Writeup PicoCTF
Category Forensic

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Daftar Isi

[EASY]

Riddle Registry

Hi, intrepid investigator! 📄🔍 You've stumbled upon a peculiar PDF filled with what seems like nothing more than garbled nonsense. But beware! Not everything is as it appears. Amidst the chaos lies a hidden treasure—an elusive flag waiting to be uncovered. Find the PDF file here Hidden Confidential Document and uncover the flag within the metadata.

Attachment: confidential.pdf

Kita diberikan sebuah file pdf, pertama cek dulu metadata file:

```
┌──(kali㉿kali)-[~/pico_fore/riddle_rergistry]
└─$ exiftool confidential.pdf
ExifTool Version Number         : 13.25
File Name                       : confidential.pdf
Directory                       : .
File Size                       : 183 kB
File Modification Date/Time     : 2025:11:24 12:52:59-05:00
File Access Date/Time           : 2025:12:11 11:01:07-05:00
File Inode Change Date/Time     : 2025:11:24 12:55:40-05:00
File Permissions                : -rwxrwx---
File Type                       : PDF
File Type Extension             : pdf
MIME Type                       : application/pdf
PDF Version                     : 1.7
Linearized                      : No
Page Count                      : 1
Producer                        : PyPDF2
Author                          : cGljb0NURntwdXp6bDNkX20zdGFkYXRhX2YwdW5kIV
9jOGY5MWQ2OH0=
```

Wah ternyata ada ada metadata yang mencurigakan yaitu “Author” yang menggunakan enkripsi base64, coba kita decode text tersebut:

```
┌──(kali㉿kali)-[~/pico_fore/riddle_rergistry]
└─$ echo "cGljb0NURntwdXp6bDNkX20zdGFkYXRhX2YwdW5kIV9jOGY5MWQ2OH0=" | base64
 -d
picoCTF{puzzl3d_m3tadata_f0und!_c8f91d68}
```

Yeayyyy ternyata text tersebut berisi flag.

Flag : picoCTF{puzzl3d_m3tadata_f0und!_c8f91d68}

Hidden in plainsight
You’re given a seemingly ordinary JPG image. Something is tucked away out of sight inside the file. Your task is to discover the hidden payload and extract the flag. Download the jpg image here.
Attechment: img.jpg

Kita diberikan file img.jpg, pertama kita cek dulu metadata file:

```
┌──(kali㉿kali)-[~/pico_fore/hidden_in_plainsight]
└─$ exiftool img.jpg
ExifTool Version Number         : 13.25
File Name                       : img.jpg
Directory                       : .
File Size                       : 74 kB
File Modification Date/Time     : 2025:11:24 13:49:53-05:00
File Access Date/Time           : 2025:12:11 11:31:43-05:00
File Inode Change Date/Time     : 2025:11:24 13:51:07-05:00
File Permissions                : -rwxrwx---
File Type                       : JPEG
File Type Extension             : jpg
MIME Type                       : image/jpeg
JFIF Version                    : 1.01
Resolution Unit                 : None
X Resolution                    : 1
Y Resolution                    : 1
Comment                         : c3RlZ2hpZGU6Y0VGNmVuZHZjbVE9
Image Width                     : 640
Image Height                    : 640
Encoding Process                : Baseline DCT, Huffman coding
Bits Per Sample                 : 8
Color Components                : 3
Y Cb Cr Sub Sampling            : YCbCr4:2:0 (2 2)
Image Size                      : 640×640
Megapixels                      : 0.410
```

Nah terlihat ada yang mencurigakan dibagian “Comment”, kita decode isi dari “Comment” dulu menggunakan base64.

```
┌──(kali㉿kali)-[~/pico_fore/hidden_in_plainsight]
└─$ echo "c3RlZ2hpZGU6Y0VGNmVuZHZjbVE9"|base64 -d
steghide:cEF6endvcmQ=

┌──(kali㉿kali)-[~/pico_fore/hidden_in_plainsight]
└─$ echo "cEF6endvcmQ="|base64 -d
pAzzword
```

Ternyata isinya adalah sebuah clue “steghide” dan sebuah password, langsung saja gunakan tools steghide.

```
┌──(kali㉿kali)-[~/pico_fore/hidden_in_plainsight]
└─$ steghide extract -sf img.jpg -p pAzzword
wrote extracted data to "flag.txt".

┌──(kali㉿kali)-[~/pico_fore/hidden_in_plainsight]
└─$ cat flag.txt
picoCTF{h1dd3n_1n_1m4g3_92f08d7c}
```

Flag : picoCTF{h1dd3n_1n_1m4g3_92f08d7c}

Flag in Flame
The SOC team discovered a suspiciously large log file after a recent breach. When they opened it, they found an enormous block of encoded text instead of typical logs. Could there be something hidden within? Your mission is to inspect the resulting file and reveal the real purpose of it. The team is relying on your skills to uncover any concealed information within this unusual log. Download the encoded data here: Logs Data. Be prepared—the file is large, and examining it thoroughly is crucial.
Attachment: encodeFile.png

Kita diberikan file “encodeFile.png”, coba kita buka file tersebut berisi gambar apa.

Wahh, ada ternyata ada text yang mencurigakan, sepertinya itu adalah enkripsi hex. Langsung saja kita coba decode text tersebut.

```
┌──(kali㉿kali)-[~/pico_fore/flag_in_flame]
└─$ echo "7069636F4354467B666F72656E736963735F616E616C797369735F69735F616D617A696E675F37383265353563397D"|xxd -r -p
picoCTF{forensics_analysis_is_amazing_782e55c9}
```

Yeayy, sudah ketemu flagnya.

Flag : picoCTF{forensics_analysis_is_amazing_782e55c9}

Corrupted file
This file seems broken... or is it? Maybe a couple of bytes could make all the difference. Can you figure out how to bring it back to life?
Attachment: file

Kita diberikan sebuah file, kita coba cek dulu itu file apa

```
~/abyan/pico-ctf/corrupted-file                                07:22:45
❯ open file
gio: file:///home/kali/abyan/pico-ctf/corrupted-file/file: Failed to find default application
 for content type 'application/octet-stream'
```

Sepertinya ada kesalahan pada file tersebut, coba kita cek magic number file tersebut

```
~/abyan/pico-ctf/corrupted-file                                07:23:05
❯ xxd file
00000000: 5c78 ffe0 0010 4a46 4946 0001 0100 0001  \x....JFIF......
00000010: 0001 0000 ffdb 0043 0008 0606 0706 0508  .......C........
00000020: 0707 0709 0908 0a0c 140d 0c0b 0b0c 1912  ................
00000030: 130f 141d 1a1f 1e1d 1a1c 1c20 242e 2720  ........... $.'
00000040: 222c 231c 1c28 3729 2c30 3134 3434 1f27  ",#..(7),01444.'
00000050: 393d 3832 3c2e 3334 32ff db00 4301 0909  9=82<.342...C...
```

Nah kan, seharus nya magic number file jpeg bukan seperti itu, coba kita ubah magic number nya dengan hexedit, setelah diganti coba kita buka file tersebut

Yeayy, ketemu flagnya

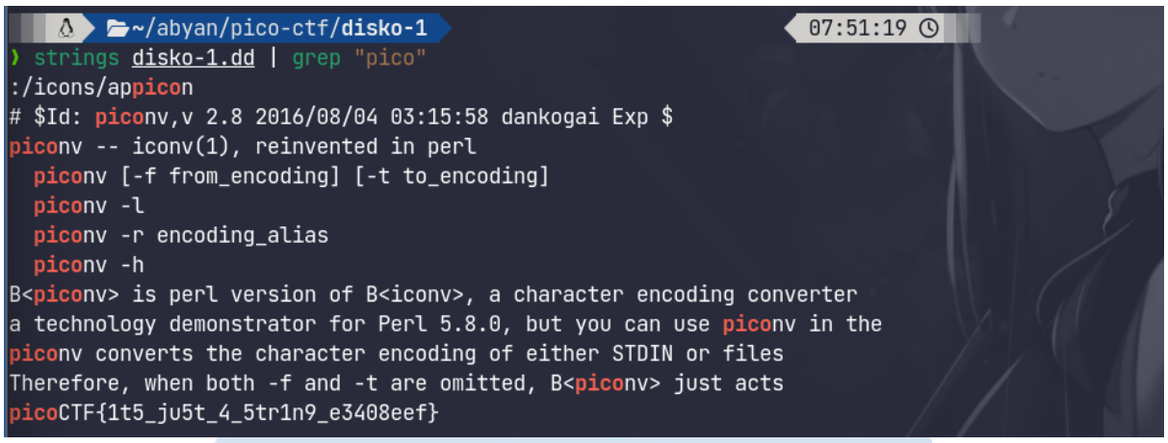
picoCTF{r3st0r1ng_th3_by73s_2326ca93}

Disko 1
Can you find the flag in this disk image? Download the disk image
Attechment: disko-1.dd.gz

Kita diberikan file disk image, coba kita extract dulu file nya dengan menggunakan command seperti ini

```
Gunzip disko-1.dd.gz
```

Kemudian coba kita cek file tersebut menggunakan strings

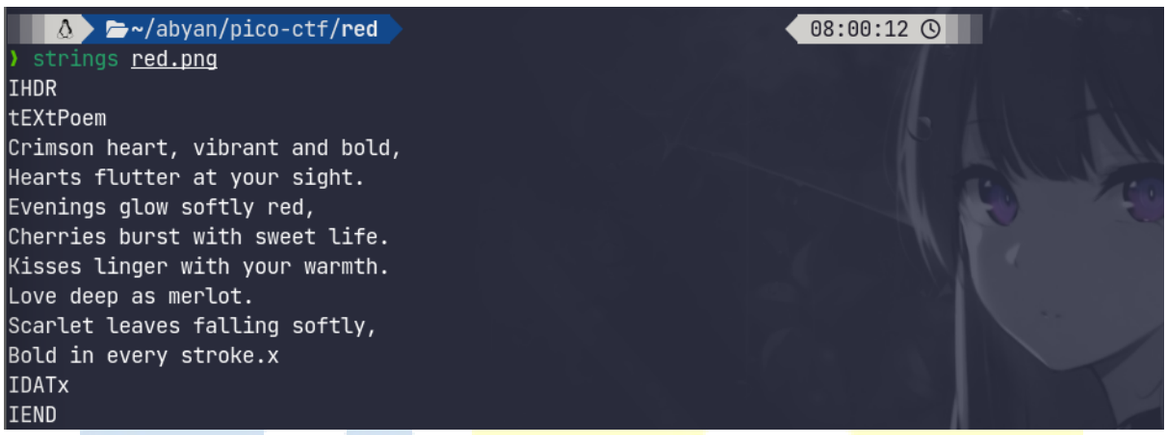


Nah ketemu flagnya

picoCTF{1t5_ju5t_4_5tr1n9_e3408eef}

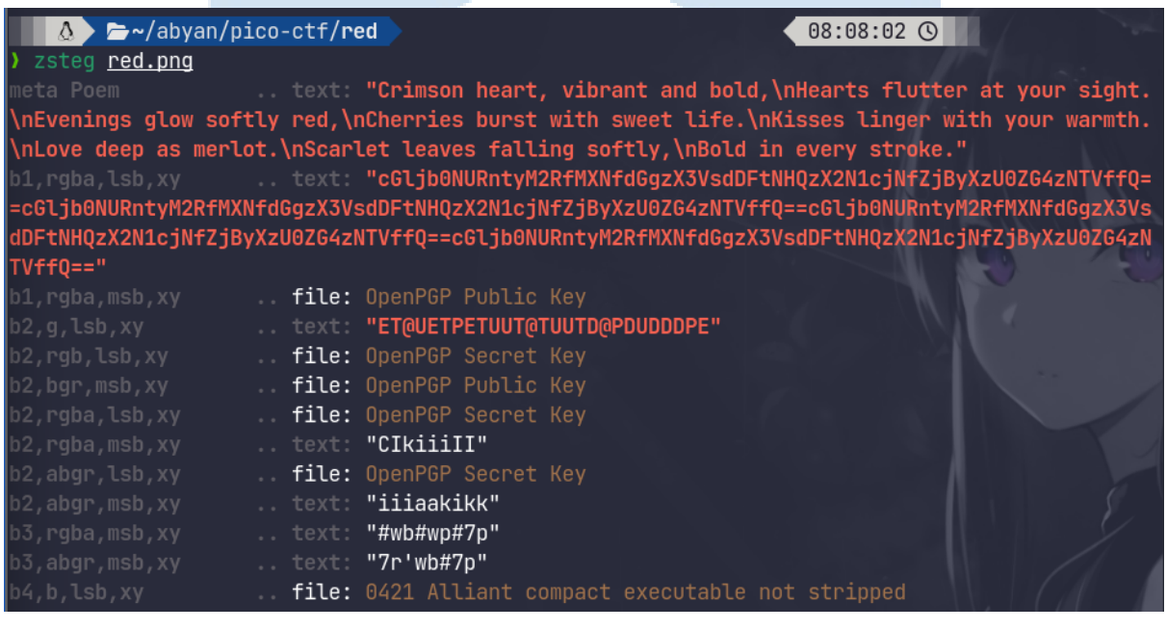
RED
RED, RED, RED, RED
Attachment: red.png

Kita diberikan file png, kita coba cek terlebih dahulu menggunakan strings

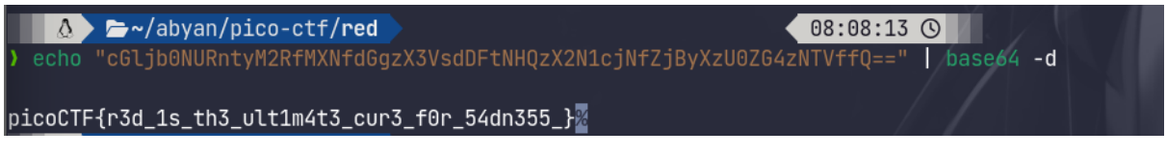


C, H, E, C, K, L, S, B.

Wow ketika kita lihat pada huruf pertama puisi tersebut ternyata memberikan kita sebuah petunjuk, untuk mengecek lsb kita coba pakai zsteg



Setelah kita check ternyata ada text yang dienkripsi dengan base64

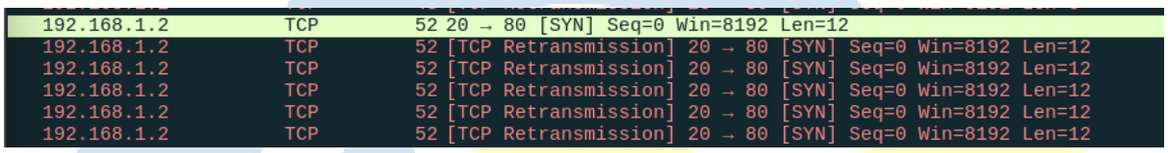


Horee kita dapat flagnya

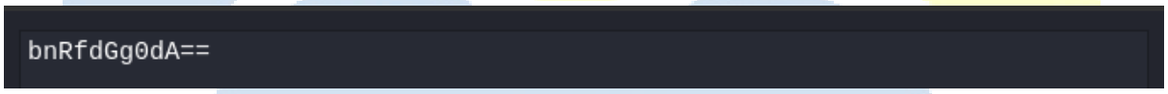
picoCTF{r3d_1s_th3_ult1m4t3_cur3_f0r_54dn355_}

Phantom Intruder
A digital ghost has breached my defenses, and my sensitive data has been stolen! 😱💻 Your mission is to uncover how this phantom intruder infiltrated my system and retrieve the hidden flag. To solve this challenge, you'll need to analyze the provided PCAP file and track down the attack method. The attacker has cleverly concealed his moves in well timely manner. Dive into the network traffic, apply the right filters and show off your forensic prowess and unmask the digital intruder!Find the PCAP file here Network Traffic PCAP file and try to get the flag.
Attachment: myNetworkTraffic.pcap

kita diberi file traffic, coba kita buka diwireshark



Coba kita lihat data di len=12



Wah ternyata isinya enkripsi base64, coba kita lihat semua yang len=12, kemudian susun semua potongan flag tersebut

picoCTF{1t_w4snt_th4t_34sy_tbh_4r_36f4a666}

Verify
People keep trying to trick my players with imitation flags. I want to make sure they get the real thing! I'm going to provide the SHA-256 hash and a decrypt script to help you know that my flags are legitimate.ssh -p 61536 ctf-player@rhea.picoctf.netUsing the password 6dd28e9b. Accept the fingerprint with yes, and ls once connected to begin. Remember, in a shell, passwords are hidden! • Checksum: 03b52eabed517324828b9e09cbbf8a7b0911f348f76cf989ba6d51acede6d5d8 • To decrypt the file once you've verified the hash, run ./decrypt.sh files/<file>.
Attachment:

Kita disuruh untuk menggunakan ssh dan kita juga diberi passwordnya, langsung saja kita masuk

```
ctf-player@pico-chall$ ls
checksum.txt  decrypt.sh  files
```

Coba kita lihat isi dari direktori files

```
ctf-player@pico-chall$ ls
00011a60  63MqIIVV  CLCyTz85  IlQwVZcY  QbiQCWZr  Ww6oTYL8  eZ4ehccg  lxv6mvZ6  sAy34VP4
022cvpdN  64nJlBLv  CNvsyU3W  ItYR0Da2  QcIkjhJ0  X5rRZ32p  efpcZmHN  m1NnTZoo  sKi8TaSn
04nLilRD  69JSHBh1  Cb22Z7FO  Izq2bmb5  QgmCuMSV  XGTpUJIw  ekSs7xW4  m3bsNhyN  sNI2Q6oa
0MT2Wrui  6vgioqew  Ce5TrzJu  J16J63tC  Qxrlj2uk  XJiFKTlc  eknrQKQh  mWWBZCgt  sRaKyq1f
0SGMttmR  76rj6cv7  ClWGbsxu  JVEoV1Bn  R3rVsQa8  XcmGmkwD  fZHEnAvZ  mdFDpW9k  svmptIxV
0fCDySFB  7j2g9w9w  DCn7KnqG  Jcwq4RxP  RAXeLvjl  YAZlvEou  g2E6RkkX  n2XnM9Nc  tFGQywwr
0hHVJSPh  7ye3lPVb  DSKHZ66z  Jk8UBmcS  RFLWtody  YKQLrxBm  g2nu6vlR  n7Vs8Bjh  tY2epsSy
0mPyFlda  870YaC5g  Dmsex2Ug  KCL5hW02  RHjAw3hj  YdTZkUcM  gLAo3J0D  n8r2Ejk9  tuma818A
0xknvebh  8Shyigig  EBBoQm7M  KKRWbrqC  RPVIP1xx  Z2rLXuyp  gem657x8  nldOsSfJ  uMpXxbqr
1kTWMoOI  8d0Ncqme  EG1lW2KR  KUIfl2m7  RQWaIGxG  ZWIiY84t  hNqXyUX2  nnZ33FAt  uUI8gJNi
1mGlW6Ts  8hKIvq38  EXQ6DiO5  KbGMgDus  RVejZvvP  ZXqAvkcE  hZxbAqts  nrwKQbJk  ugeJ5RN3
2JKdkggW  8rIuGenM  F6yHlWpt  KlqDh1ZQ  RdYwRe68  ZdPbKJh1  haNCaZmC  oNnB9jru  vJDrHtxo
2Jr8UtbZ  91cLOGeN  FJBePm2b  L58tTvhF  Rgs7l9CZ  ZyNsHVFW  iGwCDzaU  oi96tAtc  vMv1M1qs
2K4XCmfE  9DNfzhUK  FLsBEmlR  L7gltlCF  ScOtAOiZ  aGVRRt1d  iILvZZya  oiy29oCW  vWguQ8rQ
2MYWkWLC  9KIFXofB  FOxKdaVP  LCLocE1C  SwrcVnay  aHFaEXKf  ih6levXk  p1LgEQdu  vc1wGQhn
2QpRnoZQ  9pluLfgA  FtMorZ65  LMavH6jA  T5IkmqtJ  aIz8E0Iy  j1v0LBVe  p5INCxLV  vjypfsoh
2emuPVOb  ADMuzktV  G7enzzui  Lq3dNalV  T6AHhqdE  afLk75aO  jIlhVDLw  p5INQHq8  vsGKdf0J
2gP5wDgq  AEJxVlNY  Gcv1H8Qs  LrYo1dnu  TPBDRCiJ  b9YCg3Tz  jObn0z94  pXJHJUbH  w1XGgnr9
2w5vJlLG  AGOEyD4N  GhrShrXN  MPeS8YHI  TRyxUwzw  bDK7A26M  jVkxEmtq  pb1E0Y3Z  w8DmFhfg
2yMtx5qd  AVdbk5eX  Gtk4Kn9w  N8vFOGDF  TXsLzqsp  bDZN0f4B  jVlaDg4q  pnycz11G  woaiQu5g
303DzMmf  AXFWLqwI  GufDk3Mb  NC6PZdoL  TeaXjOeh  bcZupFpi  jcMzi4VO  q53EoTzu  wvhWmTPt
33CFCJ0y  AdzCNBlC  HDLWGApz  NS9xPzIA  TeyHF78l  bjtBJwTc  jdYv9CQ3  qCTrc9yM  xQJV5GcG
36tjTWoF  AiUxYmz8  HIeYL84k  Ndyi6bnx  ToT9QPKf  c3Z3JN0m  jzmPaO2D  qHwcKaSC  xlqXOqhL
3KZwXc8s  AmsN0Lkj  HJIPzwjJ  NxdIqu0S  TtPblPd6  cIDWC9cb  kDPV8ASY  qK35XlHM  yACAaKqG
3Vs8v8kW  ArUDDIQ3  HMq6348V  O5tEUFhw  U3BoYTr9  dDoFZTXh  kKVvPy8S  qSn3WAyi  yYRsKiUO
3qDKN57P  Azqf6EEw  HUjCgnh4  OH3906gp  UDI6pN8S  dKYP6pnk  kWjYWiLD  qV83Dmye  yg7uBent
4CwloraZ  B8pBCEvG  HWRVc59e  OIYZeUCB  UF1urDfG  dKisxYdK  kZ6DTcql  qWv24Da7  zYz6howf
4XqPqs6B  BN0HxLxE  Hmr54gXd  OPqDbOIH  UUiDNDlO  deppMJSV  kbumrMcy  qZ7TLGA0  zjkul95p
```

Wow banyak banget ternyata, kalo kita decrypt satu-satu akan memakan waktu yang banyak, kita buat script agar lebih cepat, begini scriptnya

```
ctf-player@pico-chall$ cat > script.sh << 'EOF'
> #!/bin/bash
> for file in files/*; do
>     hasil=$(./decrypt.sh "$file")  # perlu ./ sebelum decrypt.sh
>     echo "$hasil"
> done
> EOF
ctf-player@pico-chall$ chmod 777 script.sh
ctf-player@pico-chall$ ./script.sh
picoCTF{trust_but_verify_00011a60}
bad magic number
Error: Failed to decrypt 'files/022cvpdN'. This flag is fake! Keep looking!
bad magic number
Error: Failed to decrypt 'files/04nLilRD'. This flag is fake! Keep looking!
bad magic number
```

Setelah itu jangan lupa kasih permission ke script nya dan jalankan script tersebut, yeayy dapat flagnya

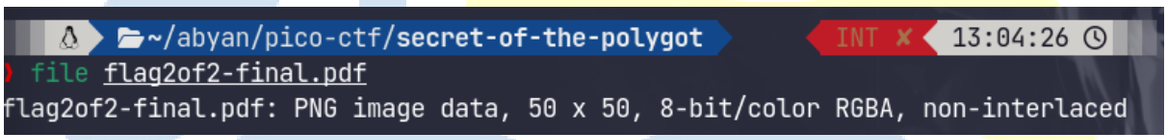
picoCTF{trust_but_verify_00011a60}

Secret of the Polyglot
The Network Operations Center (NOC) of your local institution picked up a suspicious file, they're getting conflicting information on what type of file it is. They've brought you in as an external expert to examine the file. Can you extract all the information from this strange file?Download the suspicious file here.
Attachment: flag2of2-final.pdf

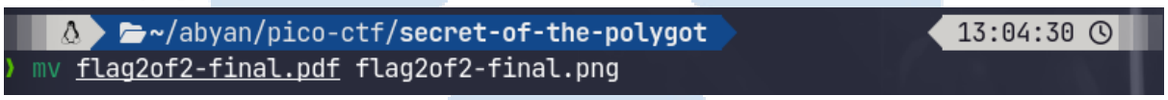
Jadi kita di berikan file pdf, lagsung saja kita lihat isinya apa

1n_pn9_&_pdf_1f991f77}

Itu adalah potongan dari flagnya, flag tersebut memberikan petunjuk kita “in png & pdf”, coba kita cek menggunakan seperti berikut



Pas dicek jadi png, hmmm mencurigakan coba kita ganti extensionnya menjadi png



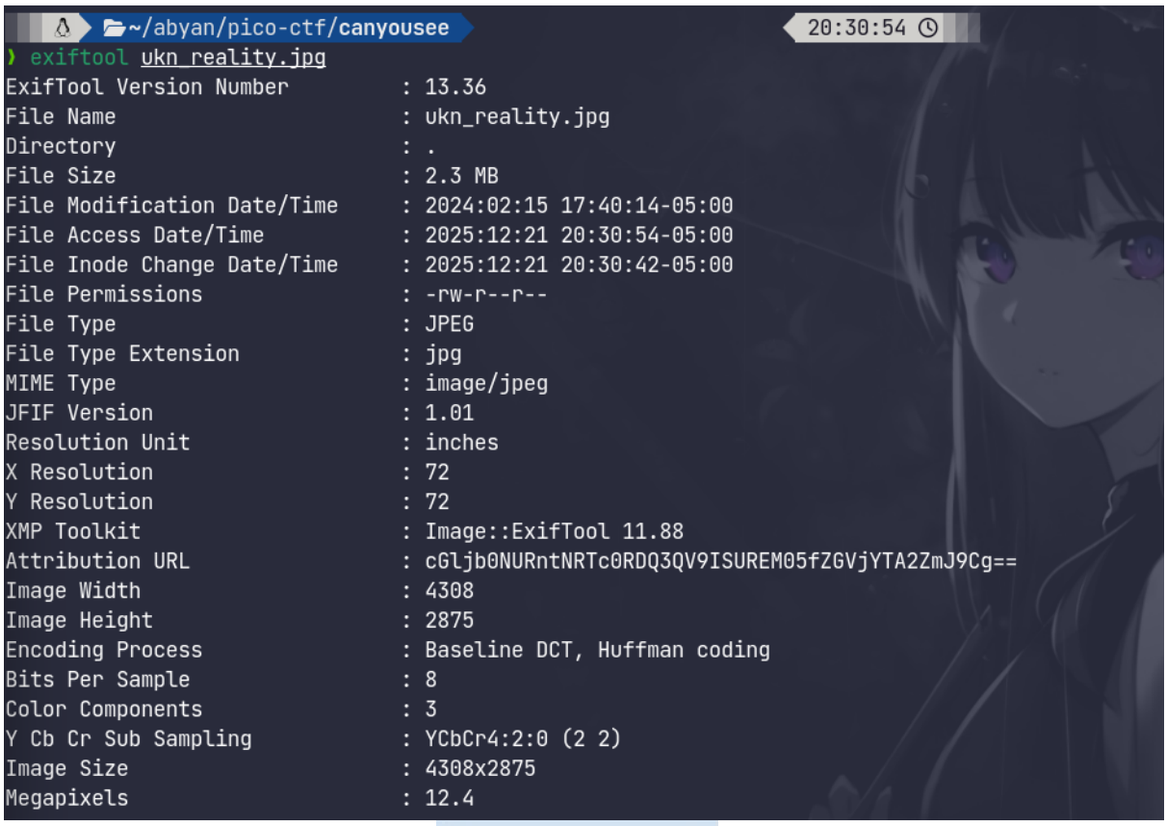
Kemudian kita buka apa isi dari file tersebut

Yeayy kita dapat potogan selanjutnya

picoCTF{f1u3n7_1n_pn9_&_pdf_1f991f77}

CanYouSee
How about some hide and seek? Download this file here.
Attachment: ukn_reality.jpg

Kita diberi file jpg, coba kita lihat metadatanya



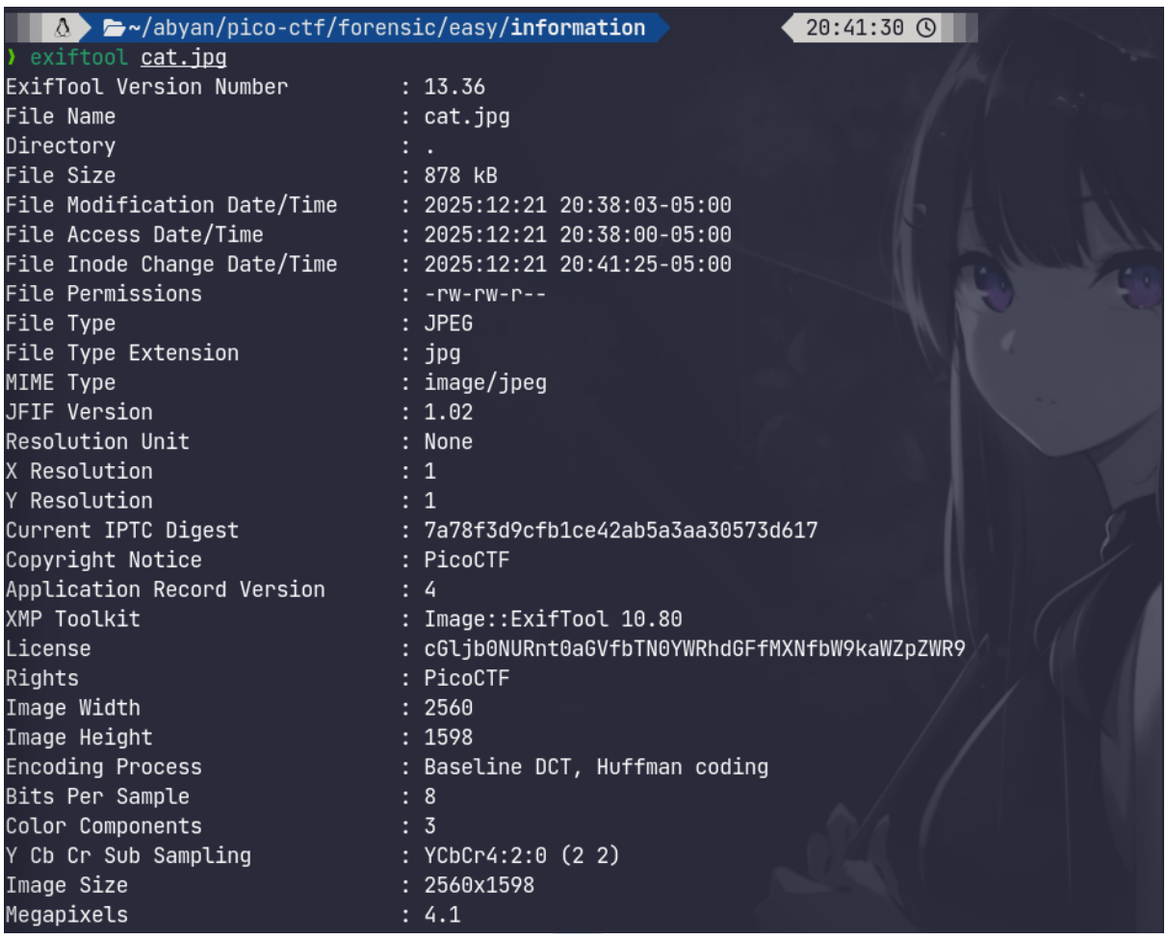
Wow ada enkripsi base64, coba kita decode

Horee ketemu flagnya

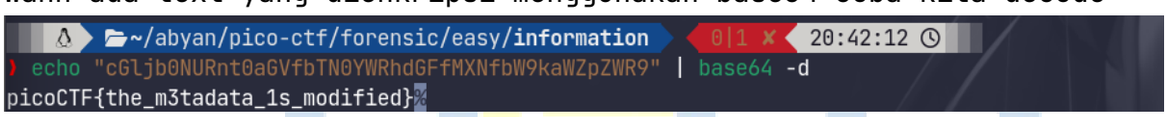
picoCTF{ME74D47A_HIDD3N_deca06fb}

Information
Files can always be changed in a secret way. Can you find the
Attachment: cat.jpg

Kita diberikan file jpg, coba kita lihat metadatanya



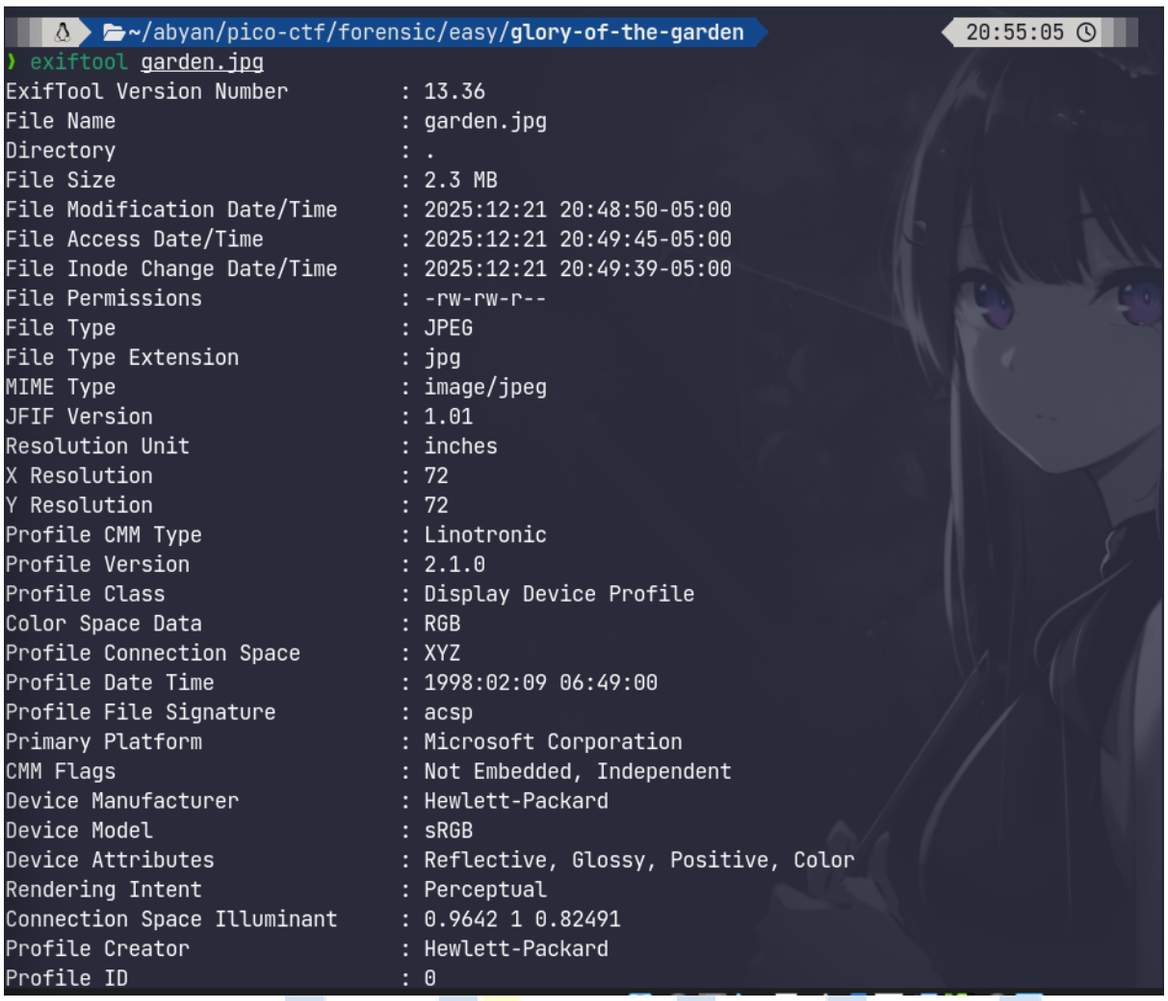
Wahh ada text yang dienkripsi menggunakan base64 coba kita decode



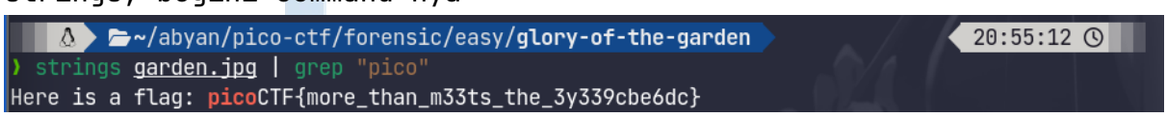
picoCTF{the_m3tadata_1s_modified}

Glory of the Garden
This file contains more than it seems.Get the flag from garden.jpg.
Attachment: garden.jpg

kita diberikan file jpg, seperti biasa kita coba lihat metadatanya terlebih dahulu



Hmm sepertinya tidak ada yang aneh, coba kita lihat menggunakan strings, begini command-nya



Nah kan, yeayy kita dapat flagnya

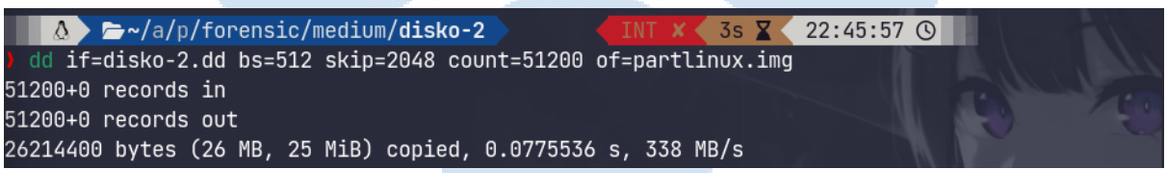
picoCTF{more_than_m33ts_the_3y339cbe6dc}

[MEDIUM]

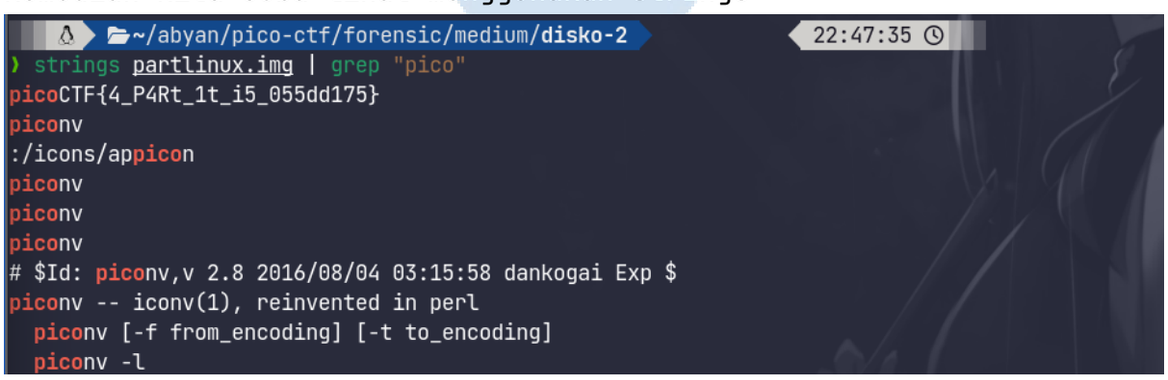
Disko 2
Can you find the flag in this disk image? The right one is Linux! One wrong step and its all gone! Download the disk image
Attachment: disko-2.dd

Kita diberi file disk image dan kita juga dikasih clue untuk ekstrak yang bagian linux pada disk tersebut, kita lihat dulu yang partisi linux dimana

Kita bisa lihat bahwa disk image tersebut memiliki 512byte sectors dan partisi linux di 2048, langsung saja kita extract



Kemudian kita coba lihat menggunakan strings



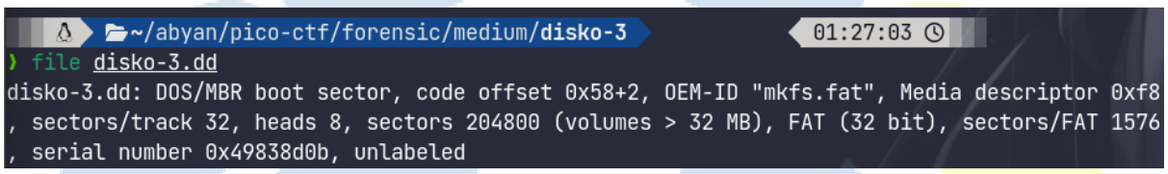
Yeayy kita dapat flagnya

picoCTF{4_P4Rt_1t_i5_055dd175}

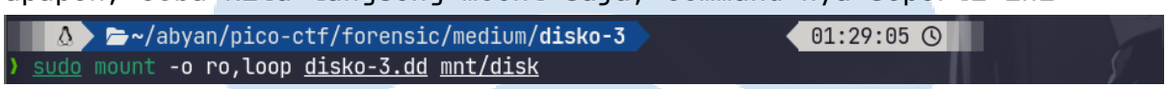
Disko 3
Can you find the flag in this disk image? This time, its not as plain as you think it is! Download the disk image.
Attachment: disko-3.dd

Kita diberikan disk image, coba kita terlebih dahulu

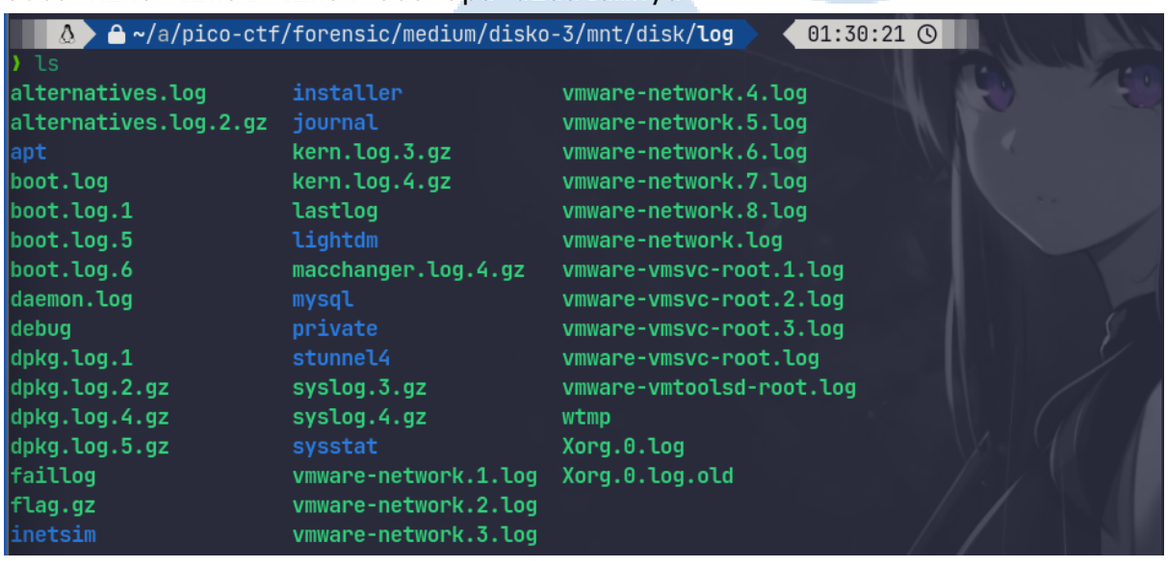
Hmm tidak ada partisi apapun ternyata, coba kita check apakah ini bener disk image



Ternyata emang benar disk image berarti emang tidak ada partisi apapun, coba kita langsung mount saja, command nya seperti ini



Coba kita lihat-lihat ada apa didalamnya



Wah ternyata ada flag.gz, langsung saja kita buka isinya ada apa

Horee sudah ketemu flagnya

picoCTF{n3v3r_z1p_2_h1d3_7e0a17da}

Event

One of the employees at your company has their computer infected by malware! Turns out every time they try to switch on the computer, it shuts down right after they log in. The story given by the employee is as follows:

1. They installed software using an installer they downloaded online
2. They ran the installed software but it seemed to do nothing
3. Now every time they bootup and login to their computer, a black command prompt screen quickly opens and closes and their computer shuts down instantly.

See if you can find evidence for the each of these events and retrieve the flag (split into 3 pieces) from the correct logs!

Attachment: Windows_logs.evtx

Kita diberikan file evtx, pertama-tama kita dump file evtx tersebut Disini saya coba bikin script untuk dump evtx

Evtx_dump.py

```python
import Evtx.Evtx as evtx
import Evtx.Views as e_views


def main():
    import argparse

    parser = argparse.ArgumentParser(
        description="Dump a binary EVTX file into XML.")
    parser.add_argument("evtx", type=str,
                        help="Path to the Windows EVTX event log file")
    args = parser.parse_args()

    with evtx.Evtx(args.evtx) as log:
        print(e_views.XML_HEADER)
        print("<Events>")
        for record in log.records():
            print(record.xml())
        print("</Events>")


if __name__ == "__main__":
    main()
```

```
~/abyan/pico-ctf/forensic/medium/event-viewing  1m 49s  05:11:40
python3 ~/abyan/pico-ctf/script/evtx_dump.py Windows_Logs.evtx > Windows_Logs.xml
```

Karena flag dienkripsi menggunakan base64 dan isi dari Windows_logs.xml banyak sekali, jadi saya membuat script untuk mendeteksi text yang dienkripsi dengan base64

```python
import base64
import string
import re

def is_printable(s):
    return all(c in string.printable for c in s)

def find_base64_in_text(text, min_length=8):
    base64_pattern = r'[A-Za-z0-9+/]{' + str(min_length) +
    r',}={0,2}'
    candidates = re.findall(base64_pattern, text)
    print(f"[DEBUG] Total kandidat base64 ditemukan oleh
    regex: {len(candidates)}")

    found = []
    for candidate in candidates:
        try:
            decoded_bytes = base64.b64decode(candidate,
            validate=True)
            decoded_text = decoded_bytes.decode('utf-8')
            if is_printable(decoded_text):
                found.append((candidate, decoded_text))
        except Exception:
            continue

    return found

def main():
    input_file = 'Windows_Logs.xml'
```

```
    output_file = 'hasil_deteksi.txt'

    with open(input_file, 'r', encoding='utf-8') as f:
        text = f.read()

    results = find_base64_in_text(text)

    if results:
        with open(output_file, 'w', encoding='utf-8') as f:
            f.write(f"{len(results)} base64 string
            ditemukan:\n\n")
            for i, (encoded, decoded) in enumerate
            (results, 1):
                f.write(f"#{i}\nEncoded: {encoded}
                \nDecoded: {decoded}\n\n")
        print(f"{len(results)} base64 string valid
        disimpan di '{output_file}'")
    else:
        print("Tidak ditemukan base64 encoded string yang
        valid.")

if __name__ == '__main__':
    main()
```

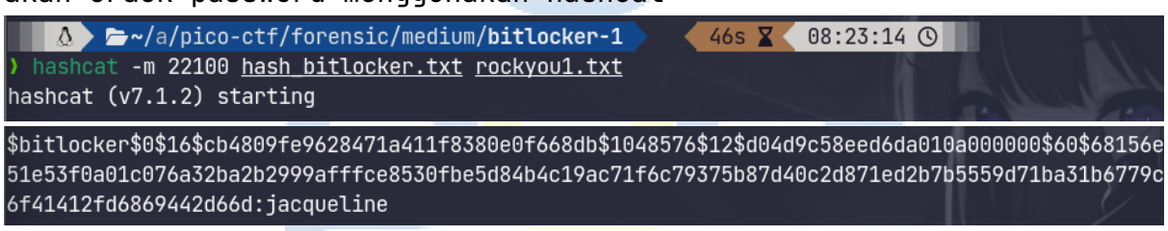
Kita buka file hasil dari script base64_detector.py

picoCTF{Ev3nt_vi3wv3r_1s_a_pr3tty_us3ful_t00l_81ba3fe9}

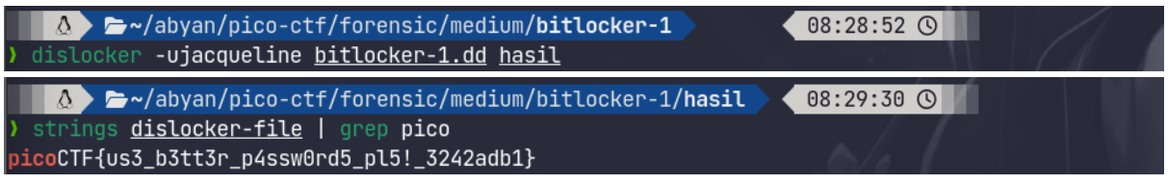
Bitlocker-1
Jacky is not very knowledgable about the best security passwords and used a simple password to encrypt their BitLocker drive. See if you can break through the encryption!
Attachment: bitlocker-1.dd

Kita diberi file disk image, dari hints kita disuruh untuk crack bitlocker tersebut, disini saya akan memakai bitlocker2john untuk mengkonversi ke format hash yang bisa dicrack

Kemudian disebutkan pada soal bahwa password-nya itu simpel dan mudah berarti mungkin password tersebut ada di rockyou.txt, saya akan crack password menggunakan hashcat



Nah sudah ketemu password-nya adalah jacqueline, langsung saja kita coba apakah benar



Horee kita sudah dapat flagnya

picoCTF{us3_b3tt3r_p4ssw0rd5_pl5!_3242adb1}

Blast From the Past

The judge for these pictures is a real fan of antiques. Can you age this photo to the specifications? Set the timestamps on this picture to 1970:01:01 00:00:00.001+00:00 with as much precision as possible for each timestamp. In this example, +00:00 is a timezone adjustment. Any timezone is acceptable as long as the time is equivalent. As an example, this timestamp is acceptable as well: 1969:12:31 19:00:00.001-05:00. For timestamps without a timezone adjustment, put them in GMT time (+00:00). The checker program provides the timestamp needed for each.
Submit your modified picture here:
nc -w 2 mimas.picoctf.net 51847 < original_modified.jpg
Check your modified picture here:
nc mimas.picoctf.net 57306

Attachment: original.jpg

Kita diberikan file jpg, dari deskripsinya sepertinya kita disuruh untuk mengganti metadata time sesuai seperti yang diperintahkan, coba kita tes kirim file tersebut ke server kita lihat apa yang terjadi

```
Checking tag 1/7
Looking at IFD0: ModifyDate
Looking for '1970:01:01 00:00:00'
Found: 2023:11:20 15:46:23
Oops! That tag isn't right. Please try again.
```

Wow ada tujuh step pengecekan, untuk yang pertama kita disuruh mengubah metadata ModifyDate, langsung saja kita ubah menggunakan exiftool, begini caranya

```
~/a/pico-ctf/forensic/medium/blast-from-the-past 11:45:35
❯ exiftool -ModifyDate="1970:01:01 00:00:00" original_modified.jpg
    1 image files updated
```

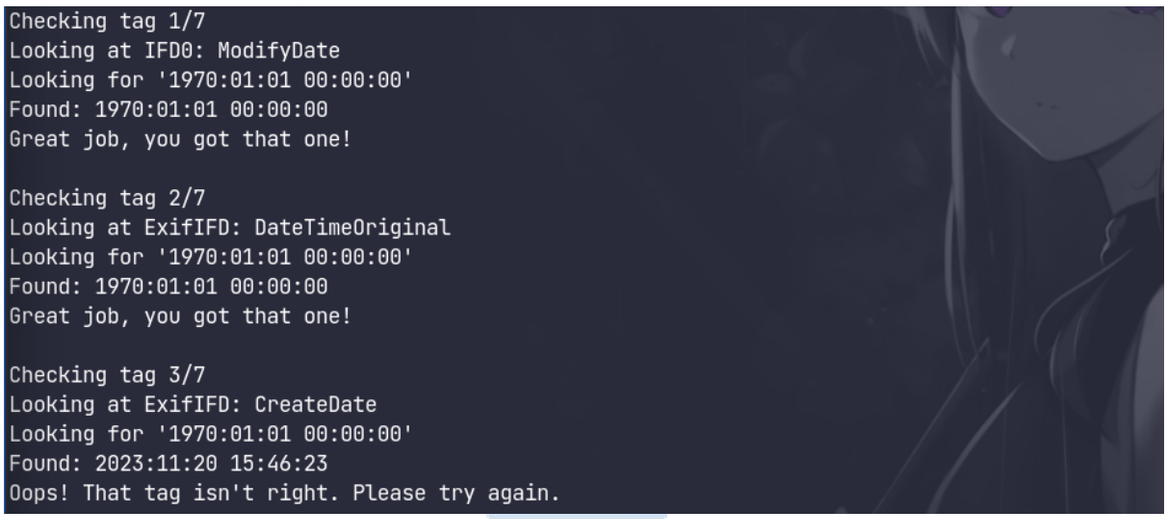
Kita coba tes kirim filenya ke server, apakah sudah benar

```
Checking tag 1/7
Looking at IFD0: ModifyDate
Looking for '1970:01:01 00:00:00'
Found: 1970:01:01 00:00:00
Great job, you got that one!

Checking tag 2/7
Looking at ExifIFD: DateTimeOriginal
Looking for '1970:01:01 00:00:00'
Found: 2023:11:20 15:46:23
Oops! That tag isn't right. Please try again.
```

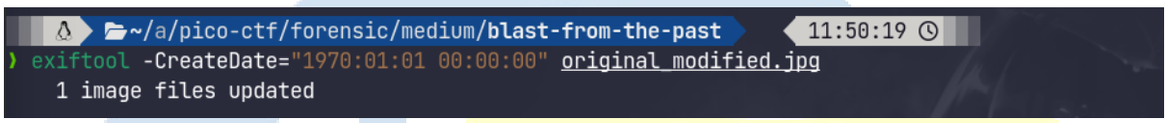
Untuk step kedua kita disuruh mengubah metadata DateTimeOriginal, begini caranya

```
~/a/pico-ctf/forensic/medium/blast-from-the-past 11:48:30
❯ exiftool -DateTimeOriginal="1970:01:01 00:00:00" original_modified.jpg
    1 image files updated
```

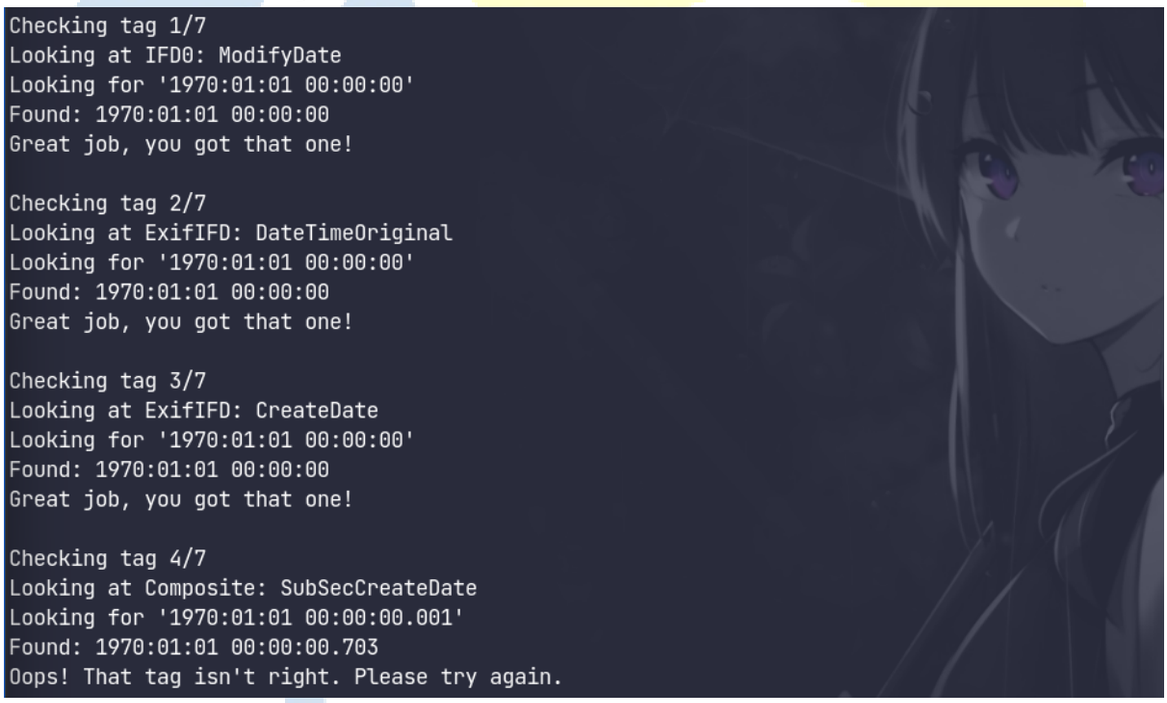
Kita tes kirim lagi ke server



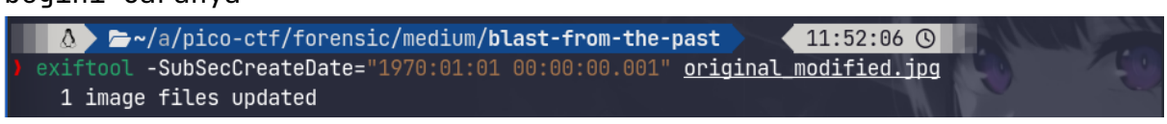
Step ketiga kita disuruh mengubah metadata CreateDate, begini caranya



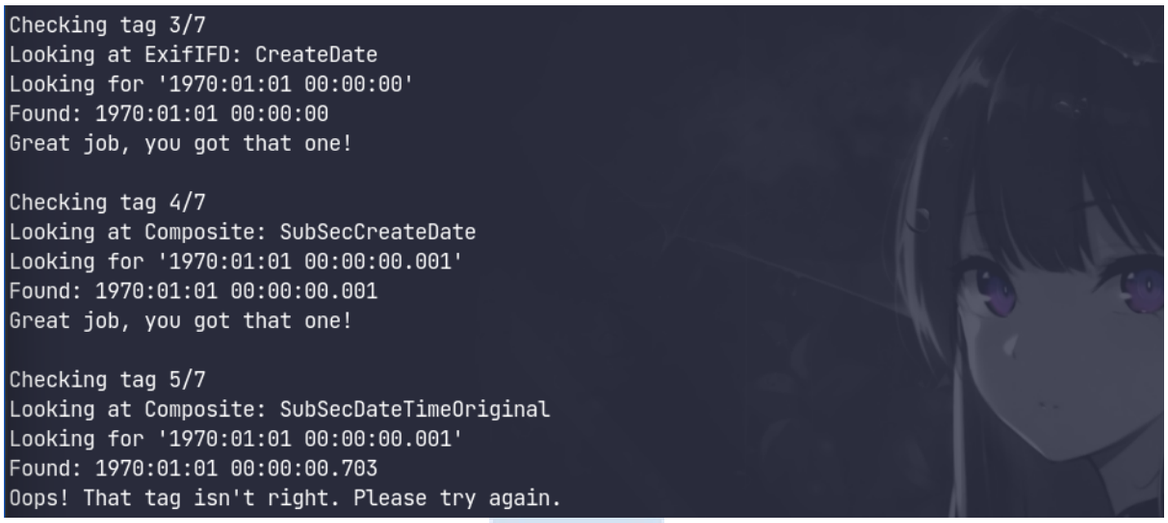
Kita tes kirim lagi ke server



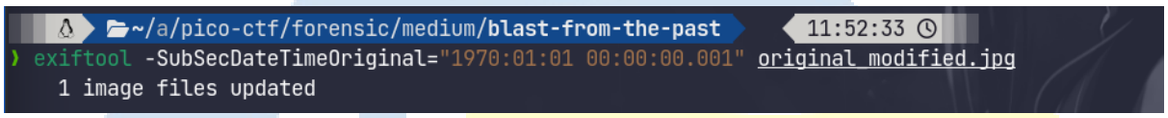
Untuk step keempat kita disuruh mengubah metadata SubSecCreateDate, begini caranya



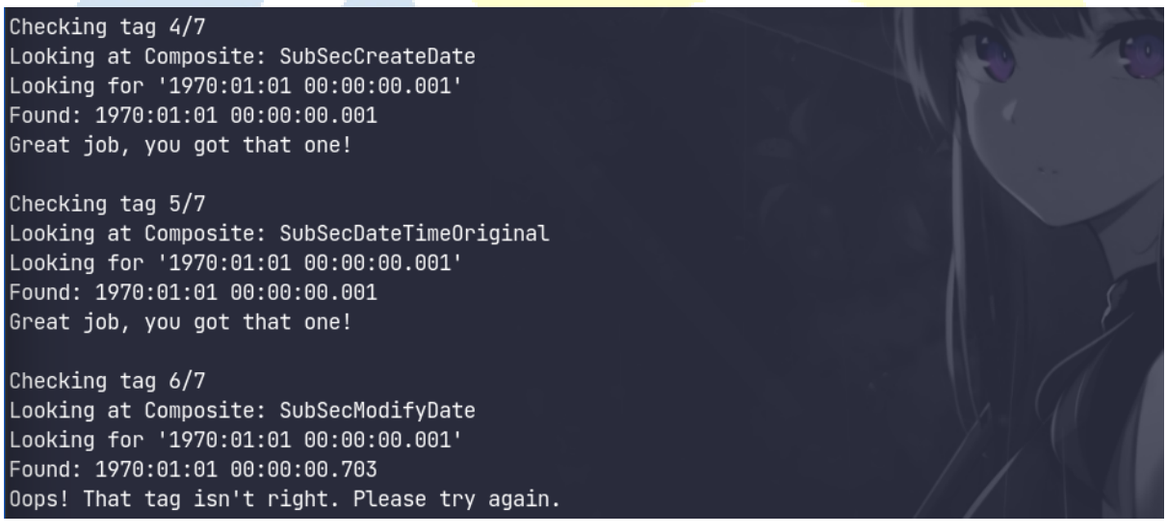
Kita tes kirim ke server



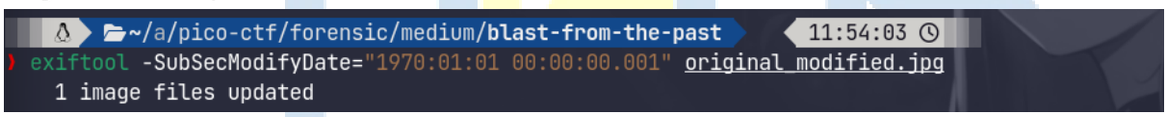
Untuk step kelima kita disuruh mengubah metadata SubSecDateTimeOriginal, begini caranya



Kita coba kirim ke server



Untuk step ke enam kita disuruh mengubah metadata SubSecModifyDate, begini caranya



Kita coba kirim keserver

```
Checking tag 5/7
Looking at Composite: SubSecDateTimeOriginal
Looking for '1970:01:01 00:00:00.001'
Found: 1970:01:01 00:00:00.001
Great job, you got that one!

Checking tag 6/7
Looking at Composite: SubSecModifyDate
Looking for '1970:01:01 00:00:00.001'
Found: 1970:01:01 00:00:00.001
Great job, you got that one!

Checking tag 7/7
Timezones do not have to match, as long as it's the equivalent time.
Looking at Samsung: TimeStamp
Looking for '1970:01:01 00:00:00.001+00:00'
Found: 2023:11:20 20:46:21.420+00:00
Oops! That tag isn't right. Please try again.
```

Untuk step ketujuh kita disuruh mengubah metadata TimeStamp, begini caranya

```
~/a/pico-ctf/forensic/medium/blast-from-the-past 11:54:33
❯ exiftool -TimeStamp="1970:01:01 00:00:00.001+00:00" original_modified.jpg
Warning: Not an integer for XMP-apple-fi:TimeStamp
    0 image files updated
    1 image files unchanged
```

Hmm, warning not an integer, coba kita lihat struktur metadatanya dengan menggunakan -v3

```
exiftool -v3 original_modified.jpg
```

```
  TimeStamp = 1700513181420
  - Tag '0x0a01' (13 bytes):
    2b82c4: 31 37 30 30 35 31 33 31 38 31 34 32 30          [1700513181420]
```

Pantas saja tidak bisa, server membaca tag tersebut kemudian server mengkonversi integer itu ke format tanggal, jadi hasilnya tidak sesuai, kita akan edit hex-nya menggunakan hexedit menjadi 0000000000001

```
 TimeStamp = 0000000000001
 - Tag '0x0a01' (13 bytes):
   2b82c4: 30 30 30 30 30 30 30 30 30 30 30 30 31          [0000000000001]
```

Kita coba kirim ke server

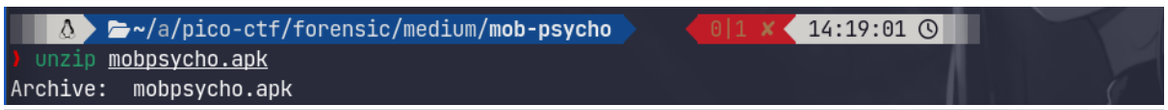
```
Checking tag 6/7
Looking at Composite: SubSecModifyDate
Looking for '1970:01:01 00:00:00.001'
Found: 1970:01:01 00:00:00.001
Great job, you got that one!

Checking tag 7/7
Timezones do not have to match, as long as it's the equivalent time.
Looking at Samsung: TimeStamp
Looking for '1970:01:01 00:00:00.001+00:00'
Found: 1970:01:01 00:00:00.001+00:00
Great job, you got that one!

You did it!
picoCTF{71m3_7r4v311ng_p1c7ur3_a4f2b526}
```

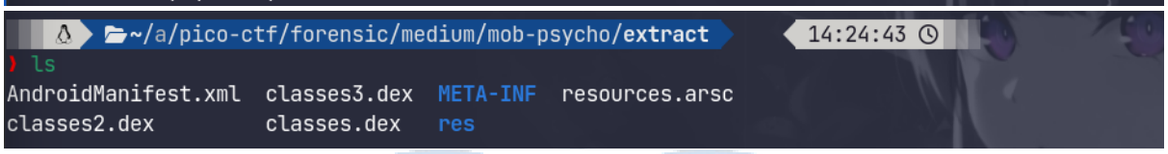
Yeay dapat flagnya

picoCTF{71m3_7r4v311ng_p1c7ur3_a4f2b526}

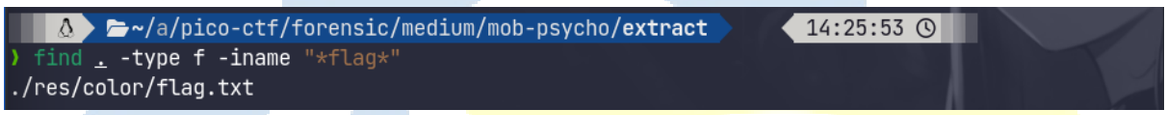
Mob Psycho
Can you handle APKs?
Attachment: mobPsycho.apk

Kita diberi file apk, langsung saja kita extract dan lihat dalamnya ada apa

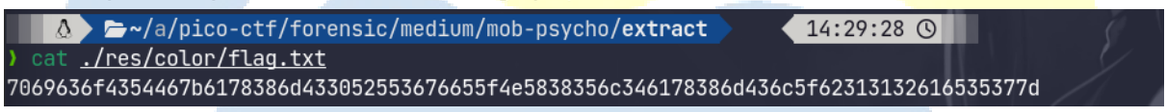




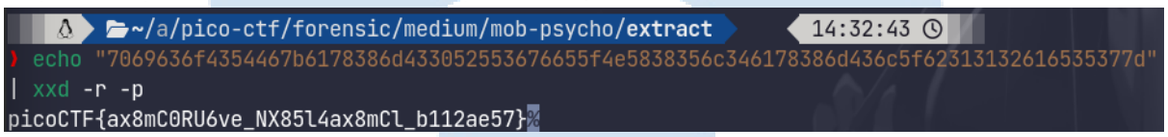
Coba kita cari apakah ada file yang mengandung kata flag, begini command nya



Wah sepertinya itu adalah flagnya, coba kita lihat



Sepertinya itu adalah enkripsi hex, coba kita decode



Nah, kita sudah dapat flagnya

picoCTF{ax8mC0RU6ve_NX85l4ax8mCl_b112ae57}

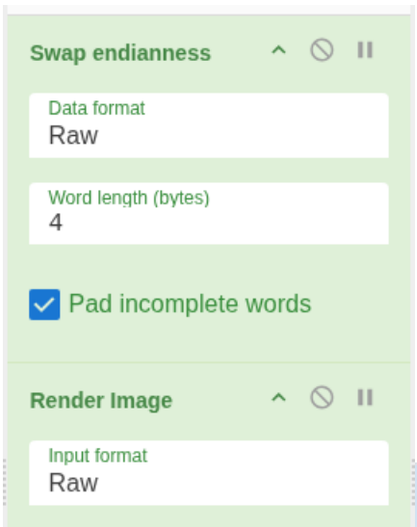
Endianness-v2
Here's a file that was recovered from a 32-bits system that organized the bytes a weird way. We're not even sure what type of file it is.
Attachment: challengeFile

disini kita diberikan sebuah file, coba kita cek itu file apa

Hmm kayaknya file tersebut rusak, sepertinya jika kita lihat pada soal terdapat sebuah petunjuk bahwa file tersebut berasal dari sistem 32-bits dan pada judul soalnya adalah endiannes, sepertinya ini byte pada file nya rusak karena file tersebut dari sistem 32 bit, coba kita lihat hex-nya begini caranya

```
hexedit challengeFile
```

Hmm seharusnya magic number-nya jpg itu “FF D8 FF E0” tapi pada file tersebut “E0 FF D8 FF” sepertinya file kebalik tiap 4 bytes, kita akan perbaiki menggunakan cyber chef, begini caranya



cari swap endianness lalu pilih yang raw dan 4 bytes, langsung saja kita download file yang sudah diperbaiki

picoCTF{cert!f1Ed_iNd!4n_s0rry_3nDian_6d3ad08e}

MSB
This image passes LSB statistical analysis, but we can't help but think there must be something to the visual artifacts present in this image...
Attachment: file.png

Kita diberikan file png, soal memberikan petunjuk bahwa pada LSB sudah dianalisis tetapi masih file masih rusak, saya curiga bahwa ada yang aneh pada bagian MSB-nya, langsung saja kita coba bikin script untuk extract MSB-nya

stego.py

```python
#!/usr/bin/env python3
import argparse
from PIL import Image
import sys

def extract_bits(pixel_value, bit_positions):
    """
    Extract specific bits from a pixel value.
    bit_positions: string of 8 chars, '1' means extract
    that bit, '0' means skip
    Example: '10000000' extracts MSB, '00000001' extracts
    LSB
    """
    binary = format(pixel_value, '08b')
    extracted = []

    for i, should_extract in enumerate(bit_positions):
        if should_extract == '1':
            extracted.append(binary[i])

    return extracted

def decode_image(input_file, output_file, bit_pattern,
channel_order='RGB', extract_mode='column'):
    """
    Decode hidden data from an image using steganography.

    Args:
        input_file: Path to input image
```

```
        output_file: Path to output text file
        bit_pattern: 8-character string indicating which
        bits to extract (e.g., '10000000' for MSB)
        channel_order: Order to read RGB channels
        (default: 'RGB')
        extract_mode: 'column' or 'row' traversal
        (default: 'column')
    """
    try:
        img = Image.open(input_file)
        width, height = img.size

        # Convert to RGB if necessary
        if img.mode != 'RGB':
            img = img.convert('RGB')

        binary_data = []

        # Determine traversal pattern
        if extract_mode == 'row':
            coordinates = [(x, y) for y in range(height)
            for x in range(width)]
        else:  # column
            coordinates = [(x, y) for x in range(width)
            for y in range(height)]

        # Extract bits from each pixel
        for x, y in coordinates:
```

```
            pixel = img.getpixel((x, y))

            # Extract bits from each channel based on order
            channel_data = {}
            channel_data['R'] = extract_bits(pixel[0],
            bit_pattern)
            channel_data['G'] = extract_bits(pixel[1],
            bit_pattern)
            channel_data['B'] = extract_bits(pixel[2],
            bit_pattern)

            # Add bits in specified channel order
            for channel in channel_order.upper():
                binary_data.extend(channel_data[channel])
```

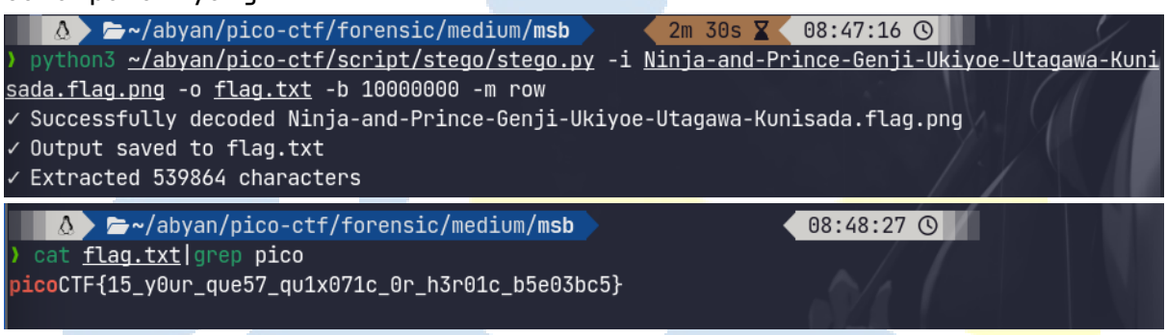
```
        # Convert binary to ASCII text
        output_text = []
        for i in range(0, len(binary_data) - 7, 8):
            byte = ''.join(binary_data[i:i+8])
            ascii_val = int(byte, 2)

            # Only include printable ASCII characters
            if 32 <= ascii_val <= 126:
                output_text.append(chr(ascii_val))
            elif ascii_val == 10 or ascii_val == 13:  #
            newline or carriage return
                output_text.append(chr(ascii_val))

        # Write output
        with open(output_file, 'w', encoding='utf-8') as f:
            f.write(''.join(output_text))

        print(f"✓ Successfully decoded {input_file}")
        print(f"✓ Output saved to {output_file}")
        print(f"✓ Extracted {len(output_text)} characters")

    except FileNotFoundError:
        print(f"✗ Error: File '{input_file}' not found",
        file=sys.stderr)
        sys.exit(1)
    except Exception as e:
        print(f"✗ Error: {str(e)}", file=sys.stderr)
        sys.exit(1)
```

```
def main():
    parser = argparse.ArgumentParser(
        prog='StegoDecode',
        description='Steganography decoder for extracting
        hidden data from images using MSB/LSB techniques',
        formatter_class=argparse.
        RawDescriptionHelpFormatter,
        epilog='''
```

```
    parser.add_argument('-i', '--input',
                        required=True,
                        help='Input image file (PNG, JPG,
                        etc.)')

    parser.add_argument('-o', '--output',
                        required=True,
                        help='Output text file for decoded
                        message')

    parser.add_argument('-b', '--bits',
                        default='00000001',
                        help='Bit pattern to extract (8
                        chars: 1=extract, 0=skip). '
                             'Examples: "10000000" for
                             MSB, "00000001" for LSB
                             (default: %(default)s)')

    parser.add_argument('-c', '--channels',
                        default='RGB',
                        choices=['RGB', 'RBG', 'GRB',
                        'GBR', 'BRG', 'BGR'],
                        help='Channel order for extraction
                        (default: %(default)s)')

    parser.add_argument('-m', '--mode',
                        default='column',
                        choices=['column', 'row'],
                        help='Pixel traversal mode
                        (default: %(default)s)')

    args = parser.parse_args()

    # Validate bit pattern
    if len(args.bits) != 8 or not all(c in '01' for c in
    args.bits):
        print("✗ Error: Bit pattern must be exactly 8
        characters of '0' or '1'", file=sys.stderr)
        sys.exit(1)

    if args.bits == '00000000':
```

```
        print("✗ Error: Bit pattern must have at least one
        '1'", file=sys.stderr)
        sys.exit(1)

    # Run decoder
    decode_image(args.input, args.output, args.bits, args.
    channels, args.mode)

if __name__ == '__main__':
    main()
```

Cara pakainya gini

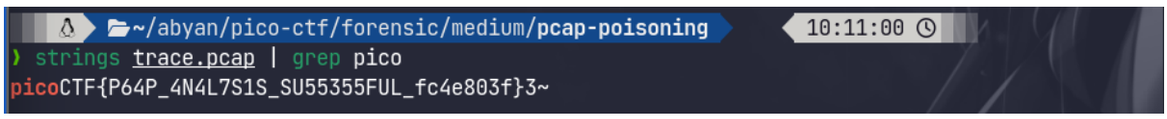


Kita sudah dapat flagnya

picoCTF{15_y0ur_que57_qu1x071c_0r_h3r01c_b5e03bc5}

Pcap-Poisoning
How about some hide and seek heh?
Attachment: trace.pcap

Kita diberikan file .pcap, pada deskripsi soal tidak diberikan petunjuk apapun coba kita cek terlebih dahulu file tersebut

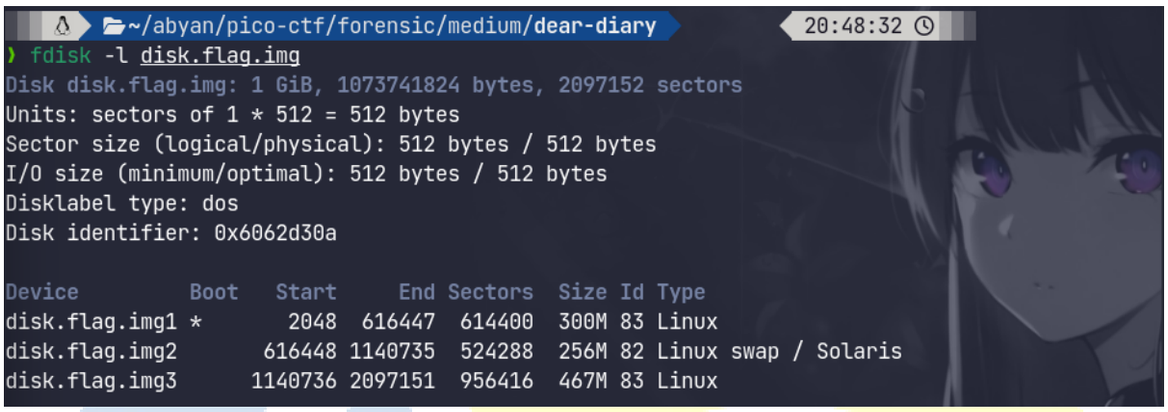


wah ternyata flag-nya ada di strings

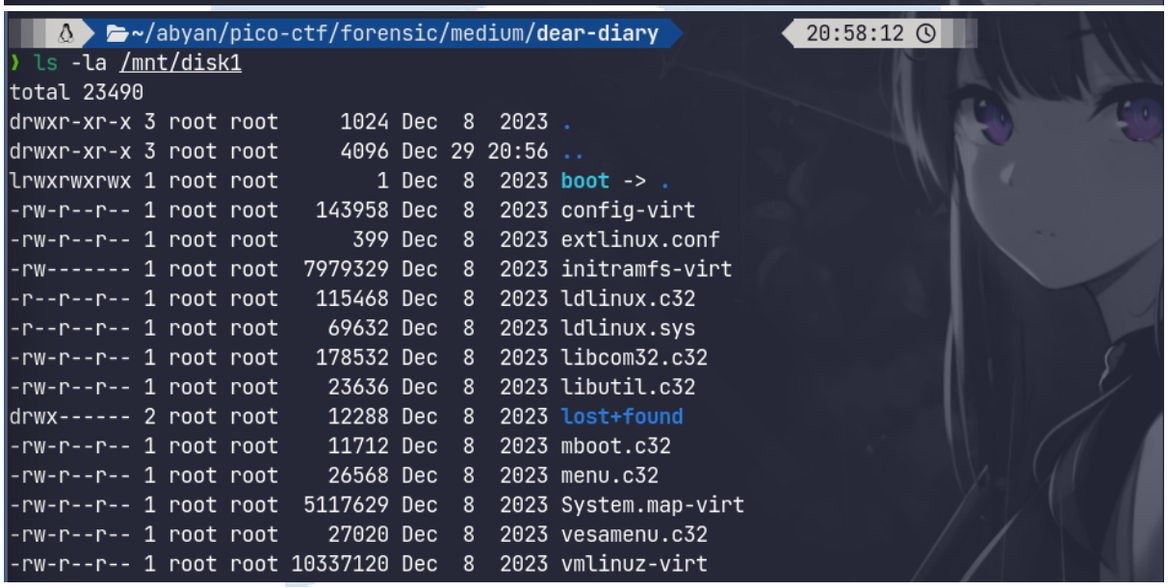
picoCTF{P64P_4N4L7S1S_SU55355FUL_fc4e803f}

Dear Diary
If you can find the flag on this disk image, we can close the case for good!
Attachment: disk.flag.img

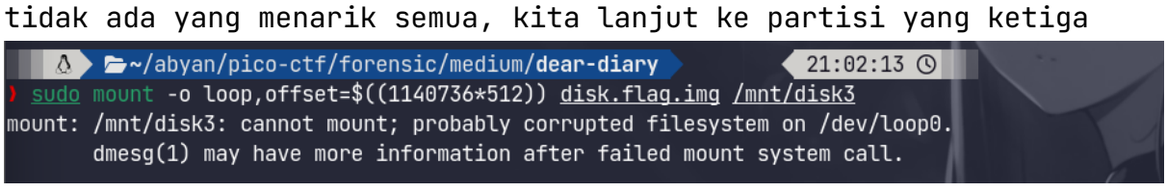
kita diberi file image, kita coba lihat dulu file tersebut



Disk tersebut berisi 3 partisi, coba kita mount satu-satu, begini commandnya



Coba kita lihat-lihat dulu apakah ada yang menarik, tapi sepertinya tidak ada yang menarik semua, kita lanjut ke partisi yang ketiga



Wah kenapa ini kok error, sepertinya file system sengaja dibuat corrupt, coba kita mount tanpa journal dan read only karena file system tersebut corrupt

```
~/abyan/pico-ctf/forensic/medium/dear-diary 21:05:59
❯ # Mount dengan noload (ignore journal)
sudo mount -o loop,offset=$((1140736*512)),ro,noload disk.flag.img /mnt/disk3
```

Nah kan bisa, coba kita cek apa saja isinya

```
~/abyan/pico-ctf/forensic/medium/dear-diary 21:06:54
❯ ls -la /mnt/disk3
total 45
drwxr-xr-x 22 root root  1024 Dec  8  2023 .
drwxr-xr-x  4 root root  4096 Dec 29 20:59 ..
drwxr-xr-x  2 root root  3072 Dec  8  2023 bin
drwxr-xr-x  2 root root  1024 Dec  8  2023 boot
drwxr-xr-x  2 root root  1024 Dec  8  2023 dev
drwxr-xr-x 31 root root  3072 Feb 17  2024 etc
drwxr-xr-x  2 root root  1024 Dec  8  2023 home
drwxr-xr-x 10 root root  1024 Dec  8  2023 lib
drwx------  2 root root 12288 Dec  8  2023 lost+found
drwxr-xr-x  5 root root  1024 Dec  8  2023 media
drwxr-xr-x  2 root root  1024 Dec  8  2023 mnt
drwxr-xr-x  2 root root  1024 Dec  8  2023 opt
drwxr-xr-x  2 root root  1024 Dec  8  2023 proc
drwx------  3 root root  1024 Feb 17  2024 root
drwxr-xr-x  2 root root  1024 Dec  8  2023 run
drwxr-xr-x  2 root root  6144 Dec  8  2023 sbin
drwxr-xr-x  2 root root  1024 Dec  8  2023 srv
drwxr-xr-x  2 root root  1024 Dec  8  2023 swap
drwxr-xr-x  2 root root  1024 Dec  8  2023 sys
drwxrwxrwt  2 root root  1024 Dec  8  2023 tmp
drwxr-xr-x  8 root root  1024 Dec  8  2023 usr
drwxr-xr-x 11 root root  1024 Dec  8  2023 var
```

Biasanya flag tersimpan di home atau engga root, coba kita cek

```
~/abyan/pico-ctf/forensic/medium/dear-diary 21:15:40
❯ sudo ls -la /mnt/disk3/root
total 4
drwx------  3 root root 1024 Feb 17  2024 .
drwxr-xr-x 22 root root 1024 Dec  8  2023 ..
-rw-------  1 root root   27 Feb 17  2024 .ash_history
drwxr-xr-x  2 root root 1024 Feb 17  2024 secret-secrets
```

Secret-secrets? Sepertinya mencurigakan ada sesuatu yang dirahasiakan

```
~/abyan/pico-ctf/forensic/medium/dear-diary 21:15:54
❯ sudo ls -la /mnt/disk3/root/secret-secrets
total 3
drwxr-xr-x 2 root root 1024 Feb 17  2024 .
drwx------ 3 root root 1024 Feb 17  2024 ..
-rwxr-xr-x 1 root root   21 Feb 17  2024 force-wait.sh
-rw-r--r-- 1 root root    0 Feb 17  2024 innocuous-file.txt
-rw-r--r-- 1 root root    0 Feb 17  2024 its-all-in-the-name
```

Wah sepertinya ada yang janggal pada file innocuous.txt, tapi kok size file tersebut kosong ya? Mungkin ada hubunganya sama petunjuk pada soal yaitu kita disuruh lihat binary data raw nya, coba kita lihat menggunakan hexdump, begini command nya

```
~/a/pico-ctf/forensic/medium/dear-diary 1m 54s 21:34:48
❯ hexdump -C disk.flag.img|less
```

```
00000170  ff e4 e8 1e 00 4f 70 65  72 61 74 69 6e 67 20 73  |.....Operating s|
00000180  79 73 74 65 6d 20 6c 6f  61 64 20 65 72 72 6f 72  |ystem load error|
00000190  2e 0d 0a 5e ac b4 0e 8a  3e 62 04 b3 07 cd 10 3c  |...^....>b.....<|
000001a0  0a 75 f1 cd 18 f4 eb fd  00 00 00 00 00 00 00 00  |.u..............|
000001b0  00 00 00 00 00 00 00 00  0a d3 62 60 00 00 80 20  |..........b`... |
000001c0  21 00 83 5e 38 26 00 08  00 00 00 60 09 00 00 5e  |!..^8&.....`...^|
000001d0  39 26 82 01 3a 47 00 68  09 00 00 00 08 00 00 01  |9&..:G.h........|
000001e0  3b 47 83 8a 08 82 00 68  11 00 00 98 0e 00 00 00  |;G.....h........|
000001f0  00 00 00 00 00 00 00 00  00 00 00 00 00 00 55 aa  |..............U.|
/inno
```

Coba kita search menggunakan kata kunci inno, caranya dengan mengetik “/inno”, kemudian tunggu sampai ketemu karena file img tersebut besar kemungkinan lama

```
23c3c830  34 07 00 00 28 00 12 01  69 6e 6e 6f 63 75 6f 75  |4...(...innocuou|
23c3c840  73 2d 66 69 6c 65 2e 74  78 74 00 00 00 00 00 00  |s-file.txt......|
23c3c850  00 00 00 00 00 00 00 00  35 07 00 00 9c 03 13 01  |........5.......|
23c3c860  69 74 73 2d 61 6c 6c 2d  69 6e 2d 74 68 65 2d 6e  |its-all-in-the-n|
23c3c870  61 6d 65 00 00 00 00 00  00 00 00 00 00 00 00 00  |ame.............|
23c3c880  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
```

Hmm tidak ada apa, coba kita tekan “n” untuk next, kemudian tunggu

```
2b6fe030  34 07 00 00 38 00 12 01  69 6e 6e 6f 63 75 6f 75  |4...8...innocuou|
2b6fe040  73 2d 66 69 6c 65 2e 74  78 74 00 00 00 00 00 00  |s-file.txt......|
2b6fe050  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
2b6fe060  00 00 00 00 00 00 00 00  35 07 00 00 8c 03 03 01  |........5.......|
2b6fe070  70 69 63 00 00 00 00 00  00 00 00 00 00 00 00 00  |pic.............|
2b6fe080  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
```

“pic” sepertinya flag tersebut dipisah-pisah menjadi beberapa bagian kita coba cek selanjutnya

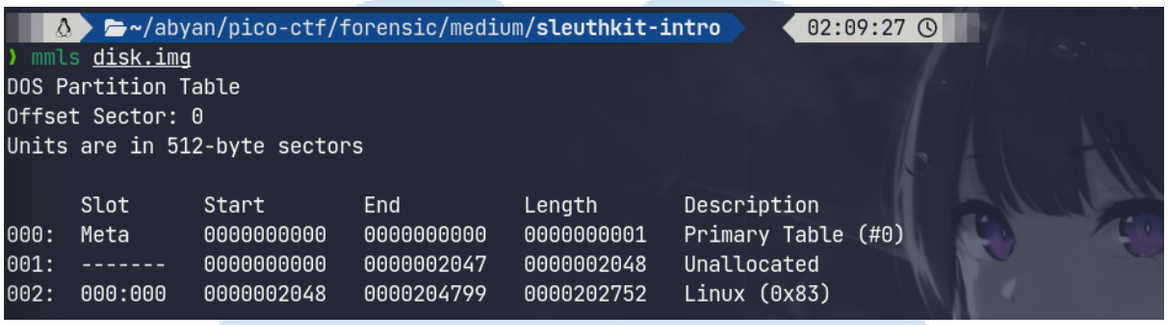
```
2b6ff830  34 07 00 00 1c 00 12 01  69 6e 6e 6f 63 75 6f 75  |4.......innocuou|
2b6ff840  73 2d 66 69 6c 65 2e 74  78 74 00 00 35 07 00 00  |s-file.txt..5...|
2b6ff850  a8 03 03 01 6f 43 54 00  00 00 00 00 00 00 00 00  |....oCT.........|
2b6ff860  00 00 00 00 00 00 00 00  00 00 00 00 00 00 00 00  |................|
```

Kata selanjutnya “oCT” sepertinya benar, cari semua bagian kemudian satukan bagian-bagian tersebut

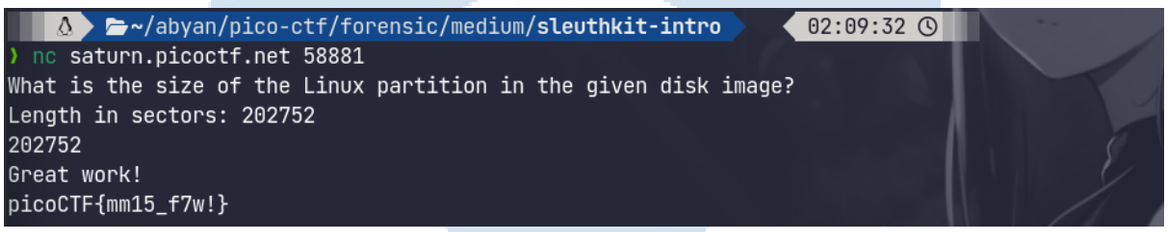
picoCTF{1_533_n4m35_80d24b30}

Sleuthkit Intro
Download the disk image and use mmls on it to find the size of the Linux partition. Connect to the remote checker service to check your answer and get the flag. Note: if you are using the webshell, download and extract the disk image into /tmp not your home directory. Download disk imageAccess checker program: nc saturn.picoctf.net 58881
Attachment: disk.flag.img

Kita diberi disk image, soal memberitahu kita untuk menggunakan mmls dan menjawab pertanyaan pada server yang diberikan, langsung saja kita coba



Kita coba menjawab pertanyaan yang ada di server

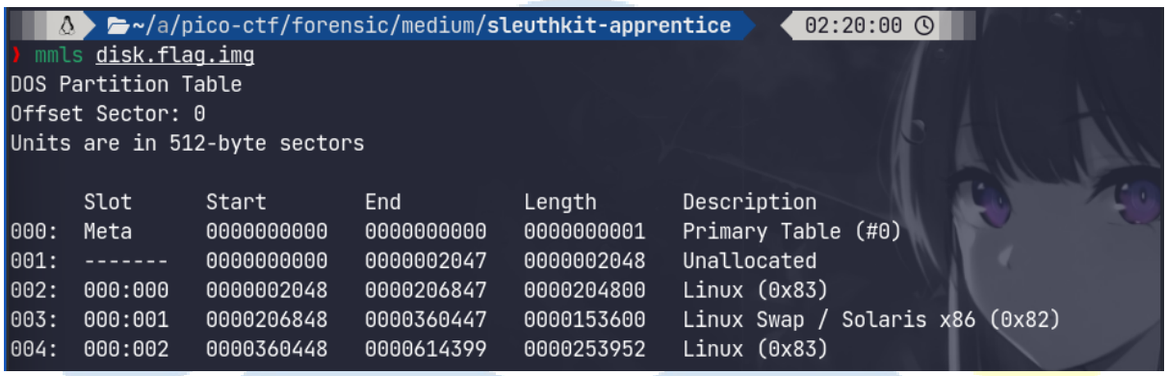


Yeayy sudah dapat flagnya

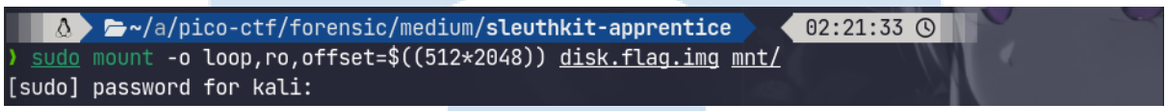
picoCTF{mm15_f7w!}

Sleuthkit Apprentice
Download this disk image and find the flag.Note: if you are using the webshell, download and extract the disk image into /tmp not your home directory.
Attachment: disk.flag.img

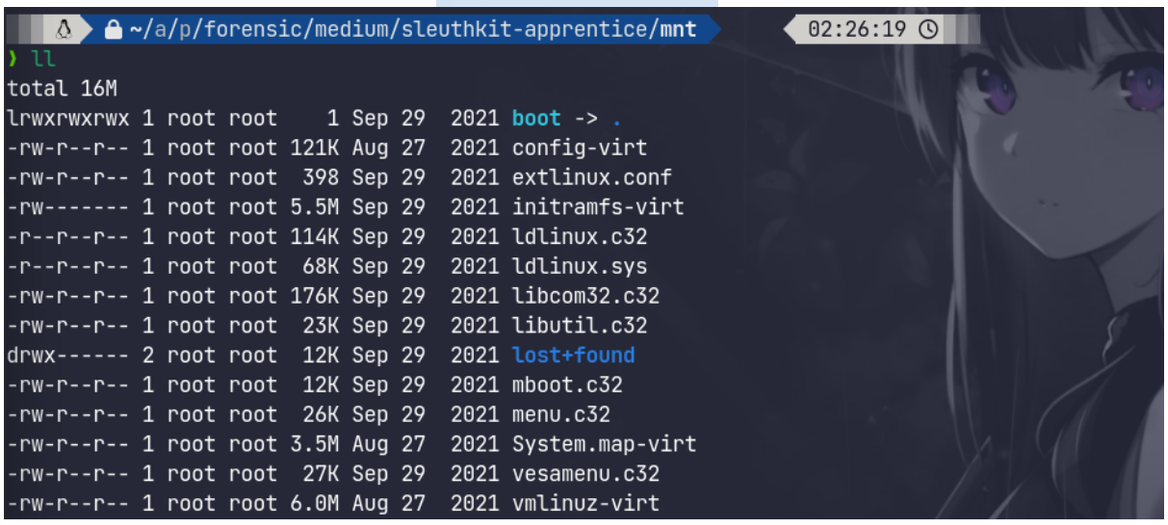
Kita diberi file disk image, coba kita lihat menggunakan the sleuthkit



Terdapat 3 partisi tetapi partisi yang kedua hanya swap, coba kita mount partisi yang pertama begini caranya

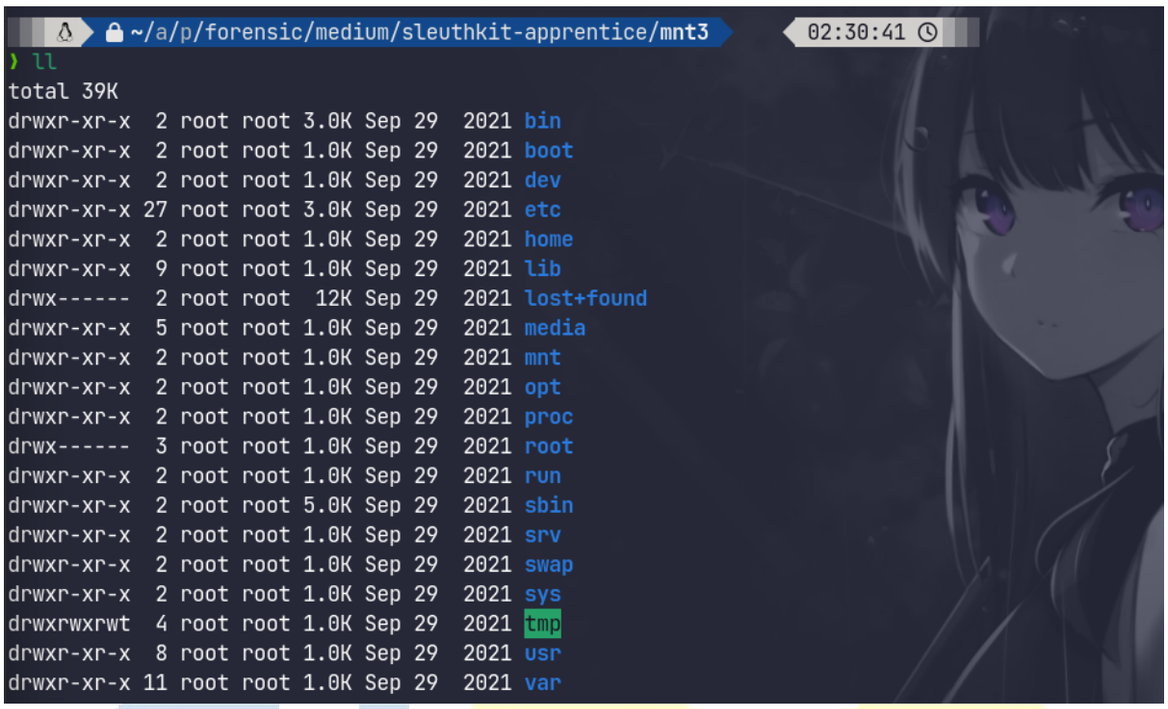


Kita coba lihat apa saja yang ada didalam

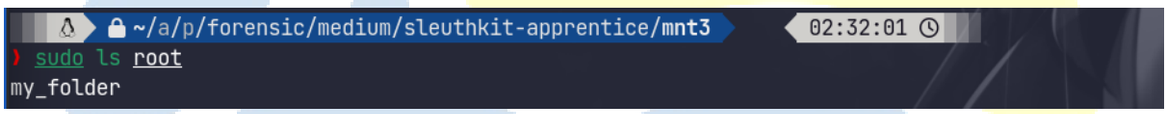


Sepertinya tidak ada yang mencurigakan, kita lanjut ke partisi yang ketiga

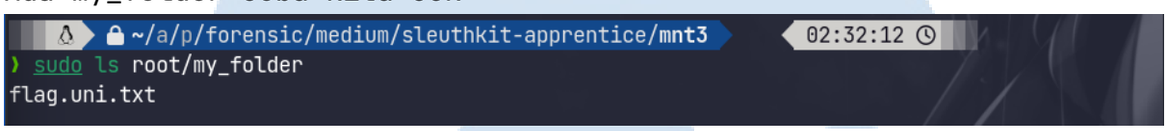
Coba kita lihat-lihat apa saja yang ada didalam partisi 3 ini



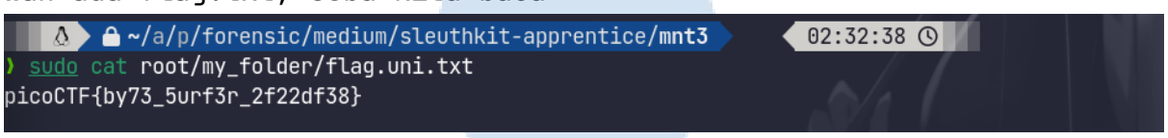
Wah, biasanya flag disembunyikan di directory root, coba kita cek



Ada my_folder coba kita cek



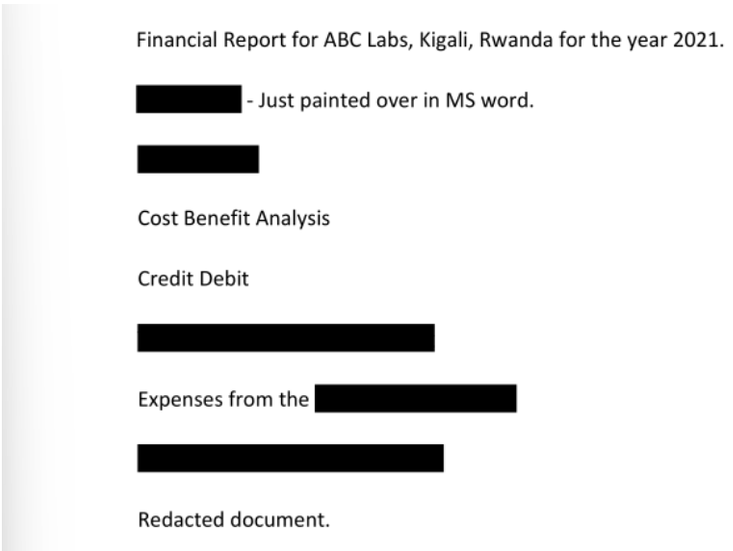
Wah ada flag.txt, coba kita baca



picoCTF{by73_5urf3r_2f22df38}

Redaction Gone Wrong
Now you DON’T see me. This report has some critical data in it, some of which have been redacted correctly, while some were not. Can you find an important key that was not redacted properly?
Attachment: file.pdf

Kita diberi file pdf, pada soal memberi petunjuk redaction coba ktia buka file pdf tersebut


Financial Report for ABC Labs, Kigali, Rwanda for the year 2021.

[redacted] - Just painted over in MS word.

[redacted]

Cost Benefit Analysis

Credit Debit

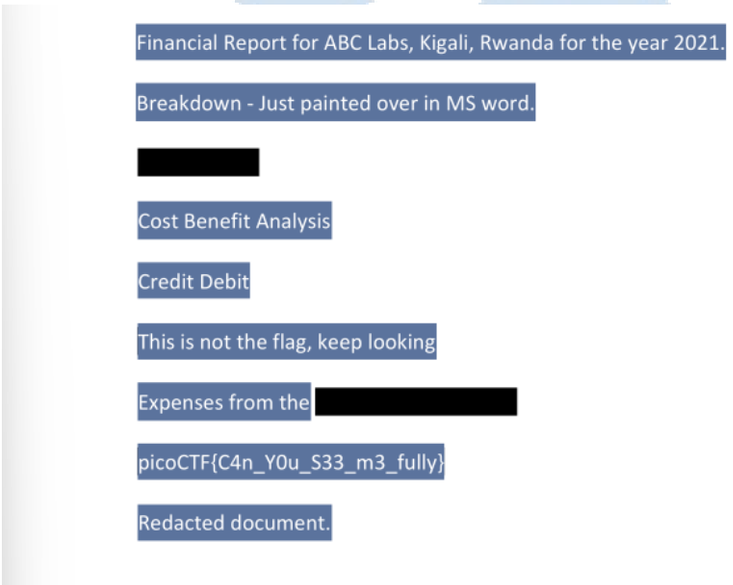
[redacted]

Expenses from the [redacted]

[redacted]

Redacted document.

Hmm ada bagian yang ditutupi sama kotak hitam, coba kita select kotak tersebut


Financial Report for ABC Labs, Kigali, Rwanda for the year 2021.

Breakdown - Just painted over in MS word.

[redacted]

Cost Benefit Analysis

Credit Debit

This is not the flag, keep looking

Expenses from the [redacted]

picoCTF{C4n_Y0u_S33_m3_fully}

Redacted document.

Wah ternyata itu adalah text yang ditutupi sama kotak hitam

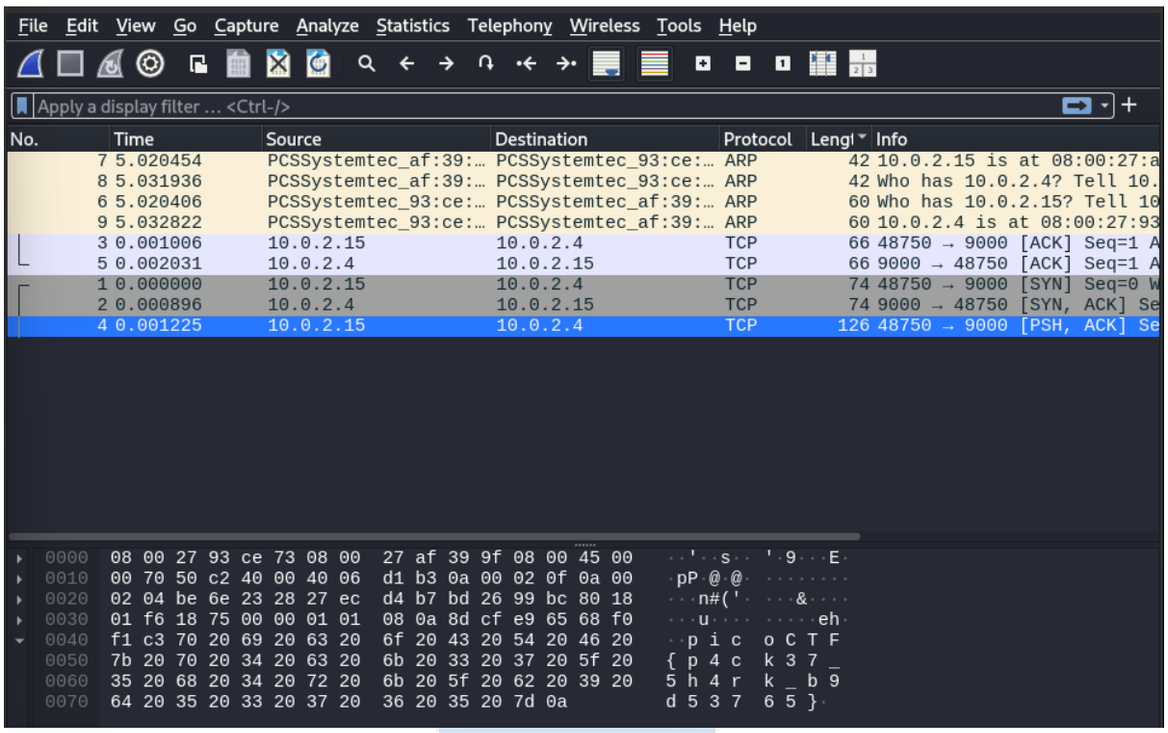
picoCTF{c4n_y0u_S33_m3_fully}

Redaction Gone Wrong

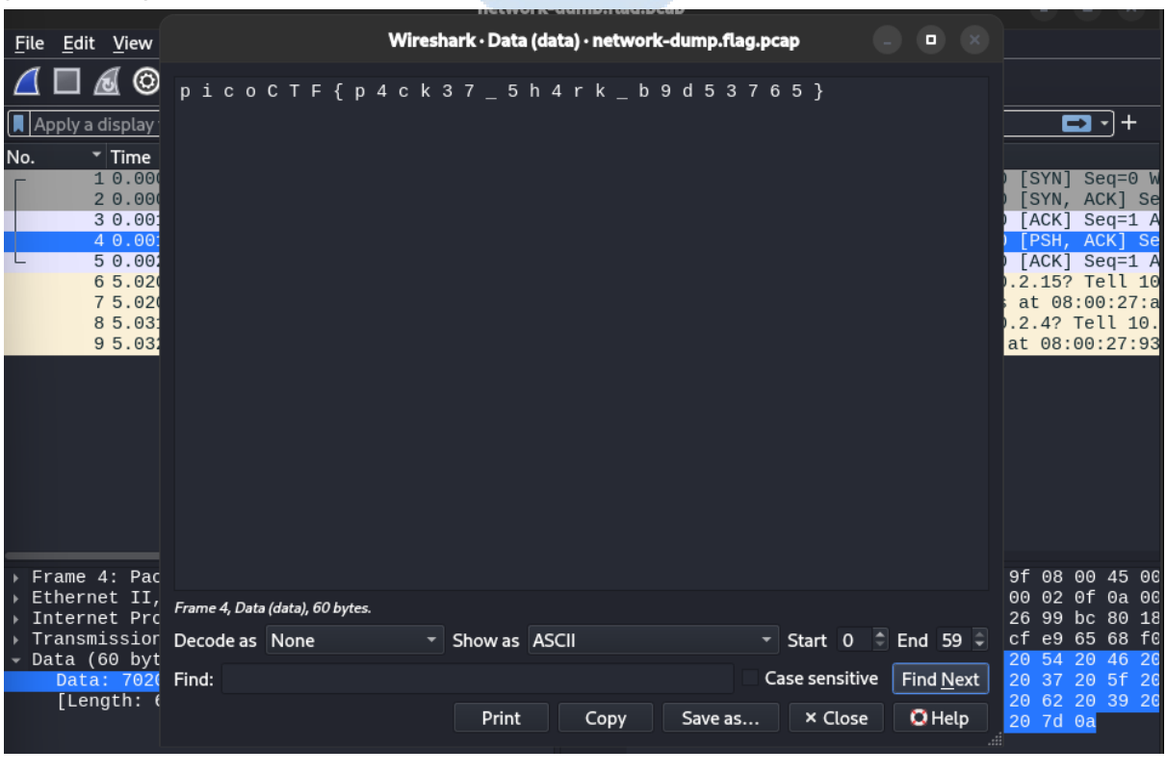
Now you DON’T see me. This report has some critical data in it, some of which have been redacted correctly, while some were not. Can you find an important key that was not redacted properly?

Attachment: file.pcap

Disini kita diberikan file pcap, coba kita lihat menggunakan wireshark apa isi dari file tersebut



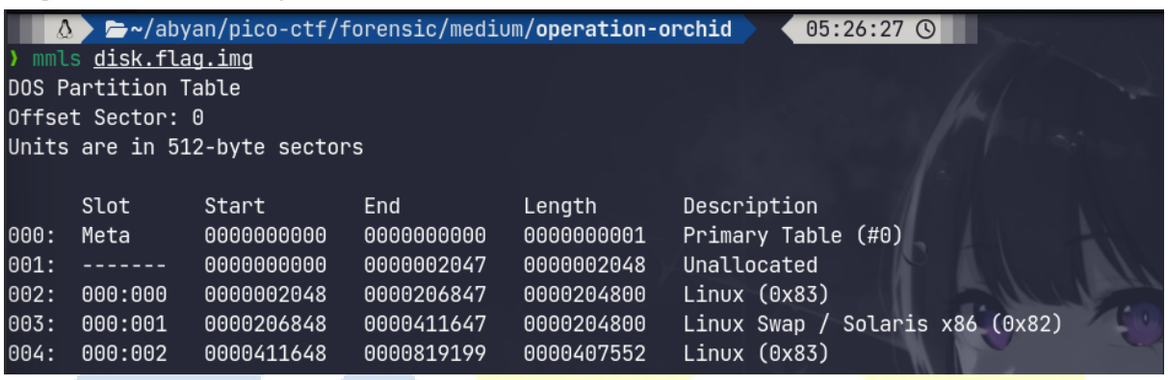
Sepetinya pada packet ke 4 terdapat sebuah flag coba kita show packet bytes



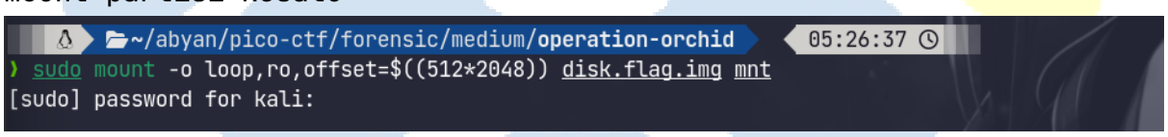
picoCTF{p4ck37_5h4rk_b9d53765}

Operation Orchid
Download this disk image and find the flag. Note: if you are using the webshell, download and extract the disk image into /tmp not your home directory.
Attachment: disk.flag.img

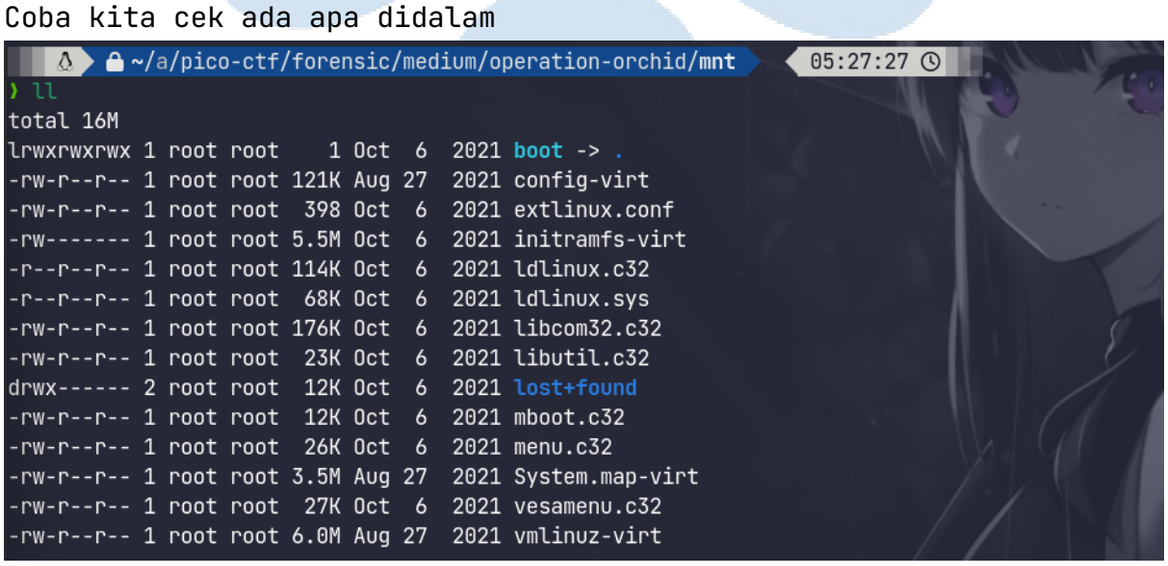
kita diberi file disk image coba kita cek menggunakan sleuthkit begini command-nya



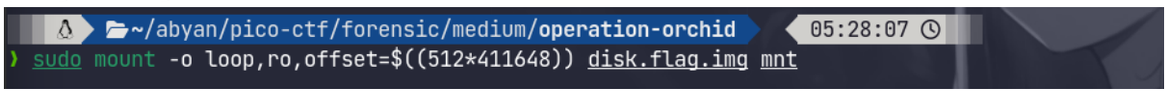
Terdapat 3 partisi tapi partisi yang kedua adalah swap, coba kita mount partisi kesatu

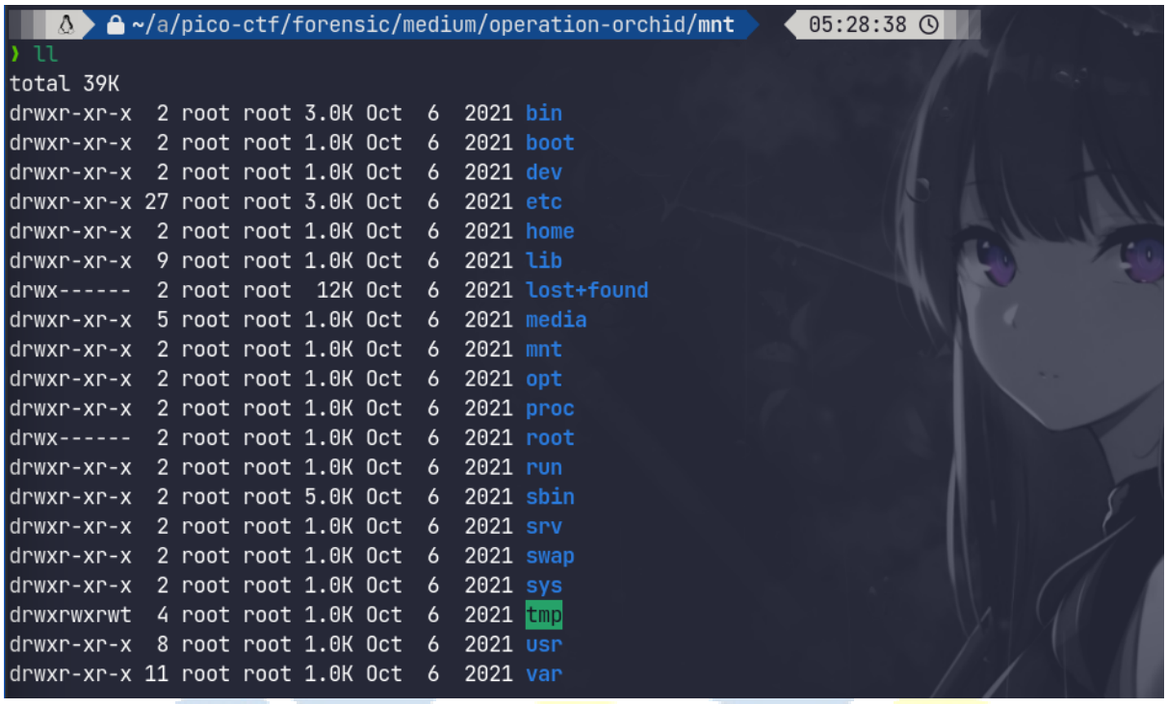


Coba kita cek ada apa didalam

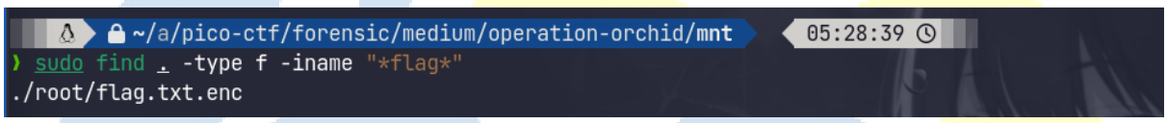


Sepertinya tidak ada yang menarik, coba sekarang kita mount partisi yang ketiga

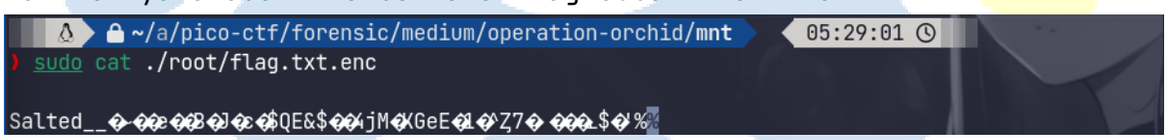




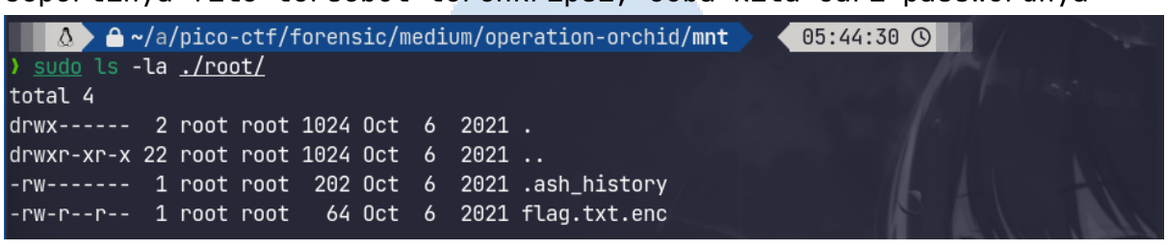
Ada yang menarik coba kita cari dengan kata kunci flag



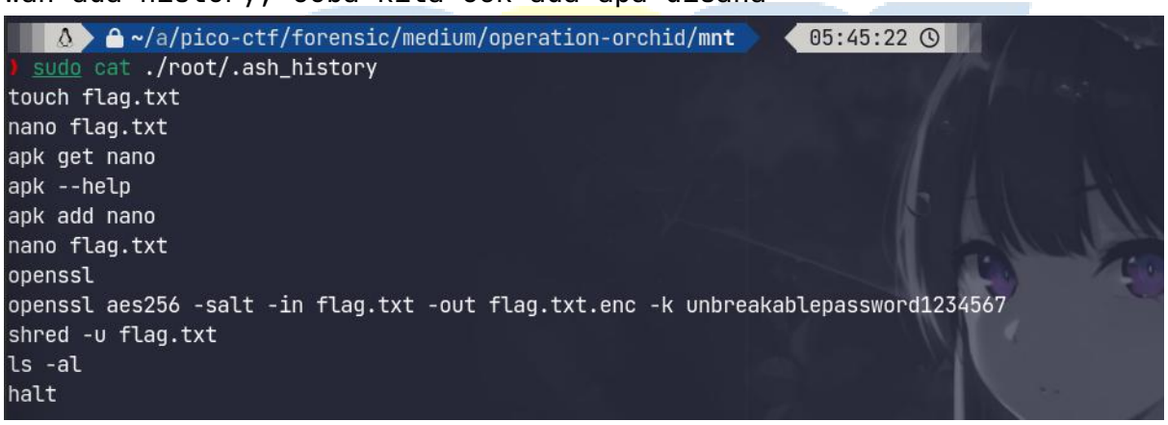
Wah ternyata ada file bernama flag coba kita lihat



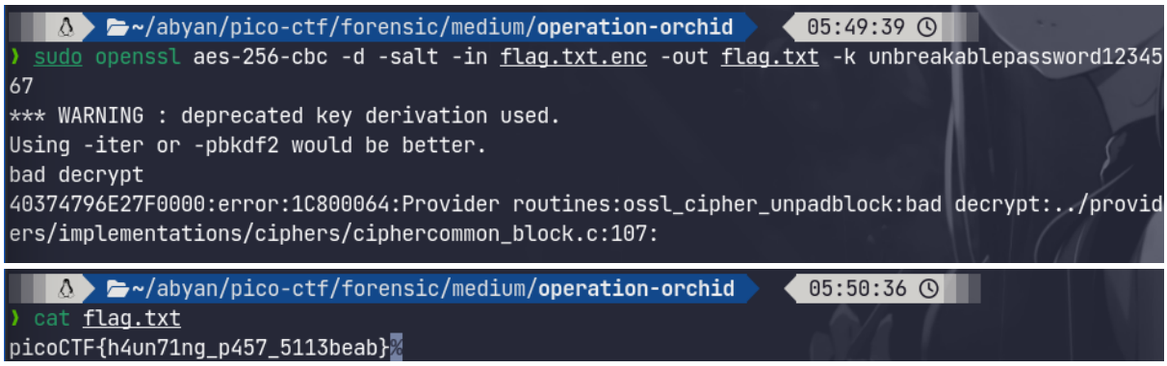
Sepertinya file tersebut terenkripsi, coba kita cari passwordnya



wah ada history, coba kita cek ada apa disana



Bingo sepertinya file flag tersebut di enkripsi menggunakan password tersebut coba kita decrypt, begini caranya

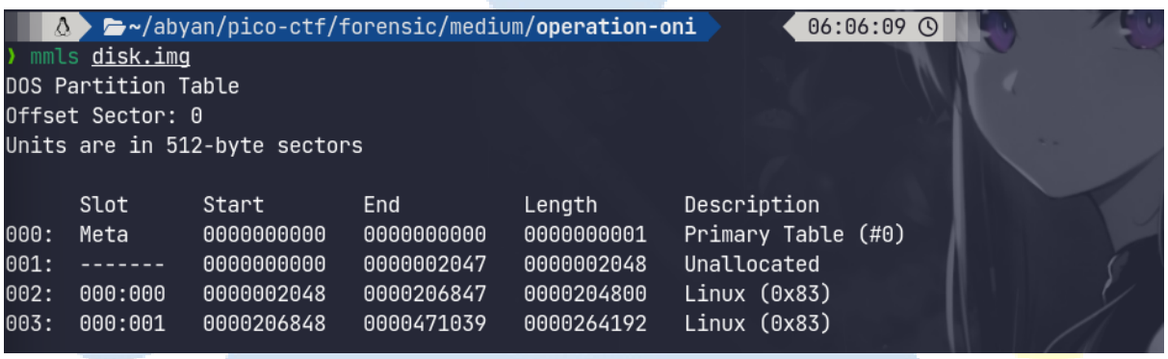


Yeay dapat flag nya

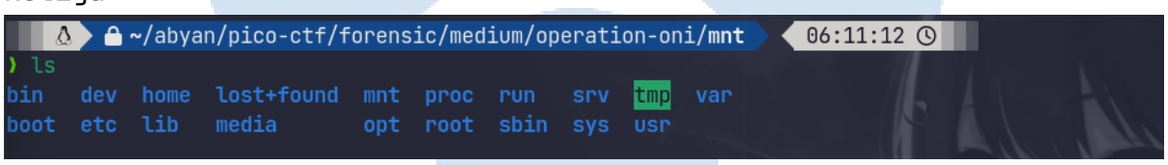
picoCTF{h4un71ng_p457_5113beab}

Operation Oni
Download this disk image, find the key and log into the remote machine. Note: if you are using the webshell, download and extract the disk image into /tmp not your home directory. • Download disk image • Remote machine: ssh -i key_file -p 60042 ctf-player@saturn.picoctf.net
Attachment: disk.img

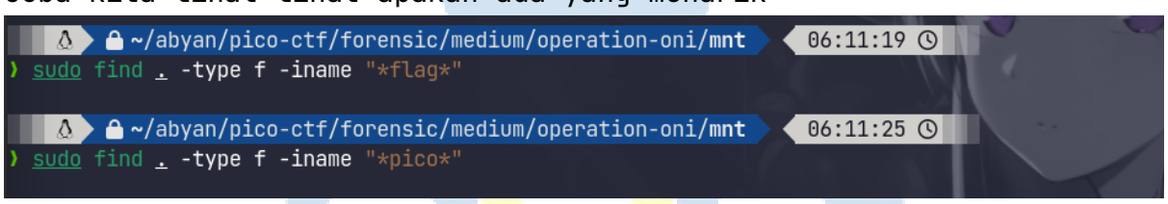
kita diberikan file disk image, coba kita lihat menggunakan the sleuth kit



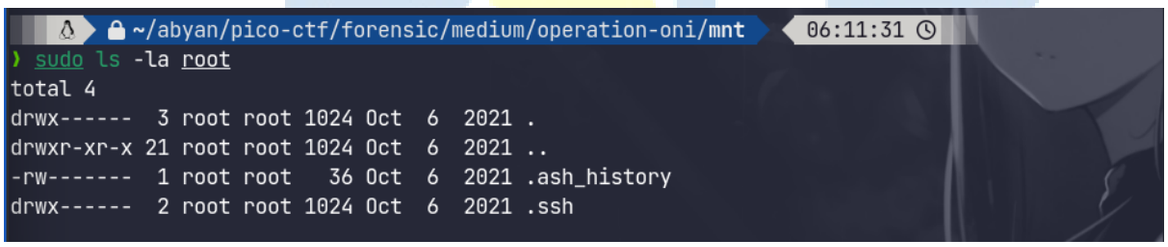
Terdapat 3 partisi, langsung saja coba kita mount partisi yang ketiga



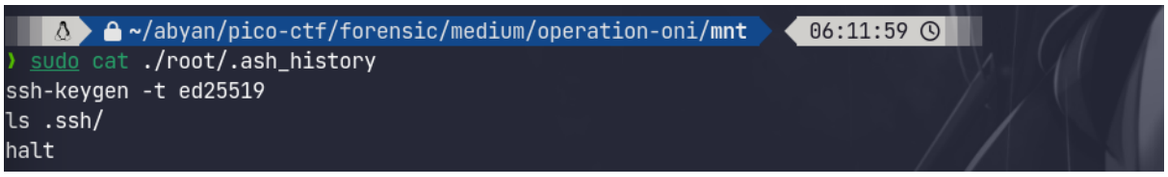
Coba kita lihat-lihat apakah ada yang menarik



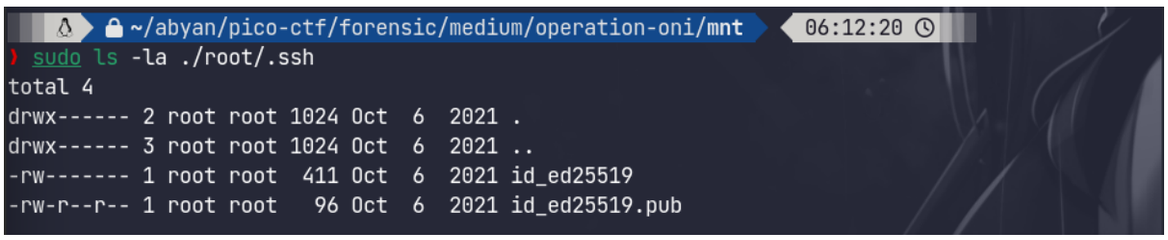
Sepertinya tidak ada file yang memiliki kata kunci flag ataupun pico coba kita cek pada directory root



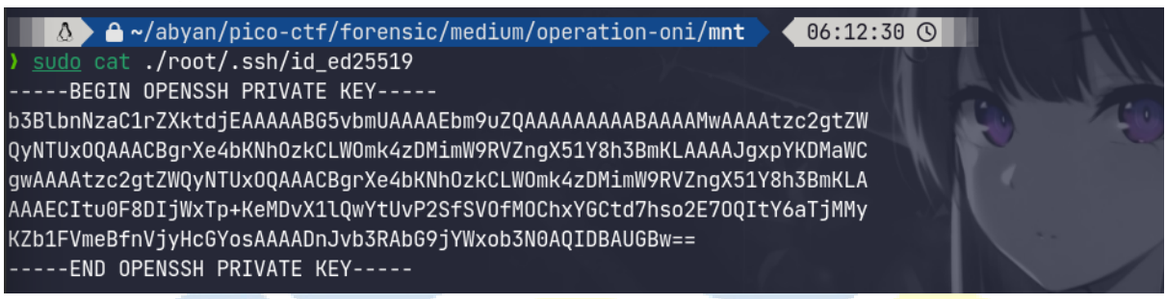
Wah ada history, coba kita cek



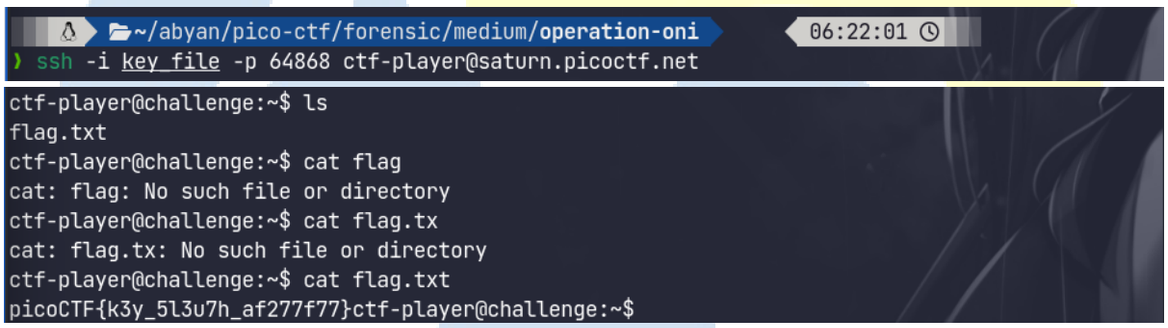
Sepertinya ada history generate ssh keys, coba kita cek di directory .ssh



Id_ed25519 sepertinya menarik karena di history terdapat history membuat key ssh



Horee dapat key untuk ssh-nya, langsung saja kita gunakan key tersebut



Yeay sudah ketemu flagnya

picoCTF{k3y_5l3u7h_af277f77}