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**Course: Cybersecurity**

**Trainer: Bharath Kumar**

**Date: 23/08/2023**

## Assignment Details

Assigned Date: 22/08/2023

Due Date: 23/08/2023

Topic: Vulnerability Scanning

## Introduction

Vulnerability scanning is a proactive security practice that involves using specialized tools to identify weaknesses and security gaps within computer systems, networks, and applications. It scans for known vulnerabilities, misconfigurations, and outdated software versions that could potentially be exploited by malicious actors. The goal of vulnerability scanning is to provide organizations with insights into their security posture, enabling them to prioritize and remediate vulnerabilities before they are exploited, thereby reducing the risk of cyberattacks and data breaches. Regular vulnerability scanning is an essential component of maintaining a strong cybersecurity strategy.

## Content

### METASPLOITABLE2

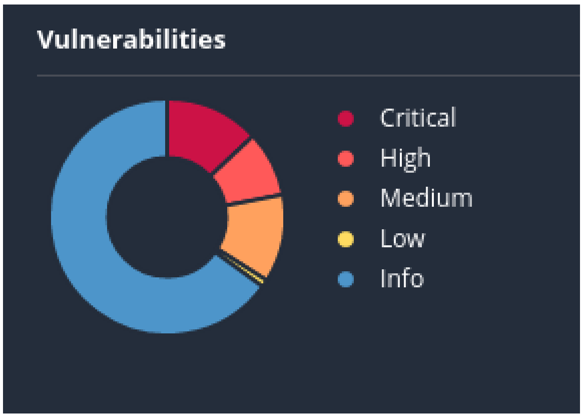
#### Scan Details

Policy: Basic Network Scan
Status: completed
Severity Base: CVSS v3.0
Scanner: Local Scanner
Start: Today at 08:48 PM
End: Today at 09:08 PM
Elapsed: 20 minutes

#### Host Details

IP: 10.0.2.5
MAC: 08:00:27:8D:55:32
OS: Linux Kernel 2.6 on Ubuntu 8.04 (hardy)
Start: Today at 8:48 PM
End: Today at 9:08 PM
Elapsed: 20 minutes

## Vulnerabilities



Critical: 13 (7%)

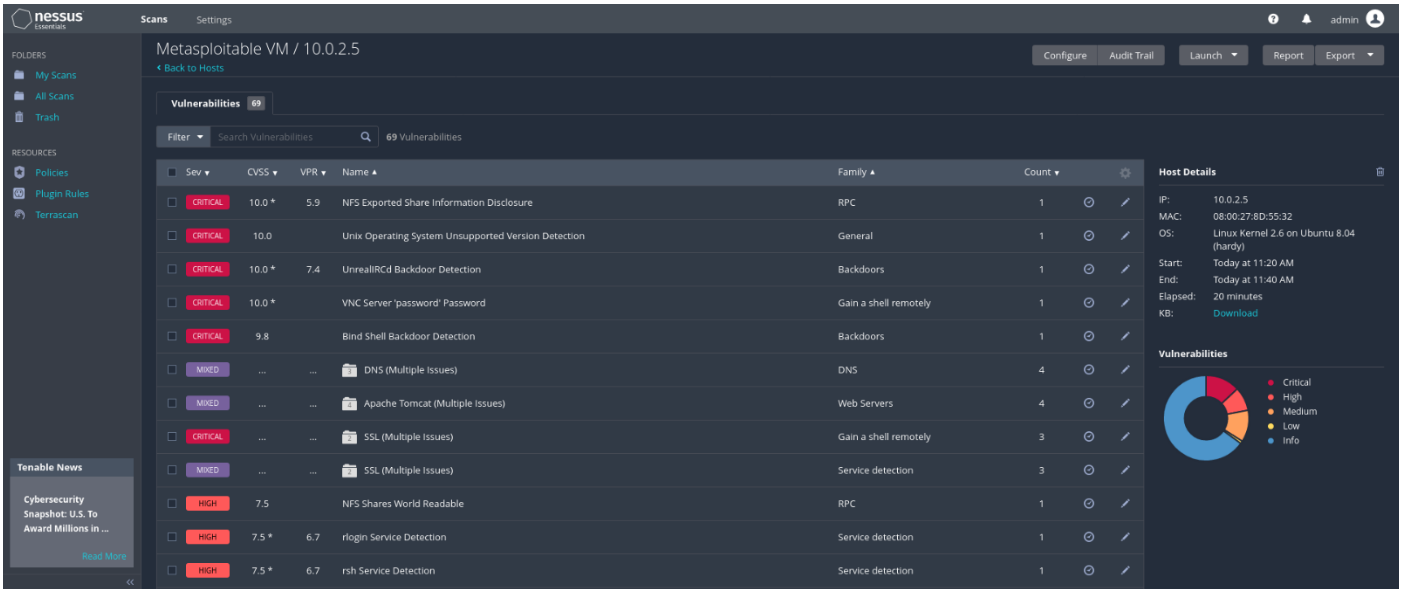
High: 7 (3%)

Medium: 25 (14%)

Low: 7 (3%)

Info: 134 (73%)

Metasploitable is a purposely vulnerable virtual machine (VM) that's used for training, practicing, and demonstrating various cybersecurity techniques and tools, particularly penetration testing and ethical hacking. It's designed to simulate a range of security vulnerabilities and weaknesses commonly found in real-world systems, making it an ideal environment for security professionals, students, and researchers to learn about and practice exploiting vulnerabilities in a controlled and safe setting.



Metasploitable VM / 10.0.2.5

Vulnerabilities 69

69 Vulnerabilities

| Sev | CVSS | VPR | Name | Family | Count |
|---|---|---|---|---|---|
| CRITICAL | 10.0 * | 5.9 | NFS Exported Share Information Disclosure | RPC | 1 |
| CRITICAL | 10.0 | | Unix Operating System Unsupported Version Detection | General | 1 |
| CRITICAL | 10.0 * | 7.4 | UnrealIRCd Backdoor Detection | Backdoors | 1 |
| CRITICAL | 10.0 * | | VNC Server 'password' Password | Gain a shell remotely | 1 |
| CRITICAL | 9.8 | | Bind Shell Backdoor Detection | Backdoors | 1 |
| MIXED | ... | ... | 3 DNS (Multiple Issues) | DNS | 4 |
| MIXED | ... | ... | 4 Apache Tomcat (Multiple Issues) | Web Servers | 4 |
| CRITICAL | ... | ... | 2 SSL (Multiple Issues) | Gain a shell remotely | 3 |
| MIXED | ... | ... | 2 SSL (Multiple Issues) | Service detection | 3 |
| HIGH | 7.5 | | NFS Shares World Readable | RPC | 1 |
| HIGH | 7.5 * | 6.7 | rlogin Service Detection | Service detection | 1 |
| HIGH | 7.5 * | 6.7 | rsh Service Detection | Service detection | 1 |

Host Details

| | |
|---|---|
| IP: | 10.0.2.5 |
| MAC: | 08:00:27:8D:55:32 |
| OS: | Linux Kernel 2.6 on Ubuntu 8.04 (hardy) |
| Start: | Today at 11:20 AM |
| End: | Today at 11:40 AM |
| Elapsed: | 20 minutes |
| KB: | Download |

Vulnerabilities

● Critical
● High
● Medium
● Low
● Info

1. **NFS Exported Share Information Disclosure [CRITICAL]**
   ID: 11356
   Description:
   At least one of the NFS shares exported by the remote server could be mounted by the scanning host. An attacker may be able to leverage this to read (and possibly write) files on remote host.
   Solution:
   Configure NFS on the remote host so that only authorized hosts can mount its remote shares.

Port: 2049 / udp / rpc-nfs

Tools to exploit: Metasploit (NFS Mount Scanner)

CVE: CVE-1999-0170, CVE-1999-0211, CVE-1999-0554

2. **Unix Operating System Unsupported Vesrsion Detected [CRITICAL]**

   ID**:** 33850

   Description:

   According to its self-reported version number, the Unix operating system running on the remote host is no longer supported.

   Lack of support implies that no new security patches for the product will be released by the vendor. As a result, it is likely to contain security vulnerabilities.

   Solution:

   Upgrade to a version of the Unix operating system that is currently supported.

   Port: N/A

   Tools to exploit: N/A

3. **UnrealIRCD Backdoor Detection [CRITICAL]**

   ID: 46882

   Description:

   The remote IRC server is a version of UnrealIRCd with a backdoor that allows an attacker to execute arbitrary code on the affected host.

   Solution:

   Re-download the software, verify it using the published MD5 / SHA1 checksums, and re-install it.

   Port: 6667 / tcp / irc

   Tools to exploit: Metasploit (UnrealIRCD 3.2.8.1 Backdoor Command Execution), CANVAS ()

   CVE: CVE-2010-2075

4. **VNC Server ‘password’ Password [CRITICAL]**

   ID: 61708

   Port: 5900 / tcp / vnc

5. **Bind Shell Backdoor Detection [CRITICAL]**

   ID: 51988

   Port: 1524 / tcp / wild_shell

6. **SSL (Multiple Issues) [CRITICAL]**

   a) **Debian OpenSSH/OpenSSL Package Random Number Generator Weakness (SSL check) [CRITICAL]**

      ID: 32321

      Port: 5432 / tcp / postgresql<br>
      25 / tcp / smtp

      Tools to exploit: Core Impact

      CVE: CVE-2008-0166

   b) **Debian OpenSSH/OpenSSL Package Random Number Generator Weakness [CRITICAL]**

      ID: 32314

      Port: 22 / tcp / ssh

      Tools to exploit: Core Impact

      CVE: CVE-2008-0166

7. **NFS Shares World Readable [HIGH]**

   ID: 42256

   Port: 2049 / tcp / rpc-nfs

8. **rlogin Service Detection [HIGH]**

   ID: 10205

Port: 513 / tcp / rlogin

9. **rsh Service Detection [HIGH]**
   ID: 10245
   Port: 514 / tcp / rsh
   Tools to exploit: Metasploit (rlogin Authentication Scanner)
   CVE: CVE-1999-0651
10. **Samba Badlock Vulnerability [HIGH]**
   ID: 90509
   Port: 445 / tcp / cifs
   Tools to exploit: No known exploits are available
   CVE: CVE-2016-2118
11. **TLS Version 1.0 Protocol Detection [MEDIUM]**
   ID: 104743
   Port: 5432 / tcp / postgresql
   25 / tcp / smtp
12. **Unencrypted Telnet Server [MEDIUM]**
   ID: 42263
   Port: 23 / tcp / telnet
13. **SSL Drown Attack Vulnerability (Decrypting RSA with Obsolete and Weakend eNcryption) [MEDIUM]**
   ID: 89058
   Port: 25 / tcp / smtp
   Tools to exploit: No known exploits are available
   CVE: CVE-2016-0800

## WINDOWS7

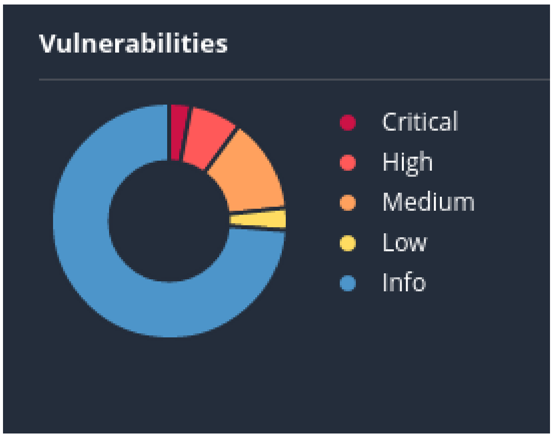
### Scan Details

Policy: Basic Network Scan
Status: completed
Severity Base: CVSS v3.0
Scanner: Local Scanner
Start: Today at 5:37 PM
End: Today at 5:42 PM
Elapsed: 5 minutes

### Host Details

IP: 10.0.2.4
MAC: 08:00:27:9E:37:29
OS: Microsoft Windows 7 Ultimate
Start: Today at 5:37 PM
End: Today at 5:42 PM
Elapsed: 5 minutes

## Vulnerabilities



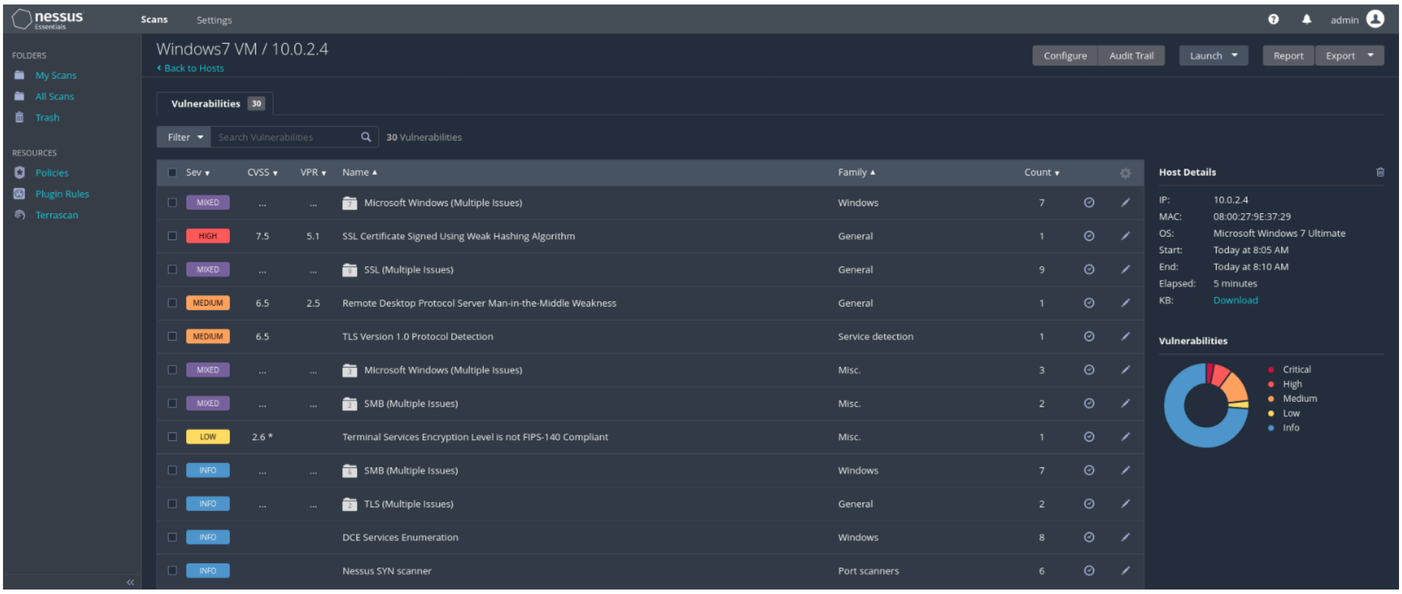
Critical: 3 (5%)

High: 4 (6%)

Medium: 9 (14%)

Low: 1 (2%)

Info: 49 (73%)



Windows7 VM / 10.0.2.4

30 Vulnerabilities

| Sev | CVSS | VPR | Name | Family | Count |
|---|---|---|---|---|---|
| MIXED | ... | ... | 7 Microsoft Windows (Multiple Issues) | Windows | 7 |
| HIGH | 7.5 | 5.1 | SSL Certificate Signed Using Weak Hashing Algorithm | General | 1 |
| MIXED | ... | ... | 9 SSL (Multiple Issues) | General | 9 |
| MEDIUM | 6.5 | 2.5 | Remote Desktop Protocol Server Man-in-the-Middle Weakness | General | 1 |
| MEDIUM | 6.5 | | TLS Version 1.0 Protocol Detection | Service detection | 1 |
| MIXED | ... | ... | 3 Microsoft Windows (Multiple Issues) | Misc. | 3 |
| MIXED | ... | ... | 2 SMB (Multiple Issues) | Misc. | 2 |
| LOW | 2.6 * | | Terminal Services Encryption Level is not FIPS-140 Compliant | Misc. | 1 |
| INFO | ... | ... | 6 SMB (Multiple Issues) | Windows | 7 |
| INFO | ... | ... | 2 TLS (Multiple Issues) | General | 2 |
| INFO | | | DCE Services Enumeration | Windows | 8 |
| INFO | | | Nessus SYN scanner | Port scanners | 6 |

Host Details

IP: 10.0.2.4
MAC: 08:00:27:9E:37:29
OS: Microsoft Windows 7 Ultimate
Start: Today at 8:05 AM
End: Today at 8:10 AM
Elapsed: 5 minutes
KB: Download

Vulnerabilities

1. **SSL Certificate Signed Using Weak Hashing Algorithm [HIGH]**
   ID: 35291
   Port: 3389 / tcp
   CVE: CVE-2004-2761
2. **Remote Desktop Protocol Server Man-in-the-Middle Weakness [MEDIUM]**
   ID: 18405
   Port: 3389 / tcp
   Tools for exploit: No known exploits are available
   CVE: CVE-2005-1794
3. **TLS Version 1.0 Protocol Detection [MEDIUM]**
   ID: 104743
   Port: 3389 / tcp

## scanme.nmap.org (Website)

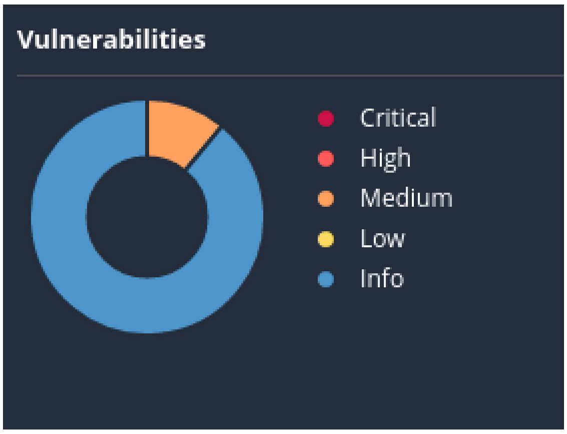
### Scan Details

Policy: Web Application Tests
Status: completed
Severity Base: CVSS v3.0
Scanner: Local Scanner
Start: Today at 8:50 PM
End: Today at 9:17 PM
Elapsed: 27 minutes

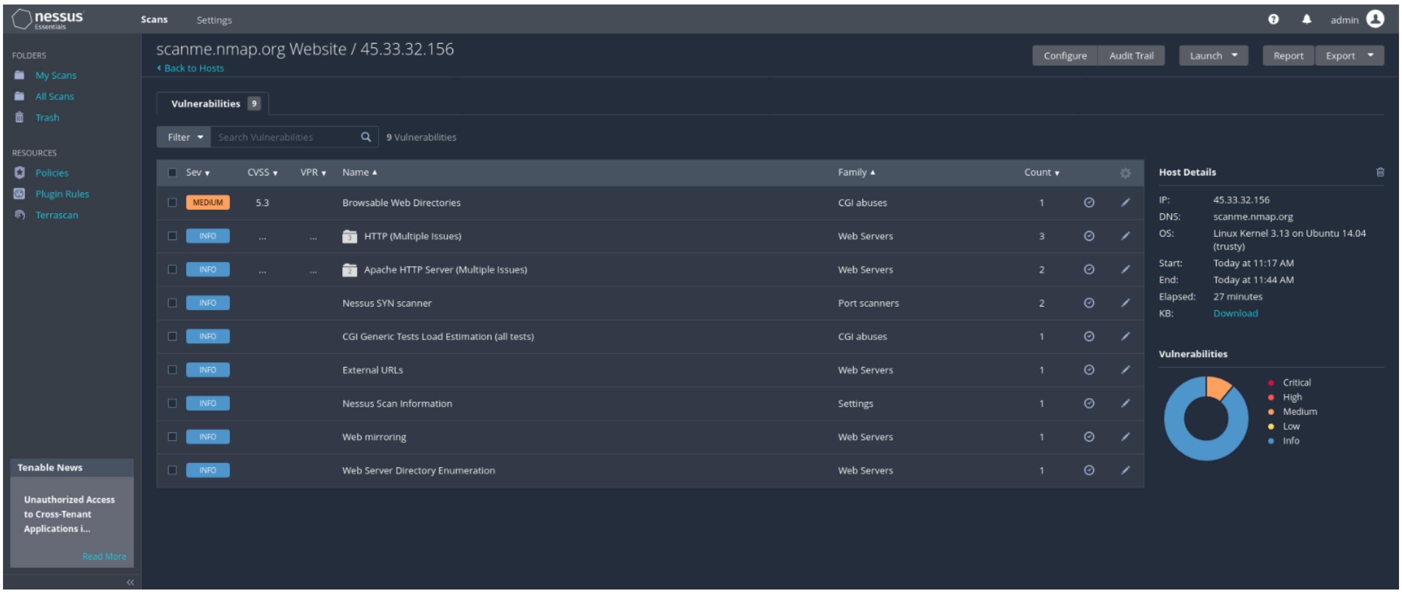
### Host Details

IP: 45.33.32.156
DNS: scanme.nmap.org
OS: Linux Kernel 3.13 on Ubuntu 14.04 (trusty)
Start: Today at 8:50 PM
End: Today at 9:17 PM
Elapsed: 27 minutes

### Vulnerabilities



Medium: 1 (8%)
Info: 12 (92%)



scanme.nmap.org Website / 45.33.32.156

Vulnerabilities 9

9 Vulnerabilities

| □ | Sev ▾ | CVSS ▾ | VPR ▾ | Name ▴ | Family ▴ | Count ▾ |
|---|---|---|---|---|---|---|
| □ | MEDIUM | 5.3 | | Browsable Web Directories | CGI abuses | 1 |
| □ | INFO | ... | ... | 3 HTTP (Multiple Issues) | Web Servers | 3 |
| □ | INFO | ... | ... | 2 Apache HTTP Server (Multiple Issues) | Web Servers | 2 |
| □ | INFO | | | Nessus SYN scanner | Port scanners | 2 |
| □ | INFO | | | CGI Generic Tests Load Estimation (all tests) | CGI abuses | 1 |
| □ | INFO | | | External URLs | Web Servers | 1 |
| □ | INFO | | | Nessus Scan Information | Settings | 1 |
| □ | INFO | | | Web mirroring | Web Servers | 1 |
| □ | INFO | | | Web Server Directory Enumeration | Web Servers | 1 |

Host Details

| | |
|---|---|
| IP: | 45.33.32.156 |
| DNS: | scanme.nmap.org |
| OS: | Linux Kernel 3.13 on Ubuntu 14.04 (trusty) |
| Start: | Today at 11:17 AM |
| End: | Today at 11:44 AM |
| Elapsed: | 27 minutes |
| KB: | Download |

Vulnerabilities

● Critical
● High
● Medium
● Low
● Info

Tenable News

Unauthorized Access to Cross-Tenant Applications i...

1. **Browsable Web Directories [MEDIUM]**
   Description
   Multiple Nessus plugins identified directories on the web server that are browsable.
   Solution
   Make sure that browsable directories do not leak confidential information or give access to sensitive resources. Additionally, use access restrictions or disable directory indexing for any that do.
   ID: 40984
   Port: 80 / tcp

## Analysis

The project report examines the implementation of vulnerability scanning utilizing Nessus as the primary tool. It delves into the process of configuring and running scans across a network to identify potential security weaknesses. The analysis highlights the effectiveness of Nessus in pinpointing vulnerabilities, discusses the significance of prompt remediation, and underscores its role in enhancing overall cybersecurity posture.

## Conclusion

The project report examines the implementation of vulnerability scanning utilizing Nessus as the primary tool. It delves into the process of configuring and running scans across a network to identify potential security weaknesses. The analysis highlights the effectiveness of Nessus in pinpointing vulnerabilities, discusses the significance of prompt remediation, and underscores its role in enhancing overall cybersecurity posture.

## References

An InfoSec Blog for anyone interested to learn security and Hacking (wordpress.com)

Nmap: the Network Mapper - Free Security Scanner