Home Cybersecurity Lab – Installation & Configuration

Home Cybersecurity Lab – Detailed Technical Installation Guide

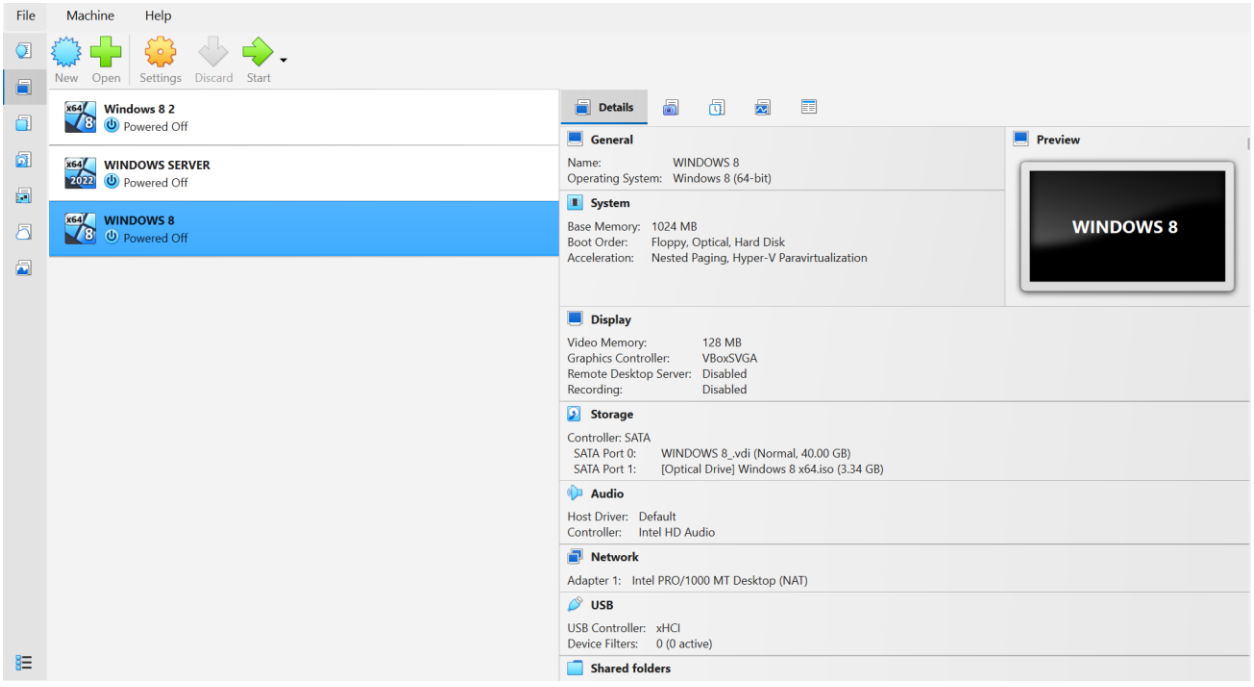
This document provides a comprehensive technical walkthrough for building a cybersecurity home lab using Oracle VirtualBox, Windows Server 2022, and Windows 8 client machines. It includes detailed explanations, best practices, and all installation images.

1. Introduction

A cybersecurity home lab is essential for hands-on practice in system administration, Active Directory, threat detection, vulnerability assessment, and overall technical cybersecurity skills. This environment mimics enterprise setups and allows safe experimentation.

2. System Requirements

- Minimum 8GB RAM (16GB recommended)
- At least 100GB free disk space
- Windows 10/11 or macOS
- Oracle VirtualBox installed
- Windows Server 2022 ISO
- Windows 8 ISO



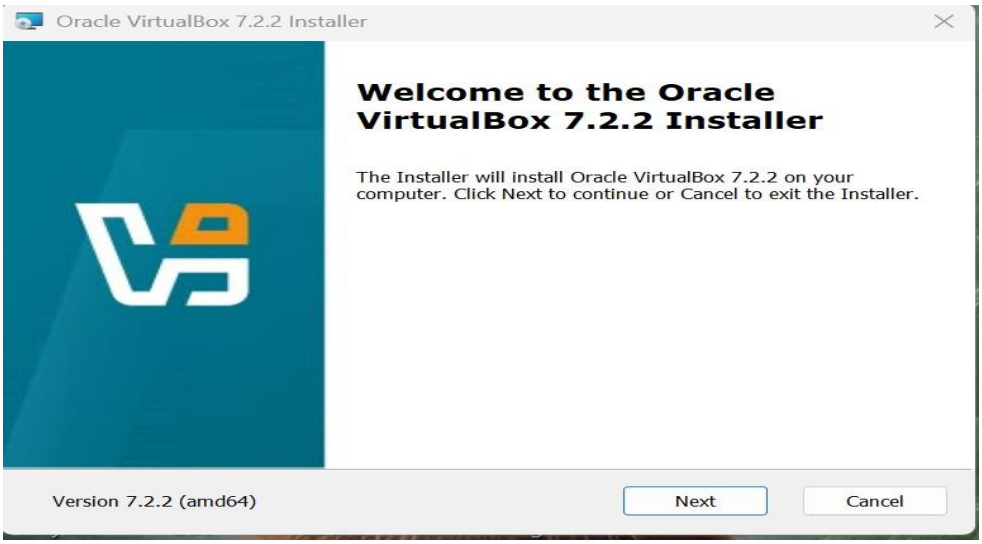
3. Installing Oracle VirtualBox

Oracle VirtualBox is a virtualization platform that allows multiple operating systems to run on a single physical host computer. After downloading the installer from the official VirtualBox website, proceed by clicking Next, accepting the defaults, and completing setup.

4. Creating Virtual Machines

- The lab contains three virtual machines:
  - Windows Server 2022 (to be configured as a Domain Controller)
  - Windows 8 Client
  - Windows 8 Clone (optional workstation for testing)

- Oracle VirtualBox



Each VM is configured with:
- Storage: 40GB or higher
- RAM: 1–4GB depending on system capacity
- NAT networking mode

5. Installing Windows Server 2022

To install Windows Server 2022:
1. Create a new VM and select Windows Server 2022 as the OS.
2. Attach the ISO file.
3. Select Standard Evaluation edition.

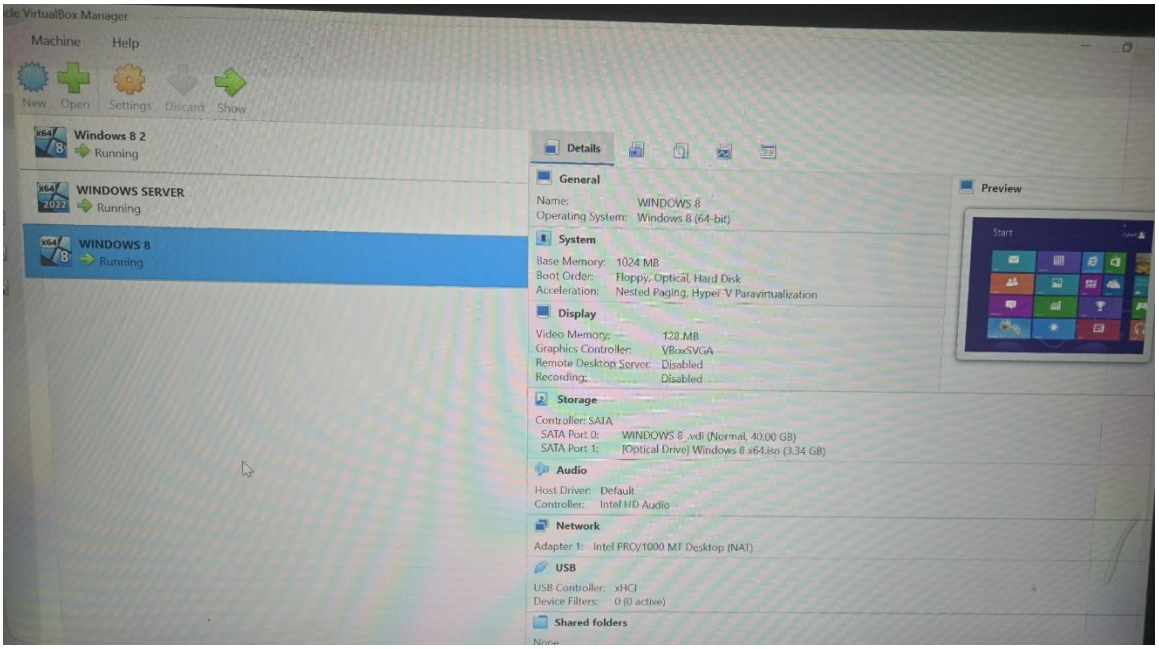
4. Complete installation and set the Administrator password.
This server will later function as the Domain Controller (AD DS).

6. Installing Windows 8 Client Machine

Windows 8 serves as the domain-join workstation. After creating the VM and assigning resources, mount the Windows 8 ISO and follow the installation wizard. Once installed, configure a local user account to prepare for domain joining.

7. Networking Configuration

NAT networking mode is used in VirtualBox to allow outbound internet access from the VMs while keeping them isolated from the host machine. This is ideal for cybersecurity labs because it prevents malicious traffic from escaping into the physical network.



Creating Virtual Machines

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8. Planned Improvements

After initial installation, the lab can be expanded with:
- Active Directory setup
- Group Policy configuration
- Domain joining Windows 8 clients
- Splunk, Wazuh, or Security Onion installation
- Incident response practice
- Vulnerability scanning simulations

9. Contact Information

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