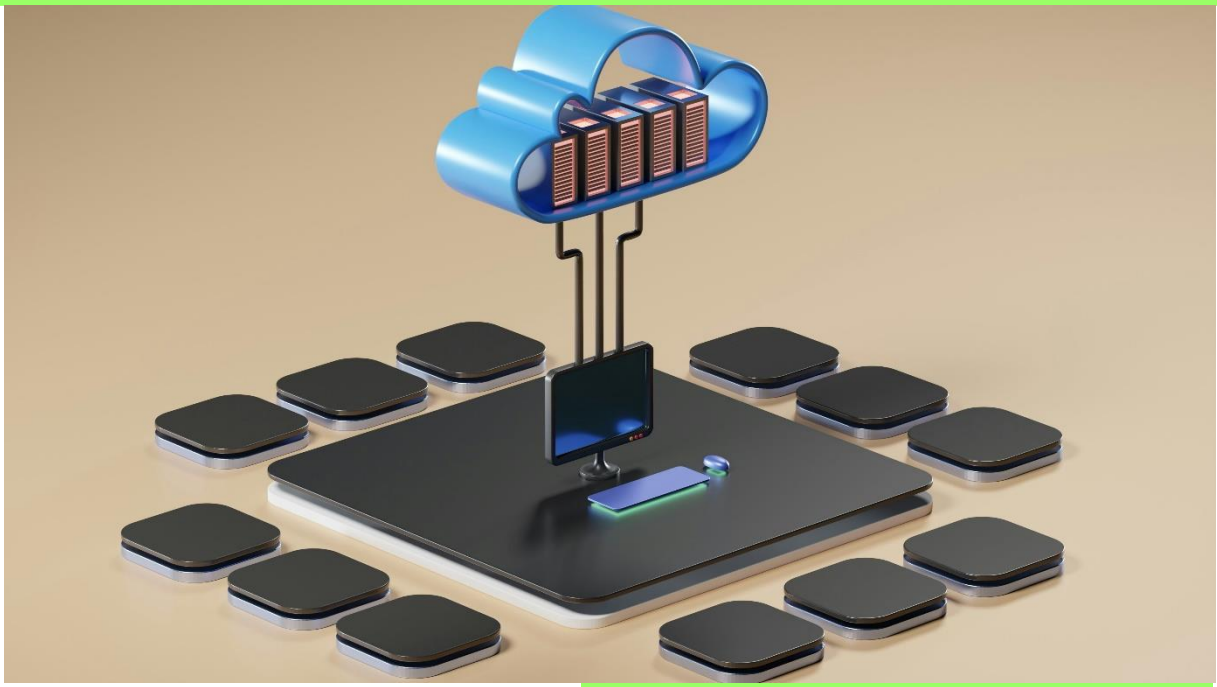
2025

Virtualization and Group Policy Deployment



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5/25/2025

Virtualization and Group Policy Deployment

Question 2, of the windows server module requires us to set up and present the following. As a network Administrator at Eduvos Midrand Campus, we have been assigned to create a virtual server and a new network printer. In this document. I will be going through the steps of how I accomplished this task and I have drawn a diagram of how the network connects together (the diagram not only gives a clear picture of how everything works but for anyone inspiring to be a network engineer it could give him/her an idea of the type of work he'll be expected to do)

Requirements:

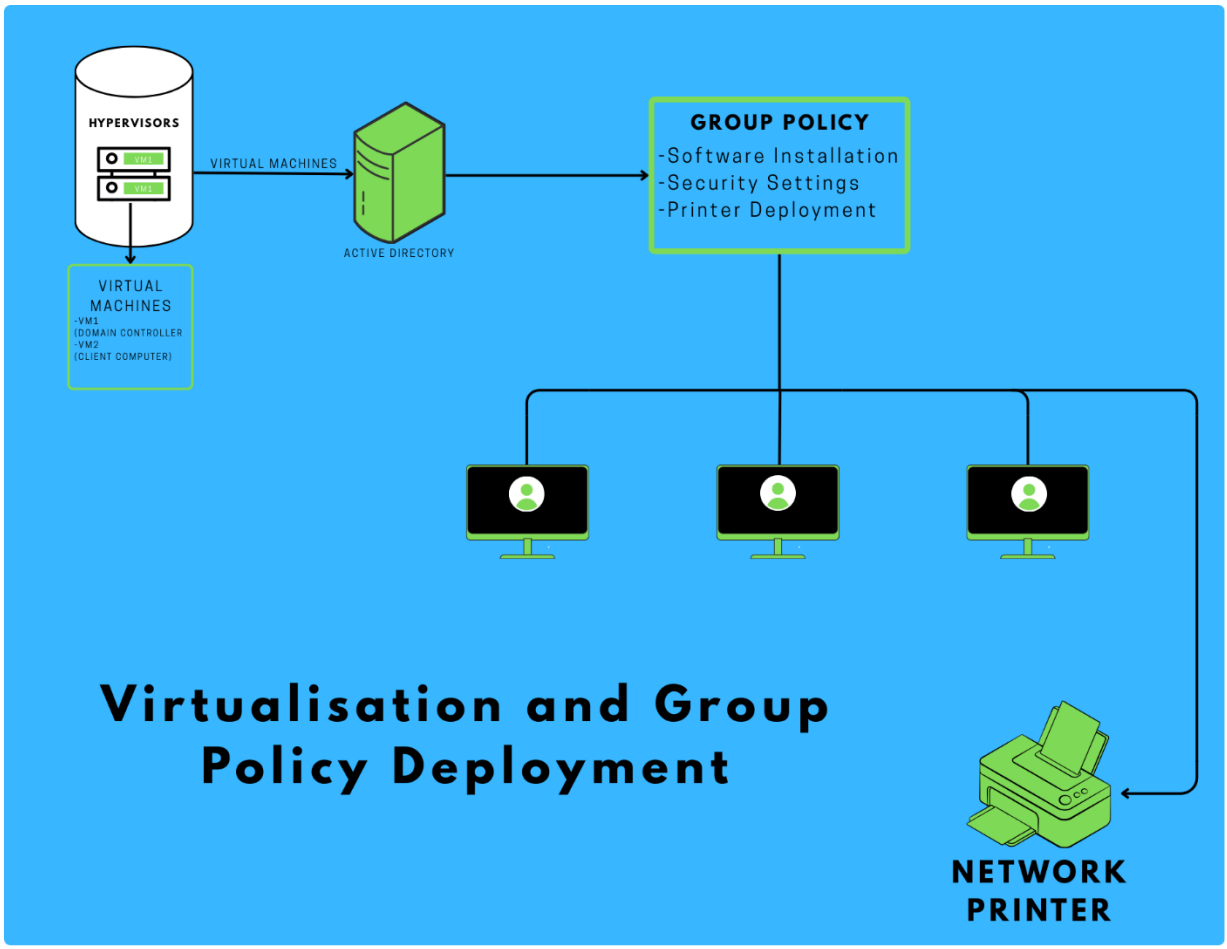
Virtual Machine 1 – Domain Controller

Virtual Machine 2 – Client Machine

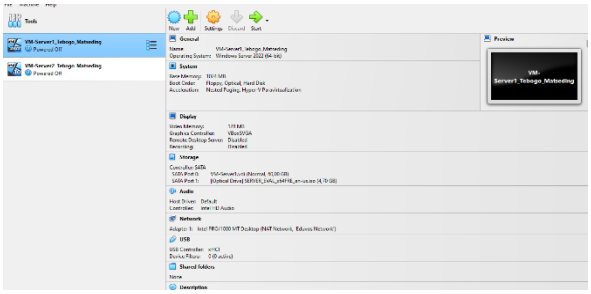
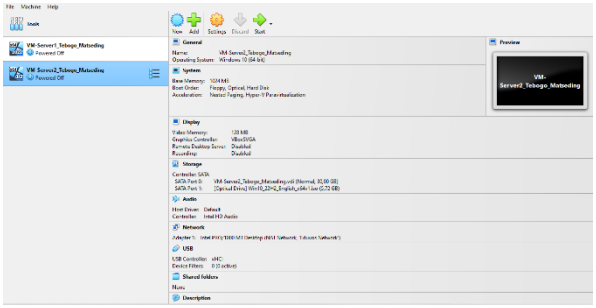
Active Directory

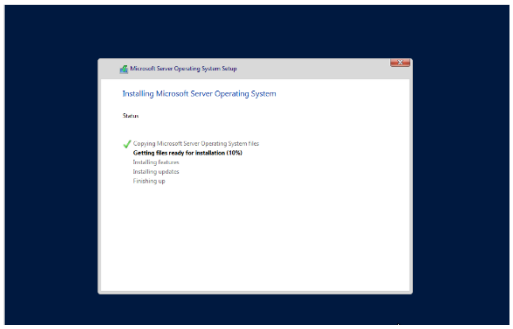
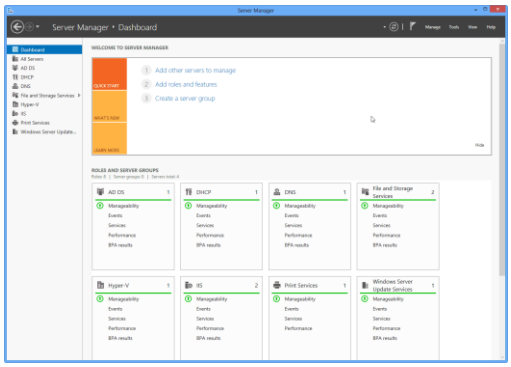
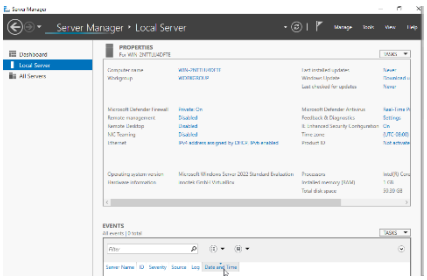
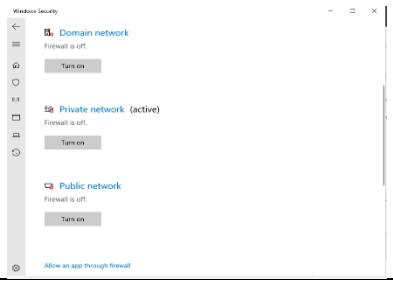
Group Policy

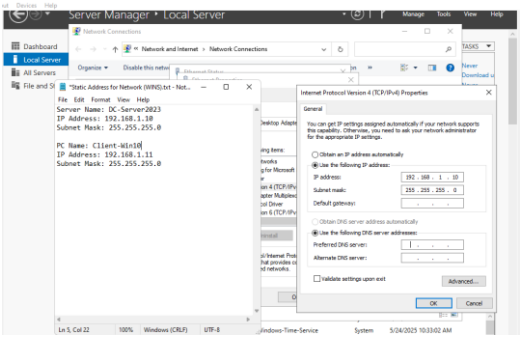
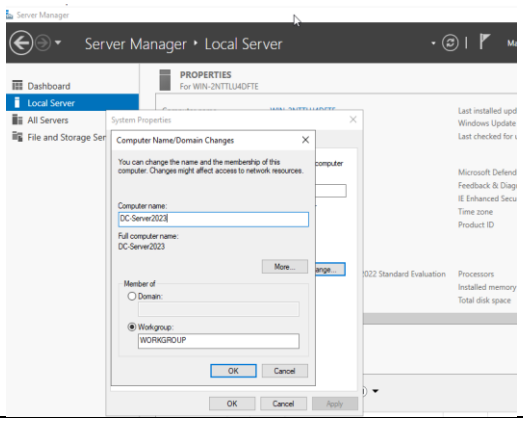
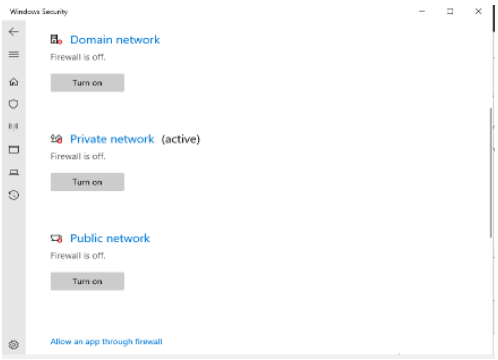
Print Server

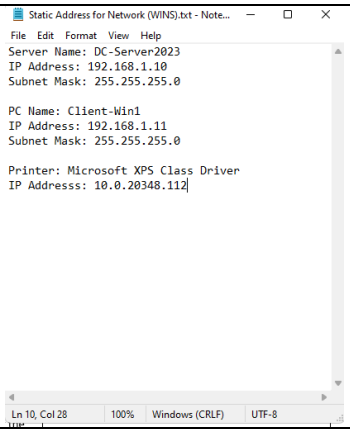
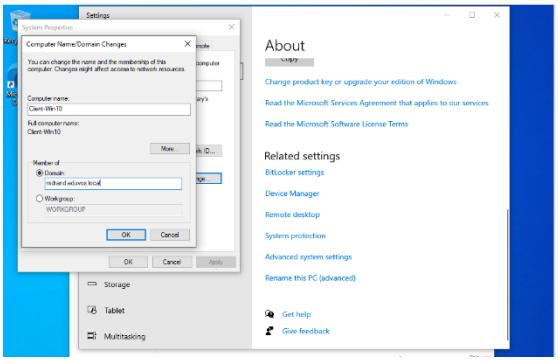
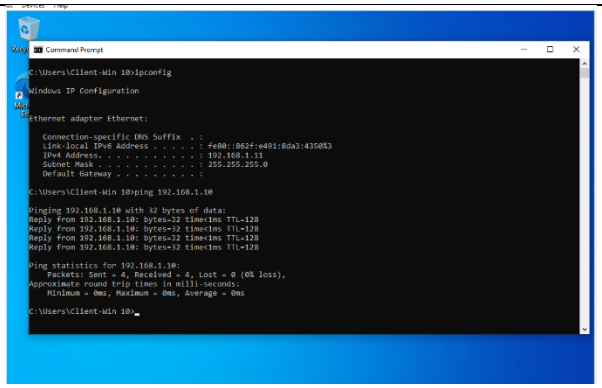
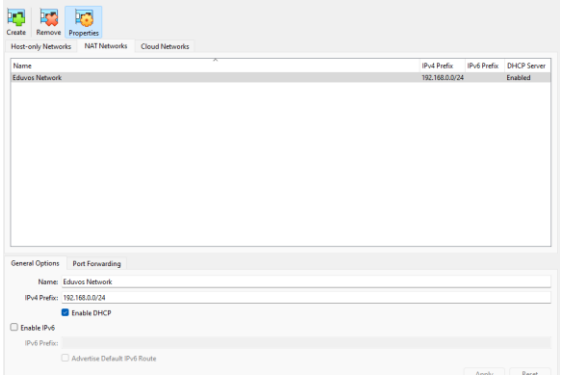


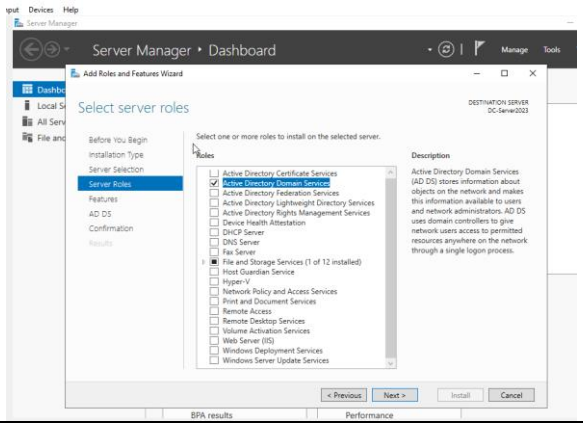
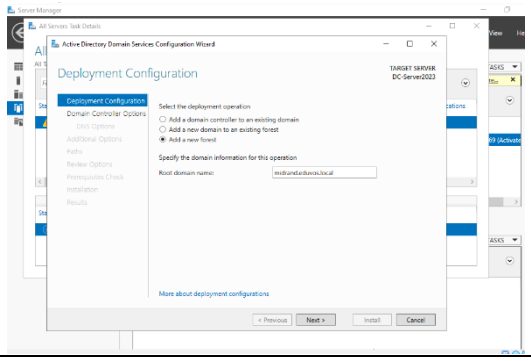
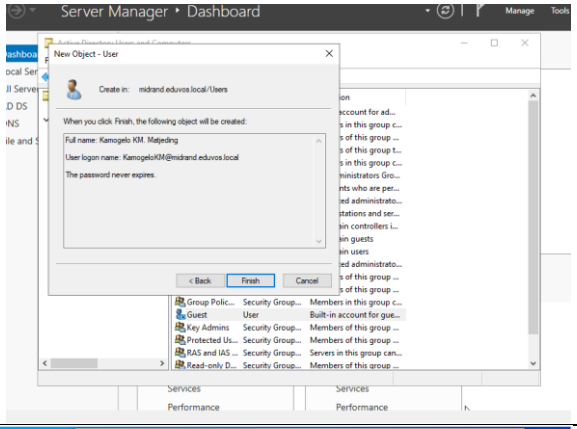
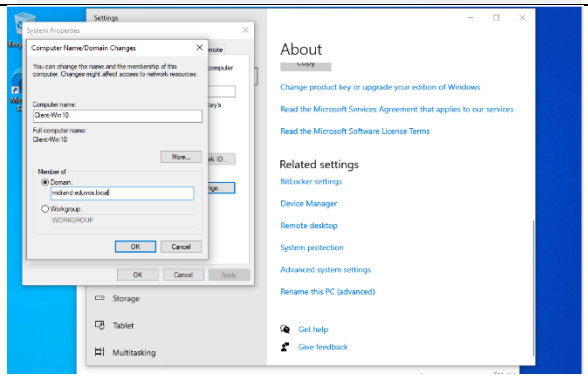
START

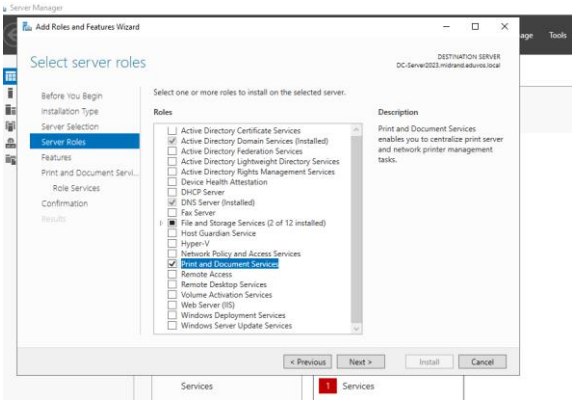
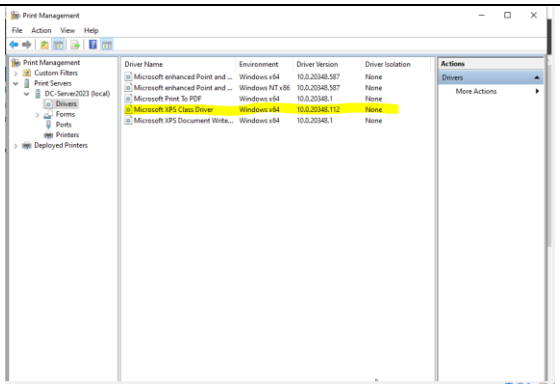
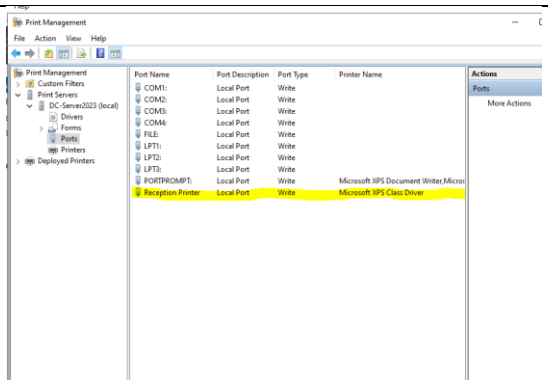
We are going to skip over the installation of Oracle virtual box, Windows server ISO and Windows 10 ISO I will be inserting a link of how to download each of them as they will be crucial to completing this project.	• Oracle Virtual Box • Windows Server ISO • Windows 10 ISO
Once you've completed the installation of Oracle virtual box, Windows server and Windows 10 the next thing step is configuring our virtual machines with the recommended RAM and Storage Memory, both the server and client computer will have different configurations	 VM1 – Domain Controller (Windows Server 2022)
VM2 – Client Computer (Window 10 ISO)	

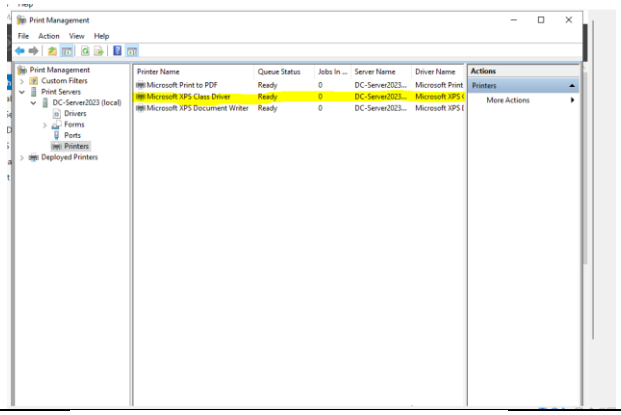
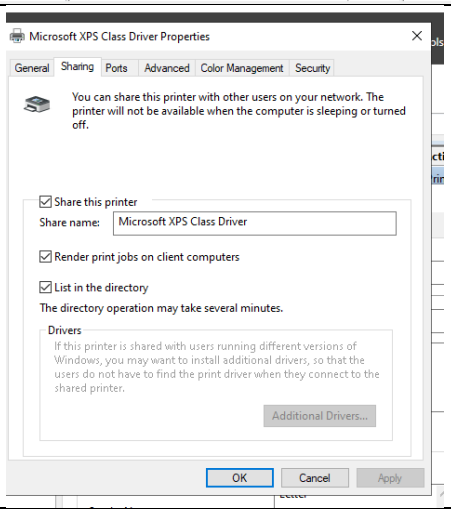
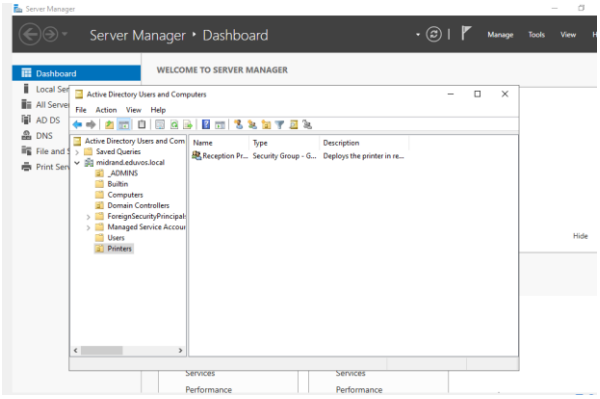
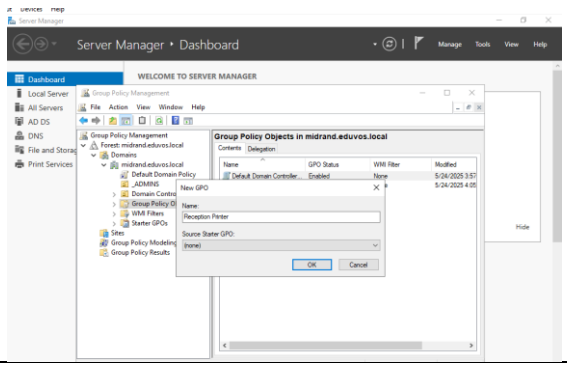
Now it is time to switch on our VMs, for our server firstly you will select the correct language for you Administrator, you will then proceed to select the Windows Server 2022 Standard Evaluation (Desktop Experience), and finally you will allocate that 60Gb space to the server. On your Windows 10 ISO, we also select the appropriate language for the client computer, you will skip the license key, then you will select Windows 10 Pro Edition and finally allocate the 30Gb of space to the computer ***(Note this process will take a while)**	
Once the installation is done you will then be prompted to give your server a password, after assigning it a password and logging in the server will then open up the Server Manager Application. This action will happen every time you switch on the server, our current goal right now is to ensure firstly, that our server and client machine are able to see each other on the network and secondly to assign our server as the domain controller.	
Since our server and computer are 2 different machines although they are working from the same laptop, virtualisations make it so that (….) Now that we understand what virtualisation does, we need a plan to allow our machines to see each other and the first step in doing that is by taking down our server's firewalls, this will allow for your server to be seen on the public network ***(Note switch off the IE Enhanced Security Configurations as well)**	 

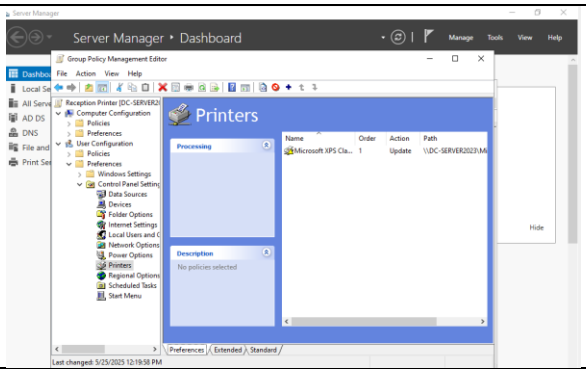
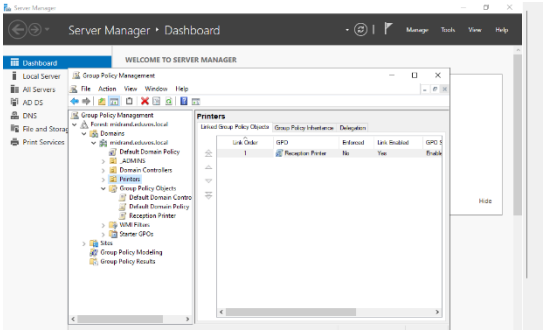
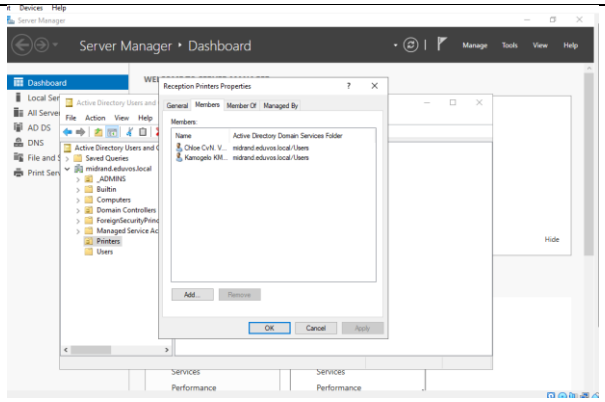
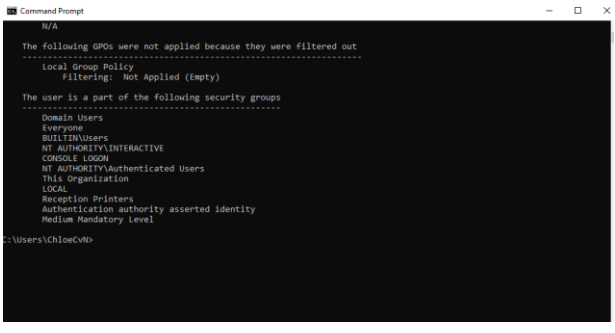
Since our server can be accessed from the public network, we need to assign it a static address this will ensure that we are only people who know what the IP address and it will help our client to connect to it once our server has been made the domain controller. For this we will need to select the ethernet option on the local server tab, this tab will redirect us to the network connections window you will then click on the ethernet adapter option, then click on properties, then click on IPv4 change the settings from DHCP to Static by selecting the box then give your server a new IP address	
Now that have assigned our server a static IP address we can change the name of the server, this will help us identifying it from other servers that we might make in the future ***(Note this action will require for you to restart the server for it to take full effect)**	
While you wait for the server to restart, we can work on our Win-10 computer, the sign-in procedure is lengthy and is focused on personalization so I will leave that up to you. From the desktop is where we will take it off from on the search bar, we will search for “firewall” then click on the option “firewall and network protection” this will redirect to a window similar to the one in the server you will disable all the current firewalls as well.	

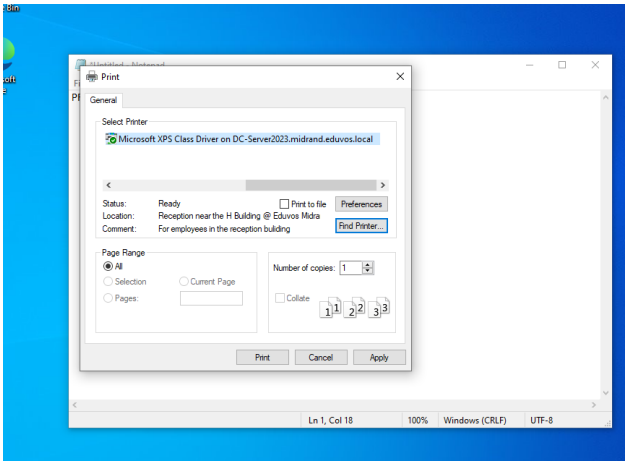
Now that our firewall is down it is time to change our IP address to a static address we go on our search bar, and type the following “manage network adapter settings” click on that option then scroll down to “More network adapter options” then following the steps as the server till you get to IPv4 one additional we will make here is to enable DNS and write our server’s IP address as the DNS apply the options and exit	
Once you have done that it is time to change your computers name, open up your file explorer then, right click your “This PC” option, then properties. On the related links click on advance system settings, then click on the Computer Name tab then click on Change and change your name ***(Note this action will require for you to restart the computer for it to take full effect)**	
After the Win-10 computer boots back up we need to make sure that the server and computer are able to not only see each other the network but communicate so in the cmd we will prompt our client computer to ping our server to see if they are communicating, once we’ve confirmed this, we can now assign our server as a domain controller	
Before we assign our server as the domain controller we need to connect before of our servers to one network so that everything happens privately on the network and information is shared efficiently This is going to be done on the Oracle Virtual Box Application we are going to create a NAT network and connect our 2 machines to that network	

Log back onto your server and navigate to the add roles and features link on the server manger dashboard. Go through all the pre-installation tabs and on the “server role” tab select the “Active Directory Domain Services” check box then install the features and wait for it to complete ***(Note this action will require for you to restart the server for it to take full effect)**	
The server now needs you to install an Active Directory Domain Services (AD DS) this server translates human-readable domain names (like "google.com") into numerical IP addresses that computers use to communicate	
Now that we have a domain, we can assign users so that the employees at Eduvos Midrand can have a unique sign in to their accounts on the domain	
Now that the DNS is up and running and we have a user to log onto it is time to connect the client computer to the DNS, so log back on the Win-10 computer and follow those same steps you did for changing the name of the Win-10 computer now instead of changing the name we are going to change the workgroup of the computer to the name of the domain	

Once you've the computer boots back up using the credentials that you created for your user log into the domain from the client (this can be also used as a test to ensure that the DNS accepts the client computer)	
Now that you have ensured that the DNS and AD are operational the first part of our job is complete now, we need to connect a printer a that will work on the network for the employees in the Eduvos reception only The first thing we need to do is to install a Print Server for our network so switch back to your server and follow the same steps you did for the DNS and AD, but select the "Print and Document Services"	
Now that we have a print server, we need to configure it so that it connects to the correct printer in the reception Things we need to install Driver: Microsoft XPS Class Driver Port: Local Port	
Reception Printer (Local Port)	

Printer (Microsoft XPS Class Driver)	
List in the Directory	
Now that the printer is set up, we need to set up who will be able to use the printer that way not everyone in the network can use the printer We need to create an organizational unit it enables administrators to organize and manage network resources, including users, computers, and other objects (e.g., Printer).	
Next thing is to go to our GPO which is used to manage and configure printer deployment in a domain environment. By using GPOs, administrators can centrally deploy printers to users and computers, ensuring consistent printer configurations across the network.	

Printer (In GPO)	
Linked Group Policy Object (Printer)	
All the configurations have been implemented what is needed now is to assign members to the printer	
Time to test if the configurations can be seen on the client computer and if your computer is seen as a member log on to the Win-10 computer and on the cmd write the following prompt “gpresult -r”	

Everything seems to be connected and configured now it is time to test if your client is able to see the printer and print from it	
Print job on queue