



Sri Lanka Institute of Information Technology

Individual Assignment IE2062 – Web Security

Reg no.:IT19974606

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Introduction

What is a web audit?

The auditing of a website entails a detailed examination of all elements that influence search engine visibility. This typical technique gives you a complete picture of all your websites, traffic, and specific pages. The website audit has been completed solely for marketing purposes. The goal is to identify flaws in web-based campaigns. The website audit starts with a general website examination to identify the steps that need to be taken to improve SEO. The SEO audit on-site and off-site, which can include broken links, duplicate meta-descriptions, HTML validation, web site statistics, mistakes, index pages, and site speed, can all provide recommendations for improving search web ranks. There are various reasons for a website audit, but the most essential ones are usually SEO and content marketing. An SEO-based website audit identifies weak places in a website's SEO score and leads to a better knowledge of its SEO status. The content audit is used to assess participation and evaluate modifications to the content strategy in order to improve the website's performance.

To do a web audit, we must first choose a website. I utilized the website "Bugcrowd" for this. Bugcrowd is a website that participates in the bug bounty program. There are numerous websites where you may conduct a web audit. We chose a website from among several that were presented to us.

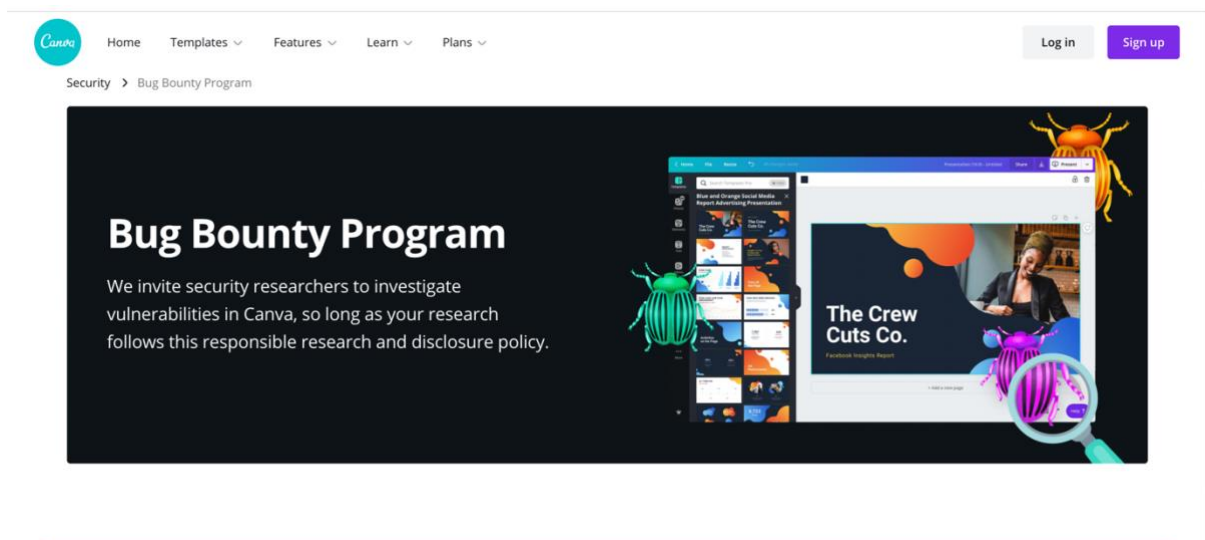
The screenshot shows the Bugcrowd website interface. At the top, there's a navigation bar with links like 'Why Bugcrowd', 'Products', 'Solutions', 'Researchers', 'Programs', 'Resources', 'Company', and a 'Get Started' button. Below this, a large heading reads 'List of bug bounty and security vulnerability disclosure programs from across the web curated by the hacker community.' A subtext states 'This list is maintained as part of the [Disclose.io](#) Safe Harbor project.' Below that, a message says 'Have a suggestion for an addition, removal, or change? Open a Pull Request to [disclose](#) on Github. Special thanks to all [contributors](#).' On the right side, there are two buttons: 'REQUEST A DEMO' and 'CONTACT US'. The main content area features a search bar with 'canva' entered, a 'Filters' dropdown, and a table of programs. The table has columns: 'Program Name', 'New', 'Bug Bounty', 'Swag', 'Hall of Fame', 'Submission URL', and 'Safeharbor'. The first row shows 'Canva' with a red checkmark in the 'Bug Bounty' column, a red bug icon in the 'Submission URL' column, and a blue bug icon in the 'Safeharbor' column.

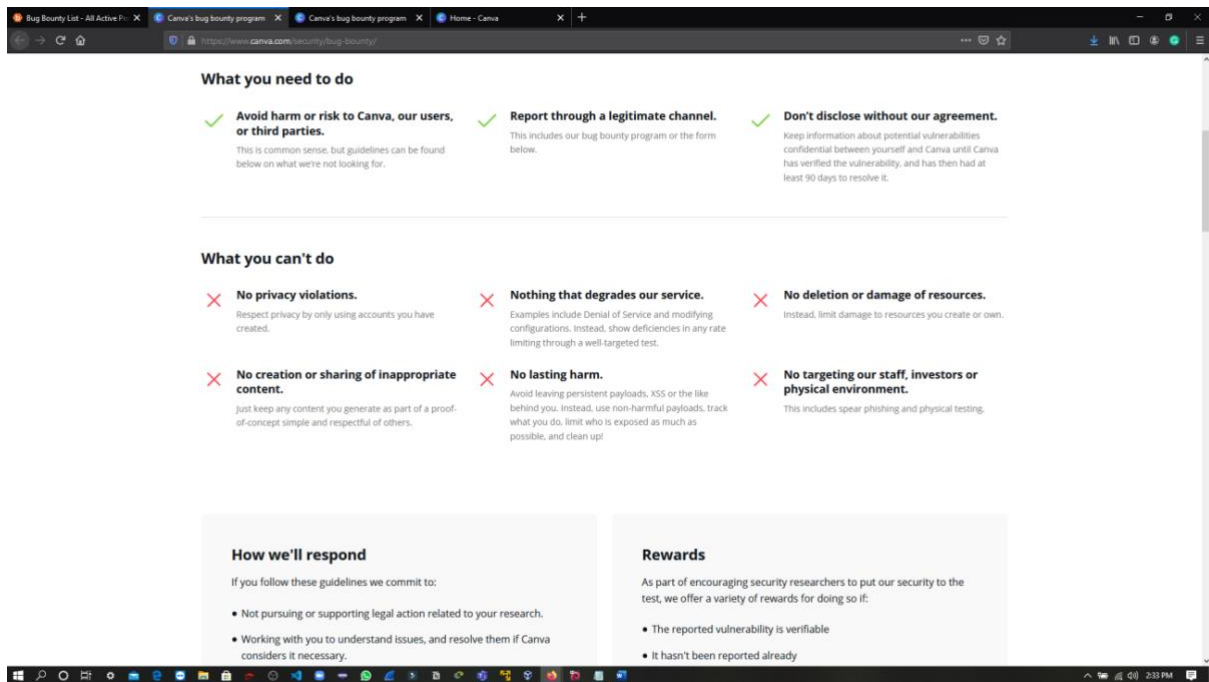
Program Name	New	Bug Bounty	Swag	Hall of Fame	Submission URL	Safeharbor
Canva		✓			🐛	🐛

And for my assignment I used the “Canva” site

Canva is a graphic design tool for making social media graphics, presentations, posters, documents, and other visual content. Users can use the templates provided in the app. The platform is free to use, however paid memberships such as Canva Pro and Canva for Enterprise are available for those that want more features.

- Canva is a free graphic design website that can be used to create invites, business cards, Instagram posts, and other things.
- Customizing thousands of templates is simple and straightforward thanks to a drag-and-drop interface.
- Canva's broad feature set allows you to modify photographs even if you don't have a lot of experience with picture editing.

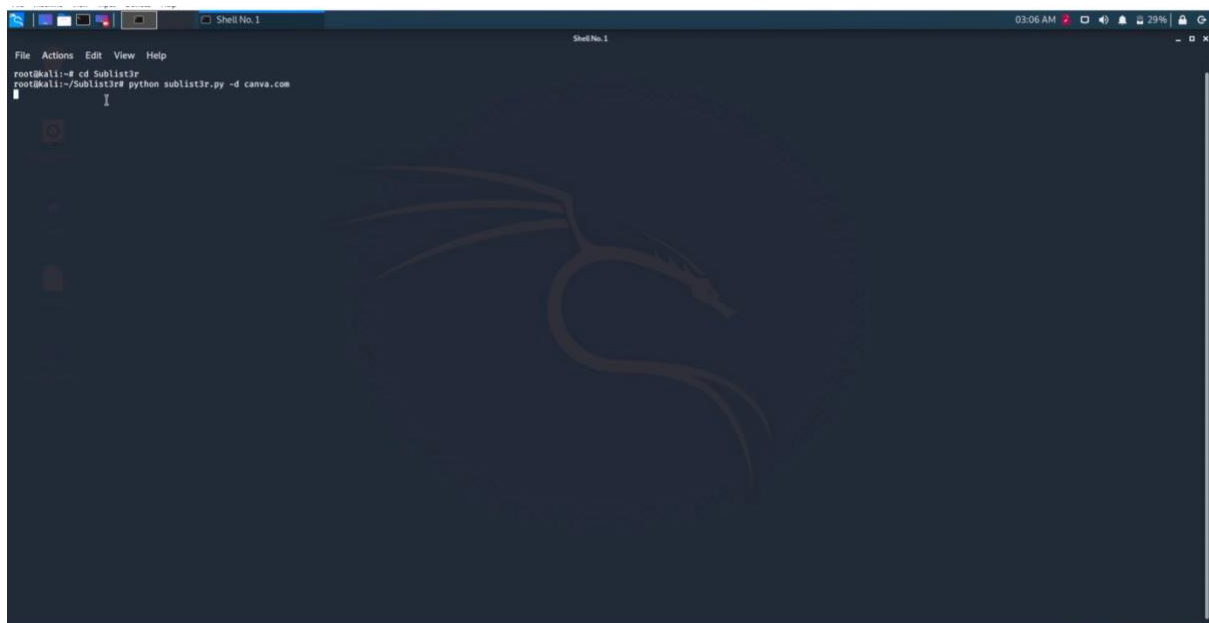




As seen in the diagram above, they have specified what they want from us and what they do not anticipate us to do during the online audit.

- What you should do:
 - Avoid causing harm or putting Canva, our users, or third parties in danger.
 - Make a formal report through a reputable source.
 - Do not reveal without our permission.
- What you can't do:
 - No invasions of privacy;
 - No resource deletion or harm.
 - No long-term consequences
 - Nothing that damages our service
 - No inappropriate content should be created or shared.
 - We will not attack our employees, investors, or physical environment.
- This assignment stipulates that the domain we choose must have at least 50 subdomains.

Sublist3r is a python utility that uses OSINT to enumerate website subdomains. It assists penetration testers and bug hunters in gathering and collecting subdomains for the site they are targeting. Sublist3r uses a variety of search engines to find subdomains, including Google, Yahoo, Bing, Baidu, and Ask. Sublist3r also uses Netcraft, Virustotal, ThreatCrowd, DNSdumpster, and ReverseDNS to find subdomains.



```
File Actions Edit View Help
# Coded By Ahmed Aboul-El* Baboul3la

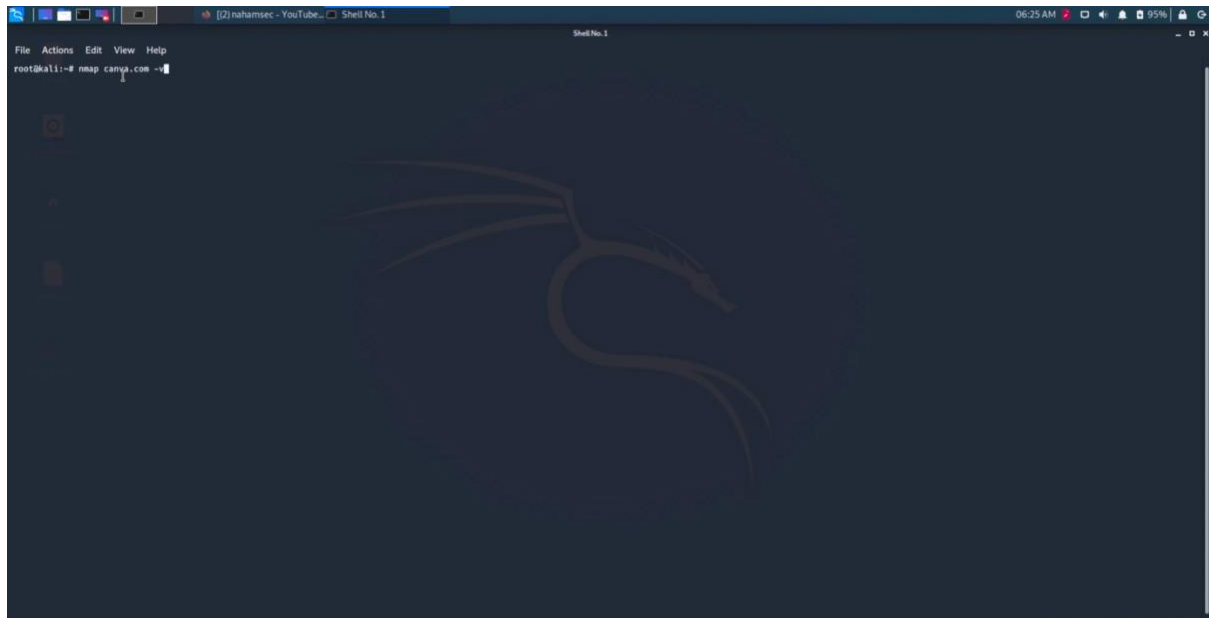
[+] Enumerating subdomains now for canva.com
[+] Searching now in Baidu..
[+] Searching now in Yahoo..
[+] Searching now in Google..
[+] Searching now in Bing..
[+] Searching now in Ask..
[+] Searching now in Metacraft..
[+] Searching now in Omdomster..
[+] Searching now in Virustotal..
[+] Searching now in ThreatCrowd..
[+] Searching now in SSL Certificates..
[+] Searching now in PassiveDNS..
[+] Total Unique Subdomains Found: 122

www.canva.com
ip-sc.canva.com
about.canva.com
about2.canva.com
vfo.canva.com
album.canva.com
alpha.canva.com
android.canva.com
animator.canva.com
api.canva.com
assets.canva.com
audio-private.canva.com
audio-public.canva.com
audio-upload.canva.com
banner-static.canva.com
blog.canva.com
button-demo.canva.com
careers.canva.com
category-public.canva.com
cl.canva.com
contribute.canva.com
corp.canva.com
l.create.canva.com
m87.create.canva.com
cse.canva.com
capi.cse.canva.com
file-uploads.cse.canva.com
public-file-uploads.cse.canva.com
static.cse.canva.com
design-automation-preset-styles.canva.com
designschool.canva.com
dev-static.canva.com
developer.canva.com
docs.developer.canva.com
document-export.canva.com
document-export-2.canva.com
download.canva.com
drive.canva.com
email.canva.com
vital.email.canva.com
```

According to the details in the above figure there are 122 sub domains

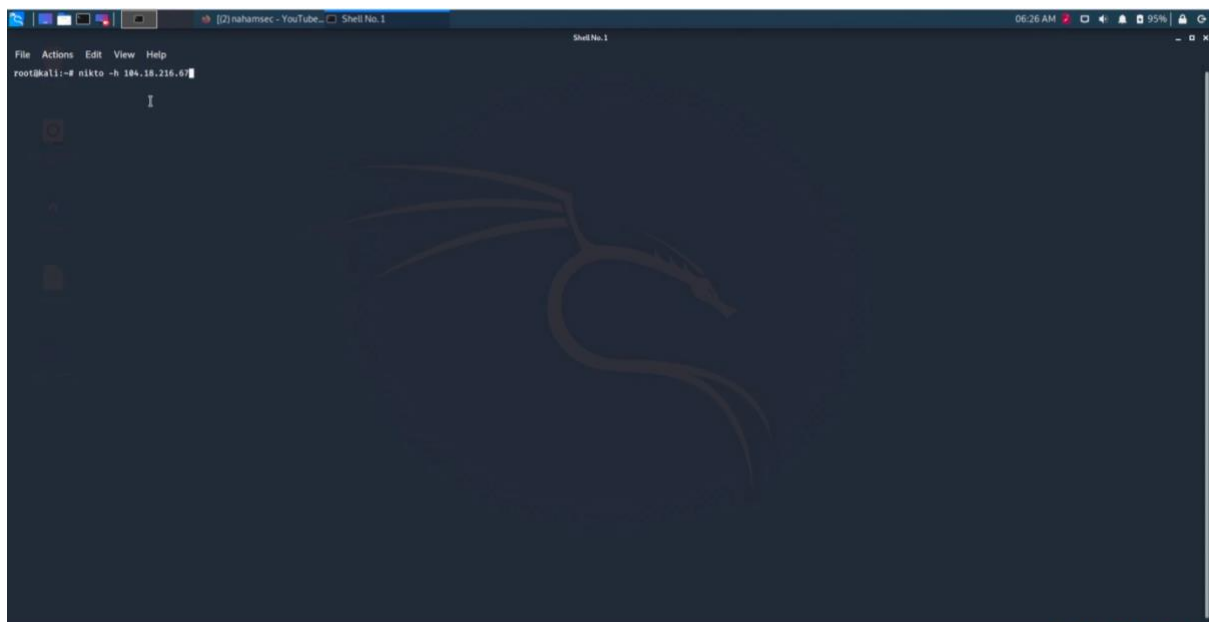
In my first effort, I attempted to exploit the site that I chose without first evaluating the site's vulnerabilities using several tools. Those attempts, however, were futile because the site was far more secure than I had imagined. Then I looked for ways to conduct a web audit properly. Nahamsec's "YouTube" videos on the issue given me some insight into web audits. According to the video, the recon must be done correctly by finding vulnerabilities and obtaining as much information as possible about the site before attempting the exploitation.

Nmap (Network Mapper) is a free and open-source vulnerability scanner and network discovery tool. Nmap is a network administrator's tool for determining what devices are running on their systems, locating available hosts and the services they provide, discovering open ports, and detecting security threats.



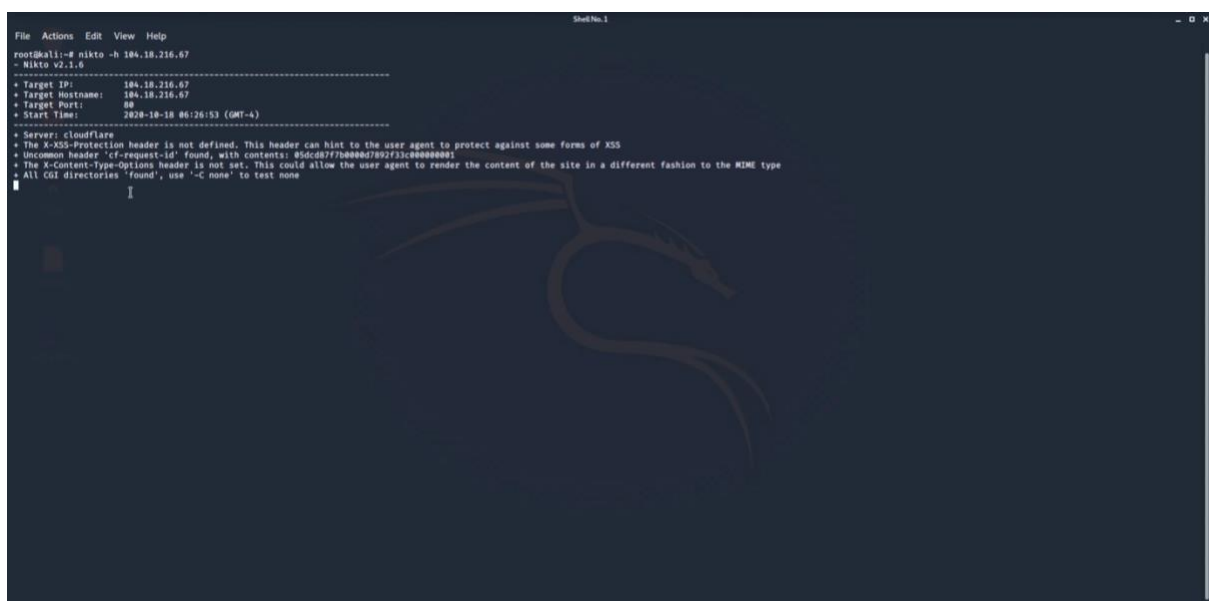
This figure shows how I used the Nmap tool to gather information about my domain and detected five open ports as well as the domain's IP address.

Nikto is an open-source vulnerability scanner written in Perl that provides extra vulnerability scanning particular to web servers. It was first released in late 2001. It scans web servers for 6400 potentially harmful files and scripts, 1200 out-of-date server versions, and approximately 300 version-specific issues.



```
File Actions Edit View Help
root@kali:~# nikto -h 104.18.216.0
```

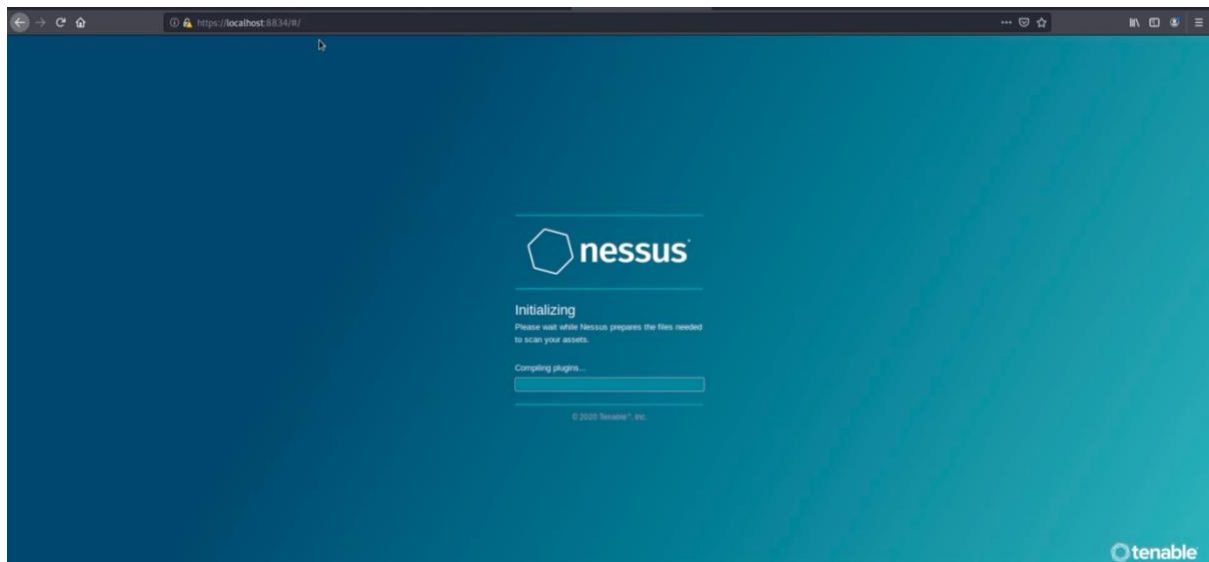
The terminal window shows the command to run Nikto on a target IP. The background features a Kali Linux dragon logo.



```
File Actions Edit View Help
root@kali:~# nikto -h 104.18.216.67
- Nikto v2.1.6
-----
+ Target IP: 104.18.216.67
+ Target Hostname: 104.18.216.67
+ Target Port: 80
+ Start Time: 2020-10-18 06:26:53 (GMT-4)
-----
+ Servers: Cloudflare
+ The X-XSS-Protection header is not defined. This header can hint to the user agent to protect against some forms of XSS
+ Uncommon header 'cf-request-id' found, with contents: 85dc87f7b000d7892f33c000000001
+ The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type
+ All CGI directories 'found', use '-C none' to test none
```

The terminal window shows the output of the Nikto scan. The background features a Kali Linux dragon logo.

Nessus is a remote security scanning application that examines a computer and alerts you if it finds any vulnerabilities that malevolent hackers could exploit to obtain access to any computer on your network. It accomplishes this by doing over 1200 checks on a specific machine, determining whether any of these attacks might be used to break into or harm the machine.



nessus

Scans Settings

FOLDERS

- My Scans
- All Scans
- Trash

REFERENCES

- Policies
- Plugin Rules
- Scanners

TENABLE

- Community
- Research

Tenable News

- Writing Security Advisories: 5 Best Practices For ...

canva

Back to My Scans

Configure Audit Trail Launch Report Export

Hosts 1 Vulnerabilities 2 History 1

Filter Search Hosts 1 Host

Host	Vulnerabilities
104.18.216.67	14

Scan Details

Policy: Web Application Tests
Status: Completed
Scanner: Local Scanner
Start: October 16 at 8:26 AM
End: October 16 at 8:39 AM
Elapsed: 12 minutes

Vulnerabilities

Critical

High

Medium

Low

Info

nessus

Scans Settings

FOLDERS

- My Scans
- All Scans
- Trash

REFERENCES

- Policies
- Plugin Rules
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canva

Back to My Scans

Configure Audit Trail Launch Report Export

Hosts 1 Vulnerabilities 2 History 1

Filter Search Vulnerabilities 2 Vulnerabilities

Sev	Name	Family	Count
INFO	Nessus SYN scanner	Port scanners	13
INFO	Nessus Scan Information	Settings	1

Scan Details

Policy: Web Application Tests
Status: Completed
Scanner: Local Scanner
Start: October 16 at 8:26 AM
End: October 16 at 8:39 AM
Elapsed: 12 minutes

Vulnerabilities

Critical

High

Medium

Low

Info

https://localhost:8834/#/scans/reports/17/vulnerabilities

canva / Plugin #11219

Back to Vulnerabilities

Configure Audit Trail Launch Report Export

Hosts 1 Vulnerabilities 2 History 1

INFO Nessus SYN scanner

Description

This plugin is a SYN 'half-open' port scanner. It shall be reasonably quick even against a firewalled target.

Note that SYN scans are less intrusive than TCP (full connect) scans against broken services, but they might cause problems for less robust firewalls and also leave unclosed connections on the remote target, if the network is loaded.

Solution

Protect your target with an IP filter.

Output

Port 80/tcp was found to be open

Port	Hosts
80/tcp	104.18.216.67

Port 443/tcp was found to be open

Port	Hosts
443/tcp	104.18.216.67

Port 2852/tcp was found to be open

Plugin Details

Severity: Info
ID: 11219
Version: \$Revision: 1.34 \$
Type: remote
Family: Port scanners
Published: February 4, 2009
Modified: September 14, 2020

Risk Information

Risk Factor: None

The screenshot displays the Nessus web interface at the URL `https://localhost:8834/#/scans/reports/17/vulnerabilities/11219`. The page title is "canva / Plugin #11219". The left sidebar contains navigation links: "My Scans", "All Scans", "Trash", "Policies", "Plugin Rules", "Scanners", "Community", and "Research". The main content area shows the details for the "Nessus SYN scanner" plugin. The "Description" section states: "This plugin is a SYN 'half-open' port scanner. It shall be reasonably quick even against a firewalled target. Note that SYN scans are less intrusive than TCP (full connect) scans against broken services, but they might cause problems for less robust firewalls and also leave unclosed connections on the remote target, if the network is loaded." The "Solution" section says: "Protect your target with an IP filter." The "Output" section lists three findings:

Port	Hosts
80/tcp	104.18.216.67

Port	Hosts
443/tcp	104.18.216.67

Port	Hosts
2052/tcp	104.18.216.67

report by nessus as a result, the nessuss scan was not successful because I did not receive any high or critical vulnerabilities.

Netsparker is automated web application security scanner that allows you to scan websites, web apps, and web services for security issues while remaining fully customisable. Netsparker can scan any web application, independent of the platform or programming language used to create it. Netsparker is the only online web application security scanner that exploits discovered vulnerabilities in a read-only and secure manner to confirm concerns. It also provides evidence of the vulnerability, so you don't have to waste time manually validating it. For example, if a SQL injection vulnerability is found, the database name will be displayed as proof of exploit.

The screenshot displays the Netsparker web application security scanner interface. The main panel shows 'Vulnerability Details' for a detected issue: 'Weak Ciphers Enabled'. The vulnerability is classified as 'Medium' (6.5/10) and is related to 'TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384 (0x0020)'. The impact states: 'Attackers might decrypt SSL traffic between your server and your visitors.' The actions to take are: 'For Apache, you should modify the SSLCipherSuite directive in the httpd.conf file.' The scan progress bar shows 100% completion. The left sidebar lists various security issues, including 'Weak Ciphers Enabled', 'Insecure Frame (External)', 'Insecure Transport Security Protocol', 'Possible Cross-site Request Forgery (XSS)', 'Possible Phishing by Navigating Browser', 'Insecure Transport Security Protocol', 'Content Security Policy (CSP) Not Implemented', 'Expect-CT Not Enabled', 'Missing X-SS-Protection Header (Variants)', 'Referer-Policy Not Implemented (Variants)', 'Forbidden Resource (Variants: 11)', 'Expect-CT in Report Only Mode', and 'Web Application Firewall Detected'.

The screenshot displays the Netsparker web application security scanner interface. The main panel shows a 'One more step' message: 'Please complete the security check to access www.canva.com'. The message states: 'Please turn JavaScript on and reload the page.' The scan progress bar shows 100% completion. The left sidebar lists various security issues, including 'Weak Ciphers Enabled', 'Insecure Frame (External)', 'Insecure Transport Security Protocol', 'Possible Cross-site Request Forgery (XSS)', 'Possible Phishing by Navigating Browser', 'Insecure Transport Security Protocol', 'Content Security Policy (CSP) Not Implemented', 'Expect-CT Not Enabled', 'Missing X-SS-Protection Header (Variants)', 'Referer-Policy Not Implemented (Variants)', 'Forbidden Resource (Variants: 11)', 'Expect-CT in Report Only Mode', and 'Web Application Firewall Detected'.

Conclusion

To do my site audit, I employed a variety of technologies , Sublist3r, Nmap, Nikto, Nessuss, and Netsparker are the tools in question. However, none of the above scans revealed any high, critical, or impactful vulnerabilities in the canva.com domain. As a result, in my opinion, canva.com is a significantly more secure web application.