ENCS5121 Information Security and Computer Networks Laboratory

EXPERIMENT #1 Introduction and Lab Setup

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Outline

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 - VirtualBox Overview
- Preparation
- Account Information of this VM
- Install SEED VM on VirtualBox
 - 1. Create a New VM in VirtualBox
 - 2. Provide a Name and Select the OS Type and Version
 - 3. Set the Memory Size and Processors
 - 4. Select the Pre-built VM File Provided by Us
 - 5. Configure the VM





SEED LABS Overview



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- <u>SEED</u> (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 <u>SEED website</u>, 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



1. Create a New VM in VirtualBox





3. Set the Memory Size and Processors



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





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.





5. Configure the VM



5.1. Enable Copy and Paste



5.2. Display

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Basic	Expert		Search settings 👂
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۵	USB	Extended F _ Aures: ✓ Enable <u>3</u> D Acceleration	
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5.3. Network

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2	Network			~					
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٦	USB		/ Cable Connected						
	Shared Folders		Port Forwarding						
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	this to avoid potential conflict								
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Install SEED VM on VirtualBox (Cont.)

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	System	Name Path Machine Folders	Access Auto Mount At		<u>R</u> ead-only	7	<u>R</u> ead-only
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$\overline{\mathfrak{D}}$	Storage				OK		OK Cancel
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۲	Serial Ports			Ve Select Folder			×
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5.5. Creating a Shared Folder - Step B





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





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Installation Video

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

