# NShield User Guide

AI-Driven Automated Security Scanning Tool

## Overview

NShield is an automated vulnerability scanning tool that streamlines network and web application security assessments. Designed with usability in mind, it offers a clean, professional web interface and utilizes tools like Nmap, Nikto, and Ollama to detect vulnerabilities and provide in-depth analysis and remediation recommendations.

The tool is designed for cybersecurity students, penetration testers, and security professionals seeking a simplified yet powerful interface to automate vulnerability detection and generate actionable reports.

## Homepage Overview

Once loaded, you will see the Homepage consisting of four main functional blocks:

1. *Installation*
2. *Network Security Scan*
3. *Web Application Security Scan*
4. *Results & Analysis*

Each block takes you to a different page with its own functionality.

## Installation Page

- Install necessary packages and models required for AI analysis (Ollama and LLaMA3)

**Installation**

Start Installation

Click the button to start installation
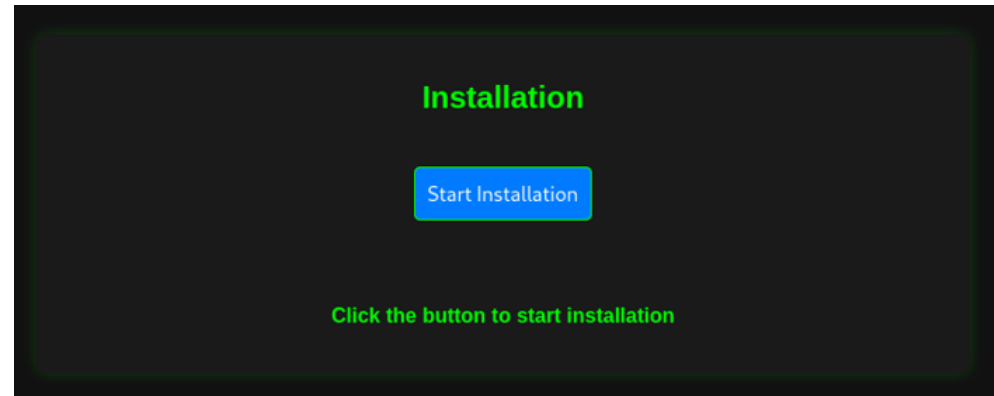
- Displays progress in 25% steps as each command completes:
  1. *Create Python virtual environment.*
  2. *Activate environment.*
  3. *Install Ollama.*
  4. *Pull LLaMA3 model.*

**Installation**

Start Installation

Installing... Please wait.
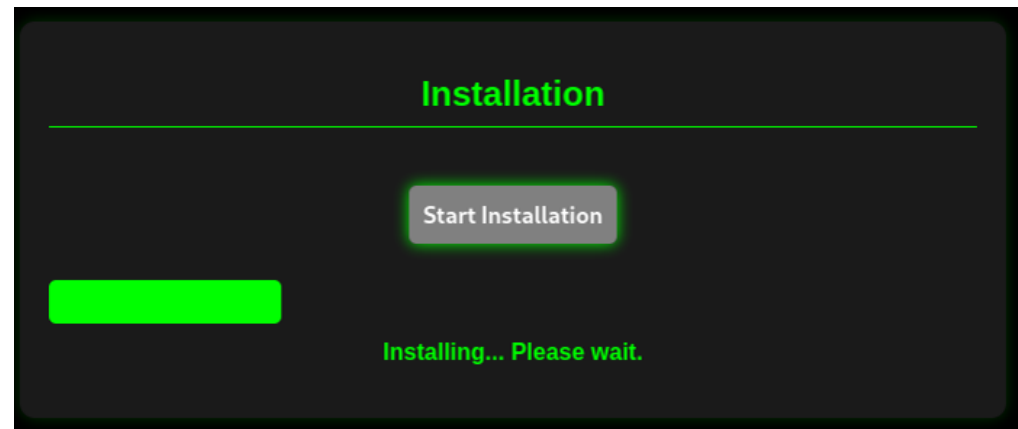
- Upon success, a "Installation Completed" button appears to return to the homepage.

## Installation

Start Installation

Installation Completed!

Installation Completed - Return Home
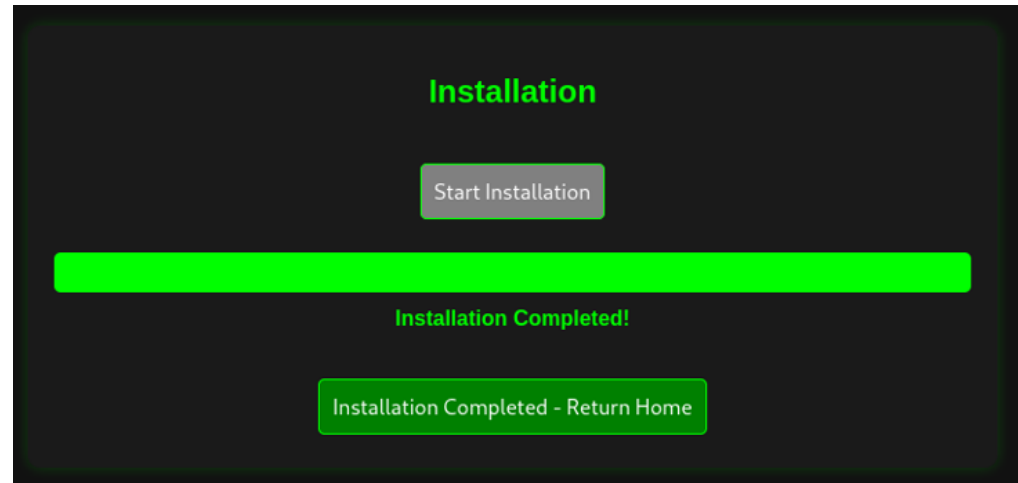
# Network Security Scan Page

- Perform vulnerability scans on network services using Nmap scripts.
- Displays a list of scan categories with descriptions and checkboxes.
- Upon pressing "Start Scanning", the selected Nmap scripts are executed sequentially.
- Generates output analyzed by Ollama saves :
  - Raw output to net_output.txt.
  - AI Analyzed HTML report to net_analysis.html.

## Network Security Scan

Enter Target IP/Domain:

plantedmeals.ca

### Select Scan Options:

☑ Full Port Scan

☑ SMB & RDP Vulnerability Scan

☑ Web & FTP Vulnerability Scan

☑ SMTP & DNS Security Scan

☑ Comprehensive Vulnerability Scan

**Start Scanning**

- Once all scans are completed, a "Done Network Security Scanning" button returns to the homepage.

# Network Security Scan

Enter Target IP/Domain:

**Select Scan Options:**

☐ Full Port Scan

☐ SMB & RDP Vulnerability Scan

☐ Web & FTP Vulnerability Scan

☐ SMTP & DNS Security Scan

☐ Comprehensive Vulnerability Scan

**Start Scanning**

✅ Network Security Scanning Complete!

**Done Network Security Scanning**

# Web Application Security Scan Page

- Run Nikto scans for detecting vulnerabilities in web applications.
- Displays a list of scan categories with descriptions and checkboxes.
- Upon pressing "Start Scanning", the selected Nikto scripts are executed sequentially.
- Generates output analyzed by Ollama saves :
  - Raw output to web_output.txt.
  - AI Analyzed HTML report to web_analysis.html.

## Web Application Security Scan

Enter Target URL:

### Select Scan Options:

☐

Basic Scan

☐

SSL Scan

☐

Verbose Scan

☐

XSS & SQL Injection Scan

☐

File Inclusion & RCE Scan

☐

Server Vulnerability Scan

**Start Scanning**

- Once all scans are completed, a "Done Network Security Scanning" button returns to the homepage.

**Web Application Security Scan**

Enter Target URL:

Select Scan Options:

☐

Basic Scan

☐

SSL Scan

☐

Verbose Scan

☐

XSS & SQL Injection Scan

☐

File Inclusion & RCE Scan
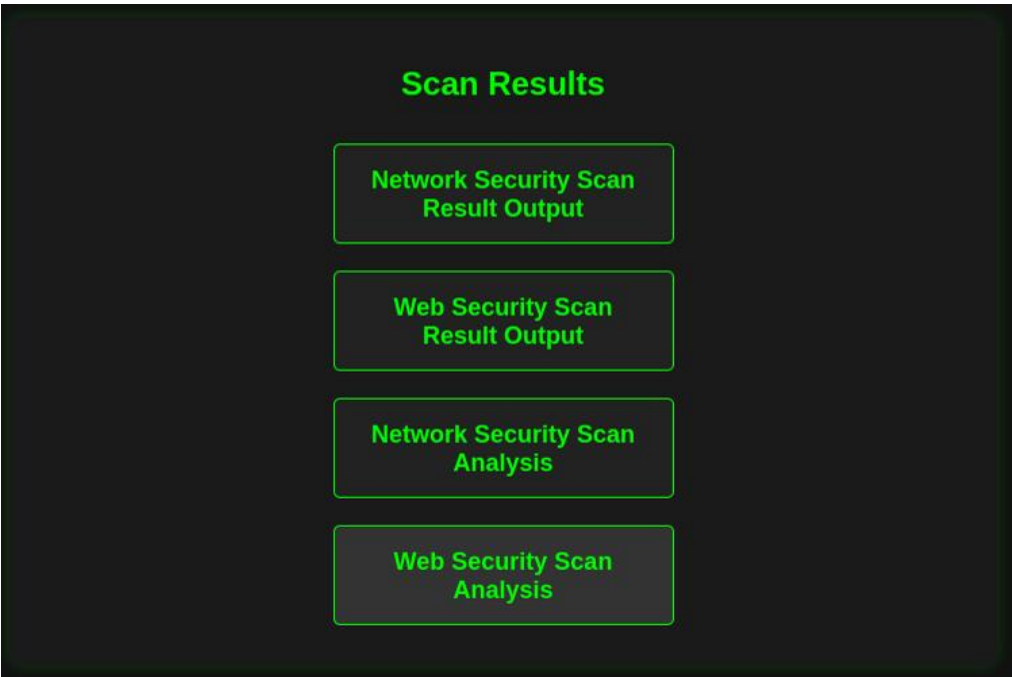
☐

Server Vulnerability Scan

**Start Scanning**

✅ Web Application Scanning Complete!

**Done Web Security Scanning**

# Results & Analysis Page

- View the results of scans and AI analysis
- Offers links to view or download the following:
  - net_output.txt
  - net_analysis.html
  - web_output.txt
  - web_analysis.html

**Scan Results**

Network Security Scan
Result Output

Web Security Scan
Result Output

Network Security Scan
Analysis

Web Security Scan
Analysis

## Button Functionality Overview

| Button | Function |
|---|---|
| Start Scanning | Begins the selected scan scripts and shows progress. |
| Done Network Scanning | Returns to homepage after network scan completes. |
| Done Web Scanning | Returns to homepage after web scan completes. |
| Installation Completed | Returns to homepage after installation finishes. |