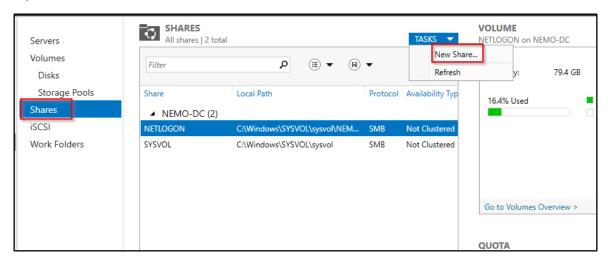
Repeat the same process for user: Peter Parker, password: Password2

Now let's create a file share that we will abuse later on:

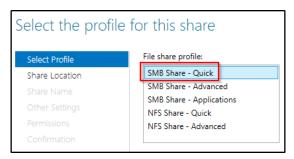
Step 1: At the Dashboard, click on File and Storage Services:



Step 2: Click on Shares and then Tasks > New Share:

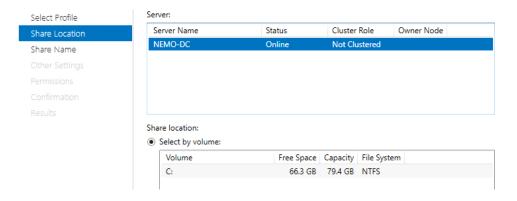


Step 3: Select SMB Share - Quick:

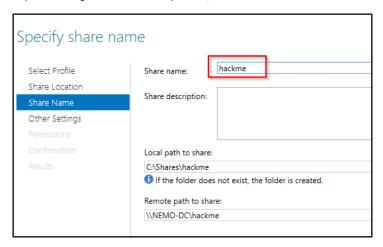


Step 4: Leave it as default here:

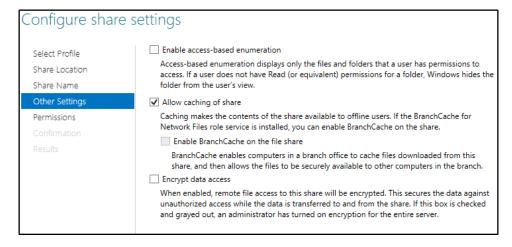
Select the server and path for this share



Step 5: And here give it whatever name you want, in our case: hackme:



Step 6: Leave it as default here:



Step 7: Leave it as default, and hit create:



Now let's set the service account fully that we had before:

Step 1: to do so open cmd as administrator

Step 2: Please check the command multiple times before you execute it, since a back slash instead of forward slash cannot work or anything else:

```
C:\Users\Administrator setspn -a NEMO-DC/SQLService.NEMO.local:60111 NEMO\SQLService
Checking domain DC=NEMO,DC=local
Registering ServicePrincipalNames for CN=SQL Service,CN=Users,DC=NEMO,DC=local
NEMO-DC/SQLService.NEMO.local:60111
Jpdated object
```

setspn -a NEMO-DC/SQLService.NEMO.local:60111 NEMO\SQLService

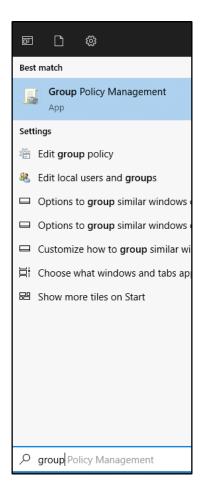
Step 3: Now that we updated object, let's query it to make sure that we really updated it:

```
C:\Users\Administrator>setspn -T NEMO.local -Q */*
Checking domain DC=NEMO,DC=local
CN=NEMO-DC,OU=Domain Controllers,DC=NEMO,DC=local
       Dfsr-12F9A27C-BF97-4787-9364-D31B6C55EB04/NEMO-DC.NEMO.local
        ldap/NEMO-DC.NEMO.local/ForestDnsZones.NEMO.local
        ldap/NEMO-DC.NEMO.local/DomainDnsZones.NEMO.local
       DNS/NEMO-DC.NEMO.local
       GC/NEMO-DC.NEMO.local/NEMO.local
        RestrictedKrbHost/NEMO-DC.NEMO.local
        RestrictedKrbHost/NEMO-DC
        RPC/a7667643-14dd-4fca-b0fe-1ea4fcb10116._msdcs.NEMO.local
       HOST/NEMO-DC/NEMO
        HOST/NEMO-DC.NEMO.local/NEMO
        HOST/NEMO-DC
        HOST/NEMO-DC.NEMO.local
        HOST/NEMO-DC.NEMO.local/NEMO.local
        E3514235-4B06-11D1-AB04-00C04FC2DCD2/a7667643-14dd-4fca-b0fe-1ea4fcb10116/NEM0.local
        ldap/NEMO-DC/NEMO
        ldap/a7667643-14dd-4fca-b0fe-1ea4fcb10116._msdcs.NEMO.local
        ldap/NEMO-DC.NEMO.local/NEMO
        ldap/NEMO-DC
        ldap/NEMO-DC.NEMO.local
ldap/NEMO-DC.NEMO.local/NEMO.local
CN=krbtgt,CN=Users,DC=NEMO,DC=local
        kadmin/changepw
CN=SQL Service,CN=Users,DC=NEMO,DC=local
        NEMO-DC/SQLService.NEMO.local:60111
Existing SPN found!
```

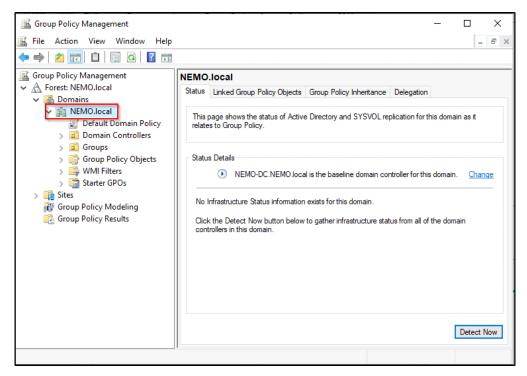
setspn -T NEMO.local -Q */*

Now let's set up a group policy

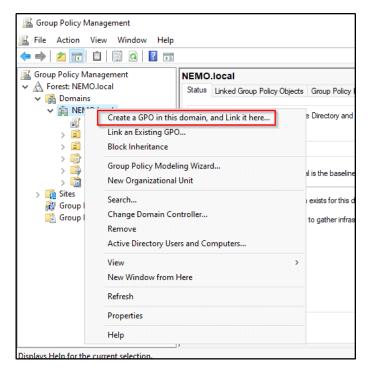
Step 1: At the start search for Group Policy Management:



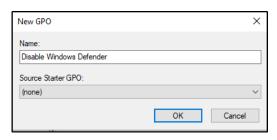
Step 2: We can set a specific GPO for a specific group or anything here, but we're going to do for the whole domain:



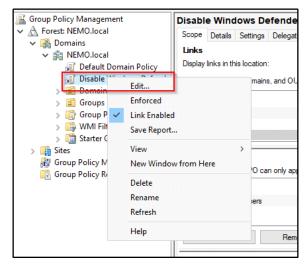
Step 3: Right click on NEMO.local and select:



Step 4: And we're going to call it: Disable Windows Defender:

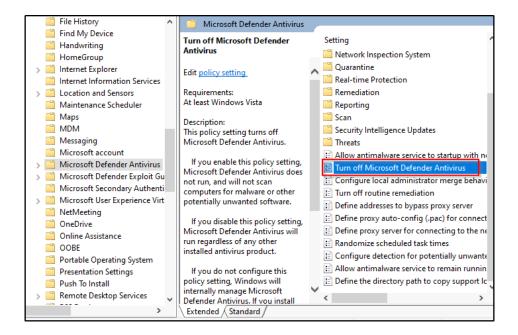


Step 5: Right click on the GPO that we just created and select $\operatorname{\sf Edit}$

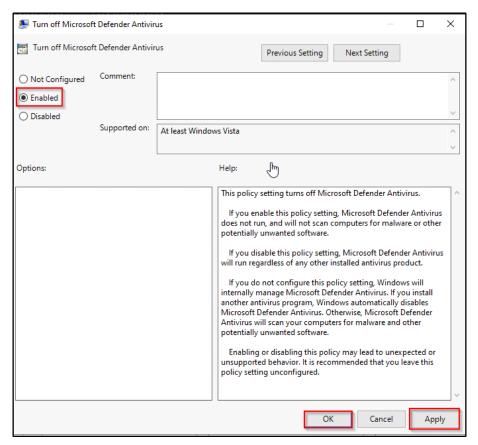


Step 6: Under Computer Configuration select: Policies > Administrative Templates > Windows Components > Microsoft Defender Antivirus

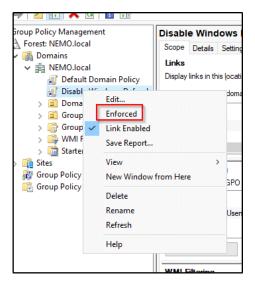
Step 7: Once we found Microsoft Defender Antivirus, click once on it and look at the right side:



Double click on Turn off Microsoft Defender Antivirus, select Enabled > Apply > Ok:



Step 8: Last thing that we're going to do here is right click on GPO that we created again, and select Enforced, any time a user joins this domain it's going to get this policy:

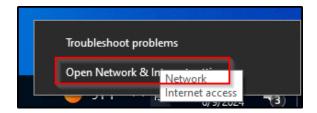


Joining Our Machines to the Domain

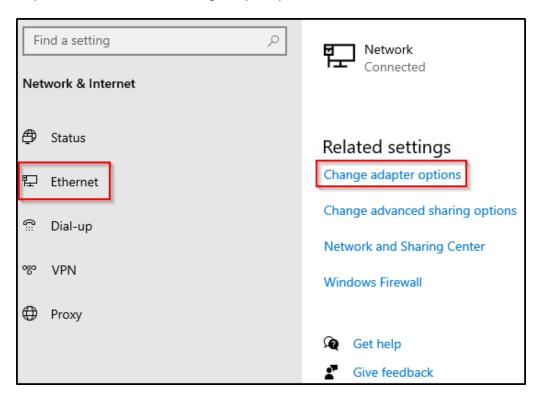
Sunday, June 9, 2024 2:56 PM

To join our machines to the domain we need to specify the IP address of AD in our case 192.168.100.79

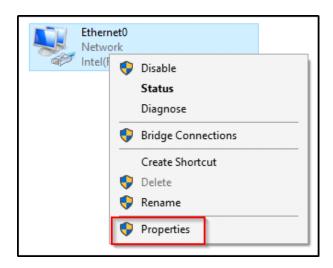
Step 1: On both machines that we've created, go to:



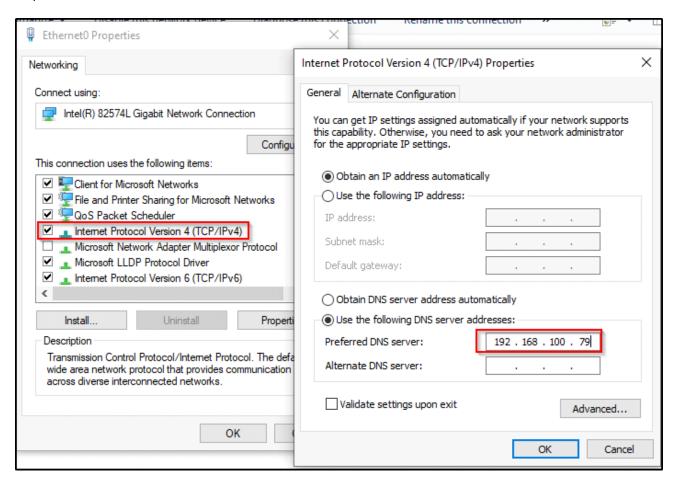
Step 2: Press on Ethernet and Change adapter options:



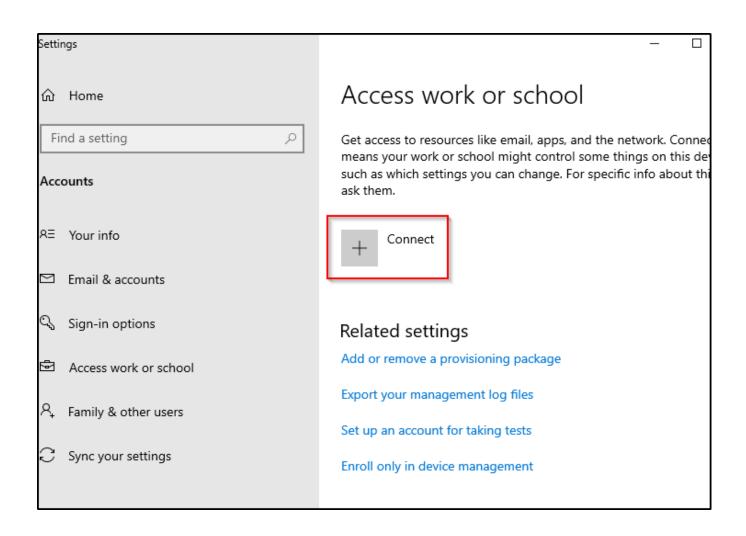
Step 3: Right click on Ethernet0 and click Properties:



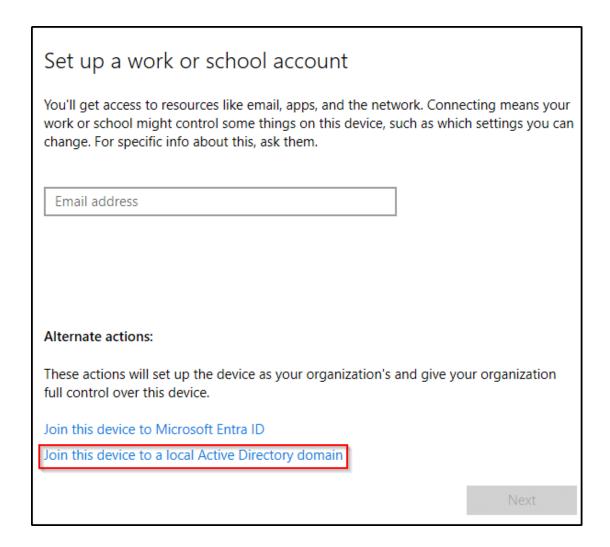
Step 4: Click on IPv4 and set the DNS server our AD IP:



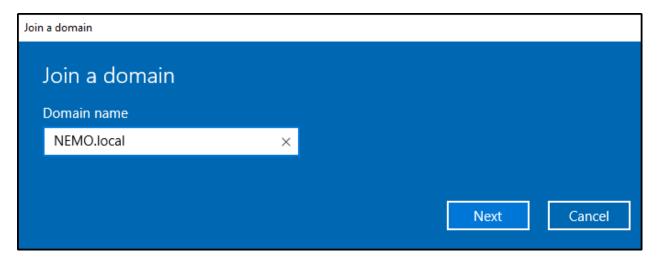
Step 5: Now we're going to join the domain, at the start search for: Access work or school, and hit connect:



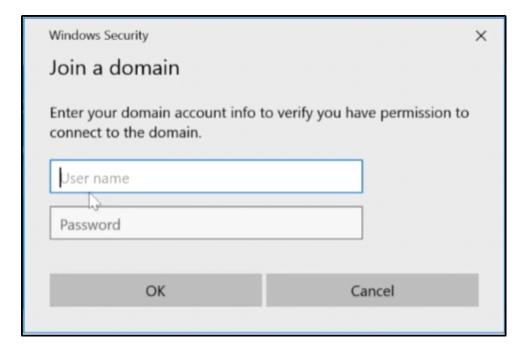
Step 6: Now select Join this device to a local Active Directory domain:



Step 7: Specify the domain name that we want to join:

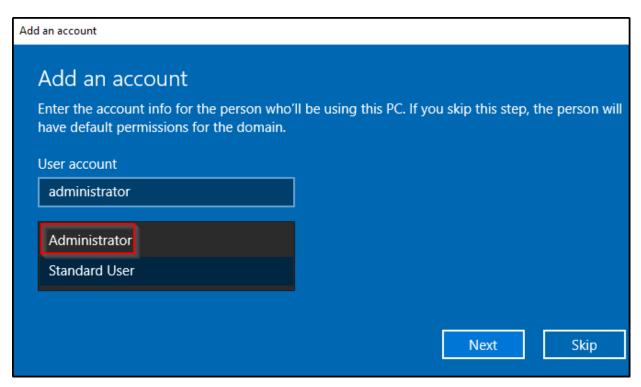


Step 8: If it finds the domain, then we'll get a pop up like this:

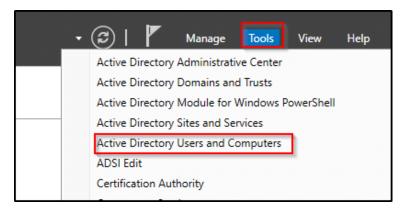


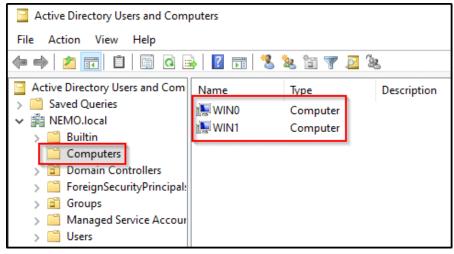
Login with adminstrator/Password123@ that we created

Step 9: Here let's choose Administrator:

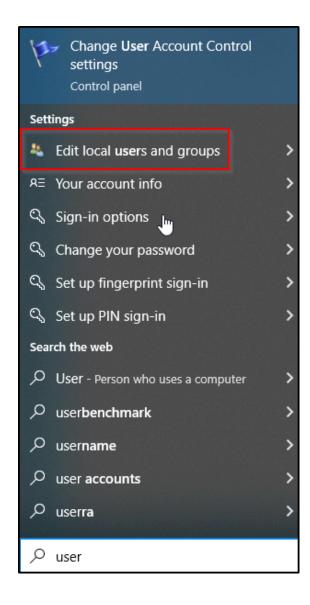


Step 10: Now let's check real quick if we added successfully computers on AD, on the dashboard select Tools > Active Directory Users and Computers:

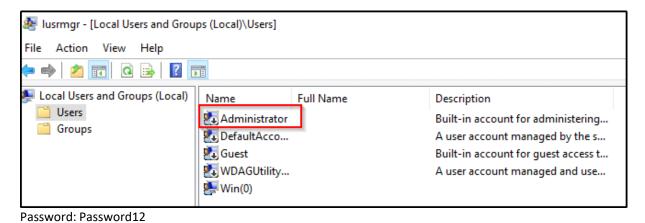




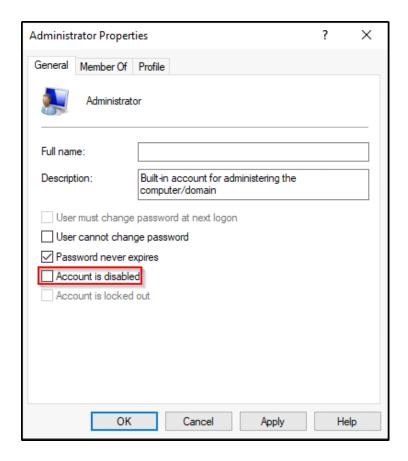
Step 11: Now let's create a local admin on both PC's, at start search for Edit local users and groups:



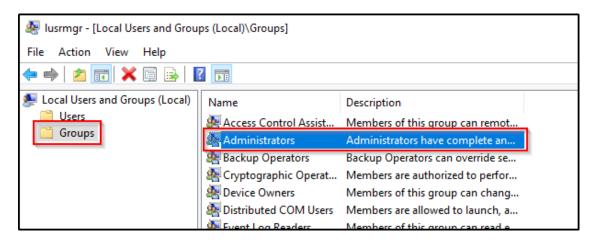
Step 12: Here, right click on Administrator and choose Set Password, let's set a password for Administrator:



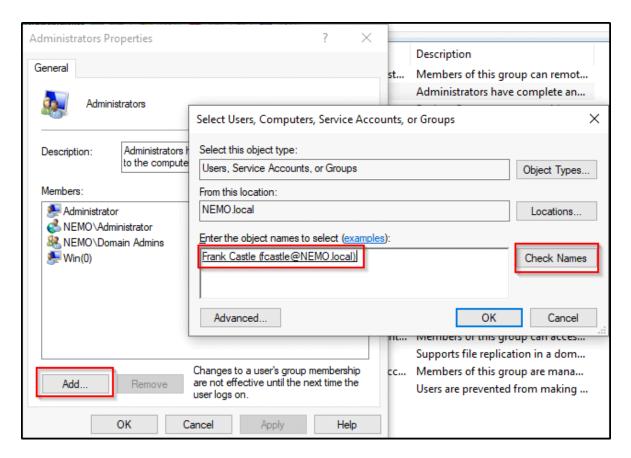
Step 13: Now double click on Administrator and uncheck Account is disabled:



Step 14: Now let's go to Groups and double click on Administrators:

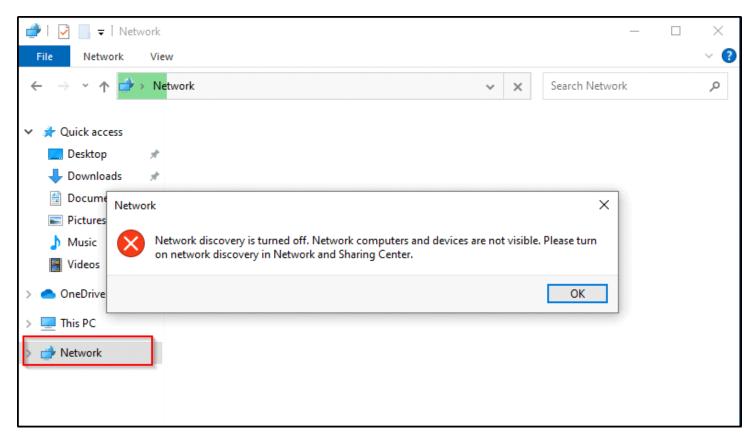


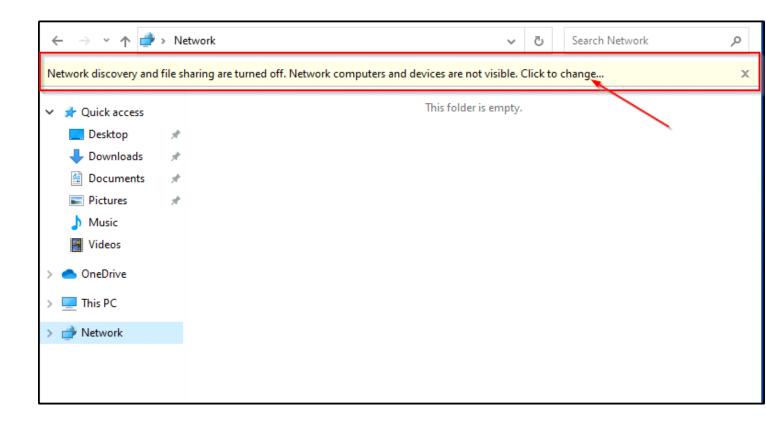
Step 15: Let's add 1 more user to this machine which we created also in AD, Frank Castle:



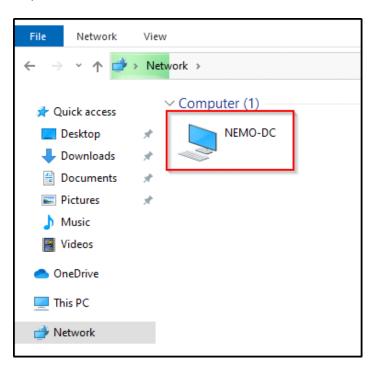
At the: Enter the object names to select just type: fcastle and then Check Names, it will automatically complete.

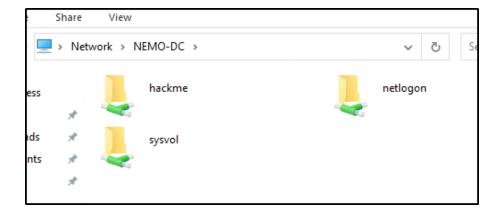
Step 16: Now go to File Explorer and select the Network, if it shows this error then enable Network discovery on 2nd picture:





Step 17: Now we can see our DC:





Now repeat the same process on the other PC too, just remember at step 12 passwords need to be identical between the 2 PC's.

At the 2nd PC in our case Win(1) add 2 users, fcastle and pparker

Differences of logging into the accounts that we created:

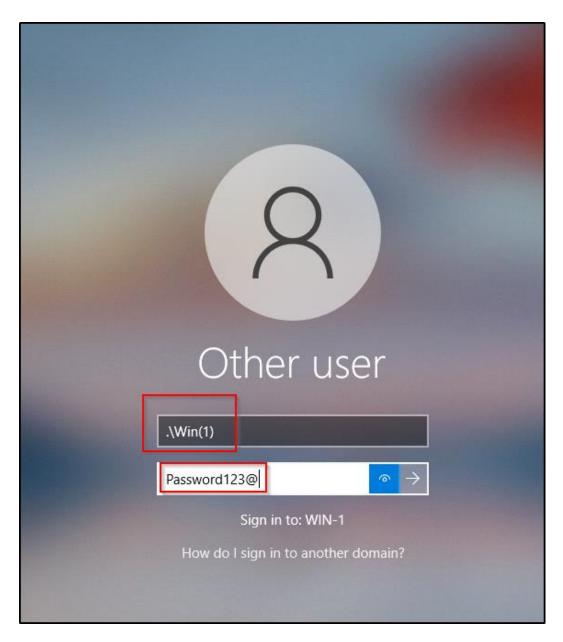
Logging in with .\Win(0) or .\Win(1):

- You are using a local user account that exists only on that specific machine.
- Useful for standalone systems or when domain services are unavailable.

Logging in with fcastle@NEMO.local:

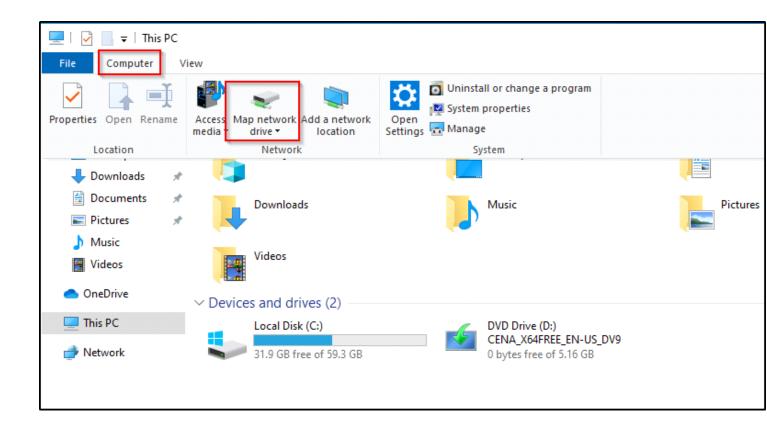
- You are using a domain user account that is recognized across the entire network.
- Necessary for accessing domain resources and for centrally managed user accounts and policies.

Step 18: Now that we know the differences between logging in locally and with domain, let's login locally at Win(1), this way:

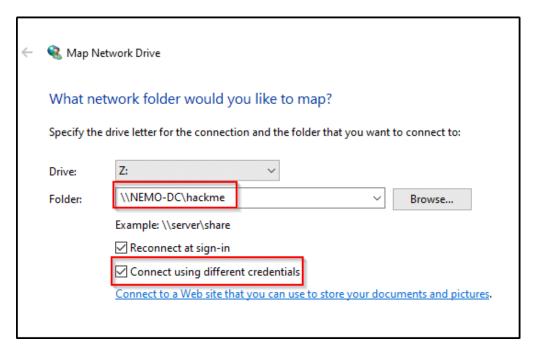


So we're using .\Win(1) and the password that we created when we created this machine: Password123 ϖ

Step 19: We're doing this because this will lead to an attack later, go to This PC > Computer > Map network drive:



Step 20: And now here, pick whatever drive you want, check "Connect using different credentials" and specify this path:



Remember we're doing this only on Win(1) not (0)

After it's finished, we should have that as a share drive on our machine:

