

Active Directory Enterprise Lab Documentation

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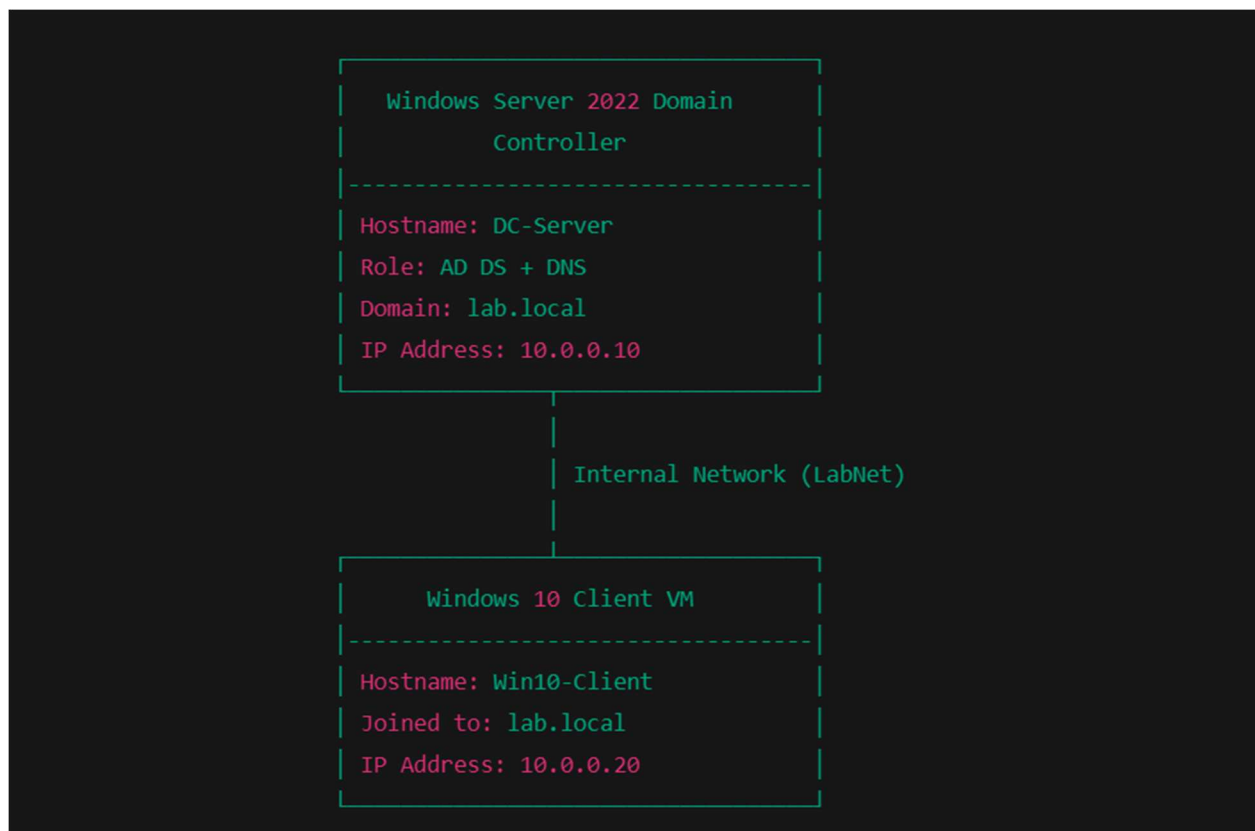
1. Project Overview

This project simulates a small enterprise Microsoft Active Directory environment using Windows Server 2022 and Windows 10. The goal is to demonstrate hands-on proficiency with:

- Domain Controller deployment
- DNS & Authentication
- Organizational Unit (OU) design
- Group Policy Objects (GPOs)
- User identity management
- Client Domain joining
- Enterprise configuration management

This lab mirrors real-world systems used in IT Supports, System Administration, and Cybersecurity operations.

2. Network Architecture



3.Virtualization Environment

- VirtualBox running on host machine
- Internal-only network (LabNet) used for server-client communication
- Dynamic disk allocation for VMs
- ISO files obtained from Microsoft Evaluation Center

4.Domain Controller Configuration

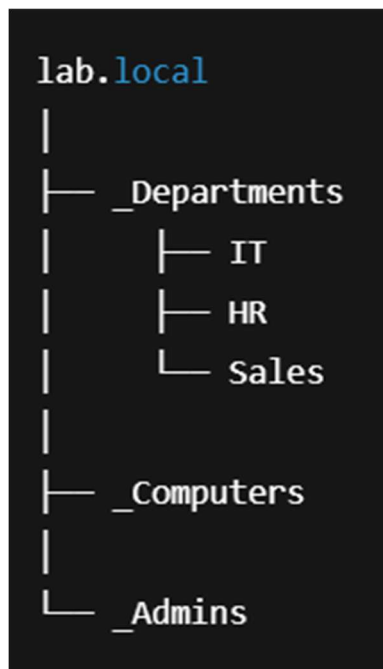
4.1 Windows Server 2022 Installation

- Installed with Desktop Experience
- Static IP: 10.0.0.10
- DNS server set to itself

4.2 Active Directory Domain Services Setup

- Installed AD DS & DNS roles
- Promoted server to DC
- Created forest and domain: lab.local
- Verified ADUC and DNS health

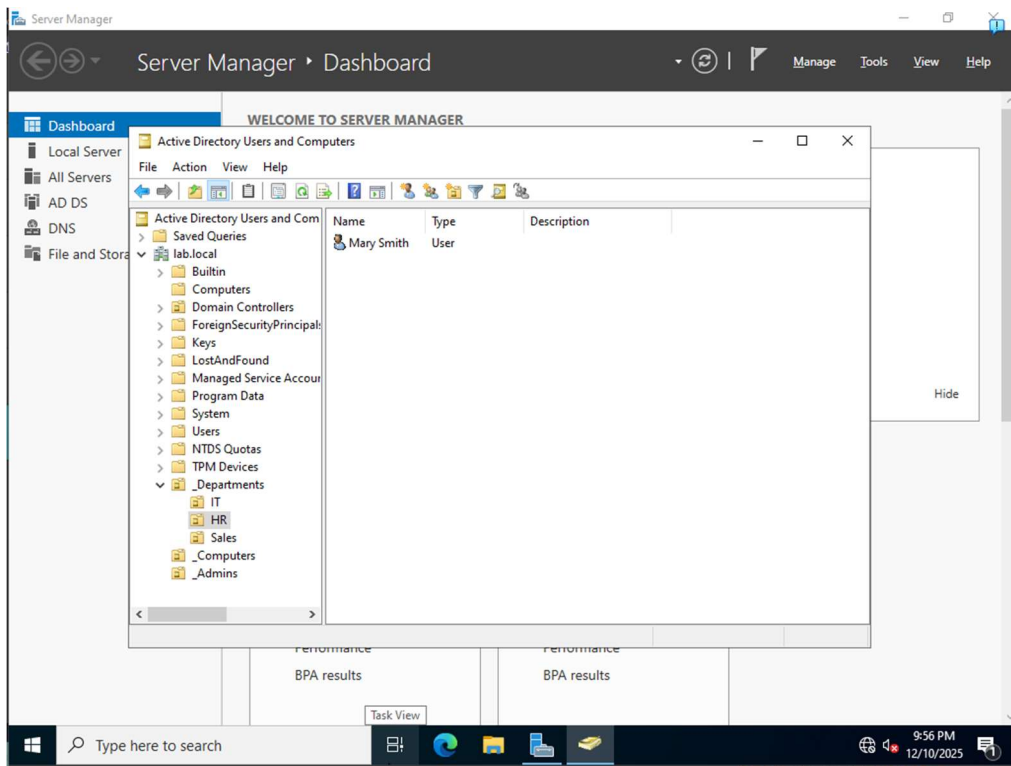
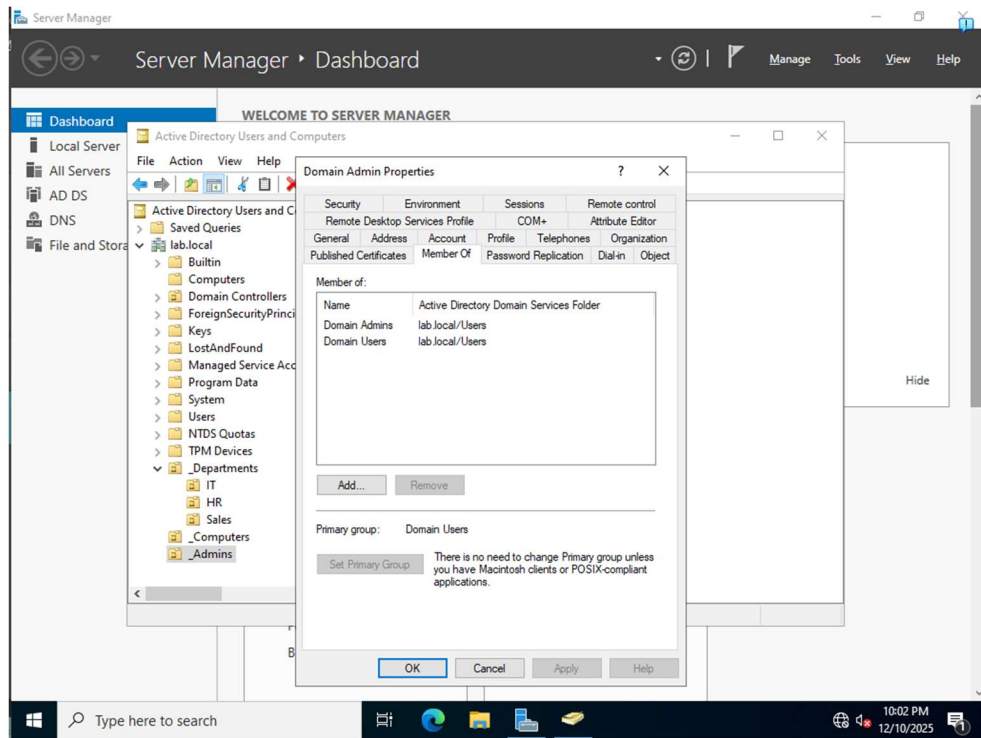
5. Organization Unit (OU) Structure

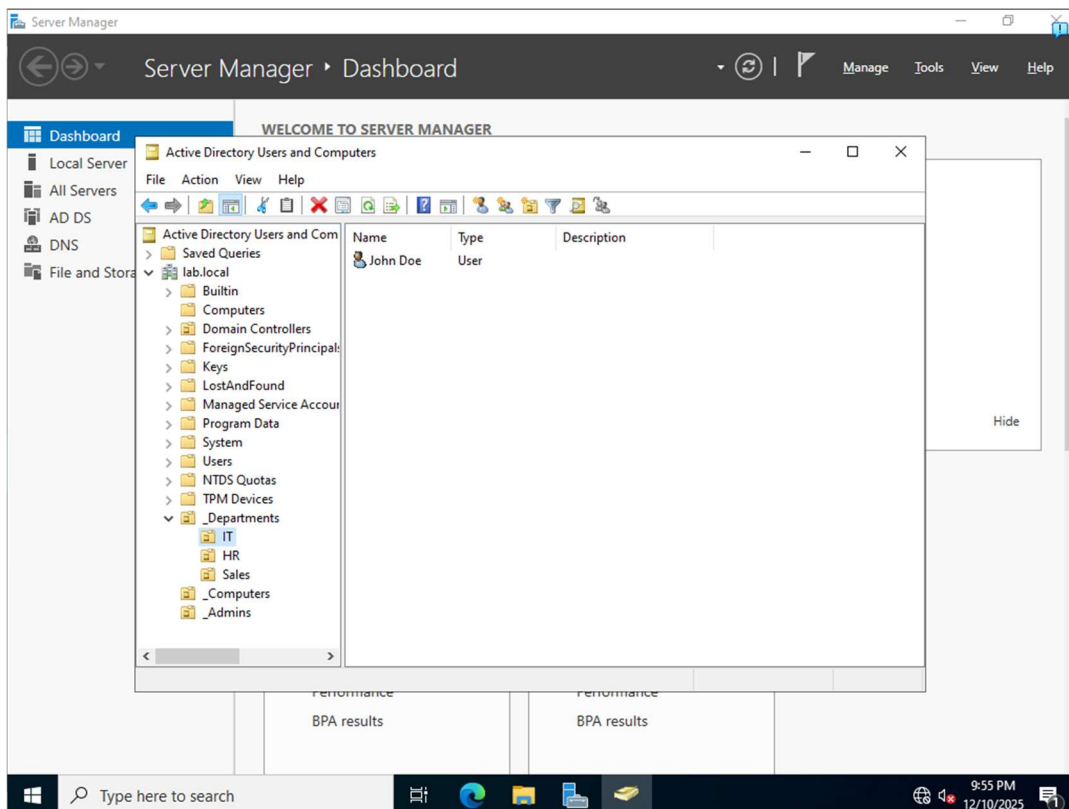
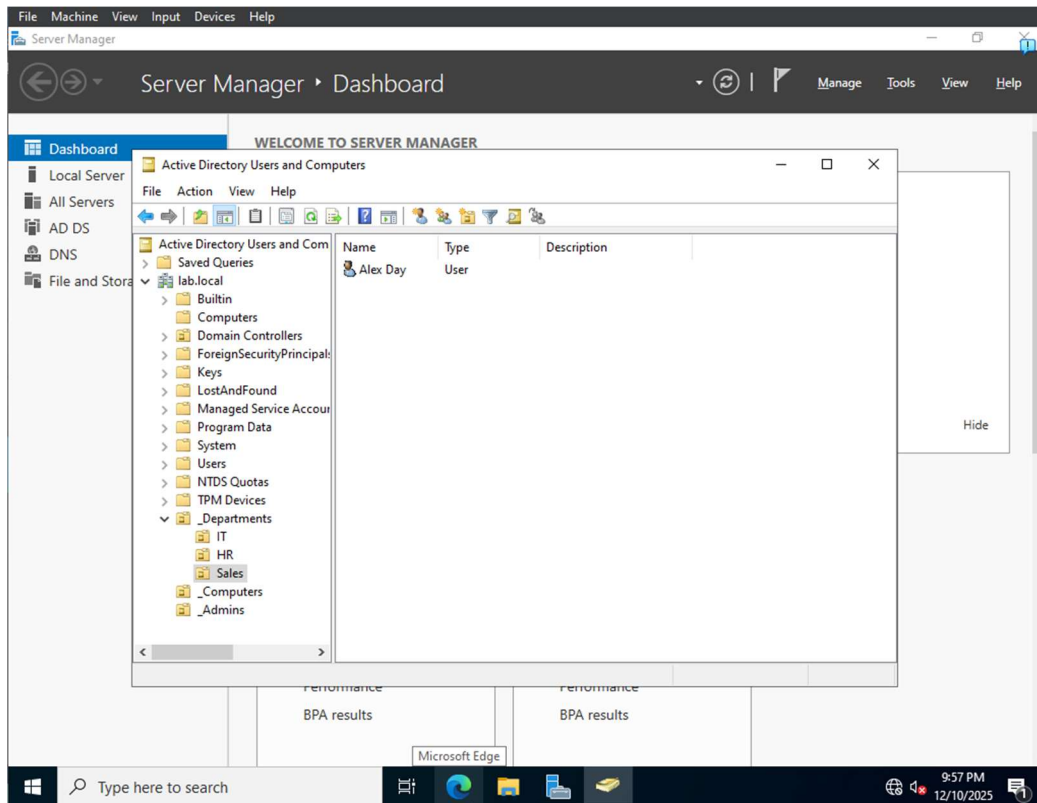


6. User & Group Administration

Created realistic user accounts:

- `It.jdoe`
- `Hr.msmith`
- `Sales.aday`
- `Domain.admin` (added to Domain Admins)





7. Group Policy Configuration

7.1 Password Security Policy

- Minimum length: 8
- Complexity: Enabled
- Max age: 90 days
- Password history: 5

7.2 Mapped Drive Policy

- Folder: \\WIN-4P04GV7UI5T\DeptShare\$
- Drive Letter: H:
- Assigned for all authenticated users

8. Client Configuration

8.1 Windows 10 VM Setup

- Static IP: 10.0.0.20
- DNS: 10.0.0.10

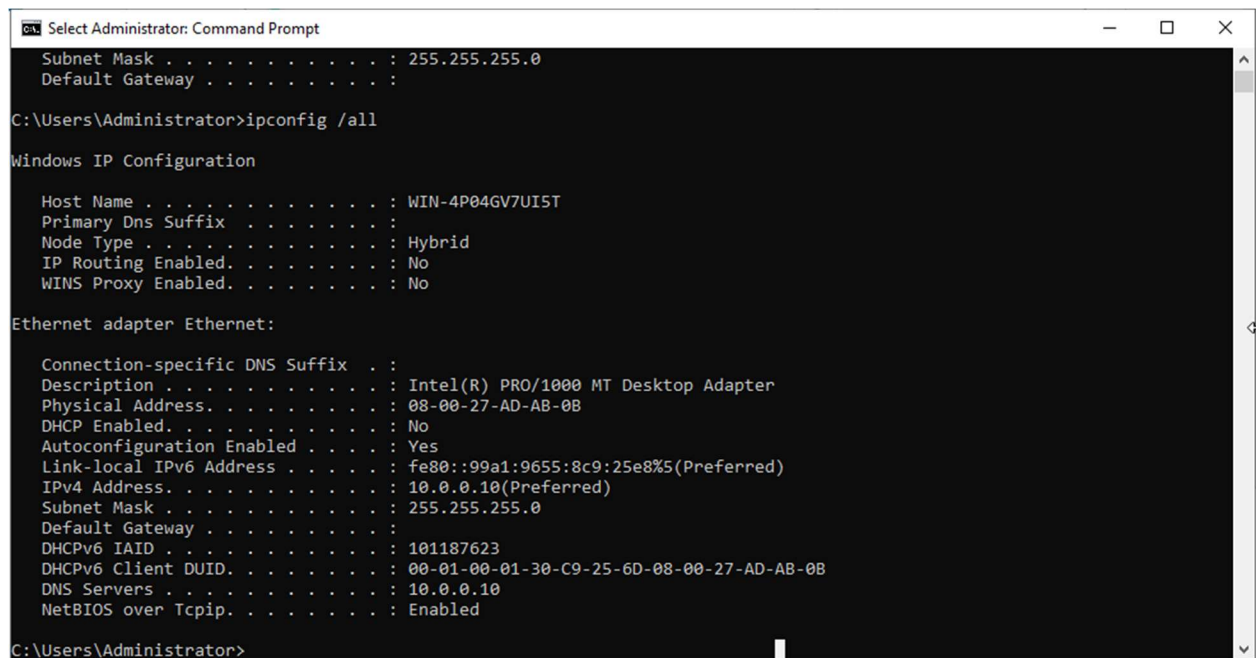
8.2 Domain Join Procedure

- Joined to lab.local
- Logged in via domain account

8.3 Policy Verification

- Mapped drive visible (H:)

9. Screenshots



```

Select Administrator: Command Prompt

Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :

C:\Users\Administrator>ipconfig /all

Windows IP Configuration

Host Name . . . . . : WIN-4P04GV7UI5T
Primary Dns Suffix . . . . . :
Node Type . . . . . : Hybrid
IP Routing Enabled. . . . . : No
WINS Proxy Enabled. . . . . : No

Ethernet adapter Ethernet:

Connection-specific DNS Suffix . :
Description . . . . . : Intel(R) PRO/1000 MT Desktop Adapter
Physical Address. . . . . : 08-00-27-AD-AB-0B
DHCP Enabled. . . . . : No
Autoconfiguration Enabled . . . . : Yes
Link-local IPv6 Address . . . . . : fe80::99a1:9655:8c9:25e8%5(Preferred)
IPv4 Address. . . . . : 10.0.0.10(Preferred)
Subnet Mask . . . . . : 255.255.255.0
Default Gateway . . . . . :
DHCPv6 IAID . . . . . : 101187623
DHCPv6 Client DUID. . . . . : 00-01-00-01-30-C9-25-6D-08-00-27-AD-AB-0B
DNS Servers . . . . . : 10.0.0.10
NetBIOS over Tcpip. . . . . : Enabled

C:\Users\Administrator>
```

Server Manager

Server Manager ▸ Dashboard

Manage Tools View Help

Dashboard

- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Services ▸

ROLES AND SERVER GROUPS

Roles: 3 | Server groups: 1 | Servers total: 1

AD DS 1

- Manageability
- Events
- Services
- Performance
- BPA results

DNS 1

- Manageability
- Events
- Services
- Performance
- BPA results

File and Storage Services 1

- Manageability
- Events
- Services
- Performance
- BPA results

Local Server 1

- Manageability
- Events
- 1 Services
- Performance
- BPA results

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All Servers 1

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File machine view input devices help

Server Manager

Server Manager ▸ Dashboard

Manage Tools View Help

Dashboard

- Local Server
- All Servers
- AD DS
- DNS
- File and Storage Services

Active Directory Users and Computers

File Action View Help

Active Directory Users and Computers

Saved Queries

lab.local

Name	Type	Description
lab.local	Domain	Folder to store your favo...

Hide

Services

Performance

BPA results

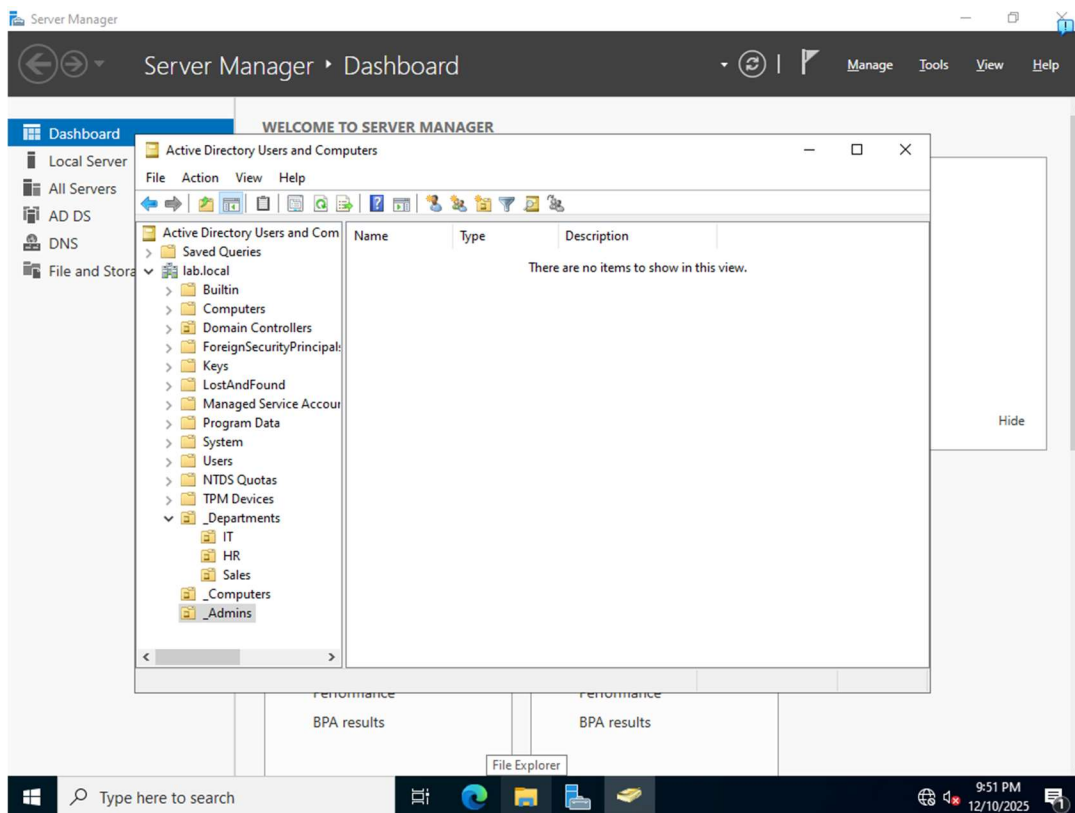
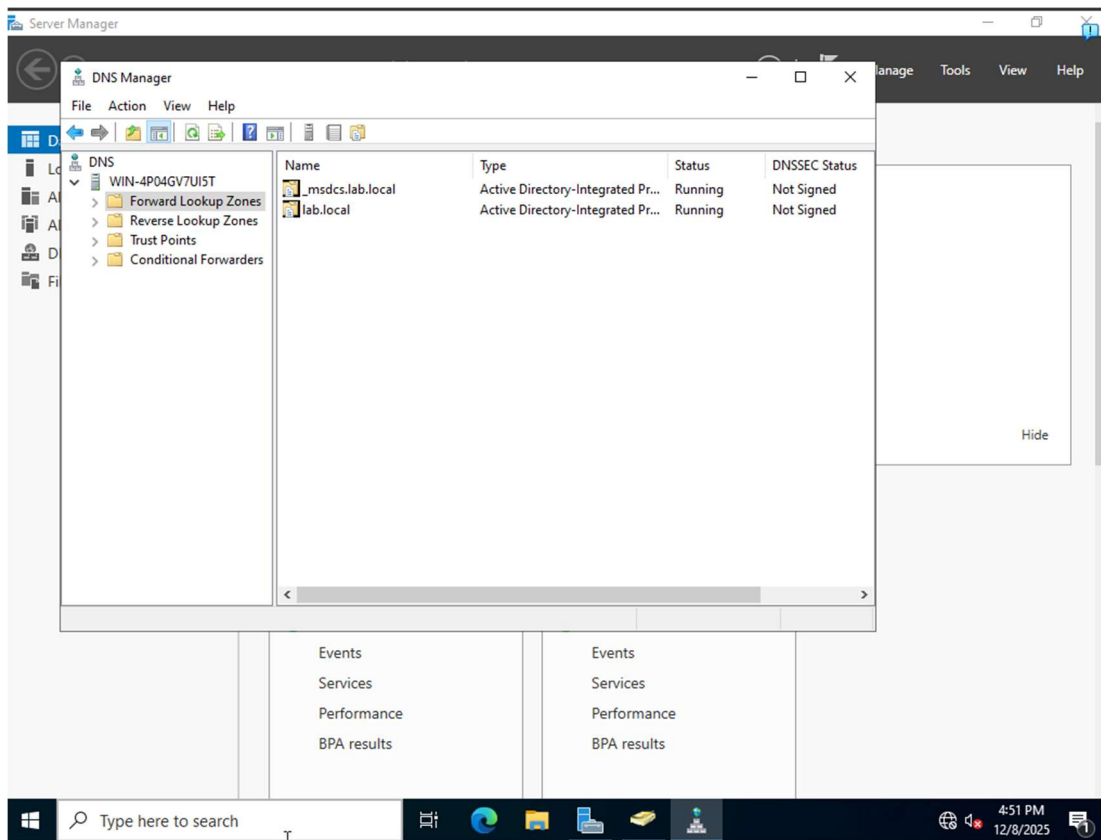
Services

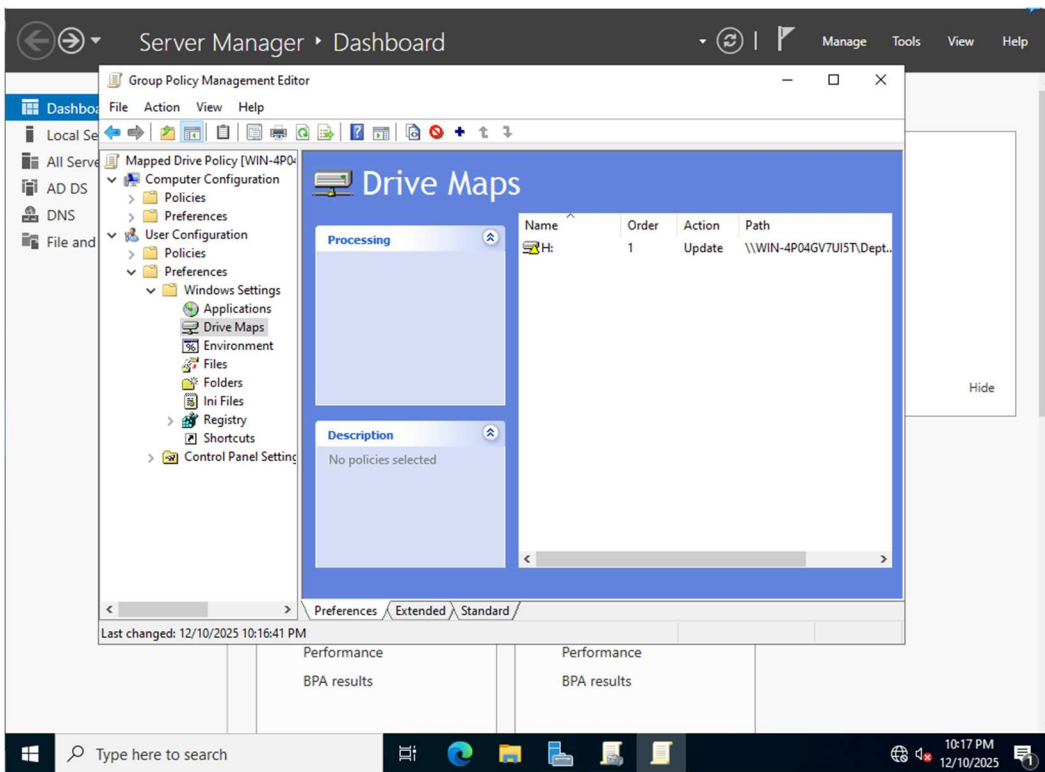
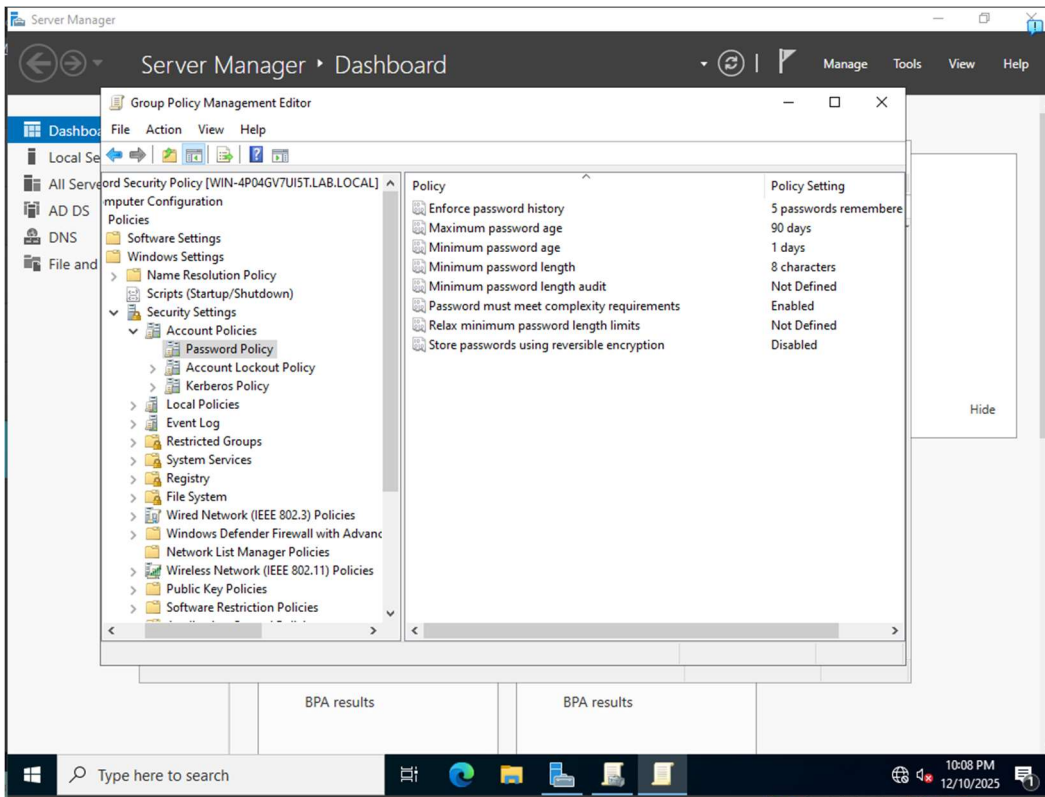
Performance

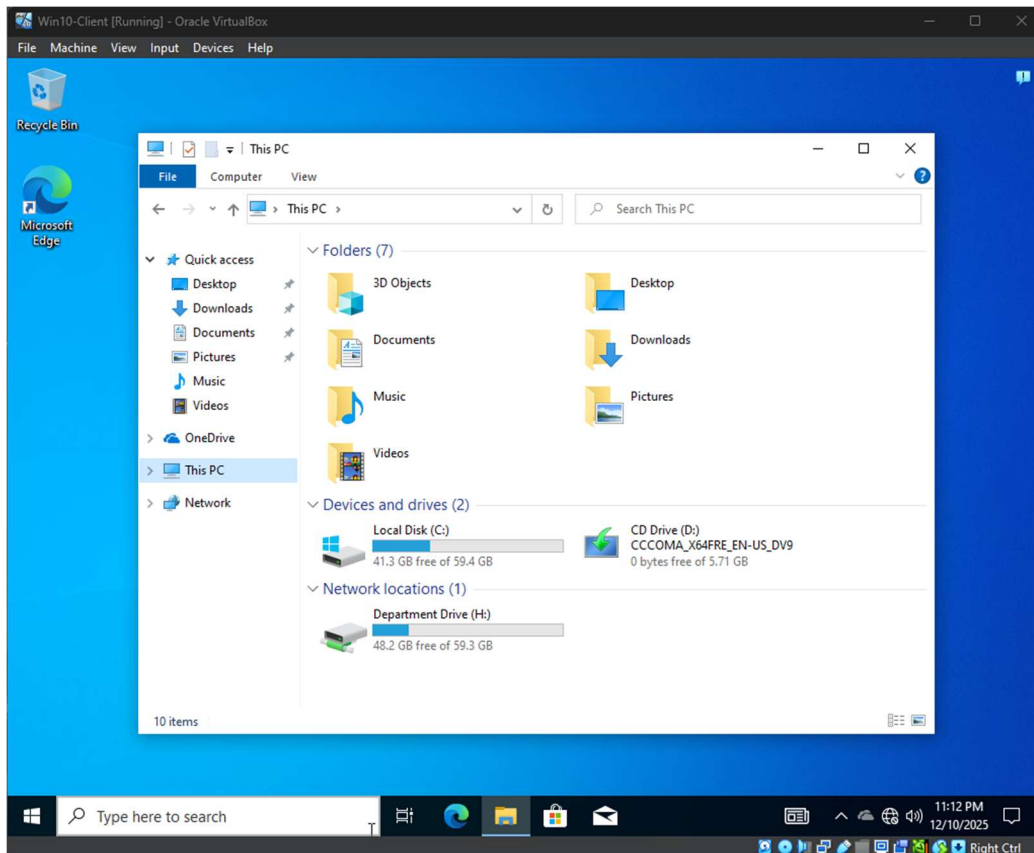
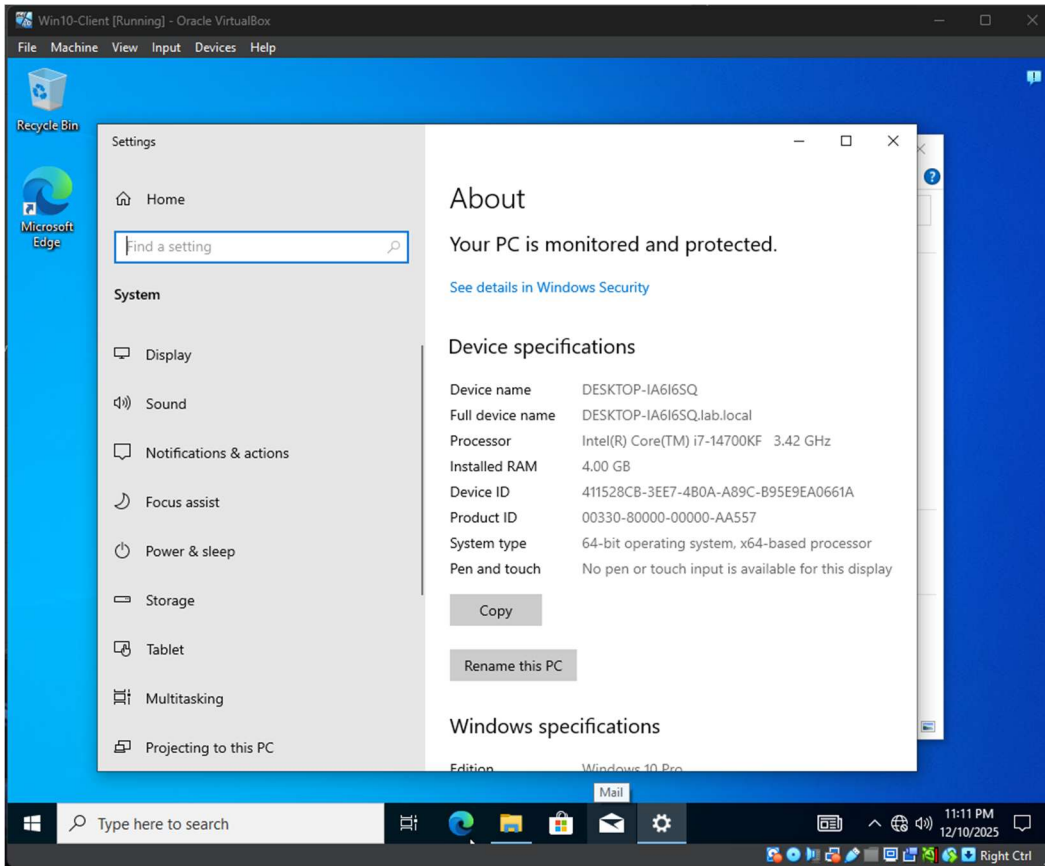
BPA results

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10. What I Learned

- Fundamentals of enterprise identity management
- DNS dependency in AD environments
- Troubleshooting domain joins and DNS issues
- Creating and applying Group Policy Objects
- Organizational Unit Planning
- Network Segmentation using virtual networks