

Home Lab Summary – Windows Domain Environment

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Lab Name: Homelab Domain Network

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Lab Overview

This home lab demonstrates the setup of a Windows domain environment using Oracle VirtualBox. The lab simulates a small IT network with a Domain Controller and a domain-joined client, showcasing practical skills in Active Directory, DNS, Windows networking, and virtualization.

Environment:

- Virtualization Platform: Oracle VirtualBox
 - Virtual Machines:
 1. DC01 – Windows Server 2019/2022, Domain Controller + DNS
 2. CLIENT01 – Windows 10 Pro, domain-joined client
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Objectives

- Build and configure a Windows Server Domain Controller
 - Configure DNS to allow domain clients to resolve the domain
 - Create a Windows 10 client and join it to the domain
 - Demonstrate connectivity and domain membership
 - Document steps with screenshots for verification and portfolio purposes
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VM Details

DC01 (Domain Controller)

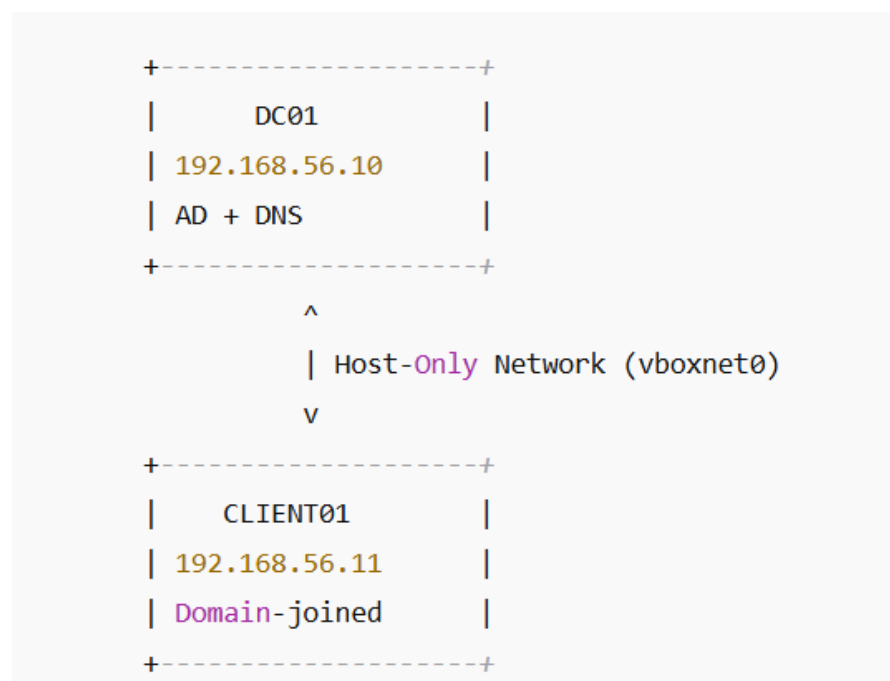
- OS: Windows Server 2019/2022
- Role: Active Directory Domain Services (ADDS)
- Domain: homelab.local
- DNS: Configured on DC01 to serve domain clients

- Key Actions:
 - Promoted to Domain Controller
 - Created domain administrator account
 - Verified services and connectivity

CLIENT01 (Client Machine)

- OS: Windows 10 Pro
- Role: Domain-joined client
- Network: Host-Only network with static IP
- DNS: Points to DC01 for domain resolution
- Key Actions:
 - Configured static IP and DNS
 - Verified connectivity to DC01 (ping, nslookup)
 - Joined domain using Network ID wizard
 - Verified domain membership via System Properties, command line, and ADUC

Network Architecture:



- Both VMs communicate through a Host-Only network to simulate a private LAN.
- Static IPs and DNS ensure proper domain functionality.

Steps Completed

1. Created and configured DC01 VM with static IP and DNS.
2. Installed Active Directory Domain Services and promoted DC01 to Domain Controller.
3. Created domain homelab.local and set Administrator password.
4. Created CLIENT01 VM and configured static IP and DNS pointing to DC01.
5. Verified connectivity using ping and nslookup.
6. Joined CLIENT01 to domain via Network ID wizard using domain admin credentials.
7. Verified domain membership:
 - System Properties → Computer Name
 - Command Prompt: whoami /fqdn, echo %USERDOMAIN%
 - Active Directory Users and Computers → Computers listing

Skills Demonstrated

- Active Directory: Installation, domain creation, management of users/computers
- DNS: Configured DC01 as DNS server and client resolution
- Networking: Host-Only network setup, static IP configuration, connectivity testing
- Domain Join: Using Network ID wizard, troubleshooting login and DNS issues
- Virtualization: Oracle VirtualBox VM creation, network adapters, resource allocation
- Documentation: Screenshots captured for each step, professional lab summary

Screenshots Included

1. DC01 IPv4 + DNS configuration
 2. ADDS / DC promotion confirmation
 3. CLIENT01 IPv4 + DNS configuration
 4. Ping / nslookup tests from CLIENT01
 5. Network ID wizard joining CLIENT01 to domain
 6. CLIENT01 showing domain in System Properties
 7. DC01 Active Directory showing CLIENT01 computer
 8. CLIENT01 desktop after domain login
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Conclusion

This lab demonstrates the ability to build, configure, and verify a Windows domain environment, showing practical IT skills relevant for IT support, system administration, and cybersecurity roles. The included screenshots and documentation provide evidence of technical competence and attention to detail.