Prepared by: Mahdi Ghaznawy

## Objective:

To create a home lab environment to practice Active Directory (AD) and other IT-related skills in preparation for entry-level IT roles.

## Hardware and Software Requirements:
Hardware:
- Personal Computer (PC) with at least 16GB RAM and 500GB storage recommended.
- Reliable internet connection.

## Software:
- Windows Server 2016 ISO (evaluation version from Microsoft).



- Windows 10 or 11 ISO (for client machines).
- Oracle VirtualBox (free for personal use).
- Active Directory Users and Computers (ADUC) tool (included in Windows Server).
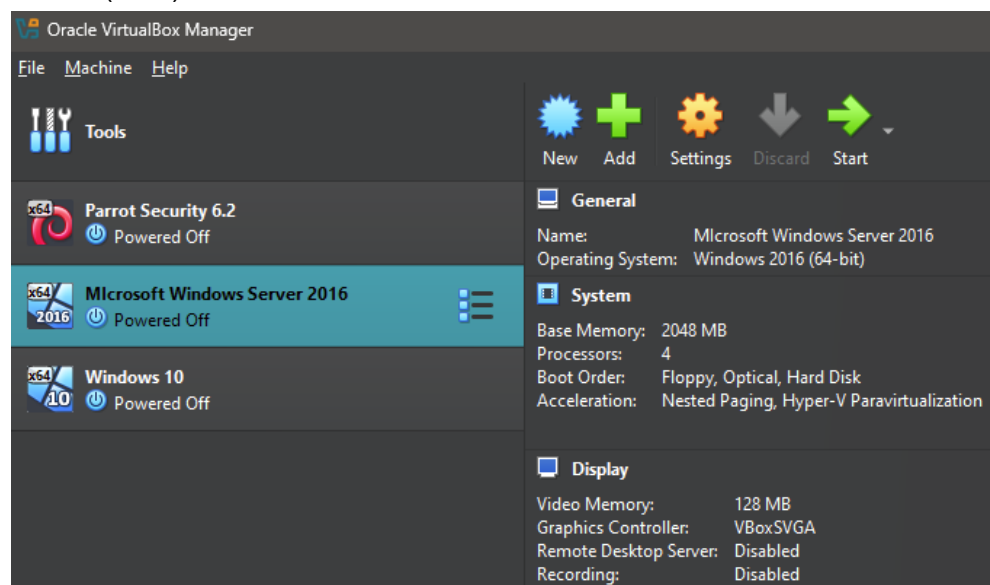
**Steps to Set Up the Home Lab:**

1. Install Virtualization Software:



- Download and install Oracle VirtualBox.
- Configure the virtualization software to allow the creation of multiple virtual machines (VMs).



2. Create the Domain Controller (DC):

- Create a new VM using the Windows Server 2016 ISO.
- Assign 4GB RAM and 30GB storage to the VM.
- Install Windows Server and configure a static IP address.

- Promote the server to a Domain Controller by installing the "Active Directory Domain Services" role.
- Use the Active Directory Wizard to create a new forest (e.g., domain name: lab.local).
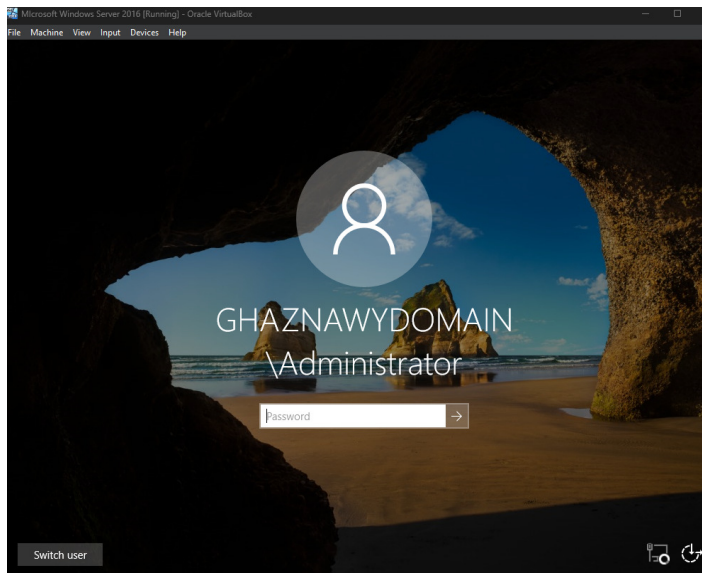


3. Set Up a Client Machine:
- Create another VM using the Windows 10/11 ISO.
- Assign 2GB RAM and 20GB storage to the VM.
- Install Windows and connect the client to the lab.local domain.

4. Configure AD Environment:
- Use ADUC to create organizational units (OUs), user accounts, and groups.
- Set up Group Policy Objects (GPOs) to enforce security settings.
- Practice creating and managing users, assigning permissions, and resetting passwords.
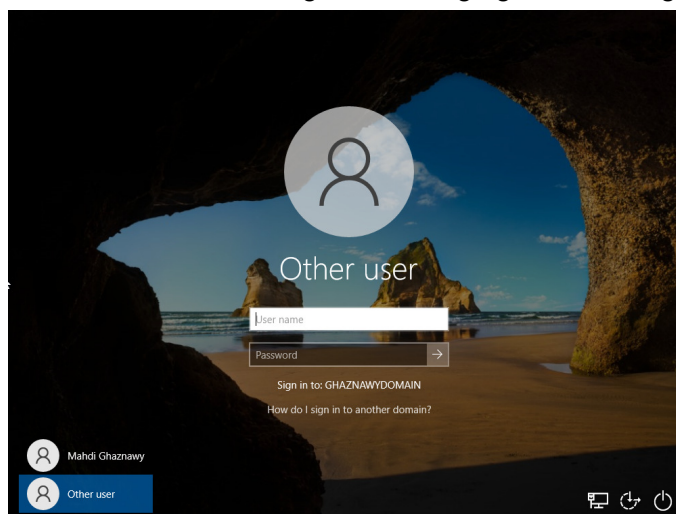


**Lessons Learned:**

Setting up this home lab allowed me to:
- Gain hands-on experience with Windows Server and Active Directory.

- Practice user and group management, as well as security configurations.
- Understand domain structures, networking, and group policies in a controlled environment.
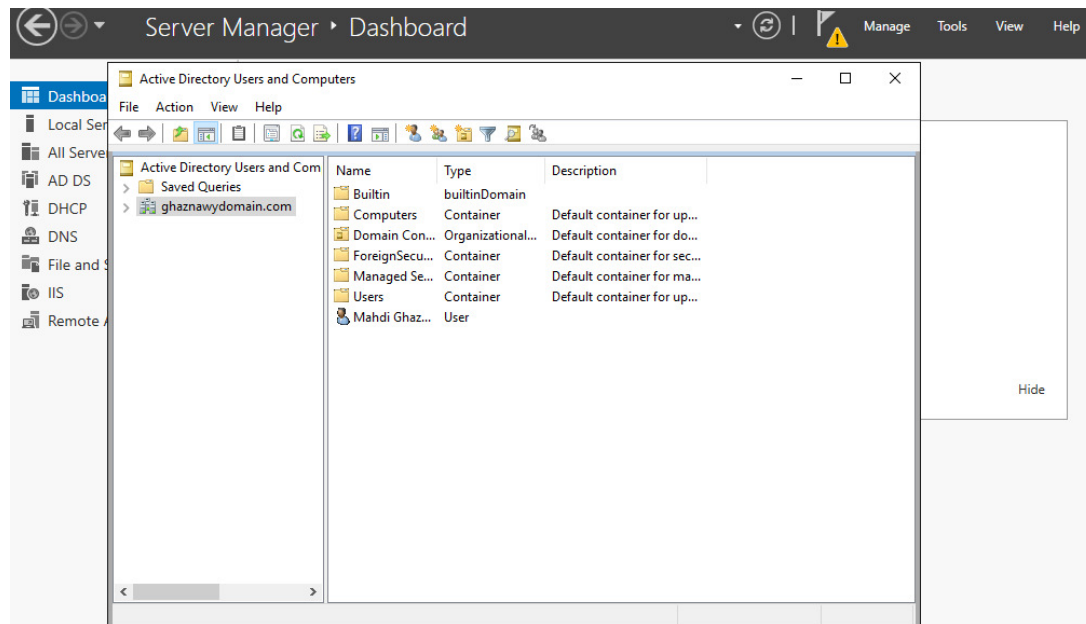


**Conclusion:**

Building a home lab is a valuable way to develop IT skills, especially for roles like Helpdesk Support or Systems Administrator. It demonstrates initiative, technical ability, and a commitment to learning.