Configuration Manual

MSc Research Project
MSc Cybersecurity

Vaibhav Ramdas Vhatkar
21194149

School of Computing
National College of Ireland

Supervisor: Prof. Vikas Sahni

National College of Ireland

MSc Project Submission Sheet

School of Computing

Student Name:	Vaibhav Ramdas Vhatkar
Student ID:	21194149
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Configuration Manual

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1   Introduction

This configuration manual provides a comprehensive overview of the hardware and software tools used to implement and execute the project.

In addition to the hardware and software requirements, the manual also includes the following information:

- A step-by-step guide to setting up the software tools.
- Instructions on how to execute the code.
- Commands that can be used to run the project.
- A description of the final output that is produced by the project.

2   System Configuration

Base Machine:
Microsoft Windows 10 Home Single language
x64-based PC
Intel(R)Core (TM)i5-10300H CPU @ 2.50GHz (8 CPUs)
16GB RAM
80GB free space

Virtual Machine:
Kali Linux
Debian(64-bit)
4 core processor
4GB RAM
20GB free space

3   Environmental Setup

Installation of Virtual Box:
("How to Install VirtualBox (with Pictures) - wikiHow," n.d.)

- Go to the VirtualBox website: https://www.virtualbox.org/wiki/Downloads and download the latest version of VirtualBox for Windows.
- Once the download is complete, run the installer.
- Follow the on-screen instructions to install VirtualBox.
- Once VirtualBox is installed, you can open it by clicking on the VirtualBox icon in your Start menu.

Installation of Kali Linux in Virtual Box:

("How to Install Kali Linux on VirtualBox {Step by Step Screenshot Tutorial}," n.d.)
- Download the Kali Linux ISO image from the Kali Linux website: https://www.kali.org/downloads/.
- In VirtualBox, click on the New button. In the Name field, enter a name for your virtual machine. In the Operating System drop-down list, select Linux. In the Version drop-down list, select Kali Linux (64-bit). In the Memory field, enter the amount of memory that you want to allocate to the virtual machine. For example, if you have 8GB of RAM, you could enter 4096 MB. Click on the Create button.
- In the Settings dialog box, click on the Storage tab. In the Controller: drop-down list, select SATA Controller. Click on the Add button and select ISO image. Click on the Choose file button and select the Kali Linux ISO image. Click on the Open button.
- Start the virtual machine by clicking on the Start button to start the virtual machine. The Kali Linux installation process will start.
- Follow the on-screen instructions to install Kali Linux. The installation process will take a few minutes.
- Once the installation is complete, the virtual machine will boot into Kali Linux. You can start using Kali Linux as if it were a physical computer.

Installation of Apache Server:
(Kali Http Server Setup - Linux Tutorials - Learn Linux Configuration, n.d.)
- Open a terminal and use the package manager specific to your Linux distribution to install Apache: *sudo apt-get install apache2*
- Start Apache: After installation, start the Apache service: *sudo systemctl start apache2*
- Enable on Boot: To ensure Apache starts automatically on boot, enable the service: *sudo systemctl enable apache2*
- Configure Firewall: If you have a firewall enabled (e.g., iptables, ufw, firewalld), allow incoming traffic on port 80 (HTTP) and 443 (HTTPS) to allow web traffic: *sudo ufw allow 80 && sudo ufw allow 443*
- Verify Installation: Open a web browser and visit http://localhost or http://your_server_ip to see the default Apache page.
- Configuration Files: Apache's main configuration file is usually located at */etc/apache2/apache2.conf*.
- Restart Apache: After making changes to the configuration files, restart Apache for the changes to take effect: *sudo systemctl restart apache2*

How to use the tool:
- Launch Kali Linux.
- Paste the "app2" folder and "test" folder in the directory "var/www/html".
- Open Terminal.
- Switch to the root user with the command "*sudo su -*".
- Start the Apache server with the command "*service apache2 start*".
- Go to the browser and type the URL command "*localhost/test*".
- Now you can use the application to detect SQL injection and XSS attacks without the WAF.
- Go to the browser and type the URL command "*localhost/app2*".
- Now you can use the application to detect SQL injection and XSS attacks with the WAF to block the attack and blacklist the attacker's IP.

References

How to Install Kali Linux on VirtualBox {Step by Step Screenshot Tutorial} [WWW Document], n.d. URL https://phoenixnap.com/kb/how-to-install-kali-linux-on-virtualbox (accessed 8.4.23).

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