

PSP0201

Week 3

Writeup

Group Name: UrKomputerHasPirus

Members:

ID	Name	Role
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1211101114	Chong Yi Jing	Member
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1211101734	Ernest Leong Zheng Yang	Member

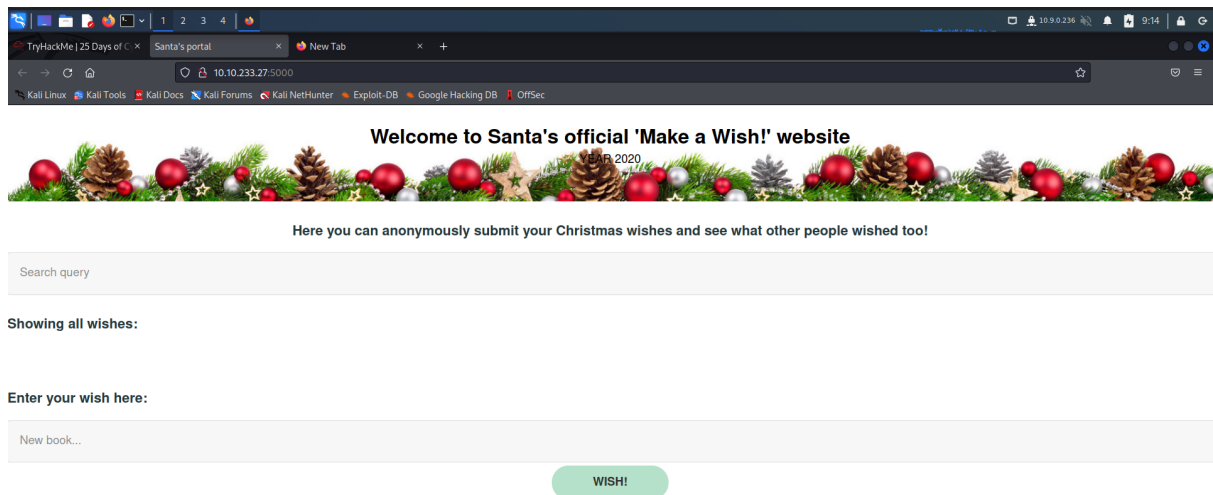
Day 6: Web Exploitation - Be careful with what you wish on a Christmas night

Tools Used: Kali Linux, OWASP

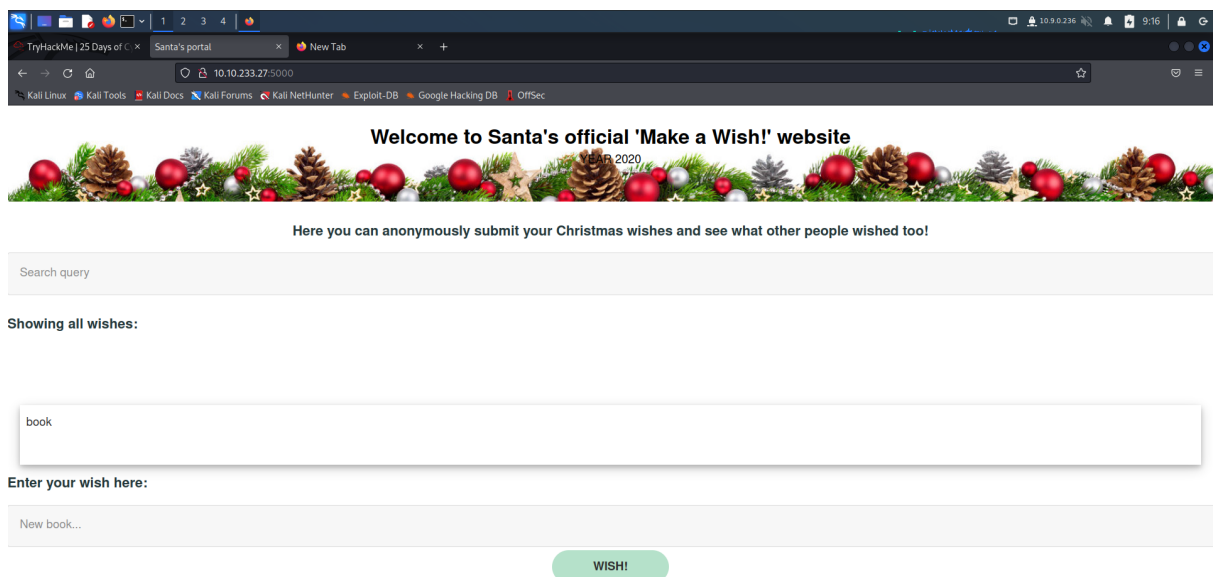
Solution/ Walkthrough

Question 1-3

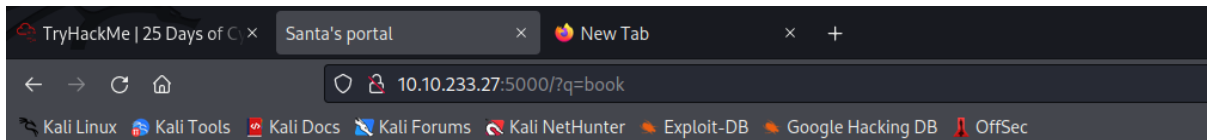
Go to the machine ip provided with port 5000



Stored Cross-site Scripting could be used to exploit this application

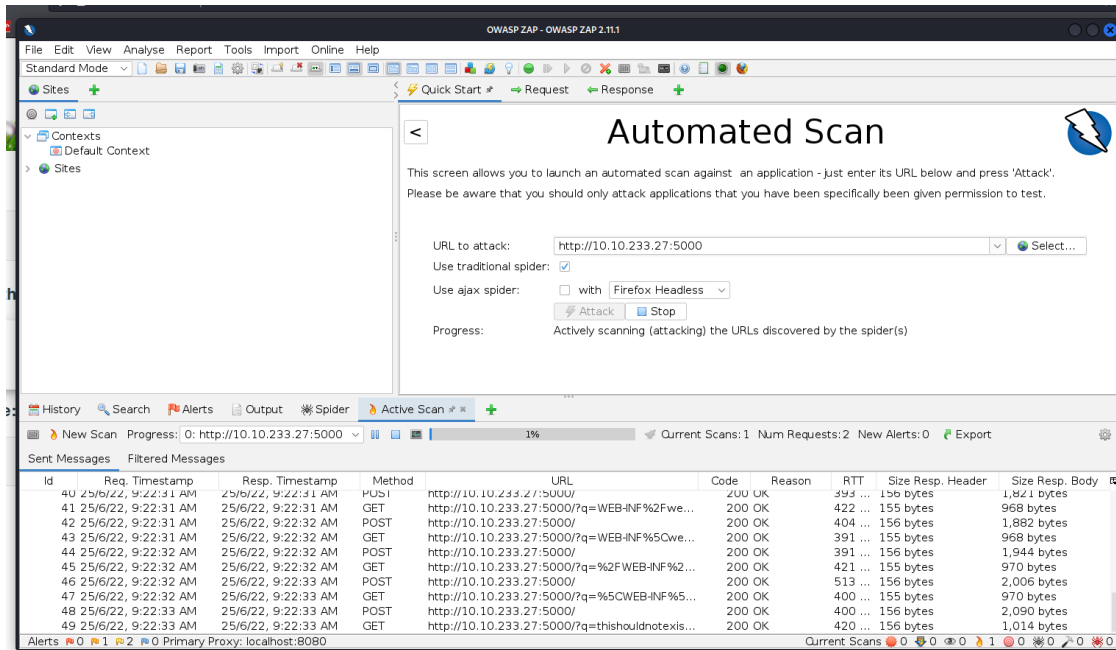


“q” as the query string



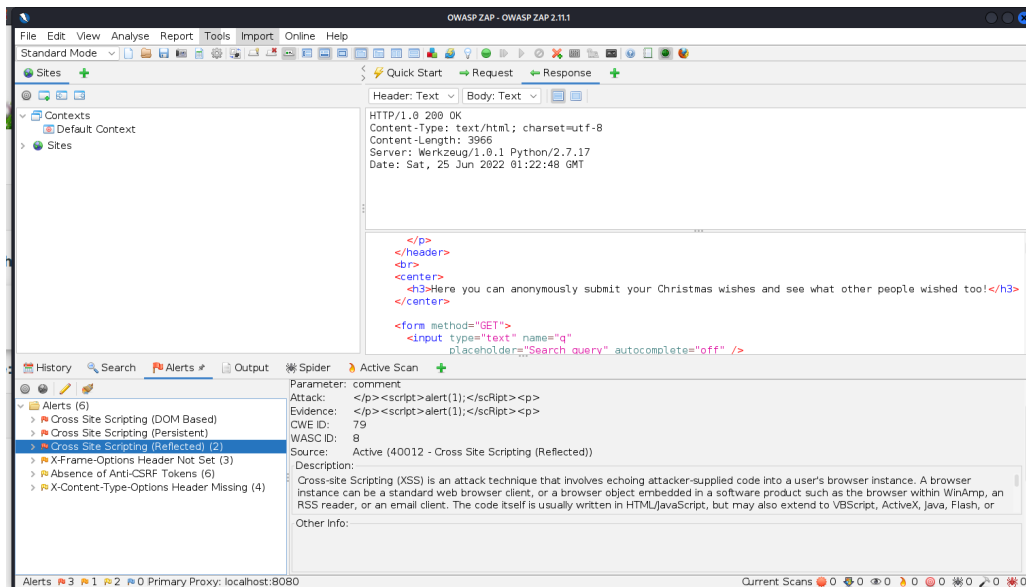
Question 4

Use OWASP ZAP to run a scan on it



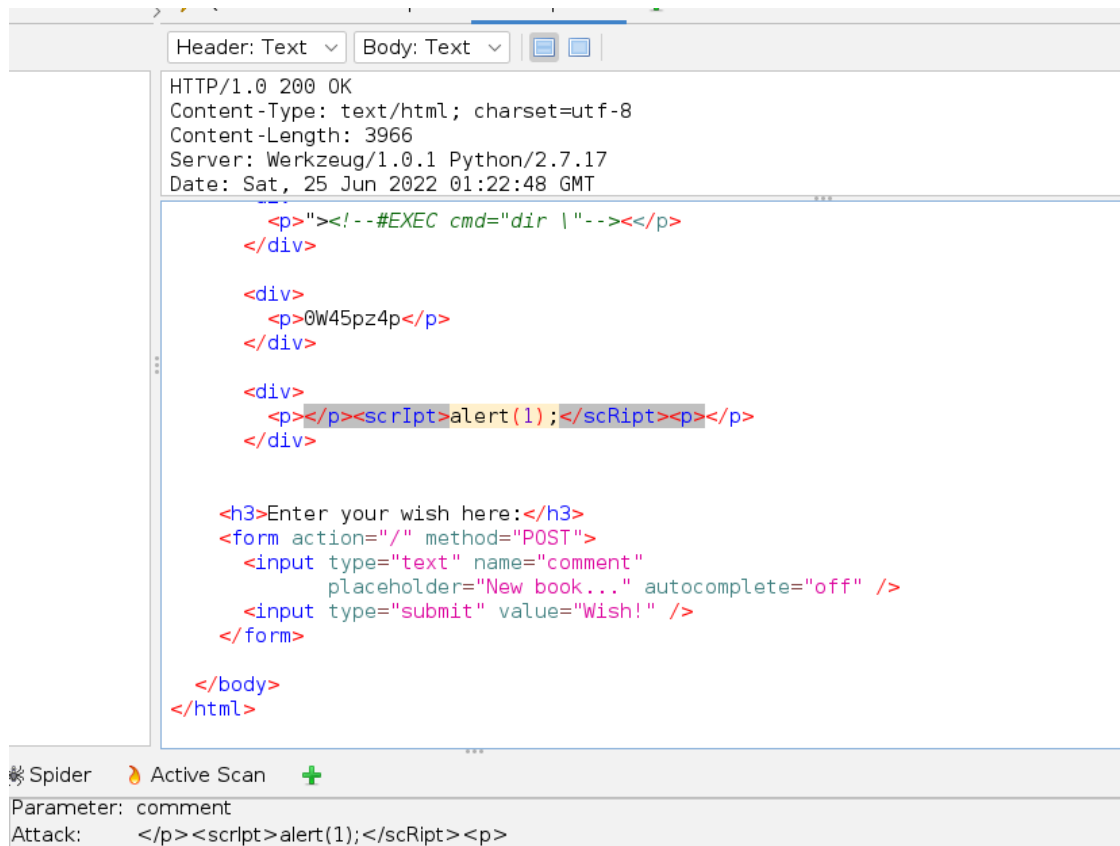
Question 5

3 types of XSS Alerts from the results, but reflected XSS should be the one we're looking for



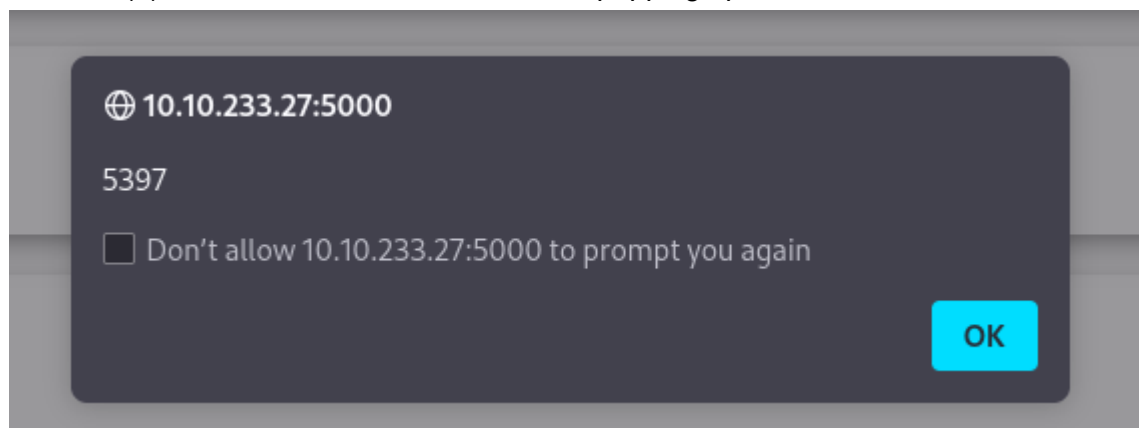
Question 6

Found weird script



Question 7

Run alert(1) random alert with numbers 5397 popping up



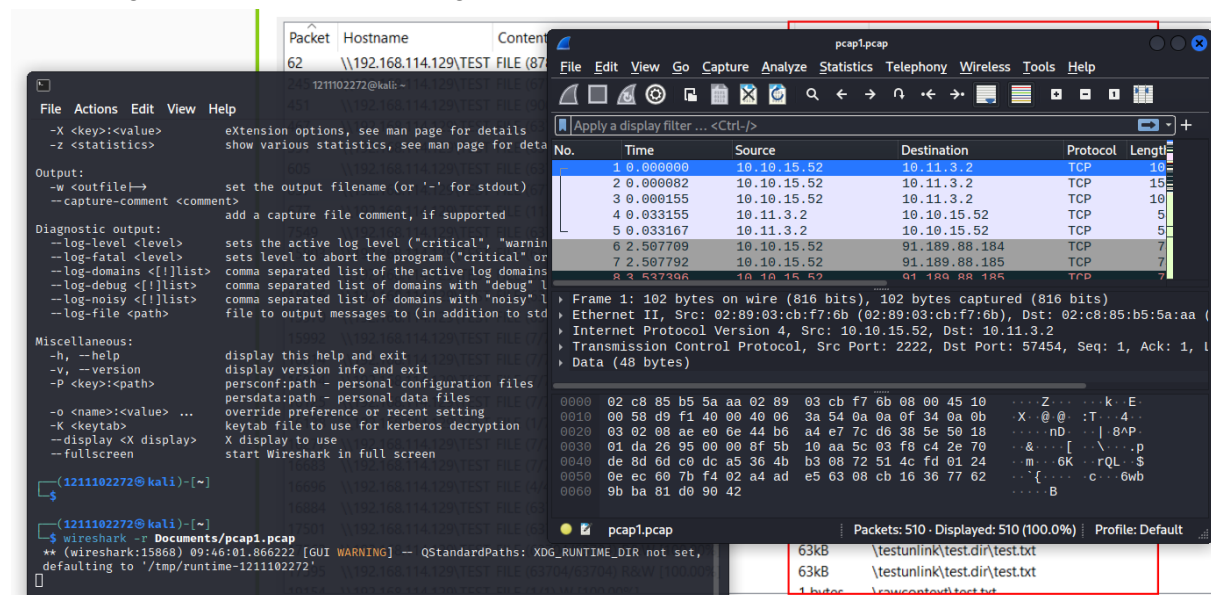
Day 7: Networking - The Grinch really did Steal Christmas

Tools Used: Kali Linux, WireShark

Solution/ Walkthrough

Question 1

Launching wireshark with the -r flag to read the .pcap file provided



Applying the ICMP display filter, the address which initiated it is 10.11.3.2 as seen from the “source” tab

pcap1.pcap

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

icmp

No.	Time	Source	Destination	Protocol	Length	Info
17	10.430447	10.11.3.2	10.10.15.52	ICMP	74	Echo (ping) request id=0x0001, seq=1/256, ttl=127 (reply in 18)
18	10.430472	10.10.15.52	10.11.3.2	ICMP	74	Echo (ping) reply id=0x0001, seq=1/256, ttl=64 (request in 17)
19	11.428953	10.11.3.2	10.10.15.52	ICMP	74	Echo (ping) request id=0x0001, seq=2/512, ttl=127 (reply in 20)
20	11.428977	10.10.15.52	10.11.3.2	ICMP	74	Echo (ping) reply id=0x0001, seq=2/512, ttl=64 (request in 19)
21	12.432844	10.11.3.2	10.10.15.52	ICMP	74	Echo (ping) request id=0x0001, seq=3/768, ttl=127 (reply in 22)
22	12.432870	10.10.15.52	10.11.3.2	ICMP	74	Echo (ping) reply id=0x0001, seq=3/768, ttl=64 (request in 21)
23	13.433469	10.11.3.2	10.10.15.52	ICMP	74	Echo (ping) request id=0x0001, seq=4/1024, ttl=127 (reply in 24)
24	13.433495	10.10.15.52	10.11.3.2	ICMP	74	Echo (ping) reply id=0x0001, seq=4/1024, ttl=64 (request in 23)

Frame 17: 74 bytes on wire (592 bits), 74 bytes captured (592 bits)
 Ethernet II, Src: 02:c8:85:b5:5a:aa (02:c8:85:b5:5a:aa), Dst: 02:89:03:cb:f7:6b (02:89:03:cb:f7:6b)
 Internet Protocol Version 4, Src: 10.11.3.2, Dst: 10.10.15.52
 Internet Control Message Protocol

Question 2

the filter “HTTP.REQUEST.METHOD == GET” is used.

pcap1.pcap

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

http.request.method == GET

No.	Time	Source	Destination	Protocol	Length	Info
67	62.185888	10.10.67.199	10.10.15.52	HTTP	384	GET / HTTP/1.1
71	62.478603	10.10.67.199	10.10.15.52	HTTP	333	GET /fontawesome/css/all.min.css HTTP/1.1
75	62.479630	10.10.67.199	10.10.15.52	HTTP	348	GET /css/dark.css HTTP/1.1
83	62.480991	10.10.67.199	10.10.15.52	HTTP	333	GET /js/bundle.js HTTP/1.1
85	62.481945	10.10.67.199	10.10.15.52	HTTP	342	GET /js/instantpage.min.js HTTP/1.1
95	62.487186	10.10.67.199	10.10.15.52	HTTP	347	GET /images/icon.png HTTP/1.1
105	62.516878	10.10.67.199	10.10.15.52	HTTP	336	GET /post/index.json HTTP/1.1
107	62.530696	10.10.67.199	10.10.15.52	HTTP	438	GET /fonts/noto-sans-jp-v25-japanese_latin-regular.woff2 HTTP/1.1
108	62.532591	10.10.67.199	10.10.15.52	HTTP	445	GET /fontawesome/webfonts/fa-solid-900.woff2 HTTP/1.1
117	62.540748	10.10.67.199	10.10.15.52	HTTP	415	GET /fonts/roboto-v28-latin-regular.woff2 HTTP/1.1
202	62.788297	10.10.67.199	10.10.15.52	HTTP	315	GET /favicon.ico HTTP/1.1
295	63.665611	10.10.67.199	10.10.15.52	HTTP	445	GET / HTTP/1.1
299	63.654788	10.10.67.199	10.10.15.52	HTTP	414	GET /fontawesome/css/all.min.css HTTP/1.1
303	63.695898	10.10.67.199	10.10.15.52	HTTP	399	GET /css/dark.css HTTP/1.1
315	63.697849	10.10.67.199	10.10.15.52	HTTP	384	GET /js/bundle.js HTTP/1.1
316	63.698177	10.10.67.199	10.10.15.52	HTTP	393	GET /js/instantpage.min.js HTTP/1.1
320	63.781373	10.10.67.199	10.10.15.52	HTTP	398	GET /images/icon.png HTTP/1.1
335	63.987281	10.10.67.199	10.10.15.52	HTTP	387	GET /post/index.json HTTP/1.1

Frame 67: 394 bytes on wire (3152 bits), 394 bytes captured (3152 bits)
 Ethernet II, Src: MS-WLB-PhysServer-32-03:60:d9:6c:db (02:23:60:d9:6c:db), Dst: 02:89:03:cb:f7:6b (02:89:03:cb:f7:6b)
 Internet Protocol Version 4, Src: 10.10.67.199, Dst: 10.10.15.52
 Transmission Control Protocol, Src Port: 55650, Dst Port: 80, Seq: 1, Ack: 1, Len: 328
 Hypertext Transfer Protocol

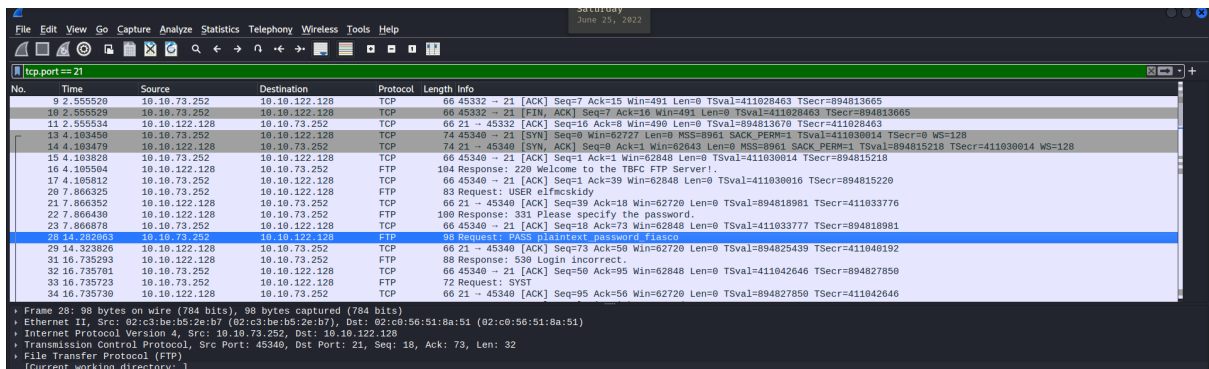
Question 3

IP Address "10.10.67.199" visited an article called “reindeer-of-the-week”

No.	Time	Source	Destination	Protocol	Length	Info
340	64.095368	10.10.67.199	10.10.15.52	HTTP	481	GET /fonts/noto-sans-jp-v25-japanese_latin-regular.woff2 HTTP/1.1
462	64.020692	10.10.67.199	10.10.15.52	HTTP	496	GET /fontawesome/webfonts/fa-solid-900.woff2 HTTP/1.1
467	64.028410	10.10.67.199	10.10.15.52	HTTP	466	GET /fonts/roboto-v28-latin-regular.woff2 HTTP/1.1
471	64.222360	10.10.67.199	10.10.15.52	HTTP	365	GET /posts/reindeer-of-the-week/ HTTP/1.1
475	66.239846	10.10.67.199	10.10.15.52	HTTP	369	GET /posts/post/index.json HTTP/1.1
478	66.249669	10.10.67.199	10.10.15.52	HTTP	463	GET /posts/fonts/noto-sans-jp-v25-japanese_latin-regular.woff2 HTTP/1.1
480	66.251644	10.10.67.199	10.10.15.52	HTTP	448	GET /posts/fonts/roboto-v28-latin-regular.woff2 HTTP/1.1

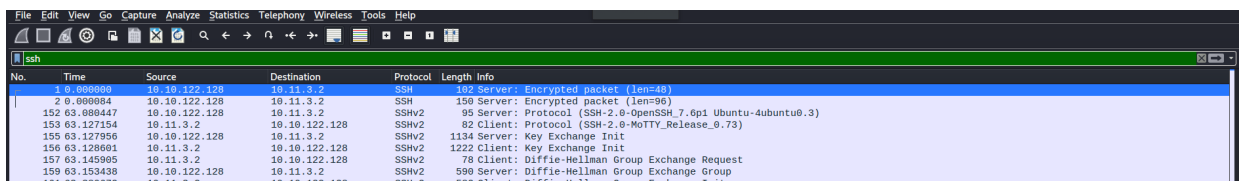
Question 4

Launching pcap2.pcap with the same steps, we apply “tcp.port == 21” to filter out the logs, we see the correct password for login “plaintext_password_fiasco”



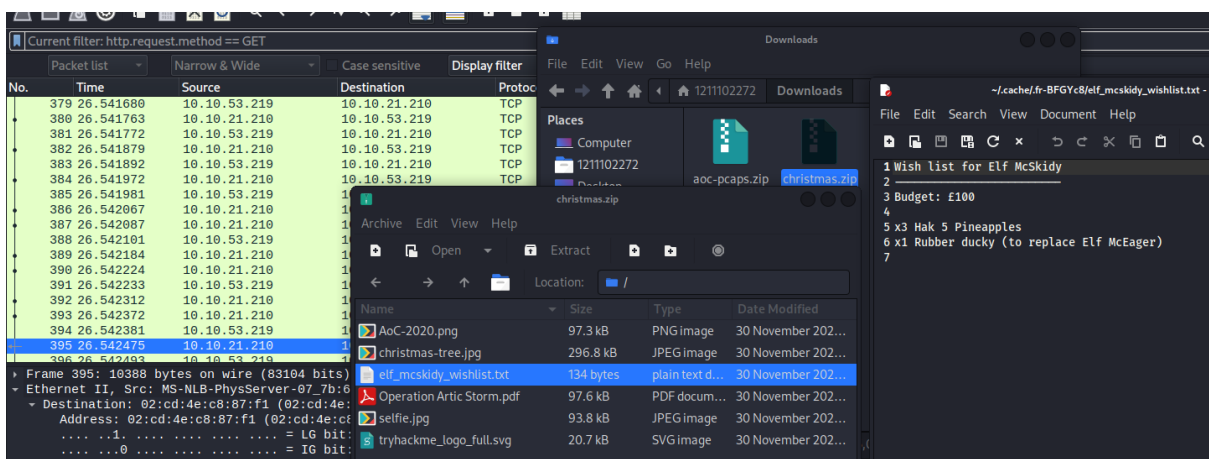
Question 5

SSH protocol is encrypted



Question 6

Analysing pcap3.pcap, we find a christmas.zip file, we exported it as HTTP, then extracted it to find a .txt file saying a rubber ducky will be used to replace Elf McEager



Thought process/ Methodology:

We launched Wireshark with the -r flag to read the .pcap file provided. After applying the ICMP display filter, the address which initiated it is 10.11.3.2 as seen from the "source" tab. To filter out all the HTTP GET requests, the filter "HTTP.REQUEST.METHOD == GET" is used. After some analysing, IP Address "10.10.67.199" visited an article called "reindeer-of-the-week". After that, we launched pcap2.pcap with the same steps, we apply "tcp.port == 21" to filter out the logs, because FTP runs on port 21, we see the correct password for login "plaintext_password_fiasco". We see the SSH protocol is encrypted. After that we started analysing pcap3.pcap, we find a christmas.zip file, we exported it as HTTP, then extracted it to find a .txt file saying a rubber ducky will be used to replace Elf McEager.

Day 8: Networking - What's under the Christmas Tree?

Tools used: Kali Linux, nmap

Question 1

Run the nmap scan on the machine IP

```
(1211102272@kali)-[~]
$ nmap -A 10.10.146.238
Starting Nmap 7.92 ( https://nmap.org ) at 2022-06-25 11:30 +08
Nmap scan report for 10.10.146.238
Host is up (0.22s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT      STATE SERVICE        VERSION
80/tcp    open  http            Apache httpd 2.4.29 ((Ubuntu))
|_ http-generator: Hugo 0.78.2
|_ http-title: TBFC6#39;s Internal Blog
|_ http-server-header: Apache/2.4.29 (Ubuntu)
2222/tcp  open  ssh             OpenSSH 7.6p1 Ubuntu 4ubuntu0.3 (Ubuntu Linux; protocol 2.0)
|_ ssh-hostkey:
|   2048 cf:c9:99:d0:5c:09:27:cd:a1:a8:1b:c2:b1:d5:ef:a6 (RSA)
|   256 4c:d4:f9:20:6b:ce:fc:62:99:54:7d:c2:b4:b2:f2:b2 (ECDSA)
|_  256 d0:e6:72:18:b5:20:89:75:d5:69:74:ac:cc:b8:3b:9b (ED25519)
3389/tcp  open  ms-wbt-server  xrdp
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 35.33 seconds
```

Question 2

Scanning using -Pn flag

```

(1211102272@kali)-[~]
$ nmap -Pn 10.10.146.238
Starting Nmap 7.92 ( https://nmap.org ) at 2022-06-25 11:37 +08
Nmap scan report for 10.10.146.238
Host is up (0.19s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT      STATE SERVICE
80/tcp    open  http
2222/tcp  open  EtherNetIP-1
3389/tcp  open  ms-wbt-server

Nmap done: 1 IP address (1 host up) scanned in 24.45 seconds

```

Question 3

Compare between -A and -sV flags

```

(1211102272@kali)-[~]
$ nmap -sV 10.10.146.238
Starting Nmap 7.92 ( https://nmap.org ) at 2022-06-25 11:43 +08
Nmap scan report for 10.10.146.238
Host is up (0.22s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT      STATE SERVICE      VERSION
80/tcp    open  http         Apache httpd 2.4.29 ((Ubuntu))
2222/tcp  open  ssh          OpenSSH 7.6p1 Ubuntu 4ubuntu0.3 (Ubuntu Linux; protocol 2.0)
3389/tcp  open  ms-wbt-server xrdp
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 42.56 seconds

```

Question 4

Determining the Linux Distro: Ubuntu

```

2222/tcp open  ssh          OpenSSH 7.6p1 Ubuntu 4ubuntu0.3 (Ubuntu Linux; protocol 2.0)

```

Question 5

Using NSE to determine the possible use for the website

```

(1211102272@kali)-[~]
$ nmap --script http-title 10.10.146.238
Starting Nmap 7.92 ( https://nmap.org ) at 2022-06-25 11:48 +08
Nmap scan report for 10.10.146.238
Host is up (0.19s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT      STATE SERVICE
80/tcp    open  http
|_http-title: TBFC's Internal Blog
2222/tcp  open  EtherNetIP-1
3389/tcp  open  ms-wbt-server

Nmap done: 1 IP address (1 host up) scanned in 26.25 seconds

```

Thought Process/ Methodology:

We ran the nmap scan on the machine IP. We then scanned using the -Pn flag. We compare between -A and -sV flags, one displayed the running process and one didn't. We went ahead to determine the Linux Distro, which is Ubuntu. We searched for a script using NSE to determine the possible use for the website on nmap.org, which found out the website is used for a blog.

Day 9: Networking - Anyone can be Santa!

Tools Used: Kali Linux, FTP

Question 1

The "Public" directory is available for access

```
(1211102272@kali)-[~]
$ ftp 10.10.148.22
Connected to 10.10.148.22.
220 Welcome to the TBFC FTP Server!.
Name (10.10.148.22:1211102272): anonymous
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||20872|)
150 Here comes the directory listing.
drwxr-xr-x  2 0          0          4096 Nov 16  2020 backups
drwxr-xr-x  2 0          0          4096 Nov 16  2020 elf_workshops
drwxr-xr-x  2 0          0          4096 Nov 16  2020 human_resources
drwxrwxrwx  2 65534     65534       4096 Nov 16  2020 public
226 Directory send OK.
```

Question 2

Backup.sh is an executable script

```
ftp> cd public
250 Directory successfully changed.
ftp> ls -a
229 Entering Extended Passive Mode (|||7267|)
150 Here comes the directory listing.
drwxrwxrwx   2 65534   65534   4096 Nov 16  2020 .
drwxr-xr-x   6 65534   65534   4096 Nov 16  2020 ..
-rwxr-xr-x   1 111     113     341 Nov 16  2020 backup.sh
-rw-rw-rw-   1 111     113     24 Nov 16  2020 shoppinglist.txt
226 Directory send OK.
ftp> █
```

Question 3

The Polar Express Movie is on santa's shopping list

```
File  Actions  Edit  View  Help
(1211102272@kali)-[~]
$ cat shoppinglist.txt
The Polar Express Movie
(1211102272@kali)-[~]
$ █
```

Question 4

Change the contents of the .sh file, set up net cat and reupload the script to gain root access, then concatenate the THM flag

```

ftp> ls
229 Entering Extended Passive Mode (|||52501|)
150 Here comes the directory listing.
-rwxr-xr-x  1 111  113      268 Jun 25 04:10 backup.sh
-rw-rw-rw-  1 111  113      24 Nov 16 2020 shoppinglist.txt
ftp> put backup.sh
local: backup.sh remote: backup.sh
226 Directory send OK.
229 Entering Extended Passive Mode (|||39658|)
150 Ok to send data.
100% |*****| 268      2.90 MiB/s   00:00 ETA
226 Transfer complete.
268 bytes sent in 00:00 (0.65 KiB/s)
ftp>

```

Question #4: Re-upload this script to contain malicious data

Note that the script that we have uploaded may take a minute to
Netcat listener on the device that you are working from, and have

THM(even_you_can_be_santa)

```

1211102272@kali: ~
File Actions Edit View Help
(1211102272@kali)-[~]
$ nc -lvnp 4444
listening on [any] 4444 ...
^C
(1211102272@kali)-[~]
$ nc -lvnp 4444
listening on [any] 4444 ...
connect to [10.9.0.236] from (UNKNOWN) [10.10.148.22] 53308
bash: cannot set terminal process group (1271): Inappropriate ioctl for device
bash: no job control in this shell
root@tbfc-ftp-01:~# cat /root/flag.txt
cat /root/flag.txt
THM{even_you_can_be_santa}
root@tbfc-ftp-01:~#

```

Thought Process/ Methodology:

When we use the ftp to connect to the server, the “Public” directory is available for access, we found out there was a backup.sh which we can use it to exploit for access. Santa had a shopping list saying he wanted to watch The Polar Express Movie. After that, we downloaded the script, changed the contents, mean while we set up netcat for a listener port, after that we uploaded the file back to gain root access, we outputted the contents with cat to find the THM flag.

Day 10: Networking - Don't be sElfish!

Tools Used: Kali Linux, samba

Question 1

Displaying all the users on samba server

```

user:[elfmcelfer] rid:[0x3e9]

===== ( Share Enumeration on 10.10.64.58 ) =====
=====

Sharename      Type      Comment
-----
tbfc-hr        Disk      tbfc-hr
tbfc-it        Disk      tbfc-it
tbfc-santa     Disk      tbfc-santa
IPC$           IPC       IPC Service (tbfc-smb server (Samba, Ubuntu))
Reconnecting with SMB1 for workgroup listing.

Server          Comment
-----
Workgroup       Master
TBFC-SMB-01     TBFC-SMB

[+] Attempting to map shares on 10.10.64.58

//10.10.64.58/tbfc-hr Mapping: DENIED Listing: N/A Writing: N/A
//10.10.64.58/tbfc-it Mapping: DENIED Listing: N/A Writing: N/A
//10.10.64.58/tbfc-santa Mapping: OK Listing: OK Writing: N/A

[E] Can't understand response:
NT_STATUS_OBJECT_NAME_NOT_FOUND listing \*
//10.10.64.58/IPC$ Mapping: N/A Listing: N/A Writing: N/A
enum4linux complete on Sat Jun 25 12:40:43 2022

```

Question 2

Shares on the server

```

Sharename      Type      Comment
-----
tbfc-hr        Disk      tbfc-hr
tbfc-it        Disk      tbfc-it
tbfc-santa     Disk      tbfc-santa
IPC$           IPC       IPC Service (tbfc-smb server (Samba, Ubuntu))
Reconnecting with SMB1 for workgroup listing.

```

Question 3

Logging into share

```
(1211102272@kali)-[~]
$ smbclient //10.10.64.58/tbfc-santa
Password for [WORKGROUP\1211102272]:
Try "help" to get a list of possible commands.
smb: \> ls
.                D           0   Thu Nov 12 10:12:07 2020
..               D           0   Thu Nov 12 09:32:21 2020
jingle-tunes     D           0   Thu Nov 12 10:10:41 2020
note_from_mcskidyt.txt  N       143  Thu Nov 12 10:12:07 2020

10252564 blocks of size 1024. 5369404 blocks available
```

Question 4

Directory left for santa

```
jingle-tunes          D           0   Thu Nov 12 10:10:41 2020
note_from_mcskidyt.txt  N       143  Thu Nov 12 10:12:07 2020
```

Thought Process/ Methodology:

We used enum4linux to display all the users on the samba server. As well as shares on the server. We found out there was a share which didn't require a password for login. There is a directory left for santa called Jingle Tunes.