Security Lab
Lab Assignment No. 11

Aim: Use the NESSUS to scan the network for vulnerabilities.

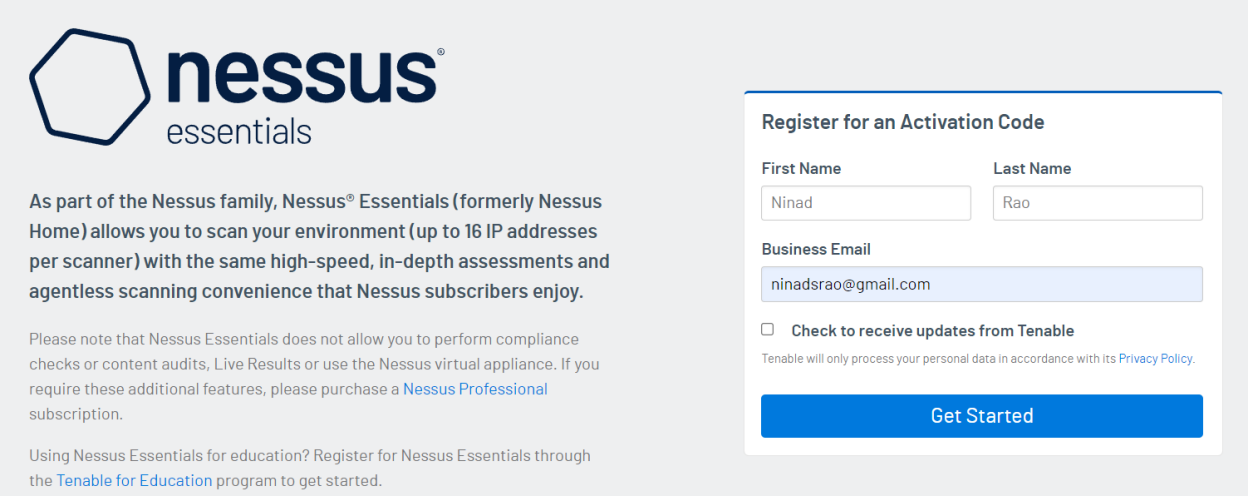
Nessus is a remote security scanning tool, which scans a computer and raises an alert if it discovers any vulnerabilities that malicious hackers could use to gain access to any computer you have connected to a network. It does this by running over 1200 checks on a given computer, testing to see if any of these attacks could be used to break into the computer or otherwise harm it.

If you are an administrator in charge of any computer (or group of computers) connected to the internet, Nessus is a great tool to help keep their domains free of the easy vulnerabilities that hackers and viruses commonly look to exploit.

Features of Nessus:

1. Unlike other scanners, Nessus does not make assumptions about your server configuration (such as assuming that port 80 must be the only web server) that can cause other scanners to miss real vulnerabilities.
2. Nessus is very **extensible**, providing a scripting language for you to write tests specific to your system once you become more familiar with the tool. It also provides a plug-in interface, and many free plug-ins are available from the Nessus plug-in site. These plugs are often specific to detecting a common virus or vulnerability.
3. **Up to date information about new vulnerabilities and attacks**. The Nessus team updates the list of what vulnerabilities to check for on a daily basis in order to minimize the window between an exploit appearing in the wild, and you being able to detect it with Nessus.
4. **Open-source**. Nessus is open source, meaning it costs nothing, and you are free to see and modify the source as you wish.
5. **Patching Assistance**: When Nessus detects a vulnerability, it is also most often able to suggest the best way you can mitigate the vulnerability.

STEP 1: **Download and Install Nessus**
In order to download Nessus, you'll first need to sign up for an online account so you can download the software and get an activation code.



1. Head to the Nessus Home landing page, enter a name and email address, and then click the Register button. You'll want to use a real email address here because Nessus sends you an activation code that you'll need in a step later.
2. Click the Download button, then download Nessus for your operating system. It's available for Windows, Mac, and Linux.
3. Once the download is complete, run the installer package and follow the on-screen instructions to finish installation.

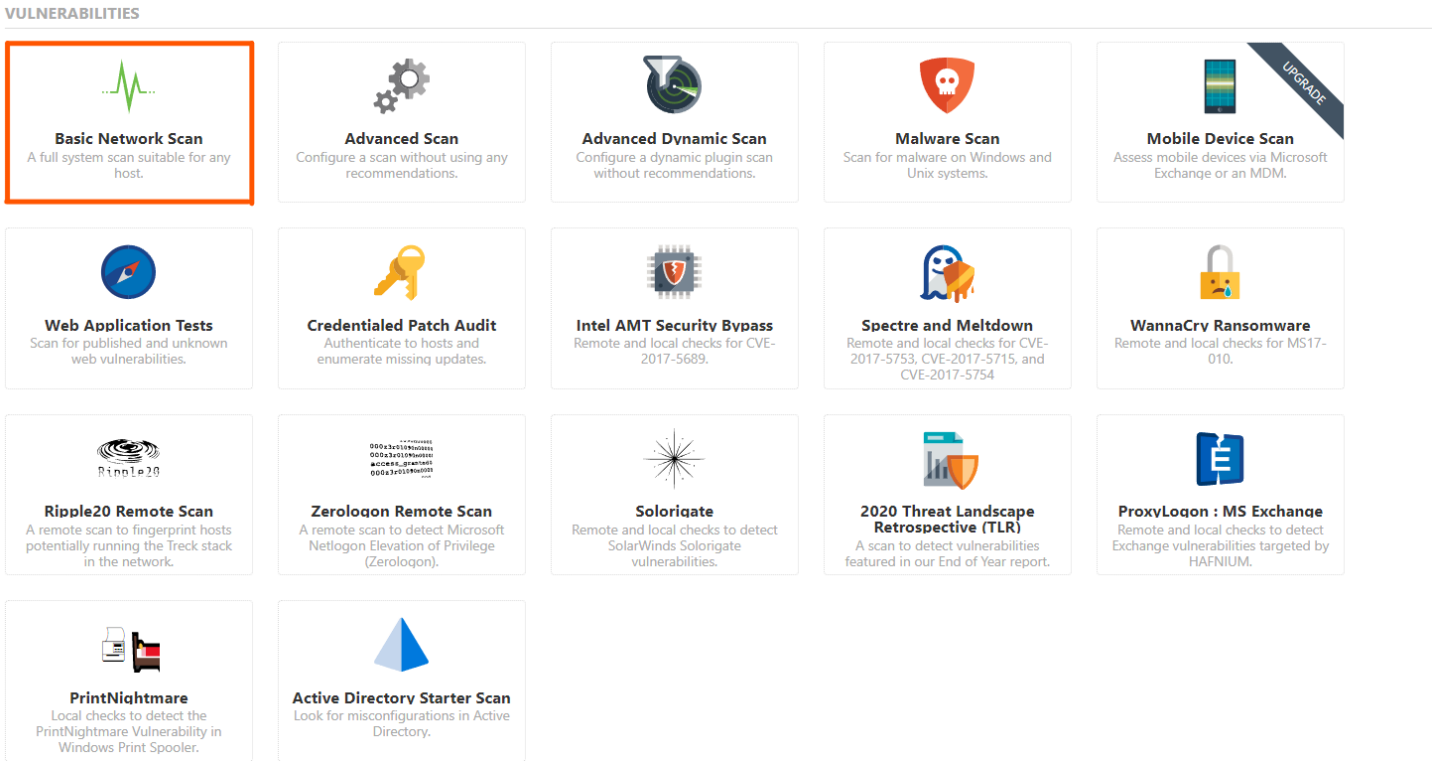
Nessus creates a local server on your computer and runs from there, so don't be surprised that the installation process is a little different than you're used to.

STEP 2: **Set Up Your Nessus Account and Activation Code**
Once Nessus is installed, point your web browser to https://localhost:8834/. This is where we'll complete the signup process and activate your copy of Nessus.

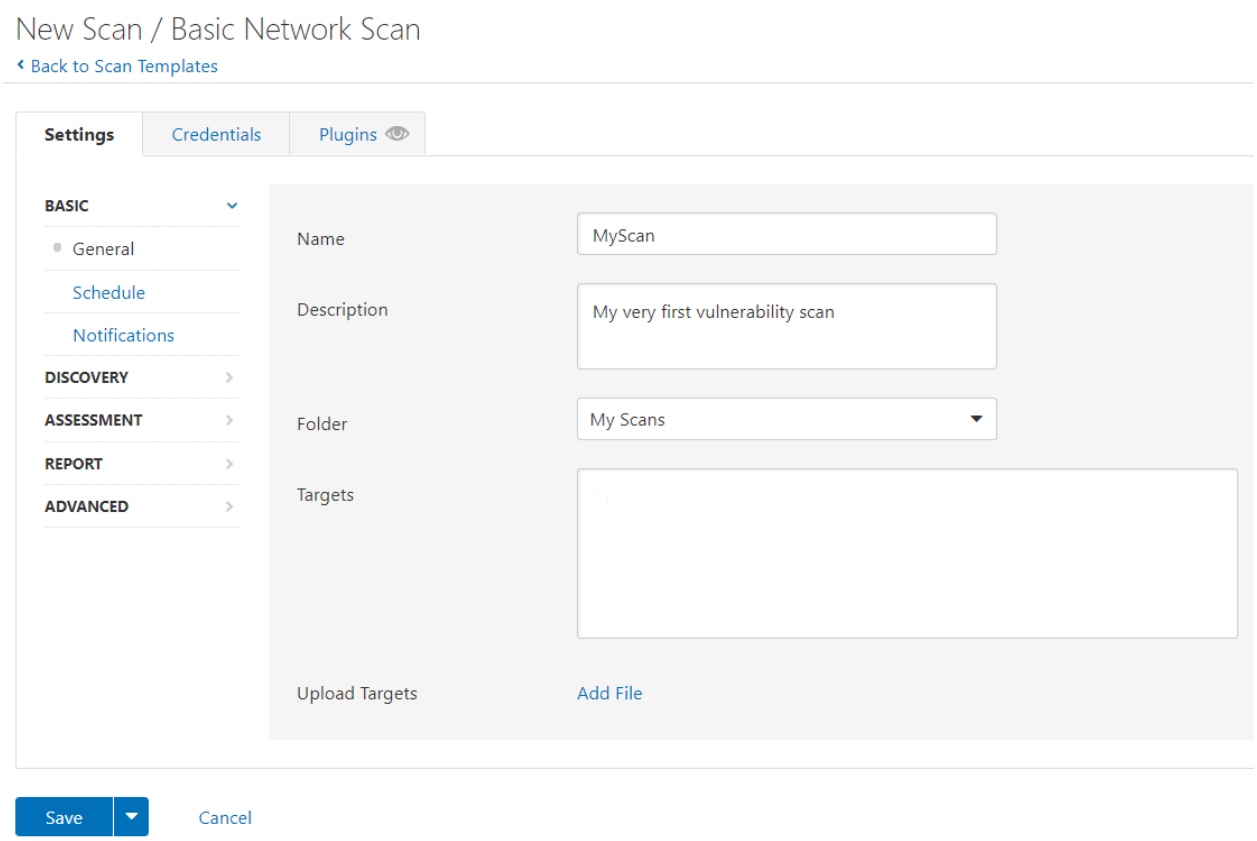
1. When you launch Nessus for the first time, you get a "*Your connection is not secure*" warning from your browser. Click "*Advanced*" and then "*Proceed to localhost*" to bypass this warning.
2. Create an account on the Account Setup screen, leave the Registration as "*Home, Professional, or Manager*," and then enter the Activation Code from your email. Click "*Continue*."

Next, Nessus will download a number of tools and plugins so it can properly scan your network with updated utilities.

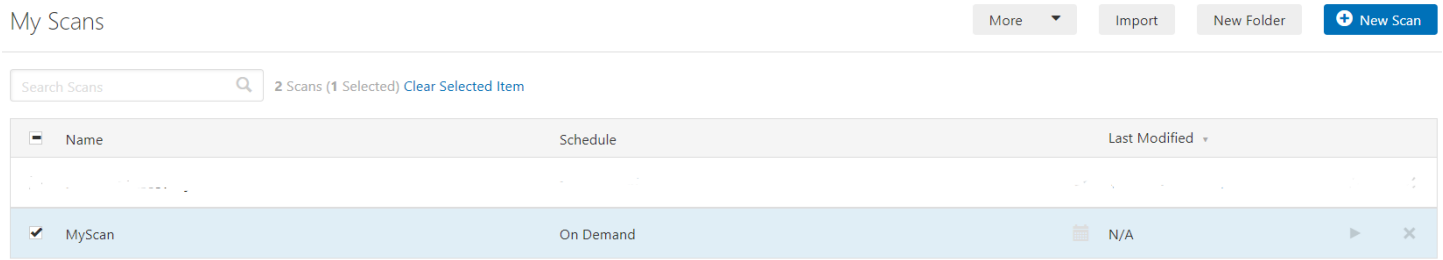
STEP 3: **Start a Vulnerability Scan**
It's time to actually test your network. This is the fun part. Nessus can actually scan for quite a few different problems, but most of us will be content using the Basic Network Scan because it offers a good overview.



1. Click the "*New Scan*."
2. Click "*Basic Network Scan*."
3. Name your scan and add a description.
4. In the "*Targets*" field, you'll want to enter IP scanning details about your home network. For example, if your router is at 192.168.0.1, you'd want to enter 192.168.0.1/24. This will make it so Nessus scans all the devices on your network (unless you have a ton of devices this is probably as high as you'd need to go).



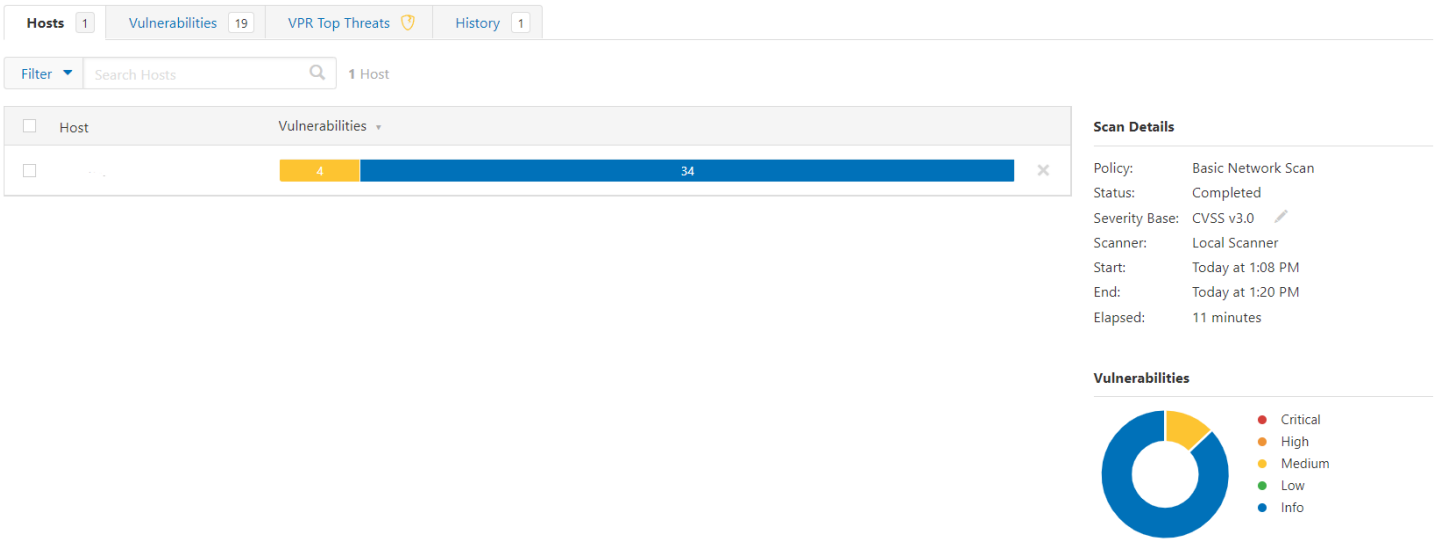
5. Click "*Save*."
6. On the next screen, click the Play icon to launch the scan.

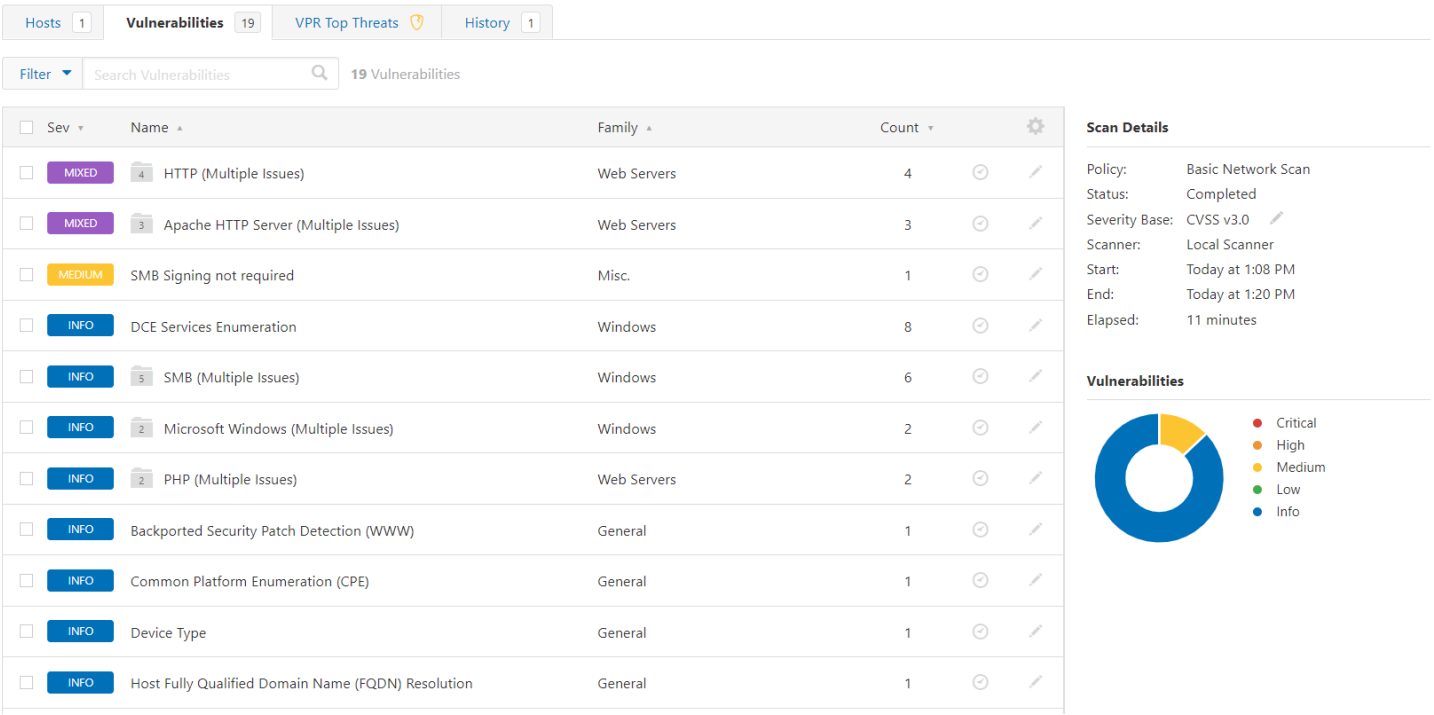


Depending on what and how many devices you have on your network, the scan takes a while, so sit back and relax while Nessus does its work.

STEP 4: **Viewing Your Results**

Once Nessus finishes, you'll see a bunch of color-coded graphs for each device (referred to as hosts) on your network. Each color of the graph signifies the danger of a vulnerability, from low to critical.





Your results should include all the devices on your local network, from your router to your Wi-Fi-enabled printer. Click the graph to reveal more information about the vulnerabilities on each device. Vulnerabilities are listed as "*plugins*," which is just Nessus' way of discovering vulnerabilities. Click on any plugin to get more information about the vulnerability, including white papers, press releases, or patch notes for potential fixes. You can also click the Vulnerabilities tab to see an overview of all the potential vulnerabilities on the network as a whole.

Vulnerabilities 19

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.
```

Port	Hosts
445 / tcp / cifs	

Plugin Details

Severity:	Medium
ID:	57608
Version:	1.19
Type:	remote
Family:	Misc.
Published:	January 19, 2012
Modified:	March 15, 2021

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

There's a chance some of these vulnerabilities will be a bit obvious. For example, Nessus picks up on any device still using a default password or points out when a computer or device is running an outdated firmware. Most of the time though, you probably won't understand what the heck you're looking at with these results.

STEP 5: **Reporting Your Results**

Nessus gives you all this data, but what exactly are you supposed to do with it? That depends on which vulnerabilities Nessus finds.

After your scan is complete, you'll find the biggest potential security holes in your network. All of these issues are easily remedied by either updating or deleting old software. While all this might sound a little scary, it's worth noting that while Nessus gives you a lot of the potential ways into a network, it's not a foolproof guide. On top of needing to be in your network in the first place (which of course, isn't terribly complicated), they'd also need to know how to actually use the variety of the exploitation tools Nessus suggests.

Vulnerabilities 19

MEDIUM Apache mod_info /server-info Information Disclosure

Description

A remote unauthenticated attacker can obtain an overview of the remote Apache web server's configuration by requesting the URL '/server-info'. This overview includes information such as installed modules, their configuration, and assorted run-time settings.

Solution

Update Apache's configuration file(s) to either disable mod_status or restrict access to specific hosts.

See Also

https://www.owasp.org/index.php/SCG_WS_Apache

Output

```
Nessus was able to exploit the issue to retrieve the contents of
'server-status' using the following request :

http://LAPTOP-VFQ11P8O/server-info

Attached is a copy of the response
```

Port	Hosts
80 / tcp	

Plugin Details

Severity:	Medium
ID:	10678
Version:	1.29
Type:	remote
Family:	Web Servers
Published:	May 28, 2001
Modified:	August 9, 2018

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:L/I:N/A:N

CVSS v2.0 Base Score: 5.0

CVSS v2.0 Vector:
CVSS2#AV:N/AC:L/Au:N/C:P/I:N/A:N

Vulnerability Information

CPE: cpe:/a:apache:http_server

Vulnerability Pub Date: January 1, 1999

Nessus is a great starting point for finding the most obvious vulnerabilities that could make you an easy target, or to just explore your home network. With very limited searching on Google, Nessus will lead you to tons of different hacking tools and a wide variety of software, so dig in and learn as much as you can.

Conclusion: Hence, we understood how to use the NESSUS to scan the network for vulnerabilities.