

ENCS5121
Information Security and
Computer Networks Laboratory

EXPERIMENT #1

Introduction and Lab Setup

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SEED LABS Overview



- [SEED](#) (Security Education for a New Generation) is an educational initiative from Syracuse University, created by Professor Wenliang Du.
- **Goal:** SEED Labs provide hands-on experience in computer security, focusing on real-world scenarios.
- **Core Topics:**
 - Cryptography (Secret/Public Key)
 - Software Security (Buffer Overflow, SQL Injection)
 - Network Security (ARP Poisoning, DNS Attacks)
 - Web Security (XSS, CSRF)
- **Learning Approach:** Labs involve simulating attacks and defenses in virtual environments.
- **Why SEED?:** It bridges theory and practice, preparing students for real-world cybersecurity challenges.

VirtualBox Overview



- **What is VirtualBox?** VirtualBox is an open-source virtualization software that allows you to run multiple operating systems simultaneously on one machine.
- **Purpose:** It enables students to create isolated environments for experimenting with different operating systems, without risking damage to the host system.
- **Key Features:**
 - Supports multiple platforms (Windows, Linux, macOS)
 - Easy to set up virtual machines (VMs)
 - Allows snapshots for saving and restoring machine states
 - Network simulation for security labs

Preparation

- Install the free **VirtualBox** software first. The VM has been tested on Version 6.1.16.
- Download the zip file **SEED-Ubuntu20.04.zip** from the [SEED website](#), unzip it, and you will get a **.vdi file**.
 - This file contains the pre-built SEED Ubuntu 20.04 image.

Account Information of this VM

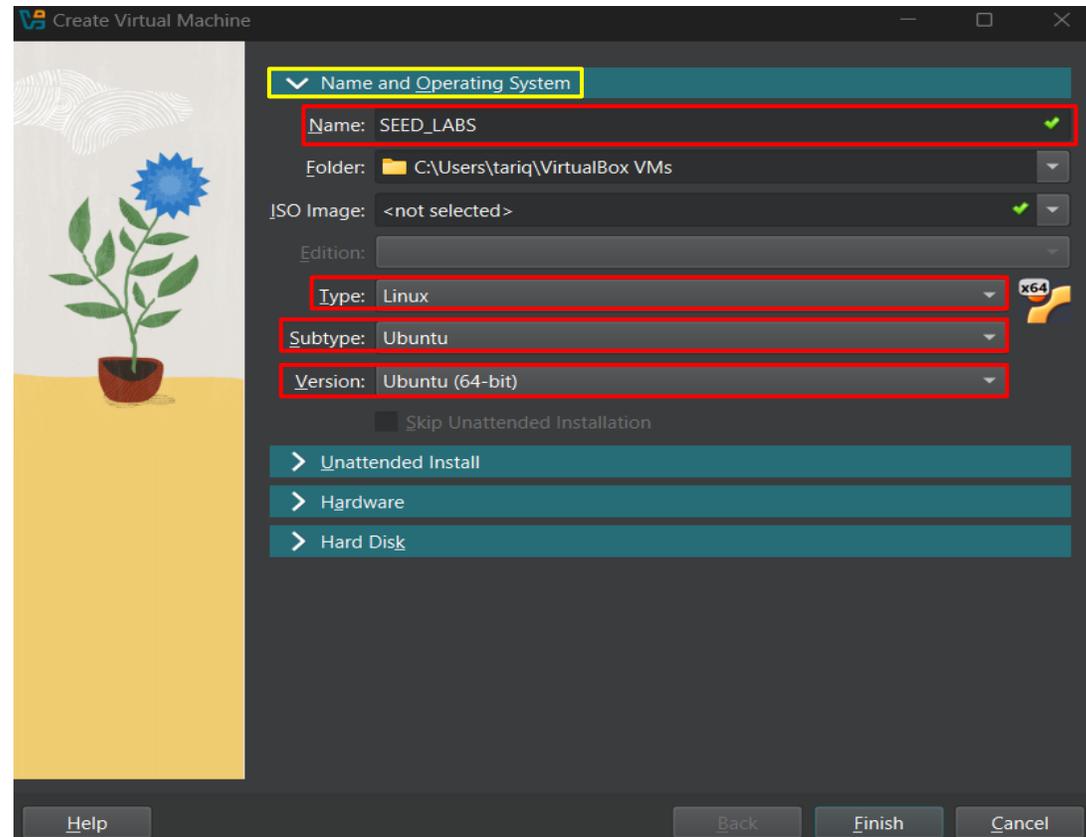
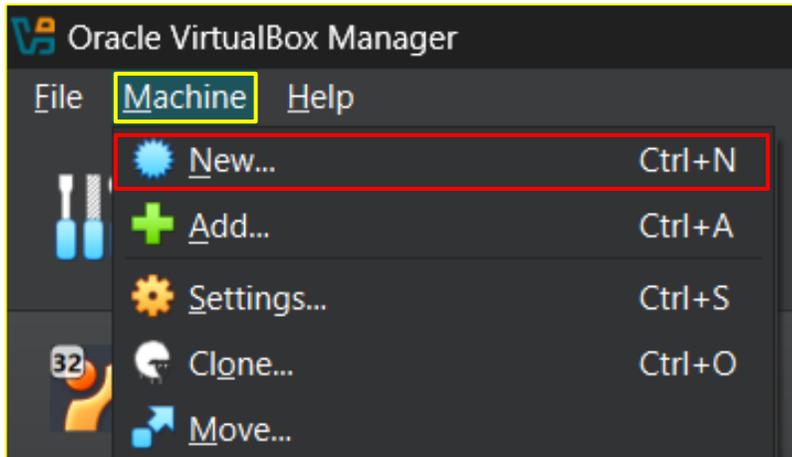
- **Username:** seed
- **Password:** dees



Install SEED VM on VirtualBox

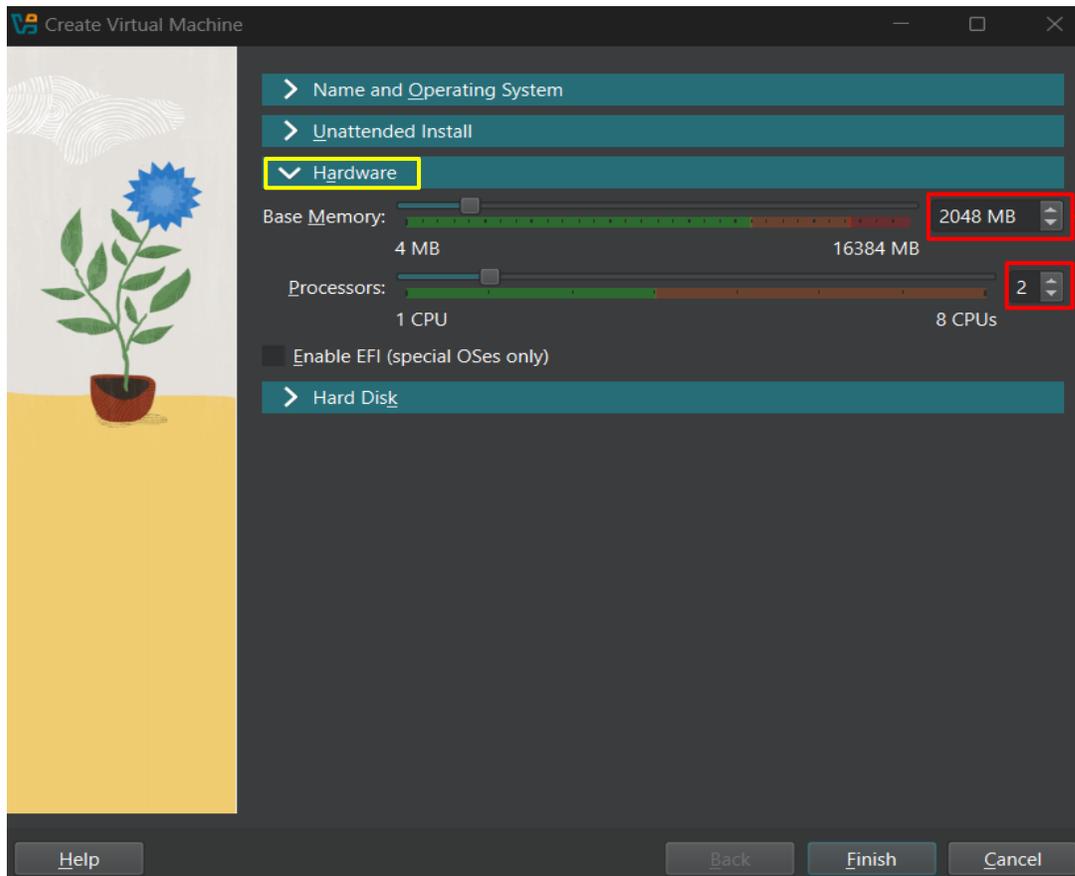
2. Provide a Name and Select the OS Type and Version

1. Create a New VM in VirtualBox



Install SEED VM on VirtualBox (Cont.)

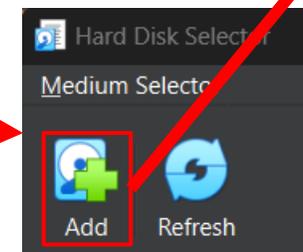
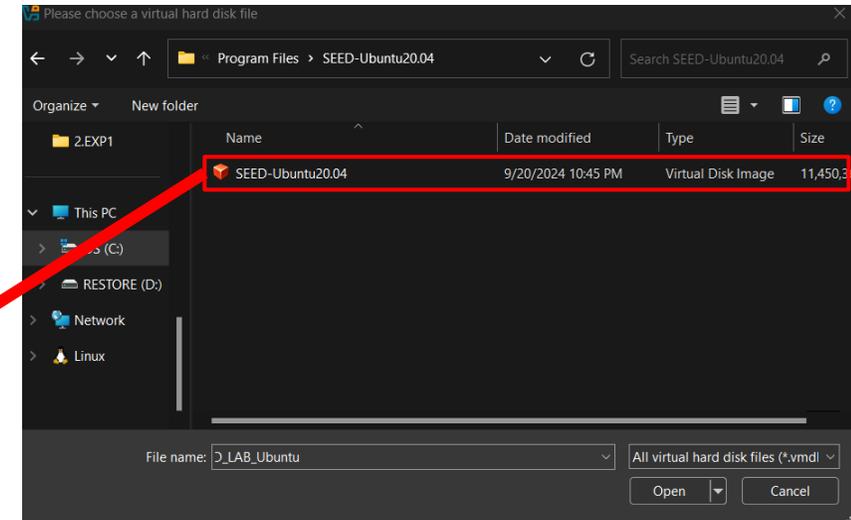
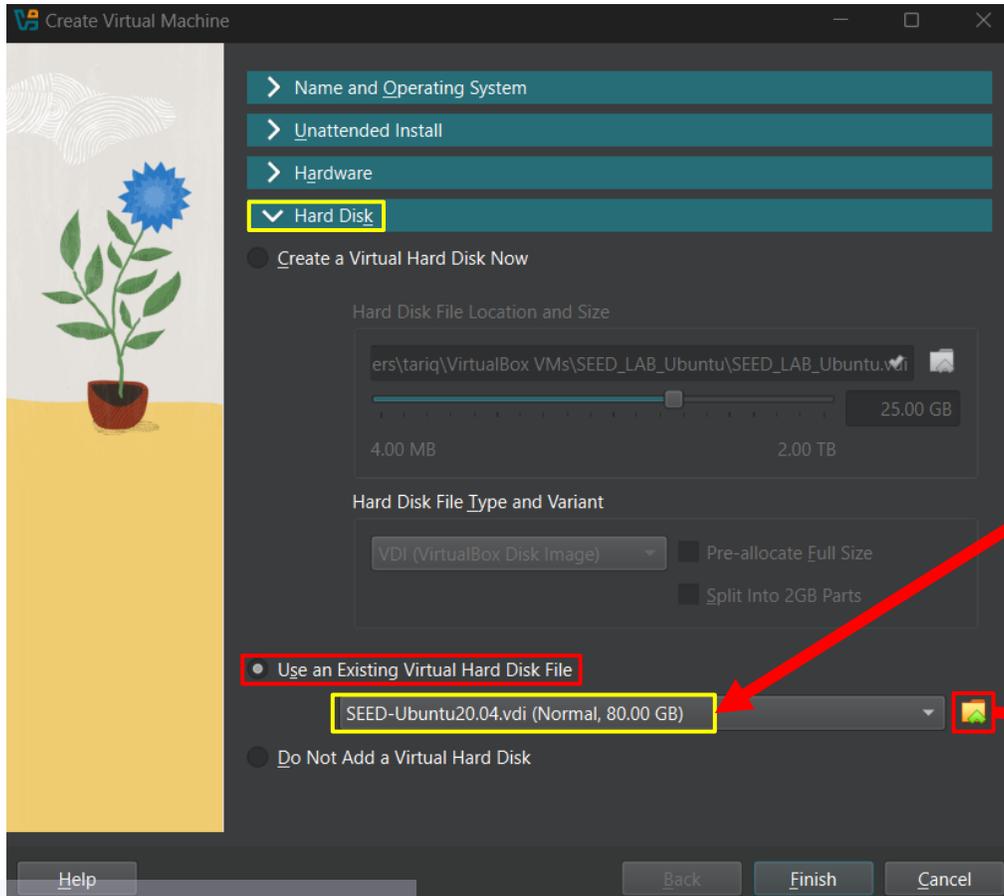
3. Set the Memory Size and Processors



1024 MB should be sufficient, but we recommend 2GB

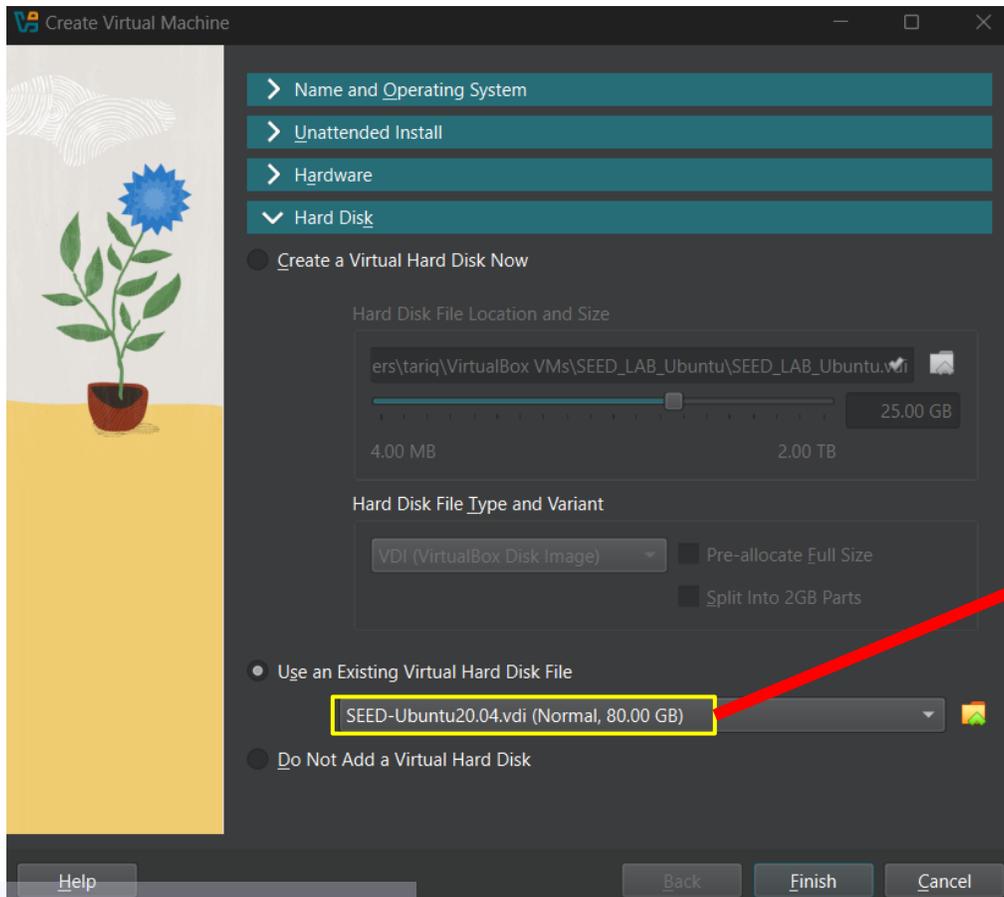
Install SEED VM on VirtualBox (Cont.)

4. Select the Pre-built VM File Provided by Us



Install SEED VM on VirtualBox (Cont.)

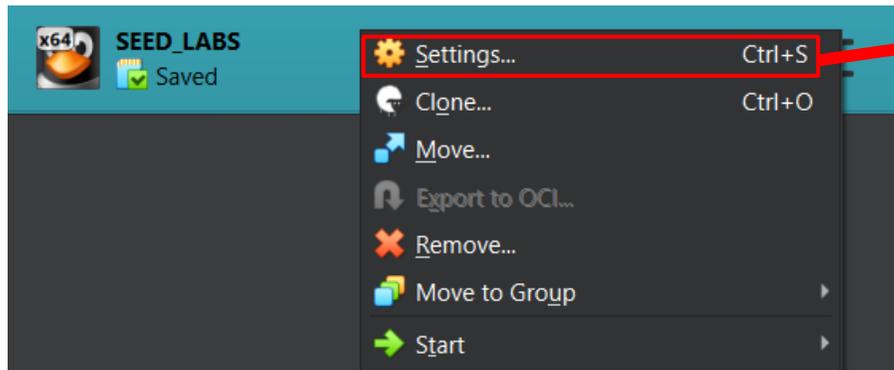
4. Select the Pre-built VM File Provided by Us



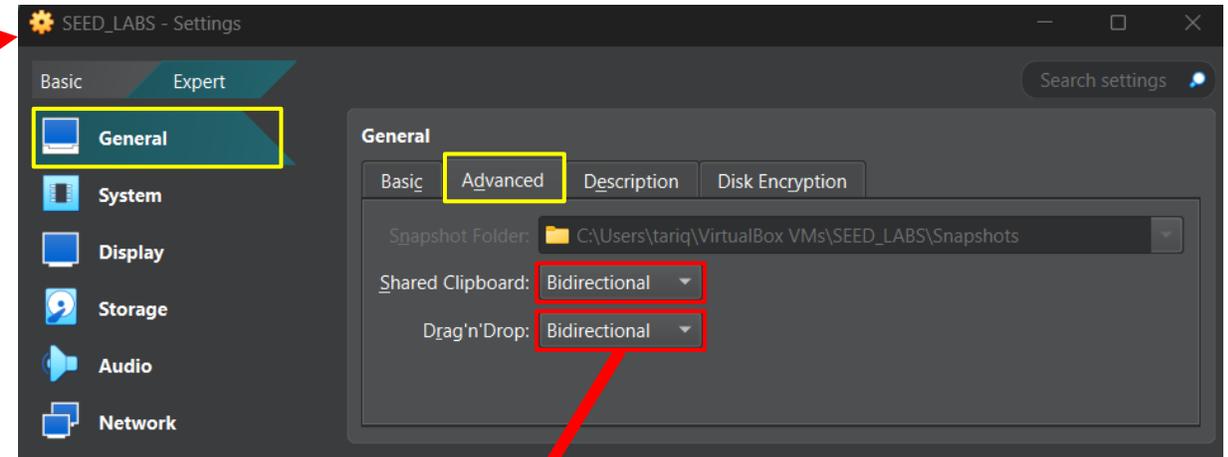
Note: If you get an error message saying that the UUID already exists, this is because the UUID in the selected vdi file is the same as the one used by an existing VM. You can either remove the other VM or change the UUID in the vdi file.

Install SEED VM on VirtualBox (Cont.)

5. Configure the VM



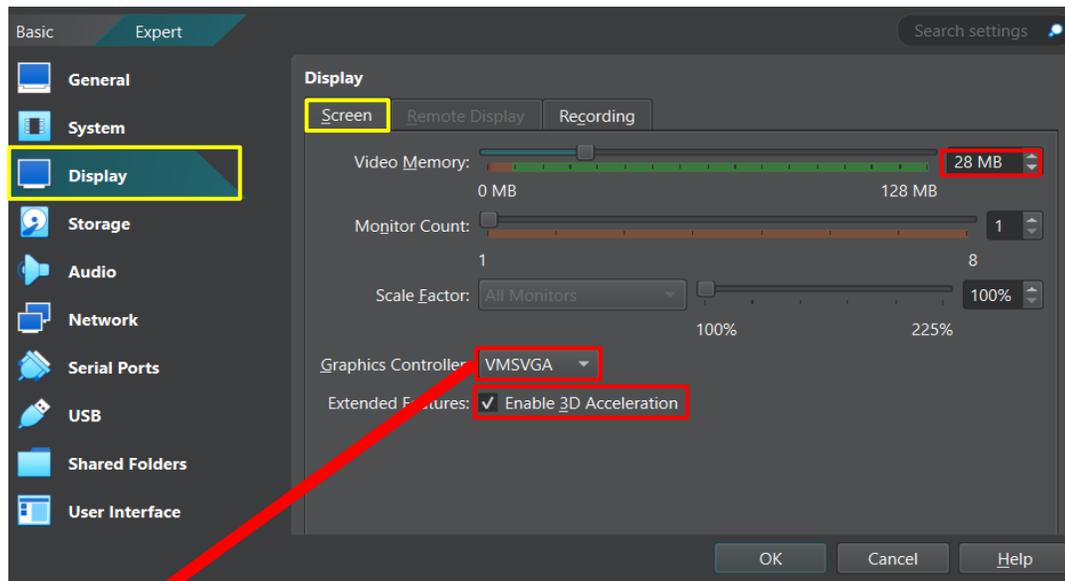
5.1. Enable Copy and Paste



- The first item allows users to copy and paste between the VM and the host computer
- The second item allows users to transfer files between the VM and the host computer using Drag and Drop

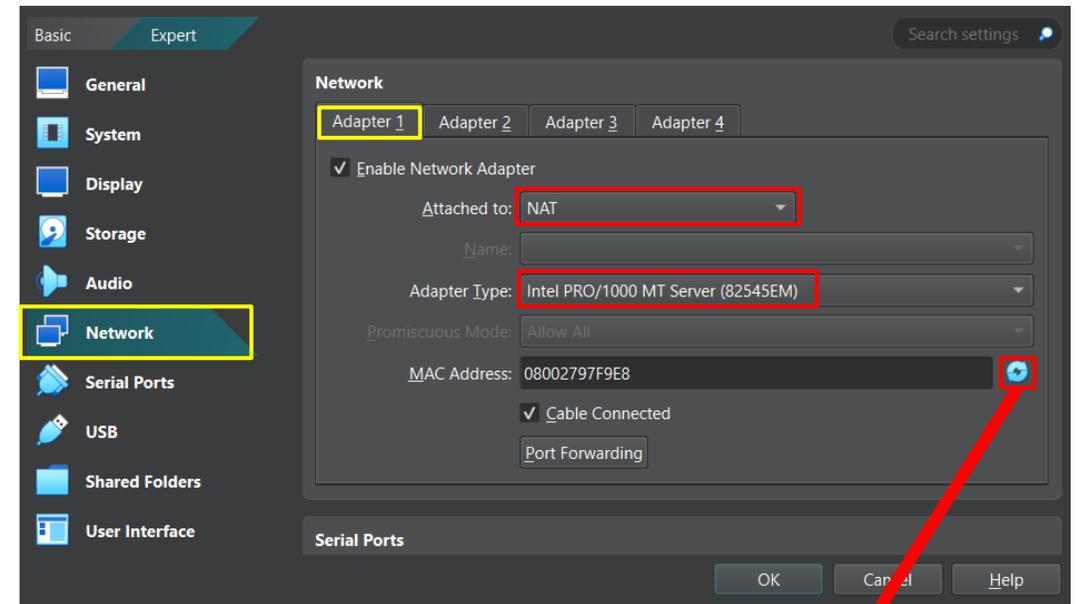
Install SEED VM on VirtualBox (Cont.)

5.2. Display



- Make sure to select VMSVGA, as choosing other graphic controllers may lead to the crash of the VM.

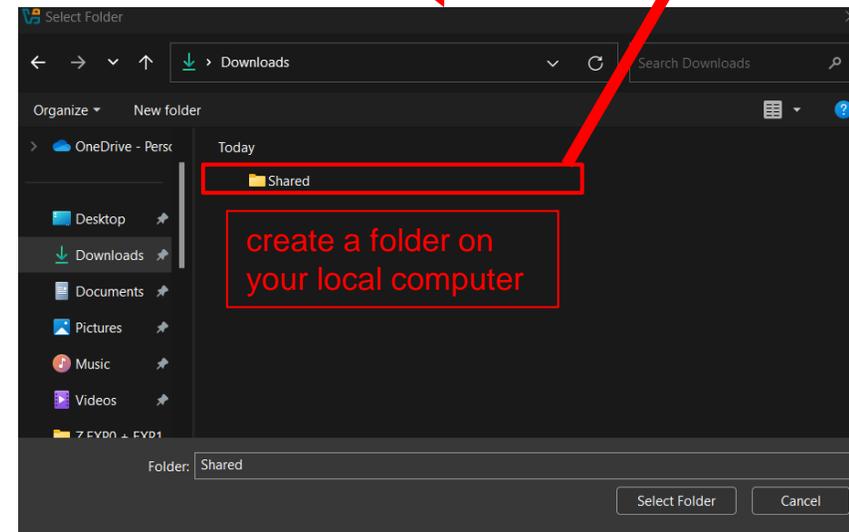
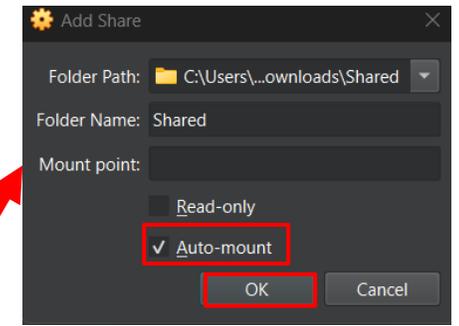
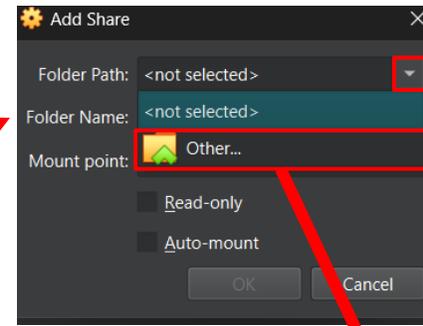
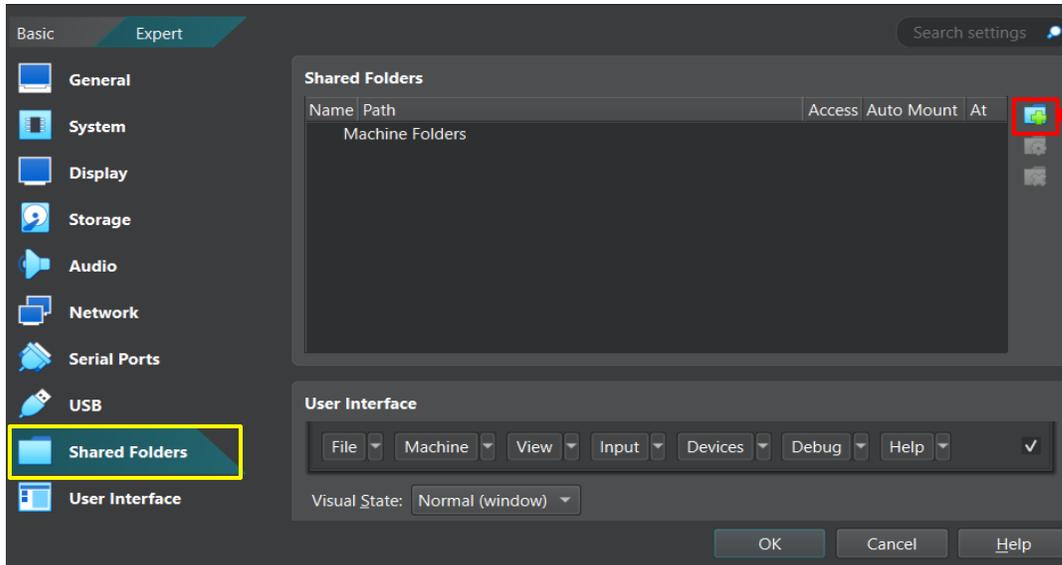
5.3. Network



- Click here to generate a new MAC address; do this to avoid potential conflict

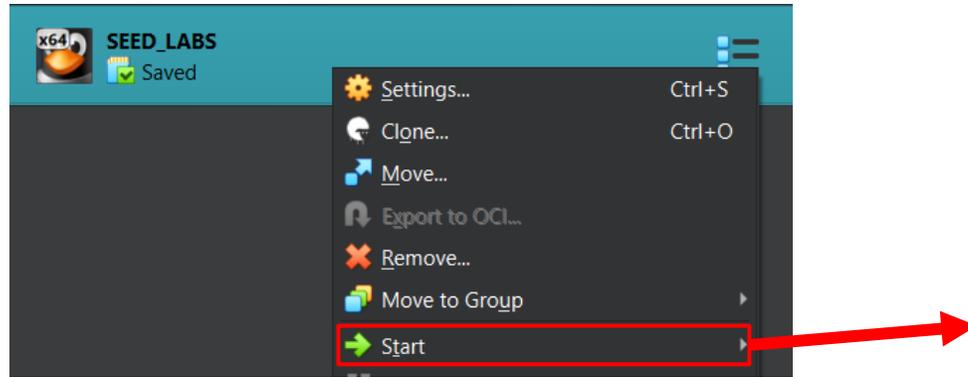
Install SEED VM on VirtualBox (Cont.)

5.4. Creating a Shared Folder - Step A



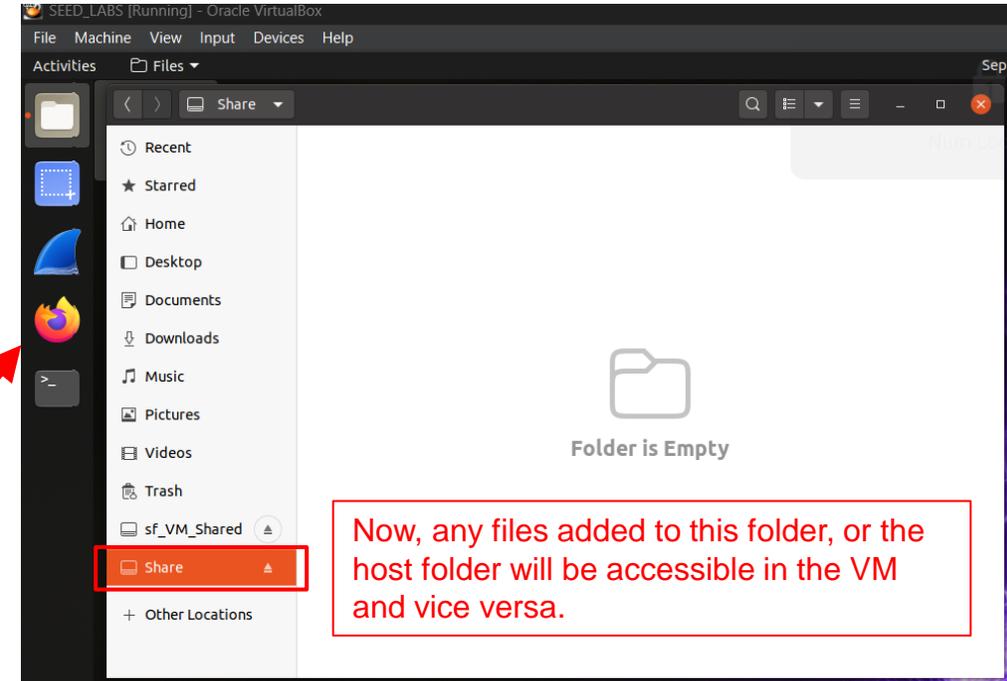
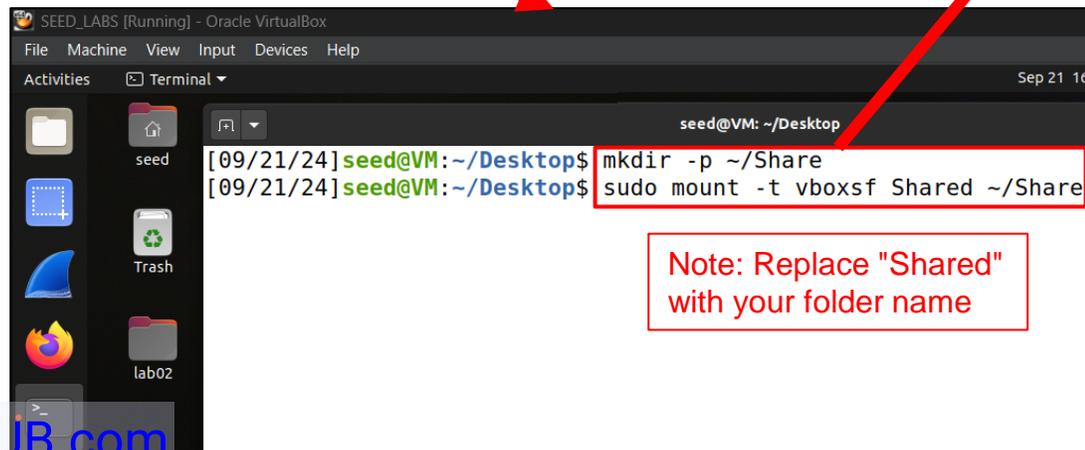
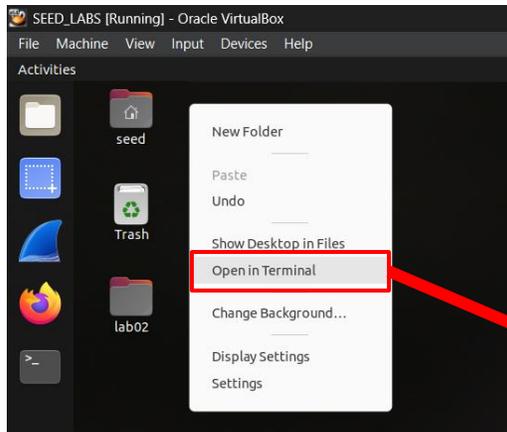
Install SEED VM on VirtualBox (Cont.)

5.5. Creating a Shared Folder - Step B



Install SEED VM on VirtualBox (Cont.)

5.5. Creating a Shared Folder - Step B (Cont.)



Installation Video

https://www.youtube.com/watch?v=LF9DFgKWiBk&t=253s&ab_channel=TariqOdeh