Creating Azure Active Directory Domain Controller and Client Machines

Things you will need:

1. Microsoft Azure Account (You can make an account and they will give you $200 in credits to use for 30 days)

In this guide, I will be walking you through how to setup an Active Directory Server and Client Machine in Microsoft Azure. At the end of this tutorial, you will understand how to setup a Domain Controller, join a Windows machine to a domain, setup users, and configure roles. If you're ready, let's begin.

Part 1, Preparing the environment:

1. Begin by creating a new resource group. Go to the search bar at the top and type in resource groups. Click on the resource groups selection.
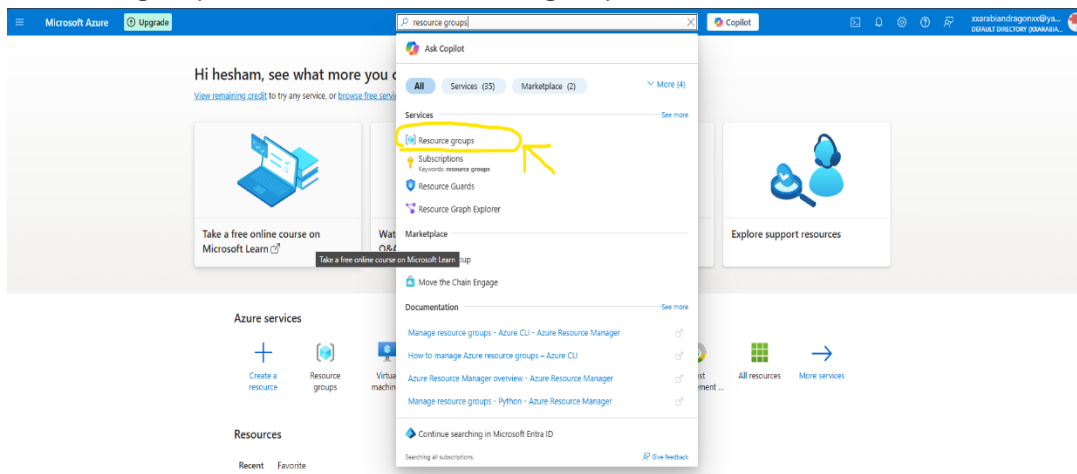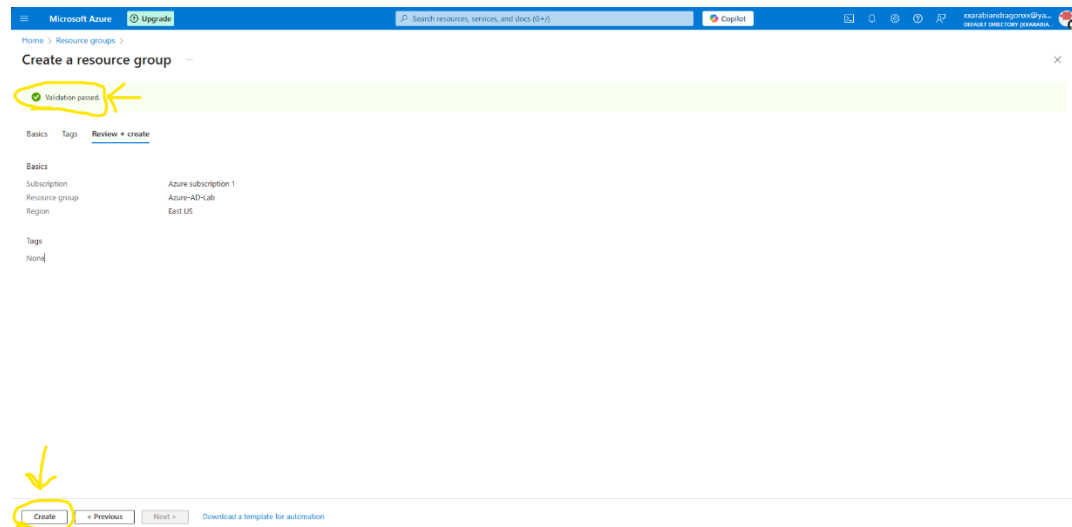

2. You should see a page called resource groups. Click on create.
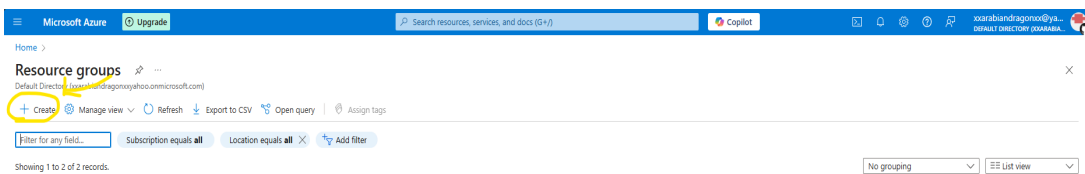
3. You can leave the subscription and region selection as their default selection. Give the resource group a name and then click on review and create.
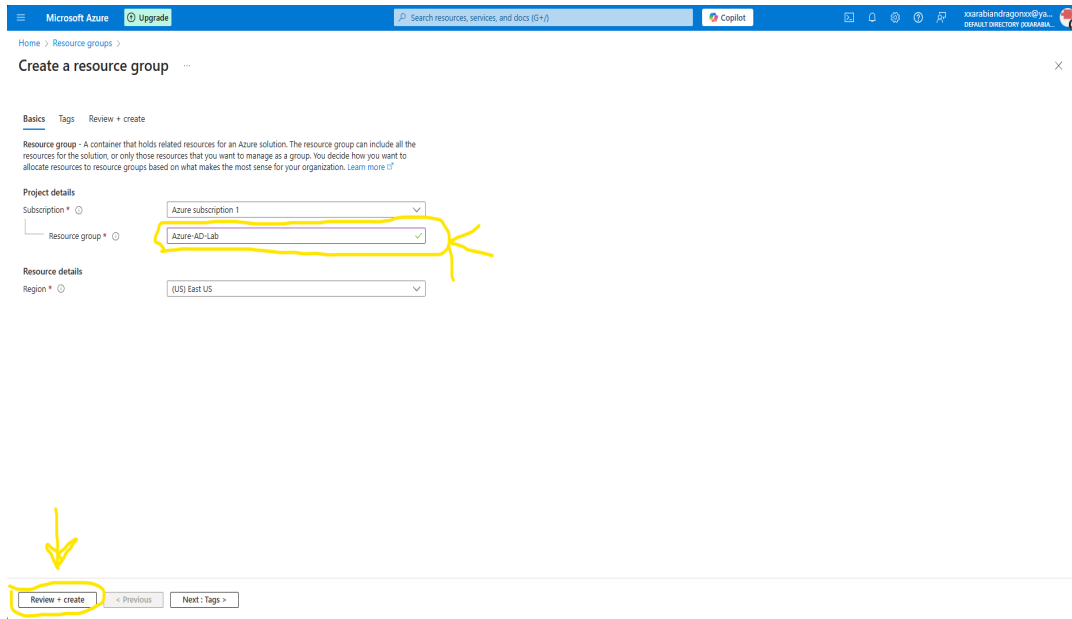

4. Azure will run a validation check to ensure everything is in order before allowing you to create it. The validation check should pass and will enable you to proceed. Click create at the bottom of the page.

5. Now you should see your newly created resource in your resource groups page. You should have also gotten a notification that the resource group was created.
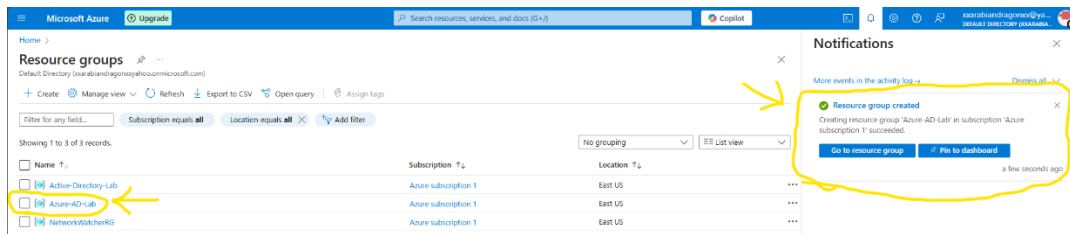

6. This step is important. Before we create the virtual machines, we need to create the virtual network. In the search bar at the top, type in virtual network and click on it from the drop-down menu.
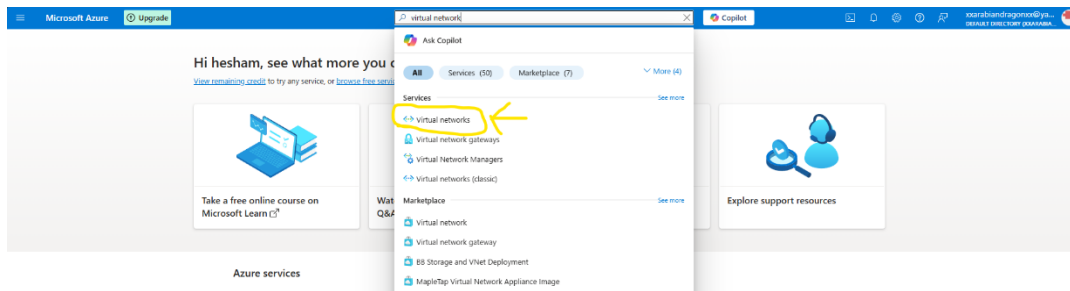

7. In the virtual network dashboard, click on create to make the new virtual network that both your Windows Server and Windows 10 machines will connect to.
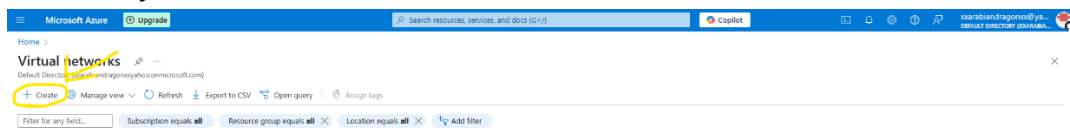
8. In this first tab, click on the drop-down list for resource group and select the resource group you made in the earlier steps. Also give your virtual network a name. Once this is done, click on the IP addresses tab at the top.
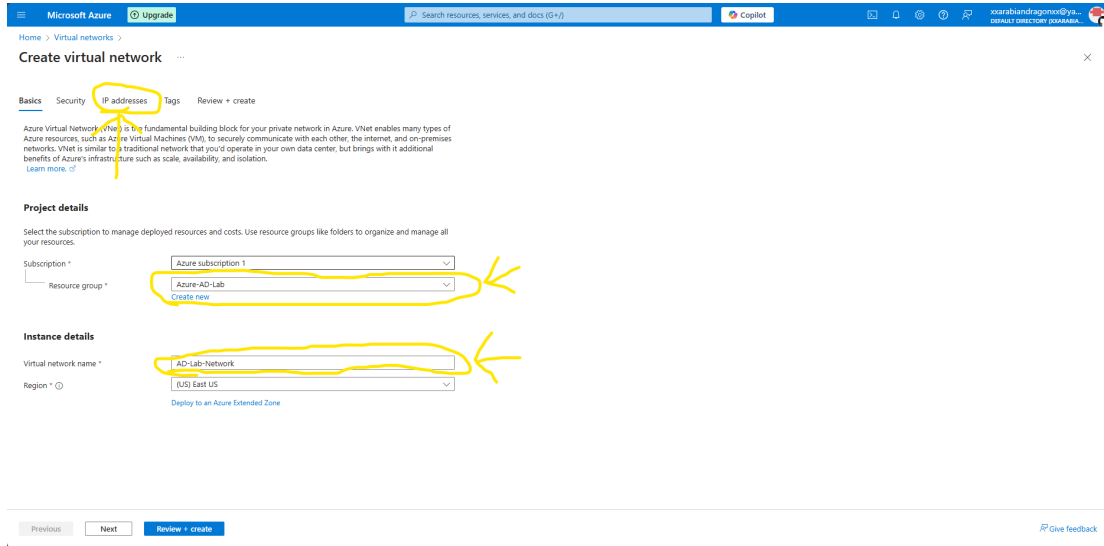
9. Here you want to go ahead and create the IP address and number of addresses to use. These are done in CIDR notation. Go ahead and pick an IP address and range you wish to use. I'm doing the IP address 10.1.1.0 with a CIDR notation of /24. That will give 256 addresses and its more than enough for this project. Click on Review and create.
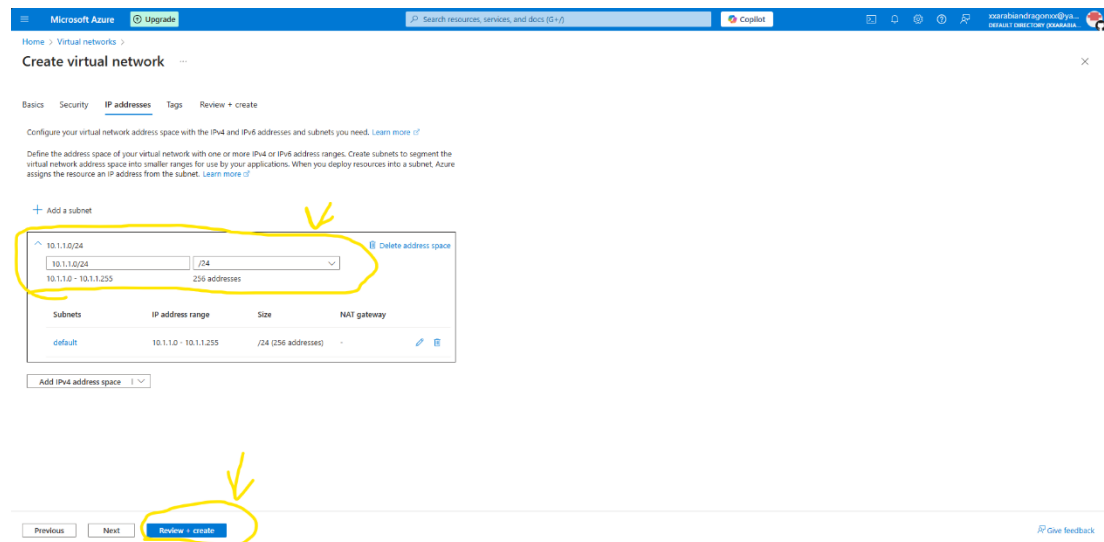
10. You should be ready to create the virtual network. Go ahead and click Create.
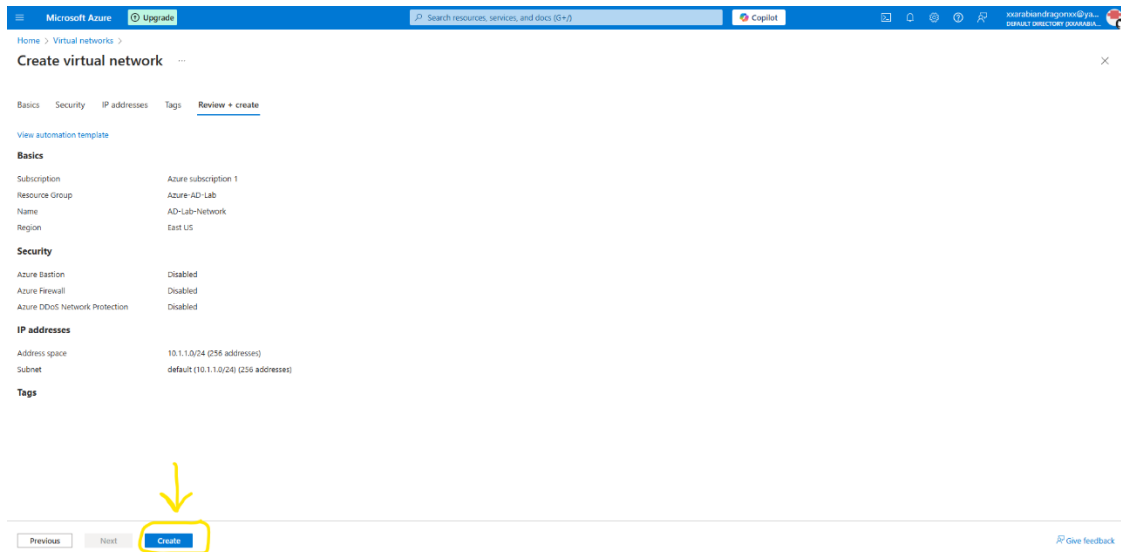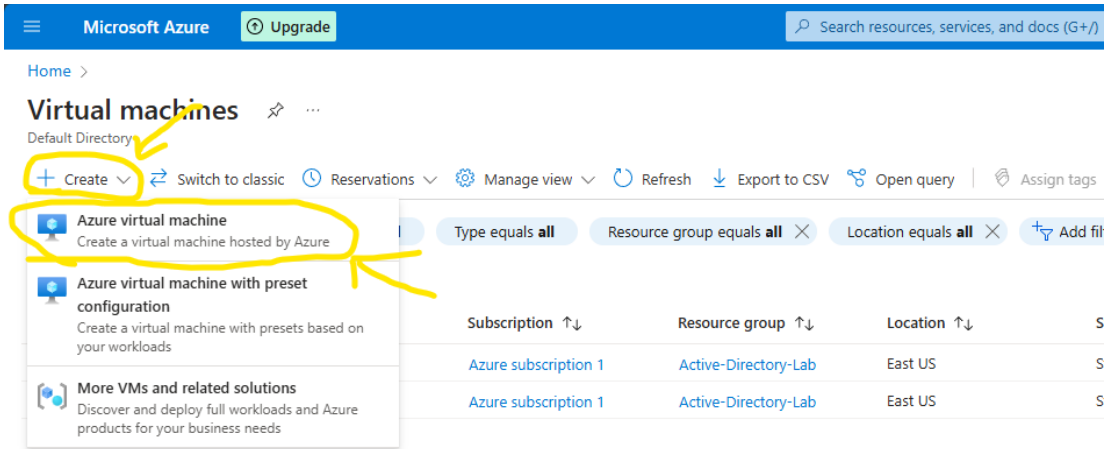

You have completed the prerequisite and are ready to move on to the next part of this tutorial.

**Part 2, Creating Virtual Machines:**

1. We need to create the two virtual machines. Start by typing in virtual machines in the search bar and clicking on it.
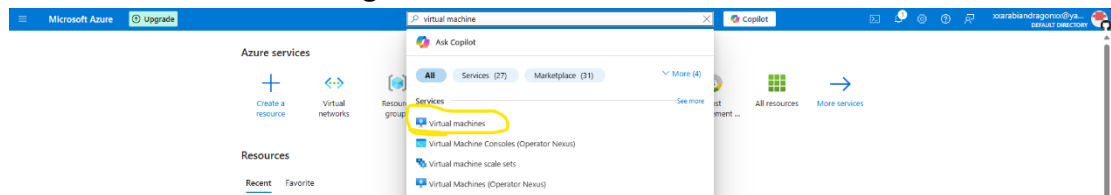
2. In the virtual machine dashboard, you want to click create and click on azure virtual machine.

3. You will be greeted with this screen below. The three things you need to do is select the existing resource group you created earlier, give your virtual machine a name, and make sure you select the same region as the resource group and virtual network.
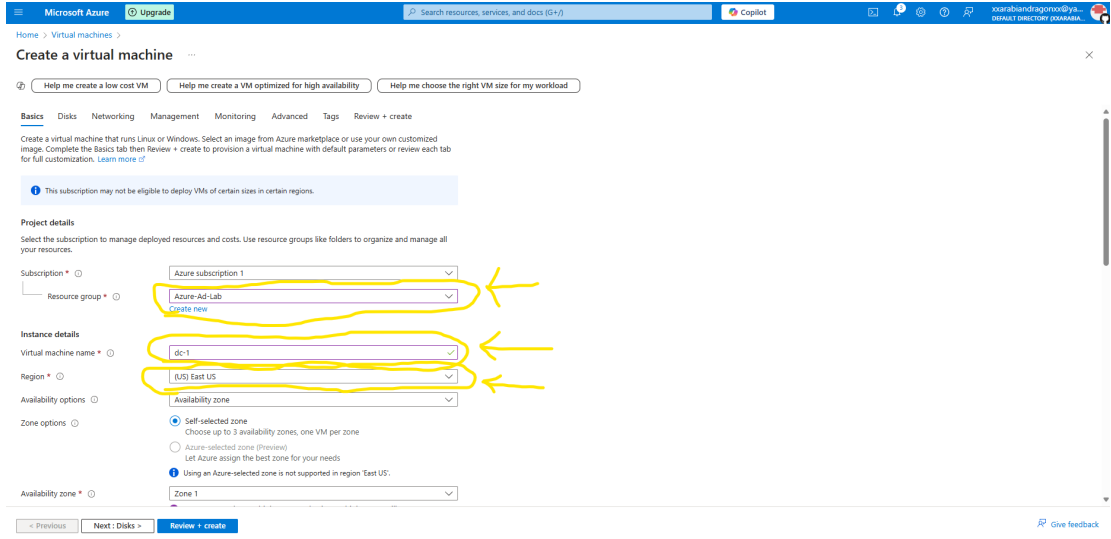
4. Scroll down a little bit and select the Windows Server 2022 Datacenter: Azure Edition Hotpatch from images drop down. You will also select the Standard dc2sz_v3 – 2 vcpus, 16gib memory from the size drop down. Finally, create a username and password for the administrator account.
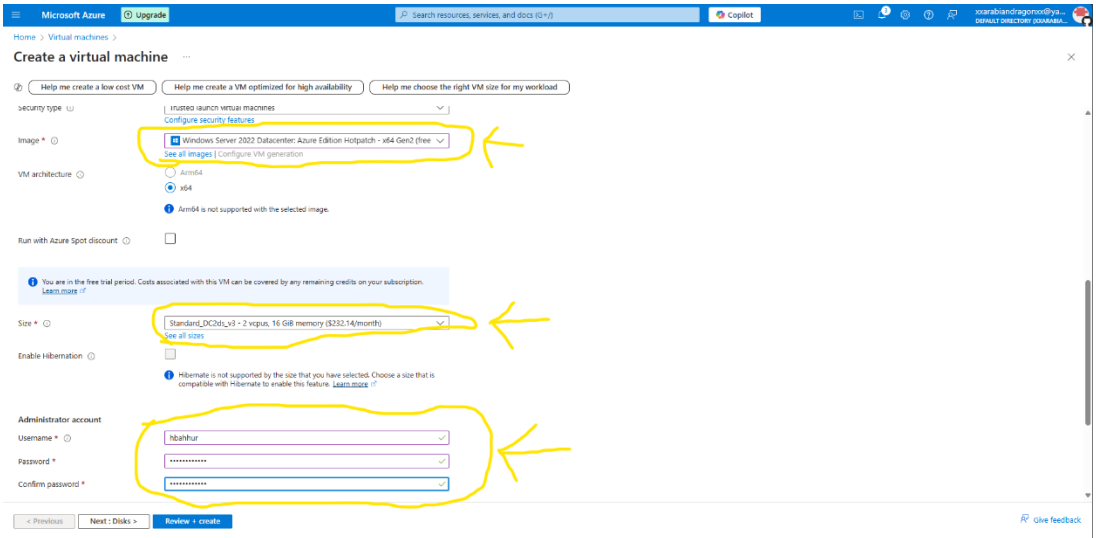
5. Scroll back to the top and select Networking from the top row.
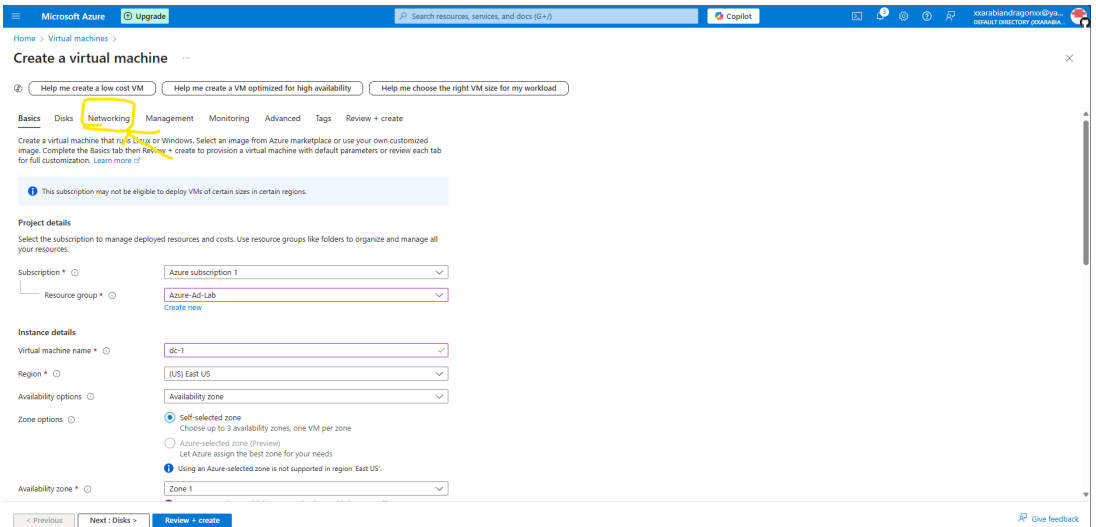
6. All we are doing here is making sure we select our virtual network we created earlier. Once you verify that we are using the already created virtual network, click on review and create.
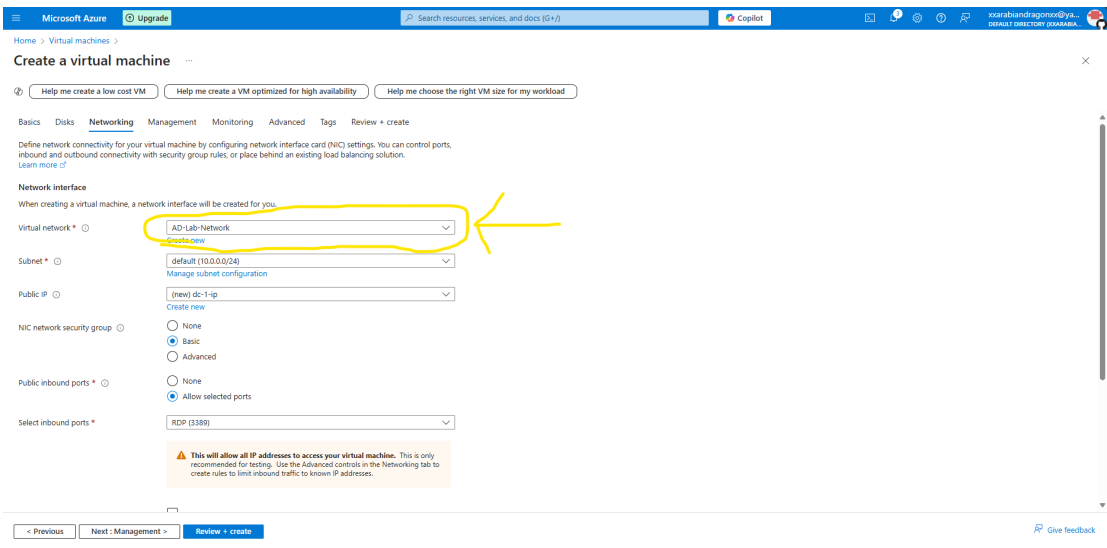
7. It will run another validation check. Once it says validation passed, click on create.
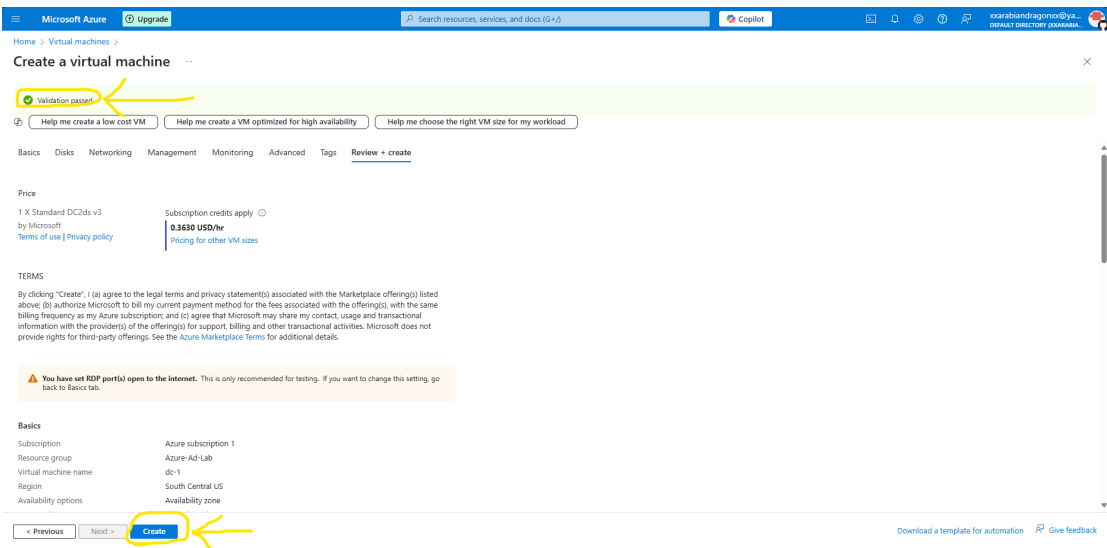
8. This part will take at least a minute or two. It is provisioning the virtual machine. Once this is done, it will say the deployment is complete. Now that we made the virtual Windows Server machine, let's go ahead and make a virtual client machine. Click on create another vm.
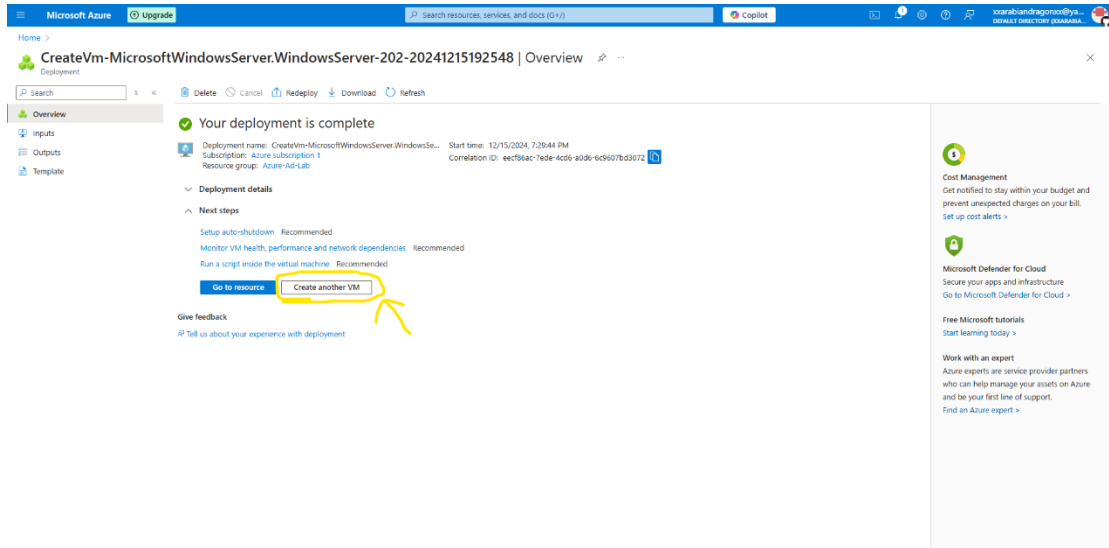
9. The settings for this virtual machine will be like the virtual Windows Server machine. Make sure you select the same resource group and region as the virtual windows server and virtual network you created in earlier steps. Give the client virtual machine a name. Scroll down a bit after this is complete.
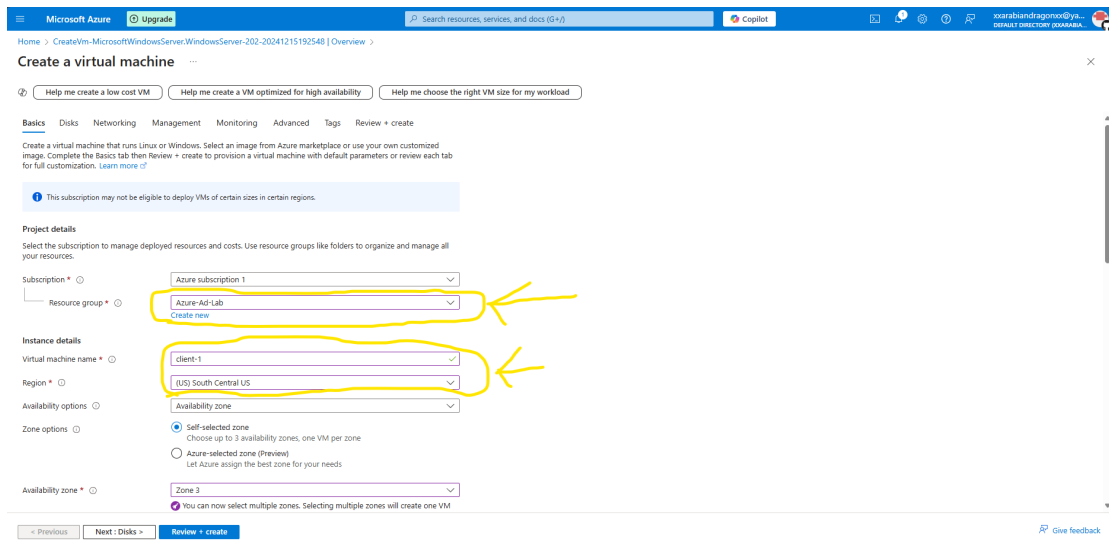
10. Go ahead and select the Windows 10 Pro image from the image drop down. Select the Standard dc2ds_v3 – 2 vcpus, 16 gib memory size. Finally, create a username and password for the administrator account. At the very bottom of the page, check the box that says, "I confirm I have an eligible Windows 10/11 license with multi-tenant hosting rights."

11. Scroll back to the top of the page and select the Networking tab.

12. Make sure the virtual network and subnet are identical to the virtual server we created earlier. Click on review and create.
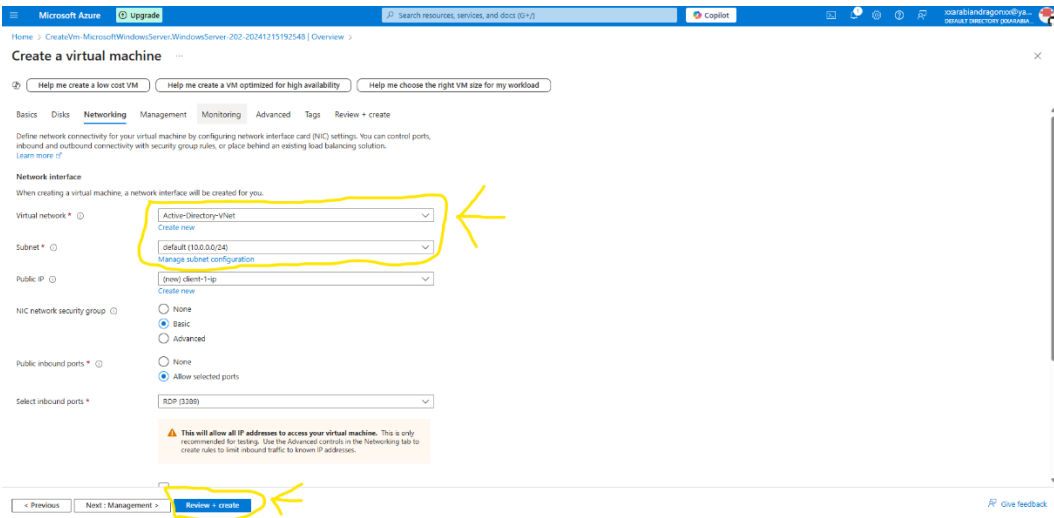
13. This will perform another validation check. Once it says validation passed, click create at the bottom of the screen.
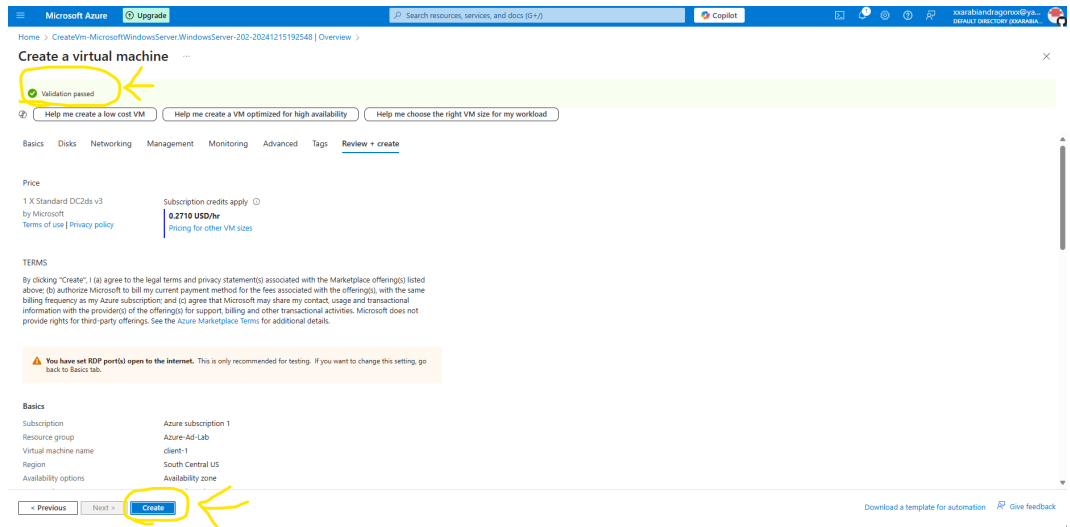
14. Wait for it to finish deploying. Once it is done, you will be ready to begin provisioning the server and client for Active Directory. Click home.
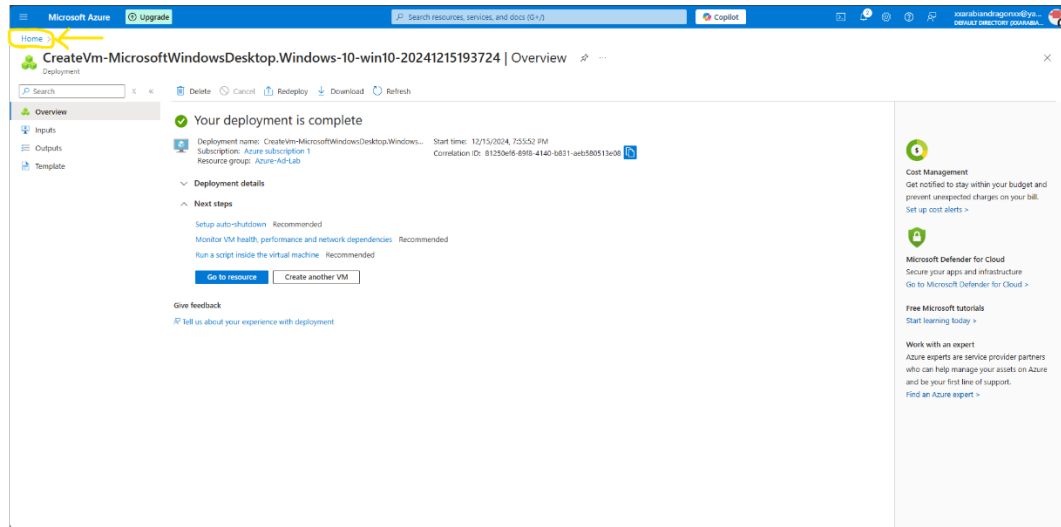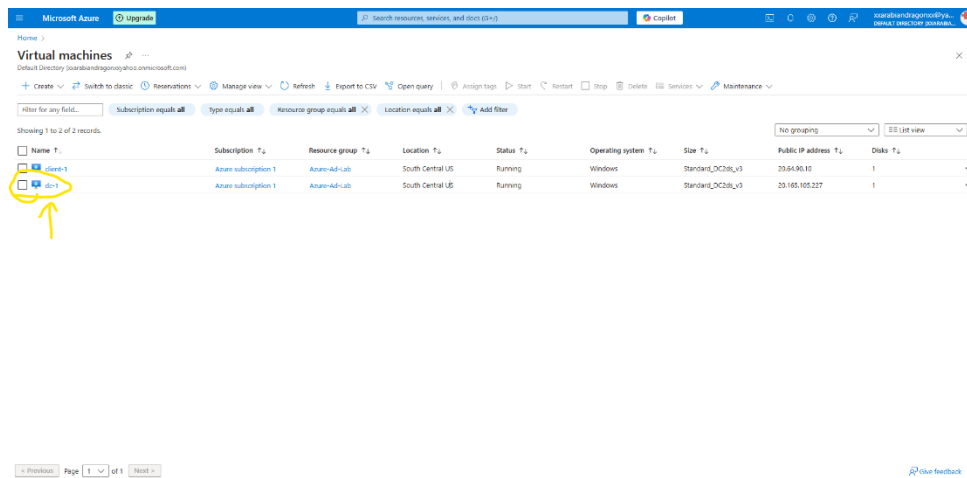

You have completed this part of the tutorial and are ready to move onto the next part.

Part 3, Configuring the Virtual environments:

1. From the home screen, click on the virtual machines button under azure

2. You should see both virtual machines we just created earlier. Click on the Windows Server machine. I named mine "dc-1"

3. You'll know you clicked the correct virtual machine when you see Windows Server as the operating system in the overview tab. Make a note of the Private IP address. Click on Network Settings under the Networking tab.

4. Click on the Network Interface name.

5. Click on the name towards the bottom of the page. A tab will open. Click on the static option for the Private IP address. Click on Save.

6. Click on virtual machines at the top.

7. Click on the Windows Server virtual machine.

8. Click on Connect and then a drop-down menu will appear. Click on Connect again.

9. On this screen, it will show options as to how to connect to the virtual machine. I'm using windows myself so I'm going to download the RDP file. If a prompt comes up asking about whether to keep or delete the file, select keep. It should download the RDP file.
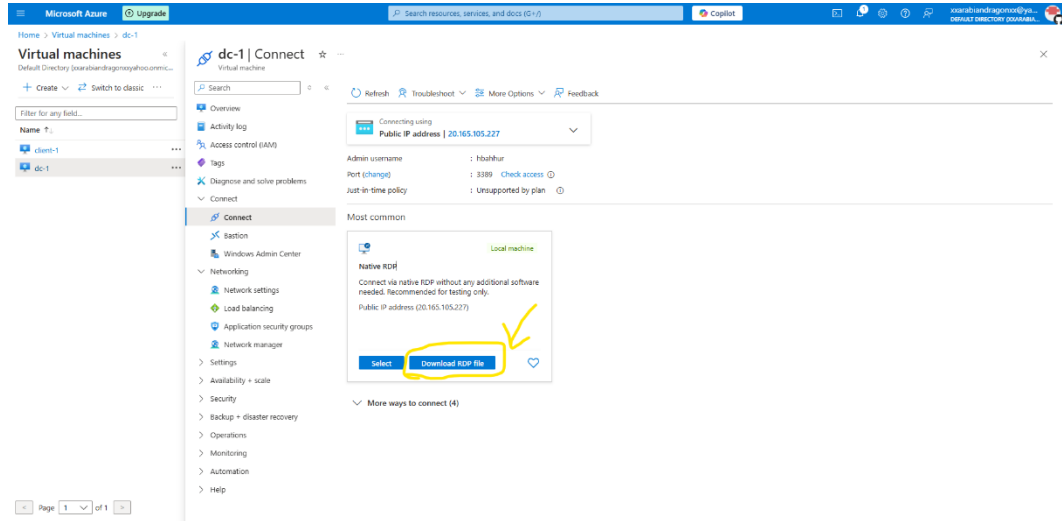
10. Open the downloaded RDP file and this prompt will come up. Click on connect.
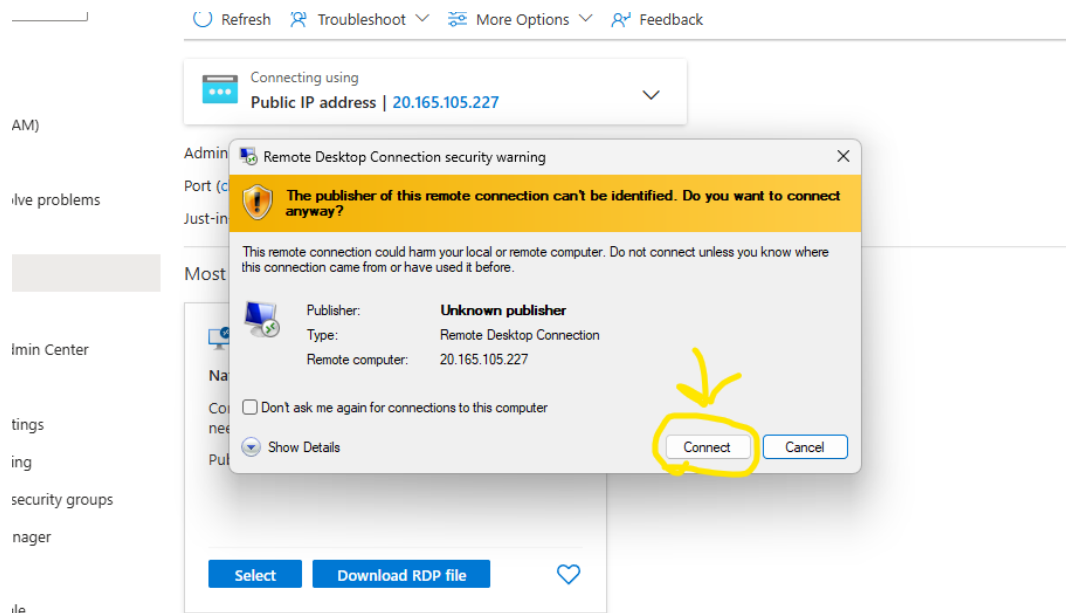
11. Another prompt will ask for the password you created when you made the virtual machine. Enter the password and click OK.
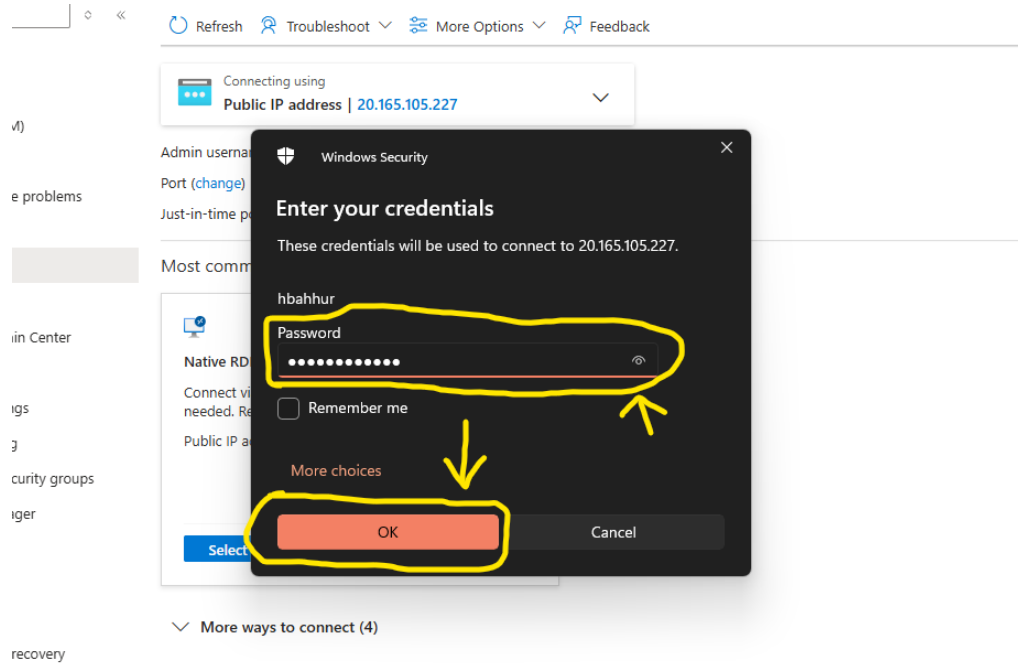
12. One last prompt will come up. Click on yes.
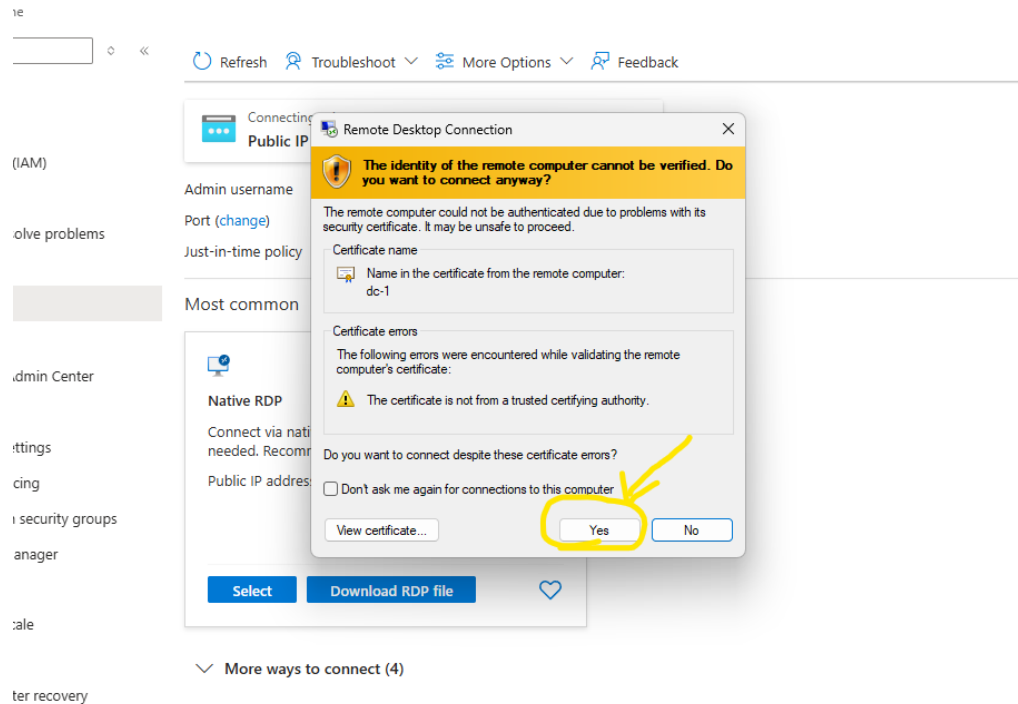
13. It should load Windows Server virtual machine. Once we confirm this, minimize this and go back to azure.
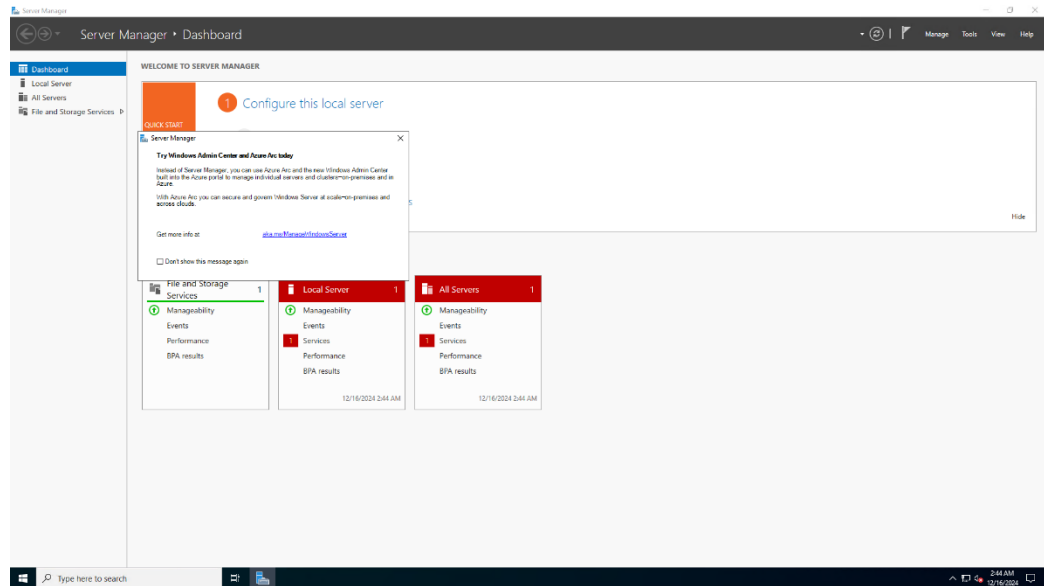
14. Make a note of the Windows Server Private IP address if you haven't already. You will need it shortly. Click on the client Virtual Machine.

15. On the client machine, click on Network settings.
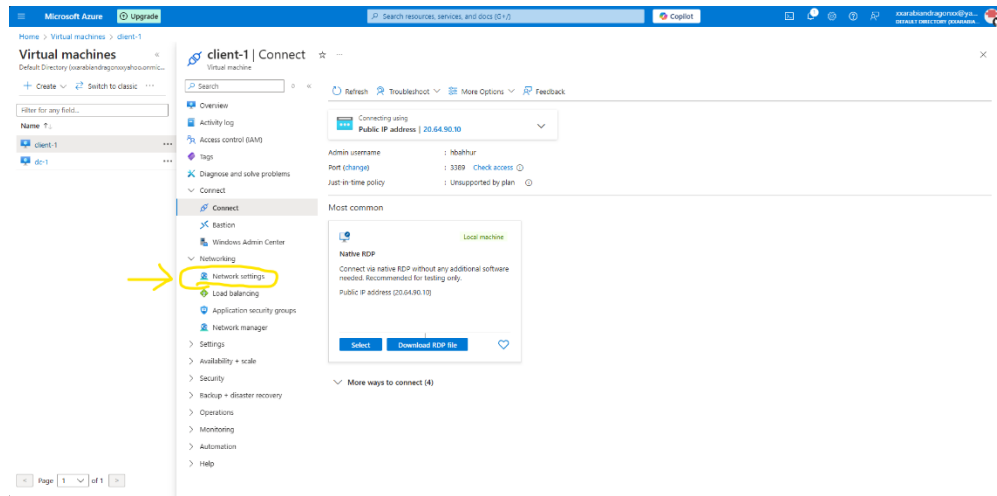
16. Click on the Network Interface Card.
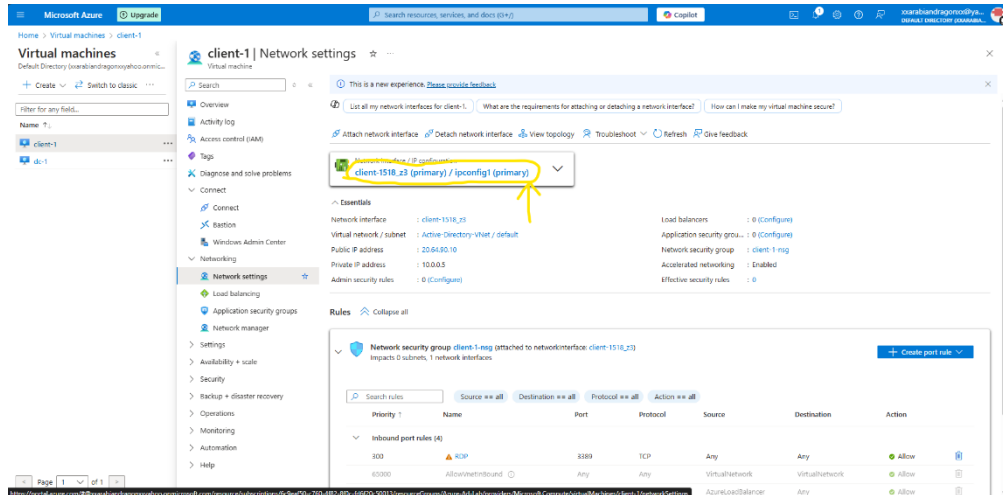
17. Click on DNS Servers.

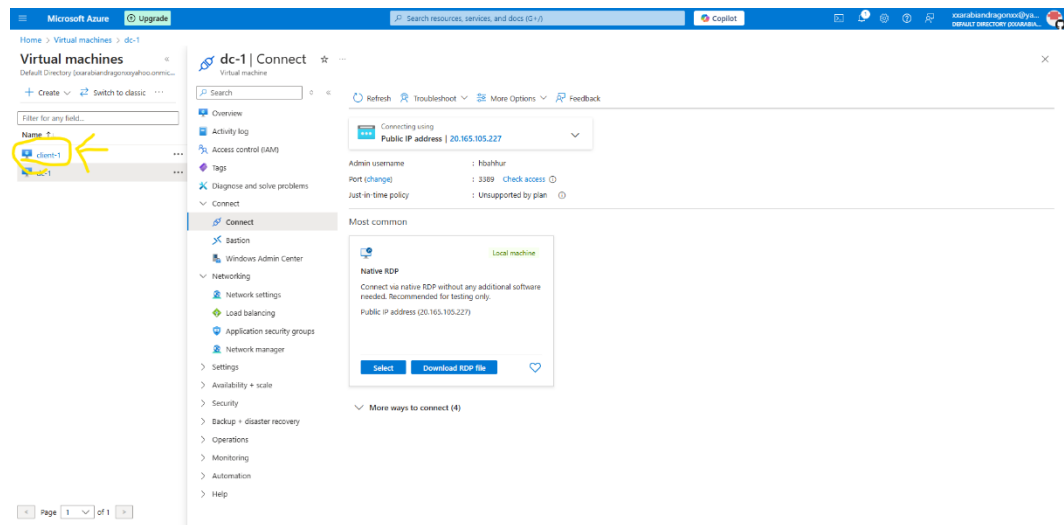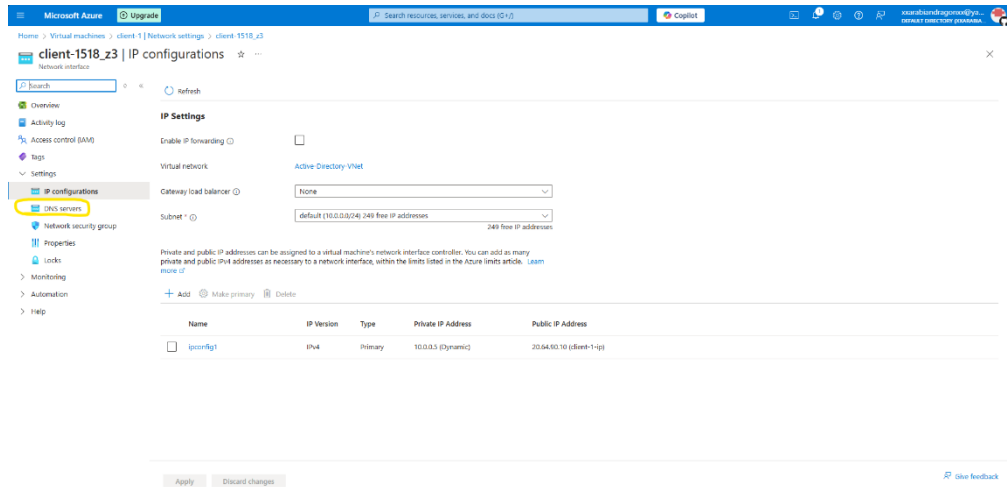18. Now this is the part where you'll put in the Windows Server's Private IP address. Click on custom where it says DNS servers, type in the Windows Server's Private IP address, and finally click save. Close out of your Windows Server remote session as well.
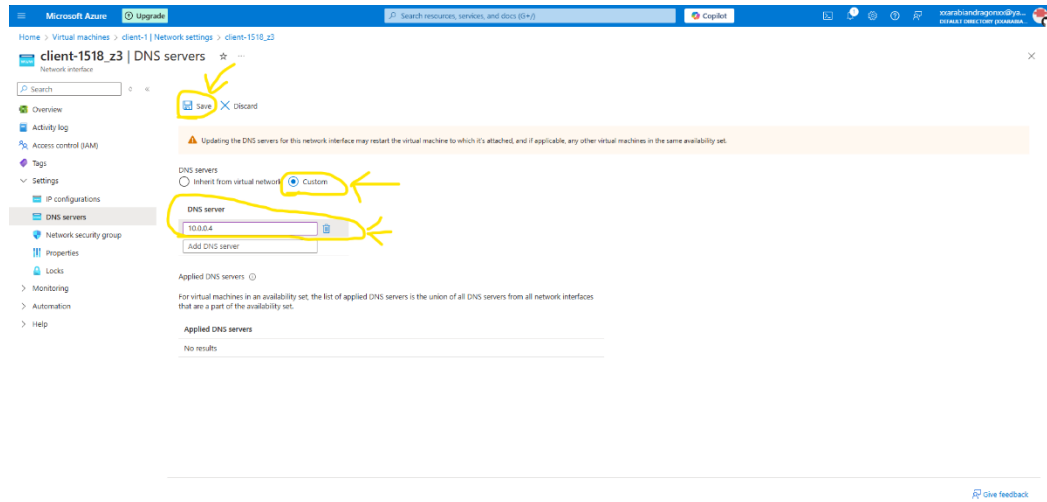
19. Click on virtual machines at the top.

20. Click on the client machine.
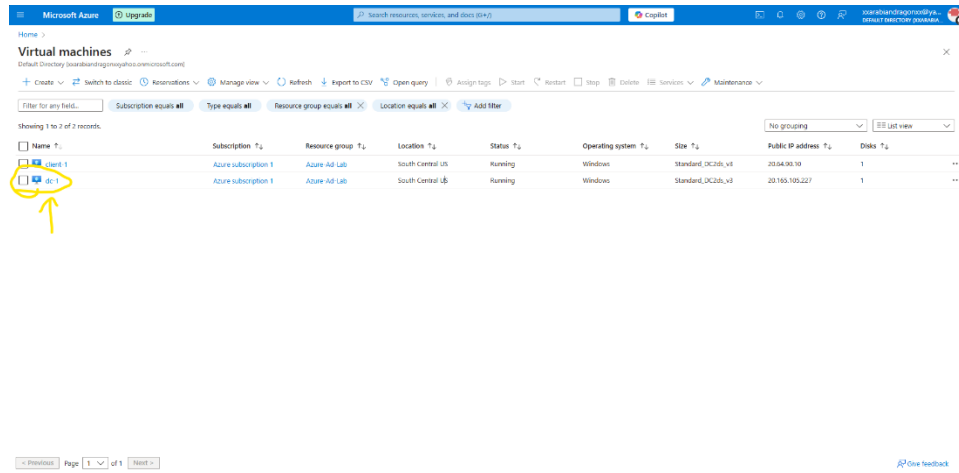
21. Click on restart. This will take a few minutes.
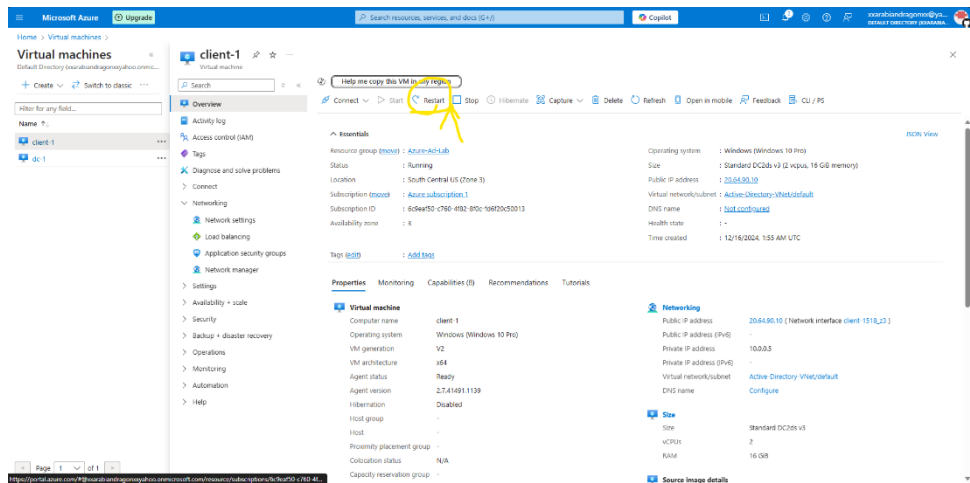
22. Now we need to remote into the Windows Server machine. Click on the RDP file we downloaded earlier and enter the password that was created earlier. Follow the prompts until you see the desktop for Windows Server.
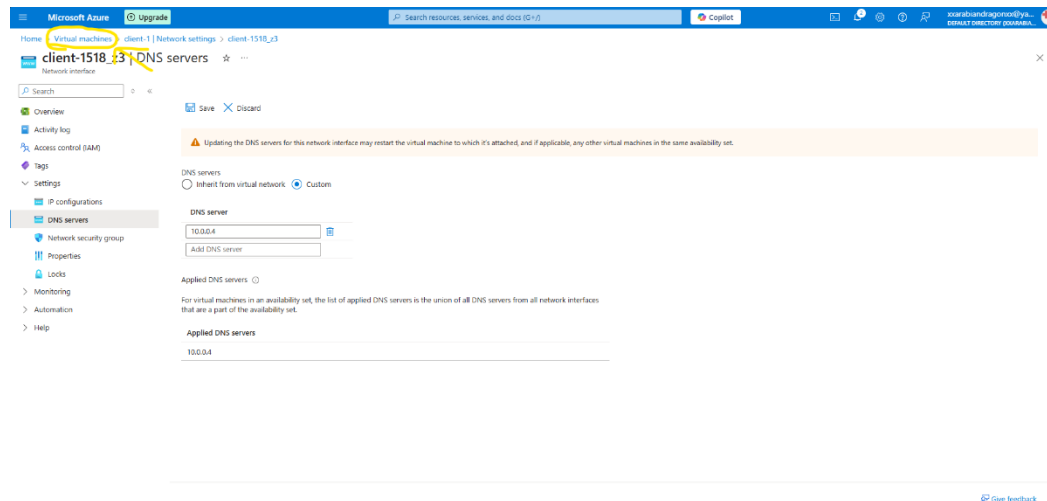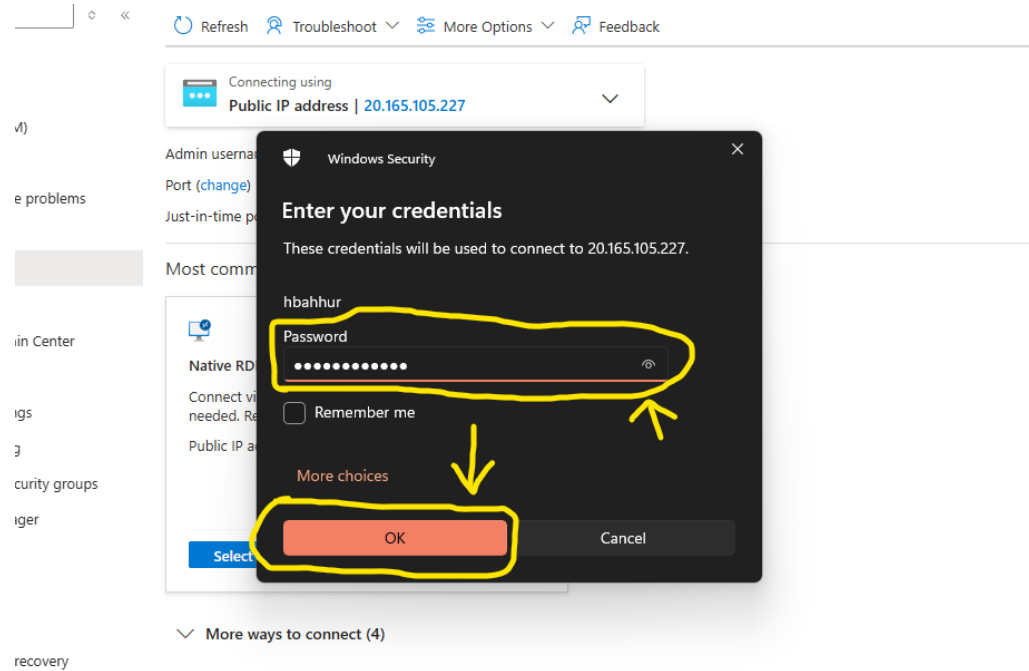

23. You should see server manager. On the top right, click on manage and then from that drop down menu click on add roles and features.
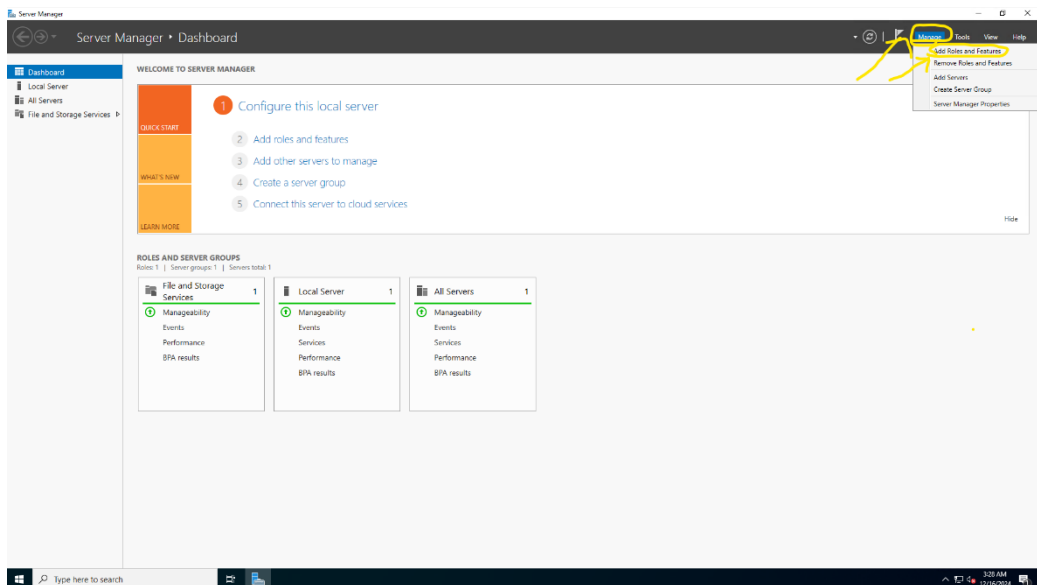
24. When the pop up appears, click on next.
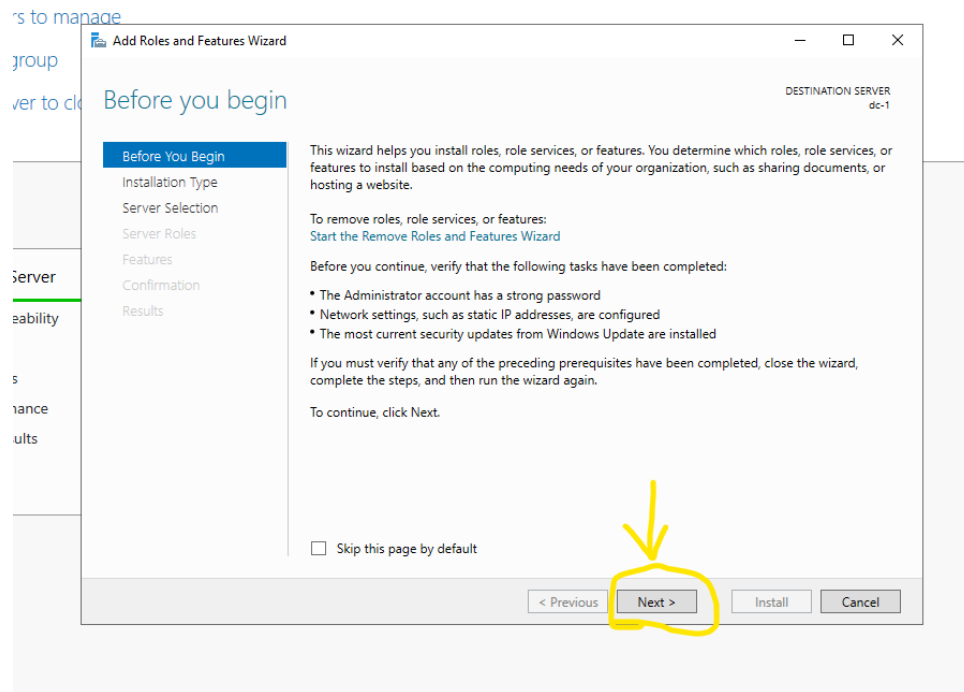
25. Click on next again.
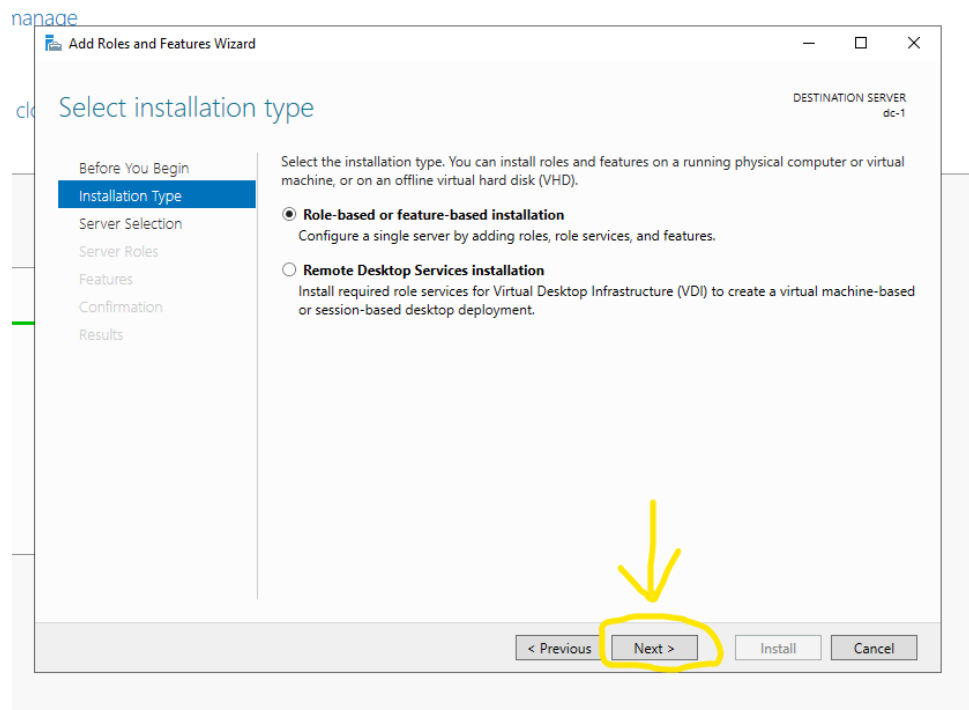
26. Everything on this page is good as is and should be left at default. Click on next again.
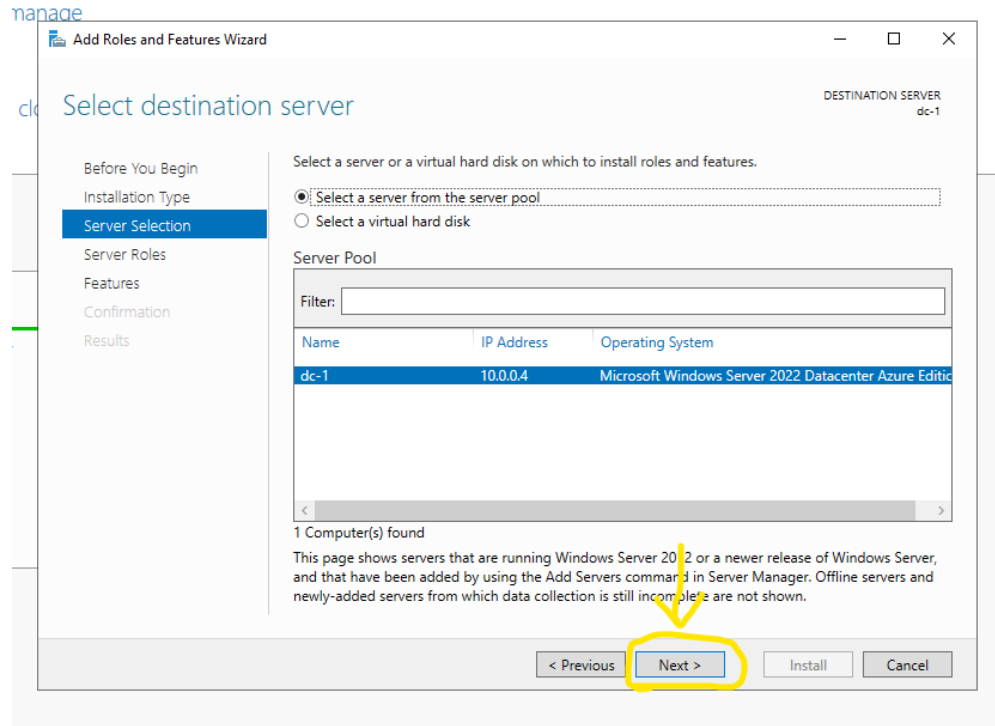
27. Check the box that says Active Directory Domain Services.
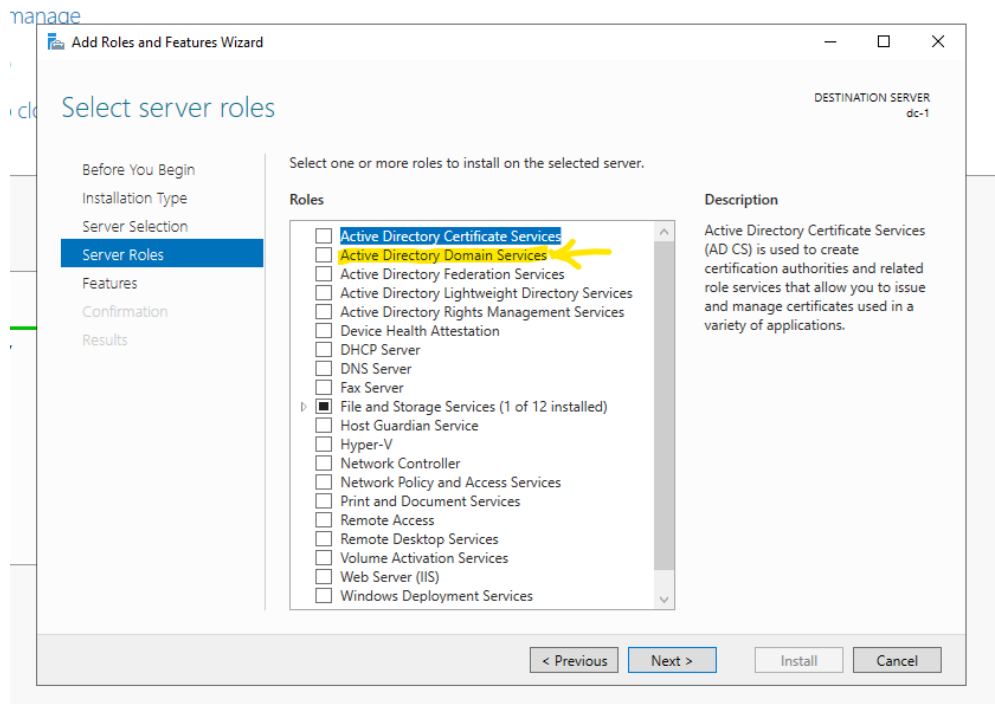
28. Another pop up will appear. Click on Add Features.
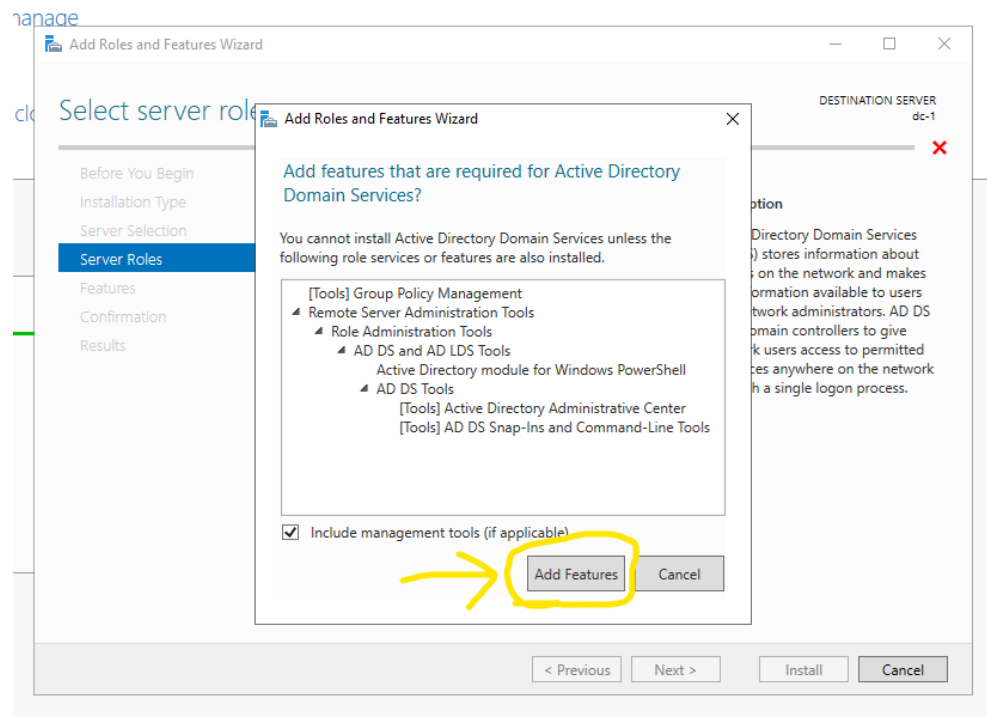
29. Click on next.
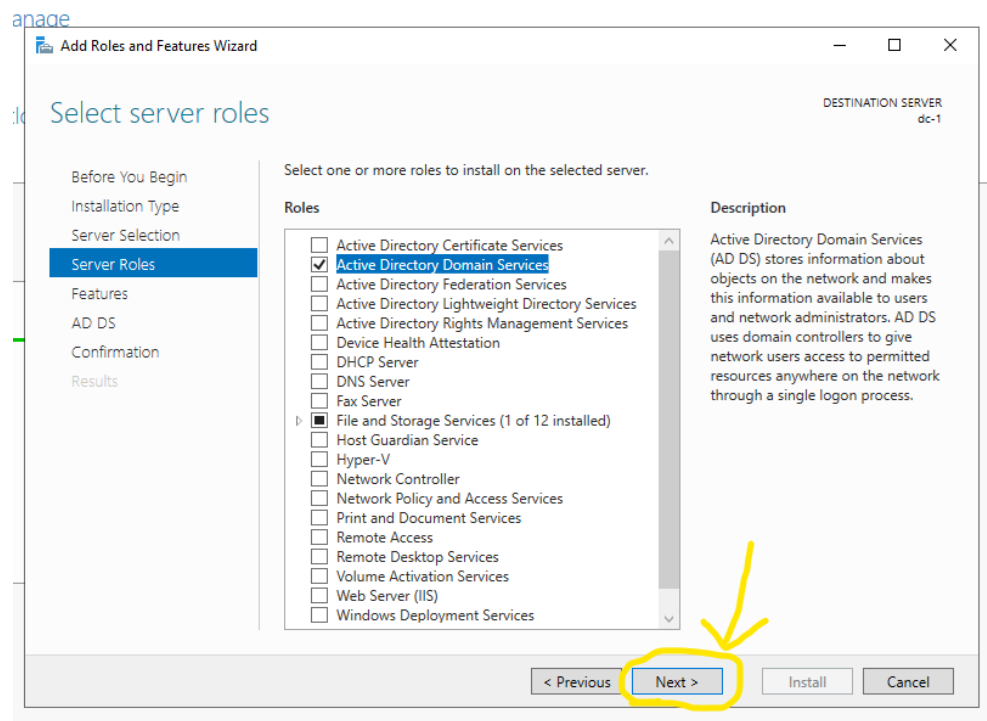
30. Click on next again.
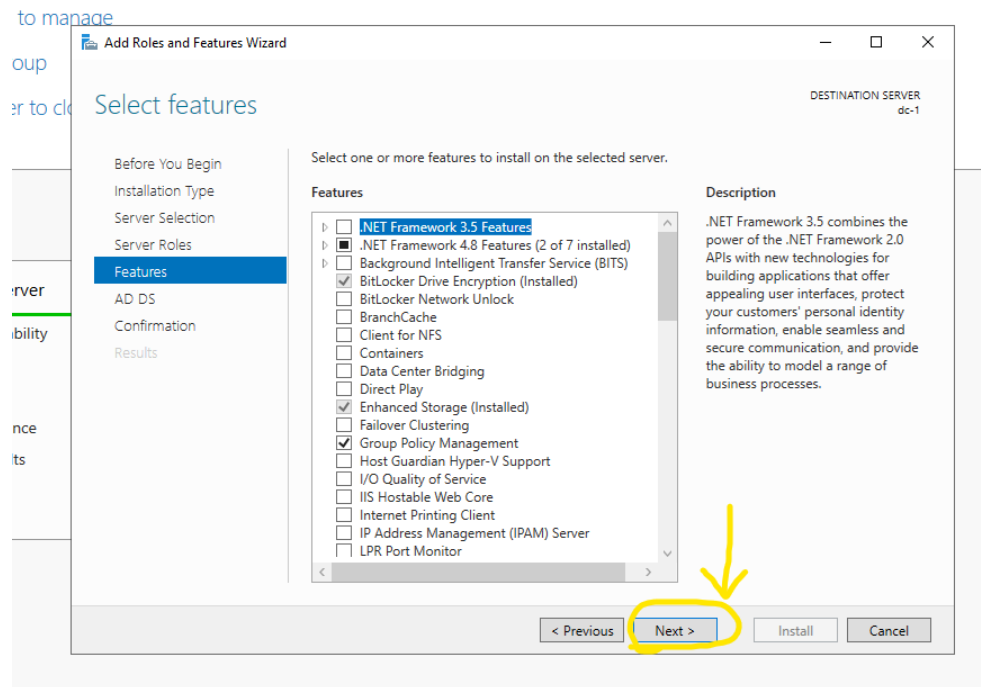
31. Click on next one more time.
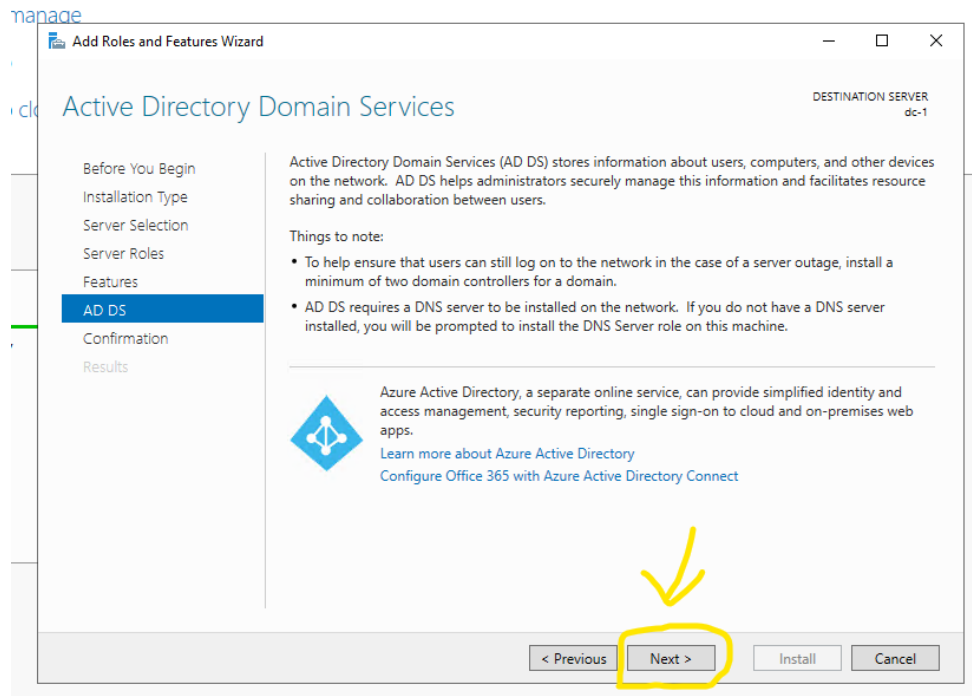
32. Check the box that says restart the destination server automatically if required. Click yes to the prompt that appears, and then click install.
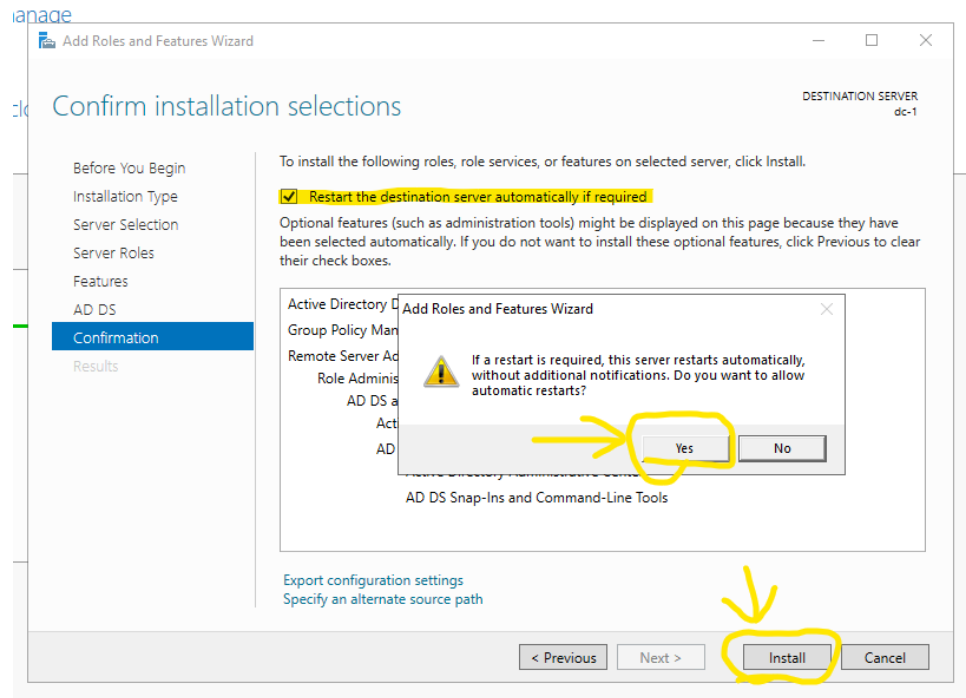
33. It will begin to install Active Directory Domain Services and other needed add-ons. Once installed, click close to return to the server manager dashboard.
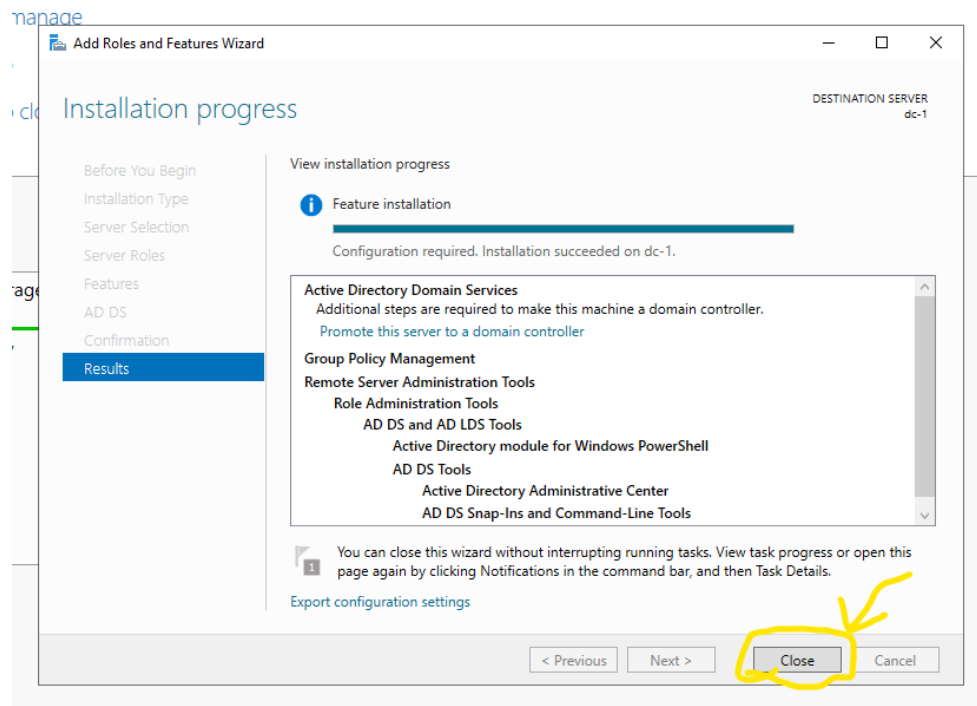
34. The next step would be getting the domain promoted to Domain Controller. In the server manager dashboard, click on the flag on the top right and click on promote this server to a domain controller.
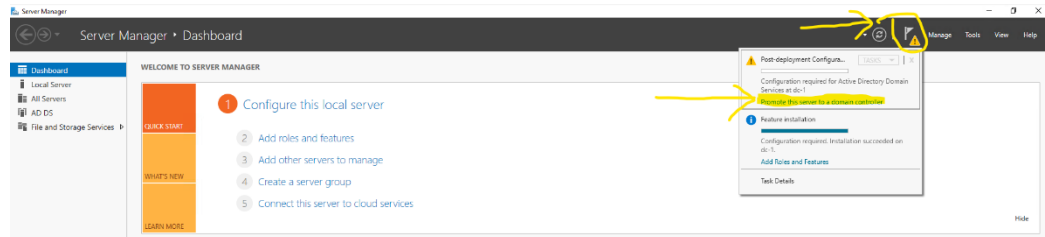
35. Check the box that says add a new forest and create a root domain name. You can choose whatever you want. I'm going to use rdproductions.com. Click next.
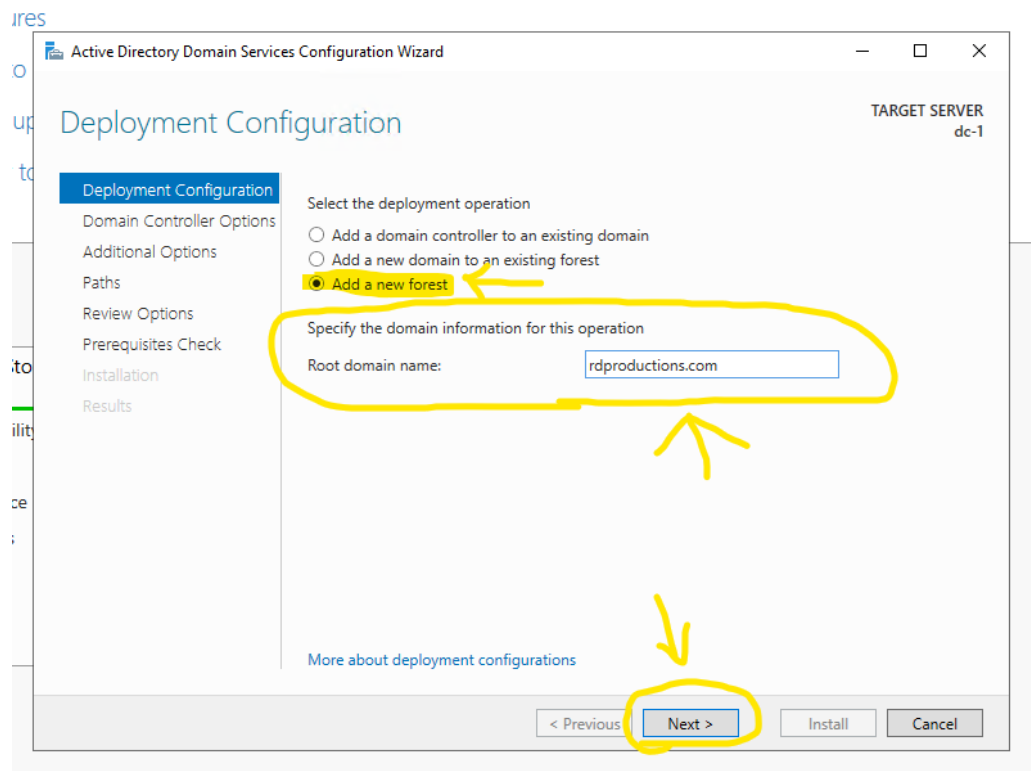
36. Create a password and then hit next.
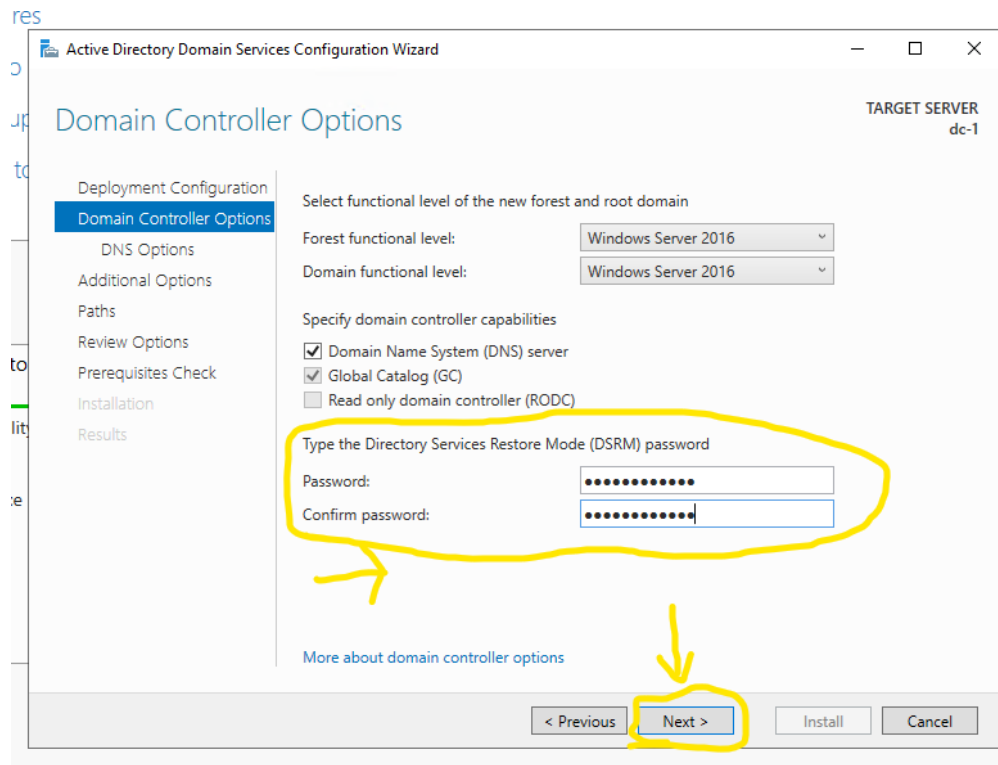
37. leave the default and hit next.
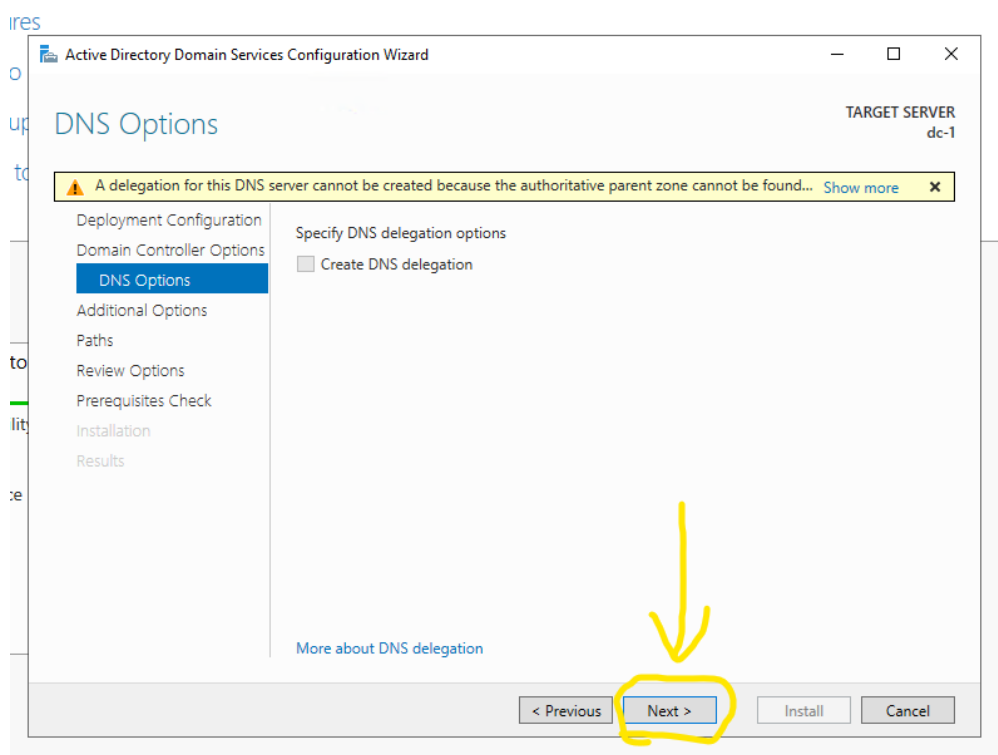
38. Keep clicking next until you get to prerequisites check option. It'll run a check to make sure things are good and then click install. It will take some time for it to configure completely. Once complete, it will restart the server.
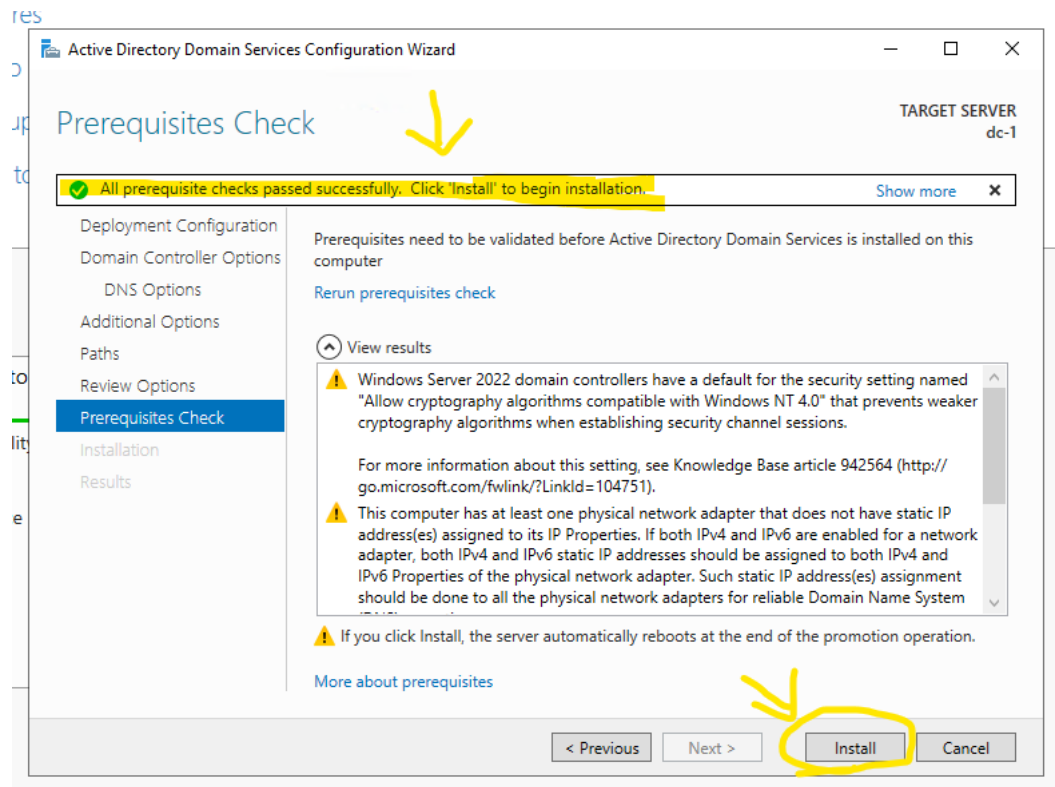
39. You will log back in after giving it a few minutes to restart. You will use the domain name you picked \ username. In this tutorial mine is rdproductions.com\hbahhur. Password is what you made during the active directory setup. If done correctly, your server manager dashboard will look like this.
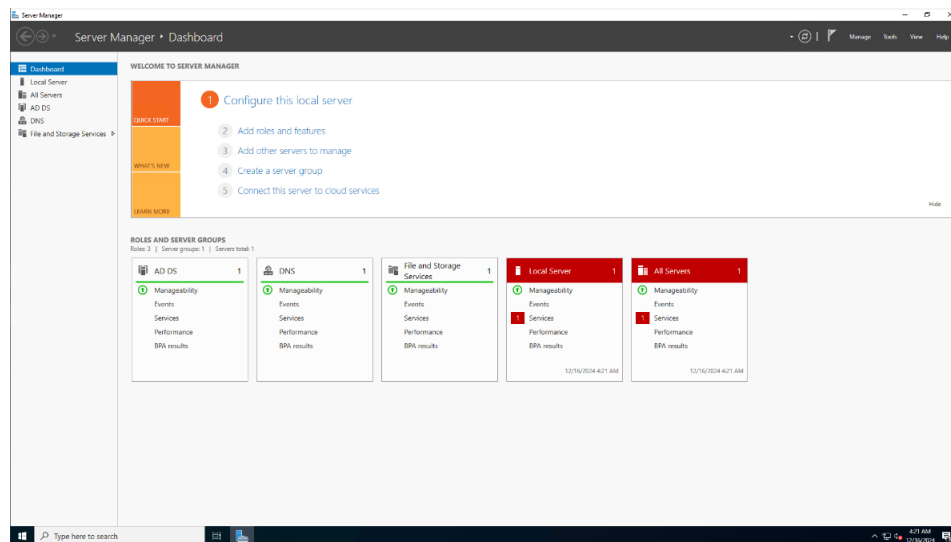
40. Now that the domain controller is ready, we need to create users. Type in the search bar "Active Directory Users and Computers".
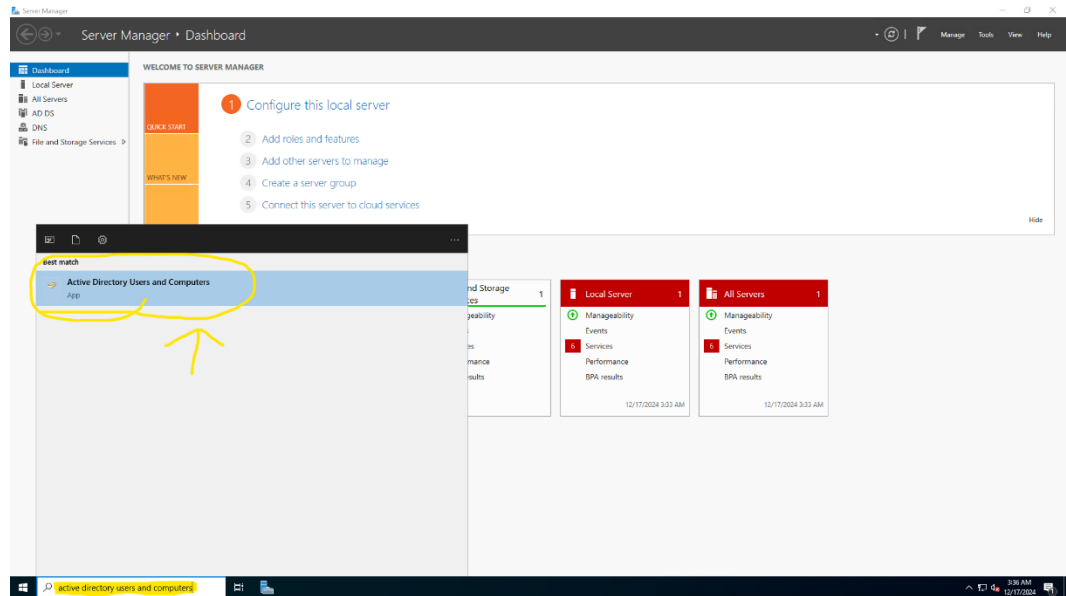
41. You'll need to make two organizational units. Right click on your domain name, select new, and then click on organizational unit. Name it _EMPLOYEES. You will repeat this one more time to make one called _ADMINS.
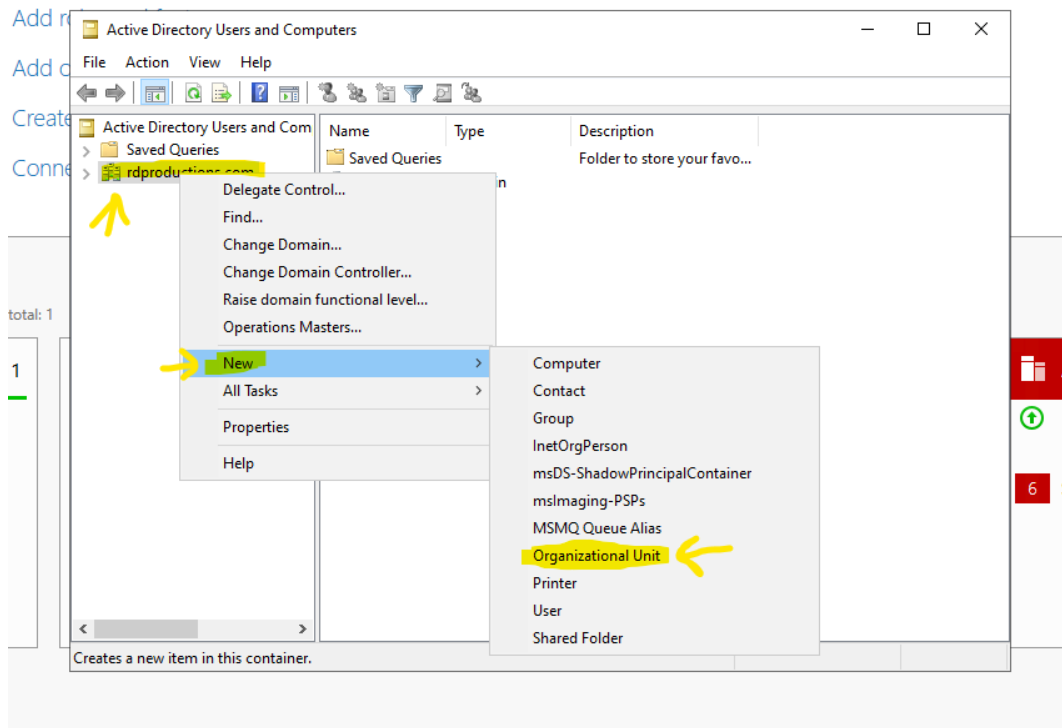
42. Click on the arrow next to your domain name to extend the menu, right click on admins, highlight new, and then click user.
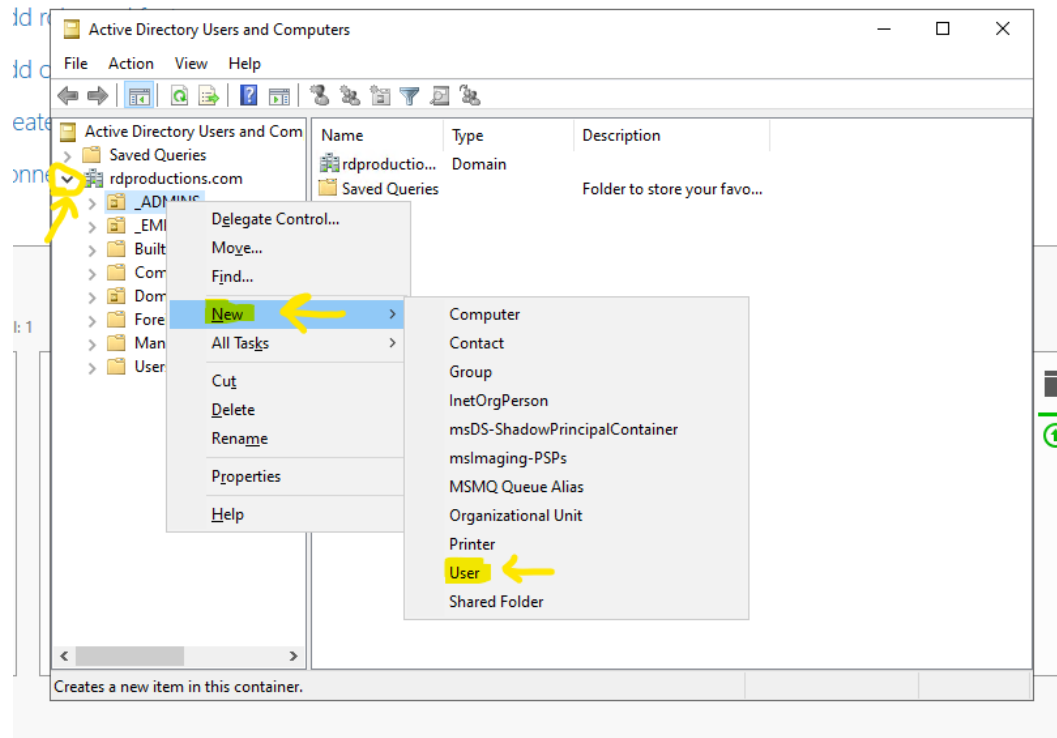
43. Fill out the first, last name, and user logon. After this click on next.
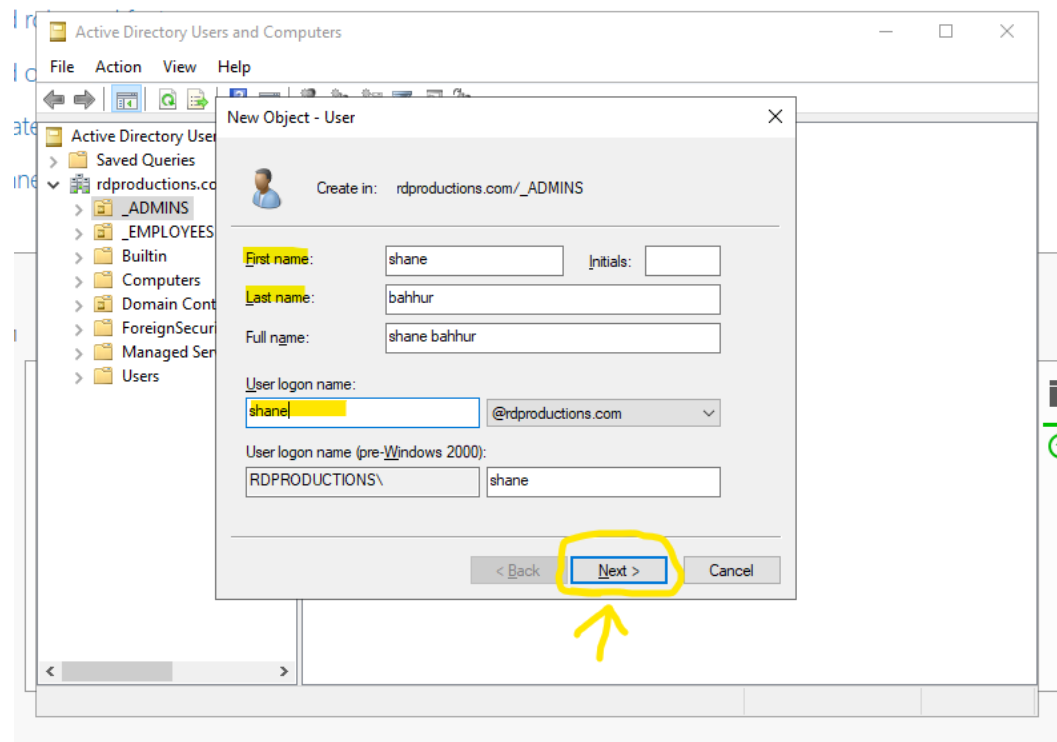
44. Create a password for the user. Now this part is how you wish to go about it. I unchecked the box that says user must change their password at next login and checked password never expires. When you're ready, click on next.
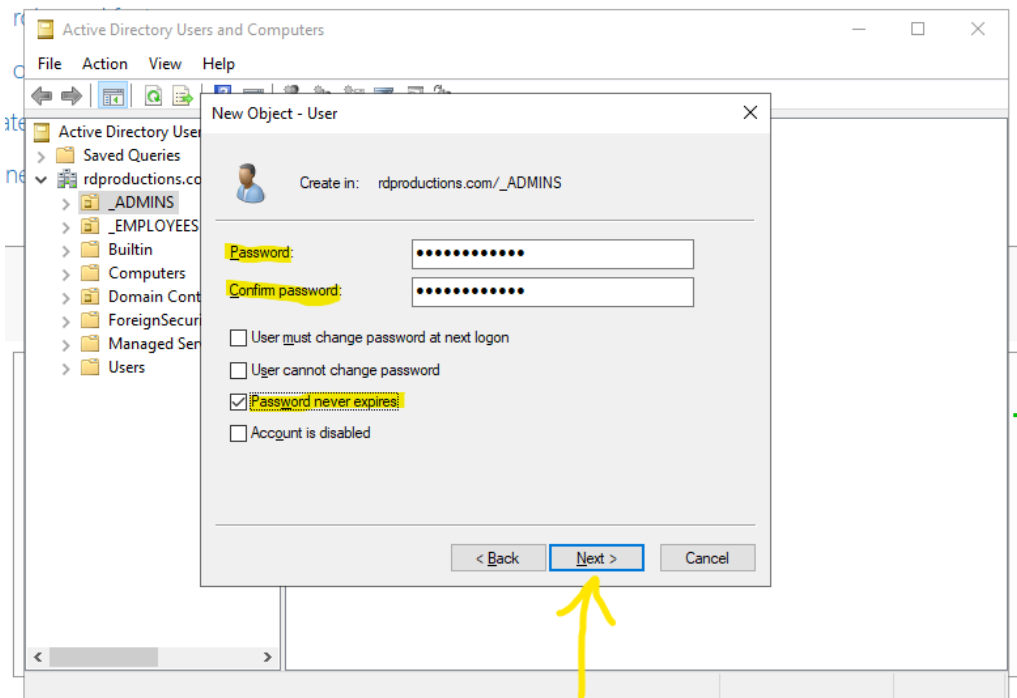
45. You'll see an overview screen of the user you're planning to create. If you're happy with it, click on finish.
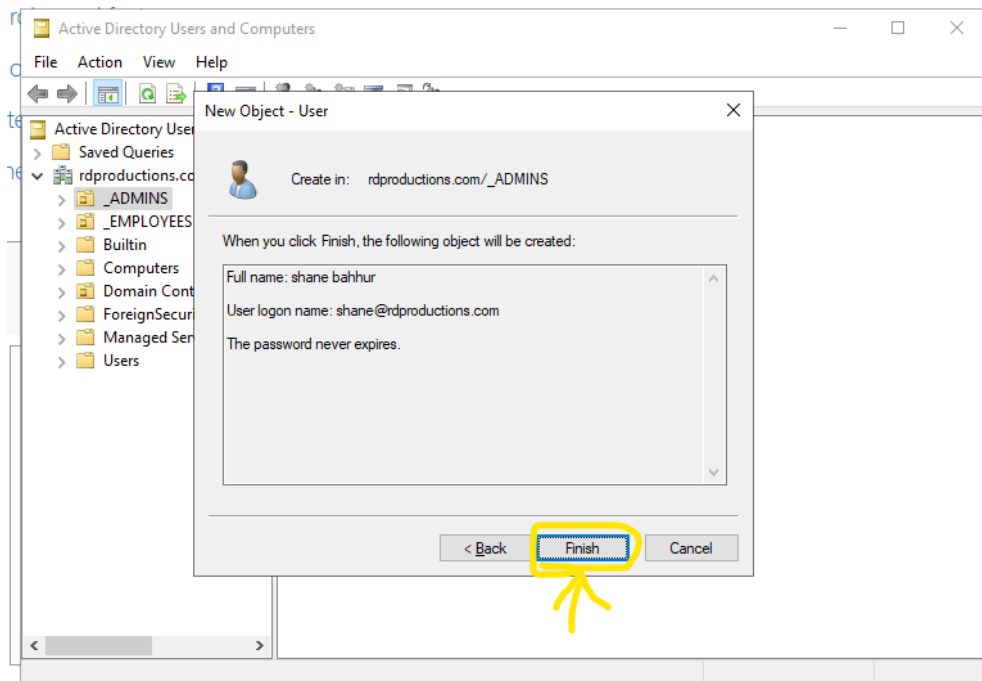
46. We are going to grant the user admin privileges. Click on the _ADMINS group, right click the user you created, and then click properties.
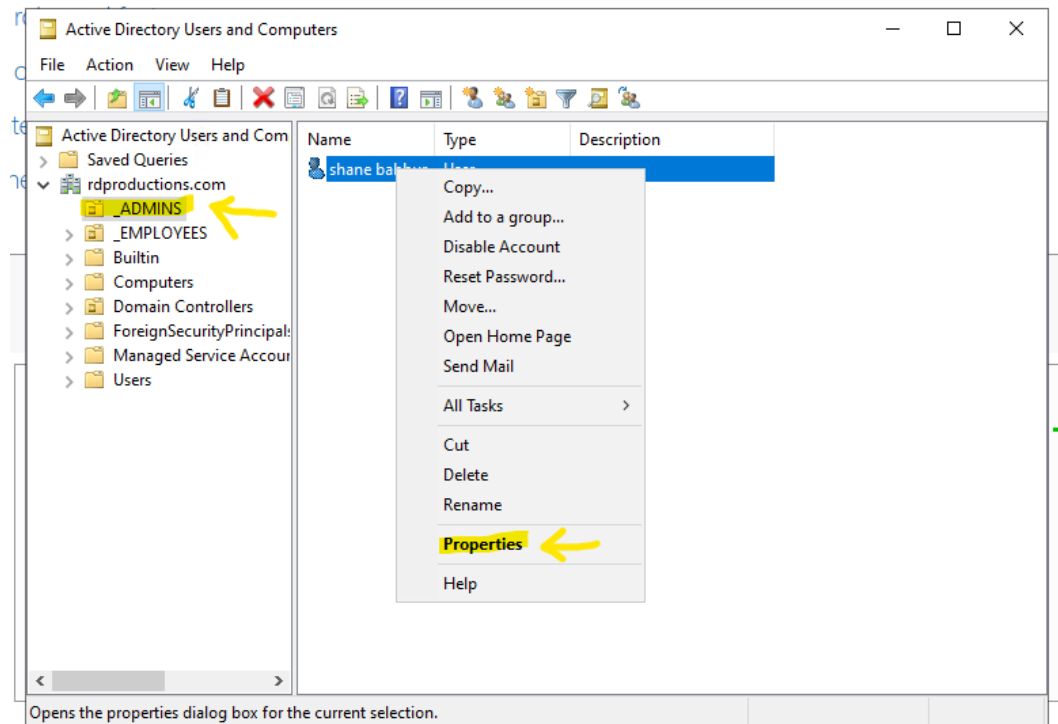
47. A pop up with a lot of tabs will display. Click on the tab at the top that says member of and then click on add.
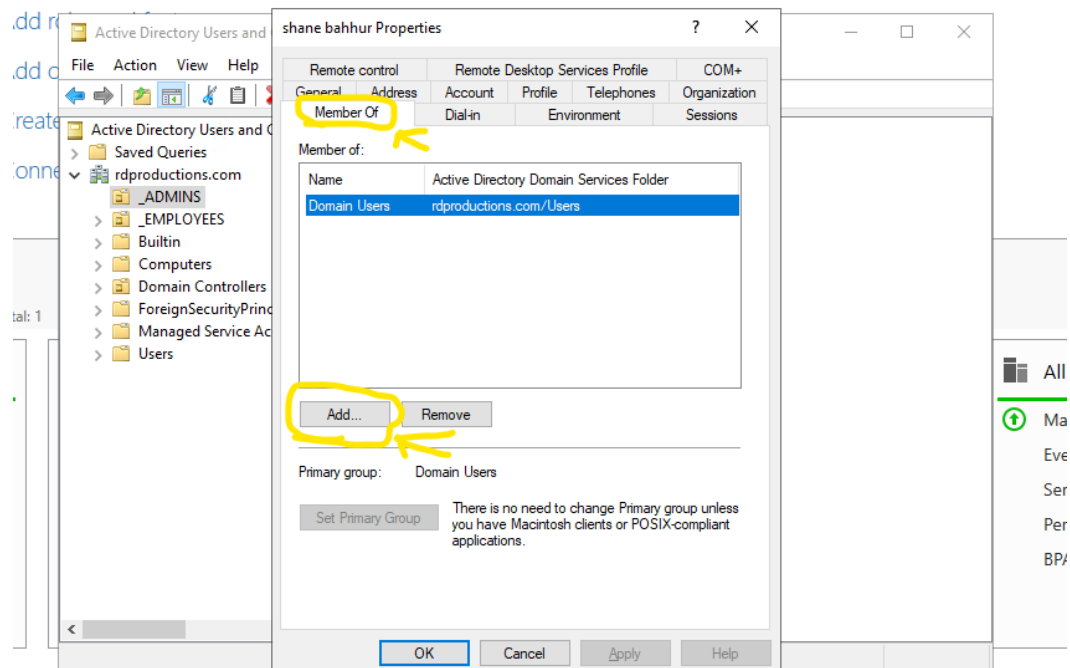
48. In the large white box on this pop up, type in Domain Admins. Click on check names. If its typed correctly, it will underline the bottom. Click on ok.
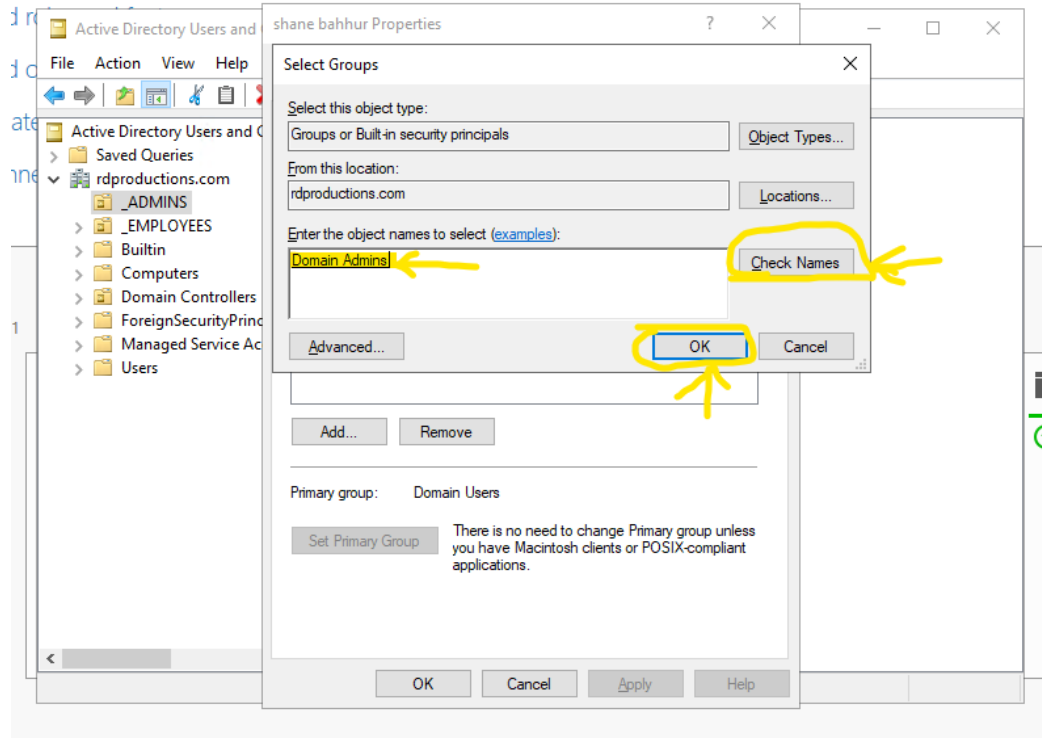
49. Click on Apply and ok.
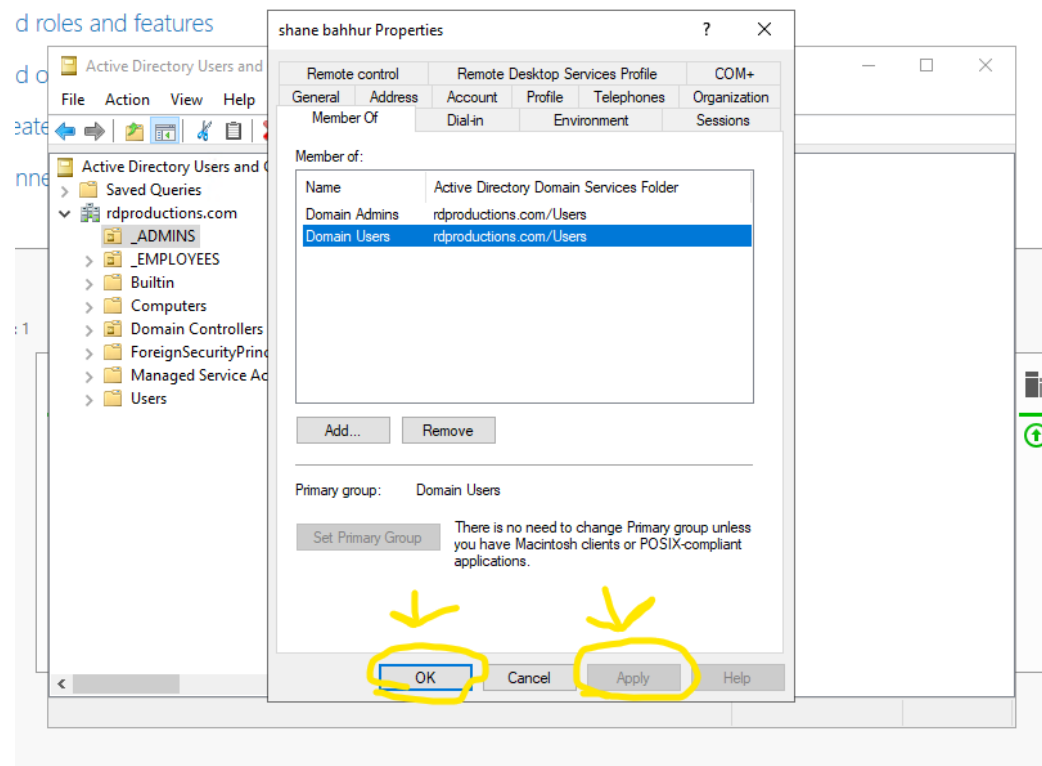
50. Now we're ready to join the client machine to the domain. Go back to azure and go to virtual machines. Click on the Windows 10 virtual machine.
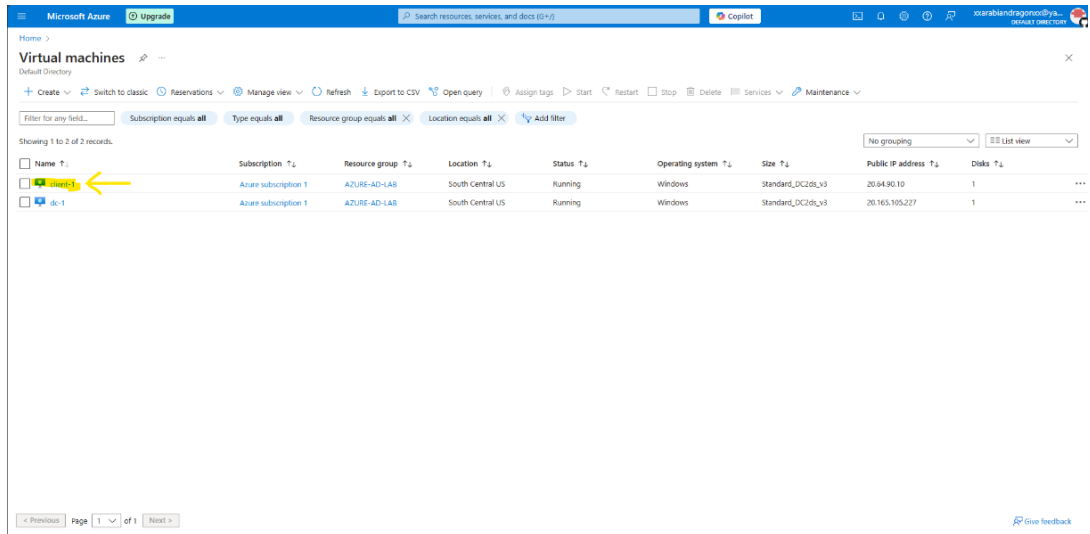
51. Click on connect, and then from the drop-down menu, click on connect.
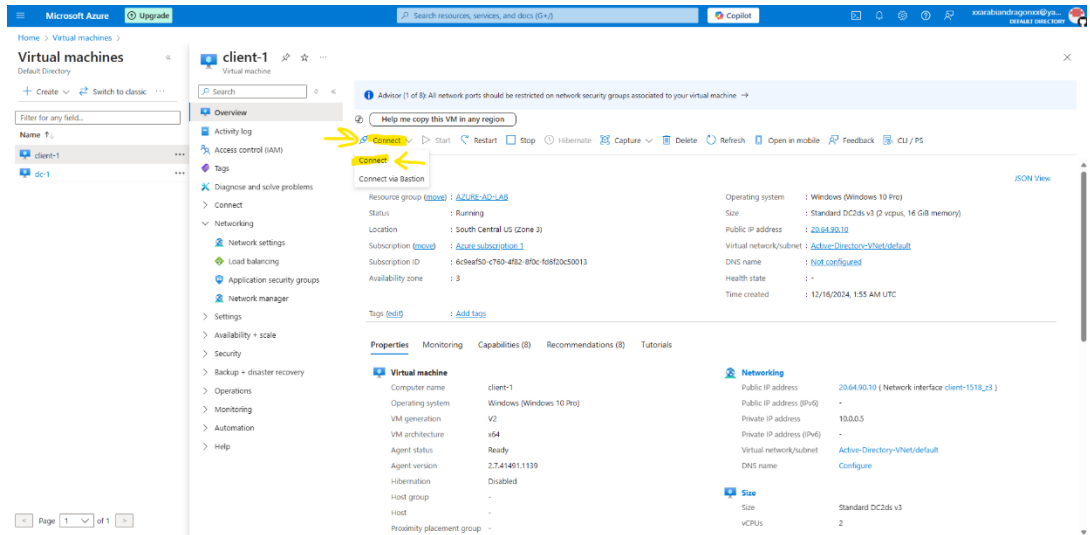
52. Click on download RDP file. It will download the login info for the windows 10 machine for us to log into it.
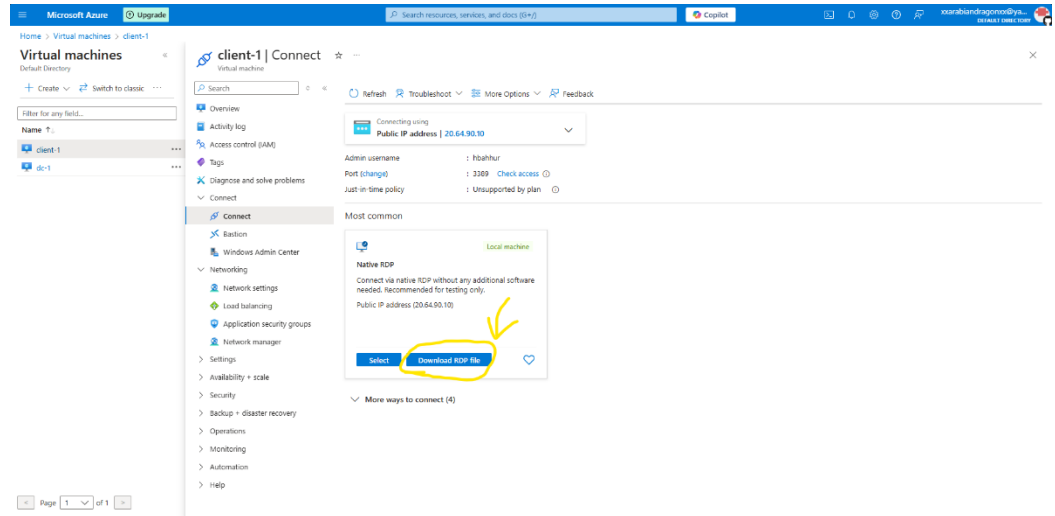
53. Just like with the Windows Server virtual machine, a prompt will come up. Click on connect and log in with the credentials that you made when you created the VM.
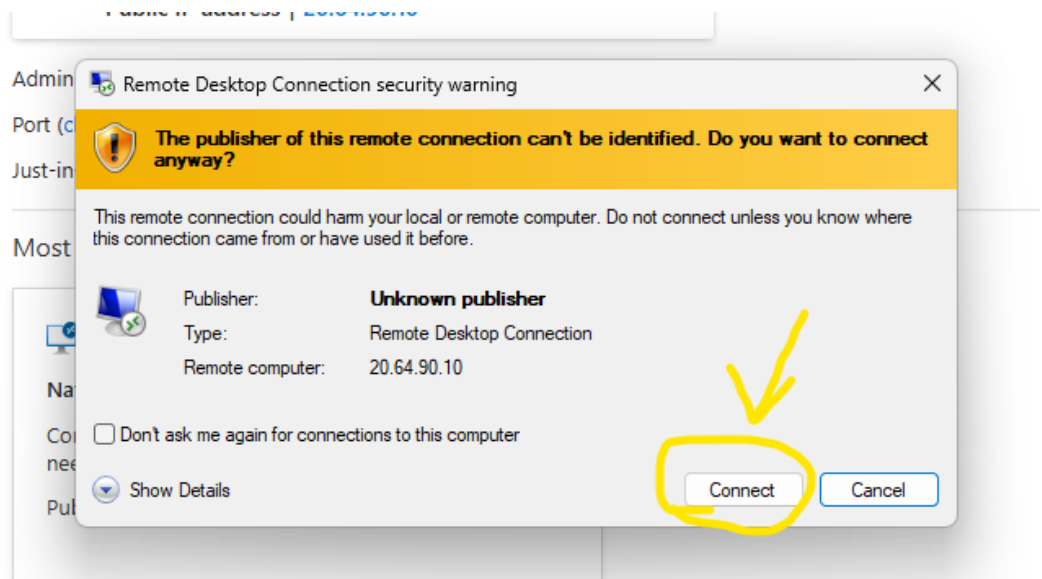
54. Once you're logged in, if a prompt comes up, click accept, and then it will take you to the desktop. From here, Right click the start menu, and click on system.
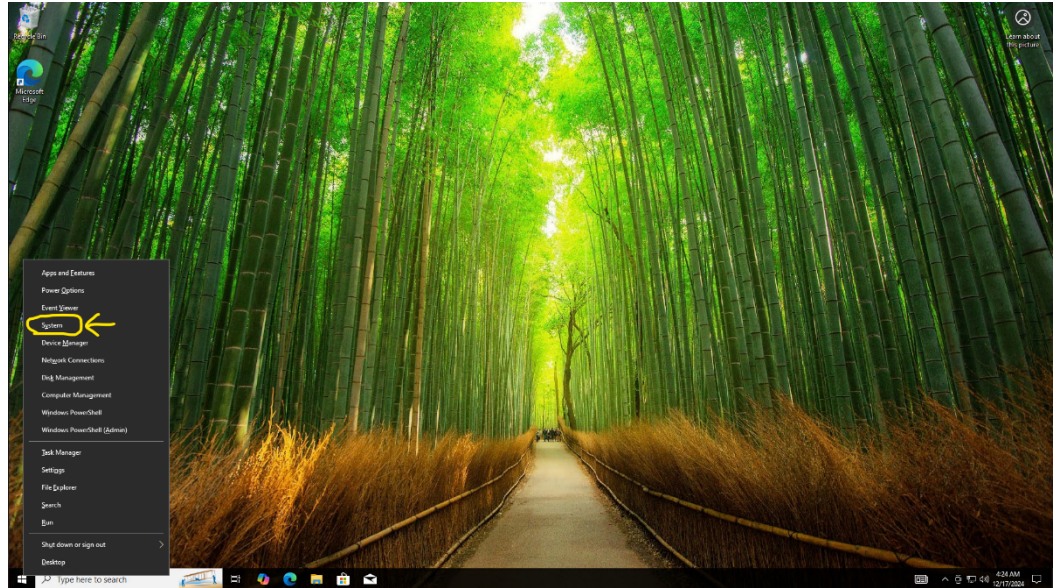
55. When the page loads, on the right side, you will see an option called Rename this PC (advanced). Click on it.
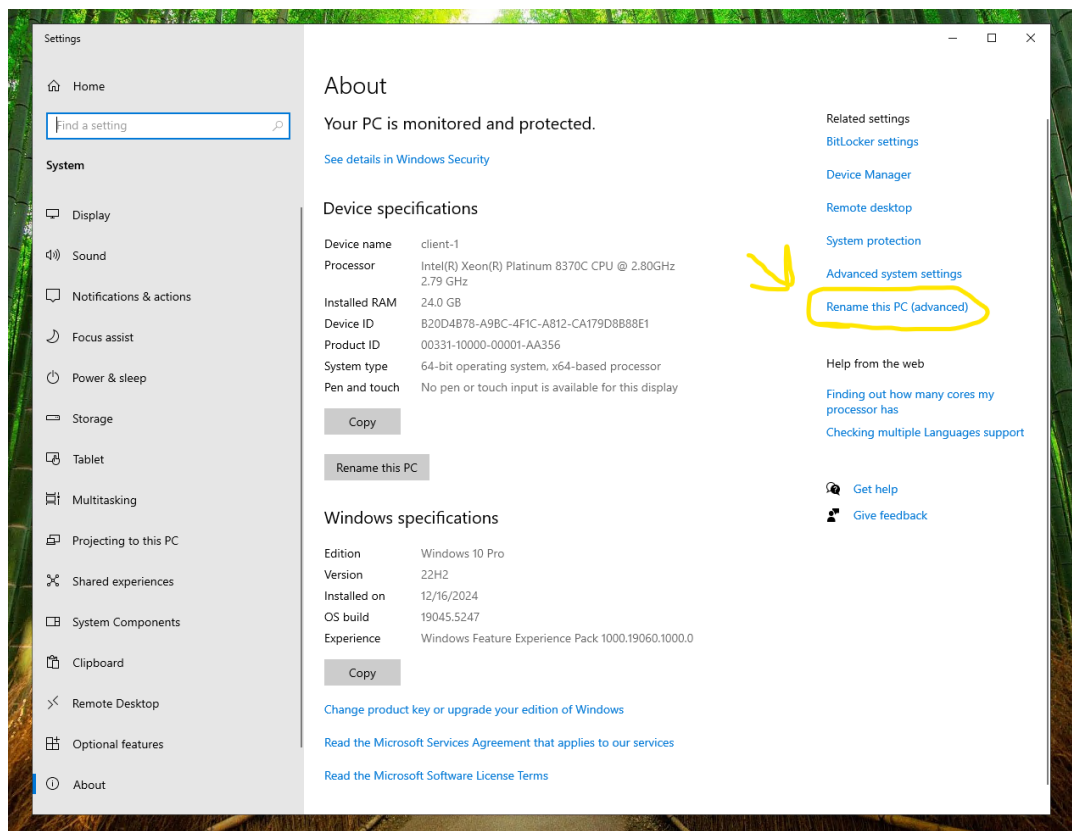
56. A smaller pop up will appear. Click on change.

57. Another pop will appear. On the bottom half you will see member of, check the box that says domain. You will enter the domain you made on the Windows Server machine. After this click on ok.
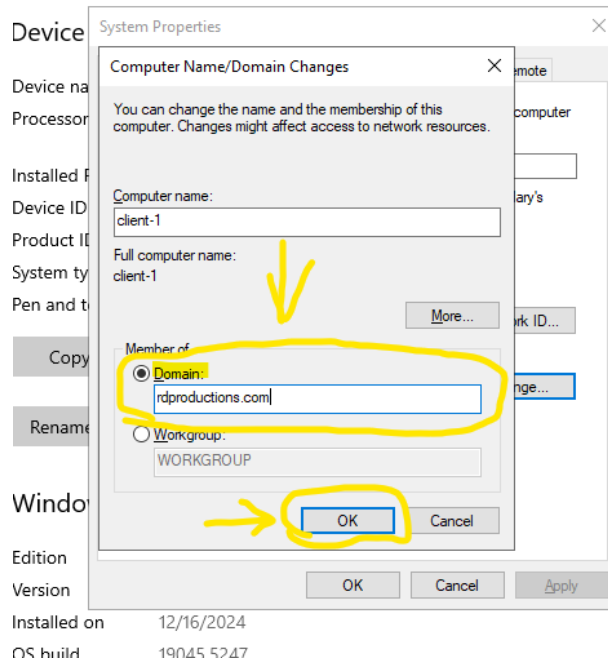
58. There will be a prompt for you to enter the username and password for the user you created back in windows server. Enter those credentials in and click ok.
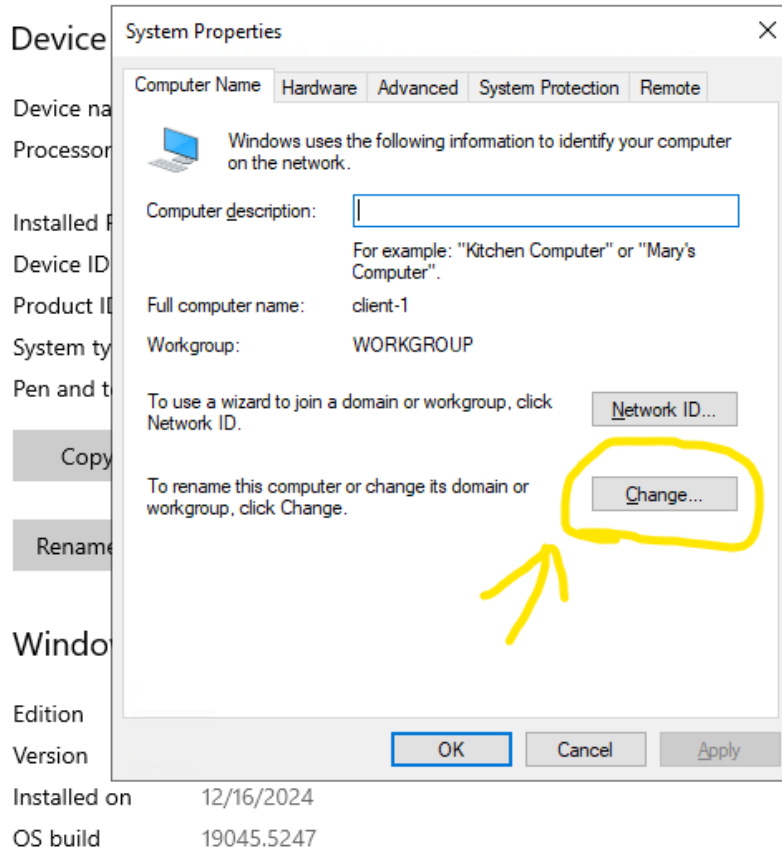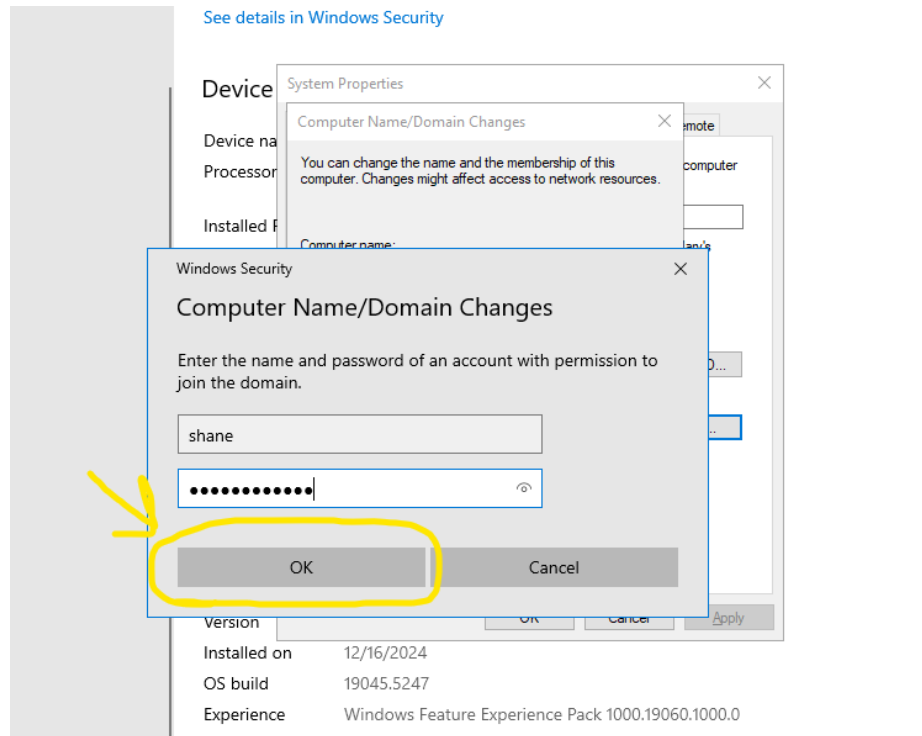

59. You will get a message saying welcome to the domain. Click ok and then you should see a prompt to restart. Let the virtual machine restart and you will be able to log in with the credentials of the user you just created.

From this point on, the machine has joined the domain. The tutorial is complete.

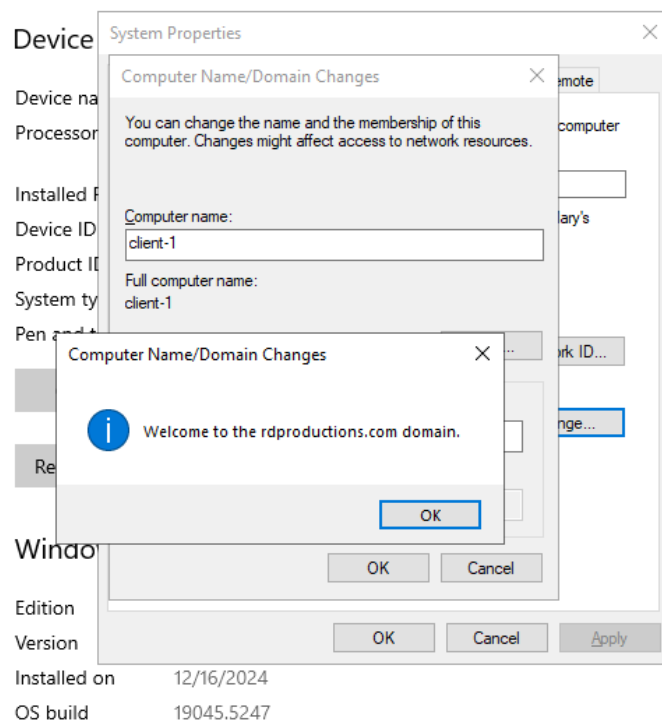If you wish to go further, you can add more users by following steps 42-49 in part 3 of the tutorial.

You can also make more virtual client machines by following steps 8-13 in part 2 of the tutorial. (be mindful of the remaining credits you have left).

Important Note: If you do not want to burn through your azure credits and be charged, make sure to stop all virtual machines running when you are done using them.

If you are having issues with setting up anything in one region, pick another region but make sure everything else is in the same region. If you're having issues setting up a virtual machine in US east and you pick south central as the region, you'll have to go back and recreate the resource group and virtual network and select the same region.