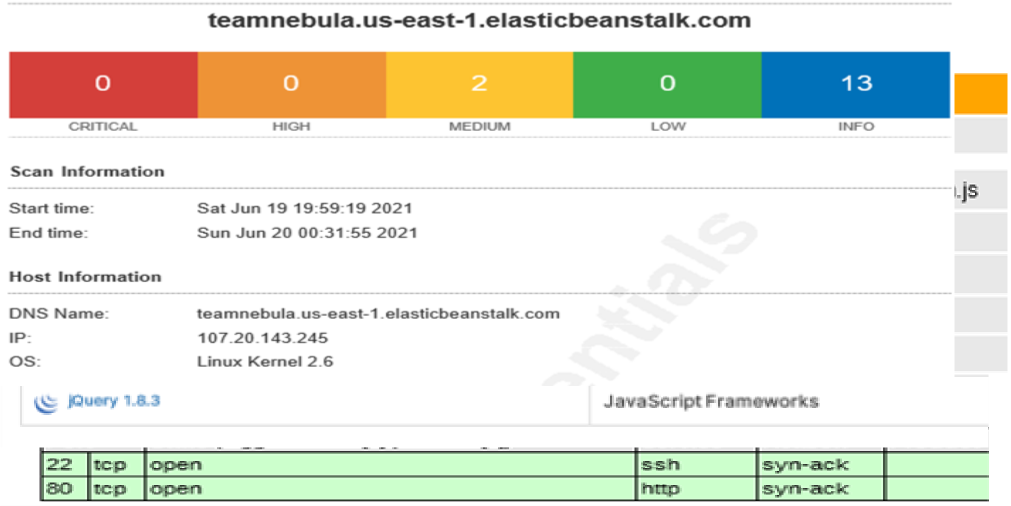


teamnebula.us-east-1.elasticbeanstalk.com

0	0	2	0	13
CRITICAL	HIGH	MEDIUM	LOW	INFO

Scan Information

Start time: Sat Jun 19 19:59:19 2021
End time: Sun Jun 20 00:31:55 2021

Host Information

DNS Name: teamnebula.us-east-1.elasticbeanstalk.com
IP: 107.20.143.245
OS: Linux Kernel 2.6

jQuery 1.8.3 | JavaScript Frameworks

```
22  tcp  open    ssh   syn-ack
80  tcp  open    http  syn-ack
```

.js

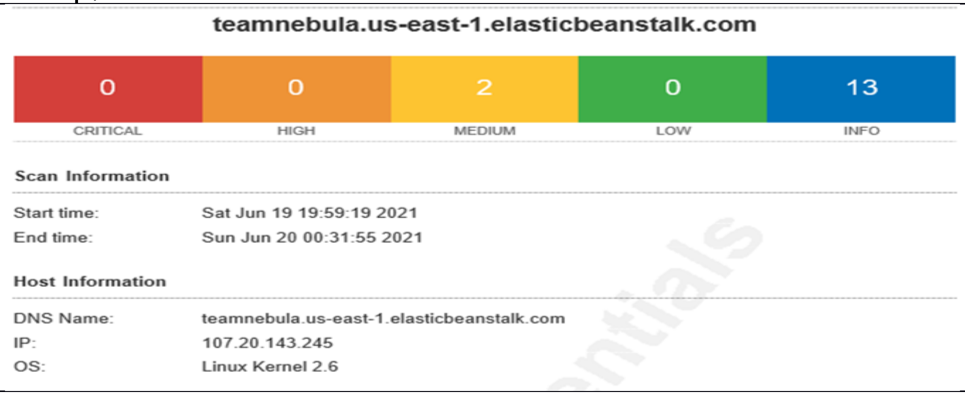
Part 1: An Executive Summary of a Network and Information Security Management (NISM) Assessment Project.

a. A brief summary of the work carried out

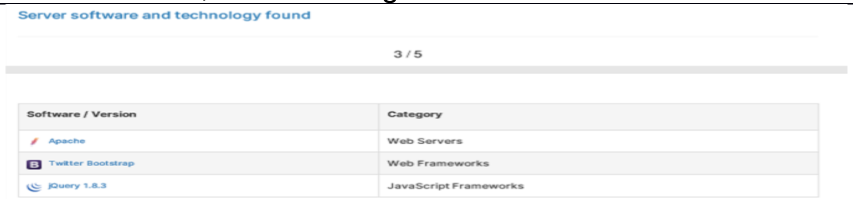
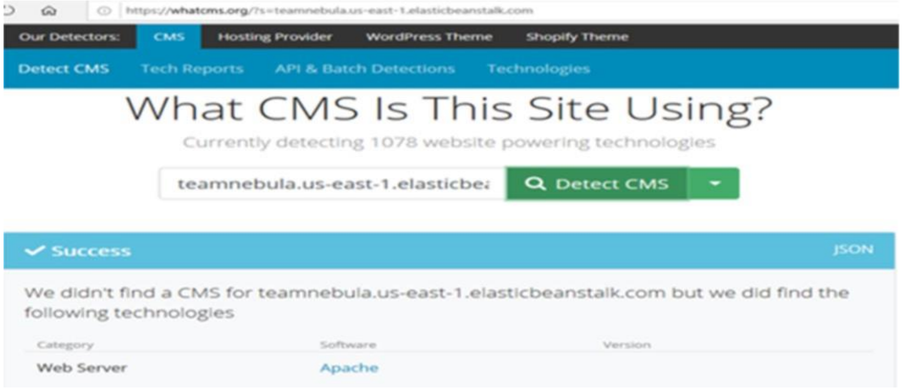
b. **Summary findings – presented in an easy to understand, non-technical manner (supported by graphics and charts as appropriate). David**

Group 5 was assigned an e-commerce website named http://www.teamnebula.us-east-1.elasticbeanstalk.com with 107.20.143.245 as the IP address to perform scans against it using the tools available in Kali Linux . The team also used other available tools to complement those available in Kali Linux in order to gather as much information from the site. Several questions were then answered that include:

1. Operating System does the web site utilize?

Answer	**Linux Kernel 2.6**
Tools	Nmap, Nessus Essentials
Scan Output	 teamnebula.us-east-1.elasticbeanstalk.com 0 CRITICAL, 0 HIGH, 2 MEDIUM, 0 LOW, 13 INFO Scan Information Start time: Sat Jun 19 19:59:19 2021 End time: Sun Jun 20 00:31:55 2021 Host Information DNS Name: teamnebula.us-east-1.elasticbeanstalk.com IP: 107.20.143.245 OS: Linux Kernel 2.6

2. What web server software is it running?

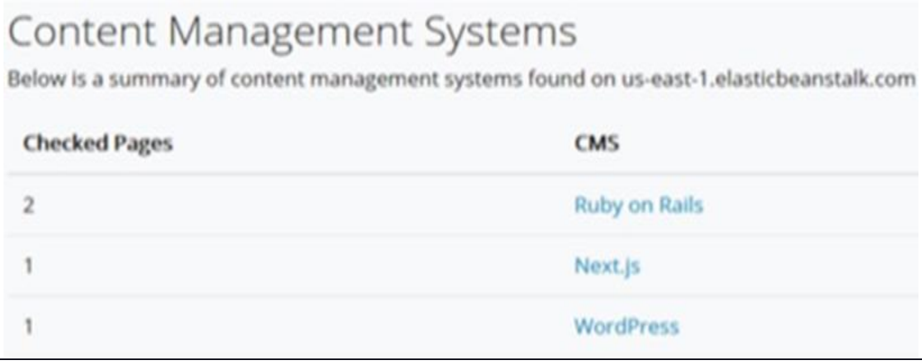
<table>
<tr><td><b>Answer</b></td><td><b>Apache</b></td></tr>
<tr><td>Tools</td><td>Pentest-Tools, whatcms.org</td></tr>
<tr><td>Scan Output</td><td>

Server software and technology found
3 / 5
<table>
<tr><th>Software / Version</th><th>Category</th></tr>
<tr><td>Apache</td><td>Web Servers</td></tr>
<tr><td>Twitter Bootstrap</td><td>Web Frameworks</td></tr>
<tr><td>jQuery 1.8.3</td><td>JavaScript Frameworks</td></tr>
</table>

https://whatcms.org/?s=teamnebula.us-east-1.elasticbeanstalk.com
Our Detectors: CMS Hosting Provider WordPress Theme Shopify Theme
Detect CMS Tech Reports API &amp; Batch Detections Technologies

What CMS Is This Site Using?
Currently detecting 1078 website powering technologies
teamnebula.us-east-1.elasticbe

✓ Success
We didn't find a CMS for teamnebula.us-east-1.elasticbeanstalk.com but we did find the following technologies
<table>
<tr><th>Category</th><th>Software</th><th>Version</th></tr>
<tr><td>Web Server</td><td>Apache</td><td></td></tr>
</table>
</td></tr>
</table>

3. Is it running a CMS (Wordpress, Drupal, etc)?

Answer	**Ruby on Rails, Next.js, WordPress**
Tools	whatcms.org

<table>
<tr><td>Scan Output</td><td>
Content Management Systems
Below is a summary of content management systems found on us-east-1.elasticbeanstalk.com
<table>
<tr><th>Checked Pages</th><th>CMS</th></tr>
<tr><td>2</td><td>Ruby on Rails</td></tr>
<tr><td>1</td><td>Next.js</td></tr>
<tr><td>1</td><td>WordPress</td></tr>
</table></td></tr>
</table>

4. What protection does it have (CDN, Proxy, Firewall?)

<table>
<tr><td><b>Answer</b></td><td><b>CDN exists because the content is cached on one AWS server. TCP traceroute revealed AWS proxies.</b></td></tr>
<tr><td>Tools</td><td>nmap</td></tr>
<tr><td>Scan Output</td><td><pre>
Starting Nmap 7.70 (https://nmap.org) at 2021-06-22 21:15
UTC
Nmap scan report for ec2-107-20-143-245.compute-
1.amazonaws.com (107.20.143.245)
Host is up (0.0075s latency).

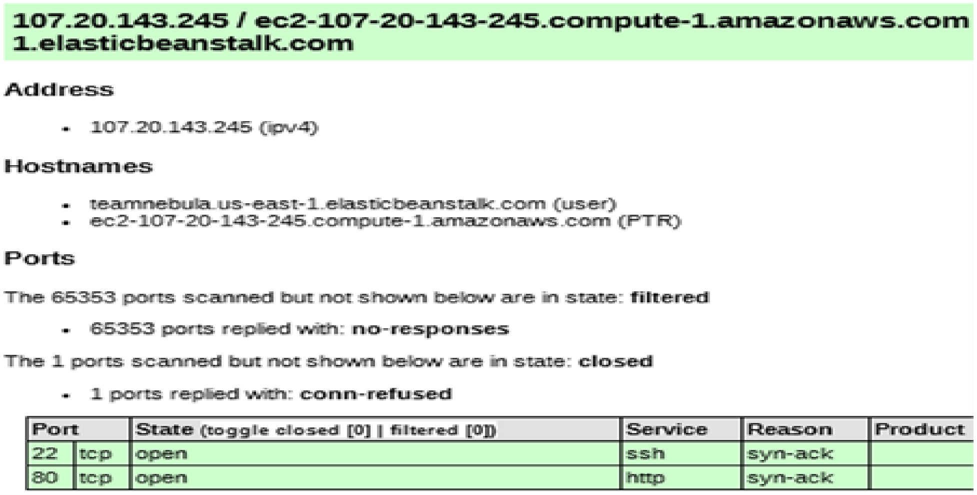
PORT   STATE   SERVICE
21/tcp   filtered ftp
22/tcp   open   ssh
23/tcp   filtered telnet
80/tcp   open   http
110/tcp filtered pop3
143/tcp filtered imap
443/tcp closed   https
3389/tcp filtered ms-wbt-server
Nmap done: 1 IP address (1 host up) scanned in 1.33 seconds
</pre></td></tr>
</table>

5. Where is it hosted?

Answer	**teamnebula.us-east-1.elasticbeanstalk.com,** **ec2-107-20-143-245.compute-1.amazonaws.com (PTR)** **Amazon AWS**

Tools	Dig, https://who.is/
Scan Output	OrgName: Amazon.com, Inc. OrgId: AMAZO-4 Address: Amazon Web Services, Inc. Address: P.O. Box 81226 City: Seattle StateProv: WA PostalCode: 98108-1226 Country: US

6. Does it have any open ports?

<table>
<tr><td><b>Answer</b></td><td><b>Yes, Open TCP Port: 22 (1 occurrence), Open TCP Port: 80 (1 occurrence)</b></td></tr>
<tr><td>Tools</td><td>Nmap</td></tr>
<tr><td>Scan Output</td><td>


107.20.143.245 / ec2-107-20-143-245.compute-1.amazonaws.com 1.elasticbeanstalk.com

Address

- 107.20.143.245 (ipv4)

Hostnames

- teamnebula.us-east-1.elasticbeanstalk.com (user)
- ec2-107-20-143-245.compute-1.amazonaws.com (PTR)

Ports

The 65353 ports scanned but not shown below are in state: **filtered**

- 65353 ports replied with: **no-responses**

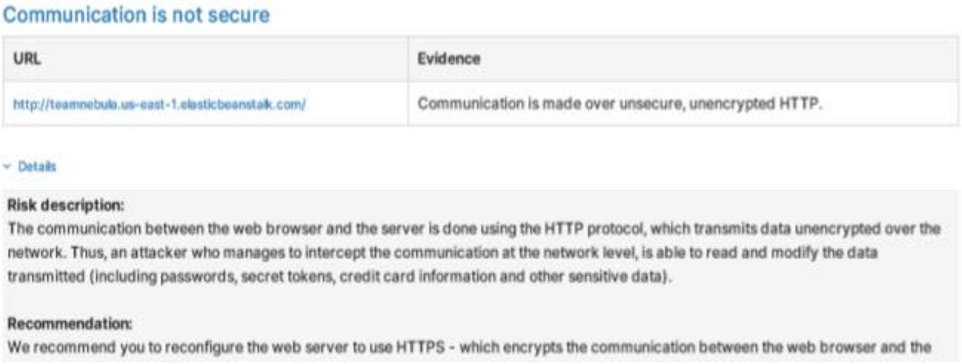
The 1 ports scanned but not shown below are in state: **closed**

- 1 ports replied with: **conn-refused**

<table>
<tr><th colspan="2">Port</th><th>State (toggle closed [0] | filtered [0])</th><th>Service</th><th>Reason</th><th>Product</th></tr>
<tr><td>22</td><td>tcp</td><td>open</td><td>ssh</td><td>syn-ack</td><td></td></tr>
<tr><td>80</td><td>tcp</td><td>open</td><td>http</td><td>syn-ack</td><td></td></tr>
</table>
</td></tr>
</table>

7. Does the site have any known vulnerabilities? **Yes**

Answer	1. Communication is made over unsecure Unencrypted HTTP 2. Response headers do not include: a. HTTP Content-Security-Policy security header b. HTTP X-Frame-Options security header c. HTTP X-XSS-Protection security header d. X-Content-Type-Options HTTP security header e. Referrer-Policy HTTP security header 3. No Anti-CSRF tokens were found in a HTML submission form SSH Weak Encryption Algorithms Supported (1 occurence) 4. MacOS X Finder '.DS_Store' Information Disclosure (1 occurence)

Tools	Pentest-Tools
Scan Output	

Communication is not secure

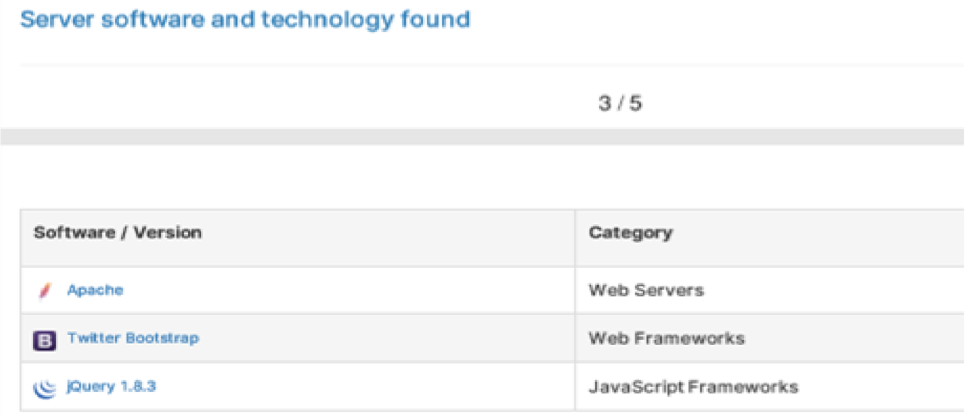
URL	Evidence
http://teamnebula.us-east-1.elasticbeanstalk.com/	Communication is made over unsecure, unencrypted HTTP.

⌄ Details

Risk description:
The communication between the web browser and the server is done using the HTTP protocol, which transmits data unencrypted over the network. Thus, an attacker who manages to intercept the communication at the network level, is able to read and modify the data transmitted (including passwords, secret tokens, credit card information and other sensitive data).

Recommendation:
We recommend you to reconfigure the web server to use HTTPS - which encrypts the communication between the web browser and the

8. What versions of software is it using?

Answer	**Apache webserver, Twitter Bootstrap Web Frameworks and jQuery 1.8.3 JavaScript Frameworks**
Tools	Pentest-Tools
Scan Output	

Server software and technology found

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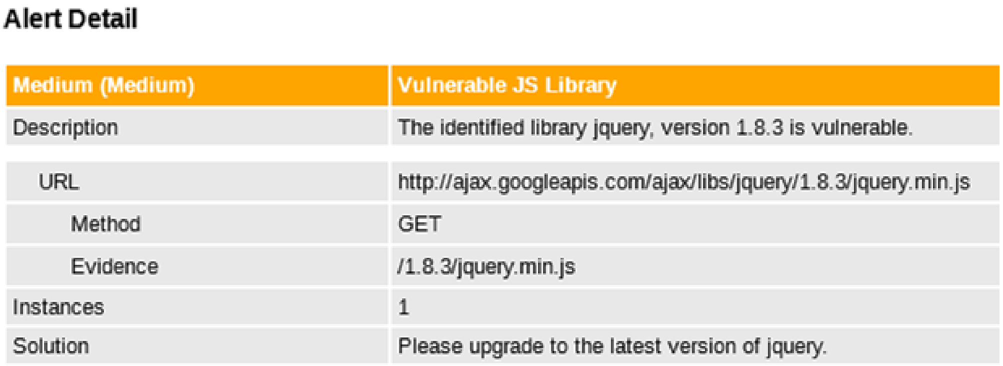
Software / Version	Category
Apache	Web Servers
Twitter Bootstrap	Web Frameworks
jQuery 1.8.3	JavaScript Frameworks

9. Are these patched so that they are up to date? **NO**

Answer	**NO**
Tools	Zap Scanning
Scan Output	

Alert Detail

Medium (Medium)	Vulnerable JS Library
Description	The identified library jquery, version 1.8.3 is vulnerable.
URL	http://ajax.googleapis.com/ajax/libs/jquery/1.8.3/jquery.min.js
Method	GET
Evidence	/1.8.3/jquery.min.js
Instances	1
Solution	Please upgrade to the latest version of jquery.

c. A section that evaluates the website against two security standards – one of which must be the GDPR directive.

d. Conclusions – with justifications.

After the pen test, there are various security threats and need to mitigate, in descending order, based on risk:

1. Linux Kernel

   In the Nessus essentials test, although there are only 2 medium threats, but it can detect the Linux Kernel 2.6.
   Linux Kernel 2.6 has been identified a serious vulnerability, which can be exploited by an attacker to launch a remote, unauthenticated denial-of-service (DoS) attack.
   There are total of 3 security holes, the one which impact the most is called “dubbed SACK Panic”, with identifier CVE-2019-11477, Linux Kernel starting from 2.6.29 is affected.
   The other 2 security holes related to the same issue are CVE-2019-5599 and CVE-2019-11479.
   The only solution to solve the issue is doing the kernel updates. It is impossible to patch the current kernel for mitigations. For example, disable the whole SACK process or block the connections with a low MSS (Eduard, 2019).

2. Unencrypted opening ports:
   In the pen test, we also found that both port 21 and 80 is opened. 80 is a non-SSL http port, which means there is no encryption between the client and server when communicating through this port. Unencrypted open port can be vulunarable. For example, malware can be spread through open port, which is also called Trojan port; services and applications will be exploited as it is not encrypted; configuration of services maybe captured by hackers; and easy to be attacked by DoS which will crash the server and cause unlimited downtime (Acunetix, 2014)

3. Too many unuse CMS systems:
   We also found that there are too many CMS systems running on the web server, which may cause potential security threat. Exposure of the use of CMS systems will cause different kinds of cyber-attack. The most common is SQL injections and database attacks, which the hacker aims to the security holes of every system.
   Many CMS systems are public with multi admins, such as WordPress, which is also detected in the pen test. Human error in such occasion will be the most likely cause of the threat. For example, hackers can see the details of one of the admins, when he/she has left from the seat but without logging out, which may cause unwanted security threats (FutureEnTech, 2020).

e. Recommendations – with justifications, ordered by business priority.

REFRENCES

1. Pentest-tools.com (2021) Website Vulnerability Scanner Available from: https://pentest-tools.com/website-vulnerability-scanning/website-scanner [Accessed on 7 June 2021].

2. Whatcms.org(2021) What CMS Is This Site Using? Available from: https://whatcms.org/ [Accessed on 7 June 2021].

3. Eduard, K (2019) Serious Vulnerabilities in Linux Kernel Allow Remote DoS Attacks, Available at: https://www.securityweek.com/serious-vulnerabilities-linux-kernel-allow-remote-dos-attacks (Accessed: 6th July 2021).

4. Acunetix (2014) Danger: Open Ports – Trojan is as Trojan does, Available at: https://www.acunetix.com/blog/articles/danger-open-ports-trojan-trojan/ (Accessed: 6th July 2021).

5. FutureEnTech (2020) 9 Default Security Threats in WordPress and How to Fix Them, Available at: https://futureentech.com/9-default-security-threats-wordpress-fix/#:~:text=%209%20Default%20Security%20Threats%20in%20WordPress%20and,and%20it%20works%20by%20creating%20a...%20More%20 (Accessed: 6th July 2021).

CZESKA'S PENTEST RESULTS BELOW (PLEASE REARRANGE HOW YOU SEE FIT)

OSINT FRAMEWORK

Maxmind.com

IP address – 54.243.142.38

Country code – US

Location – Ashburn, Virginia, US

Network – 54.243.128.0/19

Postal code – 20149

Approximate coordinates – 39,0481 / -77,4728

Accuracy radius – 1 KM

Metro code – 511

ISP/domain – Amazon

IP2Location

Address type – unicast

Usage type – DCH (data centre/web hosting/ transit)

Anonymous proxy – no

Last seen – 18 days ago

DB-IP.com

Weather code – USVA0027

Iscrawler – no

Threat level – low

Infobyip

Decimal IP – 921931302

Binary IP – 00110110 11110011 10001110 00100110

Hex IP - 0x36f38e26

--

Ipaddress.my

Connection speed – Company/T1

Shodan

Open ports – 80/TCP

Other ports – 80, 443, 5000

Web technologies – Bootstrap , Jquery

Server – Apache

Cache-Control – no cache

Transfer-Encoding – chunked

https://www.shodan.io/search?query=amazon

Spyse

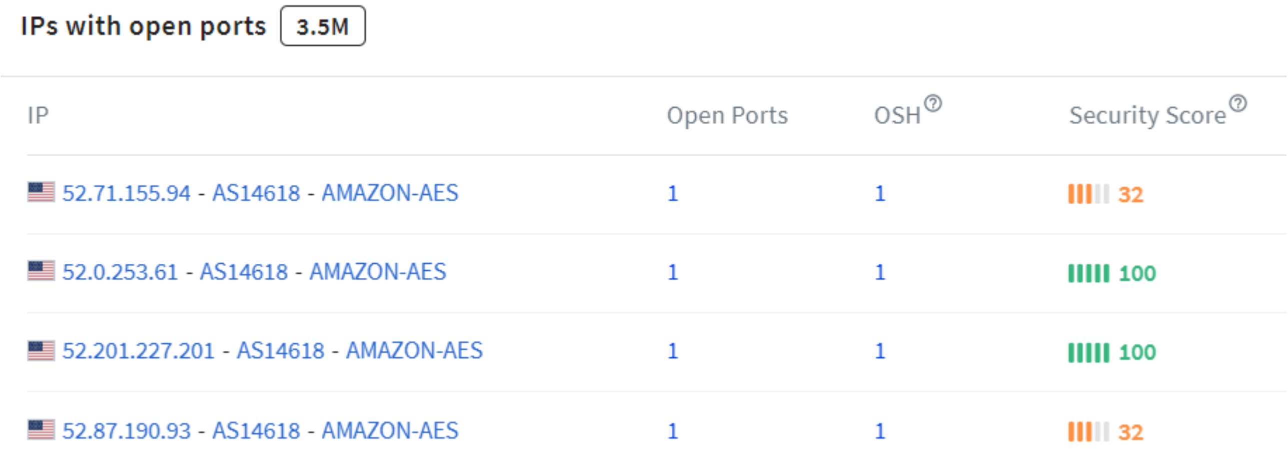
Ipv4 subnets – 362

Ipv6 subnets – 31

Domains – 29M

Related organisations – 2.1K

Security score – 100%

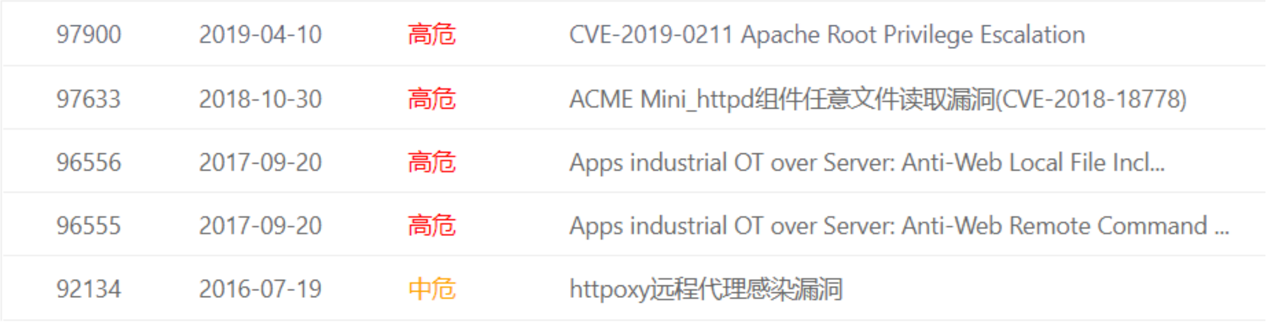


IPs with open ports 3.5M

IP	Open Ports	OSH	Security Score
52.71.155.94 - AS14618 - AMAZON-AES	1	1	32
52.0.253.61 - AS14618 - AMAZON-AES	1	1	100
52.201.227.201 - AS14618 - AMAZON-AES	1	1	100
52.87.190.93 - AS14618 - AMAZON-AES	1	1	32

Zoomeye

Vulnerabilities – See below



97900	2019-04-10	高危	CVE-2019-0211 Apache Root Privilege Escalation
97633	2018-10-30	高危	ACME Mini_httpd组件任意文件读取漏洞(CVE-2018-18778)
96556	2017-09-20	高危	Apps industrial OT over Server: Anti-Web Local File Incl...
96555	2017-09-20	高危	Apps industrial OT over Server: Anti-Web Remote Command ...
92134	2016-07-19	中危	httpoxy远程代理感染漏洞

IP void

IP blacklist status – possibly safe 0/115

Google dorking

site:amazon.co.uk filetype:pdf -

- **http://g-ec2.images-amazon.com/images/G/02/uk-family/amazon-family-night-guide.pdf**
- **https://m.media-amazon.com/images/G/02/Legal/Amazon_ModernDaySlaveryStatement_2018.docx._CB1198675309_.pdf**
- **https://m.media-amazon.com/images/G/02/images/cancellationform_uk_new._CB1198675309_.pdf**
- **https://business.amazon.co.uk/content/dam/amzn-biz/global/images/blogs/documents/reports/Hackett_Report.pdf**
-

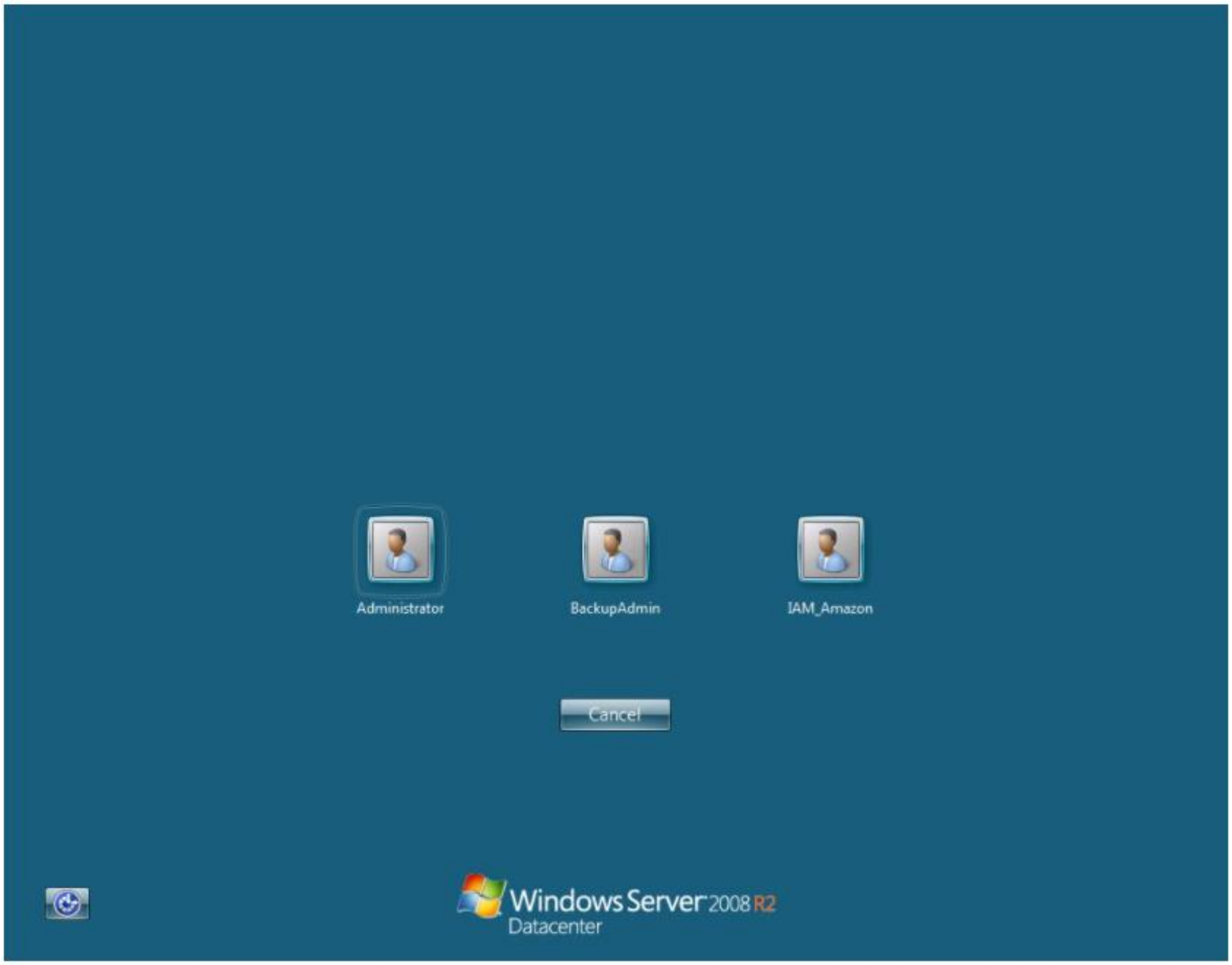
shodan membership report

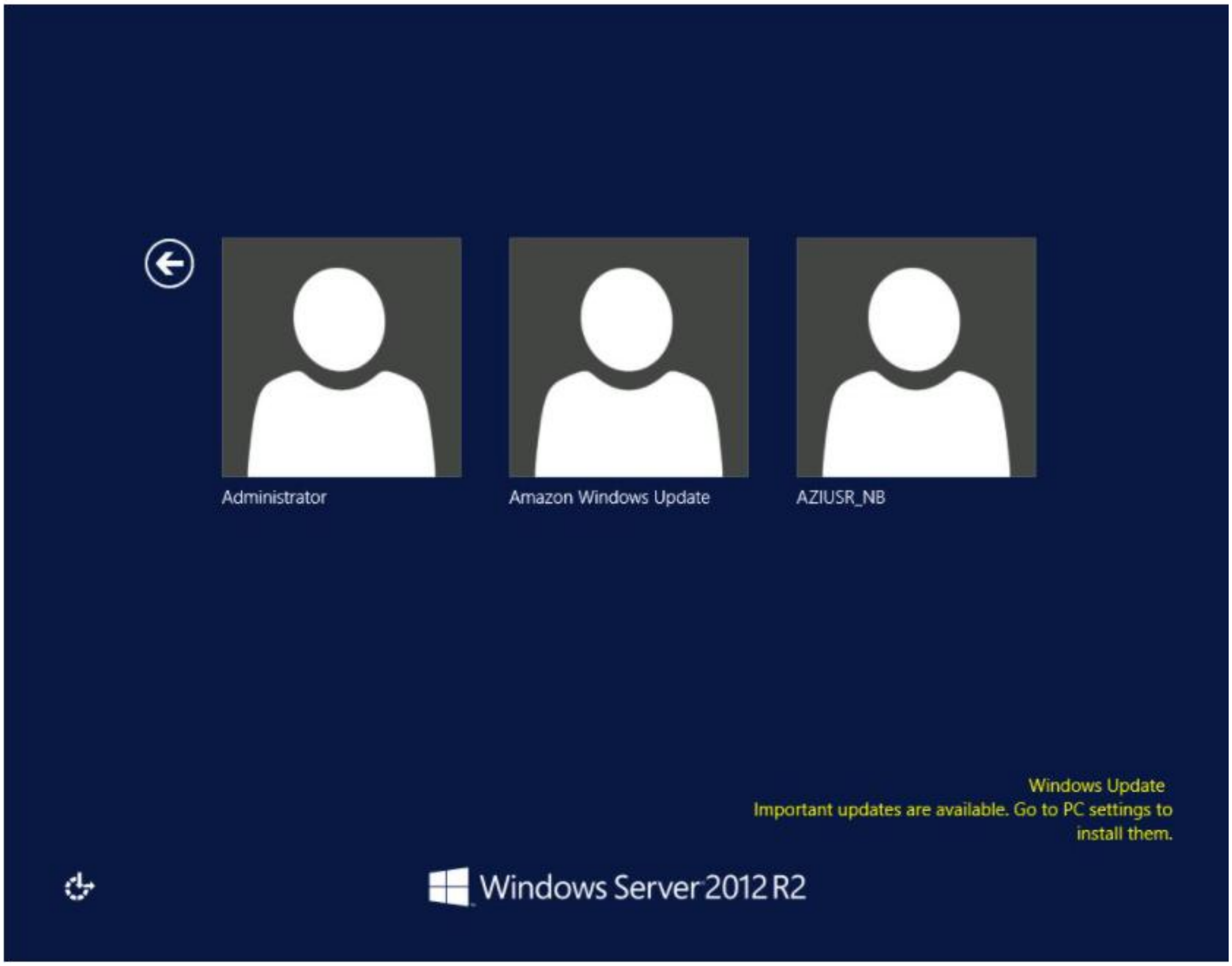
Hostnames	**ec2-54-187-238-157.us-west-2.compute.amazonaws.com**
Domains	**AMAZONAWS.COM**
Country	**United States**
City	**Boardman**
Organization	**Amazon.com, Inc.**
ISP	**Amazon.com, Inc.**

ASN	**AS16509**

OpenPorts

80, 3389, 1433





Windows Update
Important updates are available. Go to PC settings to install them.