TASK 3: PERFORMING A BASIC VULNERABILITY SCAN

Cybersecurity Lab Report

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Task 3:

Performing a Basic Vulnerability Scan

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6. Documentation of the most critical Vulnerabilities found during the scan.

Objective

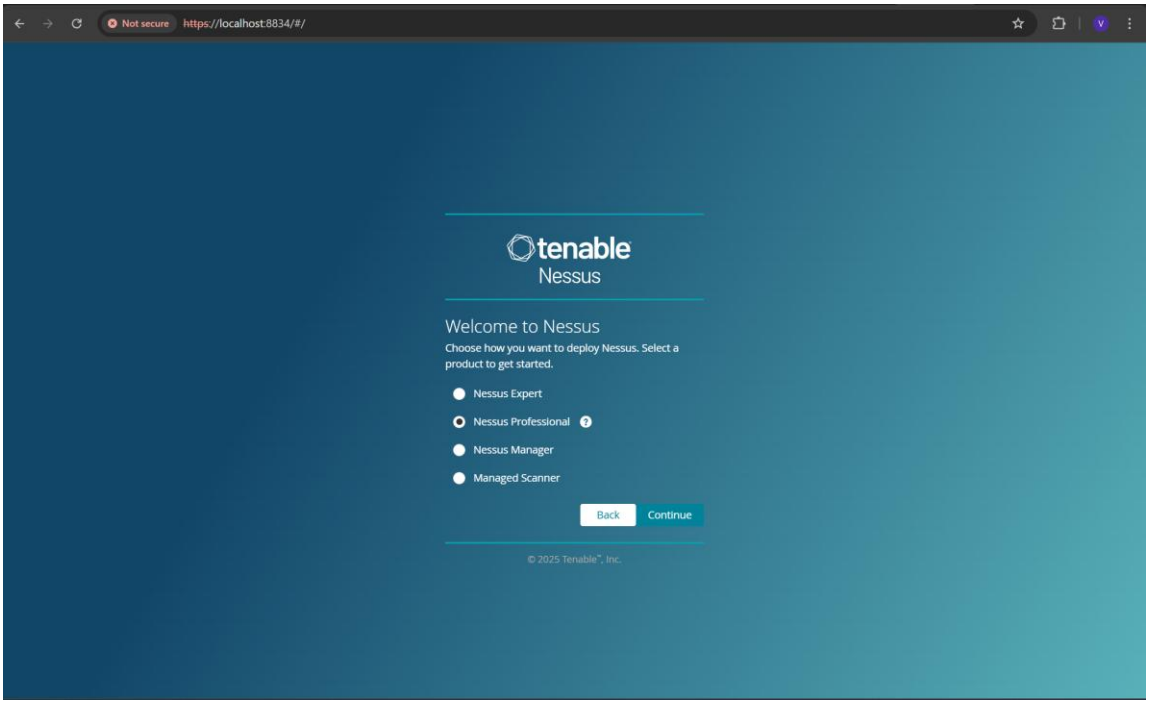
Using Open-Source tools to identify common vulnerabilities on our computer

Tools Used

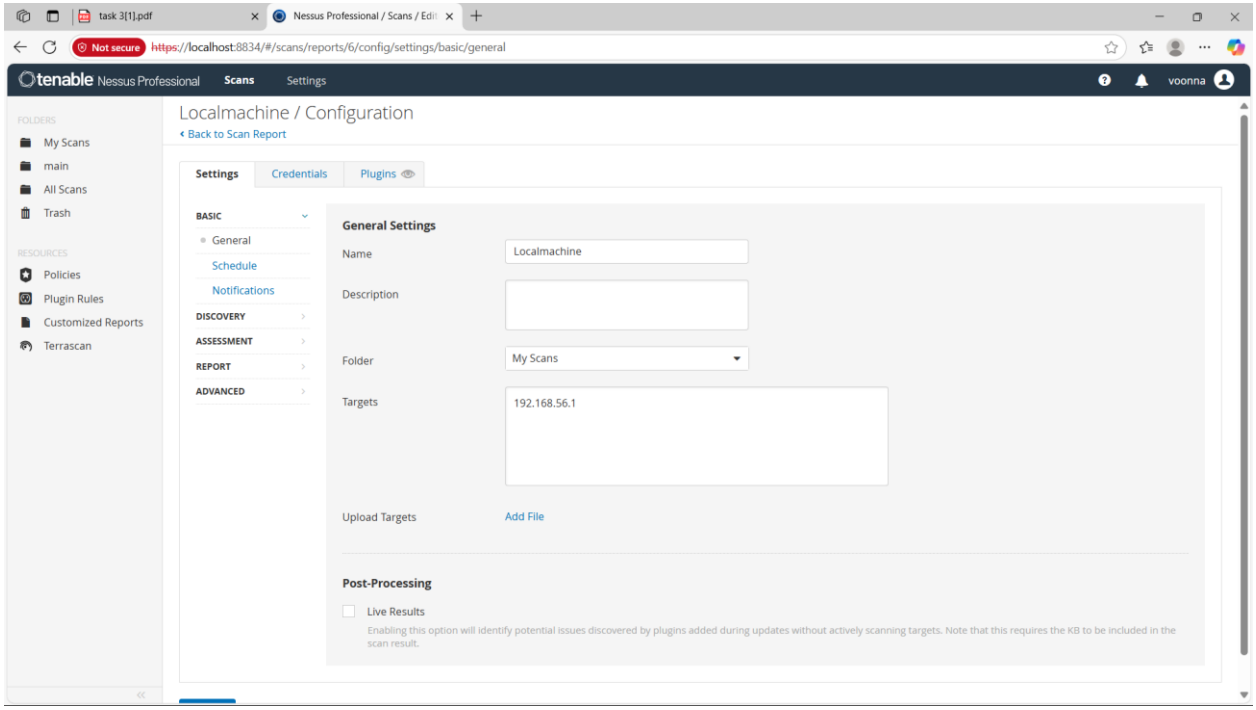
- Nessus Essentials

Steps Performed:

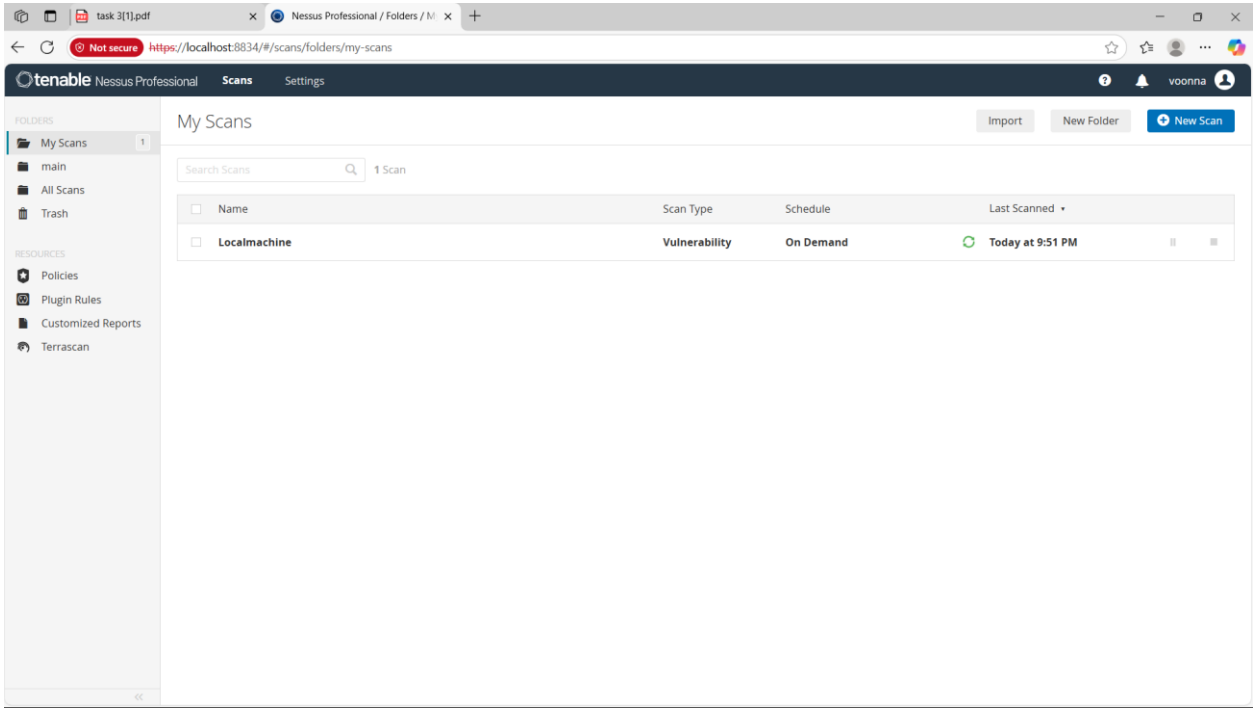
1. Installation of Nessus Essentials.



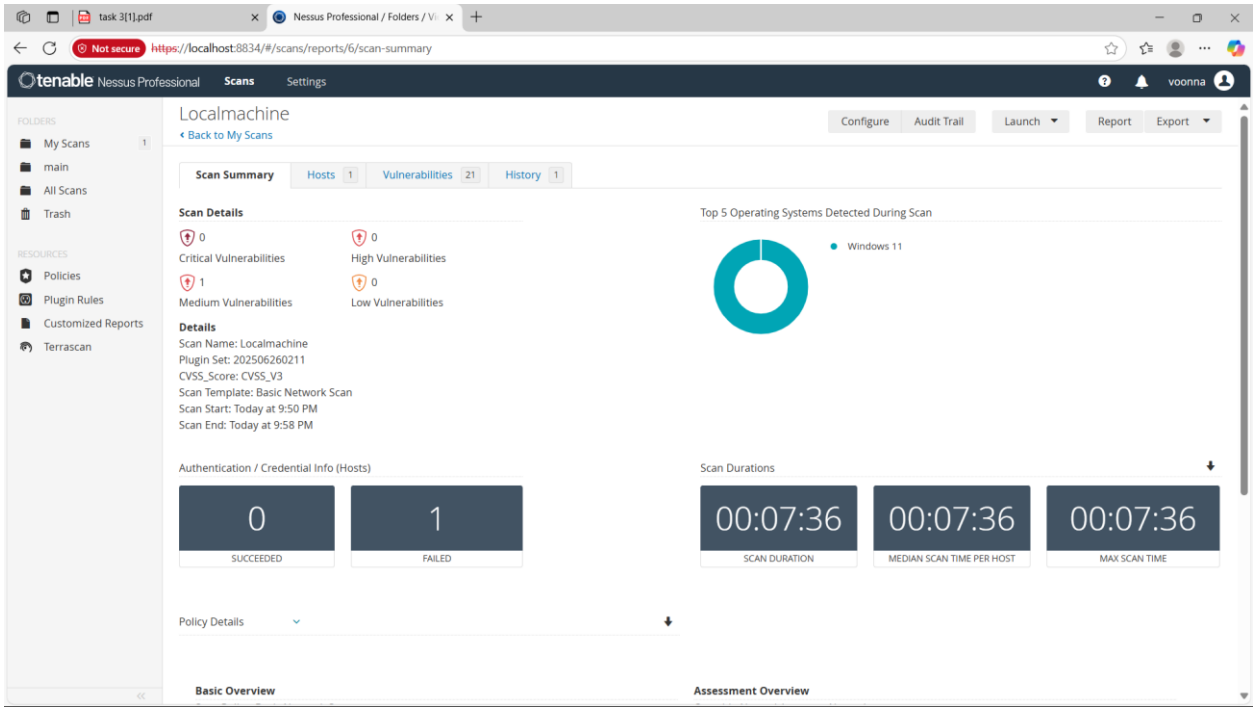
2. Setting up target as our local machine IP

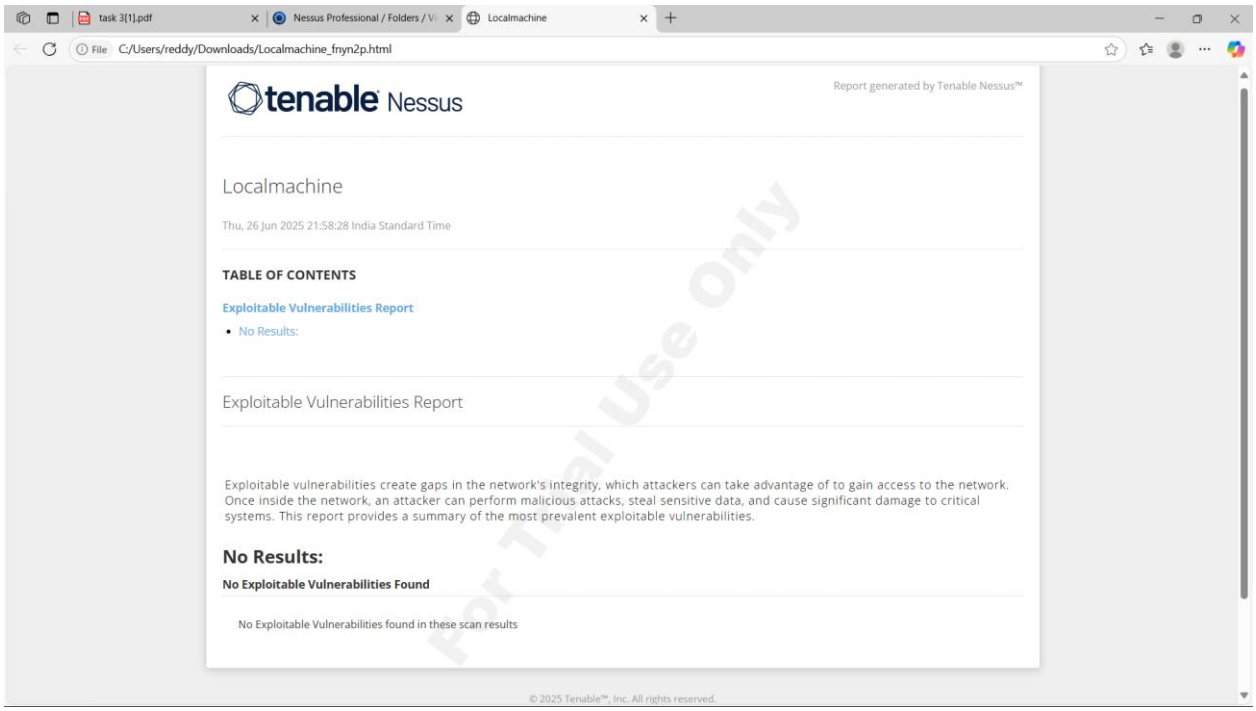


3. Performing vulnerability Scan in Nessus tool:

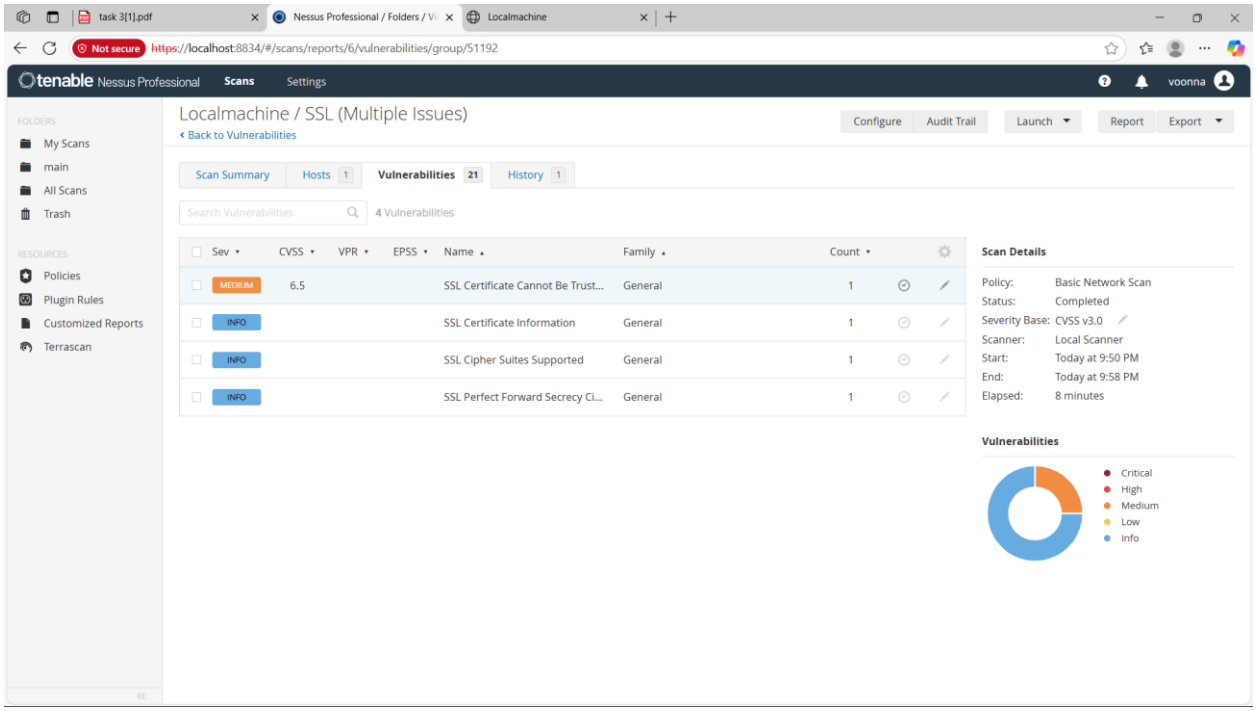


4. Reviewing the report for vulnerabilities:





5. Document the most critical Vulnerabilities found during the Scan:



Mitigations to fix vulnerabilities:

1. SSL Certificate Cannot Be Trusted (Medium Severity)
   Cause: The server is using a self-signed or untrusted SSL certificate.
   Mitigation:
   - Replace the certificate with one from a trusted Certificate Authority (CA) like Let's Encrypt, GoDaddy, etc.
   - For internal systems, import the self-signed certificate into the trusted root store of the operating system or browser.

2. SSL Certificate Information
   Cause: Informational plugin showing details of the certificate (issuer, expiry, etc.)
   Mitigation:
   - No action needed unless:
     - The certificate is expired → Renew it.
     - The certificate has mismatched common name (CN) → Reissue it with correct domain.

3. SSL Cipher Suites Supported
   Cause: The server supports older or weak encryption ciphers.
   Mitigation:
   - Reconfigure your server to use strong ciphers only, such as:
     - TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
     - TLS_AES_256_GCM_SHA384 (TLS 1.3)
   - Disable weak ciphers: RC4, DES, 3DES, NULL, EXPORT, MD5.

4. SSL Perfect Forward Secrecy (PFS) Cipher Suites Supported (Info)
   Cause: PFS ciphers are supported (which is good).
   Mitigation:
   - No action needed. This is best practice.

Conclusion:

The Nessus vulnerability scan on our local machine was completed successfully, revealing several security weaknesses that could potentially be exploited if left unaddressed. The results showed a mix of vulnerabilities ranging from informational notices to critical threats.

This assessment confirms that while the system is operational, it has exposed components that require immediate action. Key highlights include:

- Critical and High vulnerabilities: These pose significant security risks and need urgent remediation.
- Misconfigurations and outdated software: Detected in system services and applications, increasing the attack surface.
- Open network ports and weak protocols: Potentially exposing the machine to external threats.

The findings emphasize the importance of continuous monitoring and timely updates. It is recommended to:

- Apply necessary patches and security updates.
- Disable or secure unused services and ports.
- Perform regular scans and audits to maintain system integrity.

By addressing the issues identified in this scan, we move closer to ensuring a more secure and resilient local computing environment.