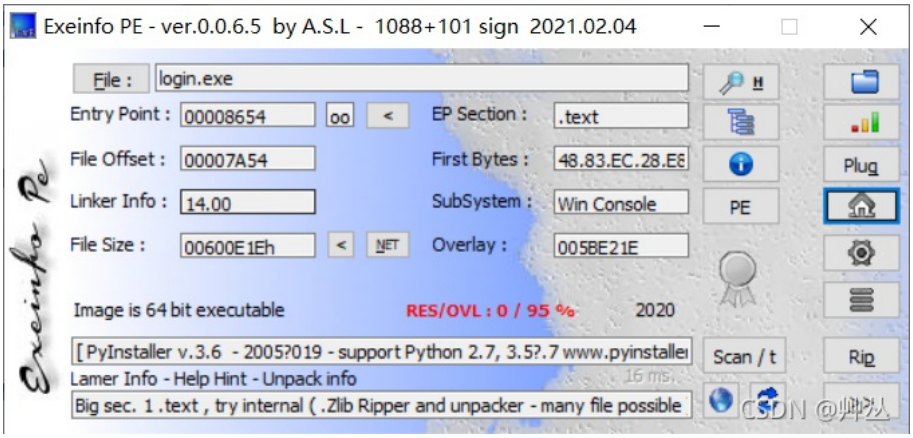
buuctf————[羊城杯 2020]login

原创

re3sry 于 2021-09-30 18:08:05 发布 81 收藏
文章标签： python buuctf reverse

1.查壳。

无壳，64位。（当时还不知到PyInstaller ）



2.直接丢到IDA反编译。发现啥也没有。

（连个提示性的字符串也没有，但运行是有input something。很迷。）

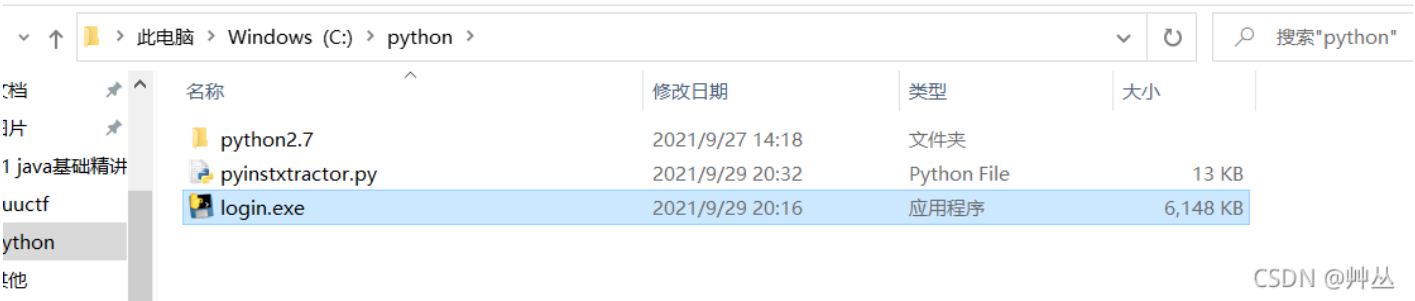
看了看大佬的wp，才知道这是PyInstaller打包的exe，需要解包。

3.解包，反编译。

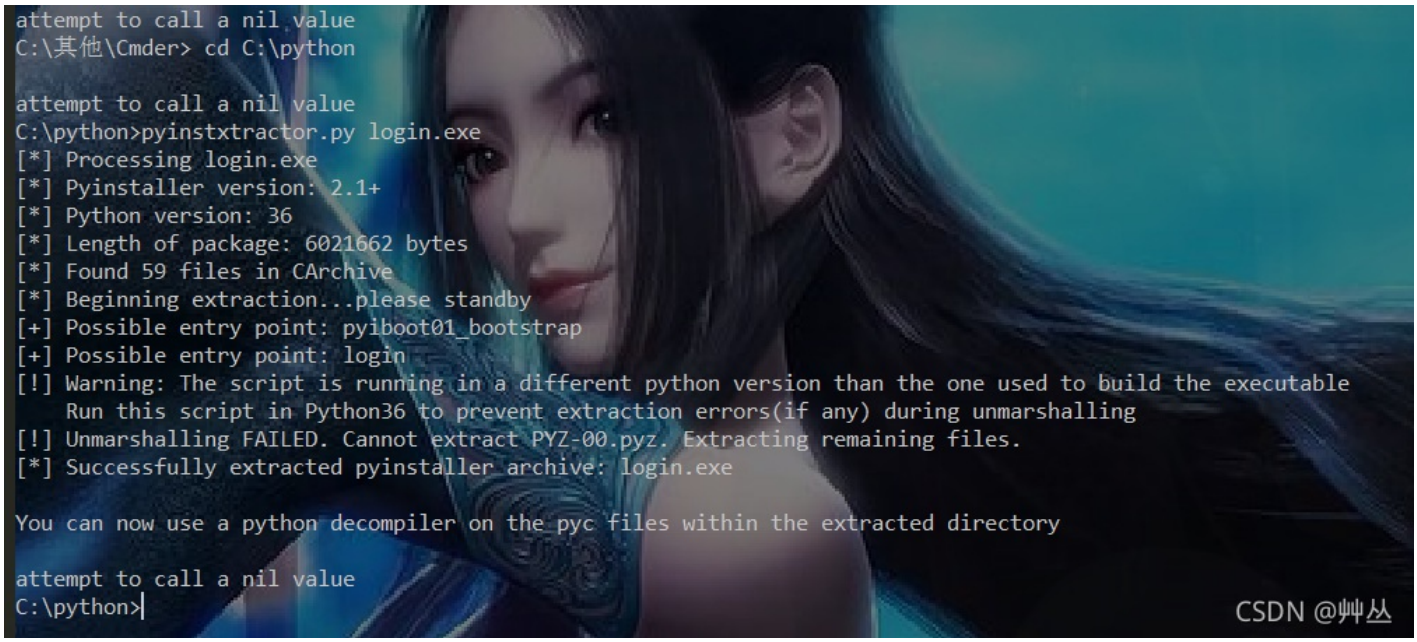
（1）解包;

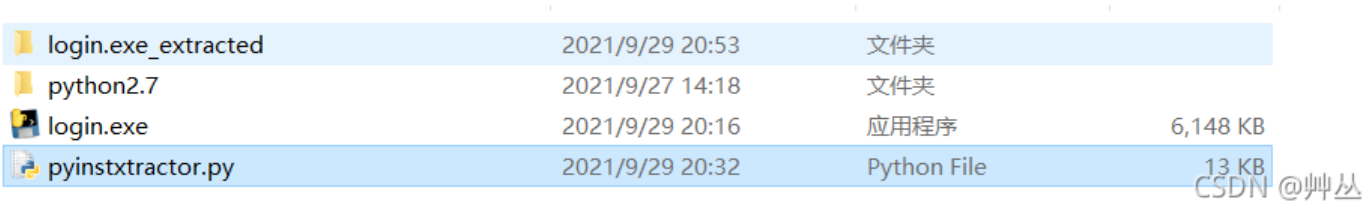
下载PyInstaller Extractor（PyInstaller Extractor download | SourceForge.net）

把login.exe与下载得到的pyinstxtractor.py放到同一目录下。



cmd运行命令 ，得到一个文件夹。





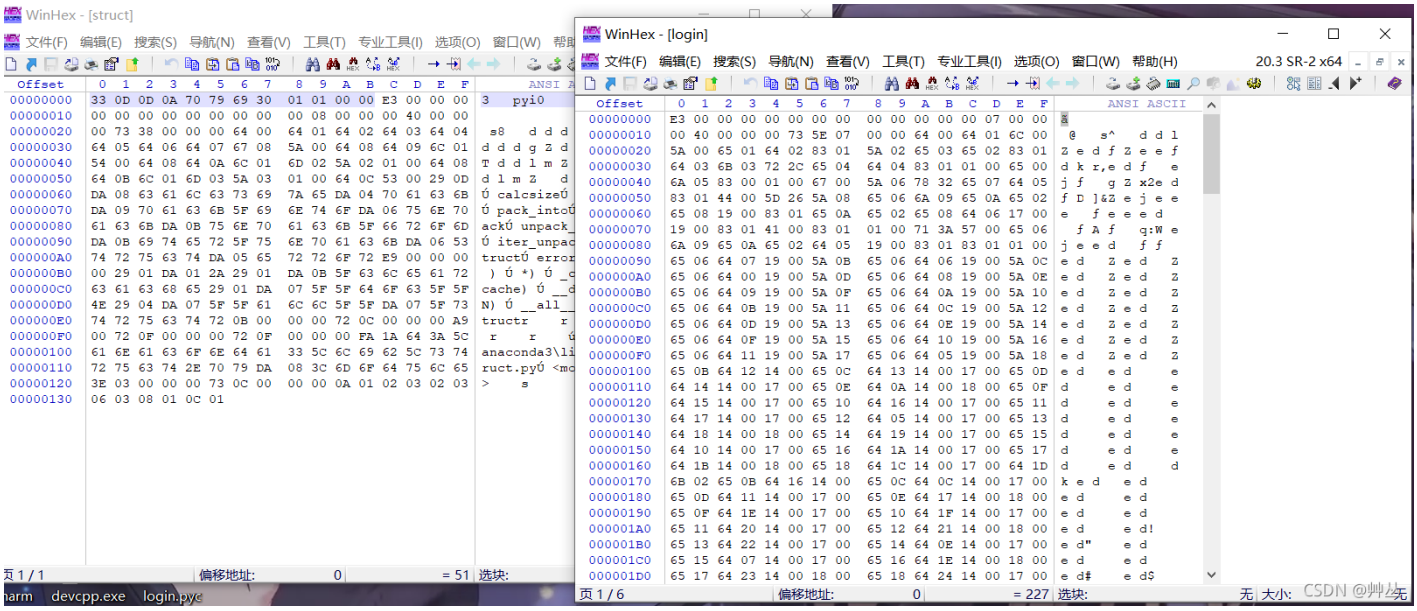
在文件夹中，找到login和struct（无后缀名。）

用winhex把struct和login打开。

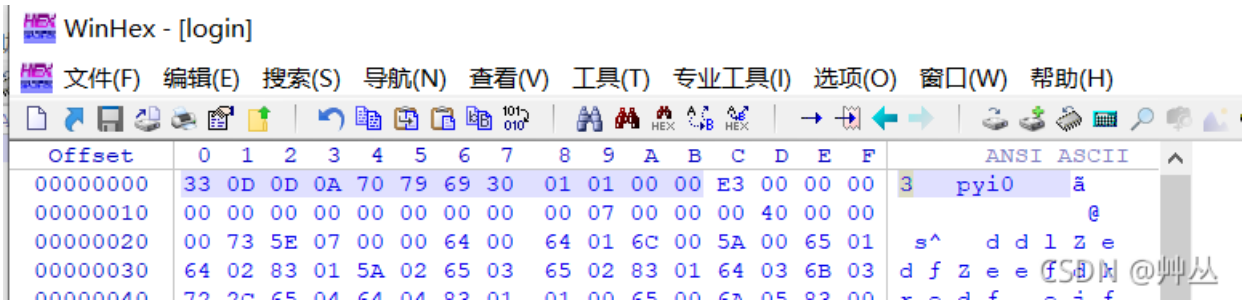
把login前面缺的字节补上（在struct中），

login这个是在从E3开始的，所以要把struct中E3前的字节都复制过去。

开始时：



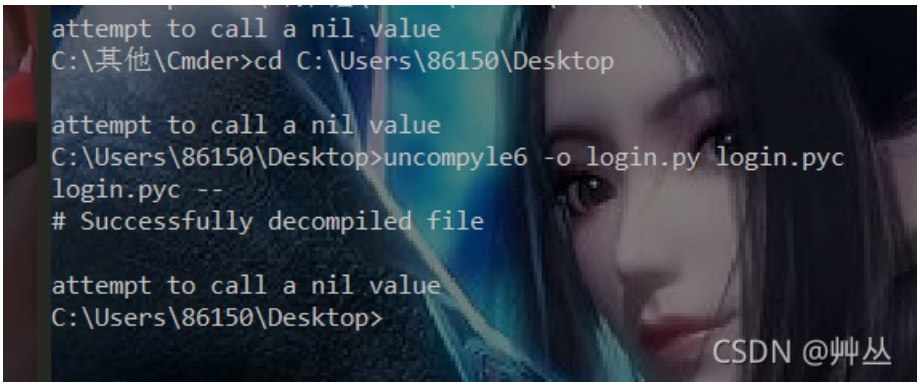
复制后：



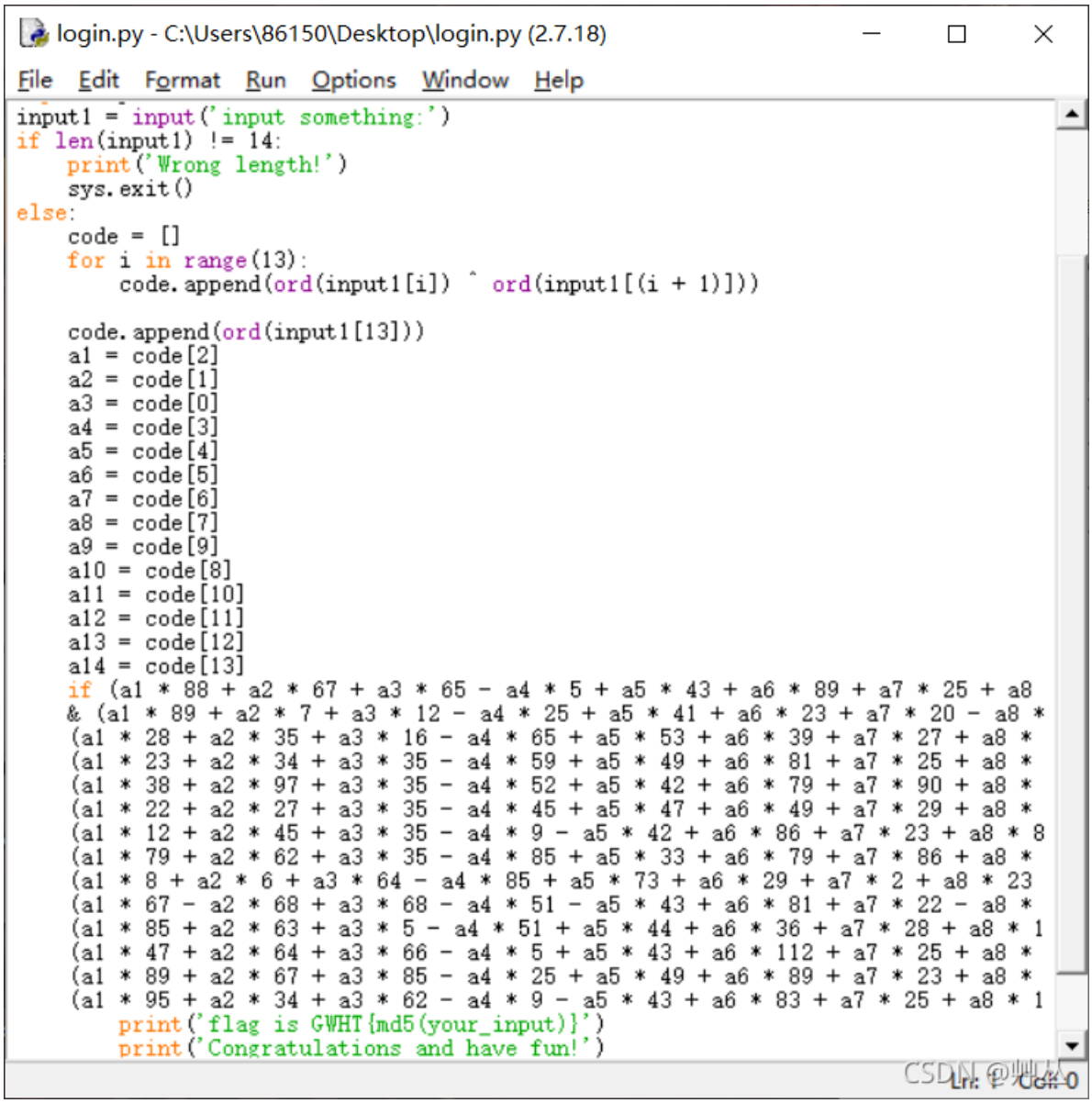
并以.pyc为后缀名保存。

（2）用uncompyle反编译。（uncompyle6安装使用方法 - pcat - 博客园）

得到.py文件。



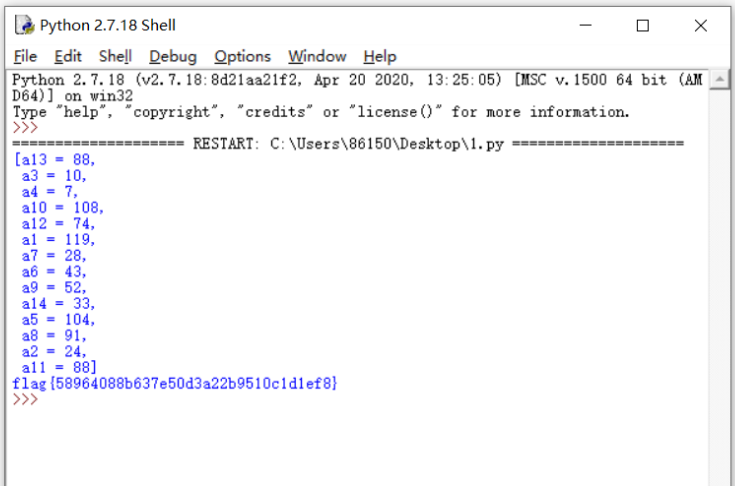
4.打开py文件进行分析。



一个简单异或加解方程（z3）最后MD5加密。

上脚本：

```python
import hashlib
#解方程
from z3 import*

a1,a2,a3,a4,a5,a6,a7,a8,a9,a10,a11,a12,a13,a14 = Ints('a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12 a13 a14')

x=Solver()
x.add(a1 * 88 + a2 * 67 + a3 * 65 - a4 * 5 + a5 * 43 + a6 * 89 + a7 * 25 + a8 * 13 - a9 * 36 + a10 * 15 + a11 * 11 + a12 * 47 - a13 * 60 + a14 * 29 == 22748)
x.add(a1 * 89 + a2 * 7 + a3 * 12 - a4 * 25 + a5 * 41 + a6 * 23 + a7 * 20 - a8 * 66 + a9 * 31 + a10 * 8 + a11 * 2 - a12 * 41 - a13 * 39 + a14 * 17 == 7258)
x.add(a1 * 28 + a2 * 35 + a3 * 16 - a4 * 65 + a5 * 53 + a6 * 39 + a7 * 27 + a8 * 15 - a9 * 33 + a10 * 13 + a11 * 101 + a12 * 90 - a13 * 34 + a14 * 23 == 26190)
x.add(a1 * 23 + a2 * 34 + a3 * 35 - a4 * 59 + a5 * 49 + a6 * 81 + a7 * 25 + a8 * 128 - a9 * 32 + a10 * 75 + a11 * 81 + a12 * 47 - a13 * 60 + a14 * 29 == 37136)
x.add(a1 * 38 + a2 * 97 + a3 * 35 - a4 * 52 + a5 * 42 + a6 * 79 + a7 * 90 + a8 * 23 - a9 * 36 + a10 * 57 + a11 * 81 + a12 * 42 - a13 * 62 - a14 * 11 == 27915)
x.add(a1 * 22 + a2 * 27 + a3 * 35 - a4 * 45 + a5 * 47 + a6 * 49 + a7 * 29 + a8 * 18 - a9 * 26 + a10 * 35 + a11 * 41 + a12 * 40 - a13 * 61 + a14 * 28 == 17298)
x.add(a1 * 12 + a2 * 45 + a3 * 35 - a4 * 9 - a5 * 42 + a6 * 86 + a7 * 23 + a8 * 85 - a9 * 47 + a10 * 34 + a11 * 76 + a12 * 43 - a13 * 44 + a14 * 65 == 19875)
x.add(a1 * 79 + a2 * 62 + a3 * 35 - a4 * 85 + a5 * 33 + a6 * 79 + a7 * 86 + a8 * 14 - a9 * 30 + a10 * 25 + a11 * 11 + a12 * 57 - a13 * 50 - a14 * 9 == 22784)
x.add(a1 * 8 + a2 * 6 + a3 * 64 - a4 * 85 + a5 * 73 + a6 * 29 + a7 * 2 + a8 * 23 - a9 * 36 + a10 * 5 + a11 * 2 + a12 * 47 - a13 * 64 + a14 * 27 == 9710)
x.add(a1 * 67 - a2 * 68 + a3 * 68 - a4 * 51 - a5 * 43 + a6 * 81 + a7 * 22 - a8 * 12 - a9 * 38 + a10 * 75 + a11 * 41 + a12 * 27 - a13 * 52 + a14 * 31 == 13376)
x.add(a1 * 85 + a2 * 63 + a3 * 5 - a4 * 51 + a5 * 44 + a6 * 36 + a7 * 28 + a8 * 15 - a9 * 6 + a10 * 45 + a11 * 31 + a12 * 7 - a13 * 67 + a14 * 78 == 24065)
x.add(a1 * 47 + a2 * 64 + a3 * 66 - a4 * 5 + a5 * 43 + a6 * 112 + a7 * 25 + a8 * 13 - a9 * 35 + a10 * 95 + a11 * 21 + a12 * 43 - a13 * 61 + a14 * 20 == 27687)
x.add(a1 * 89 + a2 * 67 + a3 * 85 - a4 * 25 + a5 * 49 + a6 * 89 + a7 * 23 + a8 * 56 - a9 * 92 + a10 * 14 + a11 * 89 + a12 * 47 - a13 * 61 - a14 * 29 == 29250)
x.add(a1 * 95 + a2 * 34 + a3 * 62 - a4 * 9 - a5 * 43 + a6 * 83 + a7 * 25 + a8 * 12 - a9 * 36 + a10 * 16 + a11 * 51 + a12 * 47 - a13 * 60 - a14 * 24 == 15317)

check = x.check()

print(x.model())

#异或

model=[119,24,10,7,104,43,28,91,52,108,88,74,88,33]
new=[10,24,119,7,104,43,28,91,108,52,88,74,88,33]
flag=''

for i in range(12,-1,-1):
    new[i] = new[i]^new[i+1]
for i in range(len(new)):
    flag += chr(new[i])

#MD5加密
m=hashlib.md5()
m.update(flag.encode('utf-8'))
print('flag{'+m.hexdigest()+'}')
```



5.get flag

flag{58964088b637e50d3a22b9510c1d1ef8}