

# Project - Windows Server 2022 Active Directory Lab (On-Premises)

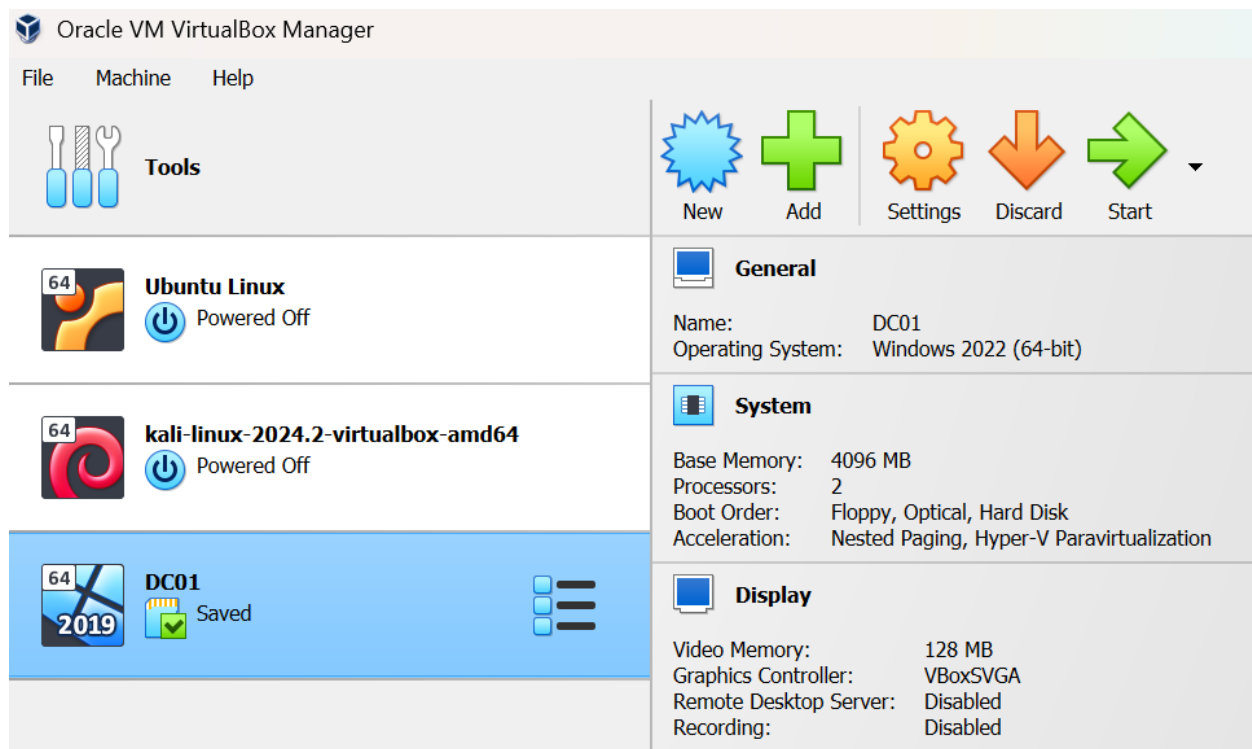
## Goal:

Simulate a company network using a Domain Controller to manage users, groups, and a client PC.

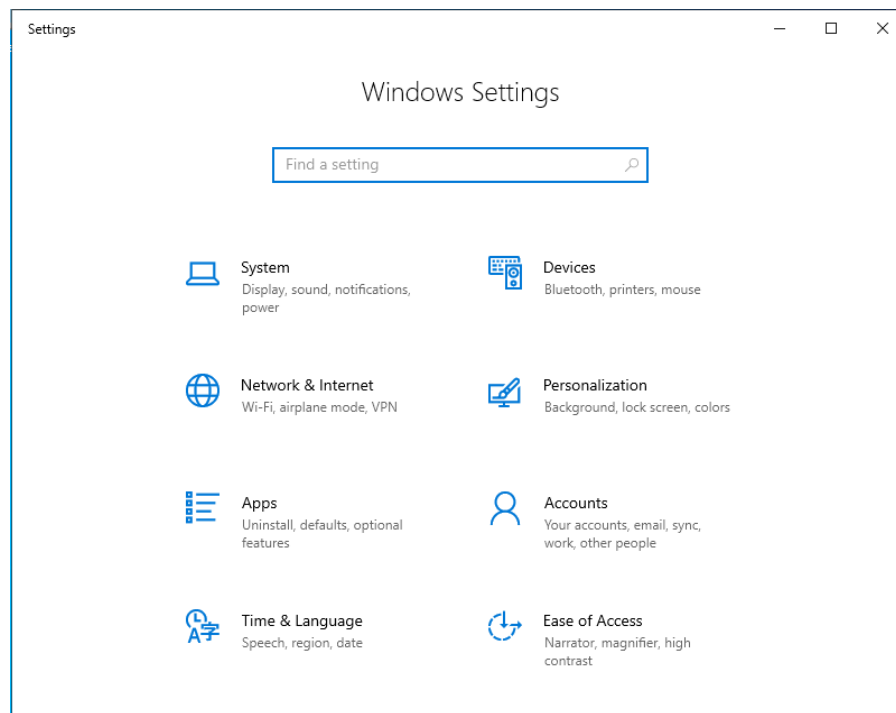
## Steps Taken:

### 1. Set up Windows Server 2022 VM (DC01)

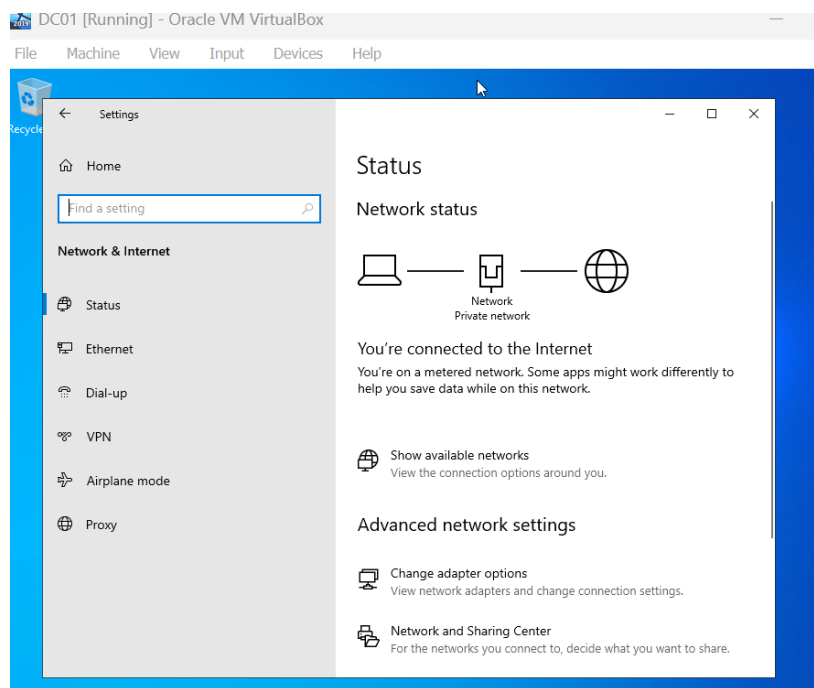
- Installed **Desktop Experience** in VirtualBox
- Configured **network adapter** to Internal Network



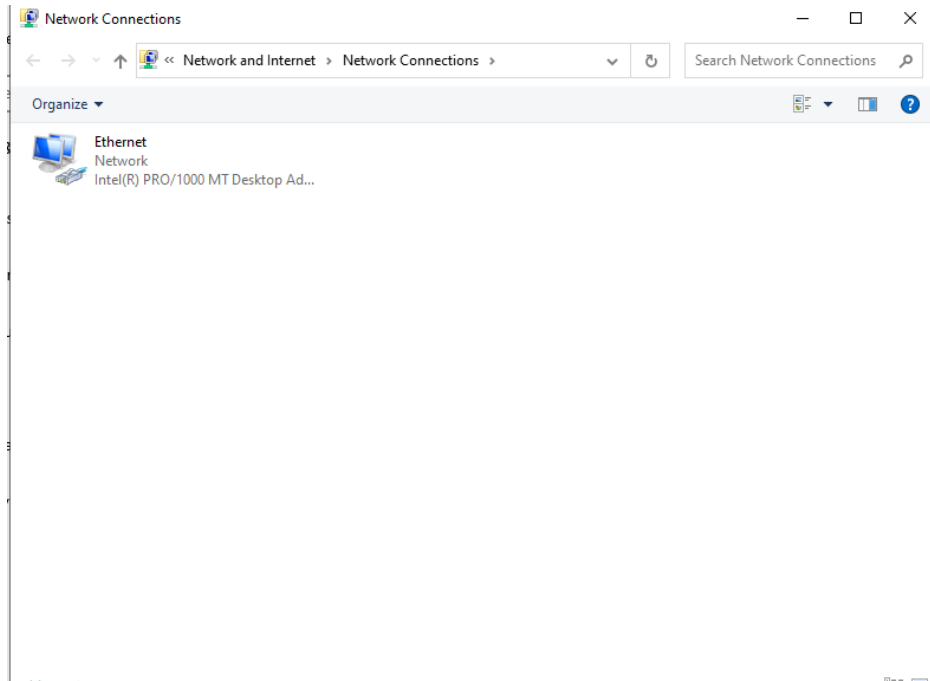
Pic 1: Create Virtual Box, DC01



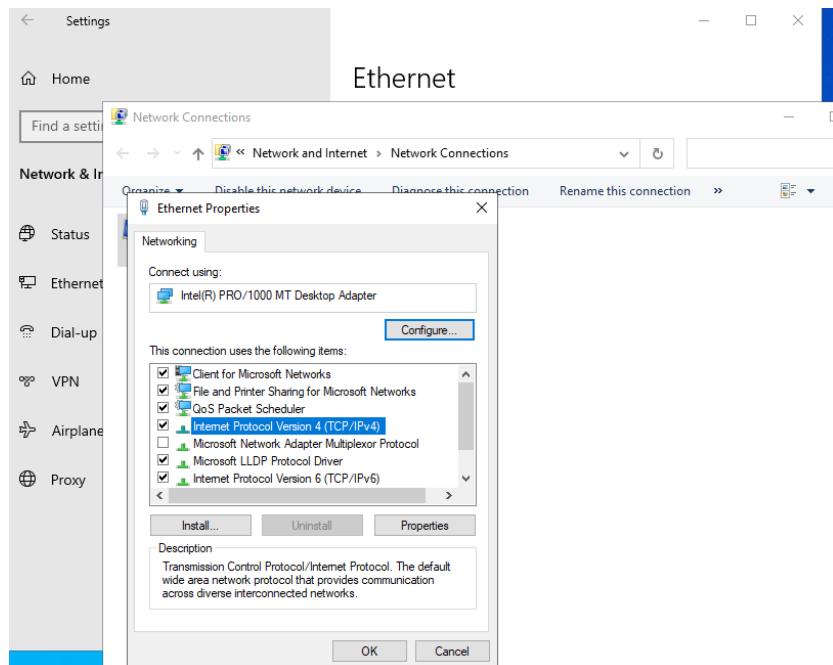
Pic 2: In setting go to Network & Internet



Pic 3: Inside, go to change adapter option



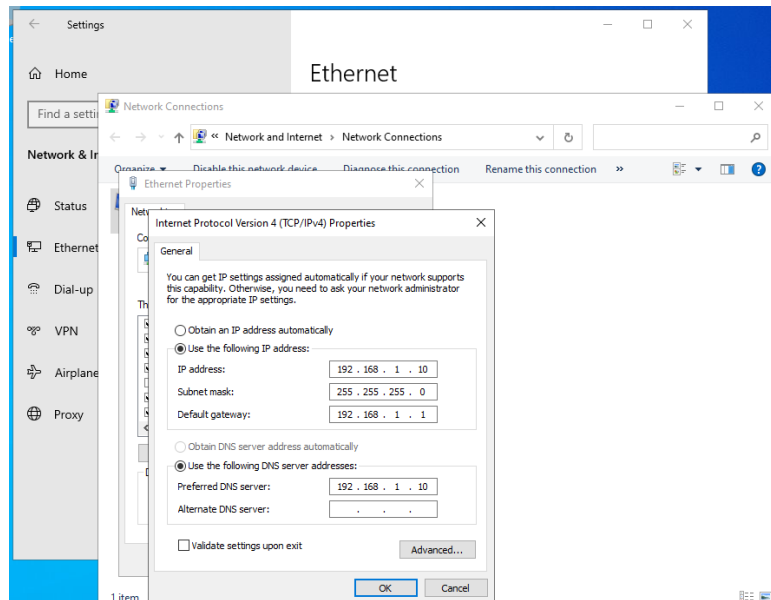
Pic 4: Right-click Ethernet and choose properties



Pic 5: Choose the TCP/Pv4

## 2. Assigned static IP to DC01

- Example: 192.168.1.10
- Set DNS to itself (DC01)



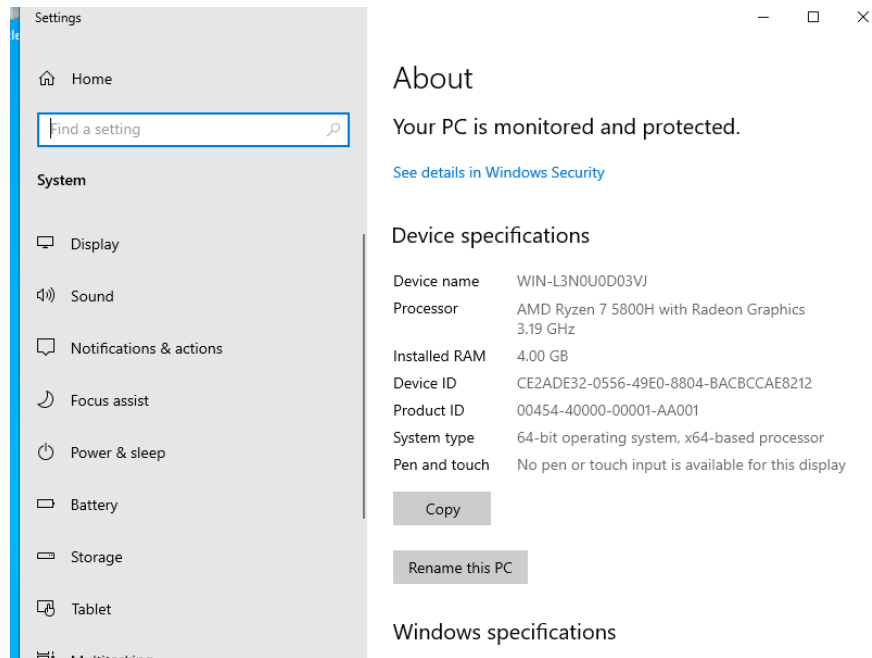
Pic 6: Setting the TCP/Pv4 properties

- ? **IP address:** 192.168.1.10
- ? **Subnet mask:** 255.255.255.0
- ? **Default gateway:** 192.168.1.1 (can be your router IP)
- ? **Preferred DNS server:** 192.168.1.10 (points to itself)

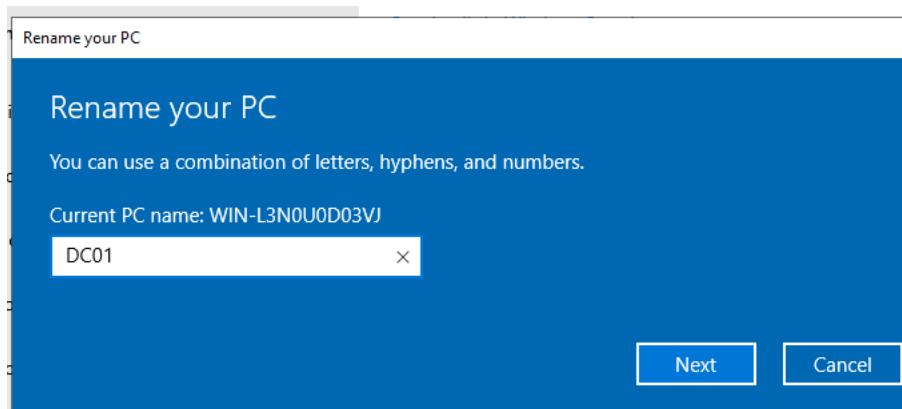
After that, we have finished step 1 here.

### Step 2 — Rename the Server

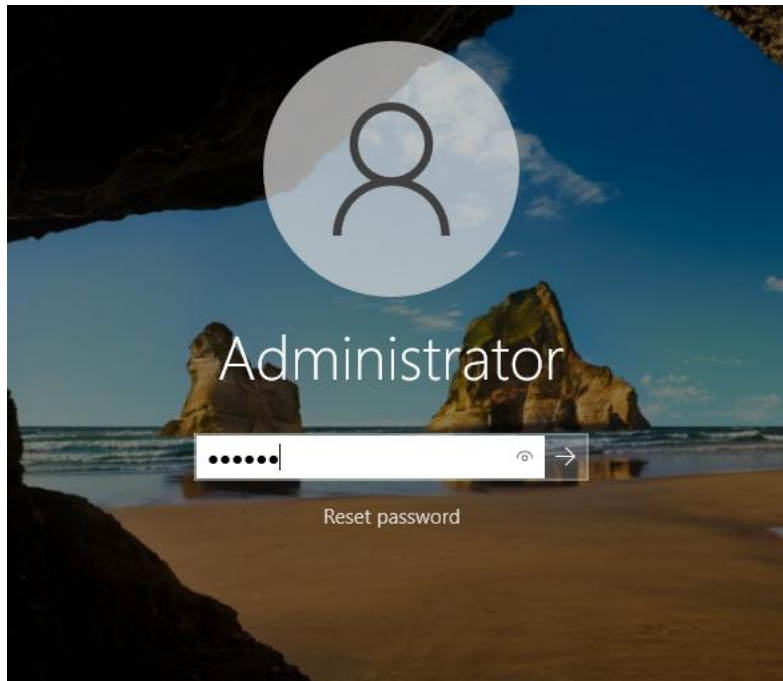
1. Right-click **This PC** → **Properties** → **Rename this PC**
2. Name: DC01
3. Restart when prompted



Pic 7: Right-click **This PC** → **Properties** → **Rename this PC**



Pic 8 :Rename to DC01 and it will restart automatically.

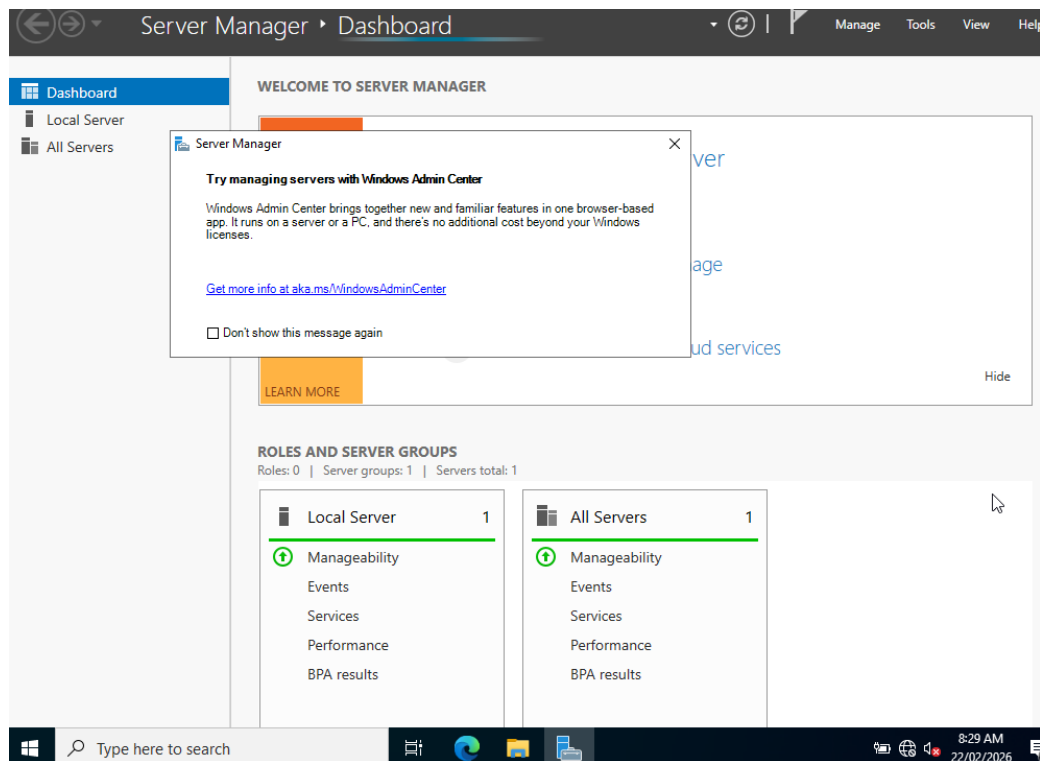


Pic9: Now ewe can login as Admin.

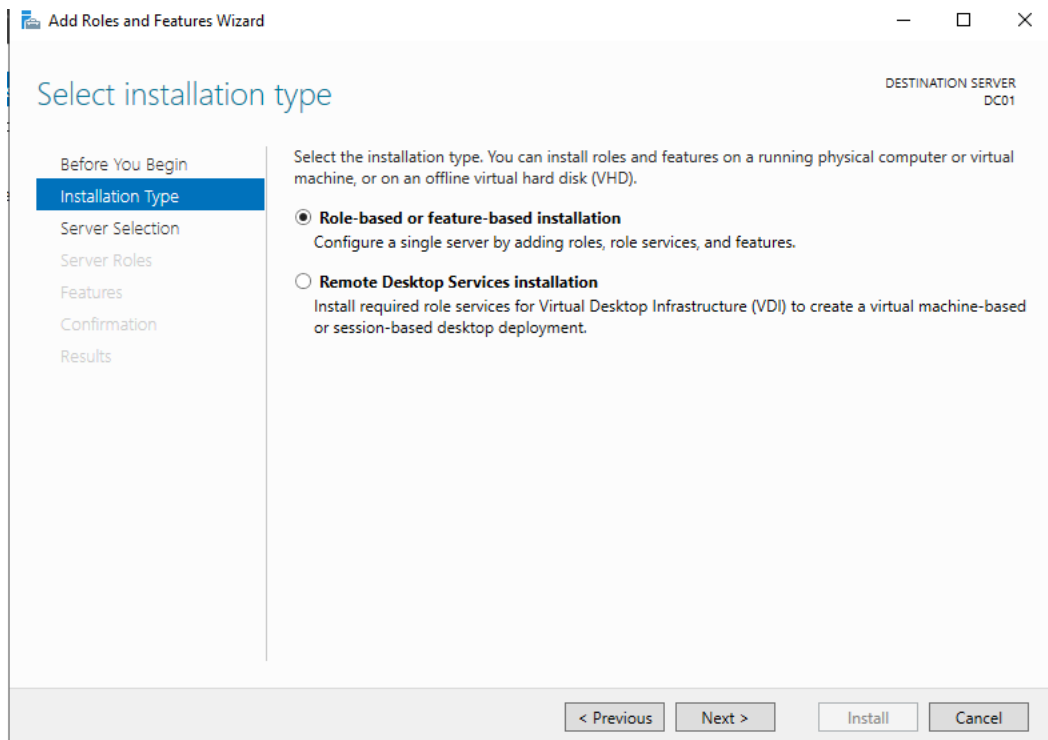
### 3. Install Active Directory Domain Services (AD DS)

1. Open **Server Manager** (should be open automatically)
2. Click **Add roles and features**
3. Click **Next → Next → Next → Next** until you reach **Server Roles**
4. Check **Active Directory Domain Services**
5. Click **Add Features** when prompted
6. Click **Next → Next → Install**

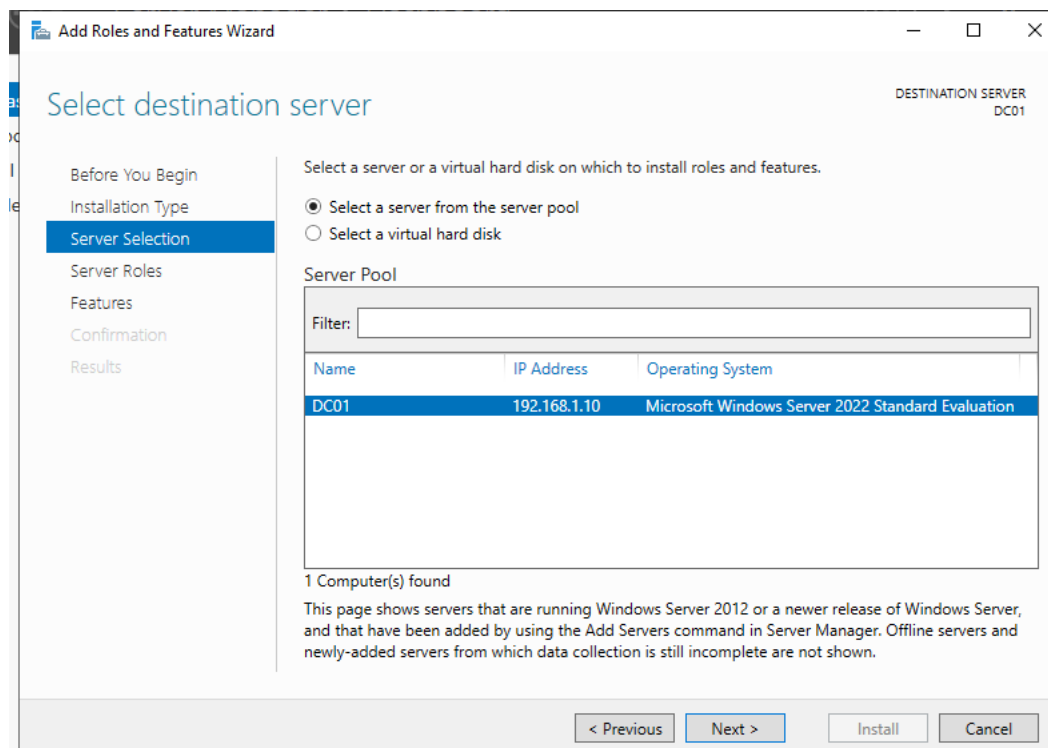
Installation will complete in a few minutes.



Pic 10: Server Manager Dashboard

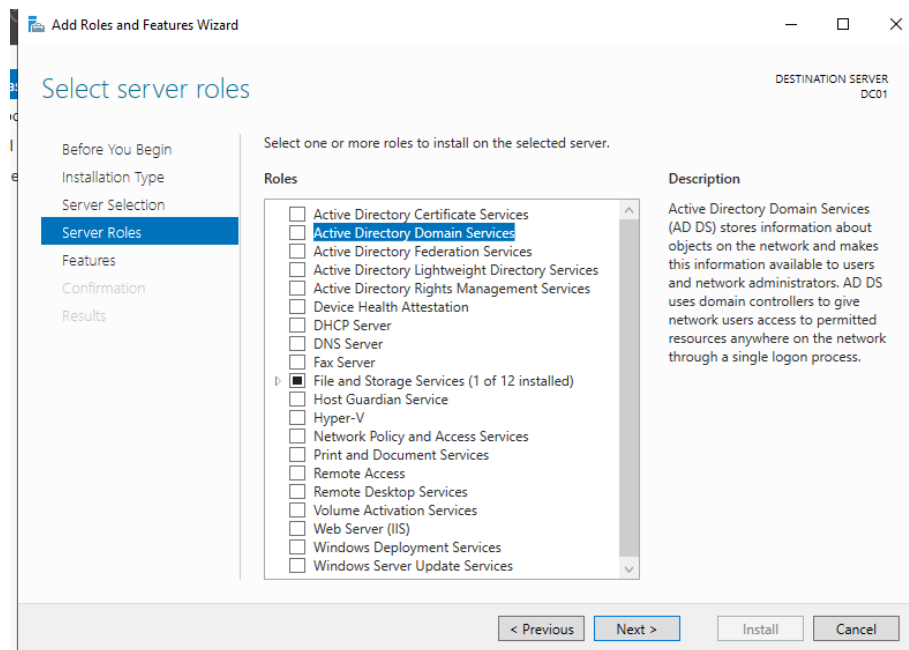


Pic 11: Select Role-Based

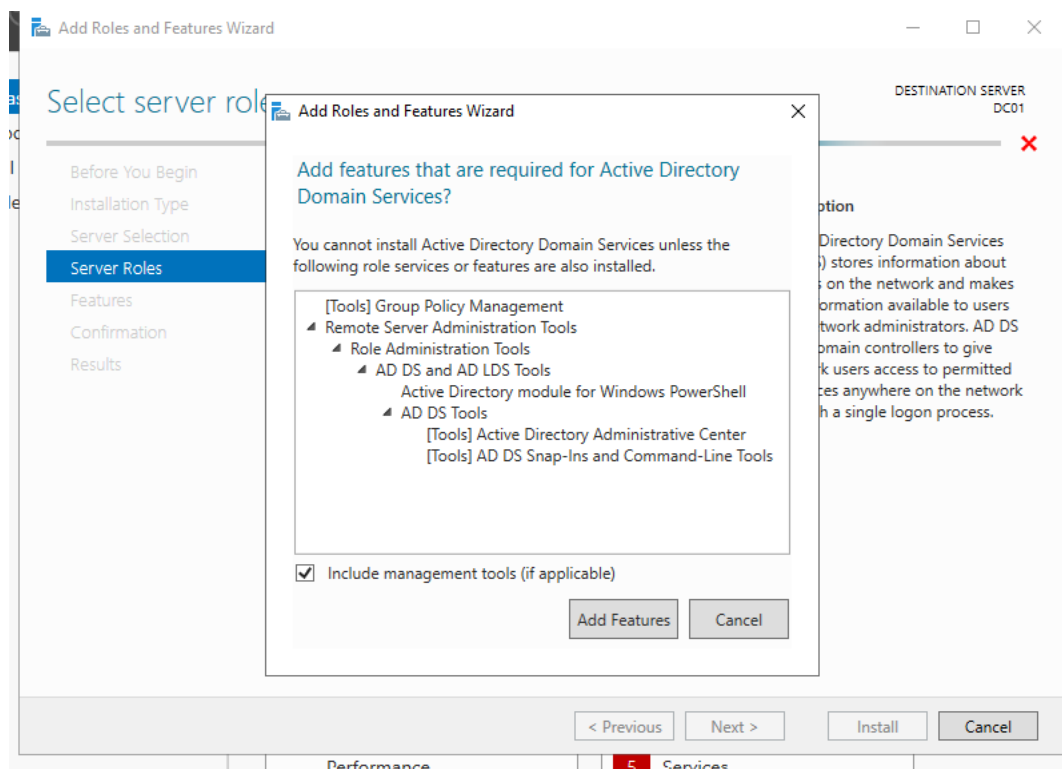


Pic 12: Select DC01 as Server

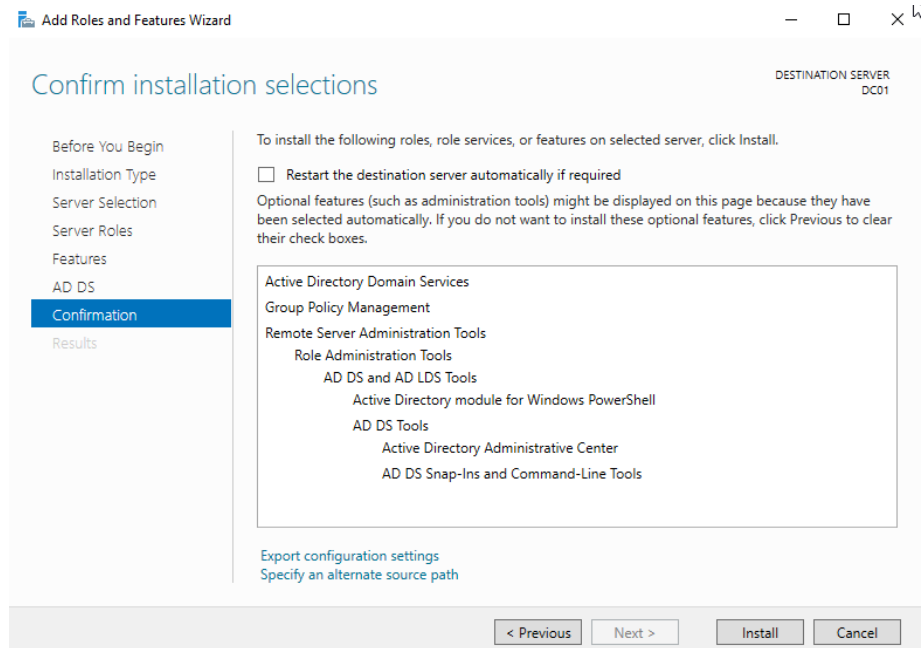




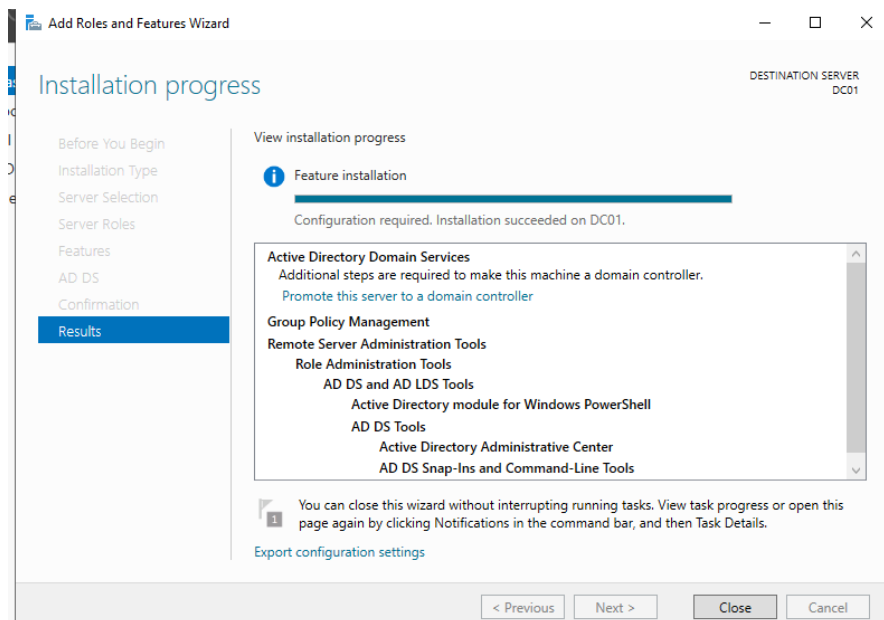
Pic 13: Choose ADDS



Pic 13: Add feature



Pic 13: Install and wait until it is completed

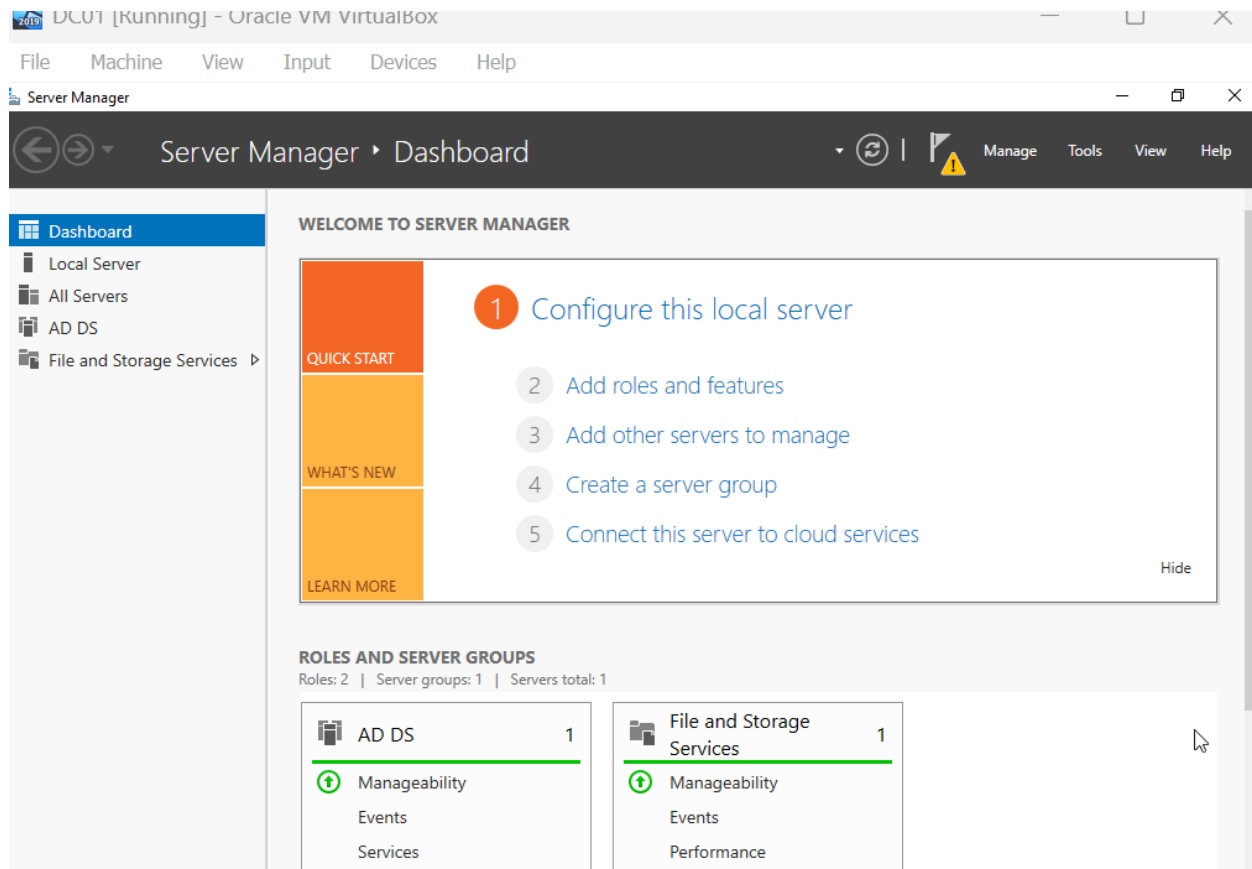


Pic 14: Completed

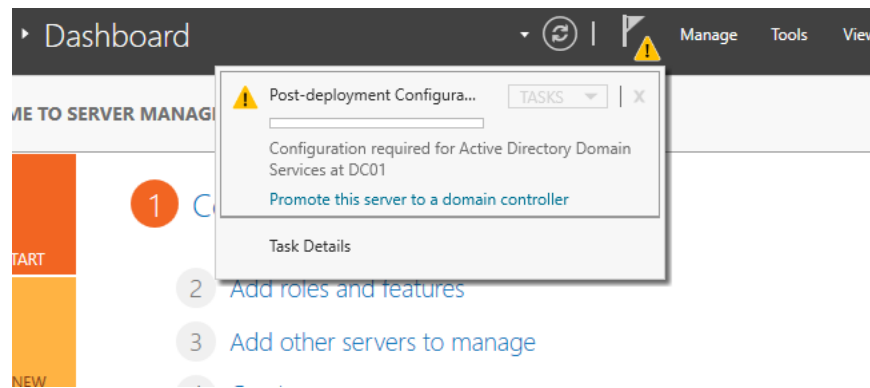
#### 4. Promote to Domain Controller

1. After installation, in Server Manager, there will be a **flag icon** with a notification
2. Click it → **Promote this server to a domain controller**
3. Select **Add a new forest**
4. Root domain name: lab.local
5. Set Directory Services Restore Mode (DSRM) password → remember it
6. Click **Next → Next → Next → Install**

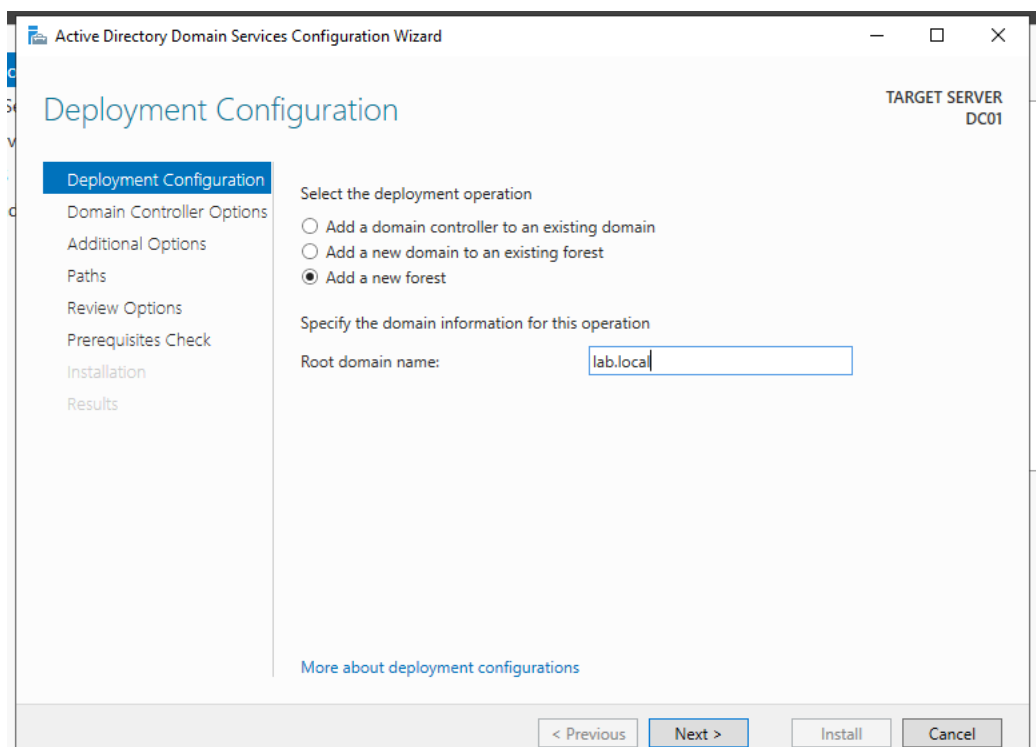
Server will restart automatically.



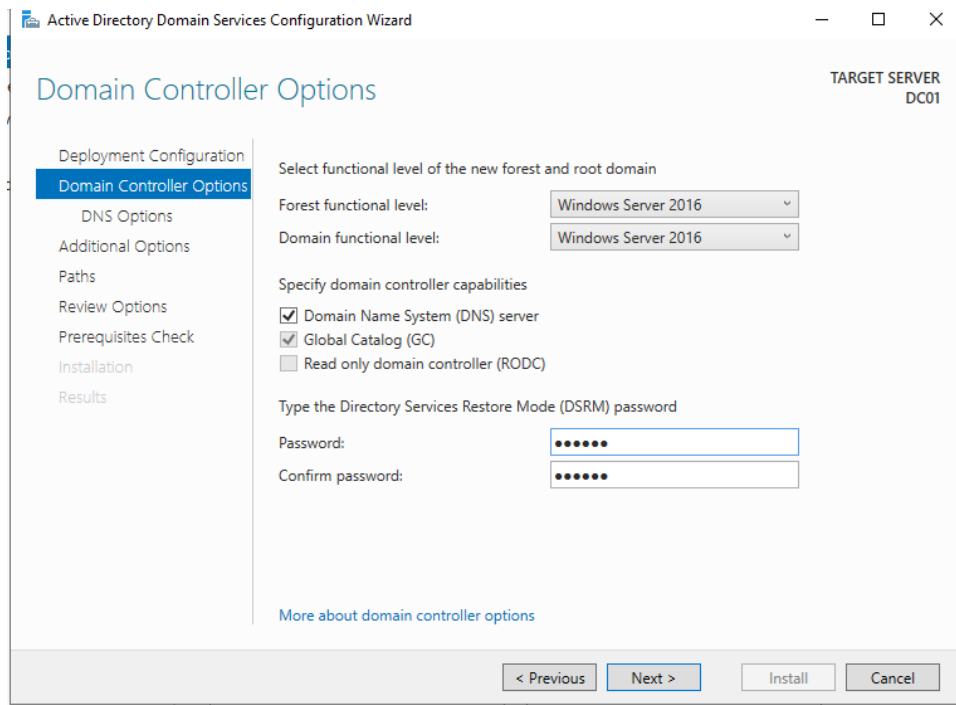
Pic 15: Flag Icon on top



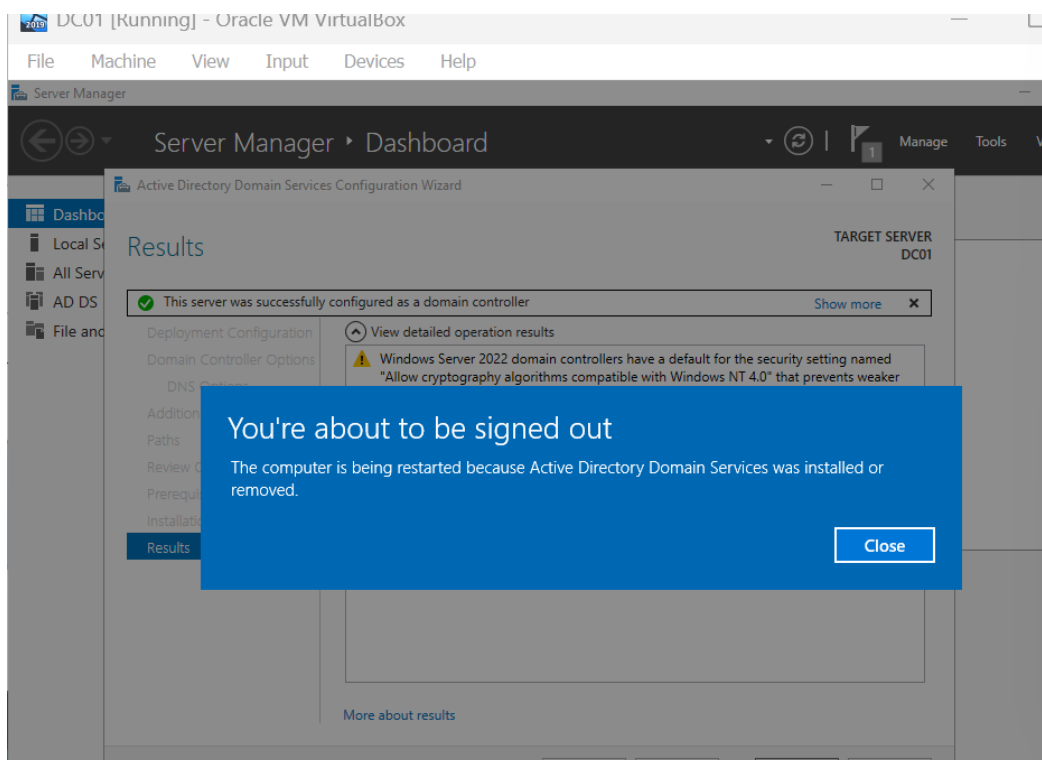
Pic 16: Click Promote this server to a domain controller



Pic 17: Create domain lab.local



Pic 17: Set a password and press next until install

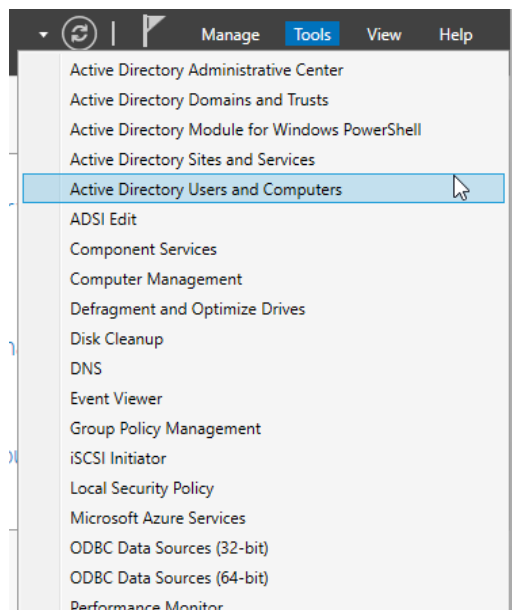


Pic 18: Restart after install

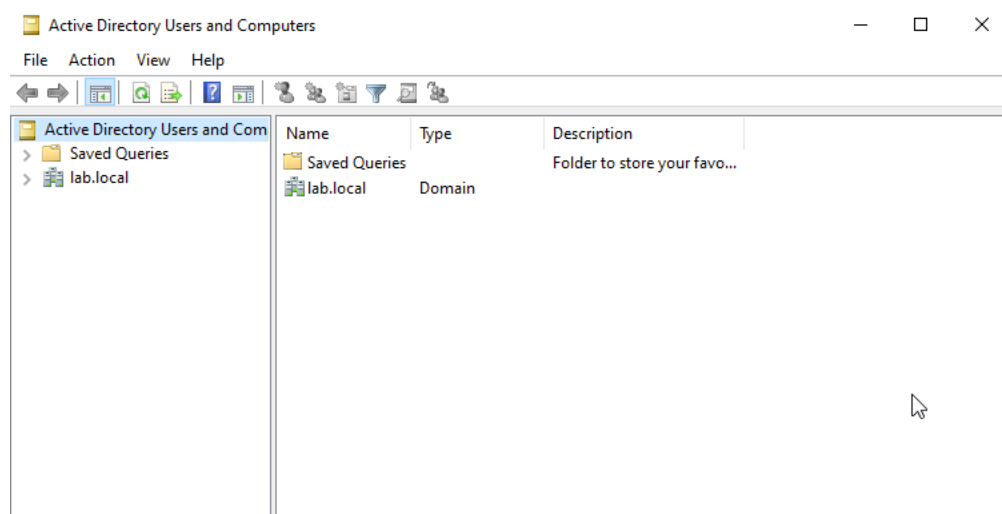
## 5. Verify Domain Controller

After reboot:

1. Login as lab\Administrator
2. Open **Active Directory Users and Computers** (Server Manager → Tools → ADUC)
3. You can see your domain and server listed



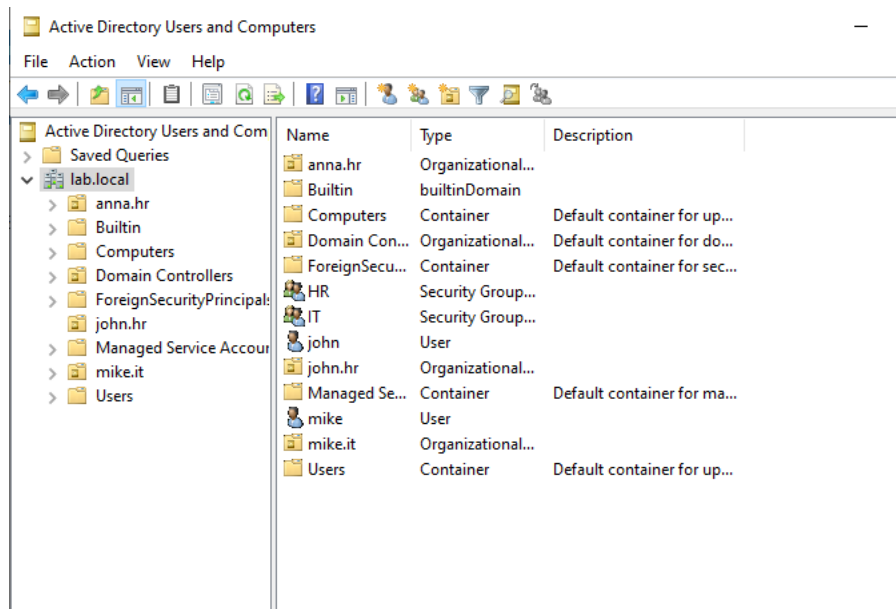
Pic 19: Go to Active Directory Users and Computers



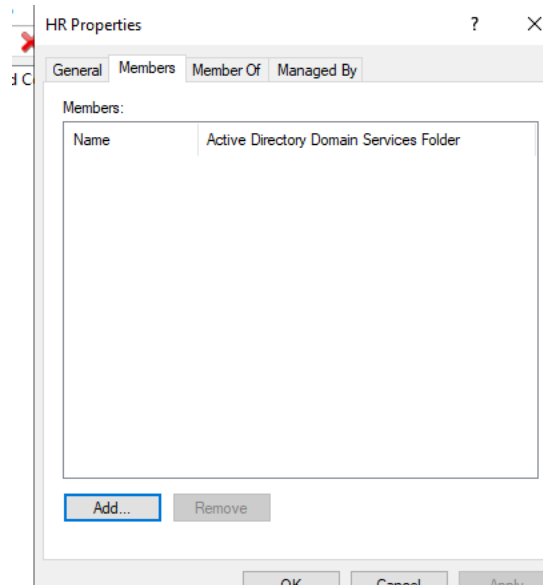
Pic 20: Can see lab.local there

## 6. Create Users and Groups

1. In ADUC → Right-click your domain → **New → Organizational Unit** (optional)
2. Create a few users:
  - john.hr
  - anna.hr
  - mike.it
3. Create groups:
  - HR
  - IT
4. Add users to groups

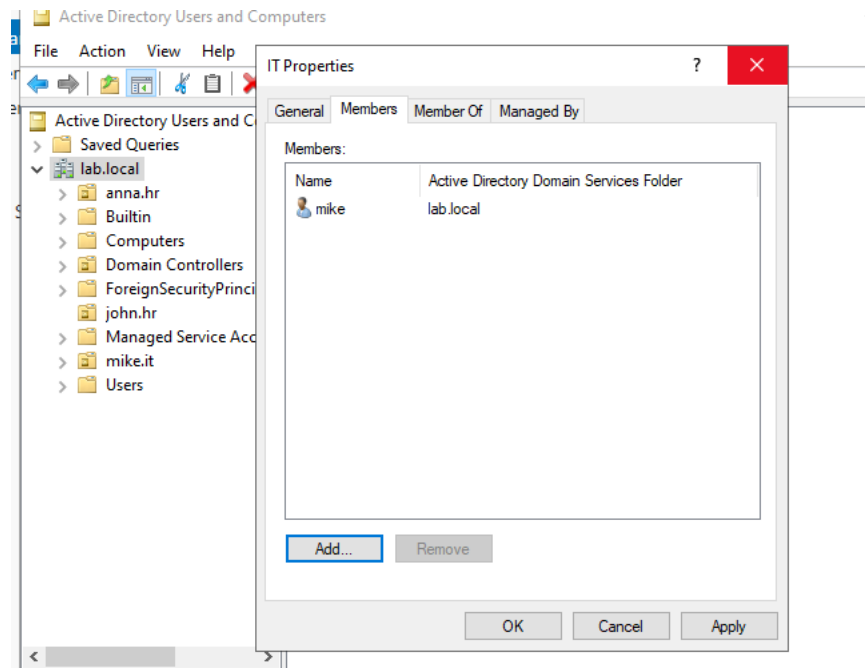


Pic 21: Create member and group inside the lab.local



Pic 22: Add member to the group



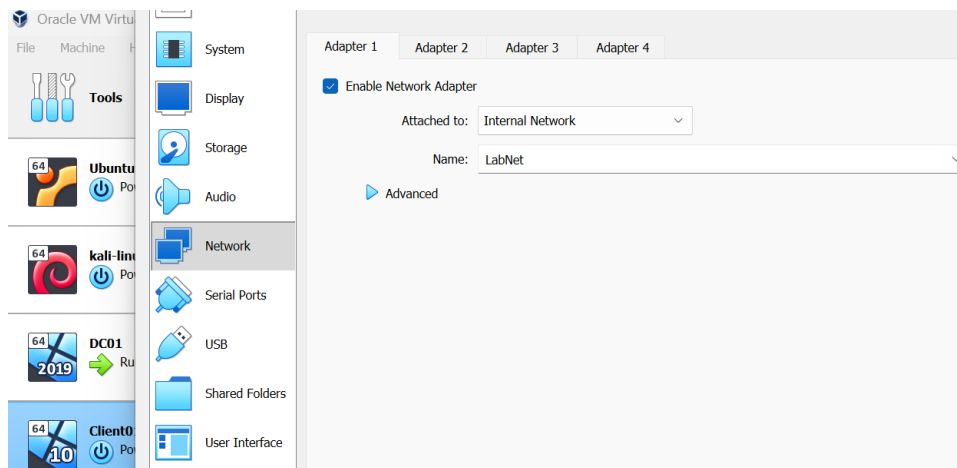


Pic 22: Mike has been added to IT group

## 7. Join a Client PC to Domain

### Step 1 — Create Client VM

- DC01 and Client01 must be on the **same virtual network** to join domain. I name LabNet



Pic 23: Create another VIM and make name of Internal Network same as DC01

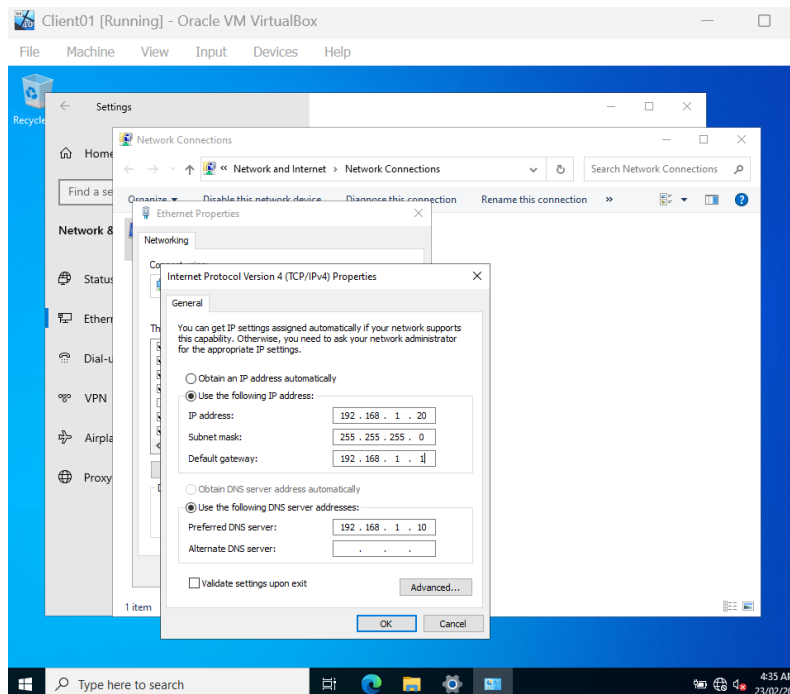
## 8. Set DNS on Client

1. Open **Network Connections** → **Ethernet** → **Properties** → **IPv4**

2. Set static IP like:

- IP: 192.168.1.20 (any in same subnet as DC)
- Subnet mask: 255.255.255.0
- Default gateway: 192.168.1.1 (can be anything if you don't need internet)
- **Preferred DNS server: 192.168.1.10 (point to DC01 IP)**

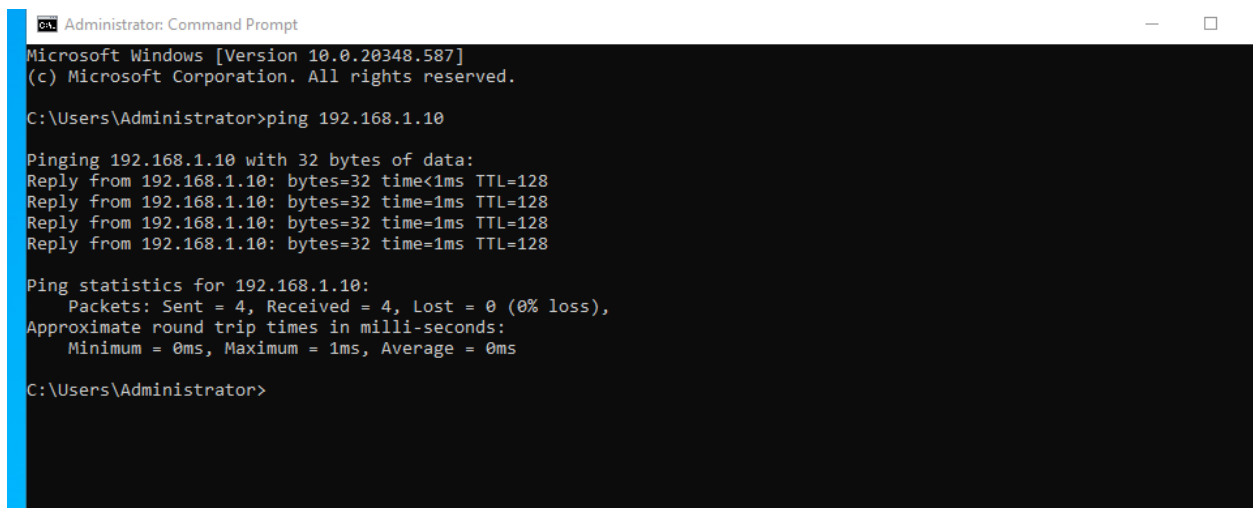
This is critical — the client **must** use **DC01** as **DNS** to find the domain.



Pic 24: set up Internet properties

## 9. Test Connectivity

1. Open **Command Prompt** on Client01
2. Ping the DC:



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.20348.587]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Administrator>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time<1ms TTL=128
Reply from 192.168.1.10: bytes=32 time=1ms TTL=128
Reply from 192.168.1.10: bytes=32 time=1ms TTL=128
Reply from 192.168.1.10: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms

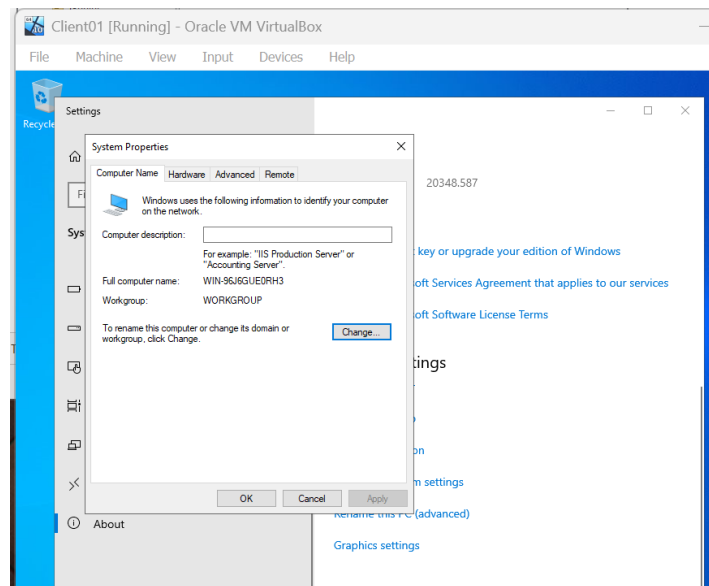
C:\Users\Administrator>
```

Pic 25: Ping to test connectivity

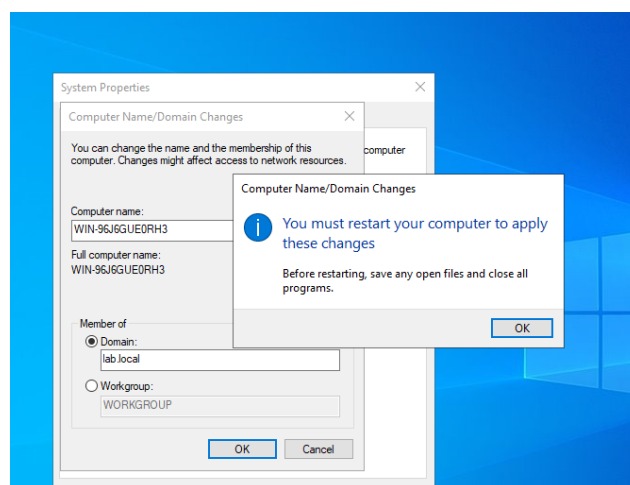
## 10. Try Domain Join Again

- Right-click **This PC** → **Properties** → **Advanced system settings** → **Computer Name** → **Change** → **Domain**
- Enter lab.local
- Credentials: lab\Administrator

And it will restart Windows 10 VM



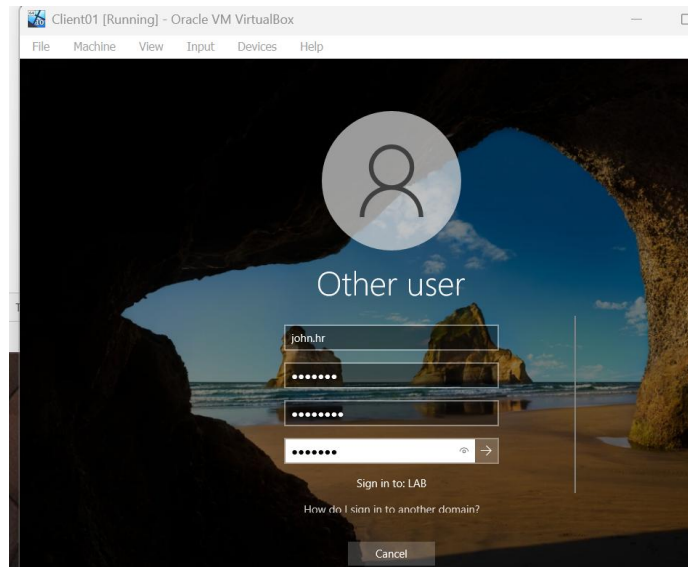
Pic 26: Press Change



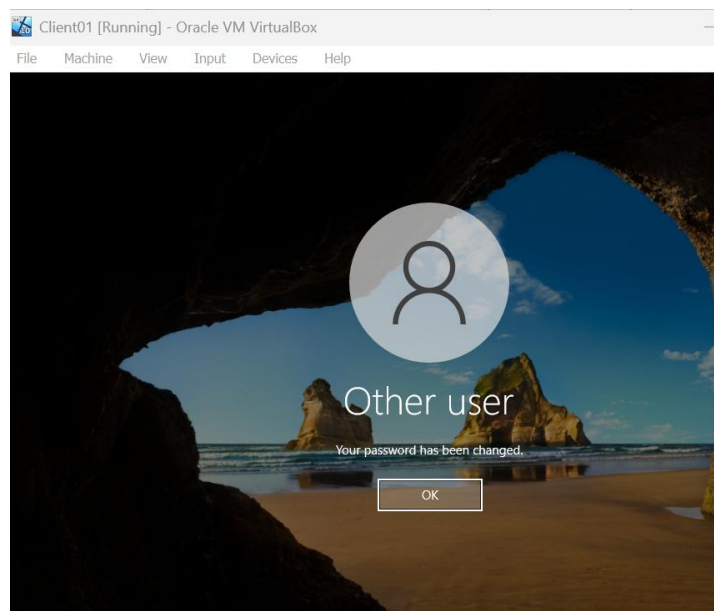
Pic 26: and choose to be a member of lab.local domain

## 11. Verify

- Log in as one of the users you created (e.g., john.hr)
- Check you can log in successfully → confirms domain join works



Pic 27: Try to login as John.hr and asked to change password



Pic 28: Login Successful.