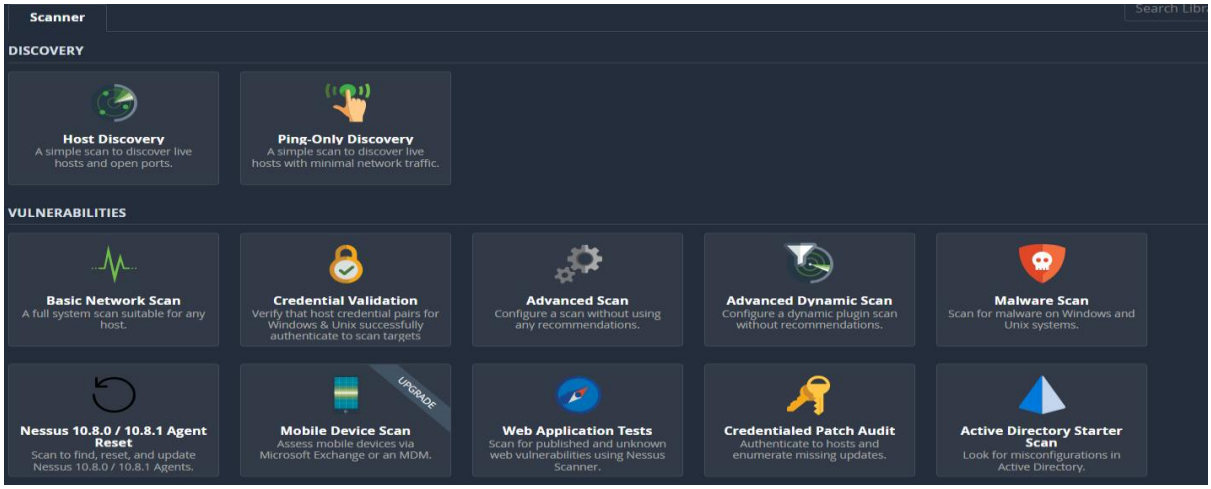
Task 3: Perform a Basic Vulnerability Scan on Your PC.

Objective: Use free tools to identify common vulnerabilities on your computer.

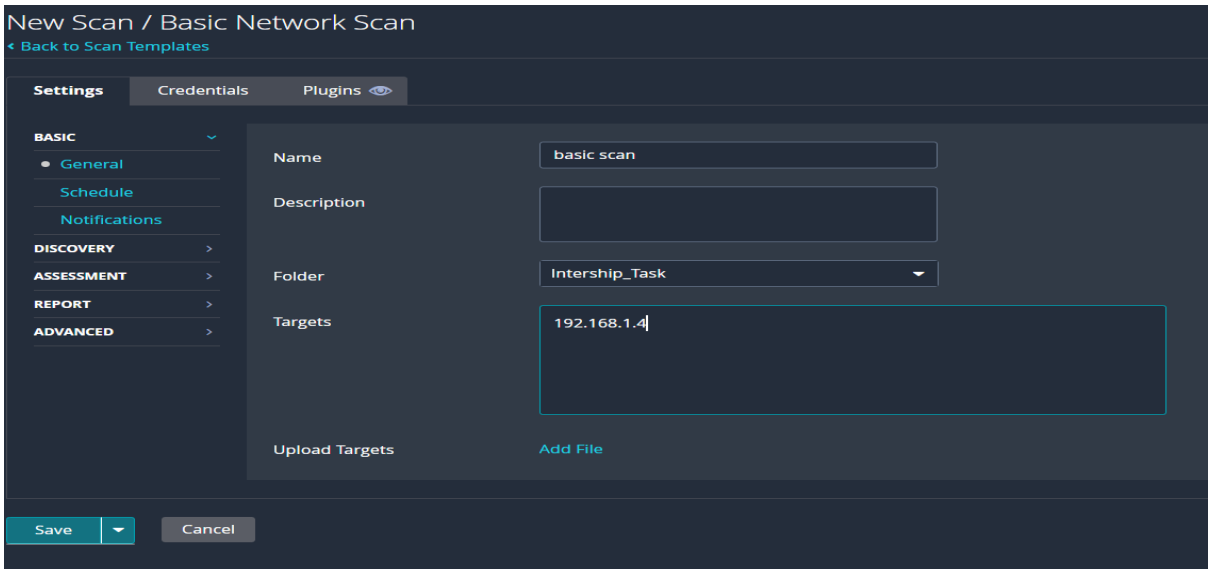
Tools: OpenVAS Community Edition (free vulnerability scanner) or Nessus Essentials.

Deliverables: Vulnerability scan report with identified issues.

1. Installed the Nessus vulnerability scanner



2. Setting up the scan:



3. Vulnerabilities found and their mitigations:

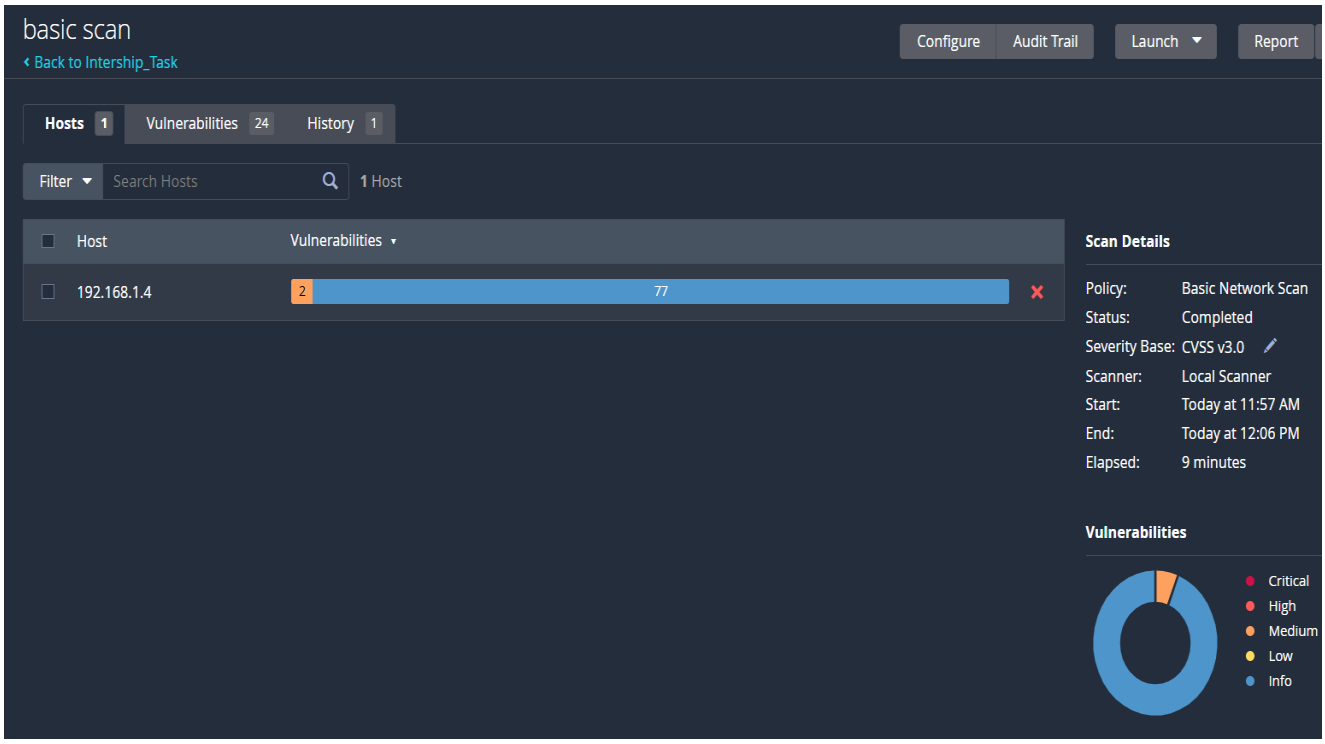
i. SMB signing not required:

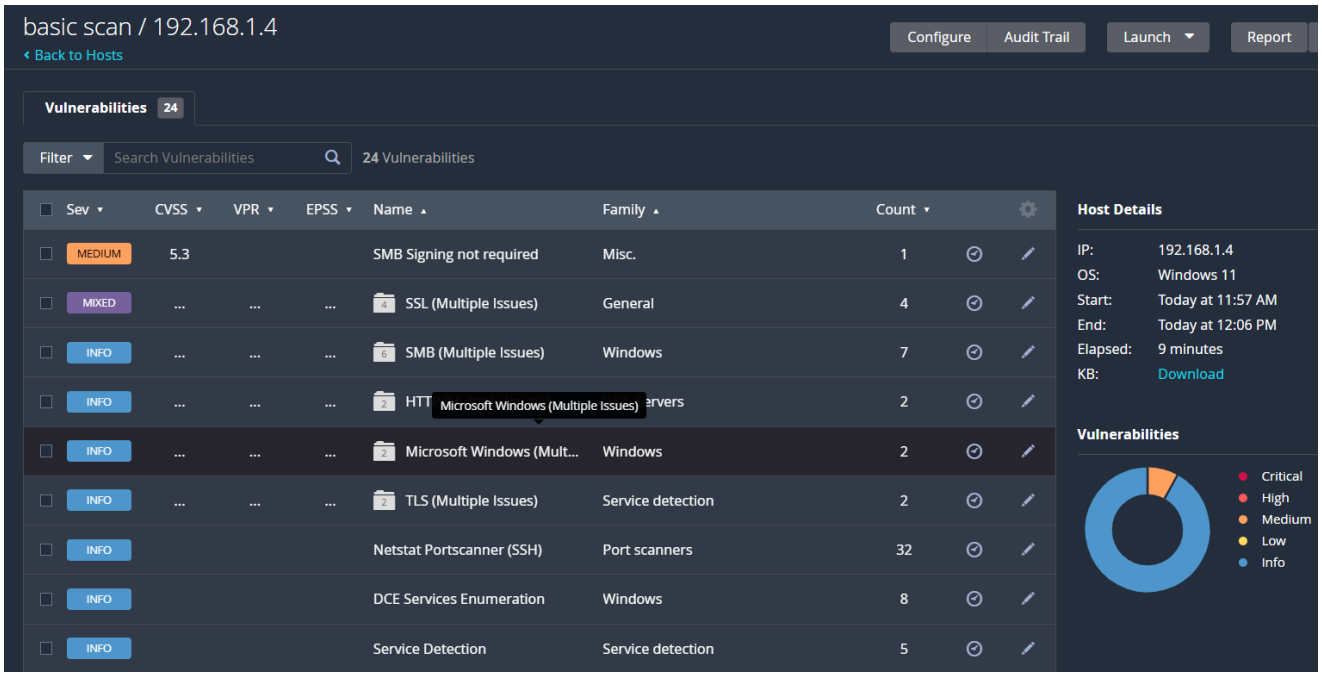
Solution: Enforce message signing in the host's configuration.

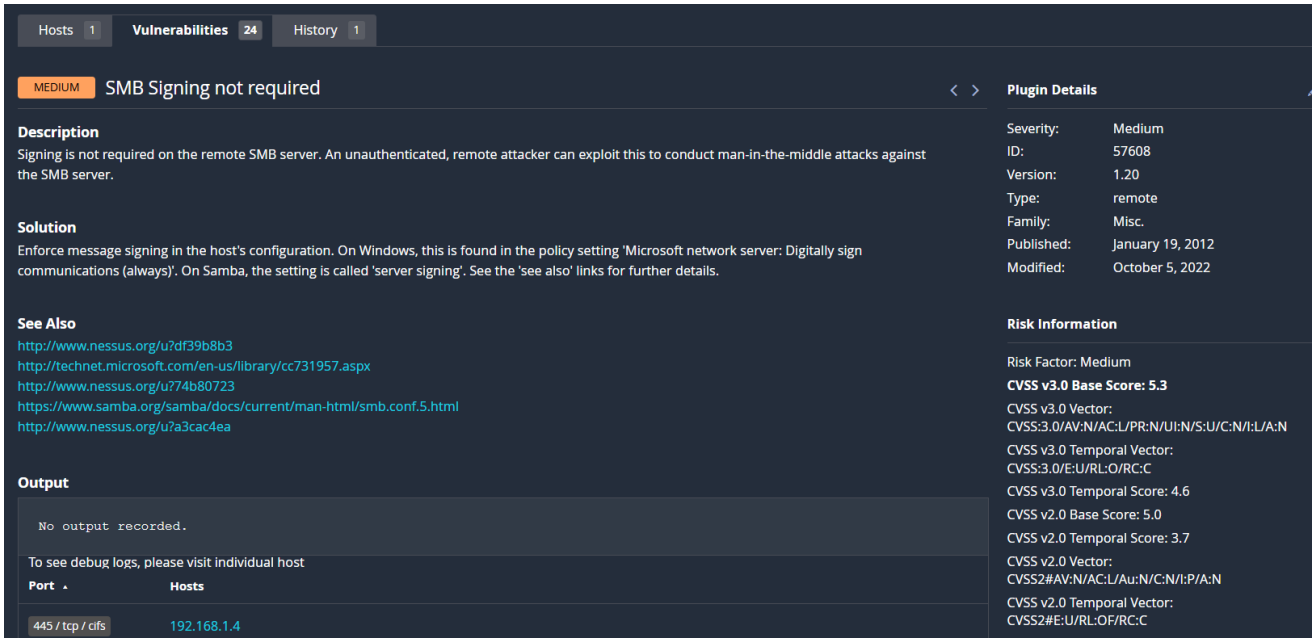
ii. SSL certificate cannot be trusted:

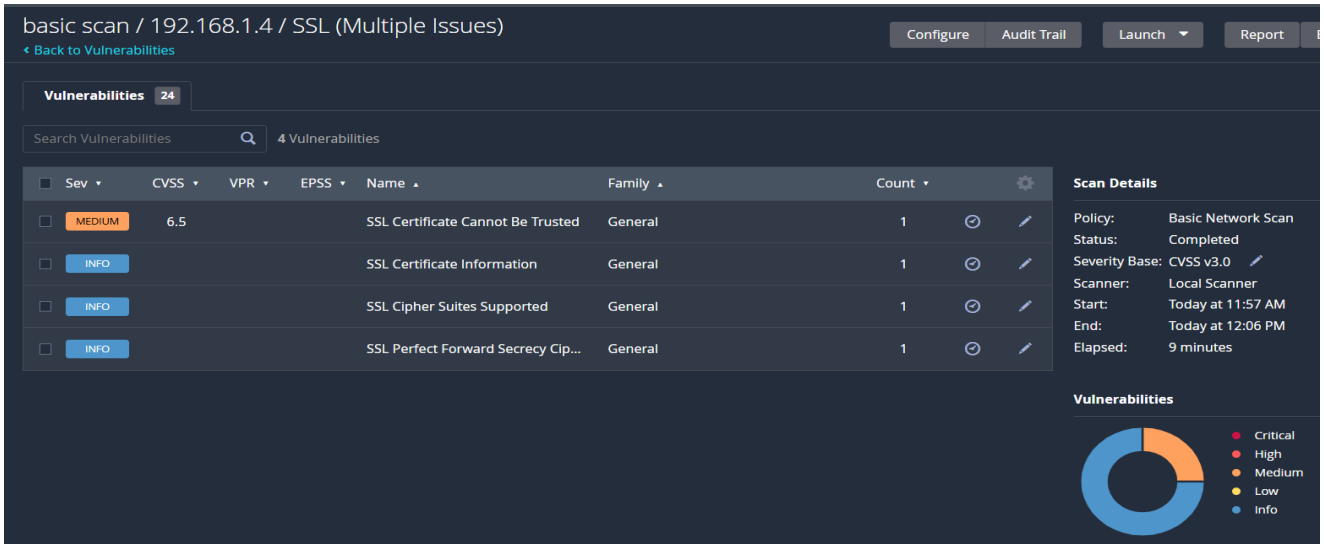
Solution: Purchase or generate a proper SSL certificate for this service.

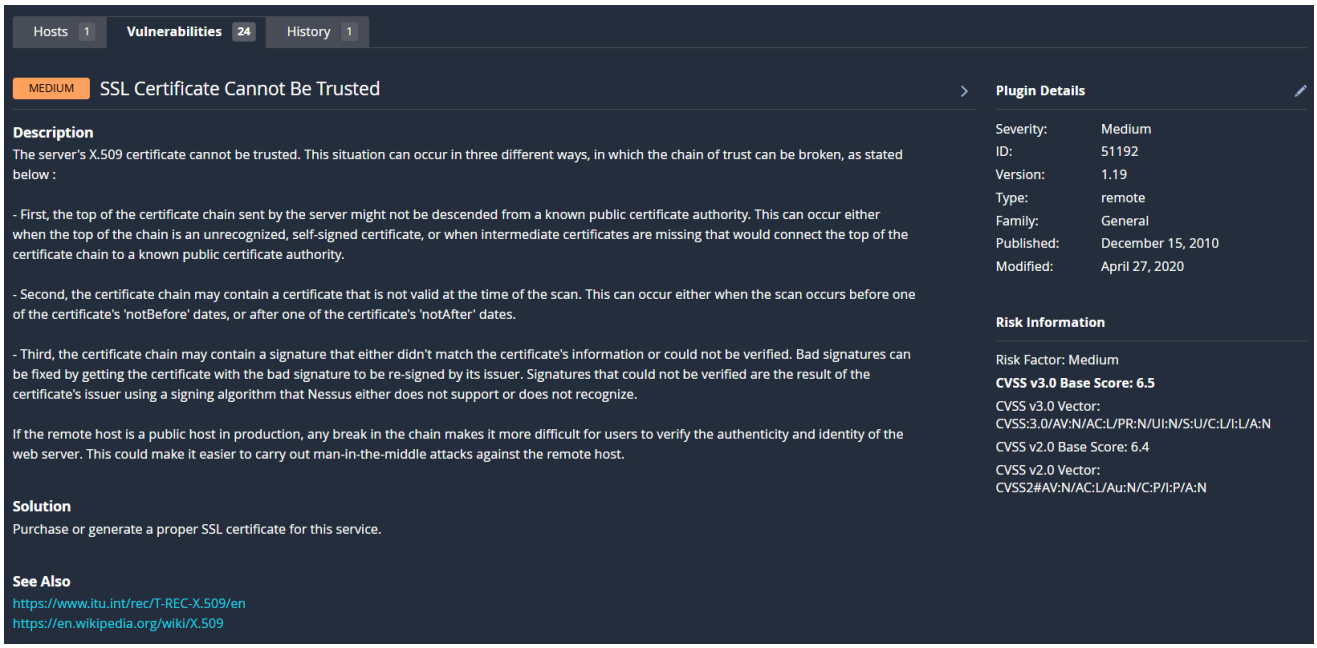
4. Screenshots of the found vulnerabilities:






Hosts 1
Vulnerabilities 24
History 1
MEDIUM
SMB Signing not required
Description
Signing is not required on the remote SMB server. An unauthenticated, remote attacker can exploit this to conduct man-in-the-middle attacks against the SMB server.
Solution
Enforce message signing in the host's configuration. On Windows, this is found in the policy setting 'Microsoft network server: Digitally sign communications (always)'. On Samba, the setting is called 'server signing'. See the 'see also' links for further details.
See Also
http://www.nessus.org/u?df39b8b3
http://technet.microsoft.com/en-us/library/cc731957.aspx
http://www.nessus.org/u?74b80723
https://www.samba.org/samba/docs/current/man-html/smb.conf.5.html
http://www.nessus.org/u?a3cac4ea
Output
No output recorded.
To see debug logs, please visit individual host
Port
Hosts
445 / tcp / cifs
192.168.1.4
Plugin Details
Severity: Medium
ID: 57608
Version: 1.20
Type: remote
Family: Misc.
Published: January 19, 2012
Modified: October 5, 2022
Risk Information
Risk Factor: Medium
CVSS v3.0 Base Score: 5.3
CVSS v3.0 Vector:
CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:N/I:L/A:N
CVSS v3.0 Temporal Vector:
CVSS:3.0/E:U/RL:O/RC:C
CVSS v3.0 Temporal Score: 4.6
CVSS v2.0 Base Score: 5.0
CVSS v2.0 Temporal Score: 3.7
CVSS v2.0 Vector:
CVSS2#AV:N/AC:L/Au:N/C:N/I:P/A:N
CVSS v2.0 Temporal Vector:
CVSS2#E:U/RL:OF/RC:C


basic scan / 192.168.1.4 / SSL (Multiple Issues)
Back to Vulnerabilities
Configure
Audit Trail
Launch
Report
Vulnerabilities 24
Search Vulnerabilities
4 Vulnerabilities
Sev
CVSS
VPR
EPSS
Name
Family
Count
MEDIUM 6.5 SSL Certificate Cannot Be Trusted General 1
INFO SSL Certificate Information General 1
INFO SSL Cipher Suites Supported General 1
INFO SSL Perfect Forward Secrecy Cip... General 1
Scan Details
Policy: Basic Network Scan
Status: Completed
Severity Base: CVSS v3.0
Scanner: Local Scanner
Start: Today at 11:57 AM
End: Today at 12:06 PM
Elapsed: 9 minutes
Vulnerabilities
Critical
High
Medium
Low
Info


Hosts 1
Vulnerabilities 24
History 1
MEDIUM
SSL Certificate Cannot Be Trusted
Description
The server's X.509 certificate cannot be trusted. This situation can occur in three different ways, in which the chain of trust can be broken, as stated below :
- First, the top of the certificate chain sent by the server might not be descended from a known public certificate authority. This can occur either when the top of the chain is an unrecognized, self-signed certificate, or when intermediate certificates are missing that would connect the top of the certificate chain to a known public certificate authority.
- Second, the certificate chain may contain a certificate that is not valid at the time of the scan. This can occur either when the scan occurs before one of the certificate's 'notBefore' dates, or after one of the certificate's 'notAfter' dates.
- Third, the certificate chain may contain a signature that either didn't match the certificate's information or could not be verified. Bad signatures can be fixed by getting the certificate with the bad signature to be re-signed by its issuer. Signatures that could not be verified are the result of the certificate's issuer using a signing algorithm that Nessus either does not support or does not recognize.
If the remote host is a public host in production, any break in the chain makes it more difficult for users to verify the authenticity and identity of the web server. This could make it easier to carry out man-in-the-middle attacks against the remote host.
Solution
Purchase or generate a proper SSL certificate for this service.
See Also
https://www.itu.int/rec/T-REC-X.509/en
https://en.wikipedia.org/wiki/X.509
Plugin Details
Severity: Medium
ID: 51192
Version: 1.19
Type: remote
Family: General
Published: December 15, 2010
Modified: April 27, 2020
Risk Information
Risk Factor: Medium
CVSS v3.0 Base Score: 6.5
CVSS v3.0 Vector:
CVSS:3.0/AV:N/AC:L/PR:N/UI:N/S:U/C:L/I:L/A:N
CVSS v2.0 Base Score: 6.4
CVSS v2.0 Vector:
CVSS2#AV:N/AC:L/Au:N/C:P/I:P/A:N