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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).

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Please select your Windows Server 2016 download

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- **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:

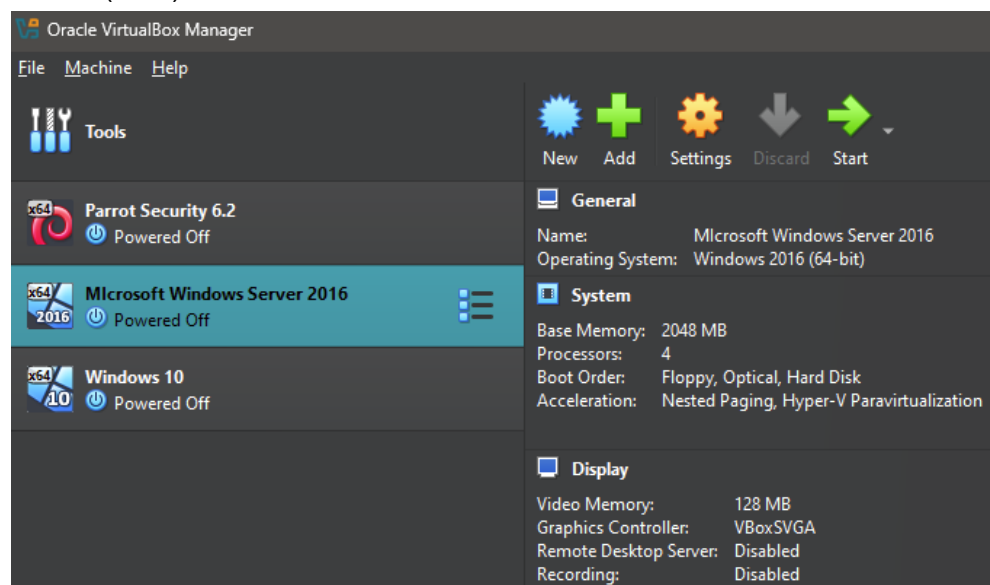
1. Install Virtualization Software:

VirtualBox Platform Packages

VirtualBox 7.1.4 platform packages

-  **Windows hosts**
-  **macOS / Intel hosts**
-  **macOS / Apple Silicon hosts**
-  **Linux distributions**
-  **Solaris hosts**
-  **Solaris 11 IPS hosts**

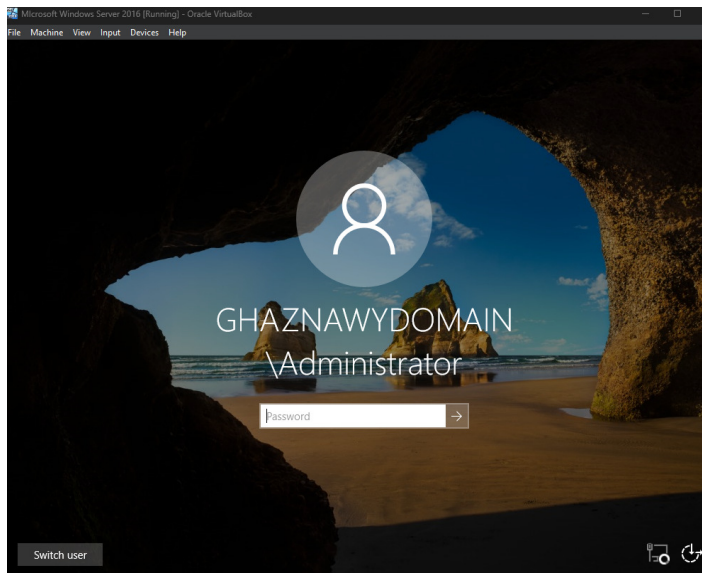
- Download and install [Oracle VirtualBox](#).
- Configure the virtualization software to allow the creation of multiple virtual machines (VMs).



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).

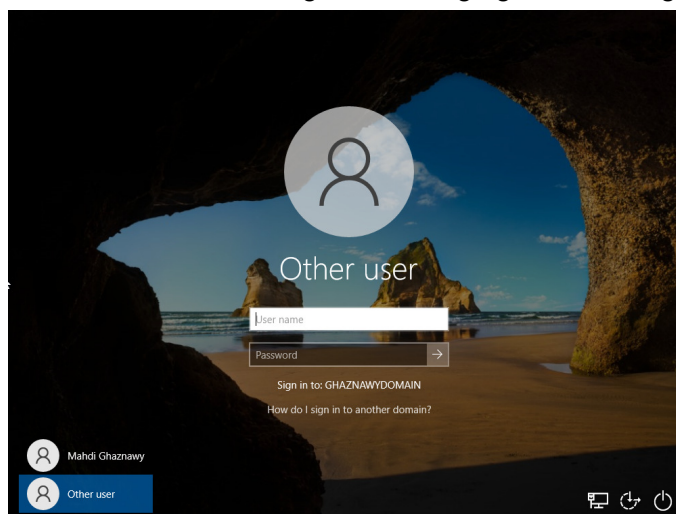


3. Set Up a Client Machine:

- 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.

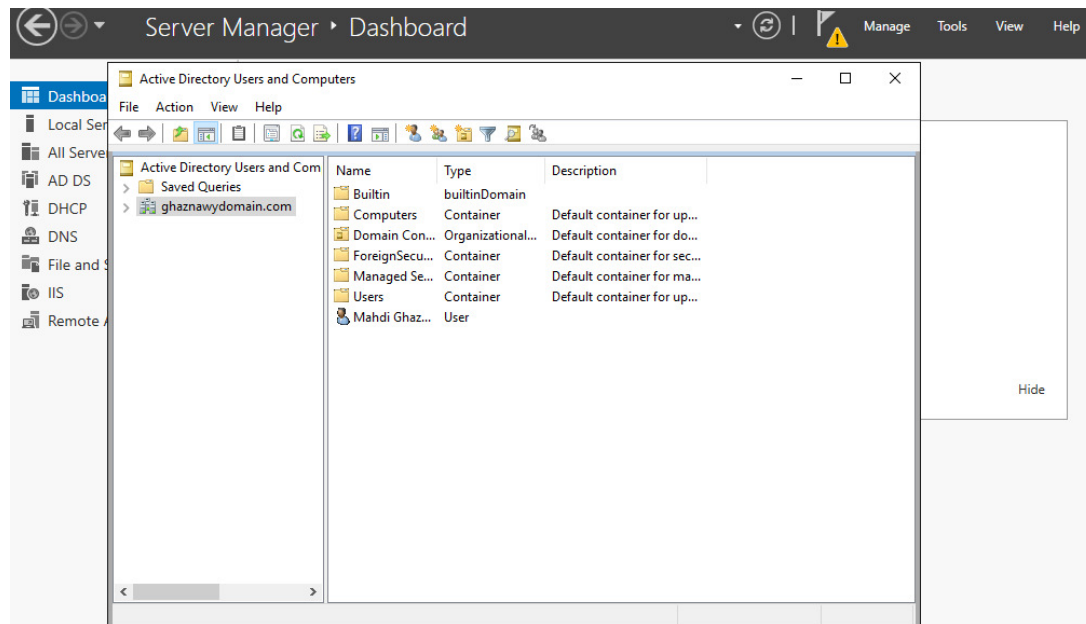


Lessons Learned:

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.